#390

OGO-6

1 MIN. AVERAGED COUNT RATES

69-051A-18A

Table of Contents

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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 This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system.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 6

1 MIN. AVERAGED COUNT RATES

69-051A-18A SPHE-00722

THIS DATA SET HAS BEEN RESTORED. ORIGINALLY IT CONTAINED TWO 9-TRACK, 800 BPI TAPES WRITTEN IN BINARY. THERE IS ONE RESTORED TAPE. THE DR TAPE IS A 3480 CARTRIDGE AND THE DS TAPE IS 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
DR02899	DS02899	D22042	1-4	06/07/69 - 09/30/69
		D22043	5-7	10/01/69 - 12/31/69

REQ. AGENT	RAND NO.	ACQ. AGENT
VJP (ROP)	RC4835	DVR

OGO-6

1 MIN. AVERAGED COUNT RATES

69-051A-18A

This data set catalog consists of 2 OGO-6 data tapes. The tapes are 800 BPI, Binary, 9 track and are multifiled. The tapes were created on a IBM 360 Computer.

Time spans are as follows:

D#	C#	FILES	TIME SPAN
D-22042	C-19173	12	6/07/69 - 9/30/69
D-22043	C-19174	4	10/01/69 - 12/31/69

Note: No format for these tapes.

UNIVERSITY OF NEW HAMPSHIRE
DURHAM, NEW HAMPSHIRE 03824

GRADUATE SCHOOL
Office of the Dean
and
Director of Research

May 26, 1977

National Space Science Data Center
Goddard Space Flight Center
Greenbelt, Maryland 20771

Gentlemen:

Attached you will find information on an experiment conducted by the undersigned. I am sorry for the delay in getting this information to you but it had inadvertently been placed in an office and no further action was taken.

Thank you.

Sincerely yours,

John A. Lockwood
Associate Director of Research

JAL:jd

Enclosure

INTERPRETING PRINTER OUTPUT FROM OGO-F-18 INITIAL REDUCTION PROGRAM

TABLE OF CONTENTS

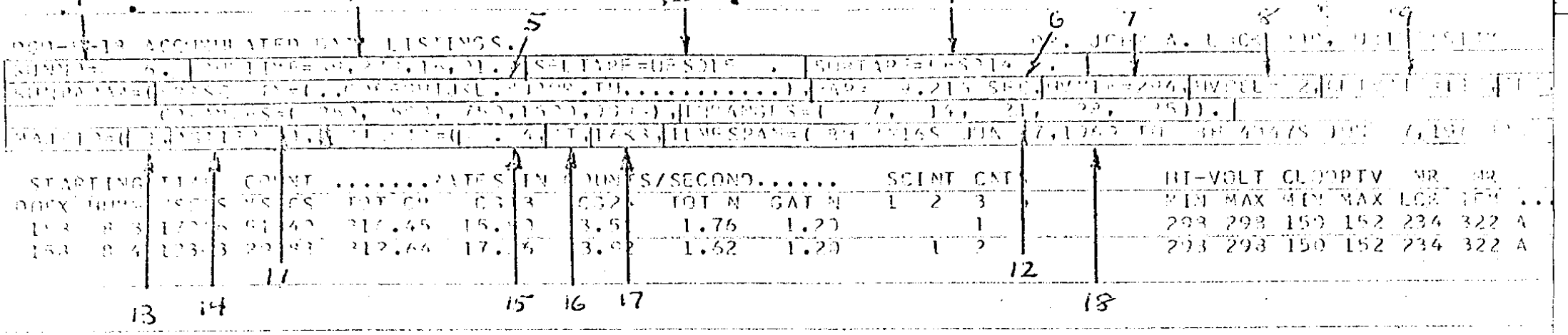

FIGURE V.1

V. Interpretation of Output from OGO-F-18 Initial Reduction Program

V.A. Printer Output

V.A.1. Processing Parameter Headings

The first line of every page of printer output is a title that identifies the type of information printed on the page. The title is followed by 3 lines that display processing conditions which were in effect at the time the program was run. The first of these 3 lines contains identifiers, while the second and third processing parameter lines contain object time options specified by the user.

An example of the 3 lines of processing parameters is shown in Figure V.1 (See fold-out on facing page.) The different parameters displayed in the figure are numbered to assist in referencing parameter meanings described below. The "intended" meanings are described in Section V.A.1.a. Since parameters are only as accurate as their sources, the source of each value is described in section V.A.1.b.

V.A.1.a. "Intended" meanings of processing parameters

Parameter 1. "RUNNO= 6."
Meaning: This is the 6th time OFIRP (OGO-F-18 Initial Reduction Program) has been used.

Parameter 2. "RUNTIME=69,279,16,01."
Meaning: OFIRP began execution for this run at about 1601 hours of day 279 in year 1969.

Parameter 3. "SELTAPE=OFS015 ."
Meaning: The name of the selected data output tape used for this run is OFS015.

Parameter 4. "SORTAPE=OFS014 ."
Meaning: The name of the sorted data output tape used for this run is OFS014.

Parameter 5. "ERRSCREEN=(..CDEFGHIJKL.NOPQR.TU .....)."
Meaning: Whenever any of the flag conditions represented by the characters within the parentheses are detected by the program, data will not be accumulated to the selected data output tape. (See sections V.A.5.b and V.A.5.c)

Parameter 6. "BAP= 9.216 SEC"
Meaning: The maximum length of time that data will be accumulated before being written on the output tapes is 9.216 seconds.

Parameter 7. "HVMIN=294"
Meaning: 2.94 volts is the least high voltage subcom value that is considered "reasonable" by the user.

Parameter 8. "HVDEL= 2"
Meaning: .02 volts is the maximum change between successive high voltage readings that is considered "reasonable" by the user.

Parameter 9. "CLTVMIN=110"
Meaning: 1.10 volts is the least calibrate-loop-threshold voltage that is considered "reasonable" by the user.

Parameter 10. "CLTVDEL= 2"
Meaning: .02 volts is the maximum change between successive calibrate-loop-threshold voltage readings that is considered "reasonable" by the user.

Parameter 11. "CPRANGES=(250, 500, 750,1500,9999)"
Meaning: The values used as lower bounds for charged-particle rate ranges 2,3,4,5,and 6 are 250, 500, 750, 1500, and 9999 counts/second, respectively.

Parameter 12. "TNRANGES=(7, 14, 21, 28, 35)"
Meaning: The values used as lower bounds for total-neutron rate ranges 2,3,4,5,and 6 are 7,14,21,28, and 35 counts/second, respectivel

(Parameters 13 - 18 shown in Figure V.1 are described in Section V.A.2.)

V.A.1.b. Sources of Processing Parameters

Parameter 1. The "count" of the number of times OFIRP has been used is a number stored at the computation center on a catalogged disc dataset. Each time OFIRP is used, the program fetches the number, increments it, stores the incremented count on the disc, and prints the incremented count as parameter11. The value of the count is really a function of (1) the initial value of the count most recently established by program S4-P5 and (2) the number of times OFIRP has been used since that initialization.

Parameter 2. This information is only as accurate as corresponding information entered by the 360 operator. (The purpose of parameter 1 is to guard against gross inaccuracy in parameter 2.)

Parameter 3. The name of the tape is taken from information originally stored on the tape the most recent time the tape was "started" by program S4-P2. The name is only as accurate as the name key-punched by the user of the S4-P2 starter program.

Parameter 4. Same as for parameter 3, above.

Parameter 5. The flag codes displayed are a reflection of the non-zero digits punched by the user in columns 1-32 of the first run-option parameter card of the input deck to the program.

Parameter 6. The multiple of 576 milliseconds as requested by the user.

Parameter 7. The greater of (1) 50 (=.50 volts) and (2) the value supplied by user.

Parameter 8. As supplied by user.

Parameter 9. The greater of (1) 50 (=.50 volts) and (2) the value supplied by user.

Parameter 10. As supplied by user.

Parameter 11,12These are not the values used by the program as rate range boundaries. Instead they are lower bounds specified by the user on the second run option parameter card. The range lower boundaries used by the program are the least multiples of 125/18 that are not less than the values supplied by the user.Only when the user supplies multiples of 125 will the program boundaries agree exactly with user boundaries.

V.A.2. Decomm file identifiers

Except for the "File Summary" listings, the Decomm identifiers are printed once near the top of every page of OFIRP printer output. However, unlike the processing parameter headings, the Decomm identifiers may appear throughout a page whenever appropriate to identify the Decomm file for which subsequent information is to be printed.

An example of printed Decomm identifiers is shown in Figure V.1. The different parameters are numbered to assist in referencing the interpretations below. The "intended" meanings are described in Section V.A.2.a. Since parameters are only as accurate as their sources, the source of each value is described in Section V.A.2.b.

V.A.2.a. "Intended" meanings of Decomm identifiers

Parameter 13. "1"
Meaning: Sequence number, starting with 1, of the tape withing the series of Decomm tapes processed by this use of OFIRP.

Parameter 14. "AG1132"
Meaning: Name of the Decomm tape.

Parameter 15. "NO. 4"
Meaning: Sequence number, starting with 1, of the current Decomm file within the tape named by parameter 2.

Parameter 16. "RT" (or "PB")
Meaning: This file contains real-time (or playback) data.

Parameter 17. "16KB"
Meaning: This file contains data recorded at "16" kilobits per second.

Parameter 18. "TIMESPAN=(8H 3M16S JUN 7,1969 TO 8H 4M47S JUN 7,1969)"
Meaning: This file contains data recorded between 16 seconds past 803 hours of June 7, 1969 and 47 seconds past 804 hours of June 7, 1969.

V.A.2.b. Sources of Decomm Identifiers

Parameter 13. Accurate. Determined by count by OFIRP.

Parameter 14. Only as accurate as the information entered by the user on the Nth tape identifier and option card, where N is the value of Parameter 13.

Parameter 15. Accurate. Determined by count by OFIRP.

Parameter 16, 17. Only as accurate as the data type supplied by NASA in the 67th character of the Decomm tape leader record.

Parameter 18. Only as accurate as the "Start time of data" and "stop time of data" supplied by NASA in characters 69-77 and 104-112, respectively, of the Decomm file leader record.

(Note: The author's experience to date [Oct. 17, 1969] with early Decomm tapes indicates Parameter 18 is unreliable. Hopefully, NASA will correct this.)

ACCUMULATED DATA LISTINGS. DR. JOHN A. LOCKWOOD, U.N.H.

RUNNO= 6. PRINTIME=70,270,16,01. SELTAPE=OFS015 . SORTAPE=OFS014 .

RUNPARAM=(ERRSCREEN=(..CDEFGHIJKL.MNOOP.TU............),BAP= 9.216 SEC,HVMIN=294,HVDEL= 2,CLTYM...

CPRANGES=(250, 500, 750,1500,9999),TNRANGES=(7, 14, 21, 28, 35)).

...=(1,131132). MINFID=(NO. 1,ST,L6K8,TIMESPAN=(6H14M53S JUN 7,1969 TO 6H16M18S JUN 7,1969)).

STARTING TIME	COUNT	........RATES IN COUNTS/SECOND......					SCINT CNTS				HI-VOLT	CLOG?TV				
...X HHMM SSECS	SSECS	TOT CP	CG13	CG24	TOT N	GAT N	1	2	3	4	MIN	MAX	MIN	MAX		
159 715 35619	25637	1293.70	11.80	7.82	1.05	.62		2		1	294	294	154	157		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

FIGURE V.2

Poor Original

V.A.3. PAP summaries in Accumulated Data Listings

A PAP (Printer Accumulation Period) is a maximum duration of time for which selected data is accumulated before counting rates are computed and printed in the Accumulated Data Listings. A PAP is that multiple of a BAP specified by the user on the first run-option parameter card.

An example of the parameters in a PAP summary is shown in Figure V.2 (see foldout on facing page). Parameters are numbered to facilitate referencing the parameter meanings described below. "Intended" meanings of the parameters are given in Section V.A.3.a. Since parameters are only as accurate as their sources, the sources of these values are described or referenced in Section V.A.3.b.

V.A.3.a. "Intended" meanings of PAP summary parameters

Parameter 1. " 158 615 35619"
Meaning: The begin time for this PAP is 35.619 seconds past 0615 hours of day 158. (Days are numbered sequentially forward with day 1 being Jan. 1, 1969.)

Parameter 2. "25632"
Meaning: The total time spanned by data selected during this PAP is 25.632 seconds.

Parameters 3-7. "1259.79 11.35 8.82 1.05 .62"
Meaning: Those cycles of selected data within the PAP had average counting rates for total charged particles, coincidence guard counter 13, coincidence guard counter 24, total neutrons, and gated neutrons of 1259.79, 11.35, 8.82, 1.05, and .62 counts per second, respectively.

Parameters 8-11." 2 1"
Meaning: 0, 2, 0, and 1 were the total counts on scintillator channels 1, 2, 3, and 4 respectively, for all cycles of select data within the PAP.

Parameter 12. "298"
Meaning: The least high voltage reading occurring in a cycle of accumulatable data was 2.98 volts.

Parameter 13. "298"
Meaning: The greatest high voltage reading occurring in a cycle of accumulatable data was 2.98 volts.

Parameter 14. "154"
Meaning: The least calibrate loop threshold voltage occurring in a cycle of accumulatable data was 1.54 volts.

Parameter 15. "156"
Meaning: The greatest calibrate-loop-threshold voltage occurring in a cycle of accumulatable data was 1.56 volts.

Parameter 16. " "
Meaning: At the time the PAP summary was printed, the most recent logarithmic counting rate subcom word (detected by the program) either was meaningless (likely) or was a true value of zero (unlikely).

Parameter 17. "322"
Meaning: At the time the PAP summary was printed, the most recent temperature subcom word was 3.22 volts.

Parameter 18. "A S "
Meaning: All error flags associated with any or all of the cycles of data selected during this PAP are indicated by the list "A,S" of flag codes. The meanings of these flags are suggested in Section V.A.5.b and are described in detail in Section V.A.5.c.

Parameter 19. "1.288"
Meaning: 1.288 is the ratio of the total coincidence guard 1-3 counts to the total coincidence guard 2-4 counts for all cycles of selected data within the PAP.

V.A.3.b. Sources of PAP summary parameters

Parameter 1. The beginning day and time are taken from the first frame of the first cycle of "accumulatable" data within the PAP. (An "accumulatable" cycle is a meaningful 4 frames of data that is a candidate for user solution by means of the error screen.)

1. The day is computed as the sum of
   a. The day of year given in the first frame of the first accumulatble cycle, and

b. The number days after Dec. 31, 1968 and prior to the current year, with the current year computed from the Decomm header record (and possibly modified by an end-of-year condition).

Note: In testing OFIRP with early tapes, the authors has observed errors in both the day-of-year in individual data frames and in the year of data given in the file header records.

2. The starting time is taken directly from the milliseconds of day given in the first frame of the first cycle of accumulatable data within the PAP.

Note: In testing OFIRP with early tapes, the author has found the milliseconds-of-day values to be unreliable.

3. The begin time of the PAP does not indicate the time of the first cycle selected.

Parameter 2. The counting time for a PAP is computed by OFIRP as the product of the number of cycles of selected data (counted by the program) and the length of time each cycle is supposed to span at the bit rate indicated by the file header record. The times spanned by four-frame cycles is assumed by the program to be 576 msec, 288 msec and 72 msec for 8KB, 16KB, and 64KB data,respectively.
The counting time has the same percent error as does the recording bit rate.

Parameters 3-7. Counting rates, to the nearest hundredth of a count per second, are computed from the total counts for all selected cycles in the PAP and from the counting time given in parameter 2. The total counts used is the total of the counts written on the selected data tape during the PAP.
A zero counting rate is never printed.

Parameters 8-11. A zero count is never printed.

Parameters 12-15. The set of subcom words from which least and greatest values are taken are those meaningful words found in cycles of accumulatable data occurring within the PAP. Thus it is possible that none of these words occurred in any of the cycles selected during the PAP. Subcom words are considered meaningful only if all of the following are true:

1. The value is at least as great as the minimum value considered by the program to be meaningful. (Original version of program uses minimum values of 0.50 volts, 0.10 volts, 0 volts, and 0 volts for high voltage, calibrate-loop-threshold voltage, logarithmic count rate voltage, and temperature voltage, respectively.
2. Subcom count in f3 status field is appropriate.
3. Subcom-in-sync condition is indicated in f3 status field.
4. Subcom word does not contain a fill flag.
5. Fill frame is not indicated in f1 status field.

If no meaningful subcom words are detected, no value is printed.

Parameters 16, 17. At the time the PAP summary is prepared for printing, the program indicates (in parameters 16, 17) the results of its most recent attempts to interpret the corresponding subcom words. Meaningless values are recorded as zeros. (See discussion of meaningful subcom words under parameters 12-15, above.) Zero values are not printed.

Parameter 18. Only flag codes A-V are used.

Parameter 19. Guard count ratios are computed only if both dividend (1-3 coincidence counts) and divisor (2-4 coincidence counts) exceed 99.

?GO-F-18 IN-FLIGHT CALIBRATION LISTINGS. DR. JOHN A. LOCKWOOD, UNIV...

RUNNO=9817. RUNTIME=69,262,19,19. SELTAPE=OFS004 . SORTAPE=OFS002 .

RUNPARAM=(ERRSCREEN=(.?..E..HI..L..OPQ........ZZ...67),BAP= 2.304 SEC,HVMIN=250,HVDEL= 2,CLTV... , ...
CPRANGES=(100, 200, 500,1000,4000),TNRANGES=(6, 10, 20, 50, 100)).

****

AJFID=(1,AP4486). MINFID=(NO. 3,PB, 8KB,TIMESPAN=(23H15M47S JUN 11,1970 TO 22H44M32S JUN 11,1970)).

DDD	HH	MM	MSECS	TOTCP	CG13	CG24	TOTN	GATN	S1	S2	S3	S4	HV	CL	LCR	TEM	(.....ERROR FLAGS .....)		LE
527	22	4	38124	439	2	148	148	17					298	138	178	320	A	S	1
527	22	4	38700	494	148	148	148	16				1	298	138	178	320	A	S	2
527	22	4	39332	488	150	148	148	16	1			1	298	138	178	320	A	S	3
527	22	4	39908	496	148	148	148	16		1			298	138	178	320	A	S	4
527	22	4	40476	481	148	148	142	15		1	2		298	138	178	320	A	S	5
527	22	4	41052	490	150	114	132	16			1		298	138	178	320	A	S	6
527	22	4	41620	488	146	34	102	11		2	1	1	298	138	178	320	A	S	7
527	22	4	42196	403	146	3	74	7					298	138	178	320	A	S	8
527	22	4	42772	194	82	1	38	3			1		298	138	178	320	A	S	9
527	22	4	43340	66	12		19	2					298	138	178	320	A	S	10
527	22	4	43916	47	2		2						298	138	178	320	A	S	11
527	22	4	44484	48	1								298	136	178	320	A	S	12
527	22	4	45060	44	1								298	136	178	320	A	S	13
527	22	4	45628	49			1						298	136	178	320	A	S	14
527	22	4	46204	43		1							298	136	178	320	A	S	15
527	22	4	46772	48	1								298	136	178	320	A	S	16

FIGURE V.3

V.A.4. In-Flight Calibration listing/displays

When an IFC is detected by OFIRP, the counts in each 4-frame cycle are prepared for eventual printer display. An example of such a display is shown in Figure V.3 (see foldout on facing page). Parameters are numbered to facilitate referencing the parameter meanings described below.

Parameter 1. " 527 22 4 41620"
Meaning: This step of the IFC sequence began at 41.620 seconds past 2204 hours of day 527. The date and time are computed from the day of year and milliseconds of day contained in the first frame of the cycle displayed on this line. Date and time are computed in the same way as parameter 1 of the PAP summaries and are subject to the same errors. (See Section V.A.3.b, parameter 1.)

Parameter 2-10. " 488 146 34 102 11 2 1 1"
Meaning: These are the total counts of each experiment word summed over the 4-frames of the cycle. Each prescaled experiment word (parameters 2-5) is decoded to twice its actual average value and the 4-frame sum is then halved, with odd half-counts lost.
A count of zero is not printed.
The above example can be interpreted as follows:

Parameter	Parameter Name	Value
2	Total charged particles	488
3	1-3 coincidence guard counter	146
4	2-4 coincidence guard counter	34
5	Total neutrons	102
6	Gated neutrons	11
7	Scintillator channel 1 counts	0
8	Scintillator channel 2 counts	2
9	Scintillator channel 3 counts	1
10	Scintillator channel 4 counts	1

Parameters 11-14. "298 138 178 320"
Meaning: These parameters indicate the results of OFIRP's most recent attempts to

interpret the 4 subcom words. Meaningless subcom words are assigned a value of zero and zero values are not printed. (See Section V.A.3.b., parameters 12-15, for description of meaningful subcom words.)
The above example can be interpreted as follows:

Parameter	Parameter Description	Value
11	Most recent main power voltage	2.98 volt
12	Most recent calibrate loop voltage	1.38 volt
13	Most recent logarithmic count rate voltage	1.78 volt
14	Most recent temperature voltage	3.20 volt

Parameter 15. "A S"
Meaning: Conditions indicated by the flag codes "A" and "S" applied to the 4-frame cycle displayed in this line. The meanings of these flags are suggested in Section V.A.5.b. and are described in detail in Section V.A.5.c.

Parameter 16. " 7"
Meaning: This parameter indicates the step number of the IFC sequence. It indicates the position of the cycle of data relative to the first step. Once OFIRP decides an IFC cycle has begun, 64 consecutive frames of data are assumed to be IFC data regardless of other data conditions. Each 4-frame cycle is decoded and displayed provided the experiment word identification bits are correct.
An IFC cycle having incorrect experiment word identification bits is simply not displayed. OFIRP disallows any cycle synchronization during an IFC sequence. However, parameter 16 is incremented whether an IFC step is displayed or not. Thus parameter 16, when displayed, is correct.

```
...-18 ERROR STATUS LISTINGS.                                          DR. JOHN A. LOCKWOOD, UNIVERSITY OF
...NO=   6.  ...TIME=69,270,15,01.   SELTAPE=OFSOL5   .   SORTAPE=OFS)14   .
...PARAM=(ERRSCREEN=(..CDEFGHIJKL.NOPQR.TU............),BAP=   9.216 SEC,HVMIN=204,HVDEL = 2,CLEVAIN=110,CLEV
          COUNTS=( 250,  500,  750,1500,9999),INRANGES=(   7,   14,   21,   28,   35)).
MAJFID=( 1,AGI132   ).  MINFID=(NO. 1,RT,16KB,TIMESPAN=( 6H14M53S JUN  7,1969 TO  6H16M18S JUN  7,1969)).
DDDD HH MM MSECS      .....ERROR  CODES.....
 334   6 15 31587     A C   F HI   LMNO
 334   6 15 32451     A C   F HI   LMNO  RS
 334   6 15 34179
 158   6 15 35519     A C   F H           RS
 158   6 15 40803     A C   F        N    RS
 158   6 15 41567     A C   F             RS
 158   6 15 41955     A     F              S
 158   6 15 43683     A                    S
 158   6 15 55779     A              N     S
 158   6 15 56643     A                    S
 158   6 16  6723     A              N     S
 158   6 16  7587     A                    S
 158   6 16 11043     A     F              S
 158   6 16 13531     A C   F              S
 158   6 16 19319     A C   F   I   LM   Q S
MAJFID=( 1,AGI132   ).  MINFID=(NO. 2,RT,16KB,TIMESPAN=( 6H22M43S JUN  7,1969 TO  6H25M21S JUN  7,1969)).
DDDD HH MM MSECS      .....ERROR  CODES.....
 158   6 22 44164     A C   F
 158   6 22 45604     A C   F              S
 158   6 22 45892     A     F              S
 158   6 22 47620     A              N     S
 158   6 22 49484     A                    S
 158   6 23 41189
 158   6 25 13063     A C                  S
 158   6 25 14791     A C   F              S
 158   6 25 20264
 158   6 14 17282     A C   F              S
 158   6 14 17570     A C   F   I   LM   Q S
MAJFID=( 1,AGI132   ).  MINFID=(NO. 3,RT,16KB,TIMESPAN=( 7H56M 3S JUN  7,1969 TO  7H56M50S JUN  7,1969)).
DDDD HH MM MSECS      .....ERROR  CODES.....
 158   7 56 49978     A C   F
 158   7 56 50266
 158   7 56 54586     A C   F HI   LM    QRS
MAJFID=( 1,AGI132   ).  MINFID=(NO. 4,RT,16KB,TIMESPAN=( 8H 3M16S JUN  7,1969 TO  8H 4M47S JUN  7,1969)).
DDDD HH MM MSECS      .....ERROR  CODES.....
 158   8  3 17046     A C   F
 158   8  3 13486     A C   F              S
 158   8  3 13774     A     F              S
 158   8  3  1502     A                    S
 158   8  4 14071
 158   8  4 41431     A C                  S
```

FIGURE V.4.

V.A.5. Error Status Listings

These listings show all changes that occur in the set of error-flag conditions applying to the Decomm data. Note that Decomm identifiers are printed at the top of each page and at the beginning of each Decomm file. (See Figure V.4, facing page.)

V.A.5.a. Meanings of Error Status Listings

Each line consists of a date and time and the set of flag codes that begin at that time. The flag codes remain in effect until the next line of the listings is printed. The date is computed from the day-of-year in the first frame of the cycle being reported and from the year of data supplied in the Decomm file header record. The time is computed from the milliseconds-of-day given in the first frame of the cycle being reported. The data and time are thus subject to the same errors as described for parameter 1 in Section V.A.3.b.

The interpretations to be given flag codes are suggested below in Section V.A.5.b and are fully described in Section V.A.5.c.

The flag codes reported in the Error status listings are composites of the flags applying to two data cycles which are sequential (in the Decomm input data stream, not necessarily in time). The composite flags are assigned to the second of the two data cycles. The date and time given is from the first frame of the second of the two cycles.

Normally, the flag codes listed represent actual conditions detected by OFIRP. However, if a time-test failure occurs for a cycle, OFIRP removes all flags from the composite flag set for that cycle. (Not all data cycles are subjected to this time test.) As a consequence, the absence of flag codes in a line of the error status listings can indicate one of two things; either the program is detecting flag free data or the program is recovering from a cycle-time-test failure.

V.A.5.b. Flag codes and the conditions they signify.

Condensed list

Code	Condition
A	Any error condition flag
B	Main-power-off flag
C	Main-power-status-is-uncertain flag
D	Rapid change flag for main power
E	Calibrate-loop-voltage-off flag
F	Calibrate-loop-voltage-is-uncertain flag
G	Rapid change flag for calibrate loop voltage
H	Subcom-identification-error flag
I	"Out-of-frame-sync" flag for data cycle
J	Sync-shift flag
K	Frame-sync-word error flag
L	Out-of-subcom-sync flag
M	Flag indicating BOD time disagrees with spacecraft clock
N	Command-in-execution flag
O	Fill-word flag for charged particle and neutron words
P	Fill-word flag for scintillator words
Q	Fill-frame flag
R	Certain warmup delay flag
S	Precautionary warmup delay flag
T	High voltage below user specified minimum
U	Calibrate loop voltage below user specified minimum
V	Not used
W,X,Y,Z,2	Total charged particle rate in user-specified range 2,3,4,5,6, respectively, for charged particles
3,4,5,6,7	Total neutron rate in user-specified neutron range 2,3,4,5,6, respectively

V.A.5.c. Detailed description of flag conditions

Code	Condition
A	This flag is set whenever any of flags B - V are set.
B	This flag bit remains unchanged except during those cycles in which a high-voltage subcom word is supposed to be read out. In such a cycle: 1. the bit remains unchanged if the subcom word is not meaningful; 2. is set to zero (OFF) if all of the following are true: a. The subcom word is meaningful. b. The value of the subcom word is at least as great as the UNH-programmed-minimum. c. The value of the next subcom word value is not known to be below the UNH-programmed minimum. 3. is set to one (ON) if either situation (a) or (b) below occurs.

a. The subcom word is meaningful but below programmed minimum.
b. The subcom word is meaningful and at least as much as the programmed minimum. However, the next subcom word is meaningful but below the programmed minimum.

(Note: 50 mv is the programmed minimum high voltage reading in the initial working version of the program.)

C This flag bit remains unchanged except during those cycles in which a high voltage subcom word is supposed to be read out. In such a cycle, this bit is set to one (ON) if either:
1. The subcom word is not meaningful;
2. The next subcom word is not meaningful (or does not exist).

Otherwise this bit is set to zero (OFF).

D The setting of this bit is not changed except during those cycles in which a high voltage subcom word is supposed to occur. In such a cycle this bit is set to 1 (ON) if all of the following are true:
1. The subcom word is meaningful and the value in the word is above the programmed minimum;
2. The next high voltage subcom word is also meaningful and the word value is also above the programmed minimum;
3. The difference in the two high voltage readings exceeds the user-specified maximum allowable change.

If any of the above are false, the bit is set to zero.

E. The setting of this bit is not changed except during those cycles in which a calibrate loop threshold voltage subcom word is supposed to occur. In such a cycle, the bit is
1. Not changed if the subcom word is not meaningful;
2. Set to one (ON) if the subcom word is meaningful but the word value is below the programmed minimum;
3. Set to one (ON) if all of the following are true:
   a. The subcom word is meaningful and its value is above the programmed minimum;
   b. The next scheduled calibrate-loop-voltage subcom word is meaningful;
   c. The next scheduled calibrate-loop-voltage subcom word value is below the programmed minimum.

(Note: 10 mv is the programmed minimum for the initial working version of the program.)

4. Set to zero (OFF) if the present word and the next scheduled word are each both meaningful and above the programmed minimum.

F The setting of this bit is not changed except during those cycles in which a calibrate-loop-voltage subcom word is supposed to occur. In such a cycle, the bit is
1. Set to one (ON) if the word is not meaningful;
2. Set to one (ON) if the word is meaningful but the word value is below the programmed minimum;
3. Set to zero (OFF) if neither of the above two conditions exists.

G The setting of this bit is not changed except during those cycles in which a calibrate-loop-voltage subcom word is supposed to occur. In such a cycle, the bit is set to one (ON) only if all of the following are true:
1. The subcom word is meaningful and the word value is above the programmed minimum;
2. The next scheduled calibrate-loop-voltage subcom word is also meaningful and the word value is also above the programmed minimum;
3. The difference between the two word values exceeds the user-specified maximum allowable change.

If any of the above are false, the bit is set to zero (OFF).

H The setting of this bit is not changed except during those cycles in which a subcom word is scheduled to appear. In such a cycle the bit is
1. Set to one (ON) if the subcom word in the cycle has a subcom count (identification number provided by NASA's computer program) different from the value that should appear.
2. Set to zero (OFF) if all subcom words in the current input block have correct subcom counts assigned and if also the most recent occurrences of other subcom words had correct subcom counts assigned.
   (Note: This condition allows premature zeroing of bit.)
3. Is otherwise left unchanged.

I This bit is updated each cycle. The bit is
1. Set to zero (OFF) if all four frames in the cycle have been flagged by NASA's editing programs as being "in-frame-sync".
2. Is set to one (ON) if any of the four frames is flagged as being "not in-frame-sync."

J This bit is updated each cycle. The bit is
1. Set to zero (OFF) if none of the four frames of the cycle has been flagged by NASA's editing program to indicate a shift to find frame synchronization.
2. Set to one (ON) if any of the four frames has been so flagged.

K This bit is updated each cycle. The bit is
1. Set to zero (OFF) if none of the four frames of the cycle has been flagged by NASA's editing program to indicate errors in the frame sync words.
2. Set to one (ON) if any of the four frames has been so flagged.

L This bit is updated each cycle. The bit is
1. Set to zero (OFF) if all of the four frames of the cycle have been flagged by NASA's editing program as being "in-subcom-sync."
2. Set to one (ON) if any of the four frames was not so flagged.

M — This bit is updated each cycle. The bit is
1. Set to zero (OFF) if none of the four frames of the cycle were flagged by NASA's editing program as having a BCD time which disagrees with the spacecraft clock.
2. Set to one (ON) if any of the four frames is so flagged.

N — This bit is updated each cycle. The bit is
1. Set to zero (OFF) if none of the four frames of the cycle contain an indication (in SC word #64) that a command was received or was executed within the last three cycles.
2. Set to one (ON) if any of the four frames contains such an indication.

O — This bit is updated each cycle. The bit is
1. Set to zero (OFF) if, during the cycle, none of the charged-particle-count words and none of the neutron-count words were fill words.
2. Set to zero (OFF) if any of the four frames of the cycle are flagged by NASA's editing program as being filler frames.
3. Set to one (ON) if none of the four frames are fill frames and at least one of the charged-particle words or neutron words are fill words.

P — This bit is updated each cycle. The bit is
1. Set to zero (OFF) if, during the cycle, neither of the scintillator words has a fill flag.
2. Set to zero (OFF) if any of the four frames of the cycle is flagged by NASA's editing program as being a fill frame.
3. Set to one (ON) if none of the four frames is a fill frame and if at least one of the scintillator words is a fill word.

Q — This bit is updated each cycle. The bit is
1. Set to zero (OFF) if none of the four frames of the cycle are flagged by NASA's editing program as being a fill frame.
2. Set to one (ON) if any of the four frames is so flagged.

R — This bit is not changed except during those cycles when a high-voltage subcom word is supposed to appear. In such a cycle the bit is
1. Set to one (ON) if, sometime during the last 55 seconds, the high voltage reading was below the programmed minimum. (Time is not checked. The previous consecutive subcom sequences for 55 seconds of data are used to determine the setting of this bit.)
2. Set to zero(OFF) if no such below-minimum high voltage reading can be detected from the data.

S — This bit is not changed except during those cycles when a high-voltage subcom word is supposed to appear. In such a cycle the bit is

1. Set to one (ON) if, sometime during the last 55 seconds of the data, one of the high voltage readings is either
   a. below programmed minimum
   b. not meaningful
   c. non-existent

(Time is not checked. Subcom sequences are counted for 55 seconds worth of data.)

2. Set to zero (OFF) if, for the last 55 seconds of data, all of the high-voltage subcom words have been present, meaningful, and above programmed minimum.

T — This bit is not changed except during those cycles when a high-voltage subcom word is supposed to appear. In such a cycle the bit is

1. Left unchanged if the subcom word is not meaningful.
2. Set to zero (OFF) if the subcom word is meaningful and its value is above the user-specified minimum.
3. Set to one (ON) if the subcom word is meaningful but is below the user-specified minimum.

U — This bit is not changed except during those cycles in which a calibrate-loop-voltage subcom word is supposed to appear. In such a cycle the bit is

1. Left unchanged if the subcom word is not meaningful.
2. Set to zero (OFF) if the subcom word is meaningful and its value is above the user-specified minimum.
3. Set to one (ON) if the subcom word is meaningful but its value is below the user-specified minimum.

V — This bit is not used. It is set to zero at all times.

W — This bit is set to one only for cycles of processible data in which the total charged particle rate is in user-specified Range #2.

X — This bit is set one only for cycles of processible data in which the total charged particle rate is in user-specified Range #3.

Y — This bit is set to 1 only for cycles of processible data in which the total charged particle rate is in user-specified Range #4.

Z — This bit is set to 1 only for cycles of processible data in which the total charged particle rate is in user-specified Range #5.

2	This bit is set to 1 only for cycles of processible data in which the total charged particle rate is in user-specified Range #6.
3	This bit is set to 1 only for cycles of processible data in which the total neutron rate is in user-specified neutron range #2.
4	This bit is set to 1 only for cycles of processible data in which the total neutron rate is in user-specified neutron range #3.
5	This bit is set to 1 only for cycles of processible data in which the total neutron rate is in user-specified neutron range #4.
6	This bit is set to 1 only for cycles of processible data in which the total neutron rate is in user-specified neutron range #5.
7	This bit is set to 1 only for cycles of processible data in which the total neutron rate is in user-specified neutron range #6.

[illegible]-13 FILE SUMMARIES. DR. JOHN A. LOCKWOOD, UNIVERSITY OF [illegible]

[illegible]= 6. SUNTIME=69,279,14,01. SELTAPE=DFS015 . SORTAPE=DFS014 .
[illegible]=([illegible]=(..[illegible],[illegible].TH...........),3AP= 9.216 SEC,HV[illegible]=294,HVDEL= 2,[illegible],[illegible]
[illegible]=(250, [illegible], 750,1500,9999),TNRANGES=(7, 14, 21, 28, 35)).

[illegible]-TIME			FIL ID		HIGH VOLTAGE				CALIBRATE LOOP				LOG COUNT RATE				TEMPERATURE				COINCIDENCE GUARD RATIO			
[illegible]	DY	HRM	TN	CN	AVG	HI	LOW	MCH	AVG	HI	LOW	MCH	AVG	HI	LOW	MCH	AVG	HI	LOW	MCH	AVG	HI	LOW	TOTAL
[illegible]	7	614	1,	1	298	298	298	0	156	156	154	2	300	302	296	4	322	324	322	2	1.238	1.238	1.236	1.238
[illegible]	7	622	1,	2	298	298	298	0	152	154	150	2	268	282	258	12	323	324	322	2	1.891	2.062	1.733	1.871
[illegible]	7	756	1,	3																				
[illegible]	7	8 3	1,	4	298	298	298	0	151	152	150	2	234	236	234	2	322	322	320	2	4.452	4.500	4.404	4.463
[illegible]	7	9 4	1,	5	298	298	298	0	146	146	146	0	254	274	238	12	320	320	320	0	1.194	1.194	1.194	1.194
[illegible]	7	9 9	1,	6	298	298	298	0	145	148	90	6	219	290	176	16	320	320	320	0	1.393	1.583	1.292	1.455
[illegible]	7	1136	1,	7	298	298	298	0	144	156	128	4	365	390	314	10	320	320	320	0	1.156	1.156	1.156	1.159
[illegible]	7	1145	1,	8	298	298	298	0	154	154	154	0	193	198	138	2	320	320	320	0				
[illegible]	7	1150	1,	9	298	298	298	0	153	156	152	2	230	298	172	12	320	320	320	0	.886	1.042	.730	.807
[illegible]	7	13 7	1,	10	298	298	298	0	150	152	150	2	239	240	236	4	320	322	320	2	1.059	1.092	.996	1.045
[illegible]	7	1410	1,	12	298	298	298	0	149	14[illegible]	148	0	220	230	214	4	320	32[illegible]	32[illegible]	0				

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FIGURE V.5

V.A.6. File Summaries

For each Decomm file processed, OFIRP prints a one-line summary of subcom word values, coincidence guard ratios, and scintillator counting rates. A sample file summary is shown in Figure V.5, facing page. The different parameters in Figure V.5 are numbered to assist in referencing the parameter meanings below.

V.A.6.a. File identifiers - Parameters 1-4

The file identifiers are taken from the Decomm identifier line prepared for the file being reported. Consequently these identifiers have the same degree of accuracy as is described in Section V.A.2.b. for parameters 13, 15, 18.

Parameter 1. Month and day of the begin time of data for the Decomm file.

Parameter 2. Hours and minutes of the begin time of data for the Decomm file.

Parameter 3. The sequence number of the Decomm tape within the set of tapes processed in this use of OFIRP.

Parameter 4. The sequence number of the Decomm file within the tape.

V.A.6.b. Subcom word summaries - Parameters 5-20

A subcon word value is chosen for inclusion in these summaries only if the word is meaningful and the word is found in a cycle of accumulatable data. The reader is reminded that an accumulatable data cycle is considered by OFIRP to be a candidate for user selection because the cycle has met OFIRP's minimum requirements. Thus the subcom values included in the file summaries are taken from data cycles meeting minimum program requirements, but not necessarily meeting user requirements.

In addition, each subcom word included in these file summaries must be "meaningful." A subcom word is "meaningful" only if all of the following are true:

1. The value is at least as great as the minimum value considered by the program to be meaningful. (The original version of

OFIRP uses 0.50 volts, 0.10 volts, 0.0 volts, and 0.0 volts as least meaningful values for high voltage, calibrate loop threshold voltage, logarithmic count rate voltage, and temperature voltage, respectively.)

2. Subcom count in f3 status field is appropriate.

3. Subcom-in-sync condition is indicated in f3 status field.

4. Subcom word does not contain a fill flag.

5. Fill frame is not indicated in f1 status field.

For each subcom word chosen for inclusion in these summaries, a subcom value change is computed by comparing the present subcom word value with the last meaningful subcom word. The comparison is considered valid only if the times (given in the frames containing the two subcom word values) are found to differ by one subcom sequence. For valid comparisons, the subcom value change is the unsigned difference of the two subcom words. For invalid comparisons, the subcom value change is zero. The largest subcom value change is reported in the file summaries.

The identification of parameters 5-20 is as follows (all values are in hundredths of volts):

Parameter	Identification
5	Average high voltage value.
6	Greatest high voltage value.
7	Least high voltage value.
8	Maximum value change in consecutive high voltage.
9	Average calibrate-loop-threshold voltage.
10	Greatest calibrate-loop-threshold voltage.
11	Least calibrate-loop-threshold voltage.
12	Maximum value change in consecutive calibrate-loop-threshold voltages.
13	Average logarithmic counting rate.
14	Greatest logarithmic counting rate.
15	Least logarithmic counting rate.
16	Maximum change in consecutive logarithmic counting rates.
17	Average temperature indication.
18	Greatest temperature indication.
19	Least temperature indication.
20	Maximum change in consecutive temperature indicators.

V.A.6.c. Coincidence Guard Ratio Summaries - Parameters 21-2

Parameters 21-23 summarize the coincidence guard ratios computed and printed in the accumulated data listings as described under parameter 19 in Sections V.A.3.a. and V.A.3.b.

Parameter 21 - The average of the ratios computed.

Parameter 22 - The greatest ratio computed.

Parameter 23 - The least ratio computed.

Parameter 24 is the ratio of the total 1-3 coincidence guard counts to the total 2-4 coincidence guard counts for all cycles of data in the Decomm file that are selected by the user. However, Parameter 24 is not computed if no guard ratios were computed and printed in the accumulated data listings for the Decomm file being reported.

V.A.6.d. Scintillator rates - Parameters 25-28

Parameters 25, 26, 27, and 28 show average counting rates, in counts per second, for scintillator channels 1, 2, 3, and 4, respectively. The total counts for each channel for all user selected data cycles are divided by the total counting time obtained by multiplying the number of selected data cycles by the cycle time appropriate to the bit rate.

[illegible]-13 DATA QUALITY SUMMARIES. DR. JOHN A. LOCKWOOD, UNIVERSITY

[illegible] 6. [illegible]=69, 77, 16, 01. SELTAPE=OFS015 . SORTAPE=OFS014 .

[illegible]=([illegible]=(, ,[illegible] . [illegible] . [illegible]...............), BAP= 9.216 SEC, HV[illegible]=204, HVDEL= 2, CL[illegible]

(C[illegible]=(250, 500, 750, 1500, 3000), INRANGES=(7, 14, 21, 28, 35)).

[illegible]=(1, AGI132). [illegible]=(N?. 9, RT, 64K8, TIMESPAN=(11H5[illegible]S JUN 7,1969 TO 11H53[illegible]S JUN 7,1969)).

[illegible] [illegible] [illegible] 1 [illegible] [illegible] 153 42600) YYYYYY YNNYNN YNNYYY YYYYYY YYN[illegible] 1.[illegible] 7 1

MINOR FILE EXTENT...DATA=(3066CYS, 3.5[illegible]MIN, 99.34PC), FILL=(2CYS, .0[illegible]MIN, .07PC), NACC=([illegible]

ERROR CODES	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
CYCLES	797	0	31	0	0	31	0	0	2	0	3	2	2	0	0	
PERCENT	25.96	.00	1.01	.00	.00	1.01	.00	.00	.07	.00	.10	.07	.07	.00	.00	.0

ERROR CODES	T	U	SEL	REJ
CYCLES	0	0	3030	36
PERCENT	.00	.00	98.66	1.17

MAJFID=(1, AGI132). MINFID=(NO. 10, RT, 16K8, TIMESPAN=(13H 7M 3S JUN 7,1969 TO 13H11M41S JUN 7,1969)).

69511 69 19 01 23 1 00028 187 1 158 47223 0 YYYYYN YNNYNN YNNYYY YYYYYY YYNNNN NNNNNN 1 11 1

MINOR FILE EXTENT...DATA=(923CYS, 4.45MIN, 93.64PC), FILL=(27CYS, .13MIN, 2.72PC), NACC=([illegible]

ERROR CODES	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
CYCLES	257	0	63	0	0	63	0	0	27	4	4	27	27	2	0	
PERCENT	25.93	.00	6.36	.00	.00	6.36	.00	.00	2.72	.40	.40	2.72	2.72	.20	.00	.0

ERROR CODES	T	U	SEL	REJ
CYCLES	0	0	879	49
PERCENT	.00	.00	88.70	4.94

MAJFID=(1, AGI132). MINFID=(NO. 12, RT, 64K8, TIMESPAN=(14H19M13S JUN 7,1969 TO 14H19M46S JUN 7,1969)).

69511 69 22 04 12 1 00028 201 2 158 51553 0 YYYYYN YNNYNN YNNYYY YYYYYY YYNNNN NNNNNN 1 91 1

MINOR FILE EXTENT...DATA=(454CYS, .54MIN, 94.58PC), FILL=(24CYS, .03MIN, 5.00PC), NACC=(2[illegible]

ERROR CODES	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
CYCLES	479	0	33	0	0	65	0	0	24	0	0	24	24	0	0	
PERCENT	99.79	.00	6.88	.00	.00	13.54	.00	.00	5.00	.00	.00	5.00	5.00	.00	.00	.0

ERROR CODES	T	U	SEL	REJ
CYCLES	0	0	414	40
PERCENT	.00	.00	86.25	8.33

1 2 3 4 5 6 8 9 10 11 12

FIGURE V.6.

V.A.7. Data Quality Summaries

V.A.7.a. For each Decomm file processed a summary of the extent of the data and of the frequency of each error condition is printed. Also included in this summary is a one-line display of part of the Decomm file header record.

Sample data quality summaries are shown in Figure V.6. (See foldout on facing page.) Note that the first line of each summary consists of the Decomm identifiers described in Section V.A.2. The second line contains a partial display of the Decomm file header record, while the third line describes the extent of the Decomm file. The remaining 6 lines provide a summary of the extent to which various conditions were detected by the program.

Groupings of parameters in Figure V.6 are numbered for ease in referencing the parameter descriptions below.

V.A.7.b. Partial display of Decomm header record - Parameter groups 1-4

The format of the Decomm file header records is given on page 54 of the OGO-F Data-Processing Plan (X-565-69-157), March 1969, Goddard Space Flight Center. This page has been included in this report and is shown below in Section V.A.7.c. The reader should consult this format to identify individual parameters within parameter groups 1-4 shown in Figure V.6.

Parameter group 1 - characters 1-32 of Decomm file header record.

Parameter group 2 - characters 67-82 of Decomm file header record.

Parameter group 3 - expanded bit-by-bit display of characters 83-88 of Decomm file header record.

Parameter group 4 - characters 89-120 of Decomm file header record.

Each of the characters in parameter groups 1, 2, and 4 are assumed by the program to be one of the octal BCD tape codes shown in the table in

Section V.A.7.d. Each input character matching one of the listed octal codes is replaced by the corresponding character code. Invalid characters, should any occur, are replaced by blanks.

Each of characters 83-88 of the Decomm file header record is assumed to be a 6 bit binary word. Each bit is represented in parameter group 3 by a "Y" for "0" and by an "N" for "1". The lowest order bit becomes the rightmost character in the expanded display. The effect of the expanded display is to show, in groups of 6, which experiments are on during the time spanned by the Decomm file. Indicators are shown in order of experiment numbers, with experiment #1 shown on the extreme left and (the non-existent) experiment #36 shown on the extreme right.

Character	Representation
1 - 5 + Space	Satellite universal ID
7 - 8 + Space	Year
10 - 12 + Space	Station number
14 - 15 + Space	Analog file number
17 - 20 + Space	Analog tape number
22 + Space	Time correction (1 = Yes, 0 = No)
24 - 28 + Space	Orbit number
30 - 32 + Space	Date of digitization (day of year)
34 - 66	Blank
67 + Space	Data Type 0 = 8 kb real time 1 = 16 kb real time 2 = 64 kb real time 3 = command storage playback
69 - 71 + Space	Day of year } Start time of data
73 - 77 + Space	Seconds of day }
79 + Space	Flex format in use (1 = Yes, 0 = No)
81 - 82	Flex format number
83 - 88	Experimenter ON/OFF status (1 = Off, 0 = On)
89 + Space	Equipment group
91 - 94 + Space	Master binary tape number
96 - 97 + Space	Master binary file number
99 - 100 + Space	A/D line operator ID
102 - 103	A/D line ID
104 - 106 + Space	Day of year } Stop time of data
108 - 112 + Space	Seconds of day }
114 - 115	Decom reel sequence number
116 - 118	Decom run number
119 - 120	Experiment number
121 - 124	Group number of time fit
125 - 126	Line number of time fit
127 - 132	First line time used in time fit
133 - 138	Last line time used in time fit
139 - 144	C_0, coefficient of time fit, floating point (7094 format)*
145 - 150	C_1, coefficient of time fit, floating point (7094 format)
151 - 156	C_2, coefficient of time fit, floating point (7094 format)
157 - 162	C_3, coefficient of time fit, floating point (7094 format)
163 - 168	C_4, coefficient of time fit, floating point (7094 format)
169 - 174	C_5, coefficient of time fit, floating point (7094 format)
175 - 228	Coefficients of 2nd time fit when used (same format as 54 previous characters)
229 - 282	Coefficients of 3rd time fit when used (same format as 54 previous characters)
283 - 336	Coefficients of 4th time fit when used (same format as 54 previous characters)
337 - 390	Coefficients of 5th time fit when used (same format as 54 previous characters)

*Corrected time = $C_0 + C_1X + C_2X^2 + C_3X^3 + C_4X^4 + C_5X^5$

where X = spacecraft clock

The file label will have a density of 556 bpi and odd parity. Label will be BCD except as noted.

Figure 32. Format of an Experimenter Tape File Label

CHARACTER	CARD	BCD TAPE	STORAGE	CHARACTER	CARD	BCD TAPE	STORAGE	CHARACTER	CARD	BCD TAPE	STORAGE	CHARACTER	CARD	BCD TAPE	STORAGE
1	1	01	01	A	12 1	61	21	J	11 1	41	41	/	0 1	21	61
2	2	02	02	B	12 2	62	22	K	11 2	42	42	S	0 2	22	62
3	3	03	03	C	12 3	63	23	L	11 3	43	43	T	0 3	23	63
4	4	04	04	D	12 4	64	24	M	11 4	44	44	U	0 4	24	64
5	5	05	05	E	12 5	65	25	N	11 5	45	45	V	0 5	25	65
6	6	06	06	F	12 6	66	26	O	11 6	46	46	W	0 6	26	66
7	7	07	07	G	12 7	67	27	P	11 7	47	47	X	0 7	27	67
8	8	10	10	H	12 8	70	30	Q	11 8	50	50	Y	0 8	30	70
9	9	11	11	I	12 9	71	31	R	11 9	51	51	Z	0 9	31	71
blank	blank	20	60	+	12	60	20	-	11	40	40	0	0	12	00
=	8-3	13	13	.	12 8-3	73	33	$	11 8-3	53	53	,	0 8-3	33	73
-	8-4	14	14	)	12 8-4	74	34	*	11 8-4	54	54	(	0 8-4	34	74

NOTE: There are two - signs. Only the 11-punch minus sign can be used in FORTRAN source program cards. Either minus sign may be used in input data to the object program; object program output uses the 11-punch minus sign.

The character $ can be used in FORTRAN only as Hollerith text in a FORMAT statement.

V.A.7.e. Decomm file extent - Parameter groups 5-7

Each four-frame cycle of data is classified by OFIRP as either "DATA" or "NACC" (not accumulatable). A cycle is classified as "DATA" provided it meets OFIRP's minimum requirements for becoming a candidate for inclusion in the user-selected data. IFC cycles are not classified as "DATA".

A few frames are excluded from this report. Frames are ignored when OFIRP shifts cycle boundaries forward to synchronize with experiment word ID bits. Such a shift usually leaves a partial cycle at the end of each Decomm file. The frames in such a partial cycle are also ignored. Otherwise every frame in the input file is included in the file-extent report. This total frame count is the base from which all percentages are computed for parameter groups 5-12.

Parameter group 5. The quantity of "DATA" is expressed as a number of four-frame cycles, as a number of minutes of counting time, and as a percentage of the total data in the Decomm file. As indicated above, cycles are classified as "DATA" if minimum program requirements are met.

Parameter group 6. The quantity of "FILL" frames supplied by NASA's programs is approximated by parameter group 6. Any cycle in which at least 1 of 4 frames is a filler frame is classified as a "FILL" cycle. The quantity of such cycles is given by count, by counting time spanned, and by percent of the total Decomm file.

Parameter group 7. As indicated above, any cycle not classified as "DATA" is classified as "NACC" (for "not accumulatable"). This classification includes cycles classified as "FILL" and all cycles occurring in an IFC sequence. The extent of non-accumulatable data is expressed by cycle count, by counting time spanned, and as a percentage of the total input Decomm file.

V.A.7.f. Condition extents - Parameter groups 8-12

Each condition extent is represented by a condition identifier, the count of the cycles to which the condition applies, and the percentage of the Decomm file to which the condition applies. Parameter group 8 shown in Figure V.6 can be used to illustrate this as follows: the condition identified by "A" applied to 479 cycles, said cycles being 99.79 percent of the entire input Decomm file.

Parameter group 8. The identifier "A" indicates the condition represented by flag code A as described in Sections V.A.5.b. and V.A.5.c. The complement of the percentage given in parameter group 8 is of interest in that it indicates the portion of the Decomm file for which either

1. A time test error occurred;
2. The data was free of all error conditions.

Hopefully the first of these possibilities happens only a minute fraction of the time.

Parameter group 9. Each condition identifier indicates the corresponding flag code condition as described in Sections V.A.5.b. and V.A.5.c.

Parameter group 10. The identifier "SEL" indicates data selected by the user.

Parameter group 11. The identifier "REJ" indicates data cycles which meet minimum program requirements but which do not meet user requirements. Note that the sum of extents indicated in parameter groups 10 and 11 is given in parameter group 4.

Parameter group 12. Same as for parameter group 9.

D-22042
6/07/69 – 9/30/69

```
$END DO
$ASS IN MS2 SI TY
$EXEC DPHEX BS  VOL1OGSUM10   HDR1OGSUM1 OGSUM10UU1 0001 73313 0000000000
 INPUT TAPE ON MS2 J. LOCKWOOD   1HDR2F00980000S820A0123936/COPY B
 DATA INPUT    11 2 2
  FILE  1      RECORD  1      LENGTH   80  BYTES
  (    0)  E5D6D3F1  D6C7E2E4  D4F1F040  40404040  40404040  40404040  40404040  40404040  40404040  40404040
  (   40)  40D14BD3  D6C3D2ED  D6D6C440  40404040  40404040  40404040  40404040  40404040  40404040  40404040
  FILE  1      RECORD  2      LENGTH   80  BYTES
  (    0)  C8C4D9F1  D6C7E2E4  D4F14040  40404040  40404040  40D6C7E2  E4D4F1F0  F0F0F1F0  F0F0F140  40404040
  (   40)  4040F7F3  F3F1F340  F0F0F0F0  F0F0F0F0  F0F0F0F0  00000000  00000000  00000000  00404040  40404040
  FILE  1      RECORD  3      LENGTH   80  BYTES
  (    0)  C8C4D9F2  C6F0F0F8  F8F0F0F0  F0F8F8F2  F0C1F0F1  F2F3F9F3  F661C3D6  D7E84040  40404040  4040C240
  (   40)  40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040
FILE    1      # OF DATA RECORDS   3      # SUCCESSFUL READS  4
        # PERMANENT READ ERRORS   0      # ZERO BYTE ERRORS  0      # SHORT RECORDS  0      # UNDEFINED ERRORS  0
          # OF RECORDS RETRIED    0      TOTAL # OF RETRIES  0
  FILE  2      RECORD  1      LENGTH   880  BYTES
  (    0)  0000009E  00000004  00000028  00000005  E2404040  42401FB8  432EC402  00000071  00000000  00000002
  (   40)  00000000  00000003  0000001F  000732A0  00002394  0000360E  423CABC8  C283EA95  0000019E  00000018
  (   80)  0000012A  C7404040  0000009E  00000004  00000029  00000001  E2404040  42438EC0  432D7AD2  00000068
  (  120)  00000000  00000000  00000000  00000002  00000032  00005B99  00000421  00000544  4240067A  C281DF95
  (  160)  00000102  0000007C  0000012A  40404040  0000009E  00000004  0000002D  00000039  E2404040  425472FD
  (  200)  43270764  00000067  00000000  00000002  00000000  00000002  00000042  000051B9  000004BA  0000045C
  (  240)  424F8908  C2613024  000000F0  00000098  0000012A  40404040  0000009E  00000004  0000002F  00000013
  (  280)  E2404040  42561845  4325B533  00000064  00000000  00000002  00000000  00000002  0000003B  00004E15
  (  320)  000004C0  0000045E  42515B6A  C24C3365  000000ED  0000009A  0000012A  C7404040  0000009E  00000004
  (  360)  00000030  00000018  E2404040  42541D20  4323FB9E  00000060  00000002  00000001  00000001  00000001
  (  400)  00000040  00004E83  00000492  00000416  42518125  C229482B  000000ED  0000009A  0000012A  C7404040
  (  440)  0000009E  00000004  00000031  00000013  E2404040  42511AA2  4322E4AB  00000067  00000001  00000000
  (  480)  00000001  00000003  0000003E  00005115  000004E0  0000041C  424FE8B5  C2162B28  000000F0  0000009A
  (  520)  0000012A  40404040  0000009E  00000004  00000032  0000002A  E2404040  424CFEB2  432195DB  00000070
  (  560)  00000000  00000002  00000000  00000002  00000045  0000548A  00000486  00000418  424CCD55  C170554D
  (  600)  000000F2  0000009C  0000012A  C7404040  0000009E  00000004  00000033  0000002F  E2404040  4248AA8A
  (  640)  43204DAC  00000067  00000000  00000000  00000001  00000001  0000003E  0000549E  00000500  000003E3
  (  680)  424914CD  413003EA  000000F2  0000009C  0000012A  C7404040  0000009E  00000004  00000034  0000002A
  (  720)  E2404040  4244BBFA  431F3A4B  00000053  00000000  00000002  00000001  00000001  00000032  00007AD9
  (  760)  00000532  00000427  424571DD  4185C948  000000F6  0000009C  0000012A  40404040  0000009E  00000004
  (  800)  00000035  00000025  E2404040  42413F8A  431E564A  00000064  00000001  00000000  00000001  00000000
  (  840)  0000002C  00039BB4  00000664  0000049B  424220C5  41BAC585  00000152  0000009A  0000012A  40404040
  FILE  2      RECORD  2      LENGTH   880  BYTES
  (    0)  0000009E  00000004  00000036  00000021  E2404040  423DBCB8  431D8066  00000054  00000000  00000000
  (   40)  00000001  00000000  00000037  0000C24C  0000057B  000003EF  423EBBE2  41E272CA  0000012C  0000009C
  (   80)  0000012A  40404040  0000009E  00000004  00000037  0000001C  E2404040  423A348D  431CB98B  00000057
  (  120)  00000000  00000001  00000002  00000002  00000035  00005475  0000053D  000003A1  423B48CA  42101310
  (  160)  000000FA  0000009C  0000012A  40404040  0000009E  00000004  00000038  00000017  E2404040  4236A7A2
  (  200)  431C02E4  0000004C  00000001  00000000  00000001  00000001  0000002C  00003C80  000004B8  0000034D
  (  240)  4237CAC0  42119932  000000E4  0000009C  0000012A  40404040  0000009E  00000004  00000039  0000001C
  (  280)  E2404040  4232B0CA  431B4C92  00000050  00000000  00000000  00000003  00000001  0000002C  00003179
  (  320)  000003F4  0000027F  4233DF22  4212F3F0  000000DA  0000009C  0000012A  C7404040  0000009E  00000004
  (  360)  0000003A  00000033  E2404040  422E826D  431AA512  00000032  00000002  00000000  00000001  00000000
  (  400)  00000027  00002691  000002F9  000001FE  422FB865  42141AAD  000000D1  0000009C  0000012A  C7404040
  (  440)  0000009E  00000004  0000003B  00000037  E2404040  4228E8F0  4319ECFB  00000027  00000000  00000000
  (  480)  00000001  00000000  0000001B  00001BCE  000001F2  00000150  422A245B  42155580  000000C4  0000009C
  (  520)  0000012A  C7404040  0000009E  00000005  00000000  00000032  E2404040  42254C06  431990E6  0000001C
  (  560)  00000000  00000000  00000000  00000000  00000011  00001797  00001B1  00000103  422688BC  4215FB11
  (  600)  000000BE  0000009C  0000012A  40404040  0000009E  00000005  00000001  0000002E  E2404040  4221AD08
  (  640)  4319498F  0000001C  00000000  00000000  00000000  00000001  00000016  0000136C  00000147  000000D0
  (  680)  4222E9C5  42168B7E  000000B6  0000009C  0000012A  40404040  0000009E  00000005  00000002  00000029
  (  720)  E2404040  421E0C5A  431917CE  00000012  00000000  00000000  00000001  00000000  0000000D  00001060
  (  760)  00000130  0000008F  421F4817  42170AB3  000000B1  0000009C  0000012A  40404040  0000009E  00000005
  (  800)  00000003  00000024  E2404040  421A6A73  4318FBC7  0000000C  00000000  00000000  00000000  00000000
  (  840)  00000008  00000F37  0000010A  0000009E  421BA45D  42177C43  000000AE  0000009C  0000012A  40404040
```

```
FILE  2      RECORD    2304    LENGTH    880  BYTES
(     0)  00000085  00000016  00000007  00000026  E2404040  C22A3DF1  433DE372  00000023  00000000  00000000
(    40)  00000001  00000000  00000012  000058CD  00000324  000001D7  C2340FED  C2687C65  000000F7  0000007C
(    80)  0000012A  40404040  000000B5  00000016  00000008  0000002B  E2404040  C226A360  433CB428  00000025
(   120)  00000000  00000000  00000000  00000000  00000019  00002D2B  000002BA  00000194  C23082CD  C26783BA
(   160)  000000DB  0000007C  0000012A  C7404040  000000B5  00000016  00000009  00000026  E2404040  C2238824
(   200)  433BA358  00000017  00000001  00000000  00000000  00000000  00000010  0000235F  0000024B  0000015A
(   240)  C22D7108  C266CEFA  000000D0  0000007C  0000012A  40404040  000000B5  00000016  0000000A  00000021
(   280)  E2404040  C22C6896  433A8785  00000017  00000000  00000000  00000001  00000000  0000000F  000020E1
(   320)  0000020C  00000116  C22A596E  C2663232  000000CC  0000007C  0000012A  40404040  000000B5  00000016
(   360)  0000000B  00000026  E2404040  C21CD473  433937EA  0000001E  00000001  00000000  00000000  00000000
(   400)  00000011  0000227D  000001F6  000000F2  C226CCD8  C2659760  000000CE  0000007C  0000012A  C7404040
(   440)  00000085  00000016  0000000C  00000021  E2404040  C21994C0  4337FF80  0000001A  00000000  00000001
(   480)  00000000  00000000  00000011  000038DD  00000239  000000D0  C22392EA  C2651C50  000000E4  0000007E
(   520)  0000012A  40404040  000000B5  00000016  0000000D  0000001C  E2404040  C21666A2  4336C76A  00000018
(   560)  00000000  00000001  00000000  00000001  0000000B  000055D6  000003DF  0000010A  C2206997  C264B1B8
(   600)  000000F7  0000007E  0000012A  40404040  000000B5  00000016  0000000E  00000033  E2404040  C2127C81
(   640)  4335406A  0000002B  00000000  00000000  00000000  00000003  0000000F  00007ECE  00000800  0000014C
(   680)  C21C8463  C2643E30  00000109  0000007E  0000012A  C7404040  000000B5  00000016  00000023  0000002D
(   720)  E2404040  423C344A  431BEFF3  0000004F  00000000  00000001  00000000  00000000  00000001  000A8FD0
(   760)  000011D6  000025D5  4231CE25  C25BA388  000001AD  0000004E  0000012A  C7404040  000000B5  00000016
(   800)  00000024  00000031  E2404040  42404DF5  431B50AE  00000054  00000002  00000000  00000000  00000000
(   840)  0000001F  00047A6C  0000055C  00000714  4235D5A5  C25A62AD  0000016C  0000005E  0000012A  C7404040
FILE  2      RECORD    2305    LENGTH    264  BYTES
(     0)  000000B5  00000016  00000025  00000036  E2404040  42444F8D  431ACB2E  00000057  00000001  00000001
(    40)  00000001  00000001  0000003F  000044E6  0000033D  000003C0  4239C088  C258DA5D  000000EB  00000080
(    80)  0000012A  C7404040  000000B5  00000016  00000026  00000031  E2404040  4248383A  431A5EFB  0000004D
(   120)  00000001  00000001  00000001  00000002  00000039  00003B26  0000033C  0000033A  423D8C3A  C256EE40
(   160)  000000E4  00000080  0000012A  40404040  000000B5  00000016  00000027  0000002C  E2404040  424BD375
(   200)  431A0E71  00000052  00000001  00000001  00000002  00000001  0000003D  00003B77  00000358  00000355
(   240)  42410465  C2549DDD  000000E6  00000080  0000012A  40404040
FILE  2      # OF DATA RECORDS   2305    # SUCCESSFUL READS  2307
          # PERMANENT READ ERRORS  0    # ZERO BYTE ERRORS  0    # SHORT RECORDS  0    # UNDEFINED ERRORS  0
             # OF RECORDS RETRIED  0    TOTAL # OF RETRIES  0
FILE  3      RECORD    1    LENGTH    80  BYTES
(     0)  C5D6C6F1  D6C7E2E4  D4F14040  40404040  40404040  40D6C7E2  E4D4F1F0  F0F0F1F0  F0F0F140  40404040
(    40)  4040F7F3  F3F1F340  F0F0F0F0  F0F0F0F0  F2F3F0F5  00000000  00000000  00000000  00404040  40404040
FILE  3      RECORD    2    LENGTH    80  BYTES
(     0)  C5D6C6F2  C6F0F0F8  F8F0F0F0  F0F8F8F2  F0C1F0F1  F2F3F9F3  F661C3D6  D7E84040  40404040  4040C240
(    40)  40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040
FILE  3      # OF DATA RECORDS   2    # SUCCESSFUL READS  2
          # PERMANENT READ ERRORS  0    # ZERO BYTE ERRORS  0    # SHORT RECORDS  0    # UNDEFINED ERRORS  0
             # OF RECORDS RETRIED  0    TOTAL # OF RETRIES  0
FILE  4      RECORD    1    LENGTH    80  BYTES
(     0)  C8C4D9F1  D6C7E2E4  D4F14040  40404040  40404040  40D6C7E2  E4D4F1F0  F0F0F1F0  F0F0F240  40404040
(    40)  4040F7F3  F3F1F340  F0F0F0F0  F0F0F0F0  F0F0F0F0  00000000  00000000  00000000  00404040  40404040
FILE  4      RECORD    2    LENGTH    80  BYTES
(     0)  C8C4D9F2  C6F0F0F8  F8F0F0F0  F0F8F8F2  F0C1F0F1  F2F3F9F3  F661C3D6  D7E8F240  40404040  4040C240
(    40)  40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040
FILE  4      # OF DATA RECORDS   2    # SUCCESSFUL READS  2
          # PERMANENT READ ERRORS  0    # ZERO BYTE ERRORS  0    # SHORT RECORDS  0    # UNDEFINED ERRORS  0
             # OF RECORDS RETRIED  0    TOTAL # OF RETRIES  0
FILE  5      RECORD    1    LENGTH    880  BYTES
(     0)  000000B6  00000000  0000000C  00000012  E2404040  422C98F5  431E42D2  0000002F  00000002  00000001
(    40)  00000001  00000000  00000027  00002B04  000001D6  000002EF  4225BFBC  C2773C5D  000000D6  00000080
(    80)  0000012A  C7404040  000000B6  00000000  0000000D  0000000E  E2404040  42302790  431D7CD2  00000040
(   120)  00000000  00000000  00000001  00000001  00000032  00003527  0000025C  00000343  42294A14  C276A052
(   160)  000000DD  00000080  0000012A  40404040  000000B6  00000000  0000000E  00000009  E2404040  4233B8BA
(   200)  431CC70F  00000042  00000000  00000004  00000000  00000001  00000034  00003EF5  000002D5  000003BD
(   240)  422CD560  C275EAC8  000000E6  00000080  0000012A  40404040  000000B6  00000000  0000000F  0000000D
(   280)  E2404040  4237CB75  431C0CED  0000004B  00000000  00000001  00000000  00000002  00000036  00009D92
(   320)  00000362  0000043E  4230DEDA  C274F342  00000101  00000080  0000012A  C7404040  000000B6  00000000
(   360)  00000010  00000024  E2404040  423C603A  431B5804  0000004D  00000001  00000000  00000000  00000002
(   400)  0000001B  0006FCA0  00000ACC  00001407  423564AD  C2739565  00000190  0000005C  0000012A  C7404040
(   440)  000000B6  00000000  00000011  00000020  E2404040  4240DD60  431AC0F4  00000053  00000000  00000000
(   480)  00000000  00000002  00000015  00065D03  00000808  00000BAD  4239CD82  C271E4B8  0000019C  00000060
```

EOF10624M1
0624M1

HDR10624M1