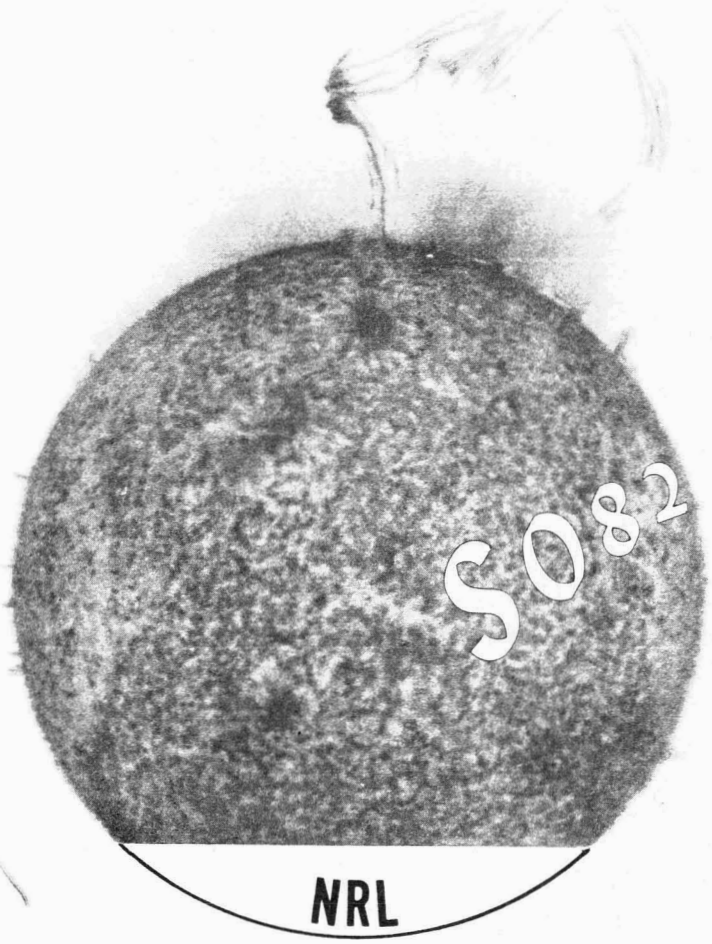
NRL/ATM
THERMAL DISTORTION PROGRAM
USER'S MANUAL



VOLUME II

THERMAL DISTORTION PROGRAM
FINAL VERSION 2L

PREPARED FOR
UNITED STATES NAVAL RESEARCH LABORATORY
WASHINGTON, D.C.

BALL BROTHERS RESEARCH CORPORATION
SUBSIDIARY OF BALL CORPORATION
BOULDER, COLORADO

A HUGE ERUPTION FROM THE SURFACE OF THE SUN SEEN IN THE LIGHT OF HE II AT 304Å
9 AUGUST 1973

This photograph, obtained during the Skylab 3 Mission, reveals for the first time that helium erupting from the sun can stay together to altitudes up to 500,000 miles. After being ejected from the sun, the gas clouds seem to have come to a standstill, as though blocked by an unseen wall, and some material appears to have been directed back toward the sun as rain, distinguished by fine threads. At present it is a challenge to explain this mystery — what forces expelled these huge clouds, then blocked its further progress, yet allowed the cloud to maintain its threads. Both magnetic fields and gravity must play a part, but these curious forms seem to defy explanation based on magnetic and gravitational fields alone.

The instrument which produced this image was an extreme ultraviolet spectroheliograph, designed and constructed by the Naval Research Laboratory and the Ball Brothers Research Corporation under the direction of Dr. R. Tousey, the Principal Investigator for this NASA experiment. To the left may be seen the sun's image in emission from iron atoms which have lost 14 electrons by collision in the suns' million-degree coronal plasma gas.

BALL BROTHERS RESEARCH CORPORATION

VOLUME II

THERMAL DISTORTION PROGRAM
FINAL VERSION 2L

NRL/ATM
THERMAL DISTORTION PROGRAM
USER'S MANUAL
FOR
S082A AND S082B INSTRUMENTS

620-250 25 July 1974

Contract No. N00014-67-C-0470
Contract Modification P00055

```
@MSG,N                REMOVE AT CARD READER     12-09-73          CLOCK NO 4653

@MSG,IW BACKUP TAPES TO 01230 ARE 01480,01458

@ASG,TX PAR.,T,01230

@REWIND PAR.
FURPUR 24H1-12/10-11:02

@FREE TPFS.

@ASG,T TPFS.,F2/1/POS/10

@ERS TPFS.
FURPUR 24H1-12/10-11:02

@COPIN PAR.,TPFS.
 48 SYM  44 REL  4 ABS

@FREE PAR.

@ASG,T 10.,F/1/POS/3

@ASG,T 11.,F/1/POS/3

@ASG,T 12.,F/1/POS/3

@ASG,T 13.,F/1/POS/3

@ASG,TX 14.,T,39083
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@ASG,T 15.,F/I/POS/3

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@FOR,US ATMSKY,ATMSKY
HSD 11A -12/10/73-11:03:30 (4,5)

   SUBROUTINE SKYATM     ENTRY POINT 001134

   STORAGE USED: CODE(1) 001141; DATA(0) 000062; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003    ATMCOM 010656
    0004    ATMRED 003405

   EXTERNAL REFERENCES (BLOCK, NAME)

    0005    NTRAN
    0006    TWAIT
    0007    READIT
    0010    NERR2$
    0011    NWDU$
    0012    NIO2$
    0013    NSTOP$
    0014    NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0000   000015 IF        0001   000037 1000L     0001   000041 1005L     0001   000050 1010L     0001   000060 1020L
    0001   000103 1050L     0001   000023 141G      0001   000116 1500L     0000   000016 2F        0001   000121 2000L
    0000   000030 3F        0001   000626 370G      0001   000125 4000L     0001   000127 4050L     0001   000145 4100L
    0001   000162 4200L     0001   001005 456G      0001   001030 471G      0001   000015 500L      0001   000201 5000L
    0001   000224 5050L     0001   001054 506G      0001   000250 5100L     0001   000266 5150L     0001   000304 5200L
    0001   001102 523G      0001   000325 5300L     0001   000351 5400L     0001   000370 5425L     0001   000433 5440L
    0001   000445 5450L     0001   000462 5475L     0001   000473 5500L     0001   000510 5900L     0001   000524 5925L
    0001   000542 6000L     0001   000554 6100L     0001   000604 6175L     0001   000621 6300L     0001   000663 7000L
    0001   000720 9000L     0001   000733 9010L     0001   000736 9050L     0001   000745 9100L     0001   000764 9150L
    0001   000777 9200L     0001   001022 9300L     0001   001070 9400L     0001   001074 9500L     0001   001116 9600L
    0001   001122 9900L     0001   001046 9999L     0004 R 000004 DATA      0000 I 000007 I         0004 I 000004 IDATA
    0000 I 000010 IDWD      0000 I 000011 IDWDS     0000 I 000005 IEOF      0004 I 003404 IER       0003 I 002786 IFDATA
    0003 I 000032 IFID      0003 I 000003 IFN       0000   000053 INJP$     0000 I 000006 IPAR      0000 I 000003 IPICK
    0003 I 001016 IRID      0003 I 000004 IRN       0000 I 000004 ISTART    0000 I 000013 ITEMP     0003 I 000006 ITIME
    0003 I 000002 ITR       0004 I 000000 IUN       0003 I 000000 IUNIT     0000 I 000014 J         0004 I 000002 JTAPE
    0003 I 000005 KERR      0004 I 000001 KUNIT     0000 I 000012 KWD       0000 I 000002 K122      0004 I 000003 LREC
    0000 I 000000 MIDEND    0000 I 000001 MIDGMT    0003 I 000001 NTAPE     0003 R 002002 RDATA

00101      1*            SUBROUTINE SKYATM
00101      2*      C*****************************************************************
00101      3*      C
00101      4*      C        READ ROUTINE FOR SKYLAB COMPRESSED USER TAPE
00101      5*      C        ROUTINE USES SUBROUTINES - READIT,SWAP
00101      6*      C
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00101      7*     C*****************************************************************
00103      8*            DIMENSION DATA(1792),IDATA(1792)
00104      9*            EQUIVALENCE (DATA(1),IDATA(1))
00105     10*            COMMON/ATMCOM/IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20),IFID(500),
00105     11*           1IRID(500),RDATA(500),IFDATA(3000)
00106     12*            COMMON/ATMRED/IUN,KUNIT,JTAPE,LREC,DATA,IER
00107     13*          1 FORMAT(1H1)
00110     14*          2 FORMAT(1H0,49HERROR CODE 4 FROM NTRAN ON TAPE READ.  JOB ENDED.)
00111     15*          3 FORMAT(1H0,10HERROR CODE,I3,28H FROM NTRAN ON FASTRAN READ.,2X,
00111     16*           1 10HJOB ENDED.)
00112     17*            DATA MIDEND/1023/
00114     18*            DATA MIDGMT/1022/
00116     19*            DATA LREC/1792/
00120     20*            DATA K122/166/
00122     21*            IF (ITR .NE. 1) GO TO 500
00124     22*            IPICK = 0
00125     23*            ISTART = 0
00126     24*            IEOF = 0
00127     25*            JTAPE = NTAPE
00130     26*            KUNIT = IUNIT
00131     27*            IUN = ABS(IUNIT)
00131     28*      C        DETERMINE TYPE RECORD TO READ
00132     29*        500 CONTINUE
00133     30*            IF (IEOF .NE. 0) GO TO 9010
00135     31*            IRN = 0
00136     32*            IFN = 0
00137     33*            IPAR = 0
00140     34*            DO 600 I=10,20
00143     35*        600 ITIME(20) = 0
00145     36*            GO TO (1000,1500,2000,1005,4000),ITR
00146     37*       1000 IDWD = 100
00147     38*       1005 CALL NTRAN(IUN,2,IDWD,IFDATA,IER)
00150     39*       1010 IF (IER .NE. -1) GO TO 1020
00152     40*            CALL TWAIT(10)
00153     41*            GO TO 1010
00154     42*       1020 IF (IER .GT. 0) GO TO 1050
00156     43*            IF (IUNIT .LT. 0) GO TO 9300
00160     44*            I = ABS(IER)
00161     45*            GO TO (1010,9100,9150,9200),I
00162     46*       1050 KERR = 1
00163     47*            IFN = IER
00164     48*            IF (ITR .NE. 1) GO TO 9999
00166     49*            IDWDS = IFDATA(24)
00167     50*            GO TO 9999
00170     51*       1500 IDWD = IDWDS
00171     52*            GO TO 1005
00172     53*       2000 IDWD = IDWDS + IDWDS
00173     54*            GO TO 1005
00173     55*      C        MAKE FIRST INITIAL READ OF DATA RECORD
00174     56*       4000 CONTINUE
00175     57*            IF (ISTART .NE. 0) GO TO 5000
00177     58*       4050 ISTART = 1
00200     59*            CALL READIT
00201     60*            GO TO (4100,9000,9050,9200,9300),IER
00202     61*       4100 ITIME(8) = FLD(0,9,IDATA(1))
00203     62*            ITIME(13) = FLD(9,6,IDATA(1))
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00204      63*          ITIME(9) = FLD(15,21,IDATA(1))
00205      64*          KWD = 2
00206      65*     4200 IF (FLD(6,10,IDATA(KWD)) .EQ. MIDGMT) GO TO 6000
00210      66*          KWD = KWD + 1
00211      67*          IF (KWD .GT. LREC) GO TO 4650
00213      68*          GO TO 4200
00213      69*     C       TEST ID WORD IN DATA RECORD
00213      70*     C       1. END OF DATA ID
00213      71*     C       2. GMT MSFC ID AND NOT ATMOC WORD ID
00213      72*     C       3. SINGLE BIT ID
00213      73*     C       4. TEST FOR LAST WORD
00213      74*     C       5. TEST DATA WORD FOR TIME MEA. K122, REAL OR INTEGER
00214      75*     5000 CONTINUE
00215      76*          IF (FLD(6,10,IDATA(KWD)) .EQ. MIDEND) GO TO 7000
00217      77*          IF (FLD(3,3,IDATA(KWD)) .EQ. 6) GO TO 5050
00221      78*          IF (FLD(6,10,IDATA(KWD)) .EQ. MIDGMT) GO TO 6000
00223      79*     5050 IF (FLD(17,4,IDATA(KWD)) .NE. 0) GO TO 5300
00225      80*          IF (KWD .EQ. LREC) GO TO 5400
00227      81*          IF (FLD(6,10,IDATA(KWD)) .EQ. K122) GO TO 5500
00231      82*          IF (FLD(0,6,IDATA(KWD+1)) .NE. 0) GO TO 5200
00233      83*          GO TO 5100
00233      84*     C       INTEGER DATA
00234      85*     5100 IFN = IFN + 1
00235      86*          IF (IDATA(KWD+1) .NE. 0) GO TO 5150
00237      87*          IRN = IRN + 1
00240      88*          IRID(IRN) = IDATA(KWD)
00241      89*          RDATA(IRN) = DATA(KWD+1)
00242      90*     5150 IFID(IFN) = IDATA(KWD)
00243      91*          IFDATA(IFN) = IDATA(KWD+1)
00244      92*          KWD = KWD + 2
00245      93*          IF (KWD .GT. LREC) GO TO 5900
00247      94*          GO TO 5000
00247      95*     C       REAL DATA
00250      96*     5200 IRN = IRN + 1
00251      97*          IRID(IRN) = IDATA(KWD)
00252      98*          RDATA(IRN) = DATA(KWD+1)
00253      99*          KWD = KWD + 2
00254     100*          IF (KWD .GT. LREC) GO TO 5900
00256     101*          GO TO 5000
00256     102*     C       SINGLE BIT DATA
00257     103*     5300 IFN = IFN + 1
00260     104*          IFID(IFN) = IDATA(KWD)
00261     105*          IFDATA(IFN) = 0
00262     106*          IFDATA(IFN) = FLD(16,1,IDATA(KWD))
00263     107*          KWD = KWD + 1
00264     108*          IF (KWD .GT. LREC) GO TO 5900
00266     109*          GO TO 5000
00266     110*     C       ID WORD LAST WORD IN RECORD - GET DATA WORD
00267     111*     5400 ITEMP = IDATA(KWD)
00270     112*          CALL READIT
00271     113*          GO TO (5425,9000,9050,9200,9300),IER
00272     114*     5425 ITIME(8) = FLD(0,9,IDATA(1))
00273     115*          ITIME(13) = FLD(9,6,IDATA(1))
00274     116*          ITIME(9) = FLD(15,21,IDATA(1))
00275     117*          KWD = 2
00276     118*          IF (FLD(6,10,ITEMP) .EQ. K122) GO TO 5475
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00300   119*          IF (FLD(0,6,IDATA(KWD)) .NE. 0) GO TO 5450
00302   120*          IFN = IFN + 1
00303   121*          IF (IDATA(KWD) .NE. 0) GO TO 5440
00305   122*          IRN = IRN + 1
00306   123*          IRID(IRN) = ITEMP
00307   124*          RDATA(IRN) = DATA(KWD)
00310   125*     5440 IFID(IFN) = ITEMP
00311   126*          IFDATA(IFN) = IDATA(KWD)
00312   127*          KWD = KWD + 1
00313   128*          GO TO 5000
00314   129*     5450 IRN = IRN + 1
00315   130*          IRID(IRN) = ITEMP
00316   131*          RDATA(IRN) = DATA(KWD)
00317   132*          KWD = KWD + 1
00320   133*          GO TO 5000
00321   134*     5475 ITIME(10) = ITEMP
00322   135*          ITIME(11) = IDATA(KWD)
00323   136*          KWD = KWD + 1
00324   137*          GO TO 5000
00325   138*     5500 ITIME(10) = IDATA(KWD)
00326   139*          ITIME(11) = IDATA(KWD+1)
00327   140*          KWD = KWD + 2
00330   141*          IF (KWD .GT. LREC) GO TO 5900
00332   142*          GO TO 5000
00332   143*     C       COMPLETED RECORD SEARCH - READ NEW ONE
00333   144*     5900 CONTINUE
00334   145*          CALL READIT
00335   146*          GO TO (5925,9000,9050,9200,9300),IER
00336   147*     5925 ITIME(8) = FLD(0,9,IDATA(1))
00337   148*          ITIME(13) = FLD(9,6,IDATA(1))
00340   149*          ITIME(9) = FLD(15,21,IDATA(1))
00341   150*          KWD = 2
00342   151*          GO TO 5000
00342   152*     C*****************************************************************
00342   153*     C
00342   154*     C        TIME WORD FOUND
00342   155*     C
00342   156*     C*****************************************************************
00343   157*     6000 CONTINUE
00344   158*          IF (IPICK .EQ. 0) GO TO 6100
00346   159*          IPICK = 0
00347   160*          KERR = 1
00350   161*          IF (IPAR .NE. 0) KERR = 3
00352   162*          GO TO 9999
00353   163*     6100 IPICK = 1
00354   164*          ITIME(6) = IDATA(KWD)
00355   165*          KWD = KWD + 1
00356   166*          IF (KWD .LE. LREC) GO TO 6300
00360   167*          CALL READIT
00361   168*          GO TO (6175,9000,9050,9200,9300),IER
00362   169*     6175 ITIME(8) = FLD(0,9,IDATA(1))
00363   170*          ITIME(13) = FLD(9,6,IDATA(1))
00364   171*          ITIME(9) = FLD(15,21,IDATA(1))
00365   172*          KWD = 2
00366   173*     6300 ITIME(7) = IDATA(KWD)
00367   174*          DO 6310 I=1,5
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00372     175*      6310 ITIME(1) = 0
00374     176*           ITIME(1) = FLD(0,9,IDATA(KWD))
00375     177*           ITIME(2) = FLD(9,5,IDATA(KWD))
00376     178*           ITIME(3) = FLD(14,6,IDATA(KWD))
00377     179*           ITIME(4) = FLD(20,6,IDATA(KWD))
00400     180*           ITIME(5) = FLD(26,10,IDATA(KWD))
00401     181*           KWD = KWD + 1
00402     182*           IF (KWD .GT. LREC) GO TO 5900
00404     183*           GO TO 5000
00404     184*      C       MID FOR END OF DATA OR MISSING DATA FOUND
00405     185*      7000 CONTINUE
00406     186*           IFN = IFN + 1
00407     187*           IFID(IFN) = IDATA(KWD)
00410     188*           IFDATA(IFN) = 0
00411     189*           IFDATA(IFN) = FLD(28,8,IDATA(KWD))
00412     190*           ITIME(14) = ITIME(14) + 1
00413     191*           ITIME(15) = IFDATA(IFN)
00414     192*           IF (IFDATA(IFN) .EQ. 9) GO TO 5900
00416     193*           KWD = KWD + 1
00417     194*           IF (KWD .GT. LREC) GO TO 5900
00421     195*           GO TO 5000
00421     196*      C       9000 - EOF DATA READ
00421     197*      C       9050 - PARITY DATA READ
00421     198*      C       9100 - EOF ID READ
00421     199*      C       9150 - PARITY ID READ
00422     200*      9000 IF (IPICK .EQ. 0) GO TO 9010
00424     201*           KERR = 1
00425     202*           IF (IPAR .NE. 0) KERR = 3
00427     203*           IEOF = 1
00430     204*           GO TO 9999
00431     205*      9010 KERR = 2
00432     206*           GO TO 9999
00433     207*      9050 ISTART = 0
00434     208*           IPICK = 0
00435     209*           IRN = 0
00436     210*           IFN = 0
00437     211*           IPAR = 1
00440     212*           GO TO 4000
00441     213*      9100 KERR = 4
00442     214*           CALL NTRAN(IUN,22)
00443     215*           GO TO 9999
00444     216*      9150 KERR = 5
00445     217*           CALL NTRAN(IUN,22)
00446     218*           IF (ITR .EQ. 1) IFN = 100
00450     219*           IF (ITR .EQ. 2) IDWDS = 1500
00452     220*           GO TO 9999
00452     221*      C       NTRAN ERROR OF 4 ON TAPE READ
00453     222*      9200 WRITE(6,1)
00455     223*           DO 9210 J=1,50
00460     224*      9210 WRITE(6,2)
00463     225*           WRITE(6,1)
00465     226*           STOP
00465     227*      C       NTRAN ERROR ON FASTRAN READ
00466     228*      9300 WRITE(6,1)
00470     229*           DO 9310 J=1,50
00473     230*      9310 WRITE(6,3) IER
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00477   231*          WRITE(6,1)
00501   232*          STOP
00502   233*     9999 CONTINUE
00503   234*          IF (IFN .EQ. 0) GO TO 9500
00505   235*          DO 9400 I=1,IFN
00510   236*          IF (FLD(3,3,IFID(I)) .EQ. 6) GO TO 9400
00512   237*          ITIME(12) = FLD(3,3,IFID(I))
00513   238*          GO TO 9900
00514   239*     9400 CONTINUE
00516   240*          ITIME(12) = 6
00517   241*     9500 CONTINUE
00520   242*          IF (IRN .EQ. 0) GO TO 9900
00522   243*          DO 9600 I=1,IRN
00525   244*          IF (FLD(3,3,IRID(I)) .EQ. 6) GO TO 9600
00527   245*          ITIME(12) = FLD(3,3,IRID(I))
00530   246*          GO TO 9900
00531   247*     9600 CONTINUE
00533   248*          ITIME(12) = 6
00534   249*     9900 CONTINUE
00535   250*          RETURN
00536   251*          END

        END OF COMPILATION:        NO  DIAGNOSTICS.
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@FOR,US ITREAD,ITREAD
HSD 11A -12/10/73-11:03:42 (4,5)

   SUBROUTINE READIT     ENTRY POINT 000236

   STORAGE USED: CODE(1) 000242; DATA(D) 003427; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   ATMRED 003405

   EXTERNAL REFERENCES (BLOCK, NAME)

    0004   NTRAN
    0005   TWAIT
    0006   NNCODS
    0007   SWAP
    0010   NERR2S
    0011   NIO2S
    0012   NERR3S

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0000   003413 IF        0001   000211 1000L     0001   000000 150L      0001   000013 160L      0001   000023 170L
    0001   000157 174G      0000   003414 2F        0001   000050 200L      0001   000213 214G      0001   000057 250L
    0001   000062 300L      0001   000065 400L      0001   000101 450L      0001   000110 500L      0001   000166 530L
    0001   000176 550L      0001   000206 590L      0001   000225 9000L     0000 R 000006 BUFF      0003 R 000004 DATA
    0000 I 003411 I         0000 I 003407 IBUFF     0003 I 000004 IDATA     0003 I 003404 IER       0000 I 003410 IERR
    0000   003421 INJPS     0000 I 000000 IT        0000 I 003412 ITU       0003 I 000000 IUN       0003 I 000002 JTAPE
    0000 I 003406 KTAPE     0003 I 000001 KUNIT     0003 I 000003 LREC

00101      1*          SUBROUTINE READIT
00101      2*     C*****************************************************************
00101      3*     C
00101      4*     C        READ ROUTINE FOR DATA RECORDS - HANDLES MULTIPLE TAPES
00101      5*     C
00101      6*     C*****************************************************************
00103      7*          DIMENSION DATA(1792),IT(6),BUFF(1792),IDATA(1792)
00104      8*          EQUIVALENCE (DATA(1),IDATA(1))
00105      9*          COMMON/ATMRED/IUN,KUNIT,JTAPE,LREC,DATA,IER
00106     10*        1 FORMAT(I2)
00107     11*        2 FORMAT(I1)
00110     12*          DATA KTAPE/1/
00112     13*          DATA IBUFF/0/
00114     14*          DATA IT(1)/6H      /
00116     15*      150 IF (IBUFF .EQ. 0) CALL NTRAN(IUN,2,LREC,BUFF,IERR)
00120     16*          IBUFF = 1
00121     17*      160 IF (IERR .NE. -1) GO TO 170
00123     18*          CALL TWAIT(10)
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00124      19*          GO TO 160
00125      20*      170 IF (IERR .GT. 0) GO TO 400
00127      21*          IF (KUNIT .LT. 0) GO TO 300
00131      22*          I = ABS(IERR)
00132      23*          IER = 2
00133      24*          GO TO (160,500,200,250),I
00133      25*    C        PARITY ON TAPE READ
00134      26*      200 IER = 3
00135      27*          CALL NTRAN(IUN,22)
00136      28*          GO TO 1000
00136      29*    C        NTRAN ERROR ON TAPE READ
00137      30*      250 IER = 4
00140      31*          GO TO 1000
00140      32*    C        NTRAN ERROR ON FASTRAN READ
00141      33*      300 IER = 5
00142      34*          GO TO 1000
00142      35*    C        GOOD READ
00143      36*      400 IER = 1
00144      37*          IF (KUNIT .GT. 0) GO TO 1000
00146      38*          IF (FLD(0,9,IDATA(1)) .EQ. 511) GO TO 450
00150      39*          GO TO 1000
00151      40*      450 IER = 2
00152      41*          CALL NTRAN(IUN,10)
00153      42*          GO TO 9000
00153      43*    C*****************************************************************
00153      44*    C
00153      45*    C        END OF FILE - TEST FOR MULTIPLE TAPES
00153      46*    C
00153      47*    C*****************************************************************
00154      48*      500 CONTINUE
00155      49*          CALL NTRAN(IUN,22)
00156      50*          IF (JTAPE .EQ. KTAPE) GO TO 9000
00160      51*          KTAPE = KTAPE + 1
00161      52*          IF (IUN .LT. 10) ENCODE(2,IT) IUN
00165      53*          IF (IUN .GT. 9) ENCODE(1,IT) IUN
00171      54*          ITU = IT(1)
00172      55*          CALL SWAP(ITU)
00173      56*          DO 590 I=1,4
00176      57*          CALL NTRAN(IUN,2,LREC,DATA,IERR)
00177      58*      530 IF (IERR .NE. -1) GO TO 550
00201      59*          CALL TWAIT(10)
00202      60*          GO TO 530
00203      61*      550 IF (IERR .GT. 0) GO TO 590
00205      62*          CALL NTRAN(IUN,22)
00206      63*      590 CONTINUE
00210      64*          IBUFF = 0
00211      65*          GO TO 150
00212      66*     1000 CONTINUE
00213      67*          DO 1050 I=1,1792
00216      68*     1050 DATA(I) = BUFF(I)
00220      69*          CALL NTRAN(IUN,2,LREC,BUFF,IERR)
00221      70*     9000 CONTINUE
00222      71*          RETURN
00223      72*          END
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END OF COMPILATION:        NO  DIAGNOSTICS.
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@FOR,US ATMGET,ATMGET
MSD 11A -12/10/73-11:03:54 (4,5)

   SUBROUTINE GETATM     ENTRY POINT 000203

   STORAGE USED: CODE(1) 000216: DATA(0) 000014: BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003    ATMCOM 010656
    0004    MIDATM 004734

   EXTERNAL REFERENCES (BLOCK, NAME)

    0005    NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001    000007 113G      0001    000112 151G      0001    000047 2500L     0001    000074 3000L     0001    000102 3500L
    0001    000104 4000L     0001    000143 4300L     0001    000161 4400L     0001    000167 4500L     0001    000171 5000L
    0004 R  004570 DATA      0000 I  000002 I         0004 I  004570 IDATA     0003 I  002766 IFDATA    0003 I  000032 IFID
    0003 I  000003 IFN       0000 I  000001 IM        0000    000005 INJP$     0003 I  001016 IRID      0003 I  000004 IRN
    0003    000006 ITIME     0003    000002 ITR       0003    000000 IUNIT     0000 I  000003 J         0000 I  000004 K
    0003    000005 KERR      0004 I  002454 LOC       0004    000001 MEAN      0004 I  000455 MID       0000 I  000000 N
    0004    000000 NMEA      0003    000001 NTAPE     0003 R  002002 RDATA
```

```
00101     1*          SUBROUTINE GETATM(IGOT)
00103     2*          DIMENSION IDATA(100)
00104     3*          COMMON/ATMCOM/IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20),IFID(500),
00104     4*         *IRID(500),RDATA(500),IFDATA(3000)
00105     5*          COMMON/MIDATM/NMEA,MEAN(100,3),MID(1023),LOC(100,11),DATA(100)
00106     6*          EQUIVALENCE (IDATA(1),DATA(1))
00107     7*          IGOT = 0
00107     8*     C        PICKUP INTEGER DATA
00110     9*          IF (IFN .EQ. 0) GO TO 4000
00112    10*          DO 3500 N=1,IFN
00115    11*          IM = FLD(6,10,IFID(N))
00116    12*          IF (FLD(3,3,IFID(N)) .EQ. 6) GO TO 2500
00120    13*          I = FLD(19,17,MID(IM))
00121    14*          IF (I .EQ. 0) GO TO 3500
00123    15*          J = FLD(17,4,IFID(N))
00124    16*          J = J + 1
00125    17*          K = FLD(19,17,LOC(I,J))
00126    18*          IF (K .EQ. 0) GO TO 3500
00130    19*          GO TO 3000
00131    20*     2500 I = FLD(1,17,MID(IM))
00132    21*          IF (I .EQ. 0) GO TO 3500
00134    22*          J = FLD(17,4,IFID(N))
00135    23*          J = J + 1
```

```
00136     24*          K = FLD(1,17,LOC(I,J))
00137     25*          IF (K .EQ. 0) GO TO 3500
00141     26*     3000 IDATA(K) = IFDATA(N)
00142     27*          IGOT = IGOT + 1
00143     28*     3500 CONTINUE
00143     29*    C        PICKUP REAL DATA
00145     30*     4000 CONTINUE
00146     31*          IF (IRN .EQ. 0) GO TO 5000
00150     32*          DO 4500 N=1,IRN
00153     33*          IM = FLD(6,10,IRID(N))
00154     34*          IF (FLD(3,3,IRID(N)) .EQ. 6) GO TO 4300
00156     35*          I = FLD(19,17,MID(IM))
00157     36*          IF (I .EQ. 0) GO TO 4500
00161     37*          K = FLD(19,17,LOC(I,1))
00162     38*          IF (K .EQ. 0) GO TO 4500
00164     39*          GO TO 4400
00165     40*     4300 I = FLD(1,17,MID(IM))
00166     41*          IF (I .EQ. 0) GO TO 4500
00170     42*          K = FLD(1,17,LOC(I,1))
00171     43*          IF (K .EQ. 0) GO TO 4500
00173     44*     4400 DATA(K) = RDATA(N)
00174     45*          IGOT = IGOT + 1
00175     46*     4500 CONTINUE
00177     47*     5000 CONTINUE
00200     48*          RETURN
00201     49*          END

      END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,US ATMSET,ATMSET
HSD 11A -12/10/73-11:04:06 (4,5)

   SUBROUTINE SETATM     ENTRY POINT 000361

   STORAGE USED: CODE(1) 000370; DATA(3) 000103; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003    ATMCOM 010656
    0004    MIDATM 004734

   EXTERNAL REFERENCES (BLOCK, NAME)

    0005    NWDUS
    0006    NIO2S
    0007    NIO1S
    0010    NERR3S

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0000    000012 IF        0001    000020 1000L     0001    000025 121G      0001    000033 130G      0001    000034 133G
    0001    000044 141G      0001    000075 157G      0000    000013 2F        0001    000031 2000L     0001    000266 230G
    0001    000316 251G      0001    000051 2900L     0000    000014 3F        0001    000070 3000L     0001    000107 3500L
    0000    000034 4F        0001    000115 4000L     0001    000152 4100L     0001    000166 4150L     0000    000053 5F
    0001    000204 5000L     0001    000217 5100L     0001    000234 5150L     0001    000253 8000L     0001    000304 8500L
    0001    000323 9000L     0001    000340 9500L     0001    000345 9999L     0004    004570 DATA      0000 I 000001 I
    0000 I 000010 IBP        0000 I 000006 IDS        0003 I 002766 IFDATA     0003 I 000032 IFID      0003 I 000003 IFN
    0000 I 000011 ILOC       0000 I 000007 IMID       0000    000067 INJPS     0003    001016 IRID      0003    000004 IRN
    0000 I 000000 IR2        0003    000006 ITIME     0003 I 000002 ITR        0003    000000 IUNIT     0000 I 000002 J
    0003    000005 KERR      0004 I 002454 LOC        0000 I 000003 MEA        0004 I 000001 MEAN      0004 I 000455 MID
    0000 I 000005 N          0000 I 000004 NLOC       0004 I 000000 NMEA       0003    000001 NTAPE     0003    002002 RDATA
```

```
00101     1*          SUBROUTINE SETATM
00103     2*          COMMON/ATMCOM/IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20),IFID(500),
00103     3*         &IRID(500),RDATA(500),IFDATA(3000)
00104     4*          COMMON/MIDATM/NMEA,MEAN(100,3),MID(1023),LOC(100,11),DATA(100)
00105     5*        1 FORMAT(1H1)
00106     6*        2 FORMAT(1H )
00107     7*        3 FORMAT(1H ,I3,3X,2A6,1X,I3,5X,I2,1X,I4,1X,I2,4X,4HMID(,I4,
00107     8*         19H) = ,I3,4X,4HLOC(,I3,1H,,I2,4H) = ,I3)
00110     9*        4 FORMAT(1H ,I3,3X,2A6,1X,I3,5X,29HTHIS MEASUREMENT COULD NOT BE,
00110    10*         11X,22HFOUND IN THE ID RECORD)
00111    11*        5 FORMAT(1H ,6X,9HMEA.  NO.,5X,2HWP,5X,10HDS  MID BP)
00112    12*          IF (ITR .EQ. 2) GO TO 1000
00114    13*          IF (ITR .EQ. 3) GO TO 2000
00116    14*          GO TO 9999
00116    15*    C        STORE 2ND ID RECORD
00117    16*     1000 IR2 = IFN
```

```
00120     17•          DO 1500 I=1,IR2
00123     18•     1500 IFID(I) = IFDATA(I)
00125     19•          GO TO 9999
00125     20•    C        SETUP PICKUP ARRAYS
00126     21•     2000 CONTINUE
00127     22•          DO 2100 I=1,NMEA
00132     23•          DO 2100 J=1,11
00135     24•     2100 LOC(I,J) = 0
00140     25•          DO 2150 I=1,1023
00143     26•     2150 MID(I) = 0
00145     27•          MEA = 1
00146     28•          NLOC = 1
00147     29•     2900 WRITE(6,1)
00151     30•          WRITE(6,5)
00153     31•          WRITE(6,2)
00155     32•     3000 N = 1
00156     33•          DO 3500 I=1,IFN,2
00161     34•          IF (IFDATA(I) .NE. MEAN(MEA,1)) GO TO 3500
00163     35•          IF (IFDATA(I+1) .NE. MEAN(MEA,2)) GO TO 3500
00165     36•          GO TO 4000
00166     37•     3500 N = N + 1
00170     38•          GO TO 8500
00171     39•     4000 IDS = FLD(3,3,IFID(N))
00172     40•          IMID = FLD(6,10,IFID(N))
00173     41•          IBP = FLD(17,4,IFID(N))
00174     42•          ILOC = 0
00175     43•          J = 0
00176     44•          IF (IDS .EQ. 6) GO TO 5000
00176     45•    C        SETUP FOR AM OR ATM IN RIGHT HALF OF WORD
00200     46•          IF (FLD(19,17,MID(IMID)) .EQ. 0) GO TO 4100
00202     47•          ILOC = FLD(19,17,MID(IMID))
00203     48•          GO TO 4150
00204     49•     4100 ILOC = NLOC
00205     50•          NLOC = NLOC + 1
00206     51•          FLD(19,17,MID(IMID)) = FLD(19,17,ILOC)
00207     52•     4150 J = IBP + 1
00210     53•          FLD(19,17,LOC(ILOC,J)) = FLD(19,17,MEAN(MEA,3))
00211     54•          GO TO 8000
00211     55•    C        SETUP FOR ATMDC IN LEFT HALF OF WORD
00212     56•     5000 IF (FLD(1,17,MID(IMID)) .EQ. 0) GO TO 5100
00214     57•          ILOC = FLD(1,17,MID(IMID))
00215     58•          GO TO 5150
00216     59•     5100 ILOC = NLOC
00217     60•          NLOC = NLOC + 1
00220     61•          FLD(1,17,MID(IMID)) = FLD(19,17,ILOC)
00221     62•     5150 J = IBP + 1
00222     63•          FLD(1,17,LOC(ILOC,J)) = FLD(19,17,MEAN(MEA,3))
00223     64•          GO TO 8000
00224     65•     8000 CONTINUE
00225     66•          WRITE(6,3) MEA,(MEAN(MEA,I),I=1,3),IDS,IMID,IBP,IMID,ILOC,
00225     67•         &ILOC,J,MEAN(MEA,3)
00244     68•          GO TO 9000
00245     69•     8500 CONTINUE
00246     70•          WRITE(6,4) MEA,(MEAN(MEA,I),I=1,3)
00255     71•          GO TO 9000
00256     72•     9000 MEA = MEA + 1
```

```
00257     73*          IF (MEA .GT. NMEA) GO TO 9500
00261     74*          IF (MOD(MEA,50) .NE. 0) GO TO 3000
00263     75*          GO TO 2900
00264     76*     9500 WRITE(6,1)
00266     77*     9999 CONTINUE
00267     78*          RETURN
00270     79*          END
```

END OF COMPILATION: NO DIAGNOSTICS.

```
@ASM,US SWAP,SWAP
ASM12F R68-6 12/10-11:04-(4,5)

                                                        AXRS.
      00  000000  27 00 14 13 1 000000   SWAP*   L       A0,*0,X11
          000001  06 00 14 00 0 000005            S       A0,PKT
          000002  27 16 14 00 0 000005            L,U     A0,PKT
    U     000003  72 11 00 00 0 000000            ER      TSWAPS
          000004  74 04 00 13 0 000002            J       2,X11
          000005  050505050505            PKT     *       *
          000006  050505050505                    *       *
                                                  END

UNDEFINED SYMBOLS:
TSWAPS

END ASM. ERRORS : NONE
```

```
@FOR,US DSTR,DSTR
HSD 11A -12/10/73-11:04:42 (13,11)

   MAIN PROGRAM

   STORAGE USED: CODE(1) 000023; DATA(0) 000001; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   UNITS  000005
    0004   DELFX  000174

   EXTERNAL REFERENCES (BLOCK, NAME)

    0005   SELECT
    0006   TRAN
    0007   NINTR$
    0010   NSTOP$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   000014 100L      0004   000150 APCLOS    0004   000124 APOPEN    0003 I 000000 I1        0003 I 000001 I2
    0003 I 000002 I3        0004   000004 NOFX      0004   000000 NONFX     0003 I 000003 O1        0003 I 000004 O2
    0004   000054 QFLX
```

```
00100      1*     C*****************************************************************
00100      2*     C      MAIN PROGRAM FOR ALL VERSIONS OF THERMAL DISTORTION PROGRAM
00100      3*     C*****************************************************************
00101      4*            INTEGER O1,O2
00103      5*            COMMON /UNITS/ I1,I2,I3,O1,O2
00104      6*            COMMON /DELFX/
00104      7*          *   NONFX(4),NOFX(10,4),QFLX(10,4),APOPEN(5,4),APCLOS(5,4)
00105      8*
00105      9*            I1= 5
00106     10*            I2=13
00107     11*            I3=14
00110     12*            O1= 6
00111     13*            O2=15
00112     14*
00112     15*     100    CONTINUE
00112     16*     C**** SELECT PREPARES A TRANSIENT DATA DECK AND WRITES IT ON UNIT O2
00113     17*            CALL SELECT
00114     18*
00114     19*     C**** TRAN IS THE CALLING ROUTINE FOR THE TRANSIENT TEMPERATURE PROGRAM.
00114     20*            CALL TRAN
00115     21*
00115     22*            GO TO 100
00116     23*            END

      END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,US SKIPID,SKIPID
MSO LIA -12/10/73-11:04:55 (18,19)

   SUBROUTINE SKIPID     ENTRY POINT 000100

   STORAGE USED: CODE(1) 000102; DATA(0) 000011; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003    ATMCOM 010657
    0004    MIDATM 004736

   EXTERNAL REFERENCES (BLOCK, NAME)

    0005    NTRAN
    0006    AWAIT
    0007    NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001    000007 10L       0001    000026 20L       0001    000046 30L       0001    000063 40L       0004    004570 DATA
    0003    002766 FDATA     0004    004570 IDATA     0000 I  000000 IERR      0003 I  002766 IFDATA    0003    000032 IFID
    0003    000003 IFN       0000    000005 INJP$     0003    001016 IRID      0003    000004 IRN       0003    000006 ITIME
    0003    000002 ITR       0003 I  000000 IUNIT     0004    000311 IWORD     0003    000005 KERR      0003    010656 KIND
    0004    004734 LDAT      0004    002454 LOC       0004    000001 MEAN      0004    000455 MID       0004    000000 NMEA
    0004    004735 NMNUMB    0003    000001 NTAPE     0000 I  000001 NW        0000 I  000002 NW2       0003    002002 RDATA
```

```
00101      1*          SUBROUTINE SKIPID
00101      2*     C*****************************************************************
00101      3*     C    SKIPS THE FIRST FOUR RECORDS ON THE COMPRESSED SKYLAB USER TAPE.
00101      4*     C*****************************************************************
00103      5*          COMMON /ATMCOM/
00103      6*         *  IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20)
00103      7*         *  ,IFID(500),IRID(500),RDATA(500),IFDATA(3000),KIND
00104      8*          DIMENSION FDATA(1)
00105      9*          EQUIVALENCE (FDATA(1),IFDATA(1))
00106     10*          COMMON /MIDATM/
00106     11*         *  NMEA,MEAN(100,3),MID(1023),LOC(100,11)
00106     12*         *  ,DATA(100),LDAT,NMNUMB
00107     13*          DIMENSION IWORD(1),IDATA(1)
00110     14*          EQUIVALENCE (IWORD(1),MEAN(1,3)),(IDATA(1),DATA(1))
00111     15*
00111     16*          CALL NTRAN(IUNIT,2,100,IFDATA,IERR)
00112     17*     10   CONTINUE
00113     18*          CALL AWAIT
00114     19*          IF(IERR.EQ.-1) GO TO 10
00116     20*          NW=IFDATA(24)
00117     21*          CALL NTRAN(IUNIT,2,NW,IFDATA,IERR)
00120     22*     20   CONTINUE
```

```
00121   23*          CALL AWAIT
00122   24*          IF(IERR.EQ.-1) GO TO 20
00124   25*          NW2=2*NW
00125   26*          CALL NTRAN(IUNIT,2,NW2,IFDATA,IERR)
00126   27*     30   CONTINUE
00127   28*          CALL AWAIT
00130   29*          IF(IERR.EQ.-1) GO TO 30
00132   30*          CALL NTRAN(IUNIT,2,NW2,IFDATA,IERR)
00133   31*     40   CONTINUE
00134   32*          CALL AWAIT
00135   33*          IF(IERR.EQ.-1) GO TO 40
00137   34*
00137   35*     100  CONTINUE
00140   36*          RETURN
00141   37*          END
```

END OF COMPILATION: NO DIAGNOSTICS.

```
@FOR,US READID,READID
HSD 11A -12/10/73-11:05:03 (7,8)

   SUBROUTINE READID     ENTRY POINT 000033

   STORAGE USED: CODE(1) 000035; DATA(0) 000004; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   ATMCOM 010657
    0004   MIDATM 004736

   EXTERNAL REFERENCES (BLOCK, NAME)

    0005   SKYATM
    0006   SETATM
    0007   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0004   004570 DATA      0003   002766 FDATA     0004   004570 IDATA     0003   002766 IFDATA    0003   000032 IFID
    0003   000003 IFN       0003   000000 INJPS     0003   001016 IRID      0003   000004 IRN       0003   000006 ITIME
    0003 I 000002 ITR       0003   000000 IUNIT     0004   000311 IWORD     0003   000005 KERR      0003   010656 KIND
    0004   004734 LDAT      0004   002454 LOC       0004   000001 MEAN      0004   000455 MID       0004   000000 NMEA
    0004   004735 NMNUMB    0003   000001 NTAPE     0003   002002 RDATA
```

```
00101      1*          SUBROUTINE READID
00101      2*     C*****************************************************************
00101      3*     C    READS THE ID RECORDS FOR THE SKYLAB ATM COMPRESSED USER TAPE.
00101      4*     C*****************************************************************
00103      5*
00103      6*          COMMON /ATMCOM/
00103      7*         *  IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20)
00103      8*         *  ,IFID(500),IRID(500),RDATA(500),IFDATA(3000),KIND
00104      9*          DIMENSION FDATA(1)
00105     10*          EQUIVALENCE (FDATA(1),IFDATA(1))
00106     11*          COMMON /MIDATM/
00106     12*         *  NMEA,MEAN(100,3),MID(1023),LOC(100,11)
00106     13*         *  ,DATA(100),LDAT,NMNUMB
00107     14*          DIMENSION IWORD(1),IDATA(1)
00110     15*          EQUIVALENCE (IWORD(1),MEAN(1,3)),(IDATA(1),DATA(1))
00111     16*
00111     17*          ITR=1
00112     18*          CALL SKYATM
00113     19*          ITR=2
00114     20*          CALL SKYATM
00115     21*          CALL SETATM
00116     22*          ITR=3
00117     23*          CALL SKYATM
```

```
00120     24*          CALL SETATM
00121     25*          ITR=4
00122     26*          CALL SKYATM
00123     27*          RETURN
00124     28*          END

      END OF COMPILATION:        No  DIAGNOSTICS.
```

```
@FOR,US IDREC,IDREC
HSD 11A -12/10/73-11:05:19 (15,16)

   SUBROUTINE IDREC     ENTRY POINT 000535

   STORAGE USED: CODE(1) 000547; DATA(0) 006113; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003    ATMCOM 010657
    0004    MIDATM 004736
    0005    FIXED  000003

   EXTERNAL REFERENCES (BLOCK, NAME)

    0006    NTRAN
    0007    AWAIT
    0010    EXIT
    0011    BSRECD
    0012    NPRT$
    0013    NIO2$
    0014    NIO1$
    0015    NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001    000207 100L      0001    000223 122L      0001    000250 130L      0001    000271 135L      0001    000277 140L
    0001    000300 150L      0001    000324 160L      0001    000345 170L      0001    000351 175L      0001    000004 30L
    0001    000313 300G      0001    000335 312G      0001    000374 340G      0001    000437 365G      0001    000440 367G
    0001    000015 40L       0001    000463 404G      0001    000501 413G      0001    000024 45L       0001    000406 500L
    0001    000415 505L      0000    005705 5900F     0000    005721 5910F     0001    000051 60L       0000    005735 6000F
    0000    005761 6010F     0000    005773 6020F     0000    006020 6030F     0000    006024 6050F     0000    006034 6060F
    0000    006040 6070F     0000    006051 6080F     0000    006061 6090F     0001    000072 65L       0001    000100 80L
    0001    000110 85L       0001    000117 87L       0001    000165 92L       0001    000144 93L       0001    000173 95L
    0004    004570 DATA      0003    002766 FDATA     0000 I 005677 I          0005 I 000002 IB        0005 I 000001 IBL
    0004    004570 IDATA     0000 I 005671 IERR       0000 I 005674 IF         0003 I 002766 IFDATA     0003    000032 IFID
    0003    000003 IFN       0000    006074 INJP$     0003    001016 IRID      0003    000004 IRN       0000 I 005700 ISUB
    0003    000006 ITIME     0003    000002 ITR       0003 I 000000 IUNIT      0004 I 000311 IWORD      0000 I 005701 J
    0000 I 005702 K          0003    000005 KERR      0003    010656 KIND      0000 I 005676 KOUNT      0000 I 005703 L
    0004    004734 LDAT      0000 I 000000 LERR       0004    002454 LOC       0000 I 005704 M          0004 I 000001 MEAN
    0003 I 002766 MEAS       0004    000455 MID       0000 I 000001 MUNIT      0004 I 000000 NMEA       0004    004735 NMNUMB
    0000 I 005672 NPAR       0003 I 000001 NTAPE      0000 I 005673 NW         0005 I 000000 NWDP       0000 I 005675 NWORD
    0003    002002 RDATA

00101      1*          SUBROUTINE IDREC
00103      2*
00103      3*     C*****************************************************************
00103      4*     C     READS THE ID RECORDS (1-4) FROM THE SKYLAB ATM TAPE AND SEARCHES
00103      5*     C       FOR THE MSFC ID NUMBER THAT CORRESPONDS TO THE DESIRED
```

```
00103      6*      C        MEASUREMENT NUMBERS.
00103      7*      C*****************************************************************
00103      8*
00103      9*              DATA LERR/0/
00105     10*              COMMON /ATMCOM/
00105     11*            *   IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20)
00105     12*            *  ,IFID(500),IRID(500),RDATA(500),IFDATA(3000),KIND
00106     13*              DIMENSION FDATA(1)
00107     14*              EQUIVALENCE (FDATA(1),IFDATA(1))
00110     15*              COMMON /MIDATM/
00110     16*            *   NMEA,MEAN(100,3),MID(1023),LOC(100,11)
00110     17*            *  ,DATA(100),LDAT,NMNUMB
00111     18*              DIMENSION IWORD(1),IDATA(1)
00112     19*              EQUIVALENCE (IWORD(1),MEAN(1,3)),(IDATA(1),DATA(1))
00113     20*              COMMON  /FIXED/
00113     21*            *   NWDP,IBL,IB
00114     22*              DIMENSION MEAS(2,1000)
00115     23*              EQUIVALENCE (MEAS(1,1),IFDATA(1))
00116     24*              DIMENSION MUNIT(3000)
00117     25*
00117     26*              CALL NTRAN(IUNIT,10)
00120     27*      30      CONTINUE
00121     28*              CALL AWAIT
00122     29*              IF(IERR.EQ.-1) GO TO 30
00122     30*      C**** READ RECORD 1 FROM ATM TAPE.
00124     31*              NPAR=0
00125     32*              NW=100
00126     33*      40      CONTINUE
00127     34*              CALL NTRAN(IUNIT,2,NW,IFDATA,IERR)
00130     35*      45      CONTINUE
00131     36*              CALL AWAIT
00132     37*              IF(IERR.EQ.-1) GO TO 45
00134     38*              IF(IERR.GE.0) GO TO 80
00136     39*              IF(IERR.LT.-2) GO TO 60
00140     40*      50      CONTINUE
00141     41*              PRINT 5900
00143     42*      5900    FORMAT('0***** EOF ENCOUNTERED ... READING ID RECORD ...'
00143     43*            *   ' TERMINATED')
00144     44*              CALL EXIT
00145     45*      60      CONTINUE
00146     46*              IF(NTAPE.EQ.0) GO TO 65
00150     47*              NPAR=NPAR+1
00151     48*              IF(NPAR.EQ.10) GO TO 65
00153     49*              CALL NTRAN(IUNIT,22)
00154     50*              CALL BSRECD(IUNIT,IF)
00155     51*              GO TO 40
00156     52*      65      CONTINUE
00157     53*              PRINT 5910
00161     54*      5910    FORMAT('0***** PARITY ERROR  ... READING ID RECORD ... '
00161     55*            *   'TERMINATED')
00162     56*              CALL EXIT
00163     57*
00163     58*      80      CONTINUE
00164     59*              IBL=IFDATA(26)
00165     60*              NWDP=IFDATA(27)
00166     61*              IB=IFDATA(24)
```

```
00167      62*
00167      63*      C**** READ RECORD 2 FROM ATM TAPE.
00167      64*            NW=IB
00170      65*            NPAR=0
00171      66*      85     CONTINUE
00172      67*            CALL NTRAN(IUNIT,2,NW,IFDATA,IERR)
00173      68*      87    CONTINUE
00174      69*            CALL AWAIT
00175      70*            IF(IERR.EQ.-1) GO TO 87
00177      71*            IF(IERR.GE.0) GO TO 95
00201      72*            IF(IERR.LT.-2) GO TO 93
00203      73*      90    CONTINUE
00204      74*            PRINT 5900
00206      75*            CALL EXIT
00207      76*      93    CONTINUE
00210      77*            IF(NTAPE.EQ.0) GO TO 92
00212      78*            NPAR=NPAR+1
00213      79*            IF(NPAR.EQ.10) GO TO 92
00215      80*            CALL NTRAN(IUNIT,22)
00216      81*            CALL BSRECD(IUNIT,IF)
00217      82*            GO TO 85
00220      83*      92    CONTINUE
00221      84*            PRINT 5910
00223      85*            CALL EXIT
00224      86*
00224      87*      95    CONTINUE
00225      88*            IF(IB.LE.1500) GO TO 100
00227      89*            PRINT 6000,IB
00232      90*      6000  FORMAT('0***** SUBROUTINE IDREC ... MORE THAN 1500 MEASUREMENTS '
00232      91*          *   'IN THE ID RECORD ... PROCESSING STOPPED.'/'0IFN=',I8)
00233      92*            CALL EXIT
00234      93*
00234      94*      100   CONTINUE
00235      95*            NWORD=IB
00236      96*
00236      97*      C**** READ RECORD 3 FROM ATM TAPE.
00236      98*            NW=2*IB
00237      99*            NPAR=0
00240     100*      120   CONTINUE
00241     101*            CALL NTRAN(IUNIT,2,NW,IFDATA,IERR)
00242     102*      122   CONTINUE
00243     103*            CALL AWAIT
00244     104*            IF(IERR.EQ.-1) GO TO 122
00246     105*            IF(IERR.GE.0) GO TO 140
00250     106*            IF(IERR.LT.-2) GO TO 130
00252     107*      125   CONTINUE
00253     108*            PRINT 5900
00255     109*            CALL EXIT
00256     110*      130   CONTINUE
00257     111*            IF(NTAPE.EQ.0) GO TO 135
00261     112*            NPAR=NPAR+1
00262     113*            IF(NPAR.EQ.10) GO TO 135
00264     114*            CALL NTRAN(IUNIT,22)
00265     115*            CALL BSRECD(IUNIT,IF)
00266     116*            GO TO 85
00267     117*      135   CONTINUE
```

```
00270          PRINT 5910
00272          CALL EXIT
00273
00273    140   CONTINUE
00274
00274    C**** LOCATE DESIRED TEMPERATURE MEASUREMENT NUMBERS IN THE MEAS ARRAY.
00274    C****    STORE THE ID NUMBERS AND THE SUBSCRIPT.
00274          KOUNT =0
00275    150   CONTINUE
00276          KOUNT=KOUNT+1
00277          DO 160 I=1,NWORD
00302          IF(MEAS(1,I).NE.MEAN(KOUNT,1)) GO TO 160
00304          IF(MEAS(2,I).EQ.MEAN(KOUNT,2)) GO TO 170
00306    160   CONTINUE
00306    C**** MEASUREMENT NUMBER NOT FOUND.
00310          PRINT 6010,(MEAN(KOUNT,I),I=1,2)
00316    6010  FORMAT('0***** MEASUREMENT',1X,2A6,1X,'NOT IN RECORD 3.')
00317          LERR=1
00320          IWORD(KOUNT)=0
00321          GO TO 175
00322
00322    170   CONTINUE
00322    C**** MEASUREMENT NUMBER FOUND.
00323          ISUB=I
00324          IWORD(KOUNT)=ISUB
00325    175   CONTINUE
00326          IF(KOUNT.NE.NMEA) GO TO 150
00330          IF(LERR.EQ.0) GO TO 500
00332    180   CONTINUE
00333          PRINT 6020
00335    6020  FORMAT('0MEASUREMENTS',3X,'DESIRED',8X,'TAPE REC'/
00335         *   1X,'SKYLAB TAPE',4X,'MEASUREMENTS',3X,'WORD NUMB'/
00335         *   1X,7('******'))
00336          PRINT 6030,(MEAS(1,J),MEAS(2,J),MEAN(J,1),MEAN(J,2),IWORD(J)
00336         *   ,J=1,NWORD)
00350    6030  FORMAT(2(1X,2A6,2X),1X,I8)
00351          CALL EXIT
00352
00352    500   CONTINUE
00352    C**** READ RECORD 4 FROM ATM TAPE.
00353          CALL NTRAN(IUNIT,2,NW,MUNIT,IERR)
00354    505   CONTINUE
00355          CALL AWAIT
00356          IF(IERR.EQ.-1) GO TO 505
00360
00360          PRINT 6050
00362    6050  FORMAT('1***** INPUT MEASUREMENT NUMBERS ******')
00363          PRINT 6060,((MEAN(I,J),J=1,2),I=1,NMEA)
00374    6060  FORMAT('0',2A6,9(1X,2A6))
00375          PRINT 6070
00377    6070  FORMAT('0***** MEASUREMENT NUMBERS FROM ATM TAPE ***')
00400          PRINT 6080
00402    6080  FORMAT('0MEASUREMENT',4X,'ISUB',5X,'UNITS')
00403          DO 510 I=1,NMEA
00406          K=IWORD(I)
00407          L=2*(K-1)+1
```

```
00410    174*          M=L+1
00411    175*          PRINT 6090,(MEAN(I,J),J=1,2),K,MUNIT(L),MUNIT(M)
00422    176*     6090 FORMAT(1X,2A6,1X,I6,5X,2A6)
00423    177*     510  CONTINUE
00425    178*
00425    179*          RETURN
00426    180*          END
```

END OF COMPILATION: NO DIAGNOSTICS.

```
@FOR,US RDATM,RDATM
HSO 11A -12/10/73-11:05:28 (15,16)

   SUBROUTINE RDATM      ENTRY POINT 000132

   STORAGE USED: CODE(1) 000136: DATA(0) 000103: BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   ATMCOM 010657
    0004   MIDATM 004736
    0005   FIXED  000003

   EXTERNAL REFERENCES (BLOCK, NAME)

    0006   SKYATM
    0007   EXIT
    0010   GETATM
    0011   REDIP
    0012   NERR2$
    0013   NPRT$
    0014   NIO2$
    0015   NIO1$
    0016   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   000007 100L      0001   000025 120L      0001   000032 130L      0001   000037 140L      0001   000044 150L
    0001   000066 151G      0001   000046 160L      0001   000052 200L      0001   000074 250L      0001   000121 500L
    0000   000001 6000F     0000   000020 6010F     0000   000037 6020F     0000   000046 6200F     0004   004570 DATA
    0003   002766 FDATA     0000 I 000000 I         0005 I 000002 IB        0005   000001 IBL       0004   004570 IDATA
    0003 I 002766 IFDATA    0003   000032 IFID      0003 I 000003 IFN       0000   000075 INJP$     0003   001016 IRID
    0003   000004 IRN       0003 I 000006 ITIME     0003 I 000002 ITR       0003   000000 IUNIT     0004   000311 IWORD
    0003 I 000005 KERR      0003 I 010656 KIND      0004 I 004734 LDAT      0004   002454 LOC       0004   000001 MEAN
    0004   000455 MID       0004   000000 NMEA      0004   004735 NMNUMB    0003 I 000001 NTAPE     0005   000000 NWDP
    0003   002002 RDATA
```

```
00101      1*          SUBROUTINE RDATM
00103      2*
00103      3*     C*****************************************************************
00103      4*     C     READS ONE DATA RECORD OF SKYLAB USER TAPE ... KIND=1 FOR
00103      5*     C     COMPRESSED FORMAT ... KIND=2 FOR FIXED FORMAT.
00103      6*     C*****************************************************************
00103      7*          COMMON /ATMCOM/
00103      8*         *   IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20)
00103      9*         *  ,IFID(500),IRID(500),RDATA(500),IFDATA(3000),KIND
00104     10*          DIMENSION FDATA(1)
00105     11*          EQUIVALENCE (FDATA(1),IFDATA(1))
00106     12*          COMMON /MIDATM/
```

```
00106      13*          *   NMEA,MEAN(100,3),MID(1023),LOC(100,11)
00106      14*          *  ,DATA(100),LDAT,NMNUMB
00107      15*           DIMENSION IWORD(1),IDATA(1)
00110      16*           EQUIVALENCE (IWORD(1),MEAN(1,3)),(IDATA(1),DATA(1))
00111      17*           COMMON  /FIXED/
00111      18*          *   NWDP,IBL,IB
00112      19*
00112      20*           GO TO (100,200),KIND
00113      21*      100  CONTINUE
00113      22*      C**** COMPRESSED FORMAT
00113      23*      C**** READ A DATA RECORD FROM THE COMPRESSED SKYLAB USER TAPE
00114      24*           ITR=5
00115      25*           CALL SKYATM
00116      26*           GO TO (160,120,130,140,140),KERR
00117      27*      120  CONTINUE
00120      28*           PRINT 6000
00122      29*      6000 FORMAT('0*****  SUBROUTINE RDATM  - END OF DATA FILE ENCOUNTERED,
00122      30*          *   PROCESSING DISCONTINUED')
00123      31*           GO TO 150
00124      32*      130  CONTINUE
00125      33*           PRINT 6010
00127      34*      6010 FORMAT('0*****  SUBROUTINE RDATM  - DATA SKIPPED DUE TO PARITY '
00127      35*          *   '- PROCESSING CONTINUED')
00130      36*           GO TO 160
00131      37*      140  CONTINUE
00132      38*           PRINT 6020,KERR
00135      39*      6020 FORMAT('0*****  SUBROUTINE RDATM  - KERR=',I5)
00136      40*      150  CONTINUE
00137      41*           CALL EXIT
00140      42*
00140      43*      160  CONTINUE
00141      44*           CALL GETATM(LDAT)
00142      45*           GO TO 500
00143      46*
00143      47*      200  CONTINUE
00143      48*      C**** FIXED FORMAT
00144      49*           CALL REDIP(IFDATA,NTAPE,KERR)
00145      50*           IF(KERR.EQ.0) GO TO 250
00147      51*           PRINT 6200,(ITIME(I),I=1,5)
00155      52*      6200 FORMAT('0*****  SUBROUTINE RDATM ...'/'0THE LAST REEL HAS BEEN READ
00155      53*          * TO THE END OF DATA.'/'0GMT=',5I10/'0EXECUTION TERMINATED.')
00156      54*           CALL EXIT
00157      55*
00157      56*      250  CONTINUE
00160      57*           ITIME(1)=FLD( 0, 9,IFDATA(2))
00161      58*           ITIME(2)=FLD( 9, 5,IFDATA(2))
00162      59*           ITIME(3)=FLD(14, 6,IFDATA(2))
00163      60*           ITIME(4)=FLD(20, 6,IFDATA(2))
00164      61*           ITIME(5)=FLD(26,10,IFDATA(2))
00165      62*           IFN=IB
00166      63*
00166      64*      500  CONTINUE
00167      65*           RETURN
00170      66*           END
```

```
END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,US REDIP,REDIP
HSD 11A -12/10/73-11:05:43 (16,17)

   SUBROUTINE REDIP      ENTRY POINT 000232

   STORAGE USED: CODE(1) 000246; DATA(0) 004005; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   FIXED  000003

   EXTERNAL REFERENCES (BLOCK, NAME)

    0004   NTRAN
    0005   AWAIT
    0006   EXIT
    0007   BSRECD
    0010   NNCOD$
    0011   SWAP
    0012   SKIPID
    0013   NPRT$
    0014   NIO2$
    0015   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   000011 IOL        0001   000174 233G       0001   000056 30L        0001   000066 35L        0001   000075 40L
    0001   000020 5L         0001   000106 50L        0001   000216 500L       0000   000024 599OF      0001   000161 60L
    0001   000220 600L       0000   000036 6000F      0000   000047 601OF      0000   000050 602OF      0001   000167 70L
    0000   000051 DATA       0003 I 000002 IB         0003 I 000001 IBL        0000 I 000051 IDATA      0000 I 000017 IERR
    0000 I 000014 IF         0000 I 000015 IFILL      0000   003774 INJP$      0000 I 000013 IP         0000 I 000016 IREC
    0000 I 000000 IT         0000 I 000020 ITEST      0000 I 000022 ITV        0000 I 000021 IUNIT      0000 I 000023 J
    0000 I 000007 K          0000 I 000011 M          0000 I 000012 MN         0000 I 000010 N          0000 I 000006 NREELS
    0003   000000 NWDP
```

```
00101      1*          SUBROUTINE REDIP(IDAT,NTAPE,KERR)
00101      2*     C*****************************************************************
00101      3*     C    IDAT IS THE ARRAY OF DATA.
00101      4*     C    NTAPE  IS THE NUMBER OF REELS.
00101      5*     C    KERR IS THE ERROR FLAG.
00101      6*     C       0= GOOD READ
00101      7*     C       1= END OF FILE OR END OF TAPE.
00101      8*     C    NWDP IS THE NUMBER OF WORDS PER PHYSICAL RECORD.
00101      9*     C    IBL IS THE NUMBER OF LOGICAL RECORDS PER PHYSICAL RECORD.
00101     10*     C    IB IS THE NUMBER OF WORDS PER LOGICAL RECORD.
00101     11*     C    K IS A FLAG THAT IS =1 WHEN DATA FROM A PHYSICAL RECORD IS
00101     12*     C       AVAILABLE IN THE IDATA ARRAY AND =0 WHEN IT IS NOT.
00101     13*     C    N IS THE PHYSICAL RECORD WORD COUNTER.
00101     14*     C    M IS THE LOGICAL BLOCK COUNTER.
```

```
00101      C     MN IS THE NUMBER OF PHYSICAL RECORDS READ.
00101      C     IP IS THE INPUT TAPE UNIT.
00101      C*****************************************************************
00103            DIMENSION IDATA(2000),IDAT(1)
00104            COMMON  /FIXED/
00104           *   NWDP,IBL,IB
00105            DIMENSION IT(6)
00106            DATA NREELS/1/
00110            DATA K/0/,N/1/,M/0/,MN/0/,IP/14/
00116            DATA IF/1/
00120            DIMENSION DATA(1)
00121            EQUIVALENCE (IDATA(1),DATA(1))
00122            DATA IFILL/0777777777777/
00124
00124            KERR=0
00125            IRED=0
00126            IF(K.GT.0) GO TO 70
00130            MN=MN+1
00131      10    CONTINUE
00132            CALL NTRAN(IP,2,IB,IDATA,IERR)
00133      5     CONTINUE
00134            CALL AWAIT
00135            IF(IERR.EQ.-1) GO TO 5
00137            ITEST=FLD(0,9,IDATA(1))
00140            IF(ITEST.EQ.511) IERR=-1
00142            IF(IERR.GE.0) GO TO 60
00144            IF(IERR+3) 20,30,50
00147      20    CONTINUE
00150            PRINT 5990,IERR
00153      5990  FORMAT(' TAPE READ PROBLEM. SUBROUTINE REDIP ..., IERR=',I5)
00154            CALL EXIT
00155      30    CONTINUE
00156            IF(NTAPE.EQ.0) GO TO 35
00160            IRED=IRED+1
00161            IF(IRED.NE.10) GO TO 40
00163      35    CONTINUE
00164            PRINT 6000,MN
00167      6000  FORMAT(' REDUNDANT RECORD *** NUMBER',I5,1X,'SKIPPED')
00170            IRED=0
00171            GO TO 10
00172      40    CONTINUE
00173            CALL NTRAN(IUNIT,22)
00174            CALL BSRECD(IP,IF)
00175            GO TO 10
00176      50    CONTINUE
00177            IF(NTAPE.EQ.0) GO TO 500
00201            IF(NREELS.EQ.NTAPE) GO TO 500
00203            NREELS=NREELS+1
00204            IF(IP.GT.9) ENCODE(6010,IT) IP
00210      6010  FORMAT(I2)
00211            IF(IP.LT.10) ENCODE(6020,IT) IP
00215      6020  FORMAT(I1)
00216            ITU=IT(1)
00217            CALL SWAP(ITU)
00220            CALL SKIPID
00221            K=0
```

```
00222     71*          N=1
00223     72*          M=0
00224     73*          GO TO 10
00225     74*     60   CONTINUE
00226     75*          IF(IDATA(I).EQ.IFILL) GO TO 50
00230     76*          K=1
00231     77*     70   CONTINUE
00232     78*          DO 80 J=1,IB
00235     79*          IDAT(J)=IDATA(N)
00236     80*          N=N+1
00237     81*     80   CONTINUE
00241     82*          M=M+1
00242     83*          IF(M.NE.IBL) GO TO 600
00244     84*          M=0
00245     85*          N=1
00246     86*          K=0
00247     87*          GO TO 600
00250     88*     500  CONTINUE
00251     89*          KERR=1
00252     90*     600  CONTINUE
00253     91*          RETURN
00254     92*          END

     END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@ASM,US AWAIT,AWAIT
ASM12F R68-6 12/10-11:05-(5,6)

    1.                                          $(1)      AXR$                    .
    2.      01   000000  27 16 15 00 000017    AWAIT.    L,U       A1,$5         .
    3. U         000001  72 11 00 00 0 000000              ER        TWAIT$        . WAIT FOR 15 MS
    4.           000002  74 04 00 13 0 000001              J         1,X11         . RETURN
    5.                                                     END                     .

UNDEFINED SYMBOLS:
TWAIT$

END ASM. ERRORS : NONE
```

```
@FOR,US REDNOM,REDNOM
HSD 11A -12/10/73-11:06:07 (9,10)

   SUBROUTINE REDNOM    ENTRY POINT 000046

   STORAGE USED: CODE(1) 000050; DATA(3) 000043; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   UNITS  000005

   EXTERNAL REFERENCES (BLOCK, NAME)

    0004   EXIT
    0005   NRDUS
    0006   NIO3S
    0007   NIO2S
    0010   NWDUS
    0011   NPRTS
    0012   NWEFS
    0013   NERR3S

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   000000 100L      0001   000026 200L      0001   000034 300L      0000   000017 5000F     0000   000021 6000F
    0000 R 000000 ALPNUM    0000 R 000016 EIGHTS    0000   000037 INJPS     0003 I 000000 I1        0003 I 000001 I2
    0003   000002 I3        0003 I 000003 O1        0003 I 000004 O2


 00101      1*          SUBROUTINE REDNOM
 00101      2*     C*****************************************************************
 00101      3*     C   REDNOM READS THE NOMINAL DATA DECK FROM THE CARD READER AND
 00101      4*     C       WRITES A NOMINAL DATA DECK FILE.
 00101      5*     C*****************************************************************
 00103      6*          INTEGER O1,O2
 00104      7*          COMMON /UNITS/ I1,I2,I3,O1,O2
 00105      8*          DIMENSION ALPNUM(14)
 00106      9*          DATA EIGHTS/'888888'/
 00110     10*
 00110     11*     100  CONTINUE
 00111     12*          READ(I1,5000,END=200) ALPNUM
 00114 *DIAGNOSTIC*  THE TEST FOR EQUALITY BETWEEN NON-INTEGERS MAY NOT BE MEANINGFUL.
 00114     13*          IF(ALPNUM(1).EQ.EIGHTS) GO TO 300
 00116     14*          WRITE(I2,5000) ALPNUM
 00121     15*     5000 FORMAT(13A6,A2)
 00122     16*          GO TO 100
 00123     17*
 00123     18*     200  CONTINUE
 00124     19*          PRINT 6000
 00126     20*     6000 FORMAT('0**** SUBROUTINE RDNOM ... READ END OF FILE ON CARD '
```

```
00126     21*          *   'READER.  CALL EXIT.')
00127     22*           CALL EXIT
00130     23*
00130     24*     300   CONTINUE
00131     25*           END FILE 12
00132     26*           RETURN
00133     27*           END

      END OF COMPILATION:          1 DIAGNOSTICS.
```

```
@FOR,US SMOOTH,SMOOTH
HSD 11A -12/10/73-11:06:10 (6,7)

   SUBROUTINE SMOOTH     ENTRY POINT 000257

   STORAGE USED: CODE(1) 000276; DATA(0) 000057; BLANK COMMON(2) 000000

   EXTERNAL REFERENCES (BLOCK, NAME)

    0003    NPRTS
    0004    NIO2S
    0005    NERR3S

   STORAGE ASSIGNMENT (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001    000166 110L      0001    000020 114G      0001    000170 150L      0001    000142 154G      0001    000174 160L
    0001    000162 165G      0001    000177 170L      0001    000241 200L      0001    000232 213G      0001    000040 50L
    0001    000062 60L       0000    000015 6000F     0001    000151 80L       0000 R 000001 BIG        0000 I 000005 I
    0000 I 000013 IA         0000 I 000012 IB         0000 I 000010 IBAD       0000    000033 INJPS     0000 I 000011 ISUB
    0000 I 000003 J          0000 I 000007 K          0000 R 000002 LITTLE     0000 R 000014 SLOP       0000 R 000006 TAVG
    0000 R 000000 TOL        0000 R 000004 TOT
```

```
00101      1*          SUBROUTINE SMOOTH(NTYME,TYME,NODE,T)
00101      2*     C*****************************************************************
00101      3*     C     SUBROUTINE TO ELIMINATE THE BAD DATA FLAGS (1.0E10**+6) AND THE
00101      4*     C        SPIKES IN THE DATA.
00101      5*     C*****************************************************************
00103      6*
00103      7*          DIMENSION T(1),TYME(1)
00104      8*          DATA TOL/10./,BIG/200./
00107      9*          REAL LITTLE/25./
00111     10*
00111     11*          J=0
00112     12*          TOT=0.
00113     13*          DO 50 I=1,NTYME
00116     14*          IF(T(I).GT.BIG) GO TO 50
00120     15*          IF(T(I).LT.LITTLE) GO TO 50
00122     16*          TOT=TOT+T(I)
00123     17*          J=J+1
00124     18*     50   CONTINUE
00126     19*
00126     20*          TAVG=TOT/J
00127     21*          K=NTYME-J
00130     22*          PRINT 6000,K,NODE
00134     23*     6000 FORMAT(1X,I5,1X,'DATA POINTS WERE ERRONEOUS ON THE ATM TAPE FOR'
00134     24*         *   ' NODE',I5)
00135     25*
00135     26*          I=0
00136     27*          IBAD=0
```

```
00137   28*      60    CONTINUE
00140   29*            I=I+1
00141   30*            IF(ABS(T(I)-TAVG).GT.TOL) GO TO 150
00141   31*      C**** THE I(TH) DATA POINT IS GOOD.
00143   32*            IF(IBAD.EQ.0) GO TO 170
00145   33*            IF(ISUB.EQ.1) GO TO 80
00145   34*      C**** INTERPOLATE TO FILL IN TEMPERATURE ARRAY.
00147   35*            IB=ISUB-1
00150   36*            IA=I
00151   37*            SLOP=(T(IA)-T(IB))/(TYME(IA)-TYME(IB))
00152   38*            J=I-1
00153   39*            DO 70 K=ISUB,J
00156   40*            T(K)=T(IB)+SLOP*(TYME(K)-TYME(IB))
00157   41*      70    CONTINUE
00161   42*            GO TO 110
00162   43*
00162   44*      80    CONTINUE
00163   45*            J=I-1
00164   46*            DO 90 K=1,J
00167   47*            T(K)=T(I)
00170   48*      90    CONTINUE
00172   49*            GO TO 110
00173   50*
00173   51*      110   CONTINUE
00174   52*            IBAD=0
00175   53*            GO TO 170
00176   54*
00176   55*      150   CONTINUE
00176   56*      C**** THE I(TH) DATA POINT IS BAD.
00177   57*            IF(IBAD.NE.0) GO TO 160
00201   58*            ISUB=I
00202   59*      160   CONTINUE
00203   60*            IBAD=IBAD+1
00204   61*      170   CONTINUE
00205   62*            IF(I.NE.NTYME) GO TO 60
00207   63*            IF(IBAD.EQ.0) GO TO 200
00207   64*      C**** EXTRAPOLATE LAST GOOD POINTS TO FILL IN FINAL TEMPERATURES.
00211   65*            SLOP=(T(ISUB-1)-T(ISUB-2))/(TYME(ISUB-1)-TYME(ISUB-2))
00212   66*            DO 180 K=ISUB,NTYME
00215   67*            T(K)=T(ISUB-2)+SLOP*(TYME(K)-TYME(ISUB-2))
00216   68*      180   CONTINUE
00220   69*            GO TO 200
00221   70*
00221   71*      200   CONTINUE
00222   72*            RETURN
00223   73*            END

        END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,US TIMAD,TIMAD
HSD 11A -12/10/73-11:06:28 (17,18)

   SUBROUTINE TIMAD      ENTRY POINT 000026

   STORAGE USED: CODE(1) 000041: DATA(3) 000005: BLANK COMMON(2) 000000

   EXTERNAL REFERENCES (BLOCK, NAME)

    0003   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   000017 100L      0001   000003 S0L       0000   000001 INJPS


00101      1*            SUBROUTINE TIMAD(DAYS,HRS,DHRS)
00101      2*      C*****************************************************************
00101      3*      C     DAYS - INTEGER, DAY OF YEAR.
00101      4*      C     HRS - HOUR OF THE DAY.
00101      5*      C     DHRS - HOURS TO ADD.
00101      6*      C*****************************************************************
00103      7*
00103      8*            INTEGER DAYS
00104      9*
00104     10*            HRS=HRS+DHRS
00105     11*      50    CONTINUE
00106     12*            IF(HRS.LT.24.) GO TO 100
00110     13*            HRS=HRS-24.
00111     14*            DAYS=DAYS+1
00112     15*            GO TO 50
00113     16*      100   CONTINUE
00114     17*            RETURN
00115     18*            END

        END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,US TIMSB,TIMSB
HSD 11A -12/10/73-11:06:31 (17,18)

   FUNCTION TIMSB        ENTRY POINT 000044

   STORAGE USED: CODE(1) 000061; DATA(3) 000024; BLANK COMMON(2) 000000

   EXTERNAL REFERENCES (BLOCK, NAME)

    0003   EXIT
    0004   NPRT$
    0005   NIO2$
    0006   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   000005 10L       0001   000017 20L       0001   000026 30L       0000   000002 6000F     0000 I 000001 ID
    0000   000015 INJP$     0000 R 000000 TIMSB


00101      1*            FUNCTION TIMSB (ID1,TH1,ID2,TH2)
00103      2*            ID=ID1-ID2
00104      3*            IF(ID) 10,30,20
00107      4*      10    CONTINUE
00110      5*            PRINT 6000, ID1,TH1,ID2,TH2
00116      6*      6000  FORMAT ('0*****  INCORRECT ARGUMENTS TO TIMSB *****',
00116      7*           *2 (I5,2X,F10.3))
00117      8*            CALL EXIT
00120      9*      20    CONTINUE
00121     10*            TH1=24*ID+TH1
00122     11*      30    CONTINUE
00123     12*            TIMSB=TH1-TH2
00124     13*            IF (TIMSB.LT.0.) GO TO 10
00126     14*            RETURN
00127     15*            END

      END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,US APTR,APTR
HSD 11A -12/10/73-11:06:34 (19,20)

   SUBROUTINE APTR      ENTRY POINT 000421

   STORAGE USED: CODE(1) 000436; DATA(2) 000113; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   ATMCOM 010657
    0004   MIDATM 004736
    0005   APERTR 000001

   EXTERNAL REFERENCES (BLOCK, NAME)

    0006   IAPSTS
    0007   TIMSB
    0010   NERR2$
    0011   NPRT$
    0012   NIO2$
    0013   NIO1$
    0014   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   000024 10L       0001   000064 15OL      0001   000403 1000L     0001   000116 12OL      0001   000120 13OL
    0001   000127 14OL      0001   000173 145L      0001   000175 15OL      0001   000165 162G      0001   000064 20L
    0001   000203 20OL      0001   000212 202G      0001   000265 225L      0001   000345 24OL      0001   000364 243G
    0001   000371 25OG      0001   000345 25OL      0001   000375 254G      0001   000403 3OOL      0000   000024 6000F
    0000   000054 6050F     0004   004570 DATA      0003   002766 FDATA     0000 I 000022 I         0004   004570 IDATA
    0000 I 000017 IDAY      0003   002766 IFDATA    0003   000032 IFID      0003   000003 IFN       0000   000071 INJPS
    0000 I 000000 IOPCL     0000 I 000015 IPATH     0003   001016 IRID      0003   000004 IRN       0003 I 000006 ITIME
    0003   000002 ITR       0003   000000 IUNIT     0004   000311 IWORD     0000 I 000023 J         0003   000005 KERR
    0003 I 010656 KIND      0000 I 000010 LAPT      0004   004734 LDAT      0004   002454 LOC       0000 I 000004 MAPT
    0004   000001 MEAN      0004   000455 MID       0005 I 000080 NAP       0004   000000 NMEA      0004   004735 NMNUMB
    0003   000001 NTAPE     0003   002002 RDATA     0000 R 000021 TAPHR     0000 I 000014 TDAY      0000 R 000020 THR
    0000 R 000016 THRS      0007 R 000000 TIMSB

00101      1*          SUBROUTINE APTR(TINIT,APOPEN,APCLOS)
00101      2*     C*****************************************************************
00101      3*     C     DETERMINES THE APERTURE OPEN AND
00101      4*     C     APERATURE CLOSE TIMES FOR ALL VERSIONS.
00101      5*     C*****************************************************************
00103      6*          COMMON /ATMCOM/
00103      7*        *   IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20)
00103      8*        *  ,IFID(500),IRID(500),RDATA(500),IFDATA(3000),KIND
00104      9*          DIMENSION FDATA(1)
00105     10*          EQUIVALENCE (FDATA(1),IFDATA(1))
00106     11*          COMMON /MIDATM/
```

```
00106     12•          *   NMEA,MEAN(100,3),MID(1023),LOC(100,11)
00106     13•          *  ,DATA(100),LDAT,NMNUMB
00107     14•           DIMENSION IWORD(1),IDATA(1)
00110     15•           EQUIVALENCE (IWORD(1),MEAN(1,3)),(IDATA(1),DATA(1))
00111     16•           COMMON /APERTR/ NAP
00112     17•           DIMENSION IOPCL(4),APOPEN(5,4),APCLOS(5,4),MAPT(4),LAPT(4)
00113     18•
00113     19•
00113     20•           INTEGER TINIT(5),TDAY
00114     21•           DATA IOPCL/4*0/,IPATH/1/,LAPT/4*1/
00120     22•
00120     23•           TCONV(IA,IB,IC,ID)=IA+(IB+(IC+ID/1000.)/60.)/60.
00121     24•
00121     25•           GO TO (10,100,130,200,1000),IPATH
00122     26•      10   CONTINUE
00123     27•           IPATH=2
00123     28•      C**** INITIALIZE INITIAL AND FINAL TIMES
00123     29•      C**** TDAY IS THE BEGIN TRANSIENT DAY.
00124     30•           TDAY=TINIT(1)
00124     31•      C**** THRS IS THE BEGIN TRANSIENT TIME.
00125     32•           THRS=TCONV(TINIT(2),TINIT(3),TINIT(4),TINIT(5))
00125     33•      C**** IDAY IS THE DAY TO START APERTURE STATUS SEARCH.
00126     34•           IDAY=TDAY
00126     35•      C**** THR IS THE TIME TO START APERTURE SEARCH.
00127     36•           THR=THRS-1.5
00130     37•           IF(THR.GE.0.) GO TO 20
00132     38•           THR=THR + 24.
00133     39•           IDAY=IDAY-1
00134     40•      20   CONTINUE
00135     41•
00135     42•      100  CONTINUE
00136     43•
00136     44•      C**** HAS THE TAPE REACHED THE ORBIT PRIOR TO THE INITIAL TIME
00136     45•           IF(ITIME(1)-IDAY)1000,110,120
00141     46•      110  CONTINUE
00142     47•           TAPHR=TCONV(ITIME(2),ITIME(3),ITIME(4),ITIME(5))
00143     48•           IF(TAPHR.LT.THR) GO TO 1000
00145     49•      120  CONTINUE
00146     50•           IPATH=3
00147     51•
00147     52•      130  CONTINUE
00147     53•      C**** THE ORBIT PRIOR TO THE INITIAL TIME HAS BEEN REACHED
00150     54•           IF(KIND.EQ.2) GO TO 140
00152     55•           CALL IAPSTS(IOPCL)
00153     56•      140  CONTINUE
00153     57•      C**** HAS TAPE TIME REACHED INITIAL TIME
00154     58•           IF(ITIME(1).LT.TDAY) GO TO 1000
00156     59•           TAPHR=TCONV(ITIME(2),ITIME(3),ITIME(4),ITIME(5))
00157     60•           IF(TAPHR.LT.THRS) GO TO 1000
00157     61•      C**** TAPE TIME HAS REACHED INITIAL TIME
00161     62•           DO 150 I=1,NAP
00164     63•           IF(IOPCL(I).EQ.0) GO TO 145
00166     64•           APOPEN(I,1)=0.
00167     65•           MAPT(I)=2
00170     66•           GO TO 150
00171     67•      145  CONTINUE
```

```
00172      68*              MAPT(I)=1
00173      69*       150    CONTINUE
00175      70*              IPATH=4
00176      71*              GO TO 1000
00177      72*
00177      73*       200    CONTINUE
00200      74*              CALL IAPSTS(IOPCL)
00201      75*              DO 250 I=1,NAP
00204      76*              IF(MAPT(I).EQ.2) GO TO 225
00204      77*       C**** I(TH) APERTURE IS CLOSED, SEARCH FOR OPENING.
00206      78*              IF(IOPCL(I).NE.1) GO TO 250
00206      79*       C**** APERTURE OPENED
00210      80*              TAPHR=TCONV(ITIME(2),ITIME(3),ITIME(4),ITIME(5))
00211      81*              J=LAPT(I)
00212      82*              APOPEN(J,I)=TIMSB(ITIME(1),TAPHR,TDAY,THRS)
00213      83*              MAPT(I)=2
00214      84*              GO TO 250
00215      85*
00215      86*       225    CONTINUE
00215      87*       C**** I(TH) APERTURE IS OPEN, SEARCH FOR CLOSING.
00216      88*              IF(IOPCL(I).NE.0) GO TO 250
00216      89*       C**** APERTURE CLOSED
00220      90*              TAPHR=TCONV(ITIME(2),ITIME(3),ITIME(4),ITIME(5))
00221      91*              J=LAPT(I)
00222      92*              APCLOS(J,I)=TIMSB(ITIME(1),TAPHR,TDAY,THRS)
00223      93*              MAPT(I)=1
00224      94*              LAPT(I)=LAPT(I)+1
00225      95*
00225      96*              IF(LAPT(I).LT.5) GO TO 240
00227      97*              PRINT 6000,I
00232      98*       6000   FORMAT('0**********/'0FIVE SETS OF APERTURE OPEN AND CLOSE TIMES'
00232      99*              *   ,' FOR APERTURE ',I1/9X,'HAVE BEEN DETECTED. '
00232     100*              *   ,'APERTURE SEARCH ENDED.')
00233     101*              IPATH=5
00234     102*       240    CONTINUE
00235     103*
00235     104*       250    CONTINUE
00237     105*              IF (KIND.EQ.1) GO TO 300
00241     106*              PRINT 6050,(IOPCL(I),MAPT(I),LAPT(I),(APOPEN(J,I),J=1,5)
00241     107*              *   ,(APCLOS(J,I),J=1,5),I=1,4)
00261     108*       6050   FORMAT('0STMT 250',3I5,10F10.3/(9X,3I5,10F10.3))
00262     109*       300    CONTINUE
00263     110*
00263     111*       1000   CONTINUE
00264     112*              RETURN
00265  *DIAGNOSTIC*  DATA CARD(S) ENCOUNTERED AFTER END CARD.
00265     113*              END

      END OF COMPILATION:          1 DIAGNOSTICS.
```

```
@FOR,US HCSEL,HCSEL
MSD 11A -12/10/73-11:06:39 (19,20)

 SUBROUTINE SELECT    ENTRY POINT 002360

 STORAGE USED: CODE(1) 002372; DATA(0) 005575; BLANK COMMON(2) 000000

  COMMON BLOCKS:

  0003   DELFLX 000174
  0004   ATMCOM 010657
  0005   MIDATM 004736
  0006   UNITS  000005
  0007   START  000007

 EXTERNAL REFERENCES (BLOCK, NAME)

  0010   REDNOM
  0011   EXIT
  0012   TMPTBL
  0013   NRDUS
  0014   NIO1S
  0015   NIO2S
  0016   NREWS
  0017   NPRTS
  0020   NWDUS
  0021   NERR2S
  0022   NIO3S
  0023   NWEFS
  0024   NERR3S

 STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

  0001   002315 1000L    0000   005463 1001F    0001   002336 1002L    0000   005374 1005F    0000   005456 1010F
  0001   001213 1012G    0001   001220 1016G    0000   005457 1030F    0001   001245 1034G    0000   005520 1040F
  0001   001252 1040G    0000   005522 1050F    0001   001273 1053G    0000   005524 1060F    0001   001313 1066G
  0000   005527 1070F    0000   005531 1080F    0000   005533 1100F    0001   001336 1104G    0001   001356 1116G
  0001   001432 1146G    0001   001445 1154G    0001   001550 1223G    0001   001563 1233G    0001   001631 1263G
  0001   001643 1271G    0001   001714 1320G    0001   001747 1343G    0001   002005 1362G    0001   002022 1367G
  0001   002044 1401G    0001   002072 1414G    0001   002113 1427G    0001   002134 1434G    0001   002161 1446G
  0001   002215 1467G    0001   002234 1501G    0001   002250 1512G    0001   002267 1523G    0001   000040 157G
  0001   000244 175L    0001   000043 202G    0001   000316 210L    0001   000114 247G    0001   000126 255G
  0001   000342 260L    0001   000140 263G    0001   000366 265L    0001   000027 27L    0001   000152 271G
  0001   000403 272L    0001   000164 277G    0001   000417 280L    0001   000422 285L    0001   000444 288L
  0001   000456 290L    0001   000467 300L    0001   000176 305G    0001   000545 305L    0001   000560 310L
  0001   000210 315G    0001   000605 315L    0001   000654 320L    0001   000215 321G    0001   000660 325L
  0001   000714 330L    0001   000233 334G    0001   000720 335L    0001   000240 340G    0001   000745 340L
  0001   000252 346G    0001   000057 35L    0001   000257 352G    0001   000064 40L    0001   000762 400L
  0001   001033 406L    0001   001034 410L    0001   001053 420L    0001   000374 422G    0001   000407 432G
  0001   001056 440L    0001   000426 446G    0001   000071 45L    0001   001131 460L    0001   000453 464G
  0001   000102 47L    0001   001164 470L    0001   001166 475L    0001   000106 50L    0001   001257 500L
  0001   001265 510L    0001   000523 515G    0001   001322 520L    0001   001330 530L    0000   005375 5985F
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0000   005377 5990F     0000   005422 5991F     0000   005430 5992F     0000   005436 5993F     0000   005446 5994F
0000   005452 5995F     0001   001365 600L      0000   005464 6000F     0000   005512 6005F     0000   005536 6024F
0000   005544 6025F     0000   005546 6035F     0001   000676 607G      0001   001412 610L      0001   001415 620L
0001   001002 656G      0001   001024 665G      0001   001506 705L      0001   001510 710L      0001   001537 715L
0001   001555 720L      0001   001103 725G      0001   001567 725L      0001   001575 730L      0001   001110 731G
0001   001620 735L      0001   001122 740G      0001   001152 761G      0001   001157 765G      0001   001655 800L
0001   001663 810L      0001   001724 814L      0001   001726 816L      0001   001735 820L      0001   001737 830L
0001   001762 835L      0001   002030 839L      0001   002051 840L      0001   002142 855L      0001   002167 900L
0001   002207 910L      0001   002242 920L      0001   002275 950L      0000 R 005312 ALPNUM    0000 R 005345 APC
0003 R 000150 APCL      0000 R 005350 APC2      0000 R 005352 APC3      0000 R 005344 APO       0003 R 000124 APOP
0000 R 005347 APO2      0000 R 005351 APO3      0000 R 000240 BNM       0000 R 005336 CAP       0005   004570 DATA
0004   002766 FDATA     0000 R 005364 FDTN      0000 I 000050 FLAG      0000 R 005361 HYS       0000 I 005330 I
0005   004570 IDATA     0000 I 005372 IE        0004   002766 IFDATA    0004   000032 IFID      0004   000003 IFN
0000 I 005367 INDSP     0000 I 005335 INDX      0000   005554 INJPS     0000 I 000133 INNODE    0000 I 000131 IOP
0004   001016 IRID      0004   000004 IRN       0004   000006 ITIME     0004   000002 ITR       0004 I 000000 IUNIT
0005   000311 IWORD     0006 I 000000 I1        0006 I 000001 I2        0006 I 000002 I3        0000 I 005332 J
0000 I 005373 JB        0000 I 005371 JE        0000 I 005353 JFAIL     0000 I 005365 JMP       0000 I 005337 K
0004   000005 KERR      0004 I 010656 KIND      0000 I 005342 KNTAP     0000 I 005362 KPATH     0007 I 000005 KPLOT
0000 I 005340 L         0005   004734 LDAT      0005   002454 LOC       0000 I 005333 LPATH     0005   000001 MEAN
0000 I 005304 MIB       0005   000455 MID       0000 I 005343 NAP       0007   000006 ND        0000 I 005334 NDE
0000 I 005363 NDFX      0000 I 000204 NDH       0000 I 005370 NDUM      0000 I 005341 NENT      0000 I 005354 NH
0000 I 000226 NHI       0000 I 005266 NI        0000 I 005300 NIB       0000 I 000233 NII       0000 I 005310 NINE
0005   000000 NMEA      0005   004735 NMNUMB    0000 I 005311 NNODE     0000 I 000052 NODE      0003 I 000004 NOFX
0000 I 005331 NOMTP     0003 I 000000 NONFX     0000 I 005346 NPATH     0000 I 005366 NSPT      0004 I 000001 NTAPE
0000 I 000051 ONE       0000 R 000123 OPT       0006 I 000003 O1        0006 I 000004 O2        0000 R 005355 POW
0000 R 000341 Q         0003 R 000054 QFLX      0004   002002 RDATA     0000 R 000351 T         0000 R 005273 TI
0007 I 000000 TINIT     0000 I 000000 TITLE     0000 R 000361 TNODE     0000 R 000244 TYME      0000 R 005360 XM
0000 R 005356 XO        0000 R 005357 YO
```

```
00101      1*          SUBROUTINE SELECT
00103      2*
00103      3*     C*****************************************************************
00103      4*     C**** SELECTS CHANGES TO NOMINAL INPUT FOR THERMAL DISTORTION PROGRAM
00103      5*     C*****************************************************************
00103      6*
00103      7*          INTEGER I1,I2,O1,O2
00104      8*          INTEGER TINIT
00105      9*          INTEGER TITLE
00106     10*          INTEGER FLAG
00107     11*          INTEGER ONE
00110     12*          DIMENSION NODE(41)
00111     13*          DIMENSION TINIT(5)
00112     14*          DIMENSION TITLE(40)
00113     15*          DIMENSION OPT(6),IOP(2)
00114     16*          DIMENSION INNODE(41)
00115     17*          DIMENSION NDH(18)
00116     18*          DIMENSION NHI(5),NII(5)
00117     19*          DIMENSION BNM(4)
00120     20*          DIMENSION TYME(61)
00121     21*          DIMENSION Q(8)
00122     22*          DIMENSION T(8)
00123     23*          DIMENSION TNODE(61,41)
00124     24*          DIMENSION NI(5),TI(5)
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00125      25*          DIMENSION NIB(4),MIB(4)
00126      26*          COMMON /DELFLX/
00126      27*         *   NONFX(4),NOFX(10,4),QFLX(10,4),APOP(5,4),APCL(5,4)
00127      28*          DATA APOP,APCL/40*99999./
00132      29*          COMMON /ATMCOM/
00132      30*         *   IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20)
00132      31*         *  ,IFID(500),IRID(500),RDATA(500),IFDATA(3000),KIND
00133      32*          DIMENSION FDATA(1)
00134      33*          EQUIVALENCE (FDATA(1),IFDATA(1))
00135      34*          COMMON /MIDATM/
00135      35*         *   NMEA,MEAN(100,3),MID(1023),LOC(100,11)
00135      36*         *  ,DATA(100),LDAT,NMNUMB
00136      37*          DIMENSION IWORD(1),IDATA(1)
00137      38*          EQUIVALENCE (IWORD(1),MEAN(1,3)),(IDATA(1),DATA(1))
00137      39*     C**** I1 IS THE CARD READER.
00137      40*     C**** I2 IS THE NOMINAL DATA DECK
00137      41*     C**** O1 IS THE PRINTER.
00137      42*     C**** O2 IS THE REVISED DATA DECK.
00140      43*          COMMON /UNITS/ I1,I2,I3,O1,O2
00141      44*          DATA ONE/1/
00143      45*          DATA NINE/9999999999/
00143      46*     C**** HCO DATA STATEMENT FOR NNODE AND NODE ARRAYS.
00145      47*          DATA NNODE/41/
00147      48*          DATA NODE
00147      49*         *   /   5,   6,   7,   8,   9,  10,  11,  12, 109, 110, 111
00147      50*         *   , 112, 113, 114, 115, 116, 117, 118, 119, 120, 141, 142
00147      51*         *   , 149, 150, 747, 749, 752, 754, 755, 787, 789, 790, 792
00147      52*         *   , 794, 795, 797, 802, 836, 837, 838, 841/
00151      53*          DIMENSION ALPNUM(14)
00152      54*          COMMON /START/ TINIT,KPLOT,ND
00153      55*
00153      56*          IUNIT=I3
00154      57*
00154      58*     C***** READ IN DAYS,HOURS,MINUTES,SECONDS,MILISECONDS
00154      59*       25 CONTINUE
00155      60*          READ(I1,1005) (TINIT(I),I=1,5),NTAPE,KIND,NOMTP,KPLOT
00167      61*     1005 FORMAT(16I5)
00170      62*          IF(NOMTP.NE.1) GO TO 27
00170      63*     C**** READ NOMINAL DATA DECK FROM CARD READER.
00172      64*          CALL REDNOM
00173      65*     27   CONTINUE
00174      66*          REWIND I2
00175      67*
00175      68*          PRINT 5985
00177      69*     5985 FORMAT('1')
00200      70*          PRINT 5990,(TINIT(I),I=1,5)
00206      71*     5990 FORMAT('0INITIAL TIME (TIME=0 IN TRANSIENT)'/
00206      72*         *   '0DAY  ',I5/'0HOUR ',I5/
00206      73*         *   '0MIN  ',I5/'0SEC  ',I5/
00206      74*         *   '0MSEC ',I5)
00207      75*          IF(NTAPE) 30,35,40
00212      76*     30   CONTINUE
00213      77*          PRINT 5991
00215      78*     5991 FORMAT('0SKYLAB USER TAPE NOT SELECTED')
00216      79*          GO TO 50
00217      80*     35   CONTINUE
```

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00220      PRINT 5992
00222 5992 FORMAT('0SKYLAB USER TAPE ON DISK')
00223      GO TO 45
00224 40   CONTINUE
00225      PRINT 5993,NTAPE
00230 5993 FORMAT('0SKYLAB USER TAPE SELECTED. REELS=',I3)
00231 45   CONTINUE
00232      IF (KIND.EQ.2) GO TO 47
00234      PRINT 5994
00236 5994 FORMAT('0COMPRESSED FORMAT')
00237      GO TO 50
00240 47   CONTINUE
00241      PRINT 5995
00243 5995 FORMAT('0FIXED FORMAT')
00244   50 CONTINUE
00245
00245 C**** INPUT TITLE CARDS
00245      READ(I2,1010)(TITLE(I),I=1,13)
00253      READ(I2,1010)(TITLE(I),I=14,26)
00261      READ(I1,1010)(TITLE(I),I=1,13)
00267      READ(I1,1010)(TITLE(I),I=14,26)
00275      WRITE(02,1010)(TITLE(I),I=1,13)
00303      WRITE(02,1010)(TITLE(I),I=14,26)
00311 1010 FORMAT(13A6)
00312
00312 C**** INPUT OPTIONS DATA
00312  100 CONTINUE
00312 C**** READ OPTIONS CARD FROM THE CARD READER
00313      READ(I1,1030)(OPT(I),I=1,6),(IOP(J),J=1,2),FLAG
00326 1030 FORMAT(6F10.4,A5,I5,5X,I5)
00327      IF(FLAG.EQ.0)GO TO 175
00331 150  CONTINUE
00331 C**** READ OPTIONS CARD FROM NOMINAL DATA DECK
00332      READ(I2,1030)(OPT(I),I=1,6),(IOP(J),J=1,2)
00344  175 WRITE(02,1030)(OPT(I),I=1,6),(IOP(J),J=1,2)
00344 C**** DUMMY READ OF NOMINAL DATA DECK.
00356      IF(FLAG.EQ.0) READ(I2,1030)
00356 C**** DUMMY READ OF NINES CARD
00361      READ(I2,1001)
00363  200 WRITE(02,1001)NINE
00366 1001 FORMAT(I10)
00367
00367 C**** IF NTAPE IS NEGATIVE, THERE IS NO TAPE INPUT DATA.
00367      LPATH=1
00370      IF(NTAPE.LT.0) LPATH=2
00372
00372 C**** INPUT NODAL DATA
00372      J=0
00373 210  CONTINUE
00374      J=J+1
00374 C**** READ NODES THAT WILL NOT CHANGE TO SPECIFIED TEMPERATURE NODES
00374 C****    FROM THE CARD READER.
00375      READ(I1,1060) INNODE(J)
00400      IF(INNODE(J).LT.99999) GO TO 210
00402 250  CONTINUE
00403      J=J-1
```

```
00404      I=0
00405  260 CONTINUE
00405  C**** READ ONE NODAL DATA CARD IMAGE FROM NOMINAL DATA DECK FILE.
00406      READ(I2,1060) NDE,INDX,CAP
00413      IF(NDE.GE.99999) GO TO 300
00415      GO TO (265,290),LPATH
00416  265 CONTINUE
00417      IF(J.EQ.0) GO TO 272
00417  C**** TEST NODE AGAINST LIST OF NODES THAT DO NOT CHANGE TO SPECIFIED
00417  C****    TEMPERATURE NODES.
00421      DO 270 K=1,J
00424      IF(NDE.EQ.INNODE(K)) GO TO 285
00426  270 CONTINUE
00426  C**** NODE NDE DID NOT MATCH ANY NODE OF THE INNODE ARRAY.
00430
00430  272 CONTINUE
00431      DO 275 K=1,NNODE
00431  C**** IS NDE A NODE THAT CAN CHANGE TO A SPECIFIED TEMPERATURE NODE.
00434      IF(NDE.EQ.NODE(K)) GO TO 280
00436  275 CONTINUE
00440      GO TO 290
00441
00441  280 CONTINUE
00441  C**** CHANGE NODE NDE TO A SPECIFIED TEMPERATURE NODE.
00442      INDX=1
00443      GO TO 290
00444
00444  285 CONTINUE
00444  C**** NODE REMAINS A MASS NODE, REMOVE IT FROM THE NODE ARRAY AND
00444  C****    DECREMENT NNODE.
00445      DO 286 K=1,NNODE
00450      IF(NDE.EQ.NODE(K)) GO TO 288
00452  286 CONTINUE
00454      PRINT 6000,NDE
00457  6000 FORMAT('0**** NODE',I5,1X,'WAS INPUT AS A NODE BASED ON INACTIVE '
00457     *   'PROBES, BUT WAS NOT IN THE NODE ARRAY.   SUBROUTINE SELECT')
00460      CALL EXIT
00461
00461  288 CONTINUE
00462      NNODE=NNODE-1
00463      DO 289 L=K,NNODE
00466      NODE(L)=NODE(L+1)
00467  289 CONTINUE
00471
00471  290 CONTINUE
00472      WRITE(02,1060) NDE,INDX,CAP
00477      GO TO 260
00500  300 WRITE(02,1001)NINE
00503      PRINT 6005,NNODE,NODE
00507  6005 FORMAT('0NNODE,NODE ARRAY'/1X,I5/(16I5))
00510
00510      READ(I1,1005) NENT
00513      READ(I1,1070) (TYME(I),I=1,NENT)
00521      IF (NTAPE.LT.0) GO TO 305
00523
00523  C**** SUBRUUTINE TMPTBL SEARCHES SKYLAB ATM TAPE, CONSTRUCTS A
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00523   C****    SPECIFIED TEMPERATURE TABLE, AND OBTAINS APERTURE OPEN AND
00523   C****    CLOSE TIMES.
00523   C**** TMPTBL CONSTRUCTS A TEMPERATURE TABLE FOR EACH NODE IN THE NODE
00523   C****   ARRAY AND RETURNS THESE TEMPERATURES IN THE TNODE ARRAY.
00523         CALL TMPTBL(TINIT,NENT,TYME,NNODE,NODE,TNODE,APOP,APCL)
00524
00524   305   CONTINUE
00524   C**** INPUT APERTURE DATA
00524   C**** FLAG=0 FOR CARD READER
00524   C**** FLAG=1 FOR NOMINAL DATA DECK FILE
00524   C**** FLAG =2 FOR SKYLAB TAPE
00525         READ(I1,1005)FLAG
00530         IF(FLAG-1) 309,320,330
00533   309   CONTINUE
00534         KNTAP=0
00535   310   CONTINUE
00536         KNTAP=KNTAP+1
00536   C**** CARD INPUT
00536   C**** READ NOMINAL DATA DECK FILE TO NINES CARD.
00537          READ(I2,1040) NAP,APO,APC
00544          IF(NAP.NE.99999) GO TO 310
00546         ASSIGN 315 TO NPATH
00547         KNTAP=KNTAP-1
00550         I=0
00551   315   CONTINUE
00552         I=I+1
00553         READ(I1,1040) NAP,APO,APC,APO2,APC2,APO3,APC3
00564   1040  FORMAT(I5,6E10.4)
00565         IF(NAP.EQ.99999) GOTO 400
00567         APOP(1,I)=APO
00570         APCL(1,I)=APC
00571         APOP(2,I)=APO2
00572         APCL(2,I)=APC2
00573         APOP(3,I)=APO3
00574         APCL(3,I)=APC3
00575         IF(I  .GT.KNTAP) GO TO 315
00577         GO TO 340
00600   320   CONTINUE
00600   C**** NOMINAL DATA TAPE
00601         ASSIGN 325 TO NPATH
00602         I=1
00603   325   CONTINUE
00604         READ(I2,1040) NAP,(APOP(J,I),APCL(J,I),J=1,3)
00614         APO=APOP(1,I)
00615         APC=APCL(1,I)
00616         I=I+1
00617         GO TO 340
00620   330   CONTINUE
00620   C**** SKYLAB TAPE
00621         ASSIGN 335 TO NPATH
00622         I=1
00623   335   CONTINUE
00624         READ(I2,1040)NAP,APO,APC
00631         IF(NAP.EQ.99999) GO TO 400
00633         APO=APOP(1,I)
00634         APC=APCL(1,I)
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00635     249•          I=I+1
00636     250•    340   CONTINUE
00637     251•          IF(NAP.EQ.99999)GO TO 400
00641     252•          WRITE(02,1040)NAP,APO,APC
00646     253•          GO TO NPATH,(315,325,335)
00647     254•      400 WRITE(02,1001)NINE
00652     255•
00652     256•    C**** READ FLUX INCREMENT DATA FROM CARD READER.
00652     257•          READ(I1,1005) NONFX
00655     258•          DO 405 J=1,4
00660     259•          L=NONFX(J)
00661     260•          IF(L.EQ.0) GO TO 406
00663     261•          READ(I1,1080) (NOFX(I,J),GFLX(I,J),I=1,L)
00672     262•    405   CONTINUE
00674     263•    406   CONTINUE
00675     264•
00675     265•    C**** INPUT HEATER DATA
00675     266•          J=0
00676     267•      410 J=J+1
00676     268•    C**** READ HEATER NODES THAT FAILED FROM THE CARD READER.
00677     269•          READ(I1,1005)NDH(J)
00702     270•          IF(NDH(J).EQ.99999)GO TO 420
00704     271•          GO TO 410
00705     272•      420 CONTINUE
00706     273•          JFAIL=J-1
00707     274•    440   CONTINUE
00707     275•    C**** READ THE HEATER DATA CARDS FROM THE NOMINAL DATA DECK FILE.
00710     276•          READ(I2,1050) NH,POW,XO,YO,XM,HYS
00720     277•    1050  FORMAT(I5,5F10.4)
00721     278•          IF(NH.EQ.99999) GO TO 470
00723     279•          READ(I2,1005) (NHI(I),I=1,5),(NII(I),I=1,5)
00735     280•          IF(JFAIL.EQ.0) GO TO 460
00737     281•          DO 450 K=1,JFAIL
00742     282•          IF(NDH(K).EQ.NH)GO TO 440
00744     283•      450 CONTINUE
00746     284•
00746     285•    460   CONTINUE
00746     286•    C****  WRITE TO THE REVISED DATA DECK FILE.
00747     287•          WRITE(02,1050) NH,POW,XO,YO,XM,HYS
00757     288•          WRITE(02,1005) (NHI(I),I=1,5),(NII(I),I=1,5)
00771     289•          GO TO 440
00772     290•    470   CONTINUE
00773     291•          IF(JFAIL.EQ.0) GO TO 500
00775     292•    475   CONTINUE
00775     293•    C**** READ HEATER DATA CARDS FROM THE CARD READER.
00776     294•          READ(I1,1050) NH,POW,XO,YO,XM,HYS
01006     295•          IF(NH.EQ.99999) GO TO 500
01010     296•          READ(I1,1005) (NHI(I),I=1,5),(NII(I),I=1,5)
01022     297•          WRITE(02,1050) NH,POW,XO,YO,XM,HYS
01032     298•          WRITE(02,1005) (NHI(I),I=1,5),(NII(I),I=1,5)
01044     299•          GO TO 475
01045     300•
01045     301•      500 WRITE(02,1001)NINE
01050     302•
01050     303•    C**** INPUT BNM DATA
01050     304•    510   CONTINUE
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01051     305*          READ(I2,1060) (NIB(I),MIB(I),BNM(I),I=1,4)
01061     306*     1060 FORMAT(4(2I5,E10.4))
01062     307*          IF(NIB(1).EQ.99999) GO TO 520
01064     308*          WRITE(02,1060) (NIB(I),MIB(I),BNM(I),I=1,4)
01074     309*          GO TO 510
01075     310*     520  CONTINUE
01076     311*          WRITE(02,1001) NINE
01101     312*     530  CONTINUE
01102     313*
01102     314*     C**** INPUT CNM DATA
01102     315*          READ(I2,1060) (NIB(I),MIB(I),BNM(I),I=1,4)
01112     316*          IF(NIB(1).EQ.99999) GO TO 600
01114     317*          WRITE(02,1060) (NIB(I),MIB(I),BNM(I),I=1,4)
01124     318*          GO TO 530
01125     319*      600 WRITE(02,1001)NINE
01130     320*
01130     321*     C**** INPUT TIME TABLE DATA
01130     322*          READ(I2,1005)NENT
01133     323*          WRITE(02,1005) NENT
01136     324*          I=1
01137     325*          GO TO 620
01140     326*     610  CONTINUE
01141     327*          I=I+8
01142     328*     620  CONTINUE
01143     329*          K=I+7
01144     330*          READ(I2,1070)(TYME(J),J=I,K)
01152     331*          WRITE(02,1070)(TYME(J),J=I,K)
01160     332*    1070  FORMAT(   8F10.4)
01161     333*          IF(K.LT.NENT) GO TO 610
01163     334*      700 WRITE(02,1001)NINE
01163     335*     C**** DUMMY READ OF NINES CARD
01166     336*          READ(I2,1005)
01170     337*
01170     338*     C**** INPUT FLUX DATA
01170     339*     C**** FLAG=1 FLUX DATA FROM CARD READER.
01170     340*     C**** FLAG=2 FLUX DATA FROM NOMINAL DATA DECK FILE
01170     341*          READ(I1,1005) FLAG
01173     342*          IF(FLAG.EQ.1) GO TO 705
01175     343*          ASSIGN 720 TO KPATH
01176     344*          GO TO 710
01177     345*     705  CONTINUE
01177     346*     C**** SET UP DUMMY READ OF NOMINAL DATA DECK.
01200     347*          ASSIGN 725 TO KPATH
01201     348*     710  CONTINUE
01201     349*     C**** READ FLUX TABLES FROM NOMINAL DATA DECK.
01202     350*          READ(I2,1080) NDFX,FDTN
01206     351*    1080  FORMAT(I5,F10.4)
01207     352*          IF(NDFX.EQ.99999) GO TO 730
01211     353*          IF(FLAG.NE.1)
01211     354*         *WRITE(02,1080) NDFX,FDTN
01216     355*          K=0
01217     356*     715  CONTINUE
01220     357*          K=K+1
01221     358*          READ(I2,1070) (Q(I),I=1,8)
01227     359*          GO TO KPATH,(725,720)
01230     360*     720  CONTINUE
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01231     361*          WRITE(02,1070) (Q(I),I=1,8)
01237     362*     725  CONTINUE
01240     363*          IF(8*K-NENT) 715,710,710
01243     364*
01243     365*     730  CONTINUE
01243     366*     C**** READ FLUX TABLES FROM CARD READER.
01244     367*          READ(I1,1080) NDFX,FDTN
01250     368*          IF(NDFX.EQ.99999) GO TO 800
01252     369*          WRITE(02,1080) NDFX,FDTN
01256     370*          K=0
01257     371*     735  CONTINUE
01260     372*          K=K+1
01261     373*          READ(I1,1070) (Q(I),I=1,8)
01267     374*          WRITE(02,1070) (Q(I),I=1,8)
01275     375*          IF(8*K-NENT) 735,730,730
01300     376*       800 WRITE(02,1001)NINE
01303     377*
01303     378*     C**** INPUT SPECIFIED TEMPERATURE DATA
01303     379*     810  CONTINUE
01304     380*          JMP=1
01305     381*          READ(I2,1005) NSPT,INDSP
01311     382*          IF(NSPT.EQ.99999) GO TO 840
01313     383*          IF(NTAPE.LT.0) GO TO 816
01315     384*          IF(NNODE.LE.0) GOTO 816
01317     385*          DO 812 I=1,NNODE
01322     386*          IF(NSPT.EQ.NODE(I)) GO TO 814
01324     387*     812  CONTINUE
01326     388*          GO TO 816
01327     389*     814  CONTINUE
01330     390*          JMP=2
01331     391*     816  CONTINUE
01332     392*          IF(INDSP.EQ.1) GO TO 820
01334     393*          NDUM=8
01335     394*          GO TO 830
01336     395*     820  CONTINUE
01337     396*          NDUM=NENT
01340     397*     830  CONTINUE
01341     398*          READ(I2,1070) (T(I),I=1,NDUM)
01347     399*          GO TO (835,810),JMP
01350     400*     835  CONTINUE
01351     401*          WRITE(02,1005) NSPT,INDSP
01355     402*          JE=0
01356     403*          IE=((NDUM-1)/8)*8
01357     404*          IF(IE.EQ.0) GO TO 839
01361     405*          DO 838 I=1,IE,8
01364     406*          JE=I+7
01365     407*          WRITE(02,1070) (T(J),J=I,JE)
01373     408*     838  CONTINUE
01375     409*
01375     410*     839  CONTINUE
01376     411*          JB=JE+1
01377     412*          WRITE(02,1070) (T(J),J=JB,NDUM)
01405     413*          GO TO 810
01406     414*     840  CONTINUE
01407     415*
01407     416*          IF(NTAPE.LT.0) GO TO 900
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01411   417*          IF(NNODE.LE.0) GO TO 900
01413   418*
01413   419*    C**** STORE SPECIFIED TEMPERATURE TABLES FROM TMPTBL.
01413   420*          DO 860 I=1,NNODE
01416   421*          WRITE(02,1005) NODE(I),ONE
01422   422*          JE=0
01423   423*          IE=((NDUM-1)/8)*8
01424   424*          IF(IE.EQ.0) GO TO 855
01426   425*          DO 850 L=1,IE,8
01431   426*          JE=L+7
01432   427*          WRITE(02,1070) (TNODE(J,I),J=L,JE)
01440   428*    850   CONTINUE
01442   429*
01442   430*    855   CONTINUE
01443   431*          JB=JE+1
01444   432*          WRITE(02,1070) (TNODE(J,I),J=JB,NENT)
01452   433*    860   CONTINUE
01454   434*    900   WRITE(02,1001)NINE
01457   435*
01457   436*    C**** INPUT INITIAL TEMPERATURE DATA
01457   437*    C**** FLAG=1 INITIAL TEMPERATURES FROM NOMINAL DATA DECK FILE
01457   438*    C**** FLAG=2 INITIAL TEMPERATURES FROM CARD READER.
01457   439*          READ(11,1035)FLAG
01462   440*          IF(FLAG.EQ.1) GO TO 920
01464   441*    910   CONTINUE
01464   442*    C**** INITIAL TEMPERATURES FROM CARD READER
01465   443*          READ(11,1100)(NI(J),TI(J),J=1,5)
01474   444*    1100  FORMAT(5(I5,F10.4))
01475   445*          IF(NI(1).EQ.99999)GO TO 950
01477   446*          WRITE(02,1100)(NI(J),TI(J),J=1,5)
01506   447*          GO TO 910
01507   448*    920   CONTINUE
01507   449*    C**** INITIAL TEMPERATURES FROM NOMINAL DATA DECK.
01510   450*          READ(12,1100)(NI(J),TI(J),J=1,5)
01517   451*          IF(NI(1).EQ.99999)GO TO 950
01521   452*          WRITE(02,1100)(NI(J),TI(J),J=1,5)
01530   453*          GO TO 920
01531   454*    950   WRITE(02,1001)NINE
01534   455*
01534   456*          END FILE 02
01535   457*          REWIND 02
01536   458*          PRINT 6024
01540   459*    6024  FORMAT('1***** REVISED DATA DECK *****')
01541   460*
01541   461*    1000   CONTINUE
01542   462*          READ(02,6025,END=1002) ALPNUM
01545   463*    6025  FORMAT(13A6,A2)
01546   464*          PRINT 6035,ALPNUM
01551   465*    6035  FORMAT(1X,13A6,A2)
01552   466*          GO TO 1000
01553   467*
01553   468*    1002  CONTINUE
01554   469*          REWIND 02
01555   470*          RETURN
01556   471*          END
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END OF COMPILATION:        NO  DIAGNOSTICS.
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@FOR,US HCTMP,HCTMP
HSD 11A -12/10/73-11:06:47 (19,20)

   SUBROUTINE TMPTBL     ENTRY POINT 000462

   STORAGE USED: CODE(1) 000516; DATA(D) 000317; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003    ATMCOM 010657
    0004    MIDATM 004736
    0005    APERTR 000001

   EXTERNAL REFERENCES (BLOCK, NAME)

    0006    READID
    0007    IDREC
    0010    RDATM
    0011    APTR
    0012    TIMAD
    0013    NTRAN
    0014    SMOOTH
    0015    NERR2$
    0016    NPRT$
    0017    NIO2$
    0020    NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001    000056 100L      0001    000100 110L      0001    000104 213G      0001    000117 224G      0001    000162 241G
    0001    000113 250L      0001    000125 300L      0001    000171 315L      0001    000173 320L      0001    000427 365G
    0001    000054 50L       0001    000327 520L      0001    000342 530L      0001    000362 550L      0001    000406 600L
    0000    000247 6020F     0001    000442 650L      0004 R 004570 DATA       0000 R 000246 DT        0003 R 002766 FDATA
    0000 I 000240 I          0004    004570 IDATA     0003    002766 IFDATA    0003    000032 IFID      0003    000003 IFN
    0000    000265 INJP$     0003    001016 IRID      0003    000004 IRN       0003 I 000006 ITIME     0003    000002 ITR
    0000 I 000241 ITYME      0003 I 000000 IUNIT      0004 I 000311 IWORD      0000 I 000206 J         0000 I 000244 K
    0003    000005 KERR      0003 I 010656 KIND       0000 I 000207 KNVRT      0004    004734 LDAT      0004    002454 LOC
    0004 I 000001 MEAN       0004    000455 MID       0005 I 000000 NAP        0004 I 000000 NMEA      0004 I 004735 NMNUMB
    0000 I 000205 NNODE      0000 I 000001 NODE       0003    000001 NTAPE     0003    002002 RDATA     0000 R 000245 TAPHR
    0000 I 000000 TDAY       0000 R 000123 TEMPS      0000 R 000242 TH         0000 R 000243 THRS       0000 R 000052 TNODE
    0000 R 000154 TPROBE

00101      1*          SUBROUTINE TMPTBL(TINIT,NTYME,TYME,KNODE,KODE,TKODE,APO,APC)
00101      2*     C*****************************************************************
00101      3*     C     TINIT - ARRAY OF INITIAL GMT, DAY, HOURS, MINUTES, SECONDS,
00101      4*     C        MILLISECONDS.
00101      5*     C     NTYME - NUMBER OF ENTRIES IN THE TYME ARRAY.
00101      6*     C     TYME - ARRAY OF INDEPENDENT VARIABLE TIME FOR SPECIFIED TEMPERATURE TABLES
00101      7*     C     KNODE - NUMBER OF NODES DEPENDENT UPON PROBE TEMPERATURES.
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00101      8*      C      KODE - ARRAY OF NODE NUMBERS OF NODES DEPENDENT UPON PROBE TEMPERATURES.
00101      9*      C      TKODE - ARRAY OF NODE TEMPERATURES OF CORRESPONDING NODES OF NODE ARRAY.
00101     10*      C      APO - APERTURE OPEN TIMES.
00101     11*      C      APC - APERTURE CLOSE TIMES.
00101     12*      C      NMNUMB - NUMBER OF TEMPERATURE PROBE MEASUREMENT NUMBERS.
00101     13*      C      MNUMB - TEMPERATURE PROBE MEASUREMENT NUMBERS.
00101     14*      C      PROBE  - MSFC ID NUMBERS FOR TEMPERATURE MEASUREMENTS.
00101     15*      C      IWORD - SUBSCRIPT OF THE TEMPERATURE PROBE IN THE FIXED FORMAT
00101     16*      C         DATA ARRAY.
00101     17*      C      NAP   - NUMBER OF APERTURE MEASUREMENT NUMBERS.
00101     18*      C      MAPNUM - APERTURE MEASUREMENT NUMBERS.
00101     19*      C      MSFCAP - APRETURE MSFC ID NUMBERS.
00101     20*      C      IAPWRD - SUBSCRIPT OF APERTURE PROBEIN THE FIXED FORMAT DATA ARRAY.
00101     21*      C*****************************************************************
00103     22*
00103     23*
00103     24*              INTEGER TINIT(5),TDAY
00104     25*              DIMENSION TYME(1)
00105     26*              DIMENSION APO(5,4),APC(5,4)
00106     27*              COMMON /ATMCOM/
00106     28*             *   IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20)
00106     29*             *  ,IFID(500),IRID(500),RDATA(500),IFDATA(3000),KIND
00107     30*              DIMENSION FDATA(1)
00110     31*              EQUIVALENCE (FDATA(1),IFDATA(1))
00111     32*              COMMON /MIDATM/
00111     33*             *   NMEA,MEAN(100,3),MID(1023),LOC(100,11)
00111     34*             *  ,DATA(100),LDAT,NMNUMB
00112     35*              DIMENSION IWORD(1),IDATA(1)
00113     36*              EQUIVALENCE (IWORD(1),MEAN(1,3)),(IDATA(1),DATA(1))
00114     37*              COMMON /APERTR/ NAP
00114     38*      C**** SPECIFICATION STATEMENTS FOR NRL-8.
00115     39*              DIMENSION NODE(41 ),TNODE(41 ),TEMPS(25),TPROBE(25),KODE(41 )
00115     40*             *   ,TKODE(61,41)
00116     41*              DATA NNODE/ 41/,NMNUMB/25/,NAP/1/
00122     42*              DATA NMEA/26/
00124     43*              DATA
00124     44*             *   (MEAN( 1,J),J=1,3)/'C0261-55A    ', 1/
00124     45*             *   (MEAN( 2,J),J=1,3)/'C0263-55A    ', 2/
00124     46*             *   (MEAN( 3,J),J=1,3)/'C0264-55A    ', 3/
00124     47*             *   (MEAN( 4,J),J=1,3)/'C0265-55A    ', 4/
00124     48*             *   (MEAN( 5,J),J=1,3)/'C0266-55A    ', 5/
00124     49*             *   (MEAN( 6,J),J=1,3)/'C0267-55A    ', 6/
00124     50*             *   (MEAN( 7,J),J=1,3)/'C0268-55A    ', 7/
00124     51*             *   (MEAN( 8,J),J=1,3)/'C0269-55A    ', 8/
00124     52*             *   (MEAN( 9,J),J=1,3)/'C0270-55A    ', 9/
00124     53*             *   (MEAN(10,J),J=1,3)/'C0271-55A    ',10/
00137     54*              DATA
00137     55*             *   (MEAN(11,J),J=1,3)/'C0286-704    ',11/
00137     56*             *   (MEAN(12,J),J=1,3)/'C0287-704    ',12/
00137     57*             *   (MEAN(13,J),J=1,3)/'C0288-703    ',13/
00137     58*             *   (MEAN(14,J),J=1,3)/'C0297-704    ',14/
00137     59*             *   (MEAN(15,J),J=1,3)/'C0300-704    ',15/
00137     60*             *   (MEAN(16,J),J=1,3)/'C0302-704    ',16/
00137     61*             *   (MEAN(17,J),J=1,3)/'C0312-704    ',17/
00137     62*             *   (MEAN(18,J),J=1,3)/'C0316-703    ',18/
00137     63*             *   (MEAN(19,J),J=1,3)/'C0319-701    ',19/
```

```
00137     *     (MEAN(20,J),J=1,3)/'C0320-701    ',20/
00152      DATA
00152     *     (MEAN(21,J),J=1,3)/'C0321-701    ',21/
00152     *     (MEAN(22,J),J=1,3)/'C0390-55A    ',22/
00152     *     (MEAN(23,J),J=1,3)/'C0391-55A    ',23/
00152     *     (MEAN(24,J),J=1,3)/'C0392-55A    ',24/
00152     *     (MEAN(25,J),J=1,3)/'C0393-55A    ',25/
00152     *     (MEAN(26,J),J=1,3)/'K0299-703    ',26/
00161      DATA NODE
00161     *     /   5,   6,   7,   8,   9,  10,  11,  12, 109, 110, 111
00161     *     , 112, 113, 114, 115, 116, 117, 118, 119, 120, 141, 142
00161     *     , 149, 150, 747, 749, 752, 754, 755, 787, 789, 790, 792
00161     *     , 794, 795, 797, 802, 836, 837, 838, 841/
00163      DIMENSION KNVRT(25)
00164      DATA (KNVRT(I),I=1,10)/10*0/,(KNVRT(I),I=11,21)/11*1/
00164     *     ,(KNVRT(I),I=22,25)/4*0/
00170
00170      TCONV(IA,IB,IC,ID)=IA+(IB+(IC+ID/1000.)/60.)/60.
00171
00171      ITYME=1
00172      IDAY=TINIT(1)
00173      TH  =TCONV(TINIT(2),TINIT(3),TINIT(4),TINIT(5))
00174      THRS=TH
00175      IF(KIND.EQ.2) GO TO 50
00175  C**** COMPRESSED FORMAT - READ ID RECORDS.
00177      CALL READID
00200      GO TO 100
00201  50  CONTINUE
00201  C**** FIXED FORMAT - READ ID RECORDS.
00202      CALL IDREC
00203
00203  100 CONTINUE
00203  C**** READ ONE ATM TAPE DATA RECORD.
00204      CALL RDATM
00205
00205  C**** CALL SUBROUTINE APTR TO SEARCH FOR APERTURE OPEN AND CLOSE
00205  C****    CONDITIONS.
00205      CALL APTR(TINIT,APO,APC)
00206
00206      IF(KNODE.LE.0) GO TO 300
00210      GO TO (110,250),KIND
00211  110 CONTINUE
00211  C**** SET PROBE TEMPERATURES
00212      DO 210 J=1,NMNUMB
00215      K=IWORD(J)
00216      TEMPS(J)=DATA(K)
00217  210 CONTINUE
00221      GO TO 300
00222
00222  250 CONTINUE
00222  C**** SET PROBE TIMPERATURES.
00223      DO 260 I=1,NMNUMB
00226      J=IWORD(I)
00227      TEMPS(I)=FDATA(J)
00230  260 CONTINUE
00232
```

```
00232     300   CONTINUE
00232     C**** HAS THE TAPE RECORD TIME REACHED THE TIME IN THE TYME ARRAY.
00233           IF(ITIME(1).NE.TDAY) GO TO 100
00235           TAPHR=TCONV(ITIME(2),ITIME(3),ITIME(4),ITIME(5))
00236           IF(TAPHR.LT.THRS) GO TO 100
00236     C**** TIME FROM TAPE RECORD HAS REACHED THE TIME TO STORE PROBE DATA.
00240           DO 320 I=1,NMNUMB
00243           IF(KNVRT(I).EQ.0) GO TO 315
00243     C**** TAPE TEMPERATURE IS DEGREES CENTIGRADE.
00245           TPROBE(I)=TEMPS(I)*1.8+32.0
00246           GO TO 320
00247     315   CONTINUE
00247     C**** TAPE TEMPERATURE IS DEGREES FAHRENHEIT.
00250           TPROBE(I)=TEMPS(I)
00251     320   CONTINUE
00253
00253     400   CONTINUE
00254           IF(KNODE.LE.0) GO TO 600
00254     C**** COMPUTE TEMPERATURES OF THE SPECIFIED TEMPERATURE NODES AT EACH
00254     C****    TIME OF THE TIME ARRAY
00256           TNODE( 1)=TPROBE(21)
00257           TNODE( 2)=TPROBE(20)
00260           TNODE( 3)=TPROBE(20)
00261           TNODE( 4)=TPROBE(19)
00262           TNODE( 5)=TPROBE(21)
00263           TNODE( 6)=TPROBE(20)
00264           TNODE( 7)=TPROBE(20)
00265           TNODE( 8)=TPROBE(19)
00266           TNODE( 9)=TPROBE(11)+(13./16.)*TPROBE(12)
00267           TNODE(10)=TPROBE(11)+(13./16.)*TPROBE(13)
00270           TNODE(11)=TNODE(10)
00271           TNODE(12)=TPROBE(15)
00272           TNODE(13)=TNODE(10)
00273           TNODE(14)=TNODE(10)
00274           TNODE(15)=TPROBE(11)+(15./16.)*TPROBE(12)
00275           TNODE(16)=TPROBE(11)+(15./16.)*TPROBE(13)
00276           TNODE(17)=TNODE(16)
00277           TNODE(18)=TPROBE(16)
00300           TNODE(19)=TNODE(16)
00301           TNODE(20)=TNODE(16)
00302           TNODE(21)=TPROBE(17)
00303           TNODE(22)=TPROBE(17)
00304           TNODE(23)=TPROBE(18)
00305           TNODE(24)=TPROBE(18)
00306           TNODE(25)=TPROBE( 9)+TPROBE(25)
00307           TNODE(26)=TPROBE( 7)+TPROBE(23)
00310           TNODE(27)=TPROBE( 9)
00311           TNODE(28)=TPROBE( 7)
00312           TNODE(29)=TPROBE( 7)
00313           TNODE(30)=TPROBE( 8)+TPROBE(25)
00314           TNODE(31)=TPROBE( 6)+TPROBE(22)
00315           TNODE(32)=TPROBE( 6)+TPROBE(22)
00316           TNODE(33)=TPROBE( 8)
00317           TNODE(34)=TPROBE( 6)
00320           TNODE(35)=TPROBE( 6)
00321           TNODE(36)=TPROBE(10)
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00322    176*          TNODE(37)=TPROBE( 1)
00323    177*          TNODE(38)=TPROBE( 2)+TPROBE( 4)
00324    178*          TNODE(39)=TPROBE( 2)
00325    179*          TNODE(40)=TPROBE( 3)
00326    180*          TNODE(41)=TPROBE( 3)+TPROBE( 5)
00327    181*
00327    182*     510  CONTINUE
00330    183*          I=1
00331    184*          J=1
00332    185*     520  CONTINUE
00333    186*          IF(KODE(J).EQ.NODE(I)) GO TO 530
00335    187*          I=I+1
00336    188*          GO TO 520
00337    189*     530  CONTINUE
00340    190*          TKODE(ITYME,J)=TNODE(I)
00341    191*          IF(J.EQ.KNODE) GO TO 550
00343    192*          I=1
00344    193*          J=J+1
00345    194*          GO TO 520
00346    195*
00346    196*     550  CONTINUE
00347    197*          IF(ITYME.GE.NTYME) GO TO 600
00351    198*          ITYME=ITYME+1
00352    199*          DT=TH+TYME(ITYME)-THRS
00353    200*          CALL TIMAD(TDAY,THRS,DT)
00354    201*          GO TO 100
00355    202*
00355    203*     600  CONTINUE
00356    204*          CALL NTRAN (IUNIT,18)
00357    205*          IF(KNODE.EQ.0) GO TO 650
00361    206*          PRINT 6020
00363    207*     6020 FORMAT('0',10('******'))
00364    208*          DO 640 I=1,KNODE
00367    209*          CALL SMOOTH(NTYME,TYME,KODE(I),TKODE(1,I))
00370    210*     640  CONTINUE
00372    211*
00372    212*     650  CONTINUE
00373    213*          RETURN
00374    214*          END

        END OF COMPILATION:        NO DIAGNOSTICS.
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@FOR,US HCIAP,HCIAP
MSD 11A 7:12/10/73-11:04:52 (16,17)

   SUBROUTINE IAPSTS     ENTRY POINT 000034

   STORAGE USED: CODE(1) 000041; DATA(0) 000010; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   APERTR 000001
    0004   ATMCOM 010657
    0005   MIDATM 004736

   EXTERNAL REFERENCES (BLOCK, NAME)

    0006   NERR2$
    0007   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   000013 100L      0001   000017 200L      0001   000022 300L      0005   004570 DATA      0004   002766 FDATA
    0005 I 004570 IDATA     0004 I 002766 IFDATA    0004   000032 IFID      0004   000003 IFN       0000   000001 INJPS
    0004   001016 IRID      0004   000004 IRN       0000 I 000000 ISUB      0004   000006 ITIME     0004   000002 ITR
    0004   000000 IUNIT     0005 I 000311 IWORD     0004   000005 KERR      0004 I 010656 KIND      0005   004734 LDAT
    0005   002454 LOC       0005   000001 MEAN      0005   000455 MID       0003   000000 NAP       0005   000080 NMEA
    0005 I 004735 NMNUMB    0004   000001 NTAPE     0004   002002 RDATA
```

```
00101      1*          SUBROUTINE IAPSTS(IOPCL)
00101      2*     C*****************************************************************
00101      3*     C    HCO VERSION
00101      4*     C    DETERMINES THE STATUS OF THE
00101      5*     C    APERTURE OPEN AND APERTURE CLOSE
00101      6*     C    DISCRETES.
00101      7*     C    IOPCL=0 IF APERTURE IS CLOSED
00101      8*     C    IOPCL=1 IF APERTURE IS OPEN
00101      9*     C*****************************************************************
00103     10*          DIMENSION IOPCL(1)
00104     11*          COMMON /APERTR/ NAP
00105     12*          COMMON /ATMCOM/
00105     13*        *   IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20)
00105     14*        *  ,IFID(500),IRID(500),RDATA(500),IFDATA(3000),KIND
00106     15*          DIMENSION FDATA(1)
00107     16*          EQUIVALENCE (FDATA(1),IFDATA(1))
00110     17*          COMMON /MIDATM/
00110     18*        *   NMEA,MEAN(100,3),MID(1023),LOC(100,11)
00110     19*        *  ,DATA(100),LDAT,NMNUMB
00111     20*          DIMENSION IWORD(1),IDATA(1)
00112     21*          EQUIVALENCE (IWORD(1),MEAN(1,3));(IDATA(1),DATA(1))
00113     22*
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00113     23•          ISUB=IWORD(NMNUMB+1)
00113     24•     C**** SEARCH FOR MEASUREMENT KO299=703=
00114     25•          GO TO (100,200),KIND
00115     26•     100  CONTINUE
00116     27•          IOPCL(1)=IDATA(ISUB)
00117     28•          GO TO 300
00120     29•
00120     30•     200  CONTINUE
00121     31•          IOPCL(1)=IFDATA(ISUB)
00122     32•
00122     33•     300  CONTINUE
00123     34•          RETURN
00124     35•          END

      END OF COMPILATION:        NO  DIAGNOSTICS.
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@FOR,US HASEL,HASEL
HSD 11A -12/10/73-11:06:55 (20,21)

   SUBROUTINE SELECT    ENTRY POINT 002360

   STORAGE USED: CODE(1) 002372; DATA(0) 005476; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   DELFLX 000174
    0004   ATMCOM 010657
    0005   MIDATM 004736
    0006   UNITS  000005
    0007   START  000007

   EXTERNAL REFERENCES (BLOCK, NAME)

    0010   REDNOM
    0011   EXIT
    0012   TMPTBL
    0013   NRDUS
    0014   NIO1S
    0015   NIO2S
    0016   NREWS
    0017   NPRTS
    0020   NWDUS
    0021   NERR2S
    0022   NIO3S
    0023   NWEFS
    0024   NERR3S

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   002315 1000L    0000   005364 1001F    0001   002336 1002L    0000   005275 1005F    0000   005357 1010F
    0001   001213 1012G    0001   001220 1016G    0000   005360 1030F    0001   001245 1034G    0000   005421 1040F
    0001   001252 1040G    0000   005423 1050F    0001   001273 1053G    0000   005425 1060F    0001   001313 1066G
    0000   005430 1070F    0000   005432 1080F    0000   005434 1100F    0001   001336 1104G    0001   001356 1116G
    0001   001432 1146G    0001   001445 1154G    0001   001550 1223G    0001   001563 1233G    0001   001631 1263G
    0001   001643 1271G    0001   001714 1320G    0001   001747 1343G    0001   002005 1362G    0001   002022 1367G
    0001   002044 1401G    0001   002072 1414G    0001   002113 1427G    0001   002134 1434G    0001   002161 1446G
    0001   002215 1467G    0001   002234 1501G    0001   002250 1512G    0001   002267 1523G    0001   000010 157G
    0001   000244 175L     0001   000043 202G     0001   000316 210L     0001   000114 247G     0001   000126 255G
    0001   000342 260L     0001   000140 263G     0001   000366 265L     0001   000027 27L      0001   000152 271G
    0001   000403 272L     0001   000164 277G     0001   000417 280L     0001   000422 285L     0001   000444 288L
    0001   000456 290L     0001   000467 300L     0001   000176 305G     0001   000545 305L     0001   000560 310L
    0001   000210 315G     0001   000605 315L     0001   000654 320L     0001   000215 321G     0001   000660 325L
    0001   000714 330L     0001   000233 334G     0001   000720 335L     0001   000240 340G     0001   000745 340L
    0001   000252 346G     0001   000057 35L      0001   000257 352G     0001   000064 40L      0001   000762 400L
    0001   001033 406L     0001   001034 410L     0001   001053 420L     0001   000374 422G     0001   000407 432G
    0001   001056 440L     0001   000426 446G     0001   000071 45L      0001   001131 460L     0001   000453 466G
    0001   000102 47L      0001   001164 470L     0001   001166 475L     0001   000106 50L      0001   001257 500L
    0001   001265 510L     0001   000523 515G     0001   001322 520L     0001   001330 530L     0000   005276 5985F
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0000    005300 5990F     0000    005323 5991F     0000    005331 5992F     0000    005337 5993F     0000    005347 5994F
0000    005353 5995F     0001    001365 600L      0000    005365 6000F     0000    005413 6005F     0000    005437 6024F
0000    005445 6025F     0000    005447 6035F     0001    000676 607G      0001    001412 610L      0001    001415 620L
0001    001002 656G      0001    001024 665G      0001    001506 705L      0001    001510 710L      0001    001537 715L
0001    001555 720L      0001    001103 725G      0001    001567 725L      0001    001575 730L      0001    001110 731G
0001    001620 735L      0001    001122 740G      0001    001152 761G      0001    001157 765G      0001    001655 800L
0001    001663 810L      0001    001724 814L      0001    001726 816L      0001    001735 820L      0001    001737 830L
0001    001762 835L      0001    002036 839L      0001    002051 840L      0001    002142 855L      0001    002167 900L
0001    002207 910L      0001    002242 920L      0001    002275 950L      0000 R 005213 ALPNUM     0000 R 005246 APC
0003 R  000150 APCL      0000 R  005251 APC2      0000 R  005253 APC3      0000 R  005245 APO       0003 R  000124 APOP
0000 R  005250 APO2      0000 R  005252 APO3      0000 R  000236 BNM       0000 R  005237 CAP       0005    004570 DATA
0004    002766 FDATA     0000 R  005265 FDTN      0000 I  000050 FLAG      0000 R  005262 HYS       0000 I  005231 I
0005    004570 IDATA     0000 I  005273 IE        0004    002766 IFDATA    0004    000032 IFID      0004    000003 IFN
0000 I  005270 INDSP     0000 I  005236 INDX      0000    005455 INJPS     0000 I  000132 INNODE    0000 I  000130 IOP
0004    001016 IRID      0004    000004 IRN       0004    000006 ITIME     0004    000002 ITR       0004 I  000000 IUNIT
0005    000311 IWORD     0006 I  000000 I1        0006 I  000001 I2        0006 I  000002 I3        0000 I  005233 J
0000 I  005274 JB        0000 I  005272 JE        0000 I  005254 JFAIL     0000 I  005266 JMP       0000 I  005240 K
0004    000005 KERR      0004 I  010656 KIND      0000 I  005243 KNTAP     0000 I  005263 KPATH     0007 I  000005 KPLOT
0000 I  005241 L         0005    004734 LDAT      0005    002454 LOC       0000 I  005234 LPATH     0005    000001 MEAN
0000 I  005205 MIB       0005    000455 MID       0000 I  005244 NAP       0007    000006 ND        0000 I  005235 NDE
0000 I  005264 NDFX      0000 I  000202 NDH       0000 I  005271 NDUM      0000 I  005242 NENT      0000 I  005255 NM
0000 I  000224 NHI       0000 I  005167 NI        0000 I  005201 NIB       0000 I  000231 NII       0000 I  005211 NINE
0005    000000 NMEA      0005    004735 NMNUMB    0000 I  005212 NNODE     0000 I  000052 NODE      0003 I  000004 NOFX
0000 I  005232 NOMTP     0003 I  000000 NONFX     0000 I  005247 NPATH     0000 I  005267 NSPT      0004 I  000001 NTAPE
0000 I  000051 ONE       0000 R  000122 OPT       0006 I  000003 O1        0006 I  000004 O2        0000 R  005256 POW
0000 R  000337 Q         0003 R  000054 QFLX      0004    002002 RDATA     0000 R  000347 T         0000 R  005174 TI
0007 I  000000 TINIT     0000 I  000000 TITLE     0000 R  000357 TNODE     0000 R  000242 TYME      0000 R  005261 XM
0000 R  005257 XO        0000 R  005260 YO
```

```
00101     1*          SUBROUTINE SELECT
00103     2*
00103     3*     C*****************************************************************
00103     4*     C**** SELECTS CHANGES TO NOMINAL INPUT FOR THERMAL DISTORTION PROGRAM
00103     5*     C*****************************************************************
00103     6*
00103     7*          INTEGER I1,I2,O1,O2
00104     8*          INTEGER TINIT
00105     9*          INTEGER TITLE
00106    10*          INTEGER FLAG
00107    11*          INTEGER ONE
00110    12*          DIMENSION NODE(40)
00111    13*          DIMENSION TINIT(5)
00112    14*          DIMENSION TITLE(40)
00113    15*          DIMENSION OPT(6),IOP(2)
00114    16*          DIMENSION INNODE(40)
00115    17*          DIMENSION NDH(18)
00116    18*          DIMENSION NHI(5),NII(5)
00117    19*          DIMENSION BNM(4)
00120    20*          DIMENSION TYME(61)
00121    21*          DIMENSION Q(8)
00122    22*          DIMENSION T(8)
00123    23*          DIMENSION TNODE(61,40)
00124    24*          DIMENSION NI(5),TI(5)
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00125      25*          DIMENSION NIB(4),MIB(4)
00126      26*          COMMON /DELFLX/
00126      27*         *   NONFX(4),NUFX(10,4),QFLX(10,4),APOP(5,4),APCL(5,4)
00127      28*          DATA APOP,APCL/40*99999./
00132      29*          COMMON /ATMCOM/
00132      30*         *   IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20)
00132      31*         *  ,IFID(500),IRID(500),RDATA(500),IFDATA(3000),KIND
00133      32*          DIMENSION FDATA(1)
00134      33*          EQUIVALENCE (FDATA(1),IFDATA(1))
00135      34*          COMMON /MIDATM/
00135      35*         *   NMEA,MEAN(100,3),MID(1023),LOC(100,11)
00135      36*         *  ,DATA(100),LDAT,NMNUMB
00136      37*          DIMENSION IWORD(1),IDATA(1)
00137      38*          EQUIVALENCE (IWORD(1),MEAN(1,3)),(IDATA(1),DATA(1))
00137      39*     C**** I1 IS THE CARD READER.
00137      40*     C**** I2 IS THE NOMINAL DATA DECK
00137      41*     C**** O1 IS THE PRINTER.
00137      42*     C**** O2 IS THE REVISED DATA DECK.
00140      43*          COMMON /UNITS/ I1,I2,I3,O1,O2
00141      44*          DATA ONE/1/
00143      45*          DATA NINE/999999999/
00143      46*     C**** HAO DATA STATEMENT FOR NNODE AND NODE ARRAYS.
00145      47*          DATA NNODE/39/
00147      48*          DATA NODE
00147      49*         *   /   9,  97,  98,  99, 100, 101, 102, 103, 104, 105
00147      50*         *   , 106, 107, 108, 147, 148, 155, 156, 177, 178, 179
00147      51*         *   , 180, 181, 182, 183, 184, 185, 186, 187, 188, 189
00147      52*         *   , 190, 191, 192, 878, 879, 880, 881, 913, 930,   0/
00151      53*          DIMENSION ALPNUM(14)
00152      54*          COMMON /START/ TINIT,KPLOT,ND
00153      55*
00153      56*          IUNIT=13
00154      57*
00154      58*     C***** READ IN DAYS,HOURS,MINUTES,SECONDS,MILISECONDS
00154      59*        25 CONTINUE
00155      60*           READ(I1,1005) (TINIT(I),I=1,5),NTAPE,KIND,NOMTP,KPLOT
00167      61*      1005 FORMAT(16I5)
00170      62*           IF(NOMTP.NE.1) GO TO 27
00170      63*     C**** READ NOMINAL DATA DECK FROM CARD READER.
00172      64*           CALL REDNOM
00173      65*     27    CONTINUE
00174      66*           REWIND I2
00175      67*
00175      68*           PRINT 5985
00177      69*     5985  FORMAT('1')
00200      70*           PRINT 5990,(TINIT(I),I=1,5)
00206      71*     5990  FORMAT('0INITIAL TIME (TIME=0 IN TRANSIENT)'/
00206      72*         *   '0DAY  ',I5/'0HOUR ',I5/
00206      73*         *   '0MIN  ',I5/'0SEC  ',I5/
00206      74*         *   '0MSEC ',I5)
00207      75*           IF(NTAPE) 30,35,40
00212      76*     30    CONTINUE
00213      77*           PRINT 5991
00215      78*     5991  FORMAT('0SKYLAB USER TAPE NOT SELECTED')
00216      79*           GO TO 50
00217      80*     35    CONTINUE
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00220      81*          PRINT 5992
00222      82*    5992  FORMAT('0SKYLAB USER TAPE ON DISK')
00223      83*          GO TO 45
00224      84*    40    CONTINUE
00225      85*          PRINT 5993,NTAPE
00230      86*    5993  FORMAT('0SKYLAB USER TAPE SELECTED. REELS=',I3)
00231      87*    45    CONTINUE
00232      88*          IF (KIND.EQ.2) GO TO 47
00234      89*          PRINT 5994
00236      90*    5994  FORMAT('0COMPRESSED FORMAT')
00237      91*          GO TO 50
00240      92*    47    CONTINUE
00241      93*          PRINT 5995
00243      94*    5995  FORMAT('0FIXED FORMAT')
00244      95*       50 CONTINUE
00245      96*
00245      97*    C**** INPUT TITLE CARDS
00245      98*          READ(I2,1010)(TITLE(I),I=1,13)
00253      99*          READ(I2,1010)(TITLE(I),I=14,26)
00261     100*          READ(I1,1010)(TITLE(I),I=1,13)
00267     101*          READ(I1,1010)(TITLE(I),I=14,26)
00275     102*          WRITE(O2,1010)(TITLE(I),I=1,13)
00303     103*          WRITE(O2,1010)(TITLE(I),I=14,26)
00311     104*     1010 FORMAT(13A6)
00312     105*
00312     106*    C**** INPUT OPTIONS DATA
00312     107*      100 CONTINUE
00312     108*    C**** READ OPTIONS CARD FROM THE CARD READER
00313     109*          READ(I1,1030)(OPT(I),I=1,6),(IOP(J),J=1,2),FLAG
00326     110*     1030 FORMAT(6F10.4,A5,I5,5X,I5)
00327     111*          IF(FLAG.EQ.0)GO TO 175
00331     112*    150   CONTINUE
00331     113*    C**** READ OPTIONS CARD FROM NOMINAL DATA DECK
00332     114*          READ(I2,1030)(OPT(I),I=1,6),(IOP(J),J=1,2)
00344     115*      175 WRITE(O2,1030)(OPT(I),I=1,6),(IOP(J),J=1,2)
00344     116*    C**** DUMMY READ OF NOMINAL DATA DECK.
00356     117*          IF(FLAG.EQ.0) READ(I2,1030)
00356     118*    C**** DUMMY READ OF NINES CARD
00361     119*          READ(I2,1001)
00363     120*      200 WRITE(O2,1001)NINE
00366     121*     1001 FORMAT(I10)
00367     122*
00367     123*    C**** IF NTAPE IS NEGATIVE, THERE IS NO TAPE INPUT DATA.
00367     124*          LPATH=1
00370     125*          IF(NTAPE.LT.0) LPATH=2
00372     126*
00372     127*    C**** INPUT NODAL DATA
00372     128*          J=0
00373     129*    210   CONTINUE
00374     130*          J=J+1
00374     131*    C**** READ NODES THAT WILL NOT CHANGE TO SPECIFIED TEMPERATURE NODES
00374     132*    C****    FROM THE CARD READER.
00375     133*          READ(I1,1060) INNODE(J)
00400     134*          IF(INNODE(J).LT.99999) GO TO 210
00402     135*    250   CONTINUE
00403     136*          J=J-1
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00404   137*          I=0
00405   138*    260   CONTINUE
00405   139*    C**** READ ONE NODAL DATA CARD IMAGE FROM NOMINAL DATA DECK FILE.
00406   140*          READ(I2,1060) NDE,INDX,CAP
00413   141*          IF(NDE.GE.99999) GO TO 300
00415   142*          GO TO (265,290),LPATH
00416   143*    265   CONTINUE
00417   144*          IF(J.EQ.0) GO TO 272
00417   145*    C**** TEST NODE AGAINST LIST OF NODES THAT DO NOT CHANGE TO SPECIFIED
00417   146*    C****    TEMPERATURE NODES.
00421   147*          DO 270 K=1,J
00424   148*          IF(NDE.EQ.INNODE(K)) GO TO 285
00426   149*    270   CONTINUE
00426   150*    C**** NODE NDE DID NOT MATCH ANY NODE OF THE INNODE ARRAY.
00430   151*
00430   152*    272   CONTINUE
00431   153*          DO 275 K=1,NNODE
00431   154*    C**** IS NDE A NODE THAT CAN CHANGE TO A SPECIFIED TEMPERATURE NODE.
00434   155*          IF(NDE.EQ.NODE(K)) GO TO 280
00436   156*    275   CONTINUE
00440   157*          GO TO 290
00441   158*
00441   159*    280   CONTINUE
00441   160*    C**** CHANGE NODE NDE TO A SPECIFIED TEMPERATURE NODE.
00442   161*          INDX=1
00443   162*          GO TO 290
00444   163*
00444   164*    285   CONTINUE
00444   165*    C**** NODE REMAINS A MASS NODE, REMOVE IT FROM THE NODE ARRAY AND
00444   166*    C****    DECREMENT NNODE.
00445   167*          DO 286 K=1,NNODE
00450   168*          IF(NDE.EQ.NODE(K)) GO TO 288
00452   169*    286   CONTINUE
00454   170*          PRINT 6000,NDE
00457   171*    6000  FORMAT('0**** NODE',I5,1X,'WAS INPUT AS A NODE BASED ON INACTIVE '
00457   172*         * 'PROBES, BUT WAS NOT IN THE NODE ARRAY.  SUBROUTINE SELECT')
00460   173*          CALL EXIT
00461   174*
00461   175*    288   CONTINUE
00462   176*          NNODE=NNODE-1
00463   177*          DO 289 L=K,NNODE
00466   178*          NODE(L)=NODE(L+1)
00467   179*    289   CONTINUE
00471   180*
00471   181*    290   CONTINUE
00472   182*          WRITE(02,1060) NDE,INDX,CAP
00477   183*          GO TO 260
00500   184*    300   WRITE(02,1001)NINE
00503   185*          PRINT 6005,NNODE,NODE
00507   186*    6005  FORMAT('0NNODE,NODE ARRAY'/1X,I5/(16I5))
00510   187*
00510   188*          READ(I1,1005) NENT
00513   189*          READ(I1,1070) (TYME(I),I=1,NENT)
00521   190*          IF (NTAPE.LT.0) GO TO 305
00523   191*
00523   192*    C**** SUBRUUTINE TMPTBL SEARCHES SKYLAB ATM TAPE, CONSTRUCTS A
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00523     C****    SPECIFIED TEMPERATURE TABLE, AND OBTAINS APERTURE OPEN AND
00523     C****    CLOSE TIMES.
00523     C**** TMPTBL CONSTRUCTS A TEMPERATURE TABLE FOR EACH NODE IN THE NODE
00523     C****   ARRAY AND RETURNS THESE TEMPERATURES IN THE TNODE ARRAY.
00523           CALL TMPTBL(TINIT,NENT,TYME,NNODE,NODE,TNODE,APOP,APCL)
00524
00524     305   CONTINUE
00524     C**** INPUT APERTURE DATA
00524     C**** FLAG=0 FOR CARD READER
00524     C**** FLAG=1 FOR NOMINAL DATA DECK FILE
00524     C**** FLAG =2 FOR SKYLAB TAPE
00525           READ(I1,1005)FLAG
00530           IF(FLAG-1) 309,320,330
00533     309   CONTINUE
00534           KNTAP=0
00535     310   CONTINUE
00536           KNTAP=KNTAP+1
00536     C**** CARD INPUT
00536     C**** READ NOMINAL DATA DECK FILE TO NINES CARD.
00537            READ(I2,1040) NAP,APO,APC
00544            IF(NAP.NE.99999) GO TO 310
00546           ASSIGN 315 TO NPATH
00547           KNTAP=KNTAP-1
00550           I=0
00551     315   CONTINUE
00552           I=I+1
00553           READ(I1,1040) NAP,APO,APC,APO2,APC2,APO3,APC3
00564     1040  FORMAT(I5,6E10.4)
00565           IF(NAP.EQ.99999) GOTO 400
00567           APOP(1,I)=APO
00570           APCL(1,I)=APC
00571           APOP(2,I)=APO2
00572           APCL(2,I)=APC2
00573           APOP(3,I)=APO3
00574           APCL(3,I)=APC3
00575           IF(I  .GT.KNTAP) GO TO 315
00577           GO TO 340
00600     320   CONTINUE
00600     C**** NOMINAL DATA TAPE
00601           ASSIGN 325 TO NPATH
00602           I=1
00603     325   CONTINUE
00604           READ(I2,1040) NAP,(APOP(J,I),APCL(J,I),J=1,3)
00614           APO=APOP(1,I)
00615           APC=APCL(1,I)
00616           I=I+1
00617           GO TO 340
00620     330   CONTINUE
00620     C**** SKYLAB TAPE
00621           ASSIGN 335 TO NPATH
00622           I=1
00623     335   CONTINUE
00624           READ(I2,1040)NAP,APO,APC
00631           IF(NAP.EQ.99999) GO TO 400
00633           APO=APOP(1,I)
00634           APC=APCL(1,I)
```

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00635   249*          I=I+1
00636   250*    340   CONTINUE
00637   251*          IF(NAP.EQ.99999)GO TO 400
00641   252*          WRITE(02,1040)NAP,APO,APC
00646   253*          GO TO NPATH,(315,325,335)
00647   254*      400 WRITE(02,1001)NINE
00652   255*
00652   256*    C**** READ FLUX INCREMENT DATA FROM CARD READER.
00652   257*          READ(I1,1005) NONFX
00655   258*          DO 405 J=1,4
00660   259*          L=NONFX(J)
00661   260*          IF(L.EQ.0) GO TO 406
00663   261*          READ(I1,1080) (NOFX(I,J),QFLX(I,J),I=1,L)
00672   262*    405   CONTINUE
00674   263*    406   CONTINUE
00675   264*
00675   265*    C**** INPUT HEATER DATA
00675   266*          J=0
00676   267*      410 J=J+1
00676   268*    C**** READ HEATER NODES THAT FAILED FROM THE CARD READER.
00677   269*          READ(I1,1005)NDH(J)
00702   270*          IF(NDH(J).EQ.99999)GO TO 420
00704   271*          GO TO 410
00705   272*      420 CONTINUE
00706   273*          JFAIL=J-1
00707   274*    440   CONTINUE
00707   275*    C**** READ THE HEATER DATA CARDS FROM THE NOMINAL DATA DECK FILE.
00710   276*          READ(I2,1050) NH,POW,XO,YO,XM,HYS
00720   277*    1050  FORMAT(I5,5F10.4)
00721   278*          IF(NH.EQ.99999) GO TO 470
00723   279*          READ(I2,1005) (NHI(I),I=1,5),(NII(I),I=1,5)
00735   280*          IF(JFAIL.EQ.0) GO TO 460
00737   281*          DO 450 K=1,JFAIL
00742   282*          IF(NDH(K).EQ.NH)GO TO 440
00744   283*      450 CONTINUE
00746   284*
00746   285*    460   CONTINUE
00746   286*    C****  WRITE TO THE REVISED DATA DECK FILE.
00747   287*          WRITE(02,1050) NH,POW,XO,YO,XM,HYS
00757   288*          WRITE(02,1005) (NHI(I),I=1,5),(NII(I),I=1,5)
00771   289*          GO TO 440
00772   290*    470   CONTINUE
00773   291*          IF(JFAIL.EQ.0) GO TO 500
00775   292*    475   CONTINUE
00775   293*    C**** READ HEATER DATA CARDS FROM THE CARD READER.
00776   294*          READ(I1,1050) NH,POW,XO,YO,XM,HYS
01006   295*          IF(NH.EQ.99999) GO TO 500
01010   296*          READ(I1,1005) (NHI(I),I=1,5),(NII(I),I=1,5)
01022   297*          WRITE(02,1050) NH,POW,XO,YO,XM,HYS
01032   298*          WRITE(02,1005) (NHI(I),I=1,5),(NII(I),I=1,5)
01044   299*          GO TO 475
01045   300*
01045   301*      500 WRITE(02,1001)NINE
01050   302*
01050   303*    C**** INPUT BNM DATA
01050   304*    510   CONTINUE
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01051   305*          READ(I2,1060) (NIB(I),MIB(I),BNM(I),I=1,4)
01061   306*     1060 FORMAT(4(2I5,E10.4))
01062   307*          IF(NIB(I).EQ.99999) GO TO 520
01064   308*          WRITE(02,1060) (NIB(I),MIB(I),BNM(I),I=1,4)
01074   309*          GO TO 510
01075   310*     520  CONTINUE
01076   311*          WRITE(02,1001) NINE
01101   312*     530  CONTINUE
01102   313*
01102   314*     C**** INPUT CNM DATA
01102   315*          READ(I2,1060) (NIB(I),MIB(I),BNM(I),I=1,4)
01112   316*          IF(NIB(I).EQ.99999) GO TO 600
01114   317*          WRITE(02,1060) (NIB(I),MIB(I),BNM(I),I=1,4)
01124   318*          GO TO 530
01125   319*      600 WRITE(02,1001)NINE
01130   320*
01130   321*     C**** INPUT TIME TABLE DATA
01130   322*          READ(I2,1005)NENT
01133   323*          WRITE(02,1005) NENT
01136   324*          I=1
01137   325*          GO TO 620
01140   326*     610  CONTINUE
01141   327*          I=I+8
01142   328*     620  CONTINUE
01143   329*          K=I+7
01144   330*          READ(I2,1070)(TYME(J),J=I,K)
01152   331*          WRITE(02,1070)(TYME(J),J=I,K)
01160   332*     1070 FORMAT(   8F10.4)
01161   333*          IF(K.LT.NENT) GO TO 610
01163   334*      700 WRITE(02,1001)NINE
01163   335*     C**** DUMMY READ OF NINES CARD
01166   336*          READ(I2,1005)
01170   337*
01170   338*     C**** INPUT FLUX DATA
01170   339*     C**** FLAG=1 FLUX DATA FROM CARD READER.
01170   340*     C**** FLAG=2 FLUX DATA FROM NOMINAL DATA DECK FILE
01170   341*          READ(I1,1005) FLAG
01173   342*          IF(FLAG.EQ.1) GO TO 705
01175   343*          ASSIGN 720 TO KPATH
01176   344*          GO TO 710
01177   345*     705  CONTINUE
01177   346*     C**** SET UP DUMMY READ OF NOMINAL DATA DECK.
01200   347*          ASSIGN 725 TO KPATH
01201   348*     710  CONTINUE
01201   349*     C**** READ FLUX TABLES FROM NOMINAL DATA DECK.
01202   350*          READ(I2,1080) NDFX,FDTN
01206   351*     1080 FORMAT(I5,F10.4)
01207   352*          IF(NDFX.EQ.99999) GO TO 730
01211   353*          IF(FLAG.NE.1)
01211   354*         *WRITE(02,1080) NDFX,FDTN
01216   355*          K=0
01217   356*     715  CONTINUE
01220   357*          K=K+1
01221   358*          READ(I2,1070) (Q(I),I=1,8)
01227   359*          GO TO KPATH,(725,720)
01230   360*     720  CONTINUE
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01231    361*          WRITE(02,1070) (Q(I),I=1,8)
01237    362*     725  CONTINUE
01240    363*          IF(8*K-NENT) 715,710,710
01243    364*
01243    365*     730  CONTINUE
01243    366*     C**** READ FLUX TABLES FROM CARD READER.
01244    367*          READ(I1,1080) NDFX,FDTN
01250    368*          IF(NDFX.EQ.99999) GO TO 800
01252    369*          WRITE(02,1080) NDFX,FDTN
01256    370*          K=0
01257    371*     735  CONTINUE
01260    372*          K=K+1
01261    373*          READ(I1,1070) (Q(I),I=1,8)
01267    374*          WRITE(02,1070) (Q(I),I=1,8)
01275    375*          IF(8*K-NENT) 735,730,730
01300    376*      800 WRITE(02,1001)NINE
01303    377*
01303    378*     C**** INPUT SPECIFIED TEMPERATURE DATA
01303    379*     810  CONTINUE
01304    380*          JMP=1
01305    381*          READ(I2,1005) NSPT,INDSP
01311    382*          IF(NSPT.EQ.99999) GO TO 840
01313    383*          IF(NTAPE.LT.0) GO TO 816
01315    384*          IF(NNODE.LE.0) GOTO 816
01317    385*          DO 812 I=1,NNODE
01322    386*          IF(NSPT.EQ.NODE(I)) GO TO 814
01324    387*     812  CONTINUE
01326    388*          GO TO 816
01327    389*     814  CONTINUE
01330    390*          JMP=2
01331    391*     816  CONTINUE
01332    392*          IF(INDSP.EQ.1) GO TO 820
01334    393*          NDUM=8
01335    394*          GO TO 830
01336    395*     820  CONTINUE
01337    396*          NDUM=NENT
01340    397*     830  CONTINUE
01341    398*          READ(I2,1070) (T(I),I=1,NDUM)
01347    399*          GO TO (835,810),JMP
01350    400*     835  CONTINUE
01351    401*          WRITE(02,1005) NSPT,INDSP
01355    402*          JE=0
01356    403*          IE=((NDUM-1)/8)*8
01357    404*          IF(IE.EQ.0) GO TO 839
01361    405*          DO 838 I=1,IE,8
01364    406*          JE=I+7
01365    407*          WRITE(02,1070) (T(J),J=I,JE)
01373    408*     838  CONTINUE
01375    409*
01375    410*     839  CONTINUE
01376    411*          JB=JE+1
01377    412*          WRITE(02,1070) (T(J),J=JB,NDUM)
01405    413*          GO TO 810
01406    414*     840  CONTINUE
01407    415*
01407    416*          IF(NTAPE.LT.0) GO TO 900
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01411   417*          IF(NNODE.LE.0) GO TO 900
01413   418*
01413   419*    C**** STORE SPECIFIED TEMPERATURE TABLES FROM TMPTBL.
01413   420*          DO 860 I=1,NNODE
01416   421*          WRITE(02,1005) NODE(I),ONE
01422   422*          JE=0
01423   423*          IE=((NDUM-1)/8)*8
01424   424*          IF(IE.EQ.0) GO TO 855
01426   425*          DO 850 L=1,IE,8
01431   426*          JE=L+7
01432   427*          WRITE(02,1070) (TNODE(J,I),J=L,JE)
01440   428*    850   CONTINUE
01442   429*
01442   430*    855   CONTINUE
01443   431*          JB=JE+1
01444   432*          WRITE(02,1070) (TNODE(J,I),J=JB,NENT)
01452   433*    860   CONTINUE
01454   434*      900 WRITE(02,1001)NINE
01457   435*
01457   436*    C**** INPUT INITIAL TEMPERATURE DATA
01457   437*    C**** FLAG=1 INITIAL TEMPERATURES FROM NOMINAL DATA DECK FILE
01457   438*    C**** FLAG=2 INITIAL TEMPERATURES FROM CARD READER.
01457   439*          READ(11,1005)FLAG
01462   440*          IF(FLAG.EQ.1) GO TO 920
01464   441*    910   CONTINUE
01464   442*    C**** INITIAL TEMPERATURES FROM CARD READER
01465   443*          READ(11,1100)(NI(J),TI(J),J=1,5)
01474   444*     1100 FORMAT(5(I5,F10.4))
01475   445*          IF(NI(1).EQ.99999)GO TO 950
01477   446*          WRITE(02,1100)(NI(J),TI(J),J=1,5)
01506   447*          GO TO 910
01507   448*    920   CONTINUE
01507   449*    C**** INITIAL TEMPERATURES FROM NOMINAL DATA DECK.
01510   450*          READ(12,1100)(NI(J),TI(J),J=1,5)
01517   451*          IF(NI(1).EQ.99999)GO TO 950
01521   452*          WRITE(02,1100)(NI(J),TI(J),J=1,5)
01530   453*          GO TO 920
01531   454*      950 WRITE(02,1001)NINE
01534   455*
01534   456*          END FILE 02
01535   457*          REWIND 02
01536   458*          PRINT 6024
01540   459*    6024  FORMAT('1***** REVISED DATA DECK *****')
01541   460*
01541   461*    1000   CONTINUE
01542   462*          READ(02,6025,END=1002) ALPNUM
01545   463*    6025  FORMAT(13A6,A2)
01546   464*          PRINT 6035,ALPNUM
01551   465*    6035  FORMAT(1X,13A6,A2)
01552   466*          GO TO 1000
01553   467*
01553   468*    1002  CONTINUE
01554   469*          REWIND 02
01555   470*          RETURN
01556   471*          END
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END OF COMPILATION:        NO  DIAGNOSTICS.
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@FOR,US HCDST,HCDST
MSD 11A -12/10/73-11:07:03 (17,18)

   SUBROUTINE DSTRT      ENTRY POINT 000100

   STORAGE USED: CODE(1) 000112; DATA(0) 001035; BLANK COMMON(2) 000000

   EXTERNAL REFERENCES (BLOCK, NAME)

    0003    NPRT$
    0004    NIO2$
    0005    NIO1$
    0006    NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001    000021 177G      0001    000025 203G      0001    000055 217G      0000    000134 6000F     0000    000145 6010F
    0000 R  000211 B1        0000 R  000000 B2        0000 R  000005 C         0000    000211 D         0000 R  000211 D1
    0000 R  000475 D10       0000 R  000521 D11       0000 R  000545 D12       0000 R  000571 D13       0000 R  000615 D14
    0000 R  000641 D15       0000 R  000665 D16       0000 R  000711 D17       0000 R  000735 D18       0000 R  000761 D19
    0000 R  000235 D2        0000 R  001005 D20       0000 R  000261 D3        0000 R  000305 D4        0000 R  000331 D5
    0000 R  000355 D6        0000 R  000401 D7        0000 R  000425 D8        0000 R  000451 D9        0000 I  000131 I
    0000    001014 INJP$     0000 I  000132 J         0000 I  000133 M         0000 I  000127 NI        0000 I  000130 NJ
    0000 I  000012 NROW
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00101      1*          SUBROUTINE DSTRT(T,TIME)
00101      2*     C**** COMPUTES HCO DISTORTION PARAMETERS AND PRINTS RESULTS IN INCHES.
00103      3*          DIMENSION B1(5,77),D(385),B2(5),C(5),T(1)
00104      4*          DIMENSION
00104      5*         *      D 1(20)      ,D 2(20)      ,D 3(20)
00104      6*         *     ,D 4(20)      ,D 5(20)      ,D 6(20)
00104      7*         *     ,D 7(20)      ,D 8(20)      ,D 9(20)
00104      8*         *     ,D10(20)      ,D11(20)      ,D12(20)
00104      9*         *     ,D13(20)      ,D14(20)      ,D15(20)
00105     10*          DIMENSION
00105     11*         *      D16(20)      ,D17(20)      ,D18(20)
00105     12*         *     ,D19(20)      ,D20( 5)
00106     13*          DIMENSION NROW(77)
00107     14*          EQUIVALENCE (B1(1,1),D(1))
00110     15*          EQUIVALENCE (D(  1),D 1(1)),(D( 21),D 2(1)),(D( 41),D 3(1))
00111     16*          EQUIVALENCE (D( 61),D 4(1)),(D( 81),D 5(1)),(D(101),D 6(1))
00112     17*          EQUIVALENCE (D(121),D 7(1)),(D(141),D 8(1)),(D(161),D 9(1))
00113     18*          EQUIVALENCE (D(181),D10(1)),(D(201),D11(1)),(D(221),D12(1))
00114     19*          EQUIVALENCE (D(241),D13(1)),(D(261),D14(1)),(D(281),D15(1))
00115     20*          EQUIVALENCE (D(301),D16(1)),(D(321),D17(1)),(D(341),D18(1))
00116     21*          EQUIVALENCE (D(361),D19(1)),(D(381),D20(1))
00117     22*          DATA NI,NJ/5,77/
00122     23*          DATA NROW
00122     24*         *   / 12,  13,  16, 107, 108, 109, 110, 111, 112, 113, 114
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00122     25*          *    , 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125
00122     26*          *    , 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136
00122     27*          *    , 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147
00122     28*          *    , 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158
00122     29*          *    , 159, 160, 161, 162, 163, 164, 165, 168, 172, 173, 174
00122     30*          *    , 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185/
00124     31*           DATA B2
00124     32*          *    / 0.805387E-01,-0.462077E-02,-0.439990E-01,-0.100223E 03
00124     33*          *    ,-0.105256E 02/
00126     34*           DATA D1
00126     35*          *    /-0.976585E-06,-0.811583E-05,-0.740554E-05,-0.168690E-01
00126     36*          *    ,-0.184869E-01, 0.424990E-05,-0.547240E-09, 0.335148E-04
00126     37*          *    , 0.763431E-01,-0.124656E-05,-0.415111E-06, 0.309089E-04
00126     38*          *    ,-0.569153E-05,-0.129647E-01, 0.704071E-01, 0.174704E-05
00126     39*          *    , 0.430527E-05, 0.189013E-06, 0.430550E-03, 0.980692E-02/
00130     40*           DATA D2
00130     41*          *    / 0.736868E-07,-0.620269E-05,-0.561867E-06,-0.127986E-02
00130     42*          *    ,-0.141290E-01,-0.288214E-06, 0.541053E-06, 0.159373E-05
00130     43*          *    , 0.363034E-02, 0.123245E-02, 0.302335E-05, 0.270977E-05
00130     44*          *    , 0.205895E-05, 0.469005E-02, 0.617256E-02, 0.672320E-05
00130     45*          *    ,-0.113566E-04,-0.611635E-06,-0.139323E-02,-0.258692E-01/
00132     46*           DATA D3
00132     47*          *    / 0.165271E-05, 0.343946E-05, 0.178857E-05, 0.407418E-02
00132     48*          *    , 0.783472E-02, 0.662717E-05, 0.381509E-04, 0.176869E-04
00132     49*          *    , 0.402889E-01, 0.869036E-01, 0.394710E-05,-0.128466E-04
00132     50*          *    ,-0.793084E-07,-0.180625E-03,-0.292632E-01, 0.299983E-05
00132     51*          *    ,-0.790681E-04,-0.893285E-05,-0.203480E-01,-0.180108E 00/
00134     52*           DATA D4
00134     53*          *    / 0.732112E-05,-0.814986E-05, 0.306443E-04, 0.698044E-01
00134     54*          *    ,-0.185644E-01, 0.683881E-05, 0.115223E-04, 0.273559E-04
00134     55*          *    , 0.623138E-01, 0.262466E-01, 0.101518E-04, 0.682572E-04
00134     56*          *    , 0.564957E-07, 0.128660E-03, 0.155482E 00, 0.238720E-05
00134     57*          *    , 0.134590E-04,-0.167091E-05,-0.380612E-02, 0.306581E-01/
00136     58*           DATA D5
00136     59*          *    /-0.467175E-05,-0.272202E-04, 0.907767E-05, 0.206779E-01
00136     60*          *    ,-0.620047E-01,-0.338325E-05,-0.370587E-04, 0.565941E-05
00136     61*          *    , 0.128914E-01,-0.844156E-01, 0.866195E-05, 0.504164E-04
00136     62*          *    , 0.111535E-04, 0.254065E-01, 0.114843E 00, 0.351176E-04
00136     63*          *    ,-0.191431E-03,-0.268920E-04,-0.612561E-01,-0.436058E 00/
00140     64*           DATA D6
00140     65*          *    / 0.182298E-04,-0.157791E-03, 0.899050E-05, 0.204797E-01
00140     66*          *    ,-0.359431E 00, 0.293688E-04,-0.214943E-03, 0.116252E-03
00140     67*          *    , 0.264809E 00,-0.489617E 00, 0.277870E-04,-0.233323E-04
00140     68*          *    , 0.164913E-03, 0.375654E 00,-0.531484E-01, 0.295552E-04
00140     69*          *    , 0.230630E-04, 0.167000E-03, 0.380408E 00, 0.525349E-01/
00142     70*           DATA D7
00142     71*          *    / 0.343552E-04, 0.196125E-03, 0.100622E-03, 0.229206E 00
00142     72*          *    , 0.446751E 00, 0.133022E-04, 0.155017E-03, 0.108077E-04
00142     73*          *    , 0.246189E-01, 0.353111E 00, 0.128951E-04, 0.187733E-03
00142     74*          *    ,-0.292402E-04,-0.666052E-01, 0.427635E 00, 0.434757E-04
00142     75*          *    , 0.158592E-03,-0.181127E-03,-0.412587E 00, 0.361254E 00/
00144     76*           DATA D8
00144     77*          *    / 0.781424E-04,-0.153073E-03,-0.176012E-03,-0.400934E 00
00144     78*          *    ,-0.348683E 00, 0.233320E-04,-0.614036E-03,-0.150240E-03
00144     79*          *    ,-0.342230E 00,-0.139870E 01, 0.191887E-04,-0.298063E-03
00144     80*          *    , 0.142043E-04, 0.323564E-01,-0.678955E 00, 0.493766E-04
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00144     81*          *   ,-0.184289E-03, 0.322490E-03, 0.734596E 00,-0.419791E 00/
00146     82*           DATA D9
00146     83*          *   / 0.460955E-04,-0.159461E-04, 0.328940E-03, 0.749289E 00
00146     84*          *   ,-0.363235E-01, 0.465651E-04, 0.162328E-04, 0.327804E-03
00146     85*          *   , 0.746702E 00, 0.369766E-01, 0.525259E-04, 0.196432E-03
00146     86*          *   , 0.331177E-03, 0.754384E 00, 0.447451E 00, 0.158999E-04
00146     87*          *   , 0.304309E-03, 0.115368E-04, 0.262797E-01, 0.693182E 00/
00150     88*           DATA D10
00150     89*          *   / 0.136391E-04, 0.609835E-03,-0.144233E-03,-0.328546E 00
00150     90*          *   , 0.138913E 01, 0.988483E-05, 0.663686E-03,-0.525802E-03
00150     91*          *   ,-0.119771E 01, 0.151180E 01, 0.228361E-04,-0.662679E-03
00150     92*          *   ,-0.530973E-03,-0.120949E 01,-0.150950E 01, 0.338906E-05
00150     93*          *   ,-0.123216E-02,-0.364457E-03,-0.830191E 00,-0.280672E 01/
00152     94*           DATA D11
00152     95*          *   / 0.309814E-04,-0.475482E-03, 0.117078E-03, 0.266691E 00
00152     96*          *   ,-0.108309E 01, 0.891567E-04,-0.163583E-03, 0.670779E-03
00152     97*          *   , 0.152796E 01,-0.372625E 00, 0.597172E-04,-0.492877E-05
00152     98*          *   , 0.465124E-03, 0.105950E 01,-0.112272E-01, 0.593301E-04
00152     99*          *   , 0.404418E-05, 0.461744E-03, 0.105180E 01, 0.921220E-02/
00154    100*           DATA D12
00154    101*          *   / 0.849607E-04, 0.163914E-03, 0.642187E-03, 0.146283E 01
00154    102*          *   , 0.373379E 00, 0.289235E-04, 0.475605E-03, 0.112928E-03
00154    103*          *   , 0.257237E 00, 0.108337E 01, 0.117500E-05, 0.120091E-02
00154    104*          *   ,-0.342232E-03,-0.779566E 00, 0.273555E 01,-0.384624E-04
00154    105*          *   , 0.150551E-02,-0.110103E-02,-0.250803E 01, 0.342939E 01/
00156    106*           DATA D13
00156    107*          *   /-0.276836E-04,-0.142577E-02,-0.104324E-02,-0.237638E 01
00156    108*          *   ,-0.324775E 01,-0.399264E-04,-0.871311E-03,-0.591516E-03
00156    109*          *   ,-0.134740E 01,-0.198475E 01,-0.327590E-05,-0.181844E-03
00156    110*          *   ,-0.866012E-04,-0.197267E 00,-0.414222E 00, 0.801785E-04
00156    111*          *   ,-0.105013E-03, 0.642418E-03, 0.146335E 01,-0.239208E 00/
00160    112*           DATA D14
00160    113*          *   / 0.165999E-04,-0.186176E-05, 0.131812E-03, 0.300253E 00
00160    114*          *   ,-0.424090E-02, 0.217823E-04, 0.107261E-04, 0.174645E-03
00160    115*          *   , 0.397822E 00, 0.244329E-01, 0.781615E-04, 0.107679E-03
00160    116*          *   , 0.629167E-03, 0.143317E 01, 0.245282E 00,-0.545793E-05
00160    117*          *   , 0.179326E-03,-0.103599E-03,-0.235986E 00, 0.408485E 00/
00162    118*           DATA D15
00162    119*          *   /-0.515286E-04, 0.828670E-03,-0.679673E-03,-0.154821E 01
00162    120*          *   , 0.188761E 01,-0.837524E-04, 0.945444E-03,-0.130767E-02
00162    121*          *   ,-0.297873E 01, 0.215361E 01,-0.900320E-04,-0.992300E-03
00162    122*          *   ,-0.135966E-02,-0.309716E 01,-0.226034E 01, 0.249727E-04
00162    123*          *   , 0.158850E-04, 0.203458E-03, 0.463456E 00, 0.361843E-01/
00164    124*           DATA D16
00164    125*          *   / 0.857711E-04, 0.154499E-03, 0.674013E-03, 0.153532E 01
00164    126*          *   , 0.351932E 00, 0.350883E-04,-0.226319E-03, 0.951846E-04
00164    127*          *   , 0.216820E 00,-0.515530E 00, 0.518308E-06,-0.280170E-05
00164    128*          *   ,-0.248191E-05,-0.565352E-02,-0.638195E-02,-0.370441E-04
00164    129*          *   ,-0.400676E-03,-0.308509E-03,-0.702750E 00,-0.912694E 00/
00166    130*           DATA D17
00166    131*          *   /-0.411335E-04, 0.265334E-03,-0.360788E-03,-0.821835E 00
00166    132*          *   , 0.604402E 00, 0.195823E-03, 0.356535E-04, 0.175707E-02
00166    133*          *   , 0.400242E 01, 0.812146E-01,-0.134554E-04, 0.716153E-04
00166    134*          *   , 0.338725E-04, 0.771574E-01, 0.163131E 00,-0.697887E-05
00166    135*          *   , 0.144139E-04, 0.147598E-05, 0.336212E-02, 0.328333E-01/
00170    136*           DATA D18
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00170    137*          *   /-0.125684E-04, 0.176234E-04,-0.148104E-06,-0.337362E-03
00170    138*          *   , 0.401441E-01, 0.640516E-04,-0.595416E-04, 0.956920E-05
00170    139*          *   , 0.217975E-01,-0.135629E 00,-0.102813E-04,-0.892471E-05
00170    140*          *   ,-0.106221E-04,-0.241961E-01,-0.203294E-01, 0.235665E-05
00170    141*          *   ,-0.450970E-05,-0.394440E-06,-0.898490E-03,-0.102725E-01/
00172    142*           DATA D19
00172    143*          *   / 0.322163E-05, 0.995612E-05,-0.137946E-04,-0.314225E-01
00172    144*          *   , 0.226789E-01,-0.369749E-04, 0.418073E-04,-0.259087E-05
00172    145*          *   ,-0.590170E-02, 0.952323E-01,-0.433875E-06, 0.150268E-05
00172    146*          *   ,-0.228232E-06,-0.519887E-03, 0.342294E-02, 0.801957E-05
00172    147*          *   , 0.942807E-05,-0.265876E-05,-0.605636E-02, 0.214760E-01/
00174    148*           DATA D20
00174    149*          *   /-0.293279E-05, 0.233265E-05,-0.252069E-04,-0.574185E-01
00174    150*          *   , 0.531352E-02/
00176    151*
00176    152*           DO 100 I=1,NI
00201    153*           C(I)=-B2(I)
00202    154*           DO 100 J=1,NJ
00205    155*           M=NROW(J)
00206    156*           C(I)=C(I)+B1(I,J)*T(M)
00207    157*       100 CONTINUE
00212    158*           PRINT 6000
00214    159*      6000 FORMAT('0',T27,'HCO OPTICAL DISTORTION OF SUN IMAGE')
00215    160*           PRINT 6010,(C(I),I=1,5)
00223    161*      6010 FORMAT('0FOCAL LENGTH DISTORTION (IN)',E15.6/
00223    162*          *   ' HORIZONTAL DISTORTION (IN)',E15.6/
00223    163*          *   ' VERTICAL DISTORTION (IN)',E15.6/
00223    164*          *   ' VERTICAL ANGULAR DISTORTION (ARC SEC)',E15.6/
00223    165*          *   ' HORIZONTAL ANGULAR DISTORTION (ARC SEC)',E15.6)
00224    166*           RETURN
00225    167*           END

      END OF COMPILATION:        NO  DIAGNOSTICS.
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@FOR,US HATMP,HATMP
MSD 11A -12/10/73-11:07:08 (20,21)

  SUBROUTINE THPTBL    ENTRY POINT 000425

  STORAGE USED: CODE(1) 000461: DATA(0) 000260: BLANK COMMON(2) 000000

   COMMON BLOCKS:

   0003   ATMCOM 010657
   0004   MIDATM 004736
   0005   APERTR 000001

  EXTERNAL REFERENCES (BLOCK, NAME)

   0006   READID
   0007   IDREC
   0010   RDATM
   0011   APTR
   0012   TIMAD
   0013   NTRAN
   0014   SMOOTH
   0015   NERR2$
   0016   NPRT$
   0017   NIO2$
   0020   NERR3$

  STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

   0001   000056 100L      0001   000100 110L      0001   000104 177G      0001   000117 210G      0001   000161 225G
   0001   000113 250L      0001   000125 300L      0001   000170 315L      0001   000172 320L      0001   000372 347G
   0001   000054 50L       0001   000272 520L      0001   000305 530L      0001   000325 550L      0001   000351 600L
   0000   000212 602DF     0001   000405 650L      0004 R 004570 DATA      0000 R 000211 DT        0003 R 002766 FDATA
   0000 I 000207 I         0004   004570 IDATA     0003   002766 IFDATA    0003   000032 IFID      0003   000003 IFN
   0000   000226 INJPS     0003   001016 IRID      0003   000004 IRN       0003 I 000006 ITIME     0003   000002 ITR
   0000 I 000203 ITYME     0003 I 000000 IUNIT     0004 I 000311 IWORD     0000 I 000162 J         0000 I 000206 K
   0003   000005 KERR      0003 I 010656 KIND      0000 I 000163 KNVRT     0004   004734 LDAT      0004   002454 LOC
   0004 I 000001 MEAN      0004   004455 MID       0005 I 000000 NAP       0004 I 000000 NMEA      0004 I 004735 NMNUMB
   0000 I 000161 NNODE     0000 I 000001 NODE      0003   000001 NTAPE     0003   002002 RDATA     0000 R 000240 TAPHR
   0000 I 000000 TDAY      0000 R 000121 TEMPS     0000 R 000204 TH        0000 R 000205 THRS      0000 R 000051 TNODE
   0000 R 000141 TPROBE

00101     1*          SUBROUTINE THPTBL(TINIT,NTYME,TYME,KNODE,KODE,TKODE,APO,APC)
00101     2*     C*****************************************************************
00101     3*     C     TINIT - ARRAY OF INITIAL GMT, DAY, HOURS, MINUTES, SECONDS,
00101     4*     C        MILLISECONDS.
00101     5*     C     NTYME - NUMBER OF ENTRIES IN THE TYME ARRAY.
00101     6*     C     TYME - ARRAY OF INDEPENDENT VARIABLE TIME FOR SPECIFIED TEMPERATURE TABLES
00101     7*     C     KNODE - NUMBER OF NODES DEPENDENT UPON PROBE TEMPERATURES.
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00101      C      KODE - ARRAY OF NODE NUMBERS OF NODES DEPENDENT UPON PROBE TEMPERATURES.
00101      C      TKODE - ARRAY OF NODE TEMPERATURES OF CORRESPONDING NODES OF NODE ARRAY.
00101      C      APO - APERTURE OPEN TIMES.
00101      C      APC - APERTURE CLOSE TIMES.
00101      C      NMNUMB - NUMBER OF TEMPERATURE PROBE MEASUREMENT NUMBERS.
00101      C      MNUMB - TEMPERATURE PROBE MEASUREMENT NUMBERS.
00101      C      PROBE  - MSFC ID NUMBERS FOR TEMPERATURE MEASUREMENTS.
00101      C      IWORD - SUBSCRIPT OF THE TEMPERATURE PROBE IN THE FIXED FORMAT
00101      C         DATA ARRAY.
00101      C      NAP   - NUMBER OF APERTURE MEASUREMENT NUMBERS.
00101      C      MAPNUM - APERTURE MEASUREMENT NUMBERS.
00101      C      MSFCAP - APRETURE MSFC ID NUMBERS.
00101      C      IAPWRD - SUBSCRIPT OF APERTURE PROBEIN THE FIXED FORMAT DATA ARRAY.
00101      C*****************************************************************
00103
00103
00103              INTEGER TINIT(5),TDAY
00104              DIMENSION TYME(1)
00105              DIMENSION APO(5,4),APC(5,4)
00106              COMMON /ATMCOM/
00106            *    IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20)
00106            *   ,IFID(500),IRID(500),RDATA(500),IFDATA(3000),KIND
00107              DIMENSION FDATA(1)
00110              EQUIVALENCE (FDATA(1),IFDATA(1))
00111              COMMON /MIDATA/
00111            *    NMEA,MEAN(100,3),MID(1023),LOC(100,11)
00111            *   ,DATA(100),LDAT,NMNUMB
00112              DIMENSION IWORD(1),IDATA(1)
00113              EQUIVALENCE (IWORD(1),MEAN(1,3)),(IDATA(1),DATA(1))
00114              COMMON /APERTR/ NAP
00114      C**** SPECIFICATION STATEMENTS FOR HAO.
00115              DIMENSION NODE( 40),TNODE( 40),TEMPS(16),TPROBE(16),KODE( 40)
00115            *    ,TKODE(61,40)
00116              DATA NNODE/ 39/,NMNUMB/16/,NAP/1/
00122              DATA NMEA/17/
00124              DATA
00124            *    (MEAN( 1,J),J=1,3)/'C0069-052    ', 1/
00124            *    (MEAN( 2,J),J=1,3)/'C0070-052    ', 2/
00124            *    (MEAN( 3,J),J=1,3)/'C0071-052    ', 3/
00124            *    (MEAN( 4,J),J=1,3)/'C0072-052    ', 4/
00124            *    (MEAN( 5,J),J=1,3)/'C0073-052    ', 5/
00124            *    (MEAN( 6,J),J=1,3)/'C0074-052    ', 6/
00124            *    (MEAN( 7,J),J=1,3)/'C0149-052    ', 7/
00124            *    (MEAN( 8,J),J=1,3)/'C0286-704    ', 8/
00124            *    (MEAN( 9,J),J=1,3)/'C0301-704    ', 9/
00124            *    (MEAN(10,J),J=1,3)/'C0306-704    ',10/
00137              DATA
00137            *    (MEAN(11,J),J=1,3)/'C0311-704    ',11/
00137            *    (MEAN(12,J),J=1,3)/'C0315-703    ',12/
00137            *    (MEAN(13,J),J=1,3)/'C0316-703    ',13/
00137            *    (MEAN(14,J),J=1,3)/'C0319-701    ',14/
00137            *    (MEAN(15,J),J=1,3)/'C0320-701    ',15/
00137            *    (MEAN(16,J),J=1,3)/'C0321-701    ',16/
00137            *    (MEAN(17,J),J=1,3)/'K0112-052    ',17/
00147              DATA NODE
00147            *   /   9,  97,  98,  99, 100, 101, 102, 103, 104, 105
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00147     64*          *    , 106, 107, 108, 147, 148, 155, 156, 177, 178, 179
00147     65*          *    , 180, 181, 182, 183, 184, 185, 186, 187, 188, 189
00147     66*          *    , 190, 191, 192, 878, 879, 880, 881, 913, 930,   0/
00151     67*           DIMENSION KNVRT(16)
00152     68*           DATA KNVRT/16*1/
00154     69*
00154     70*           TCONV(IA,IB,IC,ID)=IA+(IB+(IC+ID/1000.)/60.)/60.
00155     71*
00155     72*           ITYME=1
00156     73*           TDAY=TINIT(1)
00157     74*           TH  =TCONV(TINIT(2),TINIT(3),TINIT(4),TINIT(5))
00160     75*           THRS=TH
00161     76*           IF(KIND.EQ.2) GO TO 50
00161     77*     C**** COMPRESSED FORMAT - READ ID RECORDS.
00163     78*           CALL READID
00164     79*           GO TO 100
00165     80*     50    CONTINUE
00165     81*     C**** FIXED FORMAT - READ ID RECORDS.
00166     82*           CALL IDREC
00167     83*
00167     84*     100   CONTINUE
00167     85*     C**** READ ONE ATM TAPE DATA RECORD.
00170     86*           CALL RDATM
00171     87*
00171     88*     C**** CALL SUBROUTINE APTR TO SEARCH FOR APERTURE OPEN AND CLOSE
00171     89*     C****    CONDITIONS.
00171     90*           CALL APTR(TINIT,APO,APC)
00172     91*
00172     92*           IF(KNODE.LE.0) GO TO 300
00174     93*           GO TO (110,250),KIND
00175     94*     110   CONTINUE
00175     95*     C**** SET PROBE TEMPERATURES
00176     96*           DO 210 J=1,NMNUMB
00201     97*           K=IWORD(J)
00202     98*           TEMPS(J)=DATA(K)
00203     99*     210   CONTINUE
00205    100*           GO TO 300
00206    101*
00206    102*     250   CONTINUE
00206    103*     C**** SET PROBE TEMPERATURES.
00207    104*           DO 260 I=1,NMNUMB
00212    105*           J=IWORD(I)
00213    106*           TEMPS(I)=FDATA(J)
00214    107*     260   CONTINUE
00216    108*
00216    109*     300   CONTINUE
00216    110*     C**** HAS THE TAPE RECORD TIME REACHED THE TIME IN THE TYME ARRAY.
00217    111*           IF(ITIME(1).NE.TDAY) GO TO 100
00221    112*           TAPHR=TCONV(ITIME(2),ITIME(3),ITIME(4),ITIME(5))
00222    113*           IF(TAPHR.LT.THRS) GO TO 100
00222    114*     C**** TIME FROM TAPE RECORD HAS REACHED THE TIME TO STORE PROBE DATA.
00224    115*           DO 320 I=1,NMNUMB
00227    116*           IF(KNVRT(I).EQ.0) GO TO 315
00227    117*     C**** TAPE TEMPERATURE IS DEGREES CENTIGRADE.
00231    118*           TPROBE(I)=TEMPS(I)*1.8+32.0
00232    119*           GO TO 320
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00233   120*     315   CONTINUE
00233   121*     C**** TAPE TEMPERATURE IS DEGREES FAHRENHEIT.
00234   122*           TPROBE(I)=TEMPS(I)
00235   123*     320   CONTINUE
00237   124*
00237   125*     400   CONTINUE
00240   126*           IF(KNODE.LE.0) GO TO 600
00240   127*     C**** COMPUTE TEMPERATURES OF THE SPECIFIED TEMPERATURE NODES AT EACH
00240   128*     C****    TIME OF THE TIME ARRAY
00242   129*           TNODE( 1)=TPROBE( 7)
00243   130*           TNODE( 2)=TPROBE( 8)
00244   131*           TNODE( 3)=TPROBE( 8)
00245   132*           TNODE( 4)=TPROBE( 8)
00246   133*           TNODE( 5)=TPROBE( 9)
00247   134*           TNODE( 6)=TPROBE( 8)
00250   135*           TNODE( 7)=TPROBE( 8)
00251   136*           TNODE( 8)=TPROBE( 8)
00252   137*           TNODE( 9)=TPROBE( 8)
00253   138*           TNODE(10)=TPROBE( 8)
00254   139*           TNODE(11)=TPROBE(10)
00255   140*           TNODE(12)=TPROBE( 8)
00256   141*           TNODE(13)=TPROBE( 8)
00257   142*           TNODE(14)=TPROBE(12)
00260   143*           TNODE(15)=TPROBE(12)
00261   144*           TNODE(16)=TPROBE(11)
00262   145*           TNODE(17)=TPROBE(11)
00263   146*           TNODE(18)=TPROBE(15)
00264   147*           TNODE(19)=TPROBE(15)
00265   148*           TNODE(20)=TPROBE(15)
00266   149*           TNODE(21)=TPROBE(15)
00267   150*           TNODE(22)=TPROBE(15)
00270   151*           TNODE(23)=TPROBE(15)
00271   152*           TNODE(24)=TPROBE(15)
00272   153*           TNODE(25)=TPROBE(15)
00273   154*           TNODE(26)=TPROBE(16)
00274   155*           TNODE(27)=TPROBE(16)
00275   156*           TNODE(28)=TPROBE(15)
00276   157*           TNODE(29)=TPROBE(14)
00277   158*           TNODE(30)=TPROBE(13)
00300   159*           TNODE(31)=TPROBE(15)
00301   160*           TNODE(32)=TPROBE(15)
00302   161*           TNODE(33)=TPROBE(15)
00303   162*           TNODE(34)=TPROBE( 4)
00304   163*           TNODE(35)=TPROBE( 3)
00305   164*           TNODE(36)=TPROBE( 2)
00306   165*           TNODE(37)=TPROBE( 1)
00307   166*           TNODE(38)=TPROBE( 5)
00310   167*           TNODE(39)=TPROBE( 6)
00311   168*
00311   169*     510   CONTINUE
00312   170*           I=1
00313   171*           J=1
00314   172*     520   CONTINUE
00315   173*           IF(KODE(J).EQ.NODE(I)) GO TO 530
00317   174*           I=I+1
00320   175*           GO TO 520
```

```
00321    176*      530   CONTINUE
00322    177*            TKODE(ITYME,J)=TNODE(I)
00323    178*            IF(J.EQ.KNODE) GO TO 550
00325    179*            I=I
00326    180*            J=J+1
00327    181*            GO TO 520
00330    182*
00330    183*      550   CONTINUE
00331    184*            IF(ITYME.GE.NTYME) GO TO 600
00333    185*            ITYME=ITYME+1
00334    186*            DT=TH+TYME(ITYME)-THRS
00335    187*            CALL TIMAD(TDAY,THRS,DT)
00336    188*            GO TO 100
00337    189*
00337    190*      600   CONTINUE
00340    191*            CALL NTRAN (IUNIT,18)
00341    192*            IF(KNODE.EQ.0) GO TO 650
00343    193*            PRINT 6020
00345    194*      6020  FORMAT('0',10('******'))
00346    195*            DO 640 I=1,KNODE
00351    196*            CALL SMOOTH(NTYME,TYME,KODE(I),TKODE(1,I))
00352    197*      640   CONTINUE
00354    198*
00354    199*      650   CONTINUE
00355    200*            RETURN
00356    201*            END
```

END OF COMPILATION: NO DIAGNOSTICS.

```
@FOR,US HAIAP,HAIAP
HSD 11A -12/10/73-11:07:13 (18,19)

   SUBROUTINE IAPSTS    ENTRY POINT 000042

   STORAGE USED: CODE(1) 000047; DATA(D) 000011; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   ATMCOM 010657
    0004   MIDATM 004736

   EXTERNAL REFERENCES (BLOCK, NAME)

    0005   NERR2$
    0006   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   000013 100L      0001   000021 200L      0001   000026 300L      0004   004570 DATA      0003   002766 FDATA
    0000 I 000001 I         0004 I 004570 IDATA     0003 I 002766 IFDATA    0003   000032 IFID      0003   000003 IFN
    0000   000002 INJPS     0003   001016 IRID      0003   000004 IRN       0000 I 000000 ISUB      0003   000006 ITIME
    0003   000002 ITR       0003   000000 IUNIT     0004 I 000311 IWORD     0003   000005 KERR      0003 I 010656 KIND
    0004   004734 LDAT      0004   002454 LOC       0004   000001 MEAN      0004   000455 MID       0004   000000 NMEA
    0004 I 004735 NMNUMB    0003   000001 NTAPE     0003   002002 RDATA
```

```
00101      1*          SUBROUTINE IAPSTS(IOPCL)
00101      2*     C*****************************************************************
00101      3*     C    HAO VERSION
00101      4*     C    DETERMINES THE STATUS OF THE
00101      5*     C    APERTURE OPEN AND APERTURE CLOSE
00101      6*     C    DISCRETES.
00101      7*     C    IOPCL=0 IF APERTURE IS CLOSED
00101      8*     C    IOPCL=1 IF APERTURE IS OPEN
00101      9*     C*****************************************************************
00103     10*          COMMON /ATMCOM/
00103     11*         *   IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20)
00103     12*         *  ,IFID(500),IRID(500),RDATA(500),IFDATA(3000),KIND
00104     13*          DIMENSION FDATA(1)
00105     14*          EQUIVALENCE (FDATA(1),IFDATA(1))
00106     15*          COMMON /MIDATM/
00106     16*         *   NMEA,MEAN(100,3),MID(1023),LOC(100,11)
00106     17*         *  ,DATA(100),LDAT,NMNUMB
00107     18*          DIMENSION IWORD(1),IDATA(1)
00110     19*          EQUIVALENCE (IWORD(1),MEAN(1,3)),(IDATA(1),DATA(1))
00111     20*          DIMENSION IOPCL(1)
00112     21*
00112     22*          ISUB=IWORD(NMNUMB+1)
00113     23*          GO TO (100,200),KIND
```

```
00114     24*      100   CONTINUE
00114     25*      C**** COMPRESSED FORMAT.
00115     26*            I=FLD(34,1,IDATA(ISUB))
00116     27*            GO TO 300
00117     28*
00117     29*      200   CONTINUE
00117     30*      C**** FIXED FORMAT
00120     31*            I=FLD(34,1,IFDATA(ISUB))
00121     32*
00121     33*      300   CONTINUE
00122     34*            IOPCL(I)=I
00123     35*
00123     36*            RETURN
00124     37*            END

        END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FORIUS HADST,HADST
MSO 11A -12/10/73-11:07:16 (18,19)

   SUBROUTINE DSTRT      ENTRY POINT 000204

   STORAGE USED: CODE(1) 000217: DATA(0) 005025: BLANK COMMON(2) 000000

   EXTERNAL REFERENCES (BLOCK, NAME)

    0003    NPRT$
    0004    NIO2$
    0005    NIO1$
    0006    NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001    000022 531G      0001    000026 535G      0001    000125 562G      0001    000136 571G      0001    000147 600G
    0000    000212 6000F     0000    000221 6010F     0000    000307 6020F     0000    000377 6030F     0000    000467 6040F
    0001    000160 607G      0000 R 000524 B1         0000 R 000000 B2         0000 R 000043 C          0000    000524 D
    0000 R 000524 D1         0000 R 001010 D10        0000 R 004420 D100       0000 R 004444 D101       0000 R 004470 D102
    0000 R 004514 D103       0000 R 004540 D104       0000 R 004564 D105       0000 R 004610 D106       0000 R 004634 D107
    0000 R 004660 D108       0000 R 004704 D109       0000 R 001034 D11        0000 R 004730 D110       0000 R 004754 D111
    0000 R 001060 D12        0000 R 001104 D13        0000 R 001130 D14        0000 R 001154 D15        0000 R 001200 D16
    0000 R 001224 D17        0000 R 001250 D18        0000 R 001274 D19        0000 R 000550 D2         0000 R 001320 D20
    0000 R 001344 D21        0000 R 001370 D22        0000 R 001414 D23        0000 R 001440 D24        0000 R 001464 D25
    0000 R 001510 D26        0000 R 001534 D27        0000 R 001560 D28        0000 R 001604 D29        0000 R 000574 D3
    0000 R 001630 D30        0000 R 001654 D31        0000 R 001700 D32        0000 R 001724 D33        0000 R 001750 D34
    0000 R 001774 D35        0000 R 002020 D36        0000 R 002044 D37        0000 R 002070 D38        0000 R 002114 D39
    0000 R 000620 D4         0000 R 002140 D40        0000 R 002164 D41        0000 R 002210 D42        0000 R 002234 D43
    0000 R 002260 D44        0000 R 002304 D45        0000 R 002330 D46        0000 R 002354 D47        0000 R 002400 D48
    0000 R 002424 D49        0000 R 000644 D5         0000 R 002450 D50        0000 R 002474 D51        0000 R 002520 D52
    0000 R 002544 D53        0000 R 002570 D54        0000 R 002614 D55        0000 R 002640 D56        0000 R 002664 D57
    0000 R 002710 D58        0000 R 002734 D59        0000 R 000670 D6         0000 R 002760 D60        0000 R 003004 D61
    0000 R 003030 D62        0000 R 003054 D63        0000 R 003100 D64        0000 R 003124 D65        0000 R 003150 D66
    0000 R 003174 D67        0000 R 003220 D68        0000 R 003244 D69        0000 R 000714 D7         0000 R 003270 D70
    0000 R 003314 D71        0000 R 003340 D72        0000 R 003364 D73        0000 R 003410 D74        0000 R 003434 D75
    0000 R 003460 D76        0000 R 003504 D77        0000 R 003530 D78        0000 R 003554 D79        0000 R 000740 D8
    0000 R 003600 D80        0000 R 003624 D81        0000 R 003650 D82        0000 R 003674 D83        0000 R 003720 D84
    0000 R 003744 D85        0000 R 003770 D86        0000 R 004014 D87        0000 R 004040 D88        0000 R 004064 D89
    0000 R 000764 D9         0000 R 004110 D90        0000 R 004134 D91        0000 R 004160 D92        0000 R 004204 D93
    0000 R 004230 D94        0000 R 004254 D95        0000 R 004300 D96        0000 R 004324 D97        0000 R 004350 D98
    0000 R 004374 D99        0000 I 000207 I          0000    005003 INJP$     0000 I 000210 J          0000 I 000211 M
    0000 I 000205 NI         0000 I 000206 NJ         0000 I 000106 NRO#

00101      1*          SUBROUTINE DSTRT(T,TIME)
00101      2*     C**** COMPUTES HAO DISTORTION PARAMETERS AND PRINTS RESULTS.
00103      3*          DIMENSION B1(35,63),D(2205),B2(35),C(35),T(1)
00104      4*          DIMENSION
00104      5*        *      D 1(20)      ,D 2(20)      ,D 3(20)
```

```
00104     6*          *      ,D 4(20)      ,D 5(20)      ,D 6(20)
00104     7*          *      ,D 7(20)      ,D 8(20)      ,D 9(20)
00104     8*          *      ,D10(20)      ,D11(20)      ,D12(20)
00104     9*          *      ,D13(20)      ,D14(20)      ,D15(20)
00105    10*           DIMENSION
00105    11*          *       D16(20)      ,D17(20)      ,D18(20)
00105    12*          *      ,D19(20)      ,D20(20)      ,D21(20)
00105    13*          *      ,D22(20)      ,D23(20)      ,D24(20)
00105    14*          *      ,D25(20)      ,D26(20)      ,D27(20)
00105    15*          *      ,D28(20)      ,D29(20)      ,D30(20)
00106    16*           DIMENSION
00106    17*          *       D31(20)      ,D32(20)      ,D33(20)
00106    18*          *      ,D34(20)      ,D35(20)      ,D36(20)
00106    19*          *      ,D37(20)      ,D38(20)      ,D39(20)
00106    20*          *      ,D40(20)      ,D41(20)      ,D42(20)
00106    21*          *      ,D43(20)      ,D44(20)      ,D45(20)
00107    22*           DIMENSION
00107    23*          *       D46(20)      ,D47(20)      ,D48(20)
00107    24*          *      ,D49(20)      ,D50(20)      ,D51(20)
00107    25*          *      ,D52(20)      ,D53(20)      ,D54(20)
00107    26*          *      ,D55(20)      ,D56(20)      ,D57(20)
00107    27*          *      ,D58(20)      ,D59(20)      ,D60(20)
00110    28*           DIMENSION
00110    29*          *       D61(20)      ,D62(20)      ,D63(20)
00110    30*          *      ,D64(20)      ,D65(20)      ,D66(20)
00110    31*          *      ,D67(20)      ,D68(20)      ,D69(20)
00110    32*          *      ,D70(20)      ,D71(20)      ,D72(20)
00110    33*          *      ,D73(20)      ,D74(20)      ,D75(20)
00111    34*           DIMENSION
00111    35*          *       D76(20)      ,D77(20)      ,D78(20)
00111    36*          *      ,D79(20)      ,D80(20)      ,D81(20)
00111    37*          *      ,D82(20)      ,D83(20)      ,D84(20)
00111    38*          *      ,D85(20)      ,D86(20)      ,D87(20)
00111    39*          *      ,D88(20)      ,D89(20)      ,D90(20)
00112    40*           DIMENSION
00112    41*          *       D91(20)      ,D92(20)      ,D93(20)
00112    42*          *      ,D94(20)      ,D95(20)      ,D96(20)
00112    43*          *      ,D97(20)      ,D98(20)      ,D99(20)
00112    44*          *      ,D100(20)     ,D101(20)     ,D102(20)
00112    45*          *      ,D103(20)     ,D104(20)     ,D105(20)
00113    46*           DIMENSION
00113    47*          *       D106(20)     ,D107(20)     ,D108(20)
00113    48*          *      ,D109(20)     ,D110(20)     ,D111( 5)
00114    49*           DIMENSION NROW(63)
00115    50*           EQUIVALENCE (B1(1,1),D(1))
00116    51*           EQUIVALENCE (D(  1),D 1(1)),(D( 21),D 2(1)),(D( 41),D 3(1))
00117    52*           EQUIVALENCE (D( 61),D 4(1)),(D( 81),D 5(1)),(D(101),D 6(1))
00120    53*           EQUIVALENCE (D(121),D 7(1)),(D(141),D 8(1)),(D(161),D 9(1))
00121    54*           EQUIVALENCE (D(181),D10(1)),(D(201),D11(1)),(D(221),D12(1))
00122    55*           EQUIVALENCE (D(241),D13(1)),(D(261),D14(1)),(D(281),D15(1))
00123    56*           EQUIVALENCE (D(301),D16(1)),(D(321),D17(1)),(D(341),D18(1))
00124    57*           EQUIVALENCE (D(361),D19(1)),(D(381),D20(1)),(D(401),D21(1))
00125    58*           EQUIVALENCE (D(421),D22(1)),(D(441),D23(1)),(D(461),D24(1))
00126    59*           EQUIVALENCE (D(481),D25(1)),(D(501),D26(1)),(D(521),D27(1))
00127    60*           EQUIVALENCE (D(541),D28(1)),(D(561),D29(1)),(D(581),D30(1))
00130    61*           EQUIVALENCE (D(601),D31(1)),(D(621),D32(1)),(D(641),D33(1))
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00131      EQUIVALENCE (D(661),D34(1)),(D(681),D35(1)),(D(701),D36(1))
00132      EQUIVALENCE (D(721),D37(1)),(D(741),D38(1)),(D(761),D39(1))
00133      EQUIVALENCE (D(781),D40(1)),(D(801),D41(1)),(D(821),D42(1))
00134      EQUIVALENCE (D(841),D43(1)),(D(861),D44(1)),(D(881),D45(1))
00135      EQUIVALENCE (D(901),D46(1)),(D(921),D47(1)),(D(941),D48(1))
00136      EQUIVALENCE (D(961),D49(1)),(D(981),D50(1)),(D(1001),D51(1))
00137      EQUIVALENCE (D(1021),D52(1)),(D(1041),D53(1)),(D(1061),D54(1))
00140      EQUIVALENCE (D(1081),D55(1)),(D(1101),D56(1)),(D(1121),D57(1))
00141      EQUIVALENCE (D(1141),D58(1)),(D(1161),D59(1)),(D(1181),D60(1))
00142      EQUIVALENCE (D(1201),D61(1)),(D(1221),D62(1)),(D(1241),D63(1))
00143      EQUIVALENCE (D(1261),D64(1)),(D(1281),D65(1)),(D(1301),D66(1))
00144      EQUIVALENCE (D(1321),D67(1)),(D(1341),D68(1)),(D(1361),D69(1))
00145      EQUIVALENCE (D(1381),D70(1)),(D(1401),D71(1)),(D(1421),D72(1))
00146      EQUIVALENCE (D(1441),D73(1)),(D(1461),D74(1)),(D(1481),D75(1))
00147      EQUIVALENCE (D(1501),D76(1)),(D(1521),D77(1)),(D(1541),D78(1))
00150      EQUIVALENCE (D(1561),D79(1)),(D(1581),D80(1)),(D(1601),D81(1))
00151      EQUIVALENCE (D(1621),D82(1)),(D(1641),D83(1)),(D(1661),D84(1))
00152      EQUIVALENCE (D(1681),D85(1)),(D(1701),D86(1)),(D(1721),D87(1))
00153      EQUIVALENCE (D(1741),D88(1)),(D(1761),D89(1)),(D(1781),D90(1))
00154      EQUIVALENCE (D(1801),D91(1)),(D(1821),D92(1)),(D(1841),D93(1))
00155      EQUIVALENCE (D(1861),D94(1)),(D(1881),D95(1)),(D(1901),D96(1))
00156      EQUIVALENCE (D(1921),D97(1)),(D(1941),D98(1)),(D(1961),D99(1))
00157      EQUIVALENCE (D(1981),D100(1)),(D(2001),D101(1)),(D(2021),D102(1))
00160      EQUIVALENCE (D(2041),D103(1)),(D(2061),D104(1)),(D(2081),D105(1))
00161      EQUIVALENCE (D(2101),D106(1)),(D(2121),D107(1)),(D(2141),D108(1))
00162      EQUIVALENCE (D(2161),D109(1)),(D(2181),D110(1)),(D(2201),D111(1))
00163      DATA NI,NJ/35,63/
00166      DATA NROW
00166     *   /   2,   4,   5,   6,  64,  65,  66,  67,  68,  69,  70
00166     *   ,  71,  72,  73,  74,  75,  76,  77,  78,  79,  80,  87
00166     *   ,  88,  89,  90,  91,  92,  93,  94,  95,  96,  97,  98
00166     *   ,  99, 100, 104, 105, 124, 125, 126, 127, 128, 129, 130
00166     *   , 131, 132, 133, 134, 135, 136, 139, 141, 143, 152, 154
00166     *   , 155, 157, 161, 163, 165, 166, 171, 192/
00170      DATA B2
00170     *   / 0.198209E 01, 0.123422E-01, 0.776700E-01, 0.140246E-01
00170     *   , 0.652715E-01, 0.227295E 00, 0.445310E-01,-0.104448E-02
00170     *   ,-0.123911E-04, 0.829859E-04, 0.676618E-01,-0.725704E-02
00170     *   ,-0.211919E-04, 0.157728E-04, 0.000000E 00, 0.000000E 00
00170     *   , 0.994274E-01, 0.893805E-01,-0.316855E-02,-0.194632E-04
00170     *   ,-0.143467E-04, 0.114322E 00,-0.249417E-01,-0.147549E-03
00170     *   ,-0.145428E-04,-0.361690E-04, 0.970586E-01,-0.455780E-01
00170     *   ,-0.219848E-03,-0.229500E-04,-0.415089E-04, 0.000000E 00
00170     *   , 0.145096E-03, 0.114860E-04, 0.215366E 00/
00172      DATA D1
00172     *   /-0.122717E-04,-0.277285E-03, 0.432813E-04,-0.277285E-03
00172     *   , 0.432813E-04, 0.229751E-03,-0.516655E-03, 0.329996E-04
00172     *   , 0.812062E-06,-0.266987E-05,-0.416038E-03,-0.175178E-03
00172     *   , 0.259767E-05, 0.734838E-06, 0.000000E 00, 0.000000E 00
00172     *   ,-0.105179E-03,-0.269217E-03, 0.330562E-04, 0.196252E-05/
00174      DATA D2
00174     *   / 0.278370E-05,-0.426267E-04,-0.226590E-03, 0.108516E-03
00174     *   , 0.242089E-05,-0.630749E-06,-0.168206E-03,-0.476583E-03
00174     *   ,-0.221937E-03, 0.244143E-05, 0.227165E-05, 0.000000E 00
00174     *   ,-0.127825E-05,-0.136206E-07,-0.138250E-03,-0.249211E-05
00174     *   , 0.788215E-04, 0.176889E-04, 0.788215E-04, 0.176889E-04/
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00176     118*          DATA D3
00176     119*        *   / 0.210193E-03,-0.208443E-03, 0.526645E-04, 0.848531E-06
00176     120*        *   ,-0.254465E-05, 0.338073E-04, 0.239762E-03, 0.160747E-05
00176     121*        *   ,-0.106147E-05, 0.000000E 00, 0.000000E 00, 0.435540E-04
00176     122*        *   , 0.812122E-04, 0.268171E-04, 0.192399E-05,-0.273290E-05
00176     123*        *   , 0.563884E-04, 0.248237E-04,-0.310407E-04, 0.198398E-05/
00200     124*          DATA D4
00200     125*        *   / 0.106277E-05, 0.110949E-03,-0.141360E-03, 0.247052E-03
00200     126*        *   , 0.244125E-05,-0.187745E-05, 0.000000E 00,-0.811589E-06
00200     127*        *   ,-0.904415E-07,-0.858556E-04,-0.167073E-04,-0.125218E-03
00200     128*        *   , 0.574977E-04,-0.125218E-03, 0.574977E-04, 0.209182E-03
00200     129*        *   ,-0.250085E-03, 0.765032E-04, 0.442885E-06,-0.275964E-05/
00202     130*          DATA D5
00202     131*        *   /-0.316285E-03,-0.995164E-04, 0.102472E-05, 0.318083E-06
00202     132*        *   , 0.000000E 00, 0.000000E 00,-0.577724E-04,-0.133870E-03
00202     133*        *   , 0.437285E-04, 0.996558E-06, 0.135490E-05,-0.120187E-03
00202     134*        *   ,-0.136826E-04, 0.139401E-03, 0.816795E-06, 0.942127E-07
00202     135*        *   , 0.863592E-04,-0.735788E-04, 0.191909E-03, 0.577112E-06/
00204     136*          DATA D6
00204     137*        *   / 0.610493E-07, 0.000000E 00,-0.606821E-06, 0.162253E-06
00204     138*        *   ,-0.204522E-03,-0.177122E-05,-0.424353E-04, 0.116436E-04
00204     139*        *   ,-0.424353E-04, 0.116436E-04, 0.110613E-03,-0.210006E-03
00204     140*        *   , 0.180484E-04, 0.458053E-06,-0.130209E-05,-0.128491E-03
00204     141*        *   , 0.411896E-04, 0.120838E-05,-0.187154E-06, 0.000000E 00/
00206     142*          DATA D7
00206     143*        *   / 0.000000E 00, 0.220758E-05,-0.453131E-04, 0.933779E-05
00206     144*        *   , 0.128675E-05,-0.373352E-06,-0.474777E-05,-0.405653E-04
00206     145*        *   , 0.108311E-04, 0.123765E-05,-0.470682E-05,-0.486294E-03
00206     146*        *   ,-0.125771E-03,-0.639649E-04, 0.193959E-05, 0.141011E-06
00206     147*        *   , 0.000000E 00,-0.679012E-06,-0.546284E-07,-0.418720E-04/
00210     148*          DATA D8
00210     149*        *   / 0.300742E-11, 0.166491E-11,-0.163673E-11, 0.136266E-11
00210     150*        *   ,-0.969566E-12,-0.248283E-13, 0.360377E-12,-0.109365E-11
00210     151*        *   ,-0.972506E-16, 0.287589E-15, 0.586649E-12,-0.181726E-11
00210     152*        *   ,-0.113474E-15, 0.498415E-15, 0.000000E 00, 0.000000E 00
00210     153*        *   , 0.149027E-13, 0.789777E-12,-0.223045E-11,-0.110128E-15/
00212     154*          DATA D9
00212     155*        *   /-0.238877E-15, 0.860281E-13, 0.703749E-12,-0.208677E-11
00212     156*        *   ,-0.972920E-16, 0.232758E-15,-0.253510E-13, 0.636479E-12
00212     157*        *   ,-0.174444E-11,-0.129032E-15, 0.122039E-15, 0.000000E 00
00212     158*        *   , 0.126374E-14,-0.358362E-14,-0.106092E-13, 0.300742E-11
00212     159*        *   , 0.166491E-11,-0.163673E-11, 0.136266E-11,-0.969566E-12/
00214     160*          DATA D10
00214     161*        *   /-0.248283E-13, 0.360377E-12,-0.109365E-11,-0.972506E-16
00214     162*        *   , 0.287589E-15, 0.586649E-12,-0.181726E-11,-0.113474E-15
00214     163*        *   , 0.498415E-15, 0.000000E 00, 0.000000E 00, 0.149027E-13
00214     164*        *   , 0.789777E-12,-0.223045E-11,-0.110128E-15,-0.238877E-15
00214     165*        *   , 0.860281E-13, 0.703749E-12,-0.208677E-11,-0.972920E-16/
00216     166*          DATA D11
00216     167*        *   / 0.232758E-15,-0.253510E-13, 0.636479E-12,-0.174444E-11
00216     168*        *   ,-0.129032E-15, 0.122039E-15, 0.000000E 00, 0.126374E-14
00216     169*        *   ,-0.358362E-14,-0.106092E-13, 0.300742E-11, 0.166491E-11
00216     170*        *   ,-0.163673E-11, 0.136266E-11,-0.969566E-12,-0.248283E-13
00216     171*        *   , 0.360377E-12,-0.109365E-11,-0.972506E-16, 0.287589E-15/
00220     172*          DATA D12
00220     173*        *   / 0.586649E-12,-0.181726E-11,-0.113474E-15, 0.498415E-15
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00220     174*          *   , 0.000000E 00, 0.000000E 00, 0.149027E-13, 0.789777E-12
00220     175*          *   ,-0.223045E-11,-0.110128E-15,-0.238877E-15, 0.860281E-13
00220     176*          *   , 0.703749E-12,-0.208677E-11,-0.972920E-16, 0.232758E-15
00220     177*          *   ,-0.253510E-13, 0.636479E-12,-0.174444E-11,-0.129032E-15/
00222     178*           DATA D13
00222     179*          *   / 0.122039E-15, 0.000000E 00, 0.126374E-14,-0.358362E-14
00222     180*          *   ,-0.106092E-13, 0.300742E-11, 0.166491E-11,-0.163673E-11
00222     181*          *   , 0.136266E-11,-0.969566E-12,-0.248283E-13, 0.360377E-12
00222     182*          *   ,-0.109365E-11,-0.972506E-16, 0.287589E-15, 0.586649E-12
00222     183*          *   ,-0.181726E-11,-0.113474E-15, 0.498415E-15, 0.000000E 00/
00224     184*           DATA D14
00224     185*          *   / 0.000000E 00, 0.149027E-13, 0.789777E-12,-0.223045E-11
00224     186*          *   ,-0.110128E-15,-0.238877E-15, 0.860281E-13, 0.703749E-12
00224     187*          *   ,-0.208677E-11,-0.972920E-16, 0.232758E-15,-0.253510E-13
00224     188*          *   , 0.636479E-12,-0.174444E-11,-0.129032E-15, 0.122039E-15
00224     189*          *   , 0.000000E 00, 0.126374E-14,-0.358362E-14,-0.106092E-13/
00226     190*           DATA D15
00226     191*          *   /-0.949294E-05, 0.354869E-04, 0.104938E-04, 0.354869E-04
00226     192*          *   , 0.104938E-04,-0.187430E-05,-0.718293E-05, 0.413798E-04
00226     193*          *   , 0.179394E-06, 0.723782E-08, 0.748212E-04, 0.782181E-04
00226     194*          *   , 0.223861E-06,-0.436074E-06, 0.000000E 00, 0.000000E 00
00226     195*          *   , 0.313363E-04, 0.394142E-04, 0.804415E-05, 0.204742E-06/
00230     196*           DATA D16
00230     197*          *   /-0.116739E-05, 0.768111E-04,-0.373968E-04,-0.286824E-04
00230     198*          *   ,-0.127403E-08, 0.601089E-06, 0.542957E-04,-0.100801E-03
00230     199*          *   , 0.226277E-04, 0.283662E-06, 0.408627E-06, 0.000000E 00
00230     200*          *   ,-0.190926E-06, 0.128378E-06, 0.286747E-04, 0.300742E-11
00230     201*          *   , 0.166491E-11,-0.163673E-11, 0.136266E-11,-0.969566E-12/
00232     202*           DATA D17
00232     203*          *   /-0.248283E-13, 0.360377E-12,-0.109365E-11,-0.972506E-16
00232     204*          *   , 0.287589E-15, 0.586649E-12,-0.181726E-11,-0.113474E-15
00232     205*          *   , 0.498415E-15, 0.000000E 00, 0.000000E 00, 0.149027E-13
00232     206*          *   , 0.789777E-12,-0.223045E-11,-0.110128E-15,-0.238877E-15
00232     207*          *   , 0.860281E-13, 0.703749E-12,-0.208677E-11,-0.972920E-16/
00234     208*           DATA D18
00234     209*          *   / 0.232758E-15,-0.253510E-13, 0.636479E-12,-0.174444E-11
00234     210*          *   ,-0.129032E-15, 0.122039E-15, 0.000000E 00, 0.126374E-14
00234     211*          *   ,-0.358362E-14,-0.106092E-13, 0.000000E 00, 0.000000E 00
00234     212*          *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00234     213*          *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00236     214*           DATA D19
00236     215*          *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00236     216*          *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00236     217*          *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00236     218*          *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00236     219*          *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00240     220*           DATA D20
00240     221*          *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00240     222*          *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00240     223*          *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00240     224*          *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00240     225*          *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00242     226*           DATA D21
00242     227*          *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00242     228*          *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00242     229*          *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
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00242   230*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00242   231*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00244   232*         DATA D22
00244   233*        *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00244   234*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00244   235*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00244   236*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00244   237*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00246   238*         DATA D23
00246   239*        *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00246   240*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00246   241*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00246   242*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00246   243*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00250   244*         DATA D24
00250   245*        *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00250   246*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00250   247*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00250   248*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00250   249*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00252   250*         DATA D25
00252   251*        *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00252   252*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00252   253*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00252   254*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00252   255*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00254   256*         DATA D26
00254   257*        *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00254   258*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00254   259*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00254   260*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00254   261*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00256   262*         DATA D27
00256   263*        *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00256   264*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00256   265*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00256   266*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00256   267*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00260   268*         DATA D28
00260   269*        *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00260   270*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00260   271*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00260   272*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00260   273*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00262   274*         DATA D29
00262   275*        *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00262   276*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00262   277*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00262   278*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00262   279*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00264   280*         DATA D30
00264   281*        *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00264   282*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00264   283*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00264   284*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00264   285*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
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00266      286*          DATA D31
00266      287*        *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00266      288*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00266      289*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00266      290*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00266      291*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00270      292*          DATA D32
00270      293*        *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00270      294*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00270      295*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00270      296*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00270      297*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00272      298*          DATA D33
00272      299*        *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00272      300*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00272      301*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00272      302*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00272      303*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00274      304*          DATA D34
00274      305*        *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00274      306*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00274      307*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00274      308*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00274      309*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00276      310*          DATA D35
00276      311*        *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00276      312*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00276      313*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00276      314*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00276      315*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00300      316*          DATA D36
00300      317*        *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00300      318*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00300      319*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00300      320*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00300      321*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00302      322*          DATA D37
00302      323*        *   / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00302      324*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00302      325*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00302      326*        *   , 0.000000E 00, 0.000000E 00, 0.000000E 00,-0.145283E-03
00302      327*        *   , 0.451526E-03,-0.255524E-03, 0.451526E-03,-0.255524E-03/
00304      328*          DATA D38
00304      329*        *   / 0.602363E-03, 0.133751E-02,-0.470955E-03,-0.876869E-05
00304      330*        *   , 0.113699E-05, 0.770908E-03,-0.286469E-03,-0.974268E-05
00304      331*        *   , 0.145433E-05, 0.000000E 00, 0.000000E 00, 0.680622E-04
00304      332*        *   , 0.448698E-03,-0.253796E-03,-0.950510E-05, 0.579072E-06
00304      333*        *   , 0.444336E-06, 0.448254E-03,-0.260853E-03,-0.918611E-05/
00306      334*          DATA D39
00306      335*        *   /-0.437471E-06, 0.235587E-04, 0.680098E-03,-0.242782E-03
00306      336*        *   ,-0.894840E-05, 0.699994E-06, 0.000000E 00, 0.724847E-05
00306      337*        *   ,-0.894767E-06, 0.180804E-03, 0.735044E-03, 0.817784E-04
00306      338*        *   ,-0.164060E-02, 0.819689E-04,-0.164047E-02, 0.601678E-03
00306      339*        *   , 0.130860E-03,-0.185104E-02, 0.271729E-06, 0.108009E-04/
00310      340*          DATA D40
00310      341*        *   / 0.170237E-03,-0.173787E-02,-0.836651E-06, 0.996537E-05
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00310   342*          *   , 0.000000E 00, 0.000000E 00, 0.988555E-04, 0.789527E-04
00310   343*          *   ,-0.163838E-02,-0.616487E-04, 0.591149E-05, 0.284984E-04
00310   344*          *   , 0.504543E-04,-0.166562E-02,-0.245735E-06,-0.653332E-05
00310   345*          *   , 0.136349E-05, 0.509837E-04,-0.168419E-02, 0.434548E-08/
00312   346*           DATA D41
00312   347*          *   / 0.892302E-05, 0.000000E 00, 0.272819E-06,-0.872408E-05
00312   348*          *   , 0.557215E-04,-0.401286E-03,-0.462746E-03, 0.623575E-04
00312   349*          *   ,-0.462746E-03, 0.623575E-04, 0.447653E-03,-0.108768E-02
00312   350*          *   , 0.740299E-04, 0.107839E-04, 0.393263E-05,-0.695856E-03
00312   351*          *   , 0.151243E-03, 0.108621E-04,-0.210926E-05, 0.000000E 00/
00314   352*           DATA D42
00314   353*          *   / 0.000000E 00, 0.791032E-04,-0.459131E-03, 0.685256E-04
00314   354*          *   , 0.107585E-04,-0.232957E-05, 0.423760E-04,-0.501507E-03
00314   355*          *   , 0.344980E-04, 0.106055E-04, 0.238975E-05,-0.171281E-04
00314   356*          *   ,-0.690799E-03, 0.118009E-03, 0.104817E-04,-0.284382E-05
00314   357*          *   , 0.000000E 00,-0.897286E-05, 0.212947E-05, 0.541361E-03/
00316   358*           DATA D43
00316   359*          *   /-0.455522E-03, 0.711150E-04, 0.470604E-03, 0.711150E-04
00316   360*          *   , 0.470604E-03, 0.553143E-03, 0.151966E-03, 0.990210E-03
00316   361*          *   ,-0.222143E-05,-0.673914E-05, 0.913709E-04, 0.726566E-03
00316   362*          *   ,-0.227822E-05,-0.772508E-05, 0.000000E 00, 0.000000E 00
00316   363*          *   ,-0.189711E-04, 0.692812E-04, 0.469903E-03,-0.225429E-05/
00320   364*           DATA D44
00320   365*          *   /-0.488530E-05,-0.144567E-04, 0.837379E-04, 0.478070E-03
00320   366*          *   ,-0.216644E-05, 0.537514E-05,-0.109297E-06, 0.121938E-03
00320   367*          *   , 0.652035E-03,-0.203133E-05,-0.718838E-05, 0.000000E 00
00320   368*          *   , 0.197894E-05, 0.567801E-05, 0.809171E-04,-0.841058E-04
00320   369*          *   , 0.353349E-03, 0.725763E-05, 0.353349E-03, 0.725764E-05/
00322   370*           DATA D45
00322   371*          *   / 0.370301E-03, 0.114571E-02,-0.110022E-03,-0.104796E-05
00322   372*          *   ,-0.122200E-05, 0.123654E-02,-0.254220E-03,-0.807355E-05
00322   373*          *   , 0.114296E-05, 0.000000E 00, 0.000000E 00, 0.193522E-03
00322   374*          *   , 0.330424E-03,-0.597507E-05,-0.939764E-05, 0.950300E-06
00322   375*          *   ,-0.569300E-04, 0.387354E-03, 0.361101E-04,-0.716989E-05/
00324   376*           DATA D46
00324   377*          *   /-0.121499E-06, 0.291445E-04, 0.754316E-03, 0.892705E-04
00324   378*          *   ,-0.601270E-05,-0.259711E-06, 0.000000E 00, 0.386811E-05
00324   379*          *   , 0.249567E-06, 0.128364E-03, 0.330592E-03, 0.263606E-03
00324   380*          *   ,-0.422882E-03, 0.263606E-03,-0.422882E-03,-0.189861E-03
00324   381*          *   , 0.516405E-03,-0.120379E-02,-0.149967E-06, 0.324152E-05/
00326   382*           DATA D47
00326   383*          *   / 0.571789E-03,-0.114856E-02,-0.260104E-05, 0.846818E-05
00326   384*          *   , 0.000000E 00, 0.000000E 00, 0.825963E-04, 0.418413E-03
00326   385*          *   ,-0.441329E-03,-0.128591E-05, 0.590250E-05, 0.121589E-03
00326   386*          *   , 0.296823E-03,-0.357892E-03,-0.217086E-05,-0.767703E-05
00326   387*          *   , 0.200416E-03, 0.204110E-03,-0.824233E-03,-0.886498E-06/
00330   388*           DATA D48
00330   389*          *   / 0.705202E-05, 0.000000E 00, 0.118843E-05,-0.418616E-05
00330   390*          *   , 0.952766E-03, 0.197870E-04,-0.158403E-03,-0.740106E-04
00330   391*          *   ,-0.158403E-03,-0.740106E-04,-0.236225E-04,-0.603879E-03
00330   392*          *   ,-0.308159E-03,-0.619401E-06, 0.941470E-06,-0.668344E-03
00330   393*          *   ,-0.369970E-03, 0.460460E-05, 0.211799E-05, 0.000000E 00/
00332   394*           DATA D49
00332   395*          *   / 0.000000E 00,-0.714682E-06,-0.158675E-03,-0.884313E-04
00332   396*          *   , 0.391861E-05, 0.210352E-05,-0.146825E-03,-0.118500E-04
00332   397*          *   , 0.440168E-04, 0.382976E-05,-0.108282E-05, 0.682920E-05
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00332   398*        *   ,-0.304887E-03,-0.977721E-05, 0.228113E-05, 0.588107E-06
00332   399*        *   , 0.000000E 00,-0.129803E-05,-0.312788E-06, 0.333688E-03/
00334   400*         DATA D50
00334   401*        *   /-0.356326E-03,-0.801098E-04, 0.454395E-03,-0.801098E-04
00334   402*        *   , 0.454395E-03, 0.210362E-03, 0.551722E-05, 0.110890E-02
00334   403*        *   ,-0.181702E-05,-0.250153E-05,-0.661675E-04, 0.111134E-02
00334   404*        *   ,-0.190680E-05,-0.818880E-05, 0.000000E 00, 0.000000E 00
00334   405*        *   , 0.158137E-03,-0.806219E-04, 0.473222E-03,-0.193511E-05/
00336   406*         DATA D51
00336   407*        *   /-0.575988E-05, 0.521630E-04,-0.132785E-03, 0.407455E-03
00336   408*        *   ,-0.221938E-05, 0.786312E-05, 0.306814E-04,-0.488957E-04
00336   409*        *   , 0.832157E-03,-0.185242E-05,-0.770603E-05, 0.000000E 00
00336   410*        *   , 0.148934E-05, 0.457140E-05, 0.454962E-03,-0.599065E-04
00336   411*        *   , 0.373769E-03, 0.735879E-04, 0.373769E-03, 0.735879E-04/
00340   412*         DATA D52
00340   413*        *   / 0.152680E-04, 0.125182E-03, 0.246070E-03,-0.743209E-07
00340   414*        *   ,-0.730338E-07, 0.231923E-03, 0.284552E-03, 0.675690E-06
00340   415*        *   ,-0.240659E-05, 0.000000E 00, 0.000000E 00, 0.865298E-04
00340   416*        *   , 0.384973E-03, 0.107190E-03,-0.297080E-05,-0.330053E-05
00340   417*        *   , 0.269439E-03, 0.115534E-03,-0.106959E-03,-0.256737E-05/
00342   418*         DATA D53
00342   419*        *   /-0.617765E-06, 0.132043E-04, 0.244024E-03,-0.216965E-03
00342   420*        *   ,-0.150426E-05,-0.184753E-06, 0.000000E 00, 0.558002E-06
00342   421*        *   , 0.785966E-06, 0.270991E-03,-0.203080E-04,-0.112765E-03
00342   422*        *   , 0.235710E-04,-0.112765E-03, 0.235710E-04, 0.200002E-04
00342   423*        *   ,-0.247654E-04, 0.695449E-04,-0.682462E-07, 0.580814E-08/
00344   424*         DATA D54
00344   425*        *   /-0.317691E-04, 0.857369E-04,-0.497511E-06, 0.706435E-07
00344   426*        *   , 0.000000E 00, 0.000000E 00, 0.553762E-03, 0.807120E-04
00344   427*        *   , 0.203831E-03, 0.585001E-06, 0.240646E-05, 0.614657E-03
00344   428*        *   ,-0.533945E-03, 0.550056E-03,-0.151246E-05,-0.447378E-05
00344   429*        *   , 0.577400E-03,-0.266482E-03, 0.444897E-03, 0.579892E-06/
00346   430*         DATA D55
00346   431*        *   / 0.387386E-06, 0.000000E 00,-0.255637E-06, 0.239050E-06
00346   432*        *   ,-0.442492E-04,-0.198014E-04,-0.112611E-03, 0.228561E-04
00346   433*        *   ,-0.112611E-03, 0.228561E-04,-0.155983E-05,-0.771422E-04
00346   434*        *   , 0.896665E-04, 0.793342E-07,-0.360852E-07,-0.124237E-03
00346   435*        *   , 0.166210E-03, 0.704781E-06,-0.994489E-06, 0.000000E 00/
00350   436*         DATA D56
00350   437*        *   / 0.000000E 00, 0.588895E-05,-0.872446E-04, 0.570565E-04
00350   438*        *   , 0.211080E-05, 0.281242E-06, 0.350009E-03,-0.437253E-03
00350   439*        *   ,-0.150769E-03, 0.259483E-05, 0.741978E-05, 0.897076E-03
00350   440*        *   ,-0.205833E-03, 0.357056E-03,-0.185501E-05, 0.211880E-06
00350   441*        *   , 0.000000E 00,-0.254613E-06, 0.271896E-06, 0.113271E-03/
00352   442*         DATA D57
00352   443*        *   /-0.260149E-04, 0.885506E-05, 0.252859E-04, 0.885506E-05
00352   444*        *   , 0.252859E-04,-0.692491E-05,-0.128125E-04, 0.964401E-04
00352   445*        *   ,-0.162998E-06, 0.168661E-06,-0.386728E-04, 0.192865E-03
00352   446*        *   ,-0.461042E-06,-0.505073E-06, 0.000000E 00, 0.000000E 00
00352   447*        *   , 0.141159E-03, 0.138268E-04, 0.767824E-04,-0.187287E-06/
00354   448*         DATA D58
00354   449*        *   /-0.192617E-05, 0.284616E-03,-0.270789E-03,-0.184657E-03
00354   450*        *   ,-0.356731E-06, 0.460108E-05, 0.964104E-04,-0.101855E-03
00354   451*        *   ,-0.771386E-04, 0.890625E-07,-0.128924E-05, 0.000000E 00
00354   452*        *   , 0.104952E-06, 0.332355E-06, 0.368405E-04,-0.139843E-04
00354   453*        *   ,-0.468531E-04, 0.169478E-04,-0.468531E-04, 0.169478E-04/
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00356     454*          DATA D59
00356     455*        *   / 0.790437E-06,-0.163029E-05, 0.610738E-04,-0.563839E-08
00356     456*        *   ,-0.448247E-07,-0.891840E-05, 0.111366E-03, 0.390041E-06
00356     457*        *   ,-0.380793E-06, 0.000000E 00, 0.000000E 00, 0.155709E-03
00356     458*        *   , 0.159729E-04,-0.128648E-05, 0.125559E-05,-0.118123E-05
00356     459*        *   , 0.356132E-04,-0.196403E-04, 0.110288E-03,-0.140417E-05/
00360     460*          DATA D60
00360     461*        *   /-0.469138E-06, 0.240974E-04, 0.180115E-04, 0.197078E-03
00360     462*        *   ,-0.748057E-06,-0.301058E-07, 0.000000E 00, 0.681567E-07
00360     463*        *   , 0.189341E-06, 0.599327E-04,-0.153938E-04,-0.341494E-04
00360     464*        *   , 0.875981E-06,-0.341494E-04, 0.875966E-06,-0.105284E-03
00360     465*        *   , 0.103056E-03,-0.255487E-04,-0.350235E-06, 0.165917E-05/
00362     466*          DATA D61
00362     467*        *   /-0.662805E-04,-0.270467E-03, 0.169097E-06, 0.122592E-05
00362     468*        *   , 0.000000E 00, 0.000000E 00,-0.454501E-04, 0.280478E-04
00362     469*        *   ,-0.156800E-04, 0.447084E-06, 0.193821E-05, 0.136014E-05
00362     470*        *   , 0.266876E-04, 0.110267E-03, 0.205900E-05,-0.421187E-05
00362     471*        *   ,-0.772072E-04,-0.230035E-03, 0.243191E-03,-0.199569E-05/
00364     472*          DATA D62
00364     473*        *   / 0.142842E-06, 0.000000E 00, 0.125768E-06, 0.130805E-06
00364     474*        *   , 0.108094E-03, 0.431237E-05, 0.226740E-04,-0.140560E-04
00364     475*        *   , 0.226740E-04,-0.140560E-04,-0.401090E-04,-0.102167E-05
00364     476*        *   ,-0.430995E-04,-0.215140E-06, 0.335629E-06,-0.482452E-04
00364     477*        *   ,-0.401330E-05,-0.158754E-06, 0.209226E-07, 0.000000E 00/
00366     478*          DATA D63
00366     479*        *   / 0.000000E 00, 0.114300E-04, 0.220826E-04,-0.127815E-04
00366     480*        *   , 0.234479E-06,-0.158500E-06,-0.236966E-05, 0.244523E-04
00366     481*        *   ,-0.212605E-04, 0.107280E-05, 0.189831E-07,-0.106877E-04
00366     482*        *   ,-0.779332E-04,-0.102663E-04, 0.201752E-05,-0.208388E-07
00366     483*        *   , 0.000000E 00, 0.150994E-06, 0.172417E-08, 0.152213E-04/
00370     484*          DATA D64
00370     485*        *   / 0.214078E-03,-0.116374E-04,-0.722631E-03,-0.116374E-04
00370     486*        *   ,-0.722631E-03, 0.491330E-05,-0.382598E-04,-0.428327E-03
00370     487*        *   ,-0.196668E-07, 0.960636E-06,-0.297885E-04,-0.588985E-03
00370     488*        *   , 0.222461E-06, 0.665571E-06, 0.000000E 00, 0.000000E 00
00370     489*        *   ,-0.231363E-04,-0.122104E-04,-0.723812E-03, 0.213566E-06/
00372     490*          DATA D65
00372     491*        *   / 0.686150E-06,-0.616108E-05,-0.604934E-05,-0.718119E-03
00372     492*        *   , 0.198244E-06,-0.754182E-06,-0.349846E-05,-0.179049E-04
00372     493*        *   ,-0.623877E-03, 0.196157E-06, 0.974268E-06, 0.000000E 00
00372     494*        *   ,-0.936484E-07,-0.181549E-05, 0.572347E-04, 0.164447E-02
00372     495*        *   ,-0.958268E-02, 0.311883E-04,-0.126747E-02,-0.175447E-05/
00374     496*          DATA D66
00374     497*        *   /-0.554454E-07,-0.513154E-03, 0.558683E-06, 0.213226E-10
00374     498*        *   , 0.782019E-09,-0.860456E-03, 0.927436E-06, 0.346830E-11
00374     499*        *   , 0.852948E-13, 0.000000E 00, 0.000000E 00, 0.371706E-11
00374     500*        *   ,-0.108831E-02, 0.117304E-05, 0.998076E-11,-0.635884E-13
00374     501*        *   , 0.216392E-10,-0.108831E-02, 0.117975E-05, 0.997641E-11/
00376     502*          DATA D67
00376     503*        *   /-0.954033E-12, 0.227041E-04,-0.905521E-03, 0.983427E-06
00376     504*        *   , 0.906581E-11, 0.744185E-14, 0.000000E 00,-0.166281E-05
00376     505*        *   , 0.179222E-08, 0.583394E-07, 0.178783E-02, 0.121454E-02
00376     506*        *   , 0.604545E-03,-0.435740E-04, 0.407953E-03,-0.393769E-06
00376     507*        *   ,-0.120022E-04,-0.677961E-04, 0.673492E-11, 0.602932E-09/
00400     508*          DATA D68
00400     509*        *   /-0.201221E-04,-0.113685E-03, 0.109361E-11,-0.870003E-12
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00400     *     , 0.000000E 00, 0.000000E 00,-0.151732E-12,-0.254507E-04
00400     *    ,-0.143790E-03, 0.237764E-12,-0.154748E-11, 0.332142E-11
00400     *    ,-0.254507E-04,-0.143833E-03, 0.235362E-12, 0.980924E-12
00400     *    , 0.182114E-06,-0.211764E-04,-0.119686E-03, 0.215186E-12/
00402      DATA D69
00402     *    / 0.733914E-14, 0.000000E 00,-0.388864E-07,-0.219692E-06
00402     *    , 0.450491E-07, 0.159069E-02, 0.826852E-02, 0.156922E-04
00402     *    , 0.126771E-02,-0.856427E-06,-0.536478E-07, 0.514819E-03
00402     *    , 0.291956E-06,-0.613041E-11, 0.739718E-09, 0.863257E-03
00402     *    , 0.484495E-06,-0.873163E-12,-0.270823E-13, 0.000000E 00/
00404      DATA D70
00404     *    / 0.000000E 00,-0.277330E-11, 0.109185E-02, 0.612791E-06
00404     *    ,-0.100013E-10, 0.627855E-13,-0.120129E-10, 0.109185E-02
00404     *    , 0.619844E-06,-0.100035E-10,-0.725683E-12,-0.227738E-04
00404     *    , 0.908469E-03, 0.517662E-06,-0.908792E-11, 0.105549E-13
00404     *    , 0.000000E 00, 0.166822E-05, 0.936258E-09, 0.551916E-07/
00406      DATA D71
00406     *    / 0.366164E-02,-0.137092E-01, 0.861709E-06,-0.449421E-02
00406     *    , 0.118531E-06,-0.164046E-06,-0.377850E-02, 0.104338E-06
00406     *    , 0.118299E-09, 0.220635E-08,-0.633581E-02, 0.138181E-06
00406     *    , 0.193828E-10, 0.421323E-12, 0.000000E 00, 0.000000E 00
00406     *    , 0.227550E-10,-0.801360E-02, 0.174835E-06, 0.734626E-10/
00410      DATA D72
00410     *    /-0.481863E-12, 0.129429E-09,-0.801360E-02, 0.196749E-06
00410     *    , 0.734450E-10,-0.300033E-11, 0.167157E-03,-0.666764E-02
00410     *    , 0.169640E-06, 0.667363E-10, 0.131337E-13, 0.000000E 00
00410     *    ,-0.122438E-04, 0.267029E-09, 0.164583E-06, 0.280859E-02
00410     *    , 0.559603E-04, 0.764188E-04, 0.263822E-04, 0.630731E-04/
00412      DATA D73
00412     *    /-0.172438E-06,-0.180000E-04,-0.115843E-04, 0.165219E-10
00412     *    , 0.151332E-08,-0.301755E-04,-0.194375E-04, 0.256925E-11
00412     *    ,-0.119724E-12, 0.000000E 00, 0.000000E 00, 0.985624E-13
00412     *    ,-0.381669E-04,-0.245848E-04, 0.361472E-12,-0.265133E-12
00412     *    , 0.607724E-11,-0.381669E-04,-0.248206E-04, 0.355036E-12/
00414      DATA D74
00414     *    /-0.140709E-11, 0.736493E-06,-0.317588E-04,-0.207161E-04
00414     *    , 0.325501E-12, 0.181757E-13, 0.000000E 00,-0.583188E-07
00414     *    ,-0.375622E-07, 0.112916E-06, 0.366131E-02, 0.137135E-01
00414     *    , 0.884099E-06, 0.449750E-02, 0.117804E-06,-0.134332E-06
00414     *    , 0.378322E-02, 0.826339E-07,-0.797450E-10, 0.180820E-08/
00416      DATA D75
00416     *    / 0.634375E-02, 0.139727E-06,-0.125986E-10,-0.340818E-12
00416     *    , 0.000000E 00, 0.000000E 00,-0.229428E-10, 0.802364E-02
00416     *    , 0.176682E-06,-0.735231E-10, 0.500496E-12,-0.118348E-09
00416     *    , 0.802364E-02, 0.200163E-06,-0.735230E-10,-0.146112E-11
00416     *    ,-0.167366E-03, 0.667599E-02, 0.172984E-06,-0.668017E-10/
00420      DATA D76
00420     *    / 0.361316E-13, 0.000000E 00, 0.122591E-04, 0.269987E-09
00420     *    , 0.134933E-06, 0.333081E-02,-0.889293E-02,-0.582675E-05
00420     *    ,-0.536477E-02,-0.581472E-05,-0.171662E-06,-0.608785E-02
00420     *    ,-0.273153E-05, 0.177673E-09, 0.211244E-08,-0.102081E-01
00420     *    ,-0.462321E-05, 0.270660E-10, 0.563720E-12, 0.000000E 00/
00422      DATA D77
00422     *    / 0.000000E 00, 0.343256E-10,-0.129113E-01,-0.584740E-05
00422     *    , 0.118347E-09,-0.889960E-12, 0.202825E-09,-0.129113E-01
00422     *    ,-0.344438E-05, 0.118325E-09,-0.325792E-11, 0.269305E-03
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00422   566*          *   ,-0.107427E-01,-0.221029E-05, 0.107516E-09, 0.323148E-14
00422   567*          *   , 0.000000E 00,-0.197269E-04,-0.873414E-08, 0.157566E-06/
00424   568*           DATA D78
00424   569*          *   / 0.216767E-02,-0.106674E-03, 0.211314E-03,-0.939827E-04
00424   570*          *   , 0.211188E-03, 0.422919E-06, 0.341217E-04, 0.100130E-03
00424   571*          *   , 0.101725E-10, 0.123714E-08, 0.572354E-04, 0.167885E-03
00424   572*          *   , 0.393176E-11, 0.130531E-11, 0.000000E 00, 0.000000E 00
00424   573*          *   ,-0.931797E-12, 0.723936E-04, 0.212343E-03,-0.653129E-12/
00426   574*           DATA D79
00426   575*          *   / 0.228540E-11,-0.103863E-11, 0.723936E-04, 0.212816E-03
00426   576*          *   ,-0.658017E-12,-0.375266E-11,-0.995224E-06, 0.602391E-04
00426   577*          *   , 0.177200E-03,-0.596508E-12, 0.149217E-13, 0.000000E 00
00426   578*          *   , 0.110617E-06, 0.324431E-06, 0.922045E-07, 0.320365E-02
00426   579*          *   , 0.889805E-02,-0.359928E-04, 0.536510E-02,-0.361416E-04/
00430   580*           DATA D80
00430   581*          *   /-0.189877E-06, 0.606477E-02,-0.160540E-04,-0.151128E-09
00430   582*          *   , 0.144025E-08, 0.101694E-01,-0.269044E-04,-0.213382E-10
00430   583*          *   ,-0.776688E-12, 0.000000E 00, 0.000000E 00,-0.365278E-10
00430   584*          *   , 0.128624E-01,-0.340291E-04,-0.117872E-09, 0.455618E-12
00430   585*          *   ,-0.192496E-09, 0.128624E-01,-0.362729E-04,-0.117866E-09/
00432   586*           DATA D81
00432   587*          *   /-0.280835E-12,-0.268381E-03, 0.107020E-01,-0.307926E-04
00432   588*          *   ,-0.107091E-09, 0.388647E-13, 0.000000E 00, 0.196521E-04
00432   589*          *   ,-0.519917E-07, 0.107512E-06, 0.669625E-03,-0.242016E-02
00432   590*          *   ,-0.460625E-04,-0.207197E-02,-0.462366E-04,-0.143994E-06
00432   591*          *   ,-0.389194E-02,-0.206430E-04, 0.123919E-09, 0.506063E-09/
00434   592*           DATA D82
00434   593*          *   /-0.652610E-02,-0.346318E-04,-0.294749E-11, 0.200323E-12
00434   594*          *   , 0.000000E 00, 0.000000E 00, 0.277634E-10,-0.825428E-02
00434   595*          *   ,-0.438027E-04, 0.756442E-10,-0.111060E-11, 0.155358E-09
00434   596*          *   ,-0.825428E-02,-0.425085E-04, 0.756315E-10,-0.743254E-12
00434   597*          *   , 0.172071E-03,-0.686788E-02,-0.350157E-04, 0.687235E-10/
00436   598*           DATA D83
00436   599*          *   /-0.101654E-13, 0.000000E 00,-0.126115E-04,-0.669245E-07
00436   600*          *   , 0.377424E-07, 0.315534E-03,-0.648494E-03, 0.427293E-03
00436   601*          *   ,-0.510817E-03, 0.427651E-03, 0.158838E-05, 0.545111E-03
00436   602*          *   , 0.312001E-03,-0.299670E-10, 0.226117E-09, 0.914109E-03
00436   603*          *   , 0.523158E-03, 0.152263E-10, 0.391137E-11, 0.000000E 00/
00440   604*           DATA D84
00440   605*          *   / 0.000000E 00,-0.803332E-11, 0.115617E-02, 0.661696E-03
00440   606*          *   ,-0.105859E-10, 0.726185E-11,-0.431083E-10, 0.115617E-02
00440   607*          *   , 0.661437E-03,-0.105845E-10,-0.763448E-11,-0.225119E-04
00440   608*          *   , 0.961981E-03, 0.550272E-03,-0.961952E-11, 0.522695E-14
00440   609*          *   , 0.000000E 00, 0.176648E-05, 0.101098E-05, 0.165786E-07/
00442   610*           DATA D85
00442   611*          *   / 0.638065E-03, 0.244568E-02,-0.564635E-04, 0.208969E-02
00442   612*          *   ,-0.566909E-04,-0.147295E-06, 0.377447E-02,-0.252462E-04
00442   613*          *   ,-0.119087E-09, 0.233968E-09, 0.632911E-02,-0.423241E-04
00442   614*          *   , 0.360058E-11,-0.755963E-12, 0.000000E 00, 0.000000E 00
00442   615*          *   ,-0.264218E-10, 0.800513E-02,-0.535321E-04,-0.733564E-10/
00444   616*           DATA D86
00444   617*          *   / 0.248770E-13,-0.142253E-09, 0.800513E-02,-0.549602E-04
00444   618*          *   ,-0.733477E-10, 0.105753E-11,-0.167110E-03, 0.666057E-02
00444   619*          *   ,-0.461186E-04,-0.666465E-10, 0.182700E-13, 0.000000E 00
00444   620*          *   , 0.122308E-04,-0.817896E-07, 0.175126E-07, 0.202692E-11
00444   621*          *   , 0.112210E-11,-0.110311E-11, 0.918398E-12,-0.653460E-12/
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00446     622*          DATA D87
00446     623*        *   /-0.167336E-13, 0.242884E-12,-0.737094E-12,-0.655441E-16
00446     624*        *   , 0.193827E-15, 0.395385E-12,-0.122478E-11,-0.764785E-16
00446     625*        *   , 0.335917E-15, 0.000000E 00, 0.000000E 00, 0.100440E-13
00446     626*        *   , 0.532288E-12,-0.150326E-11,-0.742233E-16,-0.160996E-15
00446     627*        *   , 0.579805E-13, 0.474307E-12,-0.140643E-11,-0.655721E-16/
00450     628*          DATA D88
00450     629*        *   / 0.156872E-15,-0.170858E-13, 0.428969E-12,-0.117570E-11
00450     630*        *   ,-0.869641E-16, 0.822511E-16, 0.000000E 00, 0.851730E-15
00450     631*        *   ,-0.241526E-14,-0.715028E-14, 0.588595E-12,-0.530391E-13
00450     632*        *   ,-0.135340E-11,-0.387032E-13,-0.143314E-11,-0.226365E-14
00450     633*        *   , 0.251237E-14,-0.141816E-11,-0.973989E-19,-0.688115E-16/
00452     634*          DATA D89
00452     635*        *   / 0.427485E-14,-0.238227E-11,-0.373467E-18, 0.298658E-16
00452     636*        *   , 0.000000E 00, 0.000000E 00, 0.293512E-14, 0.502736E-14
00452     637*        *   ,-0.301177E-11,-0.436804E-18,-0.369072E-17,-0.845964E-15
00452     638*        *   , 0.587333E-14,-0.299457E-11,-0.661796E-18,-0.258644E-17
00452     639*        *   ,-0.737605E-14, 0.464584E-14,-0.248627E-11,-0.407654E-18/
00454     640*          DATA D90
00454     641*        *   /-0.261523E-17, 0.000000E 00, 0.868365E-17,-0.459957E-14
00454     642*        *   ,-0.745111E-14,-0.397358E-06, 0.803015E-03,-0.576805E-03
00454     643*        *   , 0.663417E-03,-0.476516E-03, 0.431832E-06,-0.111202E-03
00454     644*        *   , 0.798822E-04, 0.142336E-10,-0.278930E-09,-0.186517E-03
00454     645*        *   , 0.133955E-03,-0.128176E-10, 0.109814E-11, 0.000000E 00/
00456     646*          DATA D91
00456     647*        *   / 0.000000E 00, 0.404699E-11,-0.235909E-03, 0.169428E-03
00456     648*        *   , 0.215508E-11, 0.173369E-11, 0.179056E-10,-0.235909E-03
00456     649*        *   , 0.169428E-03, 0.215271E-11,-0.198033E-11, 0.533180E-05
00456     650*        *   ,-0.196286E-03, 0.140971E-03, 0.195901E-11,-0.504121E-14
00456     651*        *   , 0.000000E 00,-0.360440E-06, 0.258862E-06,-0.208925E-07/
00460     652*          DATA D92
00460     653*        *   / 0.480759E-06, 0.462591E-09, 0.751247E-03, 0.393583E-09
00460     654*        *   , 0.620581E-03,-0.538268E-06,-0.214853E-09,-0.104019E-03
00460     655*        *   , 0.451306E-12, 0.413562E-10,-0.950688E-10,-0.174420E-03
00460     656*        *   , 0.643372E-13,-0.135294E-11, 0.000000E 00, 0.000000E 00
00460     657*        *   ,-0.305533E-12,-0.117353E-09,-0.220608E-03, 0.202170E-15/
00462     658*          DATA D93
00462     659*        *   /-0.237022E-11, 0.145976E-11,-0.118809E-09,-0.220608E-03
00462     660*        *   , 0.273574E-15, 0.249452E-11,-0.535065E-06,-0.100000E-09
00462     661*        *   ,-0.183555E-03, 0.333066E-15, 0.777156E-15, 0.000000E 00
00462     662*        *   ,-0.183741E-12,-0.337059E-06, 0.318647E-08, 0.154053E-11
00462     663*        *   ,-0.301704E-13,-0.230199E-11,-0.247419E-13,-0.151380E-11/
00464     664*          DATA D94
00464     665*        *   /-0.163340E-03, 0.148576E-11, 0.969954E-03,-0.411933E-14
00464     666*        *   ,-0.434565E-09, 0.357738E-13,-0.221008E-11, 0.462097E-17
00464     667*        *   ,-0.340843E-14, 0.000000E 00, 0.000000E 00,-0.289007E-12
00464     668*        *   , 0.177024E-13,-0.298897E-11,-0.158859E-15, 0.260848E-15
00464     669*        *   , 0.397277E-14, 0.137296E-13,-0.295610E-11,-0.146266E-15/
00466     670*          DATA D95
00466     671*        *   / 0.938696E-15, 0.898232E-13, 0.184403E-13,-0.245254E-11
00466     672*        *   ,-0.143315E-15,-0.863060E-16, 0.000000E 00, 0.774350E-16
00466     673*        *   ,-0.447867E-14, 0.163340E-03, 0.701700E-13, 0.768617E-12
00466     674*        *   , 0.194788E-12, 0.763946E-12, 0.105848E-12, 0.283991E-09
00466     675*        *   ,-0.262067E-11,-0.176190E-09,-0.143334E-13,-0.380601E-11/
00470     676*          DATA D96
00470     677*        *   / 0.455509E-11, 0.969962E-03,-0.193736E-12, 0.683127E-14
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00470     678*          *    , 0.000000E 00, 0.000000E 00,-0.201803E-04,-0.931600E-12
00470     679*          *    , 0.419399E-12, 0.915828E-18,-0.131300E-14, 0.663867E-14
00470     680*          *    ,-0.938239E-12,-0.279036E-12,-0.931409E-17, 0.169831E-13
00470     681*          *    , 0.118098E-11,-0.801524E-12,-0.350736E-12, 0.156958E-16/
00472     682*           DATA D97
00472     683*          *    /-0.275631E-16, 0.000000E 00,-0.147551E-14, 0.600071E-15
00472     684*          *    ,-0.284300E-09, 0.000000E 00, 0.000000E 00, 0.000000E 00
00472     685*          *    , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00472     686*          *    , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00472     687*          *    , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00474     688*           DATA D98
00474     689*          *    / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.969962E-03
00474     690*          *    , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00474     691*          *    , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00474     692*          *    , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00474     693*          *    , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00476     694*           DATA D99
00476     695*          *    /-0.101479E-11,-0.261767E-11, 0.169266E-11,-0.253384E-11
00476     696*          *    , 0.990758E-12, 0.102150E-10, 0.793043E-12,-0.172484E-11
00476     697*          *    ,-0.217403E-14,-0.136824E-12, 0.128063E-11, 0.244362E-11
00476     698*          *    ,-0.512034E-14,-0.231166E-14, 0.000000E 00, 0.000000E 00
00476     699*          *    ,-0.126886E-12, 0.120154E-11, 0.277731E-11,-0.157039E-17/
00500     700*           DATA D100
00500     701*          *    / 0.197486E-14,-0.542087E-12, 0.174362E-11, 0.969962E-03
00500     702*          *    ,-0.146502E-16, 0.109557E-14, 0.369669E-12, 0.124586E-11
00500     703*          *    , 0.460770E-11,-0.142517E-16,-0.121273E-16, 0.000000E 00
00500     704*          *    , 0.228820E-14, 0.465218E-14,-0.100381E-10, 0.161767E-02
00500     705*          *    , 0.102448E-07,-0.540579E-04,-0.408987E-09, 0.312912E-05/
00502     706*           DATA D101
00502     707*          *    /-0.477491E-08, 0.212932E-09,-0.923228E-06, 0.383584E-14
00502     708*          *    , 0.333763E-12, 0.359416E-09,-0.154806E-05, 0.541712E-15
00502     709*          *    ,-0.116362E-13, 0.000000E 00, 0.000000E 00, 0.174027E-13
00502     710*          *    , 0.454650E-09,-0.195801E-05,-0.257421E-17,-0.208782E-13
00502     711*          *    , 0.219502E-13, 0.454628E-09,-0.195800E-05,-0.170518E-17/
00504     712*           DATA D102
00504     713*          *    / 0.223317E-13,-0.475848E-08, 0.378400E-09,-0.162913E-05
00504     714*          *    ,-0.336102E-17, 0.531259E-17, 0.000000E 00, 0.694857E-12
00504     715*          *    ,-0.299157E-08, 0.257697E-10, 0.161767E-02, 0.102448E-07
00504     716*          *    ,-0.540579E-04,-0.408987E-09, 0.312912E-05,-0.477491E-08
00504     717*          *    , 0.212932E-09,-0.923228E-06, 0.383584E-14, 0.333763E-12/
00506     718*           DATA D103
00506     719*          *    / 0.359416E-09,-0.154806E-05, 0.541712E-15,-0.116362E-13
00506     720*          *    , 0.000000E 00, 0.000000E 00, 0.174027E-13, 0.454650E-09
00506     721*          *    ,-0.195801E-05,-0.257421E-17,-0.208782E-13, 0.219502E-13
00506     722*          *    , 0.454628E-09,-0.195800E-05,-0.170518E-17, 0.223317E-13
00506     723*          *    ,-0.475848E-08, 0.378400E-09,-0.162913E-05,-0.336102E-17/
00510     724*           DATA D104
00510     725*          *    / 0.531259E-17, 0.000000E 00, 0.694857E-12,-0.299157E-08
00510     726*          *    , 0.257697E-10, 0.000000E 00, 0.000000E 00, 0.000000E 00
00510     727*          *    , 0.000000E 00, 0.158267E-02, 0.000000E 00, 0.000000E 00
00510     728*          *    , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00510     729*          *    , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00512     730*           DATA D105
00512     731*          *    / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00512     732*          *    , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00512     733*          *    , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
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00512     *     , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00512     *     , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00514      DATA D106
00514     *    / 0.000000E 00, 0.000000E 00, 0.158267E-02, 0.000000E 00
00514     *    , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00514     *    , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00514     *    , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00514     *    , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00/
00516      DATA D107
00516     *    / 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00516     *    , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00516     *    , 0.000000E 00, 0.000000E 00, 0.000000E 00, 0.000000E 00
00516     *    , 0.000000E 00, 0.000000E 00, 0.000000E 00,-0.400095E-04
00516     *    ,-0.467103E-04, 0.552060E-04,-0.467102E-04, 0.552060E-04/
00520      DATA D108
00520     *    / 0.453584E-04, 0.936900E-04, 0.238030E-03, 0.501326E-06
00520     *    ,-0.910229E-06, 0.895948E-04, 0.256269E-03, 0.481555E-06
00520     *    ,-0.193457E-05, 0.000000E 00, 0.000000E 00,-0.810235E-05
00520     *    ,-0.394747E-04, 0.612591E-04, 0.473738E-06,-0.130035E-05
00520     *    , 0.102552E-03,-0.142027E-03,-0.930538E-05, 0.437887E-06/
00522      DATA D109
00522     *    / 0.194780E-05, 0.188523E-04,-0.258076E-03, 0.140330E-03
00522     *    , 0.575605E-06,-0.119212E-05, 0.000000E 00,-0.544128E-06
00522     *    , 0.644300E-06, 0.652362E-04,-0.230626E-04,-0.929233E-04
00522     *    , 0.128919E-04,-0.929233E-04, 0.128919E-04, 0.147757E-03
00522     *    ,-0.238115E-03, 0.172163E-04, 0.966403E-06,-0.121481E-05/
00524      DATA D110
00524     *    /-0.174954E-03, 0.876934E-05, 0.148134E-05,-0.302734E-07
00524     *    , 0.000000E 00, 0.000000E 00,-0.119807E-04,-0.939632E-04
00524     *    , 0.120233E-04, 0.150296E-05, 0.112597E-06,-0.906801E-05
00524     *    ,-0.848952E-04, 0.181006E-04, 0.153560E-05,-0.174054E-06
00524     *    ,-0.879432E-05,-0.140105E-03, 0.746591E-05, 0.159837E-05/
00526      DATA D111
00526     *    / 0.139538E-06, 0.000000E 00,-0.980662E-06,-0.459758E-07
00526     *    ,-0.570367E-04/
00530
00530      DO 100 I=1,NI
00533      C(I)=-B2(I)
00534      DO 100 J=1,NJ
00537      M=NROW(J)
00540      C(I)=C(I)+B1(I,J)*T(M)
00541  100 CONTINUE
00544      C( 1)=C( 1)+2290.0
00545      C( 6)=C( 6)+302.111
00546      C(15)=C(15)+27.098+18.97E-6*T(154)
00547      C(16)=C(16)+23.00889+16.107E-6*T(154)
00550      C(17)=C(17)+57.155
00551      C(22)=C(22)+130.175
00552      C(27)=C(27)+111.26
00553      C(32)=C(32)+7.842859+102.05E-6*T(12)
00554      C(35)=C(35)+191.779+18.97126E-6*T(154)
00555
00555      PRINT 6000
00557 6000 FORMAT('1HA0 OPTICAL DISTORTION OF SUN IMAGE')
00560      PRINT 6010, (C(I),I=1,10)
00566 6010 FORMAT('0D1-01 Z-SEPARATION',3X,E11.5
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00566     790*          *  /' D1 X-TRANSLATION',5X,E11.5
00566     791*          *  /' D1 Y-TRANSLATION',5X,E11.5
00566     792*          *  /' D3 X-TRANSLATION',5X,E11.5
00566     793*          *  /' D3 Y-TRANSLATION',5X,E11.5
00566     794*          *  /' O1-F1 Z-SEPARATION',3X,E11.5
00566     795*          *  /' F1 X-TRANSLATION',5X,E11.5
00566     796*          *  /' F1 Y-TRANSLATION',5X,E11.5
00566     797*          *  /' F1 TILT ABOUT Y-AXIS',1X,E11.5
00566     798*          *  /' F1 TILT ABOUT X-AXIS',1X,E11.5)
00567     799*           PRINT 6020, (C(I),I=11,20)                          00079900
00575     800*     6020  FORMAT(' A3 X-TRANSLATION',5X,E11.5
00575     801*          *  /' A3 Y-TRANSLATION',5X,E11.5
00575     802*          *  /' A3 TILT ABOUT Y-AXIS',1X,E11.5
00575     803*          *  /' A3 TILT ABOUT X-AXIS',1X,E11.5
00575     804*          *  /' A3-O2A Z-SEPARATION',2X,E11.5
00575     805*          *  /' O2B-O2C Z-SEPARATION',1X,E11.5
00575     806*          *  /' O2D-M2 Z-SEPARATION',2X,E11.5
00575     807*          *  /' M2 X-TRANSLATION',5X,E11.5
00575     808*          *  /' M2 Y-TRANSLATION',5X,E11.5
00575     809*          *  /' M2 TILT ABOUT Y-AXIS',1X,E11.5)
00576     810*           PRINT 6030, (C(I),I=21,30)                          00081000
00604     811*     6030  FORMAT(' M2 TILT ABOUT X-AXIS',1X,E11.5
00604     812*          *  /' M2-M3 Z-SEPARATION',3X,E11.5
00604     813*          *  /' M3 X-TRANSLATION',5X,E11.5
00604     814*          *  /' M3 Y-TRANSLATION',5X,E11.5
00604     815*          *  /' M3 TILT ABOUT Y-AXIS',1X,E11.5
00604     816*          *  /' M3 TILT ABOUT X-AXIS',1X,E11.5
00604     817*          *  /' M3-FF Z-SEPARATION',3X,E11.5
00604     818*          *  /' FF X-TRANSLATION',5X,E11.5
00604     819*          *  /' FF Y-TRANSLATION',5X,E11.5
00604     820*          *  /' FF TILT ABOUT Y-AXIS',1X,E11.5)
00605     821*           PRINT 6040, (C(I),I=31,35)                          00082100
00613     822*     6040  FORMAT(' FF TILT ABOUT X-AXIS',1X,E11.5
00613     823*          *  /' FF-FILM Z-SEPARATION',1X,E11.5
00613     824*          *  /' O1 TILT ABOUT Y-AXIS',1X,E11.5
00613     825*          *  /' O1 TILT ABOUT X-AXIS',1X,E11.5
00613     826*          *  /' F1-A3 Z-SEPARATION',3X,E11.5)
00614     827*           RETURN
00615     828*           END

      END OF COMPILATION:        NO  DIAGNOSTICS.
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@FOR,US NBSEL,NBSEL
HSD 11A -12/10/73-11:07:30 (19,20)

   SUBROUTINE SELECT     ENTRY POINT 002360

   STORAGE USED: CODE(1) 002372; DATA(0) 017257; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   DELFLX 000174
    0004   ATMCOM 010657
    0005   MIDATM 004736
    0006   UNITS  000005
    0007   START  000007

   EXTERNAL REFERENCES (BLOCK, NAME)

    0010   REDNOM
    0011   EXIT
    0012   TMPTBL
    0013   NRDUS
    0014   NIO1S
    0015   NIO2S
    0016   NREWS
    0017   NPRTS
    0020   NWDUS
    0021   NERR2S
    0022   NIO3S
    0023   NWEFS
    0024   NERR3S

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   002315 1000L    0000   017145 1001F    0001   002336 1002L    0000   017056 1005F    0000   017140 1010F
    0001   001213 1012G    0001   001220 1016G    0000   017141 1030F    0001   001245 1034G    0000   017202 1040F
    0001   001252 1040G    0000   017204 1050F    0001   001273 1053G    0000   017206 1060F    0001   001313 1066G
    0000   017211 1070F    0000   017213 1080F    0000   017215 1100F    0001   001336 1104G    0001   001366 1116G
    0001   001432 1146G    0001   001445 1154G    0001   001550 1223G    0001   001563 1233G    0001   001681 1263G
    0001   001643 1271G    0001   001714 1320G    0001   001747 1343G    0001   002005 1362G    0001   002022 1367G
    0001   002044 1401G    0001   002072 1414G    0001   002113 1427G    0001   002134 1434G    0001   002161 1446G
    0001   002215 1467G    0001   002234 1501G    0001   002250 1512G    0001   002267 1523G    0001   000010 157G
    0001   000244 175L     0001   000043 202G     0001   000316 210L     0001   000114 247G     0001   000126 255G
    0001   000342 260L     0001   000140 263G     0001   000366 265L     0001   000027 27L      0001   000152 271G
    0001   000403 272L     0001   000164 277G     0001   000417 280L     0001   000422 285L     0001   000444 288L
    0001   000456 290L     0001   000467 300L     0001   000176 305G     0001   000545 305L     0001   000560 310L
    0001   000210 315G     0001   000605 315L     0001   000654 320L     0001   000215 321G     0001   000680 325L
    0001   000714 330L     0001   000233 334G     0001   000720 335L     0001   000240 340G     0001   000745 340L
    0001   000252 346G     0001   000057 35L      0001   000257 352G     0001   000064 40L      0001   000762 400L
    0001   001033 406L     0001   001034 410L     0001   001053 420L     0001   000374 422G     0001   000407 432G
    0001   001056 440L     0001   000426 446G     0001   000071 45L      0001   001131 460L     0001   000453 464G
    0001   000102 47L      0001   001164 470L     0001   001166 475L     0001   000106 50L      0001   001257 500L
    0001   001265 510L     0001   000523 515G     0001   001322 520L     0001   001330 530L     0000   017057 5985F
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0000    017061 5990F    0000    017134 5991F    0000    017112 5992F    0000    017120 5993F    0000    017130 5994F
0000    017134 5995F    0001    001365 600L     0000    017146 6000F    0000    017174 6005F    0000    017220 6024F
0000    017226 6025F    0000    017230 6035F    0001    000676 607G     0001    001412 610L     0001    001415 620L
0001    001002 656G     0001    001024 665G     0001    001506 705L     0001    001510 710L     0001    001537 715L
0001    001555 720L     0001    001103 725G     0001    001567 725L     0001    001575 730L     0001    001140 731G
0001    001620 735L     0001    001122 740G     0001    001152 761G     0001    001157 765G     0001    001665 800L
0001    001663 810L     0001    001724 814L     0001    001726 816L     0001    001735 820L     0001    001737 830L
0001    001762 835L     0001    002030 839L     0001    002051 840L     0001    002142 855L     0001    002167 900L
0001    002207 910L     0001    002242 920L     0001    002275 950L     0000 R 016774 ALPNUM    0000 R 017027 APC
0003 R  000150 APCL     0000 R  017032 APC2     0000 R  017034 APC3     0000 R  017026 APO      0003 R  000124 APOP
0000 R  017031 APO2     0000 R  017033 APO3     0000 R  000474 BNM      0000 R  017020 CAP      0005    004570 DATA
0004    002766 FDATA    0000 R  017046 FDTN     0000 I  000050 FLAG     0000 R  017043 HYS      0000 I  017012 I
0005    004570 IDATA    0000 I  017054 IE       0004    002766 IFDATA   0004    000032 IFID     0004    000003 IFN
0000 I  017051 INDSP    0000 I  017017 INDX     0000    017236 INJPS    0000 I  000251 INNODE   0000 I  000247 IOP
0004    001016 IRID     0004    000004 IRN      0004    000006 ITIME    0004    000002 ITR      0004 I  000000 IUNIT
0005    000311 IWORD    0006 I  000000 I1       0006 I  000001 I2       0006 I  000002 I3       0000 I  017014 J
0000 I  017055 JB       0000 I  017053 JE       0000 I  017035 JFAIL    0000 I  017047 JMP      0000 I  017021 K
0004    000005 KERR     0004 I  016656 KIND     0000 I  017024 KNTAP    0000 I  017044 KPATH    0007 I  000005 KPLOT
0000 I  017022 L        0005    004734 LDAT     0005    002454 LOC      0000 I  017015 LPATH    0005    000001 MEAN
0000 I  016766 MIB      0005    000455 MID      0000 I  017025 NAP      0007    000006 ND       0000 I  017016 NDE
0000 I  017045 NDFX     0000 I  000440 NDH      0000 I  017052 NDUM     0000 I  017023 NENT     0000 I  017036 NH
0000 I  000462 NHI      0000 I  016750 NI       0000 I  016762 NIB      0000 I  000467 NII      0000 I  016772 NINE
0005    000000 NMEA     0005    004735 NMNUMB   0000 I  016773 NNODE    0000 I  000052 NODE     0003 I  000004 NOFX
0000 I  017013 NOMTP    0003 I  000000 NONFX    0000 I  017030 NPATH    0000 I  017050 NSPT     0004 I  000001 NTAPE
0000 I  000051 ONE      0000 R  000241 OPT      0006 I  000003 O1       0006 I  000004 O2       0000 R  017037 POW
0000 R  000575 Q        0003 R  000054 QFLX     0004    002002 RDATA    0000 R  000605 T        0000 R  016755 TI
0007 I  000000 TINIT    0000 I  000000 TITLE    0000 R  000615 TNODE    0000 R  000500 TYME     0000 R  017042 XM
0000 R  017040 XO       0000 R  017041 YO
```

```
00101     1*          SUBROUTINE SELECT
00103     2*
00103     3*     C*****************************************************************
00103     4*     C**** SELECTS CHANGES TO NOMINAL INPUT FOR THERMAL DISTORTION PROGRAM
00103     5*     C*****************************************************************
00103     6*
00103     7*          INTEGER I1,I2,O1,O2
00104     8*          INTEGER TINIT
00105     9*          INTEGER TITLE
00106    10*          INTEGER FLAG
00107    11*          INTEGER ONE
00110    12*          DIMENSION NODE(119)
00111    13*          DIMENSION TINIT(5)
00112    14*          DIMENSION TITLE(40)
00113    15*          DIMENSION OPT(6),IOP(2)
00114    16*          DIMENSION INNODE(119)
00115    17*          DIMENSION NDH(18)
00116    18*          DIMENSION NHI(5),NII(5)
00117    19*          DIMENSION BNM(4)
00120    20*          DIMENSION TYME(61)
00121    21*          DIMENSION Q(8)
00122    22*          DIMENSION T(8)
00123    23*          DIMENSION TNODE(61,119)
00124    24*          DIMENSION NI(5),TI(5)
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00125      25*          DIMENSION NIB(4),MIB(4)
00126      26*          COMMON /DELFLX/
00126      27*         *   NONFX(4),NOFX(10,4),OFLX(10,4),APOP(5,4),APCL(5,4)
00127      28*          DATA APOP,APCL/40*99999./
00132      29*          COMMON /ATMCOM/
00132      30*         *   IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20)
00132      31*         *  ,IFID(500),(RID(500),RDATA(500),IFDATA(3000),KIND
00133      32*          DIMENSION FDATA(1)
00134      33*          EQUIVALENCE (FDATA(1),IFDATA(1))
00135      34*          COMMON /MIDATM/
00135      35*         *   NMEA,MEAN(100,3),MID(1023),LOC(100,11)
00135      36*         *  ,DATA(100),LDAT,NMNUMB
00136      37*          DIMENSION IWORD(1),IDATA(1)
00137      38*          EQUIVALENCE (IWORD(1),MEAN(1,3)),(IDATA(1),DATA(1))
00137      39*     C**** I1 IS THE CARD READER.
00137      40*     C**** I2 IS THE NOMINAL DATA DECK
00137      41*     C**** O1 IS THE PRINTER.
00137      42*     C**** O2 IS THE REVISED DATA DECK.
00140      43*          COMMON /UNITS/ I1,I2,I3,O1,O2
00141      44*          DATA ONE/1/
00143      45*          DATA NINE/9999999999/
00143      46*     C**** NRL-B DATA STATEMENT FOR NNODE AND NODE ARRAYS.
00145      47*          DATA NNODE/119/
00147      48*          DATA NODE
00147      49*         *  /  121, 122, 123, 124, 143, 144, 151, 152, 193, 194
00147      50*         *   , 195, 196, 197, 198, 199, 200, 201, 202, 203, 204
00147      51*         *   , 205, 206, 207, 208, 413, 414, 415, 429, 437, 438
00147      52*         *   , 439, 440, 442, 443, 444, 445, 452, 454, 456, 457
00147      53*         *   , 464, 471, 473, 474, 476, 477, 479, 485, 486,1440
00147      54*         *   ,1441,1442,1443,1444,1445,1446,1447,1448,1449,1450
00147      55*         *   ,1451,1452,1453,1454,1455,1456,1457,1458,1459,1308
00147      56*         *   ,1309,1310,1311,1312,1322,1300,1301,1302,1303,1304
00147      57*         *   ,1305,1306,1307,1313,1314,1315,1316,1317,1318,1319
00147      58*         *   ,1320,1321, 559, 555,2406,2407,2408,2424,2425,2426
00147      59*         *   ,2427,2428,2452,2454,2455,2456,2457,2473,2474,2476
00147      60*         *   ,2477,2478,2479,3407,3426,3453,3455,3477,3478/
00151      61*          DIMENSION ALPNUM(14)
00152      62*          COMMON /START/ TINIT,KPLOT,ND
00153      63*
00153      64*          IUNIT=I3
00154      65*
00154      66*     C***** READ IN DAYS,HOURS,MINUTES,SECONDS,MILISECONDS
00154      67*       25 CONTINUE
00155      68*          READ(I1,1005) (TINIT(I),I=1,5),NTAPE,KIND,NOMTP,KPLOT
00167      69*     1005 FORMAT(16I5)
00170      70*          IF(NOMTP.NE.1) GO TO 27
00170      71*     C**** READ NOMINAL DATA DECK FROM CARD READER.
00172      72*          CALL REDNOM
00173      73*     27   CONTINUE
00174      74*          REWIND I2
00175      75*
00175      76*          PRINT 5985
00177      77*     5985 FORMAT('1')
00200      78*          PRINT 5990,(TINIT(I),I=1,5)
00206      79*     5990 FORMAT('0INITIAL TIME (TIME=0 IN TRANSIENT)'/
00206      80*         *  '0DAY  ',I5/'0HOUR ',I5/
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00206     81*          *   '0MIN  ',I5/'0SEC  ',I5/
00206     82*          *   '0MSEC ',I5)
00207     83*          IF(NTAPE) 30,35,40
00212     84*     30   CONTINUE
00213     85*          PRINT 5991
00215     86*     5991 FORMAT('0SKYLAB USER TAPE NOT SELECTED')
00216     87*          GO TO 50
00217     88*     35   CONTINUE
00220     89*          PRINT 5992
00222     90*     5992 FORMAT('0SKYLAB USER TAPE ON DISK')
00223     91*          GO TO 45
00224     92*     40   CONTINUE
00225     93*          PRINT 5993,NTAPE
00230     94*     5993 FORMAT('0SKYLAB USER TAPE SELECTED. REELS=',I3)
00231     95*     45   CONTINUE
00232     96*          IF (KIND.EQ.2) GO TO 47
00234     97*          PRINT 5994
00236     98*     5994 FORMAT('0COMPRESSED FORMAT')
00237     99*          GO TO 50
00240    100*     47   CONTINUE
00241    101*          PRINT 5995
00243    102*     5995 FORMAT('0FIXED FORMAT')
00244    103*        50 CONTINUE
00245    104*
00245    105*     C**** INPUT TITLE CARDS
00245    106*          READ(I2,1010)(TITLE(I),I=1,13)
00253    107*          READ(I2,1010)(TITLE(I),I=14,26)
00261    108*          READ(I1,1010)(TITLE(I),I=1,13)
00267    109*          READ(I1,1010)(TITLE(I),I=14,26)
00275    110*          WRITE(02,1010)(TITLE(I),I=1,13)
00303    111*          WRITE(02,1010)(TITLE(I),I=14,26)
00311    112*      1010 FORMAT(13A6)
00312    113*
00312    114*     C**** INPUT OPTIONS DATA
00312    115*       100 CONTINUE
00312    116*     C**** READ OPTIONS CARD FROM THE CARD READER
00313    117*          READ(I1,1030)(OPT(I),I=1,6),(IOP(J),J=1,2),FLAG
00326    118*      1030 FORMAT(6F10.4,A5,I5,5X,I5)
00327    119*          IF(FLAG.EQ.0)GO TO 175
00331    120*     150  CONTINUE
00331    121*     C**** READ OPTIONS CARD FROM NOMINAL DATA DECK
00332    122*          READ(I2,1030)(OPT(I),I=1,6),(IOP(J),J=1,2)
00344    123*       175 WRITE(02,1030)(OPT(I),I=1,6),(IOP(J),J=1,2)
00344    124*     C**** DUMMY READ OF NOMINAL DATA DECK.
00356    125*          IF(FLAG.EQ.0) READ(I2,1030)
00356    126*     C**** DUMMY READ OF NINES CARD
00361    127*          READ(I2,1001)
00363    128*       200 WRITE(02,1001)NINE
00366    129*      1001 FORMAT(I10)
00367    130*
00367    131*     C**** IF NTAPE IS NEGATIVE, THERE IS NO TAPE INPUT DATA.
00367    132*          LPATH=1
00370    133*          IF(NTAPE.LT.0) LPATH=2
00372    134*
00372    135*     C**** INPUT NODAL DATA
00372    136*          J=0
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00373   137*      210   CONTINUE
00374   138*            J=J+1
00374   139*      C**** READ NODES THAT WILL NOT CHANGE TO SPECIFIED TEMPERATURE NODES
00374   140*      C****    FROM THE CARD READER.
00375   141*            READ(I1,1060) INNODE(J)
00400   142*            IF(INNODE(J).LT.99999) GO TO 210
00402   143*      250   CONTINUE
00403   144*            J=J-1
00404   145*            I=0
00405   146*      260   CONTINUE
00405   147*      C**** READ ONE NODAL DATA CARD IMAGE FROM NOMINAL DATA DECK FILE.
00406   148*            READ(I2,1060) NDE,INDX,CAP
00413   149*            IF(NDE.GE.99999) GO TO 300
00415   150*            GO TO (265,290),LPATH
00416   151*      265   CONTINUE
00417   152*            IF(J.EQ.0) GO TO 272
00417   153*      C**** TEST NODE AGAINST LIST OF NODES THAT DO NOT CHANGE TO SPECIFIED  IN NODE LIST
00417   154*      C****    TEMPERATURE NODES.
00421   155*            DO 270 K=1,J
00424   156*            IF(NDE.EQ.INNODE(K)) GO TO 285
00426   157*      270   CONTINUE
00426   158*      C**** NODE NDE DID NOT MATCH ANY NODE OF THE INNODE ARRAY.
00430   159*
00430   160*      272   CONTINUE
00431   161*            DO 275 K=1,NNODE
00431   162*      C**** IS NDE A NODE THAT CAN CHANGE TO A SPECIFIED TEMPERATURE NODE.
00434   163*            IF(NDE.EQ.NODE(K)) GO TO 280
00436   164*      275   CONTINUE
00440   165*            GO TO 290
00441   166*
00441   167*      280   CONTINUE
00441   168*      C**** CHANGE NODE NDE TO A SPECIFIED TEMPERATURE NODE.
00442   169*            INDX=1
00443   170*            GO TO 290
00444   171*
00444   172*      285   CONTINUE
00444   173*      C**** NODE REMAINS A MASS NODE. REMOVE IT FROM THE NODE ARRAY AND
00444   174*      C****    DECREMENT NNODE.
00445   175*            DO 286 K=1,NNODE
00450   176*            IF(NDE.EQ.NODE(K)) GO TO 288
00452   177*      286   CONTINUE
00454   178*            PRINT 6000,NDE
00457   179*      6000  FORMAT('0**** NODE',I5,1X,'WAS INPUT AS A NODE BASED ON INACTIVE '
00457   180*          *   'PROBES, BUT WAS NOT IN THE NODE ARRAY.   SUBROUTINE SELECT')
00460   181*            CALL EXIT
00461   182*
00461   183*      288   CONTINUE
00462   184*            NNODE=NNODE-1
00463   185*            DO 289 L=K,NNODE
00466   186*            NODE(L)=NODE(L+1)
00467   187*      289   CONTINUE
00471   188*
00471   189*      290   CONTINUE
00472   190*            WRITE(02,1060) NDE,INDX,CAP
00477   191*            GO TO 260
00500   192*      300   WRITE(02,1001)NINE
```

```
00503      PRINT 6005,NNODE,NODE
00507 6005 FORMAT('0NNODE:NODE ARRAY'/1X,I5/(1615))
00510
00510      READ(I1,1005) NENT
00513      READ(I1,1070) (TYME(I),I=1,NENT)
00521      IF (NTAPE.LT.0) GO TO 305
00523
00523 C**** SUBRUUTINE TMPTBL SEARCHES SKYLAB ATM TAPE, CONSTRUCTS A
00523 C****    SPECIFIED TEMPERATURE TABLE, AND OBTAINS APERTURE OPEN AND
00523 C****    CLOSE TIMES.
00523 C**** TMPTBL CONSTRUCTS A TEMPERATURE TABLE FOR EACH NODE IN THE NODE
00523 C****   ARRAY AND RETURNS THESE TEMPERATURES IN THE TNODE ARRAY.
00523      CALL TMPTBL(TINIT,NENT,TYME,NNODE,NODE,TNODE,APOP,APCL)
00524
00524 305  CONTINUE
00524 C**** INPUT APERTURE DATA
00524 C**** FLAG=0 FOR CARD READER
00524 C**** FLAG=1 FOR NOMINAL DATA DECK FILE
00524 C**** FLAG =2 FOR SKYLAB TAPE
00525      READ(I1,1005)FLAG
00530      IF(FLAG-1) 309,320,330
00533 309  CONTINUE
00534      KNTAP=0
00535 310  CONTINUE
00536      KNTAP=KNTAP+1
00536 C**** CARD INPUT
00536 C**** READ NOMINAL DATA DECK FILE TO NINES CARD.
00537       READ(I2,1040) NAP,APO,APC
00544       IF(NAP.NE.99999) GO TO 310
00546      ASSIGN 315 TO NPATH
00547      KNTAP=KNTAP-1
00550      I=0
00551 315  CONTINUE
00552      I=I+1
00553      READ(I1,1040) NAP,APO,APC,APO2,APC2,APO3,APC3
00564 1040 FORMAT(I5,6E10.4)
00565      IF(NAP.EQ.99999) GOTO 400
00567      APOP(1,I)=APO
00570      APCL(1,I)=APC
00571      APOP(2,I)=APO2
00572      APCL(2,I)=APC2
00573      APOP(3,I)=APO3
00574      APCL(3,I)=APC3
00575      IF(I  .GT.KNTAP) GO TO 315
00577      GO TO 340
00600 320  CONTINUE
00600 C**** NOMINAL DATA TAPE
00601      ASSIGN 325 TO NPATH
00602      I=1
00603 325  CONTINUE
00604      READ(I2,1040) NAP,(APOP(J,I),APCL(J,I),J=1,3)
00614      APO=APOP(1,I)
00615      APC=APCL(1,I)
00616      I=I+1
00617      GO TO 340
00620 330  CONTINUE
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00620   249*      C**** SKYLAB TAPE
00621   250*            ASSIGN 335 TO NPATH
00622   251*            I=1
00623   252*      335   CONTINUE
00624   253*            READ(I2,1040)NAP,APO,APC
00631   254*            IF(NAP.EQ.99999) GO TO 400
00633   255*            APO=APOP(1,I)
00634   256*            APC=APCL(1,I)
00635   257*            I=I+1
00636   258*      340   CONTINUE
00637   259*            IF(NAP.EQ.99999)GO TO 400
00641   260*            WRITE(02,1040)NAP,APO,APC
00646   261*            GO TO NPATH,(315,325,335)
00647   262*        400 WRITE(02,1001)NINE
00652   263*
00652   264*      C**** READ FLUX INCREMENT DATA FROM CARD READER.
00652   265*            READ(I1,1005) NONFX
00655   266*            DO 405 J=1,4
00660   267*            L=NONFX(J)
00661   268*            IF(L.EQ.0) GO TO 406
00663   269*            READ(I1,1080) (NOFX(I,J),GFLX(I,J),I=1,L)
00672   270*      405   CONTINUE
00674   271*      406   CONTINUE
00675   272*
00675   273*      C**** INPUT HEATER DATA
00675   274*            J=0
00676   275*        410 J=J+1
00676   276*      C**** READ HEATER NODES THAT FAILED FROM THE CARD READER.
00677   277*            READ(I1,1005)NDH(J)
00702   278*            IF(NDH(J).EQ.99999)GO TO 420
00704   279*            GO TO 410
00705   280*        420 CONTINUE
00706   281*            JFAIL=J-1
00707   282*      440   CONTINUE
00707   283*      C**** READ THE HEATER DATA CARDS FROM THE NOMINAL DATA DECK FILE.
00710   284*            READ(I2,1050) NH,POW,XO,YO,XM,HYS
00720   285*      1050  FORMAT(I5,5F10.4)
00721   286*            IF(NH.EQ.99999) GO TO 470
00723   287*            READ(I2,1005) (NHI(I),I=1,5),(NII(I),I=1,5)
00735   288*            IF(JFAIL.EQ.0) GO TO 460
00737   289*            DO 450 K=1,JFAIL
00742   290*            IF(NDH(K).EQ.NH)GO TO 440
00744   291*        450 CONTINUE
00746   292*
00746   293*      460   CONTINUE
00746   294*      C****  WRITE TO THE REVISED DATA DECK FILE.
00747   295*            WRITE(02,1050) NH,POW,XO,YO,XM,HYS
00757   296*            WRITE(02,1005) (NHI(I),I=1,5),(NII(I),I=1,5)
00771   297*            GO TO 440
00772   298*      470   CONTINUE
00773   299*            IF(JFAIL.EQ.0) GO TO 500
00775   300*      475   CONTINUE
00775   301*      C**** READ HEATER DATA CARDS FROM THE CARD READER.
00776   302*            READ(I1,1050) NH,POW,XO,YO,XM,HYS
01006   303*            IF(NH.EQ.99999) GO TO 500
01010   304*            READ(I1,1005) (NHI(I),I=1,5),(NII(I),I=1,5)
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01022     WRITE(02,1050) NH,POW,XO,YO,XM,HYS
01032     WRITE(02,1005) (NHI(I),I=1,5),(NII(I),I=1,5)
01044     GO TO 475
01045
01045   500 WRITE(02,1001)NINE
01050
01050 C**** INPUT BNM DATA
01050 510   CONTINUE
01051       READ(I2,1060) (NIB(I),MIB(I),BNM(I),I=1,4)
01061  1060 FORMAT(4(2I5,E10.4))
01062       IF(NIB(I).EQ.99999) GO TO 520
01064       WRITE(02,1060) (NIB(I),MIB(I),BNM(I),I=1,4)
01074       GO TO 510
01075 520   CONTINUE
01076       WRITE(02,1001) NINE
01101 530   CONTINUE
01102
01102 C****  INPUT CNM DATA
01102       READ(I2,1060) (NIB(I),MIB(I),BNM(I),I=1,4)
01112       IF(NIB(I).EQ.99999) GO TO 600
01114       WRITE(02,1060) (NIB(I),MIB(I),BNM(I),I=1,4)
01124       GO TO 530
01125   600 WRITE(02,1001)NINE
01130
01130 C**** INPUT TIME TABLE DATA
01130       READ(I2,1005)NENT
01133       WRITE(02,1005) NENT
01136       I=1
01137       GO TO 620
01140 610   CONTINUE
01141       I=I+8
01142 620   CONTINUE
01143       K=I+7
01144       READ(I2,1070)(TYME(J),J=1,K)
01152       WRITE(02,1070)(TYME(J),J=I,K)
01160  1070 FORMAT(   8F10.4)
01161       IF(K.LT.NENT) GO TO 610
01163   700 WRITE(02,1001)NINE
01163 C**** DUMMY READ OF NINES CARD
01166       READ(I2,1005)
01170
01170 C**** INPUT FLUX DATA
01170 C**** FLAG=1 FLUX DATA FROM CARD READER.
01170 C**** FLAG=2 FLUX DATA FROM NOMINAL DATA DECK FILE
01170       READ(I1,1005) FLAG
01173       IF(FLAG.EQ.1) GO TO 705
01175       ASSIGN 720 TO KPATH
01176       GO TO 710
01177 705   CONTINUE
01177 C**** SET UP DUMMY READ OF NOMINAL DATA DECK.
01200       ASSIGN 725 TO KPATH
01201 710   CONTINUE
01201 C**** READ FLUX TABLES FROM NOMINAL DATA DECK.
01202       READ(I2,1080) NDFX,FDTN
01206  1080 FORMAT(I5,F10.4)
01207       IF(NDFX.EQ.99999) GO TO 730
```

```
01211   361*          IF(FLAG.NE.1)
01211   362*         *WRITE(02,1080) NDFX,FDTN
01216   363*          K=0
01217   364*     715  CONTINUE
01220   365*          K=K+1
01221   366*          READ(I2,1070) (Q(I),I=1,8)
01227   367*          GO TO KPATH,(725,720)
01230   368*     720  CONTINUE
01231   369*          WRITE(02,1070) (Q(I),I=1,8)
01237   370*     725  CONTINUE
01240   371*          IF(8*K-NENT) 715,710,710
01243   372*
01243   373*     730  CONTINUE
01243   374*     C**** READ FLUX TABLES FROM CARD READER.
01244   375*          READ(I1,1080) NDFX,FDTN
01250   376*          IF(NDFX.EQ.99999) GO TO 800
01252   377*          WRITE(02,1080) NDFX,FDTN
01256   378*          K=0
01257   379*     735  CONTINUE
01260   380*          K=K+1
01261   381*          READ(I1,1070) (Q(I),I=1,8)
01267   382*          WRITE(02,1070) (Q(I),I=1,8)
01275   383*          IF(8*K-NENT) 735,730,730
01300   384*      800 WRITE(02,1001)NINE
01303   385*
01303   386*     C**** INPUT SPECIFIED TEMPERATURE DATA
01303   387*     810  CONTINUE
01304   388*          JMP=1
01305   389*          READ(I2,1005) NSPT,INDSP
01311   390*          IF(NSPT.EQ.99999) GO TO 840
01313   391*          IF(NTAPE.LT.0) GO TO 816
01315   392*          IF(NNODE.LE.0) GOTO 816
01317   393*          DO 812 I=1,NNODE
01322   394*          IF(NSPT.EQ.NODE(I)) GO TO 814
01324   395*     812  CONTINUE
01326   396*          GO TO 816
01327   397*     814  CONTINUE
01330   398*          JMP=2
01331   399*     816  CONTINUE
01332   400*          IF(INDSP.EQ.1) GO TO 820
01334   401*          NDUM=8
01335   402*          GO TO 830
01336   403*     820  CONTINUE
01337   404*          NDUM=NENT
01340   405*     830  CONTINUE
01341   406*          READ(I2,1070) (T(I),I=1,NDUM)
01347   407*          GO TO (835,810),JMP
01350   408*     835  CONTINUE
01351   409*          WRITE(02,1005) NSPT,INDSP
01355   410*          JE=0
01356   411*          IE=((NDUM-1)/8)*8
01357   412*          IF(IE.EQ.0) GO TO 839
01361   413*          DO 838 I=1,IE,8
01364   414*          JE=I+7
01365   415*          WRITE(02,1070) (T(J),J=I,JE)
01373   416*     838  CONTINUE
```

```
01375     417*
01375     418*      839   CONTINUE
01376     419*            JB=JE+1
01377     420*            WRITE(02,1070) (T(J),J=JB,NDUM)
01405     421*            GO TO 810
01406     422*      840   CONTINUE
01407     423*
01407     424*            IF(NTAPE.LT.0) GO TO 900
01411     425*            IF(NNODE.LE.0) GO TO 900
01413     426*
01413     427*      C**** STORE SPECIFIED TEMPERATURE TABLES FROM TMPTBL.
01413     428*            DO 860 I=1,NNODE
01416     429*            WRITE(02,1035) NODE(I),ONE
01422     430*            JE=0
01423     431*            IE=((NDUM-1)/8)*8
01424     432*            IF(IE.EQ.0) GO TO 855
01426     433*            DO 850 L=1,IE,8
01431     434*            JE=L+7
01432     435*            WRITE(02,1070) (TNODE(J,I),J=L,JE)
01440     436*      850   CONTINUE
01442     437*
01442     438*      855   CONTINUE
01443     439*            JB=JE+1
01444     440*            WRITE(02,1070) (TNODE(J,I),J=JB,NENT)
01452     441*      860   CONTINUE
01454     442*        900 WRITE(02,1001)NINE
01457     443*
01457     444*      C**** INPUT INITIAL TEMPERATURE DATA
01457     445*      C**** FLAG=1 INITIAL TEMPERATURES FROM NOMINAL DATA DECK FILE
01457     446*      C**** FLAG=2 INITIAL TEMPERATURES FROM CARD READER.
01457     447*            READ(I1,1005)FLAG
01462     448*            IF(FLAG.EQ.1) GO TO 920
01464     449*      910   CONTINUE
01464     450*      C**** INITIAL TEMPERATURES FROM CARD READER
01465     451*            READ(I1,1100)(NI(J),TI(J),J=1,5)
01474     452*       1100 FORMAT(5(I5,F10.4))
01475     453*            IF(NI(1).EQ.99999)GO TO 950
01477     454*            WRITE(02,1100)(NI(J),TI(J),J=1,5)
01506     455*            GO TO 910
01507     456*      920   CONTINUE
01507     457*      C**** INITIAL TEMPERATURES FROM NOMINAL DATA DECK.
01510     458*            READ(I2,1100)(NI(J),TI(J),J=1,5)
01517     459*            IF(NI(1).EQ.99999)GO TO 950
01521     460*            WRITE(02,1100)(NI(J),TI(J),J=1,5)
01530     461*            GO TO 920
01531     462*        950 WRITE(02,1001)NINE
01534     463*
01534     464*            END FILE 02
01535     465*            REWIND 02
01536     466*            PRINT 6024
01540     467*      6024  FORMAT('1***** REVISED DATA DECK *****')
01541     468*
01541     469*      1000   CONTINUE
01542     470*            READ(02,6025,END=1002) ALPNUM
01545     471*      6025  FORMAT(13A6,A2)
01546     472*            PRINT 6035,ALPNUM
```

```
01551    473*      6035  FORMAT(1X,13A6,A2)
01552    474*            GO TO 1000
01553    475*
01553    476*      1002  CONTINUE
01554    477*            REWIND 02
01555    478*            RETURN
01556    479*            END
```

END OF COMPILATION: NO DIAGNOSTICS.

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@FOR,US NBTMP,NBTMP
HSD 11A -12/10/73-11:07:40 (19,20)

   SUBROUTINE TMPTBL     ENTRY POINT 000671

   STORAGE USED: CODE(1) 000725; DATA(0) 000700; BLANK COMMON(2) 000000

   COMMON BLOCKS:

    0003    ATMCOM 010657
    0004    MIDATM 004736
    0005    APERTR 000001

   EXTERNAL REFERENCES (BLOCK, NAME)

    0006    READID
    0007    IDREC
    0010    RDATM
    0011    APTR
    0012    TIMAD
    0013    NTRAN
    0014    SMOOTH
    0015    NERR2$
    0016    NPRT$
    0017    NIO2$
    0020    NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001    000057 100L      0001    000101 110L      0001    000114 250L      0001    000105 261G      0001    000120 272G
    0001    000126 300L      0001    000163 307G      0001    000172 315L      0001    000174 320L      0001    000055 50L
    0001    000536 520L      0001    000551 530L      0001    000571 550L      0001    000636 551G      0001    000615 600L
    0000    000627 602DF     0001    000651 650L      0004 R  004570 DATA      0000 R  000626 DT        0003 R  002766 FDATA
    0000 I  000620 I         0004    004576 IDATA     0003    002766 IFDATA    0003    000032 IFID      0003    000003 IFN
    0000    000646 INJP$     0003    001016 IRID      0003    000004 IRN       0003 I  000006 ITIME     0003    000002 ITR
    0000 I  000621 ITYME     0003 I  000000 IUNIT     0004 I  000311 IWORD     0000 I  000532 J         0000 I  000624 K
    0003    000005 KERR      0003 I  010656 KIND      0000 I  000533 KNVRT     0004    004734 LDAT      0004    002454 LOC
    0004 I  000001 MEAN      0004    000455 MID       0005 I  000000 NAP       0004 I  000000 NMEA      0004 I  004735 NMNUMB
    0000 I  000531 NNODE     0000 I  000001 NODE      0003    000001 NTAPE     0003    002002 RDATA     0000 R  000625 TAPHR
    0000 I  000000 TDAY      0000 R  000357 TEMPS     0000 R  000622 TH        0000 R  000623 THRS      0000 R  000170 TNODE
    0000 R  000444 TPROBE

00101      1*          SUBROUTINE TMPTBL(TINIT,NTYME,TYME,KNODE,KODE,TKODE,APO,APC)
00101      2*     C*****************************************************************
00101      3*     C     TINIT - ARRAY OF INITIAL GMT, DAY, HOURS, MINUTES, SECONDS,
00101      4*     C        MILLISECONDS.
00101      5*     C     NTYME - NUMBER OF ENTRIES IN THE TYME ARRAY.
00101      6*     C     TYME - ARRAY OF INDEPENDENT VARIABLE TIME FOR SPECIFIED TEMPERATURE TABLES
00101      7*     C     KNODE - NUMBER OF NODES DEPENDENT UPON PROBE TEMPERATURES.
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00101      C     KODE - ARRAY OF NODE NUMBERS OF NODES DEPENDENT UPON PROBE TEMPERATURES.
00101      C     TKODE - ARRAY OF NODE TEMPERATURES OF CORRESPONDING NODES OF NODE ARRAY.
00101      C     APO - APERTURE OPEN TIMES.
00101      C     APC - APERTURE CLOSE TIMES.
00101      C     NMNUMB - NUMBER OF TEMPERATURE PROBE MEASUREMENT NUMBERS.
00101      C     MNUMB - TEMPERATURE PROBE MEASUREMENT NUMBERS.
00101      C     PROBE  - MSFC ID NUMBERS FOR TEMPERATURE MEASUREMENTS.
00101      C     IWORD - SUBSCRIPT OF THE TEMPERATURE PROBE IN THE FIXED FORMAT
00101      C        DATA ARRAY.
00101      C     NAP   - NUMBER OF APERTURE MEASUREMENT NUMBERS.
00101      C     MAPNUM - APERTURE MEASUREMENT NUMBERS.
00101      C     MSFCAP - APRETURE MSFC ID NUMBERS.
00101      C     IAPWRD - SUBSCRIPT OF APERTURE PROBEIN THE FIXED FORMAT DATA ARRAY.
00101      C*****************************************************************
00103
00103
00103            INTEGER TINIT(5),TDAY
00104            DIMENSION TYME(1)
00105            DIMENSION APO(5,4),APC(5,4)
00106            COMMON /ATMCOM/
00106          *    IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20)
00106          *   ,IFID(500),IRID(500),RDATA(500),IFDATA(3000),KIND
00107            DIMENSION FDATA(1)
00110            EQUIVALENCE (FDATA(1),IFDATA(1))
00111            COMMON /MIDATM/
00111          *    NMEA,MEAN(100,3),MID(1023),LOC(100,11)
00111          *   ,DATA(100),LDAT,NMNUMB
00112            DIMENSION IWORD(1),IDATA(1)
00113            EQUIVALENCE (IWORD(1),MEAN(1,3)),(IDATA(1),DATA(1))
00114            COMMON /APERTR/ NAP
00114      C**** SPECIFICATION STATEMENTS FOR NRL-8.
00115            DIMENSION NODE(119),TNODE(119),TEMPS(53),TPROBE(53),KODE(119)
00115          *    ,TKODE(61,119)
00116            DATA NNODE/119/,NMNUMB/53/,NAP/3/
00122            DATA NMEA/58/
00124            DATA
00124          *    (MEAN( 1,J),J=1,3)/'C0084-82B    ', 1      /
00124          *   ,(MEAN( 2,J),J=1,3)/'C0085-82B    ', 2      /
00124          *   ,(MEAN( 3,J),J=1,3)/'C0087-82B    ', 3      /
00124          *   ,(MEAN( 4,J),J=1,3)/'C0089-82B    ', 4      /
00124          *   ,(MEAN( 5,J),J=1,3)/'C0093-82B    ', 5      /
00124          *   ,(MEAN( 6,J),J=1,3)/'C0094-82B    ', 6      /
00124          *   ,(MEAN( 7,J),J=1,3)/'C0196-701    ', 7      /
00124          *   ,(MEAN( 8,J),J=1,3)/'C0207-82B    ', 8      /
00124          *   ,(MEAN( 9,J),J=1,3)/'C0208-82B    ', 9      /
00124          *   ,(MEAN(10,J),J=1,3)/'C0209-82B    ',10      /
00137            DATA
00137          *    (MEAN(11,J),J=1,3)/'C0210-82B    ',11      /
00137          *   ,(MEAN(12,J),J=1,3)/'C0212-82B    ',12      /
00137          *   ,(MEAN(13,J),J=1,3)/'C0213-82B    ',13      /
00137          *   ,(MEAN(14,J),J=1,3)/'C0214-82B    ',14      /
00137          *   ,(MEAN(15,J),J=1,3)/'C0215-82B    ',15      /
00137          *   ,(MEAN(16,J),J=1,3)/'C0216-82B    ',16      /
00137          *   ,(MEAN(17,J),J=1,3)/'C0217-82B    ',17      /
00137          *   ,(MEAN(18,J),J=1,3)/'C0219-82B    ',18      /
00137          *   ,(MEAN(19,J),J=1,3)/'C0220-82B    ',19      /
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00137   64*        *  ,(MEAN(20,J),J=1,3)/'C0222-828    ',20      /
00152   65*         DATA
00152   66*        *   (MEAN(21,J),J=1,3)/'C0223-828    ',21      /
00152   67*        *  ,(MEAN(22,J),J=1,3)/'C0224-828    ',22      /
00152   68*        *  ,(MEAN(23,J),J=1,3)/'C0225-828    ',23      /
00152   69*        *  ,(MEAN(24,J),J=1,3)/'C0282-701    ',24      /
00152   70*        *  ,(MEAN(25,J),J=1,3)/'C0286-704    ',25      /
00152   71*        *  ,(MEAN(26,J),J=1,3)/'C0287-704    ',26      /
00152   72*        *  ,(MEAN(27,J),J=1,3)/'C0288-703    ',27      /
00152   73*        *  ,(MEAN(28,J),J=1,3)/'C0313-704    ',28      /
00152   74*        *  ,(MEAN(29,J),J=1,3)/'C0317-703    ',29      /
00152   75*        *   (MEAN(30,J),J=1,3)/'C0319-701    ',30/
00165   76*         DATA
00165   77*        *   (MEAN(31,J),J=1,3)/'C0320-701    ',31      /
00165   78*        *  ,(MEAN(32,J),J=1,3)/'C0321-701    ',32      /
00165   79*        *  ,(MEAN(33,J),J=1,3)/'C0373-701    ',33      /
00165   80*        *  ,(MEAN(34,J),J=1,3)/'C0386-701    ',34      /
00165   81*        *  ,(MEAN(35,J),J=1,3)/'C0405-828    ',35      /
00165   82*        *  ,(MEAN(36,J),J=1,3)/'C0406-828    ',36      /
00165   83*        *  ,(MEAN(37,J),J=1,3)/'C0407-828    ',37      /
00165   84*        *  ,(MEAN(38,J),J=1,3)/'C0408-828    ',38      /
00165   85*        *  ,(MEAN(39,J),J=1,3)/'C0410-828    ',39      /
00165   86*        *  ,(MEAN(40,J),J=1,3)/'C0412-828    ',40      /
00200   87*         DATA
00200   88*        *   (MEAN(41,J),J=1,3)/'C0413-828    ',41      /
00200   89*        *  ,(MEAN(42,J),J=1,3)/'C0414-828    ',42      /
00200   90*        *  ,(MEAN(43,J),J=1,3)/'C0416-828    ',43      /
00200   91*        *  ,(MEAN(44,J),J=1,3)/'C0417-828    ',44      /
00200   92*        *  ,(MEAN(45,J),J=1,3)/'C0419-828    ',45      /
00200   93*        *  ,(MEAN(46,J),J=1,3)/'C0421-828    ',46      /
00200   94*        *  ,(MEAN(47,J),J=1,3)/'C0423-828    ',47      /
00200   95*        *  ,(MEAN(48,J),J=1,3)/'C0424-828    ',48      /
00200   96*        *  ,(MEAN(49,J),J=1,3)/'C0426-828    ',49      /
00200   97*        *  ,(MEAN(50,J),J=1,3)/'C0427-828    ',50      /
00213   98*         DATA
00213   99*        *   (MEAN(51,J),J=1,3)/'C0429-828    ',51      /
00213  100*        *  ,(MEAN(52,J),J=1,3)/'C0431-828    ',52      /
00213  101*        *  ,(MEAN(53,J),J=1,3)/'C0444-701    ',53      /
00213  102*        *  ,(MEAN(54,J),J=1,3)/'K0244-828    ',54      /
00213  103*        *  ,(MEAN(55,J),J=1,3)/'M0301-828    ',55      /
00213  104*        *  ,(MEAN(56,J),J=1,3)/'K0178-828    ',56      /
00213  105*        *  ,(MEAN(57,J),J=1,3)/'K0179-828    ',57      /
00213  106*        *  ,(MEAN(58,J),J=1,3)/'K0180-828    ',58      /
00224  107*         DATA NODE
00224  108*        *  /  121, 122, 123, 124, 143, 144, 151, 152, 193, 194, 195, 196
00224  109*        *     ,197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208
00224  110*        *    , 413, 414, 415, 429, 437, 438, 439, 440, 442, 443, 444, 446
00224  111*        *    , 452, 454, 456, 457, 464, 471, 473, 474, 476, 477, 479, 485
00224  112*        *    , 486,1440,1441,1442,1443,1444,1445,1446,1447,1448,1449,1450
00224  113*        *    ,1451,1452,1453,1454,1455,1456,1457,1458,1459,1308,1309,1310
00224  114*        *    ,1311,1312,1322,1300,1301,1302,1303,1304,1305,1306,1307,1313
00224  115*        *    ,1314,1315,1316,1317,1318,1319,1320,1321, 569, 555,2406,2407
00224  116*        *    ,2408,2424,2425,2426,2427,2428,2452,2454,2455,2456,2457,2473
00224  117*        *    ,2474,2476,2477,2478,2479,3407,3426,3453,3455,3477,3478/
00226  118*         DIMENSION KNVRT(53)
00227  119*         DATA (KNVRT(I),I=1,6)/6*0/, KNVRT(7)/1/
```

```
00227     *     ,(KNVRT(I),I=8,23)/16*0/,(KNVRT(I),I=24,34)/11*1/
00227     *     ,(KNVRT(I),I=35,52)/18*0/, KNVRT(53)/1/
00236
00236           TCONV(IA,IB,IC,ID)=IA+(IB+(IC+ID/1000.)/60.)/60.
00237
00237           ITYME=1
00240           TDAY=TINIT(1)
00241           TH  =TCONV(TINIT(2),TINIT(3),TINIT(4),TINIT(5))
00242           THRS=TH
00243           IF(KIND.EQ.2) GO TO 50
00243     C**** COMPRESSED FORMAT - READ ID RECORDS.
00245           CALL READID
00246           GO TO 100
00247     50    CONTINUE
00247     C**** FIXED FORMAT - READ ID RECORDS.
00250           CALL IDREC
00251
00251     100   CONTINUE
00251     C**** READ ONE ATM TAPE DATA RECORD.
00252           CALL RDATM
00253
00253     C**** CALL SUBROUTINE APTR TO SEARCH FOR APERTURE OPEN AND CLOSE
00253     C****    CONDITIONS.
00253           CALL APTR(TINIT,APO,APC)
00254
00254           IF(KNODE.LE.0) GO TO 300
00256           GO TO (110,250),KIND
00257     110   CONTINUE
00257     C**** SET PROBE TEMPERATURES
00260           DO 210 J=1,NMNUMB
00263           K=IWORD(J)
00264           TEMPS(J)=DATA(K)
00265     210   CONTINUE
00267           GO TO 300
00270
00270     250   CONTINUE
00270     C**** SET PROBE TIMPERATURES.
00271           DO 260 I=1,NMNUMB
00274           J=IWORD(I)
00275           TEMPS(I)=FDATA(J)
00276     260   CONTINUE
00300
00300     300   CONTINUE
00300     C**** HAS THE TAPE RECORD TIME REACHED THE TIME IN THE TYME ARRAY.
00301           IF(ITIME(1).NE.TDAY) GO TO 100
00303           TAPHR=TCONV(ITIME(2),ITIME(3),ITIME(4),ITIME(5))
00304           IF(TAPHR.LT.THRS) GO TO 100
00304     C**** TIME FROM TAPE RECORD HAS REACHED THE TIME TO STORE PROBE DATA.
00306           DO 320 I=1,NMNUMB
00311           IF(KNVRT(I).EQ.0) GO TO 315
00311     C**** TAPE TEMPERATURE IS DEGREES CENTIGRADE.
00313           TPROBE(I)=TEMPS(I)*1.8+32.0
00314           GO TO 320
00315     315   CONTINUE
00315     C**** TAPE TEMPERATURE IS DEGREES FAHRENHEIT.
00316           TPROBE(I)=TEMPS(I)
```

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00317   176*      320   CONTINUE
00321   177*
00321   178*      400   CONTINUE
00322   179*            IF(KNODE.LE.0) GO TO 600
00322   180*      C**** COMPUTE TEMPERATURES OF THE SPECIFIED TEMPERATURE NODES AT EACH
00322   181*      C****    TIME OF THE TIME ARRAY
00324   182*            TNODE(  1)=TPROBE(  25)+(3./16.)*TPROBE(  27)
00325   183*            TNODE(  2)=TPROBE(  25)+(3./16.)*TPROBE(  26)
00326   184*            TNODE(  3)=TPROBE(  25)+(3./16.)*TPROBE(  27)
00327   185*            TNODE(  4)=TPROBE(  25)+(3./16.)*TPROBE(  26)
00330   186*            TNODE(  5)=TPROBE(  29)
00331   187*            TNODE(  6)=TPROBE(  29)
00332   188*            TNODE(  7)=TPROBE(  28)
00333   189*            TNODE(  8)=TPROBE(  28)
00334   190*            TNODE(  9)=(TPROBE(  30)+TPROBE(  31)+TPROBE(  32))/3.
00335   191*            TNODE(  10)=TNODE(  9)
00336   192*            TNODE(  11)=TNODE(  9)
00337   193*            TNODE(  12)=TNODE(  9)
00340   194*            TNODE(  13)=TNODE(  9)
00341   195*            TNODE(  14)=TNODE(  9)
00342   196*            TNODE(  15)=TNODE(  9)
00343   197*            TNODE(  16)=TNODE(  9)
00344   198*            TNODE(  17)=TNODE(  9)
00345   199*            TNODE(  18)=TNODE(  9)
00346   200*            TNODE(  19)=TNODE(  9)
00347   201*            TNODE(  20)=TNODE(  9)
00350   202*            TNODE(  21)=TNODE(  9)
00351   203*            TNODE(  22)=TNODE(  9)
00352   204*            TNODE(  23)=TNODE(  9)
00353   205*            TNODE(  24)=TNODE(  9)
00354   206*            TNODE(  25)=TPROBE(  17)
00355   207*            TNODE(  26)=TPROBE(  18)
00356   208*            TNODE(  27)=TPROBE(  19)
00357   209*            TNODE(  28)=TPROBE(  23)+TPROBE(  21)
00360   210*            TNODE(  29)=TPROBE(  11)+TPROBE(   5)
00361   211*            TNODE(  30)=TPROBE(  12)+TPROBE(   6)
00362   212*            TNODE(  31)=TPROBE(  12)+TPROBE(   6)
00363   213*            TNODE(  32)=TPROBE(  13)+TPROBE(   8)
00364   214*            TNODE(  33)=TPROBE(  13)
00365   215*            TNODE(  34)=TPROBE(  12)
00366   216*            TNODE(  35)=TPROBE(  12)
00367   217*            TNODE(  36)=TPROBE(  11)
00370   218*            TNODE(  37)=TPROBE(  10)+TPROBE(   4)
00371   219*            TNODE(  38)=TPROBE(  41)
00372   220*            TNODE(  39)=TPROBE(  37)
00373   221*            TNODE(  40)=TPROBE(  35)
00374   222*            TNODE(  41)=TPROBE(  10)
00375   223*            TNODE(  42)=TPROBE(  14)-TPROBE(   9)
00376   224*            TNODE(  43)=TPROBE(  44)
00377   225*            TNODE(  44)=TPROBE(  14)
00400   226*            TNODE(  45)=TPROBE(  15)
00401   227*            TNODE(  46)=TPROBE(  22)
00402   228*            TNODE(  47)=TPROBE(  23)
00403   229*            TNODE(  48)=TPROBE(  15)-TPROBE(  16)
00404   230*            TNODE(  49)=TPROBE(  22)-TPROBE(  20)
00405   231*            TNODE(  50)=TPROBE(  24)
```

```
00406   232*        TNODE(  51)=TNODE(  50)
00407   233*        TNODE(  52)=TNODE(  50)
00410   234*        TNODE(  53)=TNODE(  50)
00411   235*        TNODE(  54)=TNODE(  50)
00412   236*        TNODE(  55)=TNODE(  50)
00413   237*        TNODE(  56)=TNODE(  50)
00414   238*        TNODE(  57)=TNODE(  50)
00415   239*        TNODE(  58)=TNODE(  50)
00416   240*        TNODE(  59)=TNODE(  50)
00417   241*        TNODE(  60)=TPROBE(  53)
00420   242*        TNODE(  61)=TNODE(  60)
00421   243*        TNODE(  62)=TNODE(  60)
00422   244*        TNODE(  63)=TNODE(  60)
00423   245*        TNODE(  64)=TNODE(  60)
00424   246*        TNODE(  65)=TNODE(  60)
00425   247*        TNODE(  66)=TNODE(  60)
00426   248*        TNODE(  67)=TNODE(  60)
00427   249*        TNODE(  68)=TNODE(  60)
00430   250*        TNODE(  69)=TNODE(  60)
00431   251*        TNODE(  70)=TPROBE(  7)
00432   252*        TNODE(  71)=TPROBE(  7)
00433   253*        TNODE(  72)=TPROBE(  7)
00434   254*        TNODE(  73)=TPROBE(  7)
00435   255*        TNODE(  74)=TPROBE(  7)
00436   256*        TNODE(  75)=TPROBE(  7)
00437   257*        TNODE(  76)=TPROBE(  33)
00440   258*        TNODE(  77)=TPROBE(  34)
00441   259*        TNODE(  78)=TPROBE(  34)
00442   260*        TNODE(  79)=TPROBE(  34)
00443   261*        TNODE(  80)=TPROBE(  34)
00444   262*        TNODE(  81)=TPROBE(  34)
00445   263*        TNODE(  82)=TPROBE(  34)
00446   264*        TNODE(  83)=TPROBE(  34)
00447   265*        TNODE(  84)=TPROBE(  34)
00450   266*        TNODE(  85)=TPROBE(  34)
00451   267*        TNODE(  86)=TPROBE(  34)
00452   268*        TNODE(  87)=TPROBE(  34)
00453   269*        TNODE(  88)=TPROBE(  34)
00454   270*        TNODE(  89)=TPROBE(  34)
00455   271*        TNODE(  90)=TPROBE(  34)
00456   272*        TNODE(  91)=TPROBE(  34)
00457   273*        TNODE(  92)=TPROBE(  34)
00460   274*        TNODE(  93)=(TPROBE(  1)+TPROBE(  3))/2.
00461   275*        TNODE(  94)=TPROBE(  2)
00462   276*        TNODE(  95)=TPROBE(  52)
00463   277*        TNODE(  96)=TPROBE(  52)
00464   278*        TNODE(  97)=TPROBE(  51)
00465   279*        TNODE(  98)=TPROBE(  49)
00466   280*        TNODE(  99)=TPROBE(  49)
00467   281*        TNODE(  100)=TPROBE(  49)
00470   282*        TNODE(  101)=TPROBE(  50)
00471   283*        TNODE(  102)=TPROBE(  46)
00472   284*        TNODE(  103)=TPROBE(  45)
00473   285*        TNODE(  104)=TPROBE(  42)
00474   286*        TNODE(  105)=TPROBE(  42)
00475   287*        TNODE(  106)=TPROBE(  39)
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00476   288*          TNODE(  107)=TPROBE(  36)
00477   289*          TNODE(  108)=TPROBE(  48)
00500   290*          TNODE(  109)=TPROBE(  47)
00501   291*          TNODE(  110)=TPROBE(  43)
00502   292*          TNODE(  111)=TPROBE(  43)
00503   293*          TNODE(  112)=TPROBE(  40)
00504   294*          TNODE(  113)=TPROBE(  38)
00505   295*          TNODE(  114)=TPROBE(  51)
00506   296*          TNODE(  115)=TPROBE(  50)
00507   297*          TNODE(  116)=TPROBE(  42)
00510   298*          TNODE(  117)=TPROBE(  39)
00511   299*          TNODE(  118)=TPROBE(  40)
00512   300*          TNODE(  119)=TPROBE(  38)
00513   301*
00513   302*    510   CONTINUE
00514   303*          I=1
00515   304*          J=1
00516   305*    520   CONTINUE
00517   306*          IF(KODE(J).EQ.NODE(I)) GO TO 530
00521   307*          I=I+1
00522   308*          GO TO 520
00523   309*    530   CONTINUE
00524   310*          TKODE(ITYME,J)=TNODE(I)
00525   311*          IF(J.EQ.KNODE) GO TO 550
00527   312*          I=1
00530   313*          J=J+1
00531   314*          GO TO 520
00532   315*
00532   316*    550   CONTINUE
00533   317*          IF(ITYME.GE.NTYME) GO TO 600
00535   318*          ITYME=ITYME+1
00536   319*          DT=TH+TYME(ITYME)-THRS
00537   320*          CALL TIMAD(TDAY,THRS,DT)
00540   321*          GO TO 100
00541   322*
00541   323*    600   CONTINUE
00542   324*          CALL NTRAN (IUNIT,18)
00543   325*          IF(KNODE.EQ.0) GO TO 650
00545   326*          PRINT 6020
00547   327*    6020  FORMAT('0',10('*******'))
00550   328*          DO 640 I=1,KNODE
00553   329*          CALL SMOOTH(NTYME,TYME,KODE(I),TKODE(1,I))
00554   330*    640   CONTINUE
00556   331*
00556   332*    650   CONTINUE
00557   333*          RETURN
00560   334*          END

      END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,US NBIAP,NBIAP
HSD 11A -12/10/73-11:07:48 (18,19)

  SUBROUTINE IAPSTS    ENTRY POINT 003240

  STORAGE USED: CODE(1) 000244; DATA(3) 000036; BLANK COMMON(2) 000000

   COMMON BLOCKS:

   0003   APERTR 000001
   0004   ATMCOM 010657
   0005   MIDATM 004736

  EXTERNAL REFERENCES (BLOCK, NAME)

   0006   NERR2$
   0007   NPRT$
   0010   NIO1$
   0011   NIO2$
   0012   NERR3$

  STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

   0001   000013 100L     0001   000031 110L     0001   000055 120L     0001   000070 125L     0001   000071 130L
   0001   000103 140L     0001   000111 145L     0001   000125 150L     0001   000127 160L     0001   000131 170L
   0001   000147 180L     0001   000167 190L     0001   000215 200L     0001   000226 210L     0001   000227 500L
   0000   000007 7000F    0000   000014 7010F    0000   000021 7020F    0005 R 004570 DATA     0004 R 002766 FDATA
   0005 I 004570 IDATA    0004 I 002766 IFDATA   0004   000032 IFID     0004   000003 IFN      0000   000030 INJP$
   0004   001016 IRID     0004   000004 IRN      0000 I 000000 ISUB     0004   000006 ITIME    0004   000002 ITR
   0004   000000 IUNIT    0005 I 000311 IWORD    0000 I 000001 IZ       0000 I 000005 JSUB     0000 I 000002 JZ
   0004   000005 KERR     0004 I 010656 KIND     0000 I 000006 KSUB     0000 I 000003 KZ       0005   004734 LDAT
   0005   002454 LOC      0000 I 000004 LZ       0005   000001 MEAN     0005   000455 MID      0003   000000 NAP
   0005   000000 NMEA     0005 I 004735 NMNUMB   0004   000001 NTAPE    0004   002002 RDATA
```

```
00101      1*          SUBROUTINE IAPSTS(IOPCL)
00101      2*     C*****************************************************************
00101      3*     C    NRL-B VERSION
00101      4*     C    DETERMINES THE STATUS OF THE
00101      5*     C    APERTURE OPEN AND APERTURE CLOSE
00101      6*     C    DISCRETES.
00101      7*     C    IOPCL=0 IF APERTURE IS CLOSED
00101      8*     C    IOPCL=1 IF APERTURE IS OPEN
00101      9*     C*****************************************************************
00103     10*          DIMENSION IOPCL(1)
00104     11*          COMMON /APERTR/ NAP
00105     12*          COMMON /ATMCOM/
00105     13*         *   IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20)
00105     14*         *  ,IFID(500),IRID(500),RDATA(500),IFDATA(3000),KIND
00106     15*          DIMENSION FDATA(1)
```

```
00107      16*          EQUIVALENCE (FDATA(1),IFDATA(1))
00110      17*          COMMON /MIDATM/
00110      18*         *   NMEA,MEAN(100,3),MID(1023),LOC(100,11)
00110      19*         *  ,DATA(100),LDAT,NMNUMB
00111      20*          DIMENSION IWORD(1),IDATA(1)
00112      21*          EQUIVALENCE (IWORD(1),MEAN(1,3)),(IDATA(1),DATA(1))
00113      22*
00113      23*     C**** K0244-82B ... ZERO IMPLIES OPEN
00113      24*          ISUB=IWORD(NMNUMB+1)
00114      25*          GO TO (100,110),KIND
00115      26*     100  CONTINUE
00116      27*          IZ=FLD(26,1,IDATA(ISUB))
00117      28*          JZ=FLD(27,1,IDATA(ISUB))
00120      29*          KZ=FLD(28,1,IDATA(ISUB))
00121      30*          GO TO 120
00122      31*     110  CONTINUE
00123      32*          PRINT 7000,ISUB,IFDATA(ISUB)
00127      33*     7000 FORMAT(' K0244-82B',I5,2X,O12)
00130      34*          IZ=FLD(26,1,IFDATA(ISUB))
00131      35*          JZ=FLD(27,1,IFDATA(ISUB))
00132      36*          KZ=FLD(28,1,IFDATA(ISUB))
00133      37*
00133      38*     120  CONTINUE
00134      39*          LZ=IZ+JZ+KZ
00135      40*          IF(LZ.GE.2) GO TO 125
00135      41*     C**** APERTURE IS OPEN
00137      42*          IOPCL(1)=1
00140      43*          GO TO 130
00141      44*     125  CONTINUE
00141      45*     C**** APERTURE IS CLOSED
00142      46*          IOPCL(1)=0
00143      47*
00143      48*     130  CONTINUE
00143      49*     C**** M0301-82B ... GREATER THAN THREE IMPLIES OPEN
00144      50*          ISUB=IWORD(NMNUMB+2)
00145      51*          GO TO (140,145),KIND
00146      52*     140  CONTINUE
00147      53*          IF(DATA(ISUB)-3.0) 150,150,160
00152      54*     145  CONTINUE
00153      55*          PRINT 7010,ISUB,FDATA(ISUB)
00157      56*     7010 FORMAT(' M0301-82B',I5,2X,F6.2)
00160      57*          IF(FDATA(ISUB)-3.0) 150,150,160
00163      58*     150  CONTINUE
00163      59*     C**** APERTURE IS CLOSED
00164      60*          IOPCL(2)=0
00165      61*          GO TO 170
00166      62*     160  CONTINUE
00166      63*     C**** APERTURE IS OPEN
00167      64*          IOPCL(2)=1
00170      65*
00170      66*     170  CONTINUE
00170      67*     C**** PRS STATUS ... K0178-82B,K0179-82B,K0180-82B
00170      68*     C****    ONE IMPLIES ON
00171      69*          ISUB=IWORD(NMNUMB+3)
00172      70*          JSUB=IWORD(NMNUMB+4)
00173      71*          KSUB=IWORD(NMNUMB+5)
```

```
00174      GO TO (180,190),KIND
00175  180 CONTINUE
00176      IZ=FLD(33,1,IDATA(ISUB))
00177      JZ=FLD(34,1,IDATA(JSUB))
00200      KZ=FLD(35,1,IDATA(KSUB))
00201      GO TO 200
00202  190 CONTINUE
00203      IZ=FLD(33,1,IFDATA(ISUB))
00204      JZ=FLD(34,1,IFDATA(JSUB))
00205      KZ=FLD(35,1,IFDATA(KSUB))
00206      PRINT 7020,IZ,JZ,KZ
00213 7020 FORMAT(' K178,K179,K180',3(2X,O12))
00214  200 CONTINUE
00215      LZ=IZ+JZ+KZ
00216      IF(LZ.EQ.0) GO TO 210
00216 C**** PRS IS ON
00220      IOPCL(3)=1
00221      GO TO 500
00222  210 CONTINUE
00222 C**** PRS IS OFF
00223      IOPCL(3)=0
00224
00224  500 CONTINUE
00225      RETURN
00226      END

     END OF COMPILATION:        NO  DIAGNOSTICS.
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```
@FOR,US NBDST,NBDST
HSD 11A -12/10/73-11:07:52 (17,18)

   SUBROUTINE DSTRT      ENTRY POINT 000131

   STORAGE USED: CODE(1) 000144; DATA(0) 002065; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003    START  000007

   EXTERNAL REFERENCES $BLOCK, NAME)

    0004    STORIT
    0005    NPRT$
    0006    NIO2$
    0007    NIO1$
    0010    NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001    000020 275G      0001    000024 301G      0001    000060 320G      0001    000071 327G      0001    000102 336G
    0000    000172 6000F     0000    000205 6010F     0000    000221 6020F     0000    000231 6030F     0000    000240 6040F
    0000 R  000247 B1        0000 R  000008 B2        0000 R  000011 C         0000    000247 D         0000 R  000247 D1
    0000 R  000533 D10       0000 R  000557 D11       0000 R  000603 D12       0000 R  000627 D13       0000 R  000653 D14
    0000 R  000677 D15       0000 R  000723 D16       0000 R  000747 D17       0000 R  000773 D18       0000 R  001017 D19
    0000 R  000273 D2        0000 R  001043 D20       0000 R  001067 D21       0000 R  001113 D22       0000 R  001137 D23
    0000 R  001163 D24       0000 R  001207 D25       0000 R  001233 D26       0000 R  001257 D27       0000 R  001303 D28
    0000 R  001327 D29       0000 R  000317 D3        0000 R  001353 D30       0000 R  001377 D31       0000 R  001423 D32
    0000 R  001447 D33       0000 R  001473 D34       0000 R  001517 D35       0000 R  001543 D36       0000 R  001587 D37
    0000 R  001613 D38       0000 R  001637 D39       0000 R  000343 D4        0000 R  001663 D40       0000 R  001707 D41
    0000 R  001733 D42       0000 R  001757 D43       0000 R  002003 D44       0000 R  002027 D45       0000 R  000367 D5
    0000 R  000413 D6        0000 R  000437 D7        0000 R  000463 D8        0000 R  000507 D9        0000 I  000167 I
    0000    002047 INJP$     0000 I  000170 J         0003    000005 KPLOT     0000 I  000171 M         0003 I  000006 NI
    0000 I  000165 NJ        0000 I  000022 NROW      0003 I  000003 TINIT     0000 R  000166 XINMM


00101       1*          SUBROUTINE DSTRT(T,TIME)
00101       2*     C**** COMPUTES NRL-B DISTORTION  PARAMETERS AND PRINTS RESULTS IN MILLIMETERS
00101       3*     C**** C(1)= CHANGE IN FOCAL DISTANCE OF SUN IMAGE ON SLIT
00101       4*     C**** C(2)= HORIZONTAL POSITION  OF SUN IMAGE ON SLIT
00101       5*     C**** C(3)= VERTICAL POSITION OF SUN IMAGE ON SLIT
00101       6*     C**** C(4)= CHANGE IN FOCAL DISTANCE OF SUN IMAGE ON LEFT SIDE OF FILM
00101       7*     C**** C(5)= HORIZONTAL POSITION OF SUN IMAGE ON LEFT SIDE OF FILM
00101       8*     C**** C(6)= VERTICAL POSITION OF SUN IMAGE ON LEFT SIDE OF FILM
00101       9*     C**** C(7)= CHANGE IN FOCAL DISTANCE OF SUN IMAGE ON RIGHT SIDE OF FILM
00101      10*     C**** C(8)= HORIZONTAL POSITION OF SUN IMAGE ON RIGHT SIDE OF FILM
00101      11*     C**** C(9)= VERTICAL POSITION OF SUN IMAGE ON RIGHT SIDE OF FILM
00103      12*
00103      13*          INTEGER TINIT(5)
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00104     14*          COMMON /START/ TINIT,KPLOT,NI
00105     15*          DIMENSION B1(9,99),D(891),B2(9),C(9),T(1)
00106     16*          DIMENSION
00106     17*         *     D 1(20)      ,D 2(20)      ,D 3(20)
00106     18*         *    ,D 4(20)      ,D 5(20)      ,D 6(20)
00106     19*         *    ,D 7(20)      ,D 8(20)      ,D 9(20)
00106     20*         *    ,D10(20)      ,D11(20)      ,D12(20)
00106     21*         *    ,D13(20)      ,D14(20)      ,D15(20)
00107     22*          DIMENSION
00107     23*         *     D16(20)      ,D17(20)      ,D18(20)
00107     24*         *    ,D19(20)      ,D20(20)      ,D21(20)
00107     25*         *    ,D22(20)      ,D23(20)      ,D24(20)
00107     26*         *    ,D25(20)      ,D26(20)      ,D27(20)
00107     27*         *    ,D28(20)      ,D29(20)      ,D30(20)
00110     28*          DIMENSION
00110     29*         *     D31(20)      ,D32(20)      ,D33(20)
00110     30*         *    ,D34(20)      ,D35(20)      ,D36(20)
00110     31*         *    ,D37(20)      ,D38(20)      ,D39(20)
00110     32*         *    ,D40(20)      ,D41(20)      ,D42(20)
00110     33*         *    ,D43(20)      ,D44(20)      ,D45(11)
00111     34*          DIMENSION NROW(99)
00112     35*          EQUIVALENCE (B1(1,1),D(1))
00113     36*          EQUIVALENCE (D(  1),D 1(1)),(D( 21),D 2(1)),(D( 41),D 3(1))
00114     37*          EQUIVALENCE (D( 61),D 4(1)),(D( 81),D 5(1)),(D(101),D 6(1))
00115     38*          EQUIVALENCE (D(121),D 7(1)),(D(141),D 8(1)),(D(161),D 9(1))
00116     39*          EQUIVALENCE (D(181),D10(1)),(D(201),D11(1)),(D(221),D12(1))
00117     40*          EQUIVALENCE (D(241),D13(1)),(D(261),D14(1)),(D(281),D15(1))
00120     41*          EQUIVALENCE (D(301),D16(1)),(D(321),D17(1)),(D(341),D18(1))
00121     42*          EQUIVALENCE (D(361),D19(1)),(D(381),D20(1)),(D(401),D21(1))
00122     43*          EQUIVALENCE (D(421),D22(1)),(D(441),D23(1)),(D(461),D24(1))
00123     44*          EQUIVALENCE (D(481),D25(1)),(D(501),D26(1)),(D(521),D27(1))
00124     45*          EQUIVALENCE (D(541),D28(1)),(D(561),D29(1)),(D(581),D30(1))
00125     46*          EQUIVALENCE (D(601),D31(1)),(D(621),D32(1)),(D(641),D33(1))
00126     47*          EQUIVALENCE (D(661),D34(1)),(D(681),D35(1)),(D(701),D36(1))
00127     48*          EQUIVALENCE (D(721),D37(1)),(D(741),D38(1)),(D(761),D39(1))
00130     49*          EQUIVALENCE (D(781),D40(1)),(D(801),D41(1)),(D(821),D42(1))
00131     50*          EQUIVALENCE (D(841),D43(1)),(D(861),D44(1)),(D(881),D45(1))
00132     51*          DATA NI,NJ/9,99/,XINMM/25.4/
00136     52*          DATA NROW
00136     53*         *   / 49,  50,  51,  52,  64,  65,  66,  67,  68,  69,  70
00136     54*         *   ,  71,  72,  73,  74,  75,  76,  77,  78,  79,  80,  81
00136     55*         *   ,  82,  83,  84,  85,  86,  87,  88,  89,  90,  91,  92
00136     56*         *   ,  93,  94,  95,  96,  97,  98,  99, 100, 101, 102, 103
00136     57*         *   , 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114
00136     58*         *   , 115, 116, 117, 118, 119, 120, 121, 122, 123, 125, 126
00136     59*         *   , 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137
00136     60*         *   , 138, 139, 140, 141, 142, 143, 144, 145, 149, 156, 157
00136     61*         *   , 158, 159, 161, 162, 185, 186, 187, 188, 196, 199, 215/
00140     62*          DATA B2
00140     63*         *   / 0.364573E-01,-0.642359E-02, 0.142618E-02, 0.181396E 00
00140     64*         *   ,-0.704927E-03,-0.148323E-01, 0.183254E 00,-0.567887E-03
00140     65*         *   ,-0.145428E-01/
00142     66*          DATA D1
00142     67*         *   / 0.369438E-05,-0.915358E-05,-0.939608E-05,-0.709082E-03
00142     68*         *   ,-0.829724E-03, 0.320499E-03, 0.655728E-06, 0.501262E-04
00142     69*         *   ,-0.228904E-04,-0.419730E-06,-0.195688E-06, 0.488453E-06
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00142      70*          *    , 0.141712E-02, 0.163097E-02,-0.647262E-03,-0.967444E-05
00142      71*          *    , 0.206783E-04, 0.201772E-05, 0.104760E-04,-0.445366E-04/
00144      72*           DATA D2
00144      73*          *    /-0.544047E-04,-0.368257E-03,-0.345888E-03, 0.955424E-04
00144      74*          *    ,-0.185060E-04, 0.110446E-03,-0.612361E-04,-0.146013E-05
00144      75*          *    ,-0.888633E-06,-0.162542E-05,-0.274799E-03,-0.315491E-03
00144      76*          *    , 0.121751E-03, 0.654654E-04,-0.124280E-03,-0.764628E-05
00144      77*          *    ,-0.186995E-06, 0.743892E-05,-0.617807E-05,-0.271201E-05/
00146      78*           DATA D3
00146      79*          *    / 0.997025E-05,-0.682628E-05,-0.292704E-05, 0.957918E-05
00146      80*          *    ,-0.664024E-05,-0.614566E-07, 0.167181E-05,-0.937651E-06
00146      81*          *    ,-0.579294E-06, 0.131785E-05,-0.127459E-05,-0.566918E-06
00146      82*          *    , 0.127893E-05,-0.125658E-05,-0.598699E-07, 0.251635E-05
00146      83*          *    ,-0.216837E-05,-0.922648E-06, 0.353337E-05,-0.235432E-05/
00150      84*           DATA D4
00150      85*          *    /-0.100596E-05, 0.339255E-05,-0.228724E-05,-0.471850E-07
00150      86*          *    , 0.198320E-05,-0.170895E-05,-0.727163E-06, 0.278474E-05
00150      87*          *    ,-0.185550E-05,-0.792824E-06, 0.267376E-05,-0.180263E-05
00150      88*          *    , 0.270089E-05, 0.301059E-04, 0.158046E-04,-0.170520E-05
00150      89*          *    , 0.450697E-04,-0.989676E-04, 0.219015E-04, 0.593957E-04/
00152      90*           DATA D5
00152      91*          *    /-0.965587E-04, 0.378767E-06, 0.106240E-04, 0.271478E-05
00152      92*          *    ,-0.749598E-06, 0.398442E-04,-0.548162E-04, 0.609215E-05
00152      93*          *    , 0.433285E-04,-0.592437E-04,-0.325326E-05, 0.257702E-04
00152      94*          *    , 0.192761E-04,-0.129846E-05, 0.433466E-04,-0.105827E-03
00152      95*          *    , 0.813445E-05, 0.480561E-04,-0.136743E-03, 0.954344E-07/
00154      96*           DATA D6
00154      97*          *    / 0.410685E-06,-0.417718E-05,-0.800543E-06, 0.391895E-04
00154      98*          *    ,-0.378791E-04, 0.753202E-07, 0.394586E-04,-0.387239E-04
00154      99*          *    , 0.833858E-05,-0.198787E-04,-0.388719E-04, 0.176356E-04
00154     100*          *    , 0.487007E-03, 0.672438E-04, 0.203979E-04, 0.485723E-03
00154     101*          *    , 0.114101E-03, 0.896025E-05, 0.381660E-04,-0.533495E-04/
00156     102*           DATA D7
00156     103*          *    / 0.179149E-04, 0.224665E-03, 0.437418E-04, 0.241619E-04
00156     104*          *    , 0.223670E-03, 0.593095E-04, 0.125889E-04, 0.346757E-04
00156     105*          *    ,-0.251743E-04, 0.203105E-04, 0.144694E-03, 0.242067E-04
00156     106*          *    , 0.276781E-04, 0.141649E-03, 0.246247E-04, 0.257955E-05
00156     107*          *    , 0.358839E-04,-0.436460E-04,-0.125882E-04, 0.120604E-03/
00160     108*           DATA D8
00160     109*          *    /-0.540759E-04,-0.670539E-05, 0.121078E-03,-0.462004E-04
00160     110*          *    , 0.334696E-05, 0.339539E-04,-0.470740E-04,-0.141484E-04
00160     111*          *    , 0.192875E-03,-0.850194E-04,-0.521168E-05, 0.194137E-03
00160     112*          *    ,-0.761470E-04, 0.251246E-05, 0.198112E-04,-0.356285E-04
00160     113*          *    ,-0.103768E-04, 0.150666E-03,-0.714342E-04,-0.500346E-05/
00162     114*           DATA D9
00162     115*          *    / 0.151015E-03,-0.655230E-04, 0.531952E-05, 0.140249E-04
00162     116*          *    , 0.671962E-05, 0.119720E-04, 0.206091E-04, 0.128250E-04
00162     117*          *    , 0.189681E-04, 0.226516E-04, 0.134040E-04, 0.146176E-05
00162     118*          *    , 0.360100E-05,-0.134313E-05, 0.737987E-05, 0.289956E-04
00162     119*          *    , 0.909300E-05, 0.100176E-04, 0.301133E-04, 0.909928E-05/
00164     120*           DATA D10
00164     121*          *    / 0.984546E-06, 0.192592E-05, 0.592071E-05, 0.125593E-04
00164     122*          *    , 0.128135E-03, 0.863982E-06, 0.148153E-04, 0.129005E-03
00164     123*          *    ,-0.222238E-05, 0.336726E-05, 0.183899E-04,-0.608430E-05
00164     124*          *    , 0.846756E-06, 0.103891E-04,-0.111297E-04, 0.226954E-04
00164     125*          *    , 0.159563E-04,-0.124030E-04, 0.181941E-06,-0.288856E-05/
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00166     126*          DATA D11
00166     127*        *   / 0.725864E-05, 0.491153E-05, 0.664931E-05, 0.119361E-04
00166     128*        *   , 0.917973E-05, 0.231544E-05, 0.717191E-05, 0.236258E-05
00166     129*        *   ,-0.115368E-04, 0.727769E-05, 0.230550E-04,-0.103034E-05
00166     130*        *   ,-0.506211E-04, 0.372799E-04, 0.933204E-05,-0.693964E-04
00166     131*        *   , 0.524394E-05, 0.894510E-04, 0.464397E-04, 0.347371E-04/
00170     132*          DATA D12
00170     133*        *   /-0.603840E-04,-0.828200E-04, 0.411171E-04,-0.562646E-04
00170     134*        *   ,-0.133977E-03,-0.170283E-05,-0.694108E-05, 0.328484E-04
00170     135*        *   , 0.189076E-04,-0.134522E-04,-0.238557E-03, 0.242223E-04
00170     136*        *   ,-0.110600E-04,-0.290633E-03,-0.315783E-06, 0.381342E-04
00170     137*        *   , 0.171716E-04, 0.730686E-05, 0.592680E-04,-0.595937E-04/
00172     138*          DATA D13
00172     139*        *   / 0.961413E-05, 0.588788E-04,-0.815843E-04,-0.113927E-05
00172     140*        *   ,-0.282990E-04, 0.241899E-05, 0.240024E-05, 0.409885E-03
00172     141*        *   , 0.233226E-03, 0.318103E-05, 0.407769E-03, 0.250033E-03
00172     142*        *   ,-0.633493E-06,-0.100944E-04, 0.754867E-06, 0.391578E-05
00172     143*        *   , 0.236053E-03, 0.493881E-04, 0.494697E-05, 0.235302E-03/
00174     144*          DATA D14
00174     145*        *   / 0.505214E-04, 0.319291E-05,-0.261819E-04,-0.214634E-04
00174     146*        *   , 0.217555E-04, 0.435832E-03, 0.171991E-03, 0.223405E-04
00174     147*        *   , 0.435519E-03, 0.214536E-03, 0.340769E-05,-0.494210E-04
00174     148*        *   ,-0.259862E-04, 0.548570E-04, 0.242477E-03, 0.396797E-03
00174     149*        *   , 0.556675E-04, 0.244953E-03, 0.452919E-03, 0.124869E-05/
00176     150*          DATA D15
00176     151*        *   /-0.603824E-04, 0.100366E-03, 0.586817E-04, 0.105635E-04
00176     152*        *   , 0.271787E-03, 0.599414E-04, 0.127882E-04, 0.285990E-03
00176     153*        *   , 0.476997E-05,-0.455676E-05, 0.476545E-04, 0.432455E-04
00176     154*        *   , 0.188728E-04, 0.731870E-04, 0.448981E-04, 0.192703E-04
00176     155*        *   , 0.757173E-04,-0.519321E-05, 0.407288E-04, 0.813236E-05/
00200     156*          DATA D16
00200     157*        *   / 0.334425E-04, 0.581637E-04, 0.175908E-04, 0.421819E-04
00200     158*        *   , 0.536860E-04, 0.101555E-04, 0.196221E-05, 0.447651E-05
00200     159*        *   , 0.263302E-05, 0.205831E-04, 0.289787E-04,-0.770169E-05
00200     160*        *   , 0.191216E-04, 0.264814E-04,-0.105712E-04, 0.321009E-05
00200     161*        *   , 0.360798E-04, 0.320759E-04, 0.477487E-04,-0.899302E-05/
00202     162*          DATA D17
00202     163*        *   / 0.388317E-05, 0.411194E-04,-0.918147E-05,-0.121852E-04
00202     164*        *   , 0.374504E-05, 0.515533E-04, 0.231423E-04, 0.189049E-04
00202     165*        *   ,-0.516301E-04, 0.127961E-04, 0.177123E-04,-0.517033E-04
00202     166*        *   ,-0.405440E-05,-0.530057E-06,-0.146895E-04, 0.196837E-04
00202     167*        *   , 0.124582E-04,-0.134428E-04,-0.130073E-03, 0.132901E-04/
00204     168*          DATA D18
00204     169*        *   /-0.130818E-04,-0.153460E-03, 0.294271E-06, 0.241479E-04
00204     170*        *   , 0.831388E-05, 0.721162E-06,-0.784019E-04, 0.121718E-03
00204     171*        *   , 0.174169E-05,-0.792042E-04, 0.121259E-03,-0.296800E-06
00204     172*        *   , 0.398162E-05, 0.381650E-05, 0.332503E-04, 0.347452E-03
00204     173*        *   ,-0.375037E-03, 0.345342E-04, 0.352099E-03,-0.379885E-03/
00206     174*          DATA D19
00206     175*        *   / 0.889349E-07,-0.771934E-05,-0.202705E-04, 0.492307E-04
00206     176*        *   , 0.157387E-03, 0.691227E-03, 0.507143E-04, 0.160292E-03
00206     177*        *   , 0.760474E-03,-0.126742E-05,-0.307640E-04, 0.103645E-04
00206     178*        *   , 0.488453E-04,-0.821141E-04, 0.325393E-03, 0.479248E-04
00206     179*        *   ,-0.783619E-04, 0.342806E-03, 0.758974E-07,-0.489124E-04/
00210     180*          DATA D20
00210     181*        *   / 0.782943E-04, 0.492264E-04,-0.971009E-04, 0.240726E-03
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00210     *     , 0.461940E-04,-0.935714E-04, 0.247908E-03, 0.671511E-05
00210     *    ,-0.314611E-04, 0.103634E-03, 0.575587E-04,-0.412660E-04
00210     *     , 0.115502E-03, 0.522515E-04,-0.372668E-04, 0.118670E-03
00210     *     , 0.125037E-05, 0.870490E-05,-0.865557E-06, 0.179675E-04/
00212      DATA D21
00212     *    / 0.704149E-05,-0.426894E-05, 0.164791E-04, 0.468758E-05
00212     *    ,-0.280459E-05, 0.363330E-05, 0.275130E-04, 0.132603E-04
00212     *     , 0.477686E-04,-0.241497E-04, 0.202929E-04, 0.365445E-04
00212     *    ,-0.275177E-04, 0.163052E-04, 0.153714E-04, 0.880349E-04
00212     *    ,-0.161494E-04, 0.430505E-04,-0.744718E-04,-0.219853E-04/
00214      DATA D22
00214     *    / 0.333099E-04,-0.778073E-04,-0.472944E-04, 0.509823E-05
00214     *     , 0.100684E-03, 0.315893E-04, 0.223717E-04,-0.127058E-04
00214     *    ,-0.108064E-03, 0.190705E-04,-0.135608E-04,-0.127848E-03
00214     *    ,-0.621307E-05,-0.119086E-03, 0.121904E-04, 0.112476E-04
00214     *     , 0.848128E-05,-0.126970E-03, 0.974732E-05, 0.790995E-05/
00216      DATA D23
00216     *    /-0.132520E-03, 0.322688E-05, 0.470110E-05, 0.137978E-04
00216     *     , 0.700558E-05, 0.499425E-04,-0.266629E-03, 0.622126E-05
00216     *     , 0.491467E-04,-0.270226E-03,-0.428934E-05,-0.963796E-05
00216     *     , 0.691388E-05, 0.358383E-04,-0.163131E-03, 0.364260E-04
00216     *     , 0.246739E-04,-0.169610E-03, 0.383520E-04, 0.270354E-05/
00220      DATA D24
00220     *    / 0.672209E-05, 0.190152E-04, 0.375845E-04,-0.802251E-04
00220     *     , 0.631006E-04, 0.264873E-04,-0.860778E-04, 0.537612E-04
00220     *     , 0.724976E-04,-0.269754E-03,-0.399602E-03, 0.273523E-04
00220     *    ,-0.458933E-04,-0.366802E-03, 0.989218E-05,-0.530610E-04
00220     *    ,-0.374046E-03, 0.533546E-04, 0.128316E-03,-0.601806E-04/
00222      DATA D25
00222     *    / 0.190766E-04, 0.343523E-04,-0.665479E-03, 0.967085E-05
00222     *     , 0.308143E-04,-0.667047E-03, 0.306349E-04, 0.298732E-03
00222     *     , 0.198701E-03, 0.368827E-04, 0.404317E-04,-0.912831E-03
00222     *     , 0.292441E-04, 0.397719E-04,-0.933188E-03, 0.932551E-07
00222     *    ,-0.376949E-04, 0.685027E-04, 0.411042E-04, 0.880434E-04/
00224      DATA D26
00224     *    /-0.105284E-02, 0.378596E-04, 0.891905E-04,-0.110092E-02
00224     *    ,-0.128104E-06, 0.659466E-05, 0.254943E-05, 0.783000E-04
00224     *     , 0.631752E-03,-0.917027E-03, 0.863311E-04, 0.639953E-03
00224     *    ,-0.997975E-03,-0.651733E-06, 0.197642E-04,-0.572023E-04
00224     *     , 0.644280E-04, 0.266976E-03, 0.176191E-02, 0.698735E-04/
00226      DATA D27
00226     *    / 0.270810E-03, 0.181322E-02,-0.540621E-05,-0.632435E-04
00226     *    ,-0.659322E-04, 0.128720E-03,-0.663012E-03, 0.110843E-02
00226     *     , 0.124520E-03,-0.653464E-03, 0.114058E-02,-0.483008E-05
00226     *    ,-0.216364E-03, 0.401008E-03, 0.137816E-03,-0.347868E-03
00226     *     , 0.680099E-03, 0.126803E-03,-0.337510E-03, 0.693965E-03/
00230      DATA D28
00230     *    /-0.215204E-04,-0.497637E-04, 0.247174E-03, 0.141900E-03
00230     *    ,-0.134756E-03, 0.212818E-03, 0.130867E-03,-0.130500E-03
00230     *     , 0.216387E-03, 0.877003E-06, 0.220630E-04, 0.751151E-05
00230     *     , 0.725473E-04,-0.437949E-04,-0.278880E-04, 0.678549E-04
00230     *    ,-0.384020E-04,-0.231870E-04, 0.183108E-04, 0.176009E-04/
00232      DATA D29
00232     *    /-0.562379E-05, 0.943780E-04, 0.216151E-03,-0.627345E-04
00232     *     , 0.922674E-04, 0.215188E-03,-0.617036E-04,-0.447692E-06
00232     *    ,-0.907829E-06, 0.532447E-06, 0.878277E-04, 0.672918E-03
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00232     *     , 0.179090E-03, 0.878449E-04, 0.672844E-03, 0.178731E-03
00232     *     , 0.201643E-06, 0.190566E-05, 0.829923E-06, 0.615924E-05/
00234      DATA D30
00234     *    /-0.145286E-03, 0.500229E-04, 0.640481E-05,-0.145135E-03
00234     *     , 0.498504E-04, 0.400648E-06, 0.158545E-05, 0.821588E-06
00234     *     , 0.308374E-05,-0.491217E-04,-0.198330E-05, 0.148503E-05
00234     *     ,-0.497188E-04,-0.189207E-05, 0.338389E-06,-0.146112E-05
00234     *     ,-0.176211E-05, 0.181970E-04, 0.170935E-03,-0.943659E-05/
00236      DATA D31
00236     *    / 0.156947E-04, 0.170011E-03,-0.803123E-05,-0.613398E-06
00236     *     , 0.158452E-05, 0.346960E-05, 0.407426E-05,-0.117193E-03
00236     *     , 0.141614E-04, 0.201697E-05,-0.118353E-03, 0.139494E-04
00236     *     ,-0.163818E-05,-0.172340E-04,-0.127456E-04, 0.943207E-04
00236     *     ,-0.304144E-03, 0.261726E-03, 0.119247E-03,-0.293084E-03/
00240      DATA D32
00240     *    / 0.257349E-03, 0.338413E-05,-0.664913E-05,-0.163317E-04
00240     *     , 0.232874E-04,-0.220970E-03, 0.199868E-03, 0.395773E-04
00240     *     ,-0.211935E-03, 0.198398E-03, 0.407940E-05, 0.306714E-04
00240     *     , 0.150048E-04, 0.398850E-04,-0.270677E-03, 0.951547E-04
00240     *     , 0.357929E-04,-0.272014E-03, 0.922541E-04,-0.170885E-04/
00242      DATA D33
00242     *    / 0.190912E-04, 0.135165E-05, 0.112716E-03, 0.207926E-03
00242     *     ,-0.102779E-03, 0.990002E-04, 0.203680E-03,-0.982016E-04
00242     *     , 0.146074E-04,-0.177582E-04,-0.159219E-05, 0.525364E-04
00242     *     ,-0.212208E-04,-0.427622E-04, 0.431553E-04,-0.230179E-04
00242     *     ,-0.362295E-04, 0.648914E-04,-0.182290E-03,-0.763236E-04/
00244      DATA D34
00244     *    / 0.983633E-04,-0.118794E-03,-0.906828E-04, 0.744211E-04
00244     *     ,-0.118589E-03,-0.743412E-04, 0.512561E-04,-0.247625E-03
00244     *     , 0.388417E-03, 0.106122E-03,-0.260711E-03,-0.964882E-04
00244     *     , 0.888487E-04,-0.256602E-03,-0.785594E-04, 0.187676E-04
00244     *     , 0.335417E-03, 0.123337E-03, 0.123815E-03,-0.585404E-03/
00246      DATA D35
00246     *    /-0.595898E-04, 0.113146E-03,-0.578458E-03,-0.601394E-04
00246     *     ,-0.196286E-05, 0.315096E-04,-0.828103E-05, 0.471942E-04
00246     *     ,-0.632883E-03, 0.106634E-02, 0.513745E-04,-0.632119E-03
00246     *     , 0.106628E-02, 0.105330E-04,-0.235027E-04,-0.328904E-04
00246     *     , 0.490705E-06, 0.700204E-04, 0.266028E-04, 0.230838E-04/
00250      DATA D36
00250     *    / 0.819511E-04, 0.269708E-04, 0.488426E-06,-0.645828E-05
00250     *     ,-0.554056E-05,-0.858165E-05, 0.325713E-04,-0.600881E-05
00250     *     ,-0.205618E-06, 0.301129E-04,-0.797768E-05, 0.111041E-04
00250     *     , 0.177295E-04,-0.430194E-06,-0.126404E-04,-0.116186E-04
00250     *     , 0.902299E-05,-0.542999E-05,-0.101099E-04, 0.597897E-05/
00252      DATA D37
00252     *    / 0.203964E-05, 0.280868E-05, 0.124186E-05,-0.123784E-04
00252     *     , 0.492411E-05, 0.937510E-05,-0.519125E-06, 0.551282E-05
00252     *     ,-0.713982E-05, 0.627760E-05, 0.422488E-05,-0.195133E-05
00252     *     , 0.296233E-05, 0.599850E-05,-0.232921E-05,-0.335158E-05
00252     *     ,-0.572278E-05, 0.118859E-04, 0.537872E-05, 0.136949E-04/
00254      DATA D38
00254     *    / 0.867655E-05, 0.151165E-04, 0.210362E-04,-0.632970E-04
00254     *     , 0.216209E-04, 0.236401E-04,-0.637771E-04, 0.146176E-05
00254     *     , 0.360100E-05,-0.134313E-05, 0.737987E-05, 0.289956E-04
00254     *     , 0.909300E-05, 0.100176E-04, 0.301133E-04, 0.909928E-05
00254     *     , 0.984546E-06, 0.192592E-05, 0.592071E-05, 0.125593E-04/
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00256      DATA D39
00256     * / 0.128135E-03, 0.863982E-06, 0.148153E-04, 0.129005E-03
00256     * ,-0.222238E-05,-0.369164E-06,-0.142618E-05, 0.267654E-05
00256     * , 0.198175E-04, 0.169106E-03,-0.341169E-03, 0.224075E-04
00256     * , 0.166118E-03,-0.359867E-03,-0.142200E-04, 0.266748E-04
00256     * ,-0.386094E-04, 0.209930E-04, 0.387649E-05,-0.504080E-04/
00260      DATA D40
00260     * / 0.184545E-04, 0.224814E-05,-0.435940E-04, 0.936917E-06
00260     * ,-0.367029E-04,-0.419569E-05, 0.352039E-05, 0.734785E-05
00260     * ,-0.473580E-05, 0.404318E-05, 0.438933E-05, 0.613326E-06
00260     * ,-0.261591E-08,-0.174318E-04,-0.951072E-05, 0.176150E-05
00260     * ,-0.304556E-05, 0.317226E-05, 0.178802E-05,-0.218870E-05/
00262      DATA D41
00262     * / 0.330994E-06,-0.240348E-08, 0.232899E-06,-0.873112E-05
00262     * , 0.293565E-05, 0.280198E-05, 0.856739E-06, 0.299912E-05
00262     * , 0.278872E-05,-0.314693E-07, 0.371688E-08, 0.119084E-08
00262     * , 0.135124E-04,-0.101870E-05, 0.268158E-05, 0.646245E-05
00262     * ,-0.175653E-05, 0.905989E-05, 0.922500E-05, 0.371752E-08/
00264      DATA D42
00264     * / 0.233805E-04, 0.135121E-04, 0.124626E-05,-0.101611E-05
00264     * ,-0.763654E-05, 0.700502E-05,-0.471875E-05,-0.487404E-05
00264     * , 0.266724E-07,-0.863839E-07,-0.755385E-07, 0.223275E-04
00264     * ,-0.201392E-02,-0.125359E-02, 0.119870E-04,-0.201192E-02
00264     * ,-0.124281E-02, 0.777730E-05,-0.197676E-04,-0.196873E-04/
00266      DATA D43
00266     * / 0.785455E-04, 0.152963E-03,-0.959733E-04, 0.774569E-04
00266     * , 0.152076E-03,-0.886565E-04, 0.989259E-05, 0.235437E-04
00266     * , 0.116031E-04, 0.221578E-04, 0.373541E-04, 0.272639E-04
00266     * , 0.345276E-04, 0.467330E-04, 0.291118E-04,-0.967226E-12
00266     * , 0.875455E-11, 0.103812E-10,-0.984983E-04,-0.184276E-03/
00270      DATA D44
00270     * /-0.525136E-03,-0.984983E-04,-0.184276E-03,-0.525136E-03
00270     * ,-0.196533E-04,-0.922246E-04,-0.102786E-02, 0.381618E-11
00270     * ,-0.151456E-10,-0.356958E-11, 0.311099E-11,-0.149857E-10
00270     * ,-0.787725E-11, 0.113013E-03,-0.617100E-04, 0.634789E-04
00270     * ,-0.113013E-03, 0.617100E-04,-0.725010E-04,-0.113013E-03/
00272      DATA D45
00272     * / 0.617100E-04,-0.725010E-04, 0.371628E-08,-0.233782E-04
00272     * , 0.135121E-04,-0.258764E-05,-0.160462E-05,-0.651504E-05
00272     * ,-0.761251E-05,-0.423805E-05,-0.375255E-05/
00274
00274      DO 100 I=1,NI
00277      C(I)=-B2(I)
00300      DO 100 J=1,NJ
00303      M=NROW(J)
00304      C(I)=C(I)+B1(I,J)*T(M)
00305  100 CONTINUE
00310      PRINT 6000
00312 6000 FORMAT('0',T27,'NRL-8 OPTICAL DISTORTION OF SUN IMAGE IN INCHES')
00313      PRINT 6010
00315 6010 FORMAT('0',T58,'LEFT',12X,'RIGHT'/T41,'SLIT'
00315     *  ,25X,'SIDE OF FILM'))
00316      PRINT 6020,(C(I),I=1,7,3)
00324 6020 FORMAT('0CHANGE IN FOCAL DISTANCE',2X,3(2X,E15.6))
00325      PRINT 6030,(C(I),I=2,8,3)
00333 6030 FORMAT('0HORIZONTAL POSITION',7X,3(2X,E15.6))
```

```
00334    350*          PRINT 6040,(C(I),I=3,9,3)
00342    351*     6040 FORMAT('OVERTICAL POSITION',9X,3(2X,E15.6))
00343    352*
00343    353*          CALL STORIT(TIME,NI,C)
00344    354*
00344    355*          RETURN
00345    356*          END
```

END OF COMPILATION: NO DIAGNOSTICS.

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@FOR,US NASEL,NASEL
HSD 11A -12/10/73-11:07:58 (19,20)

   SUBROUTINE SELECT     ENTRY POINT 002360

   STORAGE USED: CODE(1) 002372; DATA(0) 006367; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003    DELFLX 000174
    0004    ATMCOM 010657
    0005    MIDATM 004736
    0006    UNITS  000005
    0007    START  000007

   EXTERNAL REFERENCES (BLOCK, NAME)

    0010    REDNOM
    0011    EXIT
    0012    TMPTBL
    0013    NRDUS
    0014    NIO1S
    0015    NIO2S
    0016    NREWS
    0017    NPRTS
    0020    NWDUS
    0021    NERR2S
    0022    NIO3S
    0023    NWEFS
    0024    NERR3S

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001    002315 1000L    0000    006255 1001F    0001    002336 1002L    0000    006166 1005F    0000    006250 1010F
    0001    001213 1012G    0001    001220 1016G    0000    006251 1030F    0001    001245 1034G    0000    006312 1040F
    0001    001252 1040G    0000    006314 1050F    0001    001273 1053G    0000    006316 1060F    0001    001313 1066G
    0000    006321 1070F    0000    006323 1080F    0000    006325 1100F    0001    001336 1104G    0001    001356 1116G
    0001    001432 1146G    0001    001445 1154G    0001    001550 1223G    0001    001563 1233G    0001    001631 1263G
    0001    001643 1271G    0001    001714 1320G    0001    001747 1343G    0001    002005 1362G    0001    002022 1367G
    0001    002044 1401G    0001    002072 1414G    0001    002113 1427G    0001    002134 1434G    0001    002161 1446G
    0001    002215 1467G    0001    002234 1501G    0001    002250 1512G    0001    002267 1523G    0001    000010 157G
    0001    000244 175L     0001    000043 202G     0001    000316 210L     0001    000114 247G     0001    000126 255G
    0001    000342 260L     0001    000146 263G     0001    000366 265L     0001    000027 27L      0001    000152 271G
    0001    000403 272L     0001    000164 277G     0001    000417 280L     0001    000422 285L     0001    000444 288L
    0001    000456 290L     0001    000467 300L     0001    000176 305G     0001    000545 305L     0001    000560 310L
    0001    000210 315G     0001    000605 315L     0001    000654 320L     0001    000215 321G     0001    000660 325L
    0001    000714 330L     0001    000233 334G     0001    000720 335L     0001    000240 340G     0001    000745 340L
    0001    000252 346G     0001    000057 35L      0001    000257 352G     0001    000064 40L      0001    000762 400L
    0001    001033 406L     0001    001034 410L     0001    001053 420L     0001    000374 422G     0001    000407 432G
    0001    001056 440L     0001    000426 446G     0001    000071 45L      0001    001131 460L     0001    000453 464G
    0001    000102 47L      0001    001164 470L     0001    001166 475L     0001    000106 50L      0001    001257 500L
    0001    001265 510L     0001    000523 515G     0001    001322 520L     0001    001330 530L     0000    006167 5985F
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0000    006171 5990F     0000    006214 5991F     0000    006222 5992F     0000    006230 5993F     0000    006240 5994F
0000    006244 5995F     0001    001365 600L      0000    006256 6000F     0000    006304 6005F     0000    006330 6024F
0000    006336 6025F     0000    006340 6035F     0001    000676 607G      0001    001412 610L      0001    001415 620L
0001    001002 656G      0001    001024 665G      0001    001506 705L      0001    001510 710L      0001    001537 715L
0001    001555 720L      0001    001103 725G      0001    001567 725L      0001    001575 730L      0001    001110 731G
0001    001620 735L      0001    001122 740G      0001    001152 761G      0001    001157 765G      0001    001655 800L
0001    001663 810L      0001    001724 814L      0001    001726 816L      0001    001735 820L      0001    001737 830L
0001    001762 835L      0001    002030 839L      0001    002051 840L      0001    002142 855L      0001    002167 900L
0001    002207 910L      0001    002242 920L      0001    002275 950L      0000 R  006104 ALPNUM    0000 R  006137 APC
0003 R  000150 APCL      0000 R  006142 APC2      0000 R  006144 APC3      0000 R  006136 APO       0003 R  000124 APOP
0000 R  006141 APO2      0000 R  006143 APO3      0000 R  000254 BNM       0000 R  006130 CAP       0005    004570 DATA
0004    002766 FDATA     0000 R  006156 FDTN      0000 I  000050 FLAG      0000 R  006153 HYS       0000 I  006122 I
0005    004570 IDATA     0000 I  006164 IE        0004    002766 IFDATA    0004    000032 IFID      0004    000003 IFN
0000 I  006161 INDSP     0000 I  006127 INDX      0000    006346 INJPS     0000 I  000141 INNODE    0000 I  000137 IOP
0004    001016 IRID      0004    000004 IRN       0004    000006 ITIME     0004    000002 ITR       0004 I  000000 IUNIT
0005    000311 IWORD     0006 I  000000 I1        0006 I  000001 I2        0006 I  000002 I3        0000 I  006124 J
0000 I  006165 JB        0000 I  006163 JE        0000 I  006145 JFAIL     0000 I  006157 JMP       0000 I  006131 K
0004    000005 KERR      0004 I  010656 KIND      0000 I  006134 KNTAP     0000 I  006154 KPATH     0007 I  000005 KPLOT
0000 I  006132 L         0005    004734 LDAT      0005    002454 LOC       0000 I  006125 LPATH     0005    000001 MEAN
0000 I  006076 MIB       0005    004455 MID       0000 I  006135 NAP       0007    000006 ND        0000 I  006126 NDE
0000 I  006155 NDFX      0000 I  006220 NDH       0000 I  006162 NDUM      0000 I  006133 NENT      0000 I  006146 NH
0000 I  000242 NHI       0000 I  006060 NI        0000 I  006072 NIB       0000 I  000247 NII       0000 I  006102 NINE
0005    000000 NMEA      0005    004735 NMNUMB    0000 I  006103 NNODE     0000 I  000052 NODE      0003 I  000004 NOFX
0000 I  006123 NOMTP     0003 I  000000 NONFX     0000 I  006140 NPATH     0000 I  006160 NSPT      0004 I  000001 NTAPE
0000 I  000051 ONE       0000 R  006131 OPT       0006 I  000003 O1        0006 I  000004 O2        0000 R  006147 POW
0000 R  000355 Q         0003 R  000054 QFLX      0004    002002 RDATA     0000 R  000365 T         0000 R  006065 TI
0007 I  000000 TINIT     0000 I  000000 TITLE     0000 R  000375 TNODE     0000 R  000260 TYME      0000 R  006152 XM
0000 R  006150 XO        0000 R  006151 YO
```

```
00101     1*          SUBROUTINE SELECT
00103     2*
00103     3*     C*****************************************************************
00103     4*     C**** SELECTS CHANGES TO NOMINAL INPUT FOR THERMAL DISTORTION PROGRAM
00103     5*     C*****************************************************************
00103     6*
00103     7*          INTEGER I1,I2,O1,O2
00104     8*          INTEGER TINIT
00105     9*          INTEGER TITLE
00106    10*          INTEGER FLAG
00107    11*          INTEGER ONE
00110    12*          DIMENSION NODE(47)
00111    13*          DIMENSION TINIT(5)
00112    14*          DIMENSION TITLE(40)
00113    15*          DIMENSION OPT(6),IOP(2)
00114    16*          DIMENSION INNODE(47)
00115    17*          DIMENSION NDH(18)
00116    18*          DIMENSION NHI(5),NII(5)
00117    19*          DIMENSION BNM(4)
00120    20*          DIMENSION TYME(61)
00121    21*          DIMENSION Q(8)
00122    22*          DIMENSION T(8)
00123    23*          DIMENSION TNODE(61,47)
00124    24*          DIMENSION NI(5),TI(5)
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00125      25*          DIMENSION NIB(4),MIB(4)
00126      26*          COMMON /DELFLX/
00126      27*         *   NONFX(4),NOFX(10,4),QFLX(10,4),APOP(5,4),APCL(5,4)
00127      28*          DATA APOP,APCL/40*99999./
00132      29*          COMMON /ATMCOM/
00132      30*         *   IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20)
00132      31*         *  ,IFID(500),IRID(500),RDATA(500),IFDATA(3000),KIND
00133      32*          DIMENSION FDATA(1)
00134      33*          EQUIVALENCE (FDATA(1),IFDATA(1))
00135      34*          COMMON /MIDATM/
00135      35*         *   NMEA,MEAN(100,3),MID(1023),LOC(100,11)
00135      36*         *  ,DATA(100),LDAT,NMNUMB
00136      37*          DIMENSION IWORD(1),IDATA(1)
00137      38*          EQUIVALENCE (IWORD(1),MEAN(1,3)),(IDATA(1),DATA(1))
00137      39*     C**** I1 IS THE CARD READER.
00137      40*     C**** I2 IS THE NOMINAL DATA DECK
00137      41*     C**** O1 IS THE PRINTER.
00137      42*     C**** O2 IS THE REVISED DATA DECK.
00140      43*          COMMON /UNITS/ I1,I2,I3,O1,O2
00141      44*          DATA ONE/1/
00143      45*          DATA NINE/9999999999/
00143      46*     C**** NRL-A DATA STATEMENT FOR NNODE AND NODE ARRAYS.
00145      47*          DATA NNODE/47/
00147      48*          DATA NODE
00147      49*         *  / 145,146,153,154, 20, 24, 28, 32, 18, 19
00147      50*         *   , 22, 23, 26, 27, 30, 31, 17, 21, 25, 29
00147      51*         *,9005,9001,9002,125,127,126,128,129,131,132
00147      52*         *   ,130,310,311,312,323,324,325,328,329,330
00147      53*         *   ,356,357,358,9000,9003,9004,9006/
00151      54*          DIMENSION ALPNUM(14)
00152      55*          COMMON /START/ TINIT,KPLOT,ND
00153      56*
00153      57*          IUNIT=I3
00154      58*
00154      59*     C***** READ IN DAYS,HOURS,MINUTES,SECONDS,MILISECONDS
00154      60*        25 CONTINUE
00155      61*          READ(I1,1005) (TINIT(I),I=1,5),NTAPE,KIND,NOMTP,KPLOT
00167      62*      1005 FORMAT(16I5)
00170      63*          IF(NOMTP.NE.1) GO TO 27
00170      64*     C**** READ NOMINAL DATA DECK FROM CARD READER.
00172      65*          CALL REDNOM
00173      66*     27   CONTINUE
00174      67*          REWIND I2
00175      68*
00175      69*          PRINT 5985
00177      70*     5985 FORMAT('1')
00200      71*          PRINT 5990,(TINIT(I),I=1,5)
00206      72*     5990 FORMAT('0INITIAL TIME (TIME=0 IN TRANSIENT)'/
00206      73*         *   '0DAY  ',I5/'0HOUR ',I5/
00206      74*         *   '0MIN  ',I5/'0SEC  ',I5/
00206      75*         *   '0MSEC ',I5)
00207      76*          IF(NTAPE) 30,35,40
00212      77*     30   CONTINUE
00213      78*          PRINT 5991
00215      79*     5991 FORMAT('0SKYLAB USER TAPE NOT SELECTED')
00216      80*          GO TO 50
```

```
00217      35    CONTINUE
00220            PRINT 5992
00222      5992  FORMAT('0SKYLAB USER TAPE ON DISK')
00223            GO TO 45
00224      40    CONTINUE
00225            PRINT 5993,NTAPE
00230      5993  FORMAT('0SKYLAB USER TAPE SELECTED. REELS=',I3)
00231      45    CONTINUE
00232            IF (KIND.EQ.2) GO TO 47
00234            PRINT 5994
00236      5994  FORMAT('0COMPRESSED FORMAT')
00237            GO TO 50
00240      47    CONTINUE
00241            PRINT 5995
00243      5995  FORMAT('0FIXED FORMAT')
00244         50 CONTINUE
00245
00245      C**** INPUT TITLE CARDS
00245            READ(I2,1010)(TITLE(I),I=1,13)
00253            READ(I2,1010)(TITLE(I),I=14,26)
00261            READ(I1,1010)(TITLE(I),I=1,13)
00267            READ(I1,1010)(TITLE(I),I=14,26)
00275            WRITE(O2,1010)(TITLE(I),I=1,13)
00303            WRITE(O2,1010)(TITLE(I),I=14,26)
00311       1010 FORMAT(13A6)
00312
00312      C**** INPUT OPTIONS DATA
00312        100 CONTINUE
00312      C**** READ OPTIONS CARD FROM THE CARD READER
00313            READ(I1,1030)(OPT(I),I=1,6),(IOP(J),J=1,2),FLAG
00326       1030 FORMAT(6F10.4,A5,I5,5X,I5)
00327            IF(FLAG.EQ.0)GO TO 175
00331      150   CONTINUE
00331      C**** READ OPTIONS CARD FROM NOMINAL DATA DECK
00332            READ(I2,1030)(OPT(I),I=1,6),(IOP(J),J=1,2)
00344        175 WRITE(O2,1030)(OPT(I),I=1,6),(IOP(J),J=1,2)
00344      C**** DUMMY READ OF NOMINAL DATA DECK.
00356            IF(FLAG.EQ.0) READ(I2,1030)
00356      C**** DUMMY READ OF NINES CARD
00361            READ(I2,1001)
00363        200 WRITE(O2,1001)NINE
00366       1001 FORMAT(I10)
00367
00367      C**** IF NTAPE IS NEGATIVE, THERE IS NO TAPE INPUT DATA REQUIRED.
00367            LPATH=1
00370            IF(NTAPE.LT.0) LPATH=2
00372
00372      C**** INPUT NODAL DATA
00372            J=0
00373      210   CONTINUE
00374            J=J+1
00374      C**** READ NODES THAT WILL NOT CHANGE TO SPECIFIED TEMPERATURE NODES
00374      C****    FROM THE CARD READER.
00375            READ(I1,1060) INNODE(J)
00400            IF(INNODE(J).LT.99999) GO TO 210
00402      250   CONTINUE
```

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00403     137•          J=J-1
00404     138•          I=0
00405     139•     260  CONTINUE
00405     140•     C**** READ ONE NODAL DATA CARD IMAGE FROM NOMINAL DATA DECK FILE.
00406     141•          READ(I2,1060) NDE,INDX,CAP
00413     142•          IF(NDE.GE.99999) GO TO 300
00415     143•          GO TO (265,290),LPATH
00416     144•     265  CONTINUE
00417     145•          IF(J.EQ.0) GO TO 272
00417     146•     C**** TEST NODE AGAINST LIST OF NODES THAT DO NOT CHANGE TO SPECIFIED
00417     147•     C****    TEMPERATURE NODES.
00421     148•          DO 270 K=1,J
00424     149•          IF(NDE.EQ.INNODE(K)) GO TO 285
00426     150•     270  CONTINUE
00426     151•     C**** NODE NDE DID NOT MATCH ANY NODE OF THE INNODE ARRAY.
00430     152•
00430     153•     272  CONTINUE
00431     154•          DO 275 K=1,NNODE
00431     155•     C**** IS NDE A NODE THAT CAN CHANGE TO A SPECIFIED TEMPERATURE NODE.
00434     156•          IF(NDE.EQ.NODE(K)) GO TO 280
00436     157•     275  CONTINUE
00440     158•          GO TO 290
00441     159•
00441     160•     280  CONTINUE
00441     161•     C**** CHANGE NODE NDE TO A SPECIFIED TEMPERATURE NODE.
00442     162•          INDX=1
00443     163•          GO TO 290
00444     164•
00444     165•     285  CONTINUE
00444     166•     C**** NODE REMAINS A MASS NODE, REMOVE IT FROM THE NODE ARRAY AND
00444     167•     C****    DECREMENT NNODE.
00445     168•          DO 286 K=1,NNODE
00450     169•          IF(NDE.EQ.NODE(K)) GO TO 288
00452     170•     286  CONTINUE
00454     171•          PRINT 6000,NDE
00457     172•     6000 FORMAT('0**** NODE',I5,1X,'WAS INPUT AS A NODE BASED ON INACTIVE '
00457     173•         •   'PROBES, BUT WAS NOT IN THE NODE ARRAY.   SUBROUTINE SELECT')
00460     174•          CALL EXIT
00461     175•
00461     176•     288  CONTINUE
00462     177•          NNODE=NNODE-1
00463     178•          DO 289 L=K,NNODE
00466     179•          NODE(L)=NODE(L+1)
00467     180•     289  CONTINUE
00471     181•
00471     182•     290  CONTINUE
00472     183•          WRITE(02,1060) NDE,INDX,CAP
00477     184•          GO TO 260
00500     185•       300 WRITE(02,1001)NINE
00503     186•          PRINT 6005,NNODE,NODE
00507     187•     6005 FORMAT('0NNODE,NODE ARRAY'/1X,I5/(16I5))
00510     188•
00510     189•          READ(I1,1005) NENT
00513     190•          READ(I1,1070) (TYME(I),I=1,NENT)
00521     191•          IF(NTAPE.LT.0) GO TO 305
00523     192•
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00523     C**** SUBRUUTINE TMPTBL SEARCHES SKYLAB ATM TAPE, CONSTRUCTS A
00523     C****    SPECIFIED TEMPERATURE TABLE, AND OBTAINS APERTURE OPEN AND
00523     C****    CLOSE TIMES.
00523     C**** TMPTBL CONSTRUCTS A TEMPERATURE TABLE FOR EACH NODE IN THE NODE
00523     C****  ARRAY AND RETURNS THESE TEMPERATURES IN THE TNODE ARRAY.
00523           CALL TMPTBL(TINIT,NENT,TYME,NNODE,NODE,TNODE,APOP,APCL)
00524
00524     305   CONTINUE
00524     C**** INPUT APERTURE DATA
00524     C**** FLAG=0 FOR CARD READER
00524     C**** FLAG=1 FOR NOMINAL DATA DECK FILE
00524     C**** FLAG =2 FOR SKYLAB TAPE
00525           READ(I1,1005)FLAG
00530           IF(FLAG-1) 309,320,330
00533     309   CONTINUE
00534           KNTAP=0
00535     310   CONTINUE
00536           KNTAP=KNTAP+1
00536     C**** CARD INPUT
00536     C**** READ NOMINAL DATA DECK FILE TO NINES CARD.
00537            READ(I2,1040) NAP,APO,APC
00544            IF(NAP.NE.99999) GO TO 310
00546           ASSIGN 315 TO NPATH
00547           KNTAP=KNTAP-1
00550           I=0
00551     315   CONTINUE
00552           I=I+1
00553           READ(I1,1040) NAP,APO,APC,APO2,APC2,APO3,APC3
00564     1040  FORMAT(I5,6E10.4)
00565           IF(NAP.EQ.99999) GOTO 400
00567           APOP(1,I)=APO
00570           APCL(1,I)=APC
00571           APOP(2,I)=APO2
00572           APCL(2,I)=APC2
00573           APOP(3,I)=APO3
00574           APCL(3,I)=APC3
00575           IF(I  .GT.KNTAP) GO TO 315
00577           GO TO 340
00600     320   CONTINUE
00600     C**** NOMINAL DATA TAPE
00601           ASSIGN 325 TO NPATH
00602           I=1
00603     325   CONTINUE
00604           READ(I2,1040) NAP,(APOP(J,I),APCL(J,I),J=1,3)
00614           APO=APOP(1,I)
00615           APC=APCL(1,I)
00616           I=I+1
00617           GO TO 340
00620     330   CONTINUE
00620     C**** SKYLAB TAPE
00621           ASSIGN 335 TO NPATH
00622           I=1
00623     335   CONTINUE
00624           READ(I2,1040)NAP,APO,APC
00631           IF(NAP.EQ.99999) GO TO 400
00633           APO=APOP(1,I)
```

```
00634   249*          APC=APCL(I,I)
00635   250*          I=I+1
00636   251*    340   CONTINUE
00637   252*          IF(NAP.EQ.99999)GO TO 400
00641   253*          WRITE(02,1040)NAP,APO,APC
00646   254*          GO TO NPATH,(315,325,335)
00647   255*      400 WRITE(02,1001)NINE
00652   256*
00652   257*    C**** READ FLUX INCREMENT DATA FROM CARD READER.
00652   258*          READ(I1,1005) NONFX
00655   259*          DO 405 J=1,4
00660   260*          L=NONFX(J)
00661   261*          IF(L.EQ.0) GO TO 406
00663   262*          READ(I1,1080) (NOFX(I,J),WFLX(I,J),I=1,L)
00672   263*    405   CONTINUE
00674   264*    406   CONTINUE
00675   265*
00675   266*    C**** INPUT HEATER DATA
00675   267*          J=0
00676   268*      410 J=J+1
00676   269*    C**** READ HEATER NODES THAT FAILED FROM THE CARD READER.
00677   270*          READ(I1,1005)NDH(J)
00702   271*          IF(NDH(J).EQ.99999)GO TO 420
00704   272*          GO TO 410
00705   273*      420 CONTINUE
00706   274*          JFAIL=J-1
00707   275*    440   CONTINUE
00707   276*    C**** READ THE HEATER DATA CARDS FROM THE NOMINAL DATA DECK FILE.
00710   277*          READ(I2,1050) NH,POW,XO,YO,XM,HYS
00720   278*    1050  FORMAT(I5,5F10.4)
00721   279*          IF(NH.EQ.99999) GO TO 470
00723   280*          READ(I2,1005) (NHI(I),I=1,5),(NII(I),I=1,5)
00735   281*          IF(JFAIL.EQ.0) GO TO 460
00737   282*          DO 450 K=1,JFAIL
00742   283*          IF(NDH(K).EQ.NH)GO TO 440
00744   284*      450 CONTINUE
00746   285*
00746   286*    460   CONTINUE
00746   287*    C****  WRITE TO THE REVISED DATA DECK FILE.
00747   288*          WRITE(02,1050) NH,POW,XO,YO,XM,HYS
00757   289*          WRITE(02,1005) (NHI(I),I=1,5),(NII(I),I=1,5)
00771   290*          GO TO 440
00772   291*    470   CONTINUE
00773   292*          IF(JFAIL.EQ.0) GO TO 500
00775   293*    475   CONTINUE
00775   294*    C**** READ HEATER DATA CARDS FROM THE CARD READER.
00776   295*          READ(I1,1050) NH,POW,XO,YO,XM,HYS
01006   296*          IF(NH.EQ.99999) GO TO 500
01010   297*          READ(I1,1005) (NHI(I),I=1,5),(NII(I),I=1,5)
01022   298*          WRITE(02,1050) NH,POW,XO,YO,XM,HYS
01032   299*          WRITE(02,1005) (NHI(I),I=1,5),(NII(I),I=1,5)
01044   300*          GO TO 475
01045   301*
01045   302*      500 WRITE(02,1001)NINE
01050   303*
01050   304*    C**** INPUT BNM DATA
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01050   305*      510   CONTINUE
01051   306*            READ(I2,1060) (NIB(I),MIB(I),BNM(I),I=1,4)
01061   307*       1060 FORMAT(4(2I5,E10.4))
01062   308*            IF(NIB(I).EQ.99999) GO TO 520
01064   309*            WRITE(02,1060) (NIB(I),MIB(I),BNM(I),I=1,4)
01074   310*            GO TO 510
01075   311*      520   CONTINUE
01076   312*            WRITE(02,1001) NINE
01101   313*      530   CONTINUE
01102   314*
01102   315*      C**** INPUT CNM DATA
01102   316*            READ(I2,1060) (NIB(I),MIB(I),BNM(I),I=1,4)
01112   317*            IF(NIB(I).EQ.99999) GO TO 600
01114   318*            WRITE(02,1060) (NIB(I),MIB(I),BNM(I),I=1,4)
01124   319*            GO TO 530
01125   320*        600 WRITE(02,1001)NINE
01130   321*
01130   322*      C**** INPUT TIME TABLE DATA
01130   323*            READ(I2,1005)NENT
01133   324*            WRITE(02,1005) NENT
01136   325*            I=1
01137   326*            GO TO 620
01140   327*      610   CONTINUE
01141   328*            I=I+8
01142   329*      620   CONTINUE
01143   330*            K=I+7
01144   331*            READ(I2,1070)(TYME(J),J=I,K)
01152   332*            WRITE(02,1070)(TYME(J),J=I,K)
01160   333*       1070 FORMAT(    8F10.4)
01161   334*            IF(K.LT.NENT) GO TO 610
01163   335*        700 WRITE(02,1001)NINE
01163   336*      C**** DUMMY READ OF NINES CARD
01166   337*            READ(I2,1005)
01170   338*
01170   339*      C**** INPUT FLUX DATA
01170   340*      C**** FLAG=1 FLUX DATA FROM CARD READER.
01170   341*      C**** FLAG=2 FLUX DATA FROM NOMINAL DATA DECK FILE
01170   342*            READ(I1,1005) FLAG
01173   343*            IF(FLAG.EQ.1) GO TO 705
01175   344*            ASSIGN 720 TO KPATH
01176   345*            GO TO 710
01177   346*      705   CONTINUE
01177   347*      C**** SET UP DUMMY READ OF NOMINAL DATA DECK.
01200   348*            ASSIGN 725 TO KPATH
01201   349*      710   CONTINUE
01201   350*      C**** READ FLUX TABLES FROM NOMINAL DATA DECK.
01202   351*            READ(I2,1080) NDFX,FDTN
01206   352*      1080  FORMAT(I5,F10.4)
01207   353*            IF(NDFX.EQ.99999) GO TO 730
01211   354*            IF(FLAG.NE.1)
01211   355*           *WRITE(02,1080) NDFX,FDTN
01216   356*            K=0
01217   357*      715   CONTINUE
01220   358*            K=K+1
01221   359*            READ(I2,1070) (Q(I),I=1,8)
01227   360*            GO TO KPATH,(725,720)
```

```
01230     361*      720   CONTINUE
01231     362*            WRITE(02,1070) (Q(I),I=1,8)
01237     363*      725   CONTINUE
01240     364*            IF(8*K-NENT) 715,710,710
01243     365*
01243     366*      730   CONTINUE
01243     367*      C**** READ FLUX TABLES FROM CARD READER.
01244     368*            READ(I1,1080) NDFX,FDTN
01250     369*            IF(NDFX.EQ.99999) GO TO 800
01252     370*            WRITE(02,1080) NDFX,FDTN
01256     371*            K=0
01257     372*      735   CONTINUE
01260     373*            K=K+1
01261     374*            READ(I1,1070) (Q(I),I=1,8)
01267     375*            WRITE(02,1070) (Q(I),I=1,8)
01275     376*            IF(8*K-NENT) 735,730,730
01300     377*        800 WRITE(02,1001)NINE
01303     378*
01303     379*      C**** INPUT SPECIFIED TEMPERATURE DATA
01303     380*      810   CONTINUE
01304     381*            JMP=1
01305     382*            READ(I2,1005) NSPT,INDSP
01311     383*            IF(NSPT.EQ.99999) GO TO 840
01313     384*            IF(NTAPE.LT.0) GO TO 816
01315     385*            IF(NNODE.LE.0) GO TO 816
01317     386*            DO 812 I=1,NNODE
01322     387*            IF(NSPT.EQ.NODE(I)) GO TO 814
01324     388*      812   CONTINUE
01326     389*            GO TO 816
01327     390*      814   CONTINUE
01330     391*            JMP=2
01331     392*      816   CONTINUE
01332     393*            IF(INDSP.EQ.1) GO TO 820
01334     394*            NDUM=8
01335     395*            GO TO 830
01336     396*      820   CONTINUE
01337     397*            NDUM=NENT
01340     398*      830   CONTINUE
01341     399*            READ(I2,1070) (T(I),I=1,NDUM)
01347     400*            GO TO (835,810),JMP
01350     401*      835   CONTINUE
01351     402*            WRITE(02,1005) NSPT,INDSP
01355     403*            JE=0
01356     404*            IE=((NDUM-1)/8)*8
01357     405*            IF(IE.EQ.0) GO TO 839
01361     406*            DO 838 I=1,IE,8
01364     407*            JE=I+7
01365     408*            WRITE(02,1070) (T(J),J=I,JE)
01373     409*      838   CONTINUE
01375     410*
01375     411*      839   CONTINUE
01376     412*            JB=JE+1
01377     413*            WRITE(02,1070) (T(J),J=JB,NDUM)
01405     414*            GO TO 810
01406     415*      840   CONTINUE
01407     416*
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01407     417*          IF(NTAPE.LT.0) GO TO 900
01411     418*          IF(NNODE.LE.0) GO TO 900
01411     419*    C**** STORE SPECIFIED TEMPERATURE TABLES FROM TMPTBL.
01413     420*          DO 860 I=1,NNODE
01416     421*          WRITE(02,1005) NODE(I),ONE
01422     422*          JE=0
01423     423*          IE=((NDUM-1)/8)*8
01424     424*          IF(IE.EQ.0) GO TO 855
01426     425*          DO 850 L=1,IE,8
01431     426*          JE=L+7
01432     427*          WRITE(02,1070) (TNODE(J,I),J=L,JE)
01440     428*    850   CONTINUE
01442     429*
01442     430*    855   CONTINUE
01443     431*          JB=JE+1
01444     432*          WRITE(02,1070) (TNODE(J,I),J=JB,NENT)
01452     433*    860   CONTINUE
01454     434*      900 WRITE(02,1001)NINE
01457     435*
01457     436*    C**** INPUT INITIAL TEMPERATURE DATA
01457     437*    C**** FLAG=1 INITIAL TEMPERATURES FROM NOMINAL DATA DECK FILE
01457     438*    C**** FLAG=2 INITIAL TEMPERATURES FROM CARD READER.
01457     439*          READ(I1,1005)FLAG
01462     440*          IF(FLAG.EQ.1) GO TO 920
01464     441*    910   CONTINUE
01464     442*    C**** INITIAL TEMPERATURES FROM CARD READER
01465     443*          READ(I1,1100)(NI(J),TI(J),J=1,5)
01474     444*     1100 FORMAT(5(I5,F10.4))
01475     445*          IF(NI(1).EQ.99999)GO TO 950
01477     446*          WRITE(02,1100)(NI(J),TI(J),J=1,5)
01506     447*          GO TO 910
01507     448*    920   CONTINUE
01507     449*    C**** INITIAL TEMPERATURES FROM NOMINAL DATA DECK.
01510     450*          READ(I2,1100)(NI(J),TI(J),J=1,5)
01517     451*          IF(NI(1).EQ.99999)GO TO 950
01521     452*          WRITE(02,1100)(NI(J),TI(J),J=1,5)
01530     453*          GO TO 920
01531     454*      950 WRITE(02,1001)NINE
01534     455*
01534     456*          END FILE 02
01535     457*          REWIND 02
01536     458*          PRINT 6024
01540     459*    6024  FORMAT('1***** REVISED DATA DECK *****')
01541     460*
01541     461*    1000   CONTINUE
01542     462*          READ(02,6025,END=1002) ALPNUM
01545     463*    6025  FORMAT(13A6,A2)
01546     464*          PRINT 6035,ALPNUM
01551     465*    6035  FORMAT(1X,13A6,A2)
01552     466*          GO TO 1000
01553     467*
01553     468*    1002  CONTINUE
01554     469*          REWIND 02
01555     470*          RETURN
01556     471*          END
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END OF COMPILATION:        NO  DIAGNOSTICS.
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@FOR,US NATMP,NATMP
HSD 11A -12/10/73-11:08:07 (19,20)

   SUBROUTINE TMPTBL    ENTRY POINT 000472

   STORAGE USED: CODE(1) 000526: DATA(0) 000334: BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003    ATMCOM 010657
    0004    MIDATM 004736
    0005    APERTR 000001

   EXTERNAL REFERENCES (BLOCK, NAME)

    0006    READID
    0007    IDREC
    0010    RDATM
    0011    APTR
    0012    TIMAD
    0013    NTRAN
    0014    SMOOTH
    0015    NERR2$
    0016    NPRT$
    0017    NIO2$
    0020    NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001    000057 100L      0001    000101 110L      0001    000105 216G      0001    000120 227G      0001    000164 244G
    0001    000114 250L      0001    000126 300L      0001    000173 315L      0001    000175 320L      0001    000437 376G
    0001    000055 50L       0001    000337 520L      0001    000352 530L      0001    000372 550L      0001    000416 600L
    0000    000263 6020F     0001    000452 650L      0004 R  004570 DATA      0000 R  000262 DT        0003 R  002766 FDATA
    0000 I  000254 I         0004    004570 IDATA     0003    002766 IFDATA    0003    000032 IFID      0003    000003 IFN
    0000    000302 INJP$     0003    001016 IRID      0003    000004 IRN       0003 I  000006 ITIME     0003    000002 ITR
    0000 I  000255 ITYME     0003 I  000000 IUNIT     0004 I  000311 IWORD     0000 I  000222 J         0000 I  000260 K
    0003    000005 KERR      0003 I  010656 KIND      0000 I  000223 KNVRT     0004    004734 LDAT      0004    002454 LOC
    0004 I  000001 MEAN      0004    000455 MID       0005 I  000000 NAP       0004 I  000000 NMEA      0004 I  004735 NMNUMB
    0000 I  000221 NNODE     0000 I  000001 NODE      0003    000001 NTAPE     0003    002002 RDATA     0000 R  000261 TAPHR
    0000 I  000000 TDAY      0000 R  000137 TEMPS     0000 R  000256 TH        0000 R  000257 THRS      0000 R  000060 TNODE
    0000 R  000170 TPROBE
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00101      1*          SUBROUTINE TMPTBL(TINIT,NTYME,TYME,KNODE,KODE,TKODE,APO,APC)
00101      2*     C*****************************************************************
00101      3*     C    TINIT - ARRAY OF INITIAL GMT, DAY, HOURS, MINUTES, SECONDS,
00101      4*     C       MILLISECONDS.
00101      5*     C    NTYME - NUMBER OF ENTRIES IN THE TYME ARRAY.
00101      6*     C    TYME - ARRAY OF INDEPENDENT VARIABLE TIME FOR SPECIFIED TEMPERATURE TABLES
00101      7*     C    KNODE - NUMBER OF NODES DEPENDENT UPON PROBE TEMPERATURES.
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00101      C      KODE - ARRAY OF NODE NUMBERS OF NODES DEPENDENT UPON PROBE TEMPERATURES.
00101      C      TKODE - ARRAY OF NODE TEMPERATURES OF CORRESPONDING NODES OF NODE ARRAY.
00101      C      APO - APERTURE OPEN TIMES.
00101      C      APC - APERTURE CLOSE TIMES.
00101      C      NMNUMB - NUMBER OF TEMPERATURE PROBE MEASUREMENT NUMBERS.
00101      C      MNUMB - TEMPERATURE PROBE MEASUREMENT NUMBERS.
00101      C      PROBE  - MSFC ID NUMBERS FOR TEMPERATURE MEASUREMENTS.
00101      C      IWORD - SUBSCRIPT OF THE TEMPERATURE PROBE IN THE FIXED FORMAT
00101      C         DATA ARRAY.
00101      C      NAP   - NUMBER OF APERTURE MEASUREMENT NUMBERS.
00101      C      MAPNUM - APERTURE MEASUREMENT NUMBERS.
00101      C      MSFCAP - APRETURE MSFC ID NUMBERS.
00101      C      IAPWRD - SUBSCRIPT OF APERTURE PROBEIN THE FIXED FORMAT DATA ARRAY.
00101      C*****************************************************************
00103
00103
00103            INTEGER TINIT(5),TDAY
00104            DIMENSION TYME(1)
00105            DIMENSION APO(5,4),APC(5,4)
00106            COMMON /ATMCOM/
00106           *   IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20)
00106           *  ,IFID(500),IRID(500),RDATA(500),IFDATA(3000),KIND
00107            DIMENSION FDATA(1)
00110            EQUIVALENCE (FDATA(1),IFDATA(1))
00111            COMMON /MIDATM/
00111           *   NMEA,MEAN(100,3),MID(1023),LOC(100,11)
00111           *  ,DATA(100),LDAT,NMNUMB
00112            DIMENSION IWORD(1),IDATA(1)
00113            EQUIVALENCE (IWORD(1),MEAN(1,3)),(IDATA(1),DATA(1))
00114            COMMON /APERTR/ NAP
00114      C**** SPECIFICATION STATEMENTS FOR NRL-B.
00115            DIMENSION NODE(47 ),TNODE(47 ),TEMPS(25),TPROBE$25),KODE(47 )
00115           *   ,TKODE(61,47)
00116            DATA NNODE/ 47/,NMNUMB/25/,NAP/2/
00122            DATA NMEA/28/
00124            DATA
00124           *   (MEAN( 1,J),J=1,3)/'C0090-82A    ', 1/
00124           *   (MEAN( 2,J),J=1,3)/'C0091-82A    ', 2/
00124           *   (MEAN( 3,J),J=1,3)/'C0092-82A    ', 3/
00124           *   (MEAN( 4,J),J=1,3)/'C0095-82A    ', 4/
00124           *   (MEAN( 5,J),J=1,3)/'C0096-82A    ', 5/
00124           *   (MEAN( 6,J),J=1,3)/'C0165-054    ', 6/
00124           *   (MEAN( 7,J),J=1,3)/'C0166-054    ', 7/
00124           *   (MEAN( 8,J),J=1,3)/'C0167-054    ', 8/
00124           *   (MEAN( 9,J),J=1,3)/'C0197-82A    ', 9/
00124           *   (MEAN(10,J),J=1,3)/'C0201-82A    ',10/
00137            DATA
00137           *   (MEAN(11,J),J=1,3)/'C0202-82A    ',11/
00137           *   (MEAN(12,J),J=1,3)/'C0203-82A    ',12/
00137           *   (MEAN(13,J),J=1,3)/'C0204-82A    ',13/
00137           *   (MEAN(14,J),J=1,3)/'C0205-82A    ',14/
00137           *   (MEAN(15,J),J=1,3)/'C0206-82A    ',15/
00137           *   (MEAN(16,J),J=1,3)/'C0286-704    ',16/
00137           *   (MEAN(17,J),J=1,3)/'C0287-704    ',17/
00137           *   (MEAN(18,J),J=1,3)/'C0288-703    ',18/
00137           *   (MEAN(19,J),J=1,3)/'C0298-704    ',19/
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00137     64*          *   (MEAN(20,J),J=1,3)/'C0314-704    ',20/
00152     65*           DATA
00152     66*          *   (MEAN(21,J),J=1,3)/'C0318-703    ',21/
00152     67*          *   (MEAN(22,J),J=1,3)/'C0319-701    ',22/
00152     68*          *   (MEAN(23,J),J=1,3)/'C0320-701    ',23/
00152     69*          *   (MEAN(24,J),J=1,3)/'C0321-701    ',24/
00152     70*          *   (MEAN(25,J),J=1,3)/'C0459-701    ',25/
00152     71*          *   (MEAN(26,J),J=1,3)/'K0214-82A    ',26/
00152     72*          *   (MEAN(27,J),J=1,3)/'K0213-82A    ',27/
00152     73*          *   (MEAN(28,J),J=1,3)/'K0212-82A    ',28/
00163     74*           DATA NODE
00163     75*          *   /  145, 146, 153, 154,  20,  24,  28,  32,  18,  19,  22,
00163     76*          *       23,  26,  27,  30,  31,  17,  21,  25,  29,9005,9001
00163     77*          *    ,9002, 125, 127, 126, 128, 129, 131, 132, 130, 310, 311
00163     78*          *   , 312, 323, 324, 325, 328, 329, 330, 356, 357, 358,9000
00163     79*          *   ,9003,9004,9006/
00165     80*           DIMENSION KNVRT(25)
00166     81*           DATA (KNVRT(I),I=1,5)/5*0/,(KNVRT(I),I=6,8)/3*1/
00166     82*          *   ,(KNVRT(I),I=9,15)/7*0/,(KNVRT(I),I=16,25)/10*1/
00173     83*
00173     84*           TCONV(IA,IB,IC,ID)=IA+(IB+(IC+ID/1000.)/60.)/60.
00174     85*
00174     86*           ITYME=1
00175     87*           TDAY=TINIT(1)
00176     88*           TH  =TCONV(TINIT(2),TINIT(3),TINIT(4),TINIT(5))
00177     89*           THRS=TH
00200     90*           IF(KIND.EQ.2) GO TO 50
00200     91*     C**** COMPRESSED FORMAT - READ ID RECORDS.
00202     92*           CALL READID
00203     93*           GO TO 100
00204     94*     50    CONTINUE
00204     95*     C**** FIXED FORMAT - READ ID RECORDS.
00205     96*           CALL IDREC
00206     97*
00206     98*     100   CONTINUE
00206     99*     C**** READ ONE ATM TAPE DATA RECORD.
00207    100*           CALL RDATM
00210    101*
00210    102*     C**** CALL SUBROUTINE APTR TO SEARCH FOR APERTURE OPEN AND CLOSE
00210    103*     C****    CONDITIONS.
00210    104*           CALL APTR(TINIT,APO,APC)
00211    105*
00211    106*           IF(KNODE.LE.0) GO TO 300
00213    107*           GO TO (110,250),KIND
00214    108*     110   CONTINUE
00214    109*     C**** SET PROBE TEMPERATURES
00215    110*           DO 210 J=1,NMNUMB
00220    111*           K=IWORD(J)
00221    112*           TEMPS(J)=DATA(K)
00222    113*     210   CONTINUE
00224    114*           GO TO 300
00225    115*
00225    116*     250   CONTINUE
00225    117*     C**** SET PROBE TEMPERATURES.
00226    118*           DO 260 I=1,NMNUMB
00231    119*           J=IWORD(I)
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00232   120*          TEMPS(I)=FDATA(J)
00233   121*    260   CONTINUE
00235   122*
00235   123*    300   CONTINUE
00235   124*    C**** HAS THE TAPE RECORD TIME REACHED THE TIME IN THE TYME ARRAY.
00236   125*          IF(ITIME(1).NE.TDAY) GO TO 100
00240   126*          TAPHR=TCONV(ITIME(2),ITIME(3),ITIME(4),ITIME(5))
00241   127*          IF(TAPHR.LT.THRS) GO TO 100
00241   128*    C**** TIME FROM TAPE RECORD HAS REACHED THE TIME TO STORE PROBE DATA.
00243   129*          DO 320 I=1,NMNUMB
00246   130*          IF(KNVRT(I).EQ.0) GO TO 315
00246   131*    C**** TAPE TEMPERATURE IS DEGREES CENTIGRADE.
00250   132*          TPROBE(I)=TEMPS(I)*1.8+32.0
00251   133*          GO TO 320
00252   134*    315   CONTINUE
00252   135*    C**** TAPE TEMPERATURE IS DEGREES FAHRENHEIT.
00253   136*          TPROBE(I)=TEMPS(I)
00254   137*    320   CONTINUE
00256   138*
00256   139*    400   CONTINUE
00257   140*          IF(KNODE.LE.0) GO TO 600
00257   141*    C**** COMPUTE TEMPERATURES OF THE SPECIFIED TEMPERATURE NODES AT EACH
00257   142*    C****    TIME OF THE TIME ARRAY
00261   143*          TNODE(   1)=TPROBE(  21)
00262   144*          TNODE(   2)=TPROBE(  21)
00263   145*          TNODE(   3)=TPROBE(  20)
00264   146*          TNODE(   4)=TPROBE(  20)
00265   147*          TNODE(   5)=TPROBE(  22)
00266   148*          TNODE(   6)=TPROBE(  22)
00267   149*          TNODE(   7)=TPROBE(  22)
00270   150*          TNODE(   8)=TPROBE(  22)
00271   151*          TNODE(   9)=TPROBE(  23)
00272   152*          TNODE(  10)=TPROBE(  23)
00273   153*          TNODE(  11)=TPROBE(  23)
00274   154*          TNODE(  12)=TPROBE(  23)
00275   155*          TNODE(  13)=TPROBE(  23)
00276   156*          TNODE(  14)=TPROBE(  23)
00277   157*          TNODE(  15)=TPROBE(  23)
00300   158*          TNODE(  16)=TPROBE(  23)
00301   159*          TNODE(  17)=TPROBE(  24)
00302   160*          TNODE(  18)=TPROBE(  24)
00303   161*          TNODE(  19)=TPROBE(  24)
00304   162*          TNODE(  20)=TPROBE(  24)
00305   163*          TNODE(  21)=TPROBE(  25)
00306   164*          TNODE(  22)=TPROBE(   6)
00307   165*          TNODE(  23)=(TPROBE(   7)+TPROBE(   8))*0.5
00310   166*          TNODE(  24)=TPROBE(  16)+(15./16.)*TPROBE(  18)
00311   167*          TNODE(  25)=TPROBE(  16)+(13./16.)*TPROBE(  18)
00312   168*          TNODE(  26)=TPROBE(  16)+(15./16.)*TPROBE(  17)
00313   169*          TNODE(  27)=TPROBE(  16)+(13./16.)*TPROBE(  17)
00314   170*          TNODE(  28)=TNODE(  27)
00315   171*          TNODE(  29)=TNODE(  27)
00316   172*          TNODE(  30)=TNODE(  27)
00317   173*          TNODE(  31)=TPROBE(  19)
00320   174*          TNODE(  32)=TPROBE(   4)
00321   175*          TNODE(  33)=TPROBE(   5)-TPROBE(  14)
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```
00322   176*          TNODE(  34)=TPROBE(   9)
00323   177*          TNODE(  35)=TPROBE(   1)
00324   178*          TNODE(  36)=TPROBE(   2)
00325   179*          TNODE(  37)=TPROBE(   3)
00326   180*          TNODE(  38)=TPROBE(   3)+TPROBE(  10)
00327   181*          TNODE(  39)=TPROBE(   2)+TPROBE(  11)
00330   182*          TNODE(  40)=TPROBE(   1)+TPROBE(  12)
00331   183*          TNODE(  41)=TPROBE(   4)-TPROBE(  15)
00332   184*          TNODE(  42)=TPROBE(   5)
00333   185*          TNODE(  43)=TPROBE(   9)+TPROBE(  13)
00334   186*          TNODE(  44)=TNODE(  23)
00335   187*          TNODE(  45)=TNODE(  23)
00336   188*          TNODE(  46)=TNODE(  23)
00337   189*          TNODE(  47)=TNODE(  23)
00340   190*
00340   191*    510   CONTINUE
00341   192*          I=1
00342   193*          J=1
00343   194*    520   CONTINUE
00344   195*          IF(KODE(J).EQ.NODE(I)) GO TO 530
00346   196*          I=I+1
00347   197*          GO TO 520
00350   198*    530   CONTINUE
00351   199*          TKODE(ITYME,J)=TNODE(I)
00352   200*          IF(J.EQ.KNODE) GO TO 550
00354   201*          I=1
00355   202*          J=J+1
00356   203*          GO TO 520
00357   204*
00357   205*    550   CONTINUE
00360   206*          IF(ITYME.GE.NTYME) GO TO 600
00362   207*          ITYME=ITYME+1
00363   208*          DT=TH+TYME(ITYME)-THRS
00364   209*          CALL TIMAD(TDAY,THRS,DT)
00365   210*          GO TO 100
00366   211*
00366   212*    600   CONTINUE
00367   213*          CALL NTRAN (IUNIT,18)
00370   214*          IF(KNODE.EQ.0) GO TO 650
00372   215*          PRINT 6020
00374   216*    6020  FORMAT('0',10('******'))
00375   217*          DO 640 I=1,KNODE
00400   218*          CALL SMOOTH(NTYME,TYME,KODE(I),TKODE(1,I))
00401   219*    640   CONTINUE
00403   220*
00403   221*    650   CONTINUE
00404   222*          RETURN
00405   223*          END
```

END OF COMPILATION: NO DIAGNOSTICS.

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@FOR,US NAIAP,NAIAP
HSD 11A -12/10/73-11:08:12 (18,19)

   SUBROUTINE IAPSTS    ENTRY POINT 000234

   STORAGE USED: CODE(1) 000241: DATA(2) 000014: BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   APERTR 000001
    0004   ATMCOM 010657
    0005   MIDATM 004736

   EXTERNAL REFERENCES (BLOCK, NAME)

    0006   NERR2$
    0007   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   000013 110L      0001   000031 120L      0001   000046 130L      0001   000060 140L      0001   000062 150L
    0001   000073 160L      0001   000111 170L      0001   000126 180L      0001   000137 190L      0001   000142 200L
    0001   000153 210L      0001   000171 220L      0001   000206 230L      0001   000220 240L      0001   000222 250L
    0005   004570 DATA      0004   002766 FDATA     0005 I 004570 IDATA     0004 I 002766 IFDATA    0004   000032 IFID
    0004   000003 IFN       0000   000005 INJP$     0004   001016 IRID      0004   000004 IRN       0000 I 000080 ISUB
    0004   000006 ITIME     0004   000002 ITR       0004   000000 IUNIT     0005 I 000311 IWORD     0000 I 000001 IZ
    0000 I 000002 JZ        0004   000005 KERR      0004 I 010656 KIND      0000 I 000003 KZ        0005   004734 LDAT
    0005   002454 LOC       0000 I 000004 LZ        0005   000001 MEAN      0005   000455 MID       0003   000000 NAP
    0005   000000 NMEA      0005 I 004735 NMNUMB    0004   000001 NTAPE     0004   002002 RDATA
```

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00101      1*          SUBROUTINE IAPSTS(IOPCL)
00101      2*     C*****************************************************************
00101      3*     C    NRL-A VERSION
00101      4*     C    DETERMINES THE STATUS OF THE
00101      5*     C    APERTURE OPEN AND APERTURE CLOSE
00101      6*     C    DISCRETES.
00101      7*     C    IOPCL=0 IF APERTURE IS CLOSED
00101      8*     C    IOPCL=1 IF APERTURE IS OPEN
00101      9*     C*****************************************************************
00103     10*          DIMENSION IOPCL(1)
00104     11*          COMMON /APERTR/ NAP
00105     12*          COMMON /ATMCOM/
00105     13*         *  IUNIT,NTAPE,ITR,IFN,IRN,KERR,ITIME(20)
00105     14*         *  ,IFID(500),IRID(500),RDATA(500),IFDATA(3000),KIND
00106     15*          DIMENSION FDATA(1)
00107     16*          EQUIVALENCE (FDATA(1),IFDATA(1))
00110     17*          COMMON /MIDATM/
00110     18*         *  NMEA,MEAN(100,3),MID(1023),LOC(100,11)
00110     19*         *  ,DATA(100),LDAT,NMNUMB
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00111     20*          DIMENSION IWORD(1),IDATA(1)
00112     21*          EQUIVALENCE (IWORD(1),MEAN(1,3)),(IDATA(1),DATA(1))
00113     22*
00113     23*     C**** K0214-82A ... ONE IMPLIES OPEN.
00113     24*          ISUB=IWORD(NMNUMB+1)
00114     25*          GO TO (110,120),KIND
00115     26*     110  CONTINUE
00116     27*          IZ=FLD(26,1,IDATA(ISUB))
00117     28*          JZ=FLD(27,1,IDATA(ISUB))
00120     29*          KZ=FLD(28,1,IDATA(ISUB))
00121     30*          GO TO 130
00122     31*     120  CONTINUE
00123     32*          IZ=FLD(26,1,IFDATA(ISUB))
00124     33*          JZ=FLD(27,1,IFDATA(ISUB))
00125     34*          KZ=FLD(28,1,IFDATA(ISUB))
00126     35*     130  CONTINUE
00127     36*          LZ=IZ+JZ+KZ
00130     37*          IF(LZ.GE.2) GO TO 140
00130     38*     C**** APERTURE IS CLOSED.
00132     39*          IOPCL(1)=0
00133     40*          GO TO 150
00134     41*     140  CONTINUE
00134     42*     C**** APERTURE IS OPEN.
00135     43*          IOPCL(1)=1
00136     44*     150  CONTINUE
00137     45*
00137     46*     C**** K0231-82A ... ONE IMPLIES ON.
00137     47*          ISUB=IWORD(NMNUMB+2)
00140     48*          GO TO (160,170),KIND
00141     49*     160  CONTINUE
00142     50*          IZ=FLD(26,1,IDATA(ISUB))
00143     51*          JZ=FLD(27,1,IDATA(ISUB))
00144     52*          KZ=FLD(28,1,IDATA(ISUB))
00145     53*          GO TO 180
00146     54*     170  CONTINUE
00147     55*          IZ=FLD(26,1,IFDATA(ISUB))
00150     56*          JZ=FLD(27,1,IFDATA(ISUB))
00151     57*          KZ=FLD(28,1,IFDATA(ISUB))
00152     58*     180  CONTINUE
00153     59*          LZ=IZ+JZ+KZ
00154     60*          IF(LZ.GE.2) GO TO 190
00154     61*     C**** SHORT WAVELENGTH IS OFF.
00156     62*          GO TO 200
00157     63*     190  CONTINUE
00157     64*     C**** SHORT WAVELENGTH IS ON.
00160     65*          IOPCL(2)=1
00161     66*          GO TO 250
00162     67*     200  CONTINUE
00163     68*
00163     69*     C**** K0212-82A ... ONE IMPLIES ON.
00163     70*          ISUB=IWORD(NMNUMB+3)
00164     71*          GO TO(210,220),KIND
00165     72*     210  CONTINUE
00166     73*          IZ=FLD(26,1,IDATA(ISUB))
00167     74*          JZ=FLD(27,1,IDATA(ISUB))
00170     75*          KZ=FLD(28,1,IDATA(ISUB))
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00171      76*            GO TO 230
00172      77*      220   CONTINUE
00173      78*            IZ=FLD(26,1,IFDATA(ISUB))
00174      79*            JZ=FLD(27,1,IFDATA(ISUB))
00175      80*            KZ=FLD(28,1,IFDATA(ISUB))
00176      81*      230   CONTINUE
00177      82*            LZ=IZ+JZ+KZ
00200      83*            IF(LZ.GE.2) GO TO 240
00200      84*      C**** LONG WAVELENGTH IS OFF.
00202      85*            IOPCL(2)=0
00203      86*            GO TO 250
00204      87*      240   CONTINUE
00204      88*      C**** LONG WAVELENGTH IO ON.
00204      89*      C**** LONG WAVELENGTH IS ON.
00205      90*            IOPCL(2)=1
00206      91*      250   CONTINUE
00207      92*
00207      93*            RETURN
00210      94*            END
```

END OF COMPILATION: NO DIAGNOSTICS.

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@FOR,US NADST,NADST
HSD 11A -12/10/73-11:08:15 (17,18)

   SUBROUTINE DSTRT      ENTRY POINT 000131

   STORAGE USED: CODE(1) 000144; DATA(0) 001071; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003    START  000007

   EXTERNAL REFERENCES (BLOCK, NAME)

    0004    STORIT
    0005    NPRTS
    0006    NIO2S
    0007    NIO1S
    0010    NERR3S

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001    000020 203G       0001    000024 207G       0001    000060 226G       0001    000071 235G       0001    000102 244G
    0000    000126 6000F      0000    000141 6010F      0000    000154 6020F      0000    000164 6030F      0000    000173 6040F
    0000 R  000202 B1         0000 R  000000 B2         0000 R  000006 C          0000    000202 D          0000 R  000202 D1
    0000 R  000466 D10        0000 R  000512 D11        0000 R  000536 D12        0000 R  000562 D13        0000 R  000606 D14
    0000 R  000632 D15        0000 R  000656 D16        0000 R  000702 D17        0000 R  000726 D18        0000 R  000752 D19
    0000 R  000226 D2         0000 R  000776 D20        0000 R  001022 D21        0000 R  000252 D3         0000 R  000276 D4
    0000 R  000322 D5         0000 R  000346 D6         0000 R  000372 D7         0000 R  000416 D8         0000 R  000442 D9
    0000 I  000123 I          0000    001053 INJPS      0000 I  000124 J          0003    000005 KPLOT      0000 I  000125 M
    0003 I  000006 NI         0000 I  000121 NJ         0000 I  000014 NROW       0003 I  000000 TINIT      0000 R  000122 XINMM


00101      1*          SUBROUTINE DSTRT(T,TIME)
00101      2*     C**** COMPUTES NRL-A DISTORTION  PARAMETERS AND PRINTS RESULTS IN MILLIMETERS
00103      3*          DIMENSION B1(6,69),D(420),B2(6),C(6),T(1)
00104      4*          DIMENSION
00104      5*         *      D 1(20)      ,D 2(20)      ,D 3(20)
00104      6*         *     ,D 4(20)      ,D 5(20)      ,D 6(20)
00104      7*         *     ,D 7(20)      ,D 8(20)      ,D 9(20)
00104      8*         *     ,D10(20)      ,D11(20)      ,D12(20)
00104      9*         *     ,D13(20)      ,D14(20)      ,D15(20)
00104     10*         *     ,D16(20)      ,D17(20)      ,D18(20)
00104     11*         *     ,D19(20)      ,D20(20)      ,D21(20)
00105     12*          DIMENSION NROW(69)
00106     13*          EQUIVALENCE (B1(1,1),D(1))
00107     14*          EQUIVALENCE (D(  1),D 1(1)),(D( 21),D 2(1)),(D( 41),D 3(1))
00110     15*          EQUIVALENCE (D( 61),D 4(1)),(D( 81),D 5(1)),(D(101),D 6(1))
00111     16*          EQUIVALENCE (D(121),D 7(1)),(D(141),D 8(1)),(D(161),D 9(1))
00112     17*          EQUIVALENCE (D(181),D10(1)),(D(201),D11(1)),(D(221),D12(1))
00113     18*          EQUIVALENCE (D(241),D13(1)),(D(261),D14(1)),(D(281),D15(1))
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00114      EQUIVALENCE (D(301),D16(1)),(D(321),D17(1)),(D(341),D18(1))
00115      EQUIVALENCE (D(361),D19(1)),(D(381),D20(1)),(D(401),D21(1))
00116      INTEGER TINIT(5)
00117      COMMON /START/ TINIT,KPLOT,NI
00120      DATA NI,NJ/6,69/,XINMM/25.4/
00124      DATA NROW
00124     *   /       49,  50,  51,  52,  53,  54,  55,  56,  57,  58
00124     *   ,  59,  60,  61,  62,  63,  64,  65,  66,  67,  68,  69
00124     *   ,  70,  71,  72,  73,  74,  75,  76,  77,  78,  79,  80
00124     *   ,  81,  82,  83,  84,  85,  86,  87,  88,  89,  90,  91
00124     *   ,  92,  93,  94,  95,  96,  97,  98,  99, 100, 101, 102
00124     *   , 103, 104, 105, 113, 114, 115, 116, 123, 124, 131, 132
00124     *   , 136, 143, 144, 145/
00126      DATA B2
00126     *   / 0.695381E-01,-0.214845E-02, 0.204195E-01, 0.694091E-01
00126     *   ,-0.214409E-02, 0.197241E-01/
00130      DATA D1
00130     *   /-0.230541E-06, 0.101487E-05, 0.393800E-04, 0.377798E-05
00130     *   , 0.169759E-04, 0.426176E-04, 0.432906E-05,-0.358840E-04
00130     *   , 0.354322E-04, 0.198698E-04,-0.279581E-04, 0.352950E-04
00130     *   , 0.170823E-04,-0.244013E-03,-0.478750E-04, 0.342203E-04
00130     *   ,-0.249019E-03,-0.448536E-04, 0.214374E-04,-0.528673E-03/
00132      DATA D2
00132     *   /-0.197489E-03, 0.352374E-04,-0.542307E-03,-0.194044E-03
00132     *   , 0.195324E-04,-0.858353E-03,-0.331758E-03, 0.241051E-04
00132     *   ,-0.852041E-03,-0.329241E-03, 0.101362E-04,-0.443347E-03
00132     *   ,-0.149099E-03, 0.937690E-05,-0.413343E-03,-0.147976E-03
00132     *   , 0.356266E-06, 0.263853E-04, 0.100622E-03, 0.320105E-05/
00134      DATA D3
00134     *   / 0.266125E-04, 0.100828E-03, 0.213823E-04, 0.240978E-04
00134     *   ,-0.342658E-03, 0.287091E-04, 0.248322E-04,-0.339761E-03
00134     *   , 0.211521E-04, 0.629591E-04,-0.257648E-03, 0.410148E-04
00134     *   , 0.628173E-04,-0.253856E-03, 0.101637E-04, 0.399122E-04
00134     *   ,-0.135239E-03, 0.379178E-04, 0.405040E-04,-0.131069E-03/
00136      DATA D4
00136     *   / 0.164610E-05, 0.821773E-05, 0.315060E-04, 0.117082E-04
00136     *   , 0.623574E-05, 0.337647E-04, 0.234247E-06,-0.598916E-06
00136     *   , 0.253482E-04, 0.343679E-05,-0.153101E-04, 0.256429E-04
00136     *   , 0.428723E-05, 0.457919E-04,-0.266477E-05, 0.215657E-04
00136     *   , 0.374368E-04,-0.195458E-05, 0.165837E-04, 0.283714E-03/
00140      DATA D5
00140     *   /-0.138263E-03, 0.391210E-04, 0.290150E-03,-0.135190E-03
00140     *   , 0.279218E-04, 0.737059E-03,-0.417820E-03, 0.535897E-04
00140     *   , 0.753379E-03,-0.412916E-03, 0.330314E-04, 0.129937E-02
00140     *   ,-0.560349E-03, 0.471386E-04, 0.129220E-02,-0.555694E-03
00140     *   , 0.186278E-04, 0.619330E-03,-0.157928E-03, 0.208922E-04/
00142      DATA D6
00142     *   / 0.586156E-03,-0.155645E-03, 0.325838E-05, 0.211262E-04
00142     *   ,-0.157548E-03, 0.295452E-05, 0.208319E-04,-0.157189E-03
00142     *   , 0.985973E-06, 0.175083E-04, 0.298653E-04, 0.547151E-06
00142     *   , 0.173048E-04, 0.299539E-04, 0.176779E-04,-0.472496E-03
00142     *   , 0.936219E-04, 0.151510E-04,-0.425518E-03, 0.955126E-04/
00144      DATA D7
00144     *   / 0.330267E-04,-0.969158E-03,-0.116258E-03, 0.345289E-04
00144     *   ,-0.958353E-03,-0.112371E-03, 0.391983E-04,-0.799471E-03
00144     *   ,-0.693970E-04, 0.446416E-04,-0.808637E-03,-0.645628E-04
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00144      75*          *    , 0.278210E-04,-0.307245E-03,-0.208473E-04, 0.363840E-04
00144      76*          *    ,-0.315310E-03,-0.186050E-04, 0.126758E-04,-0.348141E-04/
00146      77*           DATA D8
00146      78*          *    / 0.484299E-04, 0.190977E-04,-0.325314E-04, 0.428194E-04
00146      79*          *    , 0.102555E-04, 0.182280E-04, 0.279874E-04, 0.158990E-04
00146      80*          *    , 0.152879E-04, 0.229495E-04, 0.162881E-04, 0.174547E-03
00146      81*          *    ,-0.294277E-04, 0.217635E-04, 0.178456E-03,-0.284365E-04
00146      82*          *    , 0.228059E-04, 0.474965E-03,-0.599708E-04, 0.274254E-04/
00150      83*           DATA D9
00150      84*          *    / 0.481205E-03,-0.571986E-04, 0.192159E-04, 0.508862E-03
00150      85*          *    ,-0.190484E-04, 0.210335E-04, 0.498887E-03,-0.167410E-04
00150      86*          *    , 0.133285E-04, 0.318947E-03, 0.162744E-03, 0.113099E-04
00150      87*          *    , 0.274877E-03, 0.164162E-03,-0.490048E-04, 0.256013E-05
00150      88*          *    ,-0.166121E-02,-0.493440E-04, 0.241075E-05,-0.166667E-02/
00152      89*           DATA D10
00152      90*          *    / 0.168824E-04,-0.346456E-03, 0.195197E-03, 0.164382E-04
00152      91*          *    ,-0.340912E-03, 0.197118E-03, 0.337435E-04,-0.830259E-03
00152      92*          *    , 0.979500E-04, 0.320670E-04,-0.820714E-03, 0.101739E-03
00152      93*          *    , 0.393351E-04,-0.720366E-03, 0.293773E-04, 0.343158E-04
00152      94*          *    ,-0.713466E-03, 0.335330E-04, 0.271134E-04,-0.212928E-03/
00154      95*           DATA D11
00154      96*          *    / 0.245238E-04, 0.206385E-04,-0.217476E-03, 0.261060E-04
00154      97*          *    , 0.267820E-04,-0.415296E-05, 0.204629E-04, 0.113278E-04
00154      98*          *    ,-0.173093E-04, 0.151339E-04, 0.226787E-04, 0.207171E-04
00154      99*          *    , 0.147995E-04, 0.998426E-05, 0.292713E-04, 0.119982E-04
00154     100*          *    , 0.248674E-04, 0.201405E-03, 0.467181E-04, 0.175533E-04/
00156     101*           DATA D12
00156     102*          *    / 0.204008E-03, 0.478634E-04, 0.243950E-04, 0.470214E-03
00156     103*          *    , 0.423380E-04, 0.207011E-04, 0.465183E-03, 0.447343E-04
00156     104*          *    , 0.198058E-04, 0.497939E-03, 0.106947E-03, 0.177789E-04
00156     105*          *    , 0.489375E-03, 0.109090E-03, 0.108402E-04, 0.228542E-03
00156     106*          *    , 0.147610E-03, 0.100851E-04, 0.221775E-03, 0.148814E-03/
00160     107*           DATA D13
00160     108*          *    / 0.338614E-06, 0.330798E-05, 0.239790E-04, 0.234446E-06
00160     109*          *    , 0.396672E-05, 0.240121E-04, 0.102622E-04,-0.969878E-04
00160     110*          *    , 0.269232E-03, 0.984506E-05,-0.999482E-04, 0.270393E-03
00160     111*          *    , 0.189928E-04,-0.287387E-03, 0.297464E-03, 0.139644E-04
00160     112*          *    ,-0.287819E-03, 0.299389E-03, 0.281043E-04,-0.338996E-03/
00162     113*           DATA D14
00162     114*          *    / 0.196825E-03, 0.130426E-04,-0.327466E-03, 0.199467E-03
00162     115*          *    , 0.301582E-04,-0.161655E-03, 0.498935E-04, 0.912848E-05
00162     116*          *    ,-0.162769E-03, 0.528855E-04, 0.129817E-04,-0.106923E-04
00162     117*          *    , 0.473428E-05, 0.278441E-05,-0.161365E-04, 0.630064E-05
00162     118*          *    , 0.187673E-04, 0.825274E-05, 0.203284E-04, 0.438205E-05/
00164     119*           DATA D15
00164     120*          *    / 0.190058E-04, 0.229974E-04, 0.307092E-04, 0.172685E-03
00164     121*          *    , 0.132230E-03, 0.748771E-05, 0.176977E-03, 0.135003E-03
00164     122*          *    , 0.369911E-04, 0.538950E-03, 0.390899E-03, 0.106911E-04
00164     123*          *    , 0.524805E-03, 0.393871E-03, 0.231116E-04, 0.511834E-03
00164     124*          *    , 0.432748E-03, 0.108826E-04, 0.513286E-03, 0.434727E-03/
00166     125*           DATA D16
00166     126*          *    / 0.118078E-04, 0.183598E-03, 0.317956E-03, 0.915489E-05
00166     127*          *    , 0.190570E-03, 0.319165E-03, 0.136667E-04, 0.941884E-05
00166     128*          *    , 0.480048E-03, 0.136630E-04, 0.969826E-05, 0.481624E-03
00166     129*          *    , 0.140656E-04, 0.480460E-05, 0.333532E-03, 0.126050E-04
00166     130*          *    , 0.132351E-05, 0.335072E-03, 0.280896E-04, 0.415266E-04/
```

```
00170     131*          DATA D17
00170     132*         *   / 0.493380E-03, 0.180095E-04, 0.398889E-04, 0.496056E-03
00170     133*         *   , 0.304387E-04, 0.560645E-04, 0.272076E-03, 0.109795E-04
00170     134*         *   , 0.572832E-04, 0.274640E-03, 0.292962E-04, 0.386955E-04
00170     135*         *   , 0.907784E-04, 0.660364E-05, 0.381224E-04, 0.939646E-04
00170     136*         *   , 0.110195E-04, 0.115927E-04, 0.932305E-05, 0.251838E-05/
00172     137*          DATA D18
00172     138*         *   / 0.112663E-04, 0.136974E-04, 0.195839E-05,-0.274897E-04
00172     139*         *   , 0.505543E-04, 0.553527E-05,-0.504235E-04, 0.264838E-04
00172     140*         *   , 0.342523E-05,-0.379157E-04, 0.202448E-04, 0.111168E-05
00172     141*         *   ,-0.231403E-04, 0.848546E-05,-0.116707E-06, 0.294564E-04
00172     142*         *   , 0.451167E-04, 0.519675E-05, 0.561981E-04, 0.207919E-04/
00174     143*          DATA D19
00174     144*         *   / 0.111694E-05, 0.118119E-04,-0.532597E-08, 0.393278E-06
00174     145*         *   , 0.539056E-05, 0.531120E-06, 0.332830E-05, 0.749702E-04
00174     146*         *   , 0.474364E-04,-0.148900E-06, 0.502737E-04, 0.171941E-04
00174     147*         *   , 0.208101E-05,-0.283801E-04, 0.229085E-04, 0.863052E-06
00174     148*         *   ,-0.136512E-04, 0.791590E-05,-0.438798E-05,-0.429878E-12/
00176     149*          DATA D20
00176     150*         *   /-0.123239E-03,-0.240850E-05,-0.500932E-12,-0.123630E-03
00176     151*         *   ,-0.438798E-05,-0.429878E-12,-0.123239E-03,-0.240850E-05
00176     152*         *   ,-0.500932E-12,-0.123630E-03,-0.421079E-07,-0.377749E-06
00176     153*         *   , 0.541427E-07, 0.170029E-07,-0.368227E-06, 0.779786E-06
00176     154*         *   ,-0.677378E-07, 0.343890E-05, 0.887586E-04, 0.224586E-06/
00200     155*          DATA D21
00200     156*         *   / 0.260647E-05, 0.887678E-04,-0.351488E-10,-0.659764E-04
00200     157*         *   , 0.459590E-07, 0.122877E-09,-0.658419E-04, 0.459650E-07
00200     158*         *   , 0.540504E-09, 0.295408E-04,-0.756069E-06,-0.191627E-08
00200     159*         *   , 0.303056E-04,-0.756162E-06,6*0./
00202     160*          DO 100 I=1,NI
00205     161*          C(I)=-B2(I)
00206     162*          DO 100 J=1,NJ
00211     163*          M=NROW(J)
00212     164*          C(I)=C(I)+B1(I,J)*T(M)
00213     165*      100 CONTINUE
00216     166*          PRINT 6000
00220     167*     6000 FORMAT('0',T27,'NRL-A OPTICAL DISTORTION OF SUN IMAGE IN INCHES')
00221     168*          PRINT 6010
00223     169*     6010 FORMAT('0',T41,'LEFT',12X,'RIGHT'/T33,2('SIDE OF FILM',5X))
00224     170*          PRINT 6020,(C(I),I=1,4,3)
00232     171*     6020 FORMAT('0CHANGE IN FOCAL DISTANCE',2X,2(2X,E15.6))
00233     172*          PRINT 6030,(C(I),I=2,5,3)
00241     173*     6030 FORMAT('0VERTICAL POSITION',9X,2(2X,E15.6))
00242     174*          PRINT 6040,(C(I),I=3,6,3)
00250     175*     6040 FORMAT('0HORIZONTAL POSITION',7X,2(2X,E15.6))
00251     176*
00251     177*          CALL STORIT(TIME,NI,C)
00252     178*
00252     179*          RETURN
00253     180*          END

      END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,US DTRAN,DTRAN
HSD 11A -12/10/73-11:08:20 (16,17)

   SUBROUTINE TRAN       ENTRY POINT 000074

   STORAGE USED: CODE(1) 000100: DATA(3) 000042: BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   UNIT    000005
    0004   TDATA   076400
    0005   BLK1    000645
    0006   BLK2    000613
    0007   BLK3    000013

   EXTERNAL REFERENCES (BLOCK, NAME)

    0010   RDNOD
    0011   RDBC
    0012   RDFLX
    0013   COMPUT
    0014   NPRT$
    0015   NIO2$
    0016   NRDU$
    0017   NIO1$
    0020   NSTOP$
    0021   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   000020 140G      0001   000031 146G      0001   000061 168HL     0000   000013 700F      0000   000003 701F
    0000   000012 761F      0004   000000 A         0005 R 000000 AA        0004   000000 AN        0004   000000 AO
    0004   000000 B         0005 R 000004 BB        0004   000000 BLMT      0004   000000 BP        0004   000000 C
    0005 R 000010 CC        0004   000030 CK        0004   000000 CO        0005   000014 CON       0004   000000 D
    0000 R 000001 DELT      0005   000015 DT        0004   000000 DTN       0004   000000 DTNA      0004   000000 DTNB
    0004   000000 DTNC      0006   000054 EOUT      0004   000000 HYS       0000 I 000002 I         0005   000016 IAN
    0005   000017 IANN      0005   000020 IANS      0007   000000 IAOF      0005   000021 IAS       0007   000001 IBF
    0005   000022 IBLMTS    0005   000023 IBPS      0005   000024 IBS       0005   000025 ICKS      0007   000002 ICOS
    0007   000003 ICS       0005   000026 IDS       0005   000027 IDTAS     0005   000030 IDTBS     0005   000031 IDTCS
    0005   000032 IDTNS     0007   000004 IHYF      0005   000033 IHYS      0005   000034 IN        0005   000035 INC
    0000   000034 INJP$     0005   000036 IO        0005   000037 IOUT      0006   000612 IPU       0005   000575 IQHETS
    0005   000576 IQS       0005   000577 ISLS      0005   000600 ISOS      0005   000602 ITA       0005   000603 ITAS
    0005   000604 ITAVS     0005 I 000605 ITITLE    0005   000625 ITLMTS    0005   000626 ITPS      0005   000627 ITS
    0005   000630 ITYS      0005   000601 IT4S      0000 I 000000 IVAL      0005   000631 IWATS     0003 I 000000 I1
    0003 I 000001 I2        0003 I 000002 I3        0007   000012 KNM       0005   000633 KNNM      0005   000632 KNW
    0005 I 000634 KPUN      0005   000635 L1        0005   000636 L11       0005   000637 L2        0005   000640 L21
    0004   000000 MAPT      0004   000000 MB        0006   000000 MBS       0004   000000 MC        0006   000001 MCS
    0004   000000 MX        0005   000641 M1        0005   000642 M11       0005   000643 M2        0005   000644 M21
    0006   000010 NACT      0006   000011 NAPT      0004   000000 NB        0006   000012 NBS       0004   000000 NC
    0006   000013 NCS       0004   000000 NCTL      0006   000014 NCTLS     0006   000015 NDEG      0006   000016 NENT
    0004   000000 NEXPH     0006   000017 NHEAT     0006   000020 NHEATS    0004   000000 NHET      0006   000021 NHTU
    0006   000022 NL        0006   000023 NMASS     0006   000024 NN        0006   000025 NNMAS     0006   000026 NNODE
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0006   000027 NOACS     0006   000030 NOAOS     0006   000031 NOAS      0006   000032 NOATS     0006 I 000053 NOGO
0004   000000 NOP       0006   000033 NOPF      0006   000034 NOPS      0006   000035 NORF      0006   000036 NORI
0004   000000 NOUT      0006   000037 NOUTS     0004   000000 NSWCH     0006   000040 NSWCHS    0004   000000 NT
0006   000041 NTAB      0006   000042 NTEMP     0006   000043 NTS       0004   000000 NTYPE     0006   000044 NU
0004   000000 NUM       0006   000045 NUMS      0007 I 000006 NWT       0004   000000 NX        0007   000007 NXF
0007   000010 NXS       0006   000002 N1        0006   000003 N1I       0007   000005 N2        0006   000004 N2I
0006   000005 N3        0006   000006 N3I       0006   000007 N4        0003 I 000003 O1        0003 I 000004 O2
0004   000000 Q         0004   000000 QHEAT     0007 R 000011 SIG       0004   000000 SLOPE     0004   000000 SO
0004   000000 T         0004   000000 TABLE     0004   000000 TAVEG     0004   000000 TEXPOF    0004   000000 TEXPON
0004   000000 THETC     0006   000046 THETI     0004   000000 THETO     0006   000047 THMAX     0004   000000 TLMT
0006   000050 TMAX      0006   000051 TMIN      0006   000052 TOPO      0004   000000 TP        0004   000000 TYME
0004   000000 T4        0004   000000 VAR       0004   000000 WATHR
```

```
00101     1*          SUBROUTINE TRAN
00103     2*          INTEGER I1,I2,I3,O1,O2
00104     3*          COMMON/UNIT/I1,I2,I3,O1,O2
00105     4*          COMMON /TDATA/ VAR(32000)
00106     5*          COMMON /BLK1/
00106     6*        *    AA        ,BB        ,CC        ,CON       ,DT        ,IAN
00106     7*        *   ,IANN      ,IANS      ,IAS       ,IBLMTS    ,IBPS      ,IBS
00106     8*        *   ,ICKS      ,IDS       ,IDTAS     ,IDTBS     ,IDTCS     ,IDTNS
00106     9*        *   ,IHYS      ,IN        ,INC       ,IO        ,IOUT      ,IQHETS
00106    10*        *   ,IQS       ,ISLS      ,ISOS      ,IT4S      ,ITA       ,ITAS
00106    11*        *   ,ITAVS     ,ITITLE    ,ITLMTS    ,ITPS      ,ITS       ,ITYS
00106    12*        *   ,IWATS     ,KNW       ,KNNM      ,KPUN      ,L1        ,L1I
00106    13*        *   ,L2        ,L2I       ,M1        ,M1I       ,M2        ,M2I
00107    14*          COMMON /BLK2/
00107    15*        *    MBS                   ,MCS       ,N1        ,N1I       ,N2I
00107    16*        *   ,N3        ,N3I       ,N4        ,NACT      ,NAPT      ,NBS
00107    17*        *   ,NCS       ,NCTLS     ,NDEG      ,NENT      ,NHEAT     ,NHEATS
00107    18*        *   ,NHTD      ,NL        ,NMASS     ,NN        ,NNMAS     ,NNODE
00107    19*        *   ,NOACS     ,NOAOS     ,NOAS      ,NOATS     ,NOPF      ,NOPS
00107    20*        *   ,NORF      ,NORI      ,NOUTS     ,NSWCHS    ,NTAB      ,NTEMP
00107    21*        *   ,NTS       ,NU        ,NUMS      ,THETI     ,THMAX     ,TMAX
00107    22*        *   ,TMIN      ,TOPO      ,NOGO      ,FOUT      ,IPU
00110    23*          COMMON /BLK3/
00110    24*        *    IAOF      ,IBF       ,ICOS      ,ICS       ,IHYF      ,N2
00110    25*        *   ,NWT       ,NXF       ,NXS       ,SIG       ,KNM
00111    26*          EQUIVALENCE                (VAR,MAPT)          ,(VAR,THETO)
00111    27*        *   ,(VAR,THETC)           ,(VAR,NTYPE)          ,(VAR,T)
00111    28*        *   ,(VAR,A)               ,(VAR,D)              ,(VAR,CK)
00111    29*        *   ,(VAR,NOUT)            ,(VAR,NOP)            ,(VAR,NUM)
00111    30*        *   ,(VAR,AN)              ,(VAR,NX)             ,(VAR,MX)
00111    31*        *   ,(VAR,NB)              ,(VAR,MB)             ,(VAR,B)
00111    32*        *   ,(VAR,NC)              ,(VAR,MC)             ,(VAR,C)
00111    33*        *   ,(VAR,TYME)            ,(VAR,NT)             ,(VAR,TABLE)
00111    34*        *   ,(VAR,DTN)             ,(VAR,Q)              ,(VAR,NSWCH)
00112    35*          EQUIVALENCE                (VAR,TAVEG)         ,(VAR,QHEAT)
00112    36*        *   ,(VAR,TLMT)            ,(VAR,BLMT)           ,(VAR,DTNA)
00112    37*        *   ,(VAR,DTNB)            ,(VAR,DTNC)           ,(VAR,NHET)
00112    38*        *   ,(VAR,NCTL)            ,(VAR,WATHR)          ,(VAR,NEXPH)
00112    39*        *   ,(VAR,TEXPON)          ,(VAR,TEXPOF)         ,(VAR,TP)
00112    40*        *   ,(VAR,BP)              ,(VAR,SLOPE)          ,(VAR,HYS)
```

```
00112     41*          *    ,(VAR,T4)            ,(VAR,SO)            ,(VAR,AO)
00112     42*          *    ,(VAR,CO)
00113     43*           DIMENSION AA(4),BB(4),CC(4)
00114     44*           DIMENSION MAPT(1),THETO(1),THETC(1),NTYPE(1),T(1),A(1),D(1),CK(1),
00114     45*          1NOUT(1),NOP(1),NUM(1),AN(1),NX(1),MX(1),NB(1),MB(1),B(1),NC(1),MC(
00114     46*          21),C(1),TYME(1),NT(1),TABLE(1),DTN(1),Q(1),NSWCH(1),TAVEG(1),QHEAT
00114     47*          3(1),TLMT(1),BLMT(1),DTNA(1),DTNB(1),DTNC(1),NHET(1),NCTL(1),WATHR(
00114     48*          41),NEXPH(1),TEXPON(1),TEXPOF(1), TP(1),BP(1),SLOPE(1),HYS(1),T4(1)
00114     49*          5,SO(1),AO(1),CO(1)
00115     50*           DIMENSION FOUT(350)
00116     51*           DIMENSION IOUT(350)
00117     52*           DIMENSION ITITLE(16)
00120     53*           DATA SIG,IVAL,DELT,AA,BB,CC/1.713E-9,1.,.01,.5,.29289322,1.70710678
00120     54*          X,.16666667,2.,1.,1.,2.,.5,.29289322,1.70710678,.5/
00120     55*      C    BEGINNING OF PROGRAM. RETURN HERE AT END OF CASE.
00127     56*           I2=15
00130     57*           NOGO=0
00131     58*           NWT=1
00132     59*           KPUN=0
00133     60*      1000 PRINT 701
00135     61*       701 FORMAT('1TRANSIENT THERMAL ANALYSIS PROGRAM')
00136     62*           READ(I2,761)(ITITLE(I),I=1,16)
00144     63*           PRINT 761,(ITITLE(I),I=1,16)
00152     64*       761 FORMAT(16R5)
00153     65*           READ(I2,700)
00155     66*      1001 PRINT 700
00157     67*       700 FORMAT('
00157     68*          1                          ')
00160     69*           CALL RDNOD
00161     70*           CALL RDBC
00162     71*           CALL RDFLX
00162     72*      C
00162     73*      C          CHECK TO SEE IF INPUT IS OKAY
00162     74*      C
00163     75*           IF(NOGO)1402,1402,1684
00166     76*      1402 CONTINUE
00167     77*           CALL COMPUT
00170     78*      1684 STOP
00171  *DIAGNOSTIC*  DATA CARD(S) ENCOUNTERED AFTER END CARD.
00171     79*           END

      END OF COMPILATION:          1 DIAGNOSTICS.
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```
@FOR,US DRDNOD,DRDNOD
MSD 11A -12/10/73-11:08:24 (16,17)

   SUBROUTINE RDNOD      ENTRY POINT 002054

   STORAGE USED: CODE(1) 002065; DATA(3) 000402; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003    UNIT    000305
    0004    TDATA   076400
    0005    BLK1    000645
    0006    BLK2    000613
    0007    BLK3    000613

   EXTERNAL REFERENCES (BLOCK, NAME)

    0010    NRDUS
    0011    NIO2S
    0012    NPRTS
    0013    NWBUS
    0014    NIO1S
    0015    NREWS
    0016    NRBUS
    0017    NERR3S

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001    001363 1L        0001    001426 1001G     0001    001437 1007G     0001    000355 103L      0001    000441 1031L
    0001    000467 1033L     0001    000536 1036L     0001    000547 1038L     0001    000616 1046L     0001    000627 1048L
    0001    000341 105L      0001    000672 1055L     0001    000716 1060L     0001    000744 1062L     0001    001602 1063G
    0001    000362 107L      0001    001610 1070G     0001    001621 1076G     0001    001357 109L      0001    001070 1103L
    0001    001633 1105G     0001    001122 1105L     0001    001314 111L      0001    001644 1113G     0001    001734 1144G
    0001    002020 1202G     0001    000077 177G      0001    001726 18L       0001    001775 20L       0001    000151 234G
    0001    002007 24L       0001    002012 25L       0001    000174 251G      0001    001762 26L       0001    002031 29L
    0001    000313 315G      0001    000404 353G      0001    000423 362G      0001    001170 3996L     0001    001132 3998L
    0001    001704 4085L     0001    001753 4117L     0001    001367 4119L     0001    000502 412G      0001    000160 4201L
    0001    000135 4203L     0001    000142 4206L     0001    000521 421G      0001    000075 4220L     0001    000202 4221L
    0001    000562 446G      0001    000601 455G      0001    000635 476G      0001    000654 505G      0001    001447 5098L
    0001    000714 524G      0001    000756 546G      0001    001032 574G      0001    001064 611G      0001    001116 626G
    0000    000073 702F      0001    001233 702G      0000    000076 705F      0000    000150 706F      0000    000160 708F
    0001    001270 716G      0000    000164 725F      0000    000166 726F      0001    001324 731G      0001    001335 735G
    0000    000171 737F      0000    000177 738F      0000    000200 739F      0000    000202 740F      0000    000213 746F
    0000    000240 748F      0000    000245 749F      0000    000247 750F      0000    000257 751F      0000    000265 752F
    0000    000275 753F      0000    000303 755F      0000    000312 756F      0000    000323 757F      0000    000335 760F
    0001    001376 761G      0001    001414 772G      0004 R  000000 A         0005    000000 AA        0004    000000 AN
    0004    000000 AO        0000 R  000044 APCLOS    0000 R  000043 APOPEN    0000 R  000036 ATEMP     0004    000000 B
    0005    000004 BB        0004    000000 BLMT      0004 R  000000 BP        0004    000000 C         0005    000010 CC
    0004 R  000000 CK        0004    000000 CO        0005    000014 CON       0004 R  000000 D         0005 R  000015 DT
    0004    000000 DTN       0004    000000 DTNA      0004    000000 DTNB      0004    000000 DTNC      0006 R  000054 FOUT
    0004 R  000000 HYS       0000 I  000012 I         0000 I  000021 IAF       0005    000016 IAN       0000 I  000025 IANF
    0005    000017 IANN      0005 I  000020 IANS      0007    000000 IAOF      0005 I  000021 IAS       0007    000001 IBF
```

```
0000 I 000057 IBLMTF   0005 I 000022 IBLMTS   0000 I 000070 IBPF    0005 I 000023 IBPS    0005   000024 IBS
0000 I 000023 ICKF     0005 I 000025 ICKS     0007   000002 ICOS    0007   000003 ICS     0000 I 000022 IDF
0005 I 000026 IDS      0000 I 000060 IDTAF    0005 I 000027 IDTAS   0000 I 000061 IDTBF   0005 I 000030 IDTBS
0000 I 000062 IDTCF    0005 I 000031 IDTCS    0005   000032 IDTNS   0007 I 000004 IHYF    0005 I 000033 IHYS
0000 I 000031 II       0000 I 000035 III      0005   000034 IN      0005 I 000035 INC     0000 I 000030 INDEX
0000   000364 INJPS    0005   000036 IO       0005 I 000037 IOUT    0000   000612 IPU     0000 I 000065 IQHETF
0005 I 000575 IQHETS   0005   000576 IQS      0000 I 000071 ISLF    0005 I 000577 ISLS    0005   000600 ISOS
0005   000602 ITA      0005   000603 ITAS     0005   000604 ITAVS   0000 I 000024 ITF     0005   000605 ITITLE
0000 I 000056 ITLMTF   0005 I 000625 ITLMTS   0000 I 000067 ITPF    0005 I 000626 ITPS    0005 I 000627 ITS
0005   000630 ITYS     0000 I 000066 IT4F     0005 I 000601 IT4S    0000 I 000040 IVA     0000 I 000041 IVC
0000 I 000065 IWATF    0005 I 000631 IWATS    0003 I 000000 I1      0003 I 000001 I2      0003 I 000002 I3
0000 I 000034 J        0000 I 000033 JI       0000 I 000013 K       0007   000012 KNM     0005   000633 KNNM
0005   000632 KNW      0005   000634 KPUN     0000 I 000051 K1      0000 I 000052 K2      0000 I 000053 K3
0005   000635 L1       0005   000636 L1I      0005   000637 L2      0005   000640 L2I     0004 I 000000 MAPT
0004   000000 MB       0006   000000 MBS      0004   000000 MC      0006   000001 MCS     0000 I 000000 MIN
0000 I 000032 MINI     0004   000000 MX       0005   000641 M1      0005   000642 M1I     0005   000643 M2
0005   000644 M2I      0000 I 000026 N        0000 I 000027 NA      0006 I 000010 NACT    0000 I 000001 NAN
0006 I 000011 NAPT     0000 I 000042 NAPTND   0004   000000 NB      0006   000012 NBS     0004   000000 NC
0006   000013 NCS      0004 I 000000 NCTL     0000 I 000064 NCTLF   0006 I 000014 NCTLS   0006 I 000015 NDEG
0000 I 000004 NDEX     0006   000016 NENT     0000 I 000072 NEXP    0004   000000 NEXPH   0006 I 000017 NHEAT
0000 I 000063 NHEATF   0006 I 000020 NHEATS    0004 I 000000 NHET    0006 I 000021 NHTD    0006   000022 NL
0000 I 000016 NM       0006 I 000023 NMASS    0006 I 000024 NN      0000 I 000017 NNM     0006 I 000025 NNMAS
0006 I 000026 NNODE    0000 I 000047 NOACF    0006 I 000027 NOACS   0000 I 000045 NOAF    0000 I 000046 NOAOF
0006 I 000030 NOAOS    0006 I 000031 NOAS     0000 I 000050 NOATF   0006 I 000032 NOATS   0006 I 000053 NOGO
0004 I 000000 NOP      0006 I 000033 NOPF     0006 I 000034 NOPS    0006 I 000035 NORF    0006 I 000036 NORI
0004 I 000000 NOUT     0000 I 000014 NOUTF    0006 I 000037 NOUTS   0000 I 000037 NPOS    0000 I 000020 NST
0004 I 000000 NSWCH    0000 I 000054 NSWCHF   0006 I 000040 NSWCHS   0004   000000 NT      0006   000041 NTAB
0000 I 000011 NTAPE    0006 I 000042 NTEMP    0006   000043 NTS     0004 I 000000 NTYPE   0006   000044 NU
0004 I 000000 NUM      0000 I 000015 NUMF     0006 I 000045 NUMS    0007 I 000006 NWT     0004   000000 NX
0007   000007 NXF      0007   000010 NXS      0006 I 000002 N1      0006   000003 N1I     0007 I 000005 N2
0006   000004 N2I      0006   000005 N3       0006   000006 N3I     0006   000007 N4      0000 R 000010 ORF
0000 R 000007 ORI      0003 I 000003 O1       0003 I 000004 O2      0004   000000 Q       0004 R 000000 QHEAT
0007   000011 SIG      0004 R 000000 SLOPE    0004   000000 SO      0004 R 000000 T       0004   000000 TABLE
0004   000000 TAVEG    0004   000000 TEXPOF   0004   000000 TEXPON   0004 R 000000 THETC   0006 R 000046 THETI
0004 R 000000 THETO    0006 R 000047 THMAX    0004   000000 TLMT    0006 R 000050 TMAX    0006 R 000051 TMIN
0006 R 000052 TOPO     0004   000000 TP       0004   000000 TYME    0004   000000 T4      0004   000000 VAR
0004 R 000000 WATHR
```

```
00101      1•          SUBROUTINE RDNOD
00103      2•          INTEGER I1,I2,I3,O1,O2
00104      3•          COMMON/UNIT/I1,I2,I3,O1,O2
00105      4•          COMMON /TDATA/ VAR(32000)
00106      5•          COMMON /BLK1/
00106      6•        •   AA       ,BB       ,CC       ,CON      ,DT       ,IAN
00106      7•        •  ,IANN     ,IANS     ,IAS      ,IBLMTS   ,IBPS     ,IBS
00106      8•        •  ,ICKS     ,IDS      ,IDTAS    ,IDTBS    ,IDTCS    ,IDTNS
00106      9•        •  ,IHYS     ,IN       ,INC      ,IO       ,IOUT     ,IQHETS
00106     10•        •  ,IQS      ,ISLS     ,ISOS     ,IT4S     ,ITA      ,ITAS
00106     11•        •  ,ITAVS    ,ITITLE   ,ITLMTS   ,ITPS     ,ITS      ,ITYS
00106     12•        •  ,IWATS    ,KNW      ,KNNM     ,KPUN     ,L1       ,L1I
00106     13•        •  ,L2       ,L2I      ,M1       ,M1I      ,M2       ,M2I
00107     14•          COMMON /BLK2/
00107     15•        •   MBS                ,MCS      ,N1       ,N1I      ,N2I
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00107     16*          *    ,N3        ,N3I       ,N4        ,NACT      ,NAPT      ,NBS
00107     17*          *    ,NCS       ,NCTLS     ,NDEG      ,NENT      ,NHEAT     ,NHEATS
00107     18*          *    ,NHTD      ,NL        ,NMASS     ,NN        ,NNMAS     ,NNODE
00107     19*          *    ,NOACS     ,NOAOS     ,NOAS      ,NOATS     ,NOPF      ,NOPS
00107     20*          *    ,NORF      ,NORI      ,NOUTS     ,NSWCHS    ,NTAB      ,NTEMP
00107     21*          *    ,NTS       ,NU        ,NUMS      ,THETI     ,THMAX     ,TMAX
00107     22*          *    ,TMIN      ,TOPO      ,NOGO      ,FOUT      ,IPU
00110     23*           COMMON /BLK3/
00110     24*          *     IAOF      ,IBF       ,ICOS      ,ICS       ,IHYF      ,N2
00110     25*          *    ,NWT       ,NXF       ,NXS       ,SIG       ,KNM
00111     26*           EQUIVALENCE                (VAR,MAPT)            ,(VAR,THETO)
00111     27*          *    ,(VAR,THETC)           ,(VAR,NTYPE)          ,(VAR,T)
00111     28*          *    ,(VAR,A)               ,(VAR,D)              ,(VAR,CK)
00111     29*          *    ,(VAR,NOUT)            ,(VAR,NOP)            ,(VAR,NUM)
00111     30*          *    ,(VAR,AN)              ,(VAR,NX)             ,(VAR,MX)
00111     31*          *    ,(VAR,NB)              ,(VAR,MB)             ,(VAR,B)
00111     32*          *    ,(VAR,NC)              ,(VAR,MC)             ,(VAR,C)
00111     33*          *    ,(VAR,TYME)            ,(VAR,NT)             ,(VAR,TABLE)
00111     34*          *    ,(VAR,DTN)             ,(VAR,Q)              ,(VAR,NSWCH)
00112     35*           EQUIVALENCE                (VAR,TAVEG)           ,(VAR,QHEAT)
00112     36*          *    ,(VAR,TLMT)            ,(VAR,BLMT)           ,(VAR,DTNA)
00112     37*          *    ,(VAR,DTNB)            ,(VAR,DTNC)           ,(VAR,NHET)
00112     38*          *    ,(VAR,NCTL)            ,(VAR,WATHR)          ,(VAR,NEXPH)
00112     39*          *    ,(VAR,TEXPON)          ,(VAR,TEXPOF)         ,(VAR,TP)
00112     40*          *    ,(VAR,BP)              ,(VAR,SLOPE)          ,(VAR,HYS)
00112     41*          *    ,(VAR,T4)              ,(VAR,SO)             ,(VAR,AO)
00112     42*          *    ,(VAR,CO)
00113     43*           DIMENSION AA(4),BB(4),CC(4)
00114     44*           DIMENSION MAPT(1),THETO(1),THETC(1),NTYPE(1),T(1),A(1),D(1),CK(1),
00114     45*          1NOUT(1),NOP(1),NUM(1),AN(1),NX(1),MX(1),NB(1),MB(1),B(1),NC(1),MC(
00114     46*          2I),C(1),TYME(1),NT(1),TABLE(1),DTN(1),Q(1),NSWCH(1),TAVEG(1),QHEAT
00114     47*          3(1),TLMT(1),BLMT(1),DTNA(1),DTNB(1),DTNC(1),NHET(1),NCTL(1),WATHR(
00114     48*          4I),NEXPH(1),TEXPON(1),TEXPOF(1), TP(1),BP(1),SLOPE(1),HYS(1),T4(1)
00114     49*          5,SO(1),AO(1),CO(1)
00115     50*           DIMENSION FOUT(350)
00116     51*           DIMENSION IOUT(350)
00117     52*           DIMENSION ITITLE(16)
00120     53*           DIMENSION NAN(3),NDEX(3)
00121     54*       702 FORMAT(6F10.0,A5,I5)
00122     55*       705 FORMAT(///' INITIAL TIME OF ORBIT = 'E15.4,/' FINAL TIME OF ORBIT
00122     56*          1= 'E15.4,/' INTEGRATION INTERVAL = 'E15.4,/' NUMBER OF INITIAL ORB
00122     57*          2IT = 'I5,/' NUMBER OF FINAL ORBIT = 'I5,/
00122     58*          3' PRINT OUT INTERVAL = 'E15.4,/' TEMPERATURES GIVEN IN DEGREES--'
00122     59*          4,A5)
00123     60*       706 FORMAT(2X,9HNODE DATA //5X,1HN,5X,5HINDEX,5X,3HMCP)
00124     61*       708 FORMAT(3(2I7,2X,E12.4,5X))
00125     62*       725 FORMAT(I7,2F15.5)
00126     63*       726 FORMAT(I5,3E10.2,5I5)
00127     64*       737 FORMAT(//24H  NUMBER OF APERTURES =  ,I5)
00130     65*     738   FORMAT(16I5)
00131     66*       739 FORMAT(2I5,F10.3)
00132     67*       740 FORMAT(///' APETURE NODE'I5,'IS NOT IN NO MASS ARRAY')
00133     68*       746 FORMAT(1H1,///'   NUMBER OF NODES = 'I5,/'   NUMBER OF NO MASS NOD
00133     69*          1ES = ',I5/'   NUMBER OF SPECIFIED TEMPERATURE NODES = ',I5)
00134     70*       748 FORMAT(///' LIST OF MASS NODES')
00135     71*     749   FORMAT(I5,5F10.3)
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00136   72*      750 FORMAT(////10X,' NUMBER OF HEATER NODES = ',I5)
00137   73*      751 FORMAT(///' LIST OF NO MASS NODES')
00140   74*      752 FORMAT(///' LIST OF SPECIFIED TEMPERATURE NODES')
00141   75*      753 FORMAT(////20H        HEATER DATA     ///)
00142   76*      755 FORMAT(///5H NODE ,I5,20H IS NOT IN NUM ARRAY )
00143   77*      756 FORMAT(///12H HEATER NODE ,I5,24H IS NOT IN LIST OF NODES )
00144   78*      757 FORMAT(///17H HEATER DATA NODE ,I5,24H IS NOT IN LIST OF NODES )
00145   79*      760 FORMAT(///20X,13HAPERTURE DATA ///6H  NODE ,8X,4HOPEN,8X,5HCLOSE )
00145   80*    C     INPUT OF DATA OTHER THAN THAT PERTAINING TO NODES
00146   81*          READ(I2,702)THETI,THMAX,DT,ORI,ORF,TOPO,NDEG,NTAPE
00160   82*          IF(NDEG.NE.5H CENT .AND. NDEG.NE.5H RANK)NDEG=5H FAHR
00162   83*          NORI=ORI
00163   84*          NORF=ORF
00164   85*          TMIN=-1.0
00165   86*          TMAX=1000.0
00166   87*          THAX=10000
00167   88*          READ(I2,738)
00167   89*    C
00167   90*    C          INPUT OF NODE DATA.    COUNT NUMBER OF NODES, NUMBER OF
00167   91*    C          NOMASS NODES AND NUMBER OF SPECIFIED TEMPERATURE NODES.
00167   92*    C
00171   93*          PRINT 706
00173   94*          NNODE=0
00174   95*          NNMAS=0
00175   96*          NTEMP=0
00176   97*     4220 DO 4206 I=1,3
00201   98*          READ(I2,739)NAN(I),NDEX(I),FOUT(I)
00206   99*          IF(NAN(I)-99999)4208,4201,4201
00211  100*     4208 NNODE=NNODE+1
00212  101*          WRITE(I1)NAN(I),NDEX(I),FOUT(I)
00217  102*          IF(NDEX(I))4203,4203,4204
00222  103*     4204 NTEMP=NTEMP+1
00223  104*          GO TO 4206
00224  105*     4203 IF(FOUT(I))4206,4205,4206
00227  106*     4205 NNMAS=NNMAS+1
00230  107*     4206 CONTINUE
00232  108*          PRINT 708,(NAN(K),NDEX(K),FOUT(K),K=1,3)
00242  109*          GO TO 4220
00243  110*     4201 I=I-1
00244  111*          IF(I) 4221,4221,4222
00247  112*     4222 PRINT 708,(NAN(K),NDEX(K),FOUT(K),K=1,I)
00257  113*     4221 REWIND11
00260  114*          PRINT 746,NNODE,NNMAS,NTEMP
00265  115*          NOUTS=1
00266  116*          NOUTF=NNODE
00267  117*     5079 NOPS=NOUTF+1
00270  118*          NOPF=NOUTF+NNODE
00271  119*     7037 NUMS=NOPF+1
00272  120*          NUMF=NOPF+NNODE
00273  121*          NWT=0
00274  122*          NMASS=NNODE - NNMAS - NTEMP
00275  123*     5000 NACT=NMASS + NNMAS
00276  124*          NM=1
00277  125*          NNM = NMASS+1
00300  126*          NST = NNM + NNMAS
00301  127*     5080 IAS=NUMF+1
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00302   128*          IAF=NUMF+NMASS
00303   129*     5052 IDS=IAF+1
00304   130*          IDF=IAF+NACT
00305   131*     5053 ICKS=IDF+1
00306   132*          ICKF=IDF+NACT
00307   133*     5081 ITS=ICKF+1
00310   134*          ITF=ICKF+NNODE
00311   135*    5082  IANS=ITF+1
00312   136*    5054  IANF=ITF+NNMAS*(NNMAS+1)
00313   137*          REWIND11
00314   138*          DO 101 N=1,NNODE
00317   139*          READ(11)NA,INDEX,T(ITS)
00324   140*          IF(INDEX) 102,102,103
00327   141*      102 IF(T(ITS))104,104,105
00332   142*      104 NN=NNM
00333   143*          NNM=NNM+1
00334   144*          GO TO 107
00335   145*      105 NN=NM
00336   146*          NM=NM+1
00337   147*          A(IAS+NN-1)=1./T(ITS)
00340   148*          GO TO 107
00341   149*      103 NN=NST
00342   150*          NST=NST+1
00343   151*      107 NOP(NOPS+N-1) = NA
00344   152*    101   NUM(NUMS+NN-1)=NA
00344   153*    C           SORTING SECTION
00344   154*    C
00344   155*    C                MASS NODES
00346   156*          NA=NMASS-1
00347   157*          IF(NA)1033,1033,1029
00352   158*     1029 DO 1030 I=1,NA
00355   159*          II=NUMS+I-1
00356   160*     1028 MIN=NUM(II)
00357   161*          MINI=I
00360   162*          J1=I+1
00361   163*          DO 1031 J=J1,NMASS
00364   164*          III=NUMS+J-1
00365   165*          IF(MIN-NUM(III))1031,1031,1032
00370   166*     1032 MIN=NUM(III)
00371   167*          MINI=J
00372   168*     1031 CONTINUE
00374   169*          NUM(NUMS+MINI-1)=NUM(II)
00375   170*          NUM(II)=MIN
00376   171*          ATEMP=A(IAS+I-1)
00377   172*          A(IAS+I-1)=A(IAS+MINI-1)
00400   173*          A(IAS+MINI-1)=ATEMP
00401   174*     1030 CONTINUE
00401   175*    C                NO MASS NODES
00403   176*     1033 CONTINUE
00404   177*          NPOS=NUMS+NMASS
00405   178*          NA=NNMAS-1
00406   179*          IF(NA)1038,1038,1034
00411   180*     1034 DO 1035 I=1,NA
00414   181*          II=NPOS+I-1
00415   182*     1039 MIN=NUM(II)
00416   183*          MINI=II
```

```
00417     184*          J1=I+1
00420     185*          DO 1036 J=J1,NNMAS
00423     186*          III=NPOS+J-1
00424     187*          IF(MIN-NUM(III))1036,1036,1037
00427     188*     1037 MIN=NUM(III)
00430     189*          MINI=III
00431     190*     1036 CONTINUE
00433     191*          NUM(MINI)=NUM(II)
00434     192*          NUM(II)=MIN
00435     193*     1035 CONTINUE
00437     194*     1038 CONTINUE
00437     195*     C              SPECIFIED TEMPERATURE NODES
00440     196*          NPOS=NPOS+NNMAS
00441     197*          NA=NTEMP-1
00442     198*          IF(NA)1048,1048,1044
00445     199*     1044 DO 1045 I=1,NA
00450     200*          II=NPOS+I-1
00451     201*     1049 MIN=NUM(II)
00452     202*          MINI=II
00453     203*          J1=I+1
00454     204*          DO 1046 J=J1,NTEMP
00457     205*          III=NPOS+J-1
00460     206*          IF(MIN-NUM(III))1046,1046,1047
00463     207*     1047 MIN=NUM(III)
00464     208*          MINI=III
00465     209*     1046 CONTINUE
00467     210*          NUM(MINI)=NUM(II)
00470     211*          NUM(II)=MIN
00471     212*     1045 CONTINUE
00473     213*     1048 CONTINUE
00473     214*     C          SORT NOP AND NOUT ARRAYS
00474     215*          NA=NNODE-1
00475     216*          DO 1050 I=1,NA
00500     217*          II=NOPS+I-1
00501     218*     1054 MIN=NOP(II)
00502     219*          MINI=I
00503     220*          J1=I+1
00504     221*          DO 1055 J=J1,NNODE
00507     222*          III=NOPS+J-1
00510     223*          IF(MIN-NOP(III))1055,1055,1056
00513     224*     1056 MIN=NOP(III)
00514     225*          MINI=J
00515     226*     1055 CONTINUE
00517     227*          NOP(NOPS+ MINI-1)=NOP(NOPS+I-1)
00520     228*          NOP(NOPS+I-1)=MIN
00521     229*     1050 CONTINUE
00523     230*          DO 1069 I=1,NNODE
00526     231*          N=0
00527     232*     1060 N=N+1
00530     233*          IF(NOP(NOPS+I-1)-NUM(NUMS+N-1))1061,1062,1061
00533     234*     1061 IF(N-NNODE)1060,1063,1063
00536     235*     1063 PRINT 755,NOP(NOPS+I-1)
00541     236*          NOGO=1
00542     237*     1062 NOUT(NOUTS+I-1)=N
00543     238*     1069 CONTINUE
00545     239*          DO 1101 I=1,NACT
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00550   240*          IVA=IDS+I-1
00551   241*          IVC=ICKS+I-1
00552   242*          D(IVA)=0.0
00553   243*     1101 CK(IVC)=0.0
00555   244*          PRINT 705,THETI,THMAX,DT,NORI,NORF,TOPO,NDEG
00566   245*          N1=NUMS
00567   246*          N2=NUMS+NMASS-1
00570   247*          PRINT 748
00572   248*          PRINT 738,(NUM(I),I=N1,N2)
00600   249*          N1=N2+1
00601   250*          N2=N2+NNMAS
00602   251*          PRINT 751
00604   252*          IF(NNMAS)1103,1103,1102
00607   253*     1102 PRINT 738,(NUM(I),I=N1,N2)
00615   254*     1103 N1=N2+1
00616   255*          N2=N2+NTEMP
00617   256*          PRINT 752
00621   257*          IF(NTEMP)1105,1105,1104
00624   258*     1104 PRINT 738,(NUM(I),I=N1,N2)
00624   259*     C
00624   260*     C         APERTURE DATA INPUT
00624   261*     C
00632   262*     1105 REWIND 11
00633   263*          PRINT 760
00635   264*          NAPT=0
00636   265*     3998 READ(12,726)NAPTND,APOPEN,APCLOS
00643   266*          IF(NAPTND-9999)3997,3997,3996
00646   267*     3997 WRITE(11)NAPTND,APOPEN,APCLOS
00653   268*          PRINT 725,NAPTND,APOPEN,APCLOS
00660   269*          NAPT=NAPT+1
00661   270*          GO TO 3998
00662   271*     3996 REWIND 11
00663   272*     4104 NOAS=IANF+1
00664   273*          NOAF=IANF+NAPT
00665   274*     5075 NOAOS=NOAF+1
00666   275*          NOAOF=NOAF+NAPT
00667   276*     5076 NOACS=NOAOF+1
00670   277*          NOACF=NOAOF+NAPT
00671   278*     5077 NOATS=NOACF+1
00672   279*          NOATF=NOACF+NAPT
00673   280*          PRINT 737,NAPT
00676   281*          IF(NAPT)1,1,5078
00701   282*     5078 DO 3994 I=1,NAPT
00704   283*          K1=NOAS+I-1
00705   284*          K2=NOAOS+I-1
00706   285*          K3=NOACS+I-1
00707   286*     3994 READ(11)MAPT(K1),THETO(K2),THETC(K3)
00715   287*          DO 111 I=1,NAPT
00720   288*          IVA=NOATS+I-1
00721   289*          NTYPE(IVA)=1
00722   290*          IF(THETC(NOACS+I-1) - THETO(NOAOS+I-1))4001,111,111
00725   291*     4001 NTYPE(NOATS+I-1)=2
00726   292*     111  CONTINUE
00730   293*     4002 DO 109 I=NOAS,NOAF
00733   294*          NN=NMASS+1
00734   295*          DO 110 J=1,NNMAS
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00737   296*          IF(MAPT(I) -  NUM(NUMS+NN-1))4003,109,4003
00742   297*     4003 NN=NN+1
00743   298*      110 CONTINUE
00745   299*          PRINT 740,MAPT(I)
00750   300*          NUGO=1
00751   301*      109 MAPT(I)=NN
00753   302*        1 CONTINUE
00753   303*     C
00753   304*     C    INPUT OF HEATER DATA
00753   305*     C         USE IOUT AND FOUT ARRAYS TO INPUT HEATER DATA
00753   306*     C
00754   307*          REWIND 11
00755   308*          NHEAT=0
00756   309*     4119 READ(12,749)IOUT(1),(FOUT(I),I=1,5)
00765   310*          IF(IOUT(1)-99999)4120,5098,5098
00770   311*     4120 READ(12,738)(IOUT(I),I=2,11)
00776   312*          WRITE(11)IOUT(1),(FOUT(I),I=1,5)
01005   313*          WRITE(11)(IOUT(I),I=2,11)
01013   314*          NHEAT=NHEAT+1
01014   315*          GO TO 4119
01014   316*     C
01014   317*     C         SET INDICES
01014   318*     C
01015   319*     5098 NSWCHS=NOATF+1
01016   320*          NSWCHF=NOATF+NHEAT
01017   321*      323 IQHETS =NSWCHF+1
01020   322*          IQHETF =NSWCHF+NHEAT
01021   323*     5057 ITLMTS=IQHETF+1
01022   324*          ITLMTF=IQHETF +NHEAT
01023   325*     5058 IBLMTS=ITLMTF+1
01024   326*          IBLMTF=ITLMTF+NHEAT
01025   327*     5063 IDTAS=IBLMTF+1
01026   328*          IDTAF=IBLMTF+NNODE
01027   329*     5064 IDTBS=IDTAF+1
01030   330*          IDTBF=IDTAF+NNODE
01031   331*     5065 IDTCS=IDTBF+1
01032   332*          IDTCF=IDTBF+NNODE
01033   333*     5066 NHEATS=IDTCF+1
01034   334*          NHEATF=IDTCF+NHEAT
01035   335*     5067 NCTLS=NHEATF+1
01036   336*          NCTLF=NHEATF+NHEAT*10
01037   337*     4094 IWATS=NCTLF+1
01040   338*          IWATF=NCTLF+NHEAT
01041   339*      327 IT4S=IWATF+1
01042   340*          IT4F=IWATF+NNODE
01043   341*      322 ITPS=IT4F+1
01044   342*          ITPF=IT4F+NNODE
01045   343*     4091 IBPS=ITPF+1
01046   344*          IBPF=ITPF+NHEAT
01047   345*     4092 ISLS=IBPF+1
01050   346*          ISLF=IBPF+NHEAT
01051   347*     4093 IHYS=ISLF+1
01052   348*          IHYF=ISLF+NHEAT
01053   349*          NEXP=0
01054   350*          NHTD=0
01055   351*          REWIND 11
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01055    352*      C
01055    353*      C          READ HEATER DATA BACK OFF TAPE .
01055    354*      C
01056    355*            IF(NHEAT.EQ.0)GO TO 25
01060    356*            PRINT 753
01062    357*            DO 21 K3=1,NHEAT
01065    358*            READ(11)IOUT(11),(FOUT(I),I=1,5)
01074    359*            READ(11)(IOUT(I),I=1,10)
01102    360*            PRINT 749,IOUT(11),(FOUT(I),I=1,5)
01111    361*            PRINT 738,(IOUT(I),I=1,10)
01117    362*      4020  NHTD=NHTD+1
01120    363*            FOUT(2)=FOUT(2)+                459.7
01121    364*            FOUT(3)=FOUT(3)+459.7
01122    365*            QHEAT(IQHETS +NHTD-1)=FOUT(1)
01123    366*            BP(IBPS+NHTD-1)=FOUT(3)+FOUT(4)*FOUT(2)
01124    367*            SLOPE(ISLS+NHTD-1)=FOUT(4)
01125    368*            HYS(IHYS+NHTD-1)=FOUT(5)
01126    369*            N=0
01127    370*       4085 N=N+1
01130    371*            IF(IOUT(11)  -NUM(NUMS+N-1))51,18,51
01133    372*         51 IF(N-NNODE)4085,4086,4086
01136    373*       4086 PRINT 756,IOUT(11)
01141    374*            NOGO=1
01142    375*      18    NHET(NHEATS+NHTD-1)=N
01143    376*            DO 24 I=1,10
01146    377*            IF(IOUT(I))4021,4021,26
01151    378*      4021  INC=NCTLS+(I-1)*NHEAT+NHTD-1
01152    379*            NCTL(INC)=0
01153    380*            GO TO 24
01154    381*      26    N=0
01155    382*       4117 N=N+1
01156    383*            IF(IOUT(I)-NUM(NUMS+N-1))19,20,19
01161    384*         19 IF(N-NNODE)4117,23,23
01164    385*         23 PRINT 757,IOUT(I)
01167    386*            NOGO=1
01170    387*      20    INC=NCTLS+(I-1)*NHEAT+NHTD-1
01171    388*            NCTL(INC)=N
01172    389*      24    CONTINUE
01174    390*         21 CONTINUE
01176    391*      25    IF(NHTD-0)29,29,4023
01201    392*      4023  DO 28 I=1,NHTD
01204    393*            WATHR(IWATS+I-1)=0.
01205    394*         28 NSWCH(NSWCHS+I-1)=0.
01207    395*         29 CONTINUE
01210    396*            PRINT 750,NHEAT
01213    397*            RETURN
01214    398*            END

      END OF COMPILATION:        NO  DIAGNOSTICS.
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@FOR,US DRDBC,DRDBC
HSD 11A -12/10/73-11:08:31 (16,17)

   SUBROUTINE RDBC       ENTRY POINT 002265

   STORAGE USED: CODE(1) 002301; DATA(0) 000137; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003    UNIT    000005
    0004    TDATA   076400
    0005    BLK1    000645
    0006    BLK2    000613
    0007    BLK3    000013

   EXTERNAL REFERENCES (BLOCK, NAME)

    0010    NPRT$
    0011    NIO2$
    0012    NREW$
    0013    NRDU$
    0014    NIO1$
    0015    NWBU$
    0016    NRBU$
    0017    NSTOP$
    0020    NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001    001617 1025G    0001    002005 1125G    0001    002056 1150G    0001    000451 130L    0001    001010 131L
    0001    001013 133L     0001    000540 135L     0001    000555 136L     0001    000576 138L    0001    000633 139L
    0001    000032 140G     0001    000252 142L     0001    000261 144L     0001    000041 145G    0001    000307 147L
    0001    000316 149L     0001    000403 151L     0001    000406 153L     0001    000226 155L    0001    000263 156L
    0001    000320 157L     0001    000615 161L     0001    000674 162L     0001    000626 164L    0001    000645 166L
    0001    000657 168L     0001    000663 169L     0001    000720 171L     0001    000065 173L    0001    001176 178L
    0001    001436 185L     0001    000702 190L     0001    001066 191L     0001    001133 194L    0001    001475 200L
    0001    002227 201L     0001    002232 203L     0001    002075 205L     0001    002112 206L    0001    002155 209L
    0001    002144 211L     0001    002173 212L     0001    002150 213L     0001    002013 216L    0001    001512 220L
    0001    001724 221L     0001    001727 223L     0001    001636 225L     0001    001653 226L    0001    001764 229L
    0001    001704 231L     0001    000172 233G     0001    001710 233L     0001    000345 4044L   0001    000331 4046L
    0001    000337 4048L    0001    000364 4051L    0001    000356 4053L    0001    000375 4056L   0001    000514 423G
    0001    001277 5113L    0001    001036 566G     0001    001103 603G     0001    001152 623G    0001    001204 633G
    0001    001250 645G     0001    001311 663G     0001    001314 666G     0001    001352 700G    0001    001372 706G
    0000    000046 709F     0000    000047 710F     0000    000061 713F     0000    000064 714F    0001    001487 716G
    0001    001442 727G     0001    001445 732G     0000    000075 735F     0000    000100 763F    0001    000056 7858L
    0004    000000 A        0005    000000 AA       0004 R  000000 AN       0004    000000 AO      0004 R  000000 B
    0005    000004 BB       0004    000000 BLMT     0004    000000 BP       0004 R  000000 C       0005    000010 CC
    0004    000000 CK       0000 R  000033 CMULT    0004 R  000000 CO       0005    000014 CON     0004 R  000000 D
    0000 R  000032 DIV      0005    000015 DT       0004    000000 DTN      0004    000000 DTNA    0004    000000 DTNB
    0004    000000 DTNC     0006    000054 FOUT     0004    000000 HYS      0000 I  000010 I       0005 I  000016 IAN
    0005 I  000017 IANN     0005 I  000020 IANS     0007 I  000000 IAOF     0000 I  000045 IAOS    0005    000021 IAS
    0007 I  000001 IBF      0005    000022 IBLMTS   0005    000023 IBPS     0005 I  000024 IBS     0000 I  000042 ICF
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0005   000025 ICKS     0000 I 000043 ICOF     0007 I 000002 ICOS     0007 I 000003 ICS      0005 I 000026 IDS
0005   000027 IDTAS    0005   000030 IDTBS    0005   000031 IDTCS    0005   000032 IDTNS    0000 I 000031 IGO
0007 I 000004 IHYF     0005   000033 IHYS     0000 I 000034 IIAN     0000 I 000012 IM       0005   000034 IN
0005   000035 INC      0000   000112 INJPS    0005   000036 IO       0005   000037 IOUT     0000 I 000014 IP
0006   000612 IPU      0005   000575 IQHETS   0005   000576 IQS      0000 I 000016 IS       0005   000577 ISLS
0000 I 000044 ISOF     0005 I 000600 ISOS     0005   000602 ITA      0005   000603 ITAS     0005   000604 ITAVS
0005   000605 ITITLE   0005   000625 ITLMTS   0005   000626 ITPS     0005 I 000627 ITS      0005   000630 ITYS
0005   000601 IT4S     0005   000631 IWATS    0003 I 000000 I1       0003 I 000001 I2       0003 I 000002 I3
0000 I 000020 J        0000 I 000004 JJ       0000 I 000021 K        0000 I 000005 KJ       0000 I 000041 KK
0000 I 000013 KM       0000 I 000015 KN       0007   000012 KNM      0005   000633 KNNM     0005   000632 KNW
0005   000634 KPUN     0000 I 000017 KS       0000 I 000024 L        0000 I 000006 LJ       0005   000635 L1
0005   000636 L1I      0005   000637 L2       0005   000640 L2I      0000 I 000003 M        0004   000000 MAPT
0000 I 000037 MAXC     0004 I 000000 MB       0000 I 000023 MBF      0006 I 000000 MBS      0004 I 000000 MC
0000 I 000041 MCF      0006 I 000001 MCS      0000 I 000007 MJ       0000 I 000035 MK       0004 I 000000 MX
0000 I 000001 MXF      0000 I 000000 MXS      0005 I 000641 M1       0005 I 000642 M1I      0005 I 000643 M2
0005 I 000644 M2I      0000 I 000002 N        0006 I 000010 NACT     0006   000011 NAPT     0004 I 000000 NB
0000 I 000022 NBF      0006 I 000012 NBS      0004 I 000000 NC       0000 I 000030 NCC      0000 I 000040 NCF
0006 I 000013 NCS      0004   000000 NCTL     0006   000014 NCTLS    0006   000015 NDEG     0006   000016 NENT
0004   000000 NEXPH    0006   000017 NHEAT    0006   000020 NHEATS   0004   000000 NHET     0006   000021 NHTD
0000 I 000025 NII      0000 I 000036 NK       0006   000022 NL       0006 I 000023 NMASS    0006   000024 NN
0006 I 000025 NNMAS    0006 I 000026 NNODE    0006   000027 NOACS    0006   000030 NOAOS    0006   000031 NOAS
0006   000032 NOATS    0006   000053 NOGO     0004   000000 NOP      0006   000033 NOPF     0006   000034 NOPS
0006   000035 NORF     0006   000036 NORI     0004   000000 NOUT     0006   000037 NOUTS    0000 I 000027 NR
0004   000000 NSWCH    0006   000040 NSWCHS   0004   000000 NT       0006   000041 NTAB     0006   000042 NTEMP
0006   000043 NTS      0004   000000 NTYPE    0006   000044 NU       0004 I 000000 NUM      0006 I 000045 NUMS
0007   000006 NWT      0004 I 000000 NX       0007 I 000007 NXF      0007 I 000010 NXS      0006 I 000002 N1
0006 I 000003 N1I      0007 I 000005 N2       0006 I 000004 N2I      0006 I 000005 N3       0006 I 000006 N3I
0006 I 000007 N4       0000 I 000026 N4I      0003 I 000003 O1       0003 I 000004 O2       0004   000000 Q
0004   000000 QHEAT    0007 R 000011 SIG      0004   000000 SLOPE    0004   000000 SO       0004 R 000000 T
0004   000000 TABLE    0004   000000 TAVEG    0004   000000 TEXPOF   0004   000000 TEXPON   0004   000000 THETC
0006   000046 THETI    0004   000000 THETO    0006   000047 THMAX    0004   000000 TLMT     0006   000050 TMAX
0006   000051 TMIN     0006   000052 TOPO     0004   000080 TP       0004   000000 TYME     0004   000000 T4
0004   000000 VAR      0004   000000 WATHR
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00101     1*          SUBROUTINE RDBC
00103     2*          INTEGER I1,I2,I3,O1,O2
00104     3*          COMMON/UNIT/I1,I2,I3,O1,O2
00105     4*          COMMON /TDATA/ VAR(32000)
00106     5*          COMMON /BLK1/
00106     6*        *   AA       ,BB       ,CC       ,CON      ,DT       ,IAN
00106     7*        *  ,IANN     ,IANS     ,IAS      ,IBLMTS   ,IBPS     ,IBS
00106     8*        *  ,ICKS     ,IDS      ,IDTAS    ,IDTBS    ,IDTCS    ,IDTNS
00106     9*        *  ,IHYS     ,IN       ,INC      ,IO       ,IOUT     ,IQHETS
00106    10*        *  ,IQS      ,ISLS     ,ISOS     ,IT4S     ,ITA      ,ITAS
00106    11*        *  ,ITAVS    ,ITITLE   ,ITLMTS   ,ITPS     ,ITS      ,ITYS
00106    12*        *  ,IWATS    ,KNW      ,KNNM     ,KPUN     ,L1       ,L1I
00106    13*        *  ,L2       ,L2I      ,M1       ,M1I      ,M2       ,M2I
00107    14*          COMMON /BLK2/
00107    15*        *   MBS                 ,MCS      ,N1       ,N1I      ,N2I
00107    16*        *  ,N3       ,N3I      ,N4       ,NACT     ,NAPT     ,NBS
00107    17*        *  ,NCS      ,NCTLS    ,NDEG     ,NENT     ,NHEAT    ,NHEATS
00107    18*        *  ,NHTD     ,NL       ,NMASS    ,NN       ,NNMAS    ,NNODE
00107    19*        *  ,NOACS    ,NOAOS    ,NOAS     ,NOATS    ,NOPF     ,NOPS
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00107     20*          *    ,NORF      ,NORI      ,NOUTS     ,NSWCHS    ,NTAB      ,NTEMP
00107     21*          *    ,NTS       ,NU        ,NUMS      ,THETI     ,THMAX     ,TMAX
00107     22*          *    ,TMIN      ,TOPO      ,NOGO      ,FOUT      ,IPU
00110     23*           COMMON /BLK3/
00110     24*          *     IAUF      ,IBF       ,ICOS      ,ICS       ,IHYF      ,N2
00110     25*          *    ,NWT       ,NXF       ,NXS       ,SIG       ,KNM
00111     26*           EQUIVALENCE                (VAR,MAPT)            ,(VAR,THETO)
00111     27*          *    ,(VAR,THETC)           ,(VAR,NTYPE)          ,(VAR,T)
00111     28*          *    ,(VAR,A)               ,(VAR,D)              ,(VAR,CK)
00111     29*          *    ,(VAR,NOUT)            ,(VAR,NOP)            ,(VAR,NUM)
00111     30*          *    ,(VAR,AN)              ,(VAR,NX)             ,(VAR,MX)
00111     31*          *    ,(VAR,NB)              ,(VAR,MB)             ,(VAR,B)
00111     32*          *    ,(VAR,NC)              ,(VAR,MC)             ,(VAR,C)
00111     33*          *    ,(VAR,TYME)            ,(VAR,NT)             ,(VAR,TABLE)
00111     34*          *    ,(VAR,DTN)             ,(VAR,Q)              ,(VAR,NSWCH)
00112     35*           EQUIVALENCE                (VAR,TAVEG)           ,(VAR,QHEAT)
00112     36*          *    ,(VAR,TLMT)            ,(VAR,BLMT)           ,(VAR,DTNA)
00112     37*          *    ,(VAR,DTNB)            ,(VAR,DTNC)           ,(VAR,NHET)
00112     38*          *    ,(VAR,NCTL)            ,(VAR,WATHR)          ,(VAR,NEXPH)
00112     39*          *    ,(VAR,TEXPON)          ,(VAR,TEXPOF)         ,(VAR,TP)
00112     40*          *    ,(VAR,BP)              ,(VAR,SLOPE)          ,(VAR,HYS)
00112     41*          *    ,(VAR,T4)              ,(VAR,SO)             ,(VAR,AO)
00112     42*          *    ,(VAR,CO)
00113     43*           DIMENSION AA(4),BB(4),CC(4)
00114     44*           DIMENSION MAPT(1),THETO(1),THETC(1),NTYPE(1),T(1),A(1),D(1),CK(1),
00114     45*          1NOUT(1),NOP(1),NUM(1),AN(1),NX(1),MX(1),NB(1),MB(1),B(1),NC(1),MC(
00114     46*          21),C(1),TYME(1),NT(1),TABLE(1),DTN(1),Q(1),NSWCH(1),TAVEG(1),QHEAT
00114     47*          3(1),TLMT(1),BLMT(1),DTNA(1),DTNB(1),DTNC(1),NHET(1),NCTL(1),WATHR(
00114     48*          41),NEXPH(1),TEXPON(1),TEXPOF(1), TP(1),BP(1),SLOPE(1),HYS(1),T4(1)
00114     49*          5,SO(1),AO(1),CO(1)
00115     50*           DIMENSION FOUT(350)
00116     51*           DIMENSION IOUT(350)
00117     52*           DIMENSION ITITLE(16)
00120     53*       709 FORMAT(1H1)
00121     54*       710 FORMAT(2X,23HREFLECTING VIEW FACTORS//6X,1HN,4X,1HM,5X,6HB(N,M))
00122     55*       713 FORMAT(4(I7,I5,E13.4))
00123     56*       714 FORMAT(2X,16HCONDUCTION PATHS//6X,1HN,4X,1HM,5X,6HC(N,M))
00124     57*      735  FORMAT(4(2I5,E10.3))
00125     58*       763 FORMAT(' NO BNMS TO MASSLESS NODE  ',I5)
00125     59*      C          SET ASIDE LOCATIONS FOR USE OF INPUT OF BNBS AND CNMS
00126     60*      5085 NXS=IHYF+1
00127     61*           NXF=IHYF+4
00130     62*           MXS=NXF+1
00131     63*      5086 MXF=NXF+4
00132     64*      6089 NBS=MXF+1
00132     65*      C    INPUT OF B(N,M)S AND FORMATION OF ZERO MASS MATRIX AND INVERSION
00133     66*      7859 PRINT 709
00135     67*           PRINT 710
00137     68*           DO 150 N=1,NNMAS
00142     69*           IF(NNMAS.EQ.0)GO TO 7858
00144     70*           DO 150 M=1,NNMAS
00147     71*           IAN=IANS+(M-1)*NNMAS +N
00150     72*       150 AN(IAN)=C.
00153     73*      7858 REWIND 11
00154     74*           JJ=0
00155     75*           KJ=0
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00156      76*          LJ=0
00157      77*          MJ=0
00160      78*      173 READ(12,735)NX(NXS),MX(MXS),T(ITS),NX(NXS+1),MX(MXS+1),T(ITS+1),NX
00160      79*         1(NXS+2),MX(MXS+2),T(ITS+2),NX(NXS+3),MX(MXS+3),T(ITS+3)
00176      80*          PRINT 713,NX(NXS),MX(MXS),T(ITS),NX(NXS+1),MX(MXS+1),T(ITS+1),NX(N
00176      81*         1XS+2),MX(MXS+2),T(ITS+2),NX(NXS+3),MX(MXS+3),T(ITS+3)
00214      82*          WRITE(11)NX(NXS),MX(MXS),T(ITS),NX(NXS+1),MX(MXS+1),T(ITS+1),NX(NX
00214      83*         1S+2),MX(MXS+2),T(ITS+2),NX(NXS+3),MX(MXS+3),T(ITS+3)
00232      84*          DO 151 I=1,4
00235      85*          KK=I-1
00236      86*          IF(NX(NXS+I-1)-99999)152,153,152
00241      87*      152 T(ITS+4)=SIG*T(ITS+I-1)
00242      88*          IF(T(ITS+4))154,151,154
00245      89*      154 IM=0
00246      90*          KM=0
00247      91*          IP=0
00250      92*          KN=0
00251      93*          IS=0
00252      94*          KS=0
00253      95*          J=0
00254      96*          K=0
00255      97*      155 J=J+1
00256      98*          IF(J-NNODE)4004,4004,151
00261      99*     4004 IF(NX(NXS+KK)-NUM(NUMS+J-1))155,140,155
00264     100*      140 IF(J-NMASS)141,141,142
00267     101*      141 IM=1
00270     102*          GO TO 156
00271     103*      142 IF(J-NACT)143,143,144
00274     104*      143 IP=1
00275     105*          GO TO 156
00276     106*      144 IS=1
00277     107*      156 K=K+1
00300     108*     8042 IF(K-NNODE)4005,4005,151
00303     109*     4005 IF(MX(MXS+KK)-NUM(NUMS+K-1))156,145,156
00306     110*      145 IF(K-NMASS)146,146,147
00311     111*      146 KM=1
00312     112*          GO TO 157
00313     113*      147 IF(K-NACT)148,148,149
00316     114*      148 KN=1
00317     115*          GO TO 157
00320     116*      149 KS=1
00321     117*      157 IF(IM-1)4044,4045,4044
00324     118*     4045 IF(KM-1)4046,4047,4046
00327     119*     4047 JJ=JJ+1
00330     120*     4046 IF(KS-1)4048,4049,4048
00333     121*     4049 KJ=KJ+1
00334     122*     4048 IF(KN-1)4044,4050,4044
00337     123*     4050 LJ=LJ+1
00340     124*     4044 IF(IS-1)4051,4052,4051
00343     125*     4052 IF(KM-1)4053,4054,4053
00346     126*     4054 KJ=KJ+1
00347     127*     4053 IF(KN-1)4051,4059,4051
00352     128*     4059 MJ=MJ+1
00353     129*     4051 IF(IP-1)151,4055,151
00356     130*     4055 IF(KM-1)4056,4057,4056
00361     131*     4057 LJ=LJ+1
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00362   132*    4056  IF(KS-1)151,4058,151
00365   133*    4058  MJ=MJ+1
00366   134*     151  CONTINUE
00370   135*          GO TO 173
00371   136*     153  NBF=JJ+KJ+LJ+MJ+MXF
00372   137*          NBS=MXF+1
00373   138*    5087  MBS=NBF+1
00374   139*          MBF=JJ+KJ+LJ+MJ+NBF
00375   140*    5088  IBS=MBF+1
00376   141*          IBF=MBF+JJ+KJ+LJ+MJ
00377   142*          N1=0
00400   143*          N2=JJ
00401   144*          N3=JJ+KJ
00402   145*          N4=N3+LJ
00403   146*          REWIND 11
00404   147*     130  READ(11)NX(NXS),MX(MXS),T(ITS),NX(NXS+1),MX(MXS+1),T(ITS+1),NX(NXS
00404   148*         1+2),MX(MXS+2),T(ITS+2),NX(NXS+3),MX(MXS+3),T(ITS+3)
00422   149*          DO 131 I=1,4
00425   150*          KK=I-1
00426   151*          IF(NX(NXS+KK)-99999)132,133,132
00431   152*     132  T(ITS+4)=SIG*T(ITS+KK)
00432   153*          IF(T(ITS+4))134,131,134
00435   154*     134  J=0
00436   155*          K=0
00437   156*     135  J=J+1
00440   157*          IF(J-NNODE)4006,4006,131
00443   158*    4006  IF(NX(NXS+KK)-NUM(NUMS+J-1))135,136,135
00446   159*     136  K=K+1
00447   160*    5002  IF(K-NNODE)4007,4007,131
00452   161*    4007  IF(MX(MXS+KK)-NUM(NUMS+K-1))136,137,136
00455   162*     137  IF(J-NMASS)138,138,139
00460   163*     138  IF(K-NMASS)160,160,161
00463   164*     160  N1=N1+1
00464   165*          L=N1
00465   166*          D(IDS+K-1)=D(IDS+K-1)+T(ITS+4)
00466   167*          GO TO 162
00467   168*     161  IF(K-NACT)163,163,164
00472   169*     163  N3=N3+1
00473   170*    5003  L=N3
00474   171*          GO TO 162
00475   172*     164  N2=N2+1
00476   173*    5004  L=N2
00477   174*          GO TO 162
00500   175*     139  IF(K-NMASS)165,165,166
00503   176*     165  L=K
00504   177*          K=J
00505   178*    5005  J=L
00506   179*          GO TO 138
00507   180*     166  IF(J-NACT)167,167,168
00512   181*     167  L=K
00513   182*          K=J
00514   183*    5006  J=L
00515   184*          GO TO 169
00516   185*     168  IF(K-NACT)169,169,131
00521   186*     169  IF(J-NACT)171,171,170
00524   187*     170  N4=N4+1
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00525   188*          L=N4
00526   189*          GO TO 190
00527   190*     162  D(IDS+J-1)=D(IDS+J-1)+T(ITS+4)
00530   191*     190  NB(NBS+L-1)=J
00530   191*     190  NB(NBS+L-1)=J
00531   192*          MB(MBS+L-1)=K
00532   193*          B(IBS+L-1)=T(ITS+4)
00533   194*          GO TO 131
00534   195*     171  IF(J-K)172,131,172
00537   196*     172  J=J-NMASS
00540   197*          K=K-NMASS
00541   198*    5007  IAN=IANS+(J-1)*NNMAS+J-1
00542   199*    6001  AN(IAN)=AN(IAN)+T(ITS+4)
00543   200*          IAN=IANS+(K-1)*NNMAS+K-1
00544   201*    6002  AN(IAN)=AN(IAN)+T(ITS+4)
00545   202*          IAN=IANS+(K-1)*NNMAS+J-1
00546   203*    6003  IANN=IAN
00547   204*    6004  AN(IAN)=AN(IAN)-T(ITS+4)
00550   205*          IAN=IANS+(J-1)*NNMAS+K   -1
00551   206*    6005  AN(IAN)=AN(IANN)
00552   207*     131  CONTINUE
00554   208*          GO TO 130
00555   209*     133  NII=N2
00556   210*          N1I=1
00557   211*          N2I=JJ+1
00560   212*    5008  N3I=N2I+KJ
00561   213*          N4I=N3I+LJ
00562   214*          IF(N3-N3I)191,192,192
00565   215*     192  DO 193 I=N3I,N3
00570   216*          NII=NII+1
00571   217*    5009  B(NII+IBS-1)=B(IBS+I-1)
00572   218*          NB(NII+NBS-1)=NB(NBS+I-1)
00573   219*     193  MB(NII+MBS-1)=MB(MBS+I-1)
00575   220*     191  N3I=N2+1
00576   221*          N3=NII
00577   222*          IF(N4-N4I)194,195,195
00602   223*     195  DO 196 I=N4I,N4
00605   224*          NII=NII+1
00606   225*    5011  B(NII+IBS-1)=B(IBS+I-1)
00607   226*          NB(NBS+NII-1)=NB(NBS+I-1)
00610   227*     196  MB(MBS+NII-1)=MB(MBS+I-1)
00612   228*     194  N4I=N3+1
00613   229*    5012  N4=NII
00614   230*          IF(NNMAS)200,200,174
00617   231*     174  IF(N4-N3I)178,176,176
00622   232*     176  DO 177 N=N3I,N4
00625   233*          M=MB(MBS+N-1)-NMASS
00626   234*          IAN=IANS+(M-1)*NNMAS+M-1
00627   235*     177  AN(IAN)=AN(IAN)+B(IBS+N-1)
00631   236*     178  N=NMASS
00632   237*          DO 181 M=1,NNMAS
00635   238*          N=N+1
00636   239*          IAN=IANS+(M-1)*NNMAS+M-1
00637   240*     181  AN(IAN)=AN(IAN)+D(IDS+N-1)
00641   241*          NR=NNMAS
00642   242*    5013  NCC=NR+1
00642   243*    C                CHECK TO SEE IF MASSLESS NODE IS ISOLATED
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00643     244*          IGO=0
00644     245*          DO 5113 N=1,NNMAS
00647     246*          IAN=(N-1)*NNMAS+N-1+IANS
00650     247*          IF(AN(IAN).GT.0.0)GO TO 5113
00652     248*          IGO=1
00653     249*          PRINT 763,NUM(NUMS+NMASS+N-1)
00656     250*     5113 CONTINUE
00660     251*          IF(IGO.EQ.1)STOP
00662     252*          DO 182 N=1,NR
00665     253*          DO 183 M=1,NR
00670     254*          IAN=IANS+(NCC-1)*NNMAS+M-1
00671     255*      183 AN(IAN)=0.
00673     256*          IAN=IANS+(NCC-1)*NNMAS+N-1
00674     257*          AN(IAN)=1.
00675     258*          IAN=IANS+N-1
00676     259*          DIV=1./AN(IAN)
00677     260*          DO 184 M=1,NCC
00702     261*      869 IAN=IANS+(M-1)*NNMAS+N-1
00703     262*      184 AN(IAN)=DIV*AN(IAN)
00705     263*          DO 185 M=1,NR
00710     264*          IF(M-N)186,185,186
00713     265*      186 IAN=IANS+M-1
00714     266*          CMULT=AN(IAN)
00715     267*          DO 187 L=1,NCC
00720     268*          IAN = IANS+(L-1)*NNMAS+M-1
00721     269*          IIAN= IANS+(L-1)*NNMAS+N-1
00722     270*      187 AN(IAN) = AN(IAN)-CMULT*AN(IIAN)
00724     271*      185 CONTINUE
00726     272*          DO 188 M=1,NR
00731     273*          DO 188 L=1,NR
00734     274*          IAN=IANS +(L-1)*NNMAS+M-1
00735     275*          IIAN= IANS+L*NNMAS+M-1
00736     276*      188 AN(IAN)=AN(IIAN)
00741     277*      182 CONTINUE
00741     278*    C     INPUT OF C(N,M)S
00743     279*      200 PRINT 709
00745     280*          PRINT 714
00747     281*          MK=0
00750     282*          NK=0
00751     283*          REWIND 11
00752     284*      220 READ(12,735)NX(NXS),MX(MXS),T(ITS),NX(NXS+1),MX(MXS+1),T(ITS+1),NX
00752     285*         1(NXS+2),MX(MXS+2),T(ITS+2),NX(NXS+3),MX(MXS+3),T(ITS+3)
00770     286*          PRINT 713,NX(NXS),MX(MXS),T(ITS),NX(NXS+1),MX(MXS+1),T(ITS+1),NX(N
00770     287*         1XS+2),MX(MXS+2),T(ITS+2),NX(NXS+3),MX(MXS+3),T(ITS+3)
01006     288*          WRITE(11)NX(NXS),MX(MXS),T(ITS),NX(NXS+1),MX(MXS+1),T(ITS+1),NX(NX
01006     289*         1S+2),MX(MXS+2),T(ITS+2),NX(NXS+3),MX(MXS+3),T(ITS+3)
01024     290*          DO 221 I=1,4
01027     291*          KK=I-1
01030     292*          IF(NX(NXS+KK)-99999)222,223,222
01033     293*      222 IF(T(ITS+KK))224,221,224
01036     294*      224 J=0
01037     295*          K=0
01040     296*      225 J=J+1
01041     297*          IF(J-NNODE)4008,4008,221
01044     298*     4008 IF(NX(NXS+KK)-NUM(NUMS+J-1))225,226,225
01047     299*      226 K=K+1
```

```
01050     300*          IF(K-NNODE)4009,4009,221
01053     301*     4009 IF(MX(MXS+KK)-NUM(NUMS+K-1))226,227,226
01056     302*      227 IF(J-NMASS)226,228,229
01061     303*      228 IF(K-NMASS)230,230,231
01064     304*      230 MK=MK+1
01065     305*          GO TO 221
01066     306*      231 IF(K-NACT)221,221,233
01071     307*      233 NK=NK+1
01072     308*          GO TO 221
01073     309*      229 IF(K-NMASS)234,234,221
01076     310*      234 IF(J-NACT)221,221,233
01101     311*      221 CONTINUE
01103     312*          GO TO 220
01104     313*     223  MAXC=MK+NK
01105     314*          M1=1
01106     315*          M2=MAXC
01107     316*          NCS=IBF+1
01110     317*     5090 NCF=IBF+MAXC
01111     318*          MCS=NCF+1
01112     319*     5091 MCF=NCF+MAXC
01113     320*          ICS=MCF+1
01114     321*     5092 ICF=MCF+MAXC
01115     322*     874  ICOS=ICF+1
01116     323*          ICOF=ICF+NNODE
01117     324*     872  ISOS=ICOF+1
01120     325*          ISOF=ICOF+NNODE
01121     326*     873  IAOS=ISOF+1
01122     327*          IAOF=ISOF+NNODE
01123     328*          REWIND 11
01124     329*          DO 878 I=1,NACT
01127     330*     878  CO(ICOS+I-1)=0.
01131     331*      216 READ(11)NX(NXS),MX(MXS),T(ITS),NX(NXS+1),MX(MXS+1),T(ITS+1),NX(NXS
01131     332*         1+2),MX(MXS+2),T(ITS+2),NX(NXS+3),MX(MXS+3),T(ITS+3)
01147     333*          DO 201 I=1,4
01152     334*          KK=I-1
01153     335*          IF(NX(NXS+KK)-99999)202,203,202
01156     336*      202 IF(T(ITS+KK))204,201,204
01161     337*      204 J=0
01162     338*          K=0
01163     339*      205 J=J+1
01164     340*          IF(J-NNODE)4010,4010,201
01167     341*     4010 IF(NX(NXS+KK)-NUM(NUMS+J-1))205,206,205
01172     342*      206 K=K+1
01173     343*          IF(K-NNODE)4011,4011,201
01176     344*     4011 IF(MX(MXS+KK)-NUM(NUMS+K-1))206,207,206
01201     345*      207 IF(J-NMASS)208,208,209
01204     346*      208 IF(K-NMASS)210,210,211
01207     347*      210 L=M1
01210     348*     5014 M1=M1+1
01211     349*          GO TO 212
01212     350*      211 IF(K-NACT)201,201,213
01215     351*      213 L=M2
01216     352*     5015 M2=M2-1
01217     353*          GO TO 212
01220     354*      209 IF(K-NMASS)214,214,201
01223     355*      214 IF(J-NACT)201,201,215
```

```
01226    356*        215 L=K
01227    357*            K=J
01230    358*       5016 J=L
01231    359*            GO TO 213
01232    360*        212 NC(L+NCS-1)=J
01233    361*            MC(L+MCS-1)=K
01234    362*            C(ICS+L-1)=T(ITS+KK)
01235    363*            CO(ICOS+J-1)=CO(ICOS+J-1)+T(ITS+KK)
01236    364*            CO(ICOS+K-1)=CO(ICOS+K-1)+T(ITS+KK)
01237    365*        201 CONTINUE
01241    366*            GO TO 216
01242    367*        203 M1I=1
01243    368*            M1=M1-1
01244    369*            M21=M2+1
01245    370*            M2=MAXC
01246    371*            RETURN
01247    372*            END

        END OF COMPILATION:        NO  DIAGNOSTICS.
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@FOR,US DRDFLX,DRDFLX
HSD 11A -12/10/73-11:08:40 (17,18)

   SUBROUTINE RDFLX      ENTRY POINT 001601

   STORAGE USED: CODE(1) 001615; DATA(0) 000252; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   UNIT   000005
    0004   TDATA  076400
    0005   BLK1   000645
    0006   BLK2   000613
    0007   BLK3   000013

   EXTERNAL REFERENCES (BLOCK, NAME)

    0010   NREWS
    0011   NRDUS
    0012   NIO2S
    0013   NIO1S
    0014   NWBUS
    0015   NPRTS
    0016   NSTOPS
    0017   NRBUS
    0020   NERR3S

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   001472 1014G     0001   000625 1277L     0001   001470 1359L     0001   000044 162G      0001   001366 1661L
    0001   001120 1672L     0001   001105 1673L     0001   001115 1678L     0001   000100 201G      0001   000143 225G
    0001   000170 241G      0001   000055 251L      0001   000175 258L      0001   000110 273L      0001   000150 276L
    0001   000634 277L      0001   000437 280L      0001   000477 281L      0001   001321 282L      0001   001076 284L
    0001   000453 285L      0001   000450 287L      0001   000446 288L      0001   000553 290L      0001   001176 292L
    0001   001364 293L      0001   000733 294L      0001   000254 300G      0001   000262 305G      0001   000605 306L
    0001   000273 313G      0001   001507 356L      0001   001443 359L      0001   000715 361L      0001   001160 362L
    0001   000427 366G      0001   000407 401L      0001   000023 4012L     0001   001560 4118L     0001   000472 414G
    0001   000532 434G      0001   000576 455G      0001   000615 466G      0001   000323 5093L     0001   000700 522G
    0001   000176 5257L     0001   000300 5258L     0001   000243 5306L     0001   000754 543G      0001   000766 551G
    0001   000774 556G      0001   001002 561G      0001   001046 574G      0001   001141 635G      0001   001221 661G
    0001   001227 666G      0001   001235 671G      0000   000036 703F      0001   001300 704G      0000   000040 707F
    0000   000043 709F      0001   001313 713G      0000   000044 718F      0000   000056 719F      0000   000064 720F
    0000   000067 721F      0001   001334 722G      0000   000106 724F      0000   000111 736F      0000   000113 738F
    0000   000114 741F      0000   000122 745F      0001   001555 7538L     0000   000132 754F      0000   000141 758F
    0000   000156 759F      0001   001422 765G      0001   001530 868L      0004   000000 A         0005   000000 AA
    0004   000000 AN        0004   000000 AO        0004   000000 B         0005   000004 BB        0004   000000 BLMT
    0004   000000 BP        0004   000000 C         0005   000010 CC        0004   000000 CK        0004   000000 CO
    0005 R 000014 CON       0004   000000 D         0005   000015 DT        0004 R 000000 DTN       0004   000000 DTNA
    0004   000000 DTNB      0004   000000 DTNC      0000 R 000004 DTNJJ     0000 R 000021 FDTN      0006 R 000054 FOUT
    0004   000000 HYS       0000 I 000002 I         0005   000016 IAN       0005   000017 IANN      0005   000020 IANS
    0007 I 000000 IAOF      0005   000021 IAS       0007   000001 IBF       0005   000022 IBLMTS    0005   000023 IBPS
    0005   000024 IBS       0005   000025 ICKS      0007   000002 ICOS      0007   000003 ICS       0005   000026 IDS
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0005    000027 IDTAS     0005    000030 IDTBS     0005    000031 IDTCS     0000 I 000012 IDTNF     0005 I 000032 IDTNS
0007    000004 IHYF      0005    000033 IHYS      0000 I 000024 II        0000 I 000025 IJ        0005    000034 IN
0005    000035 INC       0000 I 000007 IND       0000    000224 INJPS     0000 I 000000 INT       0005    000036 IO
0005    000037 IOUT      0006    000612 IPU       0000 I 000013 IQF       0005    000575 IQHETS    0005 I 000576 IQS
0005    000577 ISLS      0005    000600 ISOS      0005 I 000602 ITA       0000 I 000011 ITAF      0000 I 000020 ITAPE
0005 I 000603 ITAS       0000 I 000614 ITAVF      0005 I 000604 ITAVS     0005    000605 ITITLE    0005    000625 ITLMTS
0005    000626 ITPS      0005 I 000627 ITS        0000 I 000001 ITYF      0005 I 000630 ITYS      0005    000601 IT4S
0005    000631 IWATS     0003 I 000000 I1        0003 I 000001 I2        0003 I 000002 I3        0000 I 000005 J
0000 I 000030 JF        0000 I 000033 JI        0000 I 000034 JII       0000 I 000022 JJ        0000 I 000027 JS
0000 I 000035 JX        0000 I 000023 K         0000 I 000017 KASE      0007 I 000012 KNM       0005 I 000633 KNNM
0005    000632 KNW       0005    000634 KPUN      0000 I 000015 LA        0000 I 000032 LF        0000 I 000031 LS
0005 I 000635 L1        0005 I 000636 L1I       0005 I 000637 L2        0005 I 000640 L2I       0004    000000 MAPT
0004    000000 MB        0006    000000 MBS       0004    000000 MC        0006    000001 MCS       0004    000000 MX
0005    000641 M1        0005    000642 M1I       0005    000643 M2        0005    000644 M2I       0006 I 000010 NACT
0006    000011 NAPT      0004    000000 NB        0006    000012 NBS       0004    000000 NC        0006    000013 NCS
0004    000000 NCTL      0006    000014 NCTLS     0006 I 000015 NDEG      0006 I 000016 NENT      0004    000000 NEXPH
0000 I 000016 NFLX      0006    000017 NHEAT     0006    000020 NHEATS    0004    000000 NHET      0006    000021 NHTD
0006 I 000022 NL        0006 I 000023 NMASS     0006 I 000024 NN        0006    000025 NNMAS     0006 I 000026 NNODE
0006    000027 NOACS     0006    000030 NOAOS     0006    000031 NOAS      0006    000032 NOATS     0006 I 000053 NOGO
0004    000000 NOP       0000 I 000026 NOPA      0006    000033 NOPF      0006    000034 NOPS      0006    000035 NORF
0006    000036 NORI      0004    000000 NOUT      0006    000037 NOUTS     0000 I 000006 NSPEC     0004    000000 NSWCH
0006    000040 NSWCHS    0004 I 000038 NT        0006 I 000041 NTAB      0006 I 000042 NTEMP     0000 I 000010 NTF
0000 I 000003 NTKK      0006 I 000043 NTS       0004    000000 NTYPE     0006 I 000044 NU        0004 I 000000 NUM
0006 I 000045 NUMS      0007    000006 NWT       0004 I 000000 NX        0007 I 000007 NXF       0007 I 000010 NXS
0006    000002 N1        0006    000003 N1I       0007    000005 N2        0006    000004 N2I       0006    000005 N3
0006    000006 N3I       0006    000007 N4        0003 I 000003 O1        0003 I 000004 O2        0004 R 000000 Q
0004    000000 QHEAT     0007    000011 SIG       0004    000000 SLOPE     0004    000000 SO        0004 R 000000 T
0004 R 000000 TABLE     0004 R 000000 TAVEG     0004    000000 TEXPOR    0004    000000 TEXPON    0004    000000 THETC
0006    000046 THETI     0004    000000 THETO     0006    000047 THMAX     0004    000000 TLMT      0006    000050 TMAX
0006    000051 TMIN      0006    000052 TOPO      0004    000000 TP        0004 R 000000 TYME      0004    000000 T4
0004    000000 VAR       0004    000000 WATHR
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00101      1*          SUBROUTINE RDFLX
00103      2*          INTEGER I1,I2,I3,O1,O2
00104      3*          COMMON/UNIT/I1,I2,I3,O1,O2
00105      4*          COMMON /TDATA/ VAR(32000)
00106      5*          COMMON /BLK1/
00106      6*        *    AA        ,BB        ,CC        ,CON       ,DT        ,IAN
00106      7*        *   ,IANN      ,IANS      ,IAS       ,IBLMTS    ,IBPS      ,IBS
00106      8*        *   ,ICKS      ,IDS       ,IDTAS     ,IDTBS     ,IDTOS     ,IDTNS
00106      9*        *   ,IHYS      ,IN        ,INC       ,IO        ,IOUT      ,IQHETS
00106     10*        *   ,IQS       ,ISLS      ,ISOS      ,IT4S      ,ITA       ,ITAS
00106     11*        *   ,ITAVS     ,ITITLE    ,ITLMTS    ,ITPS      ,ITS       ,ITYS
00106     12*        *   ,IWATS     ,KNW       ,KNNM      ,KPUN      ,L1        ,L1I
00106     13*        *   ,L2        ,L2I       ,M1        ,M1I       ,M2        ,M2I
00107     14*          COMMON /BLK2/
00107     15*        *    MBS                   ,MCS       ,N1        ,N1I       ,N2I
00107     16*        *   ,N3        ,N3I       ,N4        ,NACT      ,NAPT      ,NBS
00107     17*        *   ,NCS       ,NCTLS     ,NDEG      ,NENT      ,NHEAT     ,NHEATS
00107     18*        *   ,NHTD      ,NL        ,NMASS     ,NN        ,NNMAS     ,NNODE
00107     19*        *   ,NOACS     ,NOAOS     ,NOAS      ,NOATS     ,NOPF      ,NOPS
00107     20*        *   ,NORF      ,NORI      ,NOUTS     ,NSWCHS    ,NTAB      ,NTEMP
00107     21*        *   ,NTS       ,NU        ,NUMS      ,THETI     ,THMAX     ,TMAX
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00107      22*          *    ,TMIN      ,TOPO      ,NOGO      ,FOUT      ,IPU
00110      23*           COMMON /BLK3/
00110      24*          *     IAOF      ,IBF       ,ICOS      ,ICS       ,IHYF      ,N2
00110      25*          *    ,NWT       ,NXF       ,NXS       ,SIG       ,KNM
00111      26*           EQUIVALENCE                (VAR,MAPT)            ,(VAR,THETU)
00111      27*          *    ,(VAR,THETC)          ,(VAR,NTYPE)          ,(VAR,T)
00111      28*          *    ,(VAR,A)              ,(VAR,D)              ,(VAR,CK)
00111      29*          *    ,(VAR,NOUT)           ,(VAR,NOP)            ,(VAR,NUM)
00111      30*          *    ,(VAR,AN)             ,(VAR,NX)             ,(VAR,MX)
00111      31*          *    ,(VAR,NB)             ,(VAR,MB)             ,(VAR,B)
00111      32*          *    ,(VAR,NC)             ,(VAR,MC)             ,(VAR,C)
00111      33*          *    ,(VAR,TYME)           ,(VAR,NT)             ,(VAR,TABLE)
00111      34*          *    ,(VAR,DTN)            ,(VAR,Q)              ,(VAR,NSWCH)
00112      35*           EQUIVALENCE                (VAR,TAVEG)           ,(VAR,QHEAT)
00112      36*          *    ,(VAR,TLMT)           ,(VAR,BLMT)           ,(VAR,DTNA)
00112      37*          *    ,(VAR,DTNB)           ,(VAR,DTNC)           ,(VAR,NHET)
00112      38*          *    ,(VAR,NCTL)           ,(VAR,WATHR)          ,(VAR,NEXPH)
00112      39*          *    ,(VAR,TEXPON)         ,(VAR,TEXPOF)         ,(VAR,TP)
00112      40*          *    ,(VAR,BP)             ,(VAR,SLOPE)          ,(VAR,HYS)
00112      41*          *    ,(VAR,T4)             ,(VAR,SO)             ,(VAR,AO)
00112      42*          *    ,(VAR,CO)
00113      43*           DIMENSION AA(4),BB(4),CC(4)
00114      44*           DIMENSION MAPT(1),THETU(1),THETC(1),NTYPE(1),T(1),A(1),D(1),CK(1),
00114      45*          1NOUT(1),NOP(1),NUM(1),AN(1),NX(1),MX(1),NB(1),MB(1),B(1),NC(1),MC(
00114      46*          21),C(1),TYME(1),NT(1),TABLE(1),DTN(1),Q(1),NSWCH(1),TAVEG(1),QHEAT
00114      47*          3(1),TLMT(1),BLMT(1),DTNA(1),DTNB(1),DTNC(1),NHET(1),NCTL(1),WATHR(
00114      48*          41),NEXPH(1),TEXPON(1),TEXPOF(1), TP(1),BP(1),SLOPE(1),HYS(1),T4(1)
00114      49*          5,SO(1),AO(1),CO(1)
00115      50*           DIMENSION FOUT(350)
00116      51*           DIMENSION IOUT(350)
00117      52*           DIMENSION ITITLE(16)
00120      53*       703 FORMAT(8E10.2)
00121      54*       707 FORMAT(5(I5,F10.3))
00122      55*       709 FORMAT(1H1)
00123      56*       718 FORMAT(///2X,11HFLUX TABLES/20X,1HN/8X,7(10X,I4)//19X,4HMULT)
00124      57*       719 FORMAT(12X,7(E14.4)//5X,5HTHETA,9X,4HFLUX)
00125      58*       720 FORMAT(F12.5,7E14.4)
00126      59*       721 FORMAT(///2X,59HTEMPERATURE TABLES FOR SPECIFIED TEMPERATURE NODES
00126      60*          1 (DEGREES A5,1H),/20X,1HN)
00127      61*       724 FORMAT(8X,7(10X,I4))
00130      62*     736   FORMAT(8F10.3)
00131      63*     738   FORMAT(16I5)
00132      64*     741   FORMAT(//' THIS PROBLEM IS TOO BIG')
00133      65*     745   FORMAT(' NODE' I5,' IS N OT IN LIST OF NODES')
00134      66*       754 FORMAT(////' NUMBER OF FLUX TABLES = ' ,I5///)
00135      67*       758 FORMAT(//5H NODE,I5,56H HAS A FLUX OR SPEC. TEMP. TABLE BUT IS NOT
00135      68*          1 IN NODE LIST  )
00136      69*       759 FORMAT(///73H THE NUMBER OF SPECIFIED TEMP. NODES IS NOT EQUAL TO
00136      70*          1THE NUMBER OF TABLES  /25H NO. SPEC. TEMP. NODES = ,I5,/
00136      71*          1 26H NO. SPEC. TEMP. TABLES =  ,I5)
00136      72*     C
00136      73*     C     INPUT OF FLUX TABLES
00136      74*     C
00137      75*           REWIND 11
00140      76*           REWIND 12
00141      77*           KNNM=0
```

```
00142      KNM=0
00143      NTAB=0
00144  217 READ(I2,738)NENT
00147      IF(NENT-99999)4012,4013,4012
00152 4013 NENT=0
00153 4012 ITYS=IAOF+1
00154      ITYF=IAOF+NENT
00155      IF(NENT-0)4014,1661,4014
00160 4014 READ(I2,703)(TYME(I),I=ITYS,ITYF)
00166      READ(I2,738)
00170  251 READ(I2,707)NTKK,DTNJJ
00174      IF(NTKK -99999)257,258,257
00174 C          READ 'TABLE' ARRAY INTO 'FOUT'ARRAY SINCE AVAILABLE,
00174 C          AND INDICES NOT YET SET.
00174 C
00177  257 READ(I2,736)(FOUT(I),I=1,NENT)
00205      NTAB=NTAB+1
00206      J=0
00207  273 J=J+1
00210      IF(NTKK-NUM(NUMS+J-1))273,274,273
00213  274 IF(J-NMASS)275,275,276
00216  275 KNM=KNM+1
00217      WRITE(11)NTKK,DTNJJ
00223      WRITE(11)(FOUT(I),I=1,NENT)
00231      GO TO 251
00232  276 KNNM=KNNM+1
00233      WRITE(12)NTKK,DTNJJ
00237      WRITE(12)(FOUT(I),I=1,NENT)
00245      GO TO 251
00245 C
00245 C          COUNT SPECIFIED TEMPERATURE TABLES
00245 C
00246  258 NSPEC=0
00247 5257 READ(I2,738)INT,IND
00253      IF(INT-99999)5305,5258,5258
00256 5305 NSPEC=NSPEC+1
00257      WRITE(12)INT,IND
00263      IF(IND)5306,5307,5306
00266 5307 READ(I2,736)CON
00271      CON=CON+459.7
00272      WRITE(12)CON
00275      GO TO 5257
00276 5306 READ(I2,736)(FOUT(I),I=1,NENT)
00304      DO5308I=1,NENT
00307 5308 FOUT(I)=FOUT(I)+459.7
00311      WRITE(12)(FOUT(I),I=1,NENT)
00317      GO TO 5257
00320 5258 REWIND 11
00321      REWIND 12
00322      IF(NSPEC-NTEMP)5391,5093,5391
00325 5391 PRINT 759,NTEMP,NSPEC
00331      NOGO=1
00332      NTEMP=NSPEC
00333 5093 NTS=ITYF+1
00334      NTF=ITYF+NTAB+NTEMP
00335 5094 ITAS=NTF+1
```

```
00336   134*          ITAF=NTF+NENT*(NTAB+NTEMP)
00337   135*     5095 IDTNS=ITAF+1
00340   136*          IDTNF=ITAF+NNODE
00341   137*     5096 IQS=IDTNF+1
00342   138*          IQF=IDTNF+NNODE+NENT
00343   139*     5097 ITAVS=IQF+1
00344   140*          ITAVF=IQF+NNODE+NTAB
00345   141*     5198 NXS=ITAVF+1
00346   142*          NXF=ITAVF+NTAB+NTEMP+10
00347   143*          IF(NXF-32000) 401,401,6000
00352   144*     6000 PRINT 741
00354   145*          PRINT 738,NXF
00357   146*          STOP
00360   147*      401 NTAB=NTAB+NTEMP
00361   148*          LA=IQS+NENT-1
00362   149*      315 NFLX=KNM+KNNM
00363   150*          NTAB=NFLX+NTEMP
00364   151*      316 KASE=0
00365   152*          DO 277 I=1,NTAB
00370   153*          IF(I-KNM)279,279,280
00373   154*      279 ITAPE=11
00374   155*          GO TO 287
00375   156*      280 IF(I-NFLX)289,289,288
00400   157*      289 ITAPE=12
00401   158*          GO TO 285
00402   159*      288 KASE=1
00403   160*      287 IF(KASE)285,285,290
00406   161*      285 READ(ITAPE)INT,FDTN
00412   162*          READ(ITAPE)(Q(JJ),JJ=IQS,LA)
00420   163*          J=0
00421   164*      281 J=J+1
00422   165*          IF(J-NNODE)283,283,1277
00425   166*      283 IF(INT-NUM(NUMS+J-1))281,237,281
00430   167*      237 NT(I-1+NTS)=J
00431   168*          TAVEG(ITAVS+I-1)=FDTN
00432   169*          NX(NXS+I-1)=INT
00433   170*          DO 278 K=1,NENT
00436   171*          ITA=ITAS+NTAB*(K-1)+I-1
00437   172*      278 TABLE(ITA)=Q(IQS+K-1)*FDTN
00441   173*          GO TO 277
00442   174*      290 READ(12)INT,IND
00446   175*          IF(IND)306,307,306
00451   176*      307 READ(12)CON
00454   177*          DO 308 NN=IQS,LA
00457   178*      308 Q(NN)=CON
00461   179*          FDTN=1.
00462   180*          J=0
00463   181*          GO TO 281
00464   182*      306 READ(12)(Q(JJ),JJ=IQS,LA)
00472   183*          FDTN=1.
00473   184*          J=0
00474   185*          GO TO 281
00475   186*     1277 PRINT 758,INT
00500   187*          NOGO=1
00501   188*      277 CONTINUE
00503   189*          LII=1
```

```
00504   190*          LI=LII+KNM-1
00505   191*     321  L2I=L1+1
00506   192*     334  L2=L2I+KNNM-1
00507   193*          NL=L2+1
00510   194*     368  NU=NL+NTEMP-1
00511   195*          II=1
00512   196*          IJ=7
00513   197*     367  NOPA=(NFLX+6)/7
00514   198*          IF(NFLX)1673,1673,1674
00517   199*    1674  PRINT 709
00521   200*          DO 284 I=1,NOPA
00524   201*          IF(I-1)314,314,361
00527   202*     314  JS=NXS
00530   203*          JF=NXS+6
00531   204*          LS=ITAVS
00532   205*     365  LF=ITAVS+6
00533   206*     361  IF(IJ-NFLX)294,294,360
00536   207*     360  JF=NXS+NFLX-1
00537   208*          LF=ITAVS+NFLX-1
00540   209*          IJ=NFLX
00541   210*     294  PRINT 718,(NX(J),J=JS,JF)
00547   211*          PRINT 719,(TAVEG(J),J=LS,LF)
00555   212*          DO 296 J=1,NENT
00560   213*          DO 298 K=II,IJ
00563   214*          ITA=ITAS+(J-1)*NTAB+K-1
00564   215*     298  Q(IQS+K-1)=TABLE(ITA)
00566   216*          JJ=ITYS+J-1
00567   217*          JI=II+IQS-1
00570   218*          JII=IJ+IQS-1
00571   219*     296  PRINT 720,(TYME(JJ),(Q(K),K=JI,JII))
00601   220*          IF(IJ-NFLX)318,284,318
00604   221*     318  JS=JF+1
00605   222*     370  JF=JS+6
00606   223*          LS=LF+1
00607   224*     301  LF=LS+6
00610   225*          II=IJ+1
00611   226*     371  IJ=II+6
00612   227*     284  CONTINUE
00614   228*          PRINT 754,NFLX
00617   229*    1673  IF(NFLX)1677,1677,1678
00622   230*    1677  II=1
00623   231*          IJ=7
00624   232*          GO TO 1672
00625   233*    1678  II=IJ+1
00626   234*    1672  KASE=0
00627   235*     320  IJ=II+6
00630   236*     312  NOPA=(NTAB-NFLX+6)/7
00631   237*          IF(NTAB-NFLX)1661,1661,1662
00634   238*    1662  DO 293 I=1,NOPA
00637   239*          IF(I-1)240,240,362
00642   240*     240  JS=NXS+NFLX
00643   241*          JF=JS+6
00644   242*     299  LS=ITAVS+NFLX
00645   243*     295  LF=LS+6
00646   244*     362  IF(IJ-NTAB)292,292,363
00651   245*     363  JF=NXS+NTAB-1
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```
00652   246*          LF=ITAVS+NTAB-1
00653   247*          IJ=NTAB
00654   248*      292 PRINT 721, NDEG
00657   249*          PRINT 724,(NX(J),J=JS,JF)
00665   250*          DO 282 J=1,NENT
00670   251*          DO 302 K=II,IJ
00673   252*          ITA=ITAS+(J-1)*NTAB+K-1
00674   253*     302  Q(IQS+K-1)=TABLE(ITA)
00676   254*          JJ=ITYS+J-1
00677   255*          JI=II+IQS-1
00700   256*          JII=IJ+IQS-1
00701   257*          IF(NDEG.EQ.5H RANK)GO TO 282
00703   258*          DO 2282 JX=JI,JII
00706   259*     2282 Q(JX)=Q(JX)-459.7
00710   260*          IF(NDEG.NE.5H CENT)GO TO 282
00712   261*          DO 2284 K=JI,JII
00715   262*     2284 Q(K)=5.*(Q(K)-32.0)/9.0
00717   263*      282 PRINT 720,(TYME(JJ),(Q(K),K=JI,JII))
00727   264*          IF(IJ-NTAB)4060,293,4060
00732   265*     4060 JS=JF+1
00733   266*     303  JF=JS+6
00734   267*          LS=LF+1
00735   268*     310  LF=LS+6
00736   269*          II=IJ+1
00737   270*     311  IJ=II+6
00740   271*     293  CONTINUE
00742   272*     1661 CONTINUE
00742   273*     C
00742   274*     C    INPUT OF INITIAL TEMPERATURE DISTRIBUTION
00742   275*     C
00743   276*          I=NXS
00744   277*          II=IDTNS
00745   278*          READ(12,707) NX(I),DTN(II),NX(I+1),DTN(II+1),NX(I+2),DTN(II+2) ,
00745   279*         1NX(I+3),DTN(II+3),NX(I+4),DTN(II+4)
00761   280*          IF(NX(NXS))1359,352,1359
00764   281*      352 DO 354 I=1,NACT
00767   282*          K=ITS+I-1
00770   283*     354  T(K)=DTN(II)+459.7
00772   284*          READ(12,738)
00774   285*          GO TO 4118
00775   286*      359 I=NXS
00776   287*          II=IDTNS
00777   288*          READ(12,707) NX(I),DTN(II),NX(I+1),DTN(II+1),NX(I+2),DTN(II+2) ,
00777   289*         1NX(I+3),DTN(II+3),NX(I+4),DTN(II+4)
01013   290*     1359 DO 7538 I=1,5
01016   291*          IF(NX(NXS+I-1)-99999)353,4118,353
01021   292*     353  IF(NX(NXS+I-1))7539,7538,7539
01024   293*     7539 NN=0
01025   294*      356 NN=NN+1
01026   295*          IF(NN-NNODE)868,868,867
01031   296*     867  K=NXS+I-1
01032   297*          PRINT 745,NX(K)
01035   298*          GO TO 7538
01036   299*     868  IF(NX(NXS+I-1)-NUM(NUMS+NN-1))356,357,356
01041   300*     357  IF(NN-NACT)358,358,7538
01044   301*     358  K=ITS+NN-1
```

```
01045    302*          T(K)=DTN(IDTNS+I-1)+459.7
01046    303*     7538 CONTINUE
01050    304*          GO TO 359
01051    305*     4118 CONTINUE
01052    306*          RETURN
01053    307*          END

      END OF COMPILATION:        NO  DIAGNOSTICS.
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@FOR,US DCMPT,DCMPT
MSD 11A -12/10/73-11:08:46 (16,17)

   SUBROUTINE COMPUT     ENTRY POINT 003602

   STORAGE USED: CODE(1) 003621; DATA(0) 001111; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003    UNIT    000005
    0004    TDATA   076400
    0005    BLK1    000645
    0006    BLK2    000613
    0007    BLK3    000013
    0010    DELFLX  000174

   EXTERNAL REFERENCES (BLOCK, NAME)

    0011    DSTRT
    0012    PLOT
    0013    NWBUS
    0014    NIO1S
    0015    NIO2S
    0016    NPRTS
    0017    NIO3S
    0020    NERR2S
    0021    XPRR
    0022    NWDCS
    0023    NERR3S

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001    001734 1010G    0001    001771 1022G    0001    002037 1036G    0001    002105 1050G    0001    003443 1051L
    0001    002166 1066G    0001    002215 1076G    0001    002233 1111G    0001    002254 1122G    0001    002263 1131G
    0001    002543 1233G    0001    002611 1252G    0001    002664 1263G    0001    003007 1331G    0001    003050 1342G
    0001    003110 1350G    0001    003136 1356G    0001    000010 140G     0001    003236 1400G    0001    003262 1410G
    0001    003275 1416G    0001    003312 1425G    0001    003321 1433G    0001    003364 1446G    0001    003414 1463G
    0001    003434 1475G    0001    003467 1506G    0001    003502 1515G    0001    003516 1525G    0001    000033 155G
    0001    003552 16L      0001    000443 1627L    0001    003261 1636L    0001    000051 166G     0001    000464 1663L
    0001    003556 1684L    0001    003302 1686L    0001    000055 172G     0001    003512 2000L    0001    000066 202G
    0001    000076 213G     0001    000121 223G     0001    000143 240G     0001    002537 30L      0001    000251 301G
    0001    002350 31L      0001    000325 317G     0001    002464 33L      0001    000356 335G     0001    002505 34L
    0001    000417 346G     0001    002535 35L      0001    000434 360G     0001    000457 366G     0001    000473 375G
    0001    001364 4L       0001    000310 403L     0001    002437 4034L    0001    000520 406G     0001    000122 410L
    0001    000137 413L     0001    000562 426G     0001    000575 434G     0001    000337 451L     0001    000547 454L
    0001    000672 466G     0001    001407 5L       0001    000552 501L     0001    000726 503L     0001    002734 5034L
    0001    000611 504L     0001    000735 507L     0001    000752 509L     0001    000760 512G     0001    000743 512L
    0001    001034 527G     0001    002326 54L      0001    001060 540G     0001    000226 55L      0001    001210 553L
    0001    001206 555L     0001    001111 556L     0001    001145 557G     0001    002772 56L      0001    001250 561L
    0001    001140 562L     0001    001204 563L     0001    001167 567G     0001    001020 570L     0001    001441 6L
    0001    001443 601L     0001    001467 604L     0001    001220 605G     0001    001476 605L     0001    001254 614G
    0001    000176 62L      0001    001266 620G     0001    001317 627G     0001    000215 63L      0001    000216 64L
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0001		001346	640G	0001		000213	65L	0001		001505	651L	0001		001517	652L	0001		001537	656L
0001		001447	657G	0001		001575	675L	0001		001432	7L	0000		001013	7000F	0000		001016	7010F
0000		001020	7020F	0000		000672	707F	0000		000675	709F	0000		000676	711F	0000		000707	712F
0000		000721	715F	0000		000731	716F	0000		000737	717F	0001		000625	72L	0000		000742	723F
0001		000644	73L	0000		000751	731F	0000		000761	732F	0000		000774	733F	0001		001561	735G
0001		000645	74L	0001		000642	75L	0001		001617	760G	0001		001636	765G	0001		000655	77L
0001		001665	775G	0001		001613	801L	0001		001724	803L	0001		001761	809L	0001		002027	812L
0001		002067	815L	0001		002244	818L	0001		002225	820L	0001		002135	821L	0001		002164	825L
0001		002223	826L	0001		002364	8723L	0001		002374	8725L	0001		002571	900L	0001		002600	901L
0001		003043	903L	0001		002655	905L	0001		003044	906L	0001		002715	908L	0001		002732	909L
0001		002742	92L	0001		002761	93L	0001		002762	94L	0001		002757	95L	0001		003184	950L
0001		003132	975L	0004	R	000000	A	0005	R	000000	AA	0004	R	000000	AN	0004		000000	AO
0010	R	000150	APCL	0010	R	000124	APOP	0000	R	000671	AVEWAT	0004	R	000000	B	0005	R	000004	BB
0004	R	000000	BLMT	0004	R	000000	BP	0004	R	000000	C	0005	R	000010	CC	0004	R	000000	CK
0004		000000	CO	0005	R	000014	CON	0004	R	000000	D	0000	R	000665	DDD	0005	R	000015	DT
0004	R	000000	DTN	0004	R	000000	DTNA	0004	R	000000	DTNB	0004	R	000000	DTNC	0000	R	000642	DTSVE
0000	R	000667	DUTY	0000	R	000645	FACT	0006	R	000054	FOUT	0004	R	000000	HYS	0000	I	000630	I
0005	I	000016	IAN	0005	I	000017	IANN	0005	I	000020	IANS	0007		000000	IAOF	0005	I	000021	IAS
0000	I	000662	IBC	0007		000001	IBF	0005	I	000022	IBLMTS	0005	I	000023	IBPS	0005	I	000024	IBS
0005	I	000025	ICKS	0007		000002	ICOS	0007	I	000003	ICS	0005	I	000026	IDS	0005	I	000027	IDTAS
0005	I	000030	IDTBS	0005	I	000031	IDTCS	0005	I	000032	IDTNS	0000	I	000620	IFLG	0007		000004	IHYF
0005	I	000033	IHYS	0005		000034	IN	0005	I	000035	INC	0000		001053	INJPS	0000	I	000644	INTEG
0005		000036	IO	0005	I	000037	IOUT	0006		000612	IPU	0005	I	000575	IQHETS	0005	I	000576	IWS
0000	I	000624	IROW	0005	I	000577	ISLS	0005	I	000600	ISOS	0005	I	000602	ITA	0000	I	000641	ITAA
0005	I	000603	ITAS	0005	I	000604	ITAVS	0005	I	000605	ITITLE	0005	I	000625	ITLMTS	0005	I	000626	ITPS
0005	I	000627	ITS	0005	I	000630	ITYS	0005	I	000601	ITYS	0000	I	000652	IVAL	0005	I	000631	IWATS
0003	I	000000	I1	0003	I	000001	I2	0003	I	000002	I3	0000	I	000631	J	0000	I	000634	K
0000	I	000661	KI	0007	I	000012	KNM	0005	I	000633	KNNM	0005		000632	KNW	0000	I	000660	KO
0005	I	000634	KPUN	0000	I	000632	L	0000	I	000654	LL	0005	I	000635	L1	0005	I	000636	L11
0005	I	000637	L2	0005	I	000640	L21	0000	I	000647	M	0004	I	000000	MAPT	0004	I	000000	MB
0006	I	000000	MBS	0004	I	000000	MC	0006	I	000001	MCS	0000	I	000655	MTYPE	0004		000000	MX
0005	I	000641	M1	0005	I	000642	M11	0005	I	000643	M2	0005	I	000644	M21	0000	I	000633	N
0006	I	000010	NACT	0006	I	000011	NAPT	0004	I	000000	NB	0006	I	000012	NBS	0004	I	000000	NC
0006	I	000013	NCS	0004	I	000000	NCTL	0006	I	000014	NCTLS	0006	I	000015	NDEG	0000	I	000666	NDIX
0006	I	000016	NENT	0000	I	000643	NEXIT	0004		000000	NEXPH	0006	I	000017	NHEAT	0006	I	000020	NHEATS
0004	I	000000	NHET	0006	I	000021	NHTD	0006	I	000022	NL	0000	I	000640	NM	0006	I	000023	NMASS
0006	I	000024	NN	0006	I	000025	NNMAS	0006	I	000026	NNODE	0006	I	000027	NOACS	0006	I	000030	NOAOS
0006	I	000031	NOAS	0006	I	000032	NOATS	0010	I	000004	NOFX	0006		000053	NOGO	0010	I	000000	NONFX
0004	I	000000	NOP	0006	I	000033	NOPF	0006	I	000034	NOPS	0000	I	000636	NORB	0006	I	000035	NORF
0006	I	000036	NORI	0004	I	000000	NOUT	0006	I	000037	NOUTS	0000	I	000650	NPT	0000	I	000651	NRK
0000	I	000653	NRRET	0004	I	000000	NSWCH	0006	I	000040	NSWCHS	0004	I	000000	NT	0006	I	000041	NTAB
0006	I	000042	NTEMP	0006	I	000043	NTS	0004	I	000000	NTYPE	0006	I	000044	NU	0004	I	000000	NUM
0006	I	000045	NUMS	0007		000006	NWT	0004		000000	NX	0007		000007	NXF	0007		000010	NXS
0006	I	000002	N1	0006	I	000003	N11	0007		000005	N2	0006	I	000004	N21	0006	I	000005	N3
0006	I	000006	N31	0006	I	000007	N4	0003	I	000003	O1	0003	I	000004	O2	0004	R	000000	Q
0010	R	000054	QFLX	0004	R	000000	QHEAT	0007		000011	SIG	0004	R	000000	SLOPE	0004	R	000000	SO
0004	R	000000	T	0004	R	000000	TABLE	0004	R	000000	TAVEG	0000	R	000637	TEMP	0004		000000	TEXPOF
0004		000000	TEXPON	0000	R	000000	TFHR	0000	R	000635	THETA	0004	R	000000	THETC	0006	R	000046	THETI
0004	R	000000	THETO	0006	R	000047	THMAX	0004	R	000000	TLMT	0006	R	000050	TMAX	0006	R	000051	TMIN
0006	R	000052	TOPO	0000	R	000670	TOTWT	0004	R	000000	TP	0000	R	000646	TTW	0004	R	000000	TYME
0004	R	000000	T4	0000	R	000663	T4AVE	0000	R	000656	T4AVE1	0000	R	000657	T4AVE2	0000	R	000664	T4AVE3
0004		000000	VAR	0004	R	000000	WATHR												

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00101      1*        SUBROUTINE COMPUT
00103      2*        INTEGER I1,I2,I3,O1,O2
00104      3*        COMMON/UNIT/I1,I2,I3,O1,O2
00105      4*        COMMON /TDATA/ VAR(32000)
00106      5*        COMMON /BLK1/
00106      6*       *    AA        ,BB        ,CC        ,CON       ,DT        ,IAN
00106      7*       *   ,IANN      ,IANS      ,IAS       ,IBLMTS    ,IBPS      ,IBS
00106      8*       *   ,ICKS      ,IDS       ,IDTAS     ,IDTBS     ,IDTCS     ,IDTNS
00106      9*       *   ,IHYS      ,IN        ,INC       ,IO        ,IOUT      ,IQHETS
00106     10*       *   ,IQS       ,ISLS      ,ISOS      ,IT4S      ,ITA       ,ITAS
00106     11*       *   ,ITAVS     ,ITITLE    ,ITLMTS    ,ITPS      ,ITS       ,ITYS
00106     12*       *   ,IWATS     ,KNW       ,KNNM      ,KPUN      ,L1        ,L1I
00106     13*       *   ,L2        ,L2I       ,M1        ,M1I       ,M2        ,M2I
00107     14*        COMMON /BLK2/
00107     15*       *    MBS                   ,MCS       ,N1        ,N1I       ,N2I
00107     16*       *   ,N3        ,N3I       ,N4        ,NACT      ,NAPT      ,NBS
00107     17*       *   ,NCS       ,NCTLS     ,NDEG      ,NENT      ,NHEAT     ,NHEATS
00107     18*       *   ,NHTD      ,NL        ,NMASS     ,NN        ,NNMAS     ,NNODE
00107     19*       *   ,NOACS     ,NOAOS     ,NOAS      ,NOATS     ,NOPF      ,NOPS
00107     20*       *   ,NORF      ,NORI      ,NOUTS     ,NSWCHS    ,NTAB      ,NTEMP
00107     21*       *   ,NTS       ,NU        ,NUMS      ,THETI     ,THMAX     ,TMAX
00107     22*       *   ,TMIN      ,TOPO      ,NOGO      ,FOUT      ,IPU
00110     23*        COMMON /BLK3/
00110     24*       *    IAOF      ,IBF       ,ICOS      ,ICS       ,IHYF      ,N2
00110     25*       *   ,NWT       ,NXF       ,NXS       ,SIG       ,KNM
00111     26*        EQUIVALENCE                (VAR,MAPT)           ,(VAR,THETO)
00111     27*       *   ,(VAR,THETC)           ,(VAR,NTYPE)         ,(VAR,T)
00111     28*       *   ,(VAR,A)               ,(VAR,D)             ,(VAR,CK)
00111     29*       *   ,(VAR,NOUT)            ,(VAR,NOP)           ,(VAR,NUM)
00111     30*       *   ,(VAR,AN)              ,(VAR,NX)            ,(VAR,MX)
00111     31*       *   ,(VAR,NB)              ,(VAR,MB)            ,(VAR,B)
00111     32*       *   ,(VAR,NC)              ,(VAR,MC)            ,(VAR,C)
00111     33*       *   ,(VAR,TYME)            ,(VAR,NT)            ,(VAR,TABLE)
00111     34*       *   ,(VAR,DTN)             ,(VAR,Q)             ,(VAR,NSWCH)
00112     35*        EQUIVALENCE                (VAR,TAVEG)          ,(VAR,QHEAT)
00112     36*       *   ,(VAR,TLMT)            ,(VAR,BLMT)          ,(VAR,DTNA)
00112     37*       *   ,(VAR,DTNB)            ,(VAR,DTNC)          ,(VAR,NHET)
00112     38*       *   ,(VAR,NCTL)            ,(VAR,WATHR)         ,(VAR,NEXPH)
00112     39*       *   ,(VAR,TEXPON)          ,(VAR,TEXPOF)        ,(VAR,TP)
00112     40*       *   ,(VAR,BP)              ,(VAR,SLOPE)         ,(VAR,HYS)
00112     41*       *   ,(VAR,T4)              ,(VAR,SO)            ,(VAR,AO)
00112     42*       *   ,(VAR,CO)
00113     43*        DIMENSION AA(4),BB(4),CC(4)
00114     44*        DIMENSION MAPT(1),THETO(1),THETC(1),NTYPE(1),T(1),A(1),D(1),CK(1),
00114     45*       1NOUT(1),NOP(1),NUM(1),AN(1),NX(1),MX(1),NB(1),MB(1),B(1),NC(1),MC(
00114     46*       21),C(1),TYME(1),NT(1),TABLE(1),DTN(1),Q(1),NSWCH(1),TAVEG(1),QHEAT
00114     47*       3(1),TLMT(1),BLMT(1),DTNA(1),DTNB(1),DTNC(1),NHET(1),NCTL(1),WATHR(
00114     48*       41),NEXPH(1),TEXPON(1),TEXPOF(1), TP(1),BP(1),SLOPE(1),HYS(1),T4(1)
00114     49*       5,SO(1),AO(1),CO(1)
00115     50*        DIMENSION FOUT(350)
00116     51*        DIMENSION IOUT(350)
00117     52*        DIMENSION ITITLE(16)
00120     53*        DIMENSION TFHR(400)
00121     54*        COMMON /DELFLX/
00121     55*       *   NONFX(4),NOFX(10,4),QFLX(10,4),APOP(5,4),APCL(5,4)
00122     56*        DIMENSION IFLG(4),IROW(4)
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00123      707 FORMAT(5(I5,F10.3))
00124      709 FORMAT(1H1)
00125      711 FORMAT(///44H TEMPERATURE EXCEEDS MAXIMUM ALLOWABLE VALUE)
00126      712 FORMAT(///49H TEMPERATURE IS LESS THAN MINIMUM ALLOWABLE VALUE)
00127      715 FORMAT(///4X,31HMEAN TEMPERATURES FOR CYCLE NO , I3)
00130      716 FORMAT(/7X,1HN,4X,10HTEMP (DEG A5,1H))
00131      717 FORMAT(3X,5(I7,F9.3))
00132      723 FORMAT(///13X,                    9HCYCLE NO ,I3,5X,6HTHETA=,F9.5)
00133      731 FORMAT(1H0,/////,40X,29HSUMMARY OF HEATER PERFORMANCE )
00134      732 FORMAT(10X,'NODE',I5,F20.6, ' WATT-HRS', 10X,F20.6,'  DUTY CYCLE')
00135      733 FORMAT(1H0,10X,15HTOTAL ENERGY =  ,F20.4,9H WATT-HRS,/6X,18HAVERAG
00135         1E WATTAGE =  ,F20.4,6H WATTS  )
00136          WRITE(10)(ITITLE(I),I=1,16)
00144          WRITE(10)TOPO,NNODE,THETI,THMAX,NDEG
00153          WRITE(10)(NOP(I),I=NOPS,NOPF)
00161          PRINT 7000,NONFX
00164     7000 FORMAT('0NONFX',4I6)
00165          DO 7005 I=1,4
00170          PRINT 7010,(APOP(J,I),APCL(J,I),J=1,5)
00177     7010 FORMAT(1X,10F13.4)
00200          PRINT 7020 ,(NOFX(J,I),QFLX(J,I),J=1,10)
00207     7020 FORMAT(1X,I5,F10.3)
00210     7005 CONTINUE
00210     C
00210     C    INITIALIZATION
00210     C
00210     C**** SET EQUATION ROW NUMBERS FOR NODES.
00212          DO 411 L=1,4
00215          IF(NONFX(L).LE.0) GO TO 413
00217          IFLG(L)=-1
00220          IROW(L)=1
00221          N=NONFX(L)
00222          DO 411 I=1,N
00225          K=0
00226      410 CONTINUE
00227          K=K+1
00230          IF(NOFX(I,L).NE.NUM(NUMS+K-1)) GO TO 410
00232          NOFX(I,L)=K
00233      411 CONTINUE
00236      413 CONTINUE
00237          DO 402 N=1,NMASS
00242          DTNA(N+IDTAS-1)=0.
00243          DTNB(IDTBS+N-1)=0.
00244          DTNC(IDTCS+N-1)=0.
00245      402 Q(IQS+N-1)=0.
00247       17 THETA=THETI
00250          NORB=NORI
00251      406 J=2
00252          IF(NTEMP)61,61,62
00255       61 IF(NTAB)63,63,62
00260       62 IF(THETA-TYME(ITYS+J-1))64,65,66
00263       66 IF(J-NENT)5035,65,5035
00266     5035 J=J+1
00267          GO TO 62
00270       65 TEMP=1.
00271       63 GO TO 55
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00272   113*        64 TEMP=(THETA-TYME(ITYS+J-2))/(TYME(ITYS+J-1)-TYME(ITYS+J-2))
00273   114*        55 IF(NTEMP)403,403,404
00276   115*     404   NL=KNM+KNNM+1
00277   116*     328   NU=NL+NTEMP-1
00300   117*           DO 50 N=NL,NU
00303   118*           K=NTS+N-1
00304   119*           NM=NT(K)
00305   120*           ITA=ITAS+(J-2)*NTAB+N-1
00306   121*           ITAA=ITAS+(J-1)*NTAB+N-1
00307   122*     50    T(ITS+NM-1)=TABLE(ITA)+TEMP*(TABLE(ITAA)-TABLE(ITA))
00311   123*       403 PRINT 709
00313   124*           DTSVE=DT
00314   125*           NEXIT=1
00315   126*           INTEG=0
00316   127*           DO 405 N=1,NNODE
00321   128*       405 TAVEG(ITAVS+N-1)=0.
00323   129*           FACT=.5*DT
00323   130*     C     OUTPUT ROUTINE
00324   131*           TTW=0
00325   132*       451 PRINT 723,NORB,THETA
00331   133*        13 PRINT 716, NDEG
00334   134*           DO 452 N=1,NNODE
00337   135*           M=NOUT(NOUTS+N-1)
00340   136*       452 DTN(IDTNS+N-1)=T(ITS+M-1)
00342   137*           TTW=TTW+TOPO
00343   138*           IF(NDEG.EQ.5H RANK)GO TO 1627
00345   139*           DO 1651 N=1,NNODE
00350   140*           IOUT(N)=NOP(NOPS+N-1)
00351   141*           FOUT(N)=DTN(IDTNS+N-1)-459.7
00352   142*           TFHR(N)=FOUT(N)
00353   143*     1651  CONTINUE
00355   144*           IF(NDEG.NE.5H CENT)GO TO 1663
00357   145*           DO 1682 N=1,NNODE
00362   146*      1682 FOUT(N)=5.*(FOUT(N)-32.0)/9.0
00364   147*           GO TO 1663
00365   148*      1627 DO 1625 N=1,NNODE
00370   149*           IOUT(N)=NOP(NOPS+N-1)
00371   150*      1625 FOUT(N)=DTN(IDTNS+N-1)
00373   151*      1663 PRINT 717,(IOUT(N),FOUT(N),N=1,NNODE)
00402   152*           CALL DSTRT(TFHR,THETA)
00403   153*           IF(NORB.EQ.NORF)WRITE(10)(FOUT(N),N=1,NNODE)
00412   154*     7938  IF(NORB-NORF)453,453,1051
00415   155*       453 IF(NEXIT.EQ.4)GO TO 975
00417   156*           DT=DTSVE
00420   157*     862   GO TO (454,16,652,975),NEXIT
00421   158*       454 NPT=NPT+1
00421   159*     C     RUNGE KUTTA INTEGRATION ROUTINE
00422   160*     501   IF(INTEG-4)4025,900,900
00425   161*     4025  DO 508I=1,NMASS
00430   162*       508 Q(IQS+I-1)=0.
00432   163*           INTEG=INTEG+1
00433   164*           DO 502 NRK=1,4
00436   165*           GO TO(503,504,503,504),NRK
00437   166*       504 THETA=THETA+0.5*DT
00440   167*           IVAL=1
00441   168*           IF(NTEMP)71,71,72
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00444      71 IF(NTAB)73,73,72
00447   72    IF(THETA-TYME(ITYS+J-1))74,75,76
00452   76    IF(J-NENT)5036,75,5036
00455    5036 J=J+1
00456         GO TO 72
00457      75 TEMP=1.
00460      73 GO TO 77
00461      74 TEMP=(THETA-TYME(ITYS+J-2))/(TYME(ITYS+J-1)-TYME(ITYS+J-2))
00462      77 IF(NTEMP)503,503,505
00465     505 DO 81 N=NL,NU
00470         NM=NT(NTS+N-1)
00471         ITA=ITAS+(J-2)*NTAB+N-1
00472         ITAA=ITAS+(J-1)*NTAB+N-1
00473   81    T(ITS+NM-1)=TABLE(ITA)+TEMP*(TABLE(ITAA)-TABLE(ITA))
00475     503 NKRET=1
00476         IF(IVAL-2)4028,507,507
00501   4028  GO TO 801
00502     507 IF(NRK-1)509,950,509
00505     512 IF(INTEG-1)509,510,510
00510     510 GO TO 2000
00511     509 DO 506 K=1,NMASS
00514         CON=AA(NRK)*(DTN(IDTNS+K-1)-BB(NRK)*Q(IQS+K-1))
00515    5070 T(ITS+K-1)=T(ITS+K-1)+DT*CON
00516     506 Q(IQS+K-1)=Q(K+IQS-1)+3.0*CON-CC(      NRK   )*DTN(IDTNS+K-1)
00520     502 CONTINUE
00522         FACT=DT
00522   C     ZERO MASS NODE SOLUTION
00523   570   IF(NNMAS)601,601,551
00526     551 DO 552 N=1,NNMAS
00531         M=N+NMASS
00532     552 T4(IT4S+N-1)=CK(ICKS+M-1)
00534         IF(L2-L21)553,554,554
00537     554 DO 555 L=L21,L2
00542         LL=NT(NTS+L-1)-NMASS
00543         IF(TEMP-1.)556,557,557
00546     557 ITA=ITAS+(J-1)*NTAB+L-1
00547         T4(IT4S+LL-1)=T4(IT4S+LL-1)+TABLE(ITA)
00550         GO TO 562
00551     556 ITA=ITAS+(J-1)*NTAB+L-1
00552         ITAA=ITAS+(J-2)*NTAB+L-1
00553         T4(IT4S+LL-1)=T4(IT4S+LL-1)+TABLE(ITAA)+TEMP*(TABLE(ITA)-TABLE(ITA
00553        1A))
00553   C**** ADD FLUX TO NO-MASS NODES.
00554   562   CONTINUE
00555         K=LL+NMASS
00556         DO 563 M=1,4
00561         IF(NONFX(M).LE.0) GO TO 555
00563         IF(IFLG(M).LE.0) GO TO 563
00565         N=NONFX(M)
00566         DO 566 I=1,N
00571         IF(NOFX(I,M).EQ.K)
00571        .   T4(IT4S+LL-1)=T4(IT4S+LL-1)+QFLX(I,M)
00573   566   CONTINUE
00575   563   CONTINUE
00577     555 CONTINUE
00601     553 IF(N4-N3I)561,559,559
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00604     225*        559 DO 560 N=N3I,N4
00607     226*            LL=MB(MBS+N-1)-NMASS
00610     227*            NN=NB(NBS+N-1)
00611     228*        560 T4(IT4S+LL-1)=T4(IT4S+LL-1)+B(IBS+N-1)*(T(ITS+NN-1)**4)
00613     229*        561 DO 564 N=1,NNMAS
00616     230*            DTN(IDTNS+N-1)=0.
00617     231*            DO 564 NN=1,NNMAS
00622     232*            IAN=IANS+(NN-1)*NNMAS+N-1
00623     233*        564 DTN(IDTNS+N-1)=DTN(IDTNS+N-1)+AN(IAN)*T4(IT4S+NN-1)
00626     234*            DO 565 N=1,NNMAS
00631     235*            M=N+NMASS
00632     236*        565 T(ITS+M-1)=DTN(IDTNS+N-1)**0.25
00634     237*            IF(NAPT -0)601,601,4029
00637     238*       4029 DO 6 I=1,NAPT
00642     239*            MTYPE=NTYPE(NOATS+I-1)
00643     240*            GO TO (4,5),MTYPE
00644     241*          4 IF(THETA.LT.THETO(NOAOS+I-1).OR.THETA.GE.THETC(NOACS+I-1))GO TO 6
00646     242*            GO TO 7
00647     243*          5 IF(THETA.LT.THETC(NOACS+I-1).OR.THETA.GE.THETO(NOAOS+I-1))GO TO 7
00651     244*            GO TO 6
00652     245*          7 M=MAPT(NOAS+I-1)
00653     246*            T(ITS+M-1)=0.
00654     247*          6 CONTINUE
00654     248*        C   CHECK FOR TEMPERATURES EXCEEDING LIMITS
00656     249*        601 DO 602 N=1,NACT
00661     250*            IF(T(ITS+N-1)-TMAX)603,603,604
00664     251*        603 IF(T(ITS+N-1)-TMIN)605,602,602
00667     252*        602 CONTINUE
00671     253*            GO TO 651
00672     254*        604 PRINT 711
00674     255*            NEXIT=2
00675     256*            GO TO 451
00676     257*        605 PRINT 712
00700     258*            NEXIT=2
00701     259*            GO TO 451
00702     260*        651 CONTINUE
00703     261*        658 IF(NPT*DT-TTW)652,653,653
00706     262*        653 NEXIT=3
00707     263*            GO TO 451
00710     264*        652 NPT=NPT+1
00711     265*        659 IF((THETA-THMAX)+0.0001)675,655,655
00714     266*        655 IF(NPT-1)975,975,657
00717     267*        657 THETA=THMAX
00720     268*            NEXIT=4
00721     269*       1107 GO TO 451
00722     270*        656 THETA=0.
00723     271*            J=1
00724     272*            TEMP=1.
00725     273*            NEXIT=1
00726     274*            INTEG=0
00727     275*            PRINT 709
00731     276*            NORB=NORB+1
00732     277*            TTW=0.0
00733     278*            NPT=0
00733     279*        C**** INITIALIZATION FLAGS AND IROW AT BEGIN OF EACH ORBIT.
00734     280*            DO 660 I=1,4
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00737   281*          IF(NONFX(I).LE.0) GO TO 451
00741   282*          IFLG(I)=-1
00742   283*          IROW(I)=1
00743   284*     660  CONTINUE
00745   285*          GO TO 451
00745   286*     C    CHECK FOR END OF ORBIT ON NEXT STEP
00746   287*     675  CONTINUE
00747   288*          CON=THETA+DT
00750   289*    5028  IF(CON-THMAX)501,676,676
00753   290*     676  INTEG=0
00754   291*          DT=THMAX-THETA
00755   292*          FACT=.5*(DTSVE+DT)
00756   293*          GO TO 501
00756   294*     C    DERIVITIVE COMPUTATION
00757   295*     801  DO 802 N=1,NNODE
00762   296*     802  T4(IT4S+N-1)=T(ITS+N-1)**4
00764   297*          DO 824 N=1,NMASS
00767   298*     824  DTN(IDTNS+N-1)=CK(ICKS+N-1)-D(IDS+N-1)*T4(IT4S+N-1)
00771   299*          IF(N1-N1I)803,804,804
00774   300*     804  DO 805 N=N1I,N1
00777   301*          L=NB(NBS+N-1)
01000   302*          LL=MB(MBS+N-1)
01001   303*    5029  DTN(IDTNS+L-1)=DTN(IDTNS+L-1)+B(IBS+N-1)*T4(IT4S+LL-1)
01002   304*     805  DTN(IDTNS+LL-1)=DTN(IDTNS+LL-1)+B(IBS+N-1)*T4(IT4S+L-1)
01004   305*     803  IF(N3-N2I)809,807,807
01007   306*     807  DO 808 N=N2I,N3
01012   307*          L=NB(NBS+N-1)
01013   308*          LL=MB(MBS+N-1)
01014   309*     808  DTN(IDTNS+L-1)=DTN(IDTNS+L-1)+B(IBS+N-1)*T4(IT4S+LL-1)
01016   310*     809  IF(M1-M1I)812,813,813
01021   311*     813  DO 814 N=M1I,M1
01024   312*          L=NC(NCS+N-1)
01025   313*          LL=MC(MCS+N-1)
01026   314*    5030  CON=C(ICS+N-1)*(T(ITS+LL-1)-T(ITS+L-1))
01027   315*    5031  DTN(IDTNS+L-1)=DTN(IDTNS+L-1)+CON
01030   316*     814  DTN(IDTNS+LL-1)=DTN(IDTNS+LL-1)-CON
01032   317*     812  IF(M2-M2I)815,816,816
01035   318*     816  DO 817 N=M2I,M2
01040   319*          L=NC(NCS+N-1)
01041   320*          LL=MC(MCS+N-1)
01042   321*     817  DTN(IDTNS+L-1)=DTN(IDTNS+L-1)+C(ICS+N-1)*(T(ITS+LL-1)-T(ITS+L-1))
01044   322*     815  IF(L1-L1I)818,819,819
01047   323*     819  DO 820 N=L1I,L1
01052   324*          L=NT(NTS+N-1)
01053   325*          IF(TEMP-1.)821,822,822
01056   326*     822  IAN=ITAS+(J-1)*NTAB+N-1
01057   327*          DTN(IDTNS+L-1)=DTN(IDTNS+L-1)+TABLE(IAN)
01060   328*          GO TO 825
01061   329*     821  IAN=ITAS+(J-1)*NTAB+N-1
01062   330*          IANN=ITAS+(J-2)*NTAB+N-1
01063   331*          DTN(IDTNS+L-1)=DTN(IDTNS+L-1)+TABLE(IANN)+TEMP*(TABLE(IAN)-TABLE(I
01063   332*         IANN))
01063   333*     C**** ADD FLUX TO MASS NODES.
01064   334*     825  CONTINUE
01065   335*          DO 826 M=1,4
01070   336*          IF(NONFX(M).LE.0) GO TO 820
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01072   337*          IF(IFLG(M).LE.0) GO TO 826
01074   338*          K=NONFX(M)
01075   339*          DO 827 I=1,K
01100   340*          IF (NOFX(I,M).EQ.L)
01100   341*        *   DTN(IDTNS+L-1)=DTN(IDTNS+L-1)+QFLX(I,M)
01102   342*    827   CONTINUE
01104   343*    826   CONTINUE
01106   344*      820 CONTINUE
01110   345*          DO 879 I=1,NACT
01113   346*    879   SO(ISOS+I-1)=ABS (DTN(IDTNS+I-1))
01113   347*    C     MODIFY T-DOT FOR HEATERS
01115   348*      818 K=1
01116   349*          IF(NHTD-0)30,30,4030
01121   350*    4030  DO 35 N=1,NHTD
01124   351*    36    T4AVE1=0.
01125   352*          T4AVE2=0.
01126   353*          KO=0
01127   354*          KI=0
01130   355*          DO 31 I=1,5
01133   356*          INC=NCTLS+(I-1)*NHEAT+N-1
01134   357*          IBC=NCTLS+(I+4)*NHEAT+N-1
01135   358*          IF(NCTL(INC))54,54,4033
01140   359*    4033  L=NCTL(INC)
01141   360*          KO=KO+1
01142   361*          T4AVE1=T4AVE1+T4(IT4S+L-1)**0.25
01143   362*    54    IF(NCTL(IBC))31,31,58
01146   363*    58    L=NCTL(IBC)
01147   364*          T4AVE2=T4AVE2+T4(IT4S+L-1)**0.25
01150   365*          KI=KI+1
01151   366*    31    CONTINUE
01153   367*          T4AVE=0.
01154   368*          T4AVE3=0.
01155   369*          IF(KO-0)8723,8723,8724
01160   370*    8724  T4AVE=T4AVE1/KO
01161   371*    8723  IF(KI-0)8725,8725,8726
01164   372*    8726  T4AVE3=T4AVE2/KI
01165   373*    8725  TLMT(ITLMTS+N-1)=-SLOPE(ISLS+N-1)*T4AVE3+BP(IBPS+N-1)
01166   374*    57    BLMT(IBLMTS+N-1)=TLMT(ITLMTS+N-1)-HYS(IHYS+N-1)
01167   375*          M=NSWCH(NSWCHS+N-1)+1
01170   376*          IF(NRK-2)4034,4035,4035
01173   377*    4035  GO TO (35,34),M
01174   378*    4034  IF(NSWCH(NSWCHS+N-1))4036,33,4036
01177   379*    4036  IF(T4AVE-TLMT(ITLMTS+N-1))34,4037,4037
01202   380*    4037  NSWCH(NSWCHS+N-1)=0
01203   381*          IF(INTEG-5)35,4038,4038
01206   382*    4038  IVAL=2
01207   383*          INTEG=0
01210   384*          GO TO 35
01211   385*    33    IF(T4AVE-BLMT(IBLMTS+N-1))4039,4039,35
01214   386*    4039  NSWCH(NSWCHS+N-1)=1
01215   387*          IF(INTEG-5)34,4040,4040
01220   388*    4040  IVAL=2
01221   389*          INTEG=0
01222   390*       34 L=NHET(NHEATS+N-1)
01223   391*     5033 DTN(IDTNS+L-1)=DTN(IDTNS+L-1)+QHEAT(IQHETS +N-1)
01224   392*          IF(NRK-2)4041,35,35
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01227    393*      4041  WATHR(IWATS+N-1)=WATHR(IWATS+N-1)+QHEAT(IWHETS +N-1)*DT/3.414
01230    394*         35 CONTINUE
01232    395*         30 DO 823 N=1,NMASS
01235    396*        823 DTN(IDTNS+N-1)=A(IAS+N-1)*DTN(IDTNS+N-1)
01237    397*            IF(IVAL-2)4042,501,501
01242  *DIAGNOSTIC*  THE TRANSFER TO 507 IS BAD BECAUSE 507 IS NOT IN THE INNERMOST DO OF A NEST.
01242    398*      4042  GO TO (507,950,906),NRRET
01242    399*      C     ADAMS INTEGRATION ROUTINE
01243    400*      900   NRRET=2
01244    401*            INTEG=5
01245    402*            NRK=1
01246    403*            GO TO 801
01247    404*      901   DDD=DT/24.0
01250    405*            NRK=2
01251    406*            DO 902 K=1,NMASS
01254    407*            TP(ITPS+K-1)=T(ITS+K-1)
01255    408*      902   T(ITS+K-1)=TP(ITPS+K-1)+DDD*(55.0*DTN(IDTNS+K-1) -59.0*DTNA(IDTAS
01255    409*           1+K-1)+37.0*DTNB(IDTBS+K-1)-9.0*DTNC(IDTCS+K-1))
01257    410*            GO TO 2000
01260    411*      905   NRRET=3
01261    412*            THETA=THETA+DT
01261    413*      C**** CHANGE FLAGS AS TIME INCREASES.
01262    414*            DO 909 L=1,4
01265    415*            IF(NONFX(L).LE.0) GO TO 5034
01267    416*            N=IROW(L)
01270    417*            IF(IFLG(L).GE.1) GO TO 908
01272    418*            IF(THETA.GE.APOP(N,L)) IFLG(L)=1
01274    419*            GO TO 909
01275    420*      908   CONTINUE
01276    421*            IF(THETA.LT.APCL(N,L)) GO TO 909
01300    422*            IFLG(L)=-1
01301    423*            IROW(L)=IROW(L)+1
01302    424*      909   CONTINUE
01304    425*      5034  IF(NTEMP)91,91,92
01307    426*      91    IF(NTAB)93,93,92
01312    427*      92    IF(THETA-TYME(J+ITYS-1))94,95,96
01315    428*        96  IF(J-NENT)5037,95,5037
01320    429*      5037  J=J+1
01321    430*            GO TO 92
01322    431*      95    TEMP=1.
01323    432*      93    GO TO 56
01324    433*      94    TEMP=(THETA-TYME(ITYS+J-2))/(TYME(ITYS+J-1)-TYME(ITYS+J-2))
01325    434*      56    IF(NTEMP)903,903,904
01330    435*      904   DO 59 N=NL,NU
01333    436*            NM=NT(NTS+N-1)
01334    437*            ITA=ITAS+(J-1)*NTAB+N-1
01335    438*            ITAA=ITAS+(J-2)*NTAB+N-1
01336    439*      59    T(ITS+NM-1)=TABLE(ITAA)+TEMP*(TABLE(ITA)-TABLE(ITAA))
01340    440*      903   GO TO 801
01341    441*      906   DO 907 K=1,NMASS
01344    442*      907   T(ITS+K-1)=TP(ITPS+K-1)+DDD*(9.0*DTN(IDTNS+K-1)+19.0*DTNA(IDTAS+K-
01344    443*           1)-5.0*DTNB(IDTBS+K-1)+DTNC(IDTCS+K-1))
01346    444*            GO TO 570
01347    445*      950   DO 951 NDIX=1,NNODE
01352    446*      951   TAVEG(ITAVS+NDIX-1)=TAVEG(ITAVS+NDIX-1)+T4(IT4S+NDIX-1)*FACT
01354  *DIAGNOSTIC*  THE TRANSFER TO 512 IS BAD BECAUSE 512 IS NOT IN THE INNERMOST DO OF A NEST.
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01354     447*          GO TO (512,931),NRRET
01354     448*     C    OUTPUT OF MEAN TEMPERATURES
01354     449*     C    MEAN TEMPERATURE CALCULATION
01355     450*       975 DO 976 NDIX=1,NNODE
01360     451*           M=NOUT(NOUTS+NDIX-1)
01361     452*       976 DTN(IDTNS+NDIX-1)=((TAVEG(ITAVS +M-1)+.5*DT*T(ITS+M-1)**4)/
01361     453*          1(THMAX-THETI))**.25
01363     454*           PRINT 709
01365     455*           PRINT 715,NORB
01370     456*           PRINT 716,NDEG
01373     457*           K=NOPS-1
01374     458*           L=IDTNS-1
01375     459*           IF(NDEG.EQ.5H RANK)GO TO 1636
01377     460*           DO 1652 I=1,NNODE
01402     461*           IOUT(I)=NOP(K+I)
01403     462*     1652  FOUT(I)=DTN(L+I)-459.7
01405     463*           IF(NDEG.NE.5H CENT) GO TO 1686
01407     464*           DO 1675 I=1,NNODE
01412     465*      1675 FOUT(I)=5.*(FOUT(I)-32.0)/9.0
01414     466*           GO TO 1686
01415     467*      1636 DO 1639 I=1,NNODE
01420     468*           IOUT(I)=NOP(K+I)
01421     469*      1639 FOUT(I)=DTN(L+I)
01423     470*      1686 PRINT 717,(IOUT(I),FOUT(I),I=1,NNODE)
01432     471*           DO 977 N=1,NNODE
01435     472*       977 TAVEG(ITAVS+N-1)=0.
01437     473*           FACT=.5*DTSVE
01440     474*           IF(NHTD-0)4043,656,4043
01443     475*      4043 PRINT 731
01445     476*           DO 38 I=1,NHTD
01450     477*           N=NHET(NHEATS+I-1)
01451     478*      4076 N=NUM(NUMS+N-1)
01452     479*           DUTY=WATHR(IWATS+I-1)*3.413/(QHEAT(IQHETS +I-1)*(THMAX-THETI))
01453     480*        38 PRINT 732,N,WATHR(IWATS+I-1),DUTY
01461     481*           TOTWT=0.0
01462     482*           DO 37 I=1,NHTD
01465     483*        37 TOTWT=TOTWT+WATHR(IWATS+I-1)
01467     484*           AVEWAT=TOTWT/(THMAX-THETI)
01470     485*           PRINT 733,TOTWT,AVEWAT
01474     486*           DO 978 N=1,NHTD
01477     487*       978 WATHR(IWATS+N-1)=0.
01501     488*           GO TO 656
01501     489*     C     CHECK FOR PUNCH
01502     490*     1051  L=IDTNS-1
01503     491*           KPUN=1
01504     492*           K=NOPS-1
01505     493*           DO 1653 N=1,NNODE
01510     494*           IOUT(N)=NOP(K+N)
01511     495*     1653  FOUT(N)=DTN(L+N)-459.7
01513     496*           PUNCH 707,(IOUT(N),FOUT(N),N=1,NNODE)
01522     497*
01522     498*           CALL PLOT
01523     499*
01523     500*           GO TO 16
01523     501*     C     DERIVATIVE SHIFT
01524     502*      2000 DO 2001 N=1,NMASS
```

```
01527    503*            DTNC(IDTCS+N-1)=DTNB(IDTBS+N-1)
01530    504*            DTNB(IDTBS+N-1)=DTNA(IDTAS+N-1)
01531    505*       2001 DTNA(IDTAS+N-1)=DTN(IDTNS+N-1)
01533  *DIAGNOSTIC*  THE TRANSFER TO 509 IS BAD BECAUSE 509 IS NOT IN THE INNERMOST DO OF A NEST.
01533    506*            GO TO(509,905),NRRET
01534    507*         16 IF(KPUN)1685,1685,1684
01537    508*      1685  GO TO 1051
01540    509*      1684  CONTINUE
01541    510*            RETURN
01542    511*            END

       END OF COMPILATION:          3 DIAGNOSTICS.
```

```
@FOR,US STORIT,STORIT
HSD 11A -12/10/73-11:09:00 (3,4)

   SUBROUTINE STORIT    ENTRY POINT 000054

   STORAGE USED: CODE(1) 000065; DATA(0) 000017; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003    A       003410

   EXTERNAL REFERENCES (BLOCK, NAME)

    0004    NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001    000013 IL        0001    000037 122G      0001    000025 2L        0001    000042 4L        0003 R 000264 DISTOR
    0000 R 000001 DTPLOT     0000    000005 INJP$     0000 I 000000 IPASS     0003 I 003410 IT        0000 I 000002 J
    0003 R 000000 TPLOT
```

```
00101      1*            SUBROUTINE STORIT(T,ND,D)
00103      2*            COMMON/A/TPLOT(180),DISTOR(180,9),IT
00104      3*            DIMENSION D(1)
00105      4*            DATA IPASS/0/DTPLOT/.008333/
00105      5*      C**** DTPLOT IS PLOT TIME INTERVAL IN HOURS, IT IS NUMBER OF PLOT POINTS
00105      6*      C**** T IS INTEGRATION TIME RELATIVE TO START OF ORBIT, ND IS NUMBER OF
00105      7*      C**** DISTORTION PARAMETERS, D IS DISTORTION VALUE, TPLOT IS PLOT TIME
00105      8*      C**** RELATIVE TO START OF ORBIT, DISTOR IS MATRIX OF DISTORTION VALUES
00105      9*      C**** AT PLOT TIMES. AP IS APERTURE OPEN AND CLOSE DATA
00110     10*            IF(IPASS.GT.0)GO TO 1
00112     11*            IPASS=1
00113     12*            IT=1
00114     13*            GO TO 2
00114     14*      C**** DETERMINE TIME TO SAVE DATA FOR PLOT. 30 SECONDS IS DESIRED TIME
00115     15*          1 IF(T.LT.(TPLOT(IT)+DTPLOT))GO TO 4
00117     16*            IT=IT+1
00120     17*          2 TPLOT(IT)=T
00121     18*            DO 3 J=1,ND
00124     19*          3 DISTOR(IT,J)=D(J)
00126     20*      4     CONTINUE
00127     21*            RETURN
00130     22*            END

      END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,US HCOPT,HCOPT
HSD 11A -12/10/73-11:09:03 (3,4)

   SUBROUTINE PLOT      ENTRY POINT 000006

   STORAGE USED: CODE(1) 000010; DATA(0) 000004; BLANK COMMON(2) 000000

   EXTERNAL REFERENCES (BLOCK, NAME)

    0003   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0000   000000 INJP$


00101       1*            SUBROUTINE PLOT
00103       2*            RETURN
00104       3*            END

        END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,US HAOPT,HAOPT
HSD 11A -12/10/73-11:09:05 (3,4)

   SUBROUTINE PLOT       ENTRY POINT 000006

   STORAGE USED: CODE(1) 000010: DATA(5) 000004: BLANK COMMON(2) 000000

   EXTERNAL REFERENCES (BLOCK, NAME)

    0003   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0000   000000 INJP$


00101       1*            SUBROUTINE PLOT
00103       2*            RETURN
00104       3*            END

        END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,US NRLPT,NRLPT
HSD 11A -12/10/73-11:09:08 (3,4)

   SUBROUTINE PLOT       ENTRY POINT 000170

   STORAGE USED: CODE(1) 000175; DATA(0) 000104; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   A       003411
    0004   START   000007
    0005   DELFLX  000174

   EXTERNAL REFERENCES (BLOCK, NAME)

    0006   IDENT
    0007   SETMIV
    0010   RITE2V
    0011   LABLV
    0012   NRLPT
    0013   FRAMEV
    0014   ENDJOB
    0015   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   000031 11SG      0001   000035 13L       0001   000100 130G      0001   000154 30L       0000 R 000000 ADARY
    0005   000150 APC       0005   000124 APO       0003   000264 DISTOR    0000 I 000030 I         0000   000074 INJPS
    0003 I 003410 IT        0000 I 000032 IX        0004   000005 KPLOT     0000 I 000033 L         0004 I 000006 ND
    0000 I 000026 NFRAME    0000 I 000031 NLAST     0005   000004 NOFX      0005   000000 NONFX     0005   000054 QFLX
    0004 I 000000 TINIT     0003 R 000000 TPLOT     0000 R 000027 TZERO     0000 R 000034 ZZZ
```

```
00101      1*          SUBROUTINE PLOT
00103      2*          DIMENSION ADARY(22)
00104      3*          COMMON/A/TPLOT(180),DISTOR(180,9),IT
00105      4*          INTEGER TINIT(5)
00106      5*          COMMON/START/TINIT,KPLOT,ND
00107      6*          COMMON/DELFLX/NONFX(4),NOFX(10,4),QFLX(10,4),APO(5,4),APC(5,4)
00110      7*          DATA NFRAME/0/
00112      8*
00112      9*          CALL IDENT(35,ADARY)
00112     10*     C**** CONVERT TPLOT TIMES INTO ACTUAL TIMES INSTEAD OF RELATIVE
00113     11*          TZERO=TINIT(2)+TINIT(3)/60.+(TINIT(4)+.001*TINIT(5))/3600.
00114     12*          DO 15 I=1,IT
00117     13*       15 TPLOT(I)=TPLOT(I)+TZERO
00121     14*     13   CONTINUE
00122     15*          NFRAME=NFRAME+1
00122     16*     C**** SET MARGINS
00123     17*          CALL SETMIV(130,28,200,100)
```

```
00123     18*      C**** PRINT TITLES THAT DO NOT CHANGE
00124     19*            CALL RITE2V(20,508,616,180,1,6,7,6HINCHES,NLAST)
00125     20*            CALL RITE2V(341,150,683,90,1,19,1,19HTIME(DAYS,HRS)  GMT,NLAST)
00125     21*      C**** PRINT DAY AND HOUR ON TIME SCALE
00126     22*            IX=-136
00127     23*            DO 14 I=1,3
00132     24*            L=TINIT(2)+I-1
00133     25*            IX=IX+306
00134     26*            ZZZ=TINIT(1)
00135     27*            CALL LABLV(ZZZ      ,IX,190,3,1,3)
00136     28*            ZZZ=L
00137     29*         14 CALL LABLV(ZZZ,IX,174,3,1,3)
00141     30*            CALL NRLPT(NFRAME,TZERO)
00142     31*            CALL FRAMEV(2)
00143     32*            IF(NFRAME.EQ.ND)GO TO 30
00145     33*            GO TO 13
00146     34*      30    CONTINUE
00147     35*            CALL ENDJOB
00150     36*            RETURN
00151     37*            END

        END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,US NRLAP,NRLAP
HSD 11A -12/10/73-11:09:11 (3,4)

   SUBROUTINE NRLPT      ENTRY POINT 000622

   STORAGE USED: CODE(1) 000637; DATA(0) 000310; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   A       003411
    0004   START   000007
    0005   DELFLX  000174
    0006   APERTR  000001

   EXTERNAL REFERENCES (BLOCK, NAME)

    0007   RITE2V
    0010   PRINTV
    0011   YAXSTP
    0012   XAXSTP
    0013   GRID1V
    0014   APLOTV
    0015   NERR2$
    0016   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   000211 1L        0001   000570 10L       0001   000107 100L      0001   000134 120L      0001   000100 121G
    0001   000136 140L      0001   000174 160L      0001   000275 2L        0001   000344 3L        0001   000357 4L
    0001   000406 5L        0001   000435 6L        0001   000464 7L        0001   000513 8L        0001   000542 9L
    0005 R 000150 APC       0005 R 000124 APO       0003 R 000264 DISTOR    0000 R 000017 DX        0000 R 000020 DY
    0000 R 000000 FACT      0000 I 000005 I         0000 I 000024 IERR      0000   000266 INJPS     0000 I 000002 ISTRT
    0003 I 003410 IT        0000 I 000003 J         0004   000005 KPLOT     0000 I 000012 L         0000 I 000022 M
    0000 I 000021 N         0006 I 000000 NAP       0004   000006 ND        0000 I 000010 NL        0000 I 000001 NLAST
    0005   000004 NOFX      0005   000000 NONFX     0000 I 000011 NR        0000 I 000023 NX        0000 I 000004 NY
    0005   000054 QFLX      0000 R 000007 STOP      0000 R 000006 STRT      0004 I 000000 TINIT     0003 R 000000 TPLOT
    0000 R 000013 XL        0000 R 000014 XR        0000 R 000015 YB        0000 R 000016 YT
```

```
00101      1*          SUBROUTINE NRLPT(NFRAME,TZERO)
00101      2*     C**** SUBROUTINE TO PLOT SIX CURVES FOR NRLA
00103      3*          COMMON/A/TPLOT(180),DISTOR(180,9),IT
00104      4*          INTEGER TINIT(5)
00105      5*          COMMON/START/TINIT,KPLOT,ND
00106      6*          COMMON/DELFLX/NONFX(4),NOFX(10,4),QFLX(10,4),APO(5,4),APC(5,4)
00107      7*          COMMON /APERTR/ NAP
00110      8*          DATA FACT/301.91/
00110      9*     C**** SET UP MAIN TITLE OF CURVE SET
00112     10*          CALL RITE2V(296,1000,728,90,1,24,1,24HS082A THERMAL DISTORTION,
00112     11*         1NLAST)
```

```
00112      12*      C**** SET UP APERTURE AND SHORT WAVELENGTH LABELS
00113      13*            CALL RITE2V(40,40,178,90,1,7,1,7HINST AP,NLAST)
00114      14*            CALL RITE2V(40,100,178,90,1,7,1,7HSHRT WL,NLAST)
00115      15*            CALL PRINTV(34,'LINE INDICATES OPEN OR IN POSITION',400,10)
00116      16*            CALL YAXSTP(180,20,110)
00116      17*      C**** PLOT APERTURE OPEN LINE.
00117      18*            ISTRT=180+IFIX((TZERO-TINIT(2))*FACT)
00120      19*            DO 160 J=1,NAP
00123      20*            NY=40+(J-1)*60
00124      21*            I=0
00125      22*      100   CONTINUE
00126      23*            I=I+1
00127      24*            IF(APO(I,J).GT.90.00) GO TO 160
00131      25*             STRT=APO(I,J)
00132      26*            IF(APC(I,J).GT.90.00) GO TO 120
00134      27*            STOP=APC(I,J)
00135      28*            GO TO 140
00136      29*      120   CONTINUE
00137      30*            STOP=1.5
00140      31*      140   CONTINUE
00141      32*            NL=ISTRT+IFIX(STRT*FACT)
00142      33*            NR=ISTRT+IFIX(STOP*FACT)
00143      34*            CALL XAXSTP(NL,NY,NR)
00144      35*            IF(I.LT.5) GO TO 100
00146      36*      160   CONTINUE
00146      37*      C**** ESTABLISH GRID FOR BASIC CURVE
00150      38*         16 GO TO(1,2,2,1,2,2),NFRAME
00151      39*      1     CONTINUE
00152      40*            L=2
00153      41*            XL=TINIT(2)
00154      42*            XR=XL+2.667
00155      43*            YB=-.008
00156      44*            YT=+.008
00157      45*            DX=5./60.
00160      46*            DY=0.0002
00161      47*            N=12
00162      48*            M= 5
00163      49*            I=0
00164      50*            J=5
00165      51*            NX=0
00166      52*            NY=4
00167      53*            CALL GRID1V(L,XL,XR,YB,YT,DX,DY,N,M,I,J,NX,NY)
00170      54*            CALL PRINTV(7,7H(LIMIT),60,200)
00171      55*            CALL PRINTV(7,7H(LIMIT),60,920)
00172      56*            GO TO 3
00173      57*      2     CONTINUE
00174      58*            XL=TINIT(2)
00175      59*            XR=XL+2.667
00176      60*            CALL GRID1V(2,XL,XR,-.06,.06,5./60.,.002,12,5,-0.5,0,4)
00177      61*            CALL PRINTV(7,7H(LIMIT),60,270)
00200      62*            CALL PRINTV(7,7H(LIMIT),60,870)
00201      63*            CALL PRINTV(23,'SMEAR LIMIT 0.002/5 MIN',345,138)
00202      64*          3 GO TO(5,7,9,4,6,8),NFRAME
00203      65*          4 CALL RITE2V(188,970,836,90,1,36,1,36HSUN IMAGE ON FILM, FOCUS, RIG
00203      66*           1HT SIDE,NLAST)
00204      67*            CALL RITE2V(458,940,566,90,1,6,1,6HPAGE 1,NLAST)
```

```
00205      68*          GO TO 10
00206      69*        5 CALL RITE2V(197,970,827,90,1,35,1,35HSUN IMAGE ON FILM, FOCUS, LEF
00206      70*         1T SIDE,NLAST)
00207      71*          CALL RITE2V(458,940,566,90,1,6,1,6HPAGE 2,NLAST)
00210      72*          GO TO 10
00211      73*        6 CALL RITE2V(80,970,944,90,1,48,1,48HSUN IMAGE ON FILM, VERTICAL PO
00211      74*         1SITION, RIGHT SIDE,NLAST)
00212      75*          CALL RITE2V(458,940,566,90,1,6,1,6HPAGE 3,NLAST)
00213      76*          GO TO 10
00214      77*        7 CALL RITE2V(89,970,935,90,1,47,1,47HSUN IMAGE ON FILM, VERTICAL PO
00214      78*         1SITION, LEFT SIDE,NLAST)
00215      79*          CALL RITE2V(458,940,566,90,1,6,1,6HPAGE 4,NLAST)
00216      80*          GO TO 10
00217      81*        8 CALL RITE2V(62,970,962,90,1,50,1,50HSUN IMAGE ON FILM, HORIZONTAL
00217      82*         1POSITION, RIGHT SIDE,NLAST)
00220      83*          CALL RITE2V(458,940,566,90,1,6,1,6HPAGE 5,NLAST)
00221      84*          GO TO 10
00222      85*        9 CALL RITE2V(71,970,953,90,1,49,1,49HSUN IMAGE ON FILM, HORIZONTAL
00222      86*         1POSITION, LEFT SIDE,NLAST)
00223      87*          CALL RITE2V(458,940,566,90,1,6,1,6HPAGE 6,NLAST)
00223      88*     C**** PLOT BASIC DISTORTION DATA
00224      89*     10   CONTINUE
00225      90*          CALL APLOTV(IT,TPLOT,DISTOR(1,NFRAME),1,1,1,34,IERR)
00226      91*          RETURN
00227      92*          END

      END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,US NRLAP,NRLBP
HSD 11A -12/10/73-11:09:15 (3,4)

   SUBROUTINE NRLPT      ENTRY POINT 001114

   STORAGE USED: CODE(1) 001125; DATA(2) 000441; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   A       003411
    0004   START   000007
    0005   DELFLX  000174
    0006   APERTR  000001

   EXTERNAL REFERENCES (BLOCK, NAME)

    0007   RITE2V
    0010   PRINTV
    0011   YAXSTP
    0012   XAXSTP
    0013   GRIDIV
    0014   APLOTV
    0015   NERR2$
    0016   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   000237 1L        0001   000122 100L      0001   000147 120L      0001   000113 122G      0001   000151 140L
    0001   000207 160L      0001   000257 2L        0001   000410 20L       0001   000453 21L       0001   000524 22L
    0001   000575 23L       0001   000640 24L       0001   000703 25L       0001   000746 26L       0001   001011 27L
    0001   001040 28L       0001   001066 29L       0001   000277 3L        0001   000317 4L        0001   000345 5L
    0001   000372 6L        0005 R 000150 APC       0005 R 000124 APO       0003 R 000264 DISTOR    0000 R 000000 FACT
    0000 I 000005 I         0000 I 000015 IERR      0000   000427 INJPS     0000 I 000002 ISTRT     0003 I 003410 IT
    0000 I 000003 J         0004   000005 KPLOT     0006 I 000000 NAP       0004   000006 ND        0000 I 000010 NL
    0000 I 000001 NLAST     0005   000004 NOFX      0005   000000 NONFX     0000 I 000011 NR        0000 I 000004 NY
    0000 R 000014 Q         0005   000054 QFLX      0000 R 000007 STOP      0000 R 000006 STRT      0004 I 000000 TINIT
    0003 R 000000 TPLOT     0000 R 000012 XL        0000 R 000013 XR
```

```
00101     1*          SUBROUTINE NRLPT(NFRAME,TZERO)
00101     2*     C**** SUBROUTINE TO PLOT NINE CURVES FOR NRLB
00103     3*          COMMON/A/TPLOT(180),DISTOR(180,9),IT
00104     4*          INTEGER TINIT(5)
00105     5*          COMMON/START/TINIT,KPLOT,ND
00106     6*          COMMON/DELFLX/NONFX(4),NOFX(10,4),QFLX(10,4),APO(5,4),APC(5,4)
00107     7*          COMMON /APERTR/ NAP
00110     8*          DATA FACT/301.91/
00110     9*     C**** SET UP MAIN TITLE OF CURVE SET
00112    10*          CALL RITE2V(296,1000,728,90,1,24,1,24HS082B THERMAL DISTORTION,
00112    11*         INLAST)
```

```
00112      12*      C**** SET UP APERTURE AND SHORT WAVELENGTH LABELS
00113      13*            CALL RITE2V(10,70,128,90,1,7,1,7HINST AP,NLAST)
00114      14*            CALL RITE2V(10,40,110,90,1,6,1,6HXUV AP,NLAST)
00115      15*            CALL RITE2V(10,100,56,90,1,3,1,3HPRS,NLAST)
00116      16*            CALL PRINTV(25,'LINE INDICATES OPEN OR ON',300,40)
00117      17*            CALL YAXSTP(180,10,130)
00117      18*      C**** PLOT APERTURE OPEN LINE.
00120      19*            ISTRT=180+IFIX((TZERO-TINIT(2))*FACT)
00121      20*            DO 160 J=1,NAP
00124      21*            NY=40+(J-1)*30
00125      22*            I=0
00126      23*      100   CONTINUE
00127      24*            I=I+1
00130      25*            IF(APO(I,J).GT.90.00) GO TO 160
00132      26*             STRT=APO(I,J)
00133      27*            IF(APC(I,J).GT.90.00) GO TO 120
00135      28*            STOP=APC(I,J)
00136      29*            GO TO 140
00137      30*      120   CONTINUE
00140      31*            STOP=1.5
00141      32*      140   CONTINUE
00142      33*            NL=ISTRT+IFIX(STRT*FACT)
00143      34*            NR=ISTRT+IFIX(STOP*FACT)
00144      35*            CALL XAXSTP(NL,NY,NR)
00145      36*            IF(I.LT.5) GO TO 100
00147      37*      160   CONTINUE
00147      38*      C**** ESTABLISH GRID FOR BASIC CURVE
00151      39*         16 XL=TINIT(2)
00152      40*            XR=XL+2.667
00153      41*            W=5./60.
00154      42*            GO TO(1,3,2,1,5,4,1,5,4),NFRAME
00155      43*          1 CALL GRID1V(2,XL,XR,-.008,.008,0,.0002,12,5,-0.5,0,4)
00156      44*            GO TO 6
00157      45*          2 CALL GRID1V(2,XL,XR,-.006,.006,0,.0002,12,5,-0.5,0,4)
00160      46*            GO TO 6
00161      47*          3 CALL GRID1V(2,XL,XR,-.003,.003,0,.0001,12,5,-0.10,0,4)
00162      48*            GO TO 6
00163      49*          4 CALL GRID1V(2,XL,XR,-.016,.016,0,.001,12,0,-0.1,0,4)
00164      50*            CALL PRINTV (24,'SMEAR LIMIT 0.010/15 MIN',400,670)
00165      51*            GO TO 6
00166      52*          5 CALL GRID1V(2,XL,XR,-.008,.008,0,.0002,12,5,-0.5,0,4)                    NE*
00167      53*            CALL PRINTV(49,'SMEAR LIMIT 0.001/15 MIN.   LIMIT IS + OR - 0.040'        -01
00167      54*           *    ,350,130)
00170      55*          6 GO TO(20,22,21,24,28,26,23,27,25),NFRAME
00171      56*         20 CALL RITE2V(242,970,782,90,1,30,1,30HSUN IMAGE ON SLIT PLATE, FOCU
00171      57*           1S,NLAST)
00172      58*            CALL RITE2V(458,940,566,90,1,6,1,6HPAGE 1,NLAST)
00173      59*            CALL PRINTV(7,7H(LIMIT),66,345)
00174      60*            CALL PRINTV(7,7H(LIMIT),66,795)
00175      61*            GO TO 29
00176      62*         21 CALL RITE2V(134,970,890,90,1,42,1,42HSUN IMAGE ON SLIT PLATE, VERT
00176      63*           1ICAL POSITION,NLAST)
00177      64*            CALL RITE2V(458,940,566,90,1,6,1,6HPAGE 2,NLAST)
00200      65*            CALL PRINTV(7,7H(LIMIT),66,750)
00201      66*            CALL PRINTV(7,7H(LIMIT),66,390)
00202      67*            CALL PRINTV(23,'SMEAR LIMIT 0.003/5 MIN',400,130)
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00203      68*          GO TO 29
00204      69*       22 CALL RITE2V(125,970,999,90,1,44,1,44HSUN IMAGE ON SLIT PLATE, HORI
00204      70*         1ZONTAL POSITION,NLAST)
00205      71*          CALL RITE2V(458,940,566,90,1,6,1,6HPAGE 3,NLAST)
00206      72*          CALL PRINTV(7,7H(LIMIT),66,690)
00207      73*          CALL PRINTV(7,7H(LIMIT),66,450)
00210      74*          CALL PRINTV(24,'SMEAR LIMIT 0.0005/S MIN',400,130)
00211      75*          GO TO 29
00212      76*       23 CALL RITE2V(179,970,845,90,1,37,1,37HSLIT IMAGE ON FILM, FOCUS, RI
00212      77*         1GHT SIDE,NLAST)
00213      78*          CALL RITE2V(458,940,566,90,1,6,1,6HPAGE 4,NLAST)
00214      79*          CALL PRINTV(7,7H(LIMIT),66,705)
00215      80*          CALL PRINTV(7,7H(LIMIT),66,435)
00216      81*          GO TO 29
00217      82*       24 CALL RITE2V(188,970,836,90,1,36,1,36HSLIT IMAGE ON FILM, FOCUS, LE
00217      83*         1FT SIDE,NLAST)
00220      84*          CALL RITE2V(458,940,566,90,1,6,1,6HPAGE 5,NLAST)
00221      85*          CALL PRINTV(7,7H(LIMIT),66,705)
00222      86*          CALL PRINTV(7,7H(LIMIT),66,435)
00223      87*          GO TO 29
00224      88*       25 CALL RITE2V(80,970,999,90,1,49,1,49HSLIT IMAGE ON FILM, VERTICAL P
00224      89*         1OSITION, RIGHT SIDE,NLAST)
00225      90*          CALL RITE2V(458,940,566,90,1,6,1,6HPAGE 6,NLAST)
00226      91*          CALL PRINTV(7,7H(LIMIT),66,846)
00227      92*          CALL PRINTV(7,7H(LIMIT),66,293)
00230      93*          GO TO 29
00231      94*       26 CALL RITE2V(89,970,999,90,1,48,1,48HSLIT IMAGE ON FILM, VERTICAL P
00231      95*         1OSITION, LEFT SIDE, NLAST)
00232      96*          CALL RITE2V(458,940,566,90,1,6,1,6HPAGE 7,NLAST)
00233      97*          CALL PRINTV(7,7H(LIMIT),66,846)
00234      98*          CALL PRINTV(7,7H(LIMIT),66,293)
00235      99*          GO TO 29
00236     100*       27 CALL RITE2V(53,970,971,90,1,51,1,51HSLIT IMAGE ON FILM, HORIZONTAL
00236     101*         1 POSITION, RIGHT SIDE, NLAST)
00237     102*          CALL RITE2V(458,940,566,90,1,6,1,6HPAGE 8,NLAST)
00240     103*          GO TO 29
00241     104*       28 CALL RITE2V(62,970,999,90,1,50,1,50HSLIT IMAGE ON FILM, HORIZONTAL
00241     105*         1 POSITION, LEFT SIDE,NLAST)
00242     106*          CALL RITE2V(458,940,566,90,1,6,1,6HPAGE 9,NLAST)
00242     107*     C*****PLOT BASIC DISTORTION DATA
00243     108*     29   CONTINUE
00244     109*          CALL APLOTV(IT,TPLOT,DISTOR(1,NFRAME),1,1,1,34,IERR)
00245     110*          RETURN
00246     111*          END

      END OF COMPILATION:        NO  DIAGNOSTICS.


@PREP
FURPUR 24HI-12/10-11:09


@PRT,T
```

1HNTSV140006*TPF$ ELEMENT TABLE

D	NAME	VERSION	TYPE	DATE	TIME	SEQ #	SIZE-PRE,	TEXT	(CYCLE	WORD)	PSRMODE	LOCATION
*	ATMSKY		FOR SYMB	15 AUG 73	23:20:57	1		53	5	4	5	1792
*	ATMSKY		RELOCATABLE	15 AUG 73	23:21:00	2	2	35				1845
*	ITREAD		FOR SYMB	15 AUG 73	23:21:01	3		16	5	4	5	1882
*	ITREAD		RELOCATABLE	15 AUG 73	23:21:03	4	2	10				1898
*	ATMGET		FOR SYMB	15 AUG 73	23:21:05	5		11	5	4	5	1910
*	ATMGET		RELOCATABLE	15 AUG 73	23:21:07	6	1	8				1921
*	ATMSET		FOR SYMB	15 AUG 73	23:21:08	7		18	5	4	5	1930
*	ATMSET		RELOCATABLE	15 AUG 73	23:21:10	8	2	16				1948
*	SWAP		ASM SYMB	15 AUG 73	23:21:13	9		2	5	4	5	1966
*	SWAP		RELOCATABLE	15 AUG 73	23:21:13	10	1	1				1968
*	DSTR		FOR SYMB	15 AUG 73	23:21:15	11		5	5	10	5	1970
*	DSTR		RELOCATABLE	15 AUG 73	23:21:16	12	2	2				1975
*	SKIPID		FOR SYMB	15 AUG 73	23:21:18	13		9	5	18	5	1979
*	SKIPID		RELOCATABLE	15 AUG 73	23:21:19	14	2	5				1988
*	READID		FOR SYMB	15 AUG 73	23:21:21	15		6	5	7	5	1995
*	READID		RELOCATABLE	15 AUG 73	23:21:22	16	2	2				2001
*	IDREC		FOR SYMB	15 AUG 73	23:21:24	17		36	5	15	5	2005
*	IDREC		RELOCATABLE	15 AUG 73	23:21:27	18	2	28				2041
*	RDATM		FOR SYMB	15 AUG 73	23:21:28	19		15	5	15	5	2071
*	RDATM		RELOCATABLE	15 AUG 73	23:21:30	20	2	9				2086
*	REDIP		FOR SYMB	15 AUG 73	23:21:31	21		19	5	16	5	2097
*	REDIP		RELOCATABLE	15 AUG 73	23:21:32	22	2	12				2116
*	AWAIT		ASM SYMB	15 AUG 73	23:21:34	23		2	5	5	5	2130
*	AWAIT		RELOCATABLE	15 AUG 73	23:21:36	24	1	1				2132
*	REDNOM		FOR SYMB	15 AUG 73	23:21:37	25		6	5	9	5	2134
*	REDNOM		RELOCATABLE	15 AUG 73	23:21:39	26	2	4				2140
*	SMOOTH		FOR SYMB	15 AUG 73	23:21:40	27		14	5	6	5	2146
*	SMOOTH		RELOCATABLE	15 AUG 73	23:21:42	28	1	12				2160
*	TIMAD		FOR SYMB	15 AUG 73	23:21:43	29		4	5	17	5	2173
*	TIMAD		RELOCATABLE	15 AUG 73	23:21:44	30	1	3				2177
*	TIMSB		FOR SYMB	15 AUG 73	23:21:45	31		3	5	17	5	2181
*	TIMSB		RELOCATABLE	15 AUG 73	23:21:46	32	1	4				2184
*	APTR		FOR SYMB	15 AUG 73	23:21:48	33		26	5	19	5	2189
*	APTR		RELOCATABLE	15 AUG 73	23:21:51	34	2	18				2215
*	HCSEL		FOR SYMB	15 AUG 73	23:21:53	35		96	5	19	5	2235
*	HCSEL		RELOCATABLE	15 AUG 73	23:21:57	36	3	82				2331
*	HCTMP		FOR SYMB	15 AUG 73	23:22:00	37		52	5	19	5	2416
*	HCTMP		RELOCATABLE	15 AUG 73	23:22:02	38	2	30				2468
*	HCIAP		FOR SYMB	15 AUG 73	23:22:03	39		8	5	18	5	2500
*	HCIAP		RELOCATABLE	15 AUG 73	23:22:04	40	2	3				2508
*	HCDST		FOR SYMB	15 AUG 73	23:22:07	41		60	5	17	5	2513
*	HCDST		RELOCATABLE	15 AUG 73	23:22:08	42	1	29				2573
*	HASEL		FOR SYMB	15 AUG 73	23:22:11	43		95	5	20	5	2603
*	HASEL		RELOCATABLE	15 AUG 73	23:22:15	44	3	82				2698
*	HATMP		FOR SYMB	15 AUG 73	23:22:16	45		47	5	20	5	2783
*	HATMP		RELOCATABLE	15 AUG 73	23:22:19	46	2	25				2830
*	HAIAP		FOR SYMB	15 AUG 73	23:22:20	47		9	5	18	5	2857
*	HAIAP		RELOCATABLE	15 AUG 73	23:22:21	48	2	3				2866
*	HADST		FOR SYMB	15 AUG 73	23:22:28	49		307	5	18	5	2871
*	HADST		RELOCATABLE	15 AUG 73	23:22:32	50	1	124				3178
*	NBSEL		FOR SYMB	15 AUG 73	23:22:34	51		99	5	19	5	3303
*	NBSEL		RELOCATABLE	15 AUG 73	23:22:39	52	3	86				3402
*	NBTMP		FOR SYMB	15 AUG 73	23:22:41	53		86	5	19	5	3491

•	NBTMP	RELOCATABLE	15 AUG 73	23:22:44	54	2	50				3577
•	NBIAP	FOR SYMB	15 AUG 73	23:22:46	55		21	5	18	5	3629
•	NBIAP	RELOCATABLE	15 AUG 73	23:22:48	56	2	11				3650
•	NBDST	FOR SYMB	15 AUG 73	23:22:51	57		130	5	17	5	3663
•	NBDST	RELOCATABLE	15 AUG 73	23:22:53	58	2	55				3793
•	NASEL	FOR SYMB	15 AUG 73	23:22:56	59		96	5	19	5	3850
•	NASEL	RELOCATABLE	15 AUG 73	23:23:00	60	3	63				3946
•	NATMP	FOR SYMB	15 AUG 73	23:23:02	61		55	5	19	5	4032
•	NATMP	RELOCATABLE	15 AUG 73	23:23:04	62	2	31				4087
•	NAIAP	FOR SYMB	15 AUG 73	23:23:06	63		19	5	18	5	4120
•	NAIAP	RELOCATABLE	15 AUG 73	23:23:07	64	2	9				4139
•	NADST	FOR SYMB	15 AUG 73	23:23:10	65		64	5	17	5	4150
•	NADST	RELOCATABLE	15 AUG 73	23:23:12	66	2	32				4214
•	DTRAN	FOR SYMB	15 AUG 73	23:23:13	67		25	5	16	5	4246
•	DTRAN	RELOCATABLE	15 AUG 73	23:23:15	68	3	7				4273
•	DRDNOD	FOR SYMB	15 AUG 73	23:23:17	69		85	5	16	5	4283
•	DRDNOD	RELOCATABLE	15 AUG 73	23:23:21	70	2	69				4368
•	DRDBC	FOR SYMB	15 AUG 73	23:23:23	71		80	5	16	5	4439
•	DRDBC	RELOCATABLE	15 AUG 73	23:23:28	72	3	70				4519
•	DRDFLX	FOR SYMB	15 AUG 73	23:23:30	73		67	5	17	5	4592
•	DRDFLX	RELOCATABLE	15 AUG 73	23:23:34	74	3	57				4659
•	DCMPT	FOR SYMB	15 AUG 73	23:23:37	75		115	5	16	5	4719
•	DCMPT	RELOCATABLE	15 AUG 73	23:23:44	76	3	113				4834
•	STORIT	FOR SYMB	15 AUG 73	23:23:45	77		6	5	3	4	4950
•	STORIT	RELOCATABLE	15 AUG 73	23:23:46	78	1	4				4956
•	HCOPT	FOR SYMB	15 AUG 73	23:23:48	79		1	5	3	4	4961
•	HCOPT	RELOCATABLE	15 AUG 73	23:23:49	80	1	1				4962
•	HAOPT	FOR SYMB	15 AUG 73	23:23:50	81		1	5	3	4	4964
•	HAOPT	RELOCATABLE	15 AUG 73	23:23:51	82	1	1				4965
•	NRLPT	FOR SYMB	15 AUG 73	23:23:52	83		9	5	3	4	4967
•	NRLPT	RELOCATABLE	15 AUG 73	23:23:54	84	2	9				4976
•	NRLAP	FOR SYMB	15 AUG 73	23:23:55	85		23	5	3	4	4987
•	NRLAP	RELOCATABLE	15 AUG 73	23:23:58	86	2	33				5010
•	NRLBP	FOR SYMB	15 AUG 73	23:24:00	87		35	5	3	4	5045
•	NRLBP	RELOCATABLE	15 AUG 73	23:24:02	88	2	50				5080
	SHCO	MAP SYMB	15 AUG 73	23:24:06	89		2	5	0	1	5132
	AHCO	ABSOLUTE	15 AUG 73	23:24:29	90		745				5134
	SHAO	MAP SYMB	15 AUG 73	23:24:30	91		2	5	0	1	5879
	AHAO	ABSOLUTE	15 AUG 73	23:24:53	92		816				5881
	SNRLB	MAP SYMB	15 AUG 73	23:24:54	93		2	5	0	1	6697
	ANRLB	ABSOLUTE	15 AUG 73	23:25:23	94		1122				6699
	SNRLA	MAP SYMB	15 AUG 73	23:25:24	95		2	5	0	1	7821
	ANRLA	ABSOLUTE	15 AUG 73	23:25:52	96		1079				7823
	ATMSKY	FOR SYMB	10 DEC 73	11:03:32	97		53	5	5	5	8902
	ATMSKY	RELOCATABLE	10 DEC 73	11:03:36	98	2	35				8955
	ITREAD	FOR SYMB	10 DEC 73	11:03:43	99		16	5	5	5	8992
	ITREAD	RELOCATABLE	10 DEC 73	11:03:46	100	2	10				9008
	ATMGET	FOR SYMB	10 DEC 73	11:03:55	101		11	5	5	5	9020
	ATMGET	RELOCATABLE	10 DEC 73	11:03:58	102	1	8				9031
	ATMSET	FOR SYMB	10 DEC 73	11:04:07	103		18	5	5	5	9040
	ATMSET	RELOCATABLE	10 DEC 73	11:04:11	104	2	16				9058
	SWAP	ASM SYMB	10 DEC 73	11:04:21	105		2	5	5	5	9076
	SWAP	RELOCATABLE	10 DEC 73	11:04:22	106	1	1				9078
	DSTR	FOR SYMB	10 DEC 73	11:04:43	107		5	5	11	5	9080
	DSTR	RELOCATABLE	10 DEC 73	11:04:48	108	2	2				9085
	SKIPID	FOR SYMB	10 DEC 73	11:04:56	109		9	5	19	5	9089

SKIPID	RELOCATABLE	10 DEC 73	11:04:58	110	2	5				9098
READID	FOR SYMB	10 DEC 73	11:05:04	111		6	5	8	5	9105
READID	RELOCATABLE	10 DEC 73	11:05:07	112	2	2				9111
IDREC	FOR SYMB	10 DEC 73	11:05:21	113		36	5	16	5	9115
IDREC	RELOCATABLE	10 DEC 73	11:05:27	114	2	28				9151
RDATM	FOR SYMB	10 DEC 73	11:05:29	115		15	5	16	5	9181
RDATM	RELOCATABLE	10 DEC 73	11:05:33	116	2	9				9196
REDIP	FOR SYMB	10 DEC 73	11:05:45	117		19	5	17	5	9207
REDIP	RELOCATABLE	10 DEC 73	11:05:47	118	2	12				9226
AWAIT	ASM SYMB	10 DEC 73	11:05:57	119		2	5	6	5	9240
AWAIT	RELOCATABLE	10 DEC 73	11:05:58	120	1	1				9242
REDNOM	FOR SYMB	10 DEC 73	11:06:07	121		6	5	10	5	9244
REDNOM	RELOCATABLE	10 DEC 73	11:06:10	122	2	4				9250
SMOOTH	FOR SYMB	10 DEC 73	11:06:25	123		14	5	7	5	9256
SMOOTH	RELOCATABLE	10 DEC 73	11:06:28	124	1	12				9270
TIMAD	FOR SYMB	10 DEC 73	11:06:28	125		4	5	18	5	9283
TIMAD	RELOCATABLE	10 DEC 73	11:06:30	126	1	3				9287
TIMSB	FOR SYMB	10 DEC 73	11:06:32	127		3	5	18	5	9291
TIMSB	RELOCATABLE	10 DEC 73	11:06:33	128	1	4				9294
APTR	FOR SYMB	10 DEC 73	11:06:35	129		26	5	20	5	9299
APTR	RELOCATABLE	10 DEC 73	11:06:38	130	2	18				9325
HCSEL	FOR SYMB	10 DEC 73	11:06:41	131		95	5	20	5	9345
HCSEL	RELOCATABLE	10 DEC 73	11:06:47	132	3	82				9440
HCTMP	FOR SYMB	10 DEC 73	11:06:49	133		52	5	20	5	9525
HCTMP	RELOCATABLE	10 DEC 73	11:06:52	134	2	30				9577
HCIAP	FOR SYMB	10 DEC 73	11:06:53	135		8	5	19	5	9609
HCIAP	RELOCATABLE	10 DEC 73	11:06:55	136	2	3				9617
HASEL	FOR SYMB	10 DEC 73	11:06:57	137		95	5	21	5	9622
HASEL	RELOCATABLE	10 DEC 73	11:07:03	138	3	82				9717
HCDST	FOR SYMB	10 DEC 73	11:07:05	139		60	5	18	5	9802
HCDST	RELOCATABLE	10 DEC 73	11:07:07	140	1	29				9862
HATMP	FOR SYMB	10 DEC 73	11:07:09	141		47	5	21	5	9892
HATMP	RELOCATABLE	10 DEC 73	11:07:13	142	2	25				9939
HAIAP	FOR SYMB	10 DEC 73	11:07:14	143		9	5	19	5	9966
HAIAP	RELOCATABLE	10 DEC 73	11:07:16	144	2	3				9975
HADST	FOR SYMB	10 DEC 73	11:07:24	145		307	5	19	5	9980
HADST	RELOCATABLE	10 DEC 73	11:07:30	146	1	124				10287
NBSEL	FOR SYMB	10 DEC 73	11:07:33	147		98	5	20	5	10412
NBSEL	RELOCATABLE	10 DEC 73	11:07:39	148	3	86				10510
NBTMP	FOR SYMB	10 DEC 73	11:07:43	149		86	5	20	5	10599
NBTMP	RELOCATABLE	10 DEC 73	11:07:47	150	2	50				10685
NBIAP	FOR SYMB	10 DEC 73	11:07:49	151		21	5	19	5	10737
NBIAP	RELOCATABLE	10 DEC 73	11:07:52	152	2	11				10758
NBDST	FOR SYMB	10 DEC 73	11:07:55	153		130	5	18	5	10771
NBDST	RELOCATABLE	10 DEC 73	11:07:58	154	2	55				10901
NASEL	FOR SYMB	10 DEC 73	11:08:01	155		95	5	20	5	10958
NASEL	RELOCATABLE	10 DEC 73	11:08:06	156	3	63				11053
NATMP	FOR SYMB	10 DEC 73	11:08:08	157		55	5	20	5	11139
NATMP	RELOCATABLE	10 DEC 73	11:08:12	158	2	31				11194
NAIAP	FOR SYMB	10 DEC 73	11:08:13	159		19	5	19	5	11227
NAIAP	RELOCATABLE	10 DEC 73	11:08:15	160	2	9				11246
NADST	FOR SYMB	10 DEC 73	11:08:17	161		64	5	18	5	11257
NADST	RELOCATABLE	10 DEC 73	11:08:19	162	2	32				11321
DTRAN	FOR SYMB	10 DEC 73	11:08:21	163		25	5	17	5	11355
DTRAN	RELOCATABLE	10 DEC 73	11:08:23	164	3	7				11380
DRDNOD	FOR SYMB	10 DEC 73	11:08:25	165		85	5	17	5	11390

DRDNOD	RELOCATABLE	10 DEC 73	11:08:31	166	2	69				11475
DRDBC	FOR SYMB	10 DEC 73	11:08:33	167		80	5	17	5	11546
DRDBC	RELOCATABLE	10 DEC 73	11:08:39	168	3	70				11626
DRDFLX	FOR SYMB	10 DEC 73	11:08:42	169		67	5	18	5	11699
DRDFLX	RELOCATABLE	10 DEC 73	11:08:47	170	3	57				11766
DCMPT	FOR SYMB	10 DEC 73	11:08:51	171		115	5	17	5	11826
DCMPT	RELOCATABLE	10 DEC 73	11:08:59	172	3	113				11941
STORIT	FOR SYMB	10 DEC 73	11:09:00	173		6	5	4	5	12057
STORIT	RELOCATABLE	10 DEC 73	11:09:02	174	1	4				12063
HCOPT	FOR SYMB	10 DEC 73	11:09:03	175		1	5	4	5	12068
HCOPT	RELOCATABLE	10 DEC 73	11:09:05	176	1	1				12069
HAOPT	FOR SYMB	10 DEC 73	11:09:06	177		1	5	4	5	12071
HAOPT	RELOCATABLE	10 DEC 73	11:09:07	178	1	1				12072
NRLPT	FOR SYMB	10 DEC 73	11:09:09	179		9	5	4	5	12074
NRLPT	RELOCATABLE	10 DEC 73	11:09:11	180	2	9				12083
NRLAP	FOR SYMB	10 DEC 73	11:09:12	181		23	5	4	5	12094
NRLAP	RELOCATABLE	10 DEC 73	11:09:15	182	2	33				12117
NRLBP	FOR SYMB	10 DEC 73	11:09:16	183		36	5	4	5	12152
NRLBP	RELOCATABLE	10 DEC 73	11:09:22	184	2	50				12188

NEXT AVAILABLE LOCATION- 12240

ASSEMBLER PROCEDURE TABLE EMPTY

COBOL PROCEDURE TABLE EMPTY

FORTRAN PROCEDURE TABLE EMPTY

ENTRY POINT TABLE

D NAME	LINK	D NAME	LINK	D NAME	LINK	D NAME	LINK	D NAME	LINK
APTR	130	AWAIT	120	COMPUT	172	DSTRT	162	DSTRT	154
DSTRT	146	DSTRT	140	FORMAINS	108	GETATM	102	IAPSTS	160
IAPSTS	152	IAPSTS	144	IAPSTS	136	IDREC	114	NRLPT	184
NRLPT	182	PLOT	180	PLOT	178	PLOT	176	RDATM	116
RDBC	168	RDFLX	170	RDNOD	166	READID	112	READIT	100
REDIP	118	REDNOM	122	SELECT	132	SELECT	148	SELECT	138
SELECT	156	SETATM	104	SKIPID	110	SKYATM	98	SMOOTH	124
STORIT	174	SWAP	106	TIMAD	126	TIMSB	128	TMPTBL	142
TMPTBL	134	TMPTBL	150	TMPTBL	158	TRAN	164		

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@MAP,IS SHCO,AHCO
MAP 23H1-12/10-11:09 -(,3)

    1.        LIB SYS$*MSFC$.

    2.        SEG LINK1

    3.        IN DSTR

    4.        IN NBFD6$

    5.        SEG LINK2A*,(LINK1)

    6.        IN REDNOM,HCSEL,HCTMP,HCIAP

    7.        SEG LINK2B*,(LINK1)

    8.        IN DTRAN,HCDST,HCOPT


ADDRESS LIMITS     001000 024730      040000 153700
SEGMENT LOAD TABLE                    040000 040013
INDIRECT LOAD TABLE                   040014 040172
STARTING ADDRESS  011041

WORDS DECIMAL      10201 IBANK        38849 DBANK


              SEGMENT LINK1           001000 011063      040173 050171

NBFOD$/FOR                                          2    040173 042374
NBDCV$/FOR64                 1    001000 001125       2    042375 042437
NETV$/FOR                    1    001126 001150
NCNVT$/FOR68                 1    001151 001372       2    042440 042534
NRBLK$/MSFC68                1    001373 001456       0    042535 042536
NFTCH$/FOR68                 1    001457 001740       2    042537 042552
NWEF$/MSFC68                 1    001741 002163       2    042553 042572
NCLOS$/MSFC68                1    002164 002346       2    042573 042623
NSWTC$/MSFC68                1    002347 002373
NBSBL$/FOR68                 1    002374 002434
NUPDA$/FOR69                 1    002435 002470
NWBLK$/MSFC68                1    002471 002647       0    042624 042625
NININ$/MSFC68                1    002650 003040       2    042626 042631
NINPT$/MSFC68                1    003041 003731       2    042632 042655
NFCHK$/MSFC68                1    003732 004730       2    042656 043043
                                                     4    043044 043115
NIOER$/MSFC68                1    004731 005130       2    043116 043270
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NOUTS/MSFC68                1   005131 006144        2   043271 043323
NFMTS/FOR68                 1   006145 007022        2   043324 043400
NTABS/MSFC68                                         2   043401 043467
ERUS/MSFC68
NRWNDS/MSFC68               1   007023 007105        2   043470 043501
UOMSYS (COMMON BLOCK)                                    043502 043516
HSMONITOR/MSFC68            1   007106 007751        2   043517 044152
                                                     4   UOMSYS
NIBUFS/FOR68                1   007752 010011        2   044153 044153
NIERS/MSFC68                1   010012 010166        2   044154 044271
NOSYMS/FOR68                1   010167 010402        2   044272 044275
NERRS/FOR68                 1   010403 010771        2   044276 044455
IOLS/64                     1   010772 011040
DELFLX (COMMON BLOCK)                                    044456 044651
DELFX (COMMON BLOCK)                                     044652 045045
UNITS (COMMON BLOCK)                                     045046 045052
BLANKSCOMMON (COMMON BLOCK)
DSTR                        1   011041 011063        0   045053 045053
                            3   UNITS                2   BLANKSCOMMON
                                                     4   DELFX
NBFO6S/FOR                                           2   045054 050171


          SEGMENT LINK2A*         011064 024730          050172 122773
          FOLLOWS SEGMENT LINK1

WRTRED/CSC                  1   011064 012230        0   050172 050330
NCBDS/MSFC                  1   012231 012314        2   050331 050341
NOTINS/MSFC68               1   012315 012614        2   050342 050345
TWAIT                       1   012615 012622
OPEN/CSC                    1   012623 013401        0   050346 054341
NOBUFS/FOR68                1   013402 013442
NTRANS/MSFC68               1   013443 014703        2   054342 055025
SKIPID                      1   014704 015005        0   055026 055036
                            3   ATMCOM               2   BLANKSCOMMON
                                                     4   MIDATM
SWAP                                                 0   055037 055045
ITREAD                      1   015006 015247        0   055046 060474
                            3   ATMRED               2   BLANKSCOMMON
TIMSB                       1   015250 015330        0   060475 060520
                                                     2   BLANKSCOMMON
REDIP                       1   015331 015576        0   060521 064525
                            3   FIXED                2   BLANKSCOMMON
ATMGET                      1   015577 016014        0   064526 064541
                            3   ATMCOM               2   BLANKSCOMMON
                                                     4   MIDATM
AWAIT                       1   016015 016017
ATMSET                      1   016020 016407        0   064542 064644
                            3   ATMCOM               2   BLANKSCOMMON
                                                     4   MIDATM
ATMRED (COMMON BLOCK)                                    064645 070251
ATMSKY                      1   016410 017550        0   070252 070333
                            3   ATMCOM               2   BLANKSCOMMON
                                                     4   ATMRED
SMOOTH                      1   017551 020046        0   070334 070412
                                                     2   BLANKSCOMMON
```

TIMAD	1	020047 020107	0	070413 070417	
			2	BLANK$COMMON	
APTR	1	020110 020545	0	070420 070532	
	3	ATMCOM	2	BLANK$COMMON	
	5	APERTR	4	MIDATM	
RDATM	1	020546 020703	0	070533 070635	
	3	ATMCOM	2	BLANK$COMMON	
	5	FIXED	4	MIDATM	
FIXED (COMMON BLOCK)				070636 070640	
IDREC	1	020704 021452	0	070641 076753	
	3	ATMCOM	2	BLANK$COMMON	
	5	FIXED	4	MIDATM	
READID	1	021453 021507	0	076754 076757	
	3	ATMCOM	2	BLANK$COMMON	
			4	MIDATM	
START (COMMON BLOCK)				076760 076766	
MIDATM (COMMON BLOCK)				076767 103724	
ATMCOM (COMMON BLOCK)				103725 114603	
APERTR (COMMON BLOCK)				114604 114604	
REDNOM	1	021510 021557	0	114605 114647	
	3	UNITS	2	BLANK$COMMON	
HCSEL	1	021560 024151	0	114650 122444	
	3	DELFLX	2	BLANK$COMMON	
	5	MIDATM	4	ATMCOM	
	7	START	6	UNITS	
HCTMP	1	024152 024667	0	122445 122763	
	3	ATMCOM	2	BLANK$COMMON	
	5	APERTR	4	MIDATM	
HCIAP	1	024670 024730	0	122764 122773	
	3	APERTR	2	BLANK$COMMON	
	5	MIDATM	4	ATMCOM	

SEGMENT LINK2B* 011064 024573 050172 153700
FOLLOWS SEGMENT LINK1

NEXP6$/FOR68	1	011064 011260	2	050172 050243	
NFINP$/MSFC68	1	011261 011706	2	050244 050327	
NFOUT$/MSFC68	1	011707 012325	2	050330 050351	
DCMPT	1	012326 016146	0	050352 051462	
	3	UNIT	2	BLANK$COMMON	
	5	BLK1	4	TDATA	
	7	BLK3	6	BLK2	
			8	DELFLX	
DRDFLX	1	016147 017763	0	051463 051734	
	3	UNIT	2	BLANK$COMMON	
	5	BLK1	4	TDATA	
	7	BLK3	6	BLK2	
DRDBC	1	017764 022264	0	051735 052073	
	3	UNIT	2	BLANK$COMMON	
	5	BLK1	4	TDATA	
	7	BLK3	6	BLK2	
DRDNOD	1	022265 024351	0	052074 052475	
	3	UNIT	2	BLANK$COMMON	
	5	BLK1	4	TDATA	
	7	BLK3	6	BLK2	

```
BLK3 (COMMON BLOCK)                                   052476 052510
BLK2 (COMMON BLOCK)                                   052511 053323
BLK1 (COMMON BLOCK)                                   053324 054170
TDATA (COMMON BLOCK)                                  054171 152570
UNIT (COMMON BLOCK)                                   152571 152575
DTRAN                  1   024352 024451      0      152576 152637
                       3   UNIT               2      BLANK$COMMON
                       5   BLK1               4      TDATA
                       7   BLK3               6      BLK2
HCDST                  1   024452 024563      0      152640 153674
                                              2      BLANK$COMMON
HCOPT                  1   024564 024573      0      153675 153700
                                              2      BLANK$COMMON
```

```
IBANK SEGMENTS DRAWN TO SCALE:   200 WORDS DECIMAL PER DASH

LINK1 (4148)
--------------------
                     LINK2A* (6053)
                     ----------------------------
                     LINK2B* (5960)
                     ----------------------------


DBANK SEGMENTS DRAWN TO SCALE:   600 WORDS DECIMAL PER DASH

LINK1 (4095)
-------
       LINK2A* (21890)
       ---------------------------------
       LINK2B* (34631)
       -------------------------------------------------------

SYS$*RLIB$, LEVEL M68-2E
END OF COLLECTION - TIME 4.415 SECONDS
```

```
@MAP,IS SHAO,AHAO
MAP 23H1-12/10-11:09 -(,0)

    1.      LIB SYS$*MSFC$.

    2.      SEG LINK1

    3.      IN DSTR

    4.      IN NBFO6$

    5.      SEG LINK2A*,(LINK1)

    6.      IN REDNOM,HASEL,HATMP,HAIAP

    7.      SEG LINK2B*,(LINK1)

    8.      IN DTRAN,HADST,HAOPT


ADDRESS LIMITS     001000 024731      040000 157670
SEGMENT LOAD TABLE                    040000 040013
INDIRECT LOAD TABLE                   040014 040172
STARTING ADDRESS  011041

WORDS DECIMAL       10178 IBANK        40889 DBANK


            SEGMENT LINK1           001000 011063      040173 050171

NBFOOS/FOR                                        2    040173 042374
NBDCVS/FOR64              1    001000 001125        2    042375 042437
NFTVS/FOR                 1    001126 001150
NCNVTS/FOR68              1    001151 001372        2    042440 042534
NRBLKS/MSFC68             1    001373 001456        0    042535 042536
NFTCHS/FOR68              1    001457 001740        2    042537 042552
NWEFS/MSFC68              1    001741 002163        2    042553 042572
NCLOSS/MSFC68             1    002164 002346        2    042573 042623
NSWTCS/MSFC68             1    002347 002373
NBSBLS/FOR68              1    002374 002434
NUPDAS/FOR68              1    002435 002470
NWBLKS/MSFC68             1    002471 002647        0    042624 042625
NININS/MSFC68             1    002650 003040        2    042626 042631
NINPTS/MSFC68             1    003041 003731        2    042632 042655
NFCHKS/MSFC68             1    003732 004730        2    042656 043043
                                                     4    043044 043115
NIOERS/MSFC68             1    004731 005130        2    043116 043270
```

```
NOUTS/MSFC68                1   005131 006144        2   043271 043323
NFMTS/FOR68                 1   006145 007022        2   043324 043400
NTABS/MSFC68                                         2   043401 043467
ERUS/MSFC68
NRWNDS/MSFC68               1   007023 007105        2   043470 043501
UOMSYS (COMMON BLOCK)                                    043502 043516
HSMONITOR/MSFC68            1   007106 007751        2   043517 044152
                                                     4   UOMSYS
NIBUFS/FOR68                1   007752 010011        2   044153 044153
NIERS/MSFC68                1   010012 010166        2   044154 044271
NOSYMS/FOR68                1   010167 010432        2   044272 044275
NERRS/FOR68                 1   010433 010771        2   044276 044455
IDLS/64                     1   010772 011040
DELFLX (COMMON BLOCK)                                    044456 044651
DELFX (COMMON BLOCK)                                     044652 045045
UNITS (COMMON BLOCK)                                     045046 045052
BLANKSCOMMON (COMMON BLOCK)
DSTR                        1   011041 011063        0   045053 045053
                            3   UNITS                2   BLANKSCOMMON
                                                     4   DELFX
NBFO6S/FOR                                           2   045054 050171

            SEGMENT LINK2A*         011064 024701        050172 122636
            FOLLOWS SEGMENT LINK1

WRTRED/CSC                  1   011064 012230        0   050172 050330
NCBDS/MSFC                  1   012231 012314        2   050331 050341
NOTINS/MSFC68               1   012315 012614        2   050342 050345
TWAIT                       1   012615 012622
OPEN/CSC                    1   012623 013401        0   050346 054341
NOBUFS/FOR68                1   013402 013442
NTRANS/MSFC68               1   013443 014703        2   054342 055025
SKIPID                      1   014704 015005        0   055026 055036
                            3   ATMCOM               2   BLANKSCOMMON
                                                     4   MIDATM
SWAP                                                 0   055037 055045
ITREAD                      1   015006 015247        0   055046 060474
                            3   ATMRED               2   BLANKSCOMMON
TIMSB                       1   015250 015330        0   060475 060520
                                                     2   BLANKSCOMMON
REDIP                       1   015331 015576        0   060521 064525
                            3   FIXED                2   BLANKSCOMMON
ATMGET                      1   015577 016014        0   064526 064541
                            3   ATMCOM               2   BLANKSCOMMON
                                                     4   MIDATM
AWAIT                       1   016015 016017
ATMSET                      1   016020 016407        0   064542 064644
                            3   ATMCOM               2   BLANKSCOMMON
                                                     4   MIDATM
ATMRED (COMMON BLOCK)                                    064645 070251
ATMSKY                      1   016410 017550        0   070252 070333
                            3   ATMCOM               2   BLANKSCOMMON
                                                     4   ATMRED
SMOOTH                      1   017551 020046        0   070334 070412
                                                     2   BLANKSCOMMON
```

TIMAD	1	020047 020167	0	070413 070417
			2	BLANKSCOMMON
APTR	1	020110 020545	0	070420 070532
	3	ATMCOM	2	BLANKSCOMMON
	5	APERTR	4	MIDATM
RDATM	1	020546 020703	0	070533 070635
	3	ATMCOM	2	BLANKSCOMMON
	5	FIXED	4	MIDATM
FIXED (COMMON BLOCK)				070636 070640
IDREC	1	020704 021452	0	070641 076753
	3	ATMCOM	2	BLANKSCOMMON
	5	FIXED	4	MIDATM
READID	1	021453 021507	0	076754 076757
	3	ATMCOM	2	BLANKSCOMMON
			4	MIDATM
START (COMMON BLOCK)				076760 076766
APERTR (COMMON BLOCK)				076767 076767
MIDATM (COMMON BLOCK)				076770 103725
ATMCOM (COMMON BLOCK)				103726 114604
BEDNOM	1	021510 021557	0	114605 114647
	3	UNITS	2	BLANKSCOMMON
HASEL	1	021560 024151	0	114650 122345
	3	DELFLX	2	BLANKSCOMMON
	5	MIDATM	4	ATMCOM
	7	START	6	UNITS
HATMP	1	024152 024632	0	122346 122625
	3	ATMCOM	2	BLANKSCOMMON
	5	APERTR	4	MIDATM
HAIAP	1	024633 024701	0	122626 122636
	3	ATMCOM	2	BLANKSCOMMON
			4	MIDATM

SEGMENT LINK2B* 011064 024700 050172 157670
FOLLOWS SEGMENT LINK1

NEXP6S/FOR68	1	011064 011260	2	050172 050243
NFINPS/MSFC68	1	011261 011706	2	050244 050327
NFOUTS/MSFC68	1	011707 012325	2	050330 050351
DCMPT	1	012326 016146	0	050352 051462
	3	UNIT	2	BLANKSCOMMON
	5	BLK1	4	TDATA
	7	BLK3	6	BLK2
			8	DELFLX
DRDFLX	1	016147 017763	0	051463 051734
	3	UNIT	2	BLANKSCOMMON
	5	BLK1	4	TDATA
	7	BLK3	6	BLK2
DRDBC	1	017764 022264	0	051735 052073
	3	UNIT	2	BLANKSCOMMON
	5	BLK1	4	TDATA
	7	BLK3	6	BLK2
DRDNOD	1	022265 024351	0	052074 052475
	3	UNIT	2	BLANKSCOMMON
	5	BLK1	4	TDATA
	7	BLK3	6	BLK2

```
BLK3 (COMMON BLOCK)                                    052476 052510
BLK2 (COMMON BLOCK)                                    052511 053323
BLK1 (COMMON BLOCK)                                    053324 054170
TDATA (COMMON BLOCK)                                   054171 152570
UNIT (COMMON BLOCK)                                    152571 152575
DTRAN                    1   024352 024451        0   152576 152637
                         3   UNIT                  2   BLANKSCOMMON
                         5   BLK1                  4   TDATA
                         7   BLK3                  6   BLK2
HADST                    1   024452 024670         0   152640 157664
                                                   2   BLANKSCOMMON
HAOPT                    1   024671 024700         0   157665 157670
                                                   2   BLANKSCOMMON
```

```
IBANK SEGMENTS DRAWN TO SCALE:   200 WORDS DECIMAL PER DASH

LINK1 (4148)
--------------------
                     LINK2A* (6030)
                     ----------------------------
                     LINK2B* (6029)
                     ----------------------------


DBANK SEGMENTS DRAWN TO SCALE:   600 WORDS DECIMAL PER DASH

LINK1 (4095)
-------
       LINK2A* (21797)
       ----------------------------------
       LINK2B* (36671)
       ------------------------------------------------------------

SYS$*RLIB$. LEVEL M68-2E
END OF COLLECTION - TIME 4.513 SECONDS
```

```
@MAP,IS SNRLB,ANRLB
MAP 23H1-12/10-11:10 -(.0)

    1.      LIB SYS$*MSFC$,

    2.      SEG LINK1

    3.      IN DSTR

    4.      IN NBF06$

    5.      SEG LINK2A*,(LINK1)

    6.      IN REDNOM,NBSEL,NBTMP,NBIAP

    7.      SEG LINK2B*,(LINK1)

    8.      IN DTRAN,NBDST,NRLPT,NRLBP
```

```
ADDRESS LIMITS     001000 042412      043000 171146
SEGMENT LOAD TABLE                    043000 043013
INDIRECT LOAD TABLE                   043014 043423
STARTING ADDRESS  011402

WORDS DECIMAL       17163 IBANK        44135 DBANK


            SEGMENT LINK1            001000 011424      043424 053436

NBF00S/FOR                                          2   043424 045625
NBDCVS/FOR64                1   001000 001125       2   045626 045670
NETVS/FOR                   1   001126 001150
NCNVTS/FOR68                1   001151 001372       2   045671 045765
NRBLKS/MSFC68               1   001373 001456       0   045766 045767
NFTCHS/FOR68                1   001457 001740       2   045770 046003
NWEFS/MSFC68                1   001741 002163       2   046004 046023
NCLOSS/MSFC68               1   002164 002346       2   046024 046054
NSWTCS/MSFC68               1   002347 002373
NBSBLS/FOR68                1   002374 002434
NUPDAS/FOR68                1   002435 002470
NOTINS/MSFC68               1   002471 002770       2   046055 046060
NWBLKS/MSFC68               1   002771 003147       0   046061 046062
NININS/MSFC68               1   003150 003340       2   046063 046066
NINPTS/MSFC68               1   003341 004231       2   046067 046112
NFCHKS/MSFC68               1   004232 005230       2   046113 046300
                                                    4   046301 046352
```

```
NIOERS/MSFC68              1   005231 005430        2   046353 046525
NOUTS/MSFC68               1   005431 006444        2   046526 046560
NFMTS/FOR68                1   006445 007322        2   046561 046635
NTABS/MSFC68                                        2   046636 046724
NOBUFS/FOR68               1   007323 007363
ERUS/MSFC68
NRWNDS/MSFC68              1   007364 007446        2   046725 046736
UOMSYS (COMMON BLOCK)                                   046737 046753
HSMONITOR/MSFC68           1   007447 010312        2   046754 047407
                                                    4   UOMSYS
NIBUFS/FOR68               1   010313 010352        2   047410 047410
NIERS/MSFC68               1   010353 010527        2   047411 047526
NOSYMS/FOR68               1   010530 010743        2   047527 047532
NERRS/FOR68                1   010744 011332        2   047533 047712
IDLS/64                    1   011333 011401
DELFX (COMMON BLOCK)                                    047713 050106
UNITS (COMMON BLOCK)                                    050107 050113
START (COMMON BLOCK)                                    050114 050122
DELFLX (COMMON BLOCK)                                   050123 050316
APERTR (COMMON BLOCK)                                   050317 050317
BLANKSCOMMON (COMMON BLOCK)
DSTR                       1   011402 011424        0   050320 050320
                           3   UNITS                2   BLANKSCOMMON
                                                    4   DELFX
NBF06S/FOR                                          2   050321 053436

          SEGMENT LINK2A*          011425 025342        053437 140315
          FOLLOWS SEGMENT LINK1

WRTRED/CSC                 1   011425 012571        0   053437 053575
NCBDS/MSFC                 1   012572 012655        2   053576 053606
TWAIT                      1   012656 012663
OPEN/CSC                   1   012664 013442        0   053607 057602
NTRANS/MSFC68              1   013443 014703        2   057603 060266
SKIPID                     1   014704 015065        0   060267 060277
                           3   ATMCOM               2   BLANKSCOMMON
                                                    4   MIDATM
SWAP                                                0   060300 060306
ITREAD                     1   015006 015247        0   060307 063735
                           3   ATMRED               2   BLANKSCOMMON
TIMSB                      1   015250 015330        0   063736 063761
                                                    2   BLANKSCOMMON
REDIP                      1   015331 015576        0   063762 067766
                           3   FIXED                2   BLANKSCOMMON
ATMGET                     1   015577 016014        0   067767 070002
                           3   ATMCOM               2   BLANKSCOMMON
                                                    4   MIDATM
AWAIT                      1   016015 016017
ATMSET                     1   016020 016407        0   070003 070105
                           3   ATMCOM               2   BLANKSCOMMON
                                                    4   MIDATM
ATMRED (COMMON BLOCK)                                   070106 073512
ATMSKY                     1   016410 017550        0   073513 073574
                           3   ATMCOM               2   BLANKSCOMMON
                                                    4   ATMRED
```

```
SMOOTH                  1   017551 020546      0   073575 073653
                                               2   BLANKSCOMMON
TIMAD                   1   020047 020107      0   073654 073660
                                               2   BLANKSCOMMON
APTR                    1   020110 020545      0   073661 073773
                        3   ATMCOM             2   BLANKSCOMMON
                        5   APERTR             4   MIDATM
RDATM                   1   020546 020703      0   073774 074076
                        3   ATMCOM             2   BLANKSCOMMON
                        5   FIXED              4   MIDATM
FIXED (COMMON BLOCK)                               074077 074101
IDREC                   1   020704 021452      0   074102 102214
                        3   ATMCOM             2   BLANKSCOMMON
                        5   FIXED              4   MIDATM
READID                  1   021453 021507      0   102215 102220
                        3   ATMCOM             2   BLANKSCOMMON
                                               4   MIDATM
MIDATM*(COMMON BLOCK)                              102221 107156
ATMCOM (COMMON BLOCK)                              107157 120035
REDNOM                  1   021516 021557      0   120036 120100
                        3   UNITS              2   BLANKSCOMMON
NBSEL                   1   021560 024151      0   120101 137357
                        3   DELFLX             2   BLANKSCOMMON
                        5   MIDATM             4   ATMCOM
                        7   START              6   UNITS
NBTMP                   1   024152 025076      0   137360 140257
                        3   ATMCOM             2   BLANKSCOMMON
                        5   APERTR             4   MIDATM
NBIAP                   1   025077 025342      0   140260 140315
                        3   APERTR             2   BLANKSCOMMON
                        5   MIDATM             4   ATMCOM


          SEGMENT LINK28*        011425 042412      053437 171146
          FOLLOWS SEGMENT LINK1

NEXP5$/FOR68            1   011425 011512      2   053437 053446
CAMRAV/SC4020           1   011513 011564      0   053447 053460
                        3   GGG                2   BLANKSCOMMON
ALOG$/FOR59             1   011565 011704      2   053461 053521
YMODV/SC4020            1   011705 011732      0   053522 053530
                                               2   BLANKSCOMMON
ACCRBY/SC4020           1   011733 011754      0   053531 053541
                                               2   BLANKSCOMMON
XMODV/SC4020            1   011755 012002      0   053542 053550
                                               2   BLANKSCOMMON
ERMRKV/SC4020           1   012003 012032      0   053551 053564
                                               2   BLANKSCOMMON
SIG6V/SC4020            1   012033 012321      0   053565 053624
                                               2   BLANKSCOMMON
SPCFRM/MSFC                                    0   053625 053700
CTOBCD/MSFC             1   012322 012620      0   053701 054052
BOXLTR/CSC              1   012621 013453      0   054053 054071
IDENT1/SC4020           1   013454 014626      0   054072 054255
                        3   GGG                2   BLANKSCOMMON
SETINT/SC4020           1   014627 014661      0   054256 054263
```

			2	BLANK$COMMON
NONLNV/SC4020	1	014662 015267	0	054264 054336
			2	BLANK$COMMON
LINRV/SC4020	1	015270 016143	0	054337 054452
	3	GGG	2	BLANK$COMMON
YSCLVI/SC4020	1	016144 016262	0	054453 054463
	3	GGG	2	BLANK$COMMON
XSCLVI/SC4020	1	016263 016400	0	054464 054474
	3	GGG	2	BLANK$COMMON
YSCALV/SC4020	1	016401 016603	0	054475 054523
	3	GGG	2	BLANK$COMMON
XSCALV/SC4020	1	016604 017006	0	054524 054552
	3	GGG	2	BLANK$COMMON
ERRNLV/SC4020	1	017007 017163	0	054553 054565
			2	BLANK$COMMON
ERRLNV/SC4020	1	017164 017273	0	054566 054603
			2	BLANK$COMMON
SETCOV/SC4020	1	017274 017334	0	054604 054614
			2	BLANK$COMMON
BRITEV/SC4020	1	017335 017436	0	054615 054630
	3	GGG	2	BLANK$COMMON
CONCAT/MSFC	1	017437 017610	0	054631 054652
PLOTP/SC4020	1	017611 017671	0	054653 055232
			2	BLANK$COMMON
BMOV/MSFC	1	017672 017752	0	055233 055243
			2	BLANK$COMMON
HOLLV/SC4020	1	017753 020035	0	055244 055260
			2	BLANK$COMMON
VCHARV/SC4020	1	020036 020301	0	055261 055300
TABLIV/SC4020			0	055301 055621
NEXP6$/FOR68	1	020302 020476	2	055622 055673
NFINP$/MSFC68	1	020477 021124	2	055674 055757
NFOUT$/MSFC68	1	021125 021543	2	055760 056001
FRAMEV/SC4020	1	021544 021763	0	056002 056066
	3	GGG	2	BLANK$COMMON
LABLV/SC4020	1	021764 023026	0	056067 056175
			2	BLANK$COMMON
SETMOV/SC4020	1	023027 023105	0	056176 056212
			2	BLANK$COMMON
IDENT/SC4020	1	023106 024303	0	056213 057732
APLOTV/SC4020	1	024304 024557	0	057733 060006
	3	GGG	2	BLANK$COMMON
GRIDIV/SC4020	1	024560 025464	0	060007 060122
	3	GGG	2	BLANK$COMMON
XAXISV/SC4020	1	025465 025670	0	060123 060156
			2	BLANK$COMMON
GGG (COMMON BLOCK)				060157 060312
PRINTV/SC4020	1	025671 026262	0	060313 060347
	3	GGG	2	BLANK$COMMON
RITE2V/SC4020	1	026263 026513	0	060350 060376
DCMPT	1	026514 032334	0	060377 061507
	3	UNIT	2	BLANK$COMMON
	5	BLK1	4	TDATA
	7	BLK3	6	BLK2
			8	DELFLX
DRDFLX	1	032335 034151	0	061510 061761

	3	UNIT	2	BLANK$COMMON
	5	BLK1	4	TDATA
	7	BLK3	6	BLK2
DRDBC	1	034152 036452	0	061762 062120
	3	UNIT	2	BLANK$COMMON
	5	BLK1	4	TDATA
	7	BLK3	6	BLK2
DRDNOD	1	036453 040537	0	062121 062522
	3	UNIT	2	BLANK$COMMON
	5	BLK1	4	TDATA
	7	BLK3	6	BLK2
STORIT	1	040540 040624	0	062523 062541
	3	A	2	BLANK$COMMON
BLK3 (COMMON BLOCK)				062542 062554
BLK2 (COMMON BLOCK)				062555 063367
BLK1 (COMMON BLOCK)				063370 064234
TDATA (COMMON BLOCK)				064235 162634
UNIT (COMMON BLOCK)				162635 162641
A (COMMON BLOCK)				162642 166252
DTRAN	1	040625 040724	0	166253 166314
	3	UNIT	2	BLANK$COMMON
	5	BLK1	4	TDATA
	7	BLK3	6	BLK2
NBDST	1	040725 041070	0	166315 170401
	3	START	2	BLANK$COMMON
NRLPT	1	041071 041265	0	170402 170505
	3	A	2	BLANK$COMMON
	5	DELFLX	4	START
NRLBP	1	041266 042412	0	170506 171146
	3	A	2	BLANK$COMMON
	5	DELFLX	4	START
			6	APERTR

```
IBANK SEGMENTS DRAWN TO SCALE:   300 WORDS DECIMAL PER DASH

LINK1 (4373)
--------------
               LINK2A* (6094)
               -------------------
               LINK2B* (12790)
               ----------------------------------------


DBANK SEGMENTS DRAWN TO SCALE:   700 WORDS DECIMAL PER DASH

LINK1 (4107)
------
      LINK2A* (27055)
      -----------------------------------
      LINK2B* (39752)
      ---------------------------------------------------------

SYS$*RLIB$. LEVEL M68-2E
END OF COLLECTION - TIME 6.481 SECONDS
```

```
@MAP,IS SNRLA,ANRLA
MAP 23H1-12/10-11:10 -(,0)

    1.        LIB SYS$*MSFC$.

    2.        SEG LINK1

    3.        IN DSTR

    4.        IN N6F06$

    5.        SEG LINK2A*,(LINK1)

    6.        IN REDNOM,NASEL,NATMP,NAIAP

    7.        SEG LINK2B*,(LINK1)

    8.        IN DTRAN,NADST,NRLPT,NRLAP


ADDRESS LIMITS    001000 042124      043000 170021
SEGMENT LOAD TABLE                   043000 043013
INDIRECT LOAD TABLE                  043014 043423
STARTING ADDRESS  011402

WORDS DECIMAL       16981 IBANK        43538 DBANK


            SEGMENT LINK1            001000 011424      043424 053436

NBF00S/FOR                                          2   043424 045625
NBDCV$/FOR64              1   001000 001125         2   045626 045670
NFTV$/FOR                 1   001126 001150
NCNVT$/FOR68              1   001151 001372         2   045671 045765
NRBLK$/MSFC68             1   001373 001456         0   045766 045767
NFTCH$/FOR68              1   001457 001740         2   045770 046003
NWEF$/MSFC68              1   001741 002163         2   046004 046023
NCLOS$/MSFC68             1   002164 002346         2   046024 046054
NSWTC$/MSFC68             1   002347 002373
NBSBL$/FOR68              1   002374 002434
NUPDA$/FOR68              1   002435 002470
NOTIN$/MSFC68             1   002471 002770         2   046055 046060
NWBLK$/MSFC68             1   002771 003147         0   046061 046062
NININ$/MSFC68             1   003150 003340         2   046063 046066
NINPT$/MSFC68             1   003341 004231         2   046067 046112
NFCHK$/MSFC68             1   004232 005230         2   046113 046300
                                                    4   046301 046352
```

```
NIOER$/MSFC68                1   005231 005430        2   046353 046525
NOUT$/MSFC68                 1   005431 006444        2   046526 046560
NFMT$/FOR68                  1   006445 007322        2   046561 046635
NTAB$/MSFC68                                          2   046636 046724
NOBUF$/FOR68                 1   007323 007363
ERU$/MSFC68
NRWND$/MSFC68                1   007364 007446        2   046725 046736
UOMSYS (COMMON BLOCK)                                     046737 046753
H$MONITOR/MSFC68             1   007447 010312        2   046754 047407
                                                      4   UOMSYS
NIBUF$/FOR68                 1   010313 010352        2   047410 047410
NIER$/MSFC68                 1   010353 010527        2   047411 047526
NOSYM$/FOR68                 1   010530 010743        2   047527 047532
NERR$/FOR68                  1   010744 011332        2   047533 047712
IOL$/64                      1   011333 011401
DELFX (COMMON BLOCK)                                      047713 050106
UNITS (COMMON BLOCK)                                      050107 050113
START (COMMON BLOCK)                                      050114 050122
DELFLX (COMMON BLOCK)                                     050123 050316
APERTR (COMMON BLOCK)                                     050317 050317
BLANK$COMMON (COMMON BLOCK)
DSTR                         1   011402 011424        0   050320 050320
                             3   UNITS                2   BLANK$COMMON
                                                      4   DELFX
NBF06$/FOR                                            2   050321 053436

            SEGMENT LINK2A*          011425 025140        053437 127037
            FOLLOWS SEGMENT LINK1

WRTRED/CSC                   1   011425 012571        0   053437 053575
NCBD$/MSFC                   1   012572 012655        2   053576 053606
TWAIT                        1   012656 012663
OPEN/CSC                     1   012664 013442        0   053607 057602
NTRAN$/MSFC68                1   013443 014703        2   057603 060266
SKIPID                       1   014704 015005        0   060267 060277
                             3   ATMCOM               2   BLANK$COMMON
                                                      4   MIDATM
SWAP                                                  0   060300 060306
LIREAD                       1   015006 015247        0   060307 063735
                             3   ATMRED               2   BLANK$COMMON
TIMSB                        1   015250 015330        0   063736 063761
                                                      2   BLANK$COMMON
REDIP                        1   015331 015576        0   063762 067766
                             3   FIXED                2   BLANK$COMMON
ATMGET                       1   015577 016014        0   067767 070002
                             3   ATMCOM               2   BLANK$COMMON
                                                      4   MIDATM
AWAIT                        1   016015 016017
ATMSET                       1   016020 016407        0   070003 070105
                             3   ATMCOM               2   BLANK$COMMON
                                                      4   MIDATM
ATMRED (COMMON BLOCK)                                     070106 073512
ATMSKY                       1   016410 017550        0   073513 073574
                             3   ATMCOM               2   BLANK$COMMON
                                                      4   ATMRED
```

SMOOTH	1	017551 020046	0	073575 073653
			2	BLANK$COMMON
TIMAD	1	020047 020107	0	073654 073660
			2	BLANK$COMMON
APTR	1	020110 020545	0	073661 073773
	3	ATMCOM	2	BLANK$COMMON
	5	APERTR	4	MIDATM
RDATM	1	020546 020703	0	073774 074076
	3	ATMCOM	2	BLANK$COMMON
	5	FIXED	4	MIDATM
FIXED (COMMON BLOCK)				074077 074101
IDREC	1	020704 021452	0	074102 102214
	3	ATMCOM	2	BLANK$COMMON
	5	FIXED	4	MIDATM
READIO	1	021453 021507	0	102215 102220
	3	ATMCOM	2	BLANK$COMMON
			4	MIDATM
MIDATM (COMMON BLOCK)				102221 107156
ATMCOM (COMMON BLOCK)				107157 120035
REDNOM	1	021510 021557	0	120036 120100
	3	UNITS	2	BLANK$COMMON
NASEL	1	021560 024151	0	120101 126467
	3	DELFLX	2	BLANK$COMMON
	5	MIDATM	4	ATMCOM
	7	START	6	UNITS
NATMP	1	024152 024677	0	126470 127023
	3	ATMCOM	2	BLANK$COMMON
	5	APERTR	4	MIDATM
NAIAP	1	024700 025140	0	127024 127037
	3	APERTR	2	BLANK$COMMON
	5	MIDATM	4	ATMCOM

SEGMENT LINK28* 011425 042124 053437 170021
FOLLOWS SEGMENT LINK1

NEXP5$/FOR68	1	011425 011512	2	053437 053446
CAMRAV/SC4020	1	011513 011564	0	053447 053460
	3	GGG	2	BLANK$COMMON
ALOG$/FOR59	1	011565 011704	2	053461 053521
YMODV/SC4020	1	011705 011732	0	053522 053530
			2	BLANK$COMMON
ACCRBY/SC4020	1	011733 011754	0	053531 053541
			2	BLANK$COMMON
XMODV/SC4020	1	011755 012002	0	053542 053550
			2	BLANK$COMMON
ERMRKV/SC4020	1	012003 012032	0	053551 053564
			2	BLANK$COMMON
SIG6V/SC4020	1	012033 012321	0	053565 053624
			2	BLANK$COMMON
SPCFRM/MSFC			0	053625 053700
CTOBCD/MSFC	1	012322 012620	0	053701 054052
BOXLTR/CSC	1	012621 013453	0	054053 054071
IDENT1/SC4020	1	013454 014626	0	054072 054255
	3	GGG	2	BLANK$COMMON
SETINT/SC4020	1	014627 014661	0	054256 054263

				2	BLANK$COMMON
NONLNV/SC4020	1	014662	015267	0	054264 054336
				2	BLANK$COMMON
LINRV/SC4020	1	015270	016143	0	054337 054452
	3	GGG		2	BLANK$COMMON
YSCLV1/SC4020	1	016144	016262	0	054453 054463
	3	GGG		2	BLANK$COMMON
XSCLV1/SC4020	1	016263	016430	0	054464 054474
	3	GGG		2	BLANK$COMMON
YSCALV/SC4020	1	016431	016603	0	054475 054523
	3	GGG		2	BLANK$COMMON
XSCALV/SC4020	1	016604	017006	0	054524 054552
	3	GGG		2	BLANK$COMMON
ERRNLV/SC4020	1	017007	017163	0	054553 054565
				2	BLANK$COMMON
ERRLNV/SC4020	1	017164	017273	0	054566 054603
				2	BLANK$COMMON
SETCOV/SC4020	1	017274	017334	0	054604 054614
				2	BLANK$COMMON
BRITEV/SC4020	1	017335	017436	0	054615 054630
	3	GGG		2	BLANK$COMMON
CONCAT/MSFC	1	017437	017610	0	054631 054652
PLOTP/SC4020	1	017611	017671	0	054653 055232
				2	BLANK$COMMON
BMOV/MSFC	1	017672	017752	0	055233 055243
				2	BLANK$COMMON
HOLLV/SC4020	1	017753	020035	0	055244 055260
				2	BLANK$COMMON
VCHARV/SC4020	1	020036	020301	0	055261 055300
TABLIV/SC4020				0	055301 055621
NEXP6$/FOR68	1	020302	020476	2	055622 055673
NFINP$/MSFC68	1	020477	021124	2	055674 055757
NFOUT$/MSFC68	1	021125	021543	2	055760 056001
FRAMEV/SC4020	1	021544	021763	0	056002 056066
	3	GGG		2	BLANK$COMMON
LABLV/SC4020	1	021764	023026	0	056067 056175
				2	BLANK$COMMON
SETMOV/SC4020	1	023027	023105	0	056176 056212
				2	BLANK$COMMON
IDENT/SC4020	1	023106	024303	0	056213 057732
APLOTV/SC4020	1	024304	024557	0	057733 060006
	3	GGG		2	BLANK$COMMON
GRIDIV/SC4020	1	024560	025464	0	060007 060122
	3	GGG		2	BLANK$COMMON
XAXISV/SC4020	1	025465	025670	0	060123 060156
				2	BLANK$COMMON
GGG (COMMON BLOCK)					060157 060312
PRINTV/SC4020	1	025671	026262	0	060313 060347
	3	GGG		2	BLANK$COMMON
RITE2V/SC4020	1	026263	026513	0	060350 060376
DCMPT	1	026514	032334	0	060377 061507
	3	UNIT		2	BLANK$COMMON
	5	BLK1		4	TDATA
	7	BLK3		6	BLK2
				8	DELFLX
DRDFLX	1	032335	034151	0	061510 061761

	3	UNIT	2	BLANK$COMMON
	5	BLK1	4	TDATA
	7	BLK3	6	BLK2
DRDBC	1	034152 036452	0	061762 062120
	3	UNIT	2	BLANK$COMMON
	5	BLK1	4	TDATA
	7	BLK3	6	BLK2
DRDNOD	1	036453 040537	0	062121 062522
	3	UNIT	2	BLANK$COMMON
	5	BLK1	4	TDATA
	7	BLK3	6	BLK2
STORIT	1	040540 040624	0	062523 062541
	3	A	2	BLANK$COMMON
BLK3 (COMMON BLOCK)				062542 062554
BLK2 (COMMON BLOCK)				062555 063367
BLK1 (COMMON BLOCK)				063370 064234
TDATA (COMMON BLOCK)				064235 162634
UNIT (COMMON BLOCK)				162635 162641
A (COMMON BLOCK)				162642 166252
DTRAN	1	040625 040724	0	166253 166314
	3	UNIT	2	BLANK$COMMON
	5	BLK1	4	TDATA
	7	BLK3	6	BLK2
NADST	1	040725 041070	0	166315 167405
	3	START	2	BLANK$COMMON
NRLPT	1	041071 041265	0	167406 167511
	3	A	2	BLANK$COMMON
	5	DELFLX	4	START
NRLAP	1	041266 042124	0	167512 170021
	3	A	2	BLANK$COMMON
	5	DELFLX	4	START
			6	APERTR

```
IBANK SEGMENTS DRAWN TO SCALE:   300 WORDS DECIMAL PER DASH

LINK1 (4373)
-------------
              LINK2A* (5964)
              ------------------
              LINK2B* (12608)
              ----------------------------------------


DBANK SEGMENTS DRAWN TO SCALE:   700 WORDS DECIMAL PER DASH

LINK1 (4107)
------
      LINK2A* (22273)
      -------------------------------
      LINK2B* (39155)
      ----------------------------------------------------

SYS$*RLIB$. LEVEL M68-2E
END OF COLLECTION - TIME 6.029 SECONDS


@ASG,T PUR4,T,SAVE05 . THERMAL DIST V2-L


@COPOUT TPF$.,PUR4.
FURPUR 24H1-12/10-11:11.
 48 SYM  44 REL  4 ABS


@COPOUT TPF$.,PUR4.
 48 SYM  44 REL  4 ABS


@REWIND PUR4.


@ERS TPF$.


@COPIN PUR4.,TPF$.
```

```
 48 SYM  44 REL  4 ABS


@FREE PUR4.


@PREP
FURPUR 24H1-12/10-11:14


@PRT,T

IHNTSV140006*TPF$ ELEMENT TABLE
```

D	NAME	VERSION	TYPE	DATE	TIME	SEQ #	SIZE-PRE,TEXT	(CYCLE	WORD)	PSRMODE	LOCATION
	ATMSKY		FOR SYMB	10 DEC 73	11:03:32	1	53	5	5	5	1792
	ATMSKY		RELOCATABLE	10 DEC 73	11:03:36	2	2 35				1845
	ITREAD		FOR SYMB	10 DEC 73	11:03:43	3	16	5	5	5	1882
	ITREAD		RELOCATABLE	10 DEC 73	11:03:46	4	2 10				1898
	ATMGET		FOR SYMB	10 DEC 73	11:03:55	5	11	5	5	5	1910
	ATMGET		RELOCATABLE	10 DEC 73	11:03:58	6	1 8				1921
	ATMSET		FOR SYMB	10 DEC 73	11:04:07	7	18	5	5	5	1930
	ATMSET		RELOCATABLE	10 DEC 73	11:04:11	8	2 16				1948
	SWAP		ASM SYMB	10 DEC 73	11:04:21	9	2	5	5	5	1966
	SWAP		RELOCATABLE	10 DEC 73	11:04:22	10	1 1				1968
	DSTR		FOR SYMB	10 DEC 73	11:04:43	11	5	5	11	5	1970
	DSTR		RELOCATABLE	10 DEC 73	11:04:48	12	2 2				1975
	SKIPID		FOR SYMB	10 DEC 73	11:04:56	13	9	5	19	5	1979
	SKIPID		RELOCATABLE	10 DEC 73	11:04:58	14	2 5				1988
	READID		FOR SYMB	10 DEC 73	11:05:04	15	6	5	8	5	1995
	READID		RELOCATABLE	10 DEC 73	11:05:07	16	2 2				2001
	IDREC		FOR SYMB	10 DEC 73	11:05:21	17	36	5	16	5	2005
	IDREC		RELOCATABLE	10 DEC 73	11:05:27	18	2 28				2041
	RDATM		FOR SYMB	10 DEC 73	11:05:29	19	15	5	16	5	2071
	RDATM		RELOCATABLE	10 DEC 73	11:05:33	20	2 9				2086
	REDIP		FOR SYMB	10 DEC 73	11:05:45	21	19	5	17	5	2097
	REDIP		RELOCATABLE	10 DEC 73	11:05:47	22	2 12				2116
	AWAIT		ASM SYMB	10 DEC 73	11:05:57	23	2	5	6	5	2130
	AWAIT		RELOCATABLE	10 DEC 73	11:05:58	24	1 1				2132
	REDNOM		FOR SYMB	10 DEC 73	11:06:07	25	6	5	10	5	2134
	REDNOM		RELOCATABLE	10 DEC 73	11:06:10	26	2 4				2140
	SMOOTH		FOR SYMB	10 DEC 73	11:06:25	27	14	5	7	5	2146
	SMOOTH		RELOCATABLE	10 DEC 73	11:06:28	28	1 12				2160
	TIMAD		FOR SYMB	10 DEC 73	11:06:28	29	4	5	18	5	2173
	TIMAD		RELOCATABLE	10 DEC 73	11:06:30	30	1 3				2177
	TIMSB		FOR SYMB	10 DEC 73	11:06:32	31	3	5	18	5	2181
	TIMSB		RELOCATABLE	10 DEC 73	11:06:33	32	1 4				2184
	APTR		FOR SYMB	10 DEC 73	11:06:35	33	26	5	20	5	2189
	APTR		RELOCATABLE	10 DEC 73	11:06:38	34	2 18				2215
	HCSEL		FOR SYMB	10 DEC 73	11:06:41	35	95	5	20	5	2235
	HCSEL		RELOCATABLE	10 DEC 73	11:06:47	36	3 82				2330
	HCTMP		FOR SYMB	10 DEC 73	11:06:49	37	52	5	20	5	2415
	HCTMP		RELOCATABLE	10 DEC 73	11:06:52	38	2 30				2467

HCIAP	FOR SYMB	10 DEC 73	11:06:53	39		8	5	19	5		2499
HCIAP	RELOCATABLE	10 DEC 73	11:06:55	40	2	3					2507
HASEL	FOR SYMB	10 DEC 73	11:06:57	41		95	5	21	5		2512
HASEL	RELOCATABLE	10 DEC 73	11:07:03	42	3	62					2607
HCDST	FOR SYMB	10 DEC 73	11:07:05	43		60	5	18	5		2692
HCDST	RELOCATABLE	10 DEC 73	11:07:07	44	1	29					2752
HATMP	FOR SYMB	10 DEC 73	11:07:09	45		47	5	21	5		2782
HATMP	RELOCATABLE	10 DEC 73	11:07:13	46	2	25					2829
HAIAP	FOR SYMB	10 DEC 73	11:07:14	47		9	5	19	5		2856
HAIAP	RELOCATABLE	10 DEC 73	11:07:16	48	2	3					2865
HADST	FOR SYMB	10 DEC 73	11:07:24	49		307	5	19	5		2870
HADST	RELOCATABLE	10 DEC 73	11:07:30	50	1	124					3177
NBSEL	FOR SYMB	10 DEC 73	11:07:33	51		98	5	20	5		3302
NBSEL	RELOCATABLE	10 DEC 73	11:07:39	52	3	66					3400
NBTMP	FOR SYMB	10 DEC 73	11:07:43	53		66	5	20	5		3489
NBTMP	RELOCATABLE	10 DEC 73	11:07:47	54	2	50					3575
NBIAP	FOR SYMB	10 DEC 73	11:07:49	55		21	5	19	5		3627
NBIAP	RELOCATABLE	10 DEC 73	11:07:52	56	2	11					3648
NBDST	FOR SYMB	10 DEC 73	11:07:55	57		130	5	18	5		3661
NBDST	RELOCATABLE	10 DEC 73	11:07:58	58	2	55					3791
NASEL	FOR SYMB	10 DEC 73	11:08:01	59		95	5	20	5		3846
NASEL	RELOCATABLE	10 DEC 73	11:08:06	60	3	63					3943
NATMP	FOR SYMB	10 DEC 73	11:08:08	61		55	5	20	5		4029
NATMP	RELOCATABLE	10 DEC 73	11:08:12	62	2	31					4084
NAIAP	FOR SYMB	10 DEC 73	11:08:13	63		19	5	19	5		4117
NAIAP	RELOCATABLE	10 DEC 73	11:08:15	64	2	9					4136
NADST	FOR SYMB	10 DEC 73	11:08:17	65		64	5	18	5		4147
NADST	RELOCATABLE	10 DEC 73	11:08:19	66	2	32					4211
DTRAN	FOR SYMB	10 DEC 73	11:08:21	67		25	5	17	5		4245
DTRAN	RELOCATABLE	10 DEC 73	11:08:23	68	3	7					4270
DRDNOD	FOR SYMB	10 DEC 73	11:08:25	69		85	5	17	5		4280
DRDNOD	RELOCATABLE	10 DEC 73	11:08:31	70	2	69					4365
DRDBC	FOR SYMB	10 DEC 73	11:08:33	71		80	5	17	5		4436
DRDBC	RELOCATABLE	10 DEC 73	11:08:39	72	3	70					4516
DRDFLX	FOR SYMB	10 DEC 73	11:08:42	73		67	5	18	5		4589
DRDFLX	RELOCATABLE	10 DEC 73	11:08:47	74	3	57					4656
DCMPT	FOR SYMB	10 DEC 73	11:08:51	75		115	5	17	5		4716
DCMPT	RELOCATABLE	10 DEC 73	11:08:59	76	3	113					4831
STORIT	FOR SYMB	10 DEC 73	11:09:00	77		6	5	4	5		4947
STORIT	RELOCATABLE	10 DEC 73	11:09:02	78	1	4					4953
HCOPT	FOR SYMB	10 DEC 73	11:09:03	79		1	5	4	5		4958
HCOPT	RELOCATABLE	10 DEC 73	11:09:05	80	1	1					4959
HAOPT	FOR SYMB	10 DEC 73	11:09:06	81		1	5	4	5		4961
HAOPT	RELOCATABLE	10 DEC 73	11:09:07	82	1	1					4962
NRLPT	FOR SYMB	10 DEC 73	11:09:09	83		9	5	4	5		4964
NRLPT	RELOCATABLE	10 DEC 73	11:09:11	84	2	9					4973
NRLAP	FOR SYMB	10 DEC 73	11:09:12	85		23	5	4	5		4984
NRLAP	RELOCATABLE	10 DEC 73	11:09:15	86	2	33					5007
NRLBP	FOR SYMB	10 DEC 73	11:09:16	87		36	5	4	5		5042
NRLBP	RELOCATABLE	10 DEC 73	11:09:22	88	2	50					5078
SHCO	MAP SYMB	10 DEC 73	11:09:26	89		2	5	0	1		5130
AHCO	ABSOLUTE	10 DEC 73	11:09:48	90		745					5132
SHAO	MAP SYMB	10 DEC 73	11:09:49	91		2	5	0	1		5877
AHAO	ABSOLUTE	10 DEC 73	11:10:12	92		816					5879
SNRLB	MAP SYMB	10 DEC 73	11:10:13	93		2	5	0	1		6695
ANRLB	ABSOLUTE	10 DEC 73	11:10:45	94		1120					6697

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  SNRLA                    MAP SYNB     10 DEC 73   11:10:45     95          2    5   0   1          7817
  ANRLA                    ABSOLUTE     10 DEC 73   11:11:15     96       1078                       7819
NEXT AVAILABLE LOCATION-                                                                               8897

ASSEMBLER PROCEDURE TABLE EMPTY

COBOL PROCEDURE TABLE EMPTY

FORTRAN PROCEDURE TABLE EMPTY

                    ENTRY POINT TABLE

 D NAME        LINK    D NAME        LINK    D NAME        LINK    D NAME        LINK    D NAME        LINK
   APTR          34      AWAIT         24      COMPUT        76      DSTRT         66      DSTRT         58
   DSTRT         50      DSTRT         44      FORMAINS      12      GETATM         6      IAPSTS        64
   IAPSTS        56      IAPSTS        48      IAPSTS        40      IDREC         18      NRLPT         88
   NRLPT         86      PLOT          84      PLOT          82      PLOT          80      RDATM         20
   RDBC          72      RDFLX         74      RDNOD         70      READID        16      READIT         4
   REDIP         22      REDNOM        26      SELECT        36      SELECT        52      SELECT        42
   SELECT        60      SETATM         8      SKIPID        14      SKYATM         2      SMOOTH        28
   STORIT        76      SWAP          10      TIMAD         30      TIMSB         32      TMPTBL        46
   TMPTBL        36      TMPTBL        54      TMPTBL        62      TRAN          68

@ASG,T PUR3,T,SAVE05 . THERMAL DIST V2-L

@COPOUT TPFS.,PUR3.
FURPUR 24H1-12/10-11:14
 48 SYM  44 REL  4 ABS

@COPOUT TPFS.,PUR3.
 48 SYM  44 REL  4 ABS

@REWIND PUR3.

@ERS TPFS.

@COPIN PUR3.,TPFS.
 48 SYM  44 REL  4 ABS

@FREE PUR3.
```

@PREP
FURPUR 24HI-12/10-11:17

@PRT,T

1HNTSV140006*TPFS ELEMENT TABLE

D	NAME	VERSION	TYPE	DATE	TIME	SEQ #	SIZE-PRE	TEXT	(CYCLE	WORD)	PSRMODE	LOCATION
✓	ATMSKY		FOR SYMB	10 DEC 73	11:03:32	1		53	5	5	5	1792
	ATMSKY		RELOCATABLE	10 DEC 73	11:03:36	2	2	35				1845
✓	ITREAD		FOR SYMB	10 DEC 73	11:03:43	3		16	5	5	5	1882
	ITREAD		RELOCATABLE	10 DEC 73	11:03:46	4	2	10				1898
✓	ATMGET		FOR SYMB	10 DEC 73	11:03:55	5		11	5	5	5	1910
	ATMGET		RELOCATABLE	10 DEC 73	11:03:58	6	1	8				1921
✓	ATMSET		FOR SYMB	10 DEC 73	11:04:07	7		18	5	5	5	1930
	ATMSET		RELOCATABLE	10 DEC 73	11:04:11	8	2	16				1948
✓	SWAP	SWAP	ASM SYMB	10 DEC 73	11:04:21	9		2	5	5	5	1966
	SWAP		RELOCATABLE	10 DEC 73	11:04:22	10	1	1				1968
✓	DSTR		FOR SYMB	10 DEC 73	11:04:43	11		5	5	11	5	1970
	DSTR		RELOCATABLE	10 DEC 73	11:04:46	12	2	2				1975
✓	SKIPID		FOR SYMB	10 DEC 73	11:04:56	13		9	5	19	5	1979
	SKIPID		RELOCATABLE	10 DEC 73	11:04:58	14	2	5				1988
✓	READID		FOR SYMB	10 DEC 73	11:05:04	15		6	5	8	5	1995
	READID		RELOCATABLE	10 DEC 73	11:05:07	16	2	2				2001
✓	IDREC		FOR SYMB	10 DEC 73	11:05:21	17		36	5	16	5	2005
	IDREC		RELOCATABLE	10 DEC 73	11:05:27	18	2	28				2041
✓	RDATM		FOR SYMB	10 DEC 73	11:05:29	19		15	5	16	5	2071
	RDATM		RELOCATABLE	10 DEC 73	11:05:33	20	2	9				2086
✓	REDIP		FOR SYMB	10 DEC 73	11:05:45	21		19	5	17	5	2097
	REDIP		RELOCATABLE	10 DEC 73	11:05:47	22	2	12				2116
✓	AWAIT	AWAIT	ASM SYMB	10 DEC 73	11:05:57	23		2	5	6	5	2130
	AWAIT		RELOCATABLE	10 DEC 73	11:05:58	24	1	1				2132
✓	REDNOM		FOR SYMB	10 DEC 73	11:06:07	25		6	5	10	5	2134
	REDNOM		RELOCATABLE	10 DEC 73	11:06:10	26	2	4				2140
✓	SMOOTH		FOR SYMB	10 DEC 73	11:06:25	27		14	5	7	5	2146
	SMOOTH		RELOCATABLE	10 DEC 73	11:06:28	28	1	12				2160
✓	TIMAD		FOR SYMB	10 DEC 73	11:06:28	29		4	5	18	5	2173
	TIMAD		RELOCATABLE	10 DEC 73	11:06:30	30	1	3				2177
✓	TIMSB		FOR SYMB	10 DEC 73	11:06:32	31		3	5	18	5	2181
	TIMSB		RELOCATABLE	10 DEC 73	11:06:33	32	1	4				2184
✓	APTR		FOR SYMB	10 DEC 73	11:06:35	33		26	5	20	5	2189
	APTR		RELOCATABLE	10 DEC 73	11:06:38	34	2	18				2215
✓	HCSEL		FOR SYMB	10 DEC 73	11:06:41	35		95	5	20	5	2235
	HCSEL		RELOCATABLE	10 DEC 73	11:06:47	36	3	82				2330
✓	HCTMP		FOR SYMB	10 DEC 73	11:06:49	37		52	5	20	5	2415
	HCTMP		RELOCATABLE	10 DEC 73	11:06:52	38	2	30				2467
✓	HCIAP		FOR SYMB	10 DEC 73	11:06:53	39		8	5	19	5	2499
	HCIAP		RELOCATABLE	10 DEC 73	11:06:55	40	2	3				2507
✓	HASEL		FOR SYMB	10 DEC 73	11:06:57	41		95	5	21	5	2512
	HASEL		RELOCATABLE	10 DEC 73	11:07:03	42	3	82				2607
✓	HCDST		FOR SYMB	10 DEC 73	11:07:05	43		60	5	18	5	2692
	HCDST		RELOCATABLE	10 DEC 73	11:07:07	44	1	29				2752
✓	HATMP		FOR SYMB	10 DEC 73	11:07:09	45		47	5	21	5	2782
	HATMP		RELOCATABLE	10 DEC 73	11:07:13	46	2	25				2829

✓HAIAP	FOR SYMB	10 DEC 73	11:07:14	47		9	5	19	5	2856
HAIAP	RELOCATABLE	10 DEC 73	11:07:16	48	2	3				2865
✓HADST	FOR SYMB	10 DEC 73	11:07:24	49		307	5	19	5	2870
HADST	RELOCATABLE	10 DEC 73	11:07:30	50	1	124				3177
✓NBSEL	FOR SYMB	10 DEC 73	11:07:33	51		98	5	20	5	3302
NBSEL	RELOCATABLE	10 DEC 73	11:07:39	52	3	86				3400
✓NBTMP	FOR SYMB	10 DEC 73	11:07:43	53		86	5	20	5	3489
NBTMP	RELOCATABLE	10 DEC 73	11:07:47	54	2	50				3575
✓NBIAP	FOR SYMB	10 DEC 73	11:07:49	55		21	5	19	5	3627
NBIAP	RELOCATABLE	10 DEC 73	11:07:52	56	2	11				3648
✓NBDST	FOR SYMB	10 DEC 73	11:07:55	57		130	5	18	5	3661
NBDST	RELOCATABLE	10 DEC 73	11:07:58	58	2	55				3791
✓NASEL	FOR SYMB	10 DEC 73	11:08:01	59		95	5	20	5	3846
NASEL	RELOCATABLE	10 DEC 73	11:08:06	60	3	63				3943
✓NATMP	FOR SYMB	10 DEC 73	11:08:08	61		55	5	20	5	4029
NATMP	RELOCATABLE	10 DEC 73	11:08:12	62	2	31				4084
✓NAIAP	FOR SYMB	10 DEC 73	11:08:13	63		19	5	19	5	4117
NAIAP	RELOCATABLE	10 DEC 73	11:08:15	64	2	9				4136
✓NADST	FOR SYMB	10 DEC 73	11:08:17	65		64	5	18	5	4147
NADST	RELOCATABLE	10 DEC 73	11:08:19	66	2	32				4211
✓OTRAN	FOR SYMB	10 DEC 73	11:08:21	67		25	5	17	5	4245
OTRAN	RELOCATABLE	10 DEC 73	11:08:23	68	3	7				4270
✓DRDNOD	FOR SYMB	10 DEC 73	11:08:25	69		85	5	17	5	4280
DRDNOD	RELOCATABLE	10 DEC 73	11:08:31	70	2	69				4365
✓DRDBC	FOR SYMB	10 DEC 73	11:08:33	71		80	5	17	5	4436
DRDBC	RELOCATABLE	10 DEC 73	11:08:39	72	3	70				4516
✓DRDFLX	FOR SYMB	10 DEC 73	11:08:42	73		67	5	18	5	4589
DRDFLX	RELOCATABLE	10 DEC 73	11:08:47	74	3	57				4656
✓OCMPT	FOR SYMB	10 DEC 73	11:08:51	75		115	5	17	5	4716
DCMPT	RELOCATABLE	10 DEC 73	11:08:59	76	3	113				4831
✓STORIT	FOR SYMB	10 DEC 73	11:09:00	77		6	5	4	5	4947
STORIT	RELOCATABLE	10 DEC 73	11:09:02	78	1	4				4953
✓HCOPT	FOR SYMB	10 DEC 73	11:09:03	79		1	5	4	5	4958
HCOPT	RELOCATABLE	10 DEC 73	11:09:05	80	1	1				4959
✓HAOPT	FOR SYMB	10 DEC 73	11:09:06	81		1	5	4	5	4961
HAOPT	RELOCATABLE	10 DEC 73	11:09:07	82	1	1				4962
✓NRLPT	FOR SYMB	10 DEC 73	11:09:09	83		9	5	4	5	4964
NRLPT	RELOCATABLE	10 DEC 73	11:09:11	84	2	9				4973
✓NRLAP	FOR SYMB	10 DEC 73	11:09:12	85		23	5	4	5	4984
NRLAP	RELOCATABLE	10 DEC 73	11:09:15	86	2	33				5007
✓NRLBP	FOR SYMB	10 DEC 73	11:09:16	87		36	5	4	5	5042
NRLBP	RELOCATABLE	10 DEC 73	11:09:22	88	2	50				5078
SHCO	MAP SYMB	10 DEC 73	11:09:26	89		2	5	0	1	5130
AHCO	ABSOLUTE	10 DEC 73	11:09:48	90		745				5132
SHAO	MAP SYMB	10 DEC 73	11:09:49	91		2	5	0	1	5877
AHAO	ABSOLUTE	10 DEC 73	11:10:12	92		816				5879
SNRLB	MAP SYMB	10 DEC 73	11:10:13	93		2	5	0	1	6695
ANRLB	ABSOLUTE	10 DEC 73	11:10:45	94		1120				6697
SNRLA	MAP SYMB	10 DEC 73	11:10:45	95		2	5	0	1	7817
ANRLA	ABSOLUTE	10 DEC 73	11:11:15	96		1078				7819

NEXT AVAILABLE LOCATION- 8897

ASSEMBLER PROCEDURE TABLE EMPTY

COBOL PROCEDURE TABLE EMPTY

FORTRAN PROCEDURE TABLE EMPTY

ENTRY POINT TABLE

D NAME	LINK	D NAME	LINK	D NAME	LINK	D NAME	LINK	D NAME	LINK
APTR	34	AWAIT	24	COMPUT	74	DSTRT	66	DSTRT	58
DSTRT	50	DSTRT	44	FORMAINS	12	GETATM	6	IAPSTS	64
IAPSTS	56	IAPSTS	48	IAPSTS	40	IDREC	18	NRLPT	88
NRLPT	86	PLOT	84	PLOT	82	PLOT	80	RDATM	20
RDBC	72	RDFLX	74	RDNOD	70	READID	16	READIT	4
REDIP	22	REDNOM	26	SELECT	38	SELECT	52	SELECT	42
SELECT	60	SETATM	8	SKIPID	14	SKYATM	2	SMOOTH	28
STORIT	78	SWAP	10	TIMAD	30	TIMSB	32	TMPTBL	46
TMPTBL	38	TMPTBL	54	TMPTBL	62	TRAN	68		

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@ASG,T PUR2,T,SAVE05 . THERMAL DIST V2-L


@COPOUT TPFS.,PUR2.
FURPUR 24HI-12/10-11:17
 48 SYM  44 REL  4 ABS


@COPOUT TPFS.,PUR2.
 48 SYM  44 REL  4 ABS


@REWIND PUR2.


@ERS TPFS.


@COPIN PUR2.,TPFS.
 48 SYM  44 REL  4 ABS


@FREE PUR2.


@PREP
FURPUR 24HI-12/10-11:26


@PRT,T
```

1HNTSV140006*TPFS ELEMENT TABLE

D	NAME	VERSION	TYPE	DATE	TIME	SEQ #	SIZE-PRE	TEXT	(CYCLE	WORD)	PSRMODE	LOCATION
	ATMSKY		FOR SYMB	10 DEC 73	11:03:32	1		53	5	5	5	1792
	ATMSKY		RELOCATABLE	10 DEC 73	11:03:36	2	2	35				1845
	ITREAD		FOR SYMB	10 DEC 73	11:03:43	3		16	5	5	5	1882
	ITREAD		RELOCATABLE	10 DEC 73	11:03:46	4	2	10				1898
	ATMGET		FOR SYMB	10 DEC 73	11:03:55	5		11	5	5	5	1910
	ATMGET		RELOCATABLE	10 DEC 73	11:03:58	6	1	8				1921
	ATMSET		FOR SYMB	10 DEC 73	11:04:07	7		18	5	5	5	1930
	ATMSET		RELOCATABLE	10 DEC 73	11:04:11	8	2	16				1948
	SWAP		ASM SYMB	10 DEC 73	11:04:21	9		2	5	5	5	1966
	SWAP		RELOCATABLE	10 DEC 73	11:04:22	10	1	1				1968
	DSTR		FOR SYMB	10 DEC 73	11:04:43	11		5	5	11	5	1970
	DSTR		RELOCATABLE	10 DEC 73	11:04:48	12	2	2				1975
	SKIPID		FOR SYMB	10 DEC 73	11:04:56	13		9	5	19	5	1979
	SKIPID		RELOCATABLE	10 DEC 73	11:04:58	14	2	5				1988
	READID		FOR SYMB	10 DEC 73	11:05:04	15		6	5	8	5	1995
	READID		RELOCATABLE	10 DEC 73	11:05:07	16	2	2				2001
	IDREC		FOR SYMB	10 DEC 73	11:05:21	17		36	5	16	5	2005
	IDREC		RELOCATABLE	10 DEC 73	11:05:27	18	2	28				2041
	RDATM		FOR SYMB	10 DEC 73	11:05:29	19		15	5	16	5	2071
	RDATM		RELOCATABLE	10 DEC 73	11:05:33	20	2	9				2086
	REDIP		FOR SYMB	10 DEC 73	11:05:45	21		19	5	17	5	2097
	REDIP		RELOCATABLE	10 DEC 73	11:05:47	22	2	12				2116
	AWAIT		ASM SYMB	10 DEC 73	11:05:57	23		2	5	6	5	2130
	AWAIT		RELOCATABLE	10 DEC 73	11:05:58	24	1	1				2132
	REDNOM		FOR SYMB	10 DEC 73	11:06:07	25		6	5	10	5	2134
	REDNOM		RELOCATABLE	10 DEC 73	11:06:10	26	2	4				2140
	SMOOTH		FOR SYMB	10 DEC 73	11:06:25	27		14	5	7	5	2146
	SMOOTH		RELOCATABLE	10 DEC 73	11:06:28	28	1	12				2160
	TIMAD		FOR SYMB	10 DEC 73	11:06:28	29		4	5	18	5	2173
	TIMAD		RELOCATABLE	10 DEC 73	11:06:30	30	1	3				2177
	TIMSB		FOR SYMB	10 DEC 73	11:06:32	31		3	5	18	5	2181
	TIMSB		RELOCATABLE	10 DEC 73	11:06:33	32	1	4				2184
	APTR		FOR SYMB	10 DEC 73	11:06:35	33		26	5	20	5	2189
	APTR		RELOCATABLE	10 DEC 73	11:06:38	34	2	18				2215
	HCSEL		FOR SYMB	10 DEC 73	11:06:41	35		95	5	20	5	2235
	HCSEL		RELOCATABLE	10 DEC 73	11:06:47	36	3	82				2330
	HCTMP		FOR SYMB	10 DEC 73	11:06:49	37		52	5	20	5	2415
	HCTMP		RELOCATABLE	10 DEC 73	11:06:52	38	2	30				2467
	HCIAP		FOR SYMB	10 DEC 73	11:06:53	39		8	5	19	5	2499
	HCIAP		RELOCATABLE	10 DEC 73	11:06:55	40	2	3				2507
	HASEL		FOR SYMB	10 DEC 73	11:06:57	41		95	5	21	5	2512
	HASEL		RELOCATABLE	10 DEC 73	11:07:03	42	3	82				2607
	HCDST		FOR SYMB	10 DEC 73	11:07:05	43		60	5	18	5	2692
	HCDST		RELOCATABLE	10 DEC 73	11:07:07	44	1	29				2752
	HATMP		FOR SYMB	10 DEC 73	11:07:09	45		47	5	21	5	2782
	HATMP		RELOCATABLE	10 DEC 73	11:07:13	46	2	25				2829
	HAIAP		FOR SYMB	10 DEC 73	11:07:14	47		9	5	19	5	2856
	HAIAP		RELOCATABLE	10 DEC 73	11:07:16	48	2	3				2865
	HADST		FOR SYMB	10 DEC 73	11:07:24	49		307	5	19	5	2870
	HADST		RELOCATABLE	10 DEC 73	11:07:30	50	1	124				3177
	NBSEL		FOR SYMB	10 DEC 73	11:07:33	51		98	5	20	5	3302
	NBSEL		RELOCATABLE	10 DEC 73	11:07:39	52	3	66				3400
	NBTMP		FOR SYMB	10 DEC 73	11:07:43	53		86	5	20	5	3489

NBTMP	RELOCATABLE	10 DEC 73	11:07:47	54	2	50				3575
NBIAP	FOR SYMB	10 DEC 73	11:07:49	55		21	5	19	5	3627
NBIAP	RELOCATABLE	10 DEC 73	11:07:52	56	2	11				3648
NBDST	FOR SYMB	10 DEC 73	11:07:55	57		130	5	18	5	3661
NBDST	RELOCATABLE	10 DEC 73	11:07:58	58	2	55				3791
NASEL	FOR SYMB	10 DEC 73	11:08:01	59		95	5	20	5	3848
NASEL	RELOCATABLE	10 DEC 73	11:08:06	60	3	83				3943
NATMP	FOR SYMB	10 DEC 73	11:08:08	61		55	5	20	5	4029
NATMP	RELOCATABLE	10 DEC 73	11:08:12	62	2	31				4084
NAIAP	FOR SYMB	10 DEC 73	11:08:13	63		19	5	19	5	4117
NAIAP	RELOCATABLE	10 DEC 73	11:08:15	64	2	9				4136
NADST	FOR SYMB	10 DEC 73	11:08:17	65		64	5	18	5	4147
NADST	RELOCATABLE	10 DEC 73	11:08:19	66	2	32				4211
DTRAN	FOR SYMB	10 DEC 73	11:08:21	67		25	5	17	5	4245
DTRAN	RELOCATABLE	10 DEC 73	11:08:23	68	3	7				4270
DRDNOD	FOR SYMB	10 DEC 73	11:08:25	69		85	5	17	5	4280
DRDNOD	RELOCATABLE	10 DEC 73	11:08:31	70	2	69				4365
DRDBC	FOR SYMB	10 DEC 73	11:08:33	71		80	5	17	5	4436
DRDBC	RELOCATABLE	10 DEC 73	11:08:39	72	3	70				4516
DRDFLX	FOR SYMB	10 DEC 73	11:08:42	73		67	5	18	5	4589
DRDFLX	RELOCATABLE	10 DEC 73	11:08:47	74	3	57				4656
DCMPT	FOR SYMB	10 DEC 73	11:08:51	75		115	5	17	5	4716
DCMPT	RELOCATABLE	10 DEC 73	11:08:59	76	3	113				4831
STORIT	FOR SYMB	10 DEC 73	11:09:00	77		6	5	4	5	4947
STORIT	RELOCATABLE	10 DEC 73	11:09:02	78	1	4				4953
HCOPT	FOR SYMB	10 DEC 73	11:09:03	79		1	5	4	5	4958
HCOPT	RELOCATABLE	10 DEC 73	11:09:05	80	1	1				4959
HAOPT	FOR SYMB	10 DEC 73	11:09:06	81		1	5	4	5	4961
HAOPT	RELOCATABLE	10 DEC 73	11:09:07	82	1	1				4962
NRLPT	FOR SYMB	10 DEC 73	11:09:09	83		9	5	4	5	4964
NRLPT	RELOCATABLE	10 DEC 73	11:09:11	84	2	9				4973
NRLAP	FOR SYMB	10 DEC 73	11:09:12	85		23	5	4	5	4984
NRLAP	RELOCATABLE	10 DEC 73	11:09:15	86	2	33				5007
NRLBP	FOR SYMB	10 DEC 73	11:09:16	87		36	5	4	5	5042
NRLBP	RELOCATABLE	10 DEC 73	11:09:22	88	2	50				5078
SHCO	MAP SYMB	10 DEC 73	11:09:26	89		2	5	0	1	5130
AHCO	ABSOLUTE	10 DEC 73	11:09:48	90		745				5132
SHAO	MAP SYMB	10 DEC 73	11:09:49	91		2	5	0	1	5877
AHAO	ABSOLUTE	10 DEC 73	11:10:12	92		816				5879
SNRLB	MAP SYMB	10 DEC 73	11:10:13	93		2	5	0	1	6695
ANRLB	ABSOLUTE	10 DEC 73	11:10:45	94		1120				6697
SNRLA	MAP SYMB	10 DEC 73	11:10:45	95		2	5	0	1	7817
ANRLA	ABSOLUTE	10 DEC 73	11:11:15	96		1078				7819

NEXT AVAILABLE LOCATION= 8897

ASSEMBLER PROCEDURE TABLE EMPTY

COBOL PROCEDURE TABLE EMPTY

FORTRAN PROCEDURE TABLE EMPTY

ENTRY POINT TABLE

D NAME	LINK	D NAME	LINK	D NAME	LINK	D NAME	LINK	D NAME	LINK
APTR	34	AWAIT	24	COMPUT	76	DSTRT	66	DSTRT	58
DSTRT	50	DSTRT	44	FORMAINS	12	GETATM	6	IAPSTS	64

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IAPSTS      56   IAPSTS      48   IAPSTS      40   IDREC       18   NRLPT       88
NRLPT       86   PLOT        84   PLOT        82   PLOT        80   RDATM       20
RDBC        72   RDFLX       74   RDNOD       70   READID      16   READIT       4
REDIP       22   REDNOM      26   SELECT      36   SELECT      52   SELECT      42
SELECT      60   SETATM       8   SKIPID      14   SKYATM       2   SMOOTH      28
STORIT      78   SWAP        10   TIMAD       30   TIMSB       32   TMPTBL      46
TMPTBL      38   TMPTBL      54   TMPTBL      62   TRAN        68

@ASG,T PURI,T,SAVEOS . THERMAL DIST V2-L


@COPOUT TPFS.,PURI.
FURPUR 29HI-12/10-11:26
 48 SYM  44 REL  4 ABS


@COPOUT TPFS.,PURI.
 48 SYM  44 REL  4 ABS


@REWIND PURI.


@ERS TPFS.


@COPIN PURI.,TPFS.
 48 SYM  44 REL  4 ABS


@FREE PURI.


@PREP TPFS.
FURPUR 29HI-12/10-11:29


@PRT,T
IHNTSV140006*TPFS ELEMENT TABLE

D  NAME      VERSION      TYPE          DATE        TIME      SEQ #  SIZE-PRE,TEXT (CYCLE WORD) PSRMODE  LOCATION
   ATMSKY                FOR SYMB      10 DEC 73   11:03:32    1            53     5    5    5              1792
   ATMSKY                RELOCATABLE   10 DEC 73   11:03:36    2      2     35                            1845
   ITREAD                FOR SYMB      10 DEC 73   11:03:43    3            16     5    5    5              1882
   ITREAD                RELOCATABLE   10 DEC 73   11:03:46    4      2     10                            1898
```

ATMGET	FOR SYMB	10 DEC 73	11:03:55	5		11	5	5	5	1910
ATMGET	RELOCATABLE	10 DEC 73	11:03:58	6	1	8				1921
ATMSET	FOR SYMB	10 DEC 73	11:04:07	7		18	5	5	5	1930
ATMSET	RELOCATABLE	10 DEC 73	11:04:11	8	2	16				1948
SWAP	ASM SYMB	10 DEC 73	11:04:21	9		2	5	5	5	1966
SWAP	RELOCATABLE	10 DEC 73	11:04:22	10	1	1				1968
DSTR	FOR SYMB	10 DEC 73	11:04:43	11		5	5	11	5	1970
DSTR	RELOCATABLE	10 DEC 73	11:04:48	12	2	2				1975
SKIPID	FOR SYMB	10 DEC 73	11:04:56	13		9	5	19	5	1979
SKIPID	RELOCATABLE	10 DEC 73	11:04:58	14	2	5				1988
READID	FOR SYMB	10 DEC 73	11:05:04	15		6	5	8	5	1995
READID	RELOCATABLE	10 DEC 73	11:05:07	16	2	2				2001
IDREC	FOR SYMB	10 DEC 73	11:05:21	17		36	5	16	5	2005
IDREC	RELOCATABLE	10 DEC 73	11:05:27	18	2	28				2041
RDATM	FOR SYMB	10 DEC 73	11:05:29	19		15	5	16	5	2071
RDATM	RELOCATABLE	10 DEC 73	11:05:33	20	2	9				2086
REDIP	FOR SYMB	10 DEC 73	11:05:45	21		19	5	17	5	2097
REDIP	RELOCATABLE	10 DEC 73	11:05:47	22	2	12				2116
AWAIT	ASM SYMB	10 DEC 73	11:05:57	23		2	5	6	5	2130
AWAIT	RELOCATABLE	10 DEC 73	11:05:58	24	1	1				2132
REDNOM	FOR SYMB	10 DEC 73	11:06:07	25		6	5	10	5	2134
REDNOM	RELOCATABLE	10 DEC 73	11:06:10	26	2	4				2140
SMOOTH	FOR SYMB	10 DEC 73	11:06:25	27		14	5	7	5	2146
SMOOTH	RELOCATABLE	10 DEC 73	11:06:28	28	1	12				2160
TIMAD	FOR SYMB	10 DEC 73	11:06:28	29		4	5	18	5	2173
TIMAD	RELOCATABLE	10 DEC 73	11:06:30	30	1	3				2177
TIMSB	FOR SYMB	10 DEC 73	11:06:32	31		3	5	18	5	2181
TIMSB	RELOCATABLE	10 DEC 73	11:06:33	32	1	4				2184
APTR	FOR SYMB	10 DEC 73	11:06:35	33		26	5	20	5	2189
APTR	RELOCATABLE	10 DEC 73	11:06:38	34	2	18				2215
HCSEL	FOR SYMB	10 DEC 73	11:06:41	35		95	5	20	5	2235
HCSEL	RELOCATABLE	10 DEC 73	11:06:47	36	3	82				2330
HCTMP	FOR SYMB	10 DEC 73	11:06:49	37		52	5	20	5	2415
HCTMP	RELOCATABLE	10 DEC 73	11:06:52	38	2	30				2467
HCIAP	FOR SYMB	10 DEC 73	11:06:53	39		8	5	19	5	2499
HCIAP	RELOCATABLE	10 DEC 73	11:06:55	40	2	3				2507
HASEL	FOR SYMB	10 DEC 73	11:06:57	41		95	5	21	5	2512
HASEL	RELOCATABLE	10 DEC 73	11:07:03	42	3	62				2607
HCDST	FOR SYMB	10 DEC 73	11:07:05	43		60	5	18	5	2692
HCDST	RELOCATABLE	10 DEC 73	11:07:07	44	1	29				2752
HATMP	FOR SYMB	10 DEC 73	11:07:09	45		47	5	21	5	2782
HATMP	RELOCATABLE	10 DEC 73	11:07:13	46	2	25				2829
HAIAP	FOR SYMB	10 DEC 73	11:07:14	47		9	5	19	5	2856
HAIAP	RELOCATABLE	10 DEC 73	11:07:16	48	2	3				2865
HADST	FOR SYMB	10 DEC 73	11:07:24	49		307	5	19	5	2870
HADST	RELOCATABLE	10 DEC 73	11:07:30	50	1	124				3177
NBSEL	FOR SYMB	10 DEC 73	11:07:33	51		98	5	20	5	3302
NBSEL	RELOCATABLE	10 DEC 73	11:07:39	52	3	86				3400
NBTMP	FOR SYMB	10 DEC 73	11:07:43	53		86	5	20	5	3489
NBTMP	RELOCATABLE	10 DEC 73	11:07:47	54	2	50				3575
NBIAP	FOR SYMB	10 DEC 73	11:07:49	55		21	5	19	5	3627
NBIAP	RELOCATABLE	10 DEC 73	11:07:52	56	2	11				3648
NBDST	FOR SYMB	10 DEC 73	11:07:55	57		130	5	18	5	3661
NBDST	RELOCATABLE	10 DEC 73	11:07:58	58	2	55				3791
NASEL	FOR SYMB	10 DEC 73	11:08:01	59		95	5	20	5	3848
NASEL	RELOCATABLE	10 DEC 73	11:08:06	60	3	83				3943

NATMP	FOR SYMB	10 DEC 73	11:08:08	61		55	5	20	5	4029
NATMP	RELOCATABLE	10 DEC 73	11:08:12	62	2	31				4084
NAIAP	FOR SYMB	10 DEC 73	11:08:13	63		19	5	19	5	4117
NAIAP	RELOCATABLE	10 DEC 73	11:08:15	64	2	9				4136
NADST	FOR SYMB	10 DEC 73	11:08:17	65		64	5	18	5	4147
NADST	RELOCATABLE	10 DEC 73	11:08:19	66	2	32				4211
DTRAN	FOR SYMB	10 DEC 73	11:08:21	67		25	5	17	5	4245
DTRAN	RELOCATABLE	10 DEC 73	11:08:23	68	3	7				4270
DRDNOD	FOR SYMB	10 DEC 73	11:08:25	69		85	5	17	5	4280
DRDNOD	RELOCATABLE	10 DEC 73	11:08:31	70	2	69				4365
DRDBC	FOR SYMB	10 DEC 73	11:08:33	71		80	5	17	5	4436
DRDBC	RELOCATABLE	10 DEC 73	11:08:39	72	3	70				4516
DRDFLX	FOR SYMB	10 DEC 73	11:08:42	73		67	5	18	5	4589
DRDFLX	RELOCATABLE	10 DEC 73	11:08:47	74	3	57				4656
DCMPT	FOR SYMB	10 DEC 73	11:08:51	75		115	5	17	5	4716
DCMPT	RELOCATABLE	10 DEC 73	11:08:59	76	3	113				4831
STORIT	FOR SYMB	10 DEC 73	11:09:00	77		6	5	4	5	4947
STORIT	RELOCATABLE	10 DEC 73	11:09:02	78	1	4				4953
HCOPT	FOR SYMB	10 DEC 73	11:09:03	79		1	5	4	5	4958
HCOPT	RELOCATABLE	10 DEC 73	11:09:05	80	1	1				4959
HAOPT	FOR SYMB	10 DEC 73	11:09:06	81		1	5	4	5	4961
HAOPT	RELOCATABLE	10 DEC 73	11:09:07	82	1	1				4962
NRLPT	FOR SYMB	10 DEC 73	11:09:09	83		9	5	4	5	4964
NRLPT	RELOCATABLE	10 DEC 73	11:09:11	84	2	9				4973
NRLAP	FOR SYMB	10 DEC 73	11:09:12	85		23	5	4	5	4984
NRLAP	RELOCATABLE	10 DEC 73	11:09:15	86	2	33				5007
NRLBP	FOR SYMB	10 DEC 73	11:09:16	87		36	5	4	5	5042
NRLBP	RELOCATABLE	10 DEC 73	11:09:22	88	2	50				5078
SHCO	MAP SYMB	10 DEC 73	11:09:26	89		2	5	0	1	5130
AHCO	ABSOLUTE	10 DEC 73	11:09:48	90		745				5132
SHAO	MAP SYMB	10 DEC 73	11:09:49	91		2	5	0	1	5877
AHAO	ABSOLUTE	10 DEC 73	11:10:12	92		816				5879
SNRLB	MAP SYMB	10 DEC 73	11:10:13	93		2	5	0	1	6695
ANRLB	ABSOLUTE	10 DEC 73	11:10:45	94		1120				6697
SNRLA	MAP SYMB	10 DEC 73	11:10:45	95		2	5	0	1	7817
ANRLA	ABSOLUTE	10 DEC 73	11:11:15	96		1078				7819

NEXT AVAILABLE LOCATION- 8897

ASSEMBLER PROCEDURE TABLE EMPTY

COBOL PROCEDURE TABLE EMPTY

FORTRAN PROCEDURE TABLE EMPTY

ENTRY POINT TABLE

D NAME	LINK	D NAME	LINK	D NAME	LINK	D NAME	LINK	D NAME	LINK
APTR	34	AWAIT	24	COMPUT	76	DSTRT	66	DSTRT	58
DSTRT	50	DSTRT	44	FORMAINS	12	GETATM	6	IAPSTS	64
IAPSTS	56	IAPSTS	48	IAPSTS	40	IDREC	18	NRLPT	88
NRLPT	86	PLOT	84	PLOT	82	PLOT	80	RDATM	20
RDBC	72	RDFLX	74	RDNOD	70	READID	16	READIT	4
REDIP	22	REDNOM	26	SELECT	36	SELECT	52	SELECT	42
SELECT	68	SETATM	8	SKIPID	14	SKYATM	2	SMOOTH	28
STORIT	78	SWAP	10	TIMAD	30	TIMSB	32	TMPTBL	46
TMPTBL	38	TMPTBL	54	TMPTBL	62	TRAN	68		

@XQT ANRLB

INITIAL TIME (TIME=0 IN TRANSIENT)

DAY 331

HOUR 21

MIN 0

SEC 0

MSEC 0

SKYLAB USER TAPE SELECTED. REELS= 1

FIXED FORMAT

NNODE,NODE ARRAY

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  118
 121  122  123  124  143  144  151  152  193  194  195  196  197  198  199  200
 201  202  203  204  205  206  207  208  413  414  415  429  437  438  439  440
 442  443  444  445  452  454  456  457  464  471  473  474  476  477  479  485
 486 1440 1441 1442 1443 1444 1445 1446 1447 1448 1449 1450 1451 1452 1453 1454
1455 1456 1457 1458 1459 1308 1309 1310 1311 1312 1322 1301 1302 1303 1304 1305
1306 1307 1313 1314 1315 1316 1317 1318 1319 1320 1321  559  555 2406 2407 2408
2424 2425 2426 2427 2428 2452 2454 2455 2456 2457 2473 2474 2476 2477 2478 2479
3407 3426 3453 3455 3477 3478 3478
```

***** MEASUREMENT C0373-701 NOT IN RECORD 3.

MEASUREMENTS SKYLAB TAPE	DESIRED MEASUREMENTS	TAPE REC WORD NUMB
SITE RCDNO	C0084-82B	39
GMT	C0085-82B	40
C0004-702	C0087-82B	41
C0006-702	C0089-82B	42
C0007-702	C0093-82B	46
C0008-702	C0094-82B	47
C0009-702	C0196-701	72
C0010-702	C0207-82B	81
C0011-702	C0208-82B	82
C0012-702	C0209-82B	83
C0013-702	C0210-82B	84
C0014-702	C0212-82B	85
C0015-702	C0213-82B	86
C0016-702	C0214-82B	87
C0017-702	C0215-82B	88
C0018-702	C0216-82B	89
C0019-702	C0217-82B	90
C0020-702	C0219-82B	92
C0021-702	C0220-82B	93
C0022-702	C0222-82B	95
C0023-702	C0223-82B	96
C0024-702	C0224-82B	97

C0025-702	C0225-82B	98
C0026-702	C0282-701	138
C0027-702	C0286-704	140
C0028-702	C0287-704	141
C0029-702	C0288-703	142
C0036-056	C0313-704	167
C0037-056	C0317-703	171
C0038-056	C0319-701	173
C0039-056	C0320-701	174
C0041-056	C0321-701	175
C0069-052	C0373-701	0
C0070-052	C0386-701	219
C0071-052	C0405-82B	238
C0072-052	C0406-82B	239
C0073-052	C0407-82B	240
C0074-052	C0408-82B	241
C0084-82B	C0410-82B	243
C0085-82B	C0412-82B	245
C0087-82B	C0413-82B	246
C0089-82B	C0414-82B	247
C0090-82A	C0416-82B	249
C0091-82A	C0417-82B	250
C0092-82A	C0419-82B	252
C0093-82B	C0421-82B	254
C0094-82B	C0423-82B	256
C0095-82A	C0424-82B	257
C0096-82A	C0426-82B	259
C0116-702	C0427-82B	260
C0141-056	C0429-82B	262
C0143-056	C0431-82B	264
C0144-056	C0444-701	271
C0145-056	K0244-82B	377
C0149-052	M0301-82B	680
C0154-054	K0178-82B	359
C0155-054	K0179-82B	360
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C0229-710	82B	@@@@@@*	0
C0230-710	82B	@@@@@@(	0
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C0232-710	82B	@@@@@@,	0
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C0235-711	82B	@@@@@@[L	0
C0236-711	82B	@@@@@@[M	0
C0237-712	82B	@@@@@@[N	0
C0238-712	82B	@@@@@@[O	0
C0239-712	82B	@@@@@@[P	0
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C0264-55A	701	@@@@@@]E	0
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ETLM	000000000000	0
PDFZ1	000000000000	0
PDFY1	000000000000	0
EAX	000000000000	0
PDFX1	000000000000	0
DATA1	000000000000	0
EPVZ3	000000000000	0
CTT3	000000000000	0
EPVZ2	000000000000	0
EPVZ1	000000000000	0
CTT2	000000000000	0
EPVY2	000000000000	0
EPVY1	000000000000	0
CTT1	000000000000	0
EPXV2	000000000000	0
EPXV1	000000000000	0
CTT	000000000000	0
ETAY	000000000000	0
LMBDY	000000000000	0
AIDLD3	000000000000	0
AIDLD2	000000000000	0
AIDLD1	000000000000	0
FCT21	000000000000	0
CTR3	000000000000	0
CTR2	000000000000	0
TAUP	000000000000	0
CTR1	000000000000	0
TR	000000000000	0

TAU	0000000000000	0
TAUM	0000000000000	0
EDC3	0000000000000	0
MTIMER	0000000000000	0
EDC2	0000000000000	0
TGMT	0000000000000	0
EDC1	0000000000000	0
A3DLD3	0000000000000	0
A3DLD2	0000000000000	0
A3DLD1	0000000000000	0
WCIUT	0000000000000	0
QVI4	0000000000000	0
QVI3	0000000000000	0
THDTZ	0000000000000	0
THDTY	0000000000000	0
THDTX	0000000000000	0
IRG3Z	0000000000000	0
IRG2Z	0000000000000	0
IRG1Z	0000000000000	0
IRG3Y	0000000000000	0
IRG2Y	0000000000000	0
IRG1Y	0000000000000	0
IRG3X	0000000000000	0
IRG2X	0000000000000	0
IRG1X	0000000000000	0
E33VR	0000000000000	0
E32VR	0000000000000	0
E31VR	0000000000000	0
MTACS	0000000000000	0
QVI2	0000000000000	0
QVI1	0000000000000	0
ATMT	0000000000000	0
DISM	0000000000000	0
DISM1	0000000000000	0
NRLO	0000000000000	0
BETAZ	0000000000000	0
BETAY	0000000000000	0
BETAX	0000000000000	0
GAMY	0000000000000	0
GAMX	0000000000000	0
GAMRR	0000000000000	0
NUZ	0000000000000	0
PSI3	0000000000000	0
PSI1	0000000000000	0
E23VR	0000000000000	0
E22VR	0000000000000	0
E21VR	0000000000000	0
FTACS	0000000000000	0
QVA4	0000000000000	0
QVA4	0000000000000	0
QVA3	0000000000000	0
QVA3	0000000000000	0
GMYB4	0000000000000	0
GMXB4	0000000000000	0
HA2TM	0000000000000	0
GMYB3	0000000000000	0

GMXB3	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
HA1TM	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
GMYB2	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
GMXB2	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
HCOTM	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
GMYB1	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
GMXB1	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
NRLTM	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
E13VR	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
E12VR	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
E11VR	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
VREF	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
QVA2	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
QVA2	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
QVA1	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
QVA1	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
GMEY2	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
GMEY1	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
SW201	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
GMEX2	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
GMEX1	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
SW101	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
PHD3Z	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
PHD3Y	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
PHD3X	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
PHD2Z	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
PHD2Y	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
PHD2X	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
PHD1Z	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0
PHD1Y	⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖	0

```
NORMAL EXIT.  EXECUTION TIME:        15230 MILLISECONDS.
DATA IGNORED - IN CONTROL MODE

@PMD,E

PMD 020- 12/10-11:30
SYS$*RLIB$. LEVEL M68-2E
```

```
RUNID:  NRLBTD   ACCOUNT: 1HNTSv140006   PROJECT: BBRCNBBIN232
   LOAD 01230  16/3 PAR          -1 10171
1-10171•MSG: BACKUP TAPES TO 01236 ARE 01480,01458
1 OK
   SERVICE     16/3 01230  10171
   LOAD 39083  16/6 14           -1 10171
1- SAVE  BLANK 16/13 PUR4         -1 10171
   SERVICE     17/13 BLANK  10171
1 38216
1- SAVE  BLANK 16/14 PUR3         -1 10171
   SERVICE     17/14 BLANK  10171
1 38047
0- SAVE  BLANK 16/15 PUR2         -1 10171
   SERVICE     17/15 BLANK  10171
0 4596
   SERVICE     17/15 4596   10171
   SERVICE     17/15 4596   10171
   SERVICE     17/15 4596   10171
0- SAVE  BLANK 16/12 PUR1         -1 10171
   SERVICE     17/12 BLANK  10171
0  8305
TIME: 00:02:01.138   IN: 1836   OUT: 0        PAGES:   265
INITIATION  TIME:   11:01:57-DEC 10,1973
TERMINATION TIME:   11:30:22-DEC 10,1973
```

COMPUTER RESOURCE UNITS	CPU-CORE	I/O CORE	FASTRAND	1702	432	TAPE	UNIT RECORD		COST
52.040	1.99723	0.27113	0.42523	0.31994	2.10284	26.02560	20.89836	$	34.92