DATA SET CATALOG #88

OSO - 3

Celestial Gamma-Ray Detector

67-020A-01A 19 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 This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system.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

OSO 3

REAL + ARTIFICIAL EVENTS, ATTITUDE

67-020A-01A

THIS DATA SET HAS BEEN RESTORED. THERE WERE ORIGINALLY 19 9-TRACK, 1600 BPI TAPES, WRITTEN IN BCD. THERE ARE FOUR RESTORED TAPES WRITTEN IN ASCII. THE TAPES ARE NOT IN SEQUENTIAL ORDER. THE DR TAPES ARE 3480 CARTRIDGES AND THE DS TAPES ARE 9-TRACK, 6250 BPI. THE TAPES WERE CREATED ON AN IBM 360 COMPUTER. THE DR AND DS NUMBERS ALONG WITH THE CORRESPONDING D NUMBERS AND TIME SPANS ARE AS FOLLOWS:

DR#	DS#	DD#	FILES	TIME SPAN
DR03935	DS03935	D02393	1	03/08/67 - 05/17/67
		D02394	2	05/17/67 - 07/21/67
		D02395	3	07/21/67 - 09/24/67
		D02396	4	09/24/67 - 12/18/67
		D02397	5	12/18/67 - 03/07/68
DR03936	DS03936	D02398	1	03/07/68 - 05/27/68
		D02399	2	05/27/68 - 06/28/68
		D02400	3	03/08/67 - 04/20/67
		D02401	4	04/20/67 - 05/29/67
		D02402	5	05/29/67 - 07/07/67
DR03937	DS03937	D02403	1	07/07/67 - 08/14/67
		D02404	2	08/14/67 - 09/22/67
		D02405	3	09/22/67 - 11/12/67
		D02406	4	11/12/67 - 12/20/67
		D02407	5	12/20/67 - 01/28/68
DR03938	DS03938	D02408	1	01/28/68 - 03/08/68
		D02409	2	03/08/68 - 04/16/68
		D02410	3	04/16/68 - 05/24/68
		D02411	4	05/24/68 - 06/28/68

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OSO-3 CELESTIAL GAMMA-RAY DETECTOR

This data set consists of 19 BCD, 7-track, 556 BPI tapes. Each tape contains one file and they are IBM 7094 compatible. Each physical record contains 100 logical records. The logical records are 80 character card images. The time spans for the tapes are:

TAPE NO.		START TIME	STOP TIME
D-2393	(C-1858)	03/08/67	05/17/67
D-2394	(C-1859)	05/17/67	07/21/67
D-2395	(C-1860)	07/21/67	09/24/67
D-2396	(C-1861)	09/24/67	12/18/67
D-2397	(C-1862)	12/18/67	03/06/68
D-2398	(C-1863)	03/06/68	05/26/68
D-2399	(C-1864)	05/26/68	06/28/68
D-2400	(C-1865)	03/08/67	04/20/67
D-2401	(C-1866)	04/20/67	05/29/67
D-2402	(C-1867)	05/29/67	07/07/67
D-2403	(C-1868)	07/07/67	08/14/67
D-2404	(C-1869)	08/14/67	09/22/67
D-2405	(C-1870)	09/22/67	11/12/67
D-2406	(C-1871)	11/12/67	12/20/67
D-2407	(C-1872)	12/20/67	01/28/68
D-2408	(C-1873)	01/28/68	03/08/68
D-2409	(C-1874)	03/08/68	04/16/68
D-2410	(C-1875)	04/16/68	05/24/68
D-2411	(C-1876)	05/24/68	06/28/68

The original tapes in this data set were processed at M.I.T. on an IBM 360/65 computer.

OSO-3

CELESTIAL GAMMA-RAY DETECTORS

FORMATS

If the ID (which is located in columns 69-72 of each logical record) is equal to either 3500 or 4500, the format for that record is as follows:

COLUMN	ID	DESCRIPTION
1-3	DAY	DAY NUMBER WITH JANUARY 1, 1967 = DAY 1.
4-10	SEC	SECONDS OF DAY IN UNIVERSAL TIME
11		BLANKS
12	MODE	
13-16	RAA (1)	EVENT RIGHT ASCENSION #1
17-20	DECL (1)	EVENT DECLINATION #1
21-24	RAA (2)	EVENT RIGHT ASCENSION #2
25-28	DECL (2)	EVENT DECLINATION #2
29-31	FLAT	LATITUDE ON EARTH WHICH SATELLITE IS OVER
32-34	FLONG	LONGITUDE " " " " " "
35-38	HEIGHT	ALTITUDE OF SATELLITE (KM)
39-41	ERA	RIGHT ASCENSION OF VECTOR TO EARTHS CENTER
42-44	EDECL	DECLINATION OF VECTOR TO EARTH'S CENTER
45-47	HOR	ANGLE BETWEEN EVENT DIRECT. AND HORIZON
48-50	EANG	ANGLE BETWEEN EVENT DIREC. AND SATELLITE
51-53	AZMUTH	ANGLE BETWEEN VECTOR OF N. POLE&TANGENT PLANE TO
54-56	SRA	RIGHT ASCENSION OF VECTOR FROM SAT. TO SUN THE EARTH
57-59	SDECL	DECLINATION OF VECTOR FROM SAT. TO SUN
60-62	GEOLAT	GEOMAGNETIC LATITUDE OF SATELLITE
63-65	GLAT	GALACTIC LATITUDE OF EVENT DIRECTION
66-68	GLONG	GALACTIC LONGITUDE OF EVENT DIRECTION
69-72	ID	IDENTIFICATION OF TYPE OF EVENT
73-74	S3	'S3' APPEARS ON ALL CARD IMAGES
75-80	NOUTCT	SEQUENCE NUMBER OF CARD

If the ID is equal to either 3501 or 4501, the format for that logical record is as follows:

COLUMN	ID	DESCRIPTION
1-3	DAY	DAY NUMBER WITH JANUARY 1, 1967 = DAY 1
4-10	SEC	SECONDS OF DAY IN UNIVERSAL TIME
11		BLANK
12	NITE	INTERGER; IF 1 = DAYTIME; 2 = NIGHTTIME
13-15	XMTS	TIME FROM EVENT TO NEXT SPACECRAFT SUN PIP.
16-18	TROTAT	PERIOD OF ROTATION OF SATELLITE
19	JUMSEV	NO. OF ROUTINE DATA LINES
20-22	XMTM	TIME FROM EVENT TO NEXT SPACECRAFT MAG. CROSSING
23-25	XMM	PREVIOUS VALUE OF M-M TELMETERED
26	JUMSEV	NO. OF ROUTINE DATA LINES
27-29	BXWM	PRODUCT OF VECTORS OF MAG. FD. & SPIN AXIS
30-33	ANTI	RATE OF PLASTIC ANTICOINCIDENCE DET.

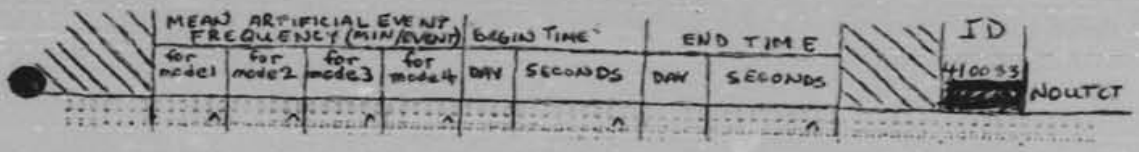
COLUMN	ID	DESCRIPTION
34	JTMAEV	NO. OF ROUTINE DATA LINES
35-39	JBLAST	COUNTERS
40-42	PULSE (1)	PULSE HEIGHT VALUE AT EVENT (1)
43-45	PULSE (2)	" " " " " (2)
46-48	PULSE (3)	" " " " " (3)
49-51	PULSE (4)	" " " " " (4)
52-54	PULSE (5)	" " " " " (5)
55-57	PULSE (6)	" " " " " (6)
58-60	PULSE (7)	" " " " " (7)
61-63	PULSE (8)	" " " " " (8)
64-68	BWA	ANGLE BETWEEN SPIN AXIS & MAG FIELD DIR.
* 69-72	ID	IDENTIFICATION OF TYPE OF EVENT
73-74	S3	'S3' APPEARS ON ALL CARD IMAGES
75-80	NOUTCT	SEQUENCE NUMBER OF CARD

If any other number appears as the ID, one of the formats on the following page should fit the record.

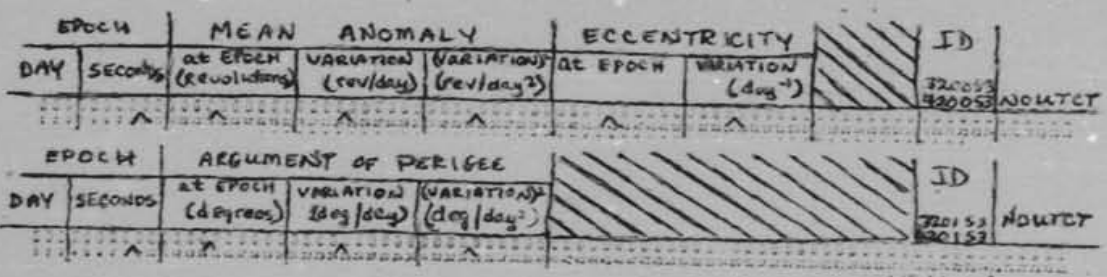
* If the ID is a number in the 3000's, it is a real event
if the ID is a number in the 4000's, it is an artificial event.

FORMATS

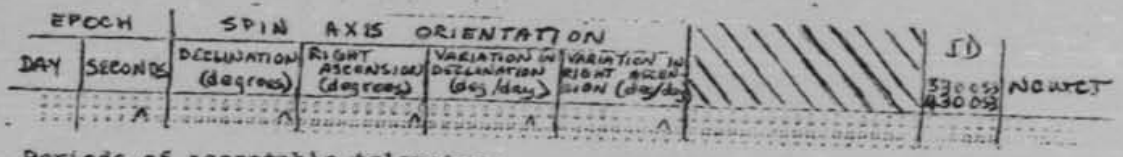
Artificial Event control card (for each run):



Satellite orbital elements:



Satellite spin axis orientation:



Periods of acceptable telemetry:

End of data (for each run):

Figure 2. Images of cards used [illegible] in this NCP program.

^ indicates where actual data goes

67-020A-01K
OSO-3

The Gamma Ray Astronomy Experiment
on the 3rd Orbiting Solar Observatory OSO-3

(Description of Data Stored in the
National Space Sciences Data Center)

. General Description of the Instrument

The Gamma Ray Astronomy Experiment on the OSO-3 discovered high energy cosmic gamma rays and mapped their intensity over the celestial sphere. The intensity is concentrated in a narrow band around the Milky Way and has a broad maximum in the direction of the galactic center. In addition, evidence is found for a general background of cosmic gamma rays at high galactic latitudes. A detailed description of the scientific results is given in Ref. 3.

The apparatus, which contains 15 photomultipliers and over 3000 transistors, is a system of radiation detectors and electronic circuits which occupy the segments of the wheel section of the satellite as shown in Figures 2 and 3 of Ref. 1. When operated in the electronic configuration designated "mode 3", it responds with great selectivity to gamma rays with energies above a detection threshold of about 70 MeV and arriving within about 12° of the forward direction. More complete descriptions of the apparatus and its characteristics are contained in Ref. 1, 2, and 3.

Gamma rays are produced in the interactions of high energy particles with matter and radiation. Since high energy particles (cosmic rays) and matter (mostly hydrogen) are known to exist in interstellar space, there was little doubt at the inception of the experiment that cosmic gamma rays exist. However, their existence was first announced when