IMP-8 FLUX PLOT PROGRAM DESCRIPTION AND USER'S GUIDE

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General Information

The IMP Flux Plot Program will generate flux plots of PHA data from IMP-6, IMP-7, and/or IMP-8. Either time history plots or spectral plots may be run. The program uses IMP-6, IMP-7, and/or IMP-8 Intermediate Flux tapes as input. The output consists of line printer flux listings along with plot tapes containing instructions for generating microfilm plots on the SD-4060 Plotter and/or datasets in the FT31F001, FT32F001 output format, for use with the XTAPE program(N.Lal) in making PDP 11/70 tapes.

Flux data is organized into energy boxes which are predefined in the Intermediate Flux Program. A flux box usually consists of events of a specific particle type for specific energy range. Appendix 1 lists the box identifications and definitions for the three satellites. In the Flux Plot Program, data is plotted in energy bins. A flux bin consists of one or more boxes representing particles of the same species with a given energy range. Note that the bins must consist of adjacent boxes (i.e. a continuous energy range). In addition to flux data, certain rates are available on the flux tapes. These rates are have been assigned to flux box numbers as listed in Appendix 1.

Time History Plots

Time History Plots consist of flux bins plotted against time. They may be generated for up to 100 bins. The user specifies the averaging interval, the plot frame size, and the overall start and stop times for plotting. In addition, the 100 plotted items may be grouped in any combination desired for up to six individual items per frame for up to 50 plot frame sets. For these frames, the x axis limits must all be identical, but the y axis limits may be specified on a frame by frame basis.

Spectral Plots

Spectral plots consist of flux bins plotted against energy for a given time period. They may be generated for up to 100 bins. The plotted items may be grouped in any combination on up to 50 seperate plot frame sets. Spectral plot frames may specify different x and y limits for each individual frame. The following options exist for specifying time with spectral plots:

•   a spectral plot can be generated for each start-stop time.

•   a periodic set of plots can be generated for each start-stop time.

•   a spectral plot can be generated for a number of (summarized) start-stop times.

Parameter Cards

A set of input cards must consist of the following sequence of cards:

1.   1 title card

2.   1 tape unit card

3.   1 plot parameter card

4. bin definition cards (up to 100 with time history plots, up to 100 spectral plots).

5. 1 plot scaling card

6. optional axis scaling cards for individual frames

7. 1 or more time cards

Title card

NAME	COLUMN	FORMAT	DESCRIPTION
JTITLE	1-80	20A4	Alphanumeric title to be written on all print-outs and plot frames.

Averaging Interval Card

NAME	COLUMN	FORMAT	DESCRIPTION
IAVMIN	1-5	I5	Length of data averaging interval, in minutes.* Must be a multiple of 5 minutes and equal to or less than the spectral plot interval or the time history plot interval. * A negative number or zero will average the flux data over the entire data point.
QSTAT	10	L1	Statistics flag: T = prints statistics for spectral plot F = no statistics (default)
QDEBUG	11	L1	T = prints out debug messages F = no messages (default)
QTIMCK	12	L1	IMP-6 only, scans the flux database years and corrects the bad ones
XMIN0	21-25	F5.1	4060 plot raster limits (default 205. , if blank)
XMAXX0	26-30	F5.1	(default 4049. , if blank)
YMIN0	31-35	F5.1	(default 300. , if blank)
YMAX0	36-40	F5.1	(default 2700. , if blank)

Plot parameter card

NAME	COLUMN	FORMAT	DESCRIPTION
NUMBIN	1-3	I3	Number of Bin Cards following this card (see Bin definition card).
JPLOT	4	A1	Plot type: T = time history plot

S = spectral plot

QFILTR	5	L1	IMP-6 perigee data flag: T = IMP-6 subperigee data is filtered out F = not filtered out (QFILTR is ignored with IMP-7 or IMP-8 data).
QPRINT	6	L1	Line printer listing flag: T = line printer flux listing F = no listing
QLINES	7	L1	Spectral plot energy axis scaling: T = linear x-axis F = log x-axis (QLINES is ignored with time history plots).
QTC	8	L1	Trend check enable flag: T = apply trend check to rates. Factor to be used is TCFACT below. (See text) F = do not apply trend check algorithm to rates.
QOTAPE	9	L1	T = generate output listing flux datasets for use in preparing a PDP 11/70 (with the XTAPE program) tape
XPERIG	12-19	F8.2	IMP-6 override perigee altitude, in kilometers. Default is 70,000 km. (XPERIG does not apply to IMP-7 or IMP-8 data).
TCFACT	22-26	F5.0	Trend check factor (default = 100).

Bin Definition Card(s)

Must have NUMBIN number of cards (See Plot Parameter Card).

NAME	COLUMN	FORMAT	DESCRIPTION
JIMP	1	I1	Satellite identification for bin: 6 = IMP-6 7 = IMP-7 8 = IMP-8
JFRAME	2-3	I2	Frame number in which this bin is to be plotted (=1 -50).
JCHAR	4	A1	Plot character for this bin. (Optional, since a default set of characters has been defined).
XNORM	5-11	F7.2	Normalization factor for this bin. (Optional, since a blank input will yield a normalization of 1.0).
JBOX(1-10)	12-41	10I3	From 1 to 10 boxes to be included in this bin. (See appendix A for box identification number and box descriptions).

Plot Scaling Card

NAME	COLUMN	FORMAT	DESCRIPTION
MNFLX	1-5	I5	Lower y-axis power of 10 for plot, in flux units.
MXFLX	6-10	I5	Upper y-axis power of 10 for plot, in flux units.
MNENG	11-15	I5	Lower x-axis power of 10 for spectral plot in MeV. (If QLINES = true on card c, MINEN is absolute magnitude, not power of 10. MNENG ignored with time history plots).
MXENG	16-20	I5	Upper x-axis power of 10 for spectral plot, in MeV. (See note above for MNENG).
JRANUN	21-25	I5	Plot frame range units. 1 = months 2 = days 3 = hours
NORANU	26-30	I5	Width of plot frame in JRANUN units (i.e. a frame will be NORANU number of JRANUN units wide).
IAVU	31-35	I5	Data point averaging unit: 2 = days 3 = hours 4 = minutes
NOAVU	36-40	I5	Widths of averaging period in IAVU units. (i.e. each data point on a time history plot will consist of NOAVU number of IAVU units worth of data. Note that IAVU and NOAVU are ignored with spectral plots).
NFRAME	41-45	I5	0,1- sets all frame parameters equal to those specified on plot scaling card. 2 or more - expects (NFRAME-1) additional scaling parameter cards which specify MNFLX, MXFLX, MNENG, MXENG, 4I5 format, one for each frame.
NFR80	46-50	I5	Defaults to 7 User specifiable so that microfiche data frames will allign the first data frame for microfiche on the top line position, after header pages are written.

Time Card

NAME	COLUMN	FORMAT	DESCRIPTION
JKEY	1	I1	Spectral plot mode key: 0 = plot data indicated time period. 1 = accumulate data for indicated time period, but do not plot. (i.e. a JKEY = 0 card will plot all accumulated data). 2 = generate periodic spectral plots over indicated time period. Size of periodic plots is specified by IPRDU and NOPRDU below.

Start time:

NAME	COLUMN	FORMAT	DESCRIPTION
IDAY1	3-4	I2	start day of month
IMON1	6-8	A3	start month(1st 3 letters of month)
IYR1	10-11	I2	start year (last 2 digits)
IHR1	13-14	I2	start hour
IMIN1	16-17	I2	start minute

Stop time:

NAME	COLUMN	FORMAT	DESCRIPTION
IDAY2	19-20	I2	stop day of month
MON2	22-24	A3	stop month (1st 3 letters of month)
IYR2	26-27	I2	stop year (last 2 digits)
IHR2	29-30	I2	stop hour
IMIN2	32-33	F2	stop minute
IPRDU	36-40	I5	Periodic plot extent units 1=months 2=days 3=hours 4=minutes
NOPRDU	41-45	I5	Extent of periodic spectral plot, in IPRDU units (e.g. to generate hourly spectral plots for the start- stop time above, set JKEY = 2, IPRDU = 3, and NOPRDU = 1. Note that these parameters are ignored with time history plots).

Notes on parameter cards

This program can plot flux bins from up to three different satellites at the same time. If data from only one or two satellites is desired, however, it obviously makes no sense to allocate all three input tape units in the JCL. The program makes use of only those unit numbers corresponding to satellites for which flux is actually being requested. Thus, if flux from only one satellite is being plotted, only that satellite's Tape Unit Number will be used (16 = IMP-6, 17 = IMP-7, 18 = IMP-8); and only one input tape drive need be allocated in the JCL.

The JFRAME parameter on the Bin Definition Card is used to determine whether any 4060 plots are to be produced and, if so, what the plot organization will be. If all the JFRAME values are zero or blank, no 4060 plots will be generated. If any JFRAME value is different from zero, plots will be generated. The values of JFRAME will then determine which rates or fluxes will be plotted together on the same frame, and which will be seperated. For example, suppose there are six items, and the JFRAME values are 0,0,0,1,1,1; then the first three items will not be plotted, and the next three will be plotted together on the same frame. For another example, if five items are desired, each on a different frame, the JFRAME

values would be set to 1,2,3,4,5. If plotting symbols on the Bin Definition Card are left blank and plots are requested, a default set of symbols will be employed by the programs (viz: the alphabet).

Each new set of input cards should be preceded with a blank card. If FT31F001, FT32F001 datasets are to be made for use in generating PDP 11/70 tape (see the JCL explanation for how this is done), only one set of input cards may be used.

There is an important distinction to be made between the plot interval and the data averaging interval. With a time history plot, the plot interval is specified by IAVU and NOAVU on the plot scaling card. With a simple spectral plot, the plot interval is determined by the start and stop data times on the Time card. With a periodic spectral plot, the plot interval is specified by IPRDU and NOPRDU on the Time card. In all three of the above cases, the user may additionally specify a data averaging interval, viz; the length of time over which the flux values are calculated. The data averaging interval (specified by IAVMIN on the Averaging Interval card) must be an integral number of 5 minute periods, with a minimum value of 5 minutes and a maximum value equal to the plot interval. Then, a plot interval will consist of the average over data averaging intervals. For example, you may request a "6 hour time history plot with a 1 hour data averages"; here, each plot point representing 6 hours of data will be an average of six 1 hour flux values.

The "trend check" flag and factor on the Plot parameter card refer to a very gross trend check that attempts to eliminate isolated spurious 15 minute rate readouts that have slipped through the standard "every readout" rates trend check. Its effect is to throw out any 5 minute record in which any of the event rates differ by more than a factor of 100 (or an inputted value) from the previous readout. Its use is recommended for plots involving data averages over long intervals of time. Input times should not be expressed as midnight of the previous day, but rather the following day, i.e., not 2400 hours but 0000 hours.

The use of the Plot Scaling Card parameters JRANUN and NORANU has the following limitations:

if JRANUN = 1, the plot frame range unit = month
if JRANUN = 2, the plot frame range unit = day
if JRANUN = 3, the plot frame range unit = hour

NORANU should not exceed 23 for JRANUN = 3, and 30 for JRANUN = 2, because the x-axis labelling routine converts the frame unit into the next larger unit if those limits are exceeded. The user should request multiples of the next higher frame range unit JRANUN when the above limits would be exceeded. For example, if the user wanted 60 days of data per frame, he should instead request JRANUN = 1 and NORANU = 2. The data point averaging parameters available are still only limited by the program dimensional restriction of 250 points per frame for each data bin (maximum of 6 bins). To determine how many points to expect, the (plot frame range in decisecs)/(averaging period in decisecs) must not be greater than 250.

JCL and Sample Input Decks

The FLUXPLOT program is run from a PROC. Two forms of the PROC are necessary, one for use when making a PDP 11/70 tape see Figure 1 on page 7, and one when no PDP 11/70 tape is to be made see Figure 3 on page 10.

Spectral plot example

Figure 1 on page 7 shows the required PROC JCL for the IMP FLUXPLOT program when a PDP 11/70 tape is requested. The JCL and data cards shown in Figure 2 on page 8 would follow the above PROC JCL in order to execute the program.

```
**********************************************************************************
//FLUXPLOT PROC  REG=1024K,        CORE REQUIREMENT
//         OUT=A,            OUTPUT OF LISTINGS
//         IMFT31=NULLFILE,       FT31 DISK DATASET
//         IMFT32=NULLFILE,       FT32 DISK DATASET
//         D3132=MVSSC1,    FT31 FT32 DISK VOLUME
//         PLTAPE=ISCTCH,
//         PLABEL=NL,
//         PLFILE=1,
//         PLOTS=NULL,
//         LTAPE=JSCTCH,LLABEL=NL,LDEN=3,LFILE=1,LIST=NULL,
//         LSIZE=19000  DISK AND SIZE (LISTED DATA)
//FLUXPLOT EXEC PGM=FLUXPLOT,REGION=&REG
//STEPLIB DD DSN=SB#IM.FLUXPLOT.LOAD,DISP=SHR
//FT06F001 DD SYSOUT=&OUT,DCB=(RECFM=VBA,LRECL=137,BLKSIZE=7265)
//FT18F001 DD UNIT=(2400-9,,DEFER),DISP=SHR,
//   VOL=SER=IMP8TP,DSN=ZZZZ
//FT28F001 DD DSN=SB#IM.DEX52CAT.DATA,DISP=SHR
//SC4060ZZ DD DSN=&PLOTS.FILE,UNIT=(1600,,DEFER),DISP=(NEW,KEEP),
// DCB=(DEN=3,RECFM=F,BLKSIZE=1024),VOL=SER=&PLTAPE,
// LABEL=(&PLFILE,&PLABEL,,OUT)
//*FT31F001 DD UNIT=SYSDA,DISP=(NEW,PASS),SPACE=(TRK,1)
//*FT32F001 DD UNIT=SYSDA,DISP=(NEW,PASS),SPACE=(CYL,(5,5)),
//*         DCB=BLKSIZE=&LSIZE
//*
//*  THESE DATASETS ARE NEW FORMAT FOR 11/70 USE
//*  BUT ARE HERE INTENDED FOR USE WITH PARTAV AVERAGING
//*  PROGRAM, WHEN OUTPUT IS REQUESTED IN FLUX SUBSUMMARIES
//FT31F001 DD DSN=&IMFT31.,DISP=(NEW,CATLG,DELETE),
//        DCB=(RECFM=F,BLKSIZE=132),
//        SPACE=(TRK,(1,2)),VOL=SER=&D3132,UNIT=SYSDA
//FT32F001 DD DSN=&IMFT32.,DISP=(NEW,CATLG,DELETE),
//         DCB=BLKSIZE=&LSIZE,
//        SPACE=(TRK,(2,5)),VOL=SER=&D3132,UNIT=SYSDA
//*
//FT05F001 DD DDNAME=DATA5
//* CREATE OUTPUT DATASET ON TAPE FOR 11/70 USE
//PDPTAPE  EXEC  PGM=XTAPE,REGION=200K,COND=(4,LT),PARM='&LIST.'
//STEPLIB  DD    DSN=ZW2NL.XTAPE.LOAD,DISP=SHR
//FT06F001 DD    SYSOUT=&OUT
//FT31F001 DD    DSN=*.FLUXPLOT.FT31F001,DISP=(OLD,PASS)
//FT32F001 DD    DSN=*.FLUXPLOT.FT32F001,DISP=(OLD,PASS),
//        DCB=(RECFM=U,BLKSIZE=&LSIZE,LRECL=&LSIZE)
//FT33F001 DD DSN=&LIST.FILE,UNIT=(6250,,DEFER),DISP=(SHR,KEEP),
//        VOL=SER=&LTAPE,LABEL=(&LFILE,&LLABEL,,OUT),
//        DCB=(RECFM=U,BLKSIZE=&LSIZE,DEN=&LDEN,BUFNO=1)
//      PEND
```

Figure 1. Example of PROC: To produce an PDP 11/70 tape.
****

```
****************************************************************************
// EXEC FLUXPLOT,REG=1024K,
//        IMFT31='XRPAS.IMS7',
//        IMFT32='XRPAS.IMS7A',
//        D3132=SACC04,
//        PLTAPE=PAMI01,
//        PLOTS=PLOT,
//        PLFILE=5,
//        LTAPE=PAMI02,
//        LFILE=2
//*  NEW PGM VSN 12/86; TESTING
//*  SPECTRAL,NON PERIODIC, TOTAL TIME, 360 MIN DATA SUBSUM, 4060 PLOT
//*  USE 0,1 JKEY ON TIME CARDS
//*  SPECIFY DIFFERING X AND Y LIMITS USING NFRAME PARAMETER
//*  GENERATE FT31 AND FT32, and write result to tape PAMI02, file 2
//*  DATA FOR FILE 5 OF 4060 TAPE
//*
//FLUXPLOT.DATA5 DD *,DCB=BLKSIZE=800
TOTAL TIME AVERAGE SURVEY -- IMP 8 -- BOXES,GAINS AS OF 9/25/79
  360    FF
 54S TFFT
801        02 03 04
801        05 06
801        12 13
801        14 15
801        77 30
801        31 32
801        33 34 35
801        69 72
801        73 74 75
801        69 72 73 74 75 76
801        07 08 09
801        10 11
801        16 17
801        18 19
801        78 36
801        37 38
801        39 40 41
801        49 50 51
801        52 53 54
801        49 50 51 52 53 54 55 56
801        113114115
801        115116
801        120
801        121124
801        126129
802        02 03 04
802        05 06
802        12 13
802        14 15
802        77 30
802        31 32
802        33 34 35
802        69 72
802        73 74 75
802        69 72 73 74 75 76
802        07 08 09
802        10 11
803        16 17
803        18 19
```

```
   803        78 36
803        37 38
803        39 40 41
803        49 50 51
803        52 53 54
803        49 50 51 52 53 54 55 56
803        113114115
803        115116
803        120
803        121124
803        126129
804        401
804        402
804        403
804        404
 -5    4    0    3    1    3    2   01    4    00
 -6    2    1    2    FRAME# 2
 -6    2    2    3    FRAME# 3
 -3    2    0    1    FRAME# 4
1 01 JAN 78 00 00 01 FEB 78 00 00      2    01
0 01 FEB 78 00 00 01 APR 78 00 00      2    01


/*
```

Figure 2. Example of JCL for Spectral Plot: To produce a PDP 11/70 tape
****

Time history plot example

Figure 3 on page 10 shows the required PROC JCL for the IMP FLUXPLOT program when no PDP 11/70 tape is requested. The JCL and data cards shown in Figure 4 on page 11 would follow this PROC JCL in order to execute the program.

```
*****************************************************************************************
//FLUXPLOT PROC  REG=1024K,        CORE REQUIREMENT
//          OUT=A,            OUTPUT OF LISTINGS
//          IMFT31=NULLFILE,       FT31 DISK DATASET
//          IMFT32=NULLFILE,       FT32 DISK DATASET
//          D3132=MVSSC1,    FT31 FT32 DISK VOLUME
//          PLTAPE=ISCTCH,
//          PLABEL=NL,
//          PLFILE=1,
//          PLOTS=NULL,
//*  THIS PROC MUST BE USED WITH JOBS NOT MAKING AN 11/70 TAPE
//*         LTAPE=JSCTCH,LLABEL=NL,LDEN=3,LFILE=1,LIST=NULL,
//          LSIZE=19000  DISK AND SIZE (LISTED DATA)
//FLUXPLOT EXEC PGM=FLUXPLOT,REGION=&REG
//STEPLIB DD DSN=SB#IM.FLUXPLOT.LOAD,DISP=SHR
//FT06F001 DD SYSOUT=&OUT,DCB=(RECFM=VBA,LRECL=137,BLKSIZE=7265)
//FT18F001 DD UNIT=(2400-9,,DEFER),DISP=SHR,
//  VOL=SER=IMP8TP,DSN=ZZZZ
//FT28F001 DD DSN=SB#IM.DEX52CAT.DATA,DISP=SHR
//SC4060ZZ DD DSN=&PLOTS.FILE,UNIT=(1600,,DEFER),DISP=(NEW,KEEP),
//  DCB=(RECFM=F,BLKSIZE=1024),VOL=SER=&PLTAPE,
//  LABEL=(&PLFILE,&PLABEL,,OUT)
//*FT31F001 DD UNIT=SYSDA,DISP=(NEW,PASS),SPACE=(TRK,1)
//*FT32F001 DD UNIT=SYSDA,DISP=(NEW,PASS),SPACE=(CYL,(5,5)),
//*         DCB=BLKSIZE=&LSIZE
//*
//*  THESE DATASETS ARE NEW FORMAT FOR 11/70 USE
//*  BUT ARE HERE INTENDED FOR USE WITH PARTAV AVERAGING
//*  PROGRAM, WHEN OUTPUT IS REQUESTED IN FLUX SUBSUMMARIES
//FT31F001 DD DSN=&IMFT31.,DISP=(NEW,CATLG,DELETE),
//        SPACE=(TRK,(1,2)),VOL=SER=&D3132,UNIT=SYSDA
//FT32F001 DD DSN=&IMFT32.,DISP=(NEW,CATLG,DELETE),
//         DCB=BLKSIZE=&LSIZE,
//        SPACE=(TRK,(2,5)),VOL=SER=&D3132,UNIT=SYSDA
//*
//FT05F001 DD DDNAME=DATA5
//* CREATE OUTPUT DATASET ON TAPE FOR 11/70 USE
//*PDPTAPE  EXEC  PGM=XTAPE,REGION=200K,COND=(4,LT),PARM='&LIST.'
//*STEPLIB  DD    DSN=ZW2NL.XTAPE.LOAD,DISP=SHR
//*FT06F001 DD    SYSOUT=&OUT
//*FT31F001 DD    DSN=*.FLUXPLOT.FT31F001,DISP=(OLD,PASS)
//*FT32F001 DD    DSN=*.FLUXPLOT.FT32F001,DISP=(OLD,PASS),
//*         DCB=(RECFM=U,BLKSIZE=&LSIZE,LRECL=&LSIZE)
//*FT33F001 DD DSN=&LIST.FILE,UNIT=(6250,,DEFER),DISP=(SHR,KEEP),
//*         VOL=SER=&LTAPE,LABEL=(&LFILE,&LLABEL,,OUT),
//*         DCB=(RECFM=U,BLKSIZE=&LSIZE,DEN=&LDEN,BUFNO=1)
//       PEND
```

Figure 3. Example of PROC: No PDP 11/70 tape produced
****

```
*************************************************************************
// EXEC FLUXPLOT,REG=1024K,
//          IMFT31='XRPAS.IMT6',
//          IMFT32='XRPAS.IMT6A',
//          D3132=SACC04,
//          PLTAPE=PAMI01,
//          PLOTS=PLOT,
//          PLFILE=6
//*  NEW PGM VSN 12/86; TESTING
//* TIME-HISTORY, 1 DAY SUMS, 6 HR AVERAGING SUBSUMS; WITH PLOTTING
//* GENERATE FT31 AND FT32,  WRITE TAPE(FILE 6)
//FLUXPLOT.DATA5 DD *,DCB=BLKSIZE=800
DAILY AVERAGE SURVEY -- IMP 8 -- BOXES,GAINS AS OF 9/25/79
  360    FF
 29T TFFT
801        02 03 04
801        05 06
801        12 13
801        14 15
801        77 30
801        31 32
802        33 34 35
802        69 72
802        73 74 75
802        69 72 73 74 75 76
803        07 08 09
803        10 11
803        16 17
804        18 19
805        78 36
805        37 38
806        39 40 41
806        49 50 51
806        52 53 54
806        49 50 51 52 53 54 55 56
807        113114115
807        115116
807        120
807        121124
807        126129
808        401
808        402
808        403
808        404
  -2   2   0   2   1   1   2  01   8   00
  -4  -2   1   3    FRAME#   2
  -1   1   0   1    FRAME#   3
  -2  -1   1   2    FRAME#   4
  -4  -2   1   2    FRAME#   5
  -5  -4   1   3    FRAME#   6
  -6  -2   0   2    FRAME#   7
  -2   3   0   1    FRAME#   8
0 01 JAN 78 00 00 01 APR 78 00 00    2   01

/*
```

Figure 4. Example of JCL for Time History Plot: No PDP 11/70 tape is produced
****

If plots are not to be generated, and the PLTAPE, PLFILE and PLOTS keywords are not used on the PROC EXEC statement, the JCL should be modified to disable the SC4060ZZ tape unit. If IMP-6 or IMP-7 data is desired, the JCL above would have to be modified to include unit 16 (IMP-6 input flux tape), unit 17 (IMP-7 tape unit) and DD cards 26 (IMP-6 tape catalog) and 27 (IMP-7 tape catalog).

If only a flux listing is desired, no keyword parameters are needed on the PROC EXEC statement.

Appendix A. Fluxplot Flux Box Event assignments

Appendix B. Flexplot Flux Box Event assignments

Figure ID's

id	File	Page	Figure References	
num1a	USERGDT	7	1:	6, 6
num1	USERGDT	8	2:	6
num2a	USERGDT	10	3:	6, 9
num2	USERGDT	11	4:	9

DSMKDF478E INVALID FONT SPECIFIED WITH .BF.
DSMMOM395I 'USERGDT' LINE 00100000: .bf large
DSMKDF478E INVALID FONT SPECIFIED WITH .BF.
DSMMOM395I 'USERGDT' LINE 04430000: .bf small
DSMKDF478E INVALID FONT SPECIFIED WITH .BF.
DSMMOM395I 'USERGDT' LINE 04950000: .bf small
DSMLBR529E 'KP' WOULD EXCEED MAXIMUM SIZE.
DSMMOM395I 'USERGDT' LINE 05560000: 803   37 38
DSMKDF474W FONT SAVE STACK EMPTY - DEFAULT ASSUMED.
DSMMOM395I 'USERGDT' LINE 05780000: .pf
DSMKDF474W FONT SAVE STACK EMPTY - DEFAULT ASSUMED.
DSMMOM395I '.DSMFCAP' LINE 50: .pf
DSMMOM397I '.DSMFCAP' WAS IMBEDDED AT LINE 579 OF 'USERGDT'
DSMKDF478E INVALID FONT SPECIFIED WITH .BF.
DSMMOM395I 'USERGDT' LINE 05880000: .bf small
DSMKDF478E INVALID FONT SPECIFIED WITH .BF.
DSMMOM395I 'USERGDT' LINE 06400000: .bf small
DSMBEG323I STARTING PASS 2 OF 2.
DSMKDF478E INVALID FONT SPECIFIED WITH .BF.
DSMMOM395I 'USERGDT' LINE 00100000: .bf large
DSMKDF478E INVALID FONT SPECIFIED WITH .BF.
DSMMOM395I 'USERGDT' LINE 04430000: .bf small
DSMKDF478E INVALID FONT SPECIFIED WITH .BF.
DSMMOM395I 'USERGDT' LINE 04950000: .bf small
DSMLBR529E 'KP' WOULD EXCEED MAXIMUM SIZE.
DSMMOM395I 'USERGDT' LINE 05560000: 803   37 38
DSMKDF474W FONT SAVE STACK EMPTY - DEFAULT ASSUMED.
DSMMOM395I 'USERGDT' LINE 05780000: .pf
DSMKDF474W FONT SAVE STACK EMPTY - DEFAULT ASSUMED.
DSMMOM395I '.DSMFCAP' LINE 50: .pf
DSMMOM397I '.DSMFCAP' WAS IMBEDDED AT LINE 579 OF 'USERGDT'
DSMKDF478E INVALID FONT SPECIFIED WITH .BF.
DSMMOM395I 'USERGDT' LINE 05880000: .bf small
DSMKDF478E INVALID FONT SPECIFIED WITH .BF.
DSMMOM395I 'USERGDT' LINE 06400000: .bf small