

DATA SET CATALOG #94

OGO-I and OGO-III Spectrometer

64-054A-21I

66-049A-22K

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 This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system.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

OGO 1 & OGO 3
SOLAR COSMIC RAY COUNTS
INTERPOLATED COUNTS RATE

64-054A-12A, 21I

66-049A-22K

THESE DATA SETS HAVE BEEN RESTORED. ORIGINALLY THERE WAS ONE 7-TRACK, 556 BPI TAPE AND ONE 7-TRACK, 800 BPI TAPE, WRITTEN IN BCD. THERE IS ONE RESTORED TAPE, WRITTEN IN EBCDIC. THE DR TAPE IS A 3480 CARTRIDGE AND THE DS TAPE IS 9-TRACK, 6250 BPI. THE ORIGINAL TAPES WERE CREATED ON A 7096 COMPUTER. THE DR AND DS NUMBER ALONG WITH THE CORRESPONDING D NUMBERS ARE AS FOLLOWS:

DR#	DS#	D#	FILES	TIME SPAN	DATA SET
DR003453	DS003453	D000280	1-35	09/30/65 - 05/03/66	64-054A-12A
		D005577	36-39	09/64 - 12/67	64-054A-21I
				06/66 - 12/67	66-049A-22K

1. INTRODUCTION

The development of the Outer Zone Electron Model AE-4 was based on electron count rate data from spacecraft experiments flown between 1959 and 1967. The AE-4 model is a functional representation of time-averaged data profiles with respect to B/B_0 , L, local time, and energy obtained from each of several data sets. The electron count rate data from the Electron Spectrometer Experiments (64-054A-21 and 66-049A-22*) flown on OGOs 1 and 3 by the University of Minnesota were the principal data used in defining the energy spectra for the AE-4 model. This paper describes the reduction of the data from microfilmed listings of spectrometer rates vs. pitch angle at discrete L (data sets 64-054A-21F and 66-049A-22F*) and plots of spectrometer rates vs. L (data sets 64-054A-21E and 66-049A-22E*) produced by these experiments.

The University of Minnesota experiments on OGOs 1 and 3 consisted of physically identical spectrometers. Comparison of the data over diverse time periods was facilitated by the similarity of the spectrometers. The spatial coverage and time coverage allowed analysis of the fluxes in the slot region ($L = 2.4$ to 4.0) over the solar cycle period from minimum to near maximum. Data from $L = 1.3$ to 7.0 were also studied.

*National Space Science Data Center (NSSDC) experiment and data set identification numbers are based on international designations for spacecraft. The first five digits and letter (64-054A) identify a spacecraft. The following two digits (-21) identify an experiment. The letter appended to the experiment identification (F in -21F) identifies a unique body of data and/or supporting information associated with a given experiment.

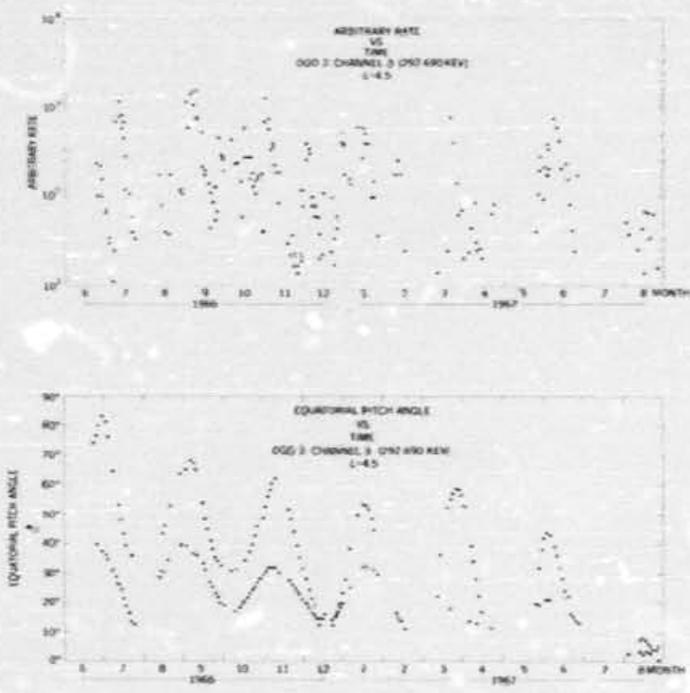


Figure Set 2 - Typical Case Which Yielded Acceptable Pitch Angle Distribution for OGO 3

OGO 1 & 3 SPECTROMETER
64-054A-21I
66-049A-22K

4/12/73

The time spans for the four files on D-5577 are:

File 1	OGO-1	9/15/64 - 11/24/65	
2	OGO-1	9/13/64 - 7/9/67	
3	OGO-3	4/22/65 - 12/27/67	6/11/66
4	OGO-3	6/11/66 - 12/25/67	

The times for files 1-3 are written D/M/YR
File 4 is mixed - some dates are written D/M/YR and
some are M/D/YR.

OGO-3 was launched - 6/7/66 yet the data in file 3
begins 4/22/65.

The time spans found for files 1-3 do not correspond
with what is in the data set catalog.

L 1.7 TIME 11/1/60 at end of 1st file } OGO-1
L 6.0 CHANNEL 1 4/25/60

APPENDIX B

LISTINGS FOR PROGRAM GLSWS

*Inventory
From 115200 91-08*

APPENDIX

ODD 1 and ODD 3 Spectrometer
Data Sets 64-054A-21F, 66-046A-22K

New data sets for the ODD 1 and 3 University of Minnesota electron spectrometer experiments were created as a result of data reduction efforts for the MS-4 electron model. Details of data reduction are given in the text. The new data sets each consist of two files of data on tape. One file contains inner zone data; the other contains outer zone data. The two data sets were combined on one magnetic tape for convenience of storage. The tape characteristics and names follow.

Tape Number:

File 1: ODD 1 64-054A-21F Inner zone electron data, L = 1.3-2.4.

All data originated from data set 64-054A-21F. Sept. '64 to Dec. '67.

File 2: ODD 1 64-054A-21F Outer zone electron data, L = 2.3-7.0.

Sept. '64 to Dec. '67.

File 3: ODD 3 66-046A-22K Inner zone electron data, L = 1.3-2.4.

All data originated from data set 66-046A-22K. Jan '66 to Dec '67.

File 4: ODD 3 66-046A-22K Outer Zone Electron data, L = 2.4-7.0.

Jan. '66 to Dec. '67

Capacity:	556 DPI
Mode:	BCD
Parity:	EVEN
Record Length:	34 Characters
Tracks:	7
Machine:	IBM 7094
Tape No:	D-05577 C-04692

```

*NAME          *UN06.*UN03*
31 F1C FLUXLO  N000*NODEC*H9*Z*XR7
C C C PROGRAM FLUX CONVERSION -- REVISED AUG 69 AT NSSDC BY GJW
C C C STANDARD INPUT UNIT = TAPE 5* STANDARD OUTPUT UNIT = TAPE 6
C C C FOR USE AT NSSDC USE BRARE CARDS TO CONVERT UNITS 5*6 TO 2*3*
C C C FOR PUNCH CARD OUTPUT OPTION* TAPE 8 IS WRITTEN*
C C C DIMENSION S(100)*BINTR(10)*YDJ(100)*YJINTR(100)*YI(210)*YINTA(100)
C C C DIMENSION DATA(210)*DATAF(210)*REAL(210)*EXTRA(210)
C C C DIMENSION A(211)*ALOGS(210)*TITLE(30)*NON(10)
C C C DIMENSION POATA(10)*PDATA(10)*SLOPE(210)
C C C DIMENSION F(76*10)*IKMAX(14)
C C C DIMENSION THR(10)*EKS(3)
C C C COMMON B*BINTR*YJ*YJINTR*Y*YINTR*DATA*DATAF*REAL*EXTRA*NON*TITLE
C C C COMMON KUN*SLOPE*ALOGS*POATA*PDATA*LER*INTFLG*ALPHA
C C C COMMON /FUNC/ NBELON*NBAND*LOW*NS
C C C REAL L
C C C DATA NCASE/200/*MAXITR/500/*INTAPE/5/*IPUNCH/0/*LFLAG/0/*EPS/0.7
C C C DATA N170/*N2/0/
C C C .....
C C C DATA IK/0/* IL/1/
C C C THE FOLLOWING DATA STATEMENT SPECIFIES THE NUMBER OF CHANNELS
C C C FOR EACH L-SET FOR WHICH DATA WILL BE SUPPLIED TO THE PROGRAM*
C C C IF IKMAX IS LESS THAN 5 FOR ANY L-SET* THE PROGRAM ASSUMES THAT
C C C CHANNELS 1 THROUGH IKMAX ARE THE ONES PROVIDED* SINCE IKMAX IS
C C C DATA DEPENDENT* THE DATA STATEMENT MUST BE CHANGED FOR EACH
C C C APPLICATION*
C C C L-1A IKMAX /5*5*5*5*5/
C C C IKMAX = IKMAX = 2
C C C .....
C C C ALPHA=0.05
C C C LER=0
C C C NS=100
C C C INTFLG=0
C C C NAMELIST /SET1/LFLAG*NCASE*MAXITR*EPS*LER*INTAPE*INTFLG*IPUNCH
C C C 1*ALPHA
100 FORMAT (1H1)
900 FORMAT (10A6*6X*11*12*1X*11*11*13*F5.3)
901 FORMAT (1H0*4X*12HDATA LISTING /*115*2(1PE20.81)*110*2(1PE20.81))
902 FORMAT (4H0BC*F10.5*5X*3HBE*F10.5)
903 FORMAT (29H1*1*2*LFLAG*B*Y*BINTR*YINTR/*310/*(15*2(1PE20.81))
904 FORMAT (15H1*3*DATA*DATAF/*15/*(15*2E20.81))
905 FORMAT (1H1*2X*1H1*11*11*1H*19X*1HJ*16X*5HLOG(1)/*//
115*3(1PE20.81))
906 FORMAT ( 35HWE SEEM TO HAVE INPUTED ONLY ZEROS /*
1 1RH EXECUTION DELETED 1
907 FORMAT (1H1*(415))
908 FORMAT (15H1R*J*LOG* SLOPE/*115*3(1PE20.81))
909 FORMAT (9X*14*10X*14*16X*14*16X*14)
910 FORMAT (10X*7H NCASE=14*1H*10X*7HMAXITR=14*1H/*
110X*7HINTAPE=14*1H*10X*7HINTFLG=14*1H/*
210X*7HIPUNCH=14*1H*10X*7HLFLAG=14*1H/*
310X*7H LER=14*1H*7H LER=14*1H*)
911 FORMAT (10X*7H EPS=F10.5*1H*4X*7H ALPHA=F10.5)
912 FORMAT (13*6X*E10.4*10X*E10.4*10X*E10.4*10X*E10.4)

```

The format for header records, data records, and trailer records follow. This sequence is repeated for each channel and L-set in each file in the following manner:

Channel 1	L = L ₁
Channel 1	L = L ₂
. .	. .
. .	. .
Channel 1	L = L ₁
Channel 2	L = L ₁
. .	. .
. .	. .
Channel 5	L = L ₁

* Data may not exist for all channels at all L values.

HEADER
CARD

DATA
CARD

TRAILER
CARD

```

LOW=J1
NABOV=J2
CUT=DATAP(J2)
OPT=0.
VARI11=DATAP(J1)
IF(1.EQ.J3)VARI11=DATAP(J1)*(1.+ALPHA)
VARI2)=0.
HMAX=(CUT-VARI11)/3.
HMIN=(CUT-VARI11)/FLOAT(MAXITR)
DER(1)=HMIN*.4.
DO 7 I1=1,100
7 TEMP(1)=0.
CALL AUX2
IF(LEP.GE.0.AND.LEP.NE.TGRAL2)GO TO 19
WRITE(6,902)J1,J2
WRITE(6,903)DER,VAR,EU,EL,HMAX,HMIN,DATAP(INBELOW),OPT
DO 8 J1=1,MAXITR
18 CALL FAANRA(VAR,DER,AUX2,NV,OPT,EU,EL,HMAX,HMIN,TEMP)
IF(VARI11+DER(1).GE.CUT)GO TO 9
CONTINUE
9 OPT=1.
DER(1)=(CUT-VARI11)
DO 10 J1=1,100
10 TEMP(J1)=0.
CALL AUX2
CALL FAANRA(VAR,DER,AUX2,NV,OPT,EU,EL,HMAX,HMIN,TEMP)
6 REAL(INBELOW)+REAL(INBELOW)+VAR(2)
J3=J3+1
IF(J3.GT.J4)GO TO 16
EXTRA(INBELOW)=0.
DO 11 I=J3,J4*2
J1=N(I)-1
LOW=J1
J2=N(I)
NABOV=J2
CUT=DATAP(J2)
OPT=0.
VARI11=DATAP(J1)
VARI2)=0.
HMAX=(CUT-VARI11)/3.
HMIN=(CUT-VARI11)/FLOAT(MAXITR)
DER(1)=HMIN*.4.
TEST2=0.
DO 12 I1=1,100
12 TEMP(I1)=0.
CALL AUX2
IF(LEP.GE.0.AND.LEP.NE.TGRAL2)GO TO 19
WRITE(6,902)J1,J2
WRITE(6,903)DER,VAR,EU,EL,HMAX,HMIN,DATAP(INBELOW),OPT
DO 13 J1=1,MAXITR
19 CALL FAANRA(VAR,DER,AUX2,NV,OPT,EU,EL,HMAX,HMIN,TEMP)
IF(VARI11+DER(1).GE.CUT)GO TO 14
CONTINUE
13 OPT=1.
DER(1)=(CUT-VARI11)
DO 15 J1=1,100
15 TEMP(J1)=0.
CALL AUX2

```

	COLUMN	FORMAT	SYMBOL	DESCRIPTION
HEADER CARD	1-44	A		Alphanumeric description of data that follows. Appears at the beginning of each channel-1 set.
	45	T		Channel number (1,2,3,4,5).
	48-51	-		Continuation of alphanumeric description.
	52-56	75.2		L-value.
DATA CARD	1-8	88.2	RS	Arbitrary rate.
	9-15	77.3	SSS	$w_0/80$. Ratio of magnetic field strength to equatorial magnetic field strength for the same L-value.
	16-22	77.3	PST	Local time in hours.
	23-29	77.3		Equatorial pitch angle in degrees.
	30-37	77.3	UN	Universal time in hours and decimal fraction.
	38-39	12	MO	Month
	40-42	11	DA	Day of Month
	44-45	12	YY	Last two digits of year.
	71-75	15	ID	NSF, NASA SP-3024 Vol. 1 pp. 10-11. An internal identification code.
76-80	75.2	XL	L-value	
TRAILER CARD	38-39	12		The number 99 in this field indicates the end of data for this L-value for this channel. Another L-value follows.
				The number 99 in this field indicates the end of data. An end of file follows.

These fields are blank for their corresponding data, Files 1 and 2.

1.00E 00	9.97	3.27	-0.	99 -0 66	-2	9915 4.00
000-3E000-01 ELECTRON SPECTROMETER CHANNEL 5 L= 6.00						
3.80E-01	1.93	23.20	70.50	7 11 66	1 17	9915 6.00
3.40E-01	1.06	23.20	65.00	7 13 66	1 18	9915 6.00
3.00E-01	3.77	16.22	20.50	7 15 66	0 20	9915 6.00
2.10E-01	1.16	22.67	56.00	7 17 66	1 20	9915 6.00
2.80E-01	1.00	19.20	73.00	9 9 66	1 47	9915 6.00
2.20E-01	2.19	13.13	32.00	9 10 66	0 48	9915 6.00
7.80E-01	2.52	12.80	28.00	9 14 66	0 50	9915 6.00
4.30E-01	1.00	15.67	61.00	11 1 66	1 73	9915 6.00
4.00E-01	1.31	12.40	68.00	11 5 66	1 75	9915 6.00
4.70E-01	1.31	15.27	67.10	11 7 66	1 76	9915 6.00

NSSDC

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THE REDUCTION AND ANALYSIS OF ELECTRON DATA
FOR OUTER ZONE ELECTRON MODEL AE-4

VOLUME III
OGO 1 and 3
UNIVERSITY OF MINNESOTA
EXPERIMENT DATA

MARCH 1971



NATIONAL SPACE SCIENCE DATA CENTER

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION - GODDARD SPACE FLIGHT CENTER, GREENBELT, MD.

NSSDC 71-08

The Reduction and Analysis of Electron Data
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Volume III
OGO 1 and 3 University of Minnesota
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