



#307

OSO-7

GAMMA RAY

71-083A-06A 19 tapes

71-083A-06B 1 tape

71-083A-06C 48 tapes



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1. INTRODUCTION:

The documentation for this data set was originally on paper, kept in NSSDC's Data Set Catalogs (DSCs). The paper documentation in the Data Set Catalogs have been made into digital images, and then collected into a single PDF file for each Data Set Catalog. The inventory information in these DSCs is current as of July 1, 2004. This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system. The information existing in the DSCs is now not needed for locating the data files, but we did not remove that inventory information.

The offline tape datasets have now been migrated from the original magnetic tape to Archival Information Packages (AIP's).

A prior restoration may have been done on data sets, if a requestor of this data set has questions; they should send an inquiry to the request office to see if additional information exists.

2. ERRATA/CHANGE LOG:

NOTE: Changes are made in a text box, and will show up that way when displayed on screen with a PDF reader.

When printing, special settings may be required to make the text box appear on the printed output.

Version	Date	Person	Page	Description of Change
01				
02				

3 LINKS TO RELEVANT INFORMATION IN THE ONLINE NSSDC
INFORMATION SYSTEM:

<http://nssdc.gsfc.nasa.gov/nmc/>

[NOTE: This link will take you to the main page of the NSSDC Master Catalog. There you will be able to perform searches to find additional information]

4. CATALOG MATERIALS:

- a. Associated Documents To find associated documents you will need to know the document ID number and then click here.
<http://nssdcftp.gsfc.nasa.gov/miscellaneous/documents/>

- b. Core Catalog Materials

DSO 7

GAMMA RAY DATA

71-083A-06A

ASGA-00002

THIS DATA SET HAS BEEN RESTORED. ORIGINALLY IT CONTAINED 19 9-TRACK, 800 BPI TAPES WRITTEN IN BINARY. THERE IS ONE RESTORED TAPE. THE DR AND DS TAPES ARE 9-TRACK, 6250 BPI. THE ORIGINAL TAPES WERE CREATED ON AN IBM 360 COMPUTER. THE DR AND DS NUMBERS ALONG WITH THE CORRESPONDING D NUMBERS AND THE TIME SPANS ARE AS FOLLOWS:

DR#	DS#	D#	FILES	TIME SPAN
DR02338	DS02338	D14297	1-4	09/30/71 - 10/28/71
		D14298	5-8	10/28/71 - 11/23/71
		D14299	9-11	11/23/71 - 12/20/71
		D14300	12-14	12/20/71 - 01/18/72
		D14301	15-16	01/18/72 - 02/15/72
		D14302	17-19	02/15/72 - 03/15/72
		D14303	20-21	03/15/72 - 04/09/72
		D14304	22-24	04/09/72 - 05/06/72
		D14305	25-26	05/06/72 - 05/31/72
		D14306	27-29	05/31/72 - 06/25/72
		D14307	30-31	06/25/72 - 07/20/72
		D14308	32-33	07/20/72 - 08/03/72
		D14309	34-36	08/03/72 - 08/22/72
		D14310	37-38	08/30/72 - 09/10/72
		D14311	39-40	09/10/72 - 10/06/72
		D14312	41-44	10/07/72 - 10/29/72
		D14313	45-48	10/29/72 - 11/17/72
		D14314	49-51	11/21/72 - 12/15/72
		D14315	52	12/15/72 - 12/27/72

See 71-083A-06C

OSO-7

GAMMA-RAY EXP. RESPONSE FUNCTION

71-083A-06B

ASGA-00012

THIS DATA SET HAS BEEN RESTORED. THERE WAS ORIGINALLY ONE 9-TRACK, 800 BPI TAPE. THERE IS ONE RESTORED TAPE. THE DR TAPE IS A 3480 CARTRIDGE AND THE DS TAPE IS 9-TRACK, 6250 BPI. THERE IS NO TIMESPAN AVAILABLE FOR THIS DATASET. THE TAPE WAS CREATED ON IBM 7096 COMPUTER. THE DR AND DS NUMBERS ALONG WITH THE CORRESPONDING D NUMBERS AND TIME SPAN ARE AS FOLLOWS:

DR#	DS#	DD#	FILES
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DR03426	DS03426	DD 14316	1

GAMMA-RAY (0.3-9.1) MEV DATA

71-083A-06C

ASGA-00017

THIS DATA SET HAS BEEN RESTORED. THEY WERE ORIGINALLY 48 9-TRACK, 800 BPI TAPES. THESE TAPES HAVE BEEN STACKED ONTO 7 9-TRACK, 6250 BPI TAPES. THE TAPES WERE CREATED ON AN IBM 360 COMPUTER. THREE OF THE ORIGINAL 48 TAPES WERE BAD, BOTH COPIES. THE DR AND DS NUMBERS, ALONG WITH THE CORRESPONDING D NUMBERS AND THE TIME SPANS ARE AS FOLLOWS:

DR#	DS#	D#	FILES	TIME SPAN
DR02784	DS02784	D14317	1	10/03/71 - 10/13/71
		D14319	2	10/23/71 - 11/01/71
		D14320	3	11/02/71 - 11/09/71
		D14321	4	11/09/71 - 11/19/71
		D14322	5	11/20/71 - 11/30/71
		D14323	6	11/30/71 - 12/09/71
		D14324	7	12/10/71 - 12/19/71
		D14325	8-9	12/20/71 - 12/28/71
DR02785	DS02785	D14326	1	12/28/71 - 01/18/72
		D14327	2	01/08/72 - 01/18/72
		D14328	3-4	01/18/72 - 01/27/72
		D14329	5-6	01/28/72 - 02/06/72
		D14331	7-8	02/15/72 - 02/26/72
		D14332	9	02/26/72 - 03/10/72
		D14333	10	03/10/72 - 03/16/72
DR02788	DS02788	D14334	1-3	03/21/72 - 04/01/72
		D14335	4	04/01/72 - 04/13/72
		D14336	5-7	04/13/72 - 04/23/72
		D14337	8-9	04/23/72 - 05/03/72
		D14338	10	05/03/72 - 05/15/72
		D14339	11-12	05/16/72 - 05/25/72
DR02791	DS02791	D14340	1	05/25/72 - 06/04/72
		D14341	2-3	06/04/72 - 06/14/72
		D14342	4-5	06/14/72 - 06/23/72
		D14343	6	06/24/72 - 07/01/72
		D14344	7	07/01/72 - 07/09/72
		D14345	8	07/09/72 - 07/20/72
DR02792	DS02792	D14346	1-2	07/20/72 - 07/31/72
		D14347	3	07/31/72 - 08/07/72
		D14348	4	08/07/72 - 08/14/72
		D14350	5	08/27/72 - 09/04/72
		D14351	6-7	09/04/72 - 09/10/72
		D14352	8	09/10/72 - 09/17/72

71-083A-06C

DR#	DS#	D#	FILES	TIME SPAN
DR02808	DS02808	D14353	1-2	09/18/72 - 09/27/72
		D14354	3-4	09/27/72 - 10/07/72
		D14355	5	10/05/72 - 10/15/72
		D14356	6	10/15/72 - 10/21/72
		D14357	7	10/21/72 - 10/30/72
DR02809	DS02809	D14358	1-2	10/30/72 - 11/09/72
		D14359	3-4	11/09/72 - 11/16/72
		D14360	5-6	11/17/72 - 11/26/72
		D14361	7	11/26/72 - 12/06/72
		D14362	8	12/06/72 - 12/17/72
		D14363	9	12/17/72 - 12/25/72
		D14364	10	12/25/72 - 12/25/72

OSO-7

GAMMA-RAY DATA

71-083A-06A, B & C

This catalog consists of one OSO 7 Response Function tape (06B), 19 OSO 7 X-Ray data tapes (06A) and 48 OSO 7 Gamma Ray data tapes (06C). The tapes are 800 BPI, Binary, 9-track. They were created on an IBM 360 computer. The Response Function tape contains one file. The remaining tapes are multi-filed. The time spans are as follows:

71-083A-06C

<u>D#</u>	<u>C#</u>	<u>TIME SPAN</u>
D-14317	C-15297	10/03/71 - 10/13/71
D-14318	C-15298	10/13/71 - 10/22/71
D-14319	C-15299	10/23/71 - 11/01/71
D-14320	C-15300	11/02/71 - 11/09/71
D-14321	C-15301	11/09/71 - 11/19/71
D-14322	C-15302	11/20/71 - 11/30/71
D-14323	C-15303	11/30/71 - 12/09/71
D-14324	C-15304	12/10/71 - 12/19/71
D-14325	C-15487	12/20/71 - 12/29/71
D-14326	C-15488	12/28/71 - 01/08/72
D-14327	C-15489	01/08/72 - 01/18/72
D-14328	C-15490	01/18/72 - 01/27/72
D-14329	C-15491	01/28/72 - 02/06/72
D-14330	C-15492	02/07/72 - 02/15/72
D-14431	C-15493	02/15/72 - 02/26/72
D-14332	C-15494	02/26/72 - 03/10/72

<u>D#</u>	<u>C#</u>	<u>TIME SPAN</u>
D-14333	C-15495	3/10/72 - 3/16/72
D-14334	C-15496	3/21/72 - 4/01/72
D-14335	C-15497	4/01/72 - 4/13/72
D-14336	C-15498	4/13/72 - 4/23/72
D-14337	C-15499	4/23/72 - 5/03/72
D-14338	C-15500	5/03/72 - 5/15/72
D-14339	C-15501	5/16/72 - 5/25/72
D-14340	C-15502	5/25/72 - 6/04/72
D-14341	C-15503	6/04/72 - 6/14/72
D-14342	C-15504	6/14/72 - 6/23/72
D-14343	C-15505	6/24/72 - 7/01/72
D-14344	C-15506	7/01/72 - 7/09/72
D-14345	C-15507	7/09/72 - 7/20/72
D-14346	C-15508	7/20/72 - 7/31/72
D-14347	C-15509	7/31/72 - 8/07/72
D-14348	C-15510	8/07/72 - 8/14/72
D-14349	C-15511	8/15/72 - 8/27/72
D-14350	C-15512	8/27/72 - 9/04/72
D-14351	C-15513	9/04/72 - 9/10/72
D-14352	C-15514	9/10/72 - 9/17/72
D-14353	C-15515	9/18/72 - 9/27/72
D-14354	C-15516	9/27/72 - 10/07/72
D-14355	C-15517	10/08/72 - 10/15/72
D-14356	C-15518	10/15/72 - 10/21/72
D-14357	C-15519	10/21/72 - 10/30/72
D-14358	C-15520	10/30/72 - 11/09/72
D-14359	C-15521	11/09/72 - 11/16/72
D-14360	C-15522	11/17/72 - 11/26/72

<u>D#</u>	<u>C#</u>	<u>TIME SPAN</u>
D-14361	C-15523	11/26/72 - 12/06/72
D-14362	C-15524	12/06/72 - 12/17/72
D-14363	C-15525	12/17/72 - 12/25/72
D-14364	C-15526	12/25/72 - 12/25/72

71-083A-06B

D-14316	C-15546
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71-083A-06A

D-14297	C-15527	9/30/71 - 10/28/71
D-14298	C-15528	10/28/71 - 11/23/71
D-14299	C-15529	11/23/71 - 12/20/71
D-14300	C-15530	12/20/71 - 1/18/72
D-14301	C-15531	1/18/72 - 2/15/72
D-14302	C-15532	2/16/72 - 3/15/72
D-14303	C-15533	3/16/72 - 4/09/72
D-14304	C-15534	4/09/72 - 5/06/72
D-14305	C-15535	5/06/72 - 5/31/72
D-14306	C-15536	5/31/72 - 6/25/72
D-14307	C-15537	6/25/72 - 7/20/72
D-14308	C-15538	7/20/72 - 8/03/72
D-14309	C-15539	8/03/72 - 8/22/72
D-14310	C-15540	8/30/72 - 9/10/72
D-14311	C-15541	9/10/72 - 10/06/72
D-14312	C-15542	10/07/72 - 10/29/72
D-14313	C-15543	10/29/72 - 11/17/72
D-14314	C-15544	11/21/72 - 12/15/72
D-14315	C-15545	12/15/72 - 12/27/72

FEB 8 5/4

UNIVERSITY OF NEW HAMPSHIRE
DURHAM, NEW HAMPSHIRE 03824

71-083A-06, OSO-7

COLLEGE OF TECHNOLOGY
Department of Physics
DeMeritt Hall

4 February 1974

Dr. Thomas Kelsall, Code 601
Data Acquisition Group
Goddard Space Flight Center
Greenbelt, Maryland 20771

Dear Dr. Kelsall:

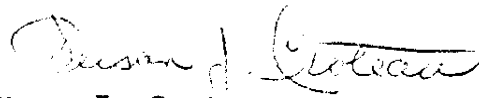
I have completed copying our PASS-III parameter tapes, X-ray data tapes, and response function tape and have sent them along with all unused tapes. In addition, I have sent a tape containing the source modules of our programs and a copy of our program file and data file on disk.

The following attachments describe the formats of the tapes sent as well as the contents of each tape. I hope that you will find the descriptions clear and complete.

I am also sending a listing of all the source programs contained in the tape labeled SOURCE.

Please feel free to call me if you have any questions.

Yours truly,


Susan J. Croteau
Computer Programmer

Attachments

Gamma-Ray Data

71-083A-06A/C

Pass-III parameter tape format:

RECFM=FB, LRECL=3540, BLKSIZE=3540

9 Track, 800 BPI DENSITY

In the following format description the first letter of each variable identifies its type in the following manner:

A-G=32-bit floating point

H =16-bit integer

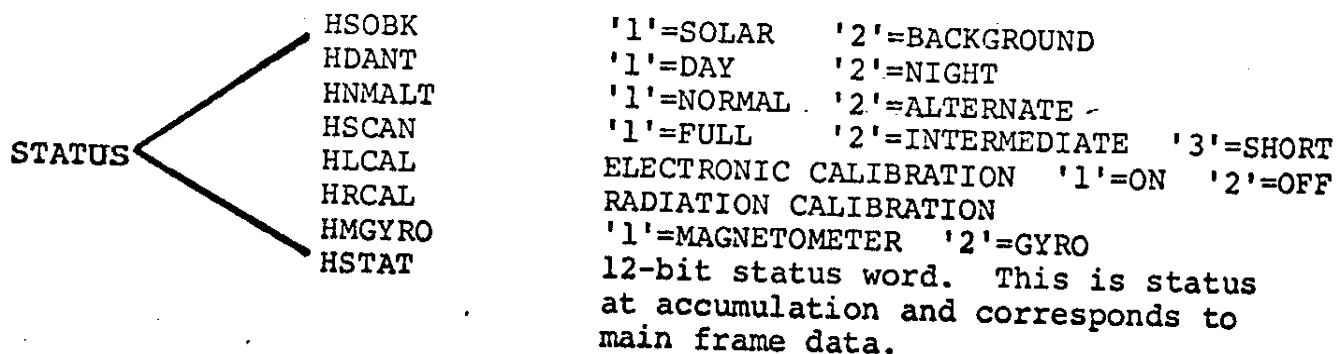
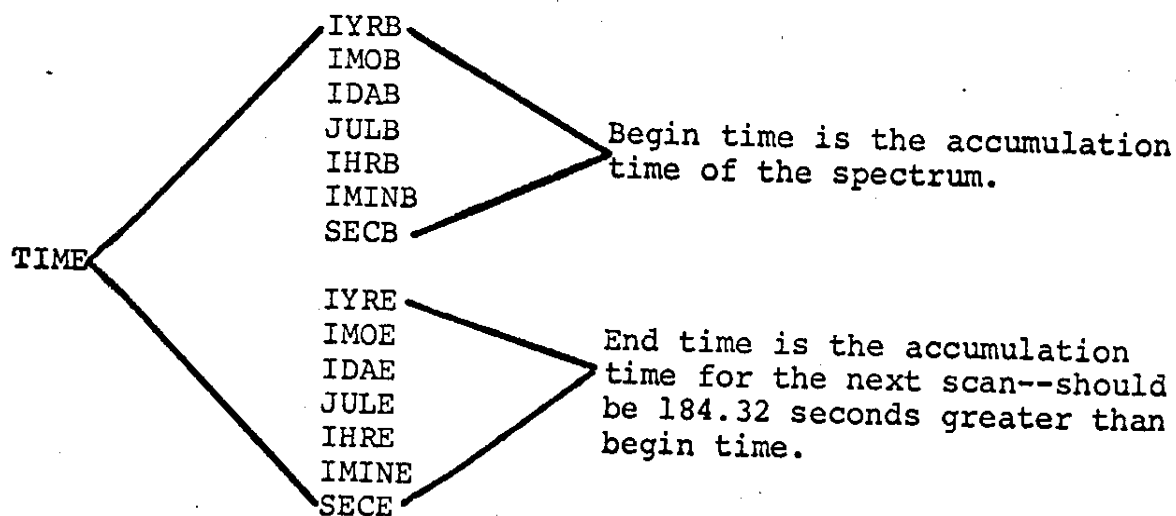
I-N=32-bit integer

O-T=32-bit floating point

U =64-bit floating point

V-Z=32-bit floating point

The format is as follows:



POSITION INFORMATION

- RIGID Vertical cutoff rigidity at time of midpoint
- BGAUS
ERMSIL B and L magnetic coordinates
- XLAT Latitude
- XLONG Longitude
- XALT Altitude

VARIABLE OBJECTS

- RASAT Satellite right ascension
- DECSAT Satellite declination
- RASUN Sun right ascension
- DECSUN Sun declination

CELESTIAL COORDINATES

- RASQD If solar: Right ascension sun quad.
If bkgrd: Right ascension bkgrd quad.
- DECSQD If solar: Declination sun quadrant
If bkgrd: Declination bkgrd quadrant
- RASPIN Right ascension spin axis
- DECSPN Declination spin axis

EARTH COORDINATES

- THESUN If solar: Theta sun quadrant
If bkgrd: Theta bkgrd quadrant
- PHISUN If solar: Phi sun quadrant
If bkgrd: Phi bkgrd quadrant
- THETAS Theta spin axis
- PHIS Phi spin axis
- SESANG Satellite-earth-sun angle
= RASAT-RASUN
- AHORIZ Horizon angle
$$= \tan^{-1} \left(\frac{\text{radius earth}}{R_{\oplus} + \text{Alt}} \right) * \left(\frac{180}{\pi} \right)$$

RATE (1) BACKGROUND=Total X-ray counts in channel 1

$$= \frac{\Sigma I - 29}{\Sigma II - 24}$$

RATE (2) SOLAR=Total X-ray counts in channel 1

$$= \frac{\Sigma I - 23}{\Sigma II - 22}$$

VAN ALLEN
PARAMETERS

IYRVPK(14)
IMOVVPK(14)
IDAVPK(14)
JULVPK(14)
IHRVPK(14)
IMNVPK(14)
SECVPK(14)
FLUX (14)
FLXINT(14)

Time of Van Allen peaks

Flux

Integrated flux

UTAPE

Tape volume serial number

IFILE

Decomm run number

ICYRDA

Run date: year and day of year

ICRHRM

Run date: hours and minutes

MONEL

Output from gain shift - 1st channel

MTWO2

Output from gain shift - last channel

TLIVE

TCLOCK=Clock time*1/390.625*8
TLIVE=TCLOCK-TDEAD

TDEAD

Dead time=DEADTIME*.001515
(+24.90 if fold over present)

CHAN(700)

Gain-shifted spectrum

HBITER

Bit error indicator
='0' if no bit errors present
='1' if at least 1 bit error found

HFOLD

Indicates dead time fold over
='0' if no fold over present
='1' if rigidity $\leq$ 60 and
dead time $<$ 10.0. When HFOLD=1,
the dead time has been adjusted
by addition of 24.90 to the
original value.

HRATE

$$= \frac{A+B}{D+E}$$
 where

A=channel 151-155

B=channel 161-165

D=channel 144-148

E=channel 168-172

HAVRTE

$$= \frac{HRATE}{HDIV}$$
 (No. of entries)

There is one average for solar
quadrants and one average for
background quadrants

HDIV	The number of scans for which rates are included to calculate HAVRTE. Starts over after every time gap and after every calibration.
HFLGS	Number of flagged main frame data words
HQUAL	Quality indicator. Indicates quality of gain shift
HATT	= '0' if attitude data is available = '1' if no attitude data available
HORB	= '0' if orbit data is available = '1' if no orbit data available
HPRM	= '0' if SUNRA and SUNDEC are valid = '1' if SUNRA and SUNDEC not valid
HIO	Number of I/O error major frames in section
HEXTRA(9)	Extra words to be used at a later date

Pass-III parameter tapes:

			Year	Month	Day	Hour	Minute	Second						
PARM01	.....	File 1:	71	10	03	09	15	10.3-71	10	13	00	27	12.0	
PARM02	.....	File 1:	71	10	13	00	36	24.3-71	10	22	21	04	52.1	
PARM03	.....	File 1:	71	10	23	10	23	31.1-71	11	01	17	45	38.0	
PARM04	.....	File 1:	71	11	02	03	55	07.0-71	11	09	13	57	26.0	
PARM05	.....	File 1:	71	11	09	14	06	38.7-71	11	19	23	53	46.1	
PARM06	.....	File 1:	71	11	20	00	02	58.6-71	11	30	01	20	11.7	
PARM07	.....	File 1:	71	11	30	01	29	24.2-71	12	09	21	51	45.0	
PARM08	.....	File 1:	71	12	10	11	16	33.0-71	12	19	18	13	22.1	
PARM09	.....	File 1:	71	12	20	05	59	52.2-71	12	24	02	15	11.0	
		File 2:	71	12	24	03	10	39.0-71	12	28	13	21	19.4	
PARM10	.....	File 1:	71	12	28	13	39	45.1-72	01	08	00	09	53.2	
PARM11	.....	File 1:	72	01	08	00	19	6.0-72	01	18	00	16	27.0	
PARM12	.....	File 1:	72	01	18	00	25	39.2-72	01	22	00	40	35.1	
		File 2:	72	01	22	12	30	09.4-72	01	27	23	52	19.3	
PARM13	.....	File 1:	72	01	28	09	48	14.4-72	02	03	09	46	04.5	
		File 2:	72	02	03	09	55	17.0-72	02	06	18	39	28.1	
PARM14	.....	File 1:	72	02	07	02	38	56.9-72	02	15	22	08	06.4	
PARM15	.....	File 1:	72	02	15	22	08	06.4-82	02	16	21	38	02.8	
		File 2:	72	02	16	21	38	02.8-72	02	26	00	11	24.1	
PARM16	.....	File 1:	72	02	26	00	20	36.6-72	03	10	00	53	43.4	
PARM17	.....	File 1:	72	03	10	01	02	55.9-72	03	16	21	27	53.0	
		File 2:	72	03	17	08	26	47.4-72	03	20	19	29	11.7	
PARM18	.....	File 1:	72	03	21	07	00	20.2-72	03	25	03	12	33.0	
		File 2:	72	03	25	03	24	51.6-72	03	30	03	49	38.4	
		File 3:	72	03	30	03	58	51.7-72	04	01	13	43	48.6	
PARM19	.....	File 1:	72	04	01	23	45	52.2-72	04	13	01	03	44.1	
PARM20	.....	File 1:	72	04	13	01	16	01.0-72	04	14	08	42	04.8	
		File 2:	72	04	14	18	28	46.8-72	04	20	06	06	16.7	
		File 3:	72	04	20	15	31	28.4-72	04	23	00	27	16.6	
PARM21	.....	File 1:	72	04	23	00	36	29.1-72	04	27	19	13	23.0	
		File 2:	72	04	27	19	35	39.3-72	05	03	17	32	12.5	
PARM22	.....	File 1:	72	05	03	17	39	47.1-72	05	15	17	32	17.1	
PARM23A	.....	File 1:	72	05	16	04	29	38.4-72	05	21	01	00	58.0	
		File 2:	72	05	21	01	34	44.7-72	05	25	11	33	18.3	

PARM23B File 1: 72 05 25 21 01 34.5-72 06 04 04 35 58.4
PARM24 File 1: 72 06 04 13 05 52.6-72 06 05 14 39 58.1
File 2: 72 06 05 15 37 02.9-72 06 14 11 37 11.7
PARM25 File 1: 72 06 14 11 34 07.3 72 06 20 09 54 37.1
File 2: 72 06 20 09 56 40.9-72 06 23 22 40 26.6
PARM26 File 1: 72 06 24 00 03 22.4-72 07 01 23 50 10.1
PARM27 File 1: 72 07 01 23 59 22.6-72 07 09 01 20 45.6
PARM28 File 1: 72 07 09 01 26 08.1-72 07 20 01 15 41.8
PARM29 File 1: 72 07 20 01 27 58.6-72 07 24 17 10 33.4
File 2: 72 07 24 17 22 50.3-72 07 31 00 46 01.7
PARM30 File 1: 72 07 31 00 55 14.1-72 08 07 00 59 49.2
PARM31 File 1: 72 08 07 01 12 06.0-72 08 14 16 28 59.8
PARM32 File 1: 72 08 15 00 55 50.0-72 08 17 09 57 46.6
File 2: 72 08 17 10 06 59.2-72 08 27 00 17 37.3
PARM33 File 1: 72 08 27 00 29 52.2-72 09 04 00 01 22.0
PARM34 File 1: 72 09 04 00 10 34.5-72 09 05 00 45 01.5
File 2: 72 09 05 01 00 22.7-72 09 10 11 21 05.0
PARM35 File 1: 72 09 10 11 34 26.2-72 09 17 21 49 13.2
PARM36 File 1: 72 09 18 06 09 55.7-72 09 22 01 45 18.3
File 2: 72 09 22 05 54 07.2-72 09 27 09 01 42.6
PARM37 File 1: 72 09 27 09 10 55.1-72 10 05 01 04 55.3
File 2: 72 10 05 01 20 16.9-72 10 07 17 22 48.9
PARM38 File 1: 72 10 08 01 34 17.5-72 10 15 00 03 40.2
PARM39 File 1: 72 10 15 00 12 52.7-72 10 21 01 15 11.2
PARM40 File 1: 72 10 21 01 24 23.7-72 10 30 00 07 22.0
PARM41 File 1: 72 10 30 00 16 34.6-72 11 06 17 02 34.8
File 2: 72 11 06 17 24 05.0-72 11 09 00 26 14.5
PARM42 File 1: 72 11 09 05 21 07.6-72 11 13 09 04 56.4
File 2: 72 11 13 09 17 13.2-72 11 16 22 53 12.9
PARM43 File 1: 72 11 17 01 11 26.4-72 11 24 10 51 28.7
File 2: 72 11 24 11 00 41.5-72 11 26 23 49 56.8
PARM44 File 1: 72 11 26 23 59 24.3-72 12 06 01 09 34.9
PARM45 File 1: 72 12 06 01 18 47.4-72 12 17 00 58 23.2
PARM46 File 1: 72 12 17 01 07 35.7-72 12 25 02 51 11.7
PARM47 File 1: 72 12 25 02 51 11.7-72 12 25 23 10 41.3

X-Ray Data

Xray data tape format

This is a 9-track tape containing interpreted X-ray values. For missing major frames, a filler of -1's is used. The time parameter reflects real time.

The logical record length is 76 characters and the block size is 1520 characters.

Here is a list of the parameters on the x-ray tape. (All parameters are 16-bit integers except for numbers 7, 8, 25, 26, 27, and 28 which are 32-bit floating point words.)

1. YEAR of 1st major frame (15.36 sec of data)
2. YEAR of 2nd major frame
3. DAY OF YEAR of 1st major frame
4. DAY OF YEAR of 2nd major frame
5. HOUR OF DATA of 1st major frame
6. HOUR OF DATA of 2nd major frame
7. MINUTES OF DATA of 1st major frame
8. MINUTES OF DATA of 2nd major frame
9. SECONDS OF DATA of 1st major frame
10. SECONDS OF DATA OF 2nd major frame
11. STATUS WORD of 12 bits in half word of 1st major frame
12. SOLAR 7.5-15
13. SOLAR 15-30
14. SOLAR 30-60
15. SOLAR 60-120
16. BACKGROUND 7.5-15
17. BACKGROUND 15-30
18. BACKGROUND 30-60
19. BACKGROUND 60-120
20. SOLAR QUADRANT TIME of 1st major frame
21. SOLAR QUADRANT TIME of 2nd major frame
22. BACKGROUND QUADRANT TIME of 1st major frame
23. BACKGROUND QUADRANT TIME of 2nd major frame
24. STATUS WORD of 12 bits in half word of 2nd major frame
25. SPIN RATE of 1st major frame
26. SPIN RATE of 2nd major frame
27. AZIMUTH ENCODER TIME of 1st major frame

- 28. AZIMUTH ENCODER TIME of 2nd major frame
- 29. ELECTRONIC CALIBRATION 1-on, 2-off, 0-no major frame
- 30. RADIATION CALIBRATION 1-on, 2-off, 0-no major frame
- 31. DAY/NIGHT INDICATOR 1-day, 2-night, 0-no status
- 32. EXTRA WORD

XRAY data tapes:

XRAY01		File 1:	71	10	07	16	17	00-71	10	13	23	52	00
		File 2:	71	09	30	14	06	00-71	10	07	14	33	00
		File 3:	71	10	13	23	58	00-71	10	20	22	30	00
		File 4:	71	10	20	22	37	00-71	10	28	11	36	00
XRAY02	.....	File 1:	71	10	28	11	42	00-71	11	04	10	11	00
		File 2:	71	11	04	10	17	00-71	11	10	20	09	00
		File 3:	71	11	10	20	15	00-71	11	16	21	01	00
		File 4:	71	11	16	21	08	00-71	11	23	10	04	00
XRAY03	.....	File 1:	71	11	23	10	10	00-71	12	07	23	47	00
		File 2:	71	12	07	23	53	00-71	12	14	23	53	00
		File 3:	71	12	14	23	59	00-71	12	20	23	00	00
XRAY04	.....	File 1:	71	12	20	23	07	00-71	12	27	21	01	00
		File 2:	71	12	27	21	07	00-71	01	01	21	53	00
		File 3:	72	01	01	22	33	00-72	01	18	13	40	00
XRAY05	.....	File 1:	72	01	18	13	47	00-72	02	01	08	33	00
		File 2:	72	02	01	10	17	00-72	02	15	23	16	00
XRAY06	.....	File 1:	72	02	16	00	49	00-72	02	19	23	41	00
		File 2:	72	02	19	23	49	00-72	03	01	03	51	00
		File 3:	72	03	01	03	58	00-72	03	15	23	47	00
XRAY07	.....	File 1:	72	03	16	00	49	00-72	03	24	01	35	00
		File 2:	72	03	24	01	42	00-72	04	09	22	32	00
XRAY08	.....	File 1:	72	04	09	22	38	00-72	04	12	02	58	00
		File 2:	72	04	11	22	43	00-72	04	22	09	09	00
		File 3:	72	04	22	09	17	00-72	05	06	23	27	00
XRAY09	.....	File 1:	72	05	06	23	33	00-72	05	18	23	24	00
		File 2:	72	05	19	00	57	00-72	05	31	10	07	00
XRAY10	.....	File 1:	72	05	31	10	14	00-72	06	13	22	46	00
		File 2:	72	06	13	22	52	00-72	06	24	20	18	00
		File 3:	72	06	24	20	24	00-72	06	25	22	44	00
XRAY11	.....	File 1:	72	06	25	22	51	00-72	07	08	21	24	00
		File 2:	72	07	08	22	56	00-72	07	20	21	18	00
XRAY12	.....	File 1:	72	07	20	21	24	00-72	07	24	17	13	00
		File 2:	72	07	24	17	24	00-72	08	03	21	28	00
XRAY13	.....	File 1:	72	08	03	21	35	00-72	08	17	10	02	00
		File 2:	72	08	17	10	09	00-72	08	22	18	00	00
		File 3:	72	08	22	18	06	00-72	08	30	22	37	00
XRAY14	.....	File 1:	72	08	30	22	43	00-72	09	06	14	53	00
		File 2:	72	09	06	16	25	00-72	09	10	02	00	00

X-ray 4

XRAY15 File 1: 72 09 10 02 06 00-72 09 25 06 29 00
File 2: 72 09 25 06 36 00-72 10 06 21 31 00

XRAY16 File 1: 72 10 06 21 37 00-72 10 08 15 12 00
File 2: 72 10 08 15 19 00-72 10 21 12 56 00
File 3: 72 10 21 13 02 00-72 10 24 16 46 00
File 4: 72 10 24 16 52 00-72 10 29 17 10 00

XRAY17 File 1: 72 10 29 17 16 00-72 11 01 11 03 00
File 2: 72 11 01 11 09 00-72 11 07 22 27 00
File 3: 72 11 07 22 33 00-72 11 09 20 36 00
File 4: 72 11 09 20 42 00-72 11 19 07 29 00

XRAY18 File 1: 72 11 19 07 35 00-72 11 24 10 57 00
File 2: 72 11 24 11 04 00-72 11 30 13 37 00
File 3: 72 11 30 13 44 00-72 12 15 21 12 00

XRAY19 File 1: 72 12 15 21 18 00-72 12 31 21 39 00

Gamma-ray Response Function

71-083A-06B

Response Function Tape (9 TRK, 800 BPI)

Five 7-track magnetic tapes generated at BBRC and containing the calibration data were merged into a single 9-track tape at the UNH Computation Center. Data sets on this tape were compared with the log book records and the erroneous records were corrected.

Since the gain of the system changed by about 7% during the calibration period, gamma ray lines 1.460 MeV (K^{40}) and 2.615 MeV (Th^{228}) observed in the background spectra were used to determine gain as a function of time over the 5-day period. Background data averaged over 10-minute intervals distributed throughout the calibration period was used to determine n_0 and c . The value for n_0 , averaged over the entire calibration period, was then used to determine c for individual graphs; linear interpolation was used to find c for intermediate times.

After determining c for each data set, the spectra were then smoothed and gain corrected to a standard c ($=0.444 \times 10^{-4}$) in the manner described by Higbie, et al. (1973).

Data sets with the same elevation (θ) and azimuth (ϕ) angles were added together and average spectra for each set of θ and ϕ determined. Sodium spectra were treated differently from the other three sources. In the case of the Na^{24} spectra, room background was first subtracted from the source spectra. This was done to remove background contribution due to natural radioactivity (mainly K^{40} and Th^{228}).

The room background corrected spectra were then corrected for the activity difference between the two Na^{24} sources and for the decay in the counting rate due to short half-life (15 hours) of the Na^{29} source. [Two series of runs were made separately with the two sources listed in Higbie, et al. (1973). Source No. 2 spectra were amplified by a constant factor 0.85]

The runs with the shadow cone 'in' were then subtracted from the corresponding spectra with the shadow cone 'out'. This provided a rough correction for the effect of scattering and room background corrected for Sn^{113} , Cs^{137} , and Zn^{65} sources.

Final spectra for the different values of θ and ϕ are on tape CALTP (RECFM=FB, LRECL=1680, BLKSIZE=1680). All variables on this tape are 32-bit words. The format is as follows:

Word No.

1	:	Source number	(integer)
2	:	Elevation angle (θ)	(integer)
3	:	Azimuth angle (ϕ)	(integer)
4	:	First channel (M_1)	(integer)

For sources 1-3	5	: Last channel (M_2)	(integer)
	6	: Sum of counts in the original source spectrum	(floating point)
	7	: Sum of counts in the original background spectrum	(floating point)
	8	: Sum of counts in the smoothed gain-shifted source spectrum from M_1 to M_2	(floating point)
	9	: Sum of counts in the smoothed gain-shifted background spectrum from M_1 to M_2	(floating point)
	10-20	: Counters and extra words used to check the accuracy of operations performed on spectrum	(floating point)
	21-420	: Spectrum (400 ch.)	(floating point)

Source Program Tape

Source Program Tape (9 TRK, 800 BPI)

This tape was created using the following data control block:

DCB=(RECFM=FB, LRECL=80, BLKSIZE=800)

Each record on the tape is a card image. Each program on the tape is preceded by two blank cards and a - PUNCH card which are not part of the program and are to be ignored.

The name of the source program tape is SOURCE.

Object Program Tape

Object Program Tape (9 TRK, 800 BPI)

The name of this tape is OBJECT.

The data control block and data set name for each file are as follows:

File 1 : DCB=(RECFM=FB, LRECL=80, BLKSIZE=800),
DSN=USER.T548.SUBLIB

File 2 : DCB=(RECFM=VS, LRECL=X, BLKSIZE=800),
DSN=USER.T548.VADATA

Both data sets are files on disk and were copied from disk onto tape using IEHMOVE. The first is a program library, the second is a data table created from data supplied by NASA (E. G. Stassinopolous).

These data sets may be copied onto disk using IEHMOVE with the following job control language:

```
//          EXEC   PGM=IEHMOVE
//SYSPRINT DD  SYSOUT=A
//SYSUT1 DD UNIT=SYSDA,SPACE=(TRK,120,,CONTIG)
//DISK DD UNIT=SYSDA,DISP=OLD,VOL=SER=DISK
//TAPE DD UNIT=2400,DISP=OLD,VOL=SER=OBJECT
//SYSIN DD *
```

	COL. 16	COL. 72
COPY	DSNAME=USER.T548.SUBLIB, FROM=2400=(OBJECT,1), TO=2314=DISK	X
COPY	DSNAME=USER.T548.VADATA, FROM=2400=(OBJECT,2), TO=2314=DISK	X
/*		

[illegible]