NASA Contractor Report 159273-2
Users Manual—Appendix H

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Thermal Radiation Analysis System TRASYS II

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APPENDIX H

AVAILABLE UNDER SEPARATE COVER AS
NASA CR-159273-2

Sample Problems.

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N A S A / M A R T I N   M A R I E T T A
T H E R M A L   R A D I A T I O N   A N A L Y S I S   S Y S T E M
C D C 6 5 0 0 / S C O P E 3 . 4

T R A S Y S   I I

```
TTTTTTTTTTTT
TTTTTTTTTTTT
TT   TTT   TT
     TTT
     TTT
     TTT
     TTT
     TTT
   TTTTTTT

RRRRRRRRR
RRRRRRRRRR
RRR      RRR
RRR      RRR
RRRRRRRRRR
RRR   RRR
RRR    RRR
RRR     RRR
RRR      RRRR

   AAAAAAA
  AAAAAAAAA
 AAAAAAAAAAA
 AAA     AAA
 AAA     AAA
 AAAAAAAAAAA
 AAA     AAA
 AAA     AAA
 AAA     AAA
AAAAA   AAAAA

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
         SSS
SS       SSS
SSSSSSSSSSSS
 SSSSSSSSSS

YYYY     YYYY
 YYY     YYY
  YYY   YYY
   YYY YYY
    YYYYY
     YYY
     YYY
     YYY
   YYYYYYY

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
         SSS
SS       SSS
SSSSSSSSSSSS
 SSSSSSSSSS
```

P R E - P R O C E S S O R   E X E C U T I O N

VERSION.MODIFICATION ... SC2E1
MODIFICATION DATE 01/21/77

DATE OF RUN 05/04/77
TIME OF RUN 11.07.23
JOB NUMBER RGEX153

```
MODEL =  N/A
OPTION AND TITLE DATA BLOCKS

CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT             HEADER OPTIONS DATA
INPUT             TITLE  SAMPLE CASE 1  -  NPLOT/SFCAL/FFCAL/GBCAL/RKCAL  -  ORIGINAL RUN
INPUT                    MODEL        = SAMPLE
INPUT                    RSO          = RSTSAM
```

```
MODEL = SAMPLE
TRASYS INFORMATION TO USER

            OPTIONS DATA -INFO- OPTIONS ARE ...

             INFO = BUILD        BUILD EXECUTION CARD
             INFO = INFO         HOW TO USE TRASYS INFO FILE
             INFO = ITRCPP       PREPROCESSOR TRACE FLAGS
             INFO = RKCAL        INFO. ON DELETION OF THE RKCAL LINK
             INFO = STEP         INFO. ON USING STEP CARDS
             INFO = CCARDS       INFO. ON TRASYS CONTROL CARDS

   END OF TRASYS INFORMATION FILE

++NOTE++ DATA ORIGINATION FROM INPUT FILE, NO -RSI- SOURCE EDITING
```

MODEL = SAMPLE
MODEL HISTORY

SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN

MODEL NAME .... SAMPLE

MODEL TITLE .... SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN

MOD LABEL	RUN JOB NUMBER	RUN DATA	RUN TIME	RSI TAPE	RSO TAPE	RTI TAPE	RTO TAPE	CMERG TAPE	EMERG TAPE	BCDOU TAPE	TRAJ TAPE	USER1 TAPE	USER2 TAPE
AA	RGEX153	05/04/77	11.07.24		RSTSAM								

SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN

MODEL = SAMPLE
SOURCE DATA EDIT DIRECTIVES

CARD ORGIN 12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO. LABEL

```
MODEL = SAMPLE                                          SAMPLE CASE 1  -  NPLOT/SFCAL/FFCAL/GBCAL/RKCAL  -  ORIGINAL RUN
SURFACE DATA INPUT BLOCK

CARD ORGIN          12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT               HEADER SURFACE DATA                                                                  1                  AA
INPUT               C                                                                                    2                  AA
INPUT               C-----THIS SURFACE DATA BLOCK IS USED IN SAMPLE CASES 1 THROUGH 5                    3                  AA
INPUT               C-----WITH VARIOUS PORTIONS OF IT BEING ACTIVATED FOR THE DIFFERENT                  4                  AA
INPUT               C-----CASES.                                                                         5                  AA
INPUT               C                                                                                    6                  AA
INPUT               BCS     BOXINR                                                                       7                  AA
INPUT               S       SURFN       = 1                                                              8                  AA
INPUT                       TYPE        = RECT                                                           9                  AA
INPUT                       ACTIVE      = BOTTOM                                                        10                  AA
INPUT                       PROP        = 0.9,0.9                                                       11                  AA
INPUT                       P1          = 1.0, 0.0, 1.0                                                 12                  AA
INPUT                       P2          = 1.0, 0.0, 0.0                                                 13                  AA
INPUT                       P3          = 1.0, 1.0, 0.0                                                 14                  AA
INPUT                       COM         = * INNER RIGH, FRONT *                                         15                  AA
INPUT               S       SURFN       = 2                                                             16                  AA
INPUT                       TYPE        = RECT                                                          17                  AA
INPUT                       ACTIVE      = BOTTOM                                                        18                  AA
INPUT                       PROP        = 0.9,0.9                                                       19                  AA
INPUT                       P1          = 1.0, 1.0, 1.0                                                 20                  AA
INPUT                       P2          = 1.0, 1.0, 0.0                                                 21                  AA
INPUT                       P3          = 0.0, 1.0, 0.0                                                 22                  AA
INPUT                       COM         = * INNER RIGHT SIDE *                                          23                  AA
INPUT               S       SURFN       = 3                                                             24                  AA
INPUT                       TYPE        = RECT                                                          25                  AA
INPUT                       ACTIVE      = TOP                                                           26                  AA
INPUT                       PROP        = 0.9,0.9                                                       27                  AA
INPUT                       P1          = 0.0, 0.0, 1.0                                                 28                  AA
INPUT                       P2          = 0.0, 0.0, 0.0                                                 29                  AA
INPUT                       P3          = 0.0, 1.0, 0.0                                                 30                  AA
INPUT                       COM         = * INNER RIGHT BACK *                                          31                  AA
INPUT               S       SURFN       = 4                                                             32                  AA
INPUT                       TYPE        = RECT                                                          33                  AA
INPUT                       ACTIVE      = TOP                                                           34                  AA
INPUT                       PROP        = 0.9,0.9                                                       35                  AA
INPUT                       P1          = 1.0, 1.0, 0.0                                                 36                  AA
INPUT                       COM         = * INNER RIGHT BOTTOM *                                        37                  AA
INPUT               BCS     BOXINL,IMGBCS=BOXINR,NINC=10,IREFSF=1000                                    38                  AA
INPUT               C                                                                                   39                  AA
INPUT               C-----THE FOREGOING CARD IMAGES BCS BOXINR IN REFERENCE PLANE 1000                  40                  AA
INPUT               C-----TO CREATE BCS BOXINL.  THE INTERIOR OF THE BOX WAS INPUT IN                   41                  AA
INPUT               C-----THIS MANNER TO FACILITATE THE INPUT OF SAMPLE CASE 4 TO SHOW                  42                  AA
INPUT               C-----THE USE OF "MESS" AND "ERN" NODES.                                            43                  AA
INPUT               C                                                                                   44                  AA
                          IMAGING SURFACE     1) BCS (     BO), GENERATING SURFACE (   11) BCS (     BO)
                          IMAGING SURFACE     2) BCS (     BO), GENERATING SURFACE (   12) BCS (     BO)
                          IMAGING SURFACE     3) BCS (     BO), GENERATING SURFACE (   13) BCS (     BO)
                          IMAGING SURFACE     4) BCS (     BO), GENERATING SURFACE (   14) BCS (     BO)
INPUT               R       REFNO       = 1000                                                          45                  AA
INPUT                       P1          = 1.0, 0.0, 1.0                                                 46                  AA
INPUT                       P2          = 1.0, 0.0, 0.0                                                 47                  AA
```

```
MODEL = SAMPLE                                SAMPLE CASE 1  -  NPLOT/SFCAL/FFCAL/GBCAL/RKCAL  -  ORIGINAL RUN
SURFACE DATA INPUT BLOCK

CARD ORGIN          12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT                           P3          = 0.0, 0.0, 0.0                                          48                AA
INPUT                           COM         = * IMAGING PLANE *                                      49                AA
INPUT               BCS         LIDINR                                                               50                AA
INPUT               S           SURFN       = 5                                                      51                AA
INPUT                           TYPE        = RECT                                                   52                AA
INPUT                           ACTIVE      = BOTTOM                                                 53                AA
INPUT                           PROP        = 0.9,0.9                                                54                AA
INPUT                           P1          = 1.0, 1.0, 0.0                                          55                AA
INPUT                           COM         = * INNER RIGHT LID *                                    56                AA
INPUT               S           SURFN       = 15                                                     57                AA
INPUT                           IMAGSF      = 5                                                      58                AA
INPUT                           IREFSF      = 1000                                                   59                AA
INPUT                           COM         = * INNER LEFT LID *                                     60                AA
INPUT               BCS         BOXOUT                                                               61                AA
INPUT               S           SURFN       = 21                                                     62                AA
INPUT                           TYPE        = BOX5                                                   63                AA
INPUT                           ACTIVE      = OUT                                                    64                AA
INPUT                           SHADE       = NO                                                     65                AA
INPUT                           PROP        = 0.2,0.9                                                66                AA
INPUT                           P1          = 1.01,-1.01, 1.01                                       67                AA
INPUT                           P2          = 1.01, 1.01, 1.01                                       68                AA
INPUT                           P3          =-0.01, 1.01, 1.01                                       69                AA
INPUT                           P4          =-0.01, 1.01,-0.01                                       70                AA
INPUT                           COM         = * OUTER SURFACES *                                     71                AA
INPUT               BCS         LIDOUT                                                               72                AA
INPUT               S           SURFN       = 26                                                     73                AA
INPUT                           TYPE        = RECT                                                   74                AA
INPUT                           ACTIVE      = TOP                                                    75                AA
INPUT                           SHADE       = NO                                                     76                AA
INPUT                           PROP        = 0.2,0.9                                                77                AA
INPUT                           P1          = 1.01,-1.01, 0.01                                       78                AA
INPUT                           P2          = 1.01, 1.01, 0.01                                       79                AA
INPUT                           P3          =-0.01, 1.01, 0.01                                       80                AA
INPUT                           COM         = * OUTER SURFACE OF LID *                               81                AA
INPUT               C                                                                                82                AA
INPUT               C-----THE NEXT TWO BCS'S (MESSR AND MESSL) ARE ACTIVATED IN SAMPLE               83                AA
INPUT               C-----CASE 4 ONLY.                                                               84                AA
INPUT               C                                                                                85                AA
INPUT               BCS         MESSR                                                                86                AA
INPUT               S           SURFN       = 101                                                    87                AA
INPUT                           TYPE        = RECT                                                   88                AA
INPUT                           ACTIVE      = TOP                                                    89                AA
INPUT                           PROP        = 1.0,1.0                                                90                AA
INPUT                           P1          = 1.0, 0.0, 1.0                                          91                AA
INPUT                           P2          = 1.0, 0.0, 0.0                                          92                AA
INPUT                           P3          = 0.0, 0.0, 0.0                                          93                AA
INPUT                           COM         = * PRIMARY MESS NODE, RIGHT SIDE *                      94                AA
INPUT               BCS         MESSL                                                                95                AA
INPUT               S           SURFN       = 111                                                    96                AA
INPUT                           TYPE        = RECT                                                   97                AA
INPUT                           ACTIVE      = BOTTOM                                                 98                AA
```

```
MODEL = SAMPLE                                       SAMPLE CASE 1  -  NPLOT/SFCAL/FFCAL/GBCAL/RKCAL  -  ORIGINAL RUN
SURFACE DATA INPUT BLOCK

CARD ORGIN     12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT                   PROP       = 1.0,1.0                                                     99                 AA
INPUT                   P1         = 1.0, 0.0, 1.0                                              100                 AA
INPUT                   P2         = 1.0, 0.0, 0.0                                              101                 AA
INPUT                   P3         = 0.0, 0.0, 0.0                                              102                 AA
INPUT                   COM        = * PRIMARY MESS NODE, LEFT SIDE *                           103                 AA
INPUT          C                                                                                104                 AA
INPUT          C-----THE FOLLOWING BCS (LIDSP) IS ACTIVATED IN SAMPLE CASE 5 ONLY.              105                 AA
INPUT          C                                                                                106                 AA
INPUT          BCS      LIDSP                                                                   107                 AA
INPUT          S        SURFN      = 200                                                        108                 AA
INPUT                   TYPE       = RECT                                                       109                 AA
INPUT                   ACTIVE     = BOTTOM                                                     110                 AA
INPUT                   PROP       = 0.1,0.1                                                    111                 AA
INPUT                   SPRI       = 0.8                                                        112                 AA
INPUT                   SPRS       = 0.8                                                        113                 AA
INPUT                   P1         = 1.0,-1.0, 0.0                                              114                 AA
INPUT                   P2         = 1.0, 1.0, 0.0                                              115                 AA
INPUT                   P3         = 0.0, 1.0, 0.0                                              116                 AA
INPUT                   COM        = * SPECULAR LID *                                           117                 AA
```

```
MODEL = SAMPLE                                        SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
BCS DATA INPUT BLOCK

CARD ORGIN         12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT              HEADER BCS DATA                                                                   118                    AA
INPUT              BCS    BOXINR                                                                     119                    AA
INPUT              BCS    BOXINL                                                                     120                    AA
INPUT              BCS    LIDINR ,0.,0.,1.,0.,-45.,0.                                                121                    AA
INPUT              BCS    BOXOUT                                                                     122                    AA
INPUT              BCS    LIDOUT ,0.,0.,1.,0.,-45.,0.                                                123                    AA
INPUT              BCS    MESSR                                                                      124                    AA
INPUT              BCS    MESSL                                                                      125                    AA
INPUT              BCS    LIDSP  ,0.,0.,1.,0.,-45.,0.                                                126                    AA
```

MODEL = SAMPLE
FORM FACTOR DATA INPUT BLOCK
SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN

```
CARD ORGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
INPUT            HEADER FORM FACTOR DATA
INPUT            C                                                                                  127              AA
INPUT            C-----ENTER KNOWN ZERO FORM FACTORS AND EQUIVALENT FORM FACTORS FOR                128              AA
INPUT            C-----CASE1.                                                                       129              AA
INPUT            C                                                                                  130              AA
INPUT            FIG     CASE1                                                                      131              AA
INPUT            NODEA   1,2,3,4,11,12,13,14,5,15,21,22,23,24,25,26,END                             132              AA
INPUT            BOTH    21,ZERO                                                                    133              AA
INPUT                    22,ZERO                                                                    134              AA
INPUT                    23,ZERO                                                                    135              AA
INPUT                    24,ZERO                                                                    136              AA
INPUT                    25,ZERO                                                                    137              AA
INPUT                    26,ZERO                                                                    138              AA
INPUT                    1,1,0.                                                                     139              AA
INPUT                    11,12,1,2                                                                  140              AA
INPUT                    11,13,1,3                                                                  141              AA
INPUT                    11,14,1,4                                                                  142              AA
INPUT                    11,15,1,5                                                                  143              AA
INPUT                    1,11,0.                                                                    144              AA
INPUT                    11,2,1,12                                                                  145              AA
INPUT                    11,3,1,13                                                                  146              AA
INPUT                    11,4,1,14                                                                  147              AA
INPUT                    11,5,1,15                                                                  148              AA
INPUT                    2,2,0.                                                                     149              AA
INPUT                    2,3,1,2                                                                    150              AA
INPUT                    2,4,1,4                                                                    151              AA
INPUT                    12,13,2,3                                                                  152              AA
INPUT                    12,14,2,4                                                                  153              AA
INPUT                    12,15,2,5                                                                  154              AA
INPUT                    12,3,2,13                                                                  155              AA
INPUT                    12,4,2,14                                                                  156              AA
INPUT                    12,5,2,15                                                                  157              AA
INPUT                    3,3,0.                                                                     158              AA
INPUT                    3,4,1,4                                                                    159              AA
INPUT                    13,14,3,4                                                                  160              AA
INPUT                    13,15,3,5                                                                  161              AA
INPUT                    3,13,0.                                                                    162              AA
INPUT                    13,4,3,14                                                                  163              AA
INPUT                    13,5,3,15                                                                  164              AA
INPUT                    4,4,0.                                                                     165              AA
INPUT                    14,15,4,5                                                                  166              AA
INPUT                    4,14,0.                                                                    167              AA
INPUT                    14,5,4,15                                                                  168              AA
INPUT                    5,5,0.                                                                     169              AA
INPUT                    5,15,0.                                                                    170              AA
                                                                                                    171              AA
```

SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN

```
MODEL = SAMPLE
CORRESPONDENCE DATA INPUT BLOCK

CARD ORGIN     12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT          HEADER CORRESPONDENCE DATA                                                          172               AA
INPUT          C                                                                                   173               AA
INPUT          C-----ENTER CORRESPONDENCE DATA FOR CASE 2                                          174               AA
INPUT          C                                                                                   175               AA
INPUT          FIG     CASE2                                                                       176               AA
INPUT                  1            = 1,11,22                                                      177               AA
INPUT                  2            = 2,25                                                         178               AA
INPUT                  3            = 3,13,24                                                      179               AA
INPUT                  4            = 4,14,21                                                      180               AA
INPUT                  5            = 5,15,26                                                      181               AA
INPUT                  12           = 12,23                                                        182               AA
INPUT          C                                                                                   183               AA
INPUT          C-----ENTER CORRESPONDENCE DATA FOR CASE 3 TO COMBINE FORM FACTORS                  184               AA
INPUT          C                                                                                   185               AA
INPUT          FIG     CASE3,FF                                                                    186               AA
INPUT                  1            = 1,11,22                                                      187               AA
INPUT                  2            = 2,25                                                         188               AA
INPUT                  3            = 3,13,24                                                      189               AA
INPUT                  4            = 4,14,21                                                      190               AA
INPUT                  5            = 5,15,26                                                      191               AA
INPUT                  12           = 12,23                                                        192               AA
```

```
MODEL = SAMPLE                                      SAMPLE CASE 1  -  NPLOT/SFCAL/FFCAL/GBCAL/RKCAL  -  ORIGINAL RUN
OPERATION DATA INPUT BLOCK  (PASS 1)

CARD ORGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT            HEADER OPERATIONS DATA                                                              193                AA


+++++ OPERATIONS DATA BLOCK (PASS 1) COMPLETE +++++
```

MODEL = SAMPLE SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN

OPERATION DATA INPUT BLOCK (PASS 2)

```
CARD ORGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
                                                                                           194                    AA
INPUT            C                                                                         195                    AA
INPUT            C-----BUILD THE CASE 1 CONFIGURATION                                      196                    AA
INPUT            C                                                                          -0
PROG             STEP       -1                                                             197                    AA
INPUT            BUILD  CASE1,BOXINR,BOXINL,LIDINR,BOXOUT,LIDOUT                            -0
PROG                    CALL BUILDC (BOXINR,6HCASE1 )                                       -0
PROG                    CALL ADD (BOXINL)                                                   -0
PROG                    CALL ADD (LIDINR)                                                   -0
PROG                    CALL ADD (BOXOUT)                                                   -0
PROG                    CALL ADD (LIDOUT)                                                  198                    AA
INPUT            C                                                                         199                    AA
INPUT            C-----PLOT THE CASE 1 CONFIGURATION INDICATING THE ACTIVE                 200                    AA
INPUT            C-----SIDES OF THE NODES.                                                 201                    AA
INPUT            C                                                                         202                    AA
INPUT                   CALL NDATAS(0,0,0,YES,0)                                           203                    AA
INPUT            L      NPLOT                                                              204                    AA
INPUT            C                                                                         205                    AA
INPUT            C-----CALCULATE SHADOW FACTOR TABLES FOR SUBSEQUENT USE IN                206                    AA
INPUT            C-----SAMPLE CASE 2 IN THE CALCULATION OF DIRECT FLUXES.                  207                    AA
INPUT            C                                                                         208                    AA
INPUT            L      SFCAL                                                              209                    AA
INPUT            C                                                                         210                    AA
INPUT            C-----CALCULATE THE FORM FACTOR MATRIX.                                   211                    AA
INPUT            C                                                                         212                    AA
INPUT            L      FFCAL                                                              213                    AA
INPUT            C                                                                         214                    AA
INPUT            C-----CALCULATE THE GRAY BODY MATRIX.                                     215                    AA
INPUT            C                                                                         216                    AA
INPUT                   CALL GBDATA(BOTH,0,FF)                                             217                    AA
INPUT            L      GBCAL                                                              218                    AA
INPUT                   CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,0)                             219                    AA
INPUT            C                                                                         220                    AA
INPUT            C-----CALCULATE AND PUNCH RADIATION CONDUCTORS.                           221                    AA
INPUT            C                                                                         222                    AA
INPUT            L      RKCAL                                                              223                    AA
INPUT            END OF DATA
```

```
MODEL = SAMPLE                                   SAMPLE CASE 1  -  NPLOT/SFCAL/FFCAL/GBCAL/RKCAL  -  ORIGINAL RUN
PROCESSOR CORE ALLOCATION

THE FOLLOWING IS THE PROCESSOR CORE ALLOCATION FOR THOSE SEGMENTS WHICH WILL BE LOADED IN THIS EXECUTION (APPROX.) ...

                                                 OCTAL/DECIMAL

TRASYS (0) SEGMENT ............................. 033501/ 14145
OPERATIONS DATA (NOT KNOWN AT THIS TIME)........ 075000/ 31232
INITALIZATION SEGMENT .......................... 037600/ 16256
FORM FACTOR SEGMENT ............................ 100100/ 32832
SHADOW FACTOR SEGMENT .......................... 063700/ 26560
NODE PLOTTER SEGMENT ........................... 047600/ 20352
GRAY BODY SEGMENT .............................. 052400/ 21760
RADATION CONDUCTOR SEGMENT ..................... 050000/ 20480

GRAY BODY DYNAMIC COMMON ....................... 004600/  2432
RADIATION CONDUCTOR DYNAMIC COMMON ............. 000574/   380

GRAY BODY MINIMUM - MAXIMUM CORE ............... 052372/ 21754 - 052372/ 21754
RADIATION CONDUCTOR MINIMUM - MAXIMUM CORE ..... 047505/ 20293 - 047751/ 20457

++CAUTION    1++ THE FFPROG SEGMENT APPEARS TO BE TOO LONG FOR AMOUNT OF CORE (075000B) AVAILABLE

MINIMUM CORE NEEDED FOR PROCESSOR EXECUTION .... 100100/ 32832

MAXIMUM CORE NEEDED FOR PROCESSOR EXECUTION .... 100100/ 32832

AMOUNT OF CORE THAT WILL BE USED BY PROCESSSOR . 100100/ 32832
```

MODEL = SAMPLE SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
WRAP UP OF THE PRE-PROCESSOR

CAUTION MESSAGE(S) OCCUR FOLLOWING THE FIRST 100 OR LESS EDIT SEQUENCE NUMBER(S) LISTED BELOW ...

223

MODEL = SAMPLE SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
WRAP UP OF THE PRE-PROCESSOR

PRE-PROCESSOR ACCOUNTING INFORMATION	CP-SEC	PP-SEC	DYM-STORAGE
SOURCE EDITING	.726	2	515
DOCUMENTATION DATA PRE-PROCESSING	0.	0	0
QUANTITIES DATA PRE-PROCESSING	.015	1	266
ARRAY DATA PRE-PROCESSING	0.	0	0
SURFACE DATA PRE-PROCESSING (PASS 1) ...	1.153	3	64
SURFACE DATA PRE-PROCESSING (PASS 2) ...	.216	4	1141
BCS DATA PRE-PROCESSING	.133	0	186
FORM FACTOR DATA PRE-PROCESSING	.586	3	1169
SHADOW DATA PRE-PROCESSING	0.	0	0
FLUX DATA PRE-PROCESSING	0.	0	0
CORRESPONDENCE DATA PRE-PROCESSING	.175	0	101
OPERATIONS DATA PRE-PROCESSING	1.481	2	872
SUBROUTINE DATA PRE-PROCESSING	.167	1	0
SEQUENTIAL TAPE INITIATION	.025	0	0

TOTAL CP TIME FOR PRE-PROCESSOR .... 5.893 DECIMAL SECONDS OR 000006 OCTAL SECONDS

TOTAL PP TIME FOR PRE-PROCESSOR .... 19 DECIMAL SECONDS OR 000023 OCTAL SECONDS

MINIMUM DYNAMIC STORAGE NEEDED BY PRE-PROCESSOR .. 1169 DECIMAL WORDS

DYNAMIC STORAGE AVAILABLE TO PRE-PROCESSOR .... 3384 DECIMAL WORDS

MINIMUM CORE NEEDED FOR PRE-PROCESSOR EXECUTION .. 071000 OCTAL WORDS

* * * * * * * * * *
NUMBER OF CAUTION MESSAGES .. 1
* * * * * * * * * *

NORMAL TERMINATION BY PRE-PROCESSOR

N A S A / M A R T I N   M A R I E T T A
T H E R M A L   R A D I A T I O N   A N A L Y S I S   S Y S T E M
C D C 6 5 0 0 / S C O P E 3 . 4

T R A S Y S   I I

```
TTTTTTTTTTTTT
TTTTTTTTTTTTT
TT   TTT   TT
     TTT
     TTT
     TTT
     TTT
     TTT
   TTTTTTT

RRRRRRRRR
RRRRRRRRRR
RRR     RRR
RRR     RRR
RRRRRRRRRR
RRR  RRR
RRR   RRR
RRR    RRR
RRR     RRRR

  AAAAAAA
 AAAAAAAAA
AAAAAAAAAAA
AAA     AAA
AAA     AAA
AAAAAAAAAAA
AAA     AAA
AAA     AAA
AAA     AAA
AAAAA  AAAAA

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
         SSS
SS       SSS
SSSSSSSSSSSS
 SSSSSSSSSS

YYYY     YYYY
 YYY     YYY
  YYY   YYY
   YYY YYY
    YYYYY
     YYY
     YYY
     YYY
   YYYYYYY

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
         SSS
SS       SSS
SSSSSSSSSSSS
 SSSSSSSSSS
```

P R E - P R O C E S S O R   E X E C U T I O N

LATEST LIBRARY MOD.VER NUMBER SL2E1
LAST LIBRARY MODIFICATION DATE 04/26/77

DATE OF THIS PROCESSOR RUN 05/04/77
TIME OF THIS PROCESSOR RUN .... 11.44.12.
JOB NUMBER OF THIS PROCESSOR RUN RGEX153

```
DATE  05/04/77  TIME  11.44.15.       THERMAL RADIATION ANALYSIS SYSTEM (TRASYS)  CDC6500/SCOPE 3.4        PAGE     1

MODEL=SAMPLE CONFIG=SAMPLE STEP=-1               SAMPLE CASE 1  -  NPLOT/SFCAL/FFCAL/GBCAL/RKCAL  -  ORIGINAL RUN
PROCESSING OPERATIONS DATA

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

THE OPERATIONS DATA SEGMENT USES ABOUT 036700 OCTAL WORDS OF CORE STORAGE

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
PROCESSING OPERATIONS DATA

NODE	BCS	AREA	ALPH	EMISS	SURF. TYPE	ACTIVE	--------COMMENTS--------------
1	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
2	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
3	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
4	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
11	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
12	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
13	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
14	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
5	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT LID
15	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER LEFT LID
21	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
22	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
23	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
24	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
25	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
26	LIDOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACE OF LID

NODE, AREA, AND PROPERTIES ARRAYS HAVE BEEN WRITTEN ON THE -RSO- TAPE
BY -BUILDC- (ACCESS NUMBER= 1)

ADJUSTING FIELD LENGTH TO 047600 FOR THE NP SEGMENT

NODE PLOTTER DATA OUTPUT

NODE PLOTTER

PARAMETER	DESCRIPTION	OPTION *,	DEFAULT
NV	VIEW NUMBER	1-6	1
IVU	VIEW	3HALL 3H3-D 1HX 1HY 1HZ 3HGEN	3HALL
SCL	SCALE FACTOR (3.15/LARGEST DISTANCE FROM CCS ORIGIN IN USER S UNITS)		AUTOMATIC SCALE
ISELN	ARRAY NAME CONTAINING NUMBER OF NODES TO BE SELECTIVELY PLOTTED	ARRAY NAME	PLOTS ALL NODES
ITIT	ARRAY NAME OF PLOT TITLE	ARRAY NAME	USES JOB TITLE
ROTX, ROTY, ROTZ,	VIEW ROTATIONS (FOR IVU = 3HGEN)	0 @ ANG @ 360	0.0 0.0 0.0
IROTX, IROTY, IROTZ	ORDER OF ROTATIONS (FOR IVU = 3HGEN)	1,2,3 (ANY ORDER)	1,2,3

*INPUT ZERO FOR DEFAULT ACTION

CALLING SEQUENCE%,

CALL NDATA (NV, IUV, SCL, ISELN, ITIT, ROTX, ROTY, ROTZ, IROTX, IROTY, IROTZ)

OR

CALL NDATAS (NV, IVU, SCL)

NOTE% IF NO CA[illegible] NDATAS ARE MADE, A CALL TO NPLOT WILL
RESULT IN A[illegible] AUTOMATICALLY SCALED GENERATED FOR NODES.

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
NODE PLOTTER DATA OUTPUT

VIEW=3-D SCALE= 1.2384 VIEW NUMBER=1

VIEW=Z-AXIS SCALE= 1.2384 VIEW NUMBER=1

VIEW=X-AXIS SCALE= 1.2384 VIEW NUMBER=1

VIEW=Y-AXIS SCALE= 1.2384 VIEW NUMBER=1

ADJUSTING FIELD LENGTH TO 036700 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 063700 FOR THE SF SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

NODE 1

INFRA RED
SHADOW TABLE

CLOCK ANGLE 0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0
0	0	0	0	0	.58	.42	.25	.11	0	0	0	0	1.00	0	0	0	0	0	41
0	0	0	0	0	.26	.31	.17	.08	0	0	0	.14	.83	0	0	0	0	0	60
0	0	0	0	0	.11	.14	.11	.03	0	0	0	.17	.39	0	0	0	0	0	75
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

NODE 1

SOLAR
SHADOW TABLE

CLOCK ANGLE 0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0
0	0	0	0	0	.58	.42	.25	.11	0	0	0	0	1.00	0	0	0	0	0	41
0	0	0	0	0	.26	.31	.17	.08	0	0	0	.14	.83	0	0	0	0	0	60
0	0	0	0	0	.11	.14	.11	.03	0	0	0	.17	.39	0	0	0	0	0	75
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 2

INFRA RED
SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	0
.58	0	0	0	0	0	0	0	0	0	0	0	0	.11	.39	.61	.64	.58	.58	41
.28	0	0	0	0	0	0	0	0	0	0	0	0	.08	.61	.58	.36	.31	.28	60
.11	0	0	0	0	0	0	0	0	0	0	0	0	.17	.39	.25	.17	.14	.11	75
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

CLOCK ANGLE

NODE 2

SOLAR
SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	0
.58	0	0	0	0	0	0	0	0	0	0	0	0	.11	.39	.61	.64	.58	.58	41
.28	0	0	0	0	0	0	0	0	0	0	0	0	.08	.61	.58	.36	.31	.28	60
.11	0	0	0	0	0	0	0	0	0	0	0	0	.17	.39	.25	.17	.14	.11	75
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 3

INFRA RED
SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.83	.72	.50	.28	.17	0	0	0	0	0	0	0	0	0	0	.17	.67	.83	.83	41
.50	.56	.42	.33	.08	0	0	0	0	0	0	0	0	0	.25	.75	.83	.67	.50	60
.33	.25	.19	.14	.11	0	0	0	0	0	0	0	0	0	.22	.44	.33	.33	.33	75
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

CLOCK ANGLE

NODE 3

SOLAR
SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.83	.72	.50	.28	.17	0	0	0	0	0	0	0	0	0	0	.17	.67	.83	.83	41
.50	.56	.42	.33	.08	0	0	0	0	0	0	0	0	0	.25	.75	.83	.67	.50	60
.33	.25	.19	.14	.11	0	0	0	0	0	0	0	0	0	.22	.44	.33	.33	.33	75
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN

SHADOW FACTOR GENERATOR LINK

NODE 4

INFRA RED SHADOW TABLE

CONE ANGLE \ CLOCK ANGLE	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360
0	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33
41	.17	.11	.17	.08	.14	.14	.06	.06	0	0	0	0	0	.17	.50	.50	.33	.17	.17
60	0	0	0	0	0	0	0	0	0	0	0	0	0	.19	.22	.08	0	0	0
75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
139	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NODE 4

SOLAR SHADOW TABLE

CONE ANGLE \ CLOCK ANGLE	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360
0	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33
41	.17	.11	.17	.08	.14	.14	.06	.06	0	0	0	0	0	.17	.50	.50	.33	.17	.17
60	0	0	0	0	0	0	0	0	0	0	0	0	0	.19	.22	.08	0	0	0
75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
139	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 11

INFRA RED SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0
0	0	0	0	0	1.00	0	0	0	0	.11	.25	.42	.58	0	0	0	0	0	41
0	0	0	0	0	.83	.14	0	0	0	.08	.17	.31	.28	0	0	0	0	0	60
0	0	0	0	0	.39	.17	0	0	0	.03	.11	.14	.11	0	0	0	0	0	75
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

CLOCK ANGLE

NODE 11

SOLAR SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0
0	0	0	0	0	1.00	0	0	0	0	.11	.25	.42	.58	0	0	0	0	0	41
0	0	0	0	0	.83	.14	0	0	0	.08	.17	.31	.28	0	0	0	0	0	60
0	0	0	0	0	.39	.17	0	0	0	.03	.11	.14	.11	0	0	0	0	0	75
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

NODE 12 — CLOCK ANGLE

INFRA RED SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	0
.58	.58	.64	.61	.39	.11	0	0	0	0	0	0	0	0	0	0	0	0	.58	41
.28	.31	.36	.58	.61	.08	0	0	0	0	0	0	0	0	0	0	0	0	.28	60
.11	.14	.17	.25	.39	.17	0	0	0	0	0	0	0	0	0	0	0	0	.11	75
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

NODE 12 — CLOCK ANGLE

SOLAR SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	0
.58	.58	.64	.61	.39	.11	0	0	0	0	0	0	0	0	0	0	0	0	.58	41
.28	.31	.36	.58	.61	.08	0	0	0	0	0	0	0	0	0	0	0	0	.28	60
.11	.14	.17	.25	.39	.17	0	0	0	0	0	0	0	0	0	0	0	0	.11	75
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

NODE 13

INFRA RED SHADOW TABLE

CLOCK ANGLE: 0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.83	.83	.67	.17	0	0	0	0	0	0	0	0	0	0	.17	.28	.50	.72	.83	41
.50	.67	.83	.75	.25	0	0	0	0	0	0	0	0	0	.08	.33	.42	.56	.50	60
.33	.33	.33	.44	.22	0	0	0	0	0	0	0	0	0	.11	.14	.19	.25	.33	75
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

NODE 13

SOLAR SHADOW TABLE

CLOCK ANGLE: 0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.83	.83	.67	.17	0	0	0	0	0	0	0	0	0	0	.17	.28	.50	.72	.83	41
.50	.67	.83	.75	.25	0	0	0	0	0	0	0	0	0	.08	.33	.42	.56	.50	60
.33	.33	.33	.44	.22	0	0	0	0	0	0	0	0	0	.11	.14	.19	.25	.33	75
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 14

INFRA RED
SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	0
.17	.17	.33	.50	.50	.17	0	0	0	0	0	.06	.06	.14	.14	.08	.17	.11	.17	41
0	0	0	.08	.22	.19	0	0	0	0	0	0	0	0	0	0	0	0	0	60
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

CLOCK ANGLE

NODE 14

SOLAR
SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	0
.17	.17	.33	.50	.50	.17	0	0	0	0	0	.06	.06	.14	.14	.08	.17	.11	.17	41
0	0	0	.08	.22	.19	0	0	0	0	0	0	0	0	0	0	0	0	0	60
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

NODE 5

INFRA RED SHADOW TABLE

CLOCK ANGLE → 0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	60
1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	75
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	90
.67	.69	.78	.81	.81	.81	0	0	0	0	0	0	0	.44	.44	.50	.67	.67	.67	104
.50	.56	.50	.58	.58	.58	.58	0	0	0	0	0	0	.03	.03	.17	.33	.50	.50	120
.17	.25	.31	.25	.31	.31	.25	.19	.11	0	0	0	0	0	0	0	.17	.17	.17	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

NODE 5

SOLAR SHADOW TABLE

CLOCK ANGLE → 0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	60
1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	75
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	90
.67	.69	.78	.81	.81	.81	0	0	0	0	0	0	0	.44	.44	.50	.67	.67	.67	104
.50	.56	.50	.58	.58	.58	.58	0	0	0	0	0	0	.03	.03	.17	.33	.50	.50	120
.17	.25	.31	.25	.31	.31	.25	.19	.11	0	0	0	0	0	0	0	.17	.17	.17	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

INFRA RED SHADOW TABLE

NODE 15	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	60
	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	75
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	90
	.67	.67	.67	.50	.44	.44	0	0	0	0	0	0	0	.81	.81	.81	.78	.69	.67	104
	.50	.50	.33	.17	.03	.03	0	0	0	0	0	0	.58	.58	.58	.58	.50	.56	.50	120
	.17	.17	.17	0	0	0	0	0	0	0	.11	.19	.25	.31	.31	.25	.31	.25	.17	139
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

CLOCK ANGLE

SOLAR SHADOW TABLE

NODE 15	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	60
	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	75
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	90
	.67	.67	.67	.50	.44	.44	0	0	0	0	0	0	0	.81	.81	.81	.78	.69	.67	104
	.50	.50	.33	.17	.03	.03	0	0	0	0	0	0	.58	.58	.58	.58	.50	.56	.50	120
	.17	.17	.17	0	0	0	0	0	0	0	.11	.19	.25	.31	.31	.25	.31	.25	.17	139
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 21

INFRA RED SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	104
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	120
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	139
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180

CLOCK ANGLE

NODE 21

SOLAR SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	104
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	120
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	139
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

NODE 22

INFRA RED SHADOW TABLE

CLOCK ANGLE →	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	41
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	60
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	75
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	90
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	104
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	120
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	139
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180

NODE 22

SOLAR SHADOW TABLE

CLOCK ANGLE →	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	41
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	60
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	75
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	90
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	104
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	120
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	139
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

INFRA RED SHADOW TABLE

NODE 23	CLOCK ANGLE 0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0
	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	41
	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	60
	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	75
	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90
	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	104
	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	120
	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	139
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180

SOLAR SHADOW TABLE

NODE 23	CLOCK ANGLE 0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0
	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	41
	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	60
	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	75
	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90
	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	104
	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	120
	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	139
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

INFRA RED SHADOW TABLE

NODE 24	CLOCK ANGLE 0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0
	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	41
	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	60
	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	75
	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	90
	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	104
	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	120
	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	139
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180

SOLAR SHADOW TABLE

NODE 24	CLOCK ANGLE 0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0
	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	41
	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	60
	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	75
	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	90
	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	104
	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	120
	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	139
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 25

INFRA RED SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	41
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	60
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	75
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	90
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	104
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	120
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	139
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180

CLOCK ANGLE

NODE 25

SOLAR SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	41
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	60
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	75
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	90
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	104
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	120
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	139
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 26

INFRA RED
SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	41
0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	60
0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	75
0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	90
0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	104
0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	120
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

CLOCK ANGLE

NODE 26

SOLAR
SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	41
0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	60
0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	75
0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	90
0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	104
0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	120
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180

TOTAL TIME FOR SHADOW FACTOR TABLES 178.6

ADJUSTING FIELD LENGTH TO 036700 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 100100 FOR THE FF SEGMENT

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CANNOT ADJUST FIELD LENGTH TO 100100 LEAVING FIELD LENGTH AT 077000 AND CONTINUING

++

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
FORM FACTOR CALCULATION LINK.

FORM FACTORS AND COMBINED FORM FACTORS - USER INPUT AND DEFAULT PARAMETERS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
FFACC	.0500	.0500	ORIENTATION ACCURACY PARAMETER	N/A
FFACCS	.1000	.1000	SHADOWING ACCURACY PARAMETER	N/A
FFMIN	1.0E-06	1.0E-06	PARAMETER TO ELIMINATE SMALL FORM FACTORS	N/A
FFNOSH	SHAD	SHAD	OVER RIDE SHADOWING PARAMETER	(SHAD,NOSH)
+FFPNCH	NO	NO	PARAMETER TO PUNCH FORM FACTORS	(YES,NO)
FFPRNT	YES	YES	FLAG FOR COMPREHENSIVE FF AND CM PRINT	(YES,NO,FF,CM,RB)
FFRATL	15.0	15.0	RATIO FOR USING SUB-NODE TECHNIQUE	N/A
FFCMB	NO	CORR	FLAG FOR COMBINING FORM FACTORS	(YES,NO,AUTO,CORR)

+ -FFPNCH WILL DEFAULT TO -YES- ON CALCULATED VALUES IF THE -RSO- FILE IS NOT SPECIFIED IN THE OPTIONS DATA BLOCK

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
FORM FACTOR CALCULATION LINK.

NODE	AREA	ALPH	EMISS
1	1.00000	.900	.900
2	1.00000	.900	.900
3	1.00000	.900	.900
4	1.00000	.900	.900
11	1.00000	.900	.900
12	1.00000	.900	.900
13	1.00000	.900	.900
14	1.00000	.900	.900
5	1.00000	.900	.900
15	1.00000	.900	.900
21	2.06040	.200	.900
22	2.06040	.200	.900
23	1.04040	.200	.900
24	2.06040	.200	.900
25	1.04040	.200	.900
26	2.06040	.200	.900

NUMBER OF NODES = 16 NUMBER OF SURFACES = 10

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUSE OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ	
1	2	CAL	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	6.069	106	106	*
1	3	CAL	.203695	.203695	.203695	.203695	.203695	1.000000	1.000000	1.352	16	16	
1	4	CAL	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	5.777	106	106	*
1	12	CAL	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	.226	4	4	
1	13	CAL	.086031	.086031	.086031	.086031	.086031	1.000000	1.000000	.573	9	9	
1	14	CAL	.039182	.039182	.039182	.039182	.039182	1.000000	1.000000	.214	4	4	
1	5	CAL	.138020	.138020	.138020	.138020	.138020	1.000000	1.000000	1.349	16	16	
1	15	CAL	.054683	.054683	.054683	.054683	.054683	1.000000	1.000000	.220	4	4	
1	FF SUM =	.9840	ROW CP TIME =	15.847									
2	3	EQUIV	.214256	.214256	.214256	.214256	0.	1.000000	1.000000	.002	0	0	
2	4	EQUIV	.214256	.214256	.214256	.214256	0.	1.000000	1.000000	.001	0	0	
2	11	EQUIV	.033882	.033882	.033882	.033882	0.	0.	0.	.002	0	0	
2	12	CAL	.069571	.069571	.069571	.069571	.069571	1.000000	1.000000	.555	9	9	
2	13	CAL	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	.214	4	4	
2	14	CAL	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	.216	4	4	
2	5	CAL	.097637	.097637	.097637	.097637	.097637	1.000000	1.000000	3.142	69	69	*
2	15	CAL	.034976	.034976	.034976	.034976	.034976	1.000000	1.000000	.216	4	4	
2	FF SUM =	.9466	ROW CP TIME =	4.419									
3	4	EQUIV	.214256	.214256	.214256	.214256	0.	1.000000	1.000000	.001	0	0	
3	11	EQUIV	.086031	.086031	.086031	.086031	0.	0.	0.	.001	0	0	
3	12	EQUIV	.033882	.033882	.033882	.033882	0.	1.000000	1.000000	.001	0	0	
3	14	CAL	.039182	.039182	.039182	.039182	.039182	1.000000	1.000000	.213	4	4	
3	5	CAL	.051908	.051908	.051908	.051908	.051908	1.000000	1.000000	3.082	64	64	*
3	15	CAL	.012000	.012000	.012000	.012000	.012000	1.000000	1.000000	.216	4	4	
3	FF SUM =	.8552	ROW CP TIME =	3.575									
4	11	EQUIV	.039182	.039182	.039182	.039182	0.	0.	0.	.002	0	0	
4	12	EQUIV	.033882	.033882	.033882	.033882	0.	1.000000	1.000000	.001	0	0	
4	13	EQUIV	.039182	.039182	.039182	.039182	0.	1.000000	1.000000	.001	0	0	
4	5	CAL	.109433	.109433	.109433	.109433	.109433	1.000000	1.000000	.518	9	9	
4	15	CAL	.057045	.057045	.057045	.057045	.057045	1.000000	1.000000	.218	4	4	

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ
4	FF SUM =	.9215	ROW CP TIME =		.817							
11	12	EQUIV	.214256	.214256	.214256	.214256	0.	1.000000	1.000000	.001	0	0
11	13	EQUIV	.203695	.203695	.203695	.203695	0.	1.000000	1.000000	0.	0	0
11	14	EQUIV	.214256	.214256	.214256	.214256	0.	1.000000	1.000000	.002	0	0
11	5	EQUIV	.054683	.054683	.054683	.054683	0.	1.000000	1.000000	.001	0	0
11	15	EQUIV	.138020	.138020	.138020	.138020	0.	1.000000	1.000000	.003	0	0
11	FF SUM =	.9840	ROW CP TIME =		.056							
12	13	EQUIV	.214256	.214256	.214256	.214256	0.	1.000000	1.000000	.001	0	0
12	14	EQUIV	.214256	.214256	.214256	.214256	0.	1.000000	1.000000	.002	0	0
12	5	EQUIV	.034976	.034976	.034976	.034976	0.	1.000000	1.000000	.001	0	0
12	15	EQUIV	.097637	.097637	.097637	.097637	0.	1.000000	1.000000	.001	0	0
12	FF SUM =	.9466	ROW CP TIME =		.046							
13	14	EQUIV	.214256	.214256	.214256	.214256	0.	1.000000	1.000000	.002	0	0
13	5	EQUIV	.012000	.012000	.012000	.012000	0.	1.000000	1.000000	.001	0	0
13	15	EQUIV	.051908	.051908	.051908	.051908	0.	1.000000	1.000000	.001	0	0
13	FF SUM =	.8552	ROW CP TIME =		.036							
14	5	EQUIV	.057045	.057045	.057045	.057045	0.	1.000000	1.000000	.002	0	0
14	15	EQUIV	.109433	.109433	.109433	.109433	0.	1.000000	1.000000	0.	0	0
14	FF SUM =	.9215	ROW CP TIME =		.028							
5	FF SUM =	.5557	ROW CP TIME =		.012							

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ

```
15   FF SUM =   .5557     ROW CP TIME =      .035

21   FF SUM =  0.         ROW CP TIME =      .002

22   FF SUM =  0.         ROW CP TIME =      .003

23   FF SUM =  0.         ROW CP TIME =      .003

24   FF SUM =  0.         ROW CP TIME =      .003

25   FF SUM =  0.         ROW CP TIME =      .001

26   FF SUM =  0.         ROW CP TIME =      .002
```

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
FORM FACTOR CALCULATION LINK.

SUMMARY OF FORM FACTOR SUMS FOR ALL NODES

NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM
1- .9840	2- .9466	3- .8552	4- .9215	11- .9840	12- .9466
13- .8552	14- .9215	5- .5557	15- .5557	21- 0.	22- 0.
23- 0.	24- 0.	25- 0.	26- 0.		

TOTAL TIME FOR FORM FACTOR SEGMENT 25.241

TOTAL TIME SINCE START OF RUN 229.176

ADJUSTING FIELD LENGTH TO 036700 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 052400 FOR THE GB SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
GRAY BODIES COMPUTATION LINK.

GREY BODIES

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
GBWBND	BOTH	NONE	WAVEBAND DEFINITION PARAMETER	(IR,SOL,BOTH)

IR GRAY BODIES STORED FOR CONFIGURATION CASE1

SOL GRAY BODIES STORED FOR CONFIGURATION CASE1

TOTAL TIME TO COMPUTE GRAY BODIES .92

ADJUSTING FIELD LENGTH TO 036700 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 050000 FOR THE RC SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTORS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
RKPNCH	PUN	NO	PUNCH/NO PUNCH PARAMETER FOR RADKS	(YES,NO)
RKMIN	1.0E-04	0.0001	PARAMETER TO ELIMINATE SMALL RADK S	N/A
IRKCN	1	1	INITIAL RADIATION CONDUCTOR ID NUMBER	N/A
RKSP	SPACE	NO	MNEMONIC FLAG FOR COMPUTATION OF RADKS TO SPACE	(SPACE,NO)
IRKNSP	999	32767	SPACE NODE ID NUMBER	N/A
SIGMA	1.71E-09	1.713E-9	STEFAN-BOLTZMANN CONSTANT	N/A
RKAMPF	1.00	1.0	AREA MULTIPLYING FACTOR	N/A
RKTAPE	NO	NO	PARAMETER TO OUTPUT TO BCD TAPE	(TAPE,NO)
RFRAC	7.0E-01	0.7	SIGNIFICANT RADIATION FRACTION	(0. TO 1.)
RTOL	.990	0.99	DECIMAL FRACTION OF LAST RADK SAVED	N/A
NERN	0	0	EFFECTIVE RADIATION NODE (ERN) NUMBER	N/A

SPECIAL RADIATION NODES

NONE

MESS SPECIAL NODES

PRIMARY SECONDARY

NONE

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTOR (RADKS) CARDS PUNCHED

AREA UNITS = INPUT UNITS * AMPF, WHERE AMPF = 1.00000

PUNCHED RADKS	-	1,	1,	2,	1.7130000E-09*	1.8345168E-01
PUNCHED RADKS	-	2,	1,	3,	1.7130000E-09*	1.7412713E-01
PUNCHED RADKS	-	3,	1,	4,	1.7130000E-09*	1.8349283E-01
PUNCHED RADKS	-	4,	1,	11,	1.7130000E-09*	7.1266147E-03
PUNCHED RADKS	-	5,	1,	12,	1.7130000E-09*	3.3361183E-02
PUNCHED RADKS	-	6,	1,	13,	1.7130000E-09*	7.3181656E-02
PUNCHED RADKS	-	7,	1,	14,	1.7130000E-09*	3.6719800E-02
PUNCHED RADKS	-	8,	1,	5,	1.7130000E-09*	1.1714795E-01
PUNCHED RADKS	-	9,	1,	15,	1.7130000E-09*	4.7474005E-02
PUNCHED RADKS	-	10,	2,	3,	1.7130000E-09*	1.8260203E-01
PUNCHED RADKS	-	11,	2,	4,	1.7130000E-09*	1.8326231E-01
PUNCHED RADKS	-	12,	2,	11,	1.7130000E-09*	3.3361183E-02
PUNCHED RADKS	-	13,	2,	12,	1.7130000E-09*	6.1032956E-02
PUNCHED RADKS	-	14,	2,	13,	1.7130000E-09*	3.2739448E-02
PUNCHED RADKS	-	15,	2,	14,	1.7130000E-09*	3.2487749E-02
PUNCHED RADKS	-	16,	2,	5,	1.7130000E-09*	8.5323768E-02
PUNCHED RADKS	-	17,	2,	15,	1.7130000E-09*	3.2227094E-02
PUNCHED RADKS	-	18,	3,	4,	1.7130000E-09*	1.8249665E-01
PUNCHED RADKS	-	19,	3,	11,	1.7130000E-09*	7.3181656E-02
PUNCHED RADKS	-	20,	3,	12,	1.7130000E-09*	3.2739448E-02
PUNCHED RADKS	-	21,	3,	13,	1.7130000E-09*	5.9256032E-03
PUNCHED RADKS	-	22,	3,	14,	1.7130000E-09*	3.5917767E-02
PUNCHED RADKS	-	23,	3,	5,	1.7130000E-09*	4.9020079E-02
PUNCHED RADKS	-	24,	3,	15,	1.7130000E-09*	1.4120054E-02
PUNCHED RADKS	-	25,	4,	11,	1.7130000E-09*	3.6719800E-02
PUNCHED RADKS	-	26,	4,	12,	1.7130000E-09*	3.2487749E-02
PUNCHED RADKS	-	27,	4,	13,	1.7130000E-09*	3.5917767E-02
PUNCHED RADKS	-	28,	4,	14,	1.7130000E-09*	5.3846610E-03
PUNCHED RADKS	-	29,	4,	5,	1.7130000E-09*	9.4445658E-02
PUNCHED RADKS	-	30,	4,	15,	1.7130000E-09*	4.9215811E-02
PUNCHED RADKS	-	31,	11,	12,	1.7130000E-09*	1.8345168E-01
PUNCHED RADKS	-	32,	11,	13,	1.7130000E-09*	1.7412713E-01
PUNCHED RADKS	-	33,	11,	14,	1.7130000E-09*	1.8349283E-01
PUNCHED RADKS	-	34,	11,	5,	1.7130000E-09*	4.7474005E-02
PUNCHED RADKS	-	35,	11,	15,	1.7130000E-09*	1.1714795E-01
PUNCHED RADKS	-	36,	12,	13,	1.7130000E-09*	1.8260203E-01
PUNCHED RADKS	-	37,	12,	14,	1.7130000E-09*	1.8326231E-01
PUNCHED RADKS	-	38,	12,	5,	1.7130000E-09*	3.2227094E-02
PUNCHED RADKS	-	39,	12,	15,	1.7130000E-09*	8.5323768E-02
PUNCHED RADKS	-	40,	13,	14,	1.7130000E-09*	1.8249665E-01
PUNCHED RADKS	-	41,	13,	5,	1.7130000E-09*	1.4120054E-02
PUNCHED RADKS	-	42,	13,	15,	1.7130000E-09*	4.9020079E-02
PUNCHED RADKS	-	43,	14,	5,	1.7130000E-09*	4.9215811E-02
PUNCHED RADKS	-	44,	14,	15,	1.7130000E-09*	9.4445658E-02

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTOR (RADK) CARDS PUNCHED

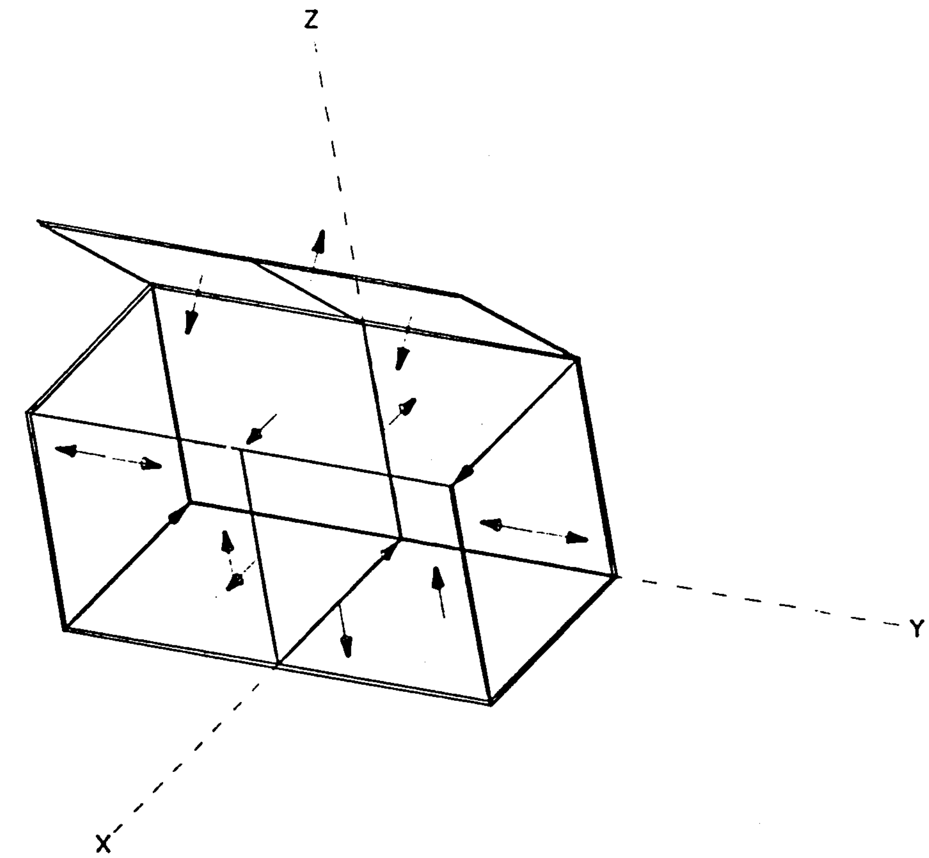
AREA UNITS = INPUT UNITS * AMPF, WHERE AMPF = 1.00000

PUNCHED RADKS	-	45.	5.	15.	1.7130000E-09*	3.1183854E-03
PUNCHED RADKS	-	46.	1.	999.	1.7130000E-09*	2.9745274E-02
PUNCHED RADKS	-	47.	2.	999.	1.7130000E-09*	6.0037913E-02
PUNCHED RADKS	-	48.	3.	999.	1.7130000E-09*	1.3734758E-01
PUNCHED RADKS	-	49.	4.	999.	1.7130000E-09*	8.3099733E-02
PUNCHED RADKS	-	50.	11.	999.	1.7130000E-09*	2.9745274E-02
PUNCHED RADKS	-	51.	12.	999.	1.7130000E-09*	6.0037913E-02
PUNCHED RADKS	-	52.	13.	999.	1.7130000E-09*	1.3734758E-01
PUNCHED RADKS	-	53.	14.	999.	1.7130000E-09*	8.3099733E-02
PUNCHED RADKS	-	54.	5.	999.	1.7130000E-09*	4.0349923E-01
PUNCHED RADKS	-	55.	15.	999.	1.7130000E-09*	4.0349923E-01
PUNCHED RADKS	-	56.	21.	999.	1.7130000E-09*	1.8543600E+00
PUNCHED RADKS	-	57.	22.	999.	1.7130000E-09*	1.8543600E+00
PUNCHED RADKS	-	58.	23.	999.	1.7130000E-09*	9.3636000E-01
PUNCHED RADKS	-	59.	24.	999.	1.7130000E-09*	1.8543600E+00
PUNCHED RADKS	-	60.	25.	999.	1.7130000E-09*	9.3636000E-01
PUNCHED RADKS	-	61.	26.	999.	1.7130000E-09*	1.8543600E+00

TOTAL TIME TO COMPUTE AND CONDENSE RADKS = .82

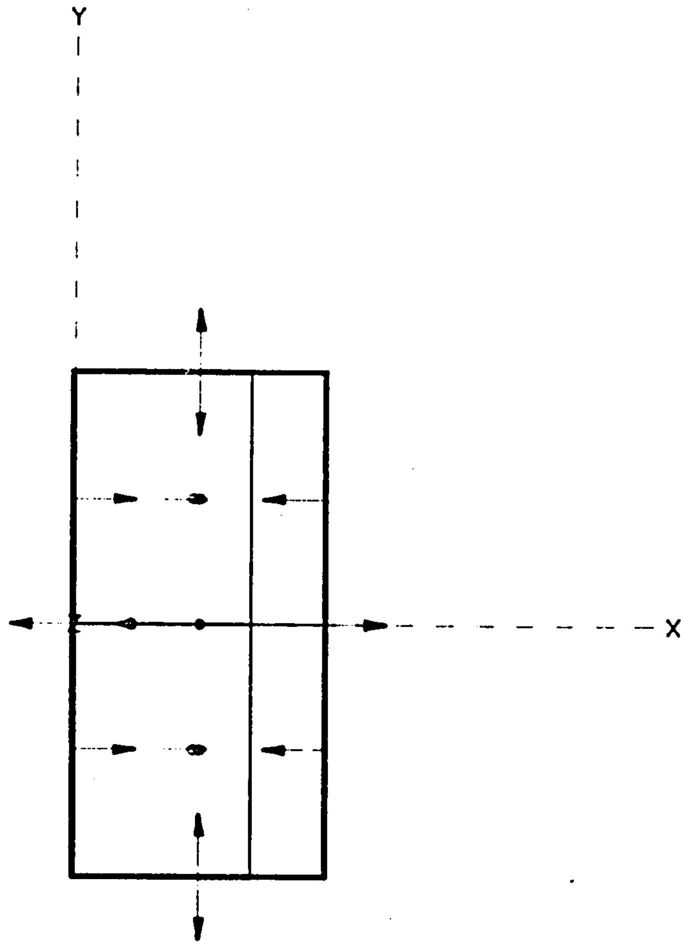
ADJUSTING FIELD LENGTH TO 036700 FOR THE OD SEGMENT

SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN



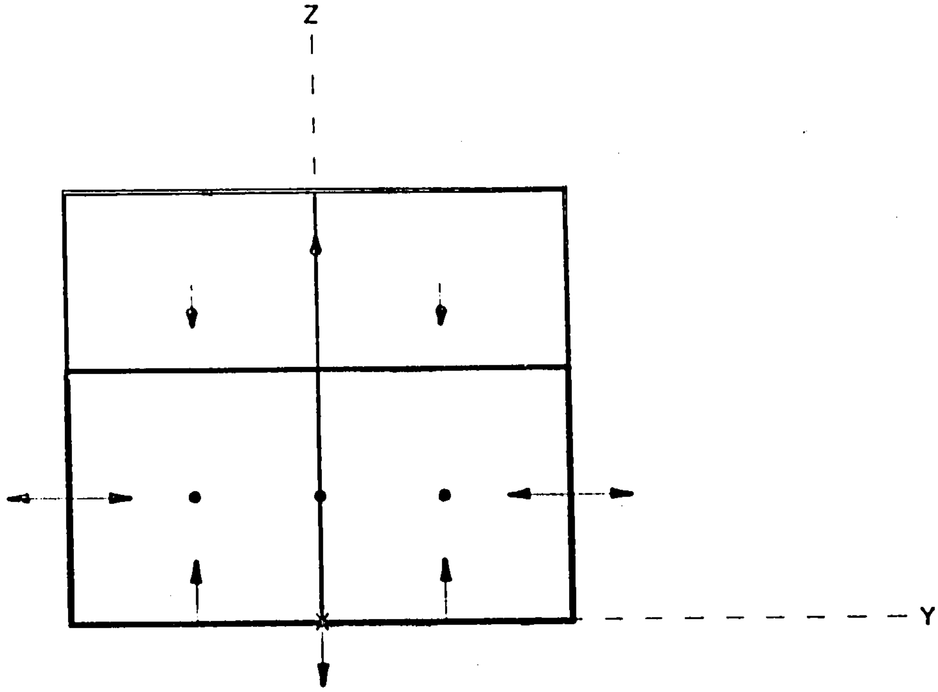
VIEW = 3-D
SCALE = 1.2384
VIEW NUMBER = 1

SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN



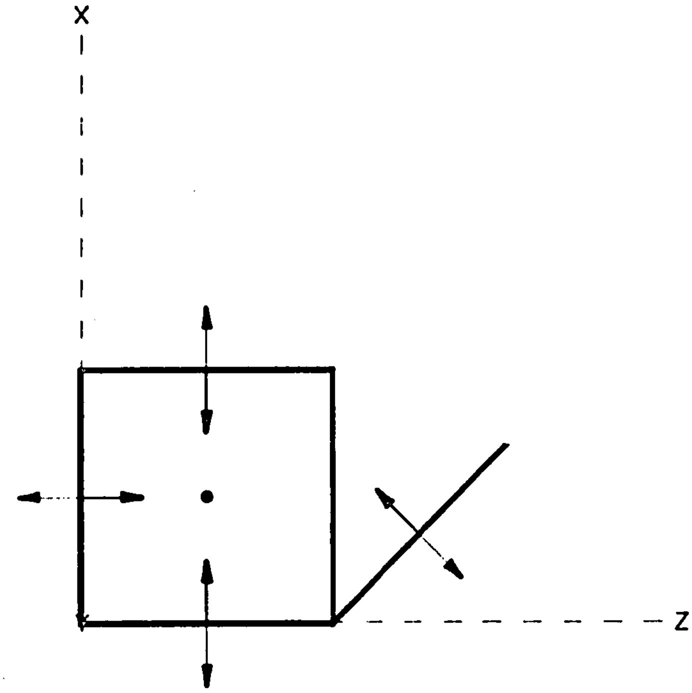
VIEW = Z-AXIS
SCALE = 1.2384
VIEW NUMBER = 1

SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN



VIEW = X-AXIS
SCALE = 1.2384
VIEW NUMBER = 1

SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN



VIEW = Y-AXIS
SCALE = 1.2384
VIEW NUMBER = 1

N A S A / M A R T I N   M A R I E T T A
T H E R M A L   R A D I A T I O N   A N A L Y S I S   S Y S T E M
C D C 6 5 0 0 / S C O P E 3 . 4

T R A S Y S   I I

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TTTTTTTTTTTT
TTTTTTTTTTTT
TT   TTT   TT
     TTT
     TTT
     TTT
     TTT
     TTT
   TTTTTTT

RRRRRRRRR
RRRRRRRRRR
RRR      RRR
RRR      RRR
RRRRRRRRRR
RRR   RRR
RRR    RRR
RRR     RRR
RRR      RRRR

  AAAAAAA
 AAAAAAAAA
AAAAAAAAAAA
AAA      AAA
AAA      AAA
AAAAAAAAAAA
AAA      AAA
AAA      AAA
AAA      AAA
AAAAA   AAAAA

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
         SSS
SS       SSS
SSSSSSSSSSSS
 SSSSSSSSSS

YYYY      YYYY
 YYY      YYY
  YYY    YYY
   YYY YYY
    YYYYY
     YYY
     YYY
     YYY
   YYYYYYY

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
         SSS
SS       SSS
SSSSSSSSSSSS
 SSSSSSSSSS
```

P R E - P R O C E S S O R   E X E C U T I O N

VERSION.MODIFICATION ... SC2E2
MODIFICATION DATE 05/09/77

DATE OF RUN 05/09/77
TIME OF RUN 19.56.37
JOB NUMBER RGEX1HG

```
MODEL =  N/A
OPTION AND TITLE DATA BLOCKS

CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT             HEADER OPTIONS DATA
INPUT             TITLE  SAMPLE CASE 2  -  SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
INPUT             C      RESTARTING SFCAL/FFCAL/GBCAL FROM SAMPLE CASE 1.
INPUT             C      COMBINING NODES IN RCCAL.
INPUT             C      CALCULATING DIRECT INCIDENT FLUXES USING SHADOW
INPUT             C      FACTOR TABLES FROM SAMPLE CASE 1.
INPUT             C
INPUT                    MODEL      = SAMPLE
INPUT                    RSI        = RSTSAM
INPUT                    RSO        = RSTSAM2
```

MODEL = SAMPLE SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
TRASYS INFORMATION TO USER

```
OPTIONS DATA -INFO- OPTIONS ARE ...

  INFO = BUILD        BUILD EXECUTION CARD
  INFO = INFO         HOW TO USE TRASYS INFO FILE
  INFO = ITRCPP       PREPROCESSOR TRACE FLAGS
  INFO = RKCAL        INFO. ON DELETION OF THE RKCAL LINK
  INFO = STEP         INFO. ON USING STEP CARDS
  INFO = CCARDS       INFO. ON TRASYS CONTROL CARDS
```

END OF TRASYS INFORMATION FILE

MODEL = SAMPLE SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
MODEL HISTORY

MODEL NAME .... SAMPLE

MODEL TITLE .... SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT

MOD LABEL	RUN JOB NUMBER	RUN DATA	RUN TIME	RSI TAPE	RSO TAPE	RTI TAPE	RTO TAPE	CMERG TAPE	EMERG TAPE	BCDOU TAPE	TRAJ TAPE	USER1 TAPE	USER2 TAPE
AA	RGEX153	05/04/77	11.07.24		RSTSAM								
AB	RGEX1HG	05/09/77	19.56.39	RSTSAM	RSTSAM2								

MODEL = SAMPLE SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT

SOURCE DATA EDIT DIRECTIVES

```
CARD ORGIN   12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

             HEADER EDIT DATA
****         *D,127,171                                                                  OLD-   127   AA
   D         HEADER FORM FACTOR DATA                                                     OLD-   128   AA
   D         C                                                                           OLD-   129   AA
   D         C-----ENTER KNOWN ZERO FORM FACTORS AND EQUIVALENT FORM FACTORS FOR         OLD-   130   AA
   D         C-----CASE1.                                                                OLD-   131   AA
   D         C                                                                           OLD-   132   AA
   D         FIG     CASE1                                                               OLD-   133   AA
   D         NODEA   1,2,3,4,11,12,13,14,5,15,21,22,23,24,25,26,END                      OLD-   134   AA
   D         BOTH    21,ZERO                                                             OLD-   135   AA
   D                 22,ZERO                                                             OLD-   136   AA
   D                 23,ZERO                                                             OLD-   137   AA
   D                 24,ZERO                                                             OLD-   138   AA
   D                 25,ZERO                                                             OLD-   139   AA
   D                 26,ZERO                                                             OLD-   140   AA
   D                 1,1,0.                                                              OLD-   141   AA
   D                 11,12,1,2                                                           OLD-   142   AA
   D                 11,13,1,3                                                           OLD-   143   AA
   D                 11,14,1,4                                                           OLD-   144   AA
   D                 11,15,1,5                                                           OLD-   145   AA
   D                 1,11,0.                                                             OLD-   146   AA
   D                 11,2,1,12                                                           OLD-   147   AA
   D                 11,3,1,13                                                           OLD-   148   AA
   D                 11,4,1,14                                                           OLD-   149   AA
   D                 11,5,1,15                                                           OLD-   150   AA
   D                 2,2,0.                                                              OLD-   151   AA
   D                 2,3,1,2                                                             OLD-   152   AA
   D                 2,4,1,4                                                             OLD-   153   AA
   D                 12,13,2,3                                                           OLD-   154   AA
   D                 12,14,2,4                                                           OLD-   155   AA
   D                 12,15,2,5                                                           OLD-   156   AA
   D                 12,3,2,13                                                           OLD-   157   AA
   D                 12,4,2,14                                                           OLD-   158   AA
   D                 12,5,2,15                                                           OLD-   159   AA
   D                 3,3,0.                                                              OLD-   160   AA
   D                 3,4,1,4                                                             OLD-   161   AA
   D                 13,14,3,4                                                           OLD-   162   AA
   D                 13.15,3,5                                                           OLD-   163   AA
   D                 3,13,0.                                                             OLD-   164   AA
   D                 13,4,3,14                                                           OLD-   165   AA
   D                 13,5,3,15                                                           OLD-   166   AA
   D                 4,4,0.                                                              OLD-   167   AA
   D                 14.15,4,5                                                           OLD-   168   AA
   D                 4,14,0.                                                             OLD-   169   AA
   D                 14,5,4,15                                                           OLD-   170   AA
   D                 5,5,0.                                                              OLD-   171   AA
   D                 5,15,0.
****         *D,195                                                                      OLD-   195   AA
   D         C-----BUILD THE CASE 1 CONFIGURATION
  I          C-----BUILD THE CASE1 CONFIGURATION FOR SFCAL/FFCAL/GBCAL RESTART       150                AB
****         *D,198,203
```

MODEL = SAMPLE SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT

SOURCE DATA EDIT DIRECTIVES

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

   D              C                                                                                 OLD-     198    AA
   D              C-----PLOT THE CASE 1 CONFIGURATION INDICATING THE ACTIVE                         OLD-     199    AA
   D              C-----SIDES OF THE NODES.                                                         OLD-     200    AA
   D              C                                                                                 OLD-     201    AA
   D                    CALL NDATAS(0,0,0,YES,0)                                                    OLD-     202    AA
   D              L     NPLOT                                                                       OLD-     203    AA
****              *D,205
   D              C-----CALCULATE SHADOW FACTOR TABLES FOR SUBSEQUENT USE IN                        OLD-     205    AA
   I              C-----READ THE SHADOW FACTOR TABLES FROM RSI FOR USE IN                   154                     AB
****              *D,210
   D              C-----CALCULATE THE FORM FACTOR MATRIX.                                           OLD-     210    AA
   I              C-----READ THE FORM FACTOR MATRIX FROM RSI                                159                     AB
****              *D,214
   D              C-----CALCULATE THE GRAY BODY MATRIX.                                             OLD-     214    AA
   I              C-----READ THE GRAY BODY MATRICES FROM RSI                                163                     AB
****              *D,218
   D                    CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,0)                                      OLD-     218    AA
****              *D,220,221
   D              C-----CALCULATE AND PUNCH RADIATION CONDUCTORS.                                   OLD-     220    AA
   D              C                                                                                 OLD-     221    AA
   I              C-----CALCULATE AND PUNCH RADKS WITH COMBINED NODES                       168                     AB
   I              C                                                                         169                     AB
   I                    CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,5HCASE2)                        170                     AB
****              *I,222
   I              C                                                                         172                     AB
   I              C-----DEFINE ORBIT AND VEHICLE ORIENTATION (CIRCULAR - PLANET-ORIENTED)   173                     AB
   I              C                                                                         174                     AB
   I                    CALL ORBIT2(EAR,0,60.,0,0,0,100.*6080.,100.*6080.)                  175                     AB
   I                    CALL ORIENT(4HPLAN,1,2,3,300.,270.,0.)                              176                     AB
   I              ORBGEN CIRP,0.,180.,2,AQ                                                  177                     AB
   I              C                                                                         178                     AB
   I              C-----MAKE ORBIT PLOTS                                                    179                     AB
   I              C                                                                         180                     AB
   I                    CALL ODATAS(1,0,0,0,0,0,0,0)                                        181                     AB
   I                    CALL ODATAS(2,0,0,0,0,90.,0,0)                                      182                     AB
   I                    CALL ODATAS(3,0,0,0,0,180.,0,0)                                     183                     AB
   I              L     OPLOT                                                               184                     AB
```

MODEL = SAMPLE SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SURFACE DATA INPUT BLOCK

```
CARD ORGIN    12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
                                                                                                1  OLD-   1  AA
RSI           HEADER SURFACE DATA                                                               2  OLD-   2  AA
RSI           C                                                                                 3  OLD-   3  AA
RSI           C-----THIS SURFACE DATA BLOCK IS USED IN SAMPLE CASES 1 THROUGH 5                 4  OLD-   4  AA
RSI           C-----WITH VARIOUS PORTIONS OF IT BEING ACTIVATED FOR THE DIFFERENT               5  OLD-   5  AA
RSI           C-----CASES.                                                                      6  OLD-   6  AA
RSI           C                                                                                 7  OLD-   7  AA
RSI           BCS     BOXINR                                                                    8  OLD-   8  AA
RSI           S       SURFN       = 1                                                           9  OLD-   9  AA
RSI                   TYPE        = RECT                                                       10  OLD-  10  AA
RSI                   ACTIVE      = BOTTOM                                                     11  OLD-  11  AA
RSI                   PROP        = 0.9,0.9                                                    12  OLD-  12  AA
RSI                   P1          = 1.0, 0.0, 1.0                                              13  OLD-  13  AA
RSI                   P2          = 1.0, 0.0, 0.0                                              14  OLD-  14  AA
RSI                   P3          = 1.0, 1.0, 0.0                                              15  OLD-  15  AA
RSI                   COM         = * INNER RIGHT FRONT *                                      16  OLD-  16  AA
RSI           S       SURFN       = 2                                                          17  OLD-  17  AA
RSI                   TYPE        = RECT                                                       18  OLD-  18  AA
RSI                   ACTIVE      = BOTTOM                                                     19  OLD-  19  AA
RSI                   PROP        = 0.9,0.9                                                    20  OLD-  20  AA
RSI                   P1          = 1.0, 1.0, 1.0                                              21  OLD-  21  AA
RSI                   P2          = 1.0, 1.0, 0.0                                              22  OLD-  22  AA
RSI                   P3          = 0.0, 1.0, 0.0                                              23  OLD-  23  AA
RSI                   COM         = * INNER RIGHT SIDE *                                       24  OLD-  24  AA
RSI           S       SURFN       = 3                                                          25  OLD-  25  AA
RSI                   TYPE        = RECT                                                       26  OLD-  26  AA
RSI                   ACTIVE      = TOP                                                        27  OLD-  27  AA
RSI                   PROP        = 0.9,0.9                                                    28  OLD-  28  AA
RSI                   P1          = 0.0, 0.0, 1.0                                              29  OLD-  29  AA
RSI                   P2          = 0.0, 0.0, 0.0                                              30  OLD-  30  AA
RSI                   P3          = 0.0, 1.0, 0.0                                              31  OLD-  31  AA
RSI                   COM         = * INNER RIGHT BACK *                                       32  OLD-  32  AA
RSI           S       SURFN       = 4                                                          33  OLD-  33  AA
RSI                   TYPE        = RECT                                                       34  OLD-  34  AA
RSI                   ACTIVE      = TOP                                                        35  OLD-  35  AA
RSI                   PROP        = 0.9,0.9                                                    36  OLD-  36  AA
RSI                   P1          = 1.0, 1.0, 0.0                                              37  OLD-  37  AA
RSI                   COM         = * INNER RIGHT BOTTOM *                                     38  OLD-  38  AA
RSI           BCS     BOXINL,IMGBCS=BOXINR,NINC=10,IREFSF=1000                                 39  OLD-  39  AA
RSI           C                                                                                40  OLD-  40  AA
RSI           C-----THE FOREGOING CARD IMAGES BCS BOXINR IN REFERENCE PLANE 1000               41  OLD-  41  AA
RSI           C-----TO CREATE BCS BOXINL.  THE INTERIOR OF THE BOX WAS INPUT IN                42  OLD-  42  AA
RSI           C-----THIS MANNER TO FACILITATE THE INPUT OF SAMPLE CASE 4 TO SHOW               43  OLD-  43  AA
RSI           C-----THE USE OF "MESS" AND "ERN" NODES.                                         44  OLD-  44  AA
RSI           C
                    IMAGING SURFACE    1) BCS (    BO), GENERATING SURFACE (   11) BCS (    BO)
                    IMAGING SURFACE    2) BCS (    BO), GENERATING SURFACE (   12) BCS (    BO)
                    IMAGING SURFACE    3) BCS (    BO), GENERATING SURFACE (   13) BCS (    BO)
                    IMAGING SURFACE    4) BCS (    BO), GENERATING SURFACE (   14) BCS (    BO)
                                                                                               45  OLD-  45  AA
RSI           R       REFNO       = 1000                                                       46  OLD-  46  AA
RSI                   P1          = 1.0, 0.0, 1.0                                              47  OLD-  47  AA
RSI                   P2          = 1.0, 0.0, 0.0
```

```
MODEL = SAMPLE                                    SAMPLE CASE 2  -  SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SURFACE DATA INPUT BLOCK

CARD ORGIN          12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

RSI                         P3          = 0.0, 0.0, 0.0                                              48  OLD-     48   AA
RSI                         COM         = * IMAGING PLANE *                                          49  OLD-     49   AA
RSI                 BCS     LIDINR                                                                   50  OLD-     50   AA
RSI                 S       SURFN       = 5                                                          51  OLD-     51   AA
RSI                         TYPE        = RECT                                                       52  OLD-     52   AA
RSI                         ACTIVE      = BOTTOM                                                     53  OLD-     53   AA
RSI                         PROP        = 0.9,0.9                                                    54  OLD-     54   AA
RSI                         P1          = 1.0, 1.0, 0.0                                              55  OLD-     55   AA
RSI                         COM         = * INNER RIGHT LID *                                        56  OLD-     56   AA
RSI                 S       SURFN       = 15                                                         57  OLD-     57   AA
RSI                         IMAGSF      = 5                                                          58  OLD-     58   AA
RSI                         IREFSF      = 1000                                                       59  OLD-     59   AA
RSI                         COM         = * INNER LEFT LID *                                         60  OLD-     60   AA
RSI                 BCS     BOXOUT                                                                   61  OLD-     61   AA
RSI                 S       SURFN       = 21                                                         62  OLD-     62   AA
RSI                         TYPE        = BOX5                                                       63  OLD-     63   AA
RSI                         ACTIVE      = OUT                                                        64  OLD-     64   AA
RSI                         SHADE       = NO                                                         65  OLD-     65   AA
RSI                         PROP        = 0.2,0.9                                                    66  OLD-     66   AA
RSI                         P1          = 1.01,-1.01, 1.01                                           67  OLD-     67   AA
RSI                         P2          = 1.01, 1.01, 1.01                                           68  OLD-     68   AA
RSI                         P3          =-0.01, 1.01, 1.01                                           69  OLD-     69   AA
RSI                         P4          =-0.01, 1.01,-0.01                                           70  OLD-     70   AA
RSI                         COM         = * OUTER SURFACES *                                         71  OLD-     71   AA
RSI                 BCS     LIDOUT                                                                   72  OLD-     72   AA
RSI                 S       SURFN       = 26                                                         73  OLD-     73   AA
RSI                         TYPE        = RECT                                                       74  OLD-     74   AA
RSI                         ACTIVE      = TOP                                                        75  OLD-     75   AA
RSI                         SHADE       = NO                                                         76  OLD-     76   AA
RSI                         PROP        = 0.2,0.9                                                    77  OLD-     77   AA
RSI                         P1          = 1.01,-1.01, 0.01                                           78  OLD-     78   AA
RSI                         P2          = 1.01, 1.01, 0.01                                           79  OLD-     79   AA
RSI                         P3          =-0.01, 1.01, 0.01                                           80  OLD-     80   AA
RSI                         COM         = * OUTER SURFACE OF LID *                                   81  OLD-     81   AA
RSI                 C                                                                                82  OLD-     82   AA
RSI                 C-----THE NEXT TWO BCS'S (MESSR AND MESSL) ARE ACTIVATED IN SAMPLE               83  OLD-     83   AA
RSI                 C-----CASE 4 ONLY.                                                               84  OLD-     84   AA
RSI                 C                                                                                85  OLD-     85   AA
RSI                 BCS     MESSR                                                                    86  OLD-     86   AA
RSI                 S       SURFN       = 101                                                        87  OLD-     87   AA
RSI                         TYPE        = RECT                                                       88  OLD-     88   AA
RSI                         ACTIVE      = TOP                                                        89  OLD-     89   AA
RSI                         PROP        = 1.0,1.0                                                    90  OLD-     90   AA
RSI                         P1          = 1.0, 0.0, 1.0                                              91  OLD-     91   AA
RSI                         P2          = 1.0, 0.0, 0.0                                              92  OLD-     92   AA
RSI                         P3          = 0.0, 0.0, 0.0                                              93  OLD-     93   AA
RSI                         COM         = * PRIMARY MESS NODE, RIGHT SIDE *                          94  OLD-     94   AA
RSI                 BCS     MESSL                                                                    95  OLD-     95   AA
RSI                 S       SURFN       = 111                                                        96  OLD-     96   AA
RSI                         TYPE        = RECT                                                       97  OLD-     97   AA
RSI                         ACTIVE      = BOTTOM                                                     98  OLD-     98   AA
```

MODEL = SAMPLE SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SURFACE DATA INPUT BLOCK

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
                                                                                                     99  OLD-     99    AA
RSI                        PROP      = 1.0,1.0                                                      100  OLD-    100    AA
RSI                        P1        = 1.0, 0.0, 1.0                                                101  OLD-    101    AA
RSI                        P2        = 1.0, 0.0, 0.0                                                102  OLD-    102    AA
RSI                        P3        = 0.0, 0.0, 0.0                                                103  OLD-    103    AA
RSI                        COM       = * PRIMARY MESS NODE, LEFT SIDE *                             104  OLD-    104    AA
RSI               C                                                                                 105  OLD-    105    AA
RSI               C-----THE FOLLOWING BCS (LIDSP) IS ACTIVATED IN SAMPLE CASE 5 ONLY.               106  OLD-    106    AA
RSI               C                                                                                 107  OLD-    107    AA
RSI               BCS      LIDSP                                                                    108  OLD-    108    AA
RSI               S        SURFN     = 200                                                          109  OLD-    109    AA
RSI                        TYPE      = RECT                                                         110  OLD-    110    AA
RSI                        ACTIVE    = BOTTOM                                                       111  OLD-    111    AA
RSI                        PROP      = 0.1,0.1                                                      112  OLD-    112    AA
RSI                        SPRI      = 0.8                                                          113  OLD-    113    AA
RSI                        SPRS      = 0.8                                                          114  OLD-    114    AA
RSI                        P1        = 1.0,-1.0, 0.0                                                115  OLD-    115    AA
RSI                        P2        = 1.0, 1.0, 0.0                                                116  OLD-    116    AA
RSI                        P3        = 0.0, 1.0, 0.0                                                117  OLD-    117    AA
RSI                        COM       = * SPECULAR LID *
```

MODEL = SAMPLE SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
BCS DATA INPUT BLOCK

CARD ORGIN	12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8	EDIT NO.	OLD	EDIT NO.	LABEL
RSI	HEADER BCS DATA	118	OLD-	118	AA
RSI	BCS BOXINR	119	OLD-	119	AA
RSI	BCS BOXINL	120	OLD-	120	AA
RSI	BCS LIDINR ,0.,0.,1.,0.,-45.,0.	121	OLD-	121	AA
RSI	BCS BOXOUT	122	OLD-	122	AA
RSI	BCS LIDOUT ,0.,0.,1.,0.,-45.,0.	123	OLD-	123	AA
RSI	BCS MESSR	124	OLD-	124	AA
RSI	BCS MESSL	125	OLD-	125	AA
RSI	BCS LIDSP ,0.,0.,1.,0.,-45.,0.	126	OLD-	126	AA

```
MODEL = SAMPLE                                        SAMPLE CASE 2  -  SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
CORRESPONDENCE DATA INPUT BLOCK

CARD ORGIN         12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

RSI                HEADER CORRESPONDENCE DATA                                                         127  OLD-       172    AA
RSI                C                                                                                  128  OLD-       173    AA
RSI                C-----ENTER CORRESPONDENCE DATA FOR CASE 2                                         129  OLD-       174    AA
RSI                C                                                                                  130  OLD-       175    AA
RSI                FIG     CASE2                                                                      131  OLD-       176    AA
RSI                        1             = 1,11,22                                                    132  OLD-       177    AA
RSI                        2             = 2,25                                                       133  OLD-       178    AA
RSI                        3             = 3,13,24                                                    134  OLD-       179    AA
RSI                        4             = 4,14,21                                                    135  OLD-       180    AA
RSI                        5             = 5,15,26                                                    136  OLD-       181    AA
RSI                        12            = 12,23                                                      137  OLD-       182    AA
RSI                C                                                                                  138  OLD-       183    AA
RSI                C-----ENTER CORRESPONDENCE DATA FOR CASE 3 TO COMBINE FORM FACTORS                 139  OLD-       184    AA
RSI                C                                                                                  140  OLD-       185    AA
RSI                FIG     CASE3,FF                                                                   141  OLD-       186    AA
RSI                        1             = 1,11,22                                                    142  OLD-       187    AA
RSI                        2             = 2,25                                                       143  OLD-       188    AA
RSI                        3             = 3,13,24                                                    144  OLD-       189    AA
RSI                        4             = 4,14,21                                                    145  OLD-       190    AA
RSI                        5             = 5,15,26                                                    146  OLD-       191    AA
RSI                        12            = 12,23                                                      147  OLD-       192    AA
```

MODEL = SAMPLE SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
OPERATION DATA INPUT BLOCK (PASS 1)

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

RSI             HEADER OPERATIONS DATA                                                               148  OLD-      193   AA
```

+++++ OPERATIONS DATA BLOCK (PASS 1) COMPLETE +++++

```
DATE  05/09/77  TIME  19.56.55.        THERMAL RADIATION ANALYSIS SYSTEM (TRASYS)  CDC6500/SCOPE VERSION        PAGE     13
                                                    SAMPLE CASE 2  -  SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
MODEL = SAMPLE
OPERATION DATA INPUT BLOCK  (PASS 2)

CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

RSI               C                                                                                  149   OLD-      194    AA
INPUT             C-----BUILD THE CASE1 CONFIGURATION FOR SFCAL/FFCAL/GBCAL RESTART                  150                      AB
RSI               C                                                                                  151   OLD-      196    AA
PROG              STEP      -1                                                                        -0
RSI               BUILD  CASE1,BOXINR,BOXINL,LIDINR,BOXOUT,LIDOUT                                    152   OLD-      197    AA
PROG                     CALL BUILDC (BOXINR,6HCASE1 )                                                -0
PROG                     CALL ADD (BOXINL)                                                            -0
PROG                     CALL ADD (LIDINR)                                                            -0
PROG                     CALL ADD (BOXOUT)                                                            -0
PROG                     CALL ADD (LIDOUT)                                                            -0
RSI               C                                                                                  153   OLD-      204    AA
INPUT             C-----READ THE SHADOW FACTOR TABLES FROM RSI FOR USE IN                            154                      AB
RSI               C-----SAMPLE CASE 2 IN THE CALCULATION OF DIRECT FLUXES.                           155   OLD-      206    AA
RSI               C                                                                                  156   OLD-      207    AA
RSI               L       SFCAL                                                                      157   OLD-      208    AA
RSI               C                                                                                  158   OLD-      209    AA
INPUT             C-----READ THE FORM FACTOR MATRIX FROM RSI                                         159                      AB
RSI               C                                                                                  160   OLD-      211    AA
RSI               L       FFCAL                                                                      161   OLD-      212    AA
RSI               C                                                                                  162   OLD-      213    AA
INPUT             C-----READ THE GRAY BODY MATRICES FROM RSI                                         163                      AB
RSI               C                                                                                  164   OLD-      215    AA
RSI                       CALL GBDATA(BOTH,0,FF)                                                     165   OLD-      216    AA
RSI               L       GBCAL                                                                      166   OLD-      217    AA
RSI               C                                                                                  167   OLD-      219    AA
INPUT             C-----CALCULATE AND PUNCH RADKS WITH COMBINED NODES                                168                      AB
INPUT             C                                                                                  169                      AB
INPUT                     CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,5HCASE2)                               170                      AB
RSI               L       RKCAL                                                                      171   OLD-      222    AA
INPUT             C                                                                                  172                      AB
INPUT             C-----DEFINE ORBIT AND VEHICLE ORIENTATION (CIRCULAR - PLANET-ORIENTED)            173                      AB
INPUT             C                                                                                  174                      AB
INPUT                     CALL ORBIT2(EAR,0,60.,0,0,0,100.*6080.,100.*6080.)                         175                      AB
INPUT                     CALL ORIENT(4HPLAN,1,2,3,300.,270.,0.)                                     176                      AB
PROG              C                                                                        *          -0
PROG              C********************  ORBIT GENERATION STARTS HERE  ********************          -0
INPUT             CORBGEN CIRP,0.,180.,2,AQ                                                *         177                      AB
PROG              C                                                                        *          -0
PROG              STEP   10000                                                             *          -0
PROG                       TRUEAN       =        0.                                        *          -0
PROG                       TRUANF       =      180.000                                     *          -0
PROG                       TRUANI       =        0.                                        *          -0
PROG                       IAI          = 0                                                *          -0
PROG                       IAS          = 0                                                *          -0
PROG                       PLTYPE       = 6HPLSAVE                                         *          -0
PROG                       CALL DICOMP(0,0,0)                                              *          -0
PROG              L          DICAL                                                         *          -0
PROG                       NSPFF        = 10000                                            *          -0
PROG                       PLTYPE       = 6HPLREAD                                         *          -0
PROG                       CALL AQDATA(IAI,IAS,0,0,0)                                      *          -0
PROG              L        AQCAL                                                           *          -0
PROG              STEP   10001                                                             *          -0
PROG                       TRUEAN       =        90.000                                    *          -0
PROG                       CALL DICOMP(0,0,10000)                                          *          -0
PROG              L          DICAL                                                         *          -0
```

```
PROG             CALL AQDATA(IAI,IAS,0,0,0)                             *        -0
PROG       L     AQCAL                                                  *        -0
PROG       STEP  10002                                                  *        -0
PROG             TRUEAN      =      180.000                             *        -0
PROG             CALL DICOMP(0,0,10000)                                 *        -0
PROG       L      DICAL                                                 *        -0
PROG             CALL AQDATA(IAI,IAS,0,0,0)                             *        -0
PROG       L     AQCAL                                                  *        -0
PROG       STEP  10003                                                  *        -0
PROG             IF(SHADIN.LT.0.)                  GO TO 90400          *        -0
PROG             TRUEAN      = SHADIN-0.1                               *        -0
PROG             IF(TRUEAN.LT.TRUANI.OR.                                *        -0
PROG           1    TRUEAN.GT.TRUANF)              GO TO  90000         *        -0
PROG             CALL DICOMP(0,4HZERO,10000)                            *        -0
PROG       L      DICAL                                                 *        -0
PROG             CALL AQDATA(IAI,IAS,0,0,0)                             *        -0
PROG       L     AQCAL                                                  *        -0
PROG       90000 CONTINUE                                               *        -0
PROG       STEP  10004                                                  *        -0
PROG             TRUEAN      = SHADIN+0.1                               *        -0
PROG             IF(TRUEAN.LT.TRUANI.OR.                                *        -0
PROG           1    TRUEAN.GT.TRUANF)              GO TO  90100         *        -0
PROG             CALL DICOMP(0,0,10000)                                 *        -0
PROG       L      DICAL                                                 *        -0
PROG             CALL AQDATA(IAI,IAS,0,0,0)                             *        -0
PROG       L     AQCAL                                                  *        -0
PROG       90100 CONTINUE                                               *        -0
PROG       STEP  10005                                                  *        -0
PROG             TRUEAN      = SHAOUT+0.1                               *        -0
PROG             IF(TRUEAN.LT.TRUANI.OR.                                *        -0
PROG           1    TRUEAN.GT.TRUANF)              GO TO  90200         *        -0
PROG             CALL DICOMP(0,4HZERO,10000)                            *        -0
PROG       L      DICAL                                                 *        -0
PROG             CALL AQDATA(IAI,IAS,0,0,0)                             *        -0
PROG       L     AQCAL                                                  *        -0
PROG       90200 CONTINUE                                               *        -0
PROG       STEP  10006                                                  *        -0
                 TRUEAN      = SHAOUT-0.1                               *        -0
PROG             TRUEAN      = SHAOUT-0.1                               *        -0
PROG             IF(TRUEAN.LT.TRUANI.OR.                                *        -0
PROG           1    TRUEAN.GT.TRUANF)              GO TO  90300         *        -0
PROG             CALL DICOMP(0,0,10000)                                 *        -0
PROG       L      DICAL                                                 *        -0
PROG             CALL AQDATA(IAI,IAS,0,0,0)                             *        -0
PROG       L     AQCAL                                                  *        -0
PROG       90300 CONTINUE                                               *        -0
PROG       90400 CONTINUE                                               *        -0
PROG             CALL QODATA(3HALL,0,0,0,0,0,0,0 )                      *        -0
PROG       L     QOCAL                                                  *        -0
PROG       C                                                            *        -0
PROG       C********************  ORBIT GENERATION ENDS HERE  ********************        -0
PROG       C                                                            *        -0
INPUT      C                                                                     178      AB
INPUT      C-----MAKE ORBIT PLOTS                                                179      AB
INPUT      C                                                                     180      AB
INPUT            CALL ODATAS(1,0,0,0,0,0,0,0)                                    181      AB
INPUT            CALL ODATAS(2,0,0,0,0,90.,0,0)                                  182      AB
INPUT            CALL ODATAS(3,0,0,0,0,180.,0,0)                                 183      AB
INPUT      L     OPLOT                                                           184      AB
RSI        END OF DATA                                                           185      AA
```

MODEL = SAMPLE SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
PROCESSOR CORE ALLOCATION

THE FOLLOWING IS THE PROCESSOR CORE ALLOCATION FOR THOSE SEGMENTS WHICH WILL BE LOADED IN THIS EXECUTION (APPROX.) ...

```
                                                    OCTAL/DECIMAL

TRASYS (0) SEGMENT ............................. 033510/ 14152
OPERATIONS DATA (NOT KNOWN AT THIS TIME)........ 075000/ 31232
INITALIZATION SEGMENT .......................... 037600/ 16256
FORM FACTOR SEGMENT ............................ 100100/ 32832
SHADOW FACTOR SEGMENT .......................... 063700/ 26560
ORBITAL PLOTTER SEGMENT ........................ 055600/ 23424
DIRECT FLUX SEGMENT ............................ 103000/ 34304
GRAY BODY SEGMENT .............................. 052500/ 21824
ABSORBED Q-S SEGMENT ........................... 042100/ 17472
-QO- SEGMENT ................................... 051700/ 21440
RADIATION CONDUCTOR SEGMENT .................... 050000/ 20480

GRAY BODY DYNAMIC COMMON ....................... 004600/  2432
-QO- DYNAMIC COMMON ............................ 003554/  1900
RADIATION CONDUCTOR DYNAMIC COMMON ............. 000574/   380

GRAY BODY MINIMUM - MAXIMUM CORE ............... 052401/ 21761 - 052401/ 21761
-QO- MINIMUM - MAXIMUM CORE .................... 046255/ 19629 - 051665/ 21429
RADIATION CONDUCTOR MINIMUM - MAXIMUM CORE ..... 047514/ 20300 - 047760/ 20464

++CAUTION    1++ THE FFPROG SEGMENT APPEARS TO BE TOO LONG FOR AMOUNT OF CORE (075000B) AVAILABLE

++CAUTION    2++ THE DIPROG SEGMENT APPEARS TO BE TOO LONG FOR AMOUNT OF CORE (075000B) AVAILABLE

MINIMUM CORE NEEDED FOR PROCESSOR EXECUTION .... 103000/ 34304

MAXIMUM CORE NEEDED FOR PROCESSOR EXECUTION .... 103000/ 34304

AMOUNT OF CORE THAT WILL BE USED BY PROCESSSOR . 103000/ 34304
```

MODEL = SAMPLE SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
WRAP UP OF THE PRE-PROCESSOR

CAUTION MESSAGE(S) OCCUR FOLLOWING THE FIRST 100 OR LESS EDIT SEQUENCE NUMBER(S) LISTED BELOW ...

185

MODEL = SAMPLE SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
WRAP UP OF THE PRE-PROCESSOR

PRE-PROCESSOR ACCOUNTING INFORMATION	CP-SEC	PP-SEC	DYM-STORAGE
SOURCE EDITING	.710	3	515
DOCUMENTATION DATA PRE-PROCESSING	0.	0	0
QUANTITIES DATA PRE-PROCESSING	.010	0	266
ARRAY DATA PRE-PROCESSING	0.	0	0
SURFACE DATA PRE-PROCESSING (PASS 1) ...	1.152	3	64
SURFACE DATA PRE-PROCESSING (PASS 2) ...	.215	4	1141
BCS DATA PRE-PROCESSING	.118	1	186
FORM FACTOR DATA PRE-PROCESSING	0.	0	0
SHADOW DATA PRE-PROCESSING	0.	0	0
FLUX DATA PRE-PROCESSING	0.	0	0
CORRESPONDENCE DATA PRE-PROCESSING	.169	0	101
OPERATIONS DATA PRE-PROCESSING	2.989	4	879
SUBROUTINE DATA PRE-PROCESSING	.239	1	0
SEQUENTIAL TAPE INITIATION	.022	0	0

TOTAL CP TIME FOR PRE-PROCESSOR .... 6.851 DECIMAL SECONDS OR 000007 OCTAL SECONDS

TOTAL PP TIME FOR PRE-PROCESSOR .... 19 DECIMAL SECONDS OR 000023 OCTAL SECONDS

MINIMUM DYNAMIC STORAGE NEEDED BY PRE-PROCESSOR .. 1141 DECIMAL WORDS

DYNAMIC STORAGE AVAILABLE TO PRE-PROCESSOR .... 3384 DECIMAL WORDS

MINIMUM CORE NEEDED FOR PRE-PROCESSOR EXECUTION .. 071000 OCTAL WORDS

* * * * * * * * * *
NUMBER OF CAUTION MESSAGES .. 2
* * * * * * * * * *

NORMAL TERMINATION BY PRE-PROCESSOR

N A S A / M A R T I N   M A R I E T T A
T H E R M A L   R A D I A T I O N   A N A L Y S I S   S Y S T E M
C D C 6 5 0 0 / S C O P E 3 . 4

T R A S Y S   I I

```
TTTTTTTTTTTTT
TTTTTTTTTTTTT
TT   TTT   TT
     TTT
     TTT
     TTT
     TTT
     TTT
   TTTTTTT

RRRRRRRRR
RRRRRRRRRR
RRR      RRR
RRR      RRR
RRRRRRRRRR
RRR   RRR
RRR    RRR
RRR     RRR
RRR      RRRR

   AAAAAAA
  AAAAAAAAA
 AAAAAAAAAAA
 AAA     AAA
 AAA     AAA
 AAAAAAAAAAA
 AAA     AAA
 AAA     AAA
 AAA     AAA
AAAAA   AAAAA

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
         SSS
 SS       SSS
 SSSSSSSSSSSS
  SSSSSSSSSS

YYYY     YYYY
 YYY     YYY
  YYY   YYY
   YYY YYY
    YYYYY
     YYY
     YYY
     YYY
   YYYYYYY

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
         SSS
 SS       SSS
 SSSSSSSSSSSS
  SSSSSSSSSS
```

P R E - P R O C E S S O R   E X E C U T I O N

LATEST LIBRARY MOD.VER NUMBER SL2E1
LAST LIBRARY MODIFICATION DATE 05/09/77

DATE OF THIS PROCESSOR RUN 05/09/77
TIME OF THIS PROCESSOR RUN .... 19.58.01.
JOB NUMBER OF THIS PROCESSOR RUN RGEX1HG

MODEL=SAMPLE CONFIG=SAMPLE STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
PROCESSING OPERATIONS DATA

++

THE OPERATIONS DATA SEGMENT USES ABOUT 042200 OCTAL WORDS OF CORE STORAGE

++

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
PROCESSING OPERATIONS DATA

NODE	BCS	AREA	ALPH	EMISS	SURF. TYPE	ACTIVE	---------COMMENTS--------------
1	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
2	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
3	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
4	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
11	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
12	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
13	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
14	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
5	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT LID
15	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER LEFT LID
21	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
22	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
23	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
24	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
25	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
26	LIDOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACE OF LID

NODE, AREA, AND PROPERTIES ARRAYS HAVE BEEN WRITTEN ON THE -RSO- TAPE
BY -BUILDC- (ACCESS NUMBER= -1)

ADJUSTING FIELD LENGTH TO 063700 FOR THE SF SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

* *

RESTARTING -SFCAL - DATA FOR CONFIGURATION -CASE1 - FROM UNIT -RSI- INITIATED BY JOB NO. RGEX153 ON 05/04/77

* *

CLOCK ANGLE

NODE 1

SOLAR SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.
0	0	0	0	0	.60	.40	.20	.10	0	0	0	0	1.00	0	0	0	0	0	22.5
0	0	0	0	0	.30	.30	.20	.10	0	0	0	.10	.80	0	0	0	0	0	45.0
0	0	0	0	0	.10	.10	.10	0	0	0	0	.20	.40	0	0	0	0	0	67.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

CLOCK ANGLE

NODE 2

SOLAR SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	0.
.60	0	0	0	0	0	0	0	0	0	0	0	0	.10	.40	.60	.60	.60	.60	22.5
.30	0	0	0	0	0	0	0	0	0	0	0	0	.10	.60	.60	.40	.30	.30	45.0
.10	0	0	0	0	0	0	0	0	0	0	0	0	.20	.40	.20	.20	.10	.10	67.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 3 — SOLAR SHADOW TABLE

NODE 3	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
	.80	.70	.50	.30	.20	0	0	0	0	0	0	0	0	0	0	.20	.70	.80	.80	22.5
	.50	.60	.40	.30	.10	0	0	0	0	0	0	0	0	0	.20	.70	.80	.70	.50	45.0
	.30	.20	.20	.10	.10	0	0	0	0	0	0	0	0	0	.20	.40	.30	.30	.30	67.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90.0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135.0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

CLOCK ANGLE

NODE 4 — SOLAR SHADOW TABLE

NODE 4	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	0.
	.20	.10	.20	.10	.10	.10	.10	.10	0	0	0	0	0	.20	.50	.50	.30	.20	.20	22.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	.20	.20	.10	0	0	0	45.0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90.0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135.0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 11

SOLAR
SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.
0	0	0	0	0	1.00	0	0	0	0	.10	.20	.40	.60	0	0	0	0	0	22.5
0	0	0	0	0	.80	.10	0	0	0	.10	.20	.30	.30	0	0	0	0	0	45.0
0	0	0	0	0	.40	.20	0	0	0	0	.10	.10	.10	0	0	0	0	0	67.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

CLOCK ANGLE

NODE 12

SOLAR
SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	0.
.60	.60	.60	.60	.40	.10	0	0	0	0	0	0	0	0	0	0	0	0	.60	22.5
.30	.30	.40	.60	.60	.10	0	0	0	0	0	0	0	0	0	0	0	0	.30	45.0
.10	.10	.20	.20	.40	.20	0	0	0	0	0	0	0	0	0	0	0	0	.10	67.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 13	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	
SOLAR SHADOW TABLE																				CONE ANGLE
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
	.80	.80	.70	.20	0	0	0	0	0	0	0	0	0	0	.20	.30	.50	.70	.80	22.5
	.50	.70	.80	.70	.20	0	0	0	0	0	0	0	0	0	.10	.30	.40	.60	.50	45.0
	.30	.30	.30	.40	.20	0	0	0	0	0	0	0	0	0	.10	.10	.20	.20	.30	67.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90.0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135.0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

CLOCK ANGLE

NODE 14	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	
SOLAR SHADOW TABLE																				CONE ANGLE
	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	0.
	.20	.20	.30	.50	.50	.20	0	0	0	0	0	.10	.10	.10	.10	.10	.20	.10	.20	22.5
	0	0	0	.10	.20	.20	0	0	0	0	0	0	0	0	0	0	0	0	0	45.0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90.0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135.0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

NODE 5

SOLAR SHADOW TABLE

CLOCK ANGLE	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22.5
	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	45.0
	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	90.0
	.70	.70	.80	.80	.80	.80	0	0	0	0	0	0	0	.40	.40	.50	.70	.70	.70	112.5
	.50	.60	.50	.60	.60	.60	.60	0	0	0	0	0	0	0	0	.20	.30	.50	.50	135.0
	.20	.20	.30	.20	.30	.30	.20	.20	.10	0	0	0	0	0	0	0	.20	.20	.20	157.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

NODE 15

SOLAR SHADOW TABLE

CLOCK ANGLE	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22.5
	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	45.0
	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	90.0
	.70	.70	.70	.50	.40	.40	0	0	0	0	0	0	0	.80	.80	.80	.80	.70	.70	112.5
	.50	.50	.30	.20	0	0	0	0	0	0	0	0	.60	.60	.60	.60	.50	.60	.50	135.0
	.20	.20	.20	0	0	0	0	0	0	0	.10	.20	.20	.30	.30	.20	.30	.20	.20	157.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

NODE 1 — INFRA RED SHADOW TABLE

CONE ANGLE \ CLOCK ANGLE	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360
0.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
22.5	0	0	0	0	0	.60	.40	.20	.10	0	0	0	0	1.00	0	0	0	0	0
45.0	0	0	0	0	0	.30	.30	.20	.10	0	0	0	.10	.80	0	0	0	0	0
67.5	0	0	0	0	0	.10	.10	.10	0	0	0	0	.20	.40	0	0	0	0	0
90.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
112.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
157.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NODE 2 — INFRA RED SHADOW TABLE

CONE ANGLE \ CLOCK ANGLE	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360
0.	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30
22.5	.60	0	0	0	0	0	0	0	0	0	0	0	0	.10	.40	.60	.60	.60	.60
45.0	.30	0	0	0	0	0	0	0	0	0	0	0	0	.10	.60	.60	.40	.30	.30
67.5	.10	0	0	0	0	0	0	0	0	0	0	0	0	.20	.40	.20	.20	.10	.10
90.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
112.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
157.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

NODE 3

INFRA RED SHADOW TABLE

CLOCK ANGLE: 0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
.80	.70	.50	.30	.20	0	0	0	0	0	0	0	0	0	0	.20	.70	.80	.80	22.5
.50	.60	.40	.30	.10	0	0	0	0	0	0	0	0	0	.20	.70	.80	.70	.50	45.0
.30	.20	.20	.10	.10	0	0	0	0	0	0	0	0	0	.20	.40	.30	.30	.30	67.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

NODE 4

INFRA RED SHADOW TABLE

CLOCK ANGLE: 0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	0.
.20	.10	.20	.10	.10	.10	.10	.10	0	0	0	0	0	.20	.50	.50	.30	.20	.20	22.5
0	0	0	0	0	0	0	0	0	0	0	0	0	.20	.20	.10	0	0	0	45.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 11

INFRA RED
SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.
0	0	0	0	0	1.00	0	0	0	0	.10	.20	.40	.60	0	0	0	0	0	22.5
0	0	0	0	0	.80	.10	0	0	0	.10	.20	.30	.30	0	0	0	0	0	45.0
0	0	0	0	0	.40	.20	0	0	0	0	.10	.10	.10	0	0	0	0	0	67.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

CLOCK ANGLE

NODE 12

INFRA RED
SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	0.
.60	.60	.60	.60	.40	.10	0	0	0	0	0	0	0	0	0	0	0	0	.60	22.5
.30	.30	.40	.60	.60	.10	0	0	0	0	0	0	0	0	0	0	0	0	.30	45.0
.10	.10	.20	.20	.40	.20	0	0	0	0	0	0	0	0	0	0	0	0	.10	67.5.
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

NODE 13

INFRA RED
SHADOW TABLE

CLOCK ANGLE	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
	.80	.80	.70	.20	0	0	0	0	0	0	0	0	0	0	.20	.30	.50	.70	.80	22.5
	.50	.70	.80	.70	.20	0	0	0	0	0	0	0	0	0	.10	.30	.40	.60	.50	45.0
	.30	.30	.30	.40	.20	0	0	0	0	0	0	0	0	0	.10	.10	.20	.20	.30	67.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90.0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135.0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

NODE 14

INFRA RED
SHADOW TABLE

CLOCK ANGLE	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	0.
	.20	.20	.30	.50	.50	.20	0	0	0	0	0	.10	.10	.10	.10	.10	.20	.10	.20	22.5
	0	0	0	.10	.20	.20	0	0	0	0	0	0	0	0	0	0	0	0	0	45.0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90.0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135.0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 5

INFRA RED SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22.5
1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	45.0
1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	67.5
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	90.0
.70	.70	.80	.80	.80	.80	0	0	0	0	0	0	0	.40	.40	.50	.70	.70	.70	112.5
.50	.60	.50	.60	.60	.60	.60	0	0	0	0	0	0	0	0	.20	.30	.50	.50	135.0
.20	.20	.30	.20	.30	.30	.20	.20	.10	0	0	0	0	0	0	0	.20	.20	.20	157.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

CLOCK ANGLE

NODE 15

INFRA RED SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22.5
1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	45.0
1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	67.5
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	90.0
.70	.70	.70	.50	.40	.40	0	0	0	0	0	0	0	.80	.80	.80	.80	.70	.70	112.5
.50	.50	.30	.20	0	0	0	0	0	0	0	0	.60	.60	.60	.60	.50	.60	.50	135.0
.20	.20	.20	0	0	0	0	0	0	0	.10	.20	.20	.30	.30	.20	.30	.20	.20	157.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 21

SOLAR SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90.0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	112.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	135.0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	157.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

CLOCK ANGLE

NODE 22

SOLAR SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	22.5
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	45.0
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	67.5
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	90.0
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	112.5
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	135.0
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	157.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 23

SOLAR SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.
1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.5
1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	45.0
1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	67.5
1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90.0
1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	112.5
1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	135.0
1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	157.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

CLOCK ANGLE

NODE 24

SOLAR SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.
0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	22.5
0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	45.0
0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	67.5
0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	90.0
0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	112.5
0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	135.0
0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	157.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

NODE 25

SOLAR SHADOW TABLE

CLOCK ANGLE: 0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	22.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	45.0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	67.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	90.0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	112.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	135.0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	157.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

NODE 26

SOLAR SHADOW TABLE

CLOCK ANGLE: 0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.5
0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	45.0
0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	67.5
0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	90.0
0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	112.5
0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	135.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

DATE 05/09/77 TIME 19.58.14. THERMAL RADIATION ANALYSIS SYSTEM (TRASYS) CDC6500/SCOPE 3.4 PAGE 16

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 21

INFRA RED SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90.0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	112.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	135.0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	157.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

CLOCK ANGLE

NODE 22

INFRA RED SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	22.5
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	45.0
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	67.5
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	90.0
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	112.5
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	135.0
1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	157.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

NODE 23

INFRA RED
SHADOW TABLE

CONE ANGLE \ CLOCK ANGLE	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360
0.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
22.5	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
45.0	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
67.5	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
90.0	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
112.5	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
135.0	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
157.5	1.00	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
180.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

NODE 24

INFRA RED
SHADOW TABLE

CONE ANGLE \ CLOCK ANGLE	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360
0.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
22.5	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0
45.0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0
67.5	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0
90.0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0
112.5	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0
135.0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0
157.5	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0
180.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 25

INFRA RED SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	22.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	45.0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	67.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	90.0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	112.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	135.0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	1.00	157.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

CLOCK ANGLE

NODE 26

INFRA RED SHADOW TABLE

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.5
0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	45.0
0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	67.5
0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	90.0
0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	112.5
0	0	0	0	0	0	0	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	135.0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180.0

TOTAL TIME FOR SHADOW FACTOR TABLES 4.3

ADJUSTING FIELD LENGTH TO 042200 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 100100 FOR THE FF SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
FORM FACTOR CALCULATION LINK.

FORM FACTORS AND COMBINED FORM FACTORS - USER INPUT AND DEFAULT PARAMETERS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
FFACC	.0500	.0500	ORIENTATION ACCURACY PARAMETER	N/A
FFACCS	.1000	.1000	SHADOWING ACCURACY PARAMETER	N/A
FFMIN	1.0E-06	1.0E-06	PARAMETER TO ELIMINATE SMALL FORM FACTORS	N/A
FFNOSH	SHAD	SHAD	OVER RIDE SHADOWING PARAMETER	(SHAD,NOSH)
+FFPNCH	NO	NO	PARAMETER TO PUNCH FORM FACTORS	(YES,NO)
FFPRNT	YES	YES	FLAG FOR COMPREHENSIVE FF AND CM PRINT	(YES,NO,FF,CM,RB)
FFRATL	15.0	15.0	RATIO FOR USING SUB-NODE TECHNIQUE	N/A
FFCMB	NO	CORR	FLAG FOR COMBINING FORM FACTORS	(YES,NO,AUTO,CORR)

+ -FFPNCH WILL DEFAULT TO -YES- ON CALCULATED VALUES IF THE -RSO- FILE IS NOT SPECIFIED IN THE OPTIONS DATA BLOCK

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* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*                                                                                                                           *
*   RESTARTING -FFCAL - DATA FOR CONFIGURATION -CASE1 - FROM UNIT -RSI- INITIATED BY JOB NO. RGEX153   ON 05/04/77         *
*                                                                                                                           *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
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MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
FORM FACTOR CALCULATION LINK.

NODE	AREA	ALPH	EMISS
1	1.00000	.900	.900
2	1.00000	.900	.900
3	1.00000	.900	.900
4	1.00000	.900	.900
11	1.00000	.900	.900
12	1.00000	.900	.900
13	1.00000	.900	.900
14	1.00000	.900	.900
5	1.00000	.900	.900
15	1.00000	.900	.900
21	2.06040	.200	.900
22	2.06040	.200	.900
23	1.04040	.200	.900
24	2.06040	.200	.900
25	1.04040	.200	.900
26	2.06040	.200	.900

NUMBER OF NODES = 16 NUMBER OF SURFACES = 16
(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUSE OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ	
1	2	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
1	3	RSI	.203695	.203695	.203695	.203695	.203695	1.000000	1.000000	0.	0	0	UN
1	4	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
1	12	RSI	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	0.	0	0	UN
1	13	RSI	.086031	.086031	.086031	.086031	.086031	1.000000	1.000000	0.	0	0	UN
1	14	RSI	.039182	.039182	.039182	.039182	.039182	1.000000	1.000000	0.	0	0	UN
1	5	RSI	.138020	.138020	.138020	.138020	.138020	1.000000	1.000000	0.	0	0	UN
1	15	RSI	.054683	.054683	.054683	.054683	.054683	1.000000	1.000000	0.	0	0	UN
1	FFSUM =	.9840	ROW CP TIME =		.083								
2	3	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
2	4	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
2	11	RSI	.033882	.033882	.033882	.033882	.033882	0.	0.	0.	0	0	UN
2	12	RSI	.069571	.069571	.069571	.069571	.069571	1.000000	1.000000	0.	0	0	UN
2	13	RSI	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	0.	0	0	UN
2	14	RSI	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	0.	0	0	UN
2	5	RSI	.097637	.097637	.097637	.097637	.097637	1.000000	1.000000	0.	0	0	UN

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUSE OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ	
2	15	RSI	.034976	.034976	.034976	.034976	.034976	1.000000	1.000000	0.	0	0	UN
2	FFSUM =	.9466	ROW CP TIME =		.088								
3	4	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
3	11	RSI	.086031	.086031	.086031	.086031	.086031	0.	0.	0.	0	0	UN
3	12	RSI	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	0.	0	0	UN
3	14	RSI	.039182	.039182	.039182	.039182	.039182	1.000000	1.000000	0.	0	0	UN
3	5	RSI	.051908	.051908	.051908	.051908	.051908	1.000000	1.000000	0.	0	0	UN
3	15	RSI	.012000	.012000	.012000	.012000	.012000	1.000000	1.000000	0.	0	0	UN
3	FFSUM =	.8552	ROW CP TIME =		.047								
4	11	RSI	.039182	.039182	.039182	.039182	.039182	0.	0.	0.	0	0	UN
4	12	RSI	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	0.	0	0	UN
4	13	RSI	.039182	.039182	.039182	.039182	.039182	1.000000	1.000000	0.	0	0	UN
4	5	RSI	.109433	.109433	.109433	.109433	.109433	1.000000	1.000000	0.	0	0	UN
4	15	RSI	.057045	.057045	.057045	.057045	.057045	1.000000	1.000000	0.	0	0	UN
4	FFSUM =	.9215	ROW CP TIME =		.043								
11	12	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
11	13	RSI	.203695	.203695	.203695	.203695	.203695	1.000000	1.000000	0.	0	0	UN
11	14	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
11	5	RSI	.054683	.054683	.054683	.054683	.054683	1.000000	1.000000	0.	0	0	UN
11	15	RSI	.138020	.138020	.138020	.138020	.138020	1.000000	1.000000	0.	0	0	UN
11	FFSUM =	.9840	ROW CP TIME =		.038								
12	13	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
12	14	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
12	5	RSI	.034976	.034976	.034976	.034976	.034976	1.000000	1.000000	0.	0	0	UN
12	15	RSI	.097637	.097637	.097637	.097637	.097637	1.000000	1.000000	0.	0	0	UN
12	FFSUM =	.9466	ROW CP TIME =		.039								
13	14	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUSE OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ	
13	5	RSI	.012000	.012000	.012000	.012000	.012000	1.000000	1.000000	0.	0	0	UN
13	15	RSI	.051908	.051908	.051908	.051908	.051908	1.000000	1.000000	0.	0	0	UN
13	FFSUM =	.8552	ROW CP TIME =		.052								
14	5	RSI	.057045	.057045	.057045	.057045	.057045	1.000000	1.000000	0.	0	0	UN
14	15	RSI	.109433	.109433	.109433	.109433	.109433	1.000000	1.000000	0.	0	0	UN
14	FFSUM =	.9215	ROW CP TIME =		.017								
5	FFSUM =	.5557	ROW CP TIME =		.005								
15	FFSUM =	.5557	ROW CP TIME =		.002								
21	FFSUM =	0.	ROW CP TIME =		.005								
22	FFSUM =	0.	ROW CP TIME =		.001								
23	FFSUM =	0.	ROW CP TIME =		.002								
24	FFSUM =	0.	ROW CP TIME =		.004								
25	FFSUM =	0.	ROW CP TIME =		.005								

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)

26 FFSUM = 0. ROW CP TIME = .034

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
FORM FACTOR CALCULATION LINK.

SUMMARY OF FORM FACTOR SUMS FOR ALL NODES

NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM
1- .9840	2- .9466	3- .8552	4- .9215	11- .9840	12- .9466
13- .8552	14- .9215	5- .5557	15- .5557	21- 0.	22- 0.
23- 0.	24- 0.	25- 0.	26- 0.		

TOTAL TIME FOR FORM FACTOR SEGMENT .766

TOTAL TIME SINCE START OF RUN 35.208

ADJUSTING FIELD LENGTH TO 042200 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 052500 FOR THE GB SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
GRAY BODIES COMPUTATION LINK.

GREY BODIES

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
GBWBND	BOTH	NONE	WAVEBAND DEFINITION PARAMETER	(IR,SOL,BOTH)

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* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*                                                                                                                           *
*   RESTARTING -GBIR  - DATA FOR CONFIGURATION -CASE1 - FROM UNIT -RSI- INITIATED BY JOB NO. RGEX153   ON 05/04/77         *
*                                                                                                                           *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
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*                                                                                                                           *
*   RESTARTING -GBSO  - DATA FOR CONFIGURATION -CASE1 - FROM UNIT -RSI- INITIATED BY JOB NO. RGEX153   ON 05/04/77         *
*                                                                                                                           *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
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IR GRAY BODIES STORED FOR CONFIG. CASE1

SOL GRAY BODIES STORED FOR CONFIG. CASE1

TOTAL TIME TO COMPUTE GRAY BODIES .77

ADJUSTING FIELD LENGTH TO 042200 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 050000 FOR THE RC SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTORS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
RKPNCH	PUN	NO	PUNCH/NO PUNCH PARAMETER FOR RADKS	(YES,NO)
RKMIN	.0001	0.0001	PARAMETER TO ELIMINATE SMALL RADK S	N/A
IRKCN	1	1	INITIAL RADIATION CONDUCTOR ID NUMBER	N/A
RKSP	SPACE	NO	MNEMONIC FLAG FOR COMPUTATION OF RADKS TO SPACE	(SPACE,NO)
IRKNSP	999	32767	SPACE NODE ID NUMBER	N/A
SIGMA	1.71E-09	1.713E-9	STEFAN-BOLTZMANN CONSTANT	N/A
RKAMPF	1.00	1.0	AREA MULTIPLYING FACTOR	N/A
RKTAPE	NO	NO	PARAMETER TO OUTPUT TO BCD TAPE	(TAPE,NO)
RFRAC	7.0E-01	0.7	SIGNIFICANT RADIATION FRACTION	(0. TO 1.)
RTOL	.990	0.99	DECIMAL FRACTION OF LAST RADK SAVED	N/A
NERN	0	0	EFFECTIVE RADIATION NODE (ERN) NUMBER	N/A

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
RADIATION CONDUCTOR GENERATION LINK.

SPECIAL RADIATION NODES

NONE

MESS SPECIAL NODES

PRIMARY SECONDARY

NONE

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTOR (RADKS) CARDS PUNCHED

AREA UNITS = INPUT UNITS * AMPF, WHERE AMPF = 1.00000

PUNCHED RADKS	-	1,	1,	2,	1.7130000E-09*	2.1681286E-01
PUNCHED RADKS	-	2,	1,	3,	1.7130000E-09*	4.9461758E-01
PUNCHED RADKS	-	3,	1,	4,	1.7130000E-09*	4.4042526E-01
PUNCHED RADKS	-	4,	1,	12,	1.7130000E-09*	2.1681286E-01
PUNCHED RADKS	-	5,	1,	5,	1.7130000E-09*	3.2924391E-01
PUNCHED RADKS	-	6,	2,	3,	1.7130000E-09*	2.1534148E-01
PUNCHED RADKS	-	7,	2,	4,	1.7130000E-09*	2.1575006E-01
PUNCHED RADKS	-	8,	2,	12,	1.7130000E-09*	6.1032956E-02
PUNCHED RADKS	-	9,	2,	5,	1.7130000E-09*	1.1755086E-01
PUNCHED RADKS	-	10,	3,	4,	1.7130000E-09*	4.3682884E-01
PUNCHED RADKS	-	11,	3,	12,	1.7130000E-09*	2.1534148E-01
PUNCHED RADKS	-	12,	3,	5,	1.7130000E-09*	1.2628027E-01
PUNCHED RADKS	-	13,	4,	12,	1.7130000E-09*	2.1575006E-01
PUNCHED RADKS	-	14,	4,	5,	1.7130000E-09*	2.8732294E-01
PUNCHED RADKS	-	15,	12,	5,	1.7130000E-09*	1.1755086E-01
PUNCHED RADKS	-	16,	1,	999,	1.7130000E-09*	1.9138505E+00
PUNCHED RADKS	-	17,	2,	999,	1.7130000E-09*	9.9639791E-01
PUNCHED RADKS	-	18,	3,	999,	1.7130000E-09*	2.1290552E+00
PUNCHED RADKS	-	19,	4,	999,	1.7130000E-09*	2.0205595E+00
PUNCHED RADKS	-	20,	12,	999,	1.7130000E-09*	9.9639791E-01
PUNCHED RADKS	-	21,	5,	999,	1.7130000E-09*	2.6613585E+00

TOTAL TIME TO COMPUTE AND CONDENSE RADKS = .62

ADJUSTING FIELD LENGTH TO 103000 FOR THE DI SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
	FLUX COMPUTATION FLAG	SOL,PLAN,ALL	ALL	ICALFL
0	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
0.	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
0.	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
0.	LONGITITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
0.	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
0.	ORBIT INCLINATION, DEGREES		0.0	OINC
6.08000E+05	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
6.08000E+05	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
0.	ORBIT ECCENTRICITY		0.0	ECC
0.	SUN RA ANGLE, DEGREES		0.0	SUNRA
0.	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
0.	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
0.	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
0.	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
3.000E+02	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
3.000E+01	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
0.	PLANET LOOK ANGLE - CLOCK, DGREES		0.0	PLCL
0.	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
0.	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
0.	CONE ANGLE, DEGREES		0.0	CONE
0.	ROTATION RATE- CCW POSITIVE		0.0	RATE
0.	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10000

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		0.	SUN CIGMA ANGLE, DEGREES
0.	STAR BETAS ANGLE, DEGREES		0.	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		7.50732E+01	PLANET DS EMISS POWER	WDS
2.09000E+07	PLANET RADIUS	PRAD		7.50732E+01	PLANET SS EMISS POWER	WSS
1.46792E+00	ORBIT PERIOD	PERIOD				
4.17312E+08	PLANET GRAV CONSTANT	GRAV		4.29000E+02	SOLAR CONSTANT AT PSD	SOL

DIRECT INCIDENT FLUXES CALCULATED USING SHADOW FACTORS

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

-DICAL - RESTART DATA FOR CONFIGURATION -CASE1 - NOT FOUND ON UNIT -RSI-. INITIATING CALCULATIONS.

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO *00 TRUE ANOMALY = 0. TIME = .00000
++++ IN THE SUN ++++

NODE NUMBER	DIRECT FLUX (QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	0.	0.	0.	SFTAPE	.001	9	0
2	1.11457E+02	1.85762E+02	.6000	SFTAPE	.083	81	0
3	3.93250E+01	1.07250E+02	.3667	SFTAPE	.131	64	0
4	1.36226E+02	3.71525E+02	.3667	SFTAPE	.189	81	0
11	0.	0.	0.	SFTAPE	.200	9	0
12	0.	0.	0.	SFTAPE	.213	9	0
13	3.21750E+01	1.07250E+02	.3000	SFTAPE	.260	64	0
14	2.47683E+01	3.71525E+02	.0667	SFTAPE	.317	81	0
5	0.	0.	0.	SFTAPE	.328	9	0
15	0.	0.	0.	SFTAPE	.338	9	0
21	0.	0.	0.	SFTAPE	.359	8	0
22	1.07250E+02	1.07250E+02	1.0000	SFTAPE	.401	66	0
23	1.85762E+02	1.85762E+02	1.0000	SFTAPE	.459	81	0
24	0.	0.	0.	SFTAPE	.467	8	0
25	0.	0.	0.	SFTAPE	.477	9	0
26	1.86871E+02	1.86871E+02	1.0000	CALC	1.048	78	10

TOTAL ELAPSED TIME IN PROBLEM = 38.307 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 10000 TRUE ANOMALY = 0. TIME = 0.
++++ IN THE SUN ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX--- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1		0.	0.	0.	0.	0.	0.	0.	66	9	9
2		0.	0.	0.	0.	0.	0.	.468	63	9	7
3		0.	0.	0.	0.	0.	0.	.888	61	9	9
4		0.	0.	0.	0.	0.	0.	1.103	52	9	9
11		0.	0.	0.	0.	0.	0.	1.545	66	9	9
12		0.	0.	0.	0.	0.	0.	1.981	63	9	9
13		0.	0.	0.	0.	0.	0.	2.429	61	9	9
14		0.	0.	0.	0.	0.	0.	2.655	52	9	9
5		3.425E+01	2.294E+01	7.361E+01	4.930E+01	.465	.465	4.324	133	16	7
15		3.497E+01	2.328E+01	7.373E+01	4.930E+01	.474	.472	6.070	133	16	9
21		1.101E+02	7.423E+01	1.101E+02	7.423E+01	1.000	1.000	6.848	112	18	10
22		4.024E+01	2.683E+01	4.024E+01	2.683E+01	1.000	1.000	7.528	61	10	10
23		4.005E+01	2.645E+01	4.005E+01	2.645E+01	1.000	1.000	8.042	63	9	10
24		3.915E+01	2.678E+01	3.915E+01	2.678E+01	1.000	1.000	8.640	66	10	10
25		3.823E+01	2.643E+01	3.823E+01	2.643E+01	1.000	1.000	9.170	66	9	8
26		6.592E+00	4.570E+00	6.592E+00	4.570E+00	1.000	1.000	9.679	52	2	10

TOTAL ELAPSED TIME IN PROBLEM = 48.459 SECONDS

ADJUSTING FIELD LENGTH TO 042200 FOR THE OD SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q COMPUTATION LINK.

VARIABLE NAME	CURRENT VALUE	DEFAULT	ABSORBED HEAT DEFINITION	OPTIONS
IAQSDS	10000	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10000	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10000	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10000

TOTAL TIME TO COMPUTE ABSORBED Q .37

ADJUSTING FIELD LENGTH TO 103000 FOR THE DI SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
	FLUX COMPUTATION FLAG	SOL,PLAN,ALL	ALL	ICALFL
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
90.000	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
0.	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
0.	LONGITITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
0.	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
0.	ORBIT INCLINATION, DEGREES		0.0	OINC
6.08000E+05	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
6.08000E+05	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
0.	ORBIT ECCENTRICITY		0.0	ECC
0.	SUN RA ANGLE, DEGREES		0.0	SUNRA
0.	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
0.	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
0.	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
0.	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
3.600E+02	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
9.000E+01	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
0.	PLANET LOOK ANGLE - CLOCK, DGREES		0.0	PLCL
0.	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
0.	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
0.	CONE ANGLE, DEGREES		0.0	CONE
0.	ROTATION RATE- CCW POSITIVE		0.0	RATE
0.	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10001

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		0.	SUN CIGMA ANGLE, DEGREES
0.	STAR BETAS ANGLE, DEGREES		0.	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		7.50732E+01	PLANET DS EMISS POWER	WDS
2.09000E+07	PLANET RADIUS	PRAD		7.50732E+01	PLANET SS EMISS POWER	WSS
1.46792E+00	ORBIT PERIOD	PERIOD				
4.17312E+08	PLANET GRAV CONSTANT	GRAV		4.29000E+02	SOLAR CONSTANT AT PSD	SOL

DIRECT INCIDENT FLUXES CALCULATED USING SHADOW FACTORS

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO *01 TRUE ANOMALY = 90.00000 TIME = .36701
++++ IN THE SUN ++++

NODE NUMBER	DIRECT FLUX (QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	0.	0.	0.	SFTAPE	0.	9	0
2	0.	5.25186E-07	0.	SFTAPE	.039	9	0
3	0.	4.29000E+02	0.	SFTAPE	.081	81	0
4	0.	0.	0.	SFTAPE	.092	9	0
11	0.	0.	0.	SFTAPE	.102	9	0
12	0.	0.	0.	SFTAPE	.111	9	0
13	0.	4.29000E+02	0.	SFTAPE	.155	81	0
14	0.	0.	0.	SFTAPE	.166	9	0
5	3.03349E+02	3.03349E+02	1.0000	SFTAPE	.222	81	0
15	3.03349E+02	3.03349E+02	1.0000	SFTAPE	.284	81	0
21	6.73312E-07	6.73312E-07	1.0000	SFTAPE	.311	8	0
22	4.29000E+02	4.29000E+02	1.0000	SFTAPE	.367	78	0
23	5.21643E-07	5.21643E-07	1.0000	SFTAPE	.385	9	0
24	0.	0.	0.	SFTAPE	.393	8	0
25	0.	0.	0.	SFTAPE	.403	9	0
26	0.	0.	0.	SFTAPE	.412	8	0

TOTAL ELAPSED TIME IN PROBLEM = 49.905 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 10001 TRUE ANOMALY = 90.00000 TIME = 0.
++++ IN THE SUN ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX--- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1		0.	0.	0.	0.	0.	0.	0.	66	9	9
2		0.	0.	0.	0.	0.	0.	.480	63	9	7
3		0.	0.	0.	0.	0.	0.	.929	61	9	9
4		0.	0.	0.	0.	0.	0.	1.163	52	9	9
11		0.	0.	0.	0.	0.	0.	1.614	66	9	9
12		0.	0.	0.	0.	0.	0.	2.062	63	9	9
13		0.	0.	0.	0.	0.	0.	2.509	61	9	9
14		0.	0.	0.	0.	0.	0.	2.737	52	9	9
5		1.584E+00	2.294E+01	2.470E+00	4.930E+01	.641	.465	4.391	133	16	7
15		1.586E+00	2.328E+01	2.470E+00	4.930E+01	.642	.472	6.112	133	16	9
21		1.430E+00	7.423E+01	1.430E+00	7.423E+01	1.000	1.000	6.877	112	18	10
22		2.061E+00	2.683E+01	2.061E+00	2.683E+01	1.000	1.000	7.541	61	10	10
23		6.423E-01	2.645E+01	6.423E-01	2.645E+01	1.000	1.000	8.043	63	9	10
24		0.	2.678E+01	0.	2.678E+01	0.	1.000	8.623	66	10	10
25		6.342E-01	2.643E+01	6.342E-01	2.643E+01	1.000	1.000	9.142	66	9	8
26		0.	4.570E+00	0.	4.570E+00	0.	1.000	9.646	52	2	10

TOTAL ELAPSED TIME IN PROBLEM = 60.046 SECONDS

ADJUSTING FIELD LENGTH TO 042200 FOR THE OD SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10001	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10001	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10001	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10001

TOTAL TIME TO COMPUTE ABSORBED Q .37

ADJUSTING FIELD LENGTH TO 103000 FOR THE DI SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
	FLUX COMPUTATION FLAG	SOL,PLAN,ALL	ALL	ICALFL
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
180.000	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
0.	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
0.	LONGITITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
0.	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
0.	ORBIT INCLINATION, DEGREES		0.0	OINC
6.08000E+05	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
6.08000E+05	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
0.	ORBIT ECCENTRICITY		0.0	ECC
0.	SUN RA ANGLE, DEGREES		0.0	SUNRA
0.	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
0.	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
0.	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
0.	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
3.000E+02	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
1.500E+02	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
0.	PLANET LOOK ANGLE - CLOCK, DGREES		0.0	PLCL
0.	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
0.	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
0.	CONE ANGLE, DEGREES		0.0	CONE
0.	ROTATION RATE- CCW POSITIVE		0.0	RATE
0.	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10002

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		0.	SUN CIGMA ANGLE, DEGREES
0.	STAR BETAS ANGLE, DEGREES		0.	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		7.50732E+01	PLANET DS EMISS POWER	WDS
2.09000E+07	PLANET RADIUS	PRAD		7.50732E+01	PLANET SS EMISS POWER	WSS
1.46792E+00	ORBIT PERIOD	PERIOD				
4.17312E+08	PLANET GRAV CONSTANT	GRAV		4.29000E+02	SOLAR CONSTANT AT PSD	SOL

DIRECT INCIDENT FLUXES CALCULATED USING SHADOW FACTORS

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO *02 TRUE ANOMALY = 180.00000 TIME = .73402
++++ IN THE SHADE ++++

NODE NUMBER	DIRECT FLUX (QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	0.	0.	0.	SFTAPE	0.	0	0
2	0.	0.	0.	SFTAPE	.035	0	0
3	0.	0.	0.	SFTAPE	.039	0	0
4	0.	0.	0.	SFTAPE	.043	0	0
11	0.	0.	0.	SFTAPE	.047	0	0
12	0.	0.	0.	SFTAPE	.050	0	0
13	0.	0.	0.	SFTAPE	.055	0	0
14	0.	0.	0.	SFTAPE	.058	0	0
5	0.	0.	0.	SFTAPE	.062	0	0
15	0.	0.	0.	SFTAPE	.065	0	0
21	0.	0.	0.	SFTAPE	.076	0	0
22	0.	0.	0.	SFTAPE	.080	0	0
23	0.	0.	0.	SFTAPE	.084	0	0
24	0.	0.	0.	SFTAPE	.089	0	0
25	0.	0.	0.	SFTAPE	.092	0	0
26	0.	0.	0.	SFTAPE	.094	0	0

TOTAL ELAPSED TIME IN PROBLEM = 61.206 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 10002 TRUE ANOMALY = 180.00000 TIME = 0.
++++ IN THE SHADE ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX--- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1		0.	0.	0.	0.	0.	0.	0.	0	0	0
2		0.	0.	0.	0.	0.	0.	.028	0	0	0
3		0.	0.	0.	0.	0.	0.	.032	0	0	0
4		0.	0.	0.	0.	0.	0.	.036	0	0	0
11		0.	0.	0.	0.	0.	0.	.040	0	0	0
12		0.	0.	0.	0.	0.	0.	.044	0	0	0
13		0.	0.	0.	0.	0.	0.	.049	0	0	0
14		0.	0.	0.	0.	0.	0.	.052	0	0	0
5		0.	2.294E+01	0.	0.	0.	0.	.056	0	0	0
15		0.	2.328E+01	0.	0.	0.	0.	.059	0	0	0
21		0.	7.423E+01	0.	0.	0.	0.	.075	0	0	0
22		0.	2.683E+01	0.	0.	0.	0.	.080	0	0	0
23		0.	2.645E+01	0.	0.	0.	0.	.085	0	0	0
24		0.	2.678E+01	0.	0.	0.	0.	.088	0	0	0
25		0.	2.643E+01	0.	0.	0.	0.	.093	0	0	0
26		0.	4.570E+00	0.	0.	0.	0.	.104	0	0	0

TOTAL ELAPSED TIME IN PROBLEM = 61.333 SECONDS

ADJUSTING FIELD LENGTH TO 042200 FOR THE OD SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q COMPUTATION LINK.

VARIABLE NAME	CURRENT VALUE	DEFAULT	ABSORBED HEAT DEFINITION	OPTIONS
IAQSDS	10002	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10002	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10002	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10002

TOTAL TIME TO COMPUTE ABSORBED Q .25

ADJUSTING FIELD LENGTH TO 103000 FOR THE DI SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
	FLUX COMPUTATION FLAG	SOL,PLAN,ALL	ALL	ICALFL
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
105.720	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
0.	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
0.	LONGITITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
0.	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
0.	ORBIT INCLINATION, DEGREES		0.0	OINC
6.08000E+05	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
6.08000E+05	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
0.	ORBIT ECCENTRICITY		0.0	ECC
0.	SUN RA ANGLE, DEGREES		0.0	SUNRA
0.	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
0.	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
0.	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
0.	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
3.590E+02	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
1.036E+02	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
0.	PLANET LOOK ANGLE - CLOCK, DGREES		0.0	PLCL
0.	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
0.	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
0.	CONE ANGLE, DEGREES		0.0	CONE
0.	ROTATION RATE- CCW POSITIVE		0.0	RATE
0.	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10003

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		0.	SUN CIGMA ANGLE, DEGREES
0.	STAR BETAS ANGLE, DEGREES		0.	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		7.50732E+01	PLANET DS EMISS POWER	WDS
2.09000E+07	PLANET RADIUS	PRAD		7.50732E+01	PLANET SS EMISS POWER	WSS
1.46792E+00	ORBIT PERIOD	PERIOD				
4.17312E+08	PLANET GRAV CONSTANT	GRAV		4.29000E+02	SOLAR CONSTANT AT PSD	SOL

DIRECT INCIDENT FLUXES CALCULATED USING SHADOW FACTORS

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO *03 TRUE ANOMALY = 105.71977 TIME = .43111
++++ IN THE SUN ++++

NODE NUMBER	DIRECT FLUX (QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	0.	0.	0.	SFTAPE	0.	9	0
2	0.	6.94783E+00	0.	SFTAPE	.039	9	0
3	0.	4.16966E+02	0.	SFTAPE	.083	81	0
4	0.	0.	0.	SFTAPE	.094	9	0
11	0.	0.	0.	SFTAPE	.102	9	0
12	0.	0.	0.	SFTAPE	.111	9	0
13	0.	4.16966E+02	0.	SFTAPE	.150	81	0
14	0.	0.	0.	SFTAPE	.159	9	0
5	2.99791E+02	3.66016E+02	.8191	SFTAPE	.212	81	0
15	2.99791E+02	3.66016E+02	.8191	SFTAPE	.265	81	0
21	1.00658E+02	1.00658E+02	1.0000	SFTAPE	.314	55	0
22	4.16966E+02	4.16966E+02	1.0000	SFTAPE	.371	78	0
23	6.94783E+00	6.94783E+00	1.0000	SFTAPE	.387	9	0
24	0.	0.	0.	SFTAPE	.402	8	0
25	0.	0.	0.	SFTAPE	.410	9	0
26	0.	0.	0.	SFTAPE	.418	8	0

TOTAL ELAPSED TIME IN PROBLEM = 62.600 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 10003 TRUE ANOMALY = 105.71977 TIME = 0.
++++ IN THE SUN ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX--- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1		0.	0.	0.	0.	0.	0.	.001	0	8	0
2		0.	0.	0.	0.	0.	0.	.030	0	8	0
3		0.	0.	0.	0.	0.	0.	.034	0	8	0
4		0.	0.	0.	0.	0.	0.	.038	0	8	0
11		0.	0.	0.	0.	0.	0.	.042	0	8	0
12		0.	0.	0.	0.	0.	0.	.046	0	8	0
13		0.	0.	0.	0.	0.	0.	.049	0	8	0
14		0.	0.	0.	0.	0.	0.	.053	0	8	0
5		0.	2.294E+01	0.	0.	0.	0.	.058	0	8	0
15		0.	2.328E+01	0.	0.	0.	0.	.062	0	8	0
21		0.	7.423E+01	0.	0.	0.	0.	.076	0	8	0
22		0.	2.683E+01	0.	0.	0.	0.	.081	0	8	0
23		0.	2.645E+01	0.	0.	0.	0.	.085	0	8	0
24		0.	2.678E+01	0.	0.	0.	0.	.089	0	8	0
25		0.	2.643E+01	0.	0.	0.	0.	.093	0	8	0
26		0.	4.570E+00	0.	0.	0.	0.	.098	0	8	0

TOTAL ELAPSED TIME IN PROBLEM = 62.720 SECONDS

ADJUSTING FIELD LENGTH TO 042200 FOR THE OD SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q COMPUTATION LINK.

VARIABLE NAME	CURRENT VALUE	DEFAULT	ABSORBED HEAT DEFINITION	OPTIONS
IAQSDS	10003	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10003	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10003	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10003

TOTAL TIME TO COMPUTE ABSORBED Q .26

ADJUSTING FIELD LENGTH TO 103000 FOR THE DI SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
	FLUX COMPUTATION FLAG	SOL,PLAN,ALL	ALL	ICALFL
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
105.920	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
0.	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
0.	LONGITITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
0.	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
0.	ORBIT INCLINATION, DEGREES		0.0	OINC
6.08000E+05	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
6.08000E+05	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
0.	ORBIT ECCENTRICITY		0.0	ECC
0.	SUN RA ANGLE, DEGREES		0.0	SUNRA
0.	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
0.	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
0.	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
0.	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
3.590E+02	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
1.037E+02	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
0.	PLANET LOOK ANGLE - CLOCK, DGREES		0.0	PLCL
0.	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
0.	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
0.	CONE ANGLE, DEGREES		0.0	CONE
0.	ROTATION RATE- CCW POSITIVE		0.0	RATE
0.	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10004

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		0.	SUN CIGMA ANGLE, DEGREES
0.	STAR BETAS ANGLE, DEGREES		0.	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		7.50732E+01	PLANET DS EMISS POWER	WDS
2.09000E+07	PLANET RADIUS	PRAD		7.50732E+01	PLANET SS EMISS POWER	WSS
1.46792E+00	ORBIT PERIOD	PERIOD				
4.17312E+08	PLANET GRAV CONSTANT	GRAV		4.29000E+02	SOLAR CONSTANT AT PSD	SOL

DIRECT INCIDENT FLUXES CALCULATED USING SHADOW FACTORS

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO *04 TRUE ANOMALY = 105.91977 TIME = .43193
++++ IN THE SHADE ++++

NODE NUMBER	DIRECT FLUX (QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	0.	0.	0.	SFTAPE	0.	0	0
2	0.	0.	0.	SFTAPE	.027	0	0
3	0.	0.	0.	SFTAPE	.031	0	0
4	0.	0.	0.	SFTAPE	.034	0	0
11	0.	0.	0.	SFTAPE	.038	0	0
12	0.	0.	0.	SFTAPE	.041	0	0
13	0.	0.	0.	SFTAPE	.045	0	0
14	0.	0.	0.	SFTAPE	.049	0	0
5	0.	0.	0.	SFTAPE	.055	0	0
15	0.	0.	0.	SFTAPE	.059	0	0
21	0.	0.	0.	SFTAPE	.071	0	0
22	0.	0.	0.	SFTAPE	.074	0	0
23	0.	0.	0.	SFTAPE	.079	0	0
24	0.	0.	0.	SFTAPE	.082	0	0
25	0.	0.	0.	SFTAPE	.085	0	0
26	0.	0.	0.	SFTAPE	.089	0	0

TOTAL ELAPSED TIME IN PROBLEM = 63.635 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 2 .- SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 10004 TRUE ANOMALY = 105.91977 TIME = 0.
++++ IN THE SHADE ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX--- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
								0.			
1		0.	0.	0.	0.	0.	0.	.026	0	0	0
2		0.	0.	0.	0.	0.	0.	.029	0	0	0
3		0.	0.	0.	0.	0.	0.	.035	0	0	0
4		0.	0.	0.	0.	0.	0.	.038	0	0	0
11		0.	0.	0.	0.	0.	0.	.047	0	0	0
12		0.	0.	0.	0.	0.	0.	.051	0	0	0
13		0.	0.	0.	0.	0.	0.	.054	0	0	0
14		0.	0.	0.	0.	0.	0.	.058	0	0	0
5		0.	2.294E+01	0.	0.	0.	0.	.062	0	0	0
15		0.	2.328E+01	0.	0.	0.	0.	.073	0	0	0
21		0.	7.423E+01	0.	0.	0.	0.	.076	0	0	0
22		0.	2.683E+01	0.	0.	0.	0.	.081	0	0	0
23		0.	2.645E+01	0.	0.	0.	0.	.085	0	0	0
24		0.	2.678E+01	0.	0.	0.	0.	.088	0	0	0
25		0.	2.643E+01	0.	0.	0.	0.	.092	0	0	0
26		0.	4.570E+00	0.	0.	0.	0.				

TOTAL ELAPSED TIME IN PROBLEM = 63.749 SECONDS

ADJUSTING FIELD LENGTH TO 042200 FOR THE OD SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10004	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10004	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10004	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10004

TOTAL TIME TO COMPUTE ABSORBED Q .24

ADJUSTING FIELD LENGTH TO 051700 FOR THE QO SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q OUTPUT COMPUTATION LINK.

ABSORBED Q OUT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IQOTME	1	1	TIME ARRAY ID NUMBER FLUX TABLES START AT IQOTME + 1	N/A
QOTAPE	NO	2HNO	PARAMETER TO OUTPUT TO BCD TAPE	(4HTAPE,2HNO)
QOPNCH	PUN	2HNO	PUNCH/NO PUNCH PARAMETER FOR OUTPUT	(3HPUN,2HNO)
QOAMPF	1.0000	1.0	AREA MULTIPLYING FACTOR	N/A
QOFMPF	1.0000	1.0	FLUX MULTIPLYING FACTOR	N/A
QOTMPF	1.0000	1.0	TIME MULTIPLYING FACTOR	N/A
QOTYPE	BOTH	NONE	PARAMETER TO DETERMINE TYPE OF OUTPUT	(3HTAB,2HAV,4HBOTH)
IQOCOR	0	0	STEP NUMBER REFERENCE FOR CORRESPONDENCE DATA	N/A
IQOARY	ALL	NONE	STEP NO. ARRAY DIRECTIVE	(3HALL,ARRAY NAME)

```
ABSORBED HEAT FLUX TABLES PUNCHED

    Q    = INPUT * FMPF  WHERE FMPF =   1.00000E+00
    TIME = INPUT * TMPF  WHERE TMPF =   1.00000E+00
    AREA IS ON SUBROUTINE CALL CARDS
```

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q OUTPUT COMPUTATION LINK.

```
     1$ TIME ARRAY
 1.969E-08, 3.670E-01, 4.311E-01, 4.319E-01, 7.340E-01
END$
     2$  HEAT FLUX ARRAY
 6.594E+00, 5.970E+00, 5.905E+00, 4.214E-01, 4.214E-01
END$
     3$  HEAT FLUX ARRAY
 1.046E+02, 4.263E+00, 4.216E+00, 3.008E-01, 3.008E-01
END$
     4$  HEAT FLUX ARRAY
 3.849E+01, 2.290E+00, 2.265E+00, 1.615E-01, 1.615E-01
END$
     5$  HEAT FLUX ARRAY
 1.233E+02, 5.210E+00, 5.153E+00, 3.680E-01, 3.680E-01
END$
     6$  HEAT FLUX ARRAY
 1.551E+00, 5.973E+00, 5.908E+00, 4.240E-01, 4.240E-01
END$
     7$  HEAT FLUX ARRAY
 1.460E+00, 4.265E+00, 4.218E+00, 3.028E-01, 3.028E-01
END$
     8$  HEAT FLUX ARRAY
 2.967E+01, 2.291E+00, 2.266E+00, 1.628E-01, 1.628E-01
END$
     9$  HEAT FLUX ARRAY
 2.270E+01, 5.212E+00, 5.155E+00, 3.697E-01, 3.697E-01
END$
    10$  HEAT FLUX ARRAY
 5.149E+01, 2.954E+02, 2.907E+02, 2.066E+01, 2.066E+01
END$
    11$  HEAT FLUX ARRAY
 5.244E+01, 2.956E+02, 2.909E+02, 2.097E+01, 2.097E+01
END$
    12$  HEAT FLUX ARRAY
 8.883E+01, 6.710E+01, 8.694E+01, 6.681E+01, 6.681E+01
END$
    13$  HEAT FLUX ARRAY
 5.364E+01, 1.104E+02, 1.075E+02, 2.414E+01, 2.414E+01
END$
    14$  HEAT FLUX ARRAY
 6.896E+01, 2.393E+01, 2.519E+01, 2.380E+01, 2.380E+01
END$
    15$  HEAT FLUX ARRAY
 3.194E+01, 2.411E+01, 2.411E+01, 2.411E+01, 2.411E+01
END$
    16$  HEAT FLUX ARRAY
 3.143E+01, 2.391E+01, 2.379E+01, 2.379E+01, 2.379E+01
END$
```

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q OUTPUT COMPUTATION LINK.

ABSORBED HEAT FLUX TABLES PUNCHED

```
Q    = INPUT * FMPF  WHERE FMPF =   1.00000E+00
TIME = INPUT * TMPF  WHERE TMPF =   1.00000E+00
AREA IS ON SUBROUTINE CALL CARDS

   17$  HEAT FLUX ARRAY
 4.281E+01, 4.113E+00, 4.113E+00, 4.113E+00, 4.113E+00
END$
```

DA11MC SUBROUTINE CALL CARDS

AREA = INPUT (UNITS) * AMPF WHERE AMPF = 1.00000E+00

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q OUTPUT COMPUTATION LINK.

DA11MC SUBROUTINE CALL CARDS

```
                        AREA = INPUT (UNITS) * AMPF  WHERE AMPF =  1.00000E+00
DA11MC( 1.46792174E+00,TIMEM,A   1,A   2, 1.00000000E+00,Q    1)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A   3, 1.00000000E+00,Q    2)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A   4, 1.00000000E+00,Q    3)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A   5, 1.00000000E+00,Q    4)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A   6, 1.00000000E+00,Q   11)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A   7, 1.00000000E+00,Q   12)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A   8, 1.00000000E+00,Q   13)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A   9, 1.00000000E+00,Q   14)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A  10, 1.00000000E+00,Q    5)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A  11, 1.00000000E+00,Q   15)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A  12, 2.06040000E+00,Q   21)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A  13, 2.06040000E+00,Q   22)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A  14, 1.04040000E+00,Q   23)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A  15, 2.06040000E+00,Q   24)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A  16, 1.04040000E+00,Q   25)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A  17, 2.06040000E+00,Q   26)$
```

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q OUTPUT COMPUTATION LINK.

AVERAGE ORBITAL HEATING FLUX AND AREA CARDS PUNCHED

VALUES ARE FLUX = INPUT (UNITS) * FMPF WHERE FMPF = 1.00000E+00
VALUES ARE AREA = INPUT (UNITS) * AMPF WHERE AMPF = 1.00000E+00

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q OUTPUT COMPUTATION LINK.

AVERAGE ORBITAL HEATING FLUX AND AREA CARDS PUNCHED

```
VALUES ARE    FLUX = INPUT (UNITS) * FMPF    WHERE FMPF =   1.00000E+00
VALUES ARE    AREA = INPUT (UNITS) * AMPF    WHERE AMPF =   1.00000E+00

Q    1=  3.83649262E+00* 1.00000000E+00*1.0000 $
Q    2=  2.77016978E+01* 1.00000000E+00*1.0000 $
Q    3=  1.04618168E+01* 1.00000000E+00*1.0000 $
Q    4=  3.27392019E+01* 1.00000000E+00*1.0000 $
Q   11=  2.57780215E+00* 1.00000000E+00*1.0000 $
Q   12=  1.92879540E+00* 1.00000000E+00*1.0000 $
Q   13=  8.25687631E+00* 1.00000000E+00*1.0000 $
Q   14=  7.58545277E+00* 1.00000000E+00*1.0000 $
Q    5=  1.20979112E+02* 1.00000000E+00*1.0000 $
Q   15=  1.21412855E+02* 1.00000000E+00*1.0000 $
Q   21=  7.32878030E+01* 2.06040000E+00*1.0000 $
Q   22=  6.05224327E+01* 2.06040000E+00*1.0000 $
Q   23=  3.51910041E+01* 1.04040000E+00*1.0000 $
Q   24=  2.60631280E+01* 2.06040000E+00*1.0000 $
Q   25=  2.57340091E+01* 1.04040000E+00*1.0000 $
Q   26=  1.37857494E+01* 2.06040000E+00*1.0000 $
```

TOTAL TIME TO COMPUTE ABSORBED Q OUT 1.03

ADJUSTING FIELD LENGTH TO 055600 FOR THE OP SEGMENT

ORBIT PLOTTER DATA OUTPUT

ODATA, ODATAS INPUT

PARAMETER	DESCRIPTION	OPTION *,	DEFAULT
NV	VIEW NUMBER	1-6	1
VU	VIEW	3HALL 3H3-D 4HBETA 5HCIGMA 3HSUN 3HGEN	3HALL
SCL	VEHICLE SURFACE SCALING FACTOR INPUT IN INCHES (MAX VALUE = (3.15-SCLR)/2.)	REAL NO.	(3.15-SCLR)/2.
SCLR	ORBIT RADIUS INPUT IN INCHES FROM CENTER OF PLOT (RECOMMENDED VALUE = 1.6)	REAL NO.	8.*RPLN/7.
RPLN	PLANET RADIUS INPUT IN INCHES FROM CENTER OF PLOT (RECOMMENDED VALUE = 1.4)	REAL NO.	1.4
TRUEAN	TRUE ANOMALY (PRESENT VEHICLE POSITION IN DEGREES FROM PERIAPSIS)	REAL NO.	COMPUTED IF TIME > 0.
TIMEST	TIME OF PERIAPSIS PASSAGE	L NO.	NONE
TIME	TIME AT PRESENT VEHICLE POSITION	REAL NO.	COMPUTED IF TRUEAN > 0.
ISELN	ARRAY NAME CONTAINING NUMBER OF SURFACES TO BE SELECTIVELY PLOTTED	ARRAY NAME	PLOTS ALL SURFACES
ITIT	ARRAY NAME OF PLOT TITLE	ARRAY NAME	USES JOB TITLE
IROTX, IROTY, IROTZ	ORDER OF ROTATIONS (FOR IVU = 3HGEN)	1,2,3 (ANY ORDER)	1,2,3
ROTX, ROTY, ROTZ,	VIEW ROTATIONS (FOR IVU = 3HGEN)	0 @ ANG @ 360	0.0 0.0 0.0

*INPUT ZERO FOR DEFAULT ACTION

CALLING SEQUENCE%,

CALL ODATA (NV, VU, SCL, SCLR, RPLN, TRUEAN, TIMEST, TIME, ISELN, ITIT, IROTX, IROTY, IROTZ, ROTX, ROTY, ROTZ)

OR

CALL ODATAS (NV, VU, SCL, SCLR, RPLN, TRUEAN, TIMEST, TIME)

NOTE% IF NO CALLS TO ODATA/ODATAS ARE MADE, A CALL TO OPLOT WILL RESULT IN ALL VIEWS BEING AUTOMATICALLY SCALED AND GENERATED.

ORBIT PLOTTER DATA OUTPUT

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ORBIT PLOTTER DATA OUTPUT

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
0.	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
0.	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
0.	LONGITITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
0.	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
0.	ORBIT INCLINATION, DEGREES		0.0	OINC
6.08000E+05	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
6.08000E+05	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
0.	ORBIT ECCENTRICITY		0.0	ECC
0.	SUN RA ANGLE, DEGREES		0.0	SUNRA
0.	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
0.	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
0.	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
0.	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX, IROTY, IROTZ,		1 2 3	
	++++ SPIN DATA ++++			
0.	CLOCK ANGLE, DEGREES (ABOUT CCS Z-AXIS CW=POSITIVE)		0.0	CLOCK
0.	CONE ANGLE, DEGREES		0.0	CONE
0.	ROTATION RATE- CCW POSITIVE		0.0	RATE

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ORBIT PLOTTER DATA OUTPUT

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		0.	SUN CIGMA ANGLE, DEGREES
0.	STAR BETAS ANGLE, DEGREES		0.	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

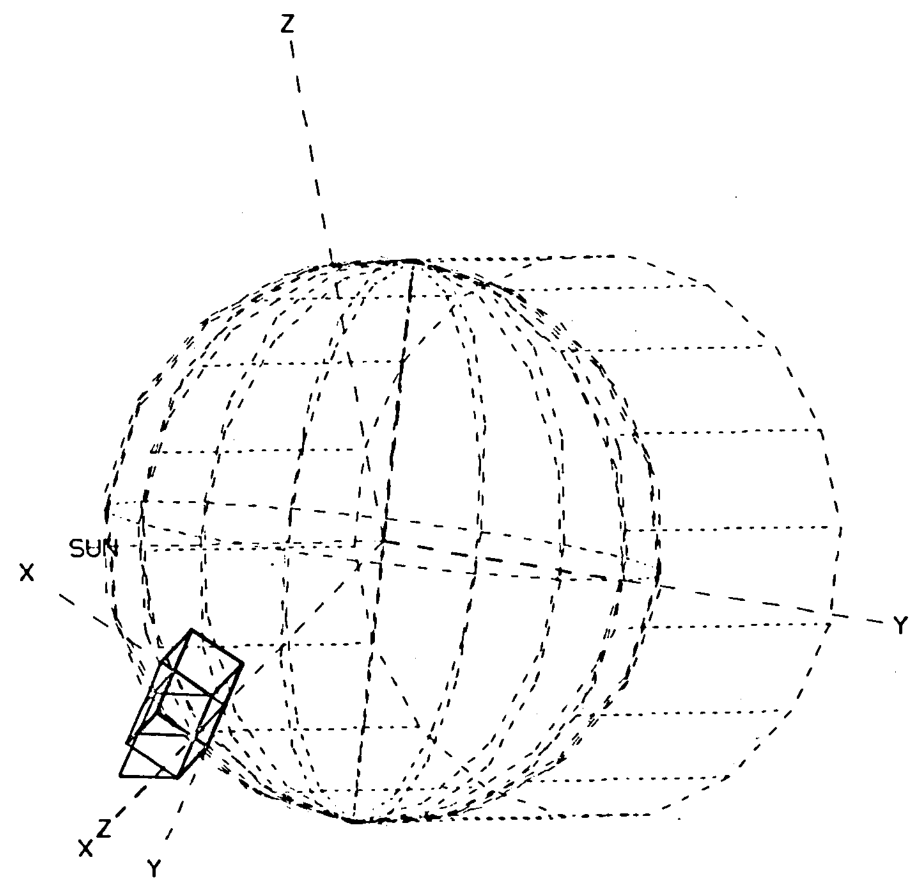
VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		7.50732E+01	PLANET DS EMISS POWER	WDS
2.09000E+07	PLANET RADIUS	PRAD		7.50732E+01	PLANET SS EMISS POWER	WSS
1.00000E+15	PLANET-SUN DISTANCE	PSD		1.46792E+00	ORBIT PERIOD	PERIOD
4.17312E+08	PLANET GRAV CONSTANT	GRAV		4.29000E+02	SOLAR CONSTANT AT PSD	SOL

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ORBIT PLOTTER DATA OUTPUT

VIEW=3-D	SCALE=	.3037	VIEW NUMBER=1
VIEW=BETA	SCALE=	.3037	VIEW NUMBER=1
VIEW=CIGMA	SCALE=	.3037	VIEW NUMBER=1
VIEW=SUN VIEW	SCALE=	.3037	VIEW NUMBER=1
VIEW=3-D	SCALE=	.3037	VIEW NUMBER=2
VIEW=BETA	SCALE=	.3037	VIEW NUMBER=2
VIEW=CIGMA	SCALE=	.3037	VIEW NUMBER=2
VIEW=SUN VIEW	SCALE=	.3037	VIEW NUMBER=2
VIEW=3-D	SCALE=	.3037	VIEW NUMBER=3
VIEW=BETA	SCALE=	.3037	VIEW NUMBER=3
VIEW=CIGMA	SCALE=	.3037	VIEW NUMBER=3
VIEW=SUN VIEW	SCALE=	.3037	VIEW NUMBER=3

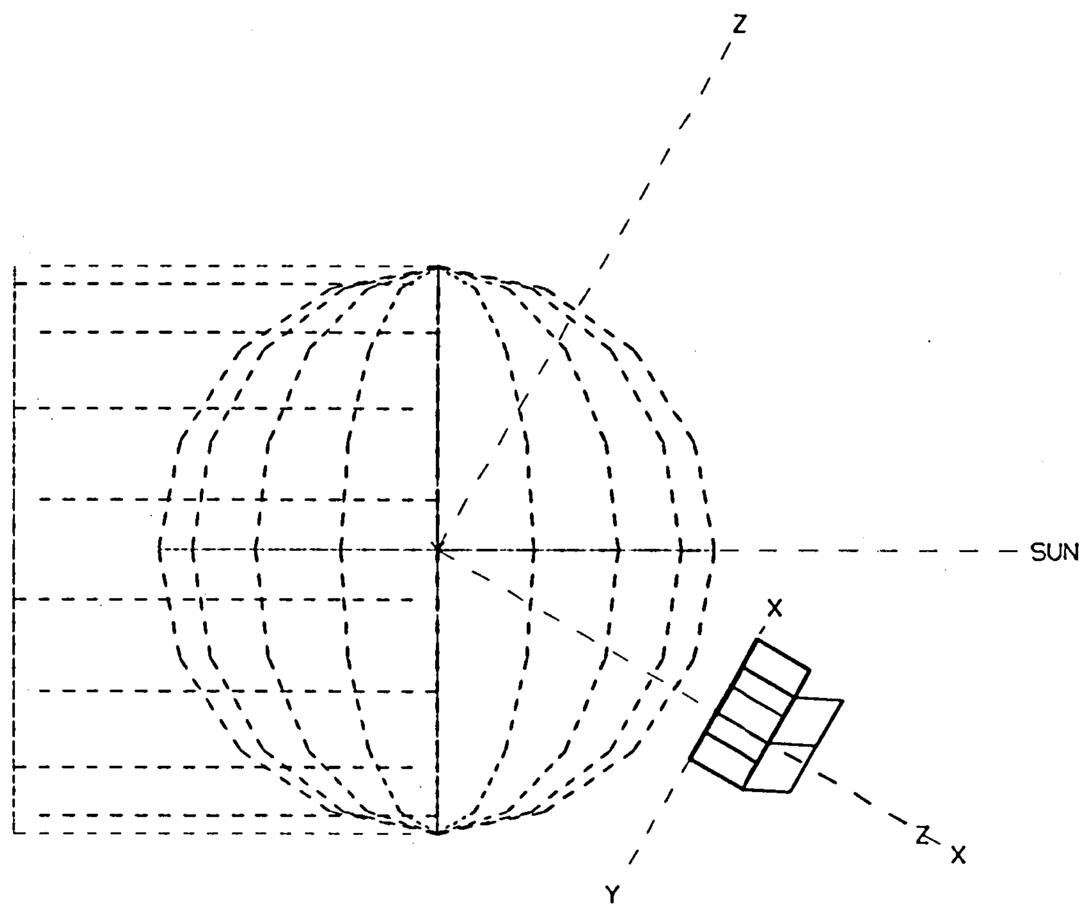
ADJUSTING FIELD LENGTH TO 042200 FOR THE OD SEGMENT

SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



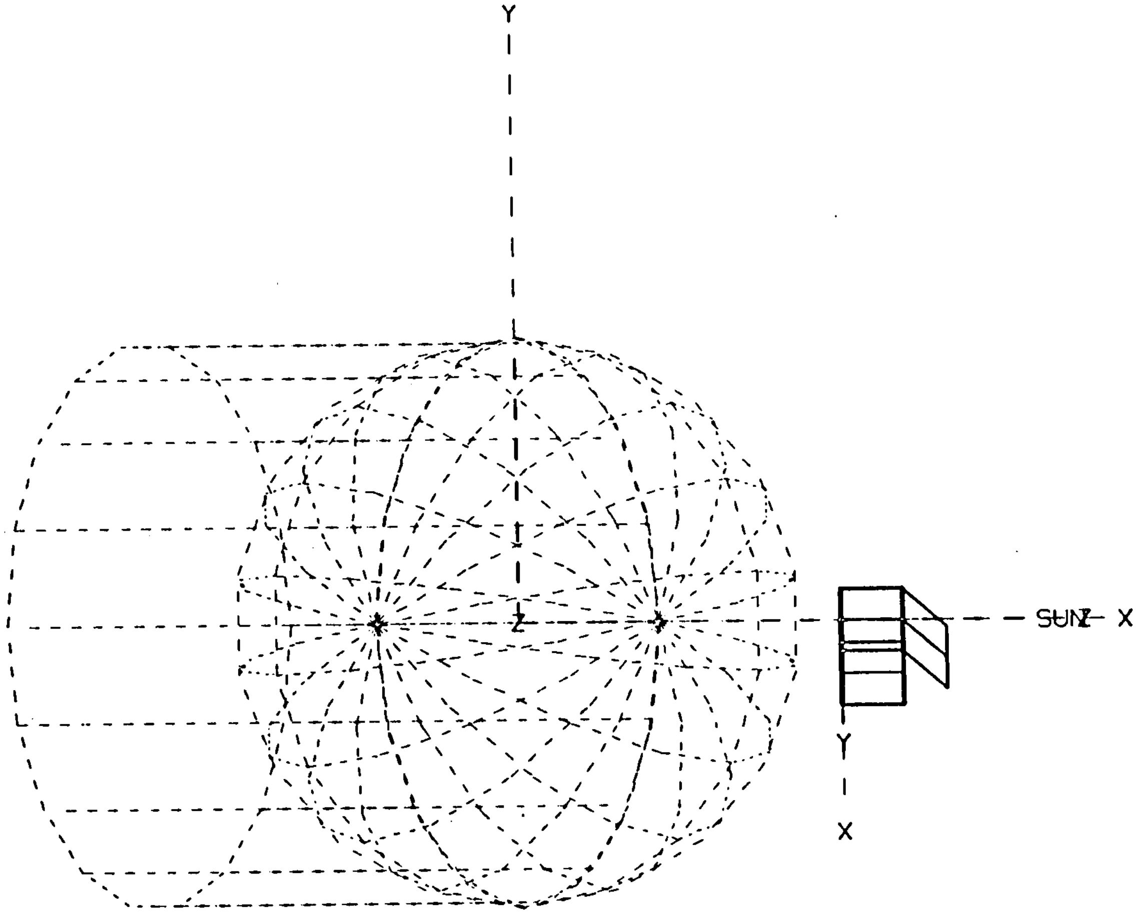
VIEW = 3-D
SCALE = .3037
VIEW NUMBER = 1

SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



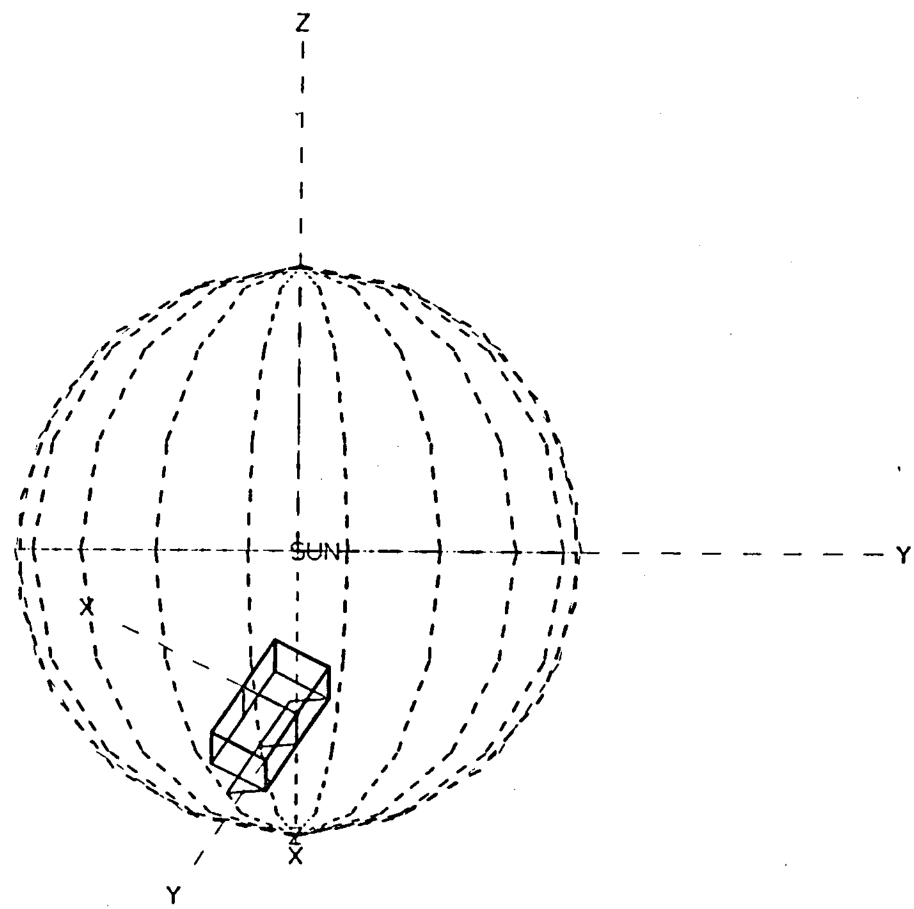
VIEW = BETA
SCALE = .3037
VIEW NUMBER = 1

SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



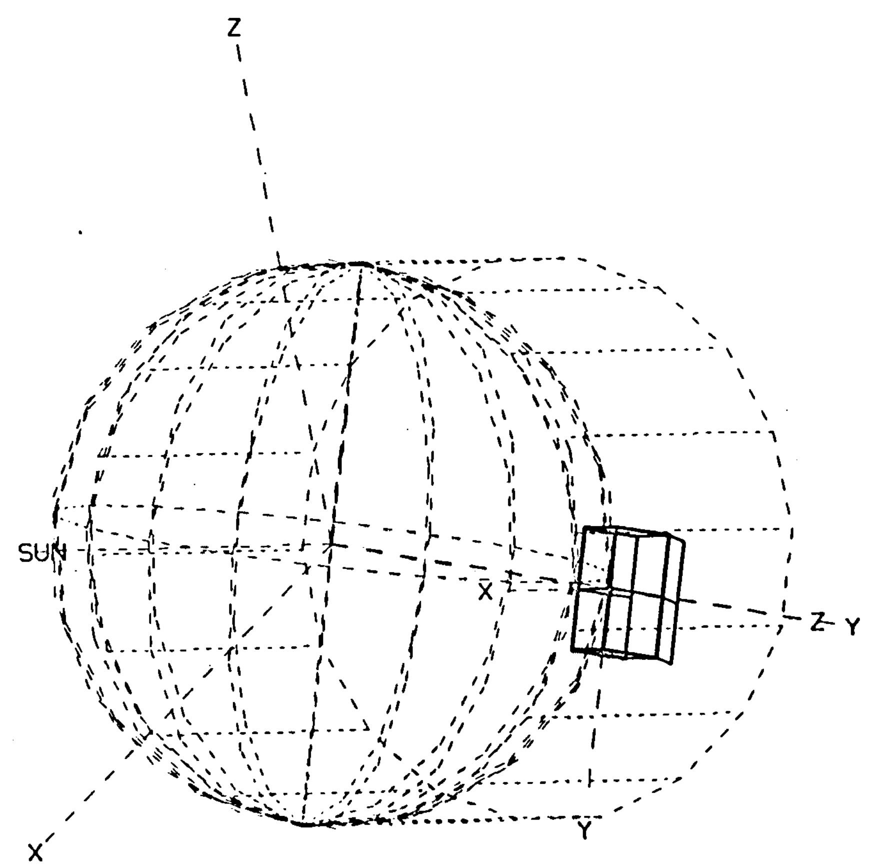
VIEW = CIGMA
SCALE = .3037
VIEW NUMBER = 1

SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



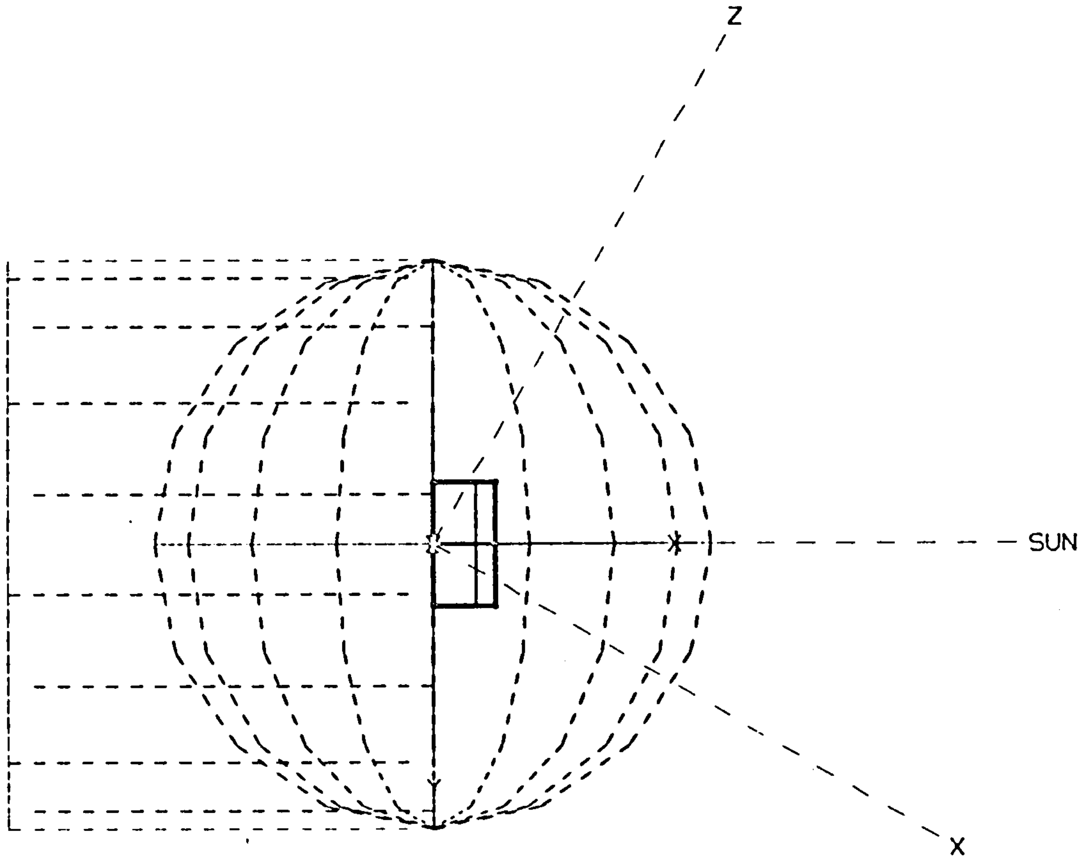
VIEW = SUN VIEW
SCALE = .3037
VIEW NUMBER = 1

SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



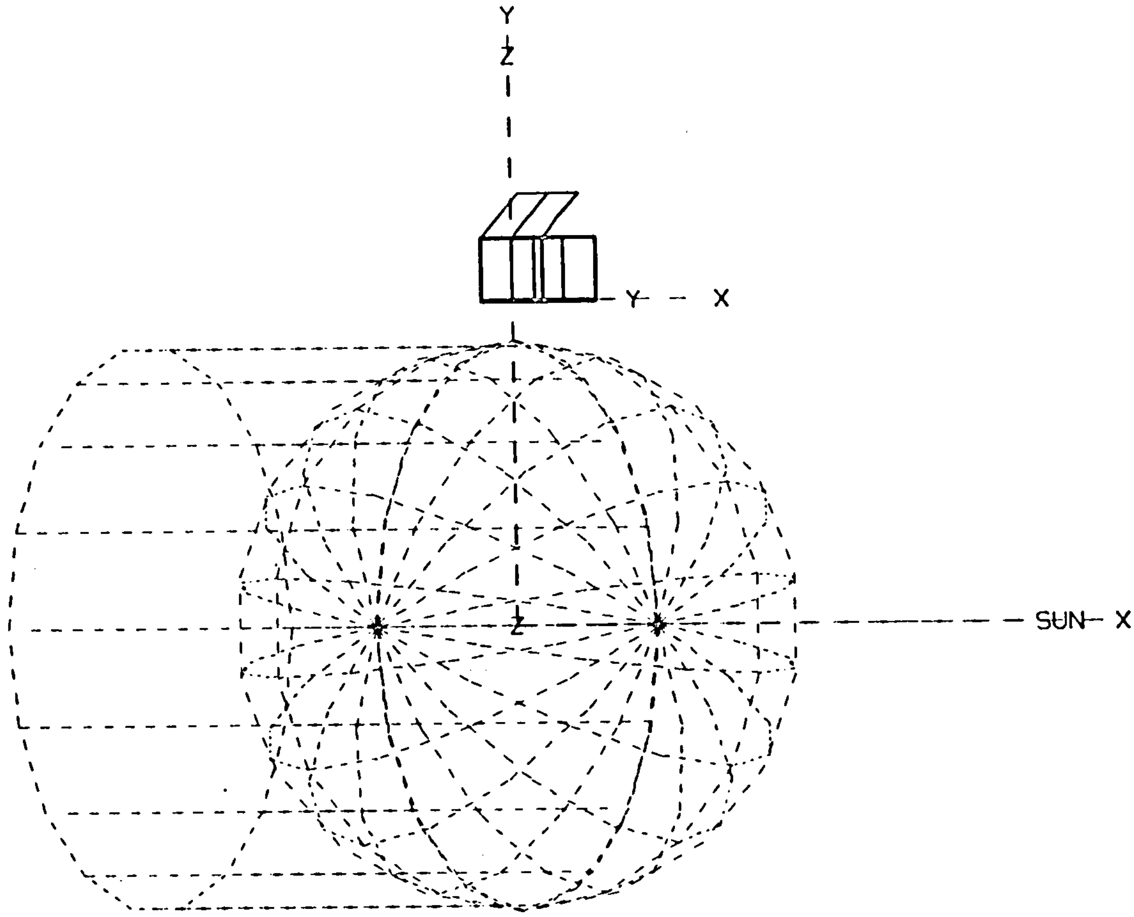
VIEW = 3-D
SCALE = .3037
VIEW NUMBER = 2

SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



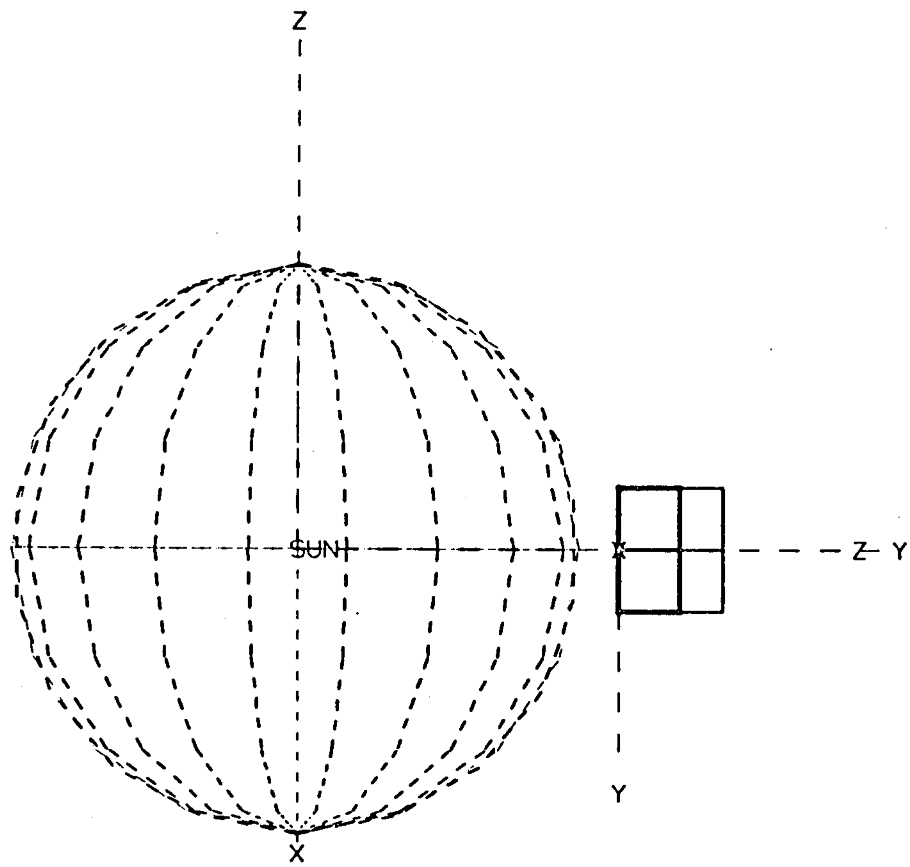
VIEW = BETA
SCALE = .3037
VIEW NUMBER = 2

SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



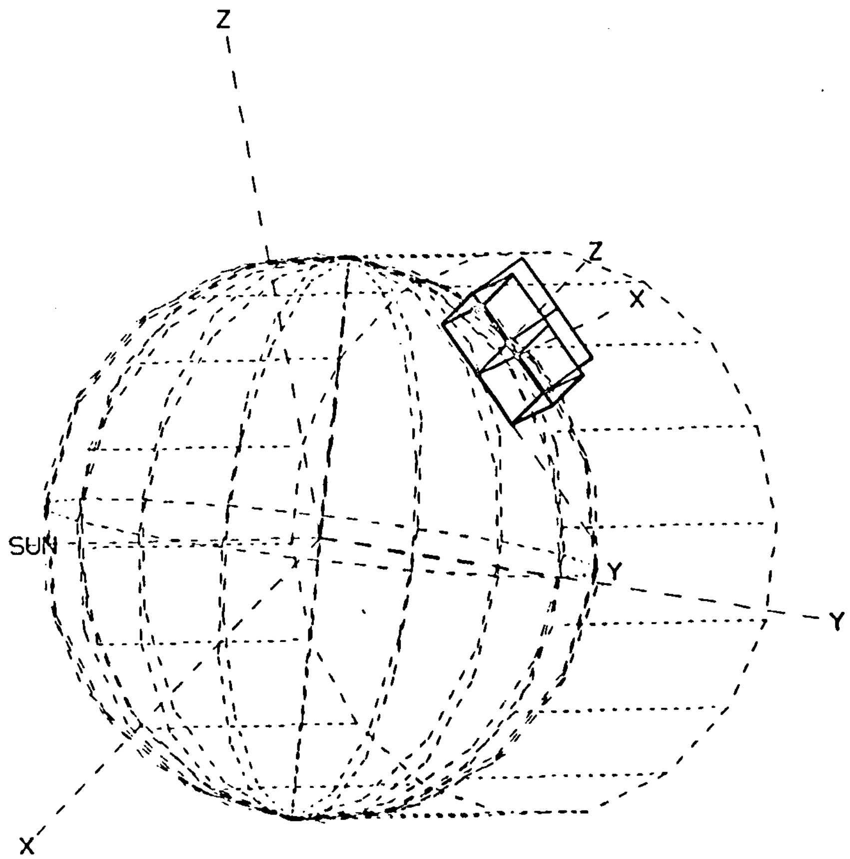
VIEW = CIGMA
SCALE = .3037
VIEW NUMBER = 2

SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



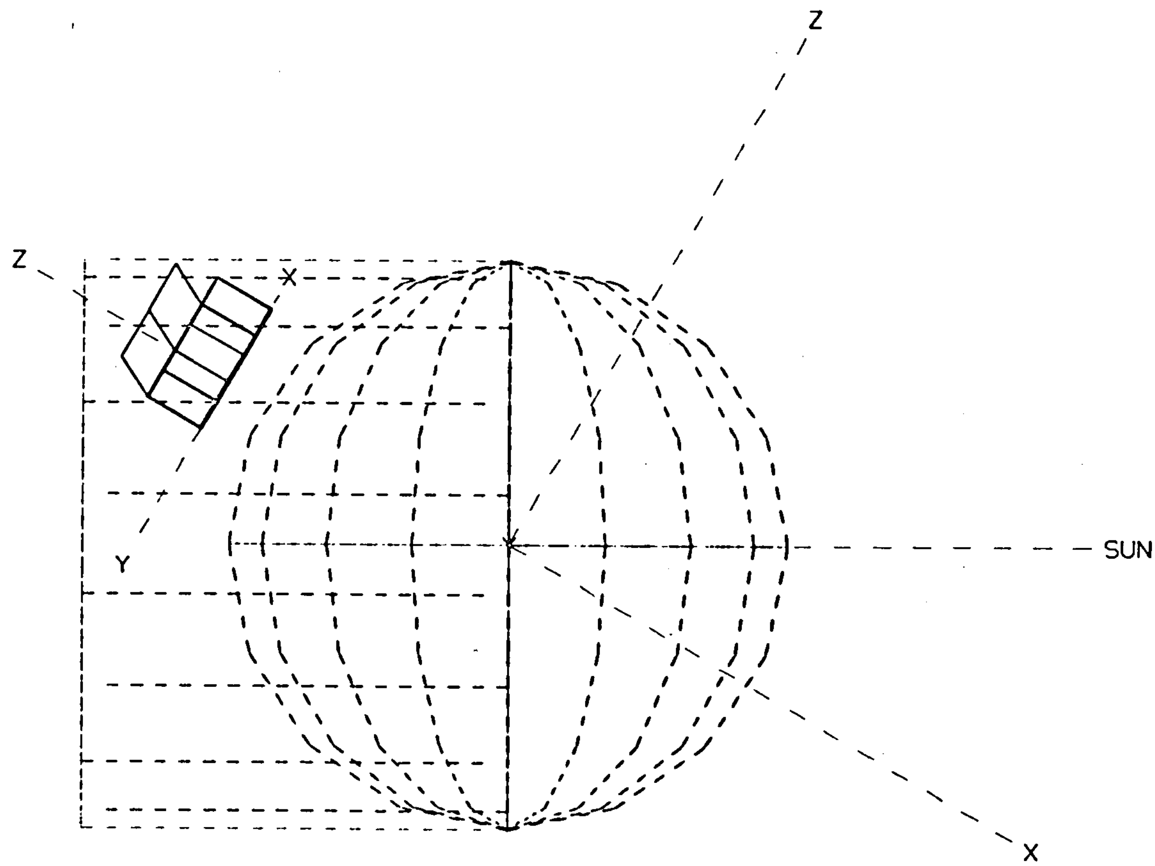
VIEW = SUN VIEW
SCALE = .3037
VIEW NUMBER = 2

SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



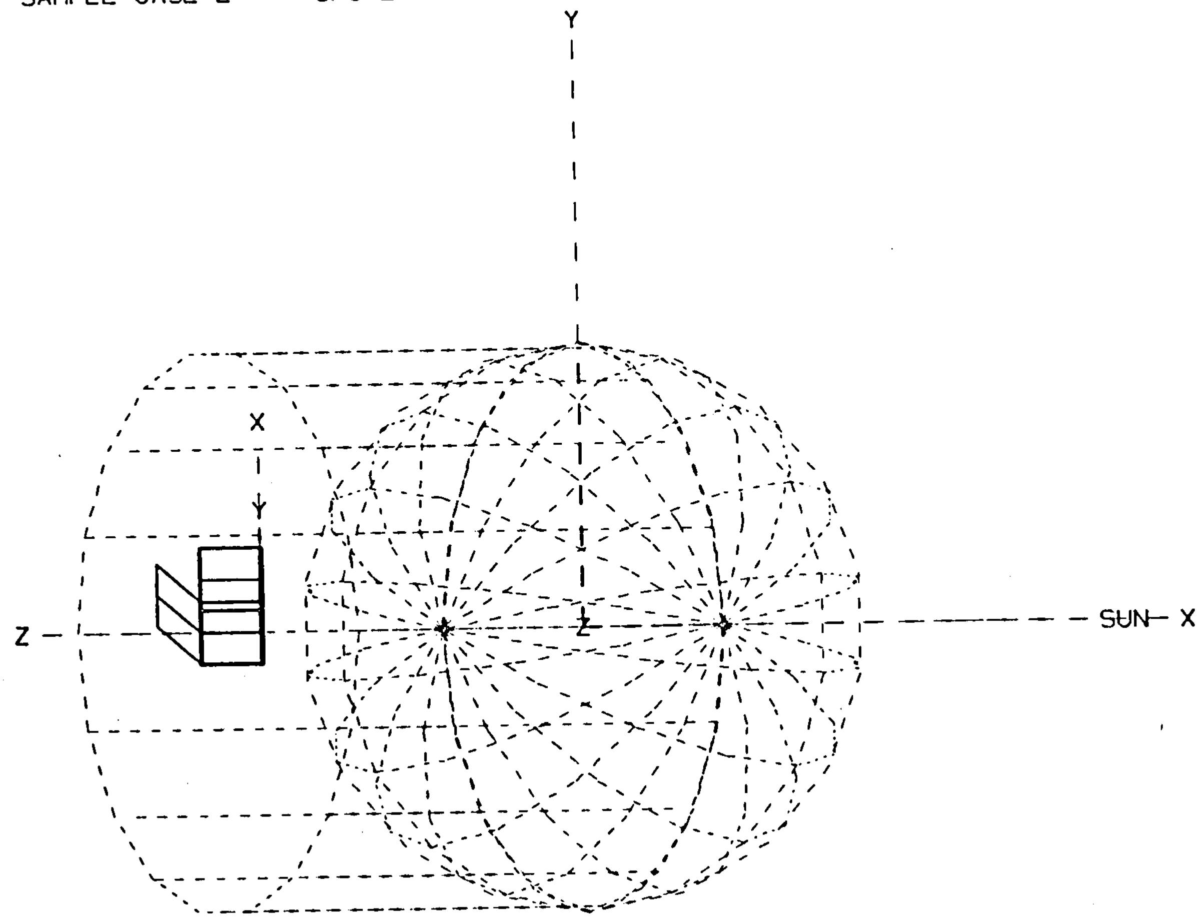
VIEW = 3-D
SCALE = .3037
VIEW NUMBER = 3

SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



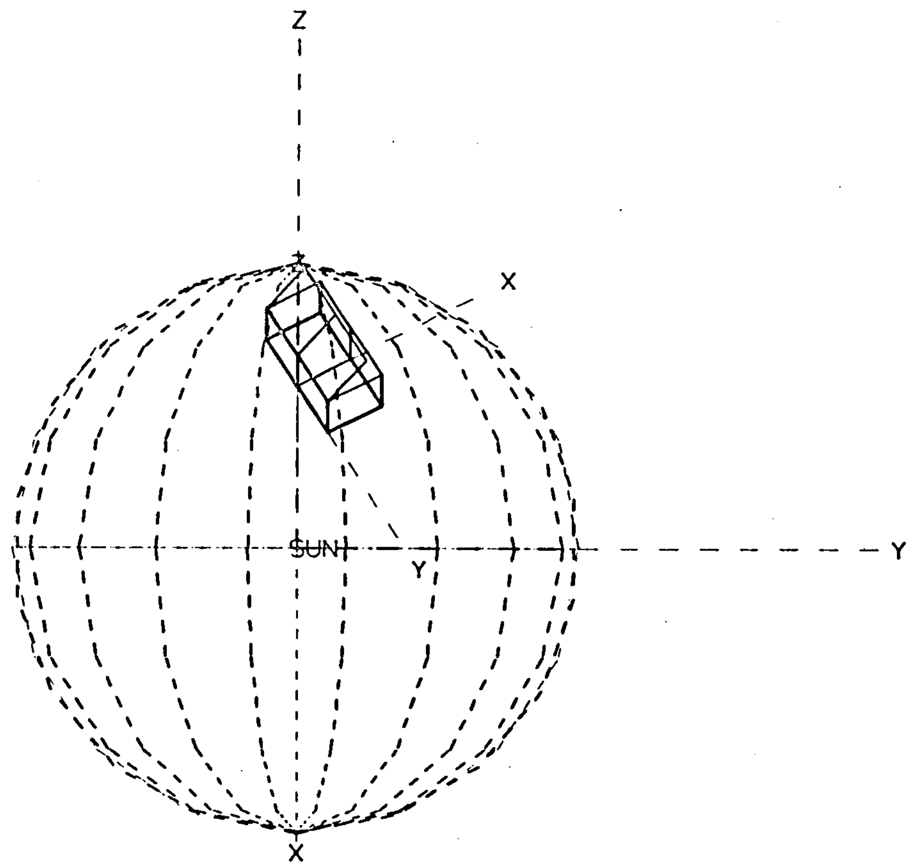
VIEW = BETA
SCALE = .3037
VIEW NUMBER = 3

SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



VIEW = CIGMA
SCALE = .3037
VIEW NUMBER = 3

SAMPLE CASE 2 - SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



VIEW = SUN VIEW
SCALE = .3037
VIEW NUMBER = 3

N A S A / M A R T I N   M A R I E T T A
T H E R M A L   R A D I A T I O N   A N A L Y S I S   S Y S T E M
C D C 6 5 0 0 / S C O P E 3 . 4

T R A S Y S   I I

```
TTTTTTTTTTTTT
TTTTTTTTTTTTT
TT   TTT   TT
     TTT
     TTT
     TTT
     TTT
     TTT
   TTTTTTT

RRRRRRRRR
RRRRRRRRRR
RRR      RRR
RRR      RRR
RRRRRRRRRR
RRR   RRR
RRR    RRR
RRR     RRR
RRR      RRRR

  AAAAAAA
 AAAAAAAAA
AAAAAAAAAAA
AAA     AAA
AAA     AAA
AAAAAAAAAAA
AAA     AAA
AAA     AAA
AAA     AAA
AAAAA   AAAAA

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
         SSS
 SS      SSS
 SSSSSSSSSSSS
  SSSSSSSSSS

YYYY     YYYY
 YYY     YYY
  YYY   YYY
   YYY YYY
    YYYYY
     YYY
     YYY
     YYY
   YYYYYYY

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
         SSS
 SS      SSS
 SSSSSSSSSSSS
  SSSSSSSSSS
```

P R E - P R O C E S S O R   E X E C U T I O N

VERSION.MODIFICATION ... SC2E2
MODIFICATION DATE 05/09/77

DATE OF RUN 05/11/77
TIME OF RUN 08.26.05
JOB NUMBER RGEX122

```
MODEL =  N/A
OPTION AND TITLE DATA BLOCKS

CARD ORGIN         12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT              HEADER OPTIONS DATA
INPUT              TITLE  SAMPLE CASE 3  -  FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
INPUT              C      SKIPPING SHADOW FACTOR TABLES ON RSI.
INPUT              C      RESTARTING FORM FACTORS.
INPUT              C      COMBINING FORM FACTORS.
INPUT              C      CALCULATING DIRECT INCIDENT FLUXES WITHOUT THE USE OF
INPUT              C      SHADOW FACTOR TABLES.
INPUT              C
INPUT                     MODEL        = SAMPLE
INPUT                     RSI          = RSTSAM2
INPUT                     RSO          = RSTSAM3
```

MODEL = SAMPLE SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN

TRASYS INFORMATION TO USER

```
OPTIONS DATA -INFO- OPTIONS ARE ...

  INFO = BUILD        BUILD EXECUTION CARD
  INFO = INFO         HOW TO USE TRASYS INFO FILE
  INFO = ITRCPP       PREPROCESSOR TRACE FLAGS
  INFO = RKCAL        INFO. ON DELETION OF THE RKCAL LINK
  INFO = STEP         INFO. ON USING STEP CARDS
  INFO = CCARDS       INFO. ON TRASYS CONTROL CARDS
```

END OF TRASYS INFORMATION FILE

MODEL = SAMPLE
MODEL HISTORY

SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN

MODEL NAME .... SAMPLE

MODEL TITLE .... SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN

MOD LABEL	RUN JOB NUMBER	RUN DATA	RUN TIME	RSI TAPE	RSO TAPE	RTI TAPE	RTO TAPE	CMERG TAPE	EMERG TAPE	BCDOU TAPE	TRAJ TAPE	USER1 TAPE	USER2 TAPE
AA	RGEX153	05/04/77	11.07.24		RSTSAM								
AB	RGEX1HG	05/09/77	19.56.39	RSTSAM	RSTSAM2								
AC	RGEX122	05/11/77	08.26.06	RSTSAM2	RSTSAM3								

SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN

MODEL = SAMPLE
SOURCE DATA EDIT DIRECTIVES

```
CARD ORGIN     12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

               HEADER EDIT DATA
****           *D,154,157
   D           C-----READ THE SHADOW FACTOR TABLES FROM RSI FOR USE IN                          OLD-   154   AB
   D           C-----SAMPLE CASE 2 IN THE CALCULATION OF DIRECT FLUXES.                         OLD-   155   AA
   D           C                                                                                OLD-   156   AA
   D           L      SFCAL                                                                     OLD-   157   AA
   I           C-----SKIP THE SHADOW FACTOR TABLES ON RSI.  THIS IS ACCOMPLISHED          154                AC
   I           C-----BY REPLACING THE "L      SFCAL" CARD WITH A "CALL RSTON" TO          155                AC
   I           C-----SET THE SKIP FLAG.                                                   156                AC
   I           C                                                                          157                AC
   I                  CALL RSTON                                                          158                AC
****           *I,161
   I           C                                                                          163                AC
   I           C-----COMBINE FORM FACTORS                                                 164                AC
   I           C                                                                          165                AC
   I                  CALL RSTOFF                                                         166                AC
   I                  CALL CMDATA(0,5HCASE3,2HFF,0,0,0)                                   167                AC
   I           L      CMCAL                                                               168                AC
****           *D,163,165
   D           C-----READ THE GRAY BODY MATRICES FROM RSI                                       OLD-   163   AB
   D           C                                                                                OLD-   164   AA
   D                  CALL GBDATA(BOTH,0,FF)                                                    OLD-   165   AA
   I           C-----CALCULATE GRAY BODY MATRICES USING COMBINED FORM FACTORS             170                AC
   I           C                                                                          171                AC
   I                  CALL GBDATA(BOTH,0,CM)                                              172                AC
****           *D,170
   D                  CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,5HCASE2)                              OLD-   170   AB
   I                  CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,0)                              177                AC
****           *D,178,184
   D           C                                                                                OLD-   178   AB
   D           C-----MAKE ORBIT PLOTS                                                           OLD-   179   AB
   D           C                                                                                OLD-   180   AB
   D                  CALL ODATAS(1,0,0,0,0,0,0,0)                                              OLD-   181   AB
   D                  CALL ODATAS(2,0,0,0,0,90.,0,0)                                            OLD-   182   AB
   D                  CALL ODATAS(3,0,0,0,0,180.,0,0)                                           OLD-   183   AB
   D           L      OPLOT                                                                     OLD-   184   AB
```

```
MODEL = SAMPLE                                        SAMPLE CASE 3  -  FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
SURFACE DATA INPUT BLOCK

CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

RSI               HEADER SURFACE DATA                                                                1  OLD-     1   AA
RSI               C                                                                                  2  OLD-     2   AA
RSI               C-----THIS SURFACE DATA BLOCK IS USED IN SAMPLE CASES 1 THROUGH 5                  3  OLD-     3   AA
RSI               C-----WITH VARIOUS PORTIONS OF IT BEING ACTIVATED FOR THE DIFFERENT                4  OLD-     4   AA
RSI               C-----CASES.                                                                       5  OLD-     5   AA
RSI               C                                                                                  6  OLD-     6   AA
RSI               BCS    BOXINR                                                                      7  OLD-     7   AA
RSI               S      SURFN       = 1                                                             8  OLD-     8   AA
RSI                      TYPE        = RECT                                                          9  OLD-     9   AA
RSI                      ACTIVE      = BOTTOM                                                       10  OLD-    10   AA
RSI                      PROP        = 0.9,0.9                                                      11  OLD-    11   AA
RSI                      P1          = 1.0, 0.0, 1.0                                                12  OLD-    12   AA
RSI                      P2          = 1.0, 0.0, 0.0                                                13  OLD-    13   AA
RSI                      P3          = 1.0, 1.0, 0.0                                                14  OLD-    14   AA
RSI                      COM         = * INNER RIGHT FRONT *                                        15  OLD-    15   AA
RSI               S      SURFN       = 2                                                            16  OLD-    16   AA
RSI                      TYPE        = RECT                                                         17  OLD-    17   AA
RSI                      ACTIVE      = BOTTOM                                                       18  OLD-    18   AA
RSI                      PROP        = 0.9,0.9                                                      19  OLD-    19   AA
RSI                      P1          = 1.0, 1.0, 1.0                                                20  OLD-    20   AA
RSI                      P2          = 1.0, 1.0, 0.0                                                21  OLD-    21   AA
RSI                      P3          = 0.0, 1.0, 0.0                                                22  OLD-    22   AA
RSI                      COM         = * INNER RIGHT SIDE *                                         23  OLD-    23   AA
RSI               S      SURFN       = 3                                                            24  OLD-    24   AA
RSI                      TYPE        = RECT                                                         25  OLD-    25   AA
RSI                      ACTIVE      = TOP                                                          26  OLD-    26   AA
RSI                      PROP        = 0.9,0.9                                                      27  OLD-    27   AA
RSI                      P1          = 0.0, 0.0, 1.0                                                28  OLD-    28   AA
RSI                      P2          = 0.0, 0.0, 0.0                                                29  OLD-    29   AA
RSI                      P3          = 0.0, 1.0, 0.0                                                30  OLD-    30   AA
RSI                      COM         = * INNER RIGHT BACK *                                         31  OLD-    31   AA
RSI               S      SURFN       = 4                                                            32  OLD-    32   AA
RSI                      TYPE        = RECT                                                         33  OLD-    33   AA
RSI                      ACTIVE      = TOP                                                          34  OLD-    34   AA
RSI                      PROP        = 0.9,0.9                                                      35  OLD-    35   AA
RSI                      P1          = 1.0, 1.0, 0.0                                                36  OLD-    36   AA
RSI                      COM         = * INNER RIGHT BOTTOM *                                       37  OLD-    37   AA
RSI               BCS    BOXINL,IMGBCS=BOXINR,NINC=10,IREFSF=1000                                   38  OLD-    38   AA
RSI               C                                                                                 39  OLD-    39   AA
RSI               C-----THE FOREGOING CARD IMAGES BCS BOXINR IN REFERENCE PLANE 1000                40  OLD-    40   AA
RSI               C-----TO CREATE BCS BOXINL.  THE INTERIOR OF THE BOX WAS INPUT IN                 41  OLD-    41   AA
RSI               C-----THIS MANNER TO FACILITATE THE INPUT OF SAMPLE CASE 4 TO SHOW                42  OLD-    42   AA
RSI               C-----THE USE OF "MESS" AND "ERN" NODES.                                          43  OLD-    43   AA
RSI               C                                                                                 44  OLD-    44   AA
                        IMAGING SURFACE     1) BCS (    BO), GENERATING SURFACE (   11) BCS (    BO)
                        IMAGING SURFACE     2) BCS (    BO), GENERATING SURFACE (   12) BCS (    BO)
                        IMAGING SURFACE     3) BCS (    BO), GENERATING SURFACE (   13) BCS (    BO)
                        IMAGING SURFACE     4) BCS (    BO), GENERATING SURFACE (   14) BCS (    BO)
RSI               R      REFNO       = 1000                                                         45  OLD-    45   AA
RSI                      P1          = 1.0, 0.0, 1.0                                                46  OLD-    46   AA
RSI                      P2          = 1.0, 0.0, 0.0                                                47  OLD-    47   AA
```

```
MODEL = SAMPLE                                    SAMPLE CASE 3  -  FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
SURFACE DATA INPUT BLOCK

CARD ORGIN         12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

RSI                         P3           = 0.0, 0.0, 0.0                                             48  OLD-       48    AA
RSI                         COM          = * IMAGING PLANE *                                         49  OLD-       49    AA
RSI                BCS      LIDINR                                                                   50  OLD-       50    AA
RSI                S        SURFN        = 5                                                         51  OLD-       51    AA
RSI                         TYPE         = RECT                                                      52  OLD-       52    AA
RSI                         ACTIVE       = BOTTOM                                                    53  OLD-       53    AA
RSI                         PROP         = 0.9,0.9                                                   54  OLD-       54    AA
RSI                         P1           = 1.0, 1.0, 0.0                                             55  OLD-       55    AA
RSI                         COM          = * INNER RIGHT LID *                                       56  OLD-       56    AA
RSI                S        SURFN        = 15                                                        57  OLD-       57    AA
RSI                         IMAGSF       = 5                                                         58  OLD-       58    AA
RSI                         IREFSF       = 1000                                                      59  OLD-       59    AA
RSI                         COM          = * INNER LEFT LID *                                        60  OLD-       60    AA
RSI                BCS      BOXOUT                                                                   61  OLD-       61    AA
RSI                S        SURFN        = 21                                                        62  OLD-       62    AA
RSI                         TYPE         = BOX5                                                      63  OLD-       63    AA
RSI                         ACTIVE       = OUT                                                       64  OLD-       64    AA
RSI                         SHADE        = NO                                                        65  OLD-       65    AA
RSI                         PROP         = 0.2,0.9                                                   66  OLD-       66    AA
RSI                         P1           = 1.01,-1.01, 1.01                                          67  OLD-       67    AA
RSI                         P2           = 1.01, 1.01, 1.01                                          68  OLD-       68    AA
RSI                         P3           =-0.01, 1.01, 1.01                                          69  OLD-       69    AA
RSI                         P4           =-0.01, 1.01,-0.01                                          70  OLD-       70    AA
RSI                         COM          = * OUTER SURFACES *                                        71  OLD-       71    AA
RSI                BCS      LIDOUT                                                                   72  OLD-       72    AA
RSI                S        SURFN        = 26                                                        73  OLD-       73    AA
RSI                         TYPE         = RECT                                                      74  OLD-       74    AA
RSI                         ACTIVE       = TOP                                                       75  OLD-       75    AA
RSI                         SHADE        = NO                                                        76  OLD-       76    AA
RSI                         PROP         = 0.2,0.9                                                   77  OLD-       77    AA
RSI                         P1           = 1.01,-1.01, 0.01                                          78  OLD-       78    AA
RSI                         P2           = 1.01, 1.01, 0.01                                          79  OLD-       79    AA
RSI                         P3           =-0.01, 1.01, 0.01                                          80  OLD-       80    AA
RSI                         COM          = * OUTER SURFACE OF LID *                                  81  OLD-       81    AA
RSI                C                                                                                 82  OLD-       82    AA
RSI                C-----THE NEXT TWO BCS'S (MESSR AND MESSL) ARE ACTIVATED IN SAMPLE                83  OLD-       83    AA
RSI                C-----CASE 4 ONLY.                                                                84  OLD-       84    AA
RSI                C                                                                                 85  OLD-       85    AA
RSI                BCS      MESSR                                                                    86  OLD-       86    AA
RSI                S        SURFN        = 101                                                       87  OLD-       87    AA
RSI                         TYPE         = RECT                                                      88  OLD-       88    AA
RSI                         ACTIVE       = TOP                                                       89  OLD-       89    AA
RSI                         PROP         = 1.0,1.0                                                   90  OLD-       90    AA
RSI                         P1           = 1.0, 0.0, 1.0                                             91  OLD-       91    AA
RSI                         P2           = 1.0, 0.0, 0.0                                             92  OLD-       92    AA
RSI                         P3           = 0.0, 0.0, 0.0                                             93  OLD-       93    AA
RSI                         COM          = * PRIMARY MESS NODE, RIGHT SIDE *                         94  OLD-       94    AA
RSI                BCS      MESSL                                                                    95  OLD-       95    AA
RSI                S        SURFN        = 111                                                       96  OLD-       96    AA
RSI                         TYPE         = RECT                                                      97  OLD-       97    AA
RSI                         ACTIVE       = BOTTOM                                                    98  OLD-       98    AA
```

```
MODEL = SAMPLE                                  SAMPLE CASE 3  -  FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
SURFACE DATA INPUT BLOCK

CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

RSI                     PROP        = 1.0,1.0                                            99  OLD-    99   AA
RSI                     P1          = 1.0, 0.0, 1.0                                     100  OLD-   100   AA
RSI                     P2          = 1.0, 0.0, 0.0                                     101  OLD-   101   AA
RSI                     P3          = 0.0, 0.0, 0.0                                     102  OLD-   102   AA
RSI                     COM         = * PRIMARY MESS NODE, LEFT SIDE *                  103  OLD-   103   AA
RSI             C                                                                       104  OLD-   104   AA
RSI             C-----THE FOLLOWING BCS (LIDSP) IS ACTIVATED IN SAMPLE CASE 5 ONLY.     105  OLD-   105   AA
RSI             C                                                                       106  OLD-   106   AA
RSI             BCS     LIDSP                                                           107  OLD-   107   AA
RSI             S       SURFN       = 200                                               108  OLD-   108   AA
RSI                     TYPE        = RECT                                              109  OLD-   109   AA
RSI                     ACTIVE      = BOTTOM                                            110  OLD-   110   AA
RSI                     PROP        = 0.1,0.1                                           111  OLD-   111   AA
RSI                     SPRI        = 0.8                                               112  OLD-   112   AA
RSI                     SPRS        = 0.8                                               113  OLD-   113   AA
RSI                     P1          = 1.0,-1.0, 0.0                                     114  OLD-   114   AA
RSI                     P2          = 1.0, 1.0, 0.0                                     115  OLD-   115   AA
RSI                     P3          = 0.0, 1.0, 0.0                                     116  OLD-   116   AA
RSI                     COM         = * SPECULAR LID *                                  117  OLD-   117   AA
```

```
MODEL = SAMPLE                                        SAMPLE CASE 3  -  FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
BCS DATA INPUT BLOCK

CARD ORGIN         12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

RSI                HEADER BCS DATA                                                                    118  OLD-    118   AA
RSI                BCS    BOXINR                                                                      119  OLD-    119   AA
RSI                BCS    BOXINL                                                                      120  OLD-    120   AA
RSI                BCS    LIDINR ,0.,0.,1.,0.,-45.,0.                                                 121  OLD-    121   AA
RSI                BCS    BOXOUT                                                                      122  OLD-    122   AA
RSI                BCS    LIDOUT ,0.,0.,1.,0.,-45.,0.                                                 123  OLD-    123   AA
RSI                BCS    MESSR                                                                       124  OLD-    124   AA
RSI                BCS    MESSL                                                                       125  OLD-    125   AA
RSI                BCS    LIDSP  ,0.,0.,1.,0.,-45.,0.                                                 126  OLD-    126   AA
```

MODEL = SAMPLE SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
CORRESPONDENCE DATA INPUT BLOCK

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

RSI               HEADER CORRESPONDENCE DATA                                                        127  OLD-     127    AA
RSI               C                                                                                 128  OLD-     128    AA
RSI               C-----ENTER CORRESPONDENCE DATA FOR CASE 2                                        129  OLD-     129    AA
RSI               C                                                                                 130  OLD-     130    AA
RSI               FIG     CASE2                                                                     131  OLD-     131    AA
RSI                       1            = 1,11,22                                                    132  OLD-     132    AA
RSI                       2            = 2,25                                                       133  OLD-     133    AA
RSI                       3            = 3,13,24                                                    134  OLD-     134    AA
RSI                       4            = 4,14,21                                                    135  OLD-     135    AA
RSI                       5            = 5,15,26                                                    136  OLD-     136    AA
RSI                       12           = 12,23                                                      137  OLD-     137    AA
RSI               C                                                                                 138  OLD-     138    AA
RSI               C-----ENTER CORRESPONDENCE DATA FOR CASE 3 TO COMBINE FORM FACTORS                139  OLD-     139    AA
RSI               C                                                                                 140  OLD-     140    AA
RSI               FIG     CASE3,FF                                                                  141  OLD-     141    AA
RSI                       1            = 1,11,22                                                    142  OLD-     142    AA
RSI                       2            = 2,25                                                       143  OLD-     143    AA
RSI                       3            = 3,13,24                                                    144  OLD-     144    AA
RSI                       4            = 4,14,21                                                    145  OLD-     145    AA
RSI                       5            = 5,15,26                                                    146  OLD-     146    AA
RSI                       12           = 12,23                                                      147  OLD-     147    AA
```

```
MODEL = SAMPLE                                     SAMPLE CASE 3  -  FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
OPERATION DATA INPUT BLOCK  (PASS 1)

CARD ORGIN          12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
                                                                                                       148  OLD-      148     AA
RSI                 HEADER OPERATIONS DATA


+++++ OPERATIONS DATA BLOCK (PASS 1) COMPLETE +++++
```

```
MODEL = SAMPLE                                          SAMPLE CASE 3  -  FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
OPERATION DATA INPUT BLOCK  (PASS 2)

CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

RSI               C                                                                                   149  OLD-     149   AA
RSI               C-----BUILD THE CASE1 CONFIGURATION FOR SFCAL/FFCAL/GBCAL RESTART                   150  OLD-     150   AB
RSI               C                                                                                   151  OLD-     151   AA
PROG              STEP      -1                                                                         -0
RSI               BUILD  CASE1,BOXINR,BOXINL,LIDINR,BOXOUT,LIDOUT                                     152  OLD-     152   AA
PROG                     CALL BUILDC (BOXINR,6HCASE1 )                                                 -0
PROG                     CALL ADD (BOXINL)                                                             -0
PROG                     CALL ADD (LIDINR)                                                             -0
PROG                     CALL ADD (BOXOUT)                                                             -0
PROG                     CALL ADD (LIDOUT)                                                             -0
RSI               C                                                                                   153  OLD-     153   AA
INPUT             C-----SKIP THE SHADOW FACTOR TABLES ON RSI.  THIS IS ACCOMPLISHED                   154                 AC
INPUT             C-----BY REPLACING THE "L      SFCAL" CARD WITH A "CALL RSTON" TO                   155                 AC
INPUT             C-----SET THE SKIP FLAG.                                                            156                 AC
INPUT             C                                                                                   157                 AC
INPUT                    CALL RSTON                                                                   158                 AC
RSI               C                                                                                   159  OLD-     158   AA
RSI               C-----READ THE FORM FACTOR MATRIX FROM RSI                                          160  OLD-     159   AB
RSI               C                                                                                   161  OLD-     160   AA
RSI               L        FFCAL                                                                      162  OLD-     161   AA
INPUT             C                                                                                   163                 AC
INPUT             C-----COMBINE FORM FACTORS                                                          164                 AC
INPUT             C                                                                                   165                 AC
INPUT                    CALL RSTOFF                                                                  166                 AC
INPUT                    CALL CMDATA(0,5HCASE3,2HFF,0,0,0)                                            167                 AC
INPUT             L        CMCAL                                                                      168                 AC
RSI               C                                                                                   169  OLD-     162   AA
INPUT             C-----CALCULATE GRAY BODY MATRICES USING COMBINED FORM FACTORS                      170                 AC
INPUT             C                                                                                   171                 AC
INPUT                    CALL GBDATA(BOTH,0,CM)                                                       172                 AC
RSI               L        GBCAL                                                                      173  OLD-     166   AA
RSI               C                                                                                   174  OLD-     167   AA
RSI               C-----CALCULATE AND PUNCH RADKS WITH COMBINED NODES                                 175  OLD-     168   AB
RSI               C                                                                                   176  OLD-     169   AB
INPUT                    CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,0)                                       177                 AC
RSI               L        RKCAL                                                                      178  OLD-     171   AA
RSI               C                                                                                   179  OLD-     172   AB
RSI               C-----DEFINE ORBIT AND VEHICLE ORIENTATION (CIRCULAR - PLANET-ORIENTED)             180  OLD-     173   AB
RSI               C                                                                                   181  OLD-     174   AB
RSI                      CALL ORBIT2(EAR,0.60.,0,0,0,100.*6080.,100.*6080.)                           182  OLD-     175   AB
RSI                      CALL ORIENT(4HPLAN,1,2,3,300.,270.,0.)                                       183  OLD-     176   AB
PROG              C                                                                  *                 -0
PROG              C******************** ORBIT GENERATION STARTS HERE ******************                -0
RSI               CORBGEN CIRP,0.,180.,2,AQ                                          *                184  OLD-     177   AB
PROG              C                                                                  *                 -0
PROG              STEP  10000                                                        *                 -0
PROG                     TRUEAN      =      0.                                       *                 -0
PROG                     TRUANF      =    180.000                                    *                 -0
PROG                     TRUANI      =      0.                                       *                 -0
PROG                     IAI         = 0                                             *                 -0
PROG                     IAS         = 0                                             *                 -0
PROG                     PLTYPE      = GHPLSAVE                                      *                 -0
PROG                     CALL DICOMP(0,0,0)                                          *                 -0
PROG              L        DICAL                                                     *                 -0
PROG                     NSPFF       = 10000                                         *                 -0
```

```
PROG              PLTYPE       = 6HPLREAD                                  *          -0
PROG              CALL AQDATA(IAI,IAS,0,0,0)                               *          -0
PROG       L      AQCAL                                                    *          -0
PROG       STEP   10001                                                    *          -0
PROG              TRUEAN       =         90.000                            *          -0
PROG              CALL DICOMP(0,0,10000)                                   *          -0
PROG       L       DICAL                                                   *          -0
PROG              CALL AQDATA(IAI,IAS,0,0,0)                               *          -0
PROG       L      AQCAL                                                    *          -0
PROG       STEP   10002                                                    *          -0
PROG              TRUEAN       =        180.000                            *          -0
PROG              CALL DICOMP(0,0,10000)                                   *          -0
PROG       L       DICAL                                                   *          -0
PROG              CALL AQDATA(IAI,IAS,0,0,0)                               *          -0
PROG       L      AQCAL                                                    *          -0
PROG       STEP   10003                                                    *          -0
PROG              IF(SHADIN.LT.0.)                      GO TO 90400        *          -0
PROG              TRUEAN       = SHADIN-0.1                                *          -0
PROG              IF(TRUEAN.LT.TRUANI.OR.                                  *          -0
PROG            1    TRUEAN.GT.TRUANF)                  GO TO  90000       *          -0
PROG              CALL DICOMP(0,4HZERO,10000)                              *          -0
PROG       L       DICAL                                                   *          -0
PROG              CALL AQDATA(IAI,IAS,0,0,0)                               *          -0
PROG       L      AQCAL                                                    *          -0
PROG       90000  CONTINUE                                                 *          -0
PROG       STEP   10004                                                    *          -0
PROG              TRUEAN       = SHADIN+0.1                                *          -0
PROG              IF(TRUEAN.LT.TRUANI.OR.                                  *          -0
PROG            1    TRUEAN.GT.TRUANF)                  GO TO  90100       *          -0
PROG              CALL DICOMP(0,0,10000)                                   *          -0
PROG       L       DICAL                                                   *          -0
PROG              CALL AQDATA(IAI,IAS,0,0,0)                               *          -0
PROG       L      AQCAL                                                    *          -0
PROG       90100  CONTINUE                                                 *          -0
PROG       STEP   10005                                                    *          -0
PROG              TRUEAN       = SHAOUT+0.1                                *          -0
PROG              IF(TRUEAN.LT.TRUANI.OR.                                  *          -0
PROG            1    TRUEAN.GT.TRUANF)                  GO TO  90200       *          -0
PROG              CALL DICOMP(0,4HZERO,10000)                              *          -0
PROG       L       DICAL                                                   *          -0
PROG              CALL AQDATA(IAI,IAS,0,0,0)                               *          -0
PROG       L      AQCAL                                                    *          -0
PROG       90200  CONTINUE                                                 *          -0
PROG       STEP   10006                                                    *          -0
                  TRUEAN       = SHAOUT-0.1                                *          -0
PROG              TRUEAN       = SHAOUT-0.1                                *          -0
PROG              IF(TRUEAN.LT.TRUANI.OR.                                  *          -0
PROG            1    TRUEAN.GT.TRUANF)                  GO TO  90300       *          -0
PROG              CALL DICOMP(0,0,10000)                                   *          -0
PROG       L       DICAL                                                   *          -0
PROG              CALL AQDATA(IAI,IAS,0,0,0)                               *          -0
PROG       L      AQCAL                                                    *          -0
PROG       90300  CONTINUE                                                 *          -0
PROG       90400  CONTINUE                                                 *          -0
PROG              CALL QODATA(3HALL,0,0,0,0,0,0,0,0 )                      *          -0
PROG       L      QOCAL                                                    *          -0
PROG       C                                                               *          -0
PROG       C********************  ORBIT GENERATION ENDS HERE  ********************          -0
PROG       C                                                               *          185        AA
RSI        END OF DATA
```

```
MODEL = SAMPLE                                          SAMPLE CASE 3  -  FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
PROCESSOR CORE ALLOCATION

THE FOLLOWING IS THE PROCESSOR CORE ALLOCATION FOR THOSE SEGMENTS WHICH WILL BE LOADED IN THIS EXECUTION (APPROX.) ...

                                                        OCTAL/DECIMAL

TRASYS (0) SEGMENT ............................. 033510/ 14152
OPERATIONS DATA (NOT KNOWN AT THIS TIME)........ 075000/ 31232
INITALIZATION SEGMENT .......................... 037600/ 16256
FORM FACTOR SEGMENT ............................ 100100/ 32832
DIRECT FLUX SEGMENT ............................ 103000/ 34304
GRAY BODY SEGMENT .............................. 052500/ 21824
ABSORBED Q-S SEGMENT ........................... 042100/ 17472
-QO- SEGMENT ................................... 051700/ 21440
RADATION CONDUCTOR SEGMENT ..................... 050000/ 20480
FORM FACTOR COMBINING SEGMENT .................. 047700/ 20416

GRAY BODY DYNAMIC COMMON ....................... 004600/  2432
-QO- DYNAMIC COMMON ............................ 003554/  1900
RADIATION CONDUCTOR DYNAMIC COMMON ............. 000574/   380
FORM FACTOR COMBINING DYNAMIC COMMON ........... 000574/   380

GRAY BODY MINIMUM - MAXIMUM CORE ............... 052401/ 21761 - 052401/ 21761
-QO- MINIMUM - MAXIMUM CORE .................... 046255/ 19629 - 051665/ 21429
RADIATION CONDUCTOR MINIMUM - MAXIMUM CORE ..... 047514/ 20300 - 047760/ 20464
FORM FACTOR COMBINING MINIMUM - MAXIMUN CORE ... 047411/ 20233 - 047607/ 20359

++CAUTION    1++ THE FFPROG SEGMENT APPEARS TO BE TOO LONG FOR AMOUNT OF CORE (075000B) AVAILABLE

++CAUTION    2++ THE DIPROG SEGMENT APPEARS TO BE TOO LONG FOR AMOUNT OF CORE (075000B) AVAILABLE

MINIMUM CORE NEEDED FOR PROCESSOR EXECUTION .... 103000/ 34304

MAXIMUM CORE NEEDED FOR PROCESSOR EXECUTION .... 103000/ 34304

AMOUNT OF CORE THAT WILL BE USED BY PROCESSSOR . 103000/ 34304
```

MODEL = SAMPLE SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
WRAP UP OF THE PRE-PROCESSOR

CAUTION MESSAGE(S) OCCUR FOLLOWING THE FIRST 100 OR LESS EDIT SEQUENCE NUMBER(S) LISTED BELOW ...

185

```
MODEL = SAMPLE                                    SAMPLE CASE 3  -  FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
WRAP UP OF THE PRE-PROCESSOR

PRE-PROCESSOR ACCOUNTING INFORMATION                  CP-SEC    PP-SEC    DYM-STORAGE
          SOURCE EDITING .........................      .491       3          515
          DOCUMENTATION DATA PRE-PROCESSING ......    0.           0            0
          QUANTITIES DATA PRE-PROCESSING .........     .013        1          266
          ARRAY DATA PRE-PROCESSING ..............    0.           0            0
          SURFACE DATA PRE-PROCESSING (PASS 1) ...    1.167        3           64
          SURFACE DATA PRE-PROCESSING (PASS 2) ...     .212        4         1141
          BCS DATA PRE-PROCESSING ................     .140        1          186
          FORM FACTOR DATA PRE-PROCESSING ........    0.           0            0
          SHADOW DATA PRE-PROCESSING .............    0.           0            0
          FLUX DATA PRE-PROCESSING ...............    0.           0            0
          CORRESPONDENCE DATA PRE-PROCESSING .....     .189        0          101
          OPERATIONS DATA PRE-PROCESSING .........    3.005        4          879
          SUBROUTINE DATA PRE-PROCESSING .........     .247        1            0
          SEQUENTIAL TAPE INITIATION .............     .025        0            0

TOTAL CP TIME FOR PRE-PROCESSOR ..................   6.738 DECIMAL SECONDS OR 000007 OCTAL SECONDS

TOTAL PP TIME FOR PRE-PROCESSOR ..................      19 DECIMAL SECONDS OR 000023 OCTAL SECONDS

MINIMUM DYNAMIC STORAGE NEEDED BY PRE-PROCESSOR ..    1141 DECIMAL WORDS

DYNAMIC STORAGE AVAILABLE TO PRE-PROCESSOR .......    3384 DECIMAL WORDS

MINIMUM CORE NEEDED FOR PRE-PROCESSOR EXECUTION ..  071000 OCTAL   WORDS

* * * * * * * * * *
NUMBER OF CAUTION MESSAGES ..    2
* * * * * * * * * *


NORMAL TERMINATION BY PRE-PROCESSOR
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N A S A / M A R T I N   M A R I E T T A
T H E R M A L   R A D I A T I O N   A N A L Y S I S   S Y S T E M
C D C 6 5 0 0 / S C O P E 3 . 4

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YYYY      YYYY
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 SSSSSSSSS
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SSS       SS
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         SSS
 SS       SSS
 SSSSSSSSSSS
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T R A S Y S   I I

P R E - P R O C E S S O R   E X E C U T I O N

LATEST LIBRARY MOD.VER NUMBER SL2E1
LAST LIBRARY MODIFICATION DATE 05/09/77

DATE OF THIS PROCESSOR RUN 05/11/77
TIME OF THIS PROCESSOR RUN .... 08.26.57.
JOB NUMBER OF THIS PROCESSOR RUN RGEX122

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MODEL=SAMPLE CONFIG=SAMPLE STEP=-1                SAMPLE CASE 3  -  FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
PROCESSING OPERATIONS DATA

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THE OPERATIONS DATA SEGMENT USES ABOUT 041700 OCTAL WORDS OF CORE STORAGE

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MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
PROCESSING OPERATIONS DATA

NODE	BCS	AREA	ALPH	EMISS	SURF. TYPE	ACTIVE	--------COMMENTS--------------
1	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
2	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
3	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
4	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
11	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
12	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
13	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
14	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
5	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT LID
15	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER LEFT LID
21	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
22	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
23	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
24	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
25	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
26	LIDOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACE OF LID

NODE, AREA, AND PROPERTIES ARRAYS HAVE BEEN WRITTEN ON THE -RSO- TAPE
BY -BUILDC- (ACCESS NUMBER= 1)

ADJUSTING FIELD LENGTH TO 100100 FOR THE FF SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
FORM FACTOR CALCULATION LINK.

FORM FACTORS AND COMBINED FORM FACTORS - USER INPUT AND DEFAULT PARAMETERS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
FFACC	.0500	.0500	ORIENTATION ACCURACY PARAMETER	N/A
FFACCS	.1000	.1000	SHADOWING ACCURACY PARAMETER	N/A
FFMIN	1.0E-06	1.0E-06	PARAMETER TO ELIMINATE SMALL FORM FACTORS	N/A
FFNOSH	SHAD	SHAD	OVER RIDE SHADOWING PARAMETER	(SHAD,NOSH)
+FFPNCH	NO	NO	PARAMETER TO PUNCH FORM FACTORS	(YES,NO)
FFPRNT	YES	YES	FLAG FOR COMPREHENSIVE FF AND CM PRINT	(YES,NO,FF,CM,RB)
FFRATL	15.0	15.0	RATIO FOR USING SUB-NODE TECHNIQUE	N/A
FFCMB	CORR	CORR	FLAG FOR COMBINING FORM FACTORS	(YES,NO,AUTO,CORR)

+ -FFPNCH WILL DEFAULT TO -YES- ON CALCULATED VALUES IF THE -RSO- FILE IS NOT SPECIFIED IN THE OPTIONS DATA BLOCK

HEADER MISMATCH ON UNIT -RSI
LABEL = CASE1 , RST LABEL = SFCAL
CONFIG = FFCAL , RST CONFIG =
ORBIT POINT= 0, RST ORB. PT=

* *

RESTARTING -FFCAL - DATA FOR CONFIGURATION -CASE1 - FROM UNIT -RSI- INITIATED BY JOB NO. RGEX1HG ON 05/09/77

* *

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
FORM FACTOR CALCULATION LINK.

NODE	AREA	ALPH	EMISS
1	1.00000	.900	.900
2	1.00000	.900	.900
3	1.00000	.900	.900
4	1.00000	.900	.900
11	1.00000	.900	.900
12	1.00000	.900	.900
13	1.00000	.900	.900
14	1.00000	.900	.900
5	1.00000	.900	.900
15	1.00000	.900	.900
21	2.06040	.200	.900
22	2.06040	.200	.900
23	1.04040	.200	.900
24	2.06040	.200	.900
25	1.04040	.200	.900
26	2.06040	.200	.900

NUMBER OF NODES = 16 NUMBER OF SURFACES = 16
(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUSE OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ	
1	2	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
1	3	RSI	.203695	.203695	.203695	.203695	.203695	1.000000	1.000000	0.	0	0	UN
1	4	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
1	12	RSI	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	0.	0	0	UN
1	13	RSI	.086031	.086031	.086031	.086031	.086031	1.000000	1.000000	0.	0	0	UN
1	14	RSI	.039182	.039182	.039182	.039182	.039182	1.000000	1.000000	0.	0	0	UN
1	5	RSI	.138020	.138020	.138020	.138020	.138020	1.000000	1.000000	0.	0	0	UN
1	15	RSI	.054683	.054683	.054683	.054683	.054683	1.000000	1.000000	0.	0	0	UN
1	FFSUM =	.9840	ROW CP TIME =		.080								
2	3	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
2	4	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
2	11	RSI	.033882	.033882	.033882	.033882	.033882	0.	0.	0.	0	0	UN
2	12	RSI	.069571	.069571	.069571	.069571	.069571	1.000000	1.000000	0.	0	0	UN
2	13	RSI	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	0.	0	0	UN
2	14	RSI	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	0.	0	0	UN
2	5	RSI	.097637	.097637	.097637	.097637	.097637	1.000000	1.000000	0.	0	0	UN

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUSE OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ	
2	15	RSI	.034976	.034976	.034976	.034976	.034976	1.000000	1.000000	0.	0	0	UN
2	FFSUM =	.9466	ROW CP TIME =		.090								
3	4	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
3	11	RSI	.086031	.086031	.086031	.086031	.086031	0.	0.	0.	0	0	UN
3	12	RSI	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	0.	0	0	UN
3	14	RSI	.039182	.039182	.039182	.039182	.039182	1.000000	1.000000	0.	0	0	UN
3	5	RSI	.051908	.051908	.051908	.051908	.051908	1.000000	1.000000	0.	0	0	UN
3	15	RSI	.012000	.012000	.012000	.012000	.012000	1.000000	1.000000	0.	0	0	UN
3	FFSUM =	.8552	ROW CP TIME =		.045								
4	11	RSI	.039182	.039182	.039182	.039182	.039182	0.	0.	0.	0	0	UN
4	12	RSI	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	0.	0	0	UN
4	13	RSI	.039182	.039182	.039182	.039182	.039182	1.000000	1.000000	0.	0	0	UN
4	5	RSI	.109433	.109433	.109433	.109433	.109433	1.000000	1.000000	0.	0	0	UN
4	15	RSI	.057045	.057045	.057045	.057045	.057045	1.000000	1.000000	0.	0	0	UN
4	FFSUM =	.9215	ROW CP TIME =		.047								
11	12	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
11	13	RSI	.203695	.203695	.203695	.203695	.203695	1.000000	1.000000	0.	0	0	UN
11	14	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
11	5	RSI	.054683	.054683	.054683	.054683	.054683	1.000000	1.000000	0.	0	0	UN
11	15	RSI	.138020	.138020	.138020	.138020	.138020	1.000000	1.000000	0.	0	0	UN
11	FFSUM =	.9840	ROW CP TIME =		.039								
12	13	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
12	14	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
12	5	RSI	.034976	.034976	.034976	.034976	.034976	1.000000	1.000000	0.	0	0	UN
12	15	RSI	.097637	.097637	.097637	.097637	.097637	1.000000	1.000000	0.	0	0	UN
12	FFSUM =	.9466	ROW CP TIME =		.031								
13	14	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUSE OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ	
13	5	RSI	.012000	.012000	.012000	.012000	.012000	1.000000	1.000000	0.	0	0	UN
13	15	RSI	.051908	.051908	.051908	.051908	.051908	1.000000	1.000000	0.	0	0	UN
13	FFSUM =	.8552	ROW CP TIME =		.055								
14	5	RSI	.057045	.057045	.057045	.057045	.057045	1.000000	1.000000	0.	0	0	UN
14	15	RSI	.109433	.109433	.109433	.109433	.109433	1.000000	1.000000	0.	0	0	UN
14	FFSUM =	.9215	ROW CP TIME =		.018								
5	FFSUM =	.5557	ROW CP TIME =		.007								
15	FFSUM =	.5557	ROW CP TIME =		.007								
21	FFSUM =	0.	ROW CP TIME =		.004								
22	FFSUM =	0.	ROW CP TIME =		.002								
23	FFSUM =	0.	ROW CP TIME =		.004								
24	FFSUM =	0.	ROW CP TIME =		.004								
25	FFSUM =	0.	ROW CP TIME =		.003								

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)

26 FFSUM = 0. ROW CP TIME = .039

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
FORM FACTOR CALCULATION LINK.

SUMMARY OF FORM FACTOR SUMS FOR ALL NODES

NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM
1- .9840	2- .9466	3- .8552	4- .9215	11- .9840	12- .9466
13- .8552	14- .9215	5- .5557	15- .5557	21- 0.	22- 0.
23- 0.	24- 0.	25- 0.	26- 0.		

TOTAL TIME FOR FORM FACTOR SEGMENT .842

TOTAL TIME SINCE START OF RUN 29.058

ADJUSTING FIELD LENGTH TO 041700 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 047700 FOR THE CM SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
FORM FACTOR COMBINING LINK.

NODE	AREA	ALPH	EMISS	TRANS(UV)	TRANS(IR)	SPECULAR REFL(UV)	SPECULAR REFL(IR)
1	4.060E+00	5.448E-01	9.000E-01	0.	0.	0.	0.
2	2.040E+00	5.431E-01	9.000E-01	0.	0.	0.	0.
3	4.060E+00	5.448E-01	9.000E-01	0.	0.	0.	0.
4	4.060E+00	5.448E-01	9.000E-01	0.	0.	0.	0.
12	2.040E+00	5.431E-01	9.000E-01	0.	0.	0.	0.
5	4.060E+00	5.448E-01	9.000E-01	0.	0.	2.939E-21	2.939E-21

NUMBER OF NODES AFTER COMBINING = 6

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
FORM FACTOR COMBINING LINK.

NODE I	NODE J	COMPUTATION	FE(I,J) W/SHAD	FE(J,I) W/SHAD	FA(I,J) W/SHAD
1	2	COMB	.061112	.121612	.061112
1	3	COMB	.142708	.142708	.142708
1	4	COMB	.124834	.124834	.124834
1	12	COMB	.061112	.121612	.061112
1	5	COMB	.094918	.094918	.094918
1	FF SUM =	.4847			
2	3	COMB	.121612	.061112	.121612
2	4	COMB	.121612	.061112	.121612
2	12	COMB	.034097	.034097	.034097
2	5	COMB	.064994	.032660	.064994
2	FF SUM =	.4639			
3	4	COMB	.124834	.124834	.124834
3	12	COMB	.061112	.121612	.061112
3	5	COMB	.031478	.031478	.031478
3	FF SUM =	.4212			
4	12	COMB	.061112	.121612	.061112
4	5	COMB	.082001	.082001	.082001
4	FF SUM =	.4539			
12	5	COMB	.064994	.032660	.064994
12	FF SUM =	.4639			
5	FF SUM =	.2737			

MODEL=SAMPLE CONFIG=CASE1 STEP=-1
FORM FACTOR COMBINING LINK.
SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN

COMBINED FORM FACTOR SUMS FROM NODE I

NODE I -	FF SUM	NODE I -	FF SUM	NODE I -	FF SUM	NODE I -	FF SUM	NODE I -	FF SUM	NODE I -	FF SUM
1 -	.4846843	2 -	.4639281	3 -	.4212440	4 -	.4538919	12 -	.4639281	5 -	.2737176

COMBINED NODE, AREA, AND PROPERTIES ARRAYS HAVE BEEN WRITTEN ON THE -RSO- TAPE
BY THE FORM FACTOR COMBINING LINK. (ACCESS NUMBER = 2)

ADJUSTING FIELD LENGTH TO 052500 FOR THE GB SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
GRAY BODIES COMPUTATION LINK.

GREY BODIES

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
GBWBND	BOTH	NONE	WAVEBAND DEFINITION PARAMETER	(IR,SOL,BOTH)

IR GRAY BODIES STORED FOR CONFIGURATION CASE1

SOL GRAY BODIES STORED FOR CONFIGURATION CASE1

TOTAL TIME TO COMPUTE GRAY BODIES .26

ADJUSTING FIELD LENGTH TO 041700 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 050000 FOR THE RC SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTORS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
RKPNCH	PUN	NO	PUNCH/NO PUNCH PARAMETER FOR RADKS	(YES,NO)
RKMIN	.0001	0.0001	PARAMETER TO ELIMINATE SMALL RADK S	N/A
IRKCN	1	1	INITIAL RADIATION CONDUCTOR ID NUMBER	N/A
RKSP	SPACE	NO	MNEMONIC FLAG FOR COMPUTATION OF RADKS TO SPACE	(SPACE,NO)
IRKNSP	999	32767	SPACE NODE ID NUMBER	N/A
SIGMA	1.71E-09	1.713E-9	STEFAN-BOLTZMANN CONSTANT	N/A
RKAMPF	1.00	1.0	AREA MULTIPLYING FACTOR	N/A
RKTAPE	NO	NO	PARAMETER TO OUTPUT TO BCD TAPE	(TAPE,NO)
RFRAC	7.0E-01	0.7	SIGNIFICANT RADIATION FRACTION	(0. TO 1.)
RTOL	.990	0.99	DECIMAL FRACTION OF LAST RADK SAVED	N/A
NERN	0	0	EFFECTIVE RADIATION NODE (ERN) NUMBER	N/A

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
RADIATION CONDUCTOR GENERATION LINK.

SPECIAL RADIATION NODES

NONE

MESS SPECIAL NODES

PRIMARY SECONDARY

NONE

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTOR (RADKS) CARDS PUNCHED

AREA UNITS = INPUT UNITS * AMPF, WHERE AMPF = 1.00000

PUNCHED RADKS	-	1,	1,	2,	1.7130000E-09*	2.0840566E-01
PUNCHED RADKS	-	2,	1,	3,	1.7130000E-09*	4.8102261E-01
PUNCHED RADKS	-	3,	1,	4,	1.7130000E-09*	4.2452057E-01
PUNCHED RADKS	-	4,	1,	12,	1.7130000E-09*	2.0840566E-01
PUNCHED RADKS	-	5,	1,	5,	1.7130000E-09*	3.2007624E-01
PUNCHED RADKS	-	6,	2,	3,	1.7130000E-09*	2.0770403E-01
PUNCHED RADKS	-	7,	2,	4,	1.7130000E-09*	2.0789586E-01
PUNCHED RADKS	-	8,	2,	12,	1.7130000E-09*	6.0547347E-02
PUNCHED RADKS	-	9,	2,	5,	1.7130000E-09*	1.1217556E-01
PUNCHED RADKS	-	10,	3,	4,	1.7130000E-09*	4.2278235E-01
PUNCHED RADKS	-	11,	3,	12,	1.7130000E-09*	2.0770403E-01
PUNCHED RADKS	-	12,	3,	5,	1.7130000E-09*	1.1431716E-01
PUNCHED RADKS	-	13,	4,	12,	1.7130000E-09*	2.0789586E-01
PUNCHED RADKS	-	14,	4,	5,	1.7130000E-09*	2.7790347E-01
PUNCHED RADKS	-	15,	12,	5,	1.7130000E-09*	1.1217556E-01
PUNCHED RADKS	-	16,	1,	999,	1.7130000E-09*	1.9916581E+00
PUNCHED RADKS	-	17,	2,	999,	1.7130000E-09*	1.0352453E+00
PUNCHED RADKS	-	18,	3,	999,	1.7130000E-09*	2.2032757E+00
PUNCHED RADKS	-	19,	4,	999,	1.7130000E-09*	2.0954493E+00
PUNCHED RADKS	-	20,	12,	999,	1.7130000E-09*	1.0352453E+00
PUNCHED RADKS	-	21,	5,	999,	1.7130000E-09*	2.7105771E+00

TOTAL TIME TO COMPUTE AND CONDENSE RADKS = .31

ADJUSTING FIELD LENGTH TO 103000 FOR THE DI SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

++++ BASIC CONTROL PARAMETERS ++++

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
	FLUX COMPUTATION FLAG	SOL,PLAN,ALL	ALL	ICALFL
0	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
0.	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
0.	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST

++++ BASIC ORBIT DATA ++++

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
0.	LONGITITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
0.	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
0.	ORBIT INCLINATION, DEGREES		0.0	OINC
6.08000E+05	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
6.08000E+05	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
0.	ORBIT ECCENTRICITY		0.0	ECC
0.	SUN RA ANGLE, DEGREES		0.0	SUNRA
0.	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
0.	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
0.	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC

++++ PLANET-ORIENTED, ORIENTATION DATA ++++

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
0.	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
3.000E+02	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
3.000E+01	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
0.	PLANET LOOK ANGLE - CLOCK, DGREES		0.0	PLCL
0.	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO

++++ SPIN DATA ++++

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
0.	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
0.	CONE ANGLE, DEGREES		0.0	CONE
0.	ROTATION RATE- CCW POSITIVE		0.0	RATE
0.	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10000

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		0.	SUN CIGMA ANGLE, DEGREES
0.	STAR BETAS ANGLE, DEGREES		0.	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		7.50732E+01	PLANET DS EMISS POWER	WDS
2.09000E+07	PLANET RADIUS	PRAD		7.50732E+01	PLANET SS EMISS POWER	WSS
1.46792E+00	ORBIT PERIOD	PERIOD				
4.17312E+08	PLANET GRAV CONSTANT	GRAV		4.29000E+02	SOLAR CONSTANT AT PSD	SOL

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO *00 TRUE ANOMALY = 0. TIME = .00000
++++ IN THE SUN ++++

NODE NUMBER	DIRECT FLUX (QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	0.	0.	0.	CALC	0.	9	0
2	9.40279E+01	1.85762E+02	.5062	CALC	.342	81	6
3	0.	1.07250E+02	0.	CALC	.730	64	9
4	1.65122E+02	3.71525E+02	.4444	CALC	1.131	81	9
11	0.	0.	0.	CALC	1.143	9	0
12	0.	0.	0.	CALC	1.152	9	0
13	1.00547E+01	1.07250E+02	.0938	CALC	1.501	64	8
14	9.17345E+01	3.71525E+02	.2469	CALC	1.841	81	7
5	0.	0.	0.	CALC	1.850	9	0
15	0.	0.	0.	CALC	1.859	9	0
21	0.	0.	0.	CALC	1.868	8	0
22	1.07250E+02	1.07250E+02	1.0000	CALC	2.322	66	10
23	1.85762E+02	1.85762E+02	1.0000	CALC	2.726	81	7
24	0.	0.	0.	CALC	2.736	8	0
25	0.	0.	0.	CALC	2.746	9	0
26	1.86871E+02	1.86871E+02	1.0000	CALC	3.278	78	10

TOTAL ELAPSED TIME IN PROBLEM = 34.389 SECONDS

DATE 05/11/77 TIME 08.27.20. THERMAL RADIATION ANALYSIS SYSTEM (TRASYS) CDC6500/SCOPE 3.4 PAGE 20

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 10000 TRUE ANOMALY = 0. TIME = 0.
++++ IN THE SUN ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX--- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1		0.	0.	3.915E+01	2.678E+01	0.	0.	.001	66	9	8
2		0.	0.	4.005E+01	2.645E+01	0.	0.	1.318	63	9	6
3		0.	0.	4.024E+01	2.683E+01	0.	0.	2.748	61	9	8
4		0.	0.	0.	0.	0.	0.	2.985	1	9	8
11		0.	0.	3.915E+01	2.678E+01	0.	0.	4.764	66	9	8
12		0.	0.	3.826E+01	2.645E+01	0.	0.	6.555	63	9	6
13		0.	0.	4.024E+01	2.683E+01	0.	0.	8.335	61	9	8
14		0.	0.	0.	0.	0.	0.	8.577	1	9	8
5		2.173E+01	1.456E+01	8.338E+01	5.586E+01	.261	.261	15.364	133	16	7
15		2.200E+01	1.458E+01	8.338E+01	5.586E+01	.264	.261	22.487	133	16	7
21		1.101E+02	7.423E+01	1.101E+02	7.423E+01	1.000	1.000	36.485	112	18	10
22		4.024E+01	2.683E+01	4.024E+01	2.683E+01	1.000	1.000	39.272	61	10	10
23		4.005E+01	2.645E+01	4.005E+01	2.645E+01	1.000	1.000	41.098	63	9	7
24		3.915E+01	2.678E+01	3.915E+01	2.678E+01	1.000	1.000	43.907	66	10	10
25		3.823E+01	2.643E+01	3.823E+01	2.643E+01	1.000	1.000	45.698	66	9	7
26		6.592E+00	4.570E+00	6.592E+00	4.570E+00	1.000	1.000	46.565	52	2	10

TOTAL ELAPSED TIME IN PROBLEM = 82.399 SECONDS

ADJUSTING FIELD LENGTH TO 041700 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 042100 FOR THE AQ SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10000	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10000	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10000	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10000

TOTAL TIME TO COMPUTE ABSORBED Q .12

ADJUSTING FIELD LENGTH TO 103000 FOR THE DI SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
	FLUX COMPUTATION FLAG	SOL,PLAN,ALL	ALL	ICALFL
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
90.000	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
0.	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
0.	LONGITITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
0.	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
0.	ORBIT INCLINATION, DEGREES		0.0	DINC
6.08000E+05	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
6.08000E+05	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
0.	ORBIT ECCENTRICITY		0.0	ECC
0.	SUN RA ANGLE, DEGREES		0.0	SUNRA
0.	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
0.	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
0.	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
0.	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
3.600E+02	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
9.000E+01	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
0.	PLANET LOOK ANGLE - CLOCK, DGREES		0.0	PLCL
0.	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
0.	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
0.	CONE ANGLE, DEGREES		0.0	CONE
0.	ROTATION RATE- CCW POSITIVE		0.0	RATE
0.	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10001

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		0.	SUN CIGMA ANGLE, DEGREES
0.	STAR BETAS ANGLE, DEGREES		0.	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		7.50732E+01	PLANET DS EMISS POWER	WDS
2.09000E+07	PLANET RADIUS	PRAD		7.50732E+01	PLANET SS EMISS POWER	WSS
1.46792E+00	ORBIT PERIOD	PERIOD				
4.17312E+08	PLANET GRAV CONSTANT	GRAV		4.29000E+02	SOLAR CONSTANT AT PSD	SOL

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN

DIRECT IRRADIATION CALCULATION LINK.

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO *01 TRUE ANOMALY = 90.00000 TIME = .36701
++++ IN THE SUN ++++

NODE NUMBER	DIRECT FLUX (QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	0.	0.	0.	CALC	0.	9	0
2	0.	5.25186E-07	0.	CALC	.048	9	4
3	0.	4.29000E+02	0.	CALC	.164	81	8
4	0.	0.	0.	CALC	.173	9	0
11	0.	0.	0.	CALC	.181	9	0
12	0.	0.	0.	CALC	.190	9	0
13	0.	4.29000E+02	0.	CALC	.455	81	8
14	0.	0.	0.	CALC	.465	9	0
5	3.03349E+02	3.03349E+02	1.0000	CALC	.854	81	7
15	3.03349E+02	3.03349E+02	1.0000	CALC	1.247	81	7
21	6.73312E-07	6.73312E-07	1.0000	CALC	1.309	8	10
22	4.29000E+02	4.29000E+02	1.0000	CALC	1.797	78	10
23	5.21643E-07	5.21643E-07	1.0000	CALC	1.843	9	5
24	0.	0.	0.	CALC	1.852	8	0
25	0.	0.	0.	CALC	1.861	9	0
26	0.	0.	0.	CALC	1.871	8	0

TOTAL ELAPSED TIME IN PROBLEM = 85.069 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 10001 TRUE ANOMALY = 90.00000 TIME = 0.
++++ IN THE SUN ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX--- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1		0.	0.	0.	0.	0.	0.	0.	66	8	0
2		0.	0.	0.	0.	0.	0.	.081	63	8	0
3		0.	0.	0.	0.	0.	0.	.133	61	8	0
4		0.	0.	0.	0.	0.	0.	.142	1	8	0
11		0.	0.	0.	0.	0.	0.	.200	66	8	0
12		0.	0.	0.	0.	0.	0.	.252	63	8	0
13		0.	0.	0.	0.	0.	0.	.304	61	8	0
14		0.	0.	0.	0.	0.	0.	.316	1	8	0
5		1.228E+00	1.456E+01	0.	0.	0.	0.	.422	133	8	0
15		1.233E+00	1.458E+01	0.	0.	0.	0.	.531	133	8	0
21		1.430E+00	7.423E+01	0.	0.	0.	0.	.623	112	8	0
22		2.061E+00	2.683E+01	0.	0.	0.	0.	.684	61	8	0
23		6.423E-01	2.645E+01	0.	0.	0.	0.	.740	63	8	0
24		0.	2.678E+01	0.	0.	0.	0.	.797	66	8	0
25		6.342E-01	2.643E+01	0.	0.	0.	0.	.855	66	8	0
26		0.	4.570E+00	0.	0.	0.	0.	.902	52	8	0

TOTAL ELAPSED TIME IN PROBLEM = 86.033 SECONDS

ADJUSTING FIELD LENGTH TO 041700 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 042100 FOR THE AQ SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q COMPUTATION LINK.

VARIABLE NAME	CURRENT VALUE	DEFAULT	ABSORBED HEAT DEFINITION	OPTIONS
IAQSDS	10001	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10001	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10001	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10001

TOTAL TIME TO COMPUTE ABSORBED Q .14

ADJUSTING FIELD LENGTH TO 103000 FOR THE DI SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
	FLUX COMPUTATION FLAG	SOL,PLAN,ALL	ALL	ICALFL
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
180.000	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
0.	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
0.	LONGITITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
0.	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
0.	ORBIT INCLINATION, DEGREES		0.0	OINC
6.08000E+05	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
6.08000E+05	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
0.	ORBIT ECCENTRICITY		0.0	ECC
0.	SUN RA ANGLE, DEGREES		0.0	SUNRA
0.	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
0.	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
0.	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED. ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
0.	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
3.000E+02	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
1.500E+02	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
0.	PLANET LOOK ANGLE - CLOCK, DGREES		0.0	PLCL
0.	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
0.	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
0.	CONE ANGLE, DEGREES		0.0	CONE
0.	ROTATION RATE- CCW POSITIVE		0.0	RATE
0.	TIME SPIN BEGINS		0.0	TIMSP

++++++++ NSTEP NO = 10002

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		0.	SUN CIGMA ANGLE, DEGREES
0.	STAR BETAS ANGLE, DEGREES		0.	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		7.50732E+01	PLANET DS EMISS POWER	WDS
2.09000E+07	PLANET RADIUS	PRAD		7.50732E+01	PLANET SS EMISS POWER	WSS
1.46792E+00	ORBIT PERIOD	PERIOD				
4.17312E+08	PLANET GRAV CONSTANT	GRAV		4.29000E+02	SOLAR CONSTANT AT PSD	SOL

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO *02 TRUE ANOMALY = 180.00000 TIME = .73402
++++ IN THE SHADE ++++

NODE NUMBER	DIRECT FLUX (QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	0.	0.	0.	RTI	0.	0	0
2	0.	0.	0.	RTI	.027	0	0
3	0.	0.	0.	RTI	.031	0	0
4	0.	0.	0.	RTI	.034	0	0
11	0.	0.	0.	RTI	.039	0	0
12	0.	0.	0.	RTI	.042	0	0
13	0.	0.	0.	RTI	.046	0	0
14	0.	0.	0.	RTI	.050	0	0
5	0.	0.	0.	RTI	.053	0	0
15	0.	0.	0.	RTI	.064	0	0
21	0.	0.	0.	RTI	.068	0	0
22	0.	0.	0.	RTI	.072	0	0
23	0.	0.	0.	RTI	.075	0	0
24	0.	0.	0.	RTI	.080	0	0
25	0.	0.	0.	RTI	.083	0	0
26	0.	0.	0.	RTI	.087	0	0

TOTAL ELAPSED TIME IN PROBLEM = 86.949 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 10002 TRUE ANOMALY = 180.00000 TIME = 0.
++++ IN THE SHADE ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX--- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1		0.	0.	0.	0.	0.	0.	.001	0	0	0
2		0.	0.	0.	0.	0.	0.	.030	0	0	0
3		0.	0.	0.	0.	0.	0.	.034	0	0	0
4		0.	0.	0.	0.	0.	0.	.038	0	0	0
11		0.	0.	0.	0.	0.	0.	.042	0	0	0
12		0.	0.	0.	0.	0.	0.	.046	0	0	0
13		0.	0.	0.	0.	0.	0.	.050	0	0	0
14		0.	0.	0.	0.	0.	0.	.054	0	0	0
5		0.	1.456E+01	0.	0.	0.	0.	.058	0	0	0
15		0.	1.458E+01	0.	0.	0.	0.	.063	0	0	0
21		0.	7.423E+01	0.	0.	0.	0.	.067	0	0	0
22		0.	2.683E+01	0.	0.	0.	0.	.072	0	0	0
23		0.	2.645E+01	0.	0.	0.	0.	.076	0	0	0
24		0.	2.678E+01	0.	0.	0.	0.	.081	0	0	0
25		0.	2.643E+01	0.	0.	0.	0.	.085	0	0	0
26		0.	4.570E+00	0.	0.	0.	0.	.089	0	0	0

TOTAL ELAPSED TIME IN PROBLEM = 87.045 SECONDS

ADJUSTING FIELD LENGTH TO 041700 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 042100 FOR THE AQ SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10002	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10002	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10002	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10002

TOTAL TIME TO COMPUTE ABSORBED Q .14

ADJUSTING FIELD LENGTH TO 103000 FOR THE DI SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
	FLUX COMPUTATION FLAG	SOL,PLAN,ALL	ALL	ICALFL
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
105.720	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
0.	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
0.	LONGITITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
0.	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
0.	ORBIT INCLINATION, DEGREES		0.0	OINC
6.08000E+05	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
6.08000E+05	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
0.	ORBIT ECCENTRICITY		0.0	ECC
0.	SUN RA ANGLE, DEGREES		0.0	SUNRA
0.	SUN DEC ANGLE.DEGREES,		0.0	SUNDEC
0.	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
0.	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
0.	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
3.590E+02	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
1.036E+02	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
0.	PLANET LOOK ANGLE - CLOCK, DGREES		0.0	PLCL
0.	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
0.	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
0.	CONE ANGLE, DEGREES		0.0	CONE
0.	ROTATION RATE- CCW POSITIVE		0.0	RATE
0.	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10003

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		0.	SUN CIGMA ANGLE, DEGREES
0.	STAR BETAS ANGLE, DEGREES		0.	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		7.50732E+01	PLANET DS EMISS POWER	WDS
2.09000E+07	PLANET RADIUS	PRAD		7.50732E+01	PLANET SS EMISS POWER	WSS
1.46792E+00	ORBIT PERIOD	PERIOD				
4.17312E+08	PLANET GRAV CONSTANT	GRAV		4.29000E+02	SOLAR CONSTANT AT PSD	SOL

MODEL=SAMPLE CONFIG=CASE1 STEP=10003
DIRECT IRRADIATION CALCULATION LINK.

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO *03 TRUE ANOMALY = 105.71977 TIME = .43111
++++ IN THE SUN ++++

NODE NUMBER	DIRECT FLUX (QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	0.	0.	0.	CALC	.001	9	0
2	0.	6.94783E+00	0.	CALC	.051	9	4
3	0.	4.16966E+02	0.	CALC	.189	81	8
4	0.	0.	0.	CALC	.200	9	0
11	0.	0.	0.	CALC	.210	9	0
12	0.	0.	0.	CALC	.220	9	0
13	0.	4.16966E+02	0.	CALC	.520	81	8
14	0.	0.	0.	CALC	.529	9	0
5	2.84679E+02	3.66016E+02	.7778	CALC	.876	81	7
15	2.84679E+02	3.66016E+02	.7778	CALC	1.255	81	7
21	1.00658E+02	1.00658E+02	1.0000	CALC	1.636	55	10
22	4.16966E+02	4.16966E+02	1.0000	CALC	2.173	78	10
23	6.94783E+00	6.94783E+00	1.0000	CALC	2.222	9	5
24	0.	0.	0.	CALC	2.233	8	0
25	0.	0.	0.	CALC	2.242	9	0
26	0.	0.	0.	CALC	2.252	8	0

TOTAL ELAPSED TIME IN PROBLEM = 90.140 . SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 10003 TRUE ANOMALY = 105.71977 TIME = 0.
++++ IN THE SUN ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX--- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1		0.	0.	0.	0.	0.	0.	.001	0	8	0
2		0.	0.	0.	0.	0.	0.	.030	0	8	0
3		0.	0.	0.	0.	0.	0.	.034	0	8	0
4		0.	0.	0.	0.	0.	0.	.049	0	8	0
11		0.	0.	0.	0.	0.	0.	.053	0	8	0
12		0.	0.	0.	0.	0.	0.	.057	0	8	0
13		0.	0.	0.	0.	0.	0.	.061	0	8	0
14		0.	0.	0.	0.	0.	0.	.065	0	8	0
5		0.	1.456E+01	0.	0.	0.	0.	.070	0	8	0
15		0.	1.458E+01	0.	0.	0.	0.	.074	0	8	0
21		0.	7.423E+01	0.	0.	0.	0.	.078	0	8	0
22		0.	2.683E+01	0.	0.	0.	0.	.083	0	8	0
23		0.	2.645E+01	0.	0.	0.	0.	.088	0	8	0
24		0.	2.678E+01	0.	0.	0.	0.	.092	0	8	0
25		0.	2.643E+01	0.	0.	0.	0.	.096	0	8	0
26		0.	4.570E+00	0.	0.	0.	0.	.101	0	8	0

TOTAL ELAPSED TIME IN PROBLEM = 90.248 SECONDS

ADJUSTING FIELD LENGTH TO 041700 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 042100 FOR THE AQ SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q COMPUTATION LINK.

VARIABLE NAME	CURRENT VALUE	DEFAULT	ABSORBED HEAT DEFINITION	OPTIONS
IAQSDS	10003	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10003	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10003	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10003

TOTAL TIME TO COMPUTE ABSORBED Q .14

ADJUSTING FIELD LENGTH TO 103000 FOR THE DI SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
	FLUX COMPUTATION FLAG	SOL,PLAN,ALL	ALL	ICALFL
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
105.920	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
0.	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
0.	LONGITITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
0.	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
0.	ORBIT INCLINATION, DEGREES		0.0	OINC
6.08000E+05	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
6.08000E+05	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
0.	ORBIT ECCENTRICITY		0.0	ECC
0.	SUN RA ANGLE, DEGREES		0.0	SUNRA
0.	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
0.	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
0.	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
0.	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
3.590E+02	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
1.037E+02	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
0.	PLANET LOOK ANGLE - CLOCK, DGREES		0.0	PLCL
0.	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
0.	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
0.	CONE ANGLE, DEGREES		0.0	CONE
0.	ROTATION RATE- CCW POSITIVE		0.0	RATE
0.	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10004

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		0.	SUN CIGMA ANGLE, DEGREES
0.	STAR BETAS ANGLE, DEGREES		0.	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		7.50732E+01	PLANET DS EMISS POWER	WDS
2.09000E+07	PLANET RADIUS	PRAD		7.50732E+01	PLANET SS EMISS POWER	WSS
1.46792E+00	ORBIT PERIOD	PERIOD				
4.17312E+08	PLANET GRAV CONSTANT	GRAV		4.29000E+02	SOLAR CONSTANT AT PSD	SOL

DIRECT IRRADIATION CALCULATION LINK.

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO *04 TRUE ANOMALY = 105.91977 TIME = .43193
++++ IN THE SHADE ++++

NODE NUMBER	DIRECT FLUX (QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	0.	0.	0.	RTI	.001	0	0
2	0.	0.	0.	RTI	.037	0	0
3	0.	0.	0.	RTI	.040	0	0
4	0.	0.	0.	RTI	.043	0	0
11	0.	0.	0.	RTI	.047	0	0
12	0.	0.	0.	RTI	.050	0	0
13	0.	0.	0.	RTI	.055	0	0
14	0.	0.	0.	RTI	.059	0	0
5	0.	0.	0.	RTI	.062	0	0
15	0.	0.	0.	RTI	.066	0	0
21	0.	0.	0.	RTI	.069	0	0
22	0.	0.	0.	RTI	.073	0	0
23	0.	0.	0.	RTI	.078	0	0
24	0.	0.	0.	RTI	.081	0	0
25	0.	0.	0.	RTI	.084	0	0
26	0.	0.	0.	RTI	.087	0	0

TOTAL ELAPSED TIME IN PROBLEM = 91.132 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 10004 TRUE ANOMALY = 105.91977 TIME = 0.
++++ IN THE SHADE ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX--- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1		0.	0.	0.	0.	0.	0.	0.	0	0	0
2		0.	0.	0.	0.	0.	0.	.030	0	0	0
3		0.	0.	0.	0.	0.	0.	.033	0	0	0
4		0.	0.	0.	0.	0.	0.	.037	0	0	0
11		0.	0.	0.	0.	0.	0.	.041	0	0	0
12		0.	0.	0.	0.	0.	0.	.046	0	0	0
13		0.	0.	0.	0.	0.	0.	.050	0	0	0
14		0.	0.	0.	0.	0.	0.	.055	0	0	0
5		0.	1.456E+01	0.	0.	0.	0.	.058	0	0	0
15		0.	1.458E+01	0.	0.	0.	0.	.063	0	0	0
21		0.	7.423E+01	0.	0.	0.	0.	.068	0	0	0
22		0.	2.683E+01	0.	0.	0.	0.	.072	0	0	0
23		0.	2.645E+01	0.	0.	0.	0.	.076	0	0	0
24		0.	2.678E+01	0.	0.	0.	0.	.080	0	0	0
25		0.	2.643E+01	0.	0.	0.	0.	.084	0	0	0
26		0.	4.570E+00	0.	0.	0.	0.	.090	0	0	0

TOTAL ELAPSED TIME IN PROBLEM = 91.230 SECONDS

ADJUSTING FIELD LENGTH TO 041700 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 042100 FOR THE AQ SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10004	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10004	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10004	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10004

TOTAL TIME TO COMPUTE ABSORBED Q .15

ADJUSTING FIELD LENGTH TO 051700 FOR THE QO SEGMENT

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q OUTPUT COMPUTATION LINK.

ABSORBED Q OUT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IQOTME	1	1	TIME ARRAY ID NUMBER FLUX TABLES START AT IQOTME + 1	N/A
QOTAPE	NO	2HNO	PARAMETER TO OUTPUT TO BCD TAPE	(4HTAPE,2HNO)
QOPNCH	PUN	2HNO	PUNCH/NO PUNCH PARAMETER FOR OUTPUT	(3HPUN,2HNO)
QOAMPF	1.0000	1.0	AREA MULTIPLYING FACTOR	N/A
QOFMPF	1.0000	1.0	FLUX MULTIPLYING FACTOR	N/A
QOTMPF	1.0000	1.0	TIME MULTIPLYING FACTOR	N/A
QOTYPE	BOTH	NONE	PARAMETER TO DETERMINE TYPE OF OUTPUT	(3HTAB,2HAV,4HBOTH)
IQOCOR	0	0	STEP NUMBER REFERENCE FOR CORRESPONDENCE DATA	N/A
IQOARY	ALL	NONE	STEP NO. ARRAY DIRECTIVE	(3HALL,ARRAY NAME)

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q OUTPUT COMPUTATION LINK.

ABSORBED HEAT FLUX TABLES PUNCHED

```
Q    = INPUT * FMPF  WHERE FMPF =   1.00000E+00
TIME = INPUT * TMPF  WHERE TMPF =   1.00000E+00
AREA IS ON SUBROUTINE CALL CARDS
```

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q OUTPUT COMPUTATION LINK.

```
    1$ TIME ARRAY
 1.969E-08, 3.670E-01, 4.311E-01, 4.319E-01, 7.340E-01
END$
    2$  HEAT FLUX ARRAY
 2.336E+00, 0.        , 0.        , 0.        , 0.
END$
    3$  HEAT FLUX ARRAY
 2.664E+01, 0.        , 0.        , 0.        , 0.
END$
    4$  HEAT FLUX ARRAY
 1.467E+00, 0.        , 0.        , 0.        , 0.
END$
    5$  HEAT FLUX ARRAY
 2.244E+01, 0.        , 0.        , 0.        , 0.
END$
    6$  HEAT FLUX ARRAY
 0.       , 0.        , 0.        , 0.        , 0.
END$
    7$  HEAT FLUX ARRAY
 0.       , 0.        , 0.        , 0.        , 0.
END$
```

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q OUTPUT COMPUTATION LINK.

DA11MC SUBROUTINE CALL CARDS

AREA = INPUT (UNITS) * AMPF WHERE AMPF = 1.00000E+00

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q OUTPUT COMPUTATION LINK.

DA11MC SUBROUTINE CALL CARDS

```
                         AREA = INPUT (UNITS) * AMPF  WHERE AMPF =  1.00000E+00
DA11MC( 1.46792174E+00,TIMEM,A   1,A   2, 4.06040000E+00,Q    1)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A   3, 2.04040000E+00,Q    2)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A   4, 4.06040000E+00,Q    3)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A   5, 4.06040000E+00,Q    4)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A   6, 2.04040000E+00,Q   12)$
DA11MC( 1.46792174E+00,TIMEM,A   1,A   7, 4.06040000E+00,Q    5)$
```

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q OUTPUT COMPUTATION LINK.

AVERAGE ORBITAL HEATING FLUX AND AREA CARDS PUNCHED

VALUES ARE FLUX = INPUT (UNITS) * FMPF WHERE FMPF = 1.00000E+00
VALUES ARE AREA = INPUT (UNITS) * AMPF WHERE AMPF = 1.00000E+00

```
MODEL=SAMPLE CONFIG=CASE1  STEP=10006            SAMPLE CASE 3  -  FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q OUTPUT COMPUTATION LINK.

                       AVERAGE ORBITAL HEATING FLUX AND AREA CARDS PUNCHED

                         VALUES ARE    FLUX = INPUT (UNITS) * FMPF   WHERE FMPF =  1.00000E+00
                         VALUES ARE    AREA = INPUT (UNITS) * AMPF   WHERE AMPF =  1.00000E+00

          Q    1=  5.83944621E-01* 4.06040000E+00*1.0000 $
          Q    2=  6.65991055E+00* 2.04040000E+00*1.0000 $
          Q    3=  3.66868563E-01* 4.06040000E+00*1.0000 $
          Q    4=  5.61014763E+00* 4.06040000E+00*1.0000 $
          Q   12=  0.             * 2.04040000E+00*1.0000 $
          Q    5=  0.             * 4.06040000E+00*1.0000 $


TOTAL TIME TO COMPUTE ABSORBED Q OUT   .56

ADJUSTING FIELD LENGTH TO 041700 FOR THE OD SEGMENT
```

N A S A / M A R T I N   M A R I E T T A
T H E R M A L   R A D I A T I O N   A N A L Y S I S   S Y S T E M
C D C 6 5 0 0 / S C O P E 3 . 4

T R A S Y S   I I

```
TTTTTTTTTTTTT
TTTTTTTTTTTTT
TT   TTT   TT
     TTT
     TTT
     TTT
     TTT
     TTT
   TTTTTTT

RRRRRRRRR
RRRRRRRRRR
RRR      RRR
RRR      RRR
RRRRRRRRRR
RRR  RRR
RRR   RRR
RRR    RRR
RRR      RRRR

  AAAAAAA
 AAAAAAAAA
AAAAAAAAAAA
AAA     AAA
AAA     AAA
AAAAAAAAAAA
AAA     AAA
AAA     AAA
AAA     AAA
AAAAA   AAAAA

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
         SSS
 SS      SSS
 SSSSSSSSSSSS
  SSSSSSSSSS

YYYY     YYYY
 YYY     YYY
  YYY   YYY
   YYY YYY
    YYYYY
     YYY
     YYY
     YYY
   YYYYYYY

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
         SSS
 SS      SSS
 SSSSSSSSSSSS
  SSSSSSSSSS
```

P R E - P R O C E S S O R   E X E C U T I O N

VERSION.MODIFICATION ... SC2E2
MODIFICATION DATE 05/09/77

DATE OF RUN 05/10/77
TIME OF RUN 16.49.37
JOB NUMBER .... RFRFIRF

```
MODEL =  N/A
OPTION AND TITLE DATA BLOCKS

CARD ORGIN         12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT              HEADER OPTIONS DATA
INPUT              TITLE  SAMPLE CASE 4  -  FFCAL/GBCAL/RCCAL
INPUT              C
INPUT              C-----FORM TWO ENCLOSURES INSIDE THE BOX BY THE USE OF "MESS" NODES.
INPUT              C-----CLOSE THE BOX LID AND CALCULATE FORM FACTORS, GRAY BODY FACTORS,
INPUT              C-----AND RADK'S FOR EACH OF THE ENCLOSURES UTILIZING AN "ERN" NODE
INPUT              C-----IN ENCLOSURE 2.
INPUT              C
INPUT                     MODEL        = SAMPLE
INPUT                     RSI          = RSTSAM
INPUT                     RSO          = RSTSAM4
```

MODEL = SAMPLE
TRASYS INFORMATION TO USER

SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL

OPTIONS DATA -INFO- OPTIONS ARE ...

INFO = BUILD	BUILD EXECUTION CARD
INFO = INFO	HOW TO USE TRASYS INFO FILE
INFO = ITRCPP	PREPROCESSOR TRACE FLAGS
INFO = RKCAL	INFO. ON DELETION OF THE RKCAL LINK
INFO = STEP	INFO. ON USING STEP CARDS
INFO = CCARDS	INFO. ON TRASYS CONTROL CARDS

END OF TRASYS INFORMATION FILE

MODEL = SAMPLE
SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
MODEL HISTORY

MODEL NAME .... SAMPLE

MODEL TITLE .... SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL

MOD LABEL	RUN JOB NUMBER	RUN DATA	RUN TIME	RSI TAPE	RSO TAPE	RTI TAPE	RTO TAPE	CMERG TAPE	EMERG TAPE	BCDOU TAPE	TRAJ TAPE	USER1 TAPE	USER2 TAPE
AA	RGEX153	05/04/77	11.07.24		RSTSAM								
AB	RFRFIRF	05/10/77	16.49.38	RSTSAM	RSTSAM4								

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
SOURCE DATA EDIT DIRECTIVES

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

                  HEADER EDIT DATA
****              *D,1
   D              HEADER SURFACE DATA                                                          OLD-        1   AA
  I               HEADER ARRAY DATA                                                     1                      AB
  I                      IPRIM1      = 101                                              2                      AB
  I                      ISEC1       = 111                                              3                      AB
  I                      IPRIM2      = 111                                              4                      AB
  I                      ISEC2       = 101                                              5                      AB
  I               HEADER SURFACE DATA                                                   6                      AB
****              *I,56
  I               BCS    LIDINL                                                        62                      AB
****              *I,121
  I               BCS    LIDINL,0.,0.,1.,0.,-45.,0.                                   128                      AB
****              *I,171
  I               C                                                                   179                      AB
  I               C-----SPECIFY CALCULATION OF FORM FACTORS FOR ENCLOSURE 1 BY        180                      AB
  I               C-----THE USE OF UNIT SPHERE LOGIC (NO SHADOWING)                   181                      AB
  I               C                                                                   182                      AB
  I               FIG    ENCL1                                                        183                      AB
  I               UNIT                                                                184                      AB
  I               C                                                                   185                      AB
  I               C-----SPECIFY CALCULATION OF FORM FACTORS FOR ENCLOSURE 2 BY        186                      AB
  I               C-----THE USE OF UNIT SPHERE LOGIC (NO SHADOWING)                   187                      AB
  I               C                                                                   188                      AB
  I               FIG    ENCL2                                                        189                      AB
  I               UNIT                                                                190                      AB
****              *D,195,222
   D              C-----BUILD THE CASE 1 CONFIGURATION                                         OLD-      195   AA
   D              C                                                                            OLD-      196   AA
   D              BUILD  CASE1,BOXINR,BOXINL,LIDINR,BOXOUT,LIDOUT                              OLD-      197   AA
   D              C                                                                            OLD-      198   AA
   D              C-----PLOT THE CASE 1 CONFIGURATION INDICATING THE ACTIVE                    OLD-      199   AA
   D              C-----SIDES OF THE NODES.                                                    OLD-      200   AA
   D              C                                                                            OLD-      201   AA
   D                     CALL NDATAS(0,0,0,YES,0)                                              OLD-      202   AA
   D              L      NPLOT                                                                 OLD-      203   AA
   D              C                                                                            OLD-      204   AA
   D              C-----CALCULATE SHADOW FACTOR TABLES FOR SUBSEQUENT USE IN                   OLD-      205   AA
   D              C-----SAMPLE CASE 2 IN THE CALCULATION OF DIRECT FLUXES.                     OLD-      206   AA
   D              C                                                                            OLD-      207   AA
   D              L      SFCAL                                                                 OLD-      208   AA
   D              C                                                                            OLD-      209   AA
   D              C-----CALCULATE THE FORM FACTOR MATRIX.                                      OLD-      210   AA
   D              C                                                                            OLD-      211   AA
   D              L      FFCAL                                                                 OLD-      212   AA
   D              C                                                                            OLD-      213   AA
   D              C-----CALCULATE THE GRAY BODY MATRIX.                                        OLD-      214   AA
   D              C                                                                            OLD-      215   AA
   D                     CALL GBDATA(BOTH,0,FF)                                                OLD-      216   AA
   D              L      GBCAL                                                                 OLD-      217   AA
   D                     CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,0)                                OLD-      218   AA
```

```
MODEL = SAMPLE                                 SAMPLE CASE 4  -  FFCAL/GBCAL/RCCAL
SOURCE DATA EDIT DIRECTIVES

CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

   D            C                                                                                    OLD-    219    AA
   D            C-----CALCULATE AND PUNCH RADIATION CONDUCTORS.                                      OLD-    220    AA
   D            C                                                                                    OLD-    221    AA
   D            L       RKCAL                                                                        OLD-    222    AA
  I             C                                                                           214                     AB
  I             C-----CLOSE BOX LID                                                         215                     AB
  I             C                                                                           216                     AB
  I                     CALL CHGBLK(LIDINR,0.,0.,1.,1,2,3,0.,0.,0.)                         217                     AB
  I                     CALL CHGBLK(LIDINL,0.,0.,1.,1,2,3,0.,0.,0.)                         218                     AB
  I             C                                                                           219                     AB
  I             C-----BUILD ENCL1 CONFIGURATION                                             220                     AB
  I             C                                                                           221                     AB
  I             BUILD   ENCL1,BOXINR,LIDINR,MESSR                                           222                     AB
  I             C                                                                           223                     AB
  I             C-----CALCULATE FORM FACTORS FOR ENCLOSURE 1                                224                     AB
  I             C                                                                           225                     AB
  I                     CALL RSTOFF                                                         226                     AB
  I             L       FFCAL                                                               227                     AB
  I             C                                                                           228                     AB
  I             C-----CALCULATE GRAY BODY FACTORS FOR ENCLOSURE 1                           229                     AB
  I             C                                                                           230                     AB
  I                     CALL GBDATA(IR,0,FF)                                                231                     AB
  I             L       GBCAL                                                               232                     AB
  I             C                                                                           233                     AB
  I             C-----CALCULATE RADK'S FOR ENCLOSURE 1                                      234                     AB
  I             C                                                                           235                     AB
  I                     CALL RCDATA(0,0,0,0,0,0,0,0,0,0,0,0,0,IPRIM1,ISEC1)                 236                     AB
  I             L       RCCAL                                                               237                     AB
  I             C                                                                           238                     AB
  I             C-----BUILD ENCL2 CONFIGURATION                                             239                     AB
  I             C                                                                           240                     AB
  I             BUILD   ENCL2,BOXINL,LIDINL,MESSL                                           241                     AB
  I             C                                                                           242                     AB
  I             C-----CALCULATE FORM FACTORS FOR ENCLOSURE 2                                243                     AB
  I             C                                                                           244                     AB
  I             L       FFCAL                                                               245                     AB
  I             C                                                                           246                     AB
  I             C-----CALCULATE GRAY BODY FACTORS FOR ENCLOSURE 2                           247                     AB
  I             C                                                                           248                     AB
  I                     CALL GBDATA(IR,0,FF)                                                249                     AB
  I             L       GBCAL                                                               250                     AB
  I             C                                                                           251                     AB
  I             C-----CALCULATE RADK'S FOR ENCLOSURE 2 UTILIZING AN "ERN" NODE              252                     AB
  I             C                                                                           253                     AB
  I                     CALL RCDATA(0,0,0,0,0,0,0,0,0,0,0,1.E-99,555,IPRIM2,ISEC2)          254                     AB
  I             L       RCCAL                                                               255                     AB
```

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
ARRAY DATA INPUT BLOCK

CARD ORGIN	12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8	EDIT NO.	OLD EDIT NO.	LABEL
INPUT	HEADER ARRAY DATA	1		AB
INPUT	IPRIM1 = 101	2		AB
INPUT	ISEC1 = 111	3		AB
INPUT	IPRIM2 = 111	4		AB
INPUT	ISEC2 = 101	5		AB

```
                                                SAMPLE CASE 4  -  FFCAL/GBCAL/RCCAL
MODEL = SAMPLE
SURFACE DATA INPUT BLOCK

CARD ORGIN     12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
                                                                                                6                    AB
INPUT          HEADER SURFACE DATA                                                              7  OLD-         2    AA
RSI            C                                                                                8  OLD-         3    AA
RSI            C-----THIS SURFACE DATA BLOCK IS USED IN SAMPLE CASES 1 THROUGH 5                9  OLD-         4    AA
RSI            C-----WITH VARIOUS PORTIONS OF IT BEING ACTIVATED FOR THE DIFFERENT             10  OLD-         5    AA
RSI            C-----CASES.                                                                    11  OLD-         6    AA
RSI            C                                                                               12  OLD-         7    AA
RSI            BCS     BOXINR                                                                  13  OLD-         8    AA
RSI            S       SURFN        = 1                                                        14  OLD-         9    AA
RSI                    TYPE         = RECT                                                     15  OLD-        10    AA
RSI                    ACTIVE       = BOTTOM                                                   16  OLD-        11    AA
RSI                    PROP         = 0.9,0.9                                                  17  OLD-        12    AA
RSI                    P1           = 1.0, 0.0, 1.0                                            18  OLD-        13    AA
RSI                    P2           = 1.0, 0.0, 0.0                                            19  OLD-        14    AA
RSI                    P3           = 1.0, 1.0, 0.0                                            20  OLD-        15    AA
RSI                    COM          = * INNER RIGH, FRONT *                                    21  OLD-        16    AA
RSI            S       SURFN        = 2                                                        22  OLD-        17    AA
RSI                    TYPE         = RECT                                                     23  OLD-        18    AA
RSI                    ACTIVE       = BOTTOM                                                   24  OLD-        19    AA
RSI                    PROP         = 0.9,0.9                                                  25  OLD-        20    AA
RSI                    P1           = 1.0, 1.0, 1.0                                            26  OLD-        21    AA
RSI                    P2           = 1.0, 1.0, 0.0                                            27  OLD-        22    AA
RSI                    P3           = 0.0, 1.0, 0.0                                            28  OLD-        23    AA
RSI                    COM          = * INNER RIGHT SIDE *                                     29  OLD-        24    AA
RSI            S       SURFN        = 3                                                        30  OLD-        25    AA
RSI                    TYPE         = RECT                                                     31  OLD-        26    AA
RSI                    ACTIVE       = TOP                                                      32  OLD-        27    AA
RSI                    PROP         = 0.9,0.9                                                  33  OLD-        28    AA
RSI                    P1           = 0.0, 0.0, 1.0                                            34  OLD-        29    AA
RSI                    P2           = 0.0, 0.0, 0.0                                            35  OLD-        30    AA
RSI                    P3           = 0.0, 1.0, 0.0                                            36  OLD-        31    AA
RSI                    COM          = * INNER RIGHT BACK *                                     37  OLD-        32    AA
RSI            S       SURFN        = 4                                                        38  OLD-        33    AA
RSI                    TYPE         = RECT                                                     39  OLD-        34    AA
RSI                    ACTIVE       = TOP                                                      40  OLD-        35    AA
RSI                    PROP         = 0.9,0.9                                                  41  OLD-        36    AA
RSI                    P1           = 1.0, 1.0, 0.0                                            42  OLD-        37    AA
RSI                    COM          = * INNER RIGHT BOTTOM *                                   43  OLD-        38    AA
RSI            BCS     BOXINL,IMGBCS=BOXINR,NINC=10,IREFSF=1000                                44  OLD-        39    AA
RSI            C                                                                               45  OLD-        40    AA
RSI            C-----THE FOREGOING CARD IMAGES BCS BOXINR IN REFERENCE PLANE 1000              46  OLD-        41    AA
RSI            C-----TO CREATE BCS BOXINL.  THE INTERIOR OF THE BOX WAS INPUT IN               47  OLD-        42    AA
RSI            C-----THIS MANNER TO FACILITATE THE INPUT OF SAMPLE CASE 4 TO SHOW              48  OLD-        43    AA
RSI            C-----THE USE OF "MESS" AND "ERN" NODES.                                        49  OLD-        44    AA
RSI            C
                    IMAGING SURFACE     1) BCS (    BO), GENERATING SURFACE (   11) BCS (     BO)
                    IMAGING SURFACE     2) BCS (    BO), GENERATING SURFACE (   12) BCS (     BO)
                    IMAGING SURFACE     3) BCS (    BO), GENERATING SURFACE (   13) BCS (     BO)
                    IMAGING SURFACE     4) BCS (    BO), GENERATING SURFACE (   14) BCS (     BO)
RSI            R        REFNO        = 1000                                                    50  OLD-        45    AA
RSI                     P1           = 1.0, 0.0, 1.0                                           51  OLD-        46    AA
RSI                     P2           = 1.0, 0.0, 0.0                                           52  OLD-        47    AA
```

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
SURFACE DATA INPUT BLOCK

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

RSI                        P3        = 0.0, 0.0, 0.0                                               53  OLD-     48   AA
RSI                        COM       = * IMAGING PLANE *                                           54  OLD-     49   AA
RSI               BCS      LIDINR                                                                  55  OLD-     50   AA
RSI               S        SURFN     = 5                                                           56  OLD-     51   AA
RSI                        TYPE      = RECT                                                        57  OLD-     52   AA
RSI                        ACTIVE    = BOTTOM                                                      58  OLD-     53   AA
RSI                        PROP      = 0.9,0.9                                                     59  OLD-     54   AA
RSI                        P1        = 1.0, 1.0, 0.0                                               60  OLD-     55   AA
RSI                        COM       = * INNER RIGHT LID *                                         61  OLD-     56   AA
INPUT             BCS      LIDINL                                                                  62                AB
RSI               S        SURFN     = 15                                                          63  OLD-     57   AA
RSI                        IMAGSF    = 5                                                           64  OLD-     58   AA
RSI                        IREFSF    = 1000                                                        65  OLD-     59   AA
RSI                        COM       = * INNER LEFT LID *                                          66  OLD-     60   AA
RSI               BCS      BOXOUT                                                                  67  OLD-     61   AA
RSI               S        SURFN     = 21                                                          68  OLD-     62   AA
RSI                        TYPE      = BOX5                                                        69  OLD-     63   AA
RSI                        ACTIVE    = OUT                                                         70  OLD-     64   AA
RSI                        SHADE     = NO                                                          71  OLD-     65   AA
RSI                        PROP      = 0.2,0.9                                                     72  OLD-     66   AA
RSI                        P1        = 1.01,-1.01, 1.01                                            73  OLD-     67   AA
RSI                        P2        = 1.01, 1.01, 1.01                                            74  OLD-     68   AA
RSI                        P3        =-0.01, 1.01, 1.01                                            75  OLD-     69   AA
RSI                        P4        =-0.01, 1.01,-0.01                                            76  OLD-     70   AA
RSI                        COM       = * OUTER SURFACES *                                          77  OLD-     71   AA
RSI               BCS      LIDOUT                                                                  78  OLD-     72   AA
RSI               S        SURFN     = 26                                                          79  OLD-     73   AA
RSI                        TYPE      = RECT                                                        80  OLD-     74   AA
RSI                        ACTIVE    = TOP                                                         81  OLD-     75   AA
RSI                        SHADE     = NO                                                          82  OLD-     76   AA
RSI                        PROP      = 0.2,0.9                                                     83  OLD-     77   AA
RSI                        P1        = 1.01,-1.01, 0.01                                            84  OLD-     78   AA
RSI                        P2        = 1.01, 1.01, 0.01                                            85  OLD-     79   AA
RSI                        P3        =-0.01, 1.01, 0.01                                            86  OLD-     80   AA
RSI                        COM       = * OUTER SURFACE OF LID *                                    87  OLD-     81   AA
RSI               C                                                                                88  OLD-     82   AA
RSI               C-----THE NEXT TWO BCS'S (MESSR AND MESSL) ARE ACTIVATED IN SAMPLE               89  OLD-     83   AA
RSI               C-----CASE 4 ONLY.                                                               90  OLD-     84   AA
RSI               C                                                                                91  OLD-     85   AA
RSI               BCS      MESSR                                                                   92  OLD-     86   AA
RSI               S        SURFN     = 101                                                         93  OLD-     87   AA
RSI                        TYPE      = RECT                                                        94  OLD-     88   AA
RSI                        ACTIVE    = TOP                                                         95  OLD-     89   AA
RSI                        PROP      = 1.0,1.0                                                     96  OLD-     90   AA
RSI                        P1        = 1.0, 0.0, 1.0                                               97  OLD-     91   AA
RSI                        P2        = 1.0, 0.0, 0.0                                               98  OLD-     92   AA
RSI                        P3        = 0.0, 0.0, 0.0                                               99  OLD-     93   AA
RSI                        COM       = * PRIMARY MESS NODE, RIGHT SIDE *                          100  OLD-     94   AA
RSI               BCS      MESSL                                                                  101  OLD-     95   AA
RSI               S        SURFN     = 111                                                        102  OLD-     96   AA
RSI                        TYPE      = RECT                                                       103  OLD-     97   AA
```

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
SURFACE DATA INPUT BLOCK

```
CARD ORGIN     12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
RSI                     ACTIVE     = BOTTOM                                                      104  OLD-    98   AA
RSI                     PROP       = 1.0,1.0                                                     105  OLD-    99   AA
RSI                     P1         = 1.0, 0.0, 1.0                                               106  OLD-   100   AA
RSI                     P2         = 1.0, 0.0, 0.0                                               107  OLD-   101   AA
RSI                     P3         = 0.0, 0.0, 0.0                                               108  OLD-   102   AA
RSI                     COM        = * PRIMARY MESS NODE, LEFT SIDE *                            109  OLD-   103   AA
RSI            C                                                                                 110  OLD-   104   AA
RSI            C-----THE FOLLOWING BCS (LIDSP) IS ACTIVATED IN SAMPLE CASE 5 ONLY.               111  OLD-   105   AA
RSI            C                                                                                 112  OLD-   106   AA
RSI            BCS      LIDSP                                                                    113  OLD-   107   AA
RSI            S        SURFN      = 200                                                         114  OLD-   108   AA
RSI                     TYPE       = RECT                                                        115  OLD-   109   AA
RSI                     ACTIVE     = BOTTOM                                                      116  OLD-   110   AA
RSI                     PROP       = 0.1,0.1                                                     117  OLD-   111   AA
RSI                     SPRI       = 0.6                                                         118  OLD-   112   AA
RSI                     SPRS       = 0.8                                                         119  OLD-   113   AA
RSI                     P1         = 1.0,-1.0, 0.0                                               120  OLD-   114   AA
RSI                     P2         = 1.0, 1.0, 0.0                                               121  OLD-   115   AA
RSI                     P3         = 0.0, 1.0, 0.0                                               122  OLD-   116   AA
RSI                     COM        = * SPECULAR LID *                                            123  OLD-   117   AA
```

MODEL = SAMPLE
SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
BCS DATA INPUT BLOCK

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

RSI               HEADER BCS DATA                                                                     124   OLD-     118      AA
RSI               BCS    BOXINR                                                                       125   OLD-     119      AA
RSI               BCS    BOXINL                                                                       126   OLD-     120      AA
RSI               BCS    LIDINR ,0.,0.,1.,0.,-45.,0.                                                  127   OLD-     121      AA
INPUT             BCS    LIDINL,0.,0.,1.,0.,-45.,0.                                                   128                     AB
RSI               BCS    BOXOUT                                                                       129   OLD-     122      AA
RSI               BCS    LIDOUT ,0.,0.,1.,0.,-45.,0.                                                  130   OLD-     123      AA
RSI               BCS    MESSR                                                                        131   OLD-     124      AA
RSI               BCS    MESSL                                                                        132   OLD-     125      AA
RSI               BCS    LIDSP  ,0.,0.,1.,0.,-45.,0.                                                  133   OLD-     126      AA
```

SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL

MODEL = SAMPLE
FORM FACTOR DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
                                                                                             134     OLD-     127      AA
RSI             HEADER FORM FACTOR DATA                                                      135     OLD-     128      AA
RSI             C                                                                            136     OLD-     129      AA
RSI             C-----ENTER KNOWN ZERO FORM FACTORS AND EQUIVALENT FORM FACTORS FOR          137     OLD-     130      AA
RSI             C-----CASE1.                                                                 138     OLD-     131      AA
RSI             C                                                                            139     OLD-     132      AA
RSI             FIG    CASE1                                                                 140     OLD-     133      AA
RSI             NODEA  1,2,3,4,11,12,13,14,5,15,21,22,23,24,25,26,END                        141     OLD-     134      AA
RSI             BOTH   21,ZERO                                                               142     OLD-     135      AA
RSI                    22,ZERO                                                               143     OLD-     136      AA
RSI                    23,ZERO                                                               144     OLD-     137      AA
RSI                    24,ZERO                                                               145     OLD-     138      AA
RSI                    25,ZERO                                                               146     OLD-     139      AA
RSI                    26,ZERO                                                               147     OLD-     140      AA
RSI                    1,1,0.                                                                148     OLD-     141      AA
RSI                    11,12,1,2                                                             149     OLD-     142      AA
RSI                    11,13,1,3                                                             150     OLD-     143      AA
RSI                    11,14,1,4                                                             151     OLD-     144      AA
RSI                    11,15,1,5                                                             152     OLD-     145      AA
RSI                    1,11,0.                                                               153     OLD-     146      AA
RSI                    11,2,1,12                                                             154     OLD-     147      AA
RSI                    11,3,1,13                                                             155     OLD-     148      AA
RSI                    11,4,1,14                                                             156     OLD-     149      AA
RSI                    11,5,1,15                                                             157     OLD-     150      AA
RSI                    2,2,0.                                                                158     OLD-     151      AA
RSI                    2,3,1,2                                                               159     OLD-     152      AA
RSI                    2,4,1,4                                                               160     OLD-     153      AA
RSI                    12,13,2,3                                                             161     OLD-     154      AA
RSI                    12,14,2,4                                                             162     OLD-     155      AA
RSI                    12,15,2,5                                                             163     OLD-     156      AA
RSI                    12,3,2,13                                                             164     OLD-     157      AA
RSI                    12,4,2,14                                                             165     OLD-     158      AA
RSI                    12,5,2,15                                                             166     OLD-     159      AA
RSI                    3,3,0.                                                                167     OLD-     160      AA
RSI                    3,4,1,4                                                               168     OLD-     161      AA
RSI                    13,14,3,4                                                             169     OLD-     162      AA
RSI                    13,15,3,5                                                             170     OLD-     163      AA
RSI                    3,13,0.                                                               171     OLD-     164      AA
RSI                    13,4,3,14                                                             172     OLD-     165      AA
RSI                    13,5,3,15                                                             173     OLD-     166      AA
RSI                    4,4,0.                                                                174     OLD-     167      AA
RSI                    14,15,4,5                                                             175     OLD-     168      AA
RSI                    4,14,0.                                                               176     OLD-     169      AA
RSI                    14,5,4,15                                                             177     OLD-     170      AA
RSI                    5,5,0.                                                                178     OLD-     171      AA
RSI                    5,15,0.                                                               179                       AB
INPUT           C                                                                            180                       AB
INPUT           C-----SPECIFY CALCULATION OF FORM FACTORS FOR ENCLOSURE 1 BY                 181                       AB
INPUT           C-----THE USE OF UNIT SPHERE LOGIC (NO SHADOWING)                            182                       AB
INPUT           C                                                                            183                       AB
INPUT           FIG    ENCL1                                                                 184                       AB
INPUT           UNIT
```

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR DATA INPUT BLOCK

CARD ORGIN	12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8	EDIT NO.	OLD EDIT NO.	LABEL
INPUT	C	185		AB
INPUT	C-----SPECIFY CALCULATION OF FORM FACTORS FOR ENCLOSURE 2 BY	186		AB
INPUT	C-----THE USE OF UNIT SPHERE LOGIC (NO SHADOWING)	187		AB
INPUT	C	188		AB
INPUT	FIG ENCL2	189		AB
INPUT	UNIT	190		AB

```
MODEL = SAMPLE                                    SAMPLE CASE 4  -  FFCAL/GBCAL/RCCAL
CORRESPONDENCE DATA INPUT BLOCK

CARD ORGIN     12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

RSI            HEADER CORRESPONDENCE DATA                                                       191  OLD-     172    AA
RSI            C                                                                                192  OLD-     173    AA
RSI            C-----ENTER CORRESPONDENCE DATA FOR CASE 2                                       193  OLD-     174    AA
RSI            C                                                                                194  OLD-     175    AA
RSI            FIG     CASE2                                                                    195  OLD-     176    AA
RSI                    1             = 1,11,22                                                  196  OLD-     177    AA
RSI                    2             = 2,25                                                     197  OLD-     178    AA
RSI                    3             = 3,13,24                                                  198  OLD-     179    AA
RSI                    4             = 4,14,21                                                  199  OLD-     180    AA
RSI                    5             = 5,15,26                                                  200  OLD-     181    AA
RSI                    12            = 12,23                                                    201  OLD-     182    AA
RSI            C                                                                                202  OLD-     183    AA
RSI            C-----ENTER CORRESPONDENCE DATA FOR CASE 3 TO COMBINE FORM FACTORS               203  OLD-     184    AA
RSI            C                                                                                204  OLD-     185    AA
RSI            FIG     CASE3,FF                                                                 205  OLD-     186    AA
RSI                    1             = 1,11,22                                                  206  OLD-     187    AA
RSI                    2             = 2,25                                                     207  OLD-     188    AA
RSI                    3             = 3,13,24                                                  208  OLD-     189    AA
RSI                    4             = 4,14,21                                                  209  OLD-     190    AA
RSI                    5             = 5,15,26                                                  210  OLD-     191    AA
RSI                    12            = 12,23                                                    211  OLD-     192    AA
```

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
OPERATION DATA INPUT BLOCK (PASS 1)

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
RSI               HEADER OPERATIONS DATA                                                              212  OLD-       193    AA
```

+++++ OPERATIONS DATA BLOCK (PASS 1) COMPLETE +++++

```
MODEL = SAMPLE                                          SAMPLE CASE 4  -  FFCAL/GBCAL/RCCAL
OPERATION DATA INPUT BLOCK  (PASS 2)

CARD ORGIN    12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
                                                                                              213    OLD-     194    AA
RSI           C                                                                               214                    AB
INPUT         C                                                                               215                    AB
INPUT         C-----CLOSE BOX LID                                                             216                    AB
INPUT         C                                                                               217                    AB
INPUT                CALL CHGBLK(LIDINR,0.,0.,1.,1,2,3,0.,0.,0.)                              218                    AB
INPUT                CALL CHGBLK(LIDINL,0.,0.,1.,1,2,3,0.,0.,0.)                              219                    AB
INPUT         C                                                                               220                    AB
INPUT         C-----BUILD ENCL1 CONFIGURATION                                                 221                    AB
INPUT         C                                                                                -0
PROG          STEP       -1                                                                   222                    AB
INPUT         BUILD  ENCL1,BOXINR,LIDINR,MESSR                                                 -0
PROG                 CALL BUILDC (BOXINR,6HENCL1 )                                             -0
PROG                 CALL ADD (LIDINR)                                                         -0
PROG                 CALL ADD (MESSR )                                                        223                    AB
INPUT         C                                                                               224                    AB
INPUT         C-----CALCULATE FORM FACTORS FOR ENCLOSURE 1                                    225                    AB
INPUT         C                                                                               226                    AB
INPUT                CALL RSTOFF                                                              227                    AB
INPUT         L      FFCAL                                                                    228                    AB
INPUT         C                                                                               229                    AB
INPUT         C-----CALCULATE GRAY BODY FACTORS FOR ENCLOSURE 1                               230                    AB
INPUT         C                                                                               231                    AB
INPUT                CALL GBDATA(IR,0,FF)                                                     232                    AB
INPUT         L      GBCAL                                                                    233                    AB
INPUT         C                                                                               234                    AB
INPUT         C-----CALCULATE RADK'S FOR ENCLOSURE 1                                          235                    AB
INPUT         C                                                                               236                    AB
INPUT                CALL RCDATA(0,0,0,0,0,0,0,0,0,0,0,0,0,0,IPRIM1,ISEC1)                    237                    AB
INPUT         L      RCCAL                                                                    238                    AB
INPUT         C                                                                               239                    AB
INPUT         C-----BUILD ENCL2 CONFIGURATION                                                 240                    AB
INPUT         C                                                                                -0
PROG          STEP       -2                                                                   241                    AB
INPUT         BUILD  ENCL2,BOXINL,LIDINL,MESSL                                                 -0
PROG                 CALL BUILDC (BOXINL,6HENCL2 )                                             -0
PROG                 CALL ADD (LIDINL)                                                         -0
PROG                 CALL ADD (MESSL )                                                        242                    AB
INPUT         C                                                                               243                    AB
INPUT         C-----CALCULATE FORM FACTORS FOR ENCLOSURE 2                                    244                    AB
INPUT         C                                                                               245                    AB
INPUT         L      FFCAL                                                                    246                    AB
INPUT         C                                                                               247                    AB
INPUT         C-----CALCULATE GRAY BODY FACTORS FOR ENCLOSURE 2                               248                    AB
INPUT         C                                                                               249                    AB
INPUT                CALL GBDATA(IR,0,FF)                                                     250                    AB
INPUT         L      GBCAL                                                                    251                    AB
INPUT         C                                                                               252                    AB
INPUT         C-----CALCULATE RADK'S FOR ENCLOSURE 2 UTILIZING AN "ERN" NODE                  253                    AB
INPUT         C                                                                               254                    AB
INPUT                CALL RCDATA(0,0,0,0,0,0,0,0,0,0,0,1.E-99,555,IPRIM2,ISEC2)               255                    AB
INPUT         L      RCCAL                                                                    256                    AA
RSI           END OF DATA
```

```
MODEL = SAMPLE                                        SAMPLE CASE 4  -  FFCAL/GBCAL/RCCAL
PROCESSOR CORE ALLOCATION

THE FOLLOWING IS THE PROCESSOR CORE ALLOCATION FOR THOSE SEGMENTS WHICH WILL BE LOADED IN THIS EXECUTION (APPROX.) ...

                                                       OCTAL/DECIMAL

TRASYS (0) SEGMENT ............................. 033517/ 14159
OPERATIONS DATA (NOT KNOWN AT THIS TIME)........ 075000/ 31232
INITALIZATION SEGMENT .......................... 037600/ 16256
FORM FACTOR SEGMENT ............................ 100200/ 32896
GRAY BODY SEGMENT .............................. 052500/ 21824
RADATION CONDUCTOR SEGMENT ..................... 050000/ 20480

GRAY BODY DYNAMIC COMMON ....................... 004600/  2432
RADIATION CONDUCTOR DYNAMIC COMMON ............. 000574/   380

GRAY BODY MINIMUM - MAXIMUM CORE ............... 052410/ 21768 - 052410/ 21768
RADIATION CONDUCTOR MINIMUM - MAXIMUM CORE ..... 047523/ 20307 - 047767/ 20471

++CAUTION    1++ THE FFPROG SEGMENT APPEARS TO BE TOO LONG FOR AMOUNT OF CORE (075000B) AVAILABLE

MINIMUM CORE NEEDED FOR PROCESSOR EXECUTION .... 100200/ 32896

MAXIMUM CORE NEEDED FOR PROCESSOR EXECUTION .... 100200/ 32896

AMOUNT OF CORE THAT WILL BE USED BY PROCESSSOR . 100200/ 32896
```

MODEL = SAMPLE
SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL

WRAP UP OF THE PRE-PROCESSOR

CAUTION MESSAGE(S) OCCUR FOLLOWING THE FIRST 100 OR LESS EDIT SEQUENCE NUMBER(S) LISTED BELOW ...

256

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
WRAP UP OF THE PRE-PROCESSOR

PRE-PROCESSOR ACCOUNTING INFORMATION	CP-SEC	PP-SEC	DYM-STORAGE
SOURCE EDITING	.859	3	515
DOCUMENTATION DATA PRE-PROCESSING	0.	0	0
QUANTITIES DATA PRE-PROCESSING	.012	0	266
ARRAY DATA PRE-PROCESSING	.069	0	20
SURFACE DATA PRE-PROCESSING (PASS 1) ...	1.173	3	64
SURFACE DATA PRE-PROCESSING (PASS 2) ...	.224	4	1141
BCS DATA PRE-PROCESSING	.143	1	201
FORM FACTOR DATA PRE-PROCESSING	.744	2	1169
SHADOW DATA PRE-PROCESSING	0.	0	0
FLUX DATA PRE-PROCESSING	0.	0	0
CORRESPONDENCE DATA PRE-PROCESSING	.198	1	101
OPERATIONS DATA PRE-PROCESSING	1.756	2	892
SUBROUTINE DATA PRE-PROCESSING	.137	1	0
SEQUENTIAL TAPE INITIATION	.026	0	0

TOTAL CP TIME FOR PRE-PROCESSOR .... 6.588 DECIMAL SECONDS OR 000007 OCTAL SECONDS

TOTAL PP TIME FOR PRE-PROCESSOR .... 21 DECIMAL SECONDS OR 000025 OCTAL SECONDS

MINIMUM DYNAMIC STORAGE NEEDED BY PRE-PROCESSOR .. 1169 DECIMAL WORDS

DYNAMIC STORAGE AVAILABLE TO PRE-PROCESSOR .... 3384 DECIMAL WORDS

MINIMUM CORE NEEDED FOR PRE-PROCESSOR EXECUTION .. 071000 OCTAL WORDS

* * * * * * * * * *
NUMBER OF CAUTION MESSAGES .. 1
* * * * * * * * * *

NORMAL TERMINATION BY PRE-PROCESSOR

N A S A / M A R T I N   M A R I E T T A
T H E R M A L   R A D I A T I O N   A N A L Y S I S   S Y S T E M
C D C 6 5 0 0 / S C O P E 3 . 4

T R A S Y S   I I

```
TTTTTTTTTTTTT
TTTTTTTTTTTTT
TT   TTT   TT
     TTT
     TTT
     TTT
     TTT
     TTT
   TTTTTTT

RRRRRRRRR
RRRRRRRRRR
RRR     RRR
RRR     RRR
RRRRRRRRRR
RRR  RRR
RRR   RRR
RRR    RRR
RRR     RRRR

  AAAAAAA
 AAAAAAAAA
AAAAAAAAAAA
AAA     AAA
AAA     AAA
AAAAAAAAAAA
AAA     AAA
AAA     AAA
AAA     AAA
AAAAA  AAAAA

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
         SSS
 SS      SSS
 SSSSSSSSSSSS
  SSSSSSSSSS

YYYY     YYYY
 YYY     YYY
  YYY   YYY
   YYY YYY
    YYYYY
     YYY
     YYY
     YYY
   YYYYYYY

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
         SSS
 SS      SSS
 SSSSSSSSSSSS
  SSSSSSSSSS
```

P R E - P R O C E S S O R   E X E C U T I O N

LATEST LIBRARY MOD.VER NUMBER SL2E1
LAST LIBRARY MODIFICATION DATE 05/09/77

DATE OF THIS PROCESSOR RUN 05/10/77
TIME OF THIS PROCESSOR RUN .... 16.50.37.
JOB NUMBER OF THIS PROCESSOR RUN .... RFRFIRF

MODEL=SAMPLE CONFIG=SAMPLE STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
PROCESSING OPERATIONS DATA

++

THE OPERATIONS DATA SEGMENT USES ABOUT 036700 OCTAL WORDS OF CORE STORAGE

++

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
PROCESSING OPERATIONS DATA

NODE	BCS	AREA	ALPH	EMISS	SURF. TYPE	ACTIVE	--------COMMENTS--------------
1	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
2	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
3	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
4	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
5	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT LID
101	MESSR	1.00000	1.000	1.000	RECTANGLE	TOP	PRIMARY MESS NODE, RIGHT SIDE

NODE, AREA, AND PROPERTIES ARRAYS HAVE BEEN WRITTEN ON THE -RSO- TAPE
BY -BUILDC- (ACCESS NUMBER= 1)

ADJUSTING FIELD LENGTH TO 100200 FOR THE FF SEGMENT

+++

CANNOT ADJUST FIELD LENGTH TO 100200 LEAVING FIELD LENGTH AT 075000 AND CONTINUING

+++

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR CALCULATION LINK.

FORM FACTORS AND COMBINED FORM FACTORS - USER INPUT AND DEFAULT PARAMETERS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
FFACC	.0500	.0500	ORIENTATION ACCURACY PARAMETER	N/A
FFACCS	.1000	.1000	SHADOWING ACCURACY PARAMETER	N/A
FFMIN	1.0E-06	1.0E-06	PARAMETER TO ELIMINATE SMALL FORM FACTORS	N/A
FFNOSH	SHAD	SHAD	OVER RIDE SHADOWING PARAMETER	(SHAD,NOSH)
+FFPNCH	NO	NO	PARAMETER TO PUNCH FORM FACTORS	(YES,NO)
FFPRNT	YES	YES	FLAG FOR COMPREHENSIVE FF AND CM PRINT	(YES,NO,FF,CM,RB)
FFRATL	15.0	15.0	RATIO FOR USING SUB-NODE TECHNIQUE	N/A
FFCMB	CORR	CORR	FLAG FOR COMBINING FORM FACTORS	(YES,NO,AUTO,CORR)

+ -FFPNCH WILL DEFAULT TO -YES- ON CALCULATED VALUES IF THE -RSO- FILE IS NOT SPECIFIED IN THE OPTIONS DATA BLOCK

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR CALCULATION LINK.

NODE	AREA	ALPH	EMISS
1	1.00000	.900	.900
2	1.00000	.900	.900
3	1.00000	.900	.900
4	1.00000	.900	.900
5	1.00000	.900	.900
101	1.00000	1.000	1.000

NUMBER OF NODES = 6 NUMBER OF SURFACES = 6

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUSE OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ
1	2	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.089	16	1
1	3	CAL	.201741	.201741	.201741	.201741	.201741	1.000000	1.000000	.061	16	1
1	4	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.060	16	1
1	5	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.065	16	1
1	101	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.059	16	1
1	FF SUM = 1.0000		ROW CP TIME =		.380							
2	3	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.060	16	1
2	4	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.065	16	1
2	5	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.060	16	1
2	101	CAL	.201741	.201741	.201741	.201741	.201741	1.000000	1.000000	.059	16	1
2	FF SUM = 1.0000		ROW CP TIME =		.275							
3	4	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.061	16	1
3	5	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.059	16	1
3	101	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.060	16	1
3	FF SUM = 1.0000		ROW CP TIME =		.203							
4	5	CAL	.201741	.201741	.201741	.201741	.201741	1.000000	1.000000	.062	16	1
4	101	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.059	16	1
4	FF SUM = 1.0000		ROW CP TIME =		.136							
5	101	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.060	16	1
5	FF SUM = 1.0000		ROW CP TIME =		.069							
101	FF SUM = 1.0000		ROW CP TIME =		.001							

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR CALCULATION LINK.

SUMMARY OF FORM FACTOR SUMS FOR ALL NODES

NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM
1- 1.0000	2- 1.0000	3- 1.0000	4- 1.0000	5- 1.0000	101- 1.0000

TOTAL TIME FOR FORM FACTOR SEGMENT 1.218

TOTAL TIME SINCE START OF RUN 50.645

ADJUSTING FIELD LENGTH TO 036700 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 052500 FOR THE GB SEGMENT

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
GRAY BODIES COMPUTATION LINK.

GREY BODIES

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
GBWBND	IR	NONE	WAVEBAND DEFINITION PARAMETER	(IR,SOL,BOTH)

IR GRAY BODIES STORED FOR CONFIGURATION ENCL1

TOTAL TIME TO COMPUTE GRAY BODIES .18

ADJUSTING FIELD LENGTH TO 036700 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 050000 FOR THE RC SEGMENT

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTORS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
RKPNCH	PUN	NO	PUNCH/NO PUNCH PARAMETER FOR RADKS	(YES,NO)
RKMIN	.0001	0.0001	PARAMETER TO ELIMINATE SMALL RADK S	N/A
IRKCN	1	1	INITIAL RADIATION CONDUCTOR ID NUMBER	N/A
RKSP	NO	NO	MNEMONIC FLAG FOR COMPUTATION OF RADKS TO SPACE	(SPACE,NO)
IRKNSP	32767	32767	SPACE NODE ID NUMBER	N/A
SIGMA	1.71E-09	1.713E-9	STEFAN-BOLTZMANN CONSTANT	N/A
RKAMPF	1.00	1.0	AREA MULTIPLYING FACTOR	N/A
RKTAPE	NO	NO	PARAMETER TO OUTPUT TO BCD TAPE	(TAPE,NO)
RFRAC	7.0E-01	0.7	SIGNIFICANT RADIATION FRACTION	(0. TO 1.)
RTOL	.990	0.99	DECIMAL FRACTION OF LAST RADK SAVED	N/A
NERN	0	0	EFFECTIVE RADIATION NODE (ERN) NUMBER	N/A

SPECIAL RADIATION NODES

NONE

MESS SPECIAL NODES

PRIMARY	SECONDARY
101	111

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTOR (RADKS) CARDS PUNCHED

AREA UNITS = INPUT UNITS * AMPF, WHERE AMPF = 1.00000

PUNCHED RADKS	-	1.	1.	2.	1.7130000E-09*	1.7227783E-01
PUNCHED RADKS	-	2.	1.	3.	1.7130000E-09*	1.7400479E-01
PUNCHED RADKS	-	3.	1.	4.	1.7130000E-09*	1.7231450E-01
PUNCHED RADKS	-	4.	1.	5.	1.7130000E-09*	1.7231450E-01
PUNCHED RADKS	-	5.	-1.	101.	1.7130000E-09*	1.9528148E-01
PUNCHED RADKS	-	6.	-111.	1.	1.7130000E-09*	1.9528148E-01
PUNCHED RADKS	-	7.	2.	3.	1.7130000E-09*	1.7227783E-01
PUNCHED RADKS	-	8.	2.	4.	1.7130000E-09*	1.7227783E-01
PUNCHED RADKS	-	9.	2.	5.	1.7130000E-09*	1.7227783E-01
PUNCHED RADKS	-	10.	-2.	101.	1.7130000E-09*	1.9715549E-01
PUNCHED RADKS	-	11.	-111.	2.	1.7130000E-09*	1.9715549E-01
PUNCHED RADKS	-	12.	3.	4.	1.7130000E-09*	1.7231450E-01
PUNCHED RADKS	-	13.	3.	5.	1.7130000E-09*	1.7231450E-01
PUNCHED RADKS	-	14.	-3.	101.	1.7130000E-09*	1.9528148E-01
PUNCHED RADKS	-	15.	-111.	3.	1.7130000E-09*	1.9528148E-01
PUNCHED RADKS	-	16.	4.	5.	1.7130000E-09*	1.7400479E-01
PUNCHED RADKS	-	17.	-4.	101.	1.7130000E-09*	1.9528148E-01
PUNCHED RADKS	-	18.	-111.	4.	1.7130000E-09*	1.9528148E-01
PUNCHED RADKS	-	19.	-5.	101.	1.7130000E-09*	1.9528148E-01
PUNCHED RADKS	-	20.	-111.	5.	1.7130000E-09*	1.9528148E-01
PUNCHED RADKS	-	21.	-101.	111.	1.7130000E-09*	2.1740377E-02

```
THE INPUT SIGNIFICANT RADIATION FRACTION = .700

THE NUMBER OF CONDUCTORS INPUT  =    21
THE NUMBER OF CONDUCTORS OUTPUT =    21
WHICH IS A  0.  PERCENT REDUCTION IN THE NUMBER OF CONDUCTORS.

100.0 PERCENT OF THE TOTAL EMISSIVE POWER IS EXACTLY COUPLED.



TOTAL TIME TO COMPUTE AND CONDENSE RADKS =    .37

ADJUSTING FIELD LENGTH TO 036700 FOR THE OD SEGMENT
```

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
PROCESSING OPERATIONS DATA

NODE	BCS	AREA	ALPH	EMISS	SURF. TYPE	ACTIVE	--------COMMENTS--------------
11	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
12	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
13	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
14	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
15	LIDINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER LEFT LID
111	MESSL	1.00000	1.000	1.000	RECTANGLE	BOTTOM	PRIMARY MESS NODE, LEFT SIDE

NODE, AREA, AND PROPERTIES ARRAYS HAVE BEEN WRITTEN ON THE -RSO- TAPE
BY -BUILDC- (ACCESS NUMBER= 2)

ADJUSTING FIELD LENGTH TO 100200 FOR THE FF SEGMENT

++

CANNOT ADJUST FIELD LENGTH TO 100200 LEAVING FIELD LENGTH AT 075000 AND CONTINUING

++

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR CALCULATION LINK.

FORM FACTORS AND COMBINED FORM FACTORS - USER INPUT AND DEFAULT PARAMETERS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
FFACC	.0500	.0500	ORIENTATION ACCURACY PARAMETER	N/A
FFACCS	.1000	.1000	SHADOWING ACCURACY PARAMETER	N/A
FFMIN	1.0E-06	1.0E-06	PARAMETER TO ELIMINATE SMALL FORM FACTORS	N/A
FFNOSH	SHAD	SHAD	OVER RIDE SHADOWING PARAMETER	(SHAD,NOSH)
+FFPNCH	NO	NO	PARAMETER TO PUNCH FORM FACTORS	(YES,NO)
FFPRNT	YES	YES	FLAG FOR COMPREHENSIVE FF AND CM PRINT	(YES,NO,FF,CM,RB)
FFRATL	15.0	15.0	RATIO FOR USING SUB-NODE TECHNIQUE	N/A
FFCMB	NO	CORR	FLAG FOR COMBINING FORM FACTORS	(YES,NO,AUTO,CORR)

+ -FFPNCH WILL DEFAULT TO -YES- ON CALCULATED VALUES IF THE -RSO- FILE IS NOT SPECIFIED IN THE OPTIONS DATA BLOCK

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR CALCULATION LINK.

NODE	AREA	ALPH	EMISS
11	1.00000	.900	.900
12	1.00000	.900	.900
13	1.00000	.900	.900
14	1.00000	.900	.900
15	1.00000	.900	.900
111	1.00000	1.000	1.000

NUMBER OF NODES = 6 NUMBER OF SURFACES = 6

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUSE OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ
11	12	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.089	16	1
11	13	CAL	.201741	.201741	.201741	.201741	.201741	1.000000	1.000000	.061	16	1
11	14	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.059	16	1
11	15	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.059	16	1
11	111	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.059	16	1
11	FF SUM =	1.0000	ROW CP TIME =		.366							
12	13	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.059	16	1
12	14	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.063	16	1
12	15	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.061	16	1
12	111	CAL	.201741	.201741	.201741	.201741	.201741	1.000000	1.000000	.060	16	1
12	FF SUM =	1.0000	ROW CP TIME =		.272							
13	14	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.058	16	1
13	15	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.062	16	1
13	111	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.058	16	1
13	FF SUM =	1.0000	ROW CP TIME =		.203							
14	15	CAL	.201741	.201741	.201741	.201741	.201741	1.000000	1.000000	.060	16	1
14	111	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.061	16	1
14	FF SUM =	1.0000	ROW CP TIME =		.137							
15	111	CAL	.199570	.199570	.199570	.199570	.199570	1.000000	1.000000	.059	16	1
15	FF SUM =	1.0000	ROW CP TIME =		.070							
111	FF SUM =	1.0000	ROW CP TIME =		.003							

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR CALCULATION LINK.

SUMMARY OF FORM FACTOR SUMS FOR ALL NODES

NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM
11- 1.0000	12- 1.0000	13- 1.0000	14- 1.0000	15- 1.0000	111- 1.0000

TOTAL TIME FOR FORM FACTOR SEGMENT 1.207

TOTAL TIME SINCE START OF RUN 53.001

ADJUSTING FIELD LENGTH TO 036700 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 052500 FOR THE GB SEGMENT

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
GRAY BODIES COMPUTATION LINK.

VARIABLE NAME	CURRENT VALUE	DEFAULT	GREY BODIES DEFINITION	OPTIONS
GBWBND	IR	NONE	WAVEBAND DEFINITION PARAMETER	(IR,SOL,BOTH)

IR GRAY BODIES STORED FOR CONFIGURATION ENCL2

TOTAL TIME TO COMPUTE GRAY BODIES .17

ADJUSTING FIELD LENGTH TO 036700 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 050000 FOR THE RC SEGMENT

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTORS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
RKPNCH	PUN	NO	PUNCH/NO PUNCH PARAMETER FOR RADKS	(YES,NO)
RKMIN	.0001	0.0001	PARAMETER TO ELIMINATE SMALL RADK S	N/A
IRKCN	1	1	INITIAL RADIATION CONDUCTOR ID NUMBER	N/A
RKSP	NO	NO	MNEMONIC FLAG FOR COMPUTATION OF RADKS TO SPACE	(SPACE,NO)
IRKNSP	32767	32767	SPACE NODE ID NUMBER	N/A
SIGMA	1.71E-09	1.713E-9	STEFAN-BOLTZMANN CONSTANT	N/A
RKAMPF	1.00	1.0	AREA MULTIPLYING FACTOR	N/A
RKTAPE	NO	NO	PARAMETER TO OUTPUT TO BCD TAPE	(TAPE,NO)
RFRAC	7.0E-01	0.7	SIGNIFICANT RADIATION FRACTION	(0. TO 1.)
RTOL	1.000E-99	0.99	DECIMAL FRACTION OF LAST RADK SAVED	N/A
NERN	555	0	EFFECTIVE RADIATION NODE (ERN) NUMBER	N/A

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
GRAY BODIES COMPUTATION LINK.

GREY BODIES

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
GBWBND	IR	NONE	WAVEBAND DEFINITION PARAMETER	(IR,SOL,BOTH)

IR GRAY BODIES STORED FOR CONFIGURATION ENCL2

TOTAL TIME TO COMPUTE GRAY BODIES .17

ADJUSTING FIELD LENGTH TO 036700 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 050000 FOR THE RC SEGMENT

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTORS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
RKPNCH	PUN	NO	PUNCH/NO PUNCH PARAMETER FOR RADKS	(YES,NO)
RKMIN	.0001	0.0001	PARAMETER TO ELIMINATE SMALL RADK S	N/A
IRKCN	1	1	INITIAL RADIATION CONDUCTOR ID NUMBER	N/A
RKSP	NO	NO	MNEMONIC FLAG FOR COMPUTATION OF RADKS TO SPACE	(SPACE,NO)
IRKNSP	32767	32767	SPACE NODE ID NUMBER	N/A
SIGMA	1.71E-09	1.713E-9	STEFAN-BOLTZMANN CONSTANT	N/A
RKAMPF	1.00	1.0	AREA MULTIPLYING FACTOR	N/A
RKTAPE	NO	NO	PARAMETER TO OUTPUT TO BCD TAPE	(TAPE,NO)
RFRAC	7.0E-01	0.7	SIGNIFICANT RADIATION FRACTION	(0. TO 1.)
RTOL	1.000E-99	0.99	DECIMAL FRACTION OF LAST RADK SAVED	N/A
NERN	555	0	EFFECTIVE RADIATION NODE (ERN) NUMBER	N/A

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

SPECIAL RADIATION NODES

NONE

MESS SPECIAL NODES

PRIMARY	SECONDARY
111	101

RADIATION CONDUCTOR (RADKS) CARDS PUNCHED

AREA UNITS = INPUT UNITS * AMPF, WHERE AMPF = 1.00000

		****	11,	11,	1.7130000E-09*	1.3826315E-02
PUNCHED RADKS	-	1,	11,	12,	1.7130000E-09*	1.7227783E-01
PUNCHED RADKS	-	2,	11,	13,	1.7130000E-09*	1.7400479E-01
PUNCHED RADKS	-	3,	11,	14,	1.7130000E-09*	1.7231450E-01
PUNCHED RADKS	-	4,	11,	15,	1.7130000E-09*	1.7231450E-01
PUNCHED RADKS	-	5,	-11,	111,	1.7130000E-09*	1.9528148E-01
PUNCHED RADKS	-	6,	-101,	11,	1.7130000E-09*	1.9528148E-01
		****	12,	12,	1.7130000E-09*	1.3752613E-02
PUNCHED RADKS	-	7,	12,	13,	1.7130000E-09*	1.7227783E-01
PUNCHED RADKS	-	8,	12,	14,	1.7130000E-09*	1.7227783E-01
PUNCHED RADKS	-	9,	12,	15,	1.7130000E-09*	1.7227783E-01
PUNCHED RADKS	-	10,	-12,	111,	1.7130000E-09*	1.9715549E-01
PUNCHED RADKS	-	11,	-101,	12,	1.7130000E-09*	1.9715549E-01
		****	13,	13,	1.7130000E-09*	1.3826315E-02
PUNCHED RADKS	-	12,	13,	14,	1.7130000E-09*	1.7231450E-01
PUNCHED RADKS	-	13,	13,	15,	1.7130000E-09*	1.7231450E-01
PUNCHED RADKS	-	14,	-13,	111,	1.7130000E-09*	1.9528148E-01
PUNCHED RADKS	-	15,	-101,	13,	1.7130000E-09*	1.9528148E-01
		****	14,	14,	1.7130000E-09*	1.3826315E-02
PUNCHED RADKS	-	16,	14,	15,	1.7130000E-09*	1.7400479E-01
PUNCHED RADKS	-	17,	-14,	111,	1.7130000E-09*	1.9528148E-01
PUNCHED RADKS	-	18,	-101,	14,	1.7130000E-09*	1.9528148E-01
		****	15,	15,	1.7130000E-09*	1.3826315E-02
PUNCHED RADKS	-	19,	-15,	111,	1.7130000E-09*	1.9528148E-01
PUNCHED RADKS	-	20,	-101,	15,	1.7130000E-09*	1.9528148E-01
PUNCHED RADKS	-	21,	-111,	101,	1.7130000E-09*	2.1740377E-02

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

THE INPUT SIGNIFICANT RADIATION FRACTION = .700

THE NUMBER OF CONDUCTORS INPUT = 21
THE NUMBER OF CONDUCTORS OUTPUT = 21
WHICH IS A 0. PERCENT REDUCTION IN THE NUMBER OF CONDUCTORS.

100.0 PERCENT OF THE TOTAL EMISSIVE POWER IS EXACTLY COUPLED.

TOTAL TIME TO COMPUTE AND CONDENSE RADKS = .45

ADJUSTING FIELD LENGTH TO 036700 FOR THE OD SEGMENT

NASA/MARTIN MARIETTA
THERMAL RADIATION ANALYSIS SYSTEM
CDC6500/SCOPE 3.4

TRASYS II

```
TTTTTTTTTTTT
TTTTTTTTTTTT
TT   TTT   TT
     TTT
     TTT
     TTT
     TTT
     TTT
   TTTTTTT

RRRRRRRRR
RRRRRRRRRR
RRR      RRR
RRR      RRR
RRRRRRRRRR
RRR  RRR
RRR   RRR
RRR    RRR
RRR     RRRR

  AAAAAAA
 AAAAAAAAA
AAAAAAAAAAA
AAA     AAA
AAA     AAA
AAAAAAAAAAA
AAA     AAA
AAA     AAA
AAA     AAA
AAAAA   AAAAA

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
          SSS
 SS       SSS
 SSSSSSSSSSSS
  SSSSSSSSSS

YYYY     YYYY
 YYY     YYY
  YYY   YYY
   YYY YYY
    YYYYY
     YYY
     YYY
     YYY
   YYYYYYY

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
          SSS
 SS       SSS
 SSSSSSSSSSSS
  SSSSSSSSSS
```

PRE-PROCESSOR EXECUTION

VERSION.MODIFICATION ... SC2E2
MODIFICATION DATE 05/09/77

DATE OF RUN 06/01/77
TIME OF RUN 17.56.15
JOB NUMBER RGEX1CJ

```
MODEL =  N/A
OPTION AND TITLE DATA BLOCKS

CARD ORGIN          12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT               HEADER OPTIONS DATA
INPUT               TITLE  SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
INPUT                      MODEL        = SAMPLE
INPUT                      RSO          = RSTSAM5
INPUT                     RSI           =RSTSAM5
```

```
******************************************************************

    A T T E N T I O N   T R A S Y S   U S E R S

******************************************************************

  NEWRL     04/02/76

THE TRASYS -N- VERSION HAS BEEN UPDATED TO SC2D1 AND SL2D1.

ALL TRASYS T VERSION USERS SHOULD CONVERT THEIR MODELS TO THE
TRASYS N VERSION.  HOWEVER, THIS CONSTITUTES A CHANGE TO THE
CALL TO THE FOLLOWING ROUTINES ...

DIDT1,DIDT1S,DIDT2,DIDT2S,DIDT3,DIDT3S,GBAPRX,RCDATA,RKDATA

  CALL DIDT1 (DINOSH,DIACC,DIACCS,TRUEAN,NSPFF,TIMEPR,
             DIPNCH,ISFAC)
  CALL DIDT1S (TRUEAN,NSPFF,TIMEPR,DIPNCH,ISFAC)
  CALL DIDT2 (DINOSH,DIACC,DIACCS,NSPFF,SUNCL,SUNCO,PLCL,
             PLCO,TIMEPR,ALT,DIPNCH,ISFAC)
  CALL DIDT2S (NSPFF,SUNCL,SUNCO,PLCL,PLCO,TIMEPR,
              ALT,DIPNCH,ISFAC)
  CALL DIDT3 (DINOSH,DIACCS,TIMEPR,DIPNCH,ISFAC)
  CALL DIDT3S (ITOD,ISFAC)

  WHERE ...
       ISFAC = 3HYES CAUSES DIRECT FLUX SHADOW FACTORS TO
                     BE WRITTEN TO THE RSO FILE.  THIS DATA
                     IS SKIPPED ON RESTART.
             = 0     NO SHADOW FACTORS WILL BE WRITTEN TO
                     THE RSO FILE.  (CURRENT METHOD).

  CALL GBAPRX (GBWBND,6HCFIBFF)

  WHERE ...
       CFIGFF = THE CONFIGURATION NAME FOR FORM FACTOR ACCESS.

  CALL RCDATA (6HCFIGGB,RKPNCH,RKMIN,IRKCN,RKSP,IRKNSP,SIGMA,
               RKAMPF,RKTAPE,RFRAC,NERN,IPRIME,ISECND)

  CALL RKDATA (6HCFIGGB,RKPNCH,RKMIN,IRKCN,RKSP,IRKNSP,
                   SIGMA,RKAMPF,RKTAPE)

  WHERE ...
       CFIGGB = THE CONFIGURATION NAME FOR GRAY BODY FACTOR
                ACCESS.
******************************************************************
```

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
TRASYS INFORMATION TO USER

```
          OPTIONS DATA -INFO- OPTIONS ARE ...

            INFO = BUILD        BUILD EXECUTION CARD
            INFO = INFO         HOW TO USE TRASYS INFO FILE
            INFO = ITRCPP       PREPROCESSOR TRACE FLAGS
            INFO = RKCAL        INFO. ON DELETION OF THE RKCAL LINK
            INFO = STEP         INFO. ON USING STEP CARDS
            INFO = CCARDS       INFO. ON TRASYS CONTROL CARDS

    END OF TRASYS INFORMATION FILE

++NOTE++ DATA ORIGINATION FROM INPUT FILE, NO -RSI- SOURCE EDITING
```

MODEL = SAMPLE
SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL

MODEL HISTORY

MODEL NAME .... SAMPLE

MODEL TITLE .... SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL

MOD LABEL	RUN JOB NUMBER	RUN DATA	RUN TIME	RSI TAPE	RSO TAPE	RTI TAPE	RTO TAPE	CMERG TAPE	EMERG TAPE	BCDOU TAPE	TRAJ TAPE	USER1 TAPE	USER2 TAPE
AA	RGEX1CJ	06/01/77	17.56.17	RSTSAM5	RSTSAM5								

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
SOURCE DATA EDIT DIRECTIVES

CARD ORGIN 12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO. LABEL

++CAUTION 1++ -RSI- WAS SPECIFIED IN OPTION DATA BLOCK BUT WAS NEVER USED IN SOURCE EDITING

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL

SURFACE DATA INPUT BLOCK

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO. LABEL
INPUT             HEADER SURFACE DATA                                                                 1                    AA
INPUT             C                                                                                   2                    AA
INPUT             C-----THIS SURFACE DATA BLOCK IS USED IN SAMPLE CASES 1 THROUGH 5                   3                    AA
INPUT             C-----WITH VARIOUS PORTIONS OF IT BEING ACTIVATED FOR THE DIFFERENT                 4                    AA
INPUT             C-----CASES.                                                                        5                    AA
INPUT             C                                                                                   6                    AA
INPUT             BCS     BOXINR                                                                      7                    AA
INPUT             S       SURFN        = 1                                                            8                    AA
INPUT                     TYPE         = RECT                                                         9                    AA
INPUT                     ACTIVE       = BOTTOM                                                      10                    AA
INPUT                     PROP         = 0.9,0.9                                                     11                    AA
INPUT                     P1           = 1.0, 0.0, 1.0                                               12                    AA
INPUT                     P2           = 1.0, 0.0, 0.0                                               13                    AA
INPUT                     P3           = 1.0, 1.0, 0.0                                               14                    AA
INPUT                     COM          = * INNER RIGHT FRONT *                                       15                    AA
INPUT             S       SURFN        = 2                                                           16                    AA
INPUT                     TYPE         = RECT                                                        17                    AA
INPUT                     ACTIVE       = BOTTOM                                                      18                    AA
INPUT                     PROP         = 0.9,0.9                                                     19                    AA
INPUT                     P1           = 1.0, 1.0, 1.0                                               20                    AA
INPUT                     P2           = 1.0, 1.0, 0.0                                               21                    AA
INPUT                     P3           = 0.0, 1.0, 0.0                                               22                    AA
INPUT                     COM          = * INNER RIGHT SIDE *                                        23                    AA
INPUT             S       SURFN        = 3                                                           24                    AA
INPUT                     TYPE         = RECT                                                        25                    AA
INPUT                     ACTIVE       = TOP                                                         26                    AA
INPUT                     PROP         = 0.9,0.9                                                     27                    AA
INPUT                     P1           = 0.0, 0.0, 1.0                                               28                    AA
INPUT                     P2           = 0.0, 0.0, 0.0                                               29                    AA
INPUT                     P3           = 0.0, 1.0, 0.0                                               30                    AA
INPUT                     COM          = * INNER RIGHT BACK *                                        31                    AA
INPUT             S       SURFN        = 4                                                           32                    AA
INPUT                     TYPE         = RECT                                                        33                    AA
INPUT                     ACTIVE       = TOP                                                         34                    AA
INPUT                     PROP         = 0.9,0.9                                                     35                    AA
INPUT                     P1           = 1.0, 1.0, 0.0                                               36                    AA
INPUT                     COM          = * INNER RIGHT BOTTOM *                                      37                    AA
INPUT             BCS     BOXINL,IMGBCS=BOXINR,NINC=10,IREFSF=1000                                   38                    AA
INPUT             C                                                                                  39                    AA
INPUT             C-----THE FOREGOING CARD IMAGES BCS BOXINR IN REFERENCE PLANE 1000                 40                    AA
INPUT             C-----TO CREATE BCS BOXINL.  THE INTERIOR OF THE BOX WAS INPUT IN                  41                    AA
INPUT             C-----THIS MANNER TO FACILITATE THE INPUT OF SAMPLE CASE 4 TO SHOW                 42                    AA
INPUT             C-----THE USE OF "MESS" AND "ERN" NODES.                                           43                    AA
INPUT             C                                                                                  44                    AA
                        IMAGING SURFACE     1) BCS (     BO), GENERATING SURFACE (   11) BCS (     BO)
                        IMAGING SURFACE     2) BCS (     BO), GENERATING SURFACE (   12) BCS (     BO)
                        IMAGING SURFACE     3) BCS (     BO), GENERATING SURFACE (   13) BCS (     BO)
                        IMAGING SURFACE     4) BCS (     BO), GENERATING SURFACE (   14) BCS (     BO)
INPUT             R       REFNO        = 1000                                                        45                    AA
INPUT                     P1           = 1.0, 0.0, 1.0                                               46                    AA
INPUT                     P2           = 1.0, 0.0, 0.0                                               47                    AA
```

```
MODEL = SAMPLE                                      SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
SURFACE DATA INPUT BLOCK

CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT                      P3          = 0.0, 0.0, 0.0                                            48                AA
INPUT                      COM         = * IMAGING PLANE *                                        49                AA
INPUT             BCS      LIDINR                                                                 50                AA
INPUT             S        SURFN       = 5                                                        51                AA
INPUT                      TYPE        = RECT                                                     52                AA
INPUT                      ACTIVE      = BOTTOM                                                   53                AA
INPUT                      PROP        = 0.9,0.9                                                  54                AA
INPUT                      P1          = 1.0, 1.0, 0.0                                            55                AA
INPUT                      COM         = * INNER RIGHT LID *                                      56                AA
INPUT             S        SURFN       = 15                                                       57                AA
INPUT                      IMAGSF      = 5                                                        58                AA
INPUT                      IREFSF      = 1000                                                     59                AA
INPUT                      COM         = * INNER LEFT LID *                                       60                AA
INPUT             BCS      BOXOUT                                                                 61                AA
INPUT             S        SURFN       = 21                                                       62                AA
INPUT                      TYPE        = BOX5                                                     63                AA
INPUT                      ACTIVE      = OUT                                                      64                AA
INPUT                      SHADE       = NO                                                       65                AA
INPUT                      PROP        = 0.2,0.9                                                  66                AA
INPUT                      P1          = 1.01,-1.01, 1.01                                         67                AA
INPUT                      P2          = 1.01, 1.01, 1.01                                         68                AA
INPUT                      P3          =-0.01, 1.01, 1.01                                         69                AA
INPUT                      P4          =-0.01, 1.01,-0.01                                         70                AA
INPUT                      COM         = * OUTER SURFACES *                                       71                AA
INPUT             BCS      LIDOUT                                                                 72                AA
INPUT             S        SURFN       = 26                                                       73                AA
INPUT                      TYPE        = RECT                                                     74                AA
INPUT                      ACTIVE      = TOP                                                      75                AA
INPUT                      SHADE       = NO                                                       76                AA
INPUT                      PROP        = 0.2,0.9                                                  77                AA
INPUT                      P1          = 1.01,-1.01, 0.01                                         78                AA
INPUT                      P2          = 1.01, 1.01, 0.01                                         79                AA
INPUT                      P3          =-0.01, 1.01, 0.01                                         80                AA
INPUT                      COM         = * OUTER SURFACE OF LID *                                 81                AA
INPUT             C                                                                               82                AA
INPUT             C-----THE NEXT TWO BCS'S (MESSR AND MESSL) ARE ACTIVATED IN SAMPLE              83                AA
INPUT             C-----CASE 4 ONLY.                                                              84                AA
INPUT             C                                                                               85                AA
INPUT             BCS      MESSR                                                                  86                AA
INPUT             S        SURFN       = 101                                                      87                AA
INPUT                      TYPE        = RECT                                                     88                AA
INPUT                      ACTIVE      = TOP                                                      89                AA
INPUT                      PROP        = 1.0,1.0                                                  90                AA
INPUT                      P1          = 1.0, 0.0, 1.0                                            91                AA
INPUT                      P2          = 1.0, 0.0, 0.0                                            92                AA
INPUT                      P3          = 0.0, 0.0, 0.0                                            93                AA
INPUT                      COM         = * PRIMARY MESS NODE, RIGHT SIDE *                        94                AA
INPUT             BCS      MESSL                                                                  95                AA
INPUT             S        SURFN       = 111                                                      96                AA
INPUT                      TYPE        = RECT                                                     97                AA
INPUT                      ACTIVE      = BOTTOM                                                   98                AA
```

```
MODEL = SAMPLE                                       SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
SURFACE DATA INPUT BLOCK

CARD ORGIN     12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT                   PROP         = 1.0,1.0                                                     99              AA
INPUT                   P1           = 1.0, 0.0, 1.0                                              100              AA
INPUT                   P2           = 1.0, 0.0, 0.0                                              101              AA
INPUT                   P3           = 0.0, 0.0, 0.0                                              102              AA
INPUT                   COM          = * PRIMARY MESS NODE, LEFT SIDE *                           103              AA
INPUT          C                                                                                  104              AA
INPUT          C-----THE FOLLOWING BCS (LIDSP) IS ACTIVATED IN SAMPLE CASE 5 ONLY.                105              AA
INPUT          C                                                                                  106              AA
INPUT          BCS      LIDSP                                                                     107              AA
INPUT          S        SURFN        = 200                                                        108              AA
INPUT                   TYPE         = RECT                                                       109              AA
INPUT                   ACTIVE       = BOTTOM                                                     110              AA
INPUT                   PROP         = 0.1,0.1                                                    111              AA
INPUT                   SPRI         = 0.8                                                        112              AA
INPUT                   SPRS         = 0.8                                                        113              AA
INPUT                   P1           = 1.0,-1.0, 0.0                                              114              AA
INPUT                   P2           = 1.0, 1.0, 0.0                                              115              AA
INPUT                   P3           = 0.0, 1.0, 0.0                                              116              AA
INPUT                   COM          = * SPECULAR LID *                                           117              AA
```

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL

BCS DATA INPUT BLOCK

CARD ORGIN	12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8	EDIT NO.	OLD EDIT NO.	LABEL
INPUT	HEADER BCS DATA	118		AA
INPUT	BCS BOXINR	119		AA
INPUT	BCS BOXINL	120		AA
INPUT	BCS LIDINR ,0.,0.,1.,0.,-45.,0.	121		AA
INPUT	BCS BOXOUT	122		AA
INPUT	BCS LIDOUT ,0.,0.,1.,0.,-45.,0.	123		AA
INPUT	BCS MESSR	124		AA
INPUT	BCS MESSL	125		AA
INPUT	BCS LIDSP ,0.,0.,1.,0.,-45.,0.	126		AA

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
FORM FACTOR DATA INPUT BLOCK

```
CARD ORGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT            HEADER FORM FACTOR DATA                                                           127                 AA
INPUT            C                                                                                 128                 AA
INPUT            C-----ENTER KNOWN ZERO FORM FACTORS AND EQUIVALENT FORM FACTORS FOR               129                 AA
INPUT            C-----CASE5.                                                                      130                 AA
INPUT            C                                                                                 131                 AA
INPUT            FIG     CASE1                                                                     132                 AA
INPUT            NODEA   1,2,3,4,11,12,13,14,200,21,22,23,24,25,26,END                             133                 AA
INPUT            BOTH    21,ZERO                                                                   134                 AA
INPUT                    22,ZERO                                                                   135                 AA
INPUT                    23,ZERO                                                                   136                 AA
INPUT                    24,ZERO                                                                   137                 AA
INPUT                    25,ZERO                                                                   138                 AA
INPUT                    26,ZERO                                                                   139                 AA
INPUT                    1,1,0.                                                                    140                 AA
INPUT                    11,12,1,2                                                                 141                 AA
INPUT                    11,13,1,3                                                                 142                 AA
INPUT                    11,14,1,4                                                                 143                 AA
INPUT                    11,200,1,200                                                              144                 AA
INPUT                    1,11,0.                                                                   145                 AA
INPUT                    11,2,1,12                                                                 146                 AA
INPUT                    11,3,1,13                                                                 147                 AA
INPUT                    11,4,1,14                                                                 148                 AA
INPUT                    2,2,0.                                                                    149                 AA
INPUT                    2,3,1,2                                                                   150                 AA
INPUT                    2,4,1,4                                                                   151                 AA
INPUT                    12,13,2,3                                                                 152                 AA
INPUT                    12,14,2,4                                                                 153                 AA
INPUT                    12,200,2,200                                                              154                 AA
INPUT                    12,3,2,13                                                                 155                 AA
INPUT                    12,4,2,14                                                                 156                 AA
INPUT                    3,3,0.                                                                    157                 AA
INPUT                    3,4,1,4                                                                   158                 AA
INPUT                    13,14,3,4                                                                 159                 AA
INPUT                    13,200,3,200                                                              160                 AA
INPUT                    3,13,0.                                                                   161                 AA
INPUT                    13,4,3,14                                                                 162                 AA
INPUT                    4,4,0.                                                                    163                 AA
INPUT                    14,200,4,200                                                              164                 AA
INPUT                    4,14,0.                                                                   165                 AA
INPUT                    200,200,0.                                                                166                 AA
```

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
CORRESPONDENCE DATA INPUT BLOCK

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT             HEADER CORRESPONDENCE DATA                                                       167                 AA
INPUT             C                                                                                168                 AA
INPUT             C-----ENTER CORRESPONDENCE DATA FOR CASE 2                                       169                 AA
INPUT             C                                                                                170                 AA
INPUT             FIG     CASE2                                                                    171                 AA
INPUT                     1           = 1,11,22                                                    172                 AA
INPUT                     2           = 2,25                                                       173                 AA
INPUT                     3           = 3,13,24                                                    174                 AA
INPUT                     4           = 4,14,21                                                    175                 AA
INPUT                     5           = 5,15,26                                                    176                 AA
INPUT                     12          = 12,23                                                      177                 AA
INPUT             C                                                                                178                 AA
INPUT             C-----ENTER CORRESPONDENCE DATA FOR CASE 3 TO COMBINE FORM FACTORS               179                 AA
INPUT             C                                                                                180                 AA
INPUT             FIG     CASE3,FF                                                                 181                 AA
INPUT                     1           = 1,11,22                                                    182                 AA
INPUT                     2           = 2,25                                                       183                 AA
INPUT                     3           = 3,13,24                                                    184                 AA
INPUT                     4           = 4,14,21                                                    185                 AA
INPUT                     5           = 5,15,26                                                    186                 AA
INPUT                     12          = 12,23                                                      187                 AA
```

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
OPERATION DATA INPUT BLOCK (PASS 1)

```
CARD ORGIN     12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
INPUT          HEADER OPERATIONS DATA                                                             188                   AA
```

+++++ OPERATIONS DATA BLOCK (PASS 1) COMPLETE +++++

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
OPERATION DATA INPUT BLOCK (PASS 2)

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT           C                                                                               189              AA
INPUT           C-----BUILD THE CASE 5 CONFIGURATION                                            190              AA
INPUT           C                                                                               191              AA
PROG            STEP      -1                                                                     -0
INPUT           BUILD  CASE5,BOXINR,BOXINL,LIDSP,BOXOUT,LIDOUT                                  192              AA
PROG                   CALL BUILDC (BOXINR,6HCASE5 )                                             -0
PROG                   CALL ADD (BOXINL)                                                         -0
PROG                   CALL ADD (LIDSP )                                                         -0
PROG                   CALL ADD (BOXOUT)                                                         -0
PROG                   CALL ADD (LIDOUT)                                                         -0
INPUT           C                                                                               193              AA
INPUT           C-----CALCULATE THE FORM FACTOR MATRIX.                                         194              AA
INPUT           C                                                                               195              AA
INPUT           L      FFCAL                                                                    196              AA
INPUT           C                                                                               197              AA
INPUT           C-----CALCULATE IMAGE FACTORS                                                   198              AA
INPUT           C                                                                               199              AA
INPUT                  CALL RBDATA(0,0,0,0,0)                                                   200              AA
INPUT           L      RBCAL                                                                    201              AA
INPUT           C                                                                               202              AA
INPUT           C-----CALCULATE THE GRAY BODY MATRIX USING IMAGE FACTORS.                       203              AA
INPUT           C                                                                               204              AA
INPUT                  CALL GBDATA(BOTH,0,RB)                                                   205              AA
INPUT           L      GBCAL                                                                    206              AA
INPUT           C                                                                               207              AA
INPUT           C-----CALCULATE AND PUNCH RADIATION CONDUCTORS.                                 208              AA
INPUT           C                                                                               209              AA
INPUT                  CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,0)                                   210              AA
INPUT           L      RKCAL                                                                    211              AA
INPUT           C                                                                               212              AA
INPUT           C-----DEFINE ORBIT AND VEHICLE ORIENTATION (CIRCULAR-PLANET-ORIENTED)           213              AA
INPUT           C                                                                               214              AA
INPUT                  CALL ORBIT2(EAR,0,60.,0,0,0,100.*6080.,100.*6080.)                       215              AA
INPUT                  CALL ORIENT(4HPLAN,1,2,3,300.,270.,0.)                                   216              AA
INPUT                  AQPRNT        =YES                                                       217              AA
PROG            C                                                             *                  -0
PROG            C********************  ORBIT GENERATION STARTS HERE  *******************         -0
INPUT           CORBGEN CIRP,0.,180.,2,DI                                      *                218              AA
PROG            C                                                             *                  -0
PROG            STEP  10000                                                   *                  -0
PROG                   TRUEAN      =       0.                                 *                  -0
PROG                   TRUANF      =     180.000                              *                  -0
PROG                   TRUANI      =       0.                                 *                  -0
PROG                   IAI         = 0                                        *                  -0
PROG                   IAS         = 0                                        *                  -0
PROG                   PLTYPE      = 6HPLSAVE                                 *                  -0
PROG                   CALL DICOMP(0,0,0)                                     *                  -0
PROG            L       DICAL                                                 *                  -0
PROG                   NSPFF       = 10000                                    *                  -0
PROG                   PLTYPE      = 6HPLREAD                                 *                  -0
PROG                   CALL AQDATA(IAI,IAS,0,0,0)                             *                  -0
PROG            C      AQCAL                                                  *                  -0
PROG            STEP  10001                                                   *                  -0
PROG                   TRUEAN      =      90.000                              *                  -0
PROG                   CALL DICOMP(0,0,10000)                                 *                  -0
```

```
PROG     L        DICAL
PROG             CALL AQDATA(IAI,IAS,0,0,0)
PROG     C        AQCAL
PROG     STEP   10002
PROG             TRUEAN       =       180.000
PROG             CALL DICOMP(0,0,10000)
PROG     L        DICAL
PROG             CALL AQDATA(IAI,IAS,0,0,0)
PROG     C        AQCAL
PROG     STEP   10003
PROG             IF(SHADIN.LT.0.)                     GO TO 90400
PROG             TRUEAN       = SHADIN-0.1
PROG             IF(TRUEAN.LT.TRUANI.OR.
PROG           1    TRUEAN.GT.TRUANF)                 GO TO  90000
PROG             CALL DICOMP(0,4HZERO,10000)
PROG     L        DICAL
PROG             CALL AQDATA(IAI,IAS,0,0,0)
PROG     C        AQCAL
PROG     90000   CONTINUE
PROG     STEP   10004
PROG             TRUEAN       = SHADIN+0.1
PROG             IF(TRUEAN.LT.TRUANI.OR.
PROG           1    TRUEAN.GT.TRUANF)                 GO TO  90100
PROG             CALL DICOMP(0,0,10000)
PROG     L        DICAL
PROG             CALL AQDATA(IAI,IAS,0,0,0)
PROG     C        AQCAL
PROG     90100   CONTINUE
PROG     STEP   10005
PROG             TRUEAN       = SHAOUT+0.1
PROG             IF(TRUEAN.LT.TRUANI.OR.
PROG           1    TRUEAN.GT.TRUANF)                 GO TO  90200
PROG             CALL DICOMP(0,4HZERO,10000)
PROG     L        DICAL
PROG             CALL AQDATA(IAI,IAS,0,0,0)
PROG     C        AQCAL
PROG     90200   CONTINUE
PROG     STEP   10006
                 TRUEAN       = SHAOUT-0.1
PROG             TRUEAN       = SHAOUT-0.1
PROG             IF(TRUEAN.LT.TRUANI.OR.
PROG           1    TRUEAN.GT.TRUANF)                 GO TO  90300
PROG             CALL DICOMP(0,0,10000)
PROG     L        DICAL
PROG             CALL AQDATA(IAI,IAS,0,0,0)
PROG     C        AQCAL
PROG     90300   CONTINUE
PROG     90400   CONTINUE
PROG     C
PROG     C********************  ORBIT GENERATION ENDS HERE  ********************
PROG     C
INPUT    C
INPUT    C-----CALCULATE INCIDENT FLUXES PLUS SPECULAR REFLECTIONS.
INPUT    C
INPUT           CALL RSTOFF
INPUT    STEP    10010
INPUT            CALL DRDATA(10000,0)
INPUT            AQPRNT       =YES
INPUT    L       DRCAL
INPUT            CALL AQDATA(0,0,0,0,0)
INPUT    L       AQCAL
INPUT    C
INPUT    STEP    10011
```

```
INPUT                CALL DRDATA(10001,0)                         AA
INPUT         L      DRCAL                                        AA
INPUT                CALL AQDATA(0,0,0,0,0)                       AA
INPUT         L      AQCAL                                        AA
INPUT         C                                                   AA
INPUT         STEP   10012                                        AA
INPUT                CALL DRDATA(10002,0)                         AA
INPUT         L      DRCAL                                        AA
INPUT                CALL AQDATA(0,0,0,0,0)                       AA
INPUT         L      AQCAL                                        AA
INPUT         C                                                   AA
INPUT         STEP   10013                                        AA
INPUT                CALL DRDATA(10003,0)                         AA
INPUT         L      DRCAL                                        AA
INPUT                CALL AQDATA(0,0,0,0,0)                       AA
INPUT         L      AQCAL                                        AA
INPUT         C                                                   AA
INPUT         STEP   10014                                        AA
INPUT                CALL DRDATA(10004,0)                         AA
INPUT         L      DRCAL                                        AA
INPUT                CALL AQDATA(0,0,0,0,0)                       AA
INPUT         L      AQCAL                                        AA
INPUT         C                                                   AA
INPUT                CALL QODATA(3HALL,0,0,0,0,0,0,0)             AA
INPUT         L      QOCAL                                        AA
INPUT         END OF DATA                                         AA
```

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
PROCESSOR CORE ALLOCATION

THE FOLLOWING IS THE PROCESSOR CORE ALLOCATION FOR THOSE SEGMENTS WHICH WILL BE LOADED IN THIS EXECUTION (APPROX.) ...

```
                                                     OCTAL/DECIMAL

TRASYS (0) SEGMENT ............................. 033515/ 14157
OPERATIONS DATA (NOT KNOWN AT THIS TIME)........ 075000/ 31232
INITALIZATION SEGMENT .......................... 037600/ 16256
FORM FACTOR SEGMENT ............................ 100200/ 32896
DIRECT FLUX SEGMENT ............................ 103000/ 34304
GRAY BODY SEGMENT .............................. 052500/ 21824
ABSORBED Q-S SEGMENT ........................... 042100/ 17472
-QO- SEGMENT ................................... 051700/ 21440
REAL BODY SEGMENT .............................. 077000/ 32256
RADATION CONDUCTOR SEGMENT ..................... 050000/ 20480
DIRECT FLUX REAL BODY SEGMENT .................. 053700/ 22464

GRAY BODY DYNAMIC COMMON ....................... 004600/  2432
-QO- DYNAMIC COMMON ............................ 003554/  1900
RADIATION CONDUCTOR DYNAMIC COMMON ............. 000574/   380

GRAY BODY MINIMUM - MAXIMUM CORE ............... 052406/ 21766 - 052406/ 21766
-QO- MINIMUM - MAXIMUM CORE .................... 046262/ 19634 - 051672/ 21434
RADIATION CONDUCTOR MINIMUM - MAXIMUM CORE ..... 047521/ 20305 - 047765/ 20469

++CAUTION    2++ THE FFPROG SEGMENT APPEARS TO BE TOO LONG FOR AMOUNT OF CORE (075000B) AVAILABLE

++CAUTION    3++ THE DIPROG SEGMENT APPEARS TO BE TOO LONG FOR AMOUNT OF CORE (075000B) AVAILABLE

++CAUTION    4++ THE RBPROG SEGMENT APPEARS TO BE TOO LONG FOR AMOUNT OF CORE (075000B) AVAILABLE

MINIMUM CORE NEEDED FOR PROCESSOR EXECUTION .... 103000/ 34304

MAXIMUM CORE NEEDED FOR PROCESSOR EXECUTION .... 103000/ 34304

AMOUNT OF CORE THAT WILL BE USED BY PROCESSSOR . 103000/ 34304
```

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
WRAP UP OF THE PRE-PROCESSOR

CAUTION MESSAGE(S) OCCUR FOLLOWING THE FIRST 100 OR LESS EDIT SEQUENCE NUMBER(S) LISTED BELOW ...

256

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL

WRAP UP OF THE PRE-PROCESSOR

PRE-PROCESSOR ACCOUNTING INFORMATION	CP-SEC	PP-SEC	DYM-STORAGE
SOURCE EDITING	.800	3	515
DOCUMENTATION DATA PRE-PROCESSING	0.	0	0
QUANTITIES DATA PRE-PROCESSING	.012	0	266
ARRAY DATA PRE-PROCESSING	0.	0	0
SURFACE DATA PRE-PROCESSING (PASS 1) ...	1.152	3	64
SURFACE DATA PRE-PROCESSING (PASS 2) ...	.223	3	1141
BCS DATA PRE-PROCESSING	.121	1	186
FORM FACTOR DATA PRE-PROCESSING	.521	2	1036
SHADOW DATA PRE-PROCESSING	0.	0	0
FLUX DATA PRE-PROCESSING	0.	0	0
CORRESPONDENCE DATA PRE-PROCESSING	.180	1	101
OPERATIONS DATA PRE-PROCESSING	3.700	4	884
SUBROUTINE DATA PRE-PROCESSING	.251	1	0
SEQUENTIAL TAPE INITIATION	.030	0	0

TOTAL CP TIME FOR PRE-PROCESSOR .... 8.232 DECIMAL SECONDS OR 000011 OCTAL SECONDS

TOTAL PP TIME FOR PRE-PROCESSOR .... 22 DECIMAL SECONDS OR 000026 OCTAL SECONDS

MINIMUM DYNAMIC STORAGE NEEDED BY PRE-PROCESSOR .. 1141 DECIMAL WORDS

DYNAMIC STORAGE AVAILABLE TO PRE-PROCESSOR .... 3384 DECIMAL WORDS

MINIMUM CORE NEEDED FOR PRE-PROCESSOR EXECUTION .. 071000 OCTAL WORDS

* * * * * * * * * * *
NUMBER OF CAUTION MESSAGES .. 4
* * * * * * * * * * *

NORMAL TERMINATION BY PRE-PROCESSOR

NASA/MARTIN MARIETTA
THERMAL RADIATION ANALYSIS SYSTEM
CDC6500/SCOPE 3.4

TRASYS II

```
TTTTTTTTTTTT
TTTTTTTTTTTT
TT   TTT   TT
     TTT
     TTT
     TTT
     TTT
     TTT
   TTTTTTT

RRRRRRRRR
RRRRRRRRRR
RRR     RRR
RRR     RRR
RRRRRRRRRR
RRR  RRR
RRR   RRR
RRR    RRR
RRR     RRRR

   AAAAAAA
  AAAAAAAAA
 AAAAAAAAAAA
 AAA     AAA
 AAA     AAA
 AAAAAAAAAAA
 AAA     AAA
 AAA     AAA
 AAA     AAA
AAAAA   AAAAA

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
         SSS
 SS      SSS
 SSSSSSSSSSSS
  SSSSSSSSSS

YYYY     YYYY
 YYY     YYY
  YYY   YYY
   YYY YYY
    YYYYY
     YYY
     YYY
     YYY
   YYYYYYY

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
         SSS
 SS      SSS
 SSSSSSSSSSSS
  SSSSSSSSSS
```

PRE-PROCESSOR EXECUTION

LATEST LIBRARY MOD.VER NUMBER SL2E2
LAST LIBRARY MODIFICATION DATE 05/31/77

DATE OF THIS PROCESSOR RUN 06/01/77
TIME OF THIS PROCESSOR RUN .... 17.57.34.
JOB NUMBER OF THIS PROCESSOR RUN RGEX1CJ

MODEL=SAMPLE CONFIG=SAMPLE STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
PROCESSING OPERATIONS DATA

++

THE OPERATIONS DATA SEGMENT USES ABOUT 042100 OCTAL WORDS OF CORE STORAGE

++

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
PROCESSING OPERATIONS DATA

NODE	BCS	AREA	ALPH	EMISS	SURF. TYPE	ACTIVE	--------COMMENTS-------------
1	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
2	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
3	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
4	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
11	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
12	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
13	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
14	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
200	LIDSP	2.00000	.100	.100	RECTANGLE	BOTTOM	SPECULAR LID
21	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
22	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
23	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
24	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
25	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
26	LIDOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACE OF LID

NODE, AREA, AND PROPERTIES ARRAYS HAVE BEEN WRITTEN ON THE -RSO- TAPE
BY -BUILDC- (ACCESS NUMBER= 1)

ADJUSTING FIELD LENGTH TO 100200 FOR THE FF SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
FORM FACTOR CALCULATION LINK.

FORM FACTORS AND COMBINED FORM FACTORS - USER INPUT AND DEFAULT PARAMETERS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
FFACC	.0500	.0500	ORIENTATION ACCURACY PARAMETER	N/A
FFACCS	.1000	.1000	SHADOWING ACCURACY PARAMETER	N/A
FFMIN	1.0E-06	1.0E-06	PARAMETER TO ELIMINATE SMALL FORM FACTORS	N/A
FFNOSH	SHAD	SHAD	OVER RIDE SHADOWING PARAMETER	(SHAD,NOSH)
+FFPNCH	NO	NO	PARAMETER TO PUNCH FORM FACTORS	(YES,NO)
FFPRNT	YES	YES	FLAG FOR COMPREHENSIVE FF AND CM PRINT	(YES,NO,FF,CM,RB)
FFRATL	15.0	15.0	RATIO FOR USING SUB-NODE TECHNIQUE	N/A
FFCMB	CORR	CORR	FLAG FOR COMBINING FORM FACTORS	(YES,NO,AUTO,CORR)

+ -FFPNCH WILL DEFAULT TO -YES- ON CALCULATED VALUES IF THE -RSO- FILE IS NOT SPECIFIED IN THE OPTIONS DATA BLOCK

```
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*                                                                                                                         *
*   RESTARTING -FFCAL - DATA FOR CONFIGURATION -CASE5 - FROM UNIT -RSI- INITIATED BY JOB NO. RGEX1ES   ON 05/23/77       *
*                                                                                                                         *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
```

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
FORM FACTOR CALCULATION LINK.

NODE	AREA	ALPH	EMISS
1	1.00000	.900	.900
2	1.00000	.900	.900
3	1.00000	.900	.900
4	1.00000	.900	.900
11	1.00000	.900	.900
12	1.00000	.900	.900
13	1.00000	.900	.900
14	1.00000	.900	.900
200	2.00000	.100	.100
21	2.06040	.200	.900
22	2.06040	.200	.900
23	1.04040	.200	.900
24	2.06040	.200	.900
25	1.04040	.200	.900
26	2.06040	.200	.900

NUMBER OF NODES = 15 NUMBER OF SURFACES = 15
(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUSE OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ	
1	2	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
1	3	RSI	.203695	.203695	.203695	.203695	.203695	1.000000	1.000000	0.	0	0	UN
1	4	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
1	12	RSI	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	0.	0	0	UN
1	13	RSI	.086031	.086031	.086031	.086031	.086031	1.000000	1.000000	0.	0	0	UN
1	14	RSI	.039182	.039182	.039182	.039182	.039182	1.000000	1.000000	0.	0	0	UN
1	200	RSI	.197480	.098740	.197480	.098740	.197480	1.000000	1.000000	0.	0	0	UN
1	FFSUM =	.9888	ROW CP TIME =		.071								
2	3	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
2	4	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
2	11	RSI	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	0.	0	0	UN
2	12	RSI	.069571	.069571	.069571	.069571	.069571	1.000000	1.000000	0.	0	0	UN
2	13	RSI	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	0.	0	0	UN
2	14	RSI	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	0.	0	0	UN
2	200	RSI	.133520	.066760	.133520	.066760	.133520	1.000000	1.000000	0.	0	0	UN

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AOCAL/QOCAL
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)			
2	FFSUM =	.9475	ROW CP TIME =		.082								
3	4	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
3	11	RSI	.086031	.086031	.086031	.086031	.086031	1.000000	1.000000	0.	0	0	UN
3	12	RSI	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	0.	0	0	UN
3	14	RSI	.039182	.039182	.039182	.039182	.039182	1.000000	1.000000	0.	0	0	UN
3	200	RSI	.061115	.030557	.061115	.030557	.061115	1.000000	1.000000	0.	0	0	UN
3	FFSUM =	.8524	ROW CP TIME =		.039								
4	11	RSI	.039182	.039182	.039182	.039182	.039182	1.000000	1.000000	0.	0	0	UN
4	12	RSI	.033882	.033882	.033882	.033882	.033882	1.000000	1.000000	0.	0	0	UN
4	13	RSI	.039182	.039182	.039182	.039182	.039182	1.000000	1.000000	0.	0	0	UN
4	200	RSI	.166171	.083086	.166171	.083086	.166171	1.000000	1.000000	0.	0	0	UN
4	FFSUM =	.9212	ROW CP TIME =		.031								
11	12	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
11	13	RSI	.203695	.203695	.203695	.203695	.203695	1.000000	1.000000	0.	0	0	UN
11	14	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
11	200	RSI	.197480	.098740	.197480	.098740	.197480	1.000000	1.000000	0.	0	0	UN
11	FFSUM =	.9888	ROW CP TIME =		.038								
12	13	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
12	14	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
12	200	RSI	.133520	.066760	.133520	.066760	.133520	1.000000	1.000000	0.	0	0	UN
12	FFSUM =	.9475	ROW CP TIME =		.026								
13	14	RSI	.214256	.214256	.214256	.214256	.214256	1.000000	1.000000	0.	0	0	UN
13	200	RSI	.061115	.030557	.061115	.030557	.061115	1.000000	1.000000	0.	0	0	UN

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)			
13	FFSUM =	.8524	ROW CP TIME =		.047								
14	200	RSI	.166171	.083086	.166171	.083086	.166171	1.000000	1.000000	0.	0	0	UN
14	FFSUM =	.9212	ROW CP TIME =		.011								
200	FFSUM =	.5583	ROW CP TIME =		.005								
21	FFSUM =	0.	ROW CP TIME =		.003								
22	FFSUM =	0.	ROW CP TIME =		.003								
23	FFSUM =	0.	ROW CP TIME =		.004								
24	FFSUM =	0.	ROW CP TIME =		.005								
25	FFSUM =	0.	ROW CP TIME =		.003								
26	FFSUM =	0.	ROW CP TIME =		.004								

SUMMARY OF FORM FACTOR SUMS FOR ALL NODES

NODE I-	FF SUM	NODE I-	FF SUM	NODE I-	FF SUM	NODE I-	FF SUM	NODE I-	FF SUM	NODE I-	FF SUM
1-	.9888	2-	.9475	3-	.8524	4-	.9212	11-	.9888	12-	.9475
13-	.8524	14-	.9212	200-	.5583	21-	0.	22-	0.	23-	0.
24-	0.	25-	0.	26-	0.						

TOTAL TIME FOR FORM FACTOR SEGMENT .713

TOTAL TIME SINCE START OF RUN 33.754

ADJUSTING FIELD LENGTH TO 042100 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 077000 FOR THE RB SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QDCAL
IMAGE FACTOR CALCULATION LINK.

NODE	AREA	ALPH	EMISS	SPECULAR REFL(SOL)	SPECULAR REFL(IR)
1	1.000E+00	9.000E-01	9.000E-01	0.	0.
2	1.000E+00	9.000E-01	9.000E-01	0.	0.
3	1.000E+00	9.000E-01	9.000E-01	0.	0.
4	1.000E+00	9.000E-01	9.000E-01	0.	0.
11	1.000E+00	9.000E-01	9.000E-01	0.	0.
12	1.000E+00	9.000E-01	9.000E-01	0.	0.
13	1.000E+00	9.000E-01	9.000E-01	0.	0.
14	1.000E+00	9.000E-01	9.000E-01	0.	0.
200	2.000E+00	1.000E-01	1.000E-01	8.000E-01	8.000E-01
21	2.060E+00	2.000E-01	9.000E-01	0.	0.
22	2.060E+00	2.000E-01	9.000E-01	0.	0.
23	1.040E+00	2.000E-01	9.000E-01	0.	0.
24	2.060E+00	2.000E-01	9.000E-01	0.	0.
25	1.040E+00	2.000E-01	9.000E-01	0.	0.
26	2.060E+00	2.000E-01	9.000E-01	0.	0.

NUMBER OF NODES = 15 NUMBER OF SURFACES = 15

RESTARTING -RBCAL - DATA FOR CONFIGURATION -CASE5 - FROM UNIT -RSI- INITIATED BY JOB NO. RGEX1ES ON 05/23/77

(* INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R INDICATES FF CALCULATED FROM J TO I)

NODE I	NODE J	COMPUTATION	IFE(I,J) W/SHAD	IFE(J,I) W/SHAD	IFA(I,J) W/SHAD	CP TIME (SEC)
1	1	RSI	.026827	.026827	.026827	.021
1	2	RSI	.228160	.228160	.228160	.025
1	3	RSI	.203695	.203695	.203695	.030
1	4	RSI	.223969	.223969	.223969	.034
1	11	RSI	.018586	.018586	.018586	.038
1	12	RSI	.050408	.050408	.050408	.042
1	13	RSI	.086031	.086031	.086031	.046
1	14	RSI	.046239	.046239	.046239	.050
1	200	RSI	.197480	.098740	.197480	.054
1	ROW CP TIME =		.058	+		
2	3	RSI	.214256	.214256	.214256	.011
2	4	RSI	.215642	.215642	.215642	.016
2	11	RSI	.050408	.050408	.050408	.020
2	12	RSI	.078381	.078381	.078381	.023
2	13	RSI	.033882	.033882	.033882	.027
2	14	RSI	.035943	.035943	.035943	.030
2	200	RSI	.133520	.066760	.133520	.035
2	ROW CP TIME =		.039	+		
3	4	RSI	.214256	.214256	.214256	.012
3	11	RSI	.086031	.086031	.086031	.016
3	12	RSI	.033882	.033882	.033882	.021
3	14	RSI	.039182	.039182	.039182	.025
3	200	RSI	.061115	.030557	.061115	.028
3	ROW CP TIME =		.032	+		
4	11	RSI	.046239	.046239	.046239	.011
4	12	RSI	.035943	.035943	.035943	.015
4	13	RSI	.039182	.039182	.039182	.019
4	200	RSI	.166171	.083086	.166171	.024

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
IMAGE FACTOR CALCULATION LINK.

(* INDICATES NODE PAIR HAS BEEN SUBDIVIDED)

NODE I	NODE J	COMPUTATION	FE(I,J) W/SHAD	FE(J,I) W/SHAD	FA(I,J) W/SHAD	F (I,J) WO/SHAD	SHAD. E FACTER	SHAD. A FACTOR	CP TIME (SEC)
4	ROW CP TIME =		.048	+					
11	11	RSI	.026827	.026827	.026827	.008			
11	12	RSI	.228160	.228160	.228160	.012			
11	13	RSI	.203695	.203695	.203695	.017			
11	14	RSI	.223969	.223969	.223969	.020			
11	200	RSI	.197480	.098740	.197480	.024			
11	ROW CP TIME =		.028	+					
12	13	RSI	.214256	.214256	.214256	.008			
12	14	RSI	.215642	.215642	.215642	.012			
12	200	RSI	.133520	.066760	.133520	.016			
12	ROW CP TIME =		.021	+					
13	14	RSI	.214256	.214256	.214256	.010			
13	200	RSI	.061115	.030557	.061115	.014			
13	ROW CP TIME =		.018	+					
14	200	RSI	.166171	.083086	.166171	.008			
14	ROW CP TIME =		.012	+					
200	ROW CP TIME =		.010	+					
21	ROW CP TIME =		.009	+					
22	ROW CP TIME =		.010	+					
23	ROW CP TIME =		.008	+					

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
IMAGE FACTOR CALCULATION LINK.

(* INDICATES NODE PAIR HAS BEEN SUBDIVIDED)

NODE I	NODE J	COMPUTATION	FE(I,J) W/SHAD	FE(J,I) W/SHAD	FA(I,J) W/SHAD	F (I,J) WO/SHAD	SHAD. E FACTER	SHAD. A FACTOR	CP TIME (SEC)
24	ROW CP TIME =		.030	+					
25	ROW CP TIME =		.011	+					
26	ROW CP TIME =		.011	+					

TOTAL CP TIME (SEC) FOR PROBLEM = .617

ADJUSTING FIELD LENGTH TO 042100 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 052500 FOR THE GB SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
GRAY BODIES COMPUTATION LINK.

GREY BODIES

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
GBWBND	BOTH	NONE	WAVEBAND DEFINITION PARAMETER	(IR,SOL,BOTH)

RESTARTING -GBIR - DATA FOR CONFIGURATION -CASE5 - FROM UNIT -RSI- INITIATED BY JOB NO. RGEX1ES ON 05/23/77

RESTARTING -GBSO - DATA FOR CONFIGURATION -CASE5 - FROM UNIT -RSI- INITIATED BY JOB NO. RGEX1ES ON 05/23/77

IR GRAY BODIES STORED FOR CONFIG. CASE5

SOL GRAY BODIES STORED FOR CONFIG. CASE5

TOTAL TIME TO COMPUTE GRAY BODIES .56

ADJUSTING FIELD LENGTH TO 042100 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 050000 FOR THE RC SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTORS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
RKPNCH	PUN	NO	PUNCH/NO PUNCH PARAMETER FOR RADKS	(YES,NO)
RKMIN	.0001	0.0001	PARAMETER TO ELIMINATE SMALL RADK S	N/A
IRKCN	1	1	INITIAL RADIATION CONDUCTOR ID NUMBER	N/A
RKSP	SPACE	NO	MNEMONIC FLAG FOR COMPUTATION OF RADKS TO SPACE	(SPACE,NO)
IRKNSP	999	32767	SPACE NODE ID NUMBER	N/A
SIGMA	1.71E-09	1.713E-9	STEFAN-BOLTZMANN CONSTANT	N/A
RKAMPF	1.00	1.0	AREA MULTIPLYING FACTOR	N/A
RKTAPE	NO	NO	PARAMETER TO OUTPUT TO BCD TAPE	(TAPE,NO)
RFRAC	7.0E-01	0.7	SIGNIFICANT RADIATION FRACTION	(0. TO 1.)
RTOL	.990	0.99	DECIMAL FRACTION OF LAST RADK SAVED	N/A
NERN	0	0	EFFECTIVE RADIATION NODE (ERN) NUMBER	N/A

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
RADIATION CONDUCTOR GENERATION LINK.

SPECIAL RADIATION NODES

NONE

MESS SPECIAL NODES

PRIMARY SECONDARY

NONE

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTOR (RADKS) CARDS PUNCHED

AREA UNITS = INPUT UNITS * AMPF, WHERE AMPF = 1.00000

PUNCHED RADKS	-	1,	1,	2,	1.7130000E-09*	1.9558929E-01
PUNCHED RADKS	-	2,	1,	3,	1.7130000E-09*	1.7511242E-01
PUNCHED RADKS	-	3,	1,	4,	1.7130000E-09*	1.9219769E-01
PUNCHED RADKS	-	4,	1,	11,	1.7130000E-09*	2.3833215E-02
PUNCHED RADKS	-	5,	1,	12,	1.7130000E-09*	4.8045144E-02
PUNCHED RADKS	-	6,	1,	13,	1.7130000E-09*	7.4387137E-02
PUNCHED RADKS	-	7,	1,	14,	1.7130000E-09*	4.3588914E-02
PUNCHED RADKS	-	8,	1,	200,	1.7130000E-09*	1.8872795E-02
PUNCHED RADKS	-	9,	2,	3,	1.7130000E-09*	1.8294539E-01
PUNCHED RADKS	-	10,	2,	4,	1.7130000E-09*	1.8486741E-01
PUNCHED RADKS	-	11,	2,	11,	1.7130000E-09*	4.8045144E-02
PUNCHED RADKS	-	12,	2,	12,	1.7130000E-09*	6.9234692E-02
PUNCHED RADKS	-	13,	2,	13,	1.7130000E-09*	3.3476677E-02
PUNCHED RADKS	-	14,	2,	14,	1.7130000E-09*	3.5061177E-02
PUNCHED RADKS	-	15,	2,	200,	1.7130000E-09*	1.3228189E-02
PUNCHED RADKS	-	16,	3,	4,	1.7130000E-09*	1.8267720E-01
PUNCHED RADKS	-	17,	3,	11,	1.7130000E-09*	7.4387137E-02
PUNCHED RADKS	-	18,	3,	12,	1.7130000E-09*	3.3476677E-02
PUNCHED RADKS	-	19,	3,	13,	1.7130000E-09*	6.0385245E-03
PUNCHED RADKS	-	20,	3,	14,	1.7130000E-09*	3.6278115E-02
PUNCHED RADKS	-	21,	3,	200,	1.7130000E-09*	6.7857034E-03
PUNCHED RADKS	-	22,	4,	11,	1.7130000E-09*	4.3588914E-02
PUNCHED RADKS	-	23,	4,	12,	1.7130000E-09*	3.5061177E-02
PUNCHED RADKS	-	24,	4,	13,	1.7130000E-09*	3.6278115E-02
PUNCHED RADKS	-	25,	4,	14,	1.7130000E-09*	5.9737999E-03
PUNCHED RADKS	-	26,	4,	200,	1.7130000E-09*	1.5984380E-02
PUNCHED RADKS	-	27,	11,	12,	1.7130000E-09*	1.9558929E-01
PUNCHED RADKS	-	28,	11,	13,	1.7130000E-09*	1.7511242E-01
PUNCHED RADKS	-	29,	11,	14,	1.7130000E-09*	1.9219769E-01
PUNCHED RADKS	-	30,	11,	200,	1.7130000E-09*	1.8872795E-02
PUNCHED RADKS	-	31,	12,	13,	1.7130000E-09*	1.8294539E-01
PUNCHED RADKS	-	32,	12,	14,	1.7130000E-09*	1.8486741E-01
PUNCHED RADKS	-	33,	12,	200,	1.7130000E-09*	1.3228189E-02
PUNCHED RADKS	-	34,	13,	14,	1.7130000E-09*	1.8267720E-01
PUNCHED RADKS	-	35,	13,	200,	1.7130000E-09*	6.7857034E-03
PUNCHED RADKS	-	36,	14,	200,	1.7130000E-09*	1.5984380E-02
PUNCHED RADKS	-	37,	1,	999,	1.7130000E-09*	9.1405142E-02
PUNCHED RADKS	-	38,	2,	999,	1.7130000E-09*	1.2336413E-01
PUNCHED RADKS	-	39,	3,	999,	1.7130000E-09*	1.8981604E-01
PUNCHED RADKS	-	40,	4,	999,	1.7130000E-09*	1.8950123E-01
PUNCHED RADKS	-	41,	11,	999,	1.7130000E-09*	9.1405142E-02
PUNCHED RADKS	-	42,	12,	999,	1.7130000E-09*	1.2336413E-01
PUNCHED RADKS	-	43,	13,	999,	1.7130000E-09*	1.8981604E-01
PUNCHED RADKS	-	44,	14,	999,	1.7130000E-09*	1.8950123E-01

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTOR (RADK) CARDS PUNCHED

AREA UNITS = INPUT UNITS * AMPF, WHERE AMPF = 1.00000

PUNCHED RADKS -	45,	200,	999,	1.7130000E-09*	9.0067552E-02
PUNCHED RADKS -	46,	21,	999,	1.7130000E-09*	1.8543600E+00
PUNCHED RADKS -	47,	22,	999,	1.7130000E-09*	1.8543600E+00
PUNCHED RADKS -	48,	23,	999,	1.7130000E-09*	9.3636000E-01
PUNCHED RADKS -	49,	24,	999,	1.7130000E-09*	1.8543600E+00
PUNCHED RADKS -	50,	25,	999,	1.7130000E-09*	9.3636000E-01
PUNCHED RADKS -	51,	26,	999,	1.7130000E-09*	1.8543600E+00

TOTAL TIME TO COMPUTE AND CONDENSE RADKS = .61

ADJUSTING FIELD LENGTH TO 103000 FOR THE DI SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=10000 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
	FLUX COMPUTATION FLAG	SOL,PLAN,ALL	ALL	ICALFL
0	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
0.	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
0.	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
0.	LONGITITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
0.	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
0.	ORBIT INCLINATION, DEGREES		0.0	OINC
6.08000E+05	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
6.08000E+05	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
0.	ORBIT ECCENTRICITY		0.0	ECC
0.	SUN RA ANGLE, DEGREES		0.0	SUNRA
0.	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
0.	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
0.	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
0.	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
3.000E+02	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
3.000E+01	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
0.	PLANET LOOK ANGLE - CLOCK, DGREES		0.0	PLCL
0.	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
0.	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
0.	CONE ANGLE, DEGREES		0.0	CONE
0.	ROTATION RATE- CCW POSITIVE		0.0	RATE
0.	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE5 STEP=10000 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10000

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		0.	SUN CIGMA ANGLE, DEGREES
0.	STAR BETAS ANGLE, DEGREES		0.	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		7.50732E+01	PLANET DS EMISS POWER	WDS
2.09000E+07	PLANET RADIUS	PRAD		7.50732E+01	PLANET SS EMISS POWER	WSS
1.46792E+00	ORBIT PERIOD	PERIOD				
4.17312E+08	PLANET GRAV CONSTANT	GRAV		4.29000E+02	SOLAR CONSTANT AT PSD	SOL

MODEL=SAMPLE CONFIG=CASE5 STEP=10000 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

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* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*                                                                                                                           *
*    RESTARTING -DICAL - DATA FOR CONFIGURATION -CASE5 - FROM UNIT -RSI- INITIATED BY JOB NO. RGEX1ES    ON 05/23/77       *
*                                                                                                                           *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
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MODEL=SAMPLE CONFIG=CASE5 STEP=10000 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. 10000 · TRUE ANOMALY = 0. TIME = .00000
++++ IN THE SUN ++++

NODE NUMBER	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	--- DIRECT ABS. FLUX ALBEDO	PLANETARY
1	0.	0.	0.	0.
2	0.	0.	0.	0.
3	0.	0.	0.	0.
4	0.	0.	0.	0.
11	0.	0.	0.	0.
12	0.	0.	0.	0.
13	0.	0.	0.	0.
14	0.	0.	0.	0.
200	2.154E+01	1.436E+01	2.154E+00	1.436E+00
21	1.101E+02	7.423E+01	2.202E+01	6.681E+01
22	4.024E+01	2.683E+01	8.048E+00	2.414E+01
23	4.005E+01	2.645E+01	8.010E+00	2.380E+01
24	3.915E+01	2.678E+01	7.829E+00	2.411E+01
25	3.823E+01	2.643E+01	7.646E+00	2.379E+01
26	6.592E+00	4.570E+00	1.318E+00	4.113E+00

ADJUSTING FIELD LENGTH TO 042100 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 103000 FOR THE DI SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=10001 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
	FLUX COMPUTATION FLAG	SOL,PLAN,ALL	ALL	ICALFL
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
90.000	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
0.	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
0.	LONGITITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
0.	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
0.	ORBIT INCLINATION, DEGREES		0.0	OINC
6.08000E+05	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
6.08000E+05	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
0.	ORBIT ECCENTRICITY		0.0	ECC
0.	SUN RA ANGLE, DEGREES		0.0	SUNRA
0.	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
0.	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
0.	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
0.	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
3.600E+02	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
9.000E+01	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
0.	PLANET LOOK ANGLE - CLOCK, DGREES		0.0	PLCL
0.	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
0.	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
0.	CONE ANGLE, DEGREES		0.0	CONE
0.	ROTATION RATE- CCW POSITIVE		0.0	RATE
0.	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE5 STEP=10001 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10001

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		0.	SUN CIGMA ANGLE, DEGREES
0.	STAR BETAS ANGLE, DEGREES		0.	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		7.50732E+01	PLANET DS EMISS POWER	WDS
2.09000E+07	PLANET RADIUS	PRAD		7.50732E+01	PLANET SS EMISS POWER	WSS
1.46792E+00	ORBIT PERIOD	PERIOD				
4.17312E+08	PLANET GRAV CONSTANT	GRAV		4.29000E+02	SOLAR CONSTANT AT PSD	SOL

MODEL=SAMPLE CONFIG=CASE5 STEP=10001 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

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*                                                                                                                         *
*    RESTARTING -DICAL - DATA FOR CONFIGURATION -CASE5 - FROM UNIT -RSI- INITIATED BY JOB NO. RGEX1ES    ON 05/23/77      *
*                                                                                                                         *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
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MODEL=SAMPLE CONFIG=CASE5 STEP=10001 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. 10001 · TRUE ANOMALY = 90.00000 TIME = .36701
++++ IN THE SUN ++++

NODE	---DIRECT INCID. FLUX--		--- DIRECT ABS. FLUX	
NUMBER	ALBEDO	PLANETARY	ALBEDO	PLANETARY
1	0.	0.	0.	0.
2	0.	0.	0.	0.
3	0.	0.	0.	0.
4	0.	0.	0.	0.
11	0.	0.	0.	0.
12	0.	0.	0.	0.
13	0.	0.	0.	0.
14	0.	0.	0.	0.
200	1.200E+00	1.436E+01	1.200E-01	1.436E+00
21	1.430E+00	7.423E+01	2.859E-01	6.681E+01
22	2.061E+00	2.683E+01	4.123E-01	2.414E+01
23	6.423E-01	2.645E+01	1.285E-01	2.380E+01
24	0.	2.678E+01	0.	2.411E+01
25	6.342E-01	2.643E+01	1.268E-01	2.379E+01
26	0.	4.570E+00	0.	4.113E+00

ADJUSTING FIELD LENGTH TO 042100 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 103000 FOR THE DI SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=10002 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
	FLUX COMPUTATION FLAG	SOL,PLAN,ALL	ALL	ICALFL
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
180.000	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
0.	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
0.	LONGITITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
0.	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
0.	ORBIT INCLINATION, DEGREES		0.0	OINC
6.08000E+05	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
6.08000E+05	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
0.	ORBIT ECCENTRICITY		0.0	ECC
0.	SUN RA ANGLE, DEGREES		0.0	SUNRA
0.	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
0.	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
0.	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
0.	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
3.000E+02	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
1.500E+02	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
0.	PLANET LOOK ANGLE - CLOCK, DGREES		0.0	PLCL
0.	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
0.	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
0.	CONE ANGLE, DEGREES		0.0	CONE
0.	ROTATION RATE- CCW POSITIVE		0.0	RATE
0.	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE5 STEP=10002 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10002

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		0.	SUN CIGMA ANGLE, DEGREES
0.	STAR BETAS ANGLE, DEGREES		0.	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		7.50732E+01	PLANET DS EMISS POWER	WDS
2.09000E+07	PLANET RADIUS	PRAD		7.50732E+01	PLANET SS EMISS POWER	WSS
1.46792E+00	ORBIT PERIOD	PERIOD				
4.17312E+08	PLANET GRAV CONSTANT	GRAV		4.29000E+02	SOLAR CONSTANT AT PSD	SOL

MODEL=SAMPLE CONFIG=CASE5 STEP=10002 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

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*                                                                                                                             *
*   RESTARTING -DICAL - DATA FOR CONFIGURATION -CASE5 - FROM UNIT -RSI- INITIATED BY JOB NO. RGEX1ES    ON 05/23/77          *
*                                                                                                                             *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
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MODEL=SAMPLE CONFIG=CASE5 STEP=10002 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. 10002 . TRUE ANOMALY = 180.00000 TIME = .73402
++++ IN THE SHADE ++++

NODE	---DIRECT INCID. FLUX--		--- DIRECT ABS. FLUX	
NUMBER	ALBEDO	PLANETARY	ALBEDO	PLANETARY
1	0.	0.	0.	0.
2	0.	0.	0.	0.
3	0.	0.	0.	0.
4	0.	0.	0.	0.
11	0.	0.	0.	0.
12	0.	0.	0.	0.
13	0.	0.	0.	0.
14	0.	0.	0.	0.
200	0.	1.436E+01	0.	1.436E+00
21	0.	7.423E+01	0.	6.681E+01
22	0.	2.683E+01	0.	2.414E+01
23	0.	2.645E+01	0.	2.380E+01
24	0.	2.678E+01	0.	2.411E+01
25	0.	2.643E+01	0.	2.379E+01
26	0.	4.570E+00	0.	4.113E+00

ADJUSTING FIELD LENGTH TO 042100 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 103000 FOR THE DI SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=10003 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
	FLUX COMPUTATION FLAG	SOL,PLAN,ALL	ALL	ICALFL
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
105.720	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
0.	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
0.	LONGITITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
0.	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
0.	ORBIT INCLINATION, DEGREES		0.0	OINC
6.08000E+05	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
6.08000E+05	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
0.	ORBIT ECCENTRICITY		0.0	ECC
0.	SUN RA ANGLE, DEGREES		0.0	SUNRA
0.	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
0.	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
0.	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
0.	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
3.590E+02	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
1.036E+02	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
0.	PLANET LOOK ANGLE - CLOCK, DGREES		0.0	PLCL
0.	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
0.	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
0.	CONE ANGLE, DEGREES		0.0	CONE
0.	ROTATION RATE- CCW POSITIVE		0.0	RATE
0.	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE5 STEP=10003 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10003

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		0.	SUN CIGMA ANGLE, DEGREES
0.	STAR BETAS ANGLE, DEGREES		0.	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		7.50732E+01	PLANET DS EMISS POWER	WDS
2.09000E+07	PLANET RADIUS	PRAD		7.50732E+01	PLANET SS EMISS POWER	WSS
1.46792E+00	ORBIT PERIOD	PERIOD				
4.17312E+08	PLANET GRAV CONSTANT	GRAV		4.29000E+02	SOLAR CONSTANT AT PSD	SOL

MODEL=SAMPLE CONFIG=CASE5 STEP=10003 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

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* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*                                                                                                                         *
*   RESTARTING -DICAL - DATA FOR CONFIGURATION -CASE5 - FROM UNIT -RSI- INITIATED BY JOB NO. RGEX1ES    ON 05/23/77      *
*                                                                                                                         *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
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MODEL=SAMPLE CONFIG=CASE5 STEP=10003 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. 10003 TRUE ANOMALY = 105.71977 TIME = .43111
++++ IN THE SUN ++++

NODE NUMBER	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	--- DIRECT ABS. FLUX ALBEDO	PLANETARY
1	0.	0.	0.	0.
2	0.	0.	0.	0.
3	0.	0.	0.	0.
4	0.	0.	0.	0.
11	0.	0.	0.	0.
12	0.	0.	0.	0.
13	0.	0.	0.	0.
14	0.	0.	0.	0.
200	0.	1.436E+01	0.	1.436E+00
21	0.	7.423E+01	0.	6.681E+01
22	0.	2.683E+01	0.	2.414E+01
23	0.	2.645E+01	0.	2.380E+01
24	0.	2.678E+01	0.	2.411E+01
25	0.	2.643E+01	0.	2.379E+01
26	0.	4.570E+00	0.	4.113E+00

ADJUSTING FIELD LENGTH TO 042100 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 103000 FOR THE DI SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=10004 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
	FLUX COMPUTATION FLAG	SOL,PLAN,ALL	ALL	ICALFL
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
105.920	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
0.	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
0.	LONGITITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
0.	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
0.	ORBIT INCLINATION, DEGREES		0.0	OINC
6.08000E+05	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
6.08000E+05	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
0.	ORBIT ECCENTRICITY		0.0	ECC
0.	SUN RA ANGLE, DEGREES		0.0	SUNRA
0.	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
0.	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
0.	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
0.	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
3.590E+02	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
1.037E+02	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
0.	PLANET LOOK ANGLE - CLOCK, DGREES		0.0	PLCL
0.	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
0.	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
0.	CONE ANGLE, DEGREES		0.0	CONE
0.	ROTATION RATE- CCW POSITIVE		0.0	RATE
0.	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE5 STEP=10004 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10004

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		0.	SUN CIGMA ANGLE, DEGREES
0.	STAR BETAS ANGLE, DEGREES		0.	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		7.50732E+01	PLANET DS EMISS POWER	WDS
2.09000E+07	PLANET RADIUS	PRAD		7.50732E+01	PLANET SS EMISS POWER	WSS
1.46792E+00	ORBIT PERIOD	PERIOD				
4.17312E+08	PLANET GRAV CONSTANT	GRAV		4.29000E+02	SOLAR CONSTANT AT PSD	SOL

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* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*                                                                                                                         *
*    RESTARTING -DICAL - DATA FOR CONFIGURATION -CASE5 - FROM UNIT -RSI- INITIATED BY JOB NO. RGEX1ES    ON 05/23/77     *
*                                                                                                                         *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
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MODEL=SAMPLE CONFIG=CASE5 STEP=10004 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. 10004 . TRUE ANOMALY = 105.91977 TIME = .43193
++++ IN THE SHADE ++++

NODE NUMBER	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	--- DIRECT ABS. FLUX ALBEDO	PLANETARY
1	0.	0.	0.	0.
2	0.	0.	0.	0.
3	0.	0.	0.	0.
4	0.	0.	0.	0.
11	0.	0.	0.	0.
12	0.	0.	0.	0.
13	0.	0.	0.	0.
14	0.	0.	0.	0.
200	0.	1.436E+01	0.	1.436E+00
21	0.	7.423E+01	0.	6.681E+01
22	0.	2.683E+01	0.	2.414E+01
23	0.	2.645E+01	0.	2.380E+01
24	0.	2.678E+01	0.	2.411E+01
25	0.	2.643E+01	0.	2.379E+01
26	0.	4.570E+00	0.	4.113E+00

ADJUSTING FIELD LENGTH TO 042100 FOR THE OD SEGMENT

ADJUSTING FIELD LENGTH TO 053700 FOR THE DR SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=10010 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QDCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 9 TRUE ANOMALY = 0. TIME = .00000
++++ IN THE SHADE ++++

NODE NUMBER	DIRECT FLUX (QDS)	DIRECT ABS. FLUX
1	0.	0.
2	9.40279E+01	8.46251E+01
3	0.	0.
4	1.65122E+02	1.48610E+02
11	0.	0.
12	0.	0.
13	1.00547E+01	9.04922E+00
14	9.17345E+01	8.25611E+01
200	0.	0.
21	0.	0.
22	1.07250E+02	2.14500E+01
23	1.85762E+02	3.71525E+01
24	0.	0.
25	0.	0.
26	1.86871E+02	3.73741E+01

TOTAL ELAPSED TIME IN PROBLEM = 39.871 SECONDS

MODEL=SAMPLE CONFIG=CASE5 STEP=10010 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 9 TRUE ANOMALY = 0. TIME = .00000
++++ IN THE SHADE ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---DIRECT ABS. FLUX--- ALBEDO	PLANETARY
1		0.	0.	0.	0.
2		0.	0.	0.	0.
3		0.	0.	0.	0.
4		0.	0.	0.	0.
11		0.	0.	0.	0.
12		0.	0.	0.	0.
13		0.	0.	0.	0.
14		0.	0.	0.	0.
200		2.154E+01	1.436E+01	2.154E+00	1.436E+00
21		1.101E+02	7.423E+01	2.202E+01	6.681E+01
22		4.024E+01	2.683E+01	8.048E+00	2.414E+01
23		4.005E+01	2.645E+01	8.010E+00	2.380E+01
24		3.915E+01	2.678E+01	7.829E+00	2.411E+01
25		3.823E+01	2.643E+01	7.646E+00	2.379E+01
26		6.592E+00	4.570E+00	1.318E+00	4.113E+00

TOTAL ELAPSED TIME IN PROBLEM = 39.939 SECONDS

ADJUSTING FIELD LENGTH TO 042100 FOR THE OD SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=10010 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10010	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10010	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10010	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

MODEL=SAMPLE CONFIG=CASE5 STEP=10010 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEATING RATES FOR ORBIT POINT = 10010 TRUE ANOMALY = 0. TIME = .0000
UNITS ARE ENERGY PER UNIT TIME

++++ IN THE SHADE ++++

NODE	SOLAR		ALBEDO		PLANETARY		TOTAL HEAT RATES	
	DIRECT	TOTAL	DIRECT	TOTAL	DIRECT	TOTAL	DIRECT	TOTAL
1	0	6.09706E+00	0	4.06578E-01	0	2.70943E-01	0	6.77458E+00
2	8.46251E+01	8.85599E+01	0	2.84976E-01	0	1.89907E-01	8.46251E+01	8.90347E+01
3	0	5.63941E+00	0	1.46185E-01	0	9.74173E-02	0	5.88301E+00
4	1.48610E+02	1.50897E+02	0	3.44352E-01	0	2.29476E-01	1.48610E+02	1.51471E+02
11	0	3.45633E+00	0	4.06578E-01	0	2.70943E-01	0	4.13385E+00
12	0	3.45528E+00	0	2.84976E-01	0	1.89907E-01	0	3.93017E+00
13	9.04922E+00	1.19405E+01	0	1.46185E-01	0	9.74173E-02	9.04922E+00	1.21841E+01
14	8.25611E+01	8.33825E+01	0	3.44352E-01	0	2.29476E-01	6.25611E+01	8.39563E+01
200	0	6.01971E-01	4.30861E+00	4.31271E+00	2.87125E+00	2.87398E+00	7.17986E+00	7.78867E+00
21	0	0	4.53642E+01	4.53642E+01	1.37654E+02	1.37654E+02	1.83018E+02	1.83018E+02
22	4.41956E+01	4.41956E+01	1.65816E+01	1.65816E+01	4.97434E+01	4.97434E+01	1.10521E+02	1.10521E+02
23	3.86535E+01	3.86535E+01	8.33337E+00	8.33337E+00	2.47628E+01	2.47628E+01	7.17497E+01	7.17497E+01
24	0	0	1.61312E+01	1.61312E+01	4.96677E+01	4.96677E+01	6.57989E+01	6.57989E+01
25	0	0	7.95471E+00	7.95471E+00	2.47462E+01	2.47462E+01	3.27009E+01	3.27009E+01
26	7.70056E+01	7.70056E+01	2.71649E+00	2.71649E+00	8.47363E+00	8.47363E+00	8.81957E+01	8.81957E+01

TOTAL ELAPSED TIME IN PROBLEM = 40.414 SECONDS

ABSORBED Q STORED IN STEP 10010

TOTAL TIME TO COMPUTE ABSORBED Q .40

ADJUSTING FIELD LENGTH TO 053700 FOR THE DR SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=10011 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 10 TRUE ANOMALY = 90.00000 TIME = .36701
++++ IN THE SHADE ++++

NODE NUMBER	DIRECT FLUX (QDS)	DIRECT ABS. FLUX
1	0.	0.
2	2.75082E-07	2.47574E-07
3	0.	0.
4	2.28800E+02	2.05920E+02
11	0.	0.
12	0.	0.
13	0.	0.
14	2.28800E+02	2.05920E+02
200	3.03349E+02	3.03349E+01
21	6.73312E-07	1.34662E-07
22	4.29000E+02	8.58000E+01
23	5.21643E-07	1.04329E-07
24	0.	0.
25	0.	0.
26	0.	0.

TOTAL ELAPSED TIME IN PROBLEM = 42.674 SECONDS

MODEL=SAMPLE CONFIG=CASE5 STEP=10011 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 10 TRUE ANOMALY = 90.00000 TIME = .36701
++++ IN THE SHADE ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---DIRECT ABS. FLUX--- ALBEDO	PLANETARY
1		0.	0.	0.	0.
2		0.	0.	0.	0.
3		0.	0.	0.	0.
4		0.	0.	0.	0.
11		0.	0.	0.	0.
12		0.	0.	0.	0.
13		0.	0.	0.	0.
14		0.	0.	0.	0.
200		1.200E+00	1.436E+01	1.200E-01	1.436E+00
21		1.430E+00	7.423E+01	2.859E-01	6.681E+01
22		2.061E+00	2.683E+01	4.123E-01	2.414E+01
23		6.423E-01	2.645E+01	1.285E-01	2.380E+01
24		0.	2.678E+01	0.	2.411E+01
25		6.342E-01	2.643E+01	1.268E-01	2.379E+01
26		0.	4.570E+00	0.	4.113E+00

TOTAL ELAPSED TIME IN PROBLEM = 42.737 SECONDS

ADJUSTING FIELD LENGTH TO 042100 FOR THE OD SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=10011 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10011	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10011	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10011	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

MODEL=SAMPLE CONFIG=CASE5 STEP=10011 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEATING RATES FOR ORBIT POINT = 10011 TRUE ANOMALY = 90.0000 TIME = .3670
UNITS ARE ENERGY PER UNIT TIME

++++ IN THE SHADE ++++

NODE	SOLAR DIRECT	SOLAR TOTAL	ALBEDO DIRECT	ALBEDO TOTAL	PLANETARY DIRECT	PLANETARY TOTAL	TOTAL HEAT RATES DIRECT	TOTAL HEAT RATES TOTAL
1	0	1.17193E+01	0	2.26555E-02	0	2.70943E-01	0	1.20129E+01
2	2.47574E-07	9.60383E+00	0	1.58795E-02	0	1.89907E-01	2.47574E-07	9.80962E+00
3	0	7.62477E+00	0	8.14577E-03	0	9.74173E-02	0	7.73033E+00
4	2.05920E+02	2.11273E+02	0	1.91882E-02	0	2.29476E-01	2.05920E+02	2.11522E+02
11	0	1.17193E+01	0	2.26555E-02	0	2.70943E-01	0	1.20129E+01
12	0	9.60383E+00	0	1.58795E-02	0	1.89907E-01	0	9.80962E+00
13	0	7.62477E+00	0	8.14577E-03	0	9.74173E-02	0	7.73033E+00
14	2.05920E+02	2.11273E+02	0	1.91882E-02	0	2.29476E-01	2.05920E+02	2.11522E+02
200	6.06698E+01	6.15402E+01	2.40086E-01	2.40315E-01	2.87125E+00	2.87398E+00	6.37811E+01	6.46545E+01
21	2.77458E-07	2.77458E-07	5.89147E-01	5.89147E-01	1.37654E+02	1.37654E+02	1.38243E+02	1.38243E+02
22	1.76782E+02	1.76782E+02	8.49402E-01	8.49402E-01	4.97434E+01	4.97434E+01	2.27375E+02	2.27375E+02
23	1.08543E-07	1.08543E-07	1.33651E-01	1.33651E-01	2.47628E+01	2.47628E+01	2.48965E+01	2.48965E+01
24	0	0	0	0	4.96677E+01	4.96677E+01	4.96677E+01	4.96677E+01
25	0	0	1.31967E-01	1.31967E-01	2.47462E+01	2.47462E+01	2.48782E+01	2.48782E+01
26	0	0	0	0	8.47363E+00	8.47363E+00	8.47363E+00	8.47363E+00

TOTAL ELAPSED TIME IN PROBLEM = 43.216 SECONDS

ABSORBED Q STORED IN STEP 10011

TOTAL TIME TO COMPUTE ABSORBED Q .41

ADJUSTING FIELD LENGTH TO 053700 FOR THE DR SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=10012 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 11 TRUE ANOMALY = 180.00000 TIME = .73402
++++ IN THE SHADE ++++

NODE NUMBER	DIRECT FLUX (QDS)	DIRECT ABS. FLUX
1	0.	0.
2	0.	0.
3	0.	0.
4	0.	0.
11	0.	0.
12	0.	0.
13	0.	0.
14	0.	0.
200	0.	0.
21	0.	0.
22	0.	0.
23	0.	0.
24	0.	0.
25	0.	0.
26	0.	0.

TOTAL ELAPSED TIME IN PROBLEM = 46.844 SECONDS

MODEL=SAMPLE CONFIG=CASE5 STEP=10012 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 11 TRUE ANOMALY = 180.00000 TIME = .73402
++++ IN THE SHADE ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---DIRECT ABS. FLUX--- ALBEDO	PLANETARY
1		0.	0.	0.	0.
2		0.	0.	0.	0.
3		0.	0.	0.	0.
4		0.	0.	0.	0.
11		0.	0.	0.	0.
12		0.	0.	0.	0.
13		0.	0.	0.	0.
14		0.	0.	0.	0.
200		0.	1.436E+01	0.	1.436E+00
21		0.	7.423E+01	0.	6.681E+01
22		0.	2.683E+01	0.	2.414E+01
23		0.	2.645E+01	0.	2.380E+01
24		0.	2.678E+01	0.	2.411E+01
25		0.	2.643E+01	0.	2.379E+01
26		0.	4.570E+00	0.	4.113E+00

TOTAL ELAPSED TIME IN PROBLEM = 46.910 SECONDS

ADJUSTING FIELD LENGTH TO 042100 FOR THE OD SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=10012 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10012	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10012	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10012	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

MODEL=SAMPLE CONFIG=CASE5 STEP=10012 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEATING RATES FOR ORBIT POINT = 10012 TRUE ANOMALY = 180.0000 TIME = .7340
UNITS ARE ENERGY PER UNIT TIME

++++ IN THE SHADE ++++

NODE	SOLAR DIRECT	SOLAR TOTAL	ALBEDO DIRECT	ALBEDO TOTAL	PLANETARY DIRECT	PLANETARY TOTAL	TOTAL HEAT RATES DIRECT	TOTAL HEAT RATES TOTAL
1	0	0	0	0	0	2.70943E-01	0	2.70943E-01
2	0	0	0	0	0	1.89907E-01	0	1.89907E-01
3	0	0	0	0	0	9.74173E-02	0	9.74173E-02
4	0	0	0	0	0	2.29476E-01	0	2.29476E-01
11	0	0	0	0	0	2.70943E-01	0	2.70943E-01
12	0	0	0	0	0	1.89907E-01	0	1.89907E-01
13	0	0	0	0	0	9.74173E-02	0	9.74173E-02
14	0	0	0	0	0	2.29476E-01	0	2.29476E-01
200	0	0	0	0	2.87125E+00	2.87398E+00	2.87125E+00	2.87398E+00
21	0	0	0	0	1.37654E+02	1.37654E+02	1.37654E+02	1.37654E+02
22	0	0	0	0	4.97434E+01	4.97434E+01	4.97434E+01	4.97434E+01
23	0	0	0	0	2.47628E+01	2.47628E+01	2.47628E+01	2.47628E+01
24	0	0	0	0	4.96677E+01	4.96677E+01	4.96677E+01	4.96677E+01
25	0	0	0	0	2.47462E+01	2.47462E+01	2.47462E+01	2.47462E+01
26	0	0	0	0	8.47363E+00	8.47363E+00	8.47363E+00	8.47363E+00

TOTAL ELAPSED TIME IN PROBLEM = 47.406 SECONDS

ABSORBED Q STORED IN STEP 10012

TOTAL TIME TO COMPUTE ABSORBED Q .42

ADJUSTING FIELD LENGTH TO 053700 FOR THE DR SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=10013 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 12 TRUE ANOMALY = 105.71977 TIME = .43111
++++ IN THE SHADE ++++

NODE NUMBER	DIRECT FLUX (QDS)	DIRECT ABS. FLUX
1	4.02633E+01	3.62370E+01
2	3.70551E+00	3.33496E+00
3	0.	0.
4	1.85318E+02	1.66786E+02
11	4.02633E+01	3.62370E+01
12	0.	0.
13	0.	0.
14	1.85318E+02	1.66786E+02
200	2.44010E+02	2.44010E+01
21	1.00658E+02	2.01316E+01
22	4.16966E+02	8.33932E+01
23	6.94783E+00	1.38957E+00
24	0.	0.
25	0.	0.
26	0.	0.

TOTAL ELAPSED TIME IN PROBLEM = 50.871 SECONDS

MODEL=SAMPLE CONFIG=CASE5 STEP=10013 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 12 TRUE ANOMALY = 105.71977 TIME = .43111
++++ IN THE SHADE ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---DIRECT ABS. FLUX--- ALBEDO	PLANETARY
1		0.	0.	0.	0.
2		0.	0.	0.	0.
3		0.	0.	0.	0.
4		0.	0.	0.	0.
11		0.	0.	0.	0.
12		0.	0.	0.	0.
13		0.	0.	0.	0.
14		0.	0.	0.	0.
200		0.	1.436E+01	0.	1.436E+00
21		0.	7.423E+01	0.	6.681E+01
22		0.	2.683E+01	0.	2.414E+01
23		0.	2.645E+01	0.	2.380E+01
24		0.	2.678E+01	0.	2.411E+01
25		0.	2.643E+01	0.	2.379E+01
26		0.	4.570E+00	0.	4.113E+00

TOTAL ELAPSED TIME IN PROBLEM = 50.936 SECONDS

ADJUSTING FIELD LENGTH TO 042100 FOR THE OD SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=10013 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10013	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10013	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10013	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

DATE 06/01/77 TIME 18.02.04. THERMAL RADIATION ANALYSIS SYSTEM (TRASYS) CDC6500/SCOPE 3.4 PAGE 52

MODEL=SAMPLE CONFIG=CASE5 STEP=10013 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEATING RATES FOR ORBIT POINT = 10013 TRUE ANOMALY = 105.7198 TIME = .4311
UNITS ARE ENERGY PER UNIT TIME

++++ IN THE SHADE ++++

NODE	SOLAR		ALBEDO		PLANETARY		TOTAL HEAT RATES	
	DIRECT	TOTAL	DIRECT	TOTAL	DIRECT	TOTAL	DIRECT	TOTAL
1	3.62370E+01	4.60497E+01	0	0	0	2.70943E-01	3.62370E+01	4.63207E+01
2	3.33496E+00	1.21871E+01	0	0	0	1.89907E-01	3.33496E+00	1.23770E+01
3	0	7.35578E+00	0	0	0	9.74173E-02	0	7.45320E+00
4	1.66786E+02	1.72226E+02	0	0	0	2.29476E-01	1.66786E+02	1.72456E+02
11	3.62370E+01	4.59890E+01	0	0	0	2.70943E-01	3.62370E+01	4.62599E+01
12	0	8.87480E+00	0	0	0	1.89907E-01	0	9.06471E+00
13	0	7.29424E+00	0	0	0	9.74173E-02	0	7.39166E+00
14	1.66786E+02	1.72165E+02	0	0	0	2.29476E-01	1.66786E+02	1.72394E+02
200	4.88021E+01	4.96811E+01	0	0	2.87125E+00	2.87398E+00	5.16733E+01	5.25551E+01
21	4.14792E+01	4.14792E+01	0	0	1.37654E+02	1.37654E+02	1.79133E+02	1.79133E+02
22	1.71823E+02	1.71823E+02	0	0	4.97434E+01	4.97434E+01	2.21567E+02	2.21567E+02
23	1.44570E+00	1.44570E+00	0	0	2.47628E+01	2.47628E+01	2.62085E+01	2.62085E+01
24	0	0	0	0	4.96677E+01	4.96677E+01	4.96677E+01	4.96677E+01
25	0	0	0	0	2.47462E+01	2.47462E+01	2.47462E+01	2.47462E+01
26	0	0	0	0	8.47363E+00	8.47363E+00	8.47363E+00	8.47363E+00

TOTAL ELAPSED TIME IN PROBLEM = 51.412 SECONDS

ABSORBED Q STORED IN STEP 10013

TOTAL TIME TO COMPUTE ABSORBED Q .42

ADJUSTING FIELD LENGTH TO 053700 FOR THE DR SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=10014 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 13 TRUE ANOMALY = 105.91977 TIME = .43193
++++ IN THE SHADE ++++

NODE NUMBER	DIRECT FLUX (QDS)	DIRECT ABS. FLUX
1	4.07624E+01	3.66861E+01
2	3.79979E+00	3.41981E+00
3	0.	0.
4	1.85182E+02	1.66664E+02
11	4.07624E+01	3.66861E+01
12	0.	0.
13	0.	0.
14	1.85182E+02	1.66664E+02
200	0.	0.
21	0.	0.
22	0.	0.
23	0.	0.
24	0.	0.
25	0.	0.
26	0.	0.

TOTAL ELAPSED TIME IN PROBLEM = 54.937 SECONDS

MODEL=SAMPLE CONFIG=CASE5 STEP=10014 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 13 TRUE ANOMALY = 105.91977 TIME = .43193
++++ IN THE SHADE ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---DIRECT ABS. FLUX--- ALBEDO	PLANETARY
1		0.	0.	0.	0.
2		0.	0.	0.	0.
3		0.	0.	0.	0.
4		0.	0.	0.	0.
11		0.	0.	0.	0.
12		0.	0.	0.	0.
13		0.	0.	0.	0.
14		0.	0.	0.	0.
200		0.	0.	0.	0.
21		0.	1.436E+01	0.	1.436E+00
22		0.	7.423E+01	0.	6.681E+01
23		0.	2.683E+01	0.	2.414E+01
24		0.	2.645E+01	0.	2.380E+01
25		0.	2.678E+01	0.	2.411E+01
26		0.	2.643E+01	0.	2.379E+01
		0.	4.570E+00	0.	4.113E+00

TOTAL ELAPSED TIME IN PROBLEM = 55.005 SECONDS

ADJUSTING FIELD LENGTH TO 042100 FOR THE OD SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=10014
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10014	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10014	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10014	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

MODEL=SAMPLE CONFIG=CASE5 STEP=10014 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEATING RATES FOR ORBIT POINT = 10014 TRUE ANOMALY = 105.9198 TIME = .4319
UNITS ARE ENERGY PER UNIT TIME

++++ IN THE SHADE ++++

NODE	SOLAR DIRECT	SOLAR TOTAL	ALBEDO DIRECT	ALBEDO TOTAL	PLANETARY DIRECT	PLANETARY TOTAL	TOTAL HEAT RATES DIRECT	TOTAL HEAT RATES TOTAL
1	3.66861E+01	4.18956E+01	0	0	0	2.70943E-01	3.66861E+01	4.21665E+01
2	3.41981E+00	9.05446E+00	0	0	0	1.89907E-01	3.41981E+00	9.24437E+00
3	0	5.71244E+00	0	0	0	9.74173E-02	0	5.80986E+00
4	1.66664E+02	1.68218E+02	0	0	0	2.29476E-01	1.66664E+02	1.68448E+02
11	3.66861E+01	4.18333E+01	0	0	0	2.70943E-01	3.66861E+01	4.21042E+01
12	0	5.65789E+00	0	0	0	1.89907E-01	0	5.84780E+00
13	0	5.64934E+00	0	0	0	9.74173E-02	0	5.74675E+00
14	1.66664E+02	1.68155E+02	0	0	0	2.29476E-01	1.66664E+02	1.68384E+02
200	0	8.34323E-01	0	0	2.87125E+00	2.87398E+00	2.87125E+00	3.70831E+00
21	0	0	0	0	1.37654E+02	1.37654E+02	1.37654E+02	1.37654E+02
22	0	0	0	0	4.97434E+01	4.97434E+01	4.97434E+01	4.97434E+01
23	0	0	0	0	2.47628E+01	2.47628E+01	2.47628E+01	2.47628E+01
24	0	0	0	0	4.96677E+01	4.96677E+01	4.96677E+01	4.96677E+01
25	0	0	0	0	2.47462E+01	2.47462E+01	2.47462E+01	2.47462E+01
26	0	0	0	0	8.47363E+00	8.47363E+00	8.47363E+00	8.47363E+00

TOTAL ELAPSED TIME IN PROBLEM = 55.524 SECONDS

ABSORBED Q STORED IN STEP 10014

TOTAL TIME TO COMPUTE ABSORBED Q .54

ADJUSTING FIELD LENGTH TO 051700 FOR THE QO SEGMENT

MODEL=SAMPLE CONFIG=CASE5 STEP=10014 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q OUTPUT COMPUTATION LINK.

ABSORBED Q OUT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IQOTME	1	1	TIME ARRAY ID NUMBER FLUX TABLES START AT IQOTME + 1	N/A
QOTAPE	NO	2HNO	PARAMETER TO OUTPUT TO BCD TAPE	(4HTAPE,2HNO)
QOPNCH	PUN	2HNO	PUNCH/NO PUNCH PARAMETER FOR OUTPUT	(3HPUN,2HNO)
QOAMPF	1.0000	1.0	AREA MULTIPLYING FACTOR	N/A
QOFMPF	1.0000	1.0	FLUX MULTIPLYING FACTOR	N/A
QOTMPF	1.0000	1.0	TIME MULTIPLYING FACTOR	N/A
QOTYPE	BOTH	NONE	PARAMETER TO DETERMINE TYPE OF OUTPUT	(3HTAB,2HAV,4HBOTH)
IQOCOR	0	0	STEP NUMBER REFERENCE FOR CORRESPONDENCE DATA	N/A
IQOARY	ALL	NONE	STEP NO. ARRAY DIRECTIVE	(3HALL,ARRAY NAME)

ABSORBED HEAT FLUX TABLES PUNCHED

```
Q    = INPUT * FMPF  WHERE FMPF =   1.00000E+00
TIME = INPUT * TMPF  WHERE TMPF =   1.00000E+00
AREA IS ON SUBROUTINE CALL CARDS
```

MODEL=SAMPLE CONFIG=CASE5 STEP=10014
ABSORBED Q OUTPUT COMPUTATION LINK.

```
   1$ TIME ARRAY
 1.969E-08, 3.670E-01, 4.311E-01, 4.319E-01, 7.340E-01
END$
   2$  HEAT FLUX ARRAY
 6.775E+00, 1.201E+01, 4.632E+01, 4.217E+01, 2.709E-01
END$
   3$  HEAT FLUX ARRAY
 8.903E+01, 9.810E+00, 1.238E+01, 9.244E+00, 1.899E-01
END$
   4$  HEAT FLUX ARRAY
 5.883E+00, 7.730E+00, 7.453E+00, 5.810E+00, 9.742E-02
END$
   5$  HEAT FLUX ARRAY
 1.515E+02, 2.115E+02, 1.725E+02, 1.684E+02, 2.295E-01
END$
   6$  HEAT FLUX ARRAY
 4.134E+00, 1.201E+01, 4.626E+01, 4.210E+01, 2.709E-01
END$
   7$  HEAT FLUX ARRAY
 3.930E+00, 9.810E+00, 9.065E+00, 5.848E+00, 1.899E-01
END$
   8$  HEAT FLUX ARRAY
 1.218E+01, 7.730E+00, 7.392E+00, 5.747E+00, 9.742E-02
END$
   9$  HEAT FLUX ARRAY
 8.396E+01, 2.115E+02, 1.724E+02, 1.684E+02, 2.295E-01
END$
  10$  HEAT FLUX ARRAY
 3.894E+00, 3.233E+01, 2.628E+01, 1.854E+00, 1.437E+00
END$
  11$  HEAT FLUX ARRAY
 8.883E+01, 6.710E+01, 8.694E+01, 6.681E+01, 6.681E+01
END$
  12$  HEAT FLUX ARRAY
 5.364E+01, 1.104E+02, 1.075E+02, 2.414E+01, 2.414E+01
END$
  13$  HEAT FLUX ARRAY
 6.896E+01, 2.393E+01, 2.519E+01, 2.380E+01, 2.380E+01
END$
  14$  HEAT FLUX ARRAY
 3.194E+01, 2.411E+01, 2.411E+01, 2.411E+01, 2.411E+01
END$
  15$  HEAT FLUX ARRAY
 3.143E+01, 2.391E+01, 2.379E+01, 2.379E+01, 2.379E+01
END$
  16$  HEAT FLUX ARRAY
 4.281E+01, 4.113E+00, 4.113E+00, 4.113E+00, 4.113E+00
END$
```

DA11MC SUBROUTINE CALL CARDS

AREA = INPUT (UNITS) * AMPF WHERE AMPF = 1.00000E+00

MODEL=SAMPLE CONFIG=CASE5 STEP=10014 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q OUTPUT COMPUTATION LINK.

DA11MC SUBROUTINE CALL CARDS

AREA = INPUT (UNITS) * AMPF WHERE AMPF = 1.00000E+00

```
DA11MC( 1.46792174E+00,TIMEM,A    1,A   2, 1.00000000E+00,Q    1)$
DA11MC( 1.46792174E+00,TIMEM,A    1,A   3, 1.00000000E+00,Q    2)$
DA11MC( 1.46792174E+00,TIMEM,A    1,A   4, 1.00000000E+00,Q    3)$
DA11MC( 1.46792174E+00,TIMEM,A    1,A   5, 1.00000000E+00,Q    4)$
DA11MC( 1.46792174E+00,TIMEM,A    1,A   6, 1.00000000E+00,Q   11)$
DA11MC( 1.46792174E+00,TIMEM,A    1,A   7, 1.00000000E+00,Q   12)$
DA11MC( 1.46792174E+00,TIMEM,A    1,A   8, 1.00000000E+00,Q   13)$
DA11MC( 1.46792174E+00,TIMEM,A    1,A   9, 1.00000000E+00,Q   14)$
DA11MC( 1.46792174E+00,TIMEM,A    1,A  10, 2.00000000E+00,Q  200)$
DA11MC( 1.46792174E+00,TIMEM,A    1,A  11, 2.06040000E+00,Q   21)$
DA11MC( 1.46792174E+00,TIMEM,A    1,A  12, 2.06040000E+00,Q   22)$
DA11MC( 1.46792174E+00,TIMEM,A    1,A  13, 1.04040000E+00,Q   23)$
DA11MC( 1.46792174E+00,TIMEM,A    1,A  14, 2.06040000E+00,Q   24)$
DA11MC( 1.46792174E+00,TIMEM,A    1,A  15, 1.04040000E+00,Q   25)$
DA11MC( 1.46792174E+00,TIMEM,A    1,A  16, 2.06040000E+00,Q   26)$
```

AVERAGE ORBITAL HEATING FLUX AND AREA CARDS PUNCHED

VALUES ARE FLUX = INPUT (UNITS) * FMPF WHERE FMPF = 1.00000E+00
VALUES ARE AREA = INPUT (UNITS) * AMPF WHERE AMPF = 1.00000E+00

MODEL=SAMPLE CONFIG=CASE5 STEP=10014 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q OUTPUT COMPUTATION LINK.

AVERAGE ORBITAL HEATING FLUX AND AREA CARDS PUNCHED

VALUES ARE FLUX = INPUT (UNITS) * FMPF WHERE FMPF = 1.00000E+00
VALUES ARE AREA = INPUT (UNITS) * AMPF WHERE AMPF = 1.00000E+00

```
Q    1=  1.60259282E+01* 1.00000000E+00*1.0000 $
Q    2=  2.76332721E+01* 1.00000000E+00*1.0000 $
Q    3=  5.28929786E+00* 1.00000000E+00*1.0000 $
Q    4=  1.42414559E+02* 1.00000000E+00*1.0000 $
Q   11=  1.53502067E+01* 1.00000000E+00*1.0000 $
Q   12=  5.50982702E+00* 1.00000000E+00*1.0000 $
Q   13=  6.84882373E+00* 1.00000000E+00*1.0000 $
Q   14=  1.25520079E+02* 1.00000000E+00*1.0000 $
Q  200=  1.23073108E+01* 2.00000000E+00*1.0000 $
Q   21=  7.32878030E+01* 2.06040000E+00*1.0000 $
Q   22=  6.05224328E+01* 2.06040000E+00*1.0000 $
Q   23=  3.51910041E+01* 1.04040000E+00*1.0000 $
Q   24=  2.60631280E+01* 2.06040000E+00*1.0000 $
Q   25=  2.57340091E+01* 1.04040000E+00*1.0000 $
Q   26=  1.37857494E+01* 2.06040000E+00*1.0000 $
```

TOTAL TIME TO COMPUTE ABSORBED Q OUT .90

```
HEADER OPTIONS DATA
TITLE  SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN
       MODEL        = SAMPLE

HEADER SURFACE DATA
C
C-----THIS SURFACE DATA BLOCK IS USED IN SAMPLE CASES 1 THROUGH 6
C-----WITH VARIOUS PORTIONS OF IT BEING ACTIVATED FOR THE DIFFERENT
C-----CASES.
C
BCS    BOXINR
S      SURFN        = 1
       TYPE         = RECT
       ACTIVE       = BOTTOM
       PROP         = 0.9,0.9
       P1           = 1.0, 0.0, 1.0
       P2           = 1.0, 0.0, 0.0
       P3           = 1.0, 1.0, 0.0
       COM          = * INNER RIGHT FRONT *
S      SURFN        = 2
       TYPE         = RECT
       ACTIVE       = BOTTOM
       PROP         = 0.9,0.9
       P1           = 1.0, 1.0, 1.0
       P2           = 1.0, 1.0, 0.0
       P3           = 0.0, 1.0, 0.0
       COM          = * INNER RIGHT SIDE *
S      SURFN        = 3
       TYPE         = RECT
       ACTIVE       = TOP
       PROP         = 0.9,0.9
       P1           = 0.0, 0.0, 1.0
       P2           = 0.0, 0.0, 0.0
       P3           = 0.0, 1.0, 0.0
       COM          = * INNER RIGHT BACK *
S      SURFN        = 4
       TYPE         = RECT
       ACTIVE       = TOP
       PROP         = 0.9,0.9
       P1           = 1.0, 1.0, 0.0
       COM          = * INNER RIGHT BOTTOM *
BCS    BOXINL,IMGBCS=BOXINR,NINC=10,IREFSF=1000,IGEN=ALL
C
C-----THE FOREGOING CARD IMAGES BCS BOXINR IN REFERENCE PLANE 1000
C-----TO CREATE BCS BOXINL.  EQUIVALENT FORM FACTOR DATA FOR
C-----BOXINL WILL ALSO BE GENERATED.
C
R      REFNO        = 1000
       P1           = 1.0, 0.0, 1.0
       P2           = 1.0, 0.0, 0.0
       P3           = 0.0, 0.0, 0.0
       COM          = * IMAGING PLANE *
BCS    LIDINR
S      SURFN        = 5
       TYPE         = RECT
       ACTIVE       = BOTTOM
       PROP         = 0.9,0.9
       P1           = 1.0, 1.0, 0.0
       COM          = * INNER RIGHT LID *
```

```
S       SURFN          = 15
        IMAGSF         = 5
        IREFSF         = 1000
        COM            = * INNER LEFT LID *
BCS     BOXOUT
S       SURFN          = 21
        TYPE           = BOX5
        ACTIVE         = OUT
        SHADE          = NO
        PROP           = 0.2,0.9
        P1             = 1.01,-1.01, 1.01
        P2             = 1.01, 1.01, 1.01
        P3             =-0.01, 1.01, 1.01
        P4             =-0.01, 1.01,-0.01
        COM            = * OUTER SURFACES *
BCS     LIDOUT
S       SURFN          = 26
        TYPE           = RECT
        ACTIVE         = TOP
        SHADE          = NO
        PROP           = 0.2,0.9
        P1             = 1.01,-1.01, 0.01
        P2             = 1.01, 1.01, 0.01
        P3             =-0.01, 1.01, 0.01
        COM            = * OUTER SURFACE OF LID *
C
C-----THE NEXT TWO BCS'S (MESSR AND MESSL) ARE ACTIVATED IN SAMPLE
C-----CASE 4 ONLY.
C
BCS     MESSR
S       SURFN          = 101
        TYPE           = RECT
        ACTIVE         = TOP
        PROP           = 1.0,1.0
        P1             = 1.0, 0.0, 1.0
        P2             = 1.0, 0.0, 0.0
        P3             = 0.0, 0.0, 0.0
        COM            = * PRIMARY MESS NODE, RIGHT SIDE *
BCS     MESSL
S       SURFN          = 111
        TYPE           = RECT
        ACTIVE         = BOTTOM
        PROP           = 1.0,1.0
        P1             = 1.0, 0.0, 1.0
        P2             = 1.0, 0.0, 0.0
        P3             = 0.0, 0.0, 0.0
        COM            = * PRIMARY MESS NODE, LEFT SIDE *
C
C-----THE FOLLOWING BCS (LIDSP) IS ACTIVATED IN SAMPLE CASE 5 ONLY.
C
BCS     LIDSP
S       SURFN          = 200
        TYPE           = RECT
        ACTIVE         = BOTTOM
        PROP           = 0.1,0.1
        SPRI           = 0.8
        SPRS           = 0.8
        P1             = 1.0,-1.0, 0.0
        P2             = 1.0, 1.0, 0.0
        P3             = 0.0, 1.0, 0.0
        COM            = * SPECULAR LID *
HEADER BCS DATA
BCS     BOXINR
```

```
BCS     BOXINL
BCS     LIDINR ,0.,0.,1.,0.,-45.,0.
BCS     BOXOUT
BCS     LIDOUT ,0.,0.,1.,0.,-45.,0.
BCS     MESSR
BCS     MESSL
BCS     LIDSP  ,0.,0.,1.,0.,-45.,0.
HEADER FORM FACTOR DATA
C
C-----ENTER KNOWN ZERO FORM FACTORS FOR CASE 6.
C
FIG     CASE6
NODEA   1,2,3,4,11,12,13,14,5,15,END
        1,1,0.
        1,11,0.
        2,2,0.
        3,3,0.
        3,13,0.
        4,4,0.
        4,14,0.
        5,5,0.
        5,15,0.
HEADER OPERATIONS DATA
C
C-----BUILD THE CASE 6 CONFIGURATION
C
STEP    1
BUILD   CASE6,BOXINR,BOXINL,LIDINR
C
C------CALCULATE THE FORM FACTOR MATRIX USING FFCAL
C
L       FFCAL
C
C------REBUILD SAME GEOMETRY UNDER A DIFFERENT NAME.
C
STEP    2
C
C------RECALCULATE FORM FACTORS USING NFFCAL.
C
BUILD   CASE6B,BOXINR,BOXINL,LIDINR
L       NFFCAL
END OF DATA
```

N A S A / M A R T I N   M A R I E T T A
T H E R M A L   R A D I A T I O N   A N A L Y S I S   S Y S T E M
U N I V A C   1 1 1 0 / E X E C   8

T R A S Y S   I I

```
TTTTTTTTTTTT
TTTTTTTTTTTT
TT   TTT   TT
     TTT
     TTT
     TTT
     TTT
     TTT
   TTTTTTT

RRRRRRRRR
RRRRRRRRRR
RRR      RRR
RRR      RRR
RRRRRRRRRR
RRR   RRR
RRR    RRR
RRR     RRR
RRR      RRRR

  AAAAAAA
 AAAAAAAAA
AAAAAAAAAAA
AAA     AAA
AAA     AAA
AAAAAAAAAAA
AAA     AAA
AAA     AAA
AAA     AAA
AAAAA   AAAAA

 SSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
          SSS
 SS        SSS
 SSSSSSSSSSSS
  SSSSSSSSSS

YYYY      YYYY
 YYY      YYY
  YYY    YYY
   YYY YYY
    YYYYY
     YYY
     YYY
     YYY
   YYYYYYY

 SSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
          SSS
 SS        SSS
 SSSSSSSSSSSS
  SSSSSSSSSS
```

P R E - P R O C E S S O R   E X E C U T I O N

VERSION.MODIFICATION ... UC2E5
MODIFICATION DATE 121178

DATE OF RUN 051279
TIME OF RUN 120953
JOB NUMBER .... JENSEO

```
DATE      051279 TIME      121045        THERMAL RADIATION ANALYSIS SYSTEM (TRASYS)  UNIVAC/EXC 8 VERSION       PAGE      1

MODEL =  N/A
OPTION AND TITLE DATA BLOCKS

CARD ORGIN          12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT               HEADER OPTIONS DATA
INPUT               TITLE  SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN
INPUT                      MODEL       = SAMPLE
```

MODEL = SAMPLE
TRASYS INFORMATION TO USER

```
*************************************************************
*                                                           *
*   A T T E N T I O N   T R A S Y S   U S E R S             *
*                                                           *
*************************************************************
```

THIS SECTION OF THE TRASYS PRINTOUT WAS DEVISED TO INFORM THE TRASYS USERS OF THE STATUS OF THE TRASYS PROGRAM WITHOUT HAVING TO PRINTOUT ALL THE STATUS INFORMATION ON EVERY RUN. TO OBTAIN ADDITIONAL INFORMATION ON HOW TO USE THIS SECTION OF THE TRASYS PRINTOUT, PLACE A (INFO=INFO) IN THE OPTIONS DATA BLOCK.

FOR TRASYS ASSISTANCE AND/OR POSSIBLE TRASYS PROGRAM PROBLEMS, PLEASE CONTACT BOB VOGT AT JSC-2326.

NEWRL 08/29/77 DOCUMENTATION ADDITION

THE TRASYS -N- VERSION HAS BEEN UPDATED TO THE UC2E2 AND UL2E4 LEVEL.
SEE LATEST USERS MANUAL FOR INFORMATION ON USER-CALLED SUBROUTINE ARGUMENT CHANGES AND NEW CAPABILITIES.

END OF TRASYS INFORMATION FILE

++NOTE++ DATA ORIGINATION FROM INPUT FILE, NO -RSI- SOURCE EDITING

++NOTE++ THE (RSO) FILE WILL NOT BE WRITTEN

MODEL = SAMPLE SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN
MODEL HISTORY

MODEL NAME .... SAMPLE

MODEL TITLE .... SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN

MOD LABEL	RUN JOB NUMBER	RUN DATA	RUN TIME	RSI TAPE	RSO TAPE	RTI TAPE	RTO TAPE	CMERG TAPE	EMERG TAPE	BCDOU TAPE	TRAJ TAPE	USER1 TAPE	USER2 TAPE
AA	JENSEO	.051279	121045										

SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN

MODEL = SAMPLE
SOURCE DATA EDIT DIRECTIVES

CARD ORGIN 12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO. LABEL

```
MODEL = SAMPLE                                   SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN
SURFACE DATA INPUT BLOCK

CARD ORGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT            HEADER SURFACE DATA
INPUT            C                                                                                  1                AA
INPUT            C-----THIS SURFACE DATA BLOCK IS USED IN SAMPLE CASES 1 THROUGH 6                  2                AA
INPUT            C-----WITH VARIOUS PORTIONS OF IT BEING ACTIVATED FOR THE DIFFERENT                3                AA
INPUT            C-----CASES.                                                                       4                AA
INPUT            C                                                                                  5                AA
INPUT            BCS     BOXINR                                                                     6                AA
INPUT            S       SURFN          = 1                                                         7                AA
INPUT                    TYPE           = RECT                                                      8                AA
INPUT                    ACTIVE         = BOTTOM                                                    9                AA
INPUT                    PROP           = 0.9,0.9                                                  10                AA
INPUT                    P1             = 1.0, 0.0, 1.0                                            11                AA
INPUT                    P2             = 1.0, 0.0, 0.0                                            12                AA
INPUT                    P3             = 1.0, 1.0, 0.0                                            13                AA
INPUT                    COM            = * INNER RIGHT FRONT *                                    14                AA
INPUT            S       SURFN          = 2                                                        15                AA
INPUT                    TYPE           = RECT                                                     16                AA
INPUT                    ACTIVE         = BOTTOM                                                   17                AA
INPUT                    PROP           = 0.9,0.9                                                  18                AA
INPUT                    P1             = 1.0, 1.0, 1.0                                            19                AA
INPUT                    P2             = 1.0, 1.0, 0.0                                            20                AA
INPUT                    P3             = 0.0, 1.0, 0.0                                            21                AA
INPUT                    COM            = * INNER RIGHT SIDE *                                     22                AA
INPUT            S       SURFN          = 3                                                        23                AA
INPUT                    TYPE           = RECT                                                     24                AA
INPUT                    ACTIVE         = TOP                                                      25                AA
INPUT                    PROP           = 0.9,0.9                                                  26                AA
INPUT                    P1             = 0.0, 0.0, 1.0                                            27                AA
INPUT                    P2             = 0.0, 0.0, 0.0                                            28                AA
INPUT                    P3             = 0.0, 1.0, 0.0                                            29                AA
INPUT                    COM            = * INNER RIGHT BACK *                                     30                AA
INPUT            S       SURFN          = 4                                                        31                AA
INPUT                    TYPE           = RECT                                                     32                AA
INPUT                    ACTIVE         = TOP                                                      33                AA
INPUT                    PROP           = 0.9,0.9                                                  34                AA
INPUT                    P1             = 1.0, 1.0, 0.0                                            35                AA
INPUT                    COM            = * INNER RIGHT BOTTOM *                                   36                AA
INPUT            BCS     BOXINL,IMGBCS=BOXINR,NINC=10,IREFSF=1000,IGEN=ALL                         37                AA
INPUT            C                                                                                 38                AA
INPUT            C-----THE FOREGOING CARD IMAGES BCS BOXINR IN REFERENCE PLANE 1000                39                AA
INPUT            C-----TO CREATE BCS BOXINL.  EQUIVALENT FORM FACTOR DATA FOR                      40                AA
INPUT            C-----BOXINL WILL ALSO BE GENERATED.                                              41                AA
INPUT            C                                                                                 42                AA
                                                                                                   43                AA
                     IMAGING SURFACE (    1) BCS (BOXINR), GENERATING SURFACE (   11) BCS (BOXINL)
                     IMAGING SURFACE (    2) BCS (BOXINR), GENERATING SURFACE (   12) BCS (BOXINL)
                     IMAGING SURFACE (    3) BCS (BOXINR), GENERATING SURFACE (   13) BCS (BOXINL)
                     IMAGING SURFACE (    4) BCS (BOXINR), GENERATING SURFACE (   14) BCS (BOXINL)
```

SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN

```
MODEL = SAMPLE
SURFACE DATA INPUT BLOCK
                                                                                                                 EDIT NO. OLD EDIT NO.  LABEL
CARD ORGIN     12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8

INPUT          R       REFNO       = 1000                                                                      44               AA
INPUT                  P1          = 1.0, 0.0, 1.0                                                             45               AA
INPUT                  P2          = 1.0, 0.0, 0.0                                                             46               AA
INPUT                  P3          = 0.0, 0.0, 0.0                                                             47               AA
INPUT                  COM         = * IMAGING PLANE *                                                         48               AA
INPUT          BCS     LIDINR                                                                                  49               AA
INPUT          S       SURFN       = 5                                                                         50               AA
INPUT                  TYPE        = RECT                                                                      51               AA
INPUT                  ACTIVE      = BOTTOM                                                                    52               AA
INPUT                  PROP        = 0.9,0.9                                                                   53               AA
INPUT                  P1          = 1.0, 1.0, 0.0                                                             54               AA
INPUT                  COM         = * INNER RIGHT LID *                                                       55               AA
INPUT          S       SURFN       = 15                                                                        56               AA
INPUT                  IMAGSF      = 5                                                                         57               AA
INPUT                  IREFSF      = 1000                                                                      58               AA
INPUT                  COM         = * INNER LEFT LID *                                                        59               AA
INPUT          BCS     BOXOUT                                                                                  60               AA
INPUT          S       SURFN       = 21                                                                        61               AA
INPUT                  TYPE        = BOX5                                                                      62               AA
INPUT                  ACTIVE      = OUT                                                                       63               AA
INPUT                  SHADE       = NO                                                                        64               AA
INPUT                  PROP        = 0.2,0.9                                                                   65               AA
INPUT                  P1          = 1.01,-1.01, 1.01                                                          66               AA
INPUT                  P2          = 1.01, 1.01, 1.01                                                          67               AA
INPUT                  P3          =-0.01, 1.01, 1.01                                                          68               AA
INPUT                  P4          =-0.01, 1.01,-0.01                                                          69               AA
INPUT                  COM         = * OUTER SURFACES *                                                        70               AA
INPUT          BCS     LIDOUT                                                                                  71               AA
INPUT          S       SURFN       = 26                                                                        72               AA
INPUT                  TYPE        = RECT                                                                      73               AA
INPUT                  ACTIVE      = TOP                                                                       74               AA
INPUT                  SHADE       = NO                                                                        75               AA
INPUT                  PROP        = 0.2,0.9                                                                   76               AA
INPUT                  P1          = 1.01,-1.01, 0.01                                                          77               AA
INPUT                  P2          = 1.01, 1.01, 0.01                                                          78               AA
INPUT                  P3          =-0.01, 1.01, 0.01                                                          79               AA
INPUT                  COM         = * OUTER SURFACE OF LID *                                                  80               AA
INPUT          C                                                                                               81               AA
INPUT          C-----THE NEXT TWO BCS'S (MESSR AND MESSL) ARE ACTIVATED IN SAMPLE                              82               AA
INPUT          C-----CASE 4 ONLY.                                                                              83               AA
INPUT          C                                                                                               84               AA
INPUT          BCS     MESSR                                                                                   85               AA
INPUT          S       SURFN       = 101                                                                       86               AA
INPUT                  TYPE        = RECT                                                                      87               AA
INPUT                  ACTIVE      = TOP                                                                       88               AA
INPUT                  PROP        = 1.0,1.0                                                                   89               AA
INPUT                  P1          = 1.0, 0.0, 1.0                                                             90               AA
INPUT
```

MODEL = SAMPLE
SURFACE DATA INPUT BLOCK

SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN

```
CARD ORGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
INPUT                     P2          = 1.0, 0.0, 0.0
INPUT                     P3          = 0.0, 0.0, 0.0                                              91                 AA
INPUT                     COM         = * PRIMARY MESS NODE, RIGHT SIDE *                          92                 AA
INPUT            BCS      MESSL                                                                    93                 AA
INPUT            S        SURFN       = 111                                                        94                 AA
INPUT                     TYPE        = RECT                                                       95                 AA
INPUT                     ACTIVE      = BOTTOM                                                     96                 AA
INPUT                     PROP        = 1.0,1.0                                                    97                 AA
INPUT                     P1          = 1.0, 0.0, 1.0                                              98                 AA
INPUT                     P2          = 1.0, 0.0, 0.0                                              99                 AA
INPUT                     P3          = 0.0, 0.0, 0.0                                             100                 AA
INPUT                     COM         = * PRIMARY MESS NODE, LEFT SIDE *                          101                 AA
INPUT            C                                                                                102                 AA
INPUT            C-----THE FOLLOWING BCS (LIDSP) IS ACTIVATED IN SAMPLE CASE 5 ONLY.              103                 AA
INPUT            C                                                                                104                 AA
INPUT            BCS      LIDSP                                                                   105                 AA
INPUT            S        SURFN       = 200                                                       106                 AA
INPUT                     TYPE        = RECT                                                      107                 AA
INPUT                     ACTIVE      = BOTTOM                                                    108                 AA
INPUT                     PROP        = 0.1,0.1                                                   109                 AA
INPUT                     SPRI        = 0.8                                                       110                 AA
INPUT                     SPRS        = 0.8                                                       111                 AA
INPUT                     P1          = 1.0,-1.0, 0.0                                             112                 AA
INPUT                     P2          = 1.0, 1.0, 0.0                                             113                 AA
INPUT                     P3          = 0.0, 1.0, 0.0                                             114                 AA
INPUT                     COM         = * SPECULAR LID *                                          115                 AA
                                                                                                  116                 AA
```

SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN

```
MODEL = SAMPLE
BCS DATA INPUT BLOCK

CARD ORGIN          12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT               HEADER BCS DATA                                                                  117                 AA
INPUT               BCS     BOXINR                                                                   118                 AA
INPUT               BCS     BOXINL                                                                   119                 AA
INPUT               BCS     LIDINR ,0.,0.,1.,0.,-45.,0.                                              120                 AA
INPUT               BCS     BOXOUT                                                                   121                 AA
INPUT               BCS     LIDOUT ,0.,0.,1.,0.,-45.,0.                                              122                 AA
INPUT               BCS     MESSR                                                                    123                 AA
INPUT               BCS     MESSL                                                                    124                 AA
INPUT               BCS     LIDSP  ,0.,0.,1.,0.,-45.,0.                                              125                 AA
```

MODEL = SAMPLE
FORM FACTOR DATA INPUT BLOCK
SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT           HEADER FORM FACTOR DATA
INPUT           C                                                                   126              AA
INPUT           C-----ENTER KNOWN ZERO FORM FACTORS FOR CASE 6.                     127              AA
INPUT           C                                                                   128              AA
INPUT           FIG     CASE6                                                       129              AA
INPUT           NODEA   1,2,3,4,11,12,13,14,5,15,21,22,23,24,25,26,END              130              AA
INPUT           BOTH    21,ZERO                                                     131              AA
INPUT                   22,ZERO                                                     132              AA
INPUT                   23,ZERO                                                     133              AA
INPUT                   24,ZERO                                                     134              AA
INPUT                   25,ZERO                                                     135              AA
INPUT                   26,ZERO                                                     136              AA
INPUT                   1,1,0.                                                      137              AA
INPUT                   1,11,0.                                                     138              AA
INPUT                   2,2,0.                                                      139              AA
INPUT                   3,3,0.                                                      140              AA
INPUT                   3,13,0.                                                     141              AA
INPUT                   4,4,0.                                                      142              AA
INPUT                   4,14,0.                                                     143              AA
INPUT                   5,5,0.                                                      144              AA
INPUT                   5,15,0.                                                     145              AA
                                                                                    146              AA
```

MODEL = SAMPLE
OPERATION DATA INPUT BLOCK (PASS 1)

CARD ORGIN	12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8	EDIT NO.	OLD EDIT NO.	LABEL
		147		AA
INPUT	HEADER OPERATIONS DATA			

+++++ OPERATIONS DATA BLOCK (PASS 1) COMPLETE +++++

MODEL = SAMPLE
OPERATION DATA INPUT BLOCK (PASS 2) SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
INPUT           C
INPUT           C-----BUILD THE CASE 6 CONFIGURATION                                                 148                AA
INPUT           C                                                                                    149                AA
INPUT           STEP    1                                                                            150                AA
INPUT           BUILD   CASE6,BOXINR,BOXINL,LIDINR,BOXOUT,LIDOUT                                     151                AA
PROG                    CALL BUILDC (BOXINR,6HCASE6 )                                                152                AA
PROG                    CALL ADD (BOXINL)                                                              0
PROG                    CALL ADD (LIDINR)                                                              0
PROG                    CALL ADD (BOXOUT)                                                              0
PROG                    CALL ADD (LIDOUT)                                                              0
INPUT           C                                                                                      0
INPUT           C------CALCULATE THE FORM FACTOR MATRIX USING FFCAL                                  153                AA
INPUT           C                                                                                    154                AA
INPUT           L       FFCAL                                                                        155                AA
INPUT           C                                                                                    156                AA
INPUT           C------REBUILD SAME GEOMETRY UNDER A DIFFERENT NAME.                                  157                AA
INPUT           C                                                                                    158                AA
INPUT           STEP    2                                                                            159                AA
INPUT           BUILD   CASE6B,BOXINR,BOXINL,LIDINR,BOXOUT,LIDOUT                                    160                AA
PROG                    CALL BUILDC (BOXINR,6HCASE6B)                                                161                AA
PROG                    CALL ADD (BOXINL)                                                              0
PROG                    CALL ADD (LIDINR)                                                              0
PROG                    CALL ADD (BOXOUT)                                                              0
PROG                    CALL ADD (LIDOUT)                                                              0
INPUT           C                                                                                      0
INPUT           C------RECALCULATE FORM FACTORS USING NFFCAL.                                        162                AA
INPUT           C                                                                                    163                AA
INPUT           L       NFFCAL                                                                       164                AA
INPUT           END OF DATA                                                                          165                AA
                                                                                                     166                AA
```

SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN

MODEL = SAMPLE
PROCESSOR CORE ALLOCATION

THE FOLLOWING IS THE PROCESSOR CORE ALLOCATION FOR THOSE SEGMENTS WHICH WILL BE LOADED IN THIS EXECUTION (APPROX.) ...

	OCTAL/DECIMAL
TRASYS (0) SEGMENT	122206/ 42118
OPERATIONS DATA (NOT KNOWN AT THIS TIME)........	175000/ 64000
INITALIZATION SEGMENT	123300/ 42688
FORM FACTOR SEGMENT	137600/ 49024
MINIMUM CORE NEEDED FOR PROCESSOR EXECUTION	137600/ 49024
MAXIMUM CORE NEEDED FOR PROCESSOR EXECUTION	137600/ 49024
AMOUNT OF CORE THAT WILL BE USED BY PROCESSSOR .	137600/ 49024

MODEL = SAMPLE SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN
WRAP UP OF THE PRE-PROCESSOR

PRE-PROCESSOR ACCOUNTING INFORMATION	CP-SEC	DYM-STORAGE
SOURCE EDITING	1.171	676
DOCUMENTATION DATA PRE-PROCESSING	.000	0
QUANTITIES DATA PRE-PROCESSING	.055	268
ARRAY DATA PRE-PROCESSING	.000	0
SURFACE DATA PRE-PROCESSING (PASS 1) ...	2.109	64
SURFACE DATA PRE-PROCESSING (PASS 2) ...	.900	1141
BCS DATA PRE-PROCESSING	.254	186
FORM FACTOR DATA PRE-PROCESSING	.642	1169
SHADOW DATA PRE-PROCESSING	.000	0
FLUX DATA PRE-PROCESSING	.000	0
CORRESPONDENCE DATA PRE-PROCESSING	.000	0
OPERATIONS DATA PRE-PROCESSING	2.442	876
SUBROUTINE DATA PRE-PROCESSING	.219	0
SEQENTIAL TAPE INITIALIZATION	.057	0

TOTAL CP TIME FOR PRE-PROCESSOR .... 8.601 DECIMAL SECONDS OR 000011 OCTAL SECONDS

MINIMUM DYNAMIC STORAGE NEEDED BY PRE-PROCESSOR .. 1169 DECIMAL WORDS

DYNAMIC STORAGE AVAILABLE TO PRE-PROCESSOR .... 10000 DECIMAL WORDS

NORMAL TERMINATION BY PRE-PROCESSOR

NASA/MARTIN MARIETTA
THERMAL RADIATION ANALYSIS SYSTEM
UNIVAC 1110/EXEC 8

TRASYS II

```
TTTTTTTTTTTTT
TTTTTTTTTTTTT
TT   TTT   TT
     TTT
     TTT
     TTT
     TTT
     TTT
   TTTTTTT

RRRRRRRRR
RRRRRRRRRR
RRR     RRR
RRR     RRR
RRRRRRRRRRR
RRR  RRR
RRR   RRR
RRR    RRR
RRR     RRRR

   AAAAAAA
  AAAAAAAAA
 AAAAAAAAAAA
 AAA     AAA
 AAA     AAA
 AAAAAAAAAAA
 AAA     AAA
 AAA     AAA
 AAA     AAA
AAAAA   AAAAA

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
          SSS
 SS       SSS
 SSSSSSSSSSSS
  SSSSSSSSSS

YYYY     YYYY
 YYY     YYY
  YYY   YYY
   YYY YYY
    YYYYY
     YYY
     YYY
     YYY
   YYYYYYY

 SSSSSSSSSS
SSSSSSSSSSSS
SSS       SS
SSS
 SSSSSSSSSS
          SSS
 SS       SSS
 SSSSSSSSSSSS
  SSSSSSSSSS
```

PROCESSOR EXECUTION

VERSION.MODIFICATION ::: UL2E11
MODIFICATION DATE ::::::: 051079

DATE OF RUN ::::::::::::: 051279
TIME OF RUN ::::::::::::: 121454
JOB NUMBER :::::::::::::: JENSEO

H-3372

DATE 051279 TIME 121457 THERMAL RADIATION ANALYSIS SYSTEM (TRASYS) UNIVAC EXEC 8 VERSION PAGE 1

MODEL=SAMPLE CONFIG=CASE6 STEP=1 SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN
PROCESSING OPERATIONS DATA

SEQUENCE	NODE	BCS	AREA	ALPH	EMISS	SURF. TYPE	ACTIVE	--------COMMENTS--------------
1	1	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
2	2	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
3	3	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
4	4	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
5	11	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
6	12	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
7	13	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
8	14	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
9	5	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT LID
10	15	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER LEFT LID
11	21	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
12	22	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
13	23	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
14	24	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
15	25	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
16	26	LIDOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACE OF LID

MODEL=SAMPLE CONFIG=CASE6 STEP=1 SAMPLE CASE 6 = FFCAL/NFFCAL COMPARISON RUN
FORM FACTOR CALCULATION LINK.

FORM FACTORS AND COMBINED FORM FACTORS = USER INPUT AND DEFAULT PARAMETERS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
FFACC	.0500	.0500	ORIENTATION ACCURACY PARAMETER	N/A
FFACCS	.1000	.1000	SHADOWING ACCURACY PARAMETER	N/A
FFMIN	.1-05	1.0E-06	PARAMETER TO ELIMINATE SMALL FORM FACTORS	N/A
FFNOSH	SHAD	SHAD	OVER RIDE SHADOWING PARAMETER	(SHAD,NOSH)
*FFPNCH	PUND	NO	PARAMETER TO PUNCH FORM FACTORS	(YES,NO)
FFPRNT	YES	YES	FLAG FOR COMPREHENSIVE FF AND CM PRINT	(YES,NO,FF,CM,RB)
FFRATL	15.0	15.0	RATIO FOR USING SUB-NODE TECHNIQUE	N/A
FFCMB	CORR	CORR	FLAG FOR COMBINING FORM FACTORS	(YES,NO,AUTO,CORR)

* =FFPNCH WILL DEFAULT TO =YES= ON CALCULATED VALUES IF THE =RSO= FILE IS NOT SPECIFIED IN THE OPTIONS DATA BLOCK

MODEL=SAMPLE CONFIG=CASE6 STEP=1 SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN
FORM FACTOR CALCULATION LINK.

SEQUENCE	NODE	AREA	ALPH	EMISS
1	1	1.00000	.900	.900
2	2	1.00000	.900	.900
3	3	1.00000	.900	.900
4	4	1.00000	.900	.900
5	11	1.00000	.900	.900
6	12	1.00000	.900	.900
7	13	1.00000	.900	.900
8	14	1.00000	.900	.900
9	5	1.00000	.900	.900
10	15	1.00000	.900	.900
11	21	2.06040	.200	.900
12	22	2.06040	.200	.900
13	23	1.04040	.200	.900
14	24	2.06040	.200	.900
15	25	1.04040	.200	.900
16	26	2.06040	.200	.900

NUMBER OF NODES = 16 NUMBER OF SURFACES = 10

SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN

MODEL=SAMPLE CONFIG=CASE6 STEP=1
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ

```
  5   FF SUM =   .5505    ROW CP TIME =     .089
 15   FF SUM =   .5505    ROW CP TIME =     .033
 21   FF SUM =   .0000    ROW CP TIME =     .029
 22   FF SUM =   .0000    ROW CP TIME =     .023
 23   FF SUM =   .0000    ROW CP TIME =     .023
 24   FF SUM =   .0000    ROW CP TIME =     .018
 25   FF SUM =   .0000    ROW CP TIME =     .016
 26   FF SUM =   .0000    ROW CP TIME =     .013
```

DATE 051279 TIME 124243 THERMAL RADIATION ANALYSIS SYSTEM (TRASYS) UNIVAC EXEC 8 VERSION PAGE 7

MODEL=SAMPLE CONFIG=CASE6 STEP=1 SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN
FORM FACTOR CALCULATION LINK.

SUMMARY OF FORM FACTOR SUMS FOR ALL NODES

NODE I-	FF SUM	NODE I-	FF SUM	NODE I-	FF SUM	NODE I-	FF SUM	NODE I-	FF SUM	NODE I-	FF SUM
1-	.9690	2-	.9203	3-	.8378	4-	.9007	11-	.9690	12-	.9203
13-	.8378	14-	.9007	5-	.5505	15-	.5505	21-	.0000	22-	.0000
23-	.0000	24-	.0000	25-	.0000	25-	.0000				

TOTAL TIME FOR FORM FACTOR SEGMENT 590.099

TOTAL TIME SINCE START OF RUN 632.816

SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN

MODEL=SAMPLE CONFIG=CASE6B STEP=2
PROCESSING OPERATIONS DATA

SEQUENCE	NODE	BCS	AREA	ALPH	EMISS	SURF. TYPE	ACTIVE	--------COMMENTS--------------
1	1	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
2	2	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
3	3	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
4	4	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
5	11	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
6	12	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
7	13	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
8	14	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
9	5	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT LID
10	15	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER LEFT LID
11	21	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
12	22	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
13	23	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
14	24	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
15	25	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
16	26	LIDOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACE OF LID

MODEL=SAMPLE CONFIG=CASE6B STEP=2 SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN
FORM FACTOR CALCULATION LINK USING UNIT SPHERE LOGIC.

FORM FACTORS AND COMBINED FORM FACTORS - USER INPUT AND DEFAULT PARAMETERS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
FFACC	.0500	.0500	ORIENTATION ACCURACY PARAMETER	N/A
FFACCS	.1000	.1000	SHADOWING ACCURACY PARAMETER	N/A
FFMIN	.1-05	1.0E-06	PARAMETER TO ELIMINATE SMALL FORM FACTORS	N/A
FFNOSH	SHAD	SHAD	OVER RIDE SHADOWING PARAMETER	(SHAD,NOSH)
+FFPNCH	PUND	NO	PARAMETER TO PUNCH FORM FACTORS	(YES,NO)
FFPRNT	YES	YES	FLAG FOR COMPREHENSIVE FF AND CM PRINT	(YES,NO,FF,CM,RB)
FFRATL	15.0	15.0	RATIO FOR USING SUB-NODE TECHNIQUE	N/A
FFCMB	CORR	CORR	FLAG FOR COMBINING FORM FACTORS	(YES,NO,AUTO,CORR)

+ -FFPNCH WILL DEFAULT TO -YES- ON CALCULATED VALUES IF THE -RSO- FILE IS NOT SPECIFIED IN THE OPTIONS DATA BLOCK

MODEL=SAMPLE CONFIG=CASE6B STEP=2 SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN
FORM FACTOR CALCULATION LINK USING UNIT SPHERE LOGIC.

SEQUENCE	NODE	AREA	ALPH	EMISS
1	1	1.00000	.900	.900
2	2	1.00000	.900	.900
3	3	1.00000	.900	.900
4	4	1.00000	.900	.900
5	11	1.00000	.900	.900
6	12	1.00000	.900	.900
7	13	1.00000	.900	.900
8	14	1.00000	.900	.900
9	5	1.00000	.900	.900
10	15	1.00000	.900	.900
11	21	2.06040	.200	.900
12	22	2.06040	.200	.900
13	23	1.04040	.200	.900
14	24	2.06040	.200	.900
15	25	1.04040	.200	.900
16	26	2.06040	.200	.900

NUMBER OF NODES = 16 NUMBER OF SURFACES = 10

MODEL=SAMPLE CONFIG=CASE6B STEP=2 SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN
FORM FACTOR CALCULATION LINK USING UNIT SPHERE LOGIC.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ
1	2	CAL	.199743	.199743	.199743	.199743	.199743	1.000000	1.000000	2.334	25	25
1	3	CAL	.201046	.201046	.201046	.201046	.201046	1.000000	1.000000	2.305	25	25
1	4	CAL	.199743	.199743	.199743	.199743	.199743	1.000000	1.000000	2.227	25	25
1	12	CAL	.032714	.032714	.032714	.032714	.032714	1.000000	1.000000	2.413	25	25
1	13	CAL	.086057	.086057	.086057	.086057	.086057	1.000000	1.000000	2.421	25	25
1	14	CAL	.040484	.040484	.040484	.040484	.040484	1.000000	1.000000	2.418	25	25
1	5	CAL	.136575	.136575	.136575	.136575	.136575	1.000000	1.000000	2.329	25	25
1	15	CAL	.055966	.055966	.055966	.055966	.055966	1.000000	1.000000	2.436	25	25
1	FF SUM =	.9523	ROW CP TIME =	20.139								
2	3	CAL	.199743	.199743	.199743	.199743	.199743	1.000000	1.000000	2.430	25	25
2	4	CAL	.199743	.199743	.199743	.199743	.199743	1.000000	1.000000	2.320	25	25
2	11	CAL	.033070	.033070	.033070	.033070	.033070	1.000000	1.000000	2.429	25	25
2	12	CAL	.068764	.068764	.068764	.068764	.068764	1.000000	1.000000	2.385	25	25
2	13	CAL	.033070	.033070	.033070	.033070	.033070	1.000000	1.000000	2.427	25	25
2	14	CAL	.033070	.033070	.033070	.033070	.033070	1.000000	1.000000	2.402	25	25
2	5	CAL	.095374	.095374	.095374	.095374	.095374	1.000000	1.000000	2.134	25	25
2	15	CAL	.034365	.034365	.034365	.034365	.034365	1.000000	1.000000	2.429	25	25
2	FF SUM =	.8969	ROW CP TIME =	19.990								
3	4	CAL	.199743	.199743	.199743	.199743	.199743	1.000000	1.000000	2.325	25	25
3	11	CAL	.086057	.086057	.086057	.086057	.086057	1.000000	1.000000	2.431	25	25
3	12	CAL	.032714	.032714	.032714	.032714	.032714	1.000000	1.000000	2.435	25	25
3	14	CAL	.040484	.040484	.040484	.040484	.040484	1.000000	1.000000	2.440	25	25
3	5	CAL	.047775	.047775	.047775	.047775	.047775	1.000000	1.000000	2.311	25	25
3	15	CAL	.011648	.011648	.011648	.011648	.011648	1.000000	1.000000	2.441	25	25
3	FF SUM =	.8192	ROW CP TIME =	17.744								
4	11	CAL	.040484	.040484	.040484	.040484	.040484	1.000000	1.000000	2.433	25	25
4	12	CAL	.032714	.032714	.032714	.032714	.032714	1.000000	1.000000	2.402	25	25
4	13	CAL	.040484	.040484	.040484	.040484	.040484	1.000000	1.000000	2.439	25	25
4	5	CAL	.107821	.107821	.107821	.107821	.107821	1.000000	1.000000	2.311	25	25

DATE 051879 TIME 150556 THERMAL RADIATION ANALYSIS SYSTEM (TRASYS) UNIVAC EXEC 8 VERSION PAGE 12

MODEL=SAMPLE CONFIG=CASE6 STEP=1 SAMPLE CASE 6 - FFCAL/NFCAL COMPARISON RUN
FORM FACTOR CALCULATION LINK USING UNIT SPHERE LOGIC.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ
4	15	CAL	.056891	.056891	.056891	.056891	.056891	1.000000	1.000000	2.520	25	25
4	FF SUM =	.8776	ROW CP TIME =	12.808								
11	12	EQUIV	.199743	.199743	.199743	.199743	.000000	1.000000	1.000000	.007	0	0
11	13	EQUIV	.201046	.201046	.201046	.201046	.000000	1.000000	1.000000	.008	0	0
11	14	EQUIV	.199743	.199743	.199743	.199743	.000000	1.000000	1.000000	.007	0	0
11	5	CAL	.055966	.055966	.055966	.055966	.055966	1.000000	1.000000	2.549	25	25
11	15	CAL	.136574	.136574	.136574	.136574	.136574	1.000000	1.000000	2.413	25	25
11	FF SUM =	.9527	ROW CP TIME =	5.108								
12	13	EQUIV	.199743	.199743	.199743	.199743	.000000	1.000000	1.000000	.008	0	0
12	14	EQUIV	.199743	.199743	.199743	.199743	.000000	1.000000	1.000000	.008	0	0
12	5	CAL	.034365	.034365	.034365	.034365	.034365	1.000000	1.000000	2.516	25	25
12	15	CAL	.095374	.095374	.095374	.095374	.095374	1.000000	1.000000	2.197	25	25
12	FF SUM =	.8959	ROW CP TIME =	4.837								
13	14	EQUIV	.199743	.199743	.199743	.199743	.000000	1.000000	1.000000	.007	0	0
13	5	CAL	.011648	.011648	.011648	.011648	.011648	1.000000	1.000000	2.501	25	25
13	15	CAL	.047775	.047775	.047775	.047775	.047775	1.000000	1.000000	2.543	25	25
13	FF SUM =	.8196	ROW CP TIME =	5.148								
14	5	CAL	.056891	.056891	.056891	.056891	.056891	1.000000	1.000000	2.533	25	25
14	15	CAL	.107821	.107821	.107821	.107821	.107821	1.000000	1.000000	2.403	25	25
14	FF SUM =	.8780	ROW CP TIME =	5.012								

MODEL=SAMPLE CONFIG=CASE6 STEP=1 SAMPLE CASE 6 - FFCAL/NFCAL COMPARISON RUN
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(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I NODE J COMPUTATION FIR(I,J) W/SHAD FIR(J,I) W/SHAD FSOL(I,J) W/SHAD FSOL(J,I) W/SHAD FF(I,J) WO/SHAD SHAD.IR FACTOR SHAD.SOL FACTOR CP TIME (SEC) NEI NEJ

5	FF SUM =	.5464	ROW CP TIME =	.110
15	FF SUM =	.5464	ROW CP TIME =	.033
21	FF SUM =	.0000	ROW CP TIME =	.028
22	FF SUM =	.0000	ROW CP TIME =	.024
23	FF SUM =	.0000	ROW CP TIME =	.021
24	FF SUM =	.0000	ROW CP TIME =	.018
25	FF SUM =	.0000	ROW CP TIME =	.016
26	FF SUM =	.0000	ROW CP TIME =	.015

MODEL=SAMPLE CONFIG=CASE6B STEP=2 SAMPLE CASE 6 - FFCAL/NFFCAL COMPARISON RUN
FORM FACTOR CALCULATION LINK USING UNIT SPHERE LOGIC.

SUMMARY OF FORM FACTOR SUMS FOR ALL NODES

NODE I-	FF SUM	NODE I-	FF SUM	NODE I-	FF SUM	NODE I-	FF SUM	NODE I-	FF SUM	NODE I-	FF SUM
1-	.9523	2-	.8969	3-	.8192	4-	.8776	11-	.9527	12-	.8959
13-	.8196	14-	.8780	5-	.5464	15-	.5464	21-	.0000	22-	.0000
23-	.0000	24-	.0000	25-	.0000	25-	.0000				

TOTAL TIME FOR FORM FACTOR SEGMENT 114.467

TOTAL TIME SINCE START OF RUN 748.063

NORMAL TERMINATION BY PROCESSOR

End of Document