

DATA SET CATALOG #111

OGO-6

LYMAN ALPHA DATA

69-051A-12A

1 tape

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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 This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system.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

DET. CURRENT, ATTITUDE, ORBIT, TAPE

69-051A-12A

This data set has been restored. There was originally one 7-track, 800 BPI tape written in BCD. There is one restored tape written in ASCII. The DR tape is a 3480 cartridge and the DS tape is 9-track, 6250 BPI. The original tape was created on a 7094 computer and the restored tape was created on an IBM 9021 computer. The DR and DS numbers along with the corresponding D number are as follows:

DR#	DS#	D#	FILES	TIME SPAN
-----	-----	-----	-----	-----
DR005302	DS005302	D005975	1	06/08/69 - 06/08/69

69-051A-12A

This data set consists of one 800 BPI, 7-track, BCD tape.

D#	C#	file	Start	Stop
D-05975	C-04881	1	6/8/69 7:13	6/8/69 7:18

Note: As yet, only 1 tape of this data set has arrived. However, at least nine other tapes of this data set are expected, all of which will contain very small amounts of data. This data will be added to the one tape above and put in a separate file.

OGO-6-12 LYMAN-ALPHA TAPE FORMATID RecordCharacters

1-10	bOGOb-b6bb	
11-20	bEXPbb12bb	Experiment Name
21-31	LYMAN-ALPHA	
32-40	blank	
41-50	REVbbXXXXX	XXXXX = Orbit Number in which data starts.
51-60	DAY 66 YYY bb	YYY = day number
61-70	DD/MM/YY bb	Date of background correction run
71-100	blank	

EXPERIMENT 13, OGO-6, Merged Tape Description

The final merged tapes for this experiment each contain 50 orbits of experimental data and selected attitude/orbit information. The tapes are written at 556 bpi, 7 track, odd parity and were produced on a CDC 6400 computer system. All words are 60 bits long in CDC 6000 format for numerical information and in CDC 6000 display code for BCD information.

Each tape contains 50 files of information consisting of 1 25-word orbit information record, 1 80-word attitude/orbit data record containing parameters for start of orbit (ascending node) and approximately 100 200-word records each containing 80 words of attitude/orbit data at one minute intervals and 120 words of experimental data at one second intervals. A 5 word label record precedes the first orbit. Two ends-of-file indicate the end of information on a tape.

The experimental data is not calibrated, but is stored in data number form. Calibration is applied at the time of data display so that problems normally resulting from calibration refinements are simplified. Digitized calibration curves are available for use upon request.

The detailed contents of each record are described below:

A. Label record - 5 60-bit words

- word 1 BCD Tape Number i.e. FFDNNNbbb
- 2 Integer Orbit Number of first orbit on tape
- 3 Integer flag - should always be 50
- 4 Integer flag - should always be 1
- 5 BCD Identification - OGO-FbbF13

*Lower case b indicates a BCD blank.

B. Orbit Information record - 25 60-bit words

word	Field	Type
1	Orbit Number	Integer
2,3	Day No. & msec of day, orbit start	"
4,5	Day No. & msec of day, orbit end	"
6,7	Day No. & msec of day, eclipse start	"
8,9	Day No. & msec of day, eclipse end	"
10,11	Day No. & msec of day, noon turn	"
12,13	Day No. & msec of day, epoch	"
14	Semimajor axis a (earth radii)	Real
15	Eccentricity e	"
16	Inclination i (degrees)	"
17	Longitude of ascending node Ω (degrees)	"
18	Argument of perigee ω (degrees)	"
19	Period (minutes)	"
20	$\dot{\Omega}$ (degrees/day)	"
21	$\dot{\omega}$ (degrees/day)	"
22	\dot{T} (minutes/day)	"
23-25	Spares	

C. Attitude/orbit data record - 80 60-bit words

word 1,2	Day No. & msec of day for this record	Integer
3,5	Local time at subsatellite point (hr, min, sec)	"

word 6,7	No data/Suspect data flags	Integer
8-10	Position vector x, y, z (kilometers)	Real
11	Radial distance r (kilometers)	"
12-14	Velocity vector $\dot{x}, \dot{y}, \dot{z}$ (km/sec)	"
15	Speed v (km/sec)	"
16-18	Solar vector x_s, y_s, z_s (kilometers)	"
19	Solar distance r_s (kilometers)	"
20,21	Latitude & Longitude of subsatellite point (degrees)	"
22	Height above geoid h (kilometers)	"
23,24	Right ascension & declination of satellite (degrees)	"
25,26	Right ascension & declination of field of view (degrees)	"
27	Sun-earth-satellite angle (degrees)	"
28	Solar zenith angle - subsatellite point (degrees)	"
29	Solar zenith angle - at satellite (degrees)	"
30	True anomaly (degrees)	"
31-33	Roll axis components in GEI coords	"
34-36	Pitch axis components in GEI coords	"
37-39	Yaw axis components in GEI coords	"
40	Array angle (degrees)	"
41	OPEP angle (degrees)	"
42	Magnetic range (earth radii)	"
43	Magnetic latitude (degrees)	"
44	McIlwain parameter (earth radii)	"
45	Field strength (gamma)	"
46	Field strength ratio to equatorial	"
47,48	Latitude & longitude of mag line ingress (degrees)	"

word 49,50	Latitude & longitude of mag line egress (degrees)	Real
51-53	Magnetic line unit vector in GEI coords	"
54-56	Magnetic line unit vector in body coords	"
57-59	$\hat{B}\hat{B}\hat{G}$ vector	"
60-68	GEI to GSE transformation matrix	"
69-77	GEI to GSM transformation matrix	"
78	Attitude data flag	"
79,80	Spares	

More complete descriptions of the parameters are available in the Data Processing Plan for OGO-E.

D. Merged data records - 200 60-bit words

Words 1-80 are exactly as those detailed in C above with each record now corresponding to times occurring on even minutes and at 1 minute intervals.

Words 81-140 contain channel A data words

Words 141-200 contain channel B data words

The experimental data consists of packed words containing the integer day number in the high 12 bits, integer seconds of day in the next 24 bits and the experimental reading in the low 12 bits. The range of data is 0-255 in data numbers (0-377₈) with 4000₈ used to indicate lack of data. The first word of the group of 60 corresponds to the time given in words 1 and 2 of the record and each succeeding word at 1 second time intervals.

R. P. Headley
7-15-71

CGO-6-12 LYMAN-ALPHA TAPE FORMAT

ID Record

Characters

1-10	bOGOb-b6bb
11-20	bEXPbb12bb
21-31	LYMAN-ALPHA
32-40	blank
41-50	REVbbXXXXX
51-60	DAY 66 YYY bb
61-70	DD/MM/YY bb
71-100	blank

Experiment Name

XXXXX = Orbit Number in
which data starts.

YYY = day number

Date of background correction
run

Data Record

The data record will contain 4000 characters arranged into 40 frames of data which are 100 characters long.

Data Frame

	<u>Data Word</u>	<u>Format</u>
1.	Time (ms)	F9.0
2.	Scanner angl. (deg)	F6.1
3.	Count rate (uncorrected) (counts/sec)	F8.0
4.	Count rate (with background correction) (counts/sec)	F8.0
5.	Data electrometer current (amps)	E9.2
6.	Calibration electrometer current (amps)	E9.2
7.	Experiment status	F2.0
8.	Look direction right ascension (GEI System) (deg)	F6.1
9.	Look direction declination (GEI System) (deg)	F6.1
10.	Look direction ecliptic longitude (GSE System) (deg)	F6.1
11.	Look direction ecliptic latitude (GSE System) (deg)	F6.1
12.	Altitude (km)	F7.1
13.	Satellite geodetic latitude (deg)	F6.1
14.	Satellit geodetic longitude (deg)	F6.1
15.	Solar-zenith angle (Sun-earth-satellite angle) (deg)	F6.1

The data will not be continuous due to several effects:

1) At the start of each input file several seconds of data is needed to initialize the routine which establishes the scanner angle; 2) The count data for scanner angles between 300 deg. and 60 deg. is not useful and is therefore edited out; 3) Dropouts in the input data are reflected in the output.

The only quantities which can take on both + and - values are the latitudes in words 9, 11, and 13. All other words will be positive. A substantial number of corrected count rates (word 4) will have zero values. Several conditions may cause this to happen: 1) The background data cannot be interpolated to provide a correction value; 2) The correction may be larger than the count rate (word 3); 3) A correction value is calculated only if the status (word 7) has a value of 2 or 6.

A double end-of-file will indicate the end of a tape.