Pam

IMP GAIN FACTOR DETERMINATION
AND
FINE-GAIN TABLE UPDATES
USER'S GUIDE

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SECTION 1 - INTRODUCTION

IMP-8 gain factors (D, E, and F detector elements) are determined in an iterative fashion using the HGPLT8 program as explained below. The gain factors are then entered into the Medium Energy Detector (MED) main gain tables, which contain gain factors for each interval. After the gain factors are entered into the MED main gain tables, the PFLUX8 program is run. The National Space Science Data Center (NSSDC) receives proton flux tapes and Dr. McGuire receives 16 mm film. Each interval contains 96 hourly fine-gain values. Fine-gain factors are available for IMP-7 and IMP-8 for many intervals. The government determines them; CSC enters them into the fine-gain tables. After fine-gains are entered or updated, the Intermediate FLUX and FLEX programs must be rerun for the intervals.

SECTION 2 - INTERVALS

2.1 DESCRIPTION OF INTERVALS

IMP data is organized by time according to interval number. An interval contains a 96 hour period (4 days). Interval 1, began on September 23, 1972.

2.2 LISTING OF INTERVALS WITH START TIMES

To obtain a complete listing of intervals with their corresponding start times, submit the member INTVLGEN contained in SB#IM.UTILITY.SOURCE. Use the TSO STAB command to set up the job as follows:

```
STAB ZBKAWINT TIME(2,0) IOEST(5)
=: LIB(UJC) 10:11
//  EXEC FORTRAN G
//SOURCE.SYSIN DD DSN=SB#IM.UTILITY.SOURCE(INTVLGEN),DISP=SHR
//*
//  EXEC LINKGO
//  EXEC NTSO
ENDINPUT
```

The source code for INTVLGEN is shown on the following page.

```
C       THIS PROGRAM GENERATES A TABULATION OF INTERVALS WITH
C       CORRESPONDING START TIMES (DAY OF MONTH,MONTH,YEAR).
C       THE TABULATION CAN EXTEND FROM INTERVAL 1 THROUGH ANY #
C       THE INTERVAL CAN BE OF ANY SPECIFIED LENGTH  (INT).
        IMPLICIT LOGICAL*1 (O)
        DIMENSION NDAYS(12),NAME(12),NDATA(3,200)
        NEEB=0
        DATA NDAYS/31,28,31,30,31,30,31,31,30,31,30,31/,IHD/0/
        DATA NAME/'JAN','FEB','MAR','APR','MAY','JUN','JUL','AUG','SEP',
     1  'OCT','NOV','DEC'/
        K=0
        OLEAP=.FALSE.
C DATA CARD SPECIFIES THE FOLLOWING VARIABLES IN IS FORMAT.
C    IDDM = INTEGER DAY OF MONTH OF 1ST INTERVAL
C    MONTH = INTEGER MONTH OF YEAR OF 1ST INTERVAL
C    IYEAR = INTEGER YEAR OF 1ST INTERVAL
C    LENGTH = LENGTH OF EACH INTERVAL
C    INT = TOTAL # OF INTERVALS TO LIST.
C EXAMPLE - IMP-7 / -8 TABLE OF INTERVALS STARTS ON 23 SEP 1972
C         AND EACH INTERVAL IS 4 DAYS IN LENGTH.
C         TO RUN A LIST FROM INT. 1 TO 1200 THE INPUT CARD IS AS FOLLOWS
C CC-#12345678901234567890123456789012345
C          23     9 1972     4 1200
        READ (5,5) IDDM,MONTH,IYEAR,LENGTH,INT
    5   FORMAT (5I5)
        INT =((INT-1)/4+1)*4
        IF ((IYEAR/4)*4.EQ.IYEAR)  OLEAP=.TRUE.
        IF ((MONTH.EQ.2).AND.OLEAP)  NEEB=1
        DO 300 I=1,INT
        NDATA(1,I-K*200)=IDDM
        NDATA(2,I-K*200)=NAME(MONTH)
        NDATA(3,I-K*200)=IYEAR
        IDDM=IDDM+LENGTH
        IF(IDDM.LE.(NDAYS(MONTH)+NEEB))  GO TO 200
        IDDM=IDDM-NDAYS(MONTH)-NEEB
        IF (MONTH.LT.12)  GO TO 80
        IYEAR=IYEAR+1
        MONTH=0
        OLEAP=.FALSE.
        IF ((IYEAR/4)*4.EQ.IYEAR)  OLEAP=.TRUE.
   80   MONTH=MONTH+1
        NEEB=0
        IF (.NOT.OLEAP)  GO TO 200
        IF (MONTH.EQ.2)  NEEB=1
  200   IF (((I/200)*200).NE.I) GO TO 300
C       SUBROUTINE WRITES INTERVALS IN BLOCKS OF 200.
        CALL WRITE (K,I,NDATA)
  300   CONTINUE
        IF(((INT/200)*200).EQ.I)STOP
        CALL WRITE (K,INT,NDATA)
        STOP
        END
        SUBROUTINE WRITE (K,INT,NDATA)
        DIMENSION NDATA(3,200)
        WRITE (6,5)
    5   FORMAT (1H1,//////,(7X,' INT.    DAY    MO.    YEAR',3(6X,' INT.
     1  DAY    MO.    YEAR')),/)
        M=K*200+1
        IF  (((INT/200)*200).NE.INT)  GO TO 10
        L=49
        GO TO 30
   10   L=(INT-K*200-1)/4
   30   N =M+L
        L1 =L+1
        DO 100 I=M,N
        I2=I+3*L1
        WRITE (6,35)((I1,(NDATA(J,I1-K*200),J=1,3)),I1=I,I2,L1)
   35   FORMAT (1H ,(4(6X,I4,'  ',4X,I3,3X,A4,3X,I4)))
  100   CONTINUE
        K =K+1
        RETURN
        END
```

*** END OF MEMBER *** 72 RECORDS PROCESSED **********

SECTION 3 - USE OF RATE PLOTS IN GAIN FACTOR DETERMINATION PROCESS

3.1 ANALYZING RATE PLOTS FOR IMP-8

- Only quiet time data should be used in determining gain factors for the main gain tables.
- To determine whether data is quiet time data, use the Imp-8 rate plots, type 2.

Mark off the intervals using the listing obtained in 2.2 above, to determine the corresponding four day spans.

The R1, R2, R3, and R4 rates are plotted. If a smooth pattern is present throughout the interval, then consider this a good interval for HGPLT8 program. Refer to figures 1.1-1.6. If the pattern has a sharp incline or decline, this is part of a solar flare period and that interval should not be run in HGPLT8 program, refer to intervals 935 and 936. (Figure 1.3)

3.2 SAMPLE RATE PLOTS FOR IMP-8, TYPE 2

Sample rate plots for IMP-8 are shown on the following pages. Interval numbers and their corresponding quality for use by HGPLT8 are shown at the bottom of each plot.

Figure 1

IRP RATES PLOT - IRP-8 RATES PLOT TYPE #2*
INTERVAL AVERAGE 60 MIN
R1=IRP8:DI.E.F.-6
R2=IRP8:DI.E.-F.-6
R3=IRP8:DI.E.F
R4=IRP8:DI.-D2.E.-F.-6
---POINT REJECTION USED
•=R1 X=R2 $=R3 &=R4

COUNTS / SEC

27 NOV 82

930 (BAD)

931 (GOOD) DAY

932 (GOOD)

Figure 1

IRP RATES PLOT - IRP-8 RATES PLOT TYPE 82*
INTERVAL AVERAGE 60 MIN
R1:IRP8:DI.E.F..G
R4:IRP8:DI..D2.E..F..G

R2:IRP8:DI.E..F..G

...POINT REJECTION USED
R5:IRP8:DI.E.F

·:R1 X:R2 S:R3 &:R4

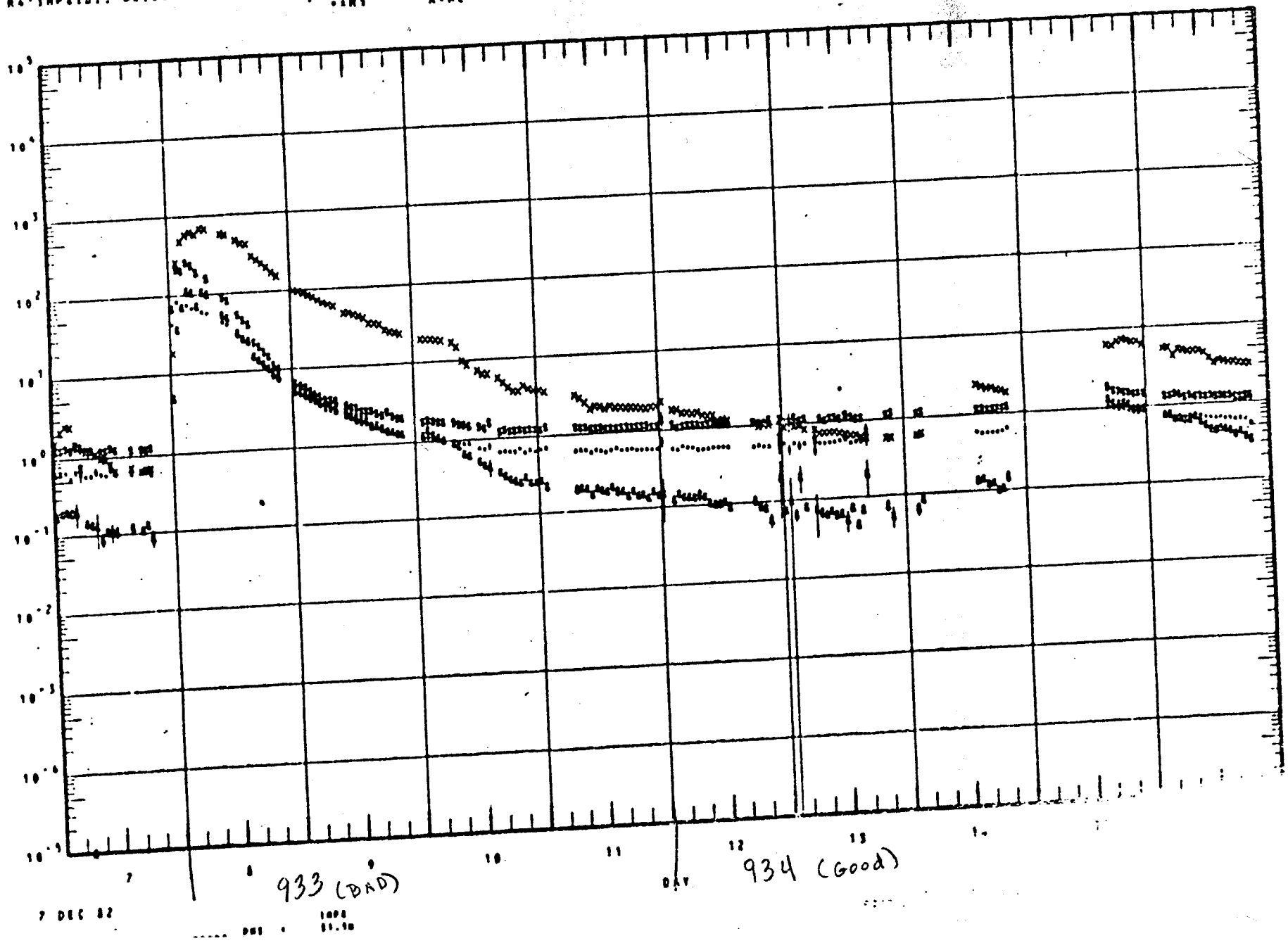

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Figure

IMP RATES PLOT - IMP-8 RATES PLOT TYPE 02*

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INTERVAL AVERAGE 60 MIN

---POINT REJECTION USED

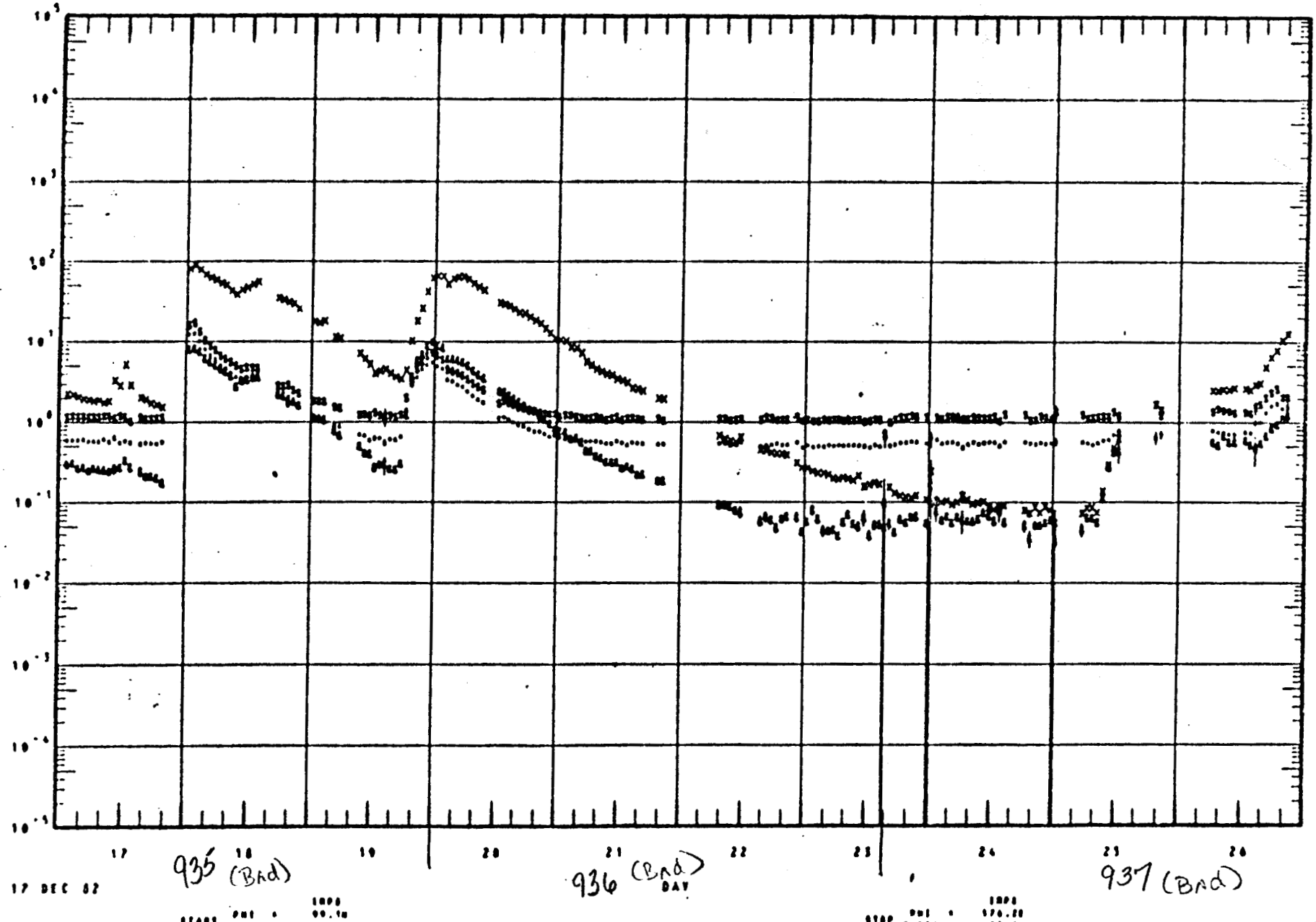
R1:IMP8:D1.E.F.-G

R2:IMP8:D1.E.-F.-G

R3:IMP8:D1.E.F

R4:IMP8:D1.-D2.E.-F.-G

·=R1 X=R2 $=R3 &=R4



17 DEC 82

START DOY : 1980 99.1h
THETA : -0.8

STOP DOY : 1980 170.2h
THETA : 21.8

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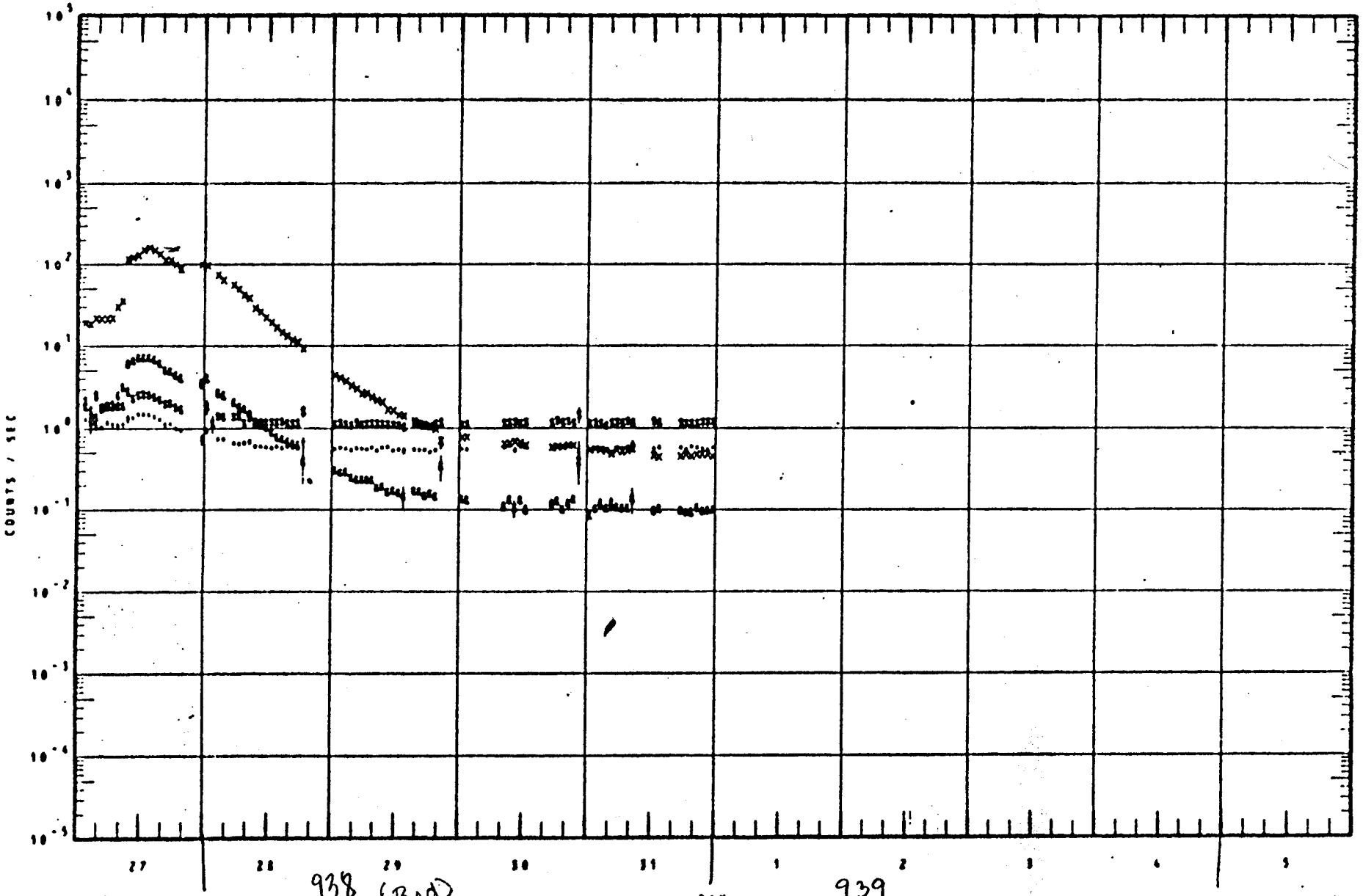
IMP RATES PLOT - IMP-8 RATES PLOT TYPE 82'
INTERVAL AVERAGE 60 MIN ---POINT REJECTION USED
R1:IMP8:D1.E.F.-G R2:IMP8:D1.E.-F.-G R3:IMP8:D1.E.F
R4:IMP8:D1.-D2.E.-F.-G

·:R1 X:R2 $:R3 &:R4



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IRP RATES PLOT - IRP-8 RATES PLOT TYPE 02
INTERVAL AVERAGE 60 MIN
R1=IRP8:DI.E.F.-G
R2=IRP8:DI.E.-F.-G
R3=IRP8:DI.E.
R4=IRP8:DI.-02.E.-F.-G
---POINT REJECTION USED

·=R1 X=R2 S=R3 &=R4

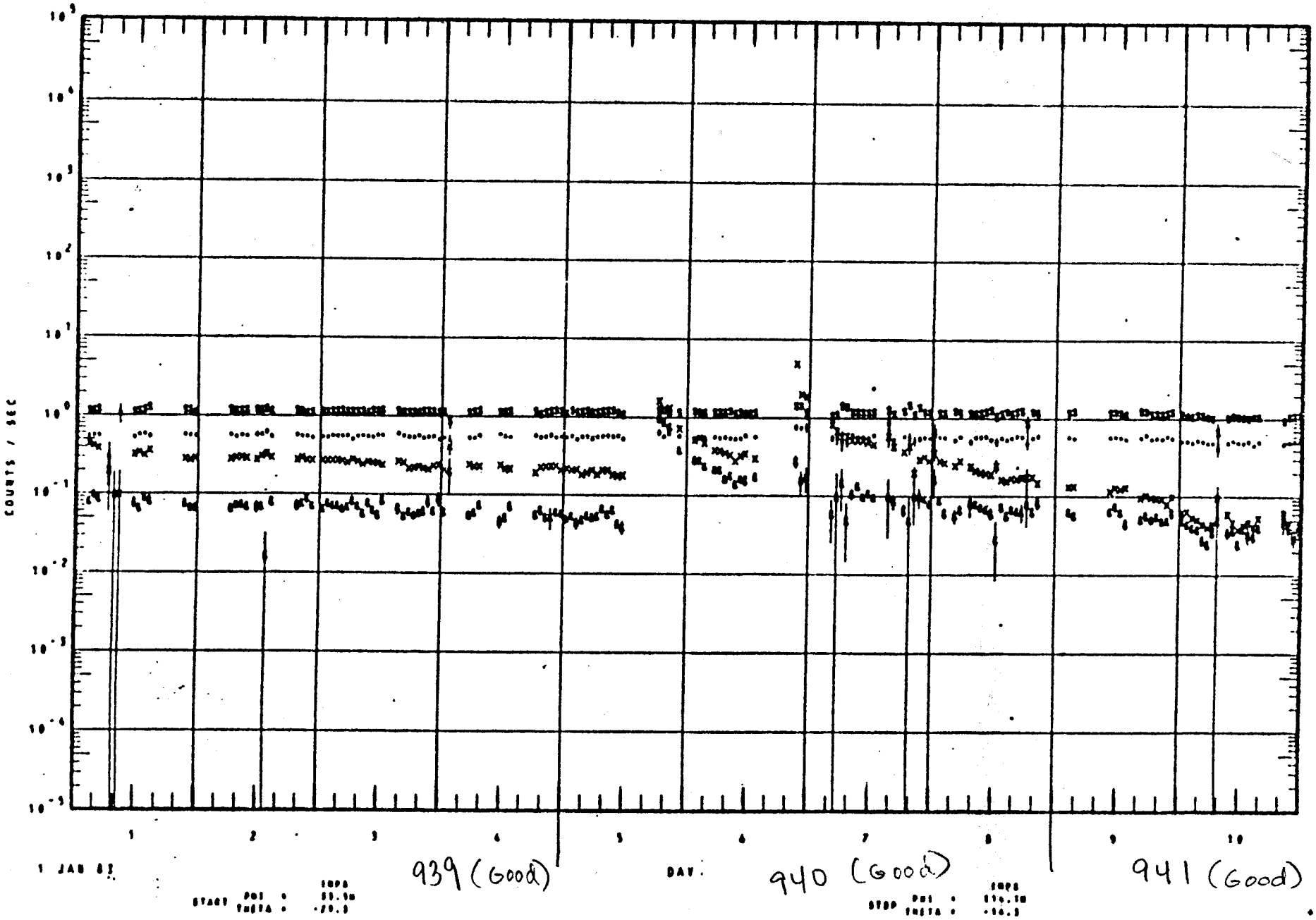

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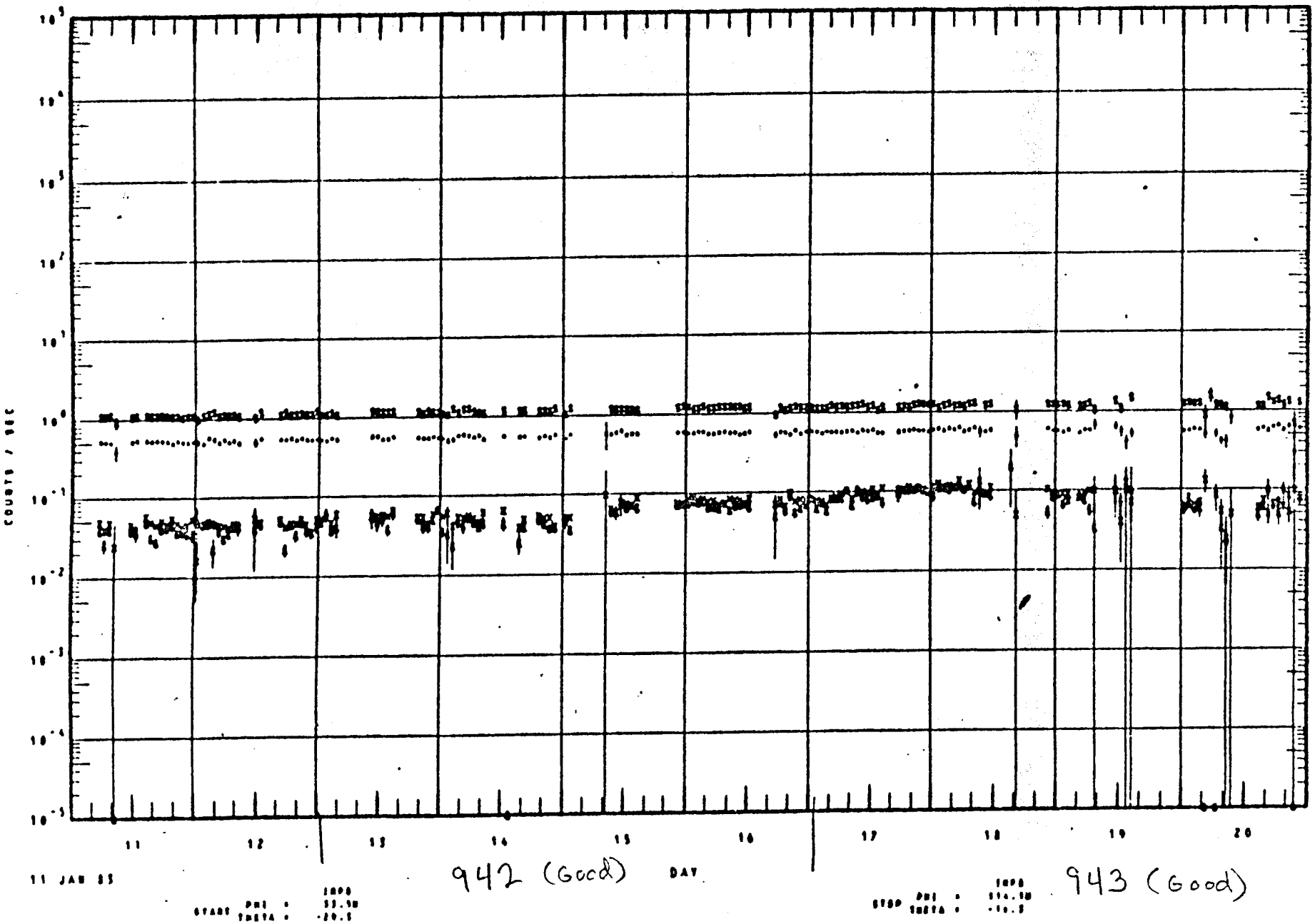
Figure 1

IRP RATES PLOT - IRP-8 RATES PLOT TYPE 02
INTERVAL AVERAGE 60 MIN
R1:IRP8:DI.E.F.-G
R4:IRP8:DI.-DZ.E.-F.-G

---POINT REJECTION USED
R2:IRP8:DI.E.-F.-G
R3:IRP8:DI.E.F

*:R1 X:R2 S:R3 &:R4



942 (Good)

943 (Good)

SECTION 4 - HGPLT8 PROGRAM SETUP

4.1 JOB CONTROL LANGUAGE (JCL)

- The JCL for HGPLT8 program shown below is contained in the unnumbered data set SB#IM.LIB.CNTL(HIGAIN). A user's guide for HGPLT8 is in the IMP documentation.

```
//ZEKAWHIG JOB (SB016,BF3,1),HGAIN,TIME=(0,30)
/*JOBPARM QUEUE=TSO
//*HIGHGAIN PLOT IMP8
//CHECK  EXEC SRCHDS,DSN='SB#IM.HGPLT8.LOAD'
//RESTORE  EXEC  PGM=LIBMAN,PARM='REST,ZN',REGION=200K,
//   COND=(0,EQ,CHECK.SEARCH)
//STEPLIB  DD  DSN=SB#HP.LIBMAN.LOAD,DISP=SHR
//*****************************************************************
//LIBVOLS  DD  DSN=SB#IM.ZLIBVOLS.V0000000,DISP=(OLD,PASS),
//   UNIT=(,,DEFER),VOL=(,RETAIN)
//LODIN    DD  DUMMY
//LODPRINT DD  SYSOUT=A,DCB=BLKSIZE=3509
//LODWORK2 DD  DSN=SB#IM.HGPLT8.LOAD,DISP=(NEW,CATLG),
//  UNIT=SYSDA,SPACE=(TRK,(07,1,1),RLSE)
//LODWORK1 DD  UNIT=AFF=LIBVOLS,DISP=(OLD,PASS),
//             VOL=(,RETAIN,SER=DUMLOD)
//SYSUDUMP DD  SYSOUT=A
//SNAP     DD  DUMMY
//COPY     EXEC  PGM=IEBCOPY,REGION=200K,
//         COND=((0,EQ,CHECK.SEARCH),(273,NE,RESTORE))
//SYSPRINT DD  SYSOUT=A
//SYSUT1   DD  DSN=*.RESTORE.LODWORK1,DISP=(OLD,KEEP)
//SYSUT2   DD  DSN=*.RESTORE.LODWORK2,DISP=OLD
//SYSUT3   DD  UNIT=SYSDA,SPACE=(TRK,(1,10))
//SYSUT4   DD  UNIT=SYSDA,SPACE=(TRK,(1,10))
//SYSIN    DD  DUMMY
//HGPLT8   EXEC PGM=HGPLT8,REGION=300K
//STEPLIB DD DSN=SB#IM.HGPLT8.LOAD,DISP=SHR
//FT06F001 DD SYSOUT=A,SPACE=(TRK,(5,5)),DCB=(LRECL=137,
//   BLKSIZE=2560,RECFM=VBA,BUFNO=1)
//FT20F001 DD DSN=IMPJ,UNIT=(2400-S,,DEFER),
//   VOL=SER=HIGHGN,DISP=SHR
//FT25F001 DD DSN=SB#IM.DEXS2CAT.DATA,DISP=SHR
//FT38F001 DD DSN=SB#IM.IMP8GAIN.DATA,DISP=SHR
//POOLSTOR DD UNIT=SYSDA,DISP=(NEW,DELETE),SPACE=(TRK,(20,40)),
//   DCB=(RECFM=F,BLKSIZE=7284)
//*4567890123456789012345678901234567890123456
//FT05F001 DD *,DCB=BUFNO=1
 DVSE     3 1    0    0   40   60   10   35
 DVSF     3 1   40   60   10   35   10   40
//FT08F001 DD *,DCB=BUFNO=1
[redacted]
/*
// EXEC NTSO
```

Note incorrect use of input

4.2 EXAMPLE OF HGPLT8 DATA CARDS

(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	885	890	0.0	1.407	1.030	1.380
0	891	891	0.0	1.407	1.030	1.328

4.3 EXPLANATION OF EXAMPLE HGPLT8 DATA CARDS

- Column 1 must be a 1 on the first card and a zero on the last card.
- Column 2 is the starting interval for HGPLT8 to summarize.
- Column 3 is the ending interval for HGPLT8 to summarize.
- Column 4 remains 0.0 in all runs.
- Column 5 is the D detector element gain factor.
- Column 6 is the E detector element gain factor.
- Column 7 is the F detector element gain factor.
- The D, E, and F detector elements for both cards are the same.
- Large numbers of intervals should be averaged together, whenever possible to improve data statistics.
- Use previously determined detector elements to start analysis (See Section 5).

SECTION 5 - PROGRAM ANALYSIS

5.1 HGPLT8 program produces four individual plots of which the first three are used for evaluation of averages.

- The first plot produces an average abscissa for the E detector element.
- The second plot produces an average ordinate for the D detector element.
- The third plot produces an average abscissa for the F detector element.

5.2 STANDARD PEAK CENTROIDS FOR D, E and F DETECTOR ELEMENTS

- The average abscissa/ordinate results for D, E, and F detector should fall within the range for standard centroids. The standard centroids are the values for IMP-8 summed intervals 110-120 when gain factors of 1.00 are used.

Standard orbits for IMP-7 are intervals 110-120; for IMP-6 are ORBIT numbers 7-15.

Table 1 gives the standard centroid values for IMP-8 along with the limits established by GSFC scientists for the centroids.

Table 1

Detector	Standard Centroid	%	Allowed Upper limit	Allowed Lower limit
D	24 230	± 1%	24.472	23.988
E	50 031	± 0.2%	50.131	49.931
F	13.267	± 1%	13.399	13.135

5.3 EXAMPLE RESULTS FROM HGPLT8 PROGRAM INTERVALS 873-875

	Input Gain Factor Values			Peak Centroid Results		
	D	E	F	D	E	F
HGPLT8 Run 1	1.425	1.020	1.392	24.286	50.117	13.113
HGPLT8 Run 2	1.425	1.020	1.395	24.286	50.117	13.296

5.4 ANALYSIS OF EXAMPLE RESULTS FROM HGPLT8 PROGRAM

- Row 1 shows the input value and averages from the first HGPLT8 run. The averages were within the standard centroids for D and E detectors. The F detector average was too low.
- Row 2 shows the input value and averages from the second HGPLT8 run. By raising the F input values by .003, the average now falls in the standard centroids range. The method to determine how much to raise or lower the input values is basically a trial and error procedure. Sometimes several runs of the HGPLT8 program are required to calculate the averages to fall within the standard centroids.
- After the D, E and F gain factors are determined for intervals 873, 874 and 875, these values are used as input for the next set of intervals.
- The final HGPLT8 program output should be filed in the appropriate binder.

5.5 PROBLEMS IN DETERMINING THE INPUT GAIN FACTORS

- Changing one input value may have an affect on the results of other elements. Several runs may then be required to determine the suitable gain factors.
- When a detector element can't be determined through HGPLT8 program, then interpolation is necessary. Refer to section 6.
- If the detector element average centroids are very close to the standard centroids, they can be used to determine the gain factors.

SECTION 6 - DETERMINING GAIN FACTORS BY INTERPOLATION RATHER THAN RUNNING

6.1 WHEN TO USE INTERPOLATION METHOD

- IMP-8 rate plots analysis shows intervals with solar flare activity that cannot be run through HGPLT8 program.
- Extreme fluctuations in the D, E, and F gain factors requires interpolation to smooth over the sharp increase/decrease.

6.2 EXAMPLE OF INTERPOLATED GAIN FACTORS

Interval	Quality	D	E	F
931	Good	1.434	1.031	1.408
932	Good	1.434	1.031	1.408
933	Bad	1.438	1.031	1.407
934	Good	1.442	1.032	1.407
935	Bad	1.447	1.032	1.407
936	Bad	1.451	1.033	1.406
937	Bad	1.456	1.033	1.406
938	Bad	1.460	1.033	1.405
939	Good	1.465	1.033	1.405
940	Good	1.465	1.033	1.405

- In the above example, gain factors for interval 933 were calculated by interpolating between intervals 932 and 934 D, E, and F gain values.
- Intervals 935 through 938 were interpolated using intervals 934 and 939 gain values for D, E, and F detector elements.
- Each interval must have the D, E, and F gain factors entered into the main gain tables, otherwise zeroes will be present. The HGPLT8 program or interpolation can be used to determine the gain factors depending on the condition of the interval.

SECTION 7 - UPDATING MED MAIN GAIN TABLES

7.1 CREATING A MEMBER IN SB#IM.FINE-GAIN.CNTL

- One data set member must be created which contains gain factors for each interval being currently determined.
- The names of the members in SB#IM.FINE-GAIN.CNTL consists of the current set of interval numbers to be entered into the main gain tables. For example, SB#IM.FINE-GAIN CNTL (G931T938) contains the intervals 931 to 938, the G indicates main gain table values.
- Refer to the following member for data card format. The date card records the date those values were.

(G931T938)

```
//*-05/12/83
//* GAIN FACTORS DECEMBER 1982
//GO.DATA5 DD *
8 931 1.434 1.031 1.408
8 932 1.434 1.031 1.408
8 933 1.438 1.031 1.407
8 934 1.442 1.032 1.407
8 935 1.447 1.032 1.407
8 936 1.451 1.033 1.406
8 937 1.456 1.033 1.406
8 938 1.460 1.033 1.405
*** END OF MEMBER ***     11 RECORDS PROCESSED     ******
```

7.2 ENTERING GAIN FACTORS INTO MED MAIN GAIN TABLES

- The clist GAINADD stored in SB#IM.LIB.CLIST will add new gain factor entries or change existing gain factors in the main gain tables.
- The input consists of the satellite number, the interval number and the D, E, and F detector elements gain factors.

- In order to end the clist GAINADD without abnormal end enter a /*.

```
17JUN83 10.23.26 - VOL=USER08, DSN=SB#IM.LIB.CLIST (GAINADD)

00000010PROC 0 LOG('SB#IM.IMP8GAIN.DATA')
00000060ALLOC F(FT05F001) DA(*) REUS
00000070ALLOC F(FT06F001) DA(*) REUS
00000080ALLOC F(FT11F001) SYSOUT REUS
00000090ALLOC F(FT38F001) DA('&LOG.')  CLD REUS
00000100WRITE GAINADD IS BEING CALLED
00000110CALL 'SB#IM.UTILITY.LOAD(GAINADD)'
00000120WRITE END OF CLIST
```

7.3 READING THE MED MAIN GAIN TABLES FOR IMP-7 AND IMP-8

- The clist GAINREAD shown below is in SB#IM.LIB.CLIST. It will read existing gain factors in the main gain table and produce a hardcopy.
- The positional parameter consists of the satellite number desired.
- In order to end the clist GAINREAD enter a /*.

```
17JUN83 10.23.26 - VOL=USER08, DSN=SB#IM.LIB.CLIST (GAINREAD)

00000010PROC 1 NUM
00000020DD FT05F001 *
00000030DD FT06F001 *
00000040/* ALLOCATE A DATA SET TO WRITE IN FOR A HARD COPY */
00000050SRCHDS UNIT11 NOMSG
00000060IF &LASTCC=0 THEN DELETE UNIT11
00000070DD FT3&NUM.F001 'SB#IM.IMP&NUM.GAIN.DATA' CLD BLKSIZE(800) LRECL(800)
00000080RECFM(F B)
00000090
00000100WRITE GAINREAD IS BEING CALLED
00000110SET REPLY=YES
00000120DO WHILE &REPLY=YES
00000130    DD FT11F001 UNIT11 SP(40 40) TR NEW MOD BLKSIZE(2400) LRECL(120) +
00000140    RECFM(F B)
00000150    CALL 'SB#IM.UTILITY.LOAD(GAINREAD)'
00000160    WRITE DO YOU WANT TO LIST MORE INTERVALS? (YES/NO)
00000170    READ &REPLY
00000180END
00000190/* PRINT HARD COPY DATA SET AND THEN DELETE IT  */
00000200PRINTO UNIT11
00000210DELETE UNIT11
00000220WRITE END OF CLIST
00000230END
```

SECTION 8 - IMP-8 PROTON FLUX PROGRAM

8.1 PRODUCTION REQUIREMENTS

The main gain tables must be updated and the SB#IM.FINE-GAIN.CNTL member (refer to section 1) must be created for the month to be run.

The proton flux program is run for an entire month and produces three output tapes.

The proton flux program produces one 20-40 MEV proton tape, one 40-80 MEV proton tape and one file on the plot tape.

8.2 STANDARD TAPES FOR PROTON FLUX PROGRAM OUTPUT

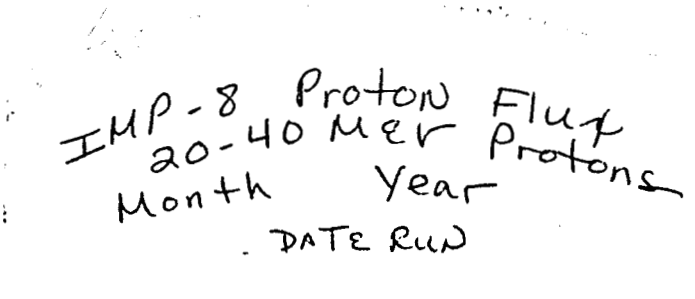
All tapes are labeled NL, DEN=3.

The tapes are produced and contain a physical label as follows:

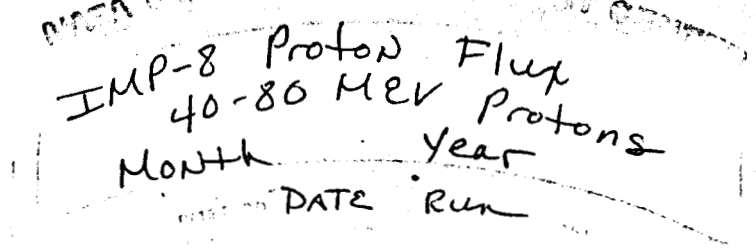
Z00210	20-40 MEV protons
Z00211	40-80 MEV protons
Z00212	20-40 MEV protons
Z00213	40-80 MEV protons
Z00214	SC4060 plot tape

Tapes 200210 through 200214 are kept in SB#IM's tape library system in slot numbers 38083 through 38087.

An example of the tape labels for MEV proton tapes is on the following page.



200210
200212



200211
200213

For each month the proton flux program is run, one 20-40, and one 40-80 MEV proton tape is created. The month and year of the data should be indicated on the labels. The date run is the date that the proton flux program was run to create these tapes.

The National Space Science Data Center (NSSDC) in Building 26, (Ralph Post, phone number 344-7134), receives these tapes and also will provide scratch tapes for future runs.

Tape 200214 contains the plot files and is updated with each proton flux program run. The plot file number is incremented each time the proton flux program is run. Then tape 200214 is sent to micrographics in Building 23 for 16 mm film and two hard copies. The 16 mm film and hard copies are delivered to Bob McGuire, Building 2.

8.3 PROTON FLUX PROGRAM SETUP

The JCL for the proton flux program is contained in SB#IM.LIB.CNTL (I8PROFLX).

The output tape numbers are changed on the FT15F001 and FT16F001 DD cards. The FT15F001 DD card produces the 20-40 MEV proton tape and the FT15F001 DD card produces the 40-80 MEV proton tape.

The SC4060ZZ DD card updates the tape 200214, standard plot tape, the file number on this DD card needs to be incremented for each month to be run in the proton flux pro-ram.

Several comment lines are provided for information use only.

One data card needs to be updated, providing the starting date and ending date for the month being run.

The data set SB#IM.LIB.CNTL (I8PROFLX) must be an unnumbered data set.

In the example on the following page, areas where the changes are to be made for each proton flux run are underlined.

The output from the I8PROFLX should be filed in appropriate binder.

8.4 IMP-8 RPOTON FLUX TAPES

After 20-40 MEV and 40-80 MEV proton flux tapes are successfully created, they are delivered to NSSDC, Building 26, Ralph Post, 344-7134. A receipt should be signed and dated by Ralph Post, indicating he received tapes for indicated months.

An example of SB#IM.LIB.CNTL (I8PROFLX).

```
17JUN83 10.22.58 - VOL=USER09, DSN=SB#IM.LIB.CNTL (I8PROFLX)

//ZEKAWAPR JOB (SB016,BF3,20),I-8.PROTON.FLUX,TIME=(5,0),CLASS=E
//CHECK  EXEC SRCHDS,DSN='SB#IM.PFLUX8.LOAD'
//RESTORE  EXEC  PGM=LIBMAN,PARM='REST,ZN',REGION=200K,
//   COND=(0,EQ,CHECK.SEARCH)
//STEPLIB  DD  DSN=SB#HP.LIBMAN.LOAD,DISP=SHR
//*****************************************************************
//LIBVOLS  DD  DSN=SB#IM.ZLIBVOLS.VC0C0000,DISP=(OLD,PASS),
//   UNIT=(,,DEFER),VOL=(,RETAIN)
//LODIN    DD  DUMMY
//LODPRINT DD  SYSOUT=A,DCB=BLKSIZE=3509
//LODWORK2 DD  DSN=SB#IM.PFLUX8.LOAD,DISP=(NEW,CATLG),
//  UNIT=SYSDA,SPACE=(TRK,(07,1,1),RLSE)
//LODWORK1 DD  UNIT=AFF=LIBVOLS,DISP=(OLD,PASS),
//             VOL=(,RETAIN,SER=DUMLOD)
//SYSUDUMP DD  SYSOUT=A
//SNAP     DD  DUMMY
//COPY     EXEC  PGM=IEBCOPY,REGION=200K,
//             COND=((0,EQ,CHECK.SEARCH),(273,NE,RESTORE))
//SYSPRINT DD  SYSOUT=A
//SYSUT1   DD  DSN=*.RESTORE.LODWORK1,DISP=(OLD,KEEP)
//SYSUT2   DD  DSN=*.RESTORE.LODWORK2,DISP=OLD
//SYSUT3   DD  UNIT=SYSDA,SPACE=(TRK,(1,10))
//SYSUT4   DD  UNIT=SYSDA,SPACE=(TRK,(1,10))
//SYSIN    DD  DUMMY
//PFLUX8 EXEC PGM=PFLUX8,REGION=200K
//STEPLIB DD DSN=SB#IM.PFLUX8.LOAD,DISP=SHR
//FT06F001 DD SYSOUT=A,DCB=(RECFM=VBA,LRECL=137,BLKSIZE=7265)
//FT10F001 DD UNIT=(2400-9,,DEFER),DISP=SHR,DSN=PHA,
//  VOL=SER=DUM
//FT15F001 DD UNIT=(2400-9,,DEFER),DISP=(OLD,KEEP),DSN=P5,
//  VOL=SER=[redacted],DCB=(DEN=3,RECFM=F,BLKSIZE=320),LABEL=(1,NL)
//FT16F001 DD UNIT=(2400-9,,DEFER),DISP=(OLD,KEEP),DSN=P6,
//  VOL=SER=[redacted],DCB=(DEN=3,RECFM=F,BLKSIZE=320),LABEL=(1,NL)
//FT25F001 DD DSN=SB#IM.DEX52CAT.DATA,DISP=SHR
//FT38F001 DD DSN=SB#IM.IMP8GAIN.DATA,DISP=SHR
//SYSUDUMP DD SYSOUT=A
//SC4060ZZ DD DSN=T4060,UNIT=(2400-9,,DEFER),DISP=(SHR,KEEP),
//  DCB=(DEN=3,RECFM=F,BLKSIZE=1024),VOL=SER=Z00214,
//  LABEL=([redacted],NL,,OUT)
//*[redacted] I'M NOW RUNNING APRIL [redacted] 1982
//*GAIN TAELES CURRENTLY FILLED UP THROUGH INT 515. (THRU SEPT 30,1982)
//*CURRENTLY HAVE MADE GAIN CHECKS THRU SEPT. 30,1982.
//FT05F001 DD *
8 01F -5000 070 140 008 019 030 102 020 040 015 063 041 102 3.12 2.67 20
1 000 000 [redacted] 00 [redacted] 00 FTT
//  EXEC NTSD
```

8.5 STANDARD PLOTS

The tape 200214 should be sent to micrographics, Building 23 for one 16 mm film and two hard copies.

Refer to the sample micrographics job slip that follows. After filled out take the slip and tape 200214 to Building 1 dispatch area, Box 23.

JOB CARD
FR 80

NAME

6664 (15 BRANCH) 8161E (20 PROJECT) 0182 (LOG NO.)

SB0161 (26 SPONSOR) P (TYPE 32) _____ (PHONE)

CALL WHEN READY ☐

TAPES		OUTPUT	
DENSITY/TRACK	1600	16 MM	✓
NO. FILES	1 (n)	35 MM	
PROCESSOR	Meta	105 MM	
		24X	42X
NO. FRAMES	#	HARDCOPY	2
NO. FICHE		KALVAR	

SPECIAL INSTRUCTIONS

Process file(s) n only.
Tape to Bldg. #1
H.C. + Film to BF3

USER COMPLETE ABOVE / OPERATIONS COMPLETE BELOW

TIME	DATE		
43	38	IN	34 CLASS, 36 MACH
48		ON MACH	47 MACH DAY
53		OFF MACH	
62	58	OUT	67 TAPE PROC

FILES PROC 70 | FRAMES PROC 73 | FILES UNPR. 79 | # FICHE

TAPE RECEIPT (COMPLETED BY USER)

DATE _____ LOG NO.

TAPE NUMBER (ORDER OF PROCESS)

1 200214	3	5
2	4	6

USE BALL POINT PEN - BEAR DOWN HARD

Multiple files can be requested from 200214 by indicating the file #'s required in the n fields of job slip and indicating the appropriate total number of files.

When the 16 mm film and hardcopies are completed, deliver them to Bob McGuire, Building 2.

SECTION 9 - IMP FINE-GAIN UPDATES

9.1 PURPOSE

Occasionally a request is made by the government to have fine-gain values entered into the fine-gain tables. These gain values are similiar to the normal gain factors, but are done on a finer scale, an hourly gain factor for each 96 hours within an interval.

9.2 SPECIAL REQUESTS FOR FINE-GAIN ADDITIONS/UPDATES

The requests should contain all the following information: interval numbers, time spans, D, E and F values and the current record number in the fine-gain tables, if previously created.

The day numbers must be converted to Julian days by using a Julian conversion calender.

The gain values must be present in input cards for the entire 96 hours within the interval. If the interval was previously run, a record number should exist and a listing can be obtained by running the program contained in SB#IM.FINE-GAIN.CNTL(FGLSTJCL). If the request is for only partial updates to the interval then use the listing for the existing fine-gain values and include them in the input cards for time periods where changes are not to be made.

26AUG83 10.19.39 - VOL=SACC09. DSN=SB#IM.FINEGAIN.CNTL (FGLSTJCL)

```
//ZBKAWLFG JOB (S8016,BF3,2),FINEGAIN-LIST,TIME=(1),MSGLEVEL=1
// EXEC FORTRANG
//SOURCE.SYSIN DD DSN=SB#IM.FINEGAIN.CNTL(FGLIST),DISP=SHR
//              DD DSN=SB#IM.FINEGAIN.CNTL(FGLSTS),DISP=SHR
//              DD DSN=SB#IM.FINEGAIN.CNTL(FGDATE),DISP=SHR
// EXEC LINKGO,REGION.GO=100K
//GO.FT10F001 DD DSN=SB#IM.FINEGAIN.DATA,DISP=SHR
// EXEC NOTIFYTS
```

This is an example of a request to update the fine-gains table.

IM75c

CHANGES TO IMP-8 FINEGAIN TABLES

Int	Time	D	E	F	REC
548 good	Dy 263 - 266 1978 20 Sept/0 - 23 Sept/12	1.290	1.00	1.33	36
549	Days 269 - 270 1978 26 Sept/0-12	1.48	1.11	1.38	37
	26 Sept/12 - 27 Sept/0	1.48	1.11	1.37	
	27 Sept/0 - 28 Sept/0	1.48	1.09	1.35	
550 Good (new)	Days 271 - 274 1978 28 Sept/0 - 29 Sept/0	1.48	1.07	1.35	—
	29 Sept/0 - 1 Oct/0	1.48	1.06	1.35	
	274 Oct/0 - 275 2 Oct/0	1.48	1.05	1.35	
781 Good	Days 99 - 101 1981 9 Apr/0 - 11 Apr/0	1.31	1.00	1.37	53
	11 Apr/0-4	1.31	1.01	1.37	
	11 Apr/4-12	1.32	1.03	1.37	
734 Good	Days 111 - 114 1981 21 Apr/0 - 24 Apr/20	1.34	1.00	1.38	55
	Days 119 - 121 1981 29 Apr/12 - 1 May/0	1.38	1.00	1.38	57
	Days 123 - 126 1981 3 May/0 - 4 May/0	1.38	1.03	1.38	—
	4 May/0	1.37	1.02	1.38	
	5 May/0	1.37	1.01	1.38	
	6 May/0	1.37	1.00	1.38	

9.3 NAMING CONVENTION FOR FINE-GAIN DATA SET MEMBERS

In SB#IM.FINE-GAIN.CNTL members exist for previous additions/updates to the fine-gain tables. One example is SB#IM.FINE-GAIN.CNTL(OCT10818), this name represents the date the additions/changes were made to the SB#IM.FINE-GAIN.DATA data set. The name represents:

Month	Day	Year	Satellite#
Oct	10	81	8

9.4 EXAMPLE OF SETUP FOR SB#IM.FINE-GAIN.CNTL MEMBERS

```
11JUL83 15.35.47 - VOL=SACC09, DSN=SB#
8 827                                                    C
1981 283 00 1.350 1.025 1.390
1981 285 12 1.400 1.025 1.390
  BLANK line
8 828
1981 287 00 1.680 1.110 1.430
1981 290 00 1.480 1.080 1.390
  BLANK line
//  EXEC NOTIFYTS
//*FINE GAIN SHIFTS FOR 10-17 OCT 1981
```

The first line represents the satellite number and the interval number to be changed/added.

The second line contains the year, Julian day, hour to start, and the D, E and F gain values.

Each interval must be separated by a blank line, as shown in the example.

The comment line should be included to provide information for future reference.

The gain values for each interval must cover the full 96 hours of the interval.

Each hour which changes any gain values must be included on a separate card containing the year, Julian day, hour, D, E and F gain values as shown.

Example of input card setup in which additional cards were required to provide gain factors to fully cover 96 hours. Refer to interval 549 on request and example.

```
 8 546
 1978 263 00 1.290 1.000 1.330
 1978 266 12 1.350 0.990 1.350

 8 549
 1978 267 00 1.670 1.260 1.450
 1978 267 06 1.670 1.240 1.450
 1978 267 12 1.670 1.230 1.450
 1978 267 18 1.590 1.230 1.450
 1978 268 00 1.510 1.130 1.430
 1978 268 12 1.490 1.130 1.430
 1978 268 18 1.480 1.130 1.420
 1978 269 00 1.480 1.110 1.380
 1978 269 12 1.480 1.110 1.370
 1978 270 00 1.480 1.090 1.350

 8 550
 1978 271 00 1.480 1.070 1.350
 1978 272 00 1.480 1.060 1.350
 1978 274 00 1.480 1.050 1.350

 // EXEC NOTIFYTS
 //*FINE GAIN SHIFTS FOR 20-30 SEPT 1 OCT 1978
```

The comment card explains the dates which correspond to the interval numbers.

9.5 PRODUCTION REQUIREMENTS

The program I8PROFLUX must be run prior to fine-gain updates.

The fine-gain tables should be stored on the Cosmic Ray program backup tapes before making updates. Submit a request for backup for SB#IM.FINE-GAIN.DATA to the person in charge of Cosmic Ray backups. Refer to sample form following.

Check the updates/changes to make sure all 96 hours of interval are covered before submitting the program. Also, check the final job printout to see that the values were entered correctly.

9.6 SUBMITTING THE FINE-GAIN TABLE UPDATES

The JCL is contained in data set SB#IM.FINE-GAIN.CNTL (FGBLDJCL).

The job can be submitted with the TSO STAB command using the JCL FGBLDJCL and the SB#IM.FINE-GAIN.CNTL input card member created.

An example of the job follows:

```
STAB ZBKAWBLD TIME (1,0) IOEST (1)
          =:  LIB(UJC) 10:11
          =:  FINE-GAIN.CNTL(FGBLDJCL)
          =:  FINE-GAIN.CNTL (Oct 10818)
          =:  11 EXEC NTSO
          ENDINPUT
```

```
26AUG83 10.19.39 - VOL=SACC09. DSN=SB#IM.FINEGAIN.CNTL (FGBLDJCL)
```

```
//  EXEC FORTRANG,PARM='MAP,LIST,NAME=FGBILD'
//SOURCE.SYSIN  DD DSN=SB#IM.FINEGAIN.CNTL(FGBILD),DISP=SHR
//               DD DSN=SB#IM.FINEGAIN.CNTL(FGLSTS),DISP=SHR
//               DD DSN=SB#IM.FINEGAIN.CNTL(FGDATE),DISP=SHR
//  EXEC LINKGO,REGION.GO=100K
//GO.FT10F001 DD DSN=SB#IM.FINEGAIN.DATA,DISP=(OLD,KEEP)
//*GO.FT36F001 DD DSN=SB#IM.IMP6GAIN.DATA,DISP=SHR
//*GO.FT37F001 DD DSN=SB#IM.IMP7GAIN.DATA,DISP=SHR
//GO.FT38F001 DD DSN=SB#IM.IMP8GAIN.DATA,DISP=SHR
//GO.DATA5 DD *
```

9.7 SAMPLE LISTING OF FINE-GAIN TABLE UPDATES

The listing produced from the stab will look similiar to the following output.

Note that each hour within interval has a D, E and F gain factor.

Check the gain factors for each hour against the request to make sure results are correct. If the gain factors

COSMIC RAY DATA SET/PROGRAM CHANGES

Satellite: IMP

Date of Change: DATE

Author of Change: NAME

Authorized by: Government NAME

A. Program (or member) changed

B. Reason for change:

Updating/changing finegain table.
Interval numbers — — — —

C. Name of Cosmic Ray data set affected:

SB#IM.FINEGAIN.DATA

D. Volumes affected by change:

1. Disk — Date Loaded: _____

   a. VOL=SER=_____

2. Tape — By: _____

   a. VOL=SER=_____

      file number_____

E. Data set attributes:

RECFM_____ LRECL_____ BLKSIZE_____

Type of Data set:

PDS_____ SEQUENTIAL ✓

Description of change: (mention subroutines affected)

FGBIED - BUILDING A FINE GAIN TABLE ENTRY FOR IMP-8 INTERVAL 781

THE FOLLOWING TIME AND GAIN CARDS HAVE BEEN READ IN:

```
YYY DDD HH/- D     E     F
1981  99  0 1.310 1.003 1.370
1981 101  0 1.310 1.010 1.370
1981 101  4 1.320 1.030 1.370
1981 101 12 1.340 1.030 1.380
```

IMP-8

INTERVAL NO. 781

9 APR 1981

DD	MON	YEAR	HOUR	D	E	F
9	APR	1981	0	1.341	1.002	1.373
9	APR	1981	1	1.341	1.002	1.373
9	APR	1981	2	1.340	0.990	1.380
9	APR	1981	3	1.340	0.990	1.380
9	APR	1981	4	1.340	0.990	1.380
9	APR	1981	5	1.340	0.990	1.380
9	APR	1981	6	1.340	0.990	1.380
9	APR	1981	7	1.340	0.990	1.380
9	APR	1981	8	1.340	0.990	1.380
9	APR	1981	9	1.340	0.990	1.380
9	APR	1981	10	1.340	0.990	1.380
9	APR	1981	11	1.340	0.990	1.380
9	APR	1981	12	1.340	0.990	1.380
9	APR	1981	13	1.340	0.990	1.380
9	APR	1981	14	1.340	0.990	1.380
9	APR	1981	15	1.340	0.990	1.380
9	APR	1981	16	1.340	0.990	1.380
9	APR	1981	17	1.340	0.990	1.380
9	APR	1981	18	1.340	0.990	1.380
9	APR	1981	19	1.340	0.990	1.380
9	APR	1981	20	1.340	0.990	1.380
9	APR	1981	21	1.340	0.990	1.380
9	APR	1981	22	1.340	0.990	1.380
9	APR	1981	23	1.340	0.990	1.380
10	APR	1981	0	1.340	0.990	1.380
10	APR	1981	1	1.340	0.990	1.380
10	APR	1981	2	1.340	0.990	1.380
10	APR	1981	3	1.340	0.990	1.380
10	APR	1981	4	1.340	0.990	1.380
10	APR	1981	5	1.340	0.990	1.380
10	APR	1981	6	1.340	0.990	1.380
10	APR	1981	7	1.340	0.990	1.380
10	APR	1981	8	1.340	0.990	1.380
10	APR	1981	9	1.340	0.990	1.380
10	APR	1981	10	1.340	0.990	1.380
10	APR	1981	11	1.340	0.990	1.380
10	APR	1981	12	1.340	0.990	1.380
10	APR	1981	13	1.340	0.990	1.380
10	APR	1981	14	1.340	0.990	1.380
10	APR	1981	15	1.340	0.990	1.380
10	APR	1981	16	1.340	0.990	1.380
10	APR	1981	17	1.340	0.990	1.380
10	APR	1981	18	1.340	0.990	1.380
10	APR	1981	19	1.340	0.990	1.380
10	APR	1981	20	1.340	0.990	1.380
10	APR	1981	21	1.340	0.990	1.380
10	APR	1981	22	1.340	0.990	1.380
10	APR	1981	23	1.340	0.990	1.380
11	APR	1981	0	1.340	1.010	1.380
11	APR	1981	1	1.340	1.010	1.380
11	APR	1981	2	1.340	1.010	1.380
11	APR	1981	3	1.340	1.010	1.380
11	APR	1981	4	1.340	1.010	1.380
11	APR	1981	5	1.340	1.010	1.380
11	APR	1981	6	1.340	1.010	1.380
11	APR	1981	7	1.340	1.010	1.380
11	APR	1981	8	1.340	1.030	1.380
11	APR	1981	9	1.340	1.030	1.380
11	APR	1981	10	1.340	1.030	1.380
11	APR	1981	11	1.340	1.030	1.380
11	APR	1981	12	1.340	1.030	1.380
11	APR	1981	13	1.340	1.030	1.380
11	APR	1981	14	1.340	1.030	1.380
11	APR	1981	15	1.340	1.030	1.380
11	APR	1981	16	1.340	1.030	1.380
11	APR	1981	17	1.340	1.030	1.380
11	APR	1981	18	1.340	1.030	1.380
11	APR	1981	19	1.340	1.030	1.380
11	APR	1981	20	1.340	1.030	1.380
11	APR	1981	21	1.340	1.030	1.380
11	APR	1981	22	1.340	1.030	1.380
11	APR	1981	23	1.340	1.030	1.380
12	APR	1981	0	1.340	1.030	1.380
12	APR	1981	1	1.340	1.030	1.380
12	APR	1981	2	1.340	1.030	1.380
12	APR	1981	3	1.340	1.030	1.380
12	APR	1981	4	1.340	1.030	1.380
12	APR	1981	5	1.340	1.030	1.380
12	APR	1981	6	1.340	1.030	1.380
12	APR	1981	7	1.340	1.030	1.380
12	APR	1981	8	1.340	1.030	1.380
12	APR	1981	9	1.340	1.030	1.380
12	APR	1981	10	1.340	1.030	1.380
12	APR	1981	11	1.340	1.030	1.380
12	APR	1981	12	1.340	1.030	1.380
12	APR	1981	13	1.340	1.030	1.380
12	APR	1981	14	1.340	1.030	1.380
12	APR	1981	15	1.340	1.030	1.380
12	APR	1981	16	1.340	1.030	1.380
12	APR	1981	17	1.340	[illegible]	1.380
12	APR	1981	18	1.340	[illegible]	1.380
12	APR	1981	19	1.340	[illegible]	1.380
12	APR	1981	20	1.340	[illegible]	1.380
12	APR	1981	21	1.340	[illegible]	1.380
12	APR	1981	22	1.340	[illegible]	1.380
12	APR	1981	23	1.340	[illegible]	1.380

THE FOLLOWING TIME GAIN TABLE RECORD WAS ENTERED AT BLOCK NUMBER 53

are in error, change the SB#IM.FINE-GAIN.CNTL member to the correct values and resubmit the stab job.

Note that the output listing shows the record number created in the fine-gain tables for the interval.

9.8 LISTING THE FINE-GAIN TABLES

After all the additions/updates on the request are completed, a listing should be generated using JCL in SB#IM.FINE-GAIN.CNTL(FGLSTJCL). This listing should be given to the requestor.

9.9 FLEX8DBG AND FLUX8DBG PROGRAMS

After the fine-gain tables are successfully created/ updated the intermediate flux programs must be rerun for the intervals.

The two JCL setups for FLEX8DBG and FLUX8DBG are contained in SB#IM.LIB.CNTL data set. Refer to the JCL listings on the following pages.

The time period data card needs to be changed to reflect the interval(s) to which fine-gain table additions/ updated were made.

The FLUX8DBG and FLEX8DBG jobs must be run in execution release manner to avoid conflicting data sets.

9.10 UPDATING SB#IM.FINE-GAIN.CNTL($STATUS$)

The $STATUS$ member is SB#IM.FINE-GAIN.CNTL needs to be updated for record keeping to reflect all additions/changes made to fine-gain tables and whether those changes were incorporated into the FLUX, FLEX tape data bases.

The format for this data set follows:

26AUG83 10.19.27 - VOL=SACC09, DSN=SB#IM.LIB.CNTL (FLUX8DBG)

```
//SENMSFLE JOB (SB016,BF3,20),IMP-8,FLUX,DBG,TIME=(2,0),CLASS=F
/*JOBPARM L=40
//CHECK EXEC SRCHDS,DSN='SB#IM.FLUX8.LOAD'
//RESTORE  EXEC  PGM=LIBMAN,PARM='REST,ZN',REGION=200K,
//   COND=(0,EQ,CHECK.SEARCH)
//STEPLIB  DD  DSN=SB#HP.LIBMAN.LOAD,DISP=SHR
//*************************************************************
//LIBVOLS   DD   DSN=SB#IM.ZLIBVOLS.V0000000,DISP=(OLD,PASS),
//   UNIT=(,,DEFER),VOL=(,RETAIN)
//LODIN     DD   DUMMY
//LODPRINT  DD   SYSOUT=A,DCB=BLKSIZE=3509
//LODWORK2  DD   DSN=SB#IM.FLUX8.LOAD,DISP=(NEW,CATLG),
//  UNIT=SYSDA,SPACE=(TRK,(C7,1,1),RLSE)
//LODWORK1  DD   UNIT=AFF=LIBVOLS,DISP=(OLD,PASS),
//               VOL=(,RETAIN,SER=DUMLOD)
//SYSUDUMP  DD   SYSOUT=A
//SNAP      DD   DUMMY
//COPY      EXEC   PGM=IEBCOPY,REGION=200K,
//          COND=((0,EQ,CHECK.SEARCH),(273,NE,RESTORE))
//SYSPRINT  DD   SYSOUT=A
//SYSUT1    DD   DSN=*.RESTORE.LODWORK1,DISP=(OLD,KEEP)
//SYSUT2    DD   DSN=*.RESTORE.LODWORK2,DISP=OLD
//SYSUT3    DD   UNIT=SYSDA,SPACE=(TRK,(1,10))
//SYSUT4    DD   UNIT=SYSDA,SPACE=(TRK,(1,10))
//SYSIN     DD   DUMMY
//FLUX8DBG EXEC PGM=FLUX8,REGION=200K
//STEPLIB DD DSN=SB#IM.FLUX8.LOAD,DISP=SHR
//FT06F001 DD SYSOUT=A,DCB=(RECFM=VBA,LRECL=137,BLKSIZE=7265)
//FT15F001 DD UNIT=(1600,,DEFER),DISP=(OLD,KEEP),DSN=IFLUX8.DUM1,
//  VOL=SER=PHAIN,DCB=DEN=3
//FT20F001 DD UNIT=(6250,,DEFER),DISP=(OLD,KEEP),
//  VOL=SER=FLUXIN,DSN=IFLUX8.DUM2
//FT25F001  DD  DSN=SB#IM.DEX52CAT.DATA,DISP=(OLD,KEEP)
//FT30F001 DD UNIT=(6250,,DEFER),DISP=(,KEEP),
//  DCB=(RECFM=FB,LRECL=588,BLKSIZE=5880,DEN=4),
//  VOL=SER=FLXOUT,DSN=IFLUX8.DUM3,LABEL=(,,,OUT)
//FT38F001 DD DSN=SB#IM.IMP8GAIN.DATA,DISP=SHR
//FT40F001  DD  DSN=SB#IM.FINEGAIN.DATA,DISP=SHR
//*    RUN INTERVALS 870 TO 915 AT THIS TIME
//FT05F001 DD *
      0.0   0.0   0.0   0.0   0.0
   828   8280.0   0.0   0.0   0.0   0.0
// EXEC NTSO
```

26AUG83 10.19.27 - VOL=SACC09, DSN=SB#IM.LIB.CNTL (FLEX8DBG)

```
//SENMSFLE JOB (SB016,BF3,30),IMP-8,FLEX,DBG,TIME=(10,0),CLASS=A
//*RUN-IMP8 FLEX-DBG
//CHECK  EXEC SRCHDS,DSN='SB#IM.FLEX8.LOAD'
//RESTORE  EXEC  PGM=LIBMAN,PARM='REST,ZN',REGION=200K,
//   COND=(0,EQ,CHECK.SEARCH)
//STEPLIB  DD  DSN=SB#HP.LIBMAN.LOAD,DISP=SHR
//*****************************************************************
//LIBVOLS  DD  DSN=SB#IM.ZLIBVOLS.V0000000,DISP=(OLD,PASS),
//   UNIT=(,,DEFER),VOL=(,RETAIN)
//LODIN    DD  DUMMY
//LODPRINT DD  SYSOUT=A,DCB=BLKSIZE=3509
//LODWORK2 DD  DSN=SB#IM.FLEX8.LOAD,DISP=(NEW,CATLG),
// UNIT=SYSDA,SPACE=(TRK,(07,1,1),RLSE)
//LODWORK1 DD  UNIT=AFF=LIBVOLS,DISP=(CLD,PASS),
//            VOL=(,RETAIN,SER=DUMLOD)
//SYSUDUMP DD  SYSOUT=A
//SNAP     DD  DUMMY
//COPY     EXEC  PGM=IEBCOPY,REGION=200K,
//            COND=((0,EQ,CHECK.SEARCH),(273,NE,RESTORE))
//SYSPRINT DD  SYSOUT=A
//SYSUT1   DD  DSN=*.RESTORE.LODWORK1,DISP=(OLD,KEEP)
//SYSUT2   DD  DSN=*.RESTORE.LODWORK2,DISP=OLD
//SYSUT3   DD  UNIT=SYSDA,SPACE=(TRK,(1,10))
//SYSUT4   DD  UNIT=SYSDA,SPACE=(TRK,(1,10))
//SYSIN    DD  DUMMY
//FLEX8 EXEC PGM=FLEX8,REGION=160K
//STEPLIB DD DSN=SB#IM.FLEX8.LOAD,DISP=SHR
//FT06F001 DD SYSOUT=A,DCB=(RECFM=VBA,LRECL=137,BLKSIZE=7265)
//FT15F001 DD UNIT=(1600,,DEFER),DISP=(OLD,KEEP),DSN=IFLUX8.DUM1,
// VOL=SER=PHAIN,DCB=DEN=3
//FT20F001 DD UNIT=(6250,,DEFER),DISP=(OLD,KEEP),
// VOL=SER=FLUXIN,DSN=IFLUX8.DUM2
//FT25F001 DD DSN=SB#IM.DEX52CAT.DATA,DISP=SHR
//FT26F001 DD DSN=SB#IM.IMP8.FLEXCAT,DISP=(OLD,KEEP)
//FT30F001 DD UNIT=(6250,,DEFER),DISP=(,KEEP),
// DCB=(RECFM=FB,LRECL=588,BLKSIZE=5880,DEN=4),
// VOL=SER=E04203,DSN=IFLUX8.DUM3
//FT38F001 DD DSN=SB#IM.IMP8GAIN.DATA,DISP=SHR
//FT40F001 DD DSN=SB#IM.FINEGAIN.DATA,DISP=SHR
//*45678901234567890123456789012345678901234567890
//FT05F001 DD *
     0.0   0.0   0.0   0.0   0.0
  897  9020.0   0.0   0.0   0.0   0.0                    F
/*
// EXEC NOTIFYTS
```

26AUG83 10.19.39 - VOL=SACC09, DSN=SB#IM.FINEGAIN.CNTL (STATUS)

```
                                                                                00000010
   STATUS OF IMP GAIN TABLES AND FLUX DATA BASE GENERATION:                     00000020
                                                                                00000030
 SATELLITE    INTERVALS        TIMES          IN TABLE?   DATA BASE?   WHEN?  00000040
   IMP-6          1-313   13MAR71-02OCT74        YES          YES        4/79  00000050
   IMP-7          1-550   23SEP72-02OCT78        YES          YES        4/79  00000060
   IMP-8        101-580   28OCT73-30JAN79        YES          YES        4/79  00000070
   IMP-8        581-615                          YES          YES       79/279 00000080
   IMP-8        616-647                          YES          YES        4/80  00000090
  &&&18MAR80 ERROR IN IMP8 GAIN TABLES                                          00000100
  &&&        INTERVALS 581-598  E GAIN FACTOR                                   00000110
  &&&       CORRECTED THISDATE - REPROCESSING OF 581-598 WILL START            00000120
   IMP-8        648-685                          YES          YES    4-7OCT80  00000130
   IMP-8        686-697                          YES          YES    3NOV80    00000140
   IMP-8        698-709                          YES          YES    7NOV80    00000150
                                                                                00000160
                                                                                00000170
********************************************************************************00000180
                                                                                00000190
   STATUS OF IMP FINEGAIN TABLE AND FLUX DATA BASE GENERATION:                  00000200
                                                                                00000210
 SATELLITE    INTERVALS        TIMES          IN TABLE?   DATA BASE?   WHEN?  00000220
   IMP-7        194-195   04NOV74-12NOV74        YES          YES        4/79  00000230
   IMP-7        266-267   19AUG75-27AUG75        YES          YES        4/79  00000240
   IMP-7        320-321   22MAR76-30MAR76        YES          YES        4/79  00000250
   IMP-7        329-330   27APR76-05MAY76        YES          YES        4/79  00000260
   IMP-7        455-458   13SEP77-29SEP77        YES          YES        4/79  00000270
   IMP-7        472-473   20NOV77-28NOV77        YES          YES        4/79  00000280
                472-473    REDONE                YES          YES        1/80  00000290
   IMP-7        474                              YES                          00000300
   IMP-7        493       12FEB78-16FEB78        NO           NO         4/79  00000310
   IMP-7        507                              YES                          00000320
   IMP-7        511-512                          YES          YES        1/80  00000330
   IMP-7        548-549                          YES          YES        1/80  00000340
                                                                                00000350
   IMP-8        162-164                          YES          NO               00000360
   IMP-8        180-185                          YES          NO               00000370
   IMP-8        194-195   04NOV74-12NOV74        YES          YES        4/79  00000380
                194-195     FG REDONE            YES          NO               00000390
   IMP-8        320-321   22MAR76-30MAR76        YES          YES        4/79  00000400
   IMP-8        329-330   27APR76-05MAY76        YES          YES        4/79  00000410
                329-330     FG REDONE            YES          NO               00000420
   IMP-8        456-458   17SEP77-29SEP77        YES          YES        4/79  00000430
                456-458     FG REDONE            YES          NO               00000440
   IMP-8        455                              YES          NO               00000450
   IMP-8        472-473   20NOV77-28NOV77        YES          YES        4/79  00000460
                472-473     REDONE GF            YES          YES        1/80  00000470
   IMP-8        493-494   12FEB78-16FEB78        NO           NO         4/79  00000480
                493-494     REDONE               YES          YES        1/80  00000490
                493         FG REDONE            YES          NO               00000500
   IMP-8        507-508                          YES          NO               00000510
   IMP-8        511-512                          YES          YES        1/80  00000520
                511-512     FG REDONE            YES          NO               00000530
   IMP-8        513-514                          YES          NO               00000540
   IMP-8        548-549                          YES          YES        1/80  00000550
                548-549     FG REDONE            YES          NO               00000560
   IMP-8        631                              YES          NO               00000570
   IMP-8        827-828   10OCT81-17OCT81        YES          YES        2/83  00000580
   IMP-8        855-856   30JAN82-06FEB82        YES          YES        2/83  00000590
   IMP-8        895-896   09JUL82-17JUL82        YES          YES        2/83  00000600
                                                                                00000610
********************************************************************************00000620
  STATUS OF IMP FINEGAIN TABLE AND FLUX DATA BASE GENERATION:                   00000630
                                                                                00000640
 SATELLITE    INTERVALS        TIMES          IN TABLE?   DATA BASE?   WHEN?  00000650
   IMP-8        548-550   20SEPT78-02OCT78       YES          YES        7/83  00000660
   IMP-8        781       09APR81-11APR81        YES          YES        7/83  00000670
   IMP-8        784       21APR81-24APR81        YES          YES        7/83  00000680
   IMP-8        786-787   29APR81-06MAY81        YES          YES        7/83  00000690
   IMP-8        827-828   10OCT81-18OCT81        YES          YES        7/83  00000700
   IMP-8        896       13JUL82-17JUL82        YES          YES        7/83  00000710
   IMP-8        933-934   06DEC82-15DEC82        YES          YES        7/83  00000720
********************************************************************************00000730
```

9.11 BACKUPS OF DATA SETS

After the FLUX8DBG and FLEX8DBG jobs are completed, Cosmic Ray backups are created by requesting the following: SB#IM.FINE-GAIN.CNTL, SB#IM.FINE-GAIN.DATA and SB#IM.IMP8GAIN.DATA. Refer to sample form in Section IX E.

SECTION 10 - SUMMARIES

10.1 Summary of the gain factor determination procedures.

1. Determine intervals and their corresponding start times.
2. Check the rate plots and select non-solar flare intervals for HGPLT8 program. Also identify solar flare intervals for interpolation.
3. Run the HGPLT8 program interactively until output centroids are acceptable.
4. File the final HGPLT8 program output.
5. Create the FINE-GAIN.CNTL member from HGPLT8 results
6. Enter the gain factors into the MED main gain tables.
7. Run proton flux program to create IMP proton flux tapes for NSSDC and plot file, file output in binder.
8. Submit to micrographics tape 200214 for 16 mm film and hardcopies.
9. Deliver proton flux tapes to Building 26, Ralph Post.

10.2 Summary of fine-gain additions/updates procedures.

1. Upon receipt of a special request, identify the Julian day, interval numbers, and existing records in fine-gain tables.
2. Create FINE-GAIN.CNTL data set member with times for the total interval.
3. Submit the FGBILD program to make the additions/updates to fine-gain tables.
4. List the fine-gain tables and verify.
5. Rerun the FLUX8DBG and FLEX8DBG programs on the intervals which were added/updated.
6. Update the SB#IM.FINE-GAIN.CNTL($STATUS$) data set with proper information.
7. Backup the data sets which were affected by the fine-gain additions/changes.