

DATA SET CATALOG #175

68-066B-01A, 02A, 03A, 04A

INJUN 5

MASTER SCIENCE FILE DATA

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 This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system.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

INJUN 5

SPMS 00048

LEPEDEA COUNT RATES, TAPE

68-066B-01A-04A

THIS DATA SET HAS BEEN RESTORED. THERE WERE ORIGINALLY 949 7-TRACK, 800 BPI TAPES, WRITTEN IN BINARY. THERE ARE 141 RESTORED TAPES. THERE WERE 134 BAD TAPES, THEY ARE LISTED ON A SEPERATE PAGE. TAPES ARE IN ORDER BY DR NUMBER, NOT BY TIME SPAN. THE DR TAPES ARE 3480 CARTRIDGES AND THE DS TAPES ARE 9-TRACK, 6250 BPI. THE ORIGINAL TAPES WERE CREATED ON AN UNIVAC 418 COMPUTER AND WERE RESTORED ON AN IBM 9021 COMPUTER. THE DR AND DS NUMBERS ALONG WITH THE CORRESPONDING D NUMBERS AND TIME SPANS ARE AS FOLLOWS:

DR#	DS#	DD#	FILES	TIME SPAN
DR005475	DS005475	D008849	1	08/10/68 - 08/10/68
		D008850	2	08/10/68 - 08/13/68
		D008851	3	08/13/68 - 08/14/68
		D008852	4	08/14/68 - 08/14/68
		D008853	5	08/14/68 - 08/15/68
		D008854	6	08/15/68 - 08/17/68
		D008855	7	08/17/68 - 08/22/68
DR005476	DS005476	D008856	1	08/22/68 - 08/27/68
		D008857	2	08/27/68 - 09/01/68
		D008858	3	09/01/68 - 09/01/68
		D008859	4	09/04/68 - 09/04/68
		D008860	5	09/08/68 - 09/09/68
		D008861	6	09/11/68 - 09/13/68
DR005477	DS005477	D008862	1	09/13/68 - 09/13/68
		D008863	2	09/14/68 - 09/16/68
		D008864	3	09/16/68 - 09/18/68
		D008865	4	09/18/68 - 09/19/68
		D008866	5	09/19/68 - 09/20/68
		D008867	6	09/20/68 - 09/22/68
DR005478	DS005478	D008868	1	09/21/68 - 09/21/68
		D008869	2	09/22/68 - 09/23/68
		D008870	3	09/23/68 - 09/24/68
		D008871	4	09/24/68 - 09/25/68

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DR#	DS#	DD#	FILES	TIME SPAN
DR005479	DS005479	D008872	1	09/25/68 - 09/26/68
		D008873	2	09/26/68 - 09/27/68
		D008874	3	09/27/68 - 09/30/68
		D008875	4	09/30/68 - 10/02/68
		D008876	5	10/02/68 - 10/03/68
		D008877	6	10/14/68 - 10/15/68
DR005480	DS005480	D008878	1	10/04/68 - 10/07/68
		D008879	2	10/07/68 - 10/08/68
		D008880	3	10/08/68 - 10/09/68
		D008881	4	10/09/68 - 10/10/68
		D008882	5	10/10/68 - 10/11/68
		D008883	6	10/11/68 - 10/11/68 *
DR005481	DS005481	D008884	1	10/12/68 - 10/13/68
		D008885	2	10/13/68 - 10/13/68
		D008886	3	10/03/68 - 10/04/68
		D008887	4	10/15/68 - 10/16/68
		D008888	5	10/22/68 - 10/23/68
		D008889	6	10/23/68 - 10/25/68
DR005482	DS005482	D008890	1	10/26/68 - 10/28/68
		D008891	2	10/28/68 - 10/30/68
		D008892	3	10/21/68 - 10/22/68
		D008893	4	10/31/68 - 11/03/68 *
		D008894	5	10/24/68 - 10/26/68
		D008895	6	10/26/68 - 10/28/68
DR005483	DS005483	D008896	1	10/28/68 - 10/30/68
		D008897	2	10/30/68 - 10/31/68
		D008898	3	10/31/68 - 11/03/68
		D008899	4	11/03/68 - 11/05/68
		D008900	5	11/05/68 - 11/07/68 *
		D008901	6	11/07/68 - 11/09/68
DR005484	DS005484	D008902	1	11/09/68 - 11/11/68
		D008903	2	11/11/68 - 11/13/68
		D008904	3	11/13/68 - 11/15/68
		D008905	4	11/15/68 - 11/17/68
		D008906	5	11/17/68 - 11/19/68
		D008907	6	11/19/68 - 11/21/68
DR005485	DS005485	D008908	1	11/21/68 - 11/21/68
		D008909	2	11/23/68 - 11/30/68
		D008910	3	11/30/68 - 12/08/68 *
		D008911	4	12/08/68 - 12/08/68
		D008912	5	12/15/68 - 12/22/68
		D008913	6	12/22/68 - 12/28/68

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DR#	DS#	DD#	FILES	TIME SPAN
DR005486	DS005486	D008914	1	12/28/68 - 01/01/69
		D008915	2	01/01/69 - 01/03/69
		D008916	3	01/03/69 - 01/06/69
		D008917	4	01/06/69 - 01/07/69
		D008918	5	01/07/69 - 01/08/69
		D008919	6	01/08/69 - 01/09/69 *
DR005487	DS005487	D008920	1	01/09/69 - 01/10/69
		D008921	2	01/10/69 - 01/10/69
		D008922	3	01/10/69 - 01/11/69
		D008923	4	01/11/69 - 01/12/69
		D008924	5	01/12/69 - 01/12/69 *
		D008925	6	01/13/69 - 01/14/69
DR005488	DS005488	D008926	1	01/14/69 - 01/15/69
		D008927	2	01/15/69 - 01/16/69
		D008928	3	01/16/69 - 01/17/69
		D008929	4	01/17/69 - 01/18/69
		D008930	5	01/18/69 - 01/19/69
		D008931	6	01/19/69 - 01/20/69
DR005489	DS005489	D008932	1	01/20/69 - 01/21/69
		D008933	2	01/21/69 - 01/21/69
		D008934	3	01/21/69 - 01/22/69
		D008935	4	01/22/69 - 01/23/69
		D008936	5	01/23/69 - 01/24/69
		D008937	6	01/24/69 - 01/26/69
DR005490	DS005490	D008938	1	01/26/69 - 01/27/69
		D008939	2	01/27/69 - 01/27/69 *
		D008940	3	01/27/69 - 01/29/69
		D008941	4	01/29/69 - 01/30/69
		D008942	5	01/30/69 - 01/31/69
		D008943	6	01/31/69 - 02/01/69
DR005491	DS005491	D008944	1	02/01/69 - 02/01/69
		D008945	2	02/03/69 - 02/03/69
		D008946	3	02/04/69 - 02/04/69
		D008947	4	02/04/69 - 02/05/69
		D008948	5	02/05/69 - 02/07/69
		D008949	6	02/07/69 - 02/09/69
DR005492	DS005492	D008950	1	02/10/69 - 02/16/69
		D008951	2	02/16/69 - 02/22/69
		D008952	3	02/22/69 - 03/01/69
		D008953	4	03/01/69 - 03/06/69
		D008954	5	03/06/69 - 03/11/69
		D008955	6	03/11/69 - 03/15/69
DR005493	DS005493	D008956	1	03/15/69 - 03/19/69
		D008957	2	03/19/69 - 03/22/69
		D008958	3	03/22/69 - 03/25/69
		D008959	4	03/25/69 - 04/02/69
		D008960	5	04/02/69 - 04/02/69 *

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DR#	DS#	DD#	FILES	TIME SPAN
DR005502	DS005502	D008962	1	04/11/69 - 04/13/69
		D008963	2	04/13/69 - 04/14/69
		D008964	3	04/14/69 - 04/16/69
		D008965	4	04/16/69 - 04/17/69
		D008966	5	04/17/69 - 04/17/69
		D008967	6	01/08/69 - 01/09/69
DR005515	DS005515	D008970	1	04/25/69 - 04/26/69 (a)
		D008971	2	04/26/69 - 04/28/69
		D008972	3	04/28/69 - 04/30/69 (b)
		D008973	4	04/30/69 - 05/01/69 (c)
		D008974	5	05/01/69 - 05/03/69
		D008975	6	05/03/69 - 05/05/69 (d)
DR005516	DS005516	D008976	1	05/05/69 - 05/06/69
		D008977	2	05/06/69 - 05/07/69 (e)
		D008978	3	05/07/69 - 05/09/69 (f)
		D008979	4	05/09/69 - 05/12/69 (g)
		D008980	5	05/12/69 - 05/13/69
		D008981	6	05/13/69 - 05/15/69
		D008982	7	05/15/69 - 05/17/69
DR005517	DS005517	D008983	1	05/17/69 - 05/19/69 (h)
		D008984	2	05/19/69 - 05/20/69
		D008985	3	05/20/69 - 05/22/69 (i)
		D008986	4	05/22/69 - 05/24/69 (j)
		D008987	5	05/24/69 - 05/26/69
		D008988	6	05/26/69 - 05/28/69 (k)
DR005518	DS005518	D008989	1	05/28/69 - 05/31/69
		D008990	2	05/31/69 - 06/03/69 (l)
		D008991	3	06/03/69 - 06/04/69 (m)
		D008992	4	06/04/69 - 06/06/69 (n)
		D008993	5	06/06/69 - 06/09/69 (o)
		D008994	6	06/09/69 - 06/11/69 (p)
DR005519	DS005519	D008995	1	06/11/69 - 06/13/69 (q)
		D008996	2	06/13/69 - 06/15/69 (r)
		D008997	3	06/15/69 - 06/17/69
		D008998	4	06/17/69 - 06/19/69 (s)
		D008999	5	06/19/69 - 06/21/69
		D009000	6	06/21/69 - 06/22/69 (t)
		D009001	7	06/22/69 - 06/24/69 (u)
DR005520	DS005520	D009002	1	06/24/69 - 06/26/69 (v)
		D009003	2	06/26/69 - 06/29/69 (w)
		D009004	3	06/29/69 - 07/01/69 (x)
		D009005	4	07/01/69 - 07/03/69 (y)
		D009006	5	07/03/69 - 07/06/69
		D009007	6	07/06/69 - 07/08/69

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DR#	DS#	DD#	FILES	TIME SPAN		
DR005521	DS005521	D009008	1	07/08/69 - 07/11/69	(z)	
		D009009	2	07/11/69 - 07/14/69		
		D009010	3	07/14/69 - 07/17/69		
		D009011	4	07/17/69 - 07/20/69		
		D009012	5	07/20/69 - 07/23/69		
		D009013	6	07/23/69 - 07/25/69		
DR005522	DS005522	D009014	1	07/25/69 - 07/29/69	(aa)	
		D009015	2	07/29/69 - 07/30/69		
		D009016	3	07/30/69 - 08/02/69	(bb)	
		D009017	4	08/02/69 - 08/04/69		
		D009018	5	08/04/69 - 08/07/69		
		D009019	6	08/07/69 - 08/12/69		
DR005523	DS005523	D009020	1	08/12/69 - 08/15/69	(cc)	
		D009021	2	08/15/69 - 08/21/69		
		D009022	3	08/21/69 - 08/24/69		
		D009023	4	08/24/69 - 08/25/69		
		D009024	5	08/25/69 - 08/29/69		(dd)
		D009025	6	08/29/69 - 09/02/69		
DR005524	DS005524	D009026	1	09/02/69 - 09/06/69	(ee)	
		D009027	2	09/06/69 - 09/09/69		
		D009028	3	09/09/69 - 09/12/69	(ff)	
		D009029	4	09/13/69 - 09/19/69		
		D009030	5	09/19/69 - 09/24/69	(hh)	
		D009031	6	09/24/69 - 09/26/69		
DR005525	DS005525	D009032	1	09/26/69 - 09/26/69	(jj)	
		D009033	2	09/26/69 - 09/27/69		
		D009034	3	09/27/69 - 09/29/69		
		D009035	4	09/29/69 - 10/03/69		
		D009036	5	10/03/69 - 10/07/69		
		D009037	6	10/07/69 - 10/09/69		
		D009038	7	10/09/69 - 10/10/69		
		D009039	8	10/10/69 - 10/15/69		
		D009041	9	10/20/69 - 10/24/69		
DR005526	DS005526	D009042	1	10/24/69 - 10/28/69	(kk)	
		D009043	2	10/28/69 - 10/30/69		
		D009044	3	10/30/69 - 11/01/69		
		D009045	4	11/01/69 - 11/04/69		
		D009046	5	11/04/69 - 11/06/69		(ll)
		D009047	6	11/06/69 - 11/09/69		
DR005527	DS005527	D009048	1	11/09/69 - 11/11/69	(mm)	
		D009049	2	11/11/69 - 11/13/69		
		D009050	3	11/13/69 - 11/14/69		
		D009051	4	11/14/69 - 11/17/69		
		D009052	5	11/17/69 - 11/19/69		
		D009053	6	11/19/69 - 11/22/69		

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DR#	DS#	DD#	FILES	TIME SPAN
DR005528	DS005528	D009054	1	11/22/69 - 11/25/69
		D009055	2	11/25/69 - 11/26/69
		D009056	3	11/25/69 - 11/26/69
		D009057	4	11/29/69 - 12/02/69
		D009058	5	12/04/69 - 12/06/69
		D009059	6	12/30/69 - 01/02/70
DR005529	DS005529	D009060	1	12/06/69 - 12/09/69
		D009061	2	12/09/69 - 12/11/69
		D009062	3	12/11/69 - 12/14/69
		D009063	4	12/14/69 - 12/14/69 *
		D009064	5	12/17/69 - 12/19/69
		D009065	6	12/19/69 - 12/23/69
DR005530	DS005530	D009066	1	12/23/69 - 12/26/69
		D009067	2	12/26/69 - 12/26/69
		D009068	3	01/21/69 - 01/22/69
		D009069	4	01/02/70 - 01/06/70
		D009070	5	01/06/70 - 01/09/70
		D009071	6	01/09/70 - 01/11/70
DR005531	DS005531	D009072	1	02/12/70 - 02/14/70
		D009073	2	01/11/70 - 01/13/70
		D009074	3	01/13/70 - 01/14/70
		D009075	4	01/14/70 - 01/15/70
		D009076	5	01/15/70 - 01/15/70 *
		D009077	6	01/19/70 - 01/21/70
DR005532	DS005532	D009078	1	01/22/70 - 01/23/70
		D009079	2	01/21/70 - 01/23/70
		D009080	3	01/23/70 - 01/26/70
		D009081	4	01/26/70 - 01/30/70
		D009082	5	01/30/70 - 01/31/70 *
		D009083	6	01/31/70 - 02/02/70 *
DR005533	DS005533	D009084	1	02/02/70 - 02/04/70
		D009085	2	02/04/70 - 02/06/70 *
		D009086	3	02/05/70 - 02/07/70 (nn)
		D009087	4	02/07/70 - 02/09/70
		D009088	5	02/09/70 - 02/12/70
		D009089	6	02/14/70 - 02/15/70
DR005534	DS005534	D009090	1	02/15/70 - 02/17/70 (oo)
		D009091	2	02/17/70 - 02/18/70
		D009092	3	02/18/70 - 02/19/70
		D009093	4	02/19/70 - 02/21/70
		D009094	5	02/21/70 - 02/22/70
		D009095	6	02/22/70 - 02/23/70
DR005535	DS005535	D009096	1	02/22/70 - 02/23/70
		D009099	2	03/08/70 - 03/09/70

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DR#	DS#	DD#	FILES	TIME SPAN
DR005536	DS005536	D009102	1	03/12/70 - 03/12/70
		D009103	2	03/13/70 - 03/14/70
		D009104	3	03/14/70 - 03/15/70
		D009105	4	03/15/70 - 03/16/70
		D009106	5	03/16/70 - 03/17/70
		D009107	6	03/17/70 - 03/17/70 *
DR005537	DS005537	D009108	1	03/18/70 - 03/18/70 *
		D009109	2	03/20/70 - 03/21/70
		D009110	3	03/21/70 - 03/22/70
		D009111	4	03/22/70 - 03/23/70
		D009112	5	03/23/70 - 03/23/70
		D009113	6	03/24/70 - 03/25/70
DR005538	DS005538	D009114	1	03/25/70 - 03/26/70
		D009115	2	03/26/70 - 03/27/70
		D009116	3	03/27/70 - 03/28/70
		D009117	4	03/28/70 - 03/29/70 (qq)
		D009118	5	03/29/70 - 04/01/70
		D009119	6	04/01/70 - 04/04/70
DR005539	DS005539	D009120	1	04/06/70 - 04/07/70
		D009121	2	04/04/70 - 04/06/70 (rr)
		D009122	3	04/07/70 - 04/09/70
		D009123	4	04/09/70 - 04/11/70
		D009124	5	04/25/70 - 04/27/70
		D009125	6	04/27/70 - 04/29/70
DR005763	DS005763	D009126	1	04/11/70 - 04/13/70
		D009127	2	04/13/70 - 04/14/70
		D009128	3	04/14/70 - 04/15/70
		D009129	4	04/15/70 - 04/18/70
		D009130	5	04/18/70 - 04/21/70 (ss)
		D009131	6	04/21/70 - 04/21/70 *
DR005764	DS005764	D009132	1	04/13/70 - 04/15/70
		D009133	2	08/23/68 - 08/26/68
		D009134	3	08/26/68 - 09/03/68
		D009135	4	09/03/68 - 09/30/68
		D009136	5	09/30/68 - 10/02/68
		D009137	6	10/02/68 - 10/09/68 (tt)
DR005765	DS005765	D009138	1	04/25/70 - 04/27/70 *
		D009139	2	10/12/68 - 10/15/68
		D009140	3	11/16/68 - 11/21/68
		D009141	4	11/16/68 - 11/16/68 *
		D009142	5	11/04/68 - 11/16/68
		D009143	6	10/30/68 - 10/30/68 *
DR005766	DS005766	D009144	1	10/24/68 - 10/24/68 *
		D009145	2	10/20/68 - 10/24/68 (uu)
		D009146	3	10/15/68 - 10/20/68
		D009147	4	11/27/68 - 11/27/68
		D009148	5	11/26/68 - 11/27/68
		D009149	6	11/24/68 - 11/24/68 *

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DR#	DS#	DD#	FILES	TIME SPAN
DR005767	DS005767	D009150	1	11/24/68 - 11/24/68
		D009151	2	11/24/68 - 11/24/68
		D009152	3	11/24/68 - 11/24/68 *
		D009153	4	11/21/68 - 11/21/68
		D009154	5	12/01/68 - 12/01/68
		D009155	6	11/28/68 - 12/01/68
DR005768	DS005768	D009156	1	11/28/68 - 11/28/68
		D009157	2	11/28/68 - 11/28/68
		D009158	3	11/28/68 - 11/28/68 *
		D009159	4	11/28/68 - 11/28/68
		D009160	5	11/27/68 - 11/28/68
		D009161	6	12/01/68 - 12/01/68
DR005769	DS005769	D009162	1	12/01/68 - 12/02/68
		D009163	2	12/02/68 - 12/02/68
		D009164	3	12/02/68 - 12/02/68
		D009165	4	12/02/68 - 12/03/68
		D009166	5	12/03/68 - 12/03/68
		D009167	6	12/03/68 - 12/03/68
DR005770	DS005770	D009168	1	12/03/68 - 12/03/68
		D009169	2	12/03/68 - 12/03/68 *
		D009170	3	12/03/68 - 12/04/68
		D009171	4	12/04/68 - 12/04/68
		D009172	5	12/04/68 - 12/04/68
		D009173	6	12/04/68 - 12/04/68
DR005771	DS005771	D009174	1	12/04/68 - 12/04/68
		D009175	2	12/04/68 - 12/04/68
		D009176	3	12/04/68 - 12/05/68
		D009177	4	12/05/68 - 12/05/68
		D009178	5	12/05/68 - 12/05/68
		D009179	6	12/05/68 - 12/05/68
DR005772	DS005772	D009180	1	12/05/68 - 12/06/68
		D009181	2	12/06/68 - 12/06/68
		D009182	3	12/06/68 - 12/06/68
		D009183	4	12/06/68 - 12/06/68
		D009184	5	12/06/68 - 12/06/68
		D009185	6	12/06/68 - 12/06/68
DR005773	DS005773	D009186	1	12/06/68 - 12/06/68 *
		D009187	2	12/07/68 - 12/07/68
		D009188	3	12/07/68 - 12/07/68

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DR#	DS#	DD#	FILES	TIME SPAN
DR005774	DS005774	D009189	1	12/30/68 - 12/31/68
		D009190	2	12/31/68 - 12/31/68
		D009191	3	12/31/68 - 01/01/69
		D009192	4	01/01/69 - 01/02/69
		D009193	5	01/02/69 - 01/02/69
		D009194	6	01/02/69 - 01/02/69
DR005775	DS005775	D009196	1	02/12/69 - 02/13/69
		D009198	2	02/15/69 - 02/16/69
DR005776	DS005776	D009202	1	01/02/69 - 01/03/69
		D009206	2	01/05/69 - 01/05/69
		D009207	3	01/06/69 - 01/06/69
		D009208	4	01/06/69 - 01/07/69
		D009209	5	01/07/69 - 01/08/69
DR005777	DS005777	D009211	1	01/08/69 - 01/08/69
		D009214	2	01/08/69 - 01/11/69
		D009215	3	01/11/69 - 01/13/69
		D009218	4	01/13/69 - 01/13/69
		D009219	5	01/18/69 - 01/20/69
		D009220	6	01/24/69 - 01/27/69
DR005778	DS005778	D009221	1	01/27/69 - 01/29/69
		D009222	2	01/29/69 - 01/31/69
		D009223	3	01/31/69 - 02/02/69
		D009225	4	02/02/69 - 02/06/69
		D009226	5	02/06/69 - 02/11/69
		D009228	6	02/11/69 - 02/12/69
DR005779	DS005779	D009229	1	02/16/69 - 02/17/69
		D009230	2	02/17/69 - 02/18/69
		D009231	3	02/18/69 - 02/19/69
		D009233	4	02/19/69 - 02/21/69
		D009234	5	02/21/69 - 02/23/69
		D009236	6	02/23/69 - 02/27/69
DR005780	DS005780	D009237	1	02/28/69 - 03/02/69
		D009239	2	03/02/69 - 03/04/69
		D009242	3	03/19/69 - 03/23/69
		D009243	4	03/29/69 - 03/30/69
		D009244	5	03/30/69 - 04/02/69
		D009245	6	04/02/69 - 04/05/69
DR005781	DS005781	D009246	1	04/10/69 - 04/12/69
		D009247	2	04/13/69 - 04/16/69
		D009248	3	04/16/69 - 04/18/69
		D009249	4	04/18/69 - 04/19/69
		D009250	5	04/19/69 - 04/20/69
		D009251	6	04/20/69 - 04/22/69

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DR#	DS#	DD#	FILES	TIME SPAN
DR005782	DS005782	D009252	1	04/22/69 - 04/23/69
		D009253	2	04/23/69 - 04/24/69
		D009254	3	04/26/69 - 04/28/69
		D009255	4	04/28/69 - 04/29/69
		D009256	5	04/29/69 - 05/01/69
		D009257	6	05/01/69 - 05/02/69
DR005783	DS005783	D009258	1	05/02/69 - 05/03/69
		D009259	2	05/03/69 - 05/06/69
		D009260	3	05/06/69 - 05/09/69
		D009261	4	05/11/69 - 05/14/69
		D009262	5	05/14/69 - 05/15/69
		D009263	6	05/15/69 - 05/16/69
DR005784	DS005784	D009264	1	05/16/69 - 05/16/69
		D009265	2	05/16/69 - 05/19/69
		D009266	3	05/09/69 - 05/09/69
DR005785	DS005785	D009272	1	05/19/69 - 05/19/69
		D009273	2	05/19/69 - 05/21/69 (vv)
		D009274	3	05/22/69 - 05/23/69
		D009275	4	05/23/69 - 05/24/69
		D009276	5	05/24/69 - 05/25/69 (ww)
		D009277	6	05/25/69 - 05/26/69
DR005786	DS005786	D009280	1	05/27/69 - 05/28/69 (xx)
		D009281	2	05/28/69 - 05/29/69 (yy)
		D009282	3	05/29/69 - 05/29/69
		D009283	4	05/29/69 - 05/30/69 (zz)
		D009284	5	05/31/69 - 06/01/69 (aaa)
		D009285	6	06/01/69 - 06/01/69 (bbb)
DR005787	DS005787	D009286	1	06/02/69 - 06/03/69 (ccc)
		D009287	2	06/03/69 - 06/03/69
		D009288	3	06/03/69 - 06/04/69
		D009289	4	06/01/69 - 06/01/69 (ddd)
		D009290	5	06/02/69 - 06/03/69
		D009291	6	05/28/69 - 05/29/69
DR005788	DS005788	D009292	1	06/05/69 - 06/05/69
		D009294	2	06/05/69 - 06/05/69
		D009296	3	06/05/69 - 06/05/69
		D009297	4	06/05/69 - 06/05/69
		D009298	5	06/07/69 - 06/09/69
		D009299	6	06/09/69 - 06/09/69
DR005789	DS005789	D009300	1	06/09/69 - 06/09/69
		D009301	2	06/09/69 - 06/10/69
		D009308	3	06/10/69 - 06/11/69 (eee)
		D009311	4	06/11/69 - 06/11/69
		D009313	5	06/11/69 - 06/12/69
		D009314	6	06/12/69 - 06/13/69 (fff)

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DR#	DS#	DD#	FILES	TIME SPAN	
DR005790	DS005790	D009315	1	06/13/69 - 06/14/69	
		D009316	2	06/14/69 - 06/14/69	
		D009317	3	06/14/69 - 06/15/69	
		D009318	4	06/15/69 - 06/15/69	
		D009319	5	06/15/69 - 06/16/69	
		D009321	6	06/16/69 - 06/17/69	
DR005791	DS005791	D009322	1	06/17/69 - 06/18/69	
		D009323	2	06/18/69 - 06/18/69	
		D009324	3	06/18/69 - 06/19/69	
		D009325	4	06/19/69 - 06/20/69	(ggg)
		D009326	5	06/20/69 - 06/20/69	
DR005792	DS005792	D009328	1	06/20/69 - 06/21/69	
		D009329	2	06/24/69 - 06/24/69	*
		D009330	3	06/21/69 - 06/21/69	*
		D009331	4	06/21/69 - 06/22/69	*
		D009332	5	06/22/69 - 06/22/69	*
		D009333	6	06/22/69 - 06/23/69	
DR005793	DS005793	D009335	1	06/23/69 - 06/24/69	
		D009336	2	06/24/69 - 06/24/69	
		D009337	3	06/24/69 - 06/25/69	
		D009338	4	06/25/69 - 06/25/69	
		D009339	5	06/25/69 - 06/26/69	
		D009340	6	06/26/69 - 06/26/69	
DR005794	DS005794	D009342	1	12/09/68 - 12/09/68	
		D009343	2	12/09/68 - 12/10/68	
		D009347	3	12/10/68 - 12/10/68	
		D009349	4	12/10/68 - 12/10/68	
		D009350	5	12/10/68 - 12/10/68	
		D009351	6	12/10/68 - 12/10/68	
DR005795	DS005795	D009353	1	12/10/68 - 12/10/68	
		D009354	2	12/10/68 - 12/11/68	
		D009355	3	12/11/68 - 12/11/68	
		D009356	4	12/11/68 - 12/11/68	
		D009357	5	12/11/68 - 12/11/68	
		D009358	6	12/11/68 - 12/12/68	
DR005796	DS005796	D009359	1	12/12/68 - 12/12/68	
		D009360	2	12/13/68 - 12/13/68	
		D009362	3	12/13/68 - 12/13/68	
		D009363	4	12/14/68 - 12/15/68	
		D009364	5	12/15/68 - 12/15/68	
		D009365	6	12/15/68 - 12/16/68	
DR005797	DS005797	D009366	1	12/16/68 - 12/16/68	
		D009367	2	12/16/68 - 12/16/68	
		D009368	3	12/16/68 - 12/16/68	
		D009369	4	12/16/68 - 12/16/68	
		D009370	5	12/16/68 - 12/16/68	
		D009371	6	12/16/68 - 12/16/68	

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DR#	DS#	DD#	FILES	TIME SPAN
DR005798	DS005798	D009372	1	12/17/68 - 12/17/68
		D009373	2	12/17/68 - 12/17/68
		D009374	3	12/17/68 - 12/17/68
		D009375	4	12/17/68 - 12/17/68
		D009376	5	12/17/68 - 12/18/68
		D009377	6	12/18/68 - 12/18/68
DR005799	DS005799	D009379	1	12/18/68 - 12/18/68
		D009380	2	12/18/68 - 12/18/68
		D009381	3	12/18/68 - 12/19/68
		D009382	4	12/19/68 - 12/19/68
		D009384	5	12/19/68 - 12/19/68
		D009385	6	12/20/68 - 12/20/68
DR005800	DS005800	D009386	1	12/20/68 - 12/20/68
		D009387	2	12/20/68 - 12/20/68
		D009389	3	12/05/68 - 12/05/68
DR005801	DS005801	D009390	1	06/26/69 - 06/27/69
		D009391	2	06/27/69 - 06/27/69
		D009392	3	06/27/69 - 06/27/69
		D009393	4	06/27/69 - 06/27/69
		D009395	5	06/27/69 - 06/28/69
		D009396	6	06/28/69 - 06/28/69
DR005802	DS005802	D009398	1	06/28/69 - 06/28/69
		D009399	2	06/28/69 - 06/29/69
		D009401	3	06/29/69 - 06/29/69
		D009402	4	06/29/69 - 06/29/69
		D009403	5	06/29/69 - 06/30/69
DR005803	DS005803	D009404	1	07/01/69 - 07/01/69
		D009405	2	07/01/69 - 07/02/69
		D009406	3	07/02/69 - 07/02/69
		D009407	4	07/02/69 - 07/02/69
		D009408	5	07/02/69 - 07/02/69
DR005804	DS005804	D009409	1	07/02/69 - 07/03/69
		D009410	2	07/03/69 - 07/03/69
		D009411	3	07/03/69 - 07/04/69
		D009412	4	07/04/69 - 07/04/69
		D009413	5	07/04/69 - 07/05/69
		D009414	6	07/05/69 - 07/05/69
DR005805	DS005805	D009415	1	07/06/69 - 07/06/69
		D009416	2	07/06/69 - 07/06/69
		D009418	3	07/06/69 - 07/07/69
		D009420	4	07/07/69 - 07/07/69
		D009421	5	07/07/69 - 07/08/69
		D009424	6	07/08/69 - 07/09/69

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DR#	DS#	DD#	FILES	TIME SPAN
DR005806	DS005806	D009425	1	07/09/69 - 07/10/69
		D009426	2	07/10/69 - 07/10/69
		D009427	3	07/10/69 - 07/11/69
		D009428	4	07/11/69 - 07/12/69
		D009429	5	07/12/69 - 07/12/69
		D009430	6	07/12/69 - 07/13/69
DR005807	DS005807	D009431	1	07/05/69 - 07/05/69
		D009432	2	07/05/69 - 07/06/69 (hhh)
DR005808	DS005808	D009434	1	07/13/69 - 07/13/69 *
		D009435	2	07/13/69 - 07/13/69
		D009436	3	07/13/69 - 07/14/69
		D009437	4	07/14/69 - 07/14/69
		D009438	5	07/14/69 - 07/14/69 (iii)
		D009439	6	07/14/69 - 07/15/69
DR005809	DS005809	D009440	1	07/15/69 - 07/16/69 (jjj)
		D009441	2	07/16/69 - 07/16/69 (kkk)
		D009442	3	07/16/69 - 07/17/69 (lll)
		D009443	4	07/17/69 - 07/18/69
		D009444	5	07/18/69 - 07/18/69 (mmm)
		D009445	6	07/18/69 - 07/19/69
DR005810	DS005810	D009446	1	07/19/69 - 07/19/69
		D009447	2	07/19/69 - 07/20/69
		D009448	3	07/20/69 - 07/20/69
		D009449	4	07/20/69 - 07/21/69
		D009451	5	07/21/69 - 07/21/69
DR005811	DS005811	D009452	1	07/21/69 - 07/21/69
		D009453	2	07/21/69 - 07/22/69
		D009454	3	07/22/69 - 07/22/69 (nnn)
		D009455	4	07/22/69 - 07/23/69
		D009456	5	07/23/69 - 07/23/69 (ooo)
		D009457	6	07/23/69 - 07/24/69
		D009458	7	07/24/69 - 07/25/69
DR005812	DS005812	D009459	1	07/25/69 - 07/25/69 (ppp)
		D009460	2	07/25/69 - 07/26/69 (qqq)
		D009461	3	07/26/69 - 07/26/69 (rrr)
		D009462	4	07/26/69 - 07/27/69
		D009463	5	07/27/69 - 07/28/69
		D009464	6	07/28/69 - 07/29/69
DR005813	DS005813	D009465	1	07/28/69 - 07/29/69
		D009466	2	07/29/69 - 07/30/69
		D009467	3	07/30/69 - 07/31/69
		D009468	4	07/31/69 - 07/31/69
		D009469	5	07/31/69 - 08/01/69 (sss)
		D009471	6	08/02/69 - 08/04/69

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DR#	DS#	DD#	FILES	TIME SPAN
DR005814	DS005814	D009472	1	08/04/69 - 08/05/69
		D009473	2	08/05/69 - 08/07/69
		D009475	3	08/07/69 - 08/09/69
		D009476	4	08/09/69 - 08/09/69
		D009477	5	08/09/69 - 08/10/69
		D009478	6	08/10/69 - 08/11/69
DR005857	DS005857	D009479	1	08/11/69 - 08/12/69
		D009480	2	08/12/69 - 08/14/69
		D009481	3	08/14/69 - 08/18/69
		D009482	4	08/18/69 - 08/22/69
		D009484	5	08/26/69 - 08/29/69
		D009485	6	08/29/69 - 09/01/69
DR005858	DS005858	D009486	1	09/01/69 - 09/02/69
		D009487	2	09/02/69 - 09/06/69
		D009488	3	09/09/69 - 09/13/69
		D009489	4	09/13/69 - 09/16/69
		D009490	5	09/16/69 - 09/17/69
		D009491	6	09/17/69 - 09/20/69
DR005859	DS005859	D009492	1	09/20/69 - 09/25/69
		D009493	2	09/25/69 - 09/30/69
		D009494	3	09/30/69 - 10/02/69
		D009495	4	09/30/69 - 10/02/69
		D009496	5	10/07/69 - 10/10/69
		D009497	6	10/10/69 - 10/11/69
DR005860	DS005860	D009498	1	10/15/69 - 10/17/69
		D009499	2	10/17/69 - 10/21/69
		D009501	3	10/23/69 - 10/24/69 (ttt)
		D009502	4	10/24/69 - 10/25/69
		D009503	5	10/25/69 - 10/27/69
		D009504	6	10/27/69 - 10/28/69
DR005861	DS005861	D009505	1	10/28/69 - 10/29/69
		D009506	2	10/29/69 - 10/30/69
		D009507	3	10/30/69 - 11/04/69
		D009508	4	11/04/69 - 11/04/69
		D009509	5	11/04/69 - 11/07/69
		D009510	6	11/07/69 - 11/10/69
		D009511	7	11/10/69 - 11/11/69
DR005862	DS005862	D009512	1	11/11/69 - 11/11/69
		D009514	2	11/11/69 - 11/12/69
		D009515	3	11/12/69 - 11/13/69
		D009516	4	11/13/69 - 11/14/69
		D009517	5	11/14/69 - 11/16/69 (uuu)
		D009518	6	11/16/69 - 11/17/69

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DR#	DS#	DD#	FILES	TIME	SPAN	
DR005863	DS005863	D009519	1	11/17/69	- 11/19/69	
		D009520	2	11/19/69	- 11/20/69	
		D009521	3	11/20/69	- 11/21/69	
		D009522	4	11/21/69	- 11/22/69	
		D009523	5	11/22/69	- 11/23/69	
		D009524	6	11/23/69	- 11/24/69	(vvv)
DR005864	DS005864	D009526	1	10/11/69	- 10/15/69	
DR005865	DS005865	D009527	1	11/24/69	- 11/25/69	(www)
		D009528	2	11/25/69	- 11/25/69	
		D009529	3	11/25/69	- 11/26/69	(xxx)
		D009530	4	11/26/69	- 11/27/69	
		D009532	5	11/27/69	- 11/27/69	(yyy)
		D009533	6	11/27/69	- 11/28/69	
DR005866	DS005866	D009534	1	11/28/69	- 11/28/69	
		D009535	2	11/28/69	- 11/28/69	(zzz)
		D009536	3	11/28/69	- 11/29/69	
		D009537	4	11/29/69	- 11/30/69	
		D009538	5	11/30/69	- 11/30/69	(aaaa)
DR005867	DS005867	D009539	1	12/05/69	- 12/05/69	(bbbb)
		D009541	2	12/05/69	- 12/06/69	
		D009542	3	12/06/69	- 12/07/69	
		D009543	4	12/07/69	- 12/08/69	
		D009544	5	12/08/69	- 12/09/69	
		D009545	6	12/09/69	- 12/10/69	
DR005868	DS005868	D009547	1	12/10/69	- 12/11/69	
		D009548	2	12/11/69	- 12/11/69	
		D009549	3	12/11/69	- 12/12/69	
		D009550	4	12/12/69	- 12/13/69	
		D009551	5	12/13/69	- 12/13/69	
		D009552	6	12/13/69	- 12/14/69	
DR005869	DS005869	D009553	1	12/14/69	- 12/15/69	
		D009554	2	12/15/69	- 12/15/69	
		D009555	3	12/16/69	- 12/16/69	
		D009556	4	12/16/69	- 12/17/69	
		D009557	5	12/17/69	- 12/18/59	
		D009558	6	12/18/69	- 12/18/69	
DR005870	DS005870	D009559	1	12/18/69	- 12/19/69	
		D009560	2	12/19/69	- 12/21/69	
		D009561	3	12/21/69	- 12/21/69	
		D009562	4	12/21/69	- 12/23/69	
		D009563	5	12/23/69	- 12/23/69	(cccc)
		D009564	6	12/25/69	- 12/26/69	
DR005871	DS005871	D009565	1	12/26/69	- 12/26/69	
		D009566	2	12/26/69	- 12/27/69	
		D009568	3	12/27/69	- 12/28/69	
		D009569	4	12/28/69	- 12/29/69	
		D009570	5	12/29/69	- 12/31/69	(dddd)
		D009571	6	12/31/69	- 12/31/69	

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DR#	DS#	DD#	FILES	TIME SPAN	
DR005872	DS005872	D009572	1	12/31/69 - 01/02/70	(eeee)
		D009573	2	01/02/70 - 01/03/70	(ffff)
		D009575	3	01/03/70 - 01/03/70	(gggg)
		D009576	4	01/03/70 - 01/04/70	(hhhh)
		D009577	5	01/04/70 - 01/05/70	
		D009578	6	01/05/70 - 01/06/70	
DR005873	DS005873	D009579	1	01/06/70 - 01/06/70	
		D009580	2	01/06/70 - 01/07/70	
		D009581	3	01/07/70 - 01/08/70	
		D009582	4	01/08/70 - 01/09/70	
		D009584	5	01/09/70 - 01/10/70	
		D009585	6	01/10/70 - 01/10/70	
DR005874	DS005874	D009586	1	01/10/70 - 01/11/70	
		D009587	2	01/11/70 - 01/12/70	
		D009588	3	01/13/70 - 01/13/70	
		D009589	4	01/13/70 - 01/15/70	
		D009590	5	01/15/70 - 01/16/70	(iiii)
		D009591	6	01/16/70 - 01/16/70	(jjjj)
DR005875	DS005875	D009592	1	01/16/70 - 01/17/70	(kkkk)
		D009593	2	01/17/70 - 01/18/70	(llll)
		D009594	3	01/18/70 - 01/18/70	(mmmm)
		D009595	4	01/19/70 - 01/20/70	(nnnn)
DR005876	DS005876	D009596	1	01/20/70 - 01/21/70	(oooo)
		D009597	2	01/21/70 - 01/23/70	(pppp)
		D009598	3	01/23/70 - 01/23/70	(qqqq)
		D009600	4	01/24/70 - 01/24/70	(rrrr)
		D009601	5	01/24/70 - 01/25/70	
		D009602	6	01/25/70 - 01/26/70	
DR005921	DS005921	D009603	1	01/26/70 - 01/27/70	(ssss)
		D009604	2	01/27/70 - 01/28/70	(tttt)
		D009605	3	01/28/70 - 01/28/70	
		D009606	4	01/29/70 - 01/29/70	
		D009607	5	01/29/70 - 01/29/70	(uuuu)
		D009608	6	01/29/70 - 01/30/70	(vvvv)
DR005922	DS005922	D009610	1	01/30/70 - 01/31/70	
		D009611	2	01/31/70 - 01/31/70	(wwww)
		D009612	3	02/01/70 - 02/02/70	
		D009613	4	02/02/70 - 02/02/70	
		D009614	5	02/02/70 - 02/03/70	(xxxx)
		D009615	6	02/03/70 - 02/05/70	
DR005923	DS005923	D009616	1	02/05/70 - 02/06/70	(yyyy)
		D009617	2	02/06/70 - 02/07/70	
		D009618	3	02/07/70 - 02/09/70	
		D009619	4	02/09/70 - 02/10/70	
		D009620	5	02/10/70 - 02/10/70	
		D009621	6	02/10/70 - 02/11/70	(zzzz)

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DR#	DS#	DD#	FILES	TIME SPAN
DR005924	DS005924	D009622	1	02/12/70 - 02/12/70
		D009623	2	02/12/70 - 02/12/70 (aaaaa)
		D009624	3	02/12/70 - 02/13/70 (bbbbb)
		D009625	4	02/13/70 - 02/14/70 (ccccc)
		D009626	5	02/14/70 - 02/15/70
		D009627	6	02/15/70 - 02/16/70
DR005925	DS005925	D009628	1	02/17/70 - 02/19/70
		D009629	2	02/19/70 - 02/20/70 (ddddd)
		D009630	3	02/20/70 - 02/22/70
		D009632	4	02/22/70 - 02/22/70
		D009635	5	02/22/70 - 02/24/70
		D009638	6	02/24/70 - 02/25/70 (eeeeee)
DR005926	DS005926	D009641	1	02/25/70 - 02/27/70 (ffffff)
		D009643	2	02/27/70 - 02/28/70
		D009644	3	02/28/70 - 03/01/70 (ggggg)
		D009645	4	03/01/70 - 03/02/70 (hhhhh)
		D009648	5	03/02/70 - 03/03/70
		D009649	6	03/03/70 - 03/04/70
DR005927	DS005927	D009652	1	03/04/70 - 03/04/70
		D009653	2	03/04/70 - 03/06/70 (iiiiii)
		D009654	3	03/06/70 - 03/07/70
		D009655	4	03/07/70 - 03/07/70
		D009657	5	03/07/70 - 03/09/70
		D009658	6	03/09/70 - 03/09/70
DR005928	DS005928	D009660	1	03/09/70 - 03/10/70
		D009661	2	03/10/70 - 03/11/70 (jjjjj)
		D009663	3	03/11/70 - 03/11/70
		D009664	4	03/11/70 - 03/12/70
		D009666	5	03/12/70 - 03/13/70 (kkkkk)
		D009667	6	03/13/70 - 03/14/70
DR005929	DS005929	D009668	1	03/14/70 - 03/15/70
		D009669	2	03/15/70 - 03/16/70 (lllll)
		D009674	3	03/16/70 - 03/16/70 (mmmmm)
		D009675	4	03/18/70 - 03/19/70
		D009676	5	03/19/70 - 03/19/70
		D009679	6	03/19/70 - 03/20/70 (nnnnn)
DR005930	DS005930	D009680	1	03/20/70 - 03/21/70
		D009681	2	03/21/70 - 03/22/70
		D009682	3	03/22/70 - 03/23/70
		D009683	4	03/23/70 - 03/24/70
		D009684	5	03/24/70 - 03/25/70
		D009685	6	03/25/70 - 03/27/70 (ooooo)

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DR#	DS#	DD#	FILES	TIME SPAN		
DR005931	DS005931	D009686	1	03/27/70 - 03/28/70	(ppppp)	
		D009689	2	03/28/70 - 03/28/70		
		D009691	3	03/28/70 - 03/30/70		
		D009692	4	03/30/70 - 03/30/70		
		D009693	5	03/30/70 - 03/31/70		(qqqqq)
		D009694	6	03/31/70 - 04/01/70		(rrrrr)
DR005932	DS005932	D009696	1	04/01/70 - 04/01/70	(sssss)	
		D009697	2	04/01/70 - 04/02/70		
		D009698	3	04/02/70 - 04/02/70		
		D009699	4	04/02/70 - 04/03/70		(ttttt)
		D009701	5	04/03/70 - 04/04/70		(uuuuu)
		D009702	6	04/04/70 - 04/05/70		
DR005933	DS005933	D009705	1	04/05/70 - 04/05/70	(vvvvv)	
		D009706	2	04/05/70 - 04/06/70		
		D009707	3	04/06/70 - 04/07/70		(wwwww)
		D009708	4	04/07/70 - 04/08/70		
		D009709	5	04/08/70 - 04/09/70		(xxxxx)
		D009713	6	04/09/70 - 04/09/70		
DR005934	DS005934	D009714	1	04/09/70 - 04/10/70		
		D009715	2	04/10/70 - 04/11/70		
		D009718	3	04/11/70 - 04/11/70		
		D009719	4	04/11/70 - 04/12/70		
		D009721	5	04/12/70 - 04/13/70		
		D009723	6	04/13/70 - 04/13/70		
DR005935	DS005935	D009724	1	04/13/70 - 04/14/70	(yyyyy)	
		D009725	2	04/14/70 - 04/15/70		
		D009726	3	04/15/70 - 04/15/70		
		D009727	4	04/15/70 - 04/16/70		(zzzzz)
		D009728	5	04/16/70 - 04/17/70		
		D009734	6	04/17/70 - 04/18/70		
DR005936	DS005936	D009735	1	04/18/70 - 04/19/70	(aaaaa)	
		D009736	2	04/19/70 - 04/19/70		(bbbbbb)
		D009737	3	04/19/70 - 04/20/70		
		D009738	4	04/20/70 - 04/20/70		
		D009743	5	04/20/70 - 04/22/70		
		D009744	6	04/22/70 - 04/23/70		
DR005937	DS005937	D009745	1	04/23/70 - 04/23/70		
		D009749	2	04/23/70 - 04/24/70		
		D009750	3	04/24/70 - 04/25/70		
		D009751	4	04/25/70 - 04/25/70		
		D009752	5	04/25/70 - 04/26/70		
		D009753	6	04/26/70 - 04/27/70		

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DR#	DS#	DD#	FILES	TIME SPAN	
DR005938	DS005938	D009758	1	04/27/70 - 04/27/70	
		D009759	2	04/27/70 - 04/28/70	(cccccc)
		D009760	3	04/28/70 - 04/29/70	
		D009761	4	04/29/70 - 04/29/70	
		D009762	5	04/29/70 - 04/30/70	
		D009763	6	04/30/70 - 04/30/70	
DR005939	DS005939	D009764	1	04/30/70 - 05/01/70	
		D009765	2	05/01/70 - 05/03/70	
		D009766	3	05/03/70 - 05/06/70	
		D009767	4	05/06/70 - 05/08/70	
		D009768	5	05/08/70 - 05/09/70	
		D009769	6	05/09/70 - 05/16/70	
DR005940	DS005940	D009770	1	05/16/70 - 05/17/70	
		D009771	2	05/17/70 - 05/19/70	
		D009772	3	05/19/70 - 05/19/70	
		D009773	4	05/19/70 - 05/21/70	(dddddd)
		D009774	5	05/21/70 - 05/28/70	
DR005941	DS005941	D009775	1	05/28/70 - 05/28/70	
		D009776	2	05/28/70 - 05/29/70	
		D009777	3	05/29/70 - 05/29/70	
		D009778	4	05/29/70 - 05/29/70	(eeeeee)
		D009779	5	05/11/70 - 05/13/70	
		D009780	6	05/13/70 - 05/17/70	
DR005942	DS005942	D009781	1	05/17/70 - 05/18/70	
		D009782	2	05/18/70 - 05/21/70	(ffffff)
		D009783	3	05/21/70 - 05/21/70	(gggggg)
		D009784	4	05/21/70 - 05/24/70	
		D009785	5	05/24/70 - 05/27/70	
		D009786	6	05/27/70 - 05/29/70	
		D009787	7	05/29/70 - 05/30/70	
		D009788	8	11/30/69 - 12/01/69	(hhhhhh)
DR005943	DS005943	D009789	1	12/01/69 - 12/01/69	(iiiiii)
		D009790	2	12/01/69 - 12/02/69	
		D009791	3	12/02/69 - 12/02/69	
		D009792	4	12/02/69 - 12/03/69	
		D009793	5	12/03/69 - 12/03/69	(jjjjjj)
		D009794	6	12/03/69 - 12/04/69	
DR005944	DS005944	D009795	1	12/04/69 - 12/04/69	
		D009796	2	12/04/69 - 12/05/69	

* UNKNOWN NUMBER OF RECORDS ARE MISSING

I/O ERRORS WERE FOUND ON THE FOLLOWING

- (a) D008970 FILE 1, RECORD 2973
- (b) D008972 FILE 1, RECORD 2979
- (c) D008973 FILE 1, RECORDS 2, 2423
- (d) D008975 FILE 1, RECORDS 44, 51
- (e) D008977 FILE 1, RECORDS 15
- (f) D008978 FILE 1, RECORDS 2936, 2955-57
- (g) D008979 FILE 1, RECORDS 211, 214, 217, 220, 226, 229, 232, 235, 238, 241, 244, 247, 250, 253, 256, 259, 262, 265, 268
- (h) D008983 FILE 1, RECORDS 44, 53, 54, 63, 65, 85, 91, 235
- (i) D008985 FILE 1, RECORD 104
- (j) D008986 FILE 1, RECORDS 63, 64, 66, 69, 72, 76
- (k) D008988 FILE 1, RECORD 151
- (l) D008990 FILE 1, RECORDS 36, 3005, 3006
- (m) D008991 FILE 1, RECORD 309
- (n) D008992 FILE 1, RECORDS 28, 31, 32, 34, 35, 37, 41, 43, 44-47, 50, 53, 5366, 369, 381, 387
- (o) D008993 FILE 1, RECORDS 29, 32
- (p) D008994 FILE 1, RECORDS 24, 68
- (q) D008995 FILE 1, RECORDS 29, 39, 54, 234
- (r) D008996 FILE 1, RECORDS 2, 5, 6, 8, 9, 25, 44-46, 50, 59-61, 69, 70, 72, 89, 91, 100, 110, 111, 114, 129, 138, 148, 167, 170, 173, 204, 210, 218, 232, 248, 339, 1611, 1831
- (s) D008998 FILE 1, RECORDS 193, 218
- (t) D009000 FILE 1, RECORDS 60, 105, 136
- (u) D009001 FILE 1, RECORDS 48, 58, 80, 81, 97, 309, 318, 330, 333, 388
- (v) D009002 FILE 1, RECORDS 198, 223, 226, 233, 239, 248,, 250, 251
- (w) D009003 FILE 1, RECORDS 23, 26, 29, 36, 52, 55, 77, 96
- (x) D009004 FILE 1, RECORDS 67, 70, 73, 76, 79, 82, 86, 89, 92, 98, 101, 108
- (y) D009005 FILE 1, RECORDS 40, 41, 43-46
- (z) D009008 FILE 1, RECORDS 1360-70
- (aa) D009014 FILE 1, RECORDS 17, 18, 20-26, 142, 143
- (bb) D009017 FILE 1, RECORD 2979
- (cc) D009022 FILE 1, RECORDS 2962, 2964
- (dd) D009024 FILE 1, RECORDS 2967, 2969
- (ee) D009026 FILE 1, RECORDS 204, 205
- (ff) D009028 FILE 1, RECORDS 103, 221, 477, 568, 717, 718, 1265
- (gg) D009029 FILE 1, RECORDS 18, 35, 64, 351, 641, 786, 821, 954, 1090, 1495 1522, 1988, 2033, 2441, 2445, 2569, 2689, 2798
- (hh) D009030 FILE 1, RECORDS 54, 165, 179, 229, 253, 259, 303, 347, 481, 552 554, 563, 608, 617, 628, 631, 651, 709, 746, 782, 793, 834, 835, 882, 884, 896, 900, 902, 945, 970, 977, 1050, 1054, 1074, 1115, 1127, 1187, 1222, 1226, 1240, 1321, 1356, 1387, 1389, 1452, 1485, 1491, 1589, 1732, 1845, 1931, 1983, 1992, 2043, 2116, 2308, 2343, 2358, 2424, 2705, 2743, 2788, 2816, 2898, 2918
- (ii) D009021 FILE 1, RECORDS 21, 27, 1024, 1308, 2797, 2837, 2859, 2888
- (jj) D009041 FILE 1, RECORDS 127, 304
- (kk) D009045 FILE 1, RECORDS 91, 97
- (ll) D009047 FILE 1, RECORD 2951
- (mm) D009051 FILE 1, RECORD 3
- (nn) D009086 FILE 1, RECORDS 1302, 1389, 2602
- (oo) D009090 FILE 1, RECORDS 69, 2651, 2678, 2785, 2909, 2958, 2994
- (pp) D009117 FILE 1, RECORDS 38, 41, 44
- (qq) D009121 FILE 1, RECORD 36
- (rr) D009130 FILE 1, RECORD 57
- (ss) D009145 FILE 1, RECORD 197
- (tt) D009137 FILE 1, RECORD 4
- (uu) D009145 FILE 1, RECORD 2980

(vv) D009273 FILE 1, RECORDS 2534, 2537, 2538
(ww) D009276 FILE 1, RECORDS 103, 1245, 1599, 1604, 1614, 1617, 1618, 1622, 1
(xx) D009280 FILE 1, RECORDS 1, 4, 17, 31, 34, 37, 43, 48, 49, 53-61, 67,70,
93, 100, 103, 108, 115, 120, 123, 128, 139, 128, 155-58,
163, 166, 169, 192
(yy) D009281 FILE 1, RECORDS 25, 120, 126, 156, 2354, 2912, 2912, 2957,
2973, 2978-79, 2985-86, 2991, 2993, 2996-96
(zz) D009283 FILE 1, RECORDS 602, 835, 1051, 1417, 1517, 2170, 2540, 2658, 27
(aaa) D009284 FILE 1, RECORDS 14, 15, 17, 18, 21, 25, 27, 28, 34, 37, 40, 41,
59, 60, 63, 65, 66, 69, 72, 79, 82, 98, 113, 120, 217,
285, 325, 328, 331, 337, 2753, 2755, 2757, 2774, 2781,
2783, 2785, 2787, 2789, 2798, 2800, 2807, 2809, 2811,
2815, 2820, 2822, 2824, 2826, 2833, 2835, 2837, 2840,
2846, 2853, 2864, 2869, 2873, 2882, 2889, 2907, 2923,
2930, 2939, 2944, 2960, 2967, 2974, 2979, 2986
(bbb) D009285 FILE 1, RECORDS 221, 785, 863, 926, 937, 940, 965, 967, 978, 98
1002, 1017, 1071-82, 1513, 1517, 1518, 1522-24, 1526,
1528-37, 1540, 1541, 1543-45, 1548, 1549, 1554, 1560,
1562, 1938
(ccc) D009286 FILE 1, RECORDS 1, 242, 436, 679, 894, 1105, 1704, 1735, 2035,
2739, 2756-62
(ddd) D009289 FILE 1, RECORDS 51, 114, 264
(eee) D009308 FILE 1, RECORDS 39, 55, 58
(fff) D009314 FILE 1, RECORDS 462, 680
(ggg) D009325 FILE 1, RECORDS 13, 2989
(hhh) D009432 FILE 1, RECORDS 398, 1092
(iii) D009438 FILE 1, RECORD 37, 85, 126
(jjj) D009440 FILE 1 RECORDS 2912 2914-16
(kkk) D009441 FILE 1 RECORDS 85, 88, 92
(lll) D009442 FILE 1 RECORDS 23, 65, 2849, 2878, 2880, 2886, 2891, 2909,
2911, 2913, 2915-16, 2912, 2921, 2947, 2949, 2952
(mmm) D009444 FILE 1 RECORDS 29, 2957
(nnn) D009454 FILE 1 RECORD 71
(ooo) D009456 FILE 1 RECORD 2913
(ppp) D009459 FILE 1 RECORDS 2920, 2922-25, 2927, 2929, 2931-32, 2934, 2936-3
(qqq) D009460 FILE 1 RECORD 2837
(rrr) D009461 FILE 1 RECORDS 2933, 2936, 2938, 2940, 2942, 2944
(sss) D009469 FILE 1 RECORD 30
(ttt) D009501 FILE 1 RECORD 116
(uuu) D009517 FILE 1 RECORD 2993
(vvv) D009524 FILE 1 RECORD 87
(www) D009527 FILE 1 RECORD 2
(xxx) D009529 FILE 1 RECORD 7, 8, 10, 11, 13, 14, 17, 20, 23, 26, 28, 31, 34,
49, 52, 53, 56, 59, 62, 65, 68, 69, 72, 78, 81, 84, 85,
87, 91, 94, 97, 100, 101, 103, 104, 110, 113, 116, 119,
120, 123, 126, 129, 132, 135, 136, 138, 139, 142, 145,
151, 154, 155, 157, 158, 161, 164, 167, 170, 173, 174, 176
(yyy) D009532 FILE 1 RECORDS 15, 18, 21, 25, 41
(zzz) D009535 FILE 1 RECORD 2804
(aaaa) D009538 FILE 1 RECORDS 2841, 2842
(bbbb) D009539 FILE 1 RECORDS 2779, 2790, 2792
(cccc) D009563 FILE 1 RECORD 1156
(dddd) D009570 FILE 1 RECORDS 11, 12
(eeee) D009572 FILE 1 RECORDS 43, 47, 68, 93
(ffff) D009573 FILE 1 RECORDS 16, 32
(gggg) D009575 FILE 1 RECORDS 2961, 2963, 2977, 2980
(hhhh) D009576 FILE 1 RECORDS 56, 57, 59, 63, 64, 66-69, 96
(iiii) D009590 FILE 1 RECORDS 136, 161, 164, 201, 247
(jjjj) D009591 FILE 1 RECORDS 498, 499

(kkkk) D009592 FILE 1 RECORDS 109, 119, 122, 128
(llll) D009593 FILE 1 RECORD 12
(mmmm) D009594 FILE 1 RECORD 12, 14, 15, 17, 18, 21, 24, 25, 27, 28-36, 43, 44
51, 55, 59, 60, 61, 64, 65, 68, 88-93, 115, 117, 119,
121, 132, 144, 145, 148, 149, 152, 2922, 2924, 2965,
2981
(nnnn) D009595 FILE 1 RECORDS 45, 54, 407, 593
(oooo) D009596 FILE 1 RECORD 3018
(pppp) D009597 FILE 1 RECORD 5
(qqqq) D009598 FILE 1 RECORD 45
(rrrr) D009600 FILE 1 RECORDS 56, 76, 77, 79, 104, 168, 395
(ssss) D009603 FILE 1 RECORD 1232
(tttt) D009604 FILE 1 RECORDS 74, 680
(uuuu) D009607 FILE 1 RECORDS 65, 68, 70, 82, 104
(vvvv) D009608 FILE 1 RECORDS 92, 1430
(www) D009611 FILE 1 RECORDS 56, 87
(xxxx) D009614 FILE 1 RECORDS 12, 23, 25, 97, 99
(yyyy) D009616 FILE 1 RECORDS 2539, 2926
(zzzz) D009621 FILE 1 RECORDS 9, 56, 60, 63, 66, 72, 2887
(aaaa) D009623 FILE 1 RECORDS 2689, 2690,, 2694, 2695, 2699, 2701,2703
(bbbbb) D009624 FILE 1 RECORDS 4, 10, 12-26, 43, 46, 58-72, 2443, 2446, 2457,
2458, 2462
(ccccc) D009625 FILE 1 RECORD 7
(ddddd) D009625 FILE 1 RECORD 28
(eeeee) D009638 FILE 1 RECORDS 19, 2772
(fffff) D009641 FILE 1 RECORD 2301, 2308, 2959, 2978, 2987
(ggggg) D009644 FILE 1 RECORDS 155, 158, 161, 164, 167, 170, 173, 176, 180, 1
189, 192, 195, 198, 201, 204, 208, 211, 214, 217, 223,
232, 239, 242, 245, 248, 251, 254, 257, 260, 264, 267,
270, 272, 273, 276, 279, 281, 282, 285, 288, 294-320,
324, 333, 336, 340, 349, 352, 355, 364
(hhhhh) D009645 FILE 1 RECORDS 2939, 2950, 2952
(iiiii) D009653 FILE 1 RECORD 2790
(jjjjj) D009661 FILE 1 RECORD 2445
(kkkkk) D009666 FILE 1 RECORD 30
(lllll) D009669 FILE 1 RECORD 190
(mmmmm) D009674 FILE 1 RECORD 2843
(nnnnn) D009679 FILE 1 RECORDS 37, 41, 42, 46, 50, 60, 64, 1226, 2839, 2841
(oooo) D009685 FILE 1 RECORDS 136, 161, 164, 201, 247
(ppppp) D009686 FILE 1 RECORDS 92, 154, 2869
(qqqqq) D009693 FILE 1 RECORDS 52, 651
(rrrrr) D009694 FILE 1 RECORDS 94, 100, 103
(sssss) D009697 FILE 1 RECORD 205
(ttttt) D009699 FILE 1 RECORD 544
(uuuuu) D009701 FILE 1 RECORD 2813
(vvvvv) D009705 FILE 1 RECORD 62, 64
(wwwww) D009707 FILE 1 RECORDS 59, 65, 68, 77, 78, 90, 93, 96, 99, 102, 103,
109, 112, 115, 124, 137, 140, 143, 149, 155, 161, 168,
174, 186, 226
(xxxxx) D009709 FILE 1 RECORD 1191
(yyyyy) D009724 FILE 1 RECORD 357
(zzzzz) D009727 FILE 1 RECORDS 2939, 2962
(aaaaa) D009735 FILE 1 RECORD 16
(bbbbbb) D009736 FILE 1 RECORDS 1057, 1059, 1812, 2411, 2678
(ccccc) D009759 FILE 1 RECORD 63, 110, 164, 167, 169, 170, 173, 176, 179, 18
185, 188, 191, 194, 197, 200, 203, 207, 212
(ddddd) D009773 FILE 1 RECORDS 376, 377
(eeeee) D009778 FILE 1 RECORDS 225, 226
(fffff) D009782 FILE 1 RECORDS 81, 84, 87, 93, 96, 103, 106, 109, 112, 115,

125, 131, 134, 137, 140, 143, 153

(gggggg) D009783

FILE 1 RECORD 145

(hhhhh) D009788

FILE 1 RECORDS 56, 1739, 1741, 1747, 1759, 1760, 1802, 1803,
1807, 1814, 1820-22, 1825, 1826, 1828, 1830-32, 1835,
2991, 2998, 3008, 3012, 3015, 3021

(iiiiii) D009789

FILE 1 RECORDS 33, 36, 40, 46, 53

(jjjjjj) D009793

FILE 1 RECORD 30

INJUN-5

68-066B-01A-04A

THE FOLLOWING TAPES WERE BAD.

D008848,

D008961, 68, 69

D009040, 97, 98

D009100, 01, 95, 97, 99

D009200, 01, 03, 04, 05, 10, 12, 13, 16, 17, 24, 27, 32, 35, 38, 40,
41, 67, 68, 69, 70, 71, 78, 79, 93, 95

D009302-07, 09, 10, 12, 20, 27, 34, 41, 44, 45, 46, 48, 52, 61, 78, 83,
88, 94, 97

D009400, 17, 19, 22, 23, 33, 50, 70, 74, 83

D009500, 13, 25, 31, 40, 46, 67, 74, 83, 99

D009609, 31, 33-34, 36, 37, 39, 40, 42, 46, 47, 50, 51, 56, 59, 62, 65,
70-73, 77, 78, 87, 88, 90, 95

D009700, 03, 04, 10, 11-12, 16, 17, 20, 22, 29-33, 39-42, 46-48, 54-57

Request Agent
PAR

Acq. Agent
JJB

INJUN V

MASTER SCIENCE FILE DATA

68-066B-01A, 02A, 03A, 04A

D-8848 - D-9796

C-7592 - C-7686

This data set consists of 949 merged Master Science File Data tapes. These tapes were originally created on a UNIVAC 418 computer. They are 800 BPI, Binary, 7-track, 1 file, with 696 character logical records and 10 logical records per physical record.

Only 91 (about 10%) of the tapes were duped. These tapes were selected uniformly from the 949 in the complete data set. The time spans for these tapes are as follows:

<u>D#</u>	<u>C#</u>	<u>DATES</u>
D-08848	C-07592 /	08/09/68 - 08/10/68
D-08858	C-07593 ✓	08/31/68 - 09/03/68
D-08868	C-07594	09/21/68 - 09/22/68
D-08878	C-07595	10/03/68 - 10/06/68
D-08888	C-07596	10/15/68 - 10/16/68
D-08898	C-07597	10/30/68 - 11/02/68
D-08908	C-07598	11/20/68 - 11/22/68
D-08918	C-07599	01/07/69 - 01/08/69
D-08928	C-07600	01/16/69 - 01/17/69
D-08938	C-07601	01/26/69 - 01/27/69
D-08948	C-07602	02/06/69 - 02/07/69
D-08958	C-07603 ✓	03/19/69 - 03/22/69
D-08968	C-07604	04/21/69 - 04/22/69
D-08978	C-07605	05/07/69 - 05/09/69
D-08988	C-07606	05/26/69 - 05/28/69
D-08998	C-07607	06/17/69 - 06/19/69
D-09008	C-07608	07/08/69 - 07/11/69
D-09018	C-07609	08/04/69 - 08/07/69
D-09038	C-07611	10/09/69 - 10/10/69
D-09048	C-07612	11/09/69 - 11/11/69
D-09058	C-07613	12/02/69 - 12/04/69
D-09068	C-07614	12/30/69 - 01/02/70
D-09078	C-07615	01/22/70 - 01/23/70
D-09088	C-07616	02/12/70 - 02/14/70
D-09098	C-07617	02/25/70 - 02/27/70
D-09108	C-07618	03/11/70 - 03/12/70
D-09118	C-07619	03/22/70 - 03/23/70
D-09128	C-07620	04/06/70 - 04/07/70

<u>D#</u>	<u>C#</u>	<u>DATES</u>
D-09138	C-07621	04/25/70 - 04/27/70
D-09156	C-07622	11/03/68 - 11/15/68
D-09166	C-07623	11/26/68 - 11/27/68
D-09176	C-07624	12/01/68 - 12/01/68
D-09186	C-07625	12/03/68 - 12/03/68
D-09196	C-07626	12/05/68 - 12/05/68
D-09206	C-07627	12/07/68 - 12/08/68
D-09216	C-07628	12/10/68 - 12/10/68
D-09226	C-07629	12/12/68 - 12/13/68
D-09236	C-07630	12/15/68 - 12/15/68
D-09246	C-07631	12/17/68 - 12/17/68
D-09256	C-07632	12/19/68 - 12/19/68
D-09266	C-07633	12/21/68 - 12/21/68
D-09276	C-07634	12/23/68 - 12/23/68
D-09286	C-07635	12/27/68 - 12/27/68
D-09296	C-07636	12/31/68 - 01/01/69
D-09316	C-07638	01/08/69 - 01/11/69
D-09326	C-07639	02/06/69 - 02/11/69
D-09336	C-07640	02/17/69 - 02/18/69
D-09346	C-07641	03/15/69 - 03/19/69
D-09356	C-07642	04/18/69 - 04/19/69
D-09366	C-07643	05/02/69 - 05/03/69
D-09376	C-07644	05/19/69 - 05/19/69
D-09386	C-07645	05/29/69 - 05/29/69
D-09396	C-07646	06/05/69 - 06/05/69
D-09406	C-07647	06/09/69 - 06/09/69
D-09416	C-07648	06/15/69 - 06/16/69
D-09426	C-07649	06/21/69 - 06/22/69

<u>D#</u>	<u>C#</u>	<u>DATES</u>
D-09436	C-07650	06/25/69 - 06/25/69
D-09446	C-07651	06/28/69 - 06/29/69
D-09456	C-07652	07/02/69 - 07/03/69
D-09460	C-07653	07/06/69 - 07/07/69
D-09476	C-07654	07/12/69 - 07/12/69
D-09486	C-07655	07/16/69 - 07/17/69
D-09496	C-07656	07/21/69 - 07/22/69
D-09506	C-07657	07/27/69 - 07/28/69
D-09516	C-07658	08/05/69 - 08/07/69
D-09526	C-07659	08/24/69 - 08/24/69
D-09536	C-07660	10/20/69 - 10/25/69
D-09556	C-07662	11/07/69 - 11/10/69
D-09566	C-07663	11/20/69 - 11/21/69
D-09576	C-07664	11/27/69 - 11/27/69
D-09586	C-07665	12/06/69 - 12/06/69
D-09596	C-07666	12/13/69 - 12/14/69
D-09606	C-07667	12/21/69 - 12/21/69
D-09616	C-07668	12/31/69 - 12/31/69
D-09626	C-07669	01/08/70 - 01/09/70
D-09636	C-07670	01/16/70 - 01/17/70
D-09646	C-07671	01/24/70 - 01/25/70
D-09666	C-07673	02/10/70 - 02/11/70
D-09676	C-07674	02/19/70 - 02/20/70
D-09686	C-07675	03/03/70 - 03/04/70
D-09696	C-07676	03/11/70 - 03/12/70
D-09706	C-07677	03/19/70 - 03/20/70
D-09716	C-07678	03/28/70 - 03/30/70
D-09726	C-07679	04/05/70 - 04/05/70

<u>D#</u>	<u>C#</u>	<u>DATES</u>
D-09736	C-07680	04/11/70 - 04/12/70
D-09746	C-07681	04/19/70 - 04/19/70
D-09756	C-07682	04/26/70 - 04/27/70
D-09766	C-07683	05/06/70 - 05/08/70
D-09776	C-07684	05/28/70 - 05/29/70
D-09786	C-07685	05/27/70 - 05/29/70
D-09796	C-07686	12/04/69 - 12/05/69

INJUN V

MASTER SCIENCE FILE DATA

FORMAT

<u>CHARACTER</u>	<u>FIELD NAME</u>	<u>FORMAT</u>	<u>DESCRIPTION</u>
1- 12	GRDTIM	XS3	Ground time derived from the computer clock - YRDDD HHMMSS
13- 21	CLOCK	XS3	Spacecraft clock - MMMMMFSS * F - not a current value
22- 24	STATUS	BIN	Address of test status buffer
25- 36	NAMSEG	XS3	Name of other segments in residence.
37- 39	PRTST	BIN	Printer status - If zero, printer available to the segments.
40- 42	MODEL	BIN	Bit no. 18= 418 no. - 1= 4 mic. 0= 2 mic. 17-16= DEMOD. number 15-10= Operator number 9- 4= Station number 3- 1= Time code type
43- 45	REV	BIN	Revolution number
46- 48	TAPEST	BIN	Tape status - If zero, then tape available to the segments
49- 51	TAPEAS	BIN	Tape assignment - logical tape unit
52- 54	EOR	BIN	Tape end of medium - address of end of reel routine in the driver
55- 57	CMDENT	BIN	Command sent this frame IN5ATD
58- 63	CMDSTT	BIN	Command status - see pages E41 - E44 for codes. Commands are numbered from right to left.
64- 69	PRETIM	BIN	Predict time - YRDDD HRMNSC Octal 6 bits to a field
70- 72	ANALOG	BIN	Analog tape number.
73- 75	FRACNT	BIN	Frame counter - between 0 and 29.
76- 78	MODE	BIN	Mode indicator - 0 = real time 037777 = non-real time
79- 81	TEST	BIN	Test status reference to Field 'MUX'
82- 84	BUSSI	BIN	Bus current reference to Field 'MUX'

<u>CHARACTER</u>	<u>FIELD NAME</u>	<u>FORMAT</u>	<u>DESCRIPTION</u>
85- 87	MUX	BIN	MUX return
88- 90	BUSSV	BIN	Bus reference to Field 'VSC'
91- 93	BATTI	BIN	Battery charge voltage reference to Field 'VSC'
94- 96	VSC	BIN	Voltage sense common
97- 99	MODEZ	BIN	Mode indicator no. 3 - bit no. 18 - unassigned 17-15 - Speed at which data was recorded 14-12 - Speed at which data was played 11- 9 - Data type 1 = PCM 2 = 30X 4 = 40X 8 - PAM flag 7 - Epoch flag - 0=Prelaunch 1=Post launch 6- 4 - Data quality 3 - VLF flag 2- 1 - Spacecraft number 1 = Flight 2 = Flight spare 3 = INJUN VI
100-105	TIMCOD	BIN	Time code reference - YRDDD HRMNSC
106-108	MILLI	BIN	Millisecond counter from time code
109-111	R100M	BIN	100 CPS counter time reference
112-114	R100S	BIN	100 CPS counter time reference
115-117	D100M	BIN	100 CPS counter data reference
118-120	D100S	BIN	100 CPS counter data reference
121-390	DATA	BIN	Satellite data - one satellite data word = 18 bits. The format for these 90 items can be found between pages E-6 and E-63.
391-396		BIN	Geographic longitude
397-402		BIN	Geographic Latitude
403-403		BIN	Radial distance
409-414		BIN	Altitude above reference spheroid
415-420		BIN	Real field longitude of the intersection of the line of sight and a surface 100 Km. above the reference spheroid.

<u>CHARACTER</u>	<u>FIELD NAME</u>	<u>FORMAT</u>	<u>DESCRIPTION</u>
421-426		BIN	<i>The intersection</i> Of the line of force and a surface 100 KM. above the reference spheriod (Ingress & Egress)
427-432		BIN	Real field latitude/ of the intersection of
433-438		BIN	the line of force & a surface 100 KM. above the reference spheriod (Ingress & Egress)
439-444		BIN	Local time (hours)
445-450		BIN	Right ascension
451-456		BIN	Velocity vector right ascension
457-462		BIN	Velocity vector declination
463-468		BIN	Velocity vector magnitude
469-474		BIN	Real field right ascension
475-480		BIN	Real field declination
481-486		BIN	Celestial right ascension of sun
487-492		BIN	Celestial declination of sun
493-498		BIN	Geomagnetic longitude
499-504		BIN	Geomagnetic latitude
505-510		BIN	Equatorial distance to line of force ($R\phi$)
511-516		BIN	Longitude of intersection of line of force and a surface 100 KM. above the reference spheriod (Ingress & Egress)
517-522		BIN	
523-528		BIN	Latitude of intersection of line of force and a surface 100 KM. above the reference spheriod (Ingress & Egress)
529-534		BIN	
535-540		BIN	Local time (hours)
541-546		BIN	L (McIlwain Parameter)
547-552		BIN	B
553-558		BIN	B/B (Equator)
559-564		BIN	Invariant latitude
565-570		BIN	Time to next sunrise
571-576		BIN	Time to next sunset

<u>CHARACTER</u>	<u>FIELD NAME</u>	<u>FORMAT</u>	<u>DESCRIPTION</u>
577-579		BIN	X Magnetometer (component of B)
580-582		BIN	Y Magnetometer (component of B)
583-585		BIN	Z Magnetometer (component of B)
586-588		BIN	X Solar Aspect (COSINE)
589-591		BIN	Y Solar Aspect (COSINE)
592-594		BIN	Z Solar Aspect (COSINE)
595-600		BIN	Velocity Vector X (COSINE)
601-606		BIN	Velocity Vector Y (COSINE)
607-612		BIN	Velocity Vector Z (COSINE)
613-618		BIN	$B_{\theta R}$ Component of B
619-624		BIN	$B_{\psi \psi}$ Component of B
625-630		BIN	$B_{\theta \theta}$ Component of B
631-636		BIN	0 Sun 1000 shade
637-642		BIN	E
643-648		BIN	Angle between B + S
649-654		BIN	Angle between B + V
655-660		BIN	Angle between E + S
661-666		BIN	X position inertial
667-672		BIN	Y position inertial
673-678		BIN	Z position inertial
679-684		BIN	XDOT inertial
685-690		BIN	YDOT inertial
691-696		BIN	ZDOT inertial

I. INJUN V DATA FORMATS

A. Introduction

The following section is a summary of data formats and housekeeping conversions. This summary includes information on both the pre and post-launch data systems.

B. Data Definitions

The smallest unit of information received from the spacecraft is called a WORD. Each word consists of nine bits, eight of which contain data and the ninth used as a parity check bit. The parity bit is in the low order or right-most portion of a word and is used to maintain the condition such that an odd number of bits in each word are in the on or "1" state.

Word Format

Bit Number	8	7	6	5	4	3	2	1	0
Contents	-----Data-----								Parity

The words are transmitted in groups of 90, the first two of which contain an 11 bit sync to indicate the start of the group. This group of 90 words is called a FRAME.

Frame Format

Word No. 0 1 -----89

Words 0 and 1 contain a frame start flag.

Words 47, 69, and 81 of each frame are further divided (subcommutated) so that it takes 30 frames to represent all the data that appears in these positions. The start of a set of 30 frames representing 2700 satellite words is determined by a flag called a sync word that appears simultaneously in words 69 and 81. This sync pattern also appears in word 81 frames 10 and 20, word 47 frame 17.

The data is transmitted in digital form in two modes, Bi-Phase and Non-Return to Zero. The Bi-Phase is the normal mode of operation and is transmitted at a rate of one frame per second. This form of data is the LOW RATE mode of operation.

The NRZ data is transmitted at one of two speeds. First, there is the real-time mode in which the data is transmitted live at a rate of 30 frames per second. The form of operation is called HIGH RATE data. Second, there is the nonreal-time NRZ data. This data is that which is recorded and transmitted at a rate of 40 frames per second. This recorder playback is known as TAPE DUMP data.

C. Frame Format

The 90 words of the frame are divided up between the experiments data and engineering data. The following is a table of data word assignments for each frame.

<u>FUNCTION</u>	<u>WORD NUMBERS</u>
Frame Sync	0, 1
Engineering Subcommutator	47, 69, 81
Magnetometer	66, 67, 68
Solar Aspect	85, 86, 87, 88, 89
AFCLR	21 to 23, 59 to 61, 82 to 84
LEPEDEA	2 to 12, 24 to 33, 48 to 58, 70 to 80
SSD	13 to 20, 34 to 46
VLF	62 to 65

Main Frame Format Diagram

	0	1	2	3	4	5	6	7	8	9
0	B	B	L	L	L	L	L	L	L	L
1	L	L	L	S	S	S	S	S	S	S
2	S	A	A	A	L	L	L	L	L	L
3	L	L	L	L	S	S	S	S	S	S
4	S	S	S	S	S	S	S	H	L	L
5	L	L	L	L	L	L	L	L	L	A
6	A	A	V	V	V	V	M	M	M	H
7	L	L	L	L	L	L	L	L	L	L
8	L	H	A	A	A	SA	SA	SA	SA	SA*

B	Frame Sync	A	AFCRL
L	LEPEDEA	H	HOUSEKEEPING
S	SSD	SA	SOLAR ASPECT
V	VLF	M	MAGNETOMETER

*Word 89 contains 3 bits of Solar Aspect information plus 2 Housekeeping bits.

FIGURE 1

TABLE 1

90 STATE COMMUTATOR FUNCTIONS

<u>Channel</u>	<u>User</u>	<u>Function</u>
00	SC	Frame Sync Word (1)
01	SC	Frame Sync and Status (2)
02	LEPEDEA	Flex Format
03	LEPEDEA	Flex Format
04	LEPEDEA	Flex Format
05	LEPEDEA	Flex Format
06	LEPEDEA	Flex Format
07	LEPEDEA	Flex Format
08	LEPEDEA	Flex Format
09	LEPEDEA	Flex Format
10	LEPEDEA	Flex Format
11	LEPEDEA	Flex Format
12	LEPEDEA	Flex Format
13	PNJ	CMD Status
14	PNJ	Alpha 2-1
15	PNJ	Alpha 3-1
16	PNJ	Alpha 4-1
17	PNJ	Alpha 1-1
18	PNJ	PET 1-4
19	PNJ	PET 1-5
20	PNJ	PET 1-2
21	AFCRL	Expt. Output TM No. 1
22	AFCRL	Expt. Output TM No. 2
23	AFCRL	Expt. Output TM No. 3
24	LEPEDEA	Flex Format
25	LEPEDEA	Flex Format
26	LEPEDEA	Flex Format
27	LEPEDEA	Flex Format
28	LEPEDEA	Flex Format

Table 1 (Continued)

<u>Channel</u>	<u>User</u>	<u>Function</u>
29	LEPEDEA	Flex Format
30	LEPEDEA	Flex Format
31	LEPEDEA	Flex Format
32	LEPEDEA	Flex Format
33	LEPEDEA	Flex Format
34	PNJ	PET 1-1
35	PNJ	PET 2-4
36	PNJ	PET 2-3
37	PNJ	PET 2-2
38	PNJ	PET 2-1
39	PNJ	PET 3-4
40	PNJ	PET 3-3
41	PNJ	PET 3-2
42	PNJ	PET 3-1
43	PNJ	PET 4-4
44	PNJ	PET 4-3
45	PNJ	PET 4-2
46	PNJ	PET 4-1
47	SC	Housekeeping Subcommutator
48	LEPEDEA	Flex Format
49	LEPEDEA	Flex Format
50	LEPEDEA	Flex Format
51	LEPEDEA	Flex Format
52	LEPEDEA	Flex Format
53	LEPEDEA	Flex Format
54	LEPEDEA	Flex Format
55	LEPEDEA	Flex Format
56	LEPEDEA	Flex Format
57	LEPEDEA	Flex Format
58	LEPEDEA	Flex Format
59	AFCLR	Expt. Output TM No. 1
60	AFCLR	Expt. Output TM No. 2

Table 1 (Continued)

<u>Channel</u>	<u>User</u>	<u>Function</u>
61	AFCR L	Expt. Output TM No. 3
62	VLF	
63	VLF	
64	VLF	
65	VLF	
66	SC	Magnetometer Axis X
67	SC	Magnetometer Axis Y
68	SC	Magnetometer Axis Z
69	SC	Experiments Subcommutator
70	LEPEDEA	Flex Format
71	LEPEDEA	Flex Format
72	LEPEDEA	Flex Format
73	LEPEDEA	Flex Format
74	LEPEDEA	Flex Format
75	LEPEDEA	Flex Format
76	LEPEDEA	Flex Format
77	LEPEDEA	Flex Format
78	LEPEDEA	Flex Format
79	LEPEDEA	Flex Format
80	LEPEDEA	Flex Format
81	SC	Housekeeping Subcommutator
82	AFCR L	Expt. Output TM No. 1
83	AFCR L	Expt. Output TM No. 2
84	AFCR L	Expt. Output TM No. 3
85	SC	Solar Aspect Output No. 1
86	SC	Solar Aspect Output No. 2
87	SC	Solar Aspect Output No. 3
88	SC	Solar Aspect Output No. 4
89	SC	Solar Aspect Output No. 5

D. Frame Sync Format

The first two words of each frame contain an 11 bit frame start flag.

Frame Sync Format

Word No.	0										1									
Bit No.	8	7	6	5	4	3	2	1	0	8	7	6	5	4	3	2	1	0		
Pattern	0	1	0	0	1	0	0	I	P	0	1	1	1	T	I	I	I	P		

I These positions are ignored.

T Time code bit. This bit is a 0 when command 14 is on and a 1 when command 14 is off.

P Parity bit.

E. Magnetometer Format

The magnetometer data is read out in words 66, 67 and 68 plus a calibration voltage in word 47 frame 7. Words 66, 67 and 68 represent the x, y and z directions respectively.

The preflight calibrations done on the magnetometer were found to be somewhat in error, and it was necessary to determine new calibration curves from flight data. The following equations were used to determine the magnetic field as measured by the spacecraft.

$$B_x = -.151 + .2117.X$$

$$B_y = .655 - .245.Y$$

$$B_z = .562 - .2.Z$$

The following pages contain the calibration data for the Flight unit and Flight space magnetometer.

TABLE 2
Magnetometer Calibration
Flight S/N 1619 6-14-68

Z Axis

<u>GAUSS</u>	<u>VOLTS</u>
+.50	4.80
+.45	4.57
.40	4.33
.35	4.08
.30	3.86
.25	3.61
.20	3.39
.15	3.14
.10	2.88
.05	2.65
.00	2.43
-.05	2.18
-.10	1.94
-.15	1.71
-.20	1.45
-.25	1.23
-.30	1.00
-.35	.74
-.40	.49
-.45	.25
-.50	.02

Z Axis bias .0137 Gauss

TABLE 3

Magnetometer Calibration

Flight S/N 1619 6-14-68

Y Axis

<u>GAUSS</u>	<u>VOLTS</u>
+ .50	.10
.45	.35
.40	.59
.35	.80
.30	1.06
.25	1.29
.20	1.55
.15	1.78
.10	2.02
.05	2.23
.00	2.47
-.05	2.72
-.10	2.96
-.15	3.19
-.20	3.41
-.25	3.67
-.30	3.88
-.35	4.14
-.40	4.37
-.45	4.61
-.50	4.84

Y Axis bias .002 Gauss

TABLE 4

Magnetometer Calibration

Flight S/N 1619 6-14-68

X Axis

<u>GAUSS</u>	<u>VOLTS</u>
+ .50	.16
.45	.37
.40	.63
.35	.87
.30	1.10
.25	1.33
.20	1.57
.15	1.82
.10	2.04
.05	2.29
.00	2.49
-.05	2.74
-.10	2.98
-.15	3.21
-.20	3.45
-.25	3.67
-.30	3.92
-.35	4.16
-.40	4.39
-.45	4.63
-.50	4.86

X Axis bias .0061 Gauss

S/C on table. Magnetometer in S/C magnets are out of S/C.

X Axis 2.47 Cal. 2.49
 Y Axis 2.53
 Z Axis 2.57

Period of oscillation with spring Z axis vertical (roll axis).

4.4 sec

Spring Constants 46.2 lbs. 1 ft.

Moment Arm 10-5/32"

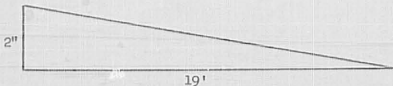
$$I = \frac{KL^2}{W^2}$$

S/C on table. Magnets in S/C

X Axis .69 }
 Y Axis 2.63 } 1, 3, 8, 13
 Z Axis 3.14 }

All systems on

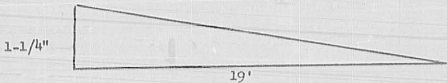
X Axis .69
 Y Axis 2.63
 Z Axis 3.16



Osc. frequency 368 sec .6 gauss applied
 33 grams--lever arm 1-1/8" perpendicular to field H=.6 gauss

$$M = \frac{T}{H}$$

Turned S/C with Z axis parallel to table.



Period of oscillation with spring no field applied -- 5 sec.

Period of oscillation without spring and with a .6 gauss field applied in the X axis, 359 sec.

32 grams--lever arm $1-1/8''$ perpendicular to field.

TABLE 5
Calibration of Flight Space Magnetometer

6-12-68

X Axis

<u>GAUSS</u>	<u>VOLTS</u>
+ .50	.14
.45	.37
.40	.61
.35	.86
.30	1.09
.25	1.33
.20	1.57
.15	1.80
.10	2.04
.05	2.29
.00	2.49
-.05	2.74
-.10	2.98
-.15	3.21
-.20	3.43
-.25	3.67
-.30	3.92
-.35	4.16
-.40	4.37
-.45	4.63
-.50	4.86

X Axis bias .0061 Gauss

TABLE 6

Calibration of Flight Space Magnetometer

6-12-68

Y Axis

<u>GAUSS</u>	<u>VOLTS</u>
+ .50	.08
.45	.33
.40	.57
.35	.80
.30	1.06
.25	1.29
.20	1.53
.15	1.76
.10	2.00
.05	2.23
.00	2.47
-.05	2.70
-.10	2.94
-.15	3.19
-.20	3.41
-.25	3.67
-.30	3.88
-.35	4.14
-.40	4.37
-.45	4.61
-.50	4.86

Y Axis bias .002 Gauss

TABLE 7

Calibration of Flight Space Magnetometer

6-12-68

Z Axis

<u>GAUSS</u>	<u>VOLTS</u>
+ .50	4.80
.45	4.57
.40	4.33
.35	4.08
.30	3.84
.25	3.61
.20	3.37
.15	3.12
.10	2.88
.05	2.65
.00	2.41
-.05	2.18
-.10	1.92
-.15	1.69
-.20	1.45
-.25	1.22
-.30	.98
-.35	.73
-.40	.47
-.45	.24
-.50	.00

Z Axis bias .0137 Gauss

F. Solar Aspect Format

The solar aspect data appears in words 85, 86, 87, 88 and 89 of each frame. The spacecraft contains six aspect sensors which are wired in pairs. The three pairs are further subcommutated between a narrow view angle and a wide view angle. Three of the sensors contain photo diodes, to aid in resolving which of the sensor pairs are facing toward the sun. Except for the diodes the data is an analog voltage that reflects the presents of sunlight.

Sensor Format

<u>Frame No.</u>	<u>Word No.</u>	<u>Function</u>
EVEN	85,86,87	COSINE (Wide Angle)
ODD	85,86,87	LINEAR (Narrow Angle)
ALL	88	SENSOR CALIBRATION
ALL	89	PHOTO DIODES

The photo diodes are added together and are readout in word 89.

Word 89 Format

Bit No.	8	7	6	5	4	3	2	1	0
Function	DA	DB	DC	H	H	X	X	X	P
DA	Diode for Axis A								
DB	Diode for Axis B								
DC	Diode for Axis C								
H	Housekeeping								
X	Ignored								
P	Parity bit								

Figures 2 through 6 contain typical calibration curves for the solar aspect sensors.

TABLE 8

ASPECT NUMBERING CONVENTIONS

<u>NO.</u>	<u>LETTER</u>	<u>POSITION</u>	<u>DIODE</u>
1	+A	60° Top	No
2	-A	240° Bottom	Yes
3	+B	120° Top	No
4	-B	300° Bottom	Yes
5	+C	300° Top	No
6	-C	120° Bottom	Yes

Wide Angle Detectors have a $90^{\circ} 1/2$ angle.

Narrow Angle Detectors have a $45^{\circ} 1/2$ angle.

Calibration Detectors have a 4° and $15^{\circ} 1/2$ angle.

SOLAR ASPECT VIEWING DIRECTIONS

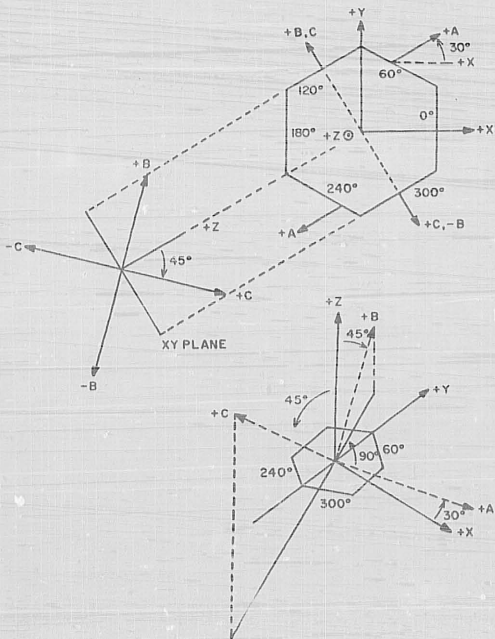


FIGURE 2

SOLAR ASPECT VIEW ANGLES

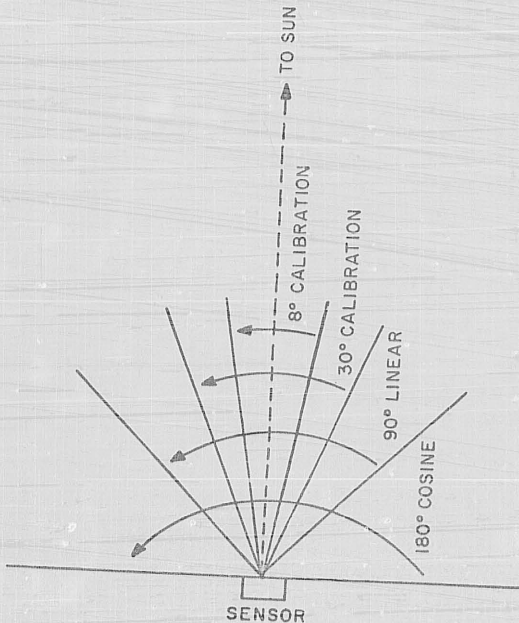
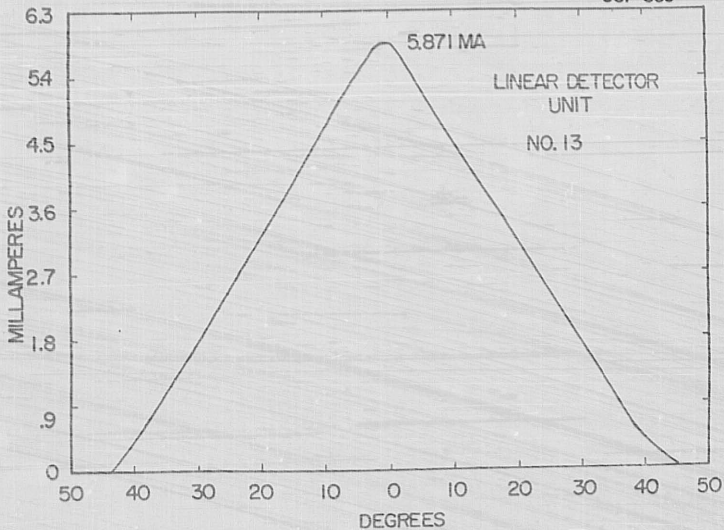


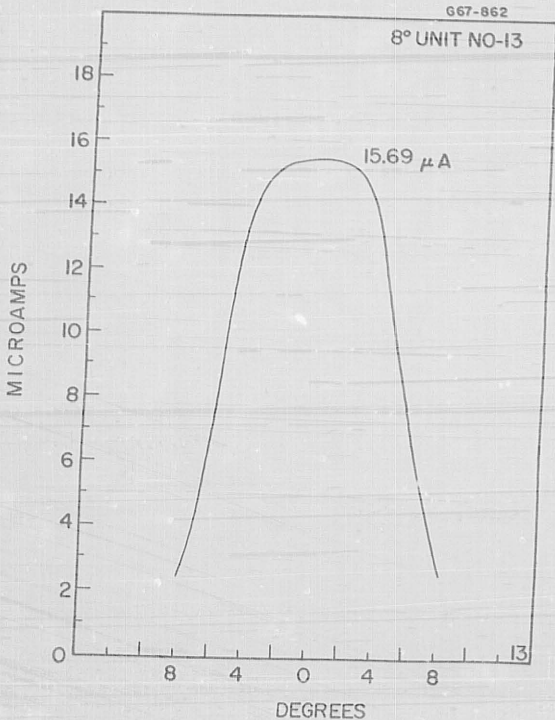
FIGURE 3

G67-859



TYPICAL SOLAR ASPECT CALIBRATION CURVE (LINEAR DETECTOR)

FIGURE 4

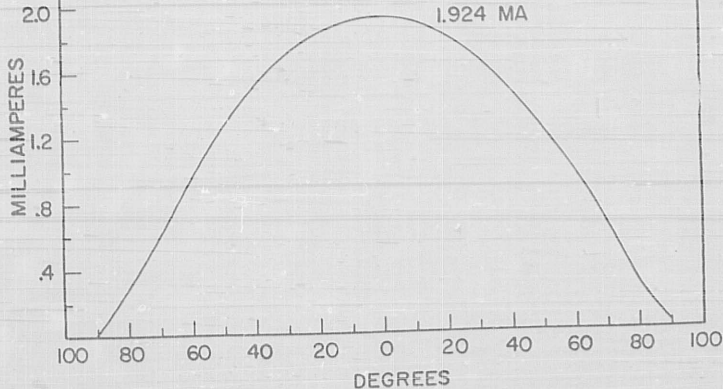


TYPICAL SOLAR ASPECT CALIBRATION CURVE (8° DETECTOR)

FIGURE 5

G67-860

COSINE UNIT NO.-13
BLACK & WHITE

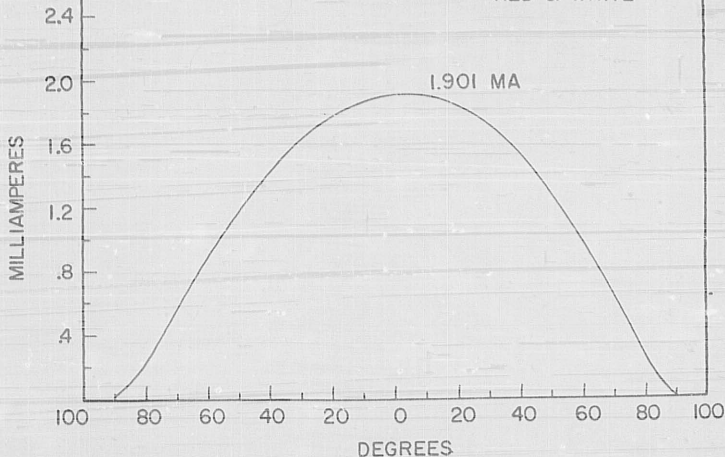


TYPICAL SOLAR ASPECT CALIBRATION CURVE (COSINE DETECTOR)

FIGURE 6

G67-863

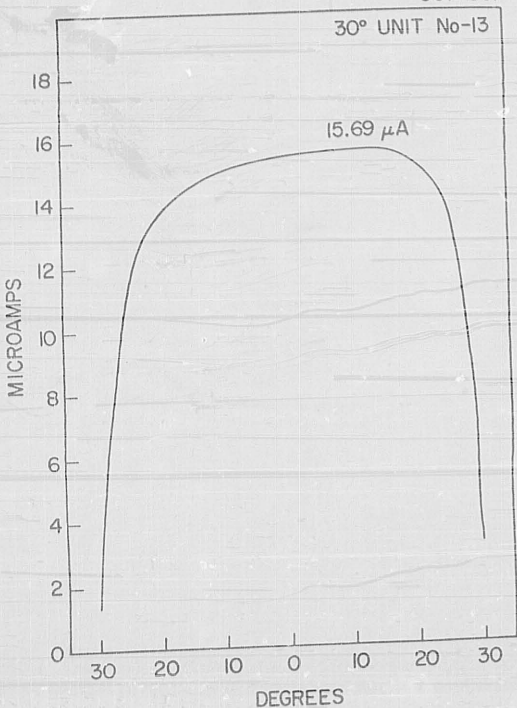
COSINE UNIT NO-13
RED & WHITE



TYPICAL SOLAR ASPECT CALIBRATION CURVE (COSINE DETECTOR)

FIGURE 7

G67-861



TYPICAL SOLAR ASPECT CALIBRATION CURVE (30° DETECTOR)

FIGURE 8

G. Formats of Housekeeping Data

The spacecraft housekeeping is read in words 47, 69 and 81 of a data frame. The following is a table of housekeeping functions and their word assignments.

<u>Function</u>	<u>Position (WD-FR)</u>
Frame Sync	47-17, 69-00, 81-00, 81-10, 81-20
Calibration Voltages	47-01, 47-02, 47-03, 47-04, 47-05, 47-06
Calibration Magnetometer	47-07
Clock	47-00, 47-10, 47-11, 47-12, 47-13, 47-14, 47-20, 81-02, 81-12
Command Status	47-18, 47-19, 47-21, 47-22, 47-23, 47-24, 47-25, 47-26, 47-29
Recorder Status	81-03
Array Voltage	47-15, 47-27
Array Current	47-16, 47-28
Bus Voltage	69-15, 69-27
Battery Current	69-16, 69-28
Dump Voltage	81-15, 81-27
Load Current	81-16, 81-28
Auxiliary Supply	47-08, 81-04
Panel Temperatures	81-06, 81-07, 81-08, 81-13, 81-14, 81-17, 81-18
Aspect Temperatures	81-05, 69-23, 69-24, 81-25, 69-29, 69-26
Cage Temperatures	81-23, 81-24
VLF	69-01, 69-02, 69-03, 69-04, 69-06, 69-07, 69-08, 69-09, 69-10, 69-11, 69-12, 69-13, 69-14, 69-17, 69-25, 69-29, 81-29
SSD	69-18, 69-19, 69-20, 69-21, 69-22

TABLE 9

INJUN V ENGINEERING SUBCOMMUTATOR ASSIGNMENTS

	<u>WORD 47</u>	<u>WORD 69</u>	<u>WORD 81</u>
0	CLOCK NO. 1	FRAME SYNC WORD	FRAME SYNC WORD
1	CALIBRATE 0.0	SPHERE POTENTIAL DIFF.	AGC VOLTAGE
2	CALIBRATE 1.0	SPHERE ELECTRONICS TEMP.	CLOCK NO. 1
3	CALIBRATE 2.0	ELEC. ANT. BOOM NO. 1 POSITION	RECORDER STATUS
4	CALIBRATE 3.0	ELEC. ANT. BOOM NO. 2 POSITION	AUX. SUPPLY +5.0 MONITOR
5	CALIBRATE 4.0	SPHERE POTENTIAL DIFF.	SOLAR ASPECT TEMP. NO. 1
6	CALIBRATE 5.0	MAG. ANT. BOOM POSITION 1, 2	TOP PANEL TEMP.
7	CALIBRATE MAGNETOMETER	MAG. PREAMP TEMP.	BOTTOM PANEL TEMP.
8	12 VOLT AUX. SUPPLY MONITOR	VLF ELECTRONICS TEMP.	PANEL A TEMP.
9	TEST STATUS IND.	SPHERE POTENTIAL DIFF.	PANEL B TEMP.
10	CLOCK NO. 1	ELECTRON GUN POTENTIAL	FRAME SYNC WORD
11	CLOCK NO. 2	SPHERE POTENTIAL AVERAGE	AGC VOLTAGE
12	CLOCK NO. 3	MAG. ANT. BOOM POSITION 3, 4	CLOCK NO. 1
13	CLOCK NO. 4	SPHERE POTENTIAL DIFF.	PANEL C TEMP.
14	CLOCK NO. 5	BALLOON EVENT MONITOR	PANEL D TEMP.
15	SOLAR ARRAY VOLTAGE	BUS VOLTAGE	POWER DUMP VOLTAGE (5 OHM)
16	SOLAR ARRAY CURRENT	BATTERY CURRENT	LOAD CURRENT
17	FRAME SYNC WORD	SPHERE POTENTIAL DIFF.	PANEL E TEMP.
18	CCS STATUS NO. 7	SSD TEMP. NO. 2	PANEL F TEMP.
19	CCS STATUS NO. 8	SSD VOLTAGE (+5.0)	BATTERY TEMP.
20	CLOCK NO. 1	SSD TEMP. NO. 1	FRAME SYNC WORD

TABLE 9 (Continued)

<u>WORD 47</u>	<u>WORD 69</u>	<u>WORD 81</u>
21 CCS STATUS NO. 1	SPHERE POTENTIAL DIFF.	AGC VOLTAGE
22 CCS STATUS NO. 2	SSD VOLTAGE (+8.0)	CLOCK NO. 1
23 CCS STATUS NO. 3	SOLAR ASPECT TEMP. NO. 2	CAGE A TEMP.
24 CCS STATUS NO. 4	SOLAR ASPECT TEMP. NO. 3	CAGE B TEMP.
25 CCS STATUS NO. 5	SPHERE POTENTIAL DIFF.	SOLAR ASPECT TEMP. NO. 5
26 CCS STATUS NO. 6	SOLAR ASPECT TEMP. NO. 4	SOLAR ASPECT TEMP. NO. 6
27 SOLAR ARRAY VOLTAGE	BUS VOLTAGE	POWER DUMP VOLTAGE (5 OHM)
28 SOLAR ARRAY CURRENT	BATTERY CURRENT	LOAD CURRENT
29 CCS STATUS NO. 9	SPHERE POTENTIAL DIFF.	BALLOON EVENT MONITOR

1. Frame Sync Format

The frame number is determined by looking for certain fixed values in a sequence. The main value used to determine the frame number is called a sync word. This sync word appears in word 47 frame 17, word 69 frame 00, and word 81 frames 0, 10, and 20. Because of the uncertainty in the analog-to-digital conversion in the spacecraft data system, the sync word may be one of two values.

Sync Word Format

Bit No.	8	7	6	5	4	3	2	1	0	Resulting Output
Pattern 1	0	1	0	0	1	0	0	0	1	1.41 Volts
Pattern 2	0	1	0	0	1	0	0	1	0	1.43 Volts

2. Calibration Voltage Format

The status of the data system is monitored by a set of calibration voltages that appear in word 47. These voltages are the 0, 1, 2, 3, 4, and 5 volt references. These voltages on the flight unit read 20 to 40 millivolts lower than their name value; that is, the 1 volt calibrate will read .98 or .96 volts instead of 1 volt.

Subcommutator Position in Word 47

<u>FRAME</u>	<u>CALIBRATE</u>	<u>NORMAL VALUE</u>
1	0 Volt	.00 Volts
2	1 Volt	.98 Volts
3	2 Volt	1.98 Volts
4	3 Volt	2.98 Volts
5	4 Volt	3.98 Volts
6	5 Volt	4.96 Volts

3. Accumulator Clock Format

The spacecraft clock is read out in the housekeeping data in words 47 and 81. The accumulator clock is a 24 bit register that has been divided into five sections, each of which is read out in a separate word. The low order 6 bits of the accumulator is short cycled to count from 0 to 29 instead of 32. The accumulator is incremented once every second no matter which data rate is being used.

Clock Read Out Format

<u>BIT NO.</u>	<u>WORD NO.</u>	<u>CLOCK RANGE</u>	<u>RAW VALUE</u>
4-0	47-0, 47-10, 47-20, 81-2, 81-12, 81-22	0-29	0-5.00V
9-5	47-11	0-31	0-5.00V
14-10	47-12	0-31	0-5.00V
19-15	47-13	0-31	0-5.00V
23-20	47-14	0-15	0-5.00V

Register Format

Bit No.	23-----6	5-----0
	Minutes	Seconds

Conversion Table for Spacecraft Clock

VOLTS	REGISTER VALUE	
	Reg. 1,2,3,4	Reg. 5
0.00-0.08	00000	0000
0.09-0.24	00001	
0.25-0.40	00010	0001
0.41-0.56	00011	0001
0.57-0.72	00100	0010
0.73-0.88	00101	0010
0.89-1.04	00110	0011

VOLTS	REGISTER VALUE	
	Reg. 1,2,3,4	Reg. 5
1.05-1.20	00111	0011
1.21-1.36	01000	0100
1.37-1.52	01001	0100
1.53-1.68	01010	0101
1.69-1.84	01011	0101
1.85-2.00	01100	0110
2.01-2.16	01101	0110
2.17-2.32	01110	0111
2.33-2.48	01111	0111
2.49-2.64	10000	1000
2.65-2.80	10001	1000
2.81-2.96	10010	1001
2.97-3.12	10011	1001
3.13-3.28	10100	1010
3.29-3.44	10101	1010
3.45-3.60	10110	1011
3.61-3.76	10111	1011
3.77-3.92	11000	1100
3.93-4.08	11001	1100
4.09-4.24	11010	1101
4.25-4.40	11011	1101
4.41-4.56	11100	1110
4.57-4.72	11101	1110
4.73-4.88	11110	1111
4.89-5.04	11111	1111

4. Command Status Format

The spacecraft has 35 command statuses, each of which can be in either of two states. The commands are numbered in two different ways; first, for internal use the statuses are numbered from 1 to 35; and second, for STADAN use the commands are numbered from 1 to 70.

Command Word Assignment

<u>COMMAND NO.</u>	<u>WORD NO.</u>	<u>FRAME NO.</u>	<u>STATUS NO.</u>
1-4	47	21	1
5-8	47	22	2
9-12	47	23	3
13-16	47	24	4
17-20	47	25	5
21-24	47	26	6
25-28	47	18	7
29-32	47	19	8
33-35	47	29	9

The command statuses are displayed in 9 words as indicated above. Each of the words represent the four of the commands giving 16 discrete voltage levels per word.

The spacecraft command system uses an eight address code plus a command code. The command address is generated by the command generator and need not be considered when generating commands from the computer.

The following is a summary of the command format and code numbers.

- (a) Address word format is 00001001.
- (b) The command execute words are made up from seventy combinations of 8 bits using a 4 out of 8 validity code. To find the bit pattern of the command, convert the number headed console code in Table 12 to a binary 8 position number.

The following pages contain calibration data for the command system status indicators. Because these indicators were not on a calibrated supply, it was necessary to normalize the command status voltage before it was converted to a bit pattern.

The command status bit pattern may be computed from the following formula:

$$\text{BITS} = \frac{(\text{RAW})(\text{BV}(26)/\text{BV}(\text{CURRENT})+.10)}{.27}$$

where

- RAW = Raw voltages from command status word.
 BV(26) = Raw bus voltage at 26 volts normally 3.63.
 BV(CURRENT) = Current raw bus voltage.
 BITS = Command status bit pattern.

NOTE: See Section H for command reception indicator.

TABLE 10
 COMMAND SYSTEM CALIBRATION
 COMMAND STATUS VOLTAGE VERSUS BUS (FLIGHT)
 10 NOVEMBER 1967

BUS VOLTAGE (CONSOLE)	WORD (69,15)	CCS1 0101	CCS2 1000	CCS4 1000	CCS5 0111
22.5	3.14	1.23	1.96	1.90	1.65
23	3.19	1.27	2.02	1.94	1.67
23.5	3.27	1.29	2.06	1.98	1.71
24	3.35	1.31	2.10	2.04	1.74
24.5	3.41	1.33	2.14	2.08	1.78
25	3.49	1.37	2.18	2.12	1.82
25.5	3.55	1.39	2.21	2.16	1.86
26	3.63	1.43	2.25	2.20	1.90
26.5	3.68	1.45	2.31	2.23	1.94
27	3.76	1.47	2.35	2.29	1.96
27.5	3.84	1.51	2.39	2.33	2.00
28	3.90	1.53	2.43	2.37	2.04
28.5	3.98	1.57	2.47	2.41	2.08
29	4.04	1.59	2.53	2.45	2.12
29.5	4.12	1.61	2.55	2.51	2.16
30	4.17	1.65	2.59	2.55	2.20

CCS	MAX ΔV /STEP	MIN ΔV /STEP
1	.04	.02
2	.06	.04
4	.06	.04
5	.04	.02
WD (69,15)	.08	.05

TABLE 11

COMMAND SYSTEM CALIBRATION
 COMMAND STATUS VOLTAGE VERSUS COMMAND (FLIGHT)
 10 NOVEMBER 1967

CCS5	BIT	BUS	CCS5 NORMAL TO 26V
0	0000	3.47	0.00
0.25	0001	3.61	0.25138
0.53	0010	3.63	0.53
0.80	0011	3.61	0.804432
1.08	0100	3.61	1.0859
1.33	0101	3.59	1.3448
1.63	0110	3.61	1.639
1.88	0111	3.59	1.9009

ΔV PEP BIT MAX = .2942 MIN = .25138

TABLE 12

INJUN V COMMAND CODES

SUI Command No.	Stadan Command No.	Console Code	Baudot Code	Function
1 on	1	15-00	Letters, T	CCS receiver on
1 off	2	00-15	T, letters	CCS receiver cycle
2 on	3	14-08	V, O	Power regulator on
2 off	4	01-07	Z, Q	Power regulator off
3 on	5	13-08	X, O	Data on
3 off	6	02-07	L, Q	Data off
4 on	7	11-08	Figures, O	Data bit rate 24.3 kbps
4 off	8	04-07	H, Q	Data bit rate 810 bps
5 on	9	07-08	Q, O	Data storage start
5 off	10	08-07	O, Q	Data storage stop
6 on	11	14-04	V, H	Data storage record
6 off	12	01-11	Z, figures	Data storage reproduce
7 on	13	13-04	X, H	Data storage channel one
7 off	14	02-11	L, figures	Data storage channel two
8 on	15	11-04	Figures, H	Telemetry, 136 MHz transmitter on
8 off	16	04-11	H, figures	Telemetry, 136 MHz transmitter off
9 on	17	07-04	Q, H	Telemetry, 400 MHz transmitter on
9 off	18	08-11	O, figures	Telemetry, 400 MHz transmitter off

TABLE 12 (Continued)

SUI Command No.	Stadan Command No.	Console Code	Baudot Code	Function
10 on	19	12-12	M, M	Telemetry transmitters mod reversed
10 off	20	03-03	W, W	Telemetry transmitter mod normal
11 on	21	10-12	G, M	Telemetry 400 MHz non-VLF
11 off	22	05-03	Y, W	Telemetry 400 MHz VLF
12 on	23	06-12	P, M	Telemetry 400 MHz select storage
12 off	24	09-03	B, W	Telemetry 400 MHz select CCS
13 on	25	09-12	B, M	Housekeeping, 136 MHz on
13 off	26	06-03	P, W	Housekeeping, 136 MHz off
14 on	27	05-12	Y, M	Time code insertion on
14 off	28	10-03	G, W	Time code insertion off
15 on	29	03-12	W, M	Lepedea 1 on
15 off	30	12-03	M, W	Lepedea 1 off
16 on	31	14-02	V, L	Lepedea 2 on
16 off	32	01-13	Z, X	Lepedea 2 off
17 on	33	13-02	X, L	Lepedea 3 on
17 off	34	02-13	L, X	Lepedea 3 off
18 on	35	11-02	Figures, L	Lepedea 4 on
18 off	36	04-13	H, X	Lepedea 4 off
19 on	37	07-02	Q, L	Lepedea 5 on
19 off	38	08-13	O, X	Lepedea 5 off

TABLE 12 (Continued)

SUI Command No.	Stadan Command No.	Console Code	Baudot Code	Function
20 on	39	12-10	M, G	Lepedea 6 on
20 off	40	03-05	W, Y	Lepedea 6 off
21 on	41	10-10	G, G	Lepedea 7 on
21 off	42	05-05	Y, Y	Lepedea 7 off
22 on	43	06-10	P, G	Lepedea 8 on
22 off	44	09-05	B, Y	Lepedea 8 off
23 on	45	09-10	B, G	Lepedea 9 on
23 off	46	06-05	P, Y	Lepedea 9 off
24 on	47	05-10	Y, G	Lepedea 10 on
24 off	48	10-05	G, Y	Lepedea 10 off
25 on	49	03-10	W, G	Lepedea 11 on
25 off	50	12-05	M, Y	Lepedea 11 off
26 on	51	12-06	M, P	Lepedea 12 on
26 off	52	03-09	W, B	Lepedea 12 off
27 on	53	10-06	G, P	Lepedea 13 on
27 off	54	05-09	Y, B	Lepedea 13 off
28 on	55	06-06	P, P	VLF 1 on
28 off	56	09-09	B, B	VLF 1 off
29 on	57	09-06	B, P	VLF 2 on
29 off	58	06-09	P, B	VLF 2 off

TABLE 12 (Continued)

SUI Command No.	Stadan Command No.	Console Code	Baudot Code	Function
30 on	59	05-06	Y, P	VLF 3 on
30 off	60	10-09	G, B	VLF 3 off
31 on	61	03-06	W, P	SSD 1 on
31 off	62	12-09	M, B	SSD 1 off
32 on	63	08-14	O, V	SSD 2 on
32 off	64	07-01	Q, Z	SSD 2 off
33 on	65	04-14	H, V	SSD 3 on
33 off	66	11-01	Figures, Z	SSD 3 off
34 on	67	02-14	L, V	AFCRL 1 on
34 off	68	13-01	X, Z	AFCRL 1 off
35 on	69	01-14	Z, V	AFCRL 2 on
35 off	70	14-01	V, Z	AFCRL 2 off

5. Power System Conversion

The power system parameters are read out in words 47, 69, and

81. The following table shows the conversions of the raw values to engineering parameters.

<u>FUNCTION</u>	<u>POSITION IN SEQUENCE</u>
Solar Aspect Voltage	47-15, 47-27
Solar Aspect Current	47-16, 47-28
Bus Voltage	69-15, 69-27
Battery Current	69-16, 69-28
Power Dump Voltage	81-15, 81-27
Load Current	81-16, 81-28
Aux. 6.0 Supply	81-04
Aux. 12.0 Supply	47-08

<u>FUNCTION</u>	<u>CONVERSION</u>	<u>RANGE</u>	<u>UNITS</u>
12 Volt Aux.	R*3.00	12 +2%	Volts
6 Volt Aux.	R*2.00	6 +1%	Volts
Panel Volts	R*(55.7/4.64)	24-44	Volts
Panel Current	R*.30	.0-1.5	Amps
Bus Voltage	R*(33.4/4.64)	22-30	Volts
Bus Current	R*.30	0-+1.50	Amps
Battery Current*	R*.50-1.00	+1.50--1.50	Amps
Dump Current	$((\text{Bus Current} * .25) + \text{Bus Volt-Dump Volt}) / 5.0$	0-1.00	Amps
Dump Volt	R*(33.4/4.64)	0-30	Volts

*NOTE

The battery current for the flight spare is somewhat different than the rest of the power systems. This calculation is done as follows:

Battery Current R*.40-.50

6. Temperature Conversions

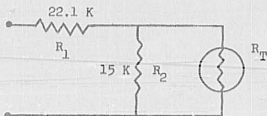
There are several temperatures read out in the housekeeping words. The conversions for all the spacecraft values are the same.

$$V = E_{12} \left[\frac{1}{1 + (R_1 (R_2 + R_T)) / R_2 * RT} \right]$$

where

- V = raw value from data frame
 E = 12 volt supply voltage
 R_1 = 22,100
 R_2 = 15,000
 R_T = value of sensor

T (degree C)	R_T
-70	935,000
-60	421,000
-50	201,000
-40	101,000
-30	53,100
-20	29,100
-10	16,600
+00	9,800
+10	5,970
+20	3,750
+30	2,420
+40	1,600
+50	1,030
+60	746
+70	526
+80	377



The flight data indicated that the battery temperature indicator was a sensistor instead of a thermister, and it was necessary to use a different conversion. This conversion was based on Table 14.

TABLE 13

THERMISTER TEMPERATURE CONVERSIONS

DEC C	VOLTS	DEC C	VOLTS	DEC C	VOLTS
-70.0	4.54	-40.0	4.21	-10.0	2.98
-69.0	4.54	-39.0	4.18	-9.0	2.92
-68.0	4.53	-38.0	4.15	-8.0	2.86
-67.0	4.53	-37.0	4.13	-7.0	2.81
-66.0	4.52	-36.0	4.10	-6.0	2.75
-65.0	4.52	-35.0	4.07	-5.0	2.69
-64.0	4.51	-34.0	4.04	-4.0	2.63
-63.0	4.51	-33.0	4.01	-3.0	2.57
-62.0	4.50	-32.0	3.98	-2.0	2.51
-61.0	4.49	-31.0	3.95	-1.0	2.46
-60.0	4.49	-30.0	3.92	0.0	2.40
-59.0	4.48	-29.0	3.88	1.0	2.34
-58.0	4.47	-28.0	3.84	2.0	2.29
-57.0	4.46	-27.0	3.80	3.0	2.23
-56.0	4.45	-26.0	3.76	4.0	2.17
-55.0	4.44	-25.0	3.72	5.0	2.12
-54.0	4.43	-24.0	3.67	6.0	2.06
-53.0	4.42	-23.0	3.63	7.0	2.00
-52.0	4.41	-22.0	3.59	8.0	1.95
-51.0	4.40	-21.0	3.55	9.0	1.89
-50.0	4.39	-20.0	3.51	10.0	1.84
-49.0	4.37	-19.0	3.46	11.0	1.79
-48.0	4.35	-18.0	3.40	12.0	1.74
-47.0	4.34	-17.0	3.35	13.0	1.69
-46.0	4.32	-16.0	3.30	14.0	1.64
-45.0	4.30	-15.0	3.24	15.0	1.60
-44.0	4.28	-14.0	3.19	16.0	1.55
-43.0	4.27	-13.0	3.14	17.0	1.50
-42.0	4.25	-12.0	3.09	18.0	1.45
-41.0	4.23	-11.0	3.03	19.0	1.40

TABLE 13 (Continued)

DEC C	VOLTS	DEC C	VOLTS	DEC C	VOLTS
20.0	1.36	40.0	0.70	60.0	0.35
21.0	1.32	41.0	0.68	61.0	0.34
22.0	1.28	42.0	0.66	62.0	0.33
23.0	1.24	43.0	0.64	63.0	0.32
24.0	1.20	44.0	0.62	64.0	0.31
25.0	1.17	45.0	0.60	65.0	0.30
26.0	1.13	46.0	0.58	66.0	0.29
27.0	1.09	47.0	0.55	67.0	0.28
28.0	1.05	48.0	0.53	68.0	0.27
29.0	1.01	49.0	0.51	69.0	0.26
30.0	0.98	50.0	0.49	70.0	0.25
31.0	0.95	51.0	0.48	71.0	0.25
32.0	0.92	52.0	0.47	72.0	0.24
33.0	0.89	53.0	0.45	73.0	0.23
34.0	0.86	54.0	0.44	74.0	0.23
35.0	0.84	55.0	0.42	75.0	0.22
36.0	0.81	56.0	0.41	76.0	0.21
37.0	0.78	57.0	0.40	77.0	0.21
38.0	0.75	58.0	0.38	78.0	0.20
39.0	0.72	59.0	0.37	79.0	0.19

TABLE 14

BATTERY TEMPERATURE VERSUS VOLTAGE

TEMP	VOLTS	TEMP	VOLTS
-49.000	0.553	-19.000	0.664
-48.000	0.556	-18.000	0.668
-47.000	0.560	-17.000	0.672
-46.000	0.563	-16.000	0.676
-45.000	0.567	-15.000	0.680
-44.000	0.570	-14.000	0.684
-43.000	0.574	-13.000	0.689
-42.000	0.577	-12.000	0.693
-41.000	0.581	-11.000	0.697
-40.000	0.585	-10.000	0.701
-39.000	0.588	-9.000	0.705
-38.000	0.592	-8.000	0.709
-37.000	0.595	-7.000	0.714
-36.000	0.599	-6.000	0.718
-35.000	0.603	-5.000	0.722
-34.000	0.606	-4.000	0.726
-33.000	0.610	-3.000	0.731
-32.000	0.614	-2.000	0.735
-31.000	0.618	-1.000	0.739
-30.000	0.621	0.000	0.744
-29.000	0.625	1.000	0.748
-28.000	0.629	2.000	0.753
-27.000	0.633	3.000	0.757
-26.000	0.637	4.000	0.762
-25.000	0.641	5.000	0.766
-24.000	0.644	6.000	0.771
-23.000	0.648	7.000	0.775
-22.000	0.652	8.000	0.780
-21.000	0.656	9.000	0.784
-20.000	0.660	10.000	0.789

TABLE 14 (Continued)

TEMP	VOLTS	TEMP	VOLTS
11.000	0.793	31.000	0.890
12.000	0.798	32.000	0.895
13.000	0.803	33.000	0.900
14.000	0.807	34.000	0.906
15.000	0.812	35.000	0.911
16.000	0.817	36.000	0.916
17.000	0.822	37.000	0.921
18.000	0.826	38.000	0.926
19.000	0.831	39.000	0.931
20.000	0.836	40.000	0.937
21.000	0.841	41.000	0.942
22.000	0.846	42.000	0.947
23.000	0.850	43.000	0.953
24.000	0.855	44.000	0.958
25.000	0.860	45.000	0.963
26.000	0.865	46.000	0.969
27.000	0.870	47.000	0.974
28.000	0.875	48.000	0.980
29.000	0.880	49.000	0.985
30.000	0.885	50.000	0.990

7. Event Monitor Formats

Balloon Monitor	R = 0	Ready
Words 69-14, 81-29	R = 1.8	Squib Fired
	R = 2.7	Inflation
	R = 3.18	Separation
Recorder Status	R = 2.95	On
Word 81-03	R = .15	Off

	1F2F	1E1F	1F2E	1E2E	WORD
Elec. Boom No. 1	4.94	3.70	2.47	1.23	69-3
Elec. Boom No. 2	5.00	3.76	2.51	1.25	69-4
Mag. Boom 1,2	4.94	3.70	2.49	1.23	69-6
Mag. Boom 3,4	4.92	3.68	2.47	1.22	69-12

E Extended

F Folded

R = raw value in volts.

H. Time, Command, and R Bit Format

There are three bits in each word that convey additional housekeeping information. These bits are called the T, V and R bit.

The T bit is an indicator which is a one or a zero depending on the state of command 14. This bit is used as a timing mark for checking the accuracy of the time assignments.

The V bit is an indicator that changes from a 1 to a 0 every time a command is received by the spacecraft. The bit will be in the 0 state for two or three frames and then return to a 1 each time a valid command is received by the spacecraft.

The R bit is an output of line R from the spacecraft clock.
The R bit is a 1 for frames 0 to 15 and a 0 for frames 16 to 29.
This indicator is used primarily to check the validity of the frame
number assignment.

Format of Bits

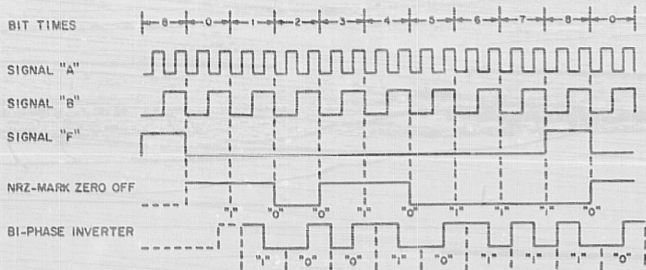
T Bit	Word 1 all frames	0111XXXX
R and V Bit	Word 89 all frames	SSSRVXXXX
P	Parity	
X	Ignored or unknown	
S	Solar aspect diode (See Section F)	

TABLE 15
CODE CONVERSION CHART

1004 PRINTER	418 CONSOLE TYPEWRITER	1004 80-COLUMN*	1004 K5-3*	418 CONSOLE FIELDATA	BCD (Type-M)
A	A	12-1	24	06	61
B	B	12-2	25	07	62
C	C	12-3	26	10	63
D	D	12-4	27	11	64
E	E	12-5	30	12	65
F	F	12-6	31	13	66
G	G	12-7	32	14	67
H	H	12-8	33	15	70
I	I	12-9	34	16	71
J	J	11-1	44	19	41
K	K	11-2	45	20	42
L	L	11-3	46	21	43
M	M	11-4	47	22	44
N	N	11-5	50	23	45
O	O	11-6	51	24	46
P	P	11-7	52	29	47
Q	Q	11-8	53	26	50
R	R	11-9	54	27	51
S	S	0-2	60	50	22
T	T	0-3	66	31	23
U	U	0-4	67	32	24
V	V	0-5	70	33	25
W	W	0-6	71	34	26
X	X	0-7	72	35	27
Y	Y	0-8	73	36	30
Z	Z	0-9	74	37	31
0	0	0	03	60	12
1	1	1	04	61	01
2	2	2	09	62	02
3	3	3	06	63	03
4	4	4	07	64	04
5	5	5	10	65	05
6	6	6	11	66	06
7	7	7	12	67	07
8	8	8	13	70	10
9	9	9	14	71	11
-	-	2-8 (12)	63 (20)	43	60
-	-	11	02	41	40
(	(	0-5-8 (0-4-8)	55 (63)	53	34
)	)	0-7-8 (12-4-8)	77 (75)	40	74
/	/	0-1	64	74	21
\	\	0-6-8	15	1	36
[	N/A	12-5-8	17	N/A	75
]	N/A	11-5-8	01	N/A	55
^	-	12-6-8 (4-3-8)	36	43	76
~	-	6-8 (3-5-8)	76	45	16
~	-	12-7-8 (3-8)	37 (35)	44	13
^	N/A	0-2-8	60	N/A	32
^	^	12-0	23	54	72
^	^	11-0	43	55	52
^	^	5-8	21	53	15
^	^	11-6-8 (1-4-8)	16	73	56
^	^	12-3-8	22	75	73
^	^	7-8 (4-8)	40 (56)	72	14
^	^	0-3-8	62	56	33
^	N/A	12	20	N/A	N/A
^	N/A	3-8	35	N/A	N/A
^	N/A	4-8	56	N/A	N/A
^	^	0-4-8	61	47	53
^	^	13-3-8	42	47	53
^	^	11-4-8	41	50	54
^	N/A	11-7-8	57	N/A	57
^	N/A	12-4-8	75	N/A	N/A
Space (P.)	Space (P.)	0000	00	05	20
N/A	0	N/A	N/A	76	N/A
N/A	1	N/A	N/A	77	N/A
N/A	2	N/A	N/A	46	N/A
N/A	3	N/A	N/A	57	N/A
N/A	4	N/A	N/A	08	N/A
N/A	5	N/A	N/A	52	N/A
N/A	6	N/A	N/A	04	N/A
N/A	7	N/A	N/A	03	N/A
N/A	8	N/A	N/A	01	N/A
N/A	9	N/A	N/A	02	N/A

I. Clock Timing Chart

Figure 2 shows the relationship between word, bit and clock time for the data system.



CLOCK TIMING CHART

FIGURE 9

J. Time Demodulator Data Format

	WORD0	WORD1	WORD2	WORD3
BIT 0 (LSB)	tSC1	USC1	TMC1	UDC1
BIT 1	tSC2	USC2	TMC2	UDC2
BIT 2	tSC4	USC4	TMC4	UDC4
BIT 3	tSC8	USC8	0	UDC8
BIT 4	0	0	0	0
BIT 5	0	0	0	0
BIT 6	SOURCE1	TSC1	UHC1	TDC1
BIT 7	SOURCE2	TSC2	UHC2	TDC2
BIT 8	REFERENCE1	TSC4	UHC4	TDC4
BIT 9	REFERENCE2	0	UHC8	TDC8
BIT 10	418 NO.	0	0	0
BIT 11	INTERFACE NO.	0	0	0
BIT 12	X BIT 1	UMC1	THC1	HDC1
BIT 13	X BIT 2	UMC2	THC2	HDC2
BIT 14	X BIT 4	UMC4	0	0
BIT 15	X BIT 8	UMC8	0	0
BIT 16	VALID CODE	0	0	0
BIT 17 (MSB)	1	0	0	0

tSC = TENTHS OF SECONDS COUNTER
 USC = UNITS OF SECONDS COUNTER
 TSC = TENS OF SECONDS COUNTER
 UMC = UNITS OF MINUTES COUNTER
 TMC = TENS OF MINUTES COUNTER
 UHC = UNITS OF HOURS COUNTER
 THC = TENS OF HOURS COUNTER
 UDC = UNITS OF DAYS COUNTER
 TDC = TENS OF DAYS COUNTER
 HDC = HUNDREDS OF DAY COUNTER

K. Injun V Modes of Modulation

<u>MODE NO.</u>	<u>TRANSMIT FREQUENCY</u>	<u>DESCRIPTION OF MODULATION</u>	<u>BIT RATE</u>
1	136.29	Split-0 data plus a Pam signal	810 bps
2	136.29	PCM(NRZ-S)/FM	24.3 kps
3A	400.65	32.4 kps data from tape recorder Channel 1	32.4 kps
4	400.65	VLF experiment	
5	400.65	Command receiver output signal	

L. Data Conversion

The spacecraft data is converted to a voltage at the time it is put into digital form. The conversion gives a voltage in tens of millivolts which is positive for words with correct parity and negative for words with bad parity.

The spacecraft data system has an accuracy of 19.6 millivolts so that the value of any datum has an uncertainty of that value.

The formula for conversion to voltages from the spacecraft data is as follows:

$$\text{Converted} = (\text{Raw} * 196. + 50.) / 100.0$$

Table 16 shows the relationship between the raw and the converted data as well as to correspond bit pattern.

TABLE 16
DATA CONVERSIONS

RAW	CVT.	1	2	3	4	5	6	7	8	P	RAW	CVT.	1	2	3	4	5	6	7	8	P	
0	0	0	0	0	0	0	0	0	0	1	28	55	0	0	0	1	1	1	0	0	0	
1	2	0	0	0	0	0	0	0	0	1	0	29	57	0	0	0	1	1	1	0	1	1
2	4	0	0	0	0	0	0	0	1	0	0	30	59	0	0	0	1	1	1	1	0	1
3	6	0	0	0	0	0	0	0	1	1	1	31	61	0	0	0	1	1	1	1	1	0
4	8	0	0	0	0	0	1	0	0	0	0	32	63	0	0	1	0	0	0	0	0	0
5	10	0	0	0	0	0	1	0	1	1	33	65	0	0	1	0	0	0	0	0	1	1
6	12	0	0	0	0	0	1	1	0	1	34	67	0	0	1	0	0	0	0	1	0	1
7	14	0	0	0	0	0	1	1	1	0	35	69	0	0	1	0	0	0	0	1	1	0
8	16	0	0	0	0	1	0	0	0	0	36	71	0	0	1	0	0	1	0	0	0	1
9	18	0	0	0	0	1	0	0	1	1	37	73	0	0	1	0	0	1	0	1	0	0
10	20	0	0	0	0	1	0	1	0	1	38	74	0	0	1	0	0	1	1	0	0	0
11	22	0	0	0	0	1	0	1	1	0	39	76	0	0	1	0	0	1	1	1	1	1
12	24	0	0	0	0	1	1	0	0	1	40	78	0	0	1	0	1	0	0	0	1	1
13	25	0	0	0	0	1	1	0	1	0	41	80	0	0	1	0	1	0	0	1	0	0
14	27	0	0	0	0	1	1	1	0	0	42	82	0	0	1	0	1	0	1	0	0	0
15	29	0	0	0	0	1	1	1	1	1	43	84	0	0	1	0	1	0	1	1	1	1
16	31	0	0	0	1	0	0	0	0	0	44	86	0	0	1	0	1	1	0	0	0	0
17	33	0	0	0	1	0	0	0	0	1	45	88	0	0	1	0	1	1	0	1	1	1
18	35	0	0	0	1	0	0	1	0	1	46	90	0	0	1	0	1	1	1	0	1	1
19	37	0	0	0	1	0	0	1	1	0	47	92	0	0	1	0	1	1	1	1	0	0
20	39	0	0	0	1	0	1	0	0	1	48	94	0	0	1	1	0	0	0	0	1	1
21	41	0	0	0	1	0	1	0	1	0	49	96	0	0	1	1	0	0	0	0	1	0
22	43	0	0	0	1	0	1	1	0	0	50	98	0	0	1	1	0	0	1	0	0	0
23	45	0	0	0	1	0	1	1	1	1	51	100	0	0	1	1	0	0	1	1	1	1
24	47	0	0	0	1	1	0	0	0	1	52	102	0	0	1	1	0	1	0	0	0	0
25	49	0	0	0	1	1	0	0	1	0	53	104	0	0	1	1	0	1	0	1	1	1
26	51	0	0	0	1	1	0	1	0	0	54	106	0	0	1	1	0	1	1	0	1	1
27	53	0	0	0	1	1	0	1	1	1	55	108	0	0	1	1	0	1	1	1	1	0

$$CVT = (RAW * 196. + 50.) / 100.0$$

TABLE 16 (Continued)

RAW	CVT.	1	2	3	4	5	6	7	8	P	RAW	CVT.	1	2	3	4	5	6	7	8	P
56	110	0	0	1	1	1	0	0	0	0	85	167	0	1	0	1	0	1	0	1	1
57	112	0	0	1	1	1	0	0	1	1	86	169	0	1	0	1	0	1	1	0	1
58	114	0	0	1	1	1	0	1	0	1	87	171	0	1	0	1	0	1	1	1	0
59	116	0	0	1	1	1	0	1	1	0	88	172	0	1	0	1	1	0	0	0	0
60	118	0	0	1	1	1	1	0	0	1	89	174	0	1	0	1	1	0	0	1	1
61	120	0	0	1	1	1	1	0	1	0	90	176	0	1	0	1	1	0	1	0	1
62	122	0	0	1	1	1	1	1	0	0	91	178	0	1	0	1	1	0	1	1	0
63	123	0	0	1	1	1	1	1	1	1	92	180	0	1	0	1	1	1	0	0	1
64	125	0	1	0	0	0	0	0	0	0	93	182	0	1	0	1	1	1	0	1	0
65	127	0	1	0	0	0	0	0	1	1	94	184	0	1	0	1	1	1	1	0	0
66	129	0	1	0	0	0	0	1	0	1	95	186	0	1	0	1	1	1	1	1	1
67	131	0	1	0	0	0	0	1	1	0	96	188	0	1	1	0	0	0	0	0	1
68	133	0	1	0	0	0	1	0	0	1	97	190	0	1	1	0	0	0	0	1	0
69	135	0	1	0	0	0	1	0	1	0	98	192	0	1	1	0	0	0	1	0	0
70	137	0	1	0	0	0	1	1	0	0	99	194	0	1	1	0	0	0	1	1	1
71	139	0	1	0	0	0	1	1	0	0	100	196	0	1	1	0	0	1	0	0	0
72	141	0	1	0	0	1	0	0	0	1	101	198	0	1	1	0	0	1	0	1	1
73	143	0	1	0	0	1	0	0	1	0	102	200	0	1	1	0	0	1	1	0	1
74	145	0	1	0	0	1	0	1	0	0	103	202	0	1	1	0	0	1	1	1	0
75	147	0	1	0	0	1	0	1	1	1	104	204	0	1	1	0	1	0	0	0	0
76	149	0	1	0	0	1	1	0	0	0	105	206	0	1	1	0	1	0	0	1	1
77	151	0	1	0	0	1	1	0	1	1	106	208	0	1	1	0	1	0	1	0	1
78	153	0	1	0	0	1	1	1	0	1	107	210	0	1	1	0	1	0	1	1	0
79	155	0	1	0	0	1	1	1	1	0	108	212	0	1	1	0	1	1	0	0	1
80	157	0	1	0	1	0	0	0	0	1	109	214	0	1	1	0	1	1	0	1	0
81	159	0	1	0	1	0	0	0	1	0	110	216	0	1	1	0	1	1	1	0	0
82	161	0	1	0	1	0	0	1	0	0	111	218	0	1	1	0	1	1	1	1	1
83	163	0	1	0	1	0	0	1	1	1	112	220	0	1	1	1	0	0	0	0	0
84	165	0	1	0	1	0	1	0	0	0	113	221	0	1	1	1	0	0	0	1	1

TABLE 16 (Continued)

RAW	CVT.	1	2	3	4	5	6	7	8	P	RAW	CVT.	1	2	3	4	5	6	7	8	P
114	223	0	1	1	1	0	0	1	0	1	143	280	1	0	0	0	1	1	1	1	0
115	225	0	1	1	1	0	0	1	1	0	144	282	1	0	0	1	0	0	0	0	1
116	227	0	1	1	1	0	1	0	0	1	145	284	1	0	0	1	0	0	0	1	0
117	229	0	1	1	1	0	1	0	1	0	146	286	1	0	0	1	0	0	1	0	0
118	231	0	1	1	1	0	1	1	0	0	147	288	1	0	0	1	0	0	1	1	1
119	233	0	1	1	1	0	1	1	1	1	148	290	1	0	0	1	0	1	0	0	0
120	235	0	1	1	1	1	0	0	0	1	149	292	1	0	0	1	0	1	0	1	1
121	237	0	1	1	1	1	0	0	1	0	150	294	1	0	0	1	0	1	1	0	1
122	239	0	1	1	1	1	0	1	0	0	151	296	1	0	0	1	0	1	1	1	0
123	241	0	1	1	1	1	0	1	1	1	152	298	1	0	0	1	1	0	0	0	0
124	243	0	1	1	1	1	1	0	0	0	153	300	1	0	0	1	1	0	0	1	1
125	245	0	1	1	1	1	1	0	1	1	154	302	1	0	0	1	1	0	1	0	1
126	247	0	1	1	1	1	1	1	0	1	155	304	1	0	0	1	1	0	1	1	0
127	249	0	1	1	1	1	1	1	1	0	156	306	1	0	0	1	1	1	0	0	1
128	251	1	0	0	0	0	0	0	0	0	157	308	1	0	0	1	1	1	0	1	0
129	253	1	0	0	0	0	0	0	1	1	158	310	1	0	0	1	1	1	1	0	0
130	255	1	0	0	0	0	0	1	0	1	159	312	1	0	0	1	1	1	1	1	1
131	257	1	0	0	0	0	0	1	1	0	160	314	1	0	1	0	0	0	0	0	1
132	259	1	0	0	0	0	1	0	0	1	161	316	1	0	1	0	0	0	0	1	0
133	261	1	0	0	0	0	1	0	1	0	162	318	1	0	1	0	0	0	1	0	0
134	263	1	0	0	0	0	1	1	0	0	163	319	1	0	1	0	0	0	1	1	1
135	265	1	0	0	0	0	1	1	1	1	164	321	1	0	1	0	0	1	0	0	0
136	267	1	0	0	0	1	0	0	0	1	165	323	1	0	1	0	0	1	0	1	1
137	269	1	0	0	0	1	0	0	1	0	166	325	1	0	1	0	0	1	1	0	1
138	270	1	0	0	0	1	0	1	0	0	167	327	1	0	1	0	0	1	1	1	0
139	272	1	0	0	0	1	0	1	1	1	168	329	1	0	1	0	1	0	0	0	0
140	274	1	0	0	0	1	1	0	0	0	169	331	1	0	1	0	1	0	0	1	1
141	276	1	0	0	0	1	1	0	1	1	170	333	1	0	1	0	1	0	1	0	1
142	278	1	0	0	0	1	1	1	0	1	171	335	1	0	1	0	1	0	1	1	0

TABLE 16 (Continued)

RAW	CVT.	1	2	3	4	5	6	7	8	P	RAW	CVT.	1	2	3	4	5	6	7	8	P
172	337	1	0	1	0	1	1	0	0	1	201	394	1	1	0	0	1	0	0	1	1
173	339	1	0	1	0	1	1	0	1	0	202	396	1	1	0	0	1	0	1	0	1
174	341	1	0	1	0	1	1	1	0	0	203	398	1	1	0	0	1	0	1	1	0
175	343	1	0	1	0	1	1	1	1	1	204	400	1	1	0	0	1	1	0	0	1
176	345	1	0	1	1	0	0	0	0	0	205	402	1	1	0	0	1	1	0	1	0
177	347	1	0	1	1	0	0	0	1	1	206	404	1	1	0	0	1	1	1	0	0
178	349	1	0	1	1	0	0	1	0	1	207	406	1	1	0	0	1	1	1	1	1
179	351	1	0	1	1	0	0	1	1	0	208	408	1	1	0	1	0	0	0	0	0
180	353	1	0	1	1	0	1	0	0	1	209	410	1	1	0	1	0	0	0	1	1
181	355	1	0	1	1	0	1	0	1	0	210	412	1	1	0	1	0	0	1	0	1
182	357	1	0	1	1	0	1	1	0	0	211	414	1	1	0	1	0	0	1	1	0
183	359	1	0	1	1	0	1	1	1	1	212	416	1	1	0	1	0	1	0	0	1
184	361	1	0	1	1	1	0	0	0	1	213	417	1	1	0	1	0	1	0	1	0
185	363	1	0	1	1	1	0	0	1	0	214	419	1	1	0	1	0	1	1	0	0
186	365	1	0	1	1	1	0	1	0	0	215	421	1	1	0	1	0	1	1	1	1
187	367	1	0	1	1	1	0	1	1	1	216	423	1	1	0	1	1	0	0	0	1
188	368	1	0	1	1	1	1	0	0	0	217	425	1	1	0	1	1	0	0	1	0
189	370	1	0	1	1	1	1	0	1	1	218	427	1	1	0	1	1	0	1	0	0
190	372	1	0	1	1	1	1	1	0	1	219	429	1	1	0	1	1	0	1	1	1
191	374	1	0	1	1	1	1	1	1	0	220	431	1	1	0	1	1	1	0	0	0
192	376	1	1	0	0	0	0	0	0	1	221	433	1	1	0	1	1	1	0	1	1
193	378	1	1	0	0	0	0	0	1	0	222	435	1	1	0	1	1	1	1	0	1
194	380	1	1	0	0	0	0	1	0	0	223	437	1	1	0	1	1	1	1	1	0
195	382	1	1	0	0	0	0	1	1	1	224	439	1	1	1	0	0	0	0	0	0
196	384	1	1	0	0	0	1	0	0	0	225	441	1	1	1	0	0	0	0	1	1
197	386	1	1	0	0	0	1	0	1	1	226	443	1	1	1	0	0	0	1	0	1
198	388	1	1	0	0	0	1	1	0	1	227	445	1	1	1	0	0	0	1	1	0
199	390	1	1	0	0	0	1	1	1	0	228	447	1	1	1	0	0	1	0	0	1
200	392	1	1	0	0	1	0	0	0	0	229	449	1	1	1	0	0	1	0	1	0

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1968
Sept. 3,
1968

0001	031005076700	030505060003	030018071006	000704777775	651013000000	000000000000	003777025000	000417003777
0004	000000013277	000000010765	204667100364	021700000215	000023377777	000000000000	000000000000	000000002101
0049	025001010364	022701052233	302737004851	307373006276	090217000357	000007700000	000002000002	000031000462
0197	000020690002	000002000002	000004000152	000100000065	000100000010	000000000000	000024000000	000000000000
0193	000320000051	000573000002	000046000355	000270000116	000521000304	000055000010	000006000010	000037000010
0241	000010000000	000010000010	000010000010	000010000150	000172000062	000002000002	000067000454	000051000002
0285	000020000002	000090000000	000000000000	000009000000	000000000000	000000000000	000000000000	000026000002
0337	000002000002	000004000062	000002000002	000020000002	000020000111	000000000000	000000000000	000074200074
0385	000663000000	000001161766	000000105030	000036146352	0000095713014	000000000000	000000000000	000000000000
0432	000000000000	000010461011	000001153412	000000353243	000000133172	000000015724	000000426360	777777753262
0481	000000467256	000000020740	000000037173	000000132243	00000005045	000000000000	000000000000	000000000000
0525	000000000000	000010522175	000000052525	000000062506	000000037601	000000146360	000135073720	000135107540
0577	000000000000	0000000001200	000545776222	000000001737	000000000035	777777775777	000000556116	777777772367
0622	000000024733	0000000001750	000000000236	000000060635	000000164446	000000150207	000022145126	777757965214
0673	000021155500	777777773167	000000001116	000000012147	031305070700	030505060404	030414071006	000705777776
0721	000000000000	000000000000	003770620000	000417003777	000000013132	000000010765	204667100364	021700777456
0765	000205377777	000000000000	000000000000	000000020101	062501100364	022701007723	30160506031	301605004305
0817	000217000357	000002000000	000002000002	00004000477	000051000002	000002000002	000004000130	000100000006
0866	000310000010	000006000006	000024000000	000000000000	000164000434	000002000002	000476000347	000420000140
0913	000170000002	000136000010	000005000010	000024000010	000010000010	000024000010	000010000010	000100000300
0961	000030000062	000000000002	000002000002	000002000002	000002000002	000002000002	000000000000	000000000000
1009	000000000000	000000000000	000000000000	000000000000	000020000002	000000000000	000002000002	000020000002
1057	000002000217	000000000000	000000000000	000000000000	000746000750	000665000000	000001162006	000001051126
1101	0000060711335	000000000000	000000000000	000000000000	000000000000	000010461133	000001153426	000000353265
1153	000000133111	000000015725	000000426376	777777753132	000000467256	000000000000	000000031713	000000132243
1201	000000005645	000000000000	000000000000	000000000000	000000000000	000010522364	000000005211	000000062531
1245	000000037732	000000146423	000135073720	000135107540	000000000000	000000000000	000000001170	00056477643
1257	000000000034	777777776601	000000556466	777777772365	000000002423	0000000001750	000000000236	000000000000
1345	000000165915	000000150002	000022145126	777757045214	000021155001	777777773167	000000010116	000000012477
1393	031305070700	030506060405	030414071006	000706777776	651013000000	000000000000	003777062001	000000000000
1441	000000013132	000000010765	204667100364	021700777456	000025377777	000000000000	000000000000	000000000000
1485	025010100364	022701007723	30160506031	301605004141	000217000357	000002000000	000002000002	000000000000
1537	000075000002	000000000002	000010000107	000019000006	000010000010	000000000000	000006000000	000000000000
1585	000000000142	000000000002	000507000347	000505000164	000140000142	000000000000	000000000000	000000000000
1633	000100000010	000010000010	000010000010	000010000264	000000000002	000000000000	000002000002	000000000000
1681	000002000002	000002000002	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
1729	000002000002	000004000505	000002000002	000002000002	000002000002	000002000002	000000000000	000000000000
1777	000663000000	000001162117	000000105175	000036143151	000005707657	000000000000	000000000000	000000000000
1825	000000000000	000010461255	000001153443	000000353300	000000133030	000000015725	000000000000	000000000000
1873	000000467256	000000020740	000000037173	000000132243	00000005045	000000000000	000135073720	000135107540
1921	000000000000	000010522554	000000005215	000000062554	000000040064	000000146466	000000146466	000000000000
1969	000000000000	00000001170	000056477643	000000001737	000000000034	777777776601	000002145126	777757045214
2017	000000024713	000000001750	000000000236	000000060123	000000156565	030506060406	030414071006	000707777776
2065	000002115500	777777773167	000000012116	000000012147	031305070700	000000010765	204667100364	021700777456
2113	000000000000	000000000000	000017003777	000000013132	022713010606	00000001765	000000000000	000000000000
2161	000002037777	000000000000	000000000000	0000000002101	062501100364	000002000002	000004000065	000100000006
2209	000217000357	000002000000	000002000002	000004003523	000002600002	000025300002	000472000320	000110002070
2257	000010000010	000006000006	000006000006	000000000000	000497000002	000000000000	000000000000	000100000010
2305	000005100010	000006000010	000006000010	000006000010	000010000010	000000000000	000000000000	000100000432
2353	000000000002	000002000002	000002000511	000213000000	000020000002	000000000000	000000000000	000000000000
2401	000000000000	000000000000	000002000002	000026000002	000020000002	000000000000	000000000000	000000000000
2449	000002000002	000000000000	000000000000	0000750000750	000065000000	000000000000	000000000000	000000000000
2497	00000005706200	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
2545	0000000132746	000000015726	000000426433	777777752453	000000050000	000010461377	000001153457	000000353330
2593	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000132243
2641	000000040217	000000146531	00000005527	77777772361	00000004704	00000001750	000000000236	000000000000
2689	000000000034	777777776601	00000005527	77777772361	000021850001	77777773167	000000010116	00000001147
2737	0000000165634	000000014732	000022145126	777757045214	000000000000	000000000000	003777062001	000417003777
2785	031305070700	030506060407	030414071006	000710777456	651013000000	000000000000	000000000000	000000000000
2833	000000013132	000000010765	204667100364	021700777456	000023377777	000000000000	000002000002	000006000533
2881	025010100364	022713010056	30160500401	30160500346	000217000357	000000000000	000002000002	000000000000
2929	000023700002	000002000002	000012000043	000010000006	000010000010	000000000000	000024000000	000000000000

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6241	777770077777	777777777525	777777774532	777777761766	031305071200	040610140305	030507071114	009607777776
6285	651013000000	000000000000	007777035100	000471093777	000000013277	000000112765	214366100367	156706017033
6337	000033437777	000000000000	000000000000	000000021011	035501100367	157266163520	300434010474	300434007036
6385	000217000357	000000000000	000051000002	000316000004	000144000026	000077000002	000326000024	000100000006
6433	000010000010	000006000262	000231000316	0000341000142	000274000116	000140000004	000403000377	000527000365
6481	000434000320	000122000019	000020100262	000247000010	000170000010	000122000010	000004100166	000014000075
6525	000454000264	000026000000	000332000051	0000241000452	000310000002	000466000312	000034100015	000026200002
6577	000103000020	000162000466	000407000341	000403000051	000241000002	000511000045	000306000075	000535116343
6625	000424000411	000000000000	000159000361	000436000363	000357000000	000001106227	777777741005	00001004641
6673	000004650145	000000000000	000000000000	000000000000	000000000000	000036055443	000000376773	777777702025
6721	77777752424	000000016320	000000352743	000002110024	000000475402	000000016352	000000015333	000000036467
6769	000000002063	000000000000	000000000000	000000000000	000000000000	000033556144	000000002544	000000001030
6817	000000001756	000000006433	0000136356220	0000136352360	000132777627	0000044001325	000455002121	000000002044
6865	77777776573	000000000420	777777765760	777777762474	000000363775	000000000000	000000000024	000000204694
6913	000000513110	77777773202	777775605417	000025247615	777700073177	777777777525	77777774532	777777761766
0001	031305071200	040610140306	030507071114	000410777776	651013000000	000000000000	063777035100	000471003777
0004	000000013277	000000112765	214366100367	156700017003	000035377777	000000000000	000000000000	000000002101
0009	000000000000	000000163520	000434010474	300434006672	000217000357	000177000120	000001000002	000300000004
0097	035501100367	157266163520	000355000107	000010000006	000100000010	000000000000	000000000000	000341000010
0146	0000051000026	000011000004	000416000430	000553000411	000436000030	000217000010	000006000000	000071000010
0193	0000510000231	000011000004	000010000122	000152000067	000030000450	000022000000	000037000000	000026000000
0241	000010000000	000044000316	000341000166	000450000330	000136000020	000154000042	000370000424	000042600010
0289	000264000002	000576000045	000170000002	000300000002	000420000511	000000000000	000000000000	000000000000
0337	000241000026	0000001106234	77777770716	000335120005	0000094651620	000000000000	000000000000	000000000000
0385	000035700000	0000003605641	000000377004	000000377004	777777752472	000000000000	000000000000	000000000000
0433	000000000000	000000016352	000000015333	000000036457	777777776605	000000000000	000000000000	000136356220
0481	000000047542	0000000356230	000000002354	000000010002	000000012741	000000000000	777777757525	777777762464
0529	00011877622	0000000401304	000511002161	000000000000	77777776605	000000000000	777777723005	000025247615
0577	000000003633	000000000000	000000000000	000000000024	000000000000	040610140307	030507071114	000611777776
0625	000000000000	777777777525	777777774532	777777761766	031305071200	000000112765	214366100367	156706017033
0673	7777770300000	000000000000	003777035100	000047100377	000000013277	157266163520	300434010474	300434000526
0721	651013000000	000000000000	000000000000	0000000002101	035501100367	157266163520	000347000065	000100000000
0769	000000037777	000000000000	000000000000	000357000000	000120000120	000077000120	000476000000	000574000002
0817	000217000357	000450000051	000051000002	000341000177	000363000156	000140000231	000476000000	000264000140
0865	000000000000	000006000006	000006000006	000006000006	000100000010	000024000010	00004100122	000264000140
0913	000377000014	000152000010	000006000010	000005000010	000005000010	000436000316	000343000025	00035000112
0961	000430002334	000026000002	000276000051	000310000172	000241000002	000066000045	000051000401	000237000002
1009	000132000401	000146000472	0003710000217	000334000144	000120000120	000001106241	777777740630	000035121446
1057	000415000217	0000316000341	0002110000645	000030000355	000357000004	000000000000	000000377016	000001005332
1105	0000000453245	000000000000	000000000000	000000021034	000000000000	000000000000	000000000000	000000000000
1153	777777552650	000000016317	000000353302	000000021034	000000000000	000000047542	000000016352	777777702025
1201	000000002263	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
1249	000000001756	0000000064652	0000136356220	0000136352360	00010077615	000000000000	77501002203	777777777355
1297	777777776760	000000001443	777777775672	777777761766	77777776251	000000000000	000000000024	000000204174
1345	0000000512572	777777772612	777775605417	000025247615	77770007777	77777777525	77777774532	777777761766
1393	031305071200	040610140310	030507071114	00061277777	651013000000	000000000000	063777035100	000471003777
1441	000000013277	000000112765	214366100367	156700017003	00000137777	000000000000	000000000000	000000002101
1489	035501100367	157266163520	000355000107	000010000006	000100000010	000000000000	000000000000	000300000004
1537	0004500000026	000077000002	0000351000221	0000190000076	000010000010	000006000006	000122000010	000026000000
1585	000432000051	000322000004	000547000045	000010000020	000233000000	000426000324	000122000010	000060000041
1633	000116000010	000122000010	000010000122	000033000026	000215000357	000026000002	000272000010	000264000075
1681	000170000002	000343000316	0000343000223	0000343000223	000114000401	000134000474	0000363000424	000077000026
1729	000200006120	000050000341	000002000213	000120000002	000254000000	000316000345	0000220000734	0006470000734
1777	000361000004	000001162646	777777740541	000035123110	00004645751	000000000000	000000000000	000000000000
1825	000000000000	000000360333	000000377030	00001005266	77777752606	000000016316	000000353457	000000210114
1873	000000047542	000000016352	000000015333	777777779226	000000002263	000000000000	000000000000	000000000000
1921	000000000000	000000356377	000000002354	000000003646	000000001756	000000004662	000136356220	000136352360
1969	00005377610	000014777516	777544902253	777777777342	77777776773	000000001446	77777775637	77777776253
2017	000000006337	000000000000	000000000000	000000000000	000000000000	77777772241	77755605417	000025247615
2065	777700077777	777777777525	777777774532	777777761766	031305071200	040610140310	030507071114	000611777776
2113	651013000000	000000000000	003777035100	000471003777	000000013277	000000000000	214366100367	156706017033
2161	000002377777	000000000000	000000000000	000000000000	035501100367	157266163520	300434010474	300434000526