

#341

IMP-H

5.46 MINUTE AVERAGED COUNT RATES

72-073A-07B

+

SECTORED RATE + PHA (HOST) TAPES

72-073A-07C

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 This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system.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

IMP-H

5.46 MINUTE AVERAGED COUNT RATES ON TAPE

SECTORED RATE + PHA (HOST) TAPES

72-073A-07B SPHE-00367

72-073A-07C SPHE-00099

These data sets have been restored. There were originally five 7-track, and five 9-track, 800 BPI tapes written in Binary for 72-073A-07B. Each of the original tapes had 60 files except D43404 which had only one file. There is one restored tape. The restored tape had to be reconstructed because the original 9-track tapes were not padded so they had to be padded so they would be the same as the 7-track tapes that were converted to 9-track on the Modcomp.

Originally there were 271 7-track and 9-track, 800 BPI tapes written in Binary for 72-073A-07C. There are 47 restored tapes.

The DR tapes are 3480 cartridges and the DS tapes are 9-track, 6250 BPI. The original tapes were created on a XDS 930 computer. The DR and DS numbers along with the corresponding D numbers and the time spans are as follows:

72-073A-07B

DR#	DS#	DD#	FILES	TIME SPAN
DR004156	DS004156	D023399	1-60	09/25/72 - 05/25/73
		D023400	61-120	05/26/73 - 01/22/74 (a)
		D028846	121-180	01/22/74 - 09/22/74 (b)
		D031125	181-240	09/21/74 - 05/22/75
		D031126	241-300	05/22/75 - 01/21/76
		D033466	301-360	01/21/76 - 09/20/76
		D037896	361-420	09/20/76 - 05/22/77
		D043402	421-480	05/22/77 - 01/20/78
		D043403	481-540	01/20/78 - 09/21/78
		D043404	541	09/21/78 - 09/25/78

- (a) Read errors occurred in records 18,21,28,29,57, File 52 of D023400
 (b) Read error occurred in record 7, File 2 of D028846

DR#	DS#	D#	FILES	TIME SPAN
DR01531	DS01531	D23354	1-2	09/28/72 - 10/04/72
		D23355	3-4	10/04/72 - 10/13/72
		D23356	5-6	10/13/72 - 10/21/72
		D23357	7-8	10/21/72 - 10/29/72
		D23358	9-10	10/29/72 - 11/05/72
		D23359	11-12	11/05/72 - 11/14/72
DR01530	DS01530	D23360	1-2	11/15/72 - 11/22/72
		D23361	3-4	11/22/72 - 11/30/72
		D23362	5-6	11/30/72 - 12/09/72
		D23363	7-8	12/09/72 - 12/17/72
		D23364	9-10	12/17/72 - 12/25/72
		D23365	11-12	12/25/72 - 12/31/72
DR01534	DS01534	D23366	1-2	12/31/72 - 01/08/73
		D23367	3-4	01/08/73 - 01/16/73
		D23368	5-6	01/16/73 - 01/24/73
		D23369	7-8	01/24/73 - 02/01/73
		D23370	9-10	02/01/73 - 02/09/73
		D23371	11-12	02/09/73 - 02/17/73
DR01535	DS01535	D23372	1-2	02/17/73 - 02/25/73
		D23373	3-4	02/25/73 - 03/05/73
		D23374	5-6	03/05/73 - 03/14/73
		D23375	7-8	03/14/73 - 03/22/73
		D23376	9-10	03/22/73 - 03/30/73
DR01532	DS01532	D23377	1-2	03/30/73 - 04/07/73
		D23378	3-4	04/07/73 - 04/13/73
		D23379	5-6	04/13/73 - 04/23/73
		D23380	7-8	04/23/73 - 05/01/73
		D23381	9-10	05/01/73 - 05/09/73
		D23382	11-12	05/09/73 - 05/17/73
DR01536	DS01536	D23383	1-2	05/17/73 - 05/25/73
		D23384	3-4	05/25/73 - 06/03/73
		D23385	5-6	06/03/73 - 06/11/73
		D23386	7-8	06/11/73 - 06/17/73
DR01533	DS01533	D23387	1-2	06/19/73 - 06/27/73
		D23388	3-4	06/27/73 - 07/05/73
		D23389	5-6	07/05/73 - 07/13/73
		D23390	7-8	07/13/73 - 07/21/73
		D23391	9-10	07/21/73 - 07/29/73
		D23392	11-12	07/29/73 - 08/06/73
DR01529	DS01529	D23393	1-2	08/06/73 - 08/14/73
		D23394	3-4	08/14/73 - 08/22/73
		D23395	5-6	08/22/73 - 08/30/73
		D23396	7-8	08/30/73 - 09/07/73
		D23397	9-10	09/07/73 - 09/15/73
		D23398	11-12	09/15/73 - 09/23/73
DR01571	DS01571	D28860	1-2	09/23/73 - 10/01/73
		D28881	3-4	10/01/73 - 10/10/73
		D28879	5-6	10/10/73 - 10/18/73
		D28858	7-8	10/18/73 - 10/26/73
		D28877	9-10	10/26/73 - 11/03/73

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DR#	DS#	D#	FILES	TIME SPAN
DR01560	DS01560	D28878	1-2	11/03/73 - 11/11/73
		D28875	3-4	11/11/73 - 11/19/73
		D28884	5-6	11/19/73 - 11/27/73
		D28869	7-8	11/27/73 - 12/05/73
		D28854	9-10	12/05/73 - 12/13/73
DR01572	DS01572	D28863	1-2	12/13/73 - 12/21/73
		D28882	3-4	12/21/73 - 12/29/73
		D28848	5-6	12/29/73 - 01/06/74
		D28849	7-8	01/06/74 - 01/14/74
		D28883	9-10	01/14/74 - 01/22/74
DR01573	DS01573	D28871	1-2	01/22/74 - 01/30/74
		D28885	3-4	01/30/74 - 02/07/74
		D28890	5-6	02/07/74 - 02/15/74
		D28892	7-8	02/15/74 - 02/23/74
		D28891	9-10	02/23/74 - 03/03/74
DR01561	DS01561	D28888	1-2	03/03/74 - 03/11/74
		D28889	3-4	03/11/74 - 03/19/74
		D28853	5-6	03/21/74 - 03/27/74
		D28852	7-8	03/31/74 - 04/05/74
		D28851	9-10	04/05/74 - 04/13/74
DR01562	DS01562	D28847	1-2	04/13/74 - 04/21/74
		D28887	3-4	04/21/74 - 04/29/74
		D28886	5-6	04/29/74 - 05/07/74
		D28859	7-8	05/07/74 - 05/15/74
		D28875	9-10	05/15/74 - 05/23/74
DR01594	DS01594	D28870	1-2	05/23/74 - 05/31/74
		D28876	3-4	05/31/74 - 06/07/74
		D28864	5-6	06/07/74 - 06/16/74
		D28863	7-8	06/16/74 - 06/24/74
		D28861	9-10	06/24/74 - 07/02/74
DR01574	DS01574	D28856	1-2	07/02/74 - 07/10/74
		D28862	3-4	07/09/74 - 07/17/74
		D28865	5-6	07/18/74 - 07/26/74
		*D28857	7-8	07/26/74 - 08/04/74
		D28850	9-10	08/04/74 - 08/12/74
DR01589	DS01589	D28866	1-3	08/16/74 - 08/20/74
		D28880	4-5	08/20/74 - 08/28/74
		D28873	6-7	08/28/74 - 09/05/74
		D28872	8-9	09/05/74 - 09/13/74
		D28867	10-11	09/13/74 - 09/21/74
DR01575	DS01575	D28874	1-2	09/21/74 - 09/29/74
		D31080	3-4	09/24/74 - 10/03/74
		D31082	5-6	10/07/74 - 10/11/74
		D31081	7-8	10/15/74 - 10/19/74
		D31083	9-10	10/22/74 - 10/31/74

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DR#	DS#	D#	FILES	TIME SPAN
DR01660	DS01660	D31084	1-2	10/31/74 - 11/08/74
		D31085	3-4	11/08/74 - 11/17/74
		D31086	5-6	11/17/74 - 11/21/74
		D31087	7-8	11/25/74 - 12/03/74
		D31088	9-10	12/03/74 - 12/11/74
DR01661	DS01661	D31089	1-2	12/11/74 - 12/30/74
		D31090	3-4	12/20/74 - 12/28/74
		D31091	5-6	12/28/74 - 01/05/75
		D31092	7-8	01/05/75 - 01/13/75
		D31093	9-10	01/13/75 - 01/21/75
DR01662	DS01662	D31094	1-2	01/21/75 - 01/29/75
		D31095	3-4	01/29/75 - 02/06/75
		D31096	5-6	02/06/75 - 02/14/75
		D31097	7-8	02/14/75 - 02/22/75
		D31098	9-10	02/22/75 - 03/02/75
DR01663	DS01663	D31099	1-2	03/02/75 - 03/10/75
		D31100	3-4	03/10/75 - 03/18/75
		D31101	5-6	03/18/75 - 03/27/75
		D31102	7-8	03/27/75 - 04/04/75
		D31103	9-10	04/04/75 - 04/12/75
DR01664	DS01664	D31104	1-2	04/12/75 - 04/20/75
		D31105	3-4	04/20/75 - 04/28/75
		D31106	5-6	04/28/75 - 05/06/75
		D31107	7-8	05/06/75 - 05/14/75
		D31111	9-10	05/14/75 - 05/22/75
DR01665	DS01665	D31112	1-2	05/22/75 - 05/30/75
		D31113	3-4	05/30/75 - 06/07/75
		D31114	5-6	06/07/75 - 06/15/75
		D31115	7-8	06/15/75 - 06/24/75
		D31116	9-10	06/24/75 - 07/03/75
		D31117	11-12	07/02/75 - 07/10/75
DR01666	DS01666	D31118	1-2	07/10/75 - 07/18/75
		D31119	3-4	07/18/75 - 07/27/75
		D31120	5-6	07/27/75 - 08/04/75
		D31121	7-8	08/04/75 - 08/12/75
		D31122	9-10	08/12/75 - 08/20/75
		D31123	11-12	08/20/75 - 08/28/75
DR01667	DS01667	D31124	1-2	08/28/75 - 09/05/75
		D31108	3-4	09/05/75 - 09/13/75
		D31109	5-6	09/13/75 - 09/21/75
		D31110	7-8	09/21/75 - 09/29/75
DR01470	DS01470	D33467	1-2	09/29/75 - 10/07/75
		D33468	3-4	10/07/75 - 10/15/75
		D33469	5-6	10/15/75 - 10/23/75
		D33470	7-8	10/23/75 - 10/26/75
		D33471	9-10	10/26/75 - 11/09/75
		D33472	11-12	11/09/75 - 11/17/75

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DF#	DS#	D#	FILES	TIME SPAN
DS01471	DS01471	D33473	1-2	11/17/75 - 11/25/75
		D33474	3-4	11/25/75 - 12/03/75
		D33475	5-6	12/03/75 - 12/11/75
		D33476	7-8	12/12/75 - 12/20/75
		D33477	9-10	12/20/75 - 12/28/75
		D33478	11-12	12/28/75 - 01/04/76
		D33479	13-14	01/04/76 - 01/13/76
DS01472	DS01472	D33480	1-2	01/13/76 - 01/21/76
		D33481	3-4	01/21/76 - 01/29/76
		D33482	5-6	01/29/76 - 02/06/76
DS01473	DS01473	D33484	1-2	02/14/76 - 02/22/76
		D33485	3-4	02/22/76 - 03/03/76
		D33486	5-6	03/02/76 - 03/10/76
		D33487	7-8	03/10/76 - 03/18/76
DS01474	DS01474	D33488	1-2	03/18/76 - 03/26/76
		D33489	3-4	03/26/76 - 04/03/76
		D33490	5-6	04/03/76 - 04/11/76
		D33491	7-8	04/11/76 - 04/19/76
		D33492	9-10	04/19/76 - 04/27/76
		D33493	11-12	04/27/76 - 05/05/76
		D33494	13-14	05/05/76 - 05/13/76
DS01475	DS01475	D33495	1-2	05/13/76 - 05/22/76
		D33496	3-4	05/22/76 - 05/27/76
		D33497	5-6	05/26/76 - 06/07/76
		D33498	7-8	06/07/76 - 06/15/76
		D33499	9-10	06/15/76 - 06/23/76
		D33500	11-12	06/23/76 - 07/02/76
DS01476	DS01476	D33501	1-2	07/02/76 - 07/10/76
		D33502	3-4	07/10/76 - 07/18/76
		D33503	5-6	07/18/76 - 07/26/76
		D33504	7-8	07/26/76 - 08/03/76
		D33505	9-10	08/03/76 - 08/11/76
		D33506	11-12	08/11/76 - 08/19/76
		D33507	13-14	08/19/76 - 08/27/76
DS01477	DS01477	D33508	1-2	08/27/76 - 09/04/76
		D33509	3-4	09/04/76 - 09/12/76
		D33510	5-6	09/12/76 - 09/20/76
		D33511	7-8	09/20/76 - 09/28/76
		D37851	9-10	09/28/76 - 10/07/76
		D37852	11-12	10/07/76 - 10/15/76
DS01478	DS01478	D37853	1-2	10/15/76 - 10/23/76
		D37854	3-4	10/23/76 - 10/31/76
		D37855	5-6	10/31/76 - 11/08/76
		D37856	7-8	11/08/76 - 11/16/76
		D37857	9-10	11/16/76 - 11/24/76
		D37858	11-12	11/24/76 - 12/02/76
		D37859	13-14	12/02/76 - 12/11/76

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DR#	DS#	D#	FILES	TIME SPAN
DR01479	DS01479	D37860	1-2	12/11/76 - 12/19/76
		D37861	3-4	12/19/76 - 12/27/76
		D37862	5-6	12/27/76 - 01/04/77
		D37863	7-8	01/04/77 - 01/12/77
		D37864	9-10	01/12/77 - 01/20/77
		D37865	11-12	01/20/77 - 01/28/77
		D37866	13-14	01/28/77 - 02/06/77
DR01480	DS01480	D37867	1-2	02/06/77 - 02/14/77
		D37868	3-4	02/14/77 - 02/22/77
		D37869	5-6	02/22/77 - 03/02/77
		D37870	7-8	03/02/77 - 03/10/77
		D37871	9-10	03/10/77 - 03/18/77
		D37872	11-12	03/18/77 - 03/26/77
DR01481	DS01481	D37873	1-2	03/26/77 - 04/03/77
		D37874	3-4	04/03/77 - 04/11/77
		D37875	5-6	04/11/77 - 04/19/77
		D37876	7-8	04/19/77 - 04/28/77
		D37877	9-10	04/28/77 - 05/06/77
		D37878	11-12	05/06/77 - 05/14/77
		D37879	13-14	05/14/77 - 05/22/77
DR01482	DS01482	D37880	1-2	05/22/77 - 05/30/77
		D37881	3-4	05/30/77 - 06/07/77
		D37882	5-6	06/07/77 - 06/15/77
		D37883	7-8	06/15/77 - 06/23/77
		D37884	9-10	06/23/77 - 07/01/77
		D37885	11-12	07/01/77 - 07/10/77
DR01483	DS01483	D37886	1-2	07/10/77 - 07/18/77
		D37887	3-4	07/18/77 - 07/26/77
		D37888	5-6	07/26/77 - 08/03/77
		D37889	7-8	08/03/77 - 08/11/77
		D37890	9-10	08/11/77 - 08/19/77
		D37891	11-12	08/19/77 - 08/27/77
DR01484	DS01484	D37892	1-2	08/27/77 - 09/05/77
		D37893	3-4	09/05/77 - 09/13/77
		D37894	5-6	09/13/77 - 09/21/77
		D37895	7-8	09/21/77 - 09/29/77
		D43357	9-10	09/29/77 - 10/07/77
		D43358	11-12	10/07/77 - 10/15/77
DR01485	DS01485	D43359	1-2	10/15/77 - 10/23/77
		D43360	3-4	10/23/77 - 10/31/77
		D43361	5-6	10/31/77 - 11/08/77
		D43362	7-8	11/08/77 - 11/16/77
		D43363	9-10	11/16/77 - 11/25/77
		D43364	11-12	11/25/77 - 12/03/77

DR#	DS#	D#	FILES	TIME SPAN
DR01491	DS01491	D43365	1-2	12/03/77 - 12/11/77
		D43366	3-4	12/11/77 - 12/19/77
		D43367	5-6	12/19/77 - 12/27/77
		D43368	7-8	12/27/77 - 01/04/78
		D43369	9-10	01/04/78 - 01/12/78
		D43370	11-12	01/12/78 - 01/20/78
		D43371	13-14	01/20/78 - 01/28/78
DR01492	DS01492	D43372	1-2	01/28/78 - 02/06/78
		D43373	3-4	02/06/78 - 02/14/78
		D43374	5-6	02/14/78 - 02/22/78
		D43375	7-8	02/22/78 - 03/03/78
		D43376	9-10	03/03/78 - 03/10/78
		D43377	11-12	03/10/78 - 03/18/78
		D43378	13-14	03/18/78 - 03/27/78
DR01493	DS01493	D43380	1-2	04/04/78 - 04/12/78
		D43381	3-4	04/12/78 - 04/20/78
		D43382	5-6	04/20/78 - 04/28/78
		D43383	7-8	04/28/78 - 05/06/78
		D43384	9-10	05/06/78 - 05/14/78
		D43385	11-12	05/14/78 - 05/22/78
DR01494	DS01494	D43386	1-2	05/22/78 - 05/30/78
		D43387	3-4	05/30/78 - 06/07/78
		D43388	5-6	06/07/78 - 06/16/78
		D43389	7-8	06/16/78 - 06/24/78
		D43390	9-10	06/24/78 - 07/02/78
		D43391	11-12	07/02/78 - 07/10/78
DR01495	DS01495	D43392	13-14	07/10/78 - 07/19/78
		D43393	1-2	07/19/78 - 07/27/78
		D43394	3-4	07/27/78 - 08/04/78
		D43395	5-6	08/04/78 - 08/12/78
		D43396	7-8	08/12/78 - 08/20/78
		D43397	9-10	08/20/78 - 08/28/78
		D43398	11-12	08/28/78 - 09/05/78
		D43399	13-14	09/05/78 - 09/13/78
		D43400	15-16	09/13/78 - 09/21/78
		D43401	17	09/21/78 - 09/25/78

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B#	C#	FILES	TIME SPAN
D31125	D20081	60	09/21/74 - 05/22/75 ⁶⁵
D31126	D20082	60	05/22/75 - 01/21/76 ⁶⁵
D23699	C17669	60	09/22/72 - 05/23/73 ²⁵
D23400	C17670	60	05/26/73 - 01/22/74
D25846	C18984	60	01/22/74 - 09/21/74
D33455		60	01/21/76 - 09/20/76
D37896	D21189	60	09/20/76 - 05/22/77
D43402		60	05/22/77 - 01/20/78
D43403		60	01/20/78 - 09/21/78
D43404		1	09/21/78 - 09/25/78

IMP - 7,8 RATE SUMMARY TAPE GENERATOR
(HRATEGN)

I. Description of Algorithms

The program produces, for a given decom run of IMP-7 or IMP-8 data, a series of rate summaries for periods of up to 256 pseudo-sequences (256 sequences or 4 albums at 1600 IBPS telemetry rate; 64 sequences or 1 album at 400 IBPS; equals 5.46 minutes approximately).

Normally, the summary intervals will be equally long and contiguous, but data gaps and changes in instrument or spacecraft status can alter that pattern.

The output consists of various housekeeping items, flags, etc., and, for each rate, the total counts in the interval and the time period covered by those counts. Depending on our knowledge (or lack thereof) of the status of the instrument during the time the rates were accumulated in the spacecraft, not all available rate readouts are used. (In addition, of course, unavailable "fill" readouts do not affect the totals. In the following discussion, though, such readouts are included in the "used" readouts).

The following discussion assumes the reader's familiarity with the instrument and the telemetry structure of the spacecraft.

Time Periods

The start time (in time of day and pseudo-sequence-count) of each interval is given on the output tape. All intervals begin at the start of an album of telemetry and contain data for at most the following 5.46 minutes. Start times of intervals will monotonically increase, but can be spaced either more or less than 5.46 minutes apart -- more, typically in the case of data gaps; less, typically in the case of bit-rate or status changes. If one interval's start-time follows the previous one by less than 5.46 minutes, it also represents the end time of the previous interval. (That is, intervals do not overlap, though 5.46 minute periods with the same start times may.)

All rate counts are accumulated into the interval during which they were counted, not (necessarily) during which they were telemetered.

New time periods are begun--

1. at the start of the first album of the run, regardless of whether it contains usable data.
2. at the start of the first album containing usable data following a change in telemetry bit-rate.

3. at the start of the first album containing usable data following a change in the large telescope's command status (except to "mixed" or "off").
4. at the start of an album containing usable data whose pseudo-sequence-count exceeds that of the beginning of the present interval by more than 200. (Generally, of course, difference will be exactly 256.)

The determination of accumulation intervals is not affected by the beginning or end of calibrate-mode periods or by short data gaps which do not trigger criterion 4.

Rate readouts used

Every unsectored-rate readout is used in accumulation of rates for the period during which it was counted except--

1. any rate counted or telemetered during an album which has the bit rate warning flag or status warning flag on. (See sort output tape format for the definition of these flags).
2. any rate counted or telemetered during an album during which the large telescope command state was mixed or during which the instrument was off.
3. any rate telemetered during one album but counted during the previous one, unless
 - (a) previous album had same bit rate,
 - (b) previous album was actually present on input tape (and read without error), and
 - (c) rates both counted and telemetered during previous album were also used.
4. as shown in the following table, counts of events that occurred during various special instrument states (X = not used).

RATE	CALIBRATE MODE PAGES 0,2	CALIBRATE MODE PAGES 1,3	EMERGENCY MODE PAGES 0,2	EMERGENCY MODE PAGES 1,3	HIGH GAIN MODE
D1					
D2	X	X	X		
D3	X		X		
D4	X		X		
CK	X	X	X		
D6					
HZLE	X	X	X	X	X
HZHE	X	X	X	X	X
D46	X	X	X	X	
CKD6	X	X	X	X	
L1	X	X			
L2	X	X			
L1	X	X			
L1 ₁	X	X			
L1 ₂					
L1 ₃					

The four criteria above are not all independent; in particular, deletions because of 3 should usually already have been made on account of 1 or 2. Also, of course, no fill readout has any affect on the totals for the interval. Readouts with all 10 or 12 log-compressor bits 0 are also ignored; this can happen for non-fill readouts in the case of certain rare hardware glitches.

Sector rates

No detailed analysis of sector rate data is included in this program. For each averaging interval, however, a summary indication of the behavior of a sample of each sector rate is included. For each sector rate, the first available readout in the interval among those for pages 0, 1, and 2 of those albums whose unsector rates were used is examined, except that D2 sector rates counted during emergency-mode, page-0-or-2 operation or calibration are ignored. (The readouts for pages 0, 1, and 2 are telemetered during pages 1,2, and 3.) A sector rate readout is not available if it is fill data or any sector's log-compressor output is 0000, or if the optical aspect system was off as indicated by the OA DPP flag in the input album.

For the single D1 sector rate readout or single D2 sector rate readout thus selected, minimum and maximum sector counts are found. If these satisfy the criterion:

$$(MAX - MIN) > 2\sqrt{MAX},$$

then the first occurrence of MAX (i.e., lowest number 1 to 8 of sector with count MAX), first occurrence of MIN, and the quantity:

$$100 (MAX - MIN) / (MAX + MIN)$$

are placed in the output for the time interval. If the criterion is not met, both sector numbers are set 0 and the percent-anisotropy quantity is set to -1. If there were no available readouts for the sector rate during the interval, all three output values will be 0.

II. Output Tape Format

Rate summary tapes are ^{9-track}~~7-track~~ magnetic tapes written in binary (odd) parity at ~~800~~ ⁶²⁵ BPI. Separate series of summary tapes are kept for the two spacecraft.

Each rate summary tape will contain data for up to 60 runs; there will be one file per run, the last run being followed by an extra, second EOF. Missing runs within the range contained on the tape will be represented by extra EOF's in the appropriate place. (Therefore a double EOF does not necessarily indicate the end of the tape.)

The last run on the tape will be written on the label. (Eventually, when all available data have been processed, all tapes except the last one should contain 60 files).

Each file contains some number of 2640-character records (660 24-bit words). Each record contains fifteen 176-character logical records, each containing rate summary data for one interval, except that there will be from one to fifteen empty (all characters 00₈) logical records at the end of each file--at least one empty logical record, and enough more to pad the last physical record to standard length.

-17.5-
RATE TAPE LOGICAL RECORD

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
TENTHS OF SECONDS OF THE DAY																											
000000000000												YEAR				DAY OF YEAR											
SIC				ORBIT								RUN															
PSEUDO-SEQUENCE - COUNT																											
000				REM		AUA		OR		STATUS		C		YEAR,				MONTH,				DAY RATEGN					
PROJECTED SUN-EARTH-SPACECRAFT ANGLE																											
GEOCENTRIC DISTANCE																											
00				QF				TEMPERATURE								00				QF				BUSS VOLT			
00				QF				A-D CAL 0								00				QF				A-D CAL 1			
00				QF				A-D CAL 2								00				QF				A-D CAL 3			
TEMPERATURE CONVERTED												BUSS VOLT CONVERTED															
D1 ANISOTROPY												MAX				MIN											
D2 ANISOTROPY												MAX				MIN											
SPARE (=0)																											
0				QUALITY								COVERAGE								D1							
COUNTS																											
0				QUALITY								COVERAGE								D2							
COUNTS																											
0				QUALITY								COVERAGE								D3							
COUNTS																											
0				QUALITY								COVERAGE								D4							
COUNTS																											
0				QUALITY								COVERAGE								CK							
COUNTS																											
0				QUALITY								COVERAGE								D6							
COUNTS																											
0				QUALITY								COVERAGE								H2LE							
COUNTS																											
0				QUALITY								COVERAGE								H2HE							
COUNTS																											
0				QUALITY								COVERAGE								D46							
COUNTS																											
0				QUALITY								COVERAGE								CKD6							
COUNTS																											
0				QUALITY								COVERAGE								L1							
COUNTS																											
0				QUALITY								COVERAGE								L2							
COUNTS																											
0				QUALITY								COVERAGE								L11							
COUNTS																											
0				QUALITY								COVERAGE								L12							
COUNTS																											
0				QUALITY								COVERAGE								L13							
COUNTS																											

0 + 44 * I, I = 0 to 14

1

2 -

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

- 7.6 -
 CONTENTS OF LOGICAL RECORD

(24-bit words, counting from 0)

WORD 0

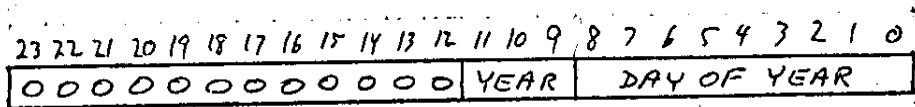
24-bit binary unsigned integer, time of day in tenths of seconds past midnight.

WORD 1 (part)

Day of year (January 1 = 1)

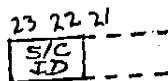
WORD 1 (part)

Year, modulo 1970



The preceeding three items give the time, day, and year, Universal Time, of the start of the rate averaging interval.

WORD 2 (part)

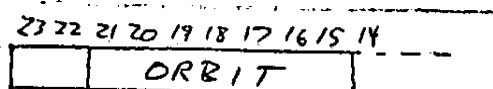


Spacecraft ID.

IMP-7 = 01

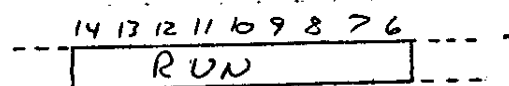
IMP-8 = 10

WORD 2 (part)



Orbit number of these data. A 7-bit unsigned integer. Orbit boundaries are approximate.

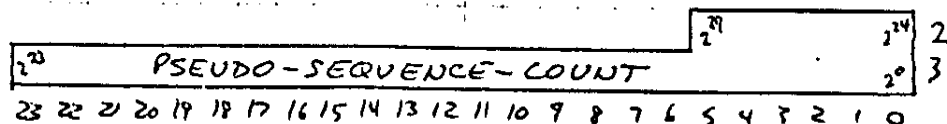
WORD 2 (part)



A 9-bit unsigned integer, the decom run number of these data.

WORD 2 (part)

WORD 3



Pseudo-sequence-count. The 30-bit unsigned integer PSC of the start of the rate averaging interval.

23	22	21	20	19	18	17	16	15	14	13	12
0	0	0	PCM XMITR	ANA XMITR	BR	STATUS	C				

PCM XMTR = 00 if PCM transmitter was always on during interval
01 if PCM transmitter was ever off
10 if no available data on this
11 (never)

ANA XMTR = 00 if analog transmitter always off during interval
01 if analog transmitter ever on
10 if no available data on this
11 (never)

BR = 0 if original data were transmitted at 400 IBPS bit rate
1 if 1600 IBPS

0 off	4 flare-override mode
1 normal mode	5 mixed
2 high gain mode	6,7 (will not occur)
3 emergency mode	

C = 1 if any calibrate-period data are included
in this interval
0 otherwise

WORD 4 (part)

11	10	9	8	7	6	5	4	3	2	1	0
YEAR				MONTH				DAY			

Date of RATEGN program run that produced this file. Unsigned binary integers: year (mod 1970), month (Jan = 1), and day of month, all as typed in by the operator.

WORD 5

24-bit signed (2-compliment) integer giving, in tenths of degrees, the projection of the sun-earth-spacecraft angle on the ecliptic plane. This value is added by a separate program. If it is not yet present, a default value of -5000_{10} ($=-500$ degrees) will be present. If orbit data was not available for this time, a value of -6000_{10} ($=-600$ degrees) will be present.

If present, the value will range from 0 to 360 degrees. The angle is 0 degrees when the projection of the spacecraft's position onto the ecliptic lies on the earth-sun line; the angle increases counter-clockwise when viewed from the north ecliptic pole.

WORD 6.

24 bit signed (2-compliment) integer giving, in tenths of Earth radii, the geocentric distance of the satellite. This value is added by a separate program. If it is not yet present, a default value of -5000_{10} ($=-500$ Earth radii) will be present. If orbit data was not available for this time, a value of -6000_{10} ($=-600$ Earth radii) will be present.

WORD 7-9

Analog

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
00		QF		TEMPERATURE								00		QF		BUSS VOLTAGE								7
00		QF		A-D CAL 0								00		QF		A-D CAL 1								8
00		QF		A-D CAL 2								00		QF		A-D CAL 3								9

The first non-fill value, if any, of the indicated 8-bit analogs in those albums whose rates were used in compiling the totals for the time interval. If no value is available, the output will be fill (eight 0 bits). The qualify flag will be that of the readout used. Quality flag code:

00 excellent
01 good
10 fill
11 (will not occur)

WORD 10 (part)

23	22	21	20	19	18	17	16	15	14	13	12
CONVERTED TEMPERATURE											

A 12-bit signed integer giving the instrument temperature in tenths of degrees C. This is derived from the count in word 7 above, using the calibration of the temperature sensor and assuming nominal calibration of the spacecraft's A/D converter. If the count is greater than 222, +80°C will be the value. If the count is less than 32 or fill, -40°C will be the value.

WORD 10 (part)

11	10	9	8	7	6	5	4	3	2	1	0
CONVERTED BUSS VOLTS											

A 12-bit unsigned integer giving the converted value of the spacecraft buss voltage in units of 10mV, computed according to

$$\text{voltage} = 25 (230 - \text{count}) + 24000 \text{ mV},$$

which assumes nominal operation of the A/D converter. If the count in word 7 above was fill, the converted value will be 29750 mV.

WORD 11

D1 sector rate anisotropy indication.

WORD 12

D2 sector rate anisotropy indication

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
D1 ANISOTROPY															MAX			MIN			11		
D2 ANISOTROPY															MAX			MIN			12		

See the preceeding section on descriptions of algorithms for details on the derivation of these. Briefly, for each case--

if no data, entire word is 0's.

if data available but "significance" criterion not met,

$$\text{MAX} = \text{MIN} = 0, \text{ anisotropy} = -1 \text{ (16-bit 2-compliment).}$$

if the criterion is satisfied, then MAX is set to the first sector in which the greatest count occurred, MIN is set to the first sector in which the least count occurred, and the anisotropy measure is set to the binary integer truncated value of

$$100 (\text{greatest} - \text{least}) / (\text{greatest} + \text{least})$$

WORD 13

Spare. 24 binary zeroes.

WORDS	14,15	D1 rate	30,31	D46 rate
	16,17	D2 rate	32,33	CKD6 rate
	18,19	D3 rate	34,35	L1 rate
	20,21	D4 rate	36,37	L2 rate
	22,23	CK rate	38,39	L1 ₁ rate
	24,25	D6 rate	40,41	L1 ₂ rate
	26,27	HZLE rate	42,43	L1 ₃ rate
	28,29	HZHE rate		

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
0	QUALITY										COVERAGE										2 ²⁰	2 ²¹	N	
2 ²³	TOTAL COUNTS																						2 ²⁰	N+1

TYPICAL RATE

The total counts, and the number and quality of the data, for the readouts of the unsectored rates used in this interval, as selected according to the criteria in the earlier description of algorithms.

COUNTS - 31-bit unsigned binary integer (will be 0 if no data).

COVERAGE - 8-bit unsigned integer giving time covered by available data for this rate, in units of 2.56 seconds (at the nominal spacecraft clock frequency). Range 0 (for no data) to 128.

QUALITY - 8-bit unsigned binary integer giving the time covered by available data which were of excellent telemetry quality. In the same units and not greater than the coverage figure above.

IMP-7,8 SORTED DATA TAPE FORMATS

The output of the program which reformats, time-sorts and eliminates overlap from the data on our raw data tapes produces an output file for the run. These files are gathered onto HOST (IMP-7) or JOST (IMP-8) tapes. HOST (or JOST) tape n contains runs $2(n-1)$ and $2(n-1)+1$, thus:

HOST (JOST)	FILE	RUN
1	1	0
1	2	1
2	1	2
2	2	3
3	1	4
.	.	.
.	.	.
.	.	.

Each run is a file. Before processing for the entire mission is complete, some runs may be missing. Their files then consist solely of an end-of-file, with no data records. Note that if there are ultimately an odd number of runs, the final tape for a mission will contain only one run. Also, there was no run 0 for IMP-8; JOST 1 therefore begins with an EOF in place of run 0.

A HOST or JOST tape is a standard 7-track magnetic tape written in binary (odd) parity. Each file (run) consists, unless the run is missing, of some number of 1952-character physical records, each containing data for one album of telemetry. A description of the content of such a record follows. Note that the 6-bit characters in the album header are numbered starting with 0 and that the 480 characters of information for each page are numbered, starting with 0, relative to the start of the page (see diagram on next page).

1952 CHARACTERS

TENTHS OF SECONDS OF DAY	
YEAR	
DAY	
FLAGS	
PSEUDO- SEQUENCE- COUNT	
FLAGS	
RUN	
SORT YEAR	
SORT DAY	
ORBIT	
PAGE 0	
PAGE 1	
PAGE 2	
PAGE 3	

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
25
26
27
28
29
30
31
32
1951

PAGE

480 CHARACTERS

DAY	
MILLI- SECONDS OF THE DAY	
QF	SPIN PERIOD
QF	SUN TIME
S/C CLOCK	
UNSECTORED RATES QFs 14 CHARS	
36-BIT SCANS (MAIN TELESCOPE) 256 CHARS	
20-BIT SCANS (LET) 64 CHARS	
SECTORED RATES 32 CHARS	
UNSECTORED RATES 84 CHARS	
00 QF	BUSS VOLT
00 QF	CHI ANALOG
00 QF	A-D CAL
FLAGS	

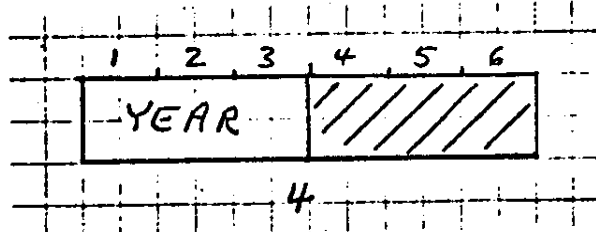
0 +32
1 +480+PAGE
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
31
32
287
288
351
352
383
384
467
468
469
470
471
472
473
474
475
476
477
478
479

Items Present Once Per Album

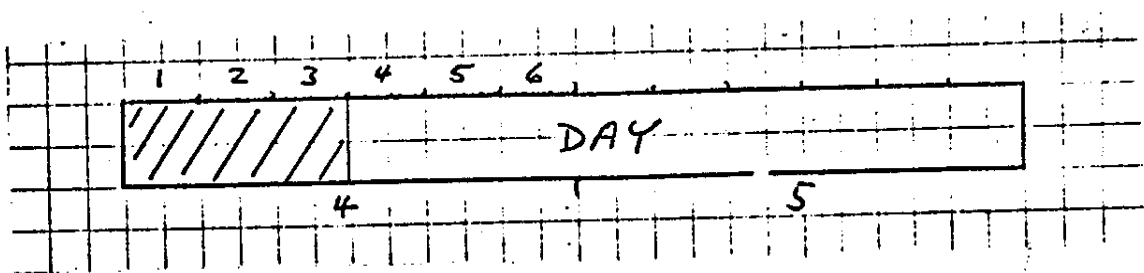
Chars.

0- 3 Tenths of seconds of the day. A 24-bit unsigned integer giving the time in tenths of seconds past midnight, Universal Time.

4(part) Year. A 3-bit unsigned integer giving the year modulo 1970 (e.g. 3=1973).



4(part)-5 Day. A 9-bit unsigned integer giving the day of the year (January 1=1; see table).



The time given in the above three items is the time of the start of the album. This time is extrapolated back, if necessary, from the milliseconds of the day on our raw data tapes for the start of the first non-empty page in the album, and truncated to an even tenth-second. If two albums are merged to create the final output album, an arbitrary one of the times is kept. (Albums are not merged unless, among other things, the times agree within 2 seconds.)

Times in a file will monotonically increase except, perhaps, at a bit-rate change.

Regular Year, January 1 = 1

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	1	32	60	91	121	152	182	213	244	274	305	335
2	2	33	61	92	122	153	183	214	245	275	306	336
3	3	34	62	93	123	154	184	215	246	276	307	337
4	4	35	63	94	124	155	185	216	247	277	308	338
5	5	36	64	95	125	156	186	217	248	278	309	339
6	6	37	65	96	126	157	187	218	249	279	310	340
7	7	38	66	97	127	158	188	219	250	280	311	341
8	8	39	67	98	128	159	189	220	251	281	312	342
9	9	40	68	99	129	160	190	221	252	282	313	343
10	10	41	69	100	130	161	191	222	253	283	314	344
11	11	42	70	101	131	162	192	223	254	284	315	345
12	12	43	71	102	132	163	193	224	255	285	316	346
13	13	44	72	103	133	164	194	225	256	286	317	347
14	14	45	73	104	134	165	195	226	257	287	318	348
15	15	46	74	105	135	166	196	227	258	288	319	349
16	16	47	75	106	136	167	197	228	259	289	320	350
17	17	48	76	107	137	168	198	229	260	290	321	351
18	18	49	77	108	138	169	199	230	261	291	322	352
19	19	50	78	109	139	170	200	231	262	292	323	353
20	20	51	79	110	140	171	201	232	263	293	324	354
21	21	52	80	111	141	172	202	233	264	294	325	355
22	22	53	81	112	142	173	203	234	265	295	326	356
23	23	54	82	113	143	174	204	235	266	296	327	357
24	24	55	83	114	144	175	205	236	267	297	328	358
25	25	56	84	115	145	176	206	237	268	298	329	359
26	26	57	85	116	146	177	207	238	269	299	330	360
27	27	58	86	117	147	178	208	239	270	300	331	361
28	28	59	87	118	148	179	209	240	271	301	332	362
29	29		88	119	149	180	210	241	272	302	333	363
30	30		89	120	150	181	211	242	273	303	334	364
31	31		90		151		212	243		304		365

Leap Year, January 1 = 1

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	1	32	61	92	122	153	183	214	245	275	306	336
2	2	33	62	93	123	154	184	215	246	276	307	337
3	3	34	63	94	124	155	185	216	247	277	308	338
4	4	35	64	95	125	156	186	217	248	278	309	339
5	5	36	65	96	126	157	187	218	249	279	310	340
6	6	37	66	97	127	158	188	219	250	280	311	341
7	7	38	67	98	128	159	189	220	251	281	312	342
8	8	39	68	99	129	160	190	221	252	282	313	343
9	9	40	69	100	130	161	191	222	253	283	314	344
10	10	41	70	101	131	162	192	223	254	284	315	345
11	11	42	71	102	132	163	193	224	255	285	316	346
12	12	43	72	103	133	164	194	225	256	286	317	347
13	13	44	73	104	134	165	195	226	257	287	318	348
14	14	45	74	105	135	166	196	227	258	288	319	349
15	15	46	75	106	136	167	197	228	259	289	320	350
16	16	47	76	107	137	168	198	229	260	290	321	351
17	17	48	77	108	138	169	199	230	261	291	322	352
18	18	49	78	109	139	170	200	231	262	292	323	353
19	19	50	79	110	140	171	201	232	263	293	324	354
20	20	51	80	111	141	172	202	233	264	294	325	355
21	21	52	81	112	142	173	203	234	265	295	326	356
22	22	53	82	113	143	174	204	235	266	296	327	357
23	23	54	83	114	144	175	205	236	267	297	328	358
24	24	55	84	115	145	176	206	237	268	298	329	359
25	25	56	85	116	146	177	207	238	269	299	330	360
26	26	57	86	117	147	178	208	239	270	300	331	361
27	27	58	87	118	148	179	209	240	271	301	332	362
28	28	59	88	119	149	180	210	241	272	302	333	363
29	29	60	89	120	150	181	211	242	273	303	334	364
30	30		90	121	151	182	212	243	274	304	335	365
31	31		91		152		213	244		305		366

Chars.

6

Flags, as shown:

1	2	3	4	5	6
PCM XMITR		ANALOG			
DPP		XMITR DPP		0	0

6

PCM transmitter DPP summary:

- 00 - All non-fill readouts of the PCM transmitter digital performance parameter in this album agree that the transmitter is on.
- 01 - One or more PCM transmitter DPP values show transmitter off.
- 10 - No non-fill readouts of PCM transmitter DPP.
- 11 - (will not occur)

Analog transmitter DPP summary:

- 00 - All non-fill readouts of the analog transmitter digital performance parameter in this album agree that the transmitter is off.
- 01 - One or more analog transmitter DPP values show transmitter on.
- 10 - No non-fill readouts of the analog transmitter DPP.
- 11 -- (will not occur)

7-11

Pseudo-sequence-count. A 30-bit unsigned integer giving the PSC of the first sequence in the album. This is extrapolated back as needed from the PSC of the first non-fill sequence of the first non-empty page as given on our raw data tapes. PSCs within a file will increase monotonically except, perhaps, when there is a bit-rate change. (Two albums are never merged to create the output album unless the PSCs are identical.)

Chars.

12-13

Flags, as follows:

1	2	3	4	5	6	1	2	3	4	5	6
OA DPP		S/C ID		BR WARN	BIT RATE	STAT WARN	STATUS			CALIBRATE	
12						13					

OA system DPP summary:

- 01 - All non-fill values of the optical-aspect system digital performance parameter agree that the system is on.
- 10 - One or more non-fill OA DPPs is the album state that the system is off.
- 00 - No non-fill readouts of the OA DPP.
- 11 - (will not occur)

Spacecraft ID.

- 01 - IMP-7
- 10 - IMP-8
- 00,11 - (will not occur)

Bit rate warning flag. A flag indicating whether it is known that during the preceding album of time the spacecraft was operating at the same bit rate as this album. (If not known, the first rate readouts in the album may cover an unknown amount of time.) This flag is set to 1 during reading of the raw data tape in each album containing the first non-empty page of an input file. If two albums are merged to create the final output file, the flag is reset to 0 unless it was set in both albums. During output, the flag is reset if the preceding album output has the same bit rate and immediately precedes this one in real time.

- 0 - preceding album known same
- 1 - otherwise

Bit rate. The telemetry bit rate, from the input file-header record. The program insists that this be consistent with the PSC stepping rate and the "k" bit in the telemetered spacecraft clock.

0 - 400 BPS

1 - 1600 BPS

Status warning flag. This flag is set if the status of the instrument during the preceding album of time is "mixed" (see status below) or is not known to be the same as the status of current album. Specifically, the flag is set to 1 if: (a) last album output is different bit rate or doesn't immediately precede in real time, or (b) the status of last album is "mixed" or different, or (c) the first fourteen snapshots (i.e. all but the last two) of the preceding album were all fill.

0 - previous status known same

1 - otherwise

Status. A 3-bit flag giving the ground-command state of the instrument during the current album. For each non-fill sequence in the album, a status is determined as follows: if the PI bits in the 36-bit scan are 00, the instrument is presumed to be off. Otherwise, the GC bits in the 20-bit scan are used. If all the sequences agree, then that is the summary status for the album; otherwise, the status is "mixed".

000 - off

001 - normal

010 - high gain

011 - emergency

100 - flare override

101 - mixed

110,111 - (will not occur)

Calibrate flag. For each album, the reconstructed spacecraft clock value in the first non-empty page is examined, and a calibrate/normal flag is constructed from the known relation between calibrate mode and the clock.

01 - this is the first album of a calibrate period

10 - this is an album of calibrate other than the first

11 - this is the first album of normal mode data following a calibrate period

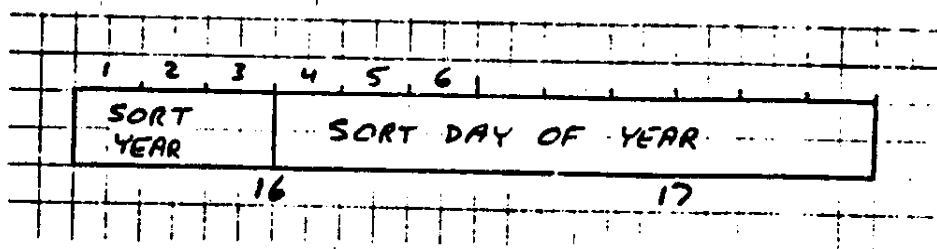
00 - otherwise

(Note: "first album" means the actual first album in real time. The first album may not be present on the tape, owing to a gap in data coverage.)

Chars.

14-15 Decom run number, a 12-bit unsigned integer.

16-17 Date of sort. The date (day, January 1=1, and year modulo 1970) that the sort program was run on the raw data tape. (For bookkeeping and error tracing.)



18-19 Orbit number. A 12-bit unsigned orbit (perigee-crossing) number, taken from the header record in each raw data tape file. Ordinarily, all files in a run are for the same orbit, but in the event that two albums from files with different orbit numbers are merged, the smaller number will be kept. (The orbit number in the file header refers to the beginning time of the file.)

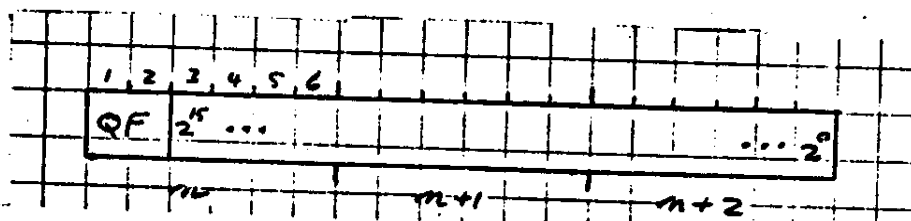
20-31 spares

Items Present in Each Page.

If an entire page is fill, it will be empty; that is, all data quality flags are set to indicate fill, all telemetered data are binary zeros, and the time and reconstructed spacecraft clock are also zero. (The time quality will be binary 00.) If there are data in the page, its contents are as follows:

Chars.

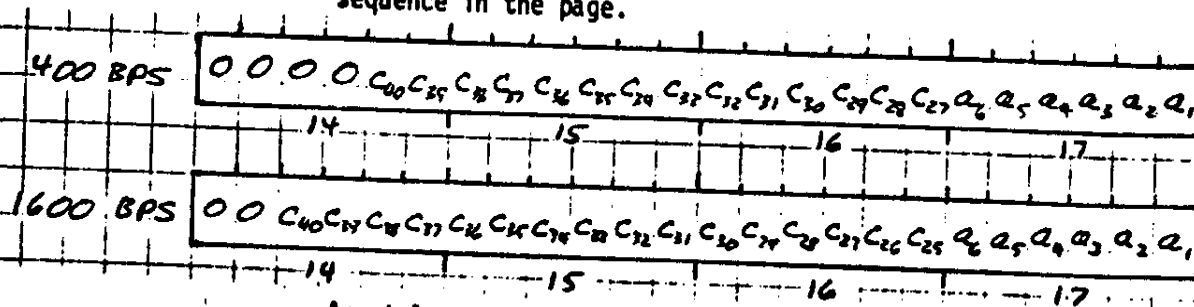
- 0- 1 Day. A 12-bit unsigned day of year (January 1=1.)
- 2- 7 Milliseconds of the day. A 36-bit unsigned integer. These two items give the time (UT) of the start of the page, copied directly from the Experimenter Data Time (EDT).
- 8-10 Spin period.
- 11-13 Sun time.



Optical-aspect system counters, as telemetered in snapshot 3. (They therefore refer to current page.) If fill, count will be 0. The 2-bit quality flag gives the data quality according to the code:

- 00 - excellent
- 01 - good
- 10 - fill
- 11 - (will not occur)

- 14-17 Reconstructed spacecraft clock value for the first non-fill sequence in the page.



Any telemetry errors remaining in this datum after convolutional decoding will have been corrected by further processing (hence "reconstructed").

Chars.

18-31

Rate quality flags. The 2-bit quality flags associated with the unsectored rates, which are located in characters 384-467 below. Each quality flag has the meaning:

- 00 - excellent
- 01 - good
- 10 - fill
- 11 - (will not occur)

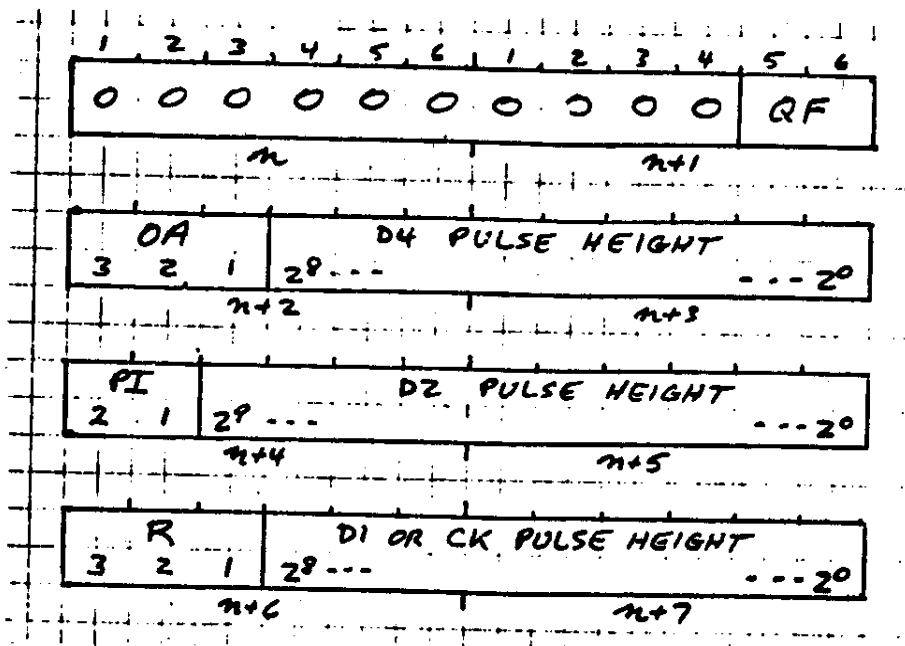
1	2	3	4	5	6	1	2	3	4	5	6
D1a	D1a	D1a	D1a	D1a	D1a	D1a	D1a	D1a	D1a	D1a	D1a
(0)	(0)	(0)	(0)	(1)	(1)	(1)	(1)	(2)	(2)	(2)	(2)
18						19					
D1a	D1a	D2	D2	D2	D2	D2	D2	D2	D2	D2	D2
(3)	(3)	(0)	(1)	(1)	(1)	(2)	(2)	(2)	(2)	(3)	(3)
20						21					
D3	D3	D3	D3	D3	D3	D4	D4	D4	D4	D4	D4
(0)	(1)	(1)	(2)	(2)	(3)	(0)	(1)	(1)	(1)	(1)	(1)
22						23					
D4	D4	CK	CK	CK	CK	L1	L1	L1	L1	L1	L1
(2)	(3)	(0)	(2)	(2)	(2)	(0)	(0)	(0)	(0)	(2)	(2)
24						25					
L12	L12	L2	L2	L2	L2	L1	L1	L1	L1	L1	L1
(1)	(3)	(0)	(2)	(2)	(2)	(1)	(1)	(1)	(1)	(3)	(3)
26						27					
H2LE	H2LE	H2HE	H2HE	H2HE	H2HE	D46	D46	D46	D46	D46	D46
(1)	(3)	(0)	(2)	(2)	(2)	(0)	(0)	(0)	(0)	(2)	(2)
28						29					
CKD6	CKD6	D6	D6	D6	D6	L13	L13	L13	L13	L13	L13
(1)	(3)	(0)	(2)	(2)	(2)	(0)	(0)	(0)	(0)	(2)	(2)
30						31					

Note that the quality flags appear in the same order as the rates themselves. The digit in parentheses under each rate name is the snapshot of the readout referred to,

Chars.

32-287

Main telescope digital scans.



Thirty-two at eight characters each. These 36-bit scans and associated qualities appear in the order they were read out during the page. Data in fill scans will be binary zeros. The quality flag gives the quality of the readout according to the code:

- 00 - excellent
- 01 - good
- 10 - fill
- 11 - (will not occur)

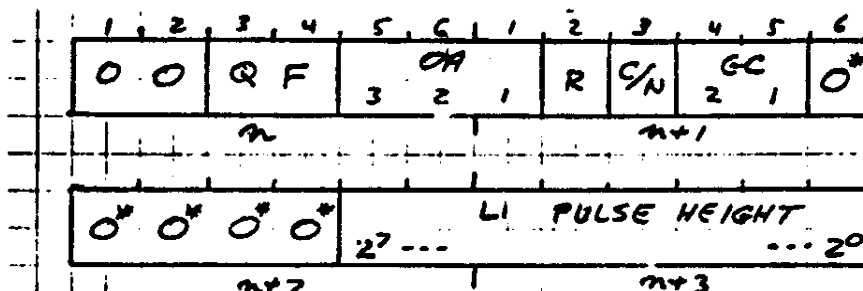
OA Bits If no event, 000. If an event occurred, the sector geometry (see Appendix 1, page 1.6) is given by:

OA3	OA2	OA1	Sector
0	0	0	8
0	0	1	7
0	1	0	6
0	1	1	5
1	0	0	4
1	0	1	3
1	1	0	2
1	1	1	1

Chars.

288-351

L.E.T. digital scans.



Sixteen at four characters each. These 20-bit scans and associated qualities appear in the order they were read out during the page. Data in fill scans will be binary zeros. The binary zeros marked with an asterisk in the diagram are part of the scan and are subject to telemetry errors. The quality flag is coded:

- 00 - excellent
- 01 - good
- 10 - fill
- 11 - (will not occur)

OA Bits If no event, 000. If an event occurred, the correspondence with sector number (see Appendix 1, page 1.6) is:

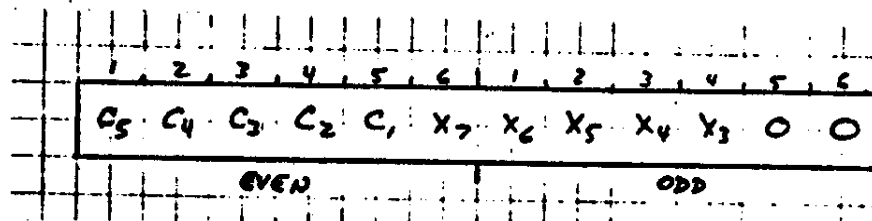
OA3	OA2	OA1	Sector
1	1	1	1
0	0	0	2
0	0	1	3
0	1	0	4
0	1	1	5
1	0	0	6
1	0	1	7
1	1	0	8

Note that the OA bit to sector correspondence for the LET is different from that for the Main Telescope!

Sectored rates

Chars.

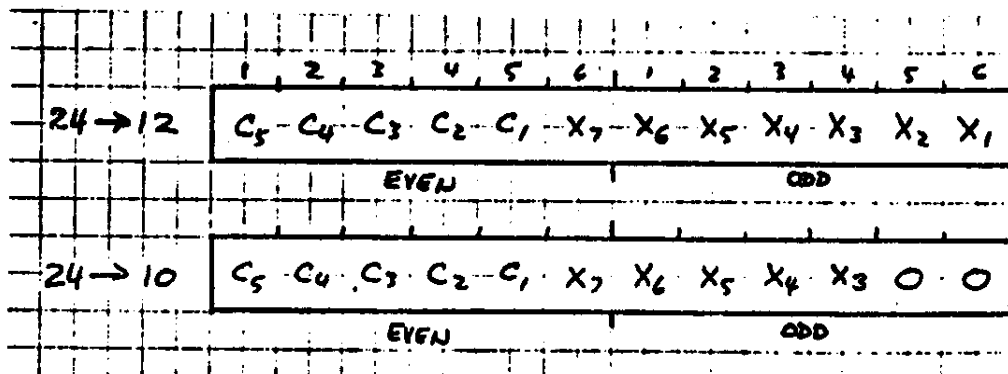
352-353	D1 sector 1	sectored rate
354-355	D1	2
356-357	D1	3
358-359	D1	4
360-361	D1	5
362-363	D1	6
364-365	D1	7
366-367	D1	8
368-369	D2 sector 1	
370-371	D2	2
372-373	D2	3
374-375	D2	4
376-377	D2	5
378-379	D2	6
380-381	D2	7
382-383	D2	8



The telemetered values of the sectored rates as listed above.
 Fill data will be all zeros. The quality flag which applies to
 all these readouts appears in character 479 below.

Unsectored Rates

CHARS.	RATE	TELEMETRY SNAP	24→?	CHARS.	RATE	TELEMETRY SNAP	24→?
384-385	D1a	0	12	426-427	CK	2	12
386-387	D1b	0	12	428-429	L1	0	12
388-389	D1a	1	12	430-431	L1	2	12
390-391	D1b	1	12	432-433	L1 ₂	1	12
392-393	D1a	2	12	434-435	L1 ₂	3	12
394-395	D1b	2	12	436-437	L2	0	12
396-397	D1a	3	12	438-439	L2	2	12
398-399	D1b	3	12	440-441	L1 ₁	1	12
400-401	D2	0	12	442-443	L1 ₁	3	12
402-403	D2	1	12	444-445	HZLE	1	12
404-405	D2	2	12	446-447	HZLE	3	12
406-407	D2	3	12	448-449	HZHE	0	12
408-409	D3	0	12	450-451	HZHE	2	12
410-411	D3	1	12	452-453	D46	0	12
412-413	D3	2	12	454-455	D46	2	12
414-415	D3	3	12	456-457	CKD6	1	12
416-417	D4	0	12	458-459	CKD6	3	12
418-419	D4	1	12	460-461	D6	0	10
420-421	D4	2	12	462-463	D6	2	10
422-423	D4	3	12	464-465	L1 ₃	0	10
424-425	CK	0	12	466-467	L1 ₃	2	10



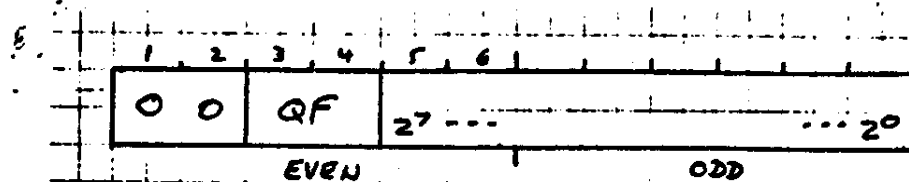
The telemetered values of the unsectored rates. Quality flags appear in characters 18-31 above; fill data are all binary zeros.

Chars.

468-469 Buss voltage analog count

470-471 Instrument temperature

472-473 A-D converter calibration

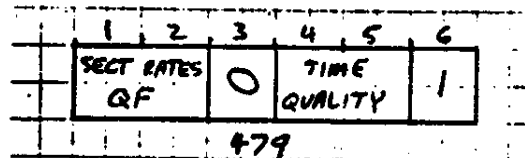


The telemetered values of the indicated analog parameters. Fill values will be binary zeros; the buss voltage will always be fill in odd-numbered pages, since it really is only telemetered every other page. The quality flags indicate data qualities according to:

- 00 - excellent
- 01 - good
- 10 - fill
- 11 - (will not occur)

474-478 spares

479 Flags, as shown.



Sectioned rates quality flag, for all the data in characters

352-383 above:

- 00 - excellent
- 01 - good
- 10 - fill
- 11 - (will not occur)

Time quality for the milliseconds of the day for this page, as given on the raw data tape.

- 01 - analog time agreed with s/c clock
- 10 - time corrected on basis of s/c clock
- 00,11 - (will not occur)

JOB 12:45:15
\$NOP DPOCT7 IF TAPE X-347
TASS IN MS4
1EXEC DPOCT7 BS
INPUT TAPE ON MS4
DATA INPUT 1 1 1

60 FILES

72-073A-07B

[OSP]

IMP-H

OVAF OF D-28846

5.46 MIN. AVG. COUNT RATES (RATE)

01/22/74 - 09/21/74

FILE	1	RECORD	1	LENGTH	2640 BYTES
(0)	17536670000	142624717002	14537772002	64370000141d	000005240243
(48)	777774000000	000016635400	000136711603	400000000021	160340000000
(96)	164350000071	733516435000	000000011643	500000000002	164350000000
(144)	164350000000	003316435000	0000000041703	603300000000	170360000000
(192)	002264370000	141600000524	024300740347	003602030203	025254110001
(240)	160354000000	004116635400	000001521643	500000000020	200400000000
(288)	210400000000	000420040000	000002421643	500000000461	170360000000
(336)	164350000000	000017036000	000000000177	3510000004026	247170021454
(384)	034700360203	020302525411	000215307777	740000000000	166354000001
(432)	170360000000	001417036000	000004531705	600000740136	164350000000
(480)	164350000000	042017036000	000002441703	600000000034	164350000000
(528)	017770210000	412624717002	145413720022	643700001420	000005240243
(576)	777774000000	000017437000	000140171703	600000000030	170360000000
(624)	164350000071	723516435000	000000011643	500000000001	164350000000
(672)	164350000000	004116435000	000000171543	300000000000	200400000000
(720)	002264370000	142200000524	024300740347	003602030203	025254110001
(768)	166354000000	003316635400	000001671643	500000000022	174370000000
(816)	174370000000	000117437000	000002271743	700000000504	174370000000
(864)	174370000000	000117437000	000000000201	364200004026	247170021454
(912)	034700360203	020302525411	000134417777	740000000000	164350000001
(960)	160340000000	002517437000	000005231743	7000000753037	160340000000
(1008)	170360000000	044117036000	000002271743	700000000025	160340000000
(1056)	020221530000	402624717002	145427720022	643700001424	000005240243
(1104)	777774000000	000017236400	000136431663	540000000027	166354000000
(1152)	164350000063	533217437000	000000011503	200000000000	150320000000
(1200)	160320000000	003417437000	000000141543	300000000000	170360000000
(1248)	002264370000	142400000524	024300740347	003602030203	025254110002
(1296)	170360000000	004617036000	000001461703	600000000021	160340000000
(1344)	160340000000	000116034000	000002121543	300000000411	174370000000
(1392)	164330000000	000017437000	000000000203	677500004126	247170021454
(1440)	034700360203	020302525411	000144417777	740000000000	176374000001
(1488)	164350000000	001516435000	000004551643	500000724135	174370000000
(1536)	170360000000	043320040000	000002411643	500000000027	174370000000
(1584)	020453050000	402624717002	145443720022	643700001430	000005230243
(1632)	777774000000	000015232400	000120141443	100000000023	144310000000
(1680)	170360000074	163515032105	000000011703	600000000002	170360000000
(1728)	170360000000	004215032000	000000111603	400000000000	154330000000
(1776)	002264370000	143000000523	024300740347	003602030203	025254110001
(1824)	164334000000	002115633400	000001441603	400000000014	160340000000
(1872)	160340000000	000216034000	00000000417	600000000417	150320000000
(1920)	170360000000	000015032000	000000000206	212700004026	247170021454
(1968)	034700360203	020302525411	000170277777	740000000000	166354000001
(2016)	164334000000	001120040000	00000512004	000001001040	160340000000
(2064)	164330000000	042017437000	000002432004	000000000034	160340000000
(2112)	020704400000	402624717002	145457720022	643700001432	000005230243
(2160)	777774000000	000016034000	000127051623	400000000027	162344000000
(2208)	164350000072	073516433000	0000000031643	500000000000	164350000000
(2256)	164350000000	002515433000	000000101443	100000000000	164350000000
(2304)	002264370000	143400000523	024300740347	003602030203	025254110001
(2352)	162344000000	002416234400	000001441663	540000000032	164350000000
(2400)	164350000000	000016435000	000001771643	500000000434	144310000000
(2448)	164350000000	000014431000	000000000210	526100004026	247170021454
(2496)	034700360203	020302525406	000134257777	740000000000	150320000001
(2544)	164330000000	002014031000	000004161403	300000000030	154330000000
(2592)	164350000000	045114431000	000002051403	000000000026	154330000000
FILE 1	RECORD 08	LENGTH	2640 BYTES		
(0)	016837650000	403224717002	15551720022	643700004142	000005170242
				007403470036	020302030250
					541100005026

\$JOB 10:27:39
\$NOP DUMP OF X-387
\$ASS IN MS6
\$AVF IN 59
\$EXEC DPOCT7 BS
INPUT TAPE ON MS6
DATA INPUT 1 0 3

FILE 60

09/21/74

0-28846

FILE	1	RECORD	68	LENGTH	2640 BYTES			
(5)	026617240000	441027326303	131132720022	461500003011	000005530240	007503470036	020302030244	540600001424
(48)	000134410000	000015633400	120201561543	3000000006045	1543300000000	036315232400	000001201703	600000000362
(96)	170360000065	603617036000	000002711703	6000000000001	1703600000000	034417437000	000005461443	100000157141
(144)	170360000003	535617036000	000041551743	7000000000076	000002670234	000044102732	000044102732	630313113672
(192)	002246150000	301200000553	024000740347	003602030203	024454110000	142500015145	000000001543	300011275354
(240)	160340000000	561716034000	000003331563	340000000121	1603400000000	030316034000	006224341403	000000000206
(288)	160340000000	000116034000	000003111503	2000000006441	1703600000017	635616034000	000316301403	000000003077
(336)	150320000000	006517036000	000000010267	654500004410	273263031311	427200224615	000030120000	055302400075
(384)	034700360203	020302445406	000011620001	610600000000	162344001125	436215433000	000052111543	300000000365
(432)	154330000000	013216034000	000002721603	400000617434	1643500000000	022616034000	000000011603	000000000256
(480)	164350000000	052316034000	001552741603	400000030402	1643500000000	345416435000	000000701603	400000000001
(528)	027050360000	441027326303	131146720022	461500003014	000005520240	007503470036	020302030244	540600001023
(576)	000250430000	000016034000	112041601523	240000005201	1523240000000	033115232400	000001071543	300000000305
(624)	154330000057	633316435000	000002351543	3000000000001	1543300000000	026717036000	000005271543	300000152743
(672)	154330000002	730416435000	000034151703	6000000000076	1543300000000	000202713367	000044102732	630313115272
(720)	002246150000	301600000552	024000750347	003602030203	024454060000	105000022501	00000001603	400010772360
(768)	152324000000	515115232400	000003461443	1000000000113	1543300000000	030015433000	005753331543	300000000213
(816)	154330000000	000015433000	000002631543	3000000000460	1643500000015	635115433000	000264461543	3000000003163
(864)	154330000000	005616435000	000000030272	1677000004410	273263031311	567200224615	000030160000	055202400075
(912)	034700360203	020302445406	000021500003	1541000000000	172364001127	077216435000	000053401643	500000000367
(960)	152324000000	012615433000	000003231543	300000575533	1703600000000	026615433000	000000021543	000000000272
(1008)	150320000000	043417437000	001574131543	300000025646	1703600000000	326115032000	000000601743	700000000000
(1056)	027302100000	441027326303	131162720022	461500003017	000005520240	007403470036	020302030244	541100001150
(1104)	000174650000	000016435000	107013641543	300000005134	1543300000000	035216034000	000001251743	700000000355
(1152)	174370000066	513717437000	000002631743	7000000000001	1743700000000	032316034000	000005341543	300000141347
(1200)	174370000003	155417437000	000034001623	4000000000073	1543300000000	000302736521	000044102732	630313116672
(1248)	002246150000	301700000552	024000750347	003602030203	024454060000	102300025122	000000001663	540011527366
(1296)	152324000000	511215232400	000003051523	240000000111	1743700000000	032117437000	006667371603	400000000244
(1344)	174370000000	000017437000	000003171643	5000000000535	1743700000016	756717437000	000317301603	4000000003124
(1392)	164350000000	005317437000	000000010274	5032000004410	273263031311	727200224615	000030210000	055202400074
(1440)	034700360203	020302445411	000041500002	0544000000000	15433001367	455416234400	000065711623	440000000342
(1488)	164350000000	011317437000	000003431743	700000665537	1443100000000	016717437000	000000001743	700000000421
(1536)	164350000000	054216435000	002326051743	700000034163	1443100000000	331416435000	000000571643	500000000002
(1584)	027533420000	441027326303	131176720022	461500003021	000005520240	007503470036	020302030244	5406000004561
(1632)	000231500000	000015232400	143216521523	240000006221	1523240000000	030015633400	000001161443	100000000252
(1680)	144310000053	613116034000	000002211443	1000000000000	1443100000000	032115032000	000004351443	100000200461
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FILE 1 RECORD 69 LENGTH 2640 BYTES 09/21/74

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