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1 AUGUST 1979
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LANDSAT-2 AND LANDSAT-3 FLIGHT EVALUATION REPORT 23 APRIL 1979 TO 23 JULY 1979

Prepared By
GE LANDSAT OPERATIONS CONTROL CENTER

For
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Goddard Space Flight Center
Greenbelt, Maryland 20771

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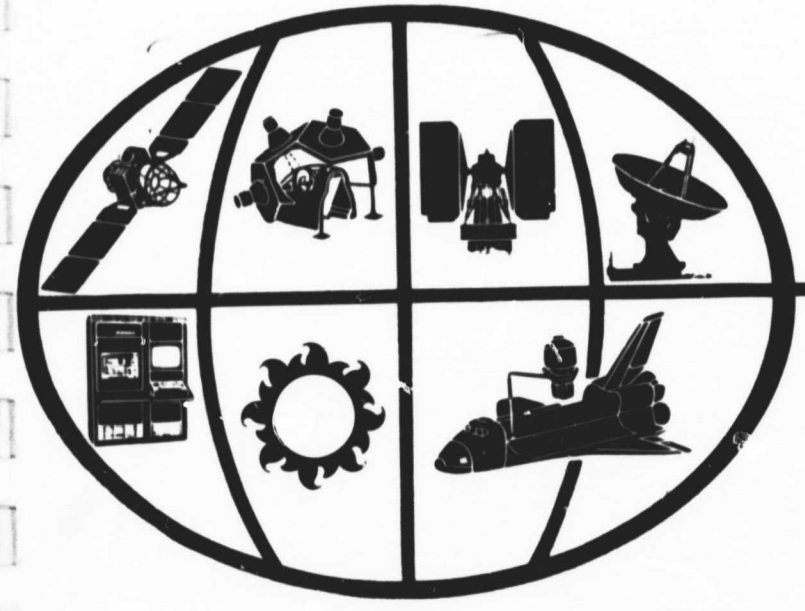

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APPROVED: John C. Speer

GENERAL ELECTRIC
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INTRODUCTION

This is the 19th report in a continuing series of documents issued at launch, and quarterly thereafter, to present flight performance analyses of the Landsat-2 spacecraft. Previously issued documents are:

Document No.	Title	Date
75SDS4215	Landsat-2 Launch and Flight Activation Evaluation Report, 22 to 26 January 1975, Launch through Orbit 50 and Orbit Adjust Operation.	21 March 1975
75SDS4228	Landsat-1 and Landsat-2 Flight Evaluation Report, 23 January 1975 to 23 April 1975.	15 August 1975
75SDS4255	Landsat-1 and Landsat-2 Flight Evaluation Report, 23 April 1975 to 23 July 1975.	10 October 1975
75SDS4266	Landsat-1 and Landsat-2 Flight Evaluation Report, 23 July 1975 to 23 October 1975.	1 December 1975
76SDS4207	Landsat-1 and Landsat-2 Flight Evaluation Report, 23 October 1975 to 23 January 1976.	29 February 1976
76SDS4248	Landsat-1 and Landsat-2 Flight Evaluation Report, 23 January 1976 to 23 April 1976.	14 July 1976
76SDS4263	Landsat-1 and Landsat-2 Flight Evaluation Report, 23 April 1976 to 23 July 1976.	15 October 1976
76SDS4278	Landsat-1 and Landsat-2 Flight Evaluation Report, 23 July 1976 to 23 October 1976	30 November 1976
77SDS4204	Landsat-1 and Landsat-2 Flight Evaluation Report, 23 October 1976 to 22 January 1977.	22 February 1977
77SDS4228	Landsat-1 and Landsat-2 Flight Evaluation Report, 23 January 1977 to 23 April 1977.	23 May 1977
77SDS4244	Landsat-1 and Landsat-2 Flight Evaluation Report, 23 April to 23 July 1977	22 August 1977

Document No.	Title	Date
77SDS4258	Landsat-1 and Landsat-2 Flight Evaluation Report, 23 July 1977 to 23 October 1977	2 November 1977
78SDS4202	Landsat-1 and Landsat-2 Flight Evaluation Report, 23 October 1977 to 23 January 1978	1 February 1978
78SDS4216	Landsat-1, Landsat-2, and Landsat-3 Flight Evaluation Report, 23 January 1978 to 23 April 1978	3 May 1978
78SDS4232	Landsat-2 and Landsat-3 Flight Evaluation Report, 23 April 1978 to 23 July 1978	1 August 1978
78SDS4250	Landsat-2 and Landsat-3 Flight Evaluation Report, 23 July 1978 to 23 October 1978	1 November 1978
79SDS4201	Landsat-2 and Landsat-3 Flight Evaluation Report, 23 October 1978 to 23 January 1979	1 February 1979
79SDS4227	Landsat-2 and Landsat-3 Flight Evaluation Report, 23 January 1979 to 23 April 1979	1 June 1979

This report contains analysis of flight performance for Orbits 21480 to 22730 for Landsat-2.

SECTION 1

SUMMARY

LANDSAT-2 OPERATIONS

SECTION 1

SUMMARY LANDSAT-2 OPERATIONS

The Landsat-2 spacecraft was launched from the Western Test Range on 22 January 1975, at 022:17:55: 51.604. The launch and orbit injection phase of the space flight were nominal and deployment of the spacecraft followed predictions. All systems continue to perform normally except Forward Scanner Pressure, Forward Scanner Pressure Telemetry, Wideband Video Tape Recorder No. 1 (WBVTR-1), and Narrow Band Tape Recorder No. 1 (NBTR-1). The Forward Scanner Pressure had begun leaking before launch but will not affect scanner performance. The Forward Scanner Pressure (Function 1003) telemetry became erratic in Orbit 2244 on 2 July 1975.

WBVTR-1 failed to rewind during Orbit 1021, 5 April 1975, and had intermittent operation until Orbit 2238, 2 July 1975, when normal operation was resumed. WBVTR-1 had a new anomaly in Orbit 2682 on 3 August 1975 because of failure of one of the 4 heads. As a result, it could not be used with MSS data, but performed satisfactorily with RBV data (because RBV provides a synchronizing pulse which permits data from the bad head to be isolated and eliminated). After Orbit 7181 on 20 June 1976, the recorder was used regularly in service recording RBV data until failure of a second head in Orbit 10064, 13 January 1977. All operation of WBVTR-1 had been discontinued since that date.

WBVTR-2 started to rewind but stopped prematurely in Orbit 1919, 9 June 1975, and again in Orbit 3854, 26 October 1975, with the cause unknown. Unit remains operational.

WBVTR-2 had 30% high headwheel current during playback in Orbit 9738 on 21 December 1976. The anomaly is cured by an operational procedure of toggling playback to record to playback. This anomaly occurs frequently but WBVTR-2 has operated for over 1100 hours. Unit remains operational.

Narrow Band Tape Recorder No. 1 (NBTR-1) halted after 35 seconds of playback in Orbit 20267, on 15 January 1979. Subsequent attempts at operation were unsuccessful. NBTR-1 had 18320 hours of in-flight operation over its four years of flight. The remaining good Narrow Band Tape Recorder No. 2 is being used to cover MSS, RBV, Downlinks, and Video Tape Recorder operation. One long (2.5 hour) record operation per day is scheduled for offline analysis.

Batteries 1, 2, 5, 6, 7 and 8 have been turned OFF one by one for restoration cycles and returned to service after a few weeks.

From 2 November 1977 to 2 February 1978, a series of orbit adjust burns were made to change the inclination angle of Landsat-2. Payload operation continued during this cycle as the ground track was maintained.

The DCS receiver was turned OFF in Orbit 15857, 4 March 1978. DCS operation was assumed by Landsat-3 at launch.

The RMP-2 (Ball Bearing Gyro) motor current began running high in Orbit 21672 on 25 April 1979. RMP-1 (Air Bearing Gyro) was turned ON in Orbit 21737 (30 April 1979) and enabled in Orbit 21754 on 1 May 1979 after the RMP-2 sensitivity decreased. The RMP-2 run down test indicated high friction and RMP-2 is considered to have failed.

In early July 1979 late line starts began occurring in Landsat-2 MSS data similar to the MSS late line starts on Landsat-3. The Landsat-2 MSS continues to be used in normal operation.

The spacecraft continues to perform its mission satisfactorily. Table 1-1 shows cumulative in-orbit payload system performance.

Table 1-1. In-Orbit Payload Systems Performance Launch thru Orbit 22935 (7-25-79) Landsat-2

RBV	Total Scenes Imaged	2,848
	Total Area Imaged (million sq. n mi.)	24.9
	ON TIME (hr.)	30.2
	ON/OFF Cycles	348
	% Real Time Images	74
	% Recorded Images	26
MSS	Total Scenes Imaged	344,550
	Total Area Imaged (million sq. n mi.)	3,004
	ON TIME (hr.)	3,633
	ON/OFF Cycles	22,189
	% Real Time Images	80
	% Recorded Images	20
DCS	Messages at OCC	1,353,058
(Not in Use)	Users	(Not in Use)
	ON TIME (hr.)	27,283
WPA-1	ON TIME (hr.)	109.4
	ON/OFF Cycles	706
WPA-2	ON TIME (hr.)	3,204
	ON/OFF Cycles	17,551
WBVTR-1	% Record Mode	38
(Not in Use)	% Playback Mode	41
	% Rewind Mode	20
	% Standby Mode	1
	Time Head-Tape Contact (hr.)	121.7
	Cycles Head-Tape Contact	1,950
	ON TIME (hr.)	154
WBVTR-2	% Record Mode	38
	% Playback Mode	41
	% Rewind Mode	20
	% Standby Mode	1
	MFSE Count in P/B	~10
	Time Head-Tape Contact (hr.)	1,129
	Cycles Head-Tape Contact	15,871
	ON TIME (hr.)	1,430

SECTION 2
ORBITAL PARAMETERS
LANDSAT-2

SECTION 2

ORBITAL PARAMETERS

At the close of this report period, Landsat-2's ground track error was -1.66 NM West (longitude at the equator).

High solar activity continues to affect spacecraft drag. Consequently, two orbit maintenance, orbit adjusts were performed to maintain spacecraft ground track. A minus X axis burn was performed during Orbit 21665, 26 April 1979 and a plus X axis burn was performed during Orbit 22159, 30 May 1979.

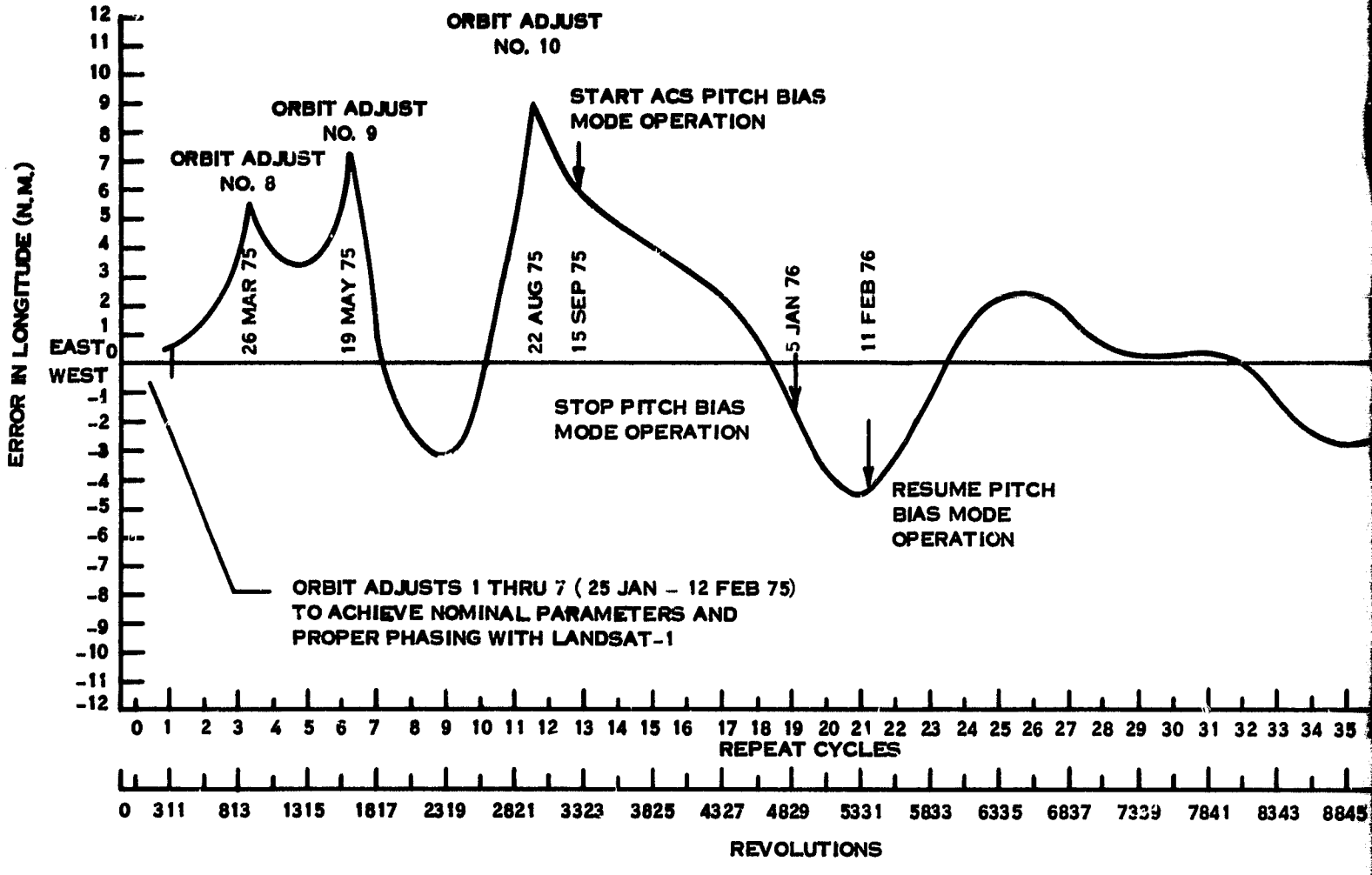
Error in longitude as a function of time since launch, orbit maintenance burns and the Pitch Position Bias Program are shown in Figure 2-1.

Figure 2-2 shows the mean local time for the spacecraft's descending equatorial crossing. The mean local time crossings for Landsats 2 and 3 respectively are 09:24:38 MLT and 09:30:48 MLT.

Phasing relationships between Landsats 2 and 3 are shown in Figure 2-3. Landsat-3 leads Landsat-2 at their descending equatorial crossings by 45.58 GMT minutes.

The Brouwer Mean Orbital parameters for Landsat-2 are given in Table 2-1.

Appendix B provides the spacecraft orbit reference tables for January 1979 through April 1980.



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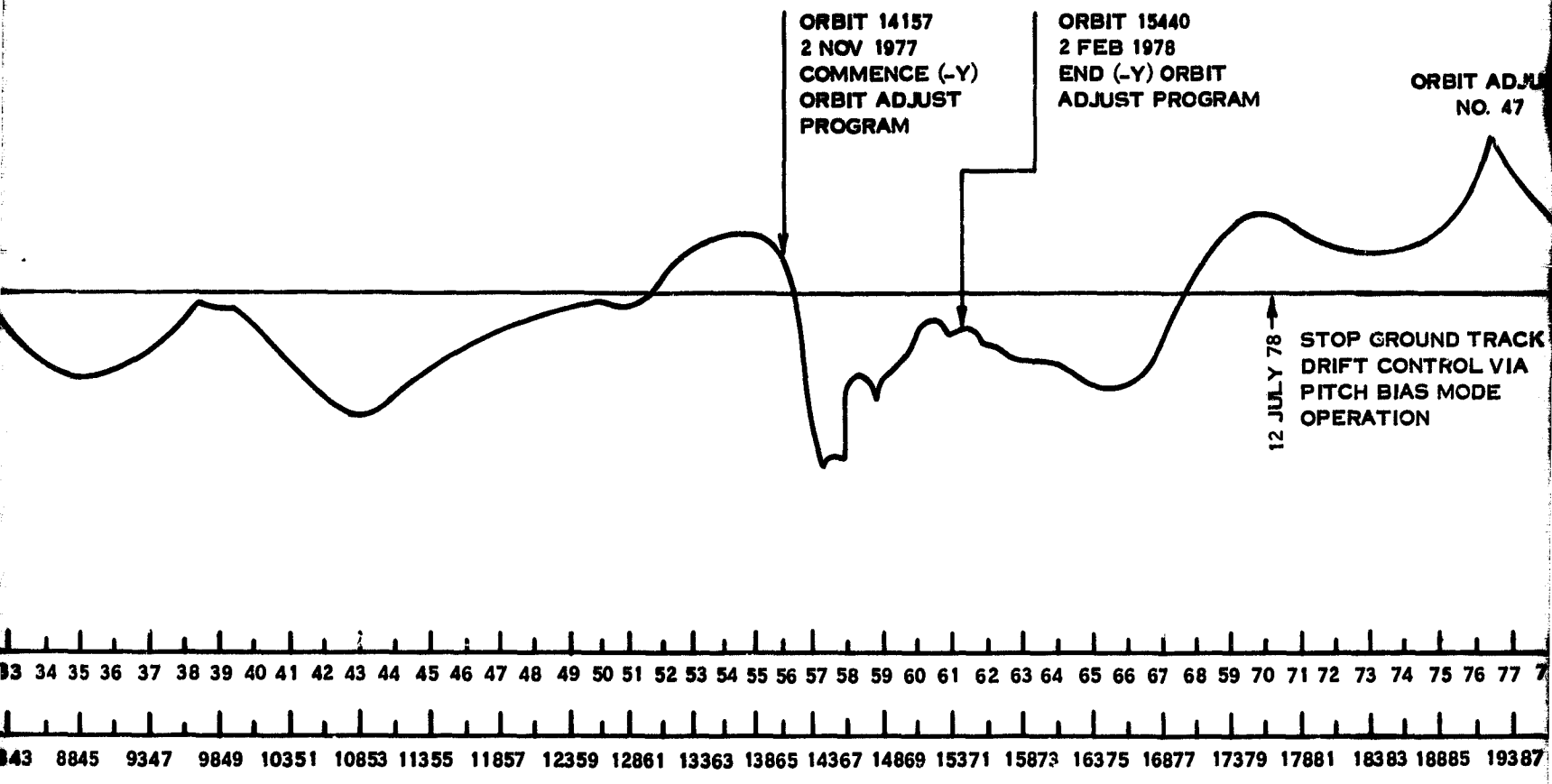

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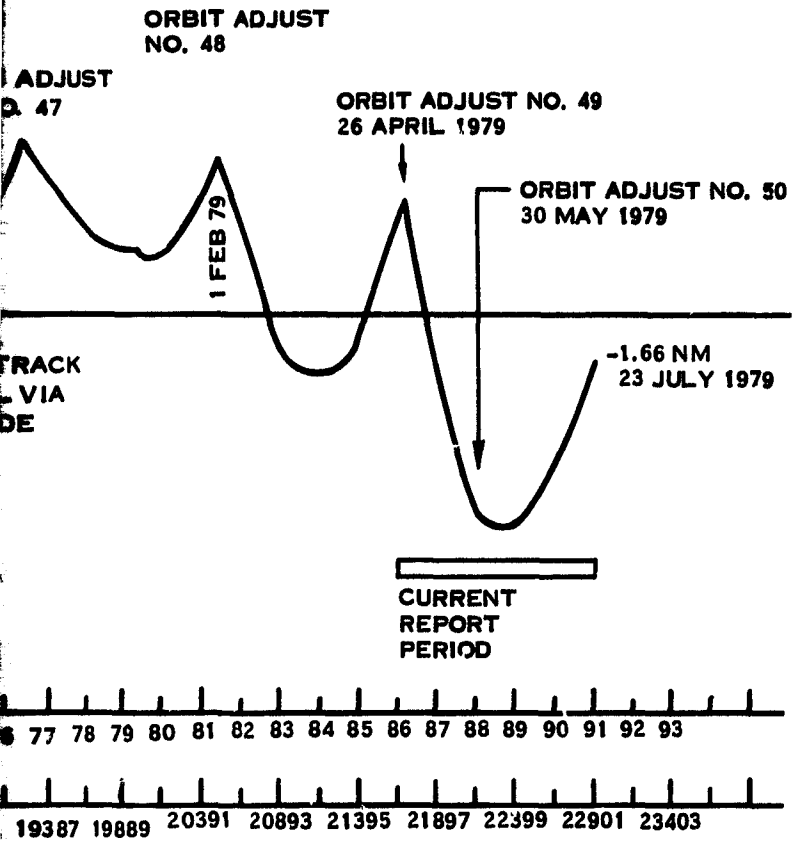

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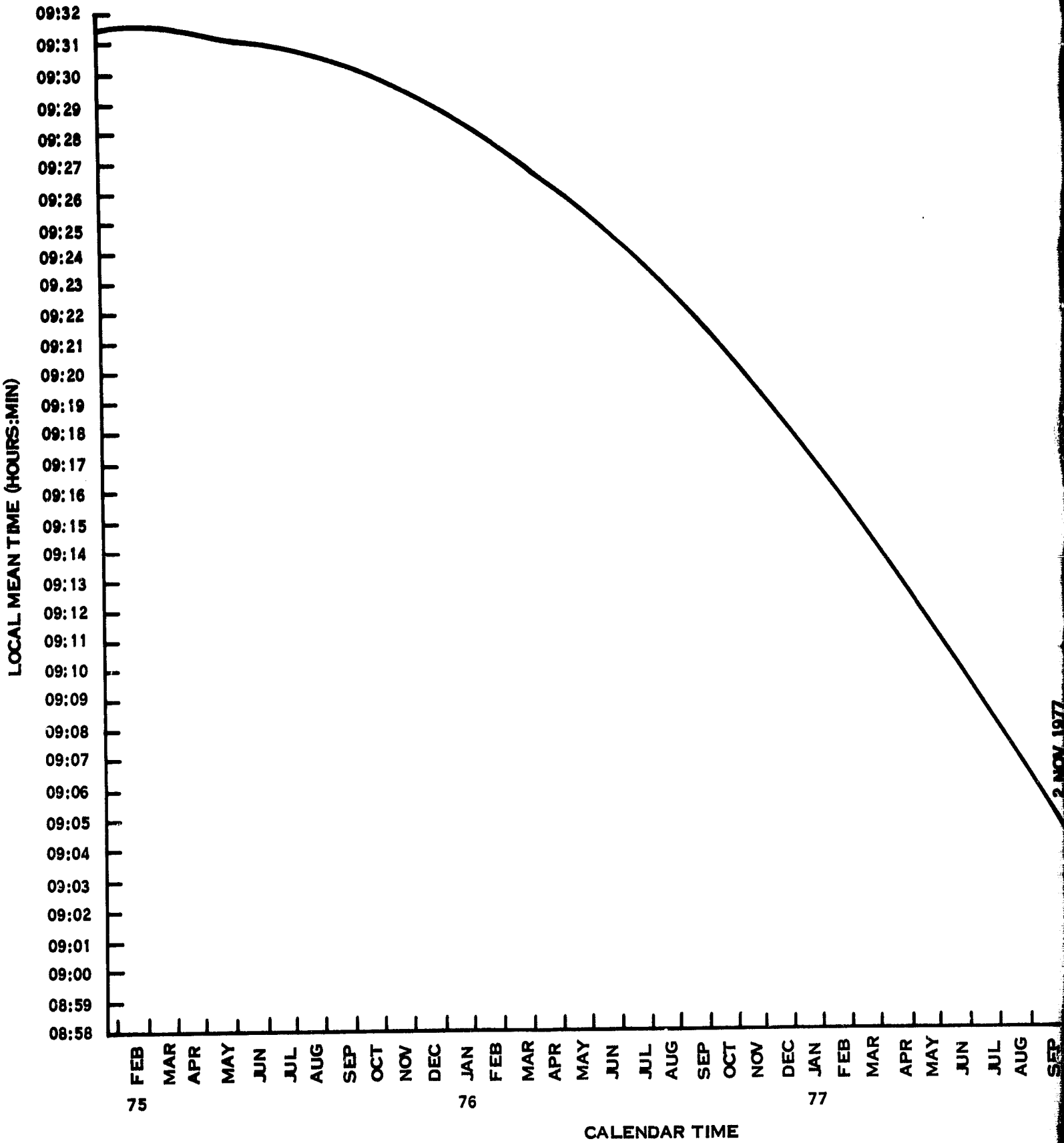
Figure 2-1. Effect of Orbit Adjusts and Pitch Position Bias Orbit Maintenance on Landsat-2's Ground Track



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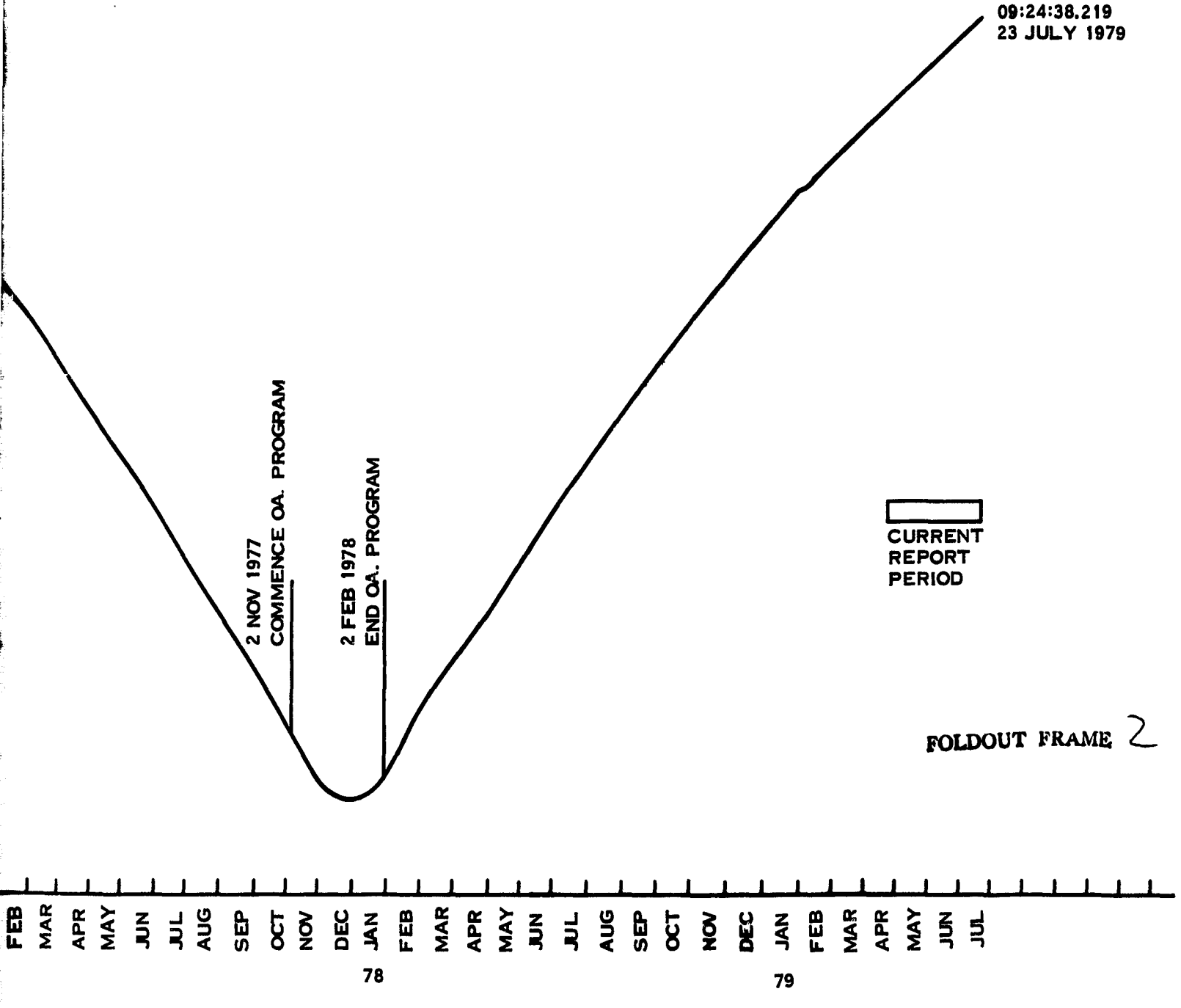
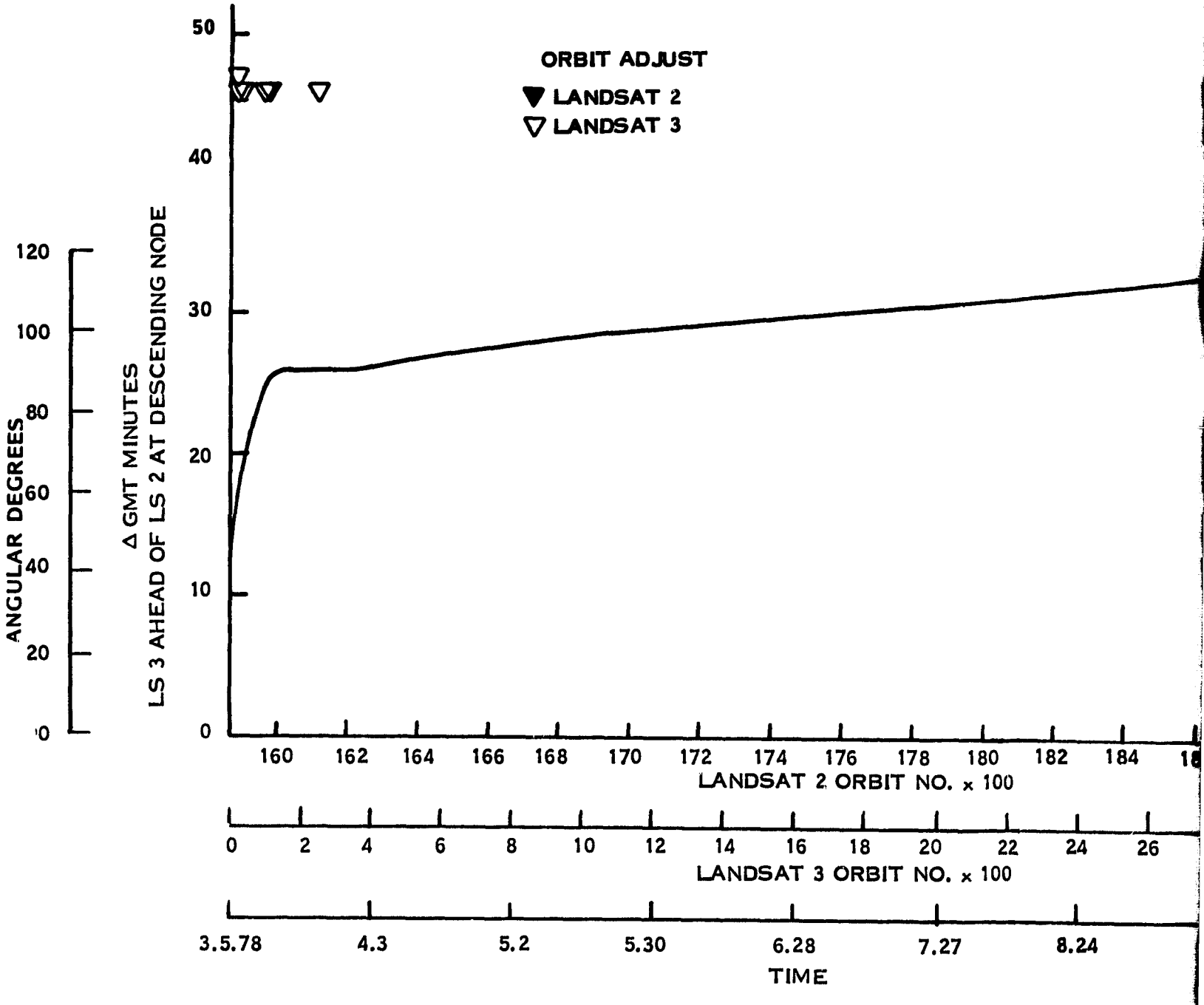


Figure 2-2. Local Mean Time of Descending Node - Landsat-2



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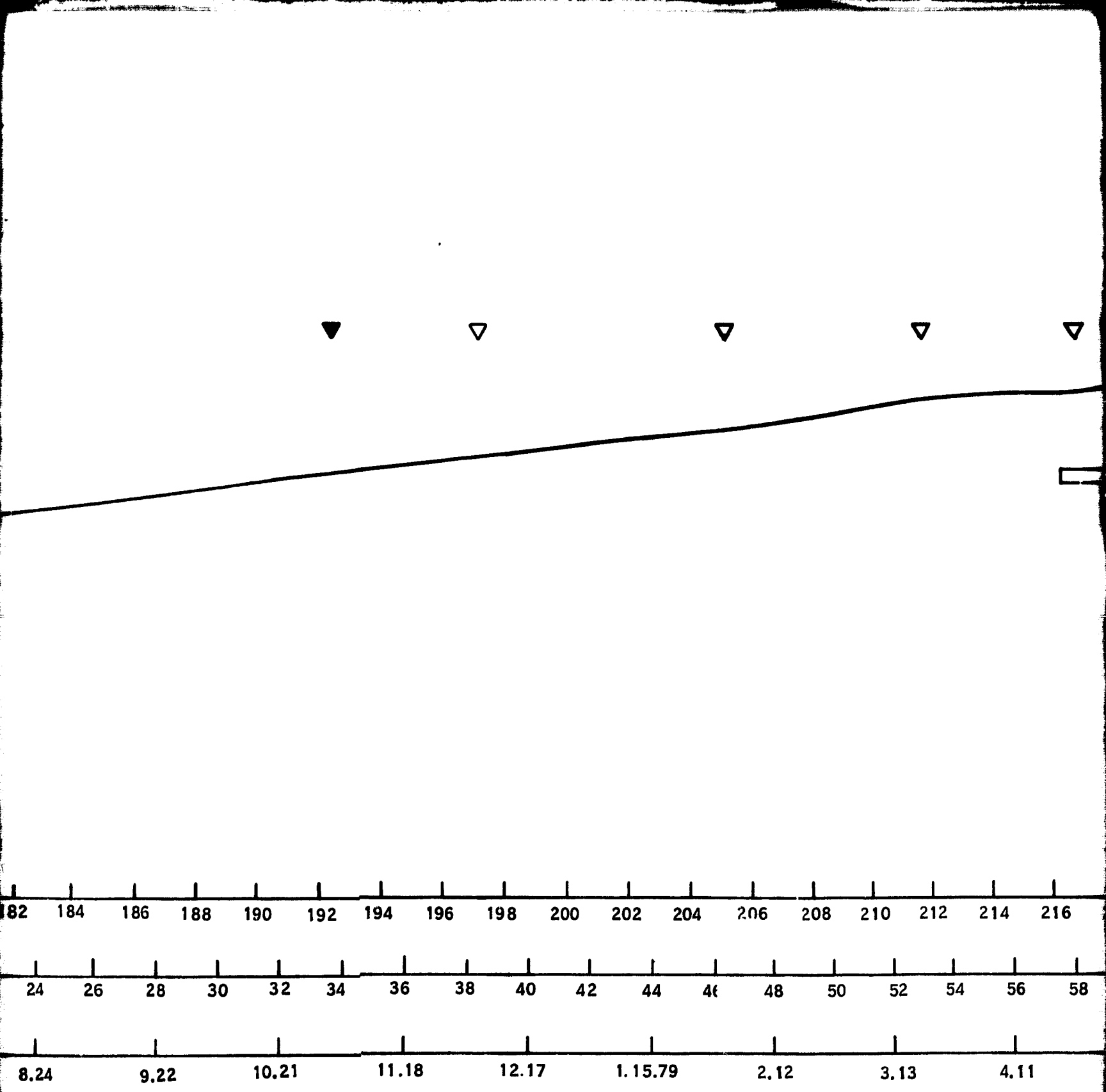

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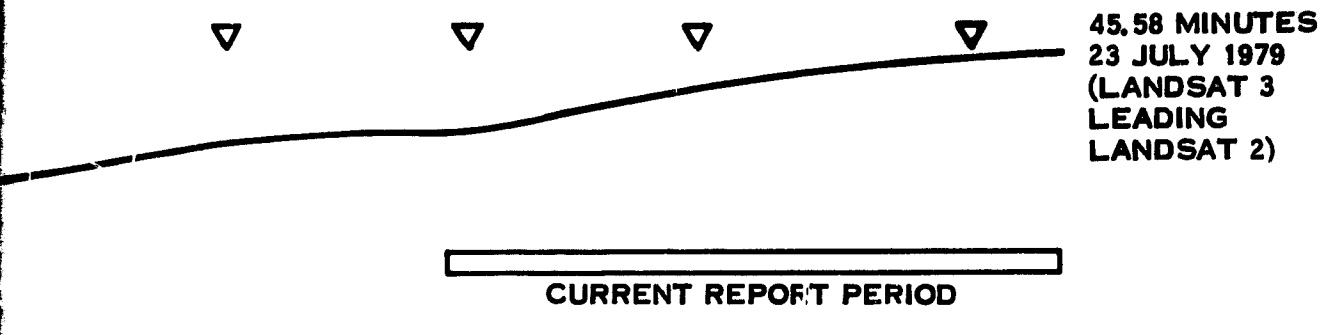

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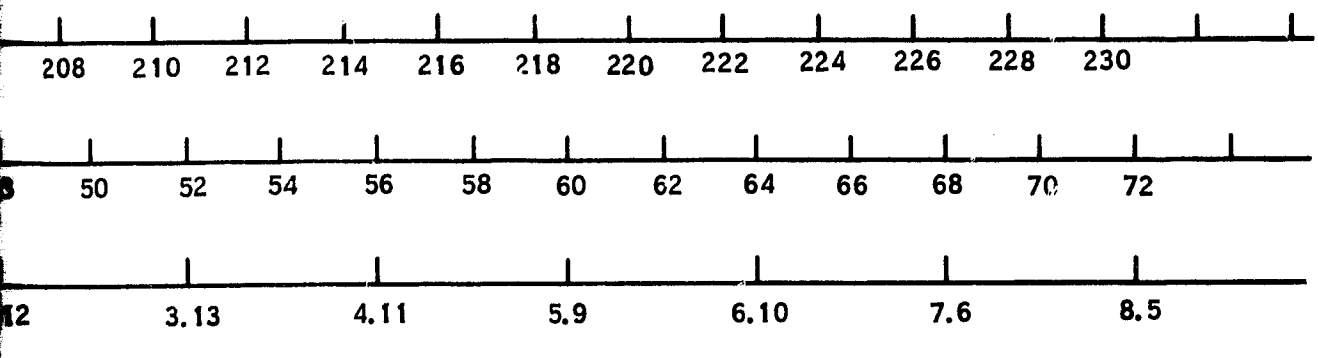

Figure 2-3. Drift in Angular Phasing Between Landsat-2 and 3

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Table 2-1. Landsat-2 Brouwer Mean Orbital Parameters

Element / Date	Apogee (KM)	Perigee (KM)	Inclination (Deg.)	Semi-Major Axis (KM)	Eccentricity	Anomolistic Period (Min)	Nodal Period (Min)	Argument of Perigee (Deg)	Right Ascension (Deg)	Mean Anomaly (Deg)
25 Jan 1975[1]	915.03	901.56	99.095	7286.462	0.000925	103.165	—	272.852	86.637	139.578
6 Feb 1975[2]	916.84	898.47	99.096	7285.820	0.001260	103.151	—	256.040	99.347	134.523
24 Apr 1975	917.85	897.40	99.079	7285.788	0.001403	103.151	103.266	62.55	174.339	117.183
25 July 1975	917.45	897.68	99.071	7285.733	0.001356	103.150	103.265	166.118	264.891	13.726
23 Oct 1975	916.70	898.49	99.059	7285.762	0.001250	103.150	103.266	282.749	353.366	257.271
24 Jan 1976	917.36	897.81	99.016	7285.751	0.001342	103.150	103.266	31.621	84.584	148.179
23 Apr 1976	917.67	897.44	99.029	7285.721	0.001389	103.149	103.265	139.745	172.774	40.033
22 July 1976	916.62	898.40	99.021	7285.677	0.001251	103.148	103.264	253.964	260.924	286.054
22 Oct. 1976	916.95	898.09	99.009	7285.683	0.001251	103.148	103.264	6.744	350.795	173.119
22 Jan. 1977	917.59	897.47	98.993	7285.693	0.001381	103.149	103.265	111.579	80.587	68.155
22 Apr 1977	916.84	898.09	98.975	7285.633	0.001287	103.147	103.263	221.210	168.277	318.768
24 Jul 1977	916.47	898.46	98.967	7285.632	0.001236	103.147	103.263	334.189	257.806	205.754
23 Oct 1977	917.40	897.52	98.955	7285.627	0.001364	103.147	103.263	81.812	347.225	97.914
22 Jan 1978[3]	915.24	900.32	99.162	7285.943	0.001024	103.154	103.269	191.142	76.302	348.761
22 Apr 1978[4]	914.74	900.97	99.215	7286.022	0.000945	103.156	103.271	309.149	166.247	230.816
23 Jul 2978	915.52	899.91	99.206	7285.880	0.001071	103.153	103.268	62.192	258.093	304.755
23 Oct 1978	915.50	900.07	99.194	7285.923	0.001059	103.154	103.269	162.731	349.853	149.509
16 Jan 1979	914.70	900.89	99.179	7285.938	0.000948	103.154	103.269	296.602	74.498	103.544
22 Apr 1979	915.42	900.09	99.1631	7285.8974	0.001052	103.154	103.269	38.281	169.946	230.169
23 Jul 1979	915.52	899.77	99.154	7285.788	0.001081	103.151	103.267	139.990	261.291	73.064

1. Post Launch.
2. After the sequence of phasing maneuvers completed in Orbit 212.
3. Interim value - orbit adjust program commenced 2 Nov 1977 was in process.
4. Orbit adjust program completed 2 February 1978.

SECTION 3
POWER SUBSYSTEM (PWR)
LANDSAT-2

SECTION 3

POWER SUBSYSTEM (PWR)

The Power Subsystem on Landsat-2 has performed satisfactorily throughout this report period.

The solar arrays continued to provide excess energy above spacecraft and payload requirements and are expected to support the Landsat-2 mission through 1980. The percentage degradation of the arrays is plotted as a function of days-in-orbit in Figure 3-1, along with the pre-launch predicted array degradation. The array degradation at the end of 54 months in orbit was 22.4% which is higher than predicted. The actual values of midday array current are plotted in Figure 3-2.

The battery packs on-line ranged from 8.67 to 9.96% depth of discharge (DOD) during this report period. When any battery reached high charge-to-discharge current ratios (C/D) it was turned OFF for a resoration cycle of a few weeks, leaving 6 batteries on-line at all times. The history of these restoration cycles is shown in Table 3-1. All battery-pack performance remained satisfactory. Battery voltages have been maintained within suitable limits with Landsat-2 power management procedure, excess array energy being dissipated through auxiliary loads. Temperatures ranged from 15.6°C to 23.7°C during this report period.

The power subsystem electronics have performed well during this report period with all regulated voltage stable. Table 3-2 shows major subsystem parameters and Table 3-3 shows power subsystem telemetry for selected orbits. Some parameters in Table 3-2 may be slightly different from those in Table 3-3 because Table 3-2 uses a power management time span (night followed by day), whereas the time span used in Table 3-3 is the playback period from the NBR.

The shunt limiter on Landsat-2 has operated several times since launch and has held the solar array bus voltage at specified levels.

Figure 3-3 shows the actual and predicted variation in sun angle to orbit plane and solar panels for Landsat-2.

Many orbits have again displayed the characteristics of notching in the array current telemetry. This condition is presumed to be sets of parallel solar cells with intermittent electrical connections, probably located where temperature extremes exist. The phenomenon occurred last year also.

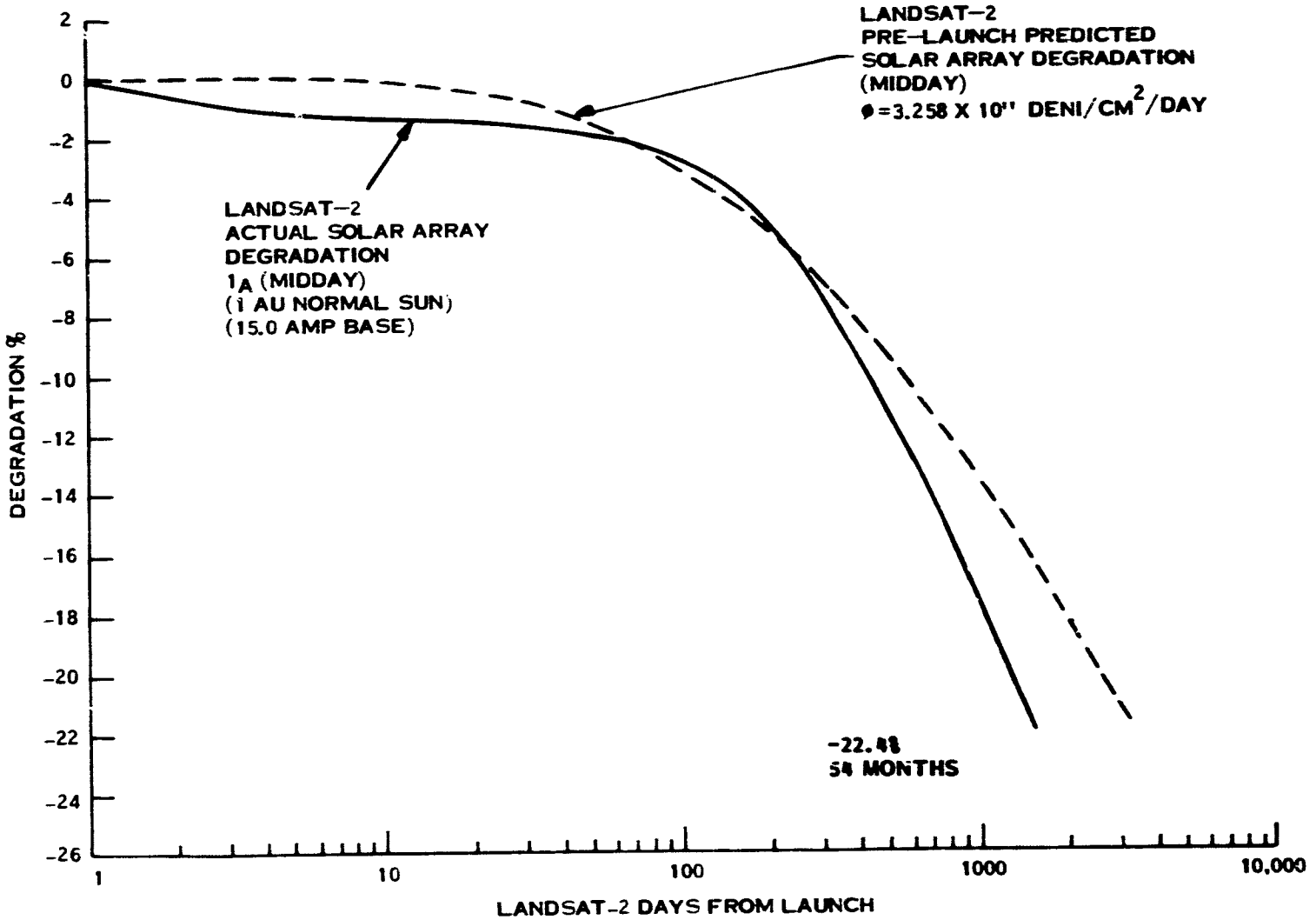
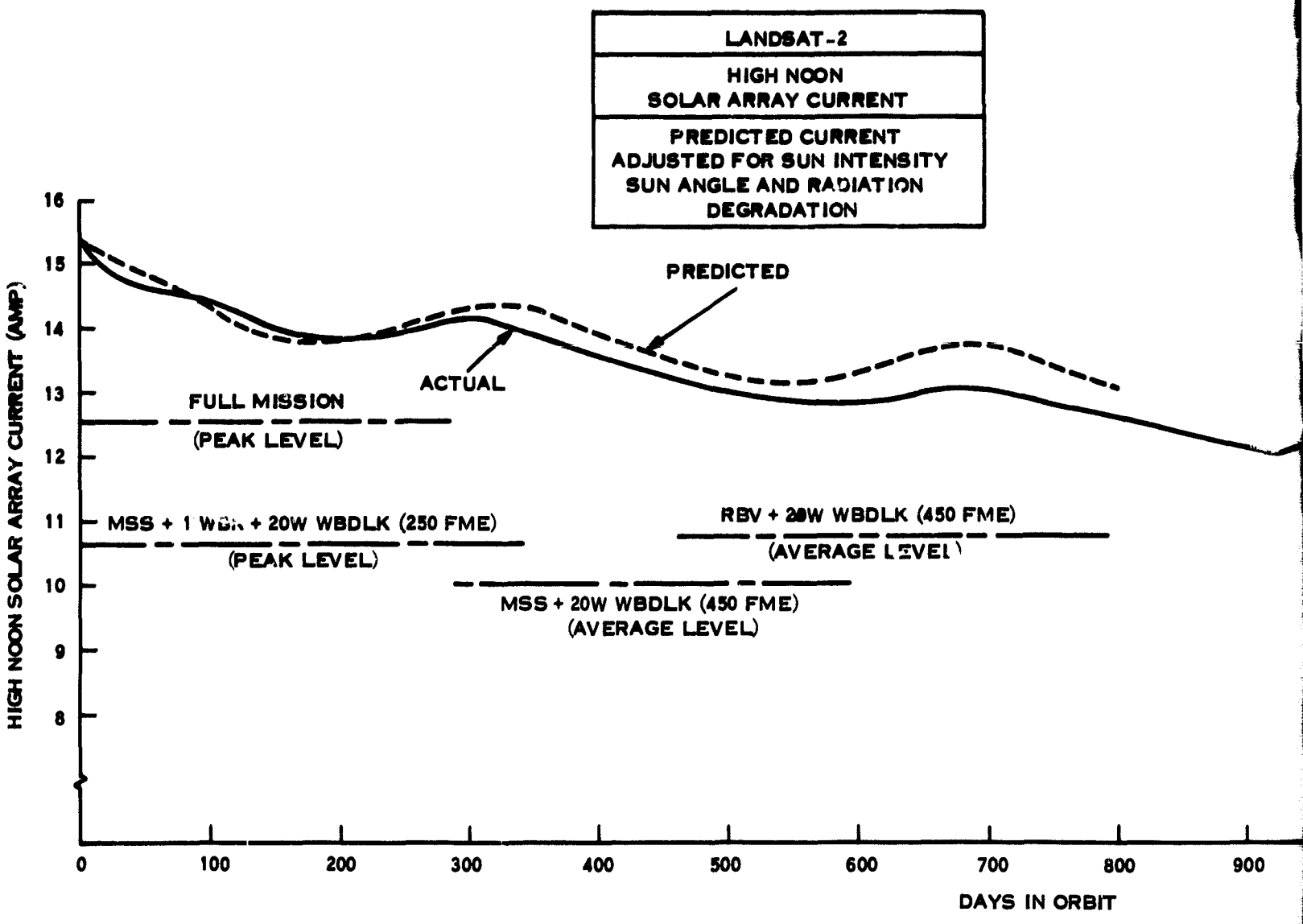


Figure 3-1. Landsat-2 Midday Solar Array Degradation vs. Days from Launch



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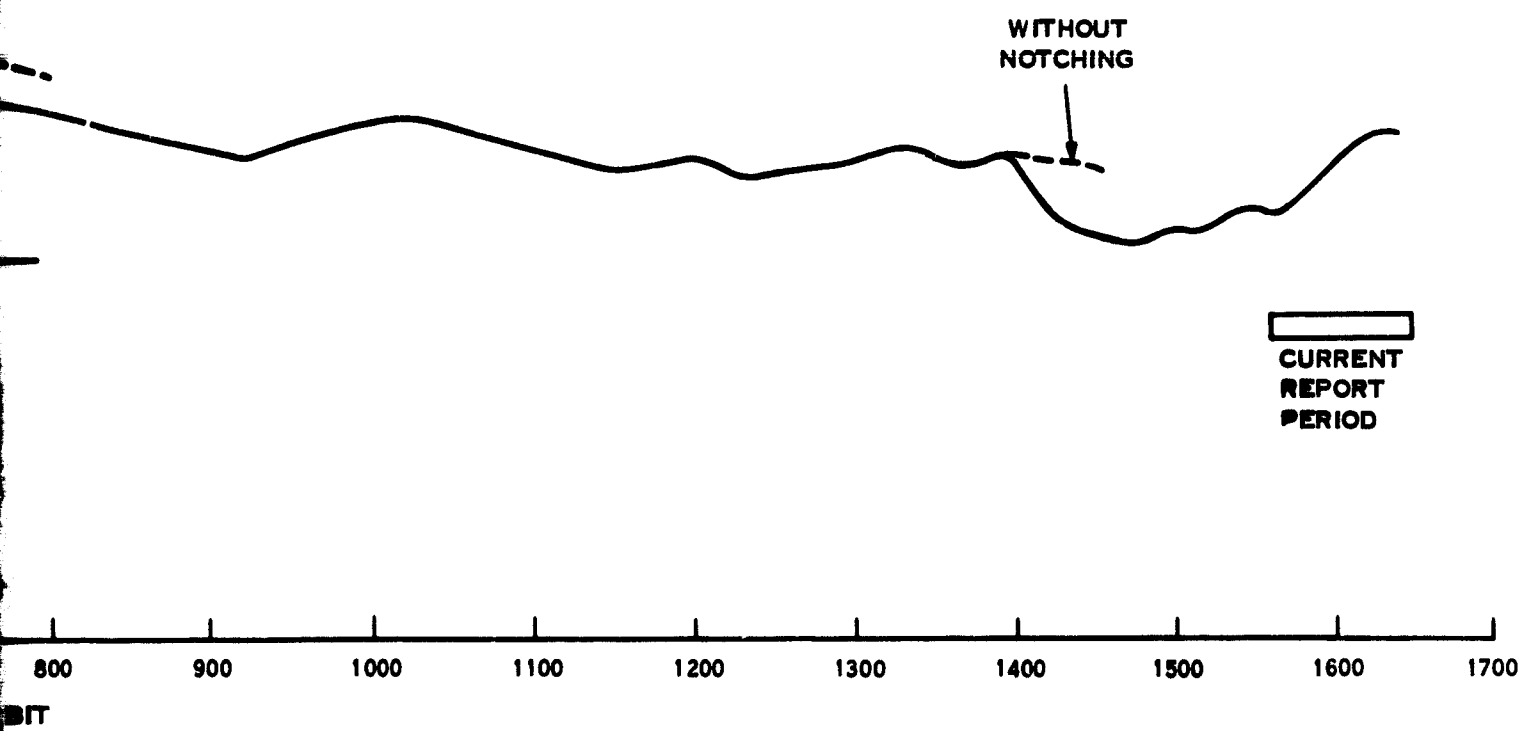

800 900 1000 1100 1200 1300 1400 1500 1600 1700

IT

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Figure 3-2. Landsat-2 Midday Solar Array Current

			1	2	3	4	5	6	7	8	9	10	11	12
BATT. 1	OFF	ORB	8029	11420	12562	13560	14870	17851	19791	20240	21931	22840		
		DATE	8-20-76	4-20-77	7-11-77	9-22-77	12-24-77	7-27-78	12-11-78	1-13-79	5-14-79	7-18-79		
	ON	ORB	8509	11947	12964	13670	15048	18088	19945	20434	22109			
		DATE	9-33-76	5-28-77	8-9-77	9-29-77	1-5-78	8-11-78	12-22-78	1-27-78	5-27-79			
BATT. 2	OFF	ORB	12078	18279	22180									
		DATE	6-6-77	8-25-79	6-1-79									
	ON	ORB	12272	18942	22387									
		DATE	6-20-77	10-12-78	6-16-79									
BATT. 3	OFF	ORB												
		DATE												
	ON	ORB												
		DATE												
BATT. 4	OFF	ORB												
		DATE												
	ON	ORB												
		DATE												
BATT. 5	OFF	ORB	10249	15297	19945	20614	22840							
		DATE	1-26-77	1-23-78	12-22-78	3-9-78	7-18-79							
	ON	ORB	10657	15354	20236	21005								
		DATE	2-24-77	2-2-78	1-13-79	3-9-79								
BATT. 6	OFF	ORB	7601	8591	9652	10962	11993	12271	12965	13454	13677	14230	14571	1471
		DATE	7-20-76	10-29-76	12-7-76	3-18-77	5-31-77	6-20-77	8-9-77	9-13-77	9-29-77	11-8-77	12-2-77	12-1
	ON	ORB	7992	9164	10028	11311	12077	12532	13159	13486	13636	14325	14615	147
		DATE	8-17-76	11-9-76	1-10-77	4-12-77	6-6-77	7-9-77	8-23-77	9-15-77	10-10-77	11-15-77	12-5-77	12-1
BATT. 7	OFF	ORB	13489	13959	18096	19900	20237	20240	22161					
		DATE	9-16-77	10-19-77	8-12-78	12-14-78	1-12-79	1-13-79	5-31-79					
	ON	ORB	13570	14159	18277	20002	20238	20614	22474					
		DATE	9-21-77	11-3-77	8-25-78	12-27-78	1-12-79	2-9-78	6-22-79					
BATT. 8	OFF	ORB	13161	19339	21878									
		DATE	8-23-77	11-9-78	5-10-79									
	ON	ORB	13444	19737	22178									
		DATE	9-12-77	12-8-78	6-1-79									

FOLDOUT FRAME

Table 3-1. Landsat-2 Battery Restoration Cycle

	10	11	12	13	14	15	16	17	18	19	20	21	22
1 79	22840 7-18-79												
6 -79													
77	14230	14571	14710	15354	15983	17696	18265	18279	19203	19791	19998	20434	22388
-77	11-8-77	12-2-77	12-12-77	2-2-78	3-13-78	7-14-78	8-24-78	8-25-79	10-30-78	12-11-78	12-26-78	1-27-79	6-16-79
56	14325	14615	14755	15550	16125	17840	18277	18436	19332	19876	20238	21858	22837
0-77	11-15-77	12-5-77	12-15-77	2-10-78	3-24-78	7-24-78	8-25-78	9-5-78	11-8-78	12-18-78	1-13-79	5-9-79	7-18-79

FOLDOUT FRAME 2

Table 3-2. Landsat-2 Major Power Subsystem Parameters

	ORBIT							
Pwr. Mgmt. Orbit No.	50	5100	10192	15211	20252	21843	22331	22721
Batt 1 Max	33.43	32.66	32.57	32.48	F	32.23	32.83	32.48
2 Chge	33.40	32.63	32.54	32.46	32.80	32.29	F	32.46
3 Volts	33.35	32.57	32.57	32.41	32.92	32.32	32.83	32.57
4	33.45	32.68	32.59	32.51	32.85	32.34	32.85	32.59
5	33.42	32.65	32.56	32.56	32.91	32.39	32.82	32.56
6	33.41	32.64	32.56	F	32.90	F	32.73	F
7	33.45	32.68	32.59	32.51	F	32.42	F	32.59
8	33.45	32.68	32.59	32.50	32.93	32.25	32.85	32.59
Average	33.42	32.65	32.57	32.50	32.89	32.32	32.82	32.55
Batt 1 End-of-Night	29.32	29.06	28.98	28.55	F	28.12	28.12	28.46
2 Volts	29.38	29.04	28.95	28.61	28.95	28.10	F	28.44
3	29.32	29.07	28.89	28.64	28.89	28.12	28.12	28.46
4	29.34	29.09	28.91	28.57	28.91	28.14	28.14	28.40
5	29.40	29.06	28.97	28.63	28.97	28.12	28.12	28.46
6	29.31	28.96	28.88	F	28.88	F	28.11	F
7	29.34	29.08	29.00	28.65	F	23.14	F	28.48
8	29.34	29.00	28.91	28.57	28.91	28.14	28.14	28.40
Average	29.34	29.04	28.94	28.40	28.92	28.13	28.13	28.44
Batt 1 Chge	12.76	21.43	13.74	15.00	F	16.56	16.33	17.30
2 Share	11.68	11.42	11.44	13.67	16.86	14.35	F	15.28
3 (%)	12.24	12.48	12.41	13.64	15.81	13.41	15.86	13.01
4	11.99	11.76	11.81	13.55	14.82	12.63	14.86	17.06
5	12.84	13.24	12.95	14.48	17.25	12.70	15.76	13.79
6	13.35	14.32	15.14	F	17.57	F	19.12	F
7	12.90	12.97	11.74	14.88	F	13.86	F	14.43
8	12.24	11.38	10.77	13.78	15.79	15.24	15.79	12.73
Batt 1 Load	12.60	11.80	11.16	14.84	F	12.33	16.80	11.86
2 Share	12.70	13.34	14.14	15.41	18.96	17.84	F	17.87
3 (%)	12.67	13.74	13.94	13.80	16.90	15.25	18.48	14.92
4	12.44	12.48	13.00	13.80	15.24	14.17	17.13	13.39
5	12.34	12.36	9.96	13.80	16.87	14.03	15.05	12.06
6	12.70	11.56	15.27	F	17.01	F	14.14	F
7	12.47	12.70	11.33	14.46	F	14.55	F	15.71
8	12.04	12.02	11.21	13.88	15.01	11.83	18.36	14.18
Batt 1 Temp	21.46	21.94	22.71	21.78	20.67	22.44	19.93	22.17
2 in	20.25	19.94	20.30	19.60	19.77	19.32	18.16	19.73
3 (°C)	18.60	17.86	17.52	17.22	17.35	16.26	16.51	16.20
4	20.83	20.36	20.36	20.97	20.46	19.64	20.11	19.61
5	24.98	27.27	30.49	34.34	28.47	21.74	23.09	22.61
6	24.26	27.28	27.69	30.39	26.72	20.49	24.56	19.91
7	24.71	26.32	27.01	29.26	25.65	22.66	21.23	21.60
8	23.63	24.41	24.55	25.66	24.50	23.83	21.43	21.56
Average	22.34	23.17	23.83	25.90	22.95	20.80	20.63	20.42
S/C Reg Bus Pwr. (W)	N	149.30	154.49	143.60	125.20	166.79	154.00	162.36
Comp Load Pwr. (W)	N	24.80	6.64	0.00	0.00	0.00	0.00	0.00
P/L Reg Bus Pwr. (W)	N	9.8	9.59	9.90	9.31	13.04	12.55	11.07
C/D Ratio	1.15	1.11	1.24	1.46	1.20	1.21	1.28	1.19
Total Charge (A-M)	271.90	223.46	223.51	243.06	201.56	243.35	245.55	230.92
Total Discharge (A-M)	237.20	201.45	180.84	166.79	168.22	201.61	191.62	193.29
Solar Array (A-M)	1106	1003	939	821.90	825.4*	804.8	836.5	842.4
S.A. Peak I (Amp)	16.05	14.43	13.25	11.99	12.39	12.24	12.55	12.47
Midday Array I (Amp)	N	13.72	12.86	11.92	10.99*	11.61	12.24	12.24
Sun Angle (Deg)(γ)	N	8.35	10.70	14.80	9.71	-0.16	-2.34	-0.97
Max R Pad Temp (°C)	N	63.20	58.40	53.27	+59.60	58.40	57.20	56.00
Min R Pad Temp (°C)	N	-35.00	-34.40	-36.80	-32.60	-36.80	-37.40	-37.40
Max L Pad Temp (°C)	N	62.15	62.15	59.92	+62.15	56.92	56.15	56.15
Min L Pad Temp (°C)	N	-42.14	-39.43	-38.86	-38.86	-45.71	-46.43	-45.71

N - Data Not Available
F - Unit Off
*Intermittent Temperature Sensitive Dropouts Present

Table 3-3. Landsat-2 Power Subsystem Analog Telemetry (Average Value for Data Received in NBTR Playback)

Func	Description	Unit	Orbits							
			50	5102	10192	15211	20252	21843	22331	22721
6001	Batt 1 Disc 1	Amp	1.01	0.74	0.52	0.66	F	0.67	0.82	0.53
6002	2		1.01	0.84	0.65	0.71	1.12	0.96	F	0.72
6003	3		1.00	0.87	0.64	0.62	0.98	0.84	0.91	0.60
6004	4		1.00	0.78	0.60	0.63	0.00	0.78	0.87	0.59
6005	5		0.99	0.78	0.47	0.63	0.98	0.77	0.75	0.51
6006*	6		1.02	0.73	0.70	F	0.99	F	0.71	F
6007	7		1.00	0.80	0.52	0.66	F	0.81	F	0.63
6008	8		0.97	0.75	0.52	0.52	0.87	0.66	0.90	0.56
6011	Batt 1 Chg 1	Amp	0.47	0.42	0.46	0.52	F	0.61	0.61	0.69
6012	2		0.43	0.38	0.37	0.47	0.45	0.52	F	0.62
6013	3		0.45	0.42	0.40	0.47	0.43	0.49	0.59	0.53
6014	4		0.44	0.39	0.39	0.48	0.40	0.47	0.55	0.50
6015	5		0.47	0.44	0.45	0.51	0.47	0.46	0.59	0.56
6016*	6		0.49	0.47	0.49	F	0.47	F	0.70	F
6017	7		0.47	0.43	0.40	0.52	F	0.51	F	0.58
6018	8		0.45	0.38	0.36	0.49	0.43	0.56	0.58	0.53
6021	Batt 1 Volt	VDC	31.50	31.11	30.79	36.71	F	30.55	30.73	30.93
6022	2		31.48	31.09	30.80	30.08	31.28	30.57	F	30.93
6023	3		31.49	31.10	30.81	30.70	31.30	30.58	30.72	30.97
6024	4		31.49	31.10	30.81	30.70	31.30	30.58	30.72	30.97
6025	5		31.50	31.11	30.79	30.73	31.31	30.66	30.72	30.96
6026*	6		31.49	31.08	30.80	F	31.31	F	30.68	F
6027	7		31.52	31.14	30.83	30.74	F	30.62	F	31.00
6028	8		31.49	31.11	30.81	30.71	31.30	30.55	30.72	30.98
6031	Batt 1 Temp	DGC	21.59	21.91	22.07	21.73	20.66	22.43	19.95	22.04
6032	2		20.53	19.90	20.36	19.51	19.74	19.39	18.28	19.56
6033	3		18.80	17.77	17.54	17.08	17.34	16.32	16.61	16.11
6034	4		20.90	20.33	20.43	20.94	20.48	19.68	20.14	20.54
6035	5		25.16	27.18	30.52	34.20	28.47	21.73	23.11	22.52
6036	6		24.37	27.19	27.67	30.32	26.72	20.46	24.54	19.92
6037	7		24.83	26.19	26.95	29.20	25.64	22.63	21.26	21.55
6038	8		23.75	24.36	24.49	25.63	24.53	23.82	21.44	21.54
6040	Rt. Pad Temp	DGC	28.06	30.90	26.11	24.98	28.46	22.71	22.96	27.70
6041	Rt Pad VM	VDC	33.72	32.86	31.44	30.53	32.45	32.96	32.21	33.10
6042	Rt Pad VN	VDC	33.46	32.44	31.27	21.60	32.04	32.13	32.65	32.37
6044	Lt. Pad Temp	DGC	25.56	28.22	26.41	27.09	29.07	20.59	20.61	26.70
6045	Lt. Pad VF	VDC	34.40	33.82	33.36	33.24	34.13	33.45	33.58	33.54
6046	Lt. Pad VG	VDC	34.48	33.91	33.45	33.32	34.21	33.56	33.67	33.62
6050	S/C UR Bus V	VDC	31.73	31.33	30.93	30.99	31.56	30.78	30.89	31.27
6051	S/C RG Bus V	VDC	24.57	24.58	24.57	24.58	24.58	24.58	24.51	24.58
6052	Aux Reg AV	VDC	23.36	23.44	23.44	23.44	23.45	23.44	23.44	23.43
6053	Aux Reg BV	VDC	23.37	23.44	23.43	23.44	23.45	23.44	23.44	23.44
6054	Solar 1	Amp	14.81	13.40	12.25	10.57	10.94	11.12	11.72	11.70
6056	S/C RG Bus 1	Amp	7.23	6.28	6.41	5.86	5.11	5.53	5.74	5.98
6058	PC Mod T1	DGC	21.67	20.77	20.08	20.37	19.60	19.26	19.54	19.57
6059	PC Mod T2	DGC	20.44	19.56	19.16	18.94	18.75	18.15	18.27	18.06
6070	P L RG Bus V	VDC	24.61	24.00	24.59	24.59	24.62	24.59	24.59	24.60
6071	P L UR Bus V	VDC	31.85	31.40	30.97	31.03	31.65	30.82	30.96	31.33
6073	P Aux AV	VDC	23.47	23.51	23.50	23.50	23.50	23.5	23.51	23.50
6074	P Aux BV	VDC	23.46	23.51	23.50	23.50	23.50	23.51	23.51	23.50
6075	PR Mod T1	DGC	20.84	20.32	20.82	20.23	20.02	19.68	19.48	19.59
6076	PR Mod T2	DGC	22.13	21.79	22.14	21.77	21.92	21.40	21.23	21.26
6079	Fuse Blow V	VDC	24.48	24.49	24.48	24.49	24.48	24.45	24.46	24.60
6080	Shunt 1 1	Amp	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
6081	2		0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
6082	3		0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
6083	4		0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
6084	5		0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
6085	6		0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
6086	7		0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
6087	8		0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
6100	P L RG Bus 1	Amp	0.38	0.54	0.40	0.41	0.39	0.51	0.73	0.43
Total No. Major Frames		Frm	396	785	697	725	394	786	755	673

*Intermittent Temperature Sensitive Dropout Present

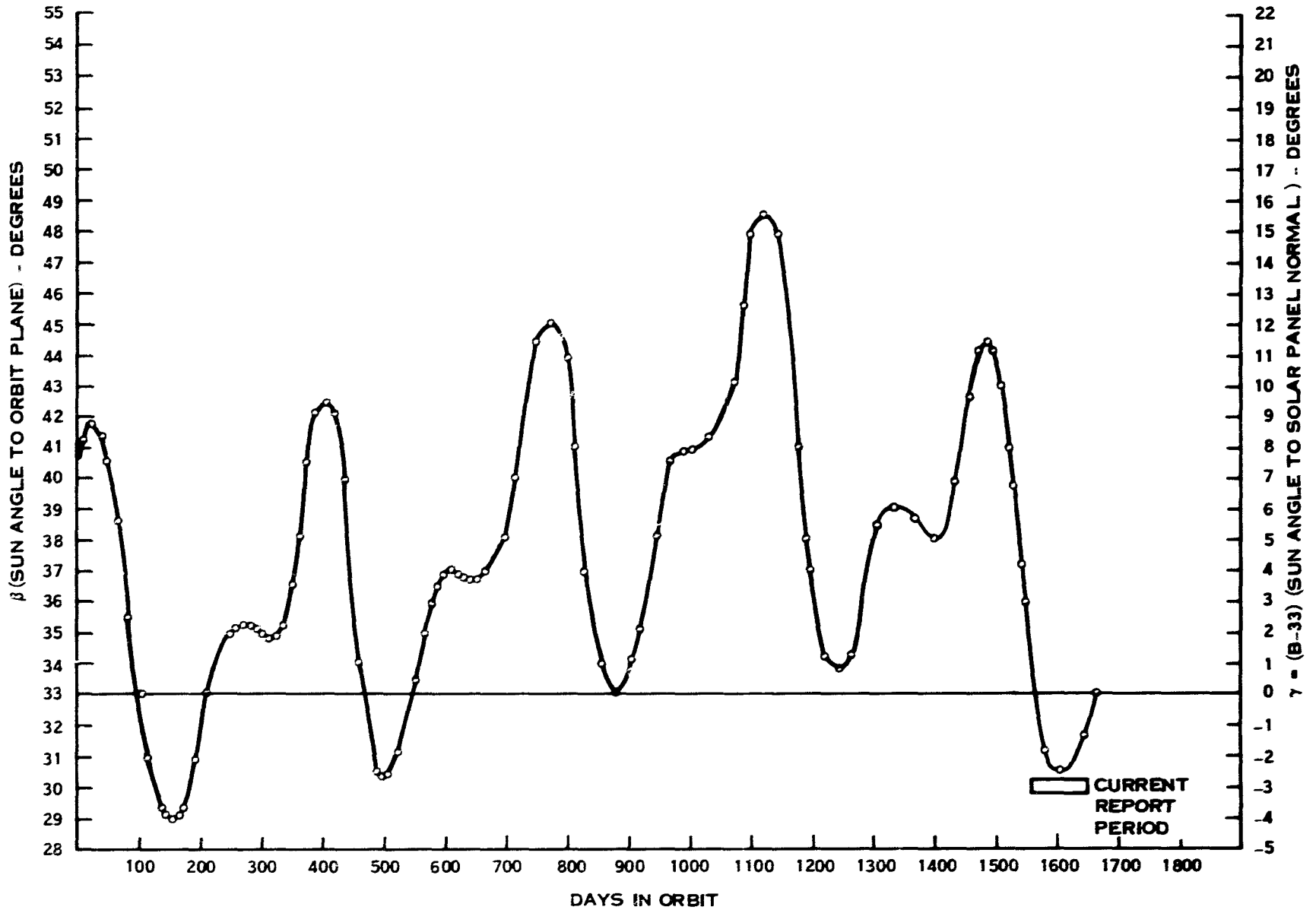

Figure 3-3. Landsat-2 Actual β (Orbit Plane) and α (Solar Panel) Sun Angles

SECTION 4

ATTITUDE CONTROL SUBSYSTEM (ACS)
LANDSAT-2

SECTION 4

ATTITUDE CONTROL SYSTEM (ACS)

Landsat-2's Attitude Control System has performed normally since launch and has consistently maintained correct spacecraft attitude.

In order to conserve freon, pitch and roll pneumatic gating is minimized by Pitch Position Bias programs implemented during spacecraft night. Stored Pitch Position Bias sequences maintain Pitch flywheel speed below the gating threshold, while Roll wheel momentum is unloaded - as required -- by two to three night scheduled momentary enables.

Table 4-1 shows the bias sequences maintained during this report period. Figure 4-1 is a plot of freon consumption vs. time with a prediction of the freon's life expectancy.

Table 4-1. Landsat-2 Pitch Position Bias Quarterly Summary

Period		Repetitive Implementation Sequence			Minutes Positioned About Satellite Midnight, T_o	
From Orbit	To Orbit	N_o*	N_o +1	N_o +2	From	To
21646 24 Apr 79	22045 22 May 79	+2.9°	+2.9°	+2.9°	T_o - 25.0	T_o + 4.0
22046 22 May 79	22325 11 June 79	+2.9°	+2.9°	+2.9°	T_o - 25.0	T_o + 1.0
22326 11 June 79	22914 23 July 79	+2.9°	+2.9°	+2.9°	T_o - 25.0	T_o - 2.0

N_o Equals Satellite Night.

Two orbit maintenance, orbit adjusts were performed during this quarter (see Section 7). On each occasion, spacecraft attitude was maintained without event while the ACS was in the orbit adjust mode with pneumatics enabled.

RMP1 (gas bearing) replaced RMP2 (ball bearing) during Orbit 21754 (1 May 1979 - ref. PIR 14N0-L/2-252). The RMP2's performance began to degrade during Orbit 21708 (28 April 1979) when its motor current increased to 114 ma. In subsequent orbits, spikes, noise and signs of gyro slow down were evident in the high rate characteristic telemetry signature. The coast down procedure was used to deactivate RMP2 during Orbit 21766 (2 May 1979) and the gyro came to rest in approximately one minute.

Flywheel duty cycles remained low (3 to 8 percent) and dual scanner operation is normal.

Both SADS are tracking the sun and their motor voltages and tachometer signatures are normal.

Subsystems temperatures, pressures, voltages and currents have all been normal as shown in the telemetry summary, Tables 4-2, 4-3 and 4-4.

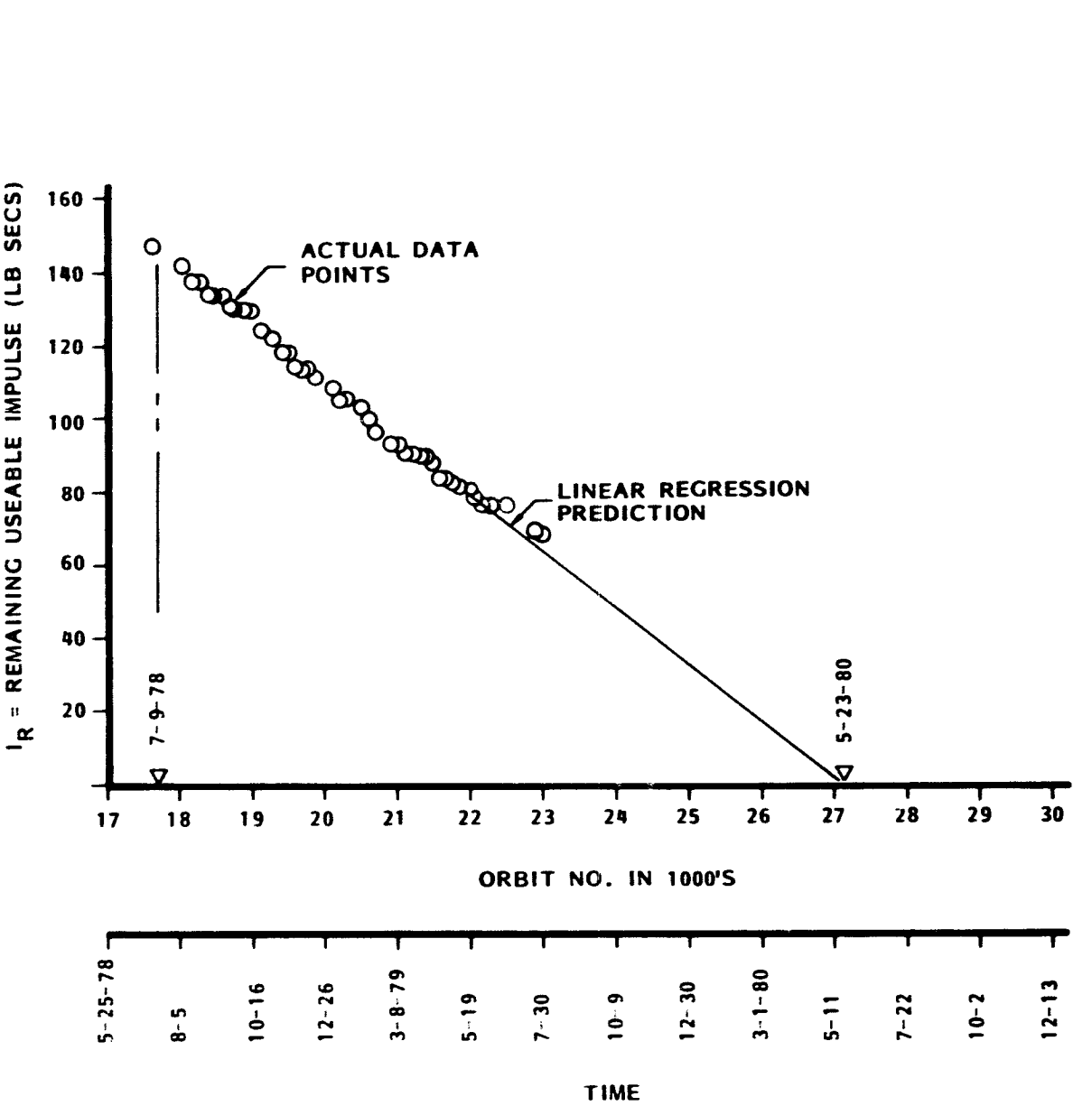

Figure 4-1. Landsat-2 Freon Life Expectancy

Table 4-2. Landsat-2 ACS Subsystem Temperature and Pressure Average

Func	Name	Units	Orbits							
			29	5102	10191	15211	20252	21843	22331	22721
1084	RMP 1 Gyro Temperature	DGC	19.33(1)	22.69	22.70	20.21(3)	24.30	51.13	51.35	51.15
1094	RMP 2 Gyro Temperature	DGC	70.00	74.26	74.50	65.14	64.23	26.20	26.24	26.12
1222	SAD RT MTR HSNG Temp.	DGC	19.50	22.98	22.73	20.08	24.45	26.96	27.29	26.96
1242	SAD LT MTR HSNG Temp.	DGC	26.87	29.79	30.26	28.17	31.71	29.39	29.32	29.13
1223	SAD RT MTR WNDNG Temp.	DGC	21.76	24.36	23.72	20.87	25.31	28.26	28.72	28.24
1243	SAD LT MTR WNDNG Temp.	DGC	30.23	32.83	33.15	30.47	34.69	32.42	32.36	32.07
1228	SAD RT HSG Pressure	PSI	7.26	7.18	7.00	6.77	6.77	6.77	6.77	6.77
1248	SAD LT HSG Pressure	PSI	7.28	7.21	6.91	6.46	6.36	6.18	6.18	6.13
1007	FWD Scanner MTR Temp.	DGC	22.07	23.80	23.97	21.18	25.06	24.68	24.8-	24.68
1016	Rear Scanner MTR Temp.	DGC	24.19	25.04	24.83	22.87	26.11	25.77	25.84	25.50
1003	FWD Scanner Pressure	PSI	9.59(2)	D	D	D	D	D	D	D
1012	Rear Scanner Pressure	PSI	6.21	5.62	5.11	4.47	4.09	4.00	4.00	3.92
1212	Gas Tank Pressure	PSI	1948.00	1517.04	1256.98	863.19(4)	554.94	457.35	443.83	420.55
1210	Gas Tank Temperature	DGC	20.66	24.25	24.43	22.25	26.00	25.33	25.33	25.22
1213	Manifold Pressure	PSI	53.98	54.56	55.26	56.49	57.47	58.15	58.46	58.10
1211	Manifold Temperature	DGC	19.18	22.59	22.78	20.51	24.25	23.58	23.62	23.31
1059	CLB Power Supply Card Temp	DGC	39.00	41.47	41.81	39.93	42.84	41.86	41.82	41.63
1260	TH01 EBP	DGC	24.29	27.21	27.58	25.58	29.07	26.69	26.13	25.92
1261	TH02 EBP	DGC	20.29	23.25	23.48	21.32	24.98	·.36	24.60	24.42
1262	TH03 EBP	DGC	18.29	21.46	21.29	18.99	22.91	24.88	25.26	24.88
1263	TH01 STS	DGC	6.54	0.52	- 1.66	- 3.67	1.52	0.04	1.12	0.71
1264	TH02 STS	DGC	D	D	D	D	D	D	D	D
1265	TH03 STS	DGC	8.46	8.67	11.66	9.78	13.54	9.64	9.57	12.11
1266	TH04 STS	DGC	- 2.78	- 3.26	- 0.08	- 3.56	2.63	0.39	1.48	3.13
1267	TH05 STS	DGC	9.62	5.57	4.24	0.97	7.23	4.27	5.31	5.78
1224	SAD R FSST	DGC	35.00	35.81	34.24	7.91(5)	41.79	46.93	47.51	46.73
1244	SAD L FSST	DGC	50.00	49.13	55.24	52.49	58.29	55.88	·5.02	55.23

(1) RMP-1 Left off after initial test in Orbit 1
(2) Prelaunch leak - refer to text
(3) RMP1 in standby mode during orbit adjust maneuvers
(4) Pressure drop due to freon consumed during orbit adjust maneuvers
(5) Low temperature caused by large beta angle shadowing
D Defective telemetry point

Table 4-3. Landsat-2 ACS Voltages and Currents

Func	Name	Units	O bit							
			29	5102	10191	15211	20252	21843	22331	22721
1081	RMP 1 MTR Volts	VDC	F	F	F	F	F	33.20	33.15	33.16
1082	RMP 1 MTR Current	Amps	F	F	F	F	F	.22	.22	.22
1080	RMP 1 Supply Volts	VDC	F	F	F	F	F	23.61	23.61	23.61
1091	RMP 2 MTR Volts	VDC	29.99	29.92	29.87	29.90	29.88	F	F	F
1092	RMP 2 MTR Current	Amps	0.10	0.10	0.10	0.10	.10	F	F	F
1090	RMP 2 Supply Volts	VDC	23.63	23.59	23.58	23.61	23.58	F	F	F
1220	SAD RT MTR WNDNG Volts	VDC	5.47	4.47	4.09	4.23	4.30	4.14	4.12	4.18
1240	SAD LT MTR WNDNG Volts	VDC	5.08	4.72	4.57	4.53	4.75	4.74	4.73	4.73
1227	SAD RT -15 VDC Conv	VDC	15.14	15.16	15.15	15.18	15.12	15.10	15.11	15.11
1247	SAD LT -15 VDC Conv	VDC	15.23	15.21	15.22	15.21	15.19	15.20	15.21	15.21
1056	CLB ± 6 VDC	TMV	2.35	2.38	2.40	2.40	2.40	2.40	2.40	2.40
1055	CLB ± 10 VDC	TMV	2.88	2.92	2.94	2.94	2.95	2.94	2.94	2.94
1057	CLB Power Supply Volts	TMV	2.97	2.96	2.97	2.96	2.97	2.97	2.97	2.97

Table 4-4. Landsat-2 ACS Attitude Errors and Driver Duty Cycles

Func	Name	Units	Orbit							
			26	5102	10191	15211	20252	21843	22331	22721
1041	Pitch Fine Error	DEG	-0.15	-0.13	-0.82	-0.78	-.71*	-1.19*	-0.88*	0.85*
1043	Pitch Flywheel Speed	RPM	-156.12	-162.97	3.39	51.87	31.41	8.40	56.55	97.11
1038	Pitch Mtr Drvr CCW	PCT	6.64	6.05	4.33	1.76	3.40	6.19	5.04	8.06
1039	Pitch Mtr Drvr CW	PCT	2.03	1.60	3.87	4.59	5.66	6.56	7.40	5.44
1030	Roll Fine Error	DEG	-0.13	-0.14	-0.21	-0.20	-.17	-0.09	-0.11	-0.12
1027	Roll Rear Flywheel SPD	RPM	729.30	748.56	792.27	796.70	770.25	748.82	754.69	724.77
1026	Roll Fwd Flywheel SPD	RPM	793.02	735.81	737.44	767.93	740.43	771.93	756.43	732.58
1022	Roll Rear Mtr Drvr CCW	PCT	0.67	0.63	0.87	0.91	.29	0.53	0.45	0.67
1025	Roll Rear Mtr Drvr CW	PCT	7.54	6.34	6.09	6.07	5.75	5.80	5.35	5.46
1023	Roll Fwd Mtr Drvr CCW	PCT	0.70	0.67	0.72	0.03	.64	0.68	0.64	0.82
1024	Roll Fwd Mtr Drvr CW	PCT	5.46	4.01	4.34	3.20	3.55	4.24	4.41	4.41
1035	Yaw Tach	RPM	-95.73	-38.16	-163.04	-34.38	-96.37	-42.92	-46.94	35.71
1033	Yaw Mtr Drvr CW	PCT	1.98	2.01	1.91	1.81	1.71	1.93	1.85	3.00
1034	Yaw Mtr Drvr CCW	PCT	2.10	1.90	2.49	1.50	1.80	1.74	1.69	2.11
1221	SAD Right Tach	D/M	3.38	3.38	3.37	3.42	3.37	3.34	3.33	3.32
1241	SAD Left Tach	D/M	3.68	3.56	3.48	3.55	3.47	3.51	3.51	3.48

*Pitch Position Bias was implemented during this Orbit.

SECTION 5
COMMAND/CLOCK SUBSYSTEM (CMD)
LANDSAT-2

SECTION 5

COMMAND/CLOCK SUBSYSTEM (CMD)

The Command Clock Subsystem operated nominally in this report period.

The spacecraft clock was reset during Orbit 21840 on 7 May 1979 from 1665 ms fast to 665 ms fast. It was reset again during Orbit 22859 from 2172 ms fast to 172 ms fast.

Figure 5-1 shows the history of the spacecraft clock drift since launch. Figure 5-2 shows the cumulative clock drift, 27.012 seconds faster in 54 months; and Figure 5-3 gives drift rate of the spacecraft clock. The clock of Landsat-2 drifts in the same direction as Landsat-3. The drift rate has decreased 2% in this quarter.

Table 5-1 shows typical telemetry values since launch. All are nominal.

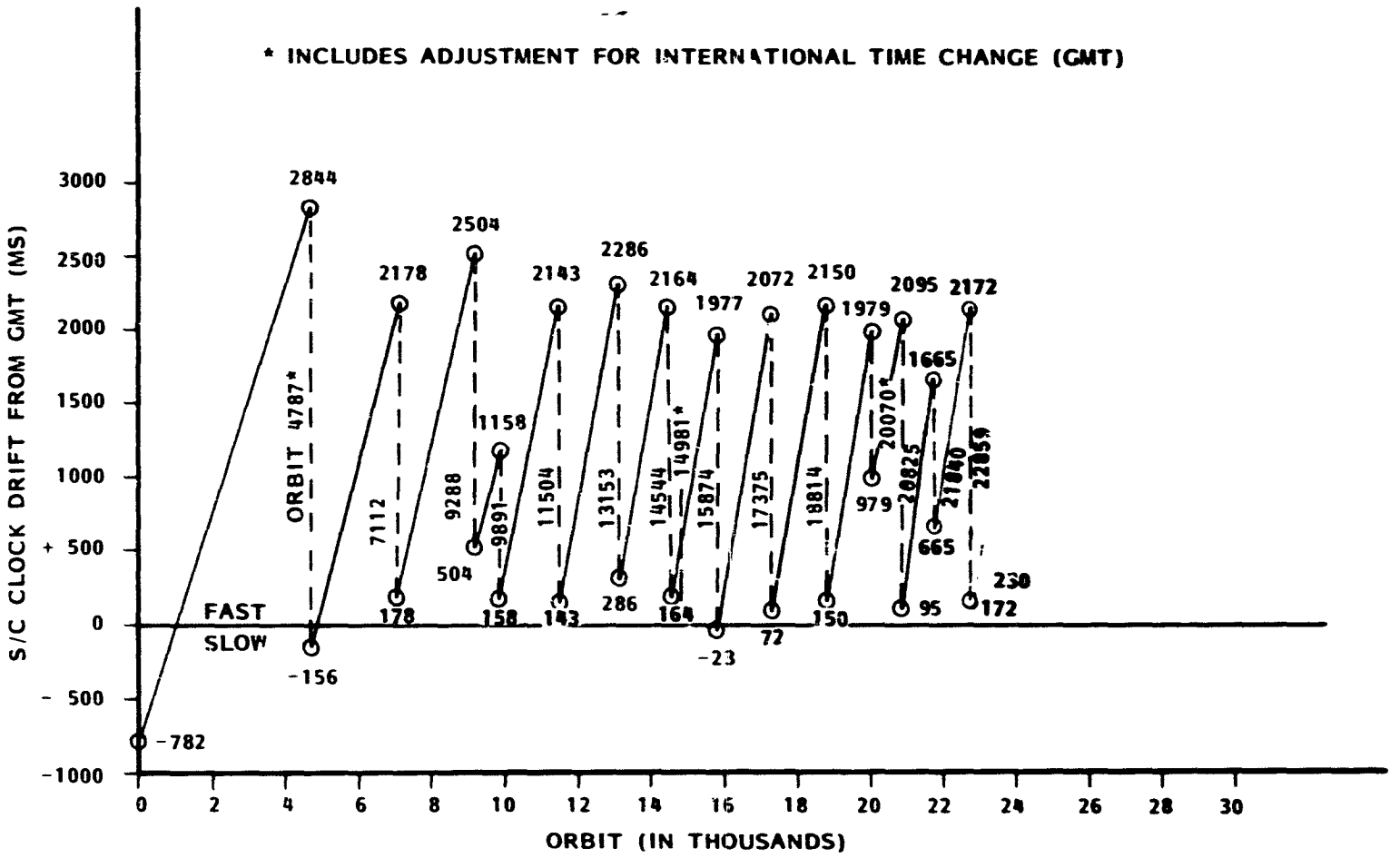

Figure 5-1. Landsat-2 Clock Drift History

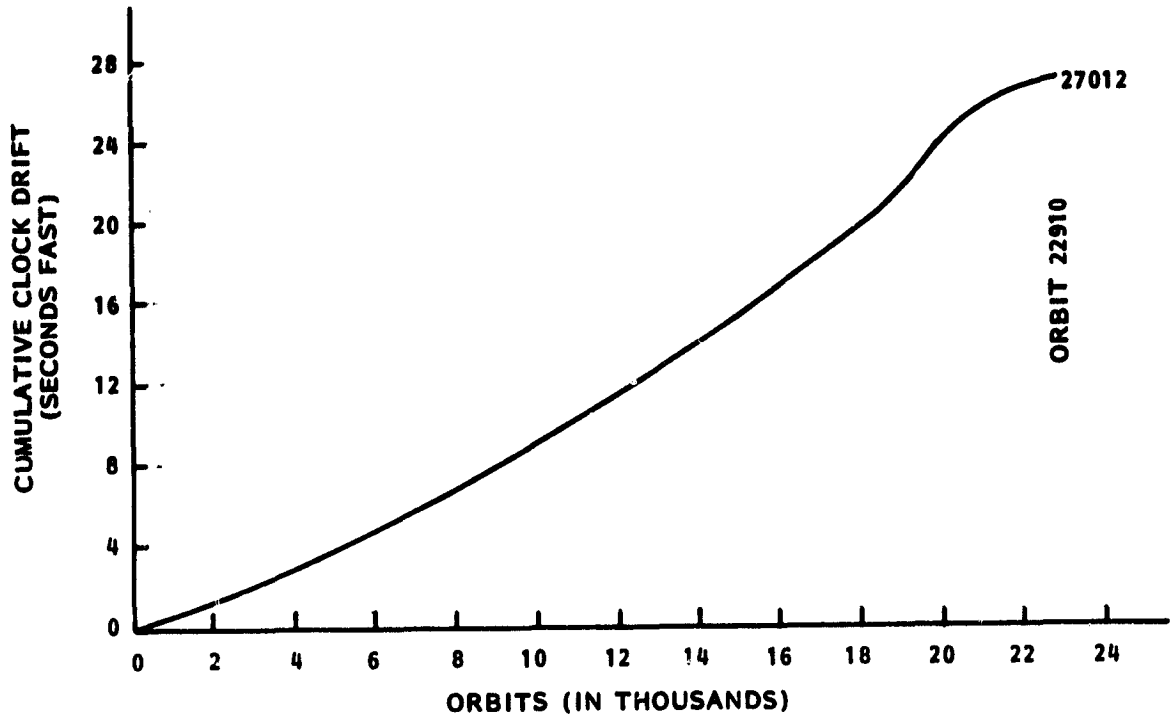

Figure 5-2. Cumulative Clock Drift

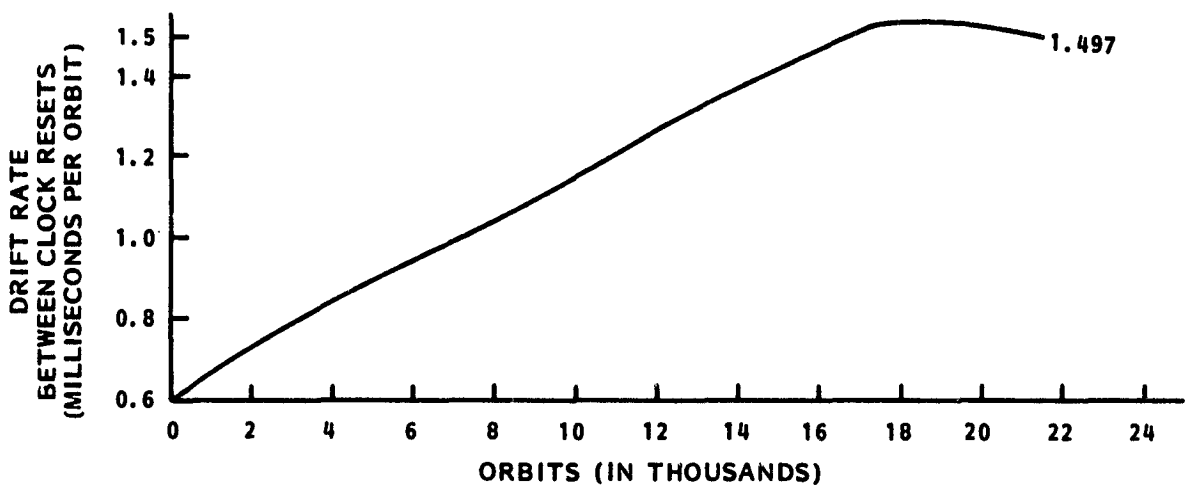

Figure 5-3. Drift Rate of S/C Clock

Table 5-1. Command/Clock Telemetry Summary, Landsat-2

Function No.	Name	Units	Orbit						
			35	5091	10192	15211	20251	21843	22331	22721
8005	Pri. Power Supply Temp	DGC	38.82	39.43	39.08	39.12	39.12	39.31	39.55	39.16
8006	Red. Power Supply Temp	DGC	36.93	38.00	37.85	37.91	38.08	38.12	38.30	37.94
8007	Pri. Osc. Temp	DGC	28.70	28.70	28.56	28.69	28.67	28.11	28.50	27.94
8008	Red Osc. Temp	DGC	27.82	27.26	26.97	27.40	27.09	26.96	27.17	26.95
8009	Pri. Osc. Output	TMV	1.06	1.05	1.05	1.06	1.05	1.05	1.05	1.05
8010	Red. Osc. Output	TMV	1.17	1.18	1.18	1.18	1.18	1.18	1.19	1.18
8011	100 KHz	TMV	3.17	3.15	3.15	3.15	3.15	3.15	3.15	3.15
8012	10 KHz	TMV	3.08	3.05	3.05	3.05	3.05	3.05	3.05	3.05
8013	2.5 KHz	TMV	3.01	2.95	2.95	2.95	2.95	2.95	2.95	2.95
8014	400 Hz	TMV	4.17	4.45	4.45	4.45	4.45	4.45	4.45	4.45
8015	Pri. -4V Power Supply	TMV	N	2.05	2.05	2.05	2.05	2.05	2.05	2.05
8016	Red. -4V Power Supply	TMV	N	2.00	2.00	2.00	2.00	2.00	2.00	2.00
8017	Pri. -6V Power Supply	TMV	N	2.30	2.30	2.30	2.30	2.30	2.30	2.30
8018	Red. -6V Power Supply	TMV	N	2.30	2.30	2.30	2.30	2.30	2.30	2.30
8019	Pri. -6V Power Supply	TMV	N	5.23	5.23	5.23	5.23	5.23	5.23	5.23
8020	Red. -6V Power Supply	TMV	N	5.23	5.23	5.23	5.23	5.23	5.23	5.23
8021	Pri. -23V Power Supply	TMV	N	5.70	5.70	5.70	5.70	5.70	5.70	5.70
8022	Red -23V Power Supply	TMV	N	5.65	5.65	5.65	5.65	5.65	5.65	5.65
80	Pri. -29V Power Supply	TMV	N	5.29	5.29	5.30	5.30	5.30	5.30	5.30
80A	Red -29V Power Supply	TMV	N	5.29	5.28	5.29	5.29	5.29	5.29	5.29
8101	CIU A - 12V	TMV	3.79	3.97	3.97	3.97	3.96	3.96	3.97	3.97
8102	CIU B - 12V	TMV	3.78	3.95	3.95	3.95	3.95	3.95	3.95	3.95
8103	CIU A - 5V	TMV	3.93	4.15	4.15	4.14	4.14	4.14	4.13	4.13
8104	CIU B - 5V	TMV	3.90	4.10	4.10	4.10	4.10	4.10	4.10	4.10
8105	CIU A Temp	DGC	26.01	21.67	21.67	22.29	21.61	21.06	21.34	29.82
8106	CIU B Temp	DGC	23.35	19.70	19.71	20.21	19.67	19.20	19.45	19.02
8201	Receiver RF-A Temp	DGC	N	29.14	28.83	28.86	28.73	28.38	28.56	28.23
8202	Receiver RF-B Temp	DGC	29.09	F	22.66	22.67	22.55	21.95	22.17	21.81
8203	D MOD A Temp	DGC	28.95	38.56	38.25	38.33	38.18	37.82	37.96	37.79
8204	D MOD B Temp	DGC	37.73	26.72	26.31	26.34	26.27	25.64	25.85	25.63
8205	Receiver A AGC	DBM	F	-91.43	-90.78	-89.02	-93.73	-91.64	-91.09	-91.79
8206	Receiver B AGC	DBM	-87.83	F	F	F	F	F	F	F
8207	Amp. A Output	TMV	F	2.54	2.75	2.66	2.25	2.53	2.61	2.58
8208	Amp. B Output	TMV	2.10	F	F	F	F	F	F	F
8209	Freq. Shift Key A Out	TMV	F	1.08	1.09	1.08	1.08	1.08	1.08	1.08
8210	Freq. Shift Key B Out	TMV	1.11	F	F	F	F	F	F	F
8211	Amp. A Output	TMV	F	1.13	1.14	1.13	1.12	1.14	1.13	1.13
8212	Amp. B Output	TMV	1.13	F	F	F	F	F	F	F
8215	D MOD A - 15V	TMV	F	4.87	4.87	4.87	4.87	4.87	4.87	4.87
8216	D MOD B - 15V	TMV	4.77	F	F	F	F	F	F	F
8217	Regulator A - 10V	TMV	F	5.40	5.40	5.40	5.40	5.40	5.40	5.40
8218	Regulator B - 10V	TMV	5.32	F	F	F	F	F	F	F
8311	ECAM Mem. Tmp	DGC	N	18.41	18.41	18.38	18.30	18.50	18.22	18.21
8312	ECAM Pwr Spply Temp	DGC	N	23.13	23.00	22.97	22.80	22.96	22.41	22.54

N - Data Not Available.
F - Unit Off.

SECTION 6

TELEMETRY SUBSYSTEM (TLM)

LANDSAT-2

SECTION 6

TELEMETRY SUBSYSTEM (TLM)

The TLM has operated nominally in this report period.

Table 6-1 shows typical telemetry values since launch. All are nominal. Functions 1264 (Thermal Shield 5 Temperature), 4002 (MMCA Board 2 Temperature) and 13200 (APU 24 Volt Input) were defective before launch but verification of these functions is acceptable by adjacent temperature and downstream voltage measurements respectively.

The memory section of the telemetry matrix remains in the 0, 0 mode.

Table 6-1. Landsat-2 TMP Telemetry Values

Func	Name	Units	Orbit							
			35	5091	10192	15211	20252	21843	22331	22721
9001	Memory Sequencer A Converter	VDC	4.45	4.45	4.45	4.45	4.45	4.45	4.45	4.45
9002	Memory Sequencer B Converter	VDC	F	F	F	F	F	F	F	F
9003	Memory Sequencer Temp	DGC	20.00	21.37	21.34	21.87	21.88	20.25	19.50	20.03
9004	Formatter A Converter	VDC	4.52	4.52	4.52	4.54	4.52	4.50	4.50	4.50
9005	Formatter B Converter	VDC	F	F	F	F	F	F	F	F
9006	Dig. Mux A Converter	VDC	4.22	4.22	4.22	4.23	4.22	4.20	4.20	4.20
9007	Dig. Mux B Converter	VDC	F	F	F	F	F	F	F	F
9008	Formatter Dig Mux Temp	DGC	25.00	27.80	29.75	32.56	30.00	23.82	24.73	22.54
9009	Analog Mux A Converter	VDC	4.02	4.05	4.05	4.05	4.05	4.05	4.07	4.07
9010	Analog Mux B Converter	VDC	F	F	F	F	F	F	F	F
9011	A D Converter A Voltage	VDC	4.02	4.03	4.04	4.03	4.03	4.02	4.02	4.02
9012	A D Converter B V ' ge	VDC	F	F	F	F	F	F	F	F
9013	Analog Mux, A D Conv. Temp	DGC	25.00	27.33	27.44	29.72	27.52	26.02	24.76	24.68
9014	Preregulator A Voltage	VDC	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
9015	Preregulator B Voltage	VDC	F	F	F	F	F	F	F	F
9016	Reprogrammer Temp	DGC	22.50	24.74	25.47	28.98	24.96	22.28	21.82	21.01
9017	Memory A Converter	VDC	4.45	4.45	4.45	4.45	4.45	4.45	4.45	4.45
9018	Memory A Temp	DGC	17.50	17.17	17.16	16.66	16.85	15.81	14.50	14.70
9019	Memory B Converter	VDC	F	F	F	F	F	F	F	F
9020	Memory B Temp	DGC	17.50	17.41	17.50	17.52	17.50	17.15	15.85	16.39
9100	Reflected Power	dBm	18.29	14.18	14.53	15.24	14.39	13.97	13.95	13.96
9101	Xmtr A-20 VDC	VDC	3.80	3.97	3.98	3.98	3.97	3.97	3.97	3.97
9102	Xmtr B-20 VDC	VDC	F	F	F	F	F	F	F	F
9103	Xmtr A Temp	DGC	27.73	26.40	30.37	26.69	29.08	21.21	21.02	20.79
9104	Xmtr B Temp	DGC	N	27.74	31.74	37.80	30.44	22.25	22.10	21.89
9105	Xmtr A Power Output	dBm	27.73	26.69	26.41	26.59	26.41	26.30	26.31	26.30
9106	Xmtr B Power Output	dBm	F	F	F	F	F	F	F	F

N - Data Not Available.
F - Unit Off.

SECTION 7

ORBIT ADJUST SUBSYSTEM (OAS)

LANDSAT-2

SECTION 7

ORBIT ADJUST SUBSYSTEM

Two ground track maintenance orbit adjusts were conducted during this report period and in both instances, the Orbit Adjust subsystem performed normally.

During Orbit 21685 (26 April 1979), the minus X thruster fired for 44.6 seconds. Spacecraft altitude was increased by 143 meters and burn efficiency was calculated at 109.8 percent.

The second burn occurred during Orbit 22159 (30 May 1979). The plus X thruster fired for 12.0 seconds. Spacecraft altitude was decreased by 39.1 meters and burn efficiency was calculated at 105.4 percent.

Telemetry records of both OA procedures are shown in Figures 7-1 through 7-8.

Table 7-1 summarizes all of the OAS system's operations since launch.

Table 7-2 shows typical telemetry values for the OAS during its quiescent periods. Variations in thrust chamber temperatures shown in Table 7-2 are consistent with variations in sun intensity and sun angle.

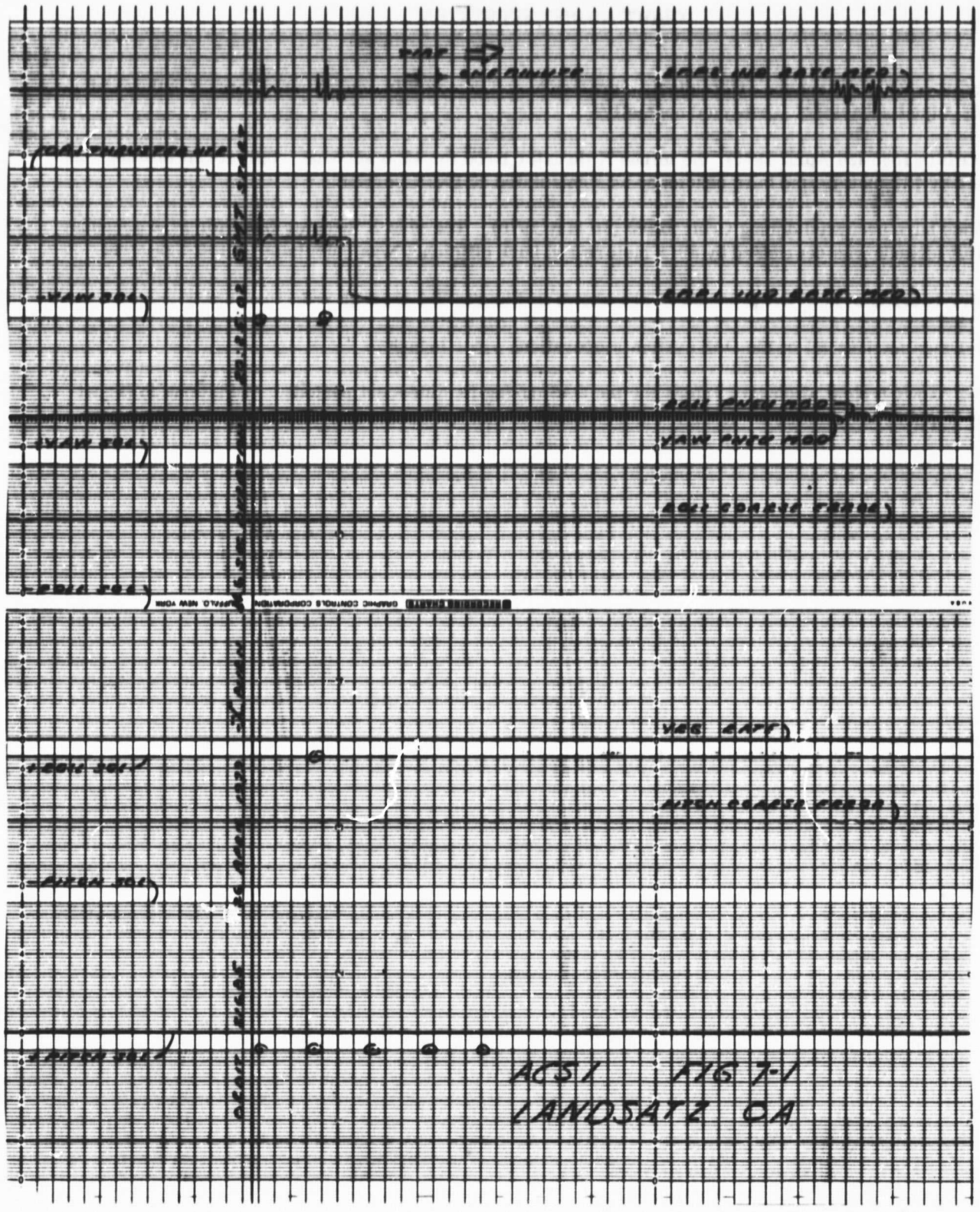

Figure 7-1. ACS 1 - Landsat-2 OA

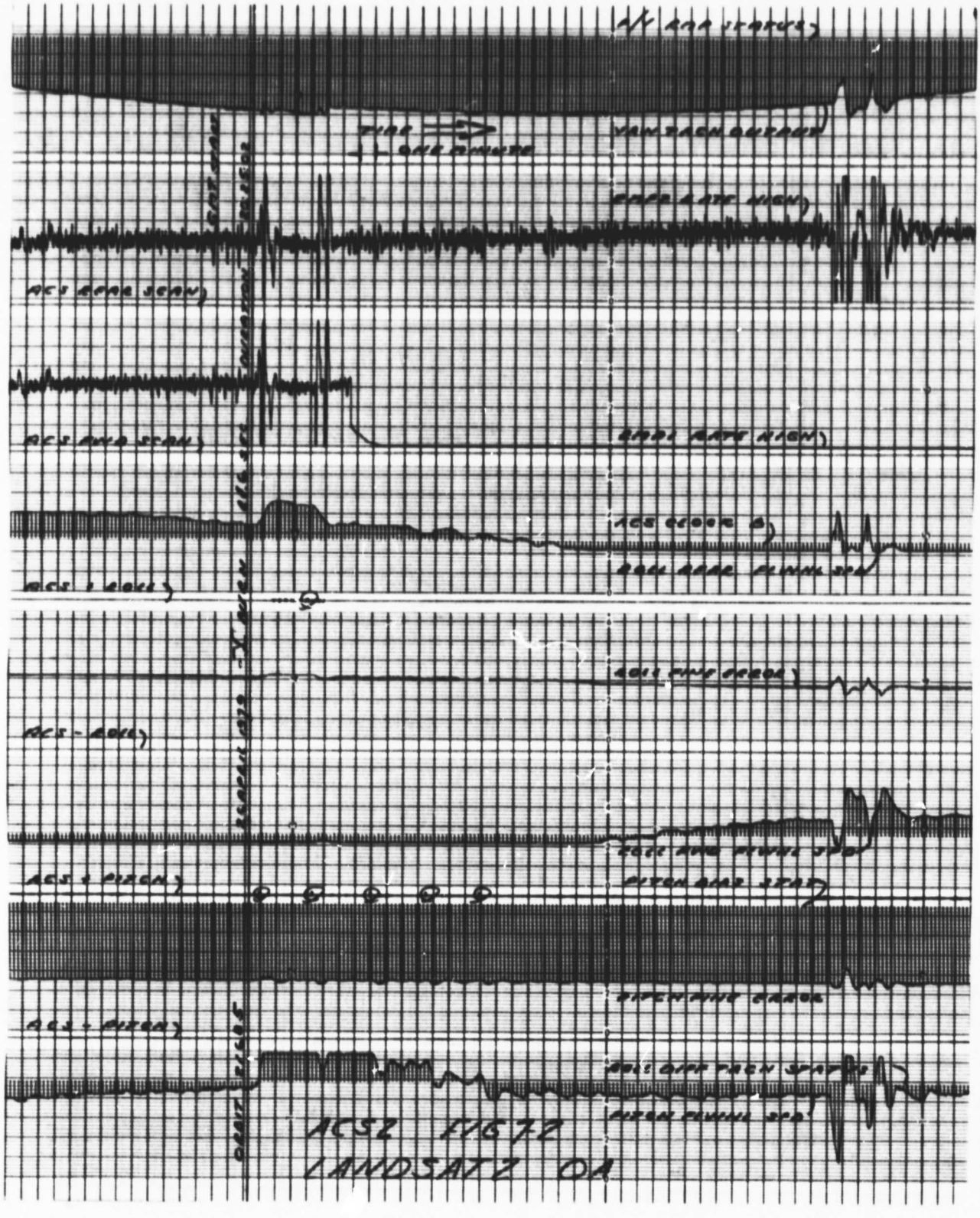

Figure 7-2. ACS 2 - Landsat-2 OA

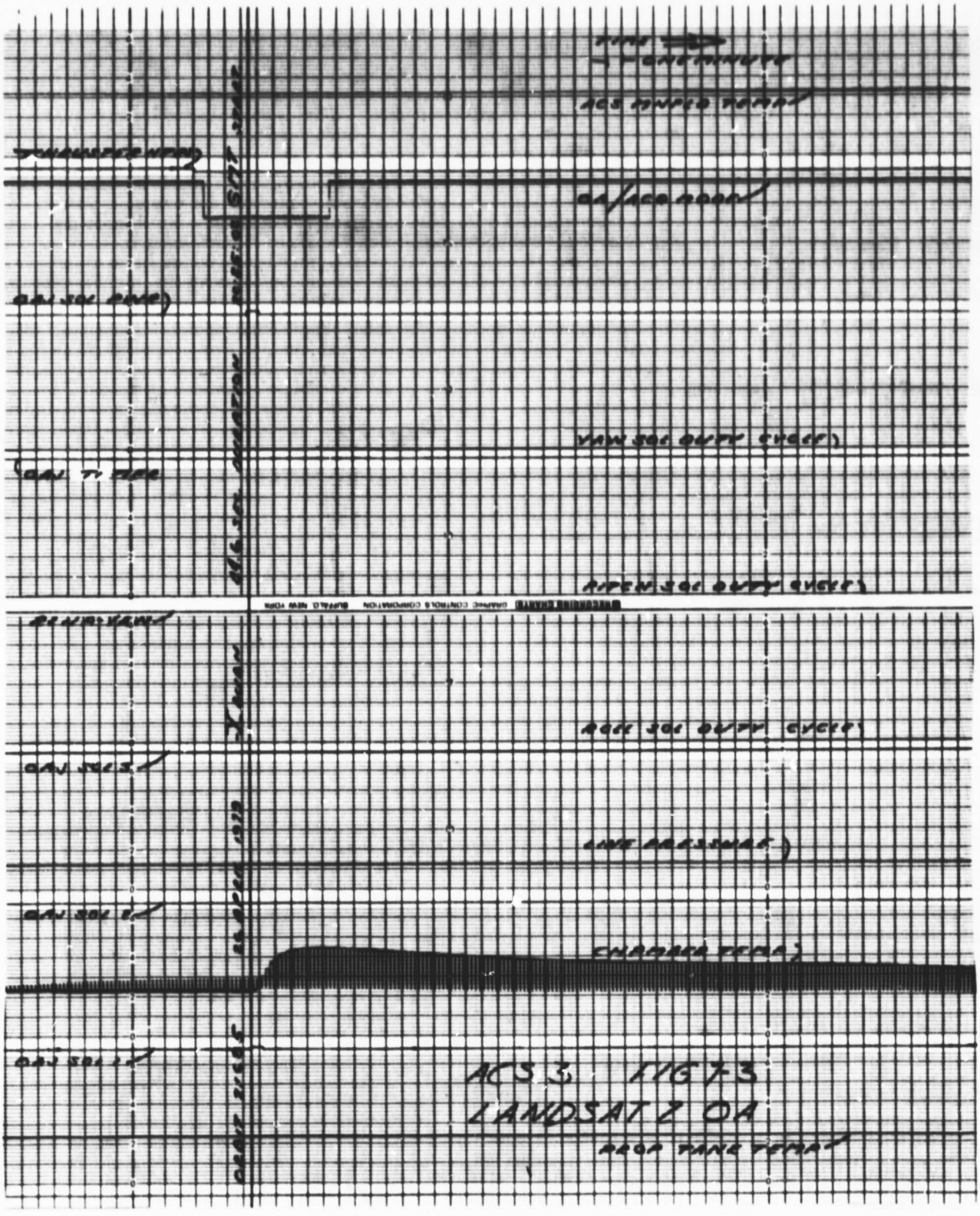

Figure 7-3. ACS 3 - Landsat-2 OA

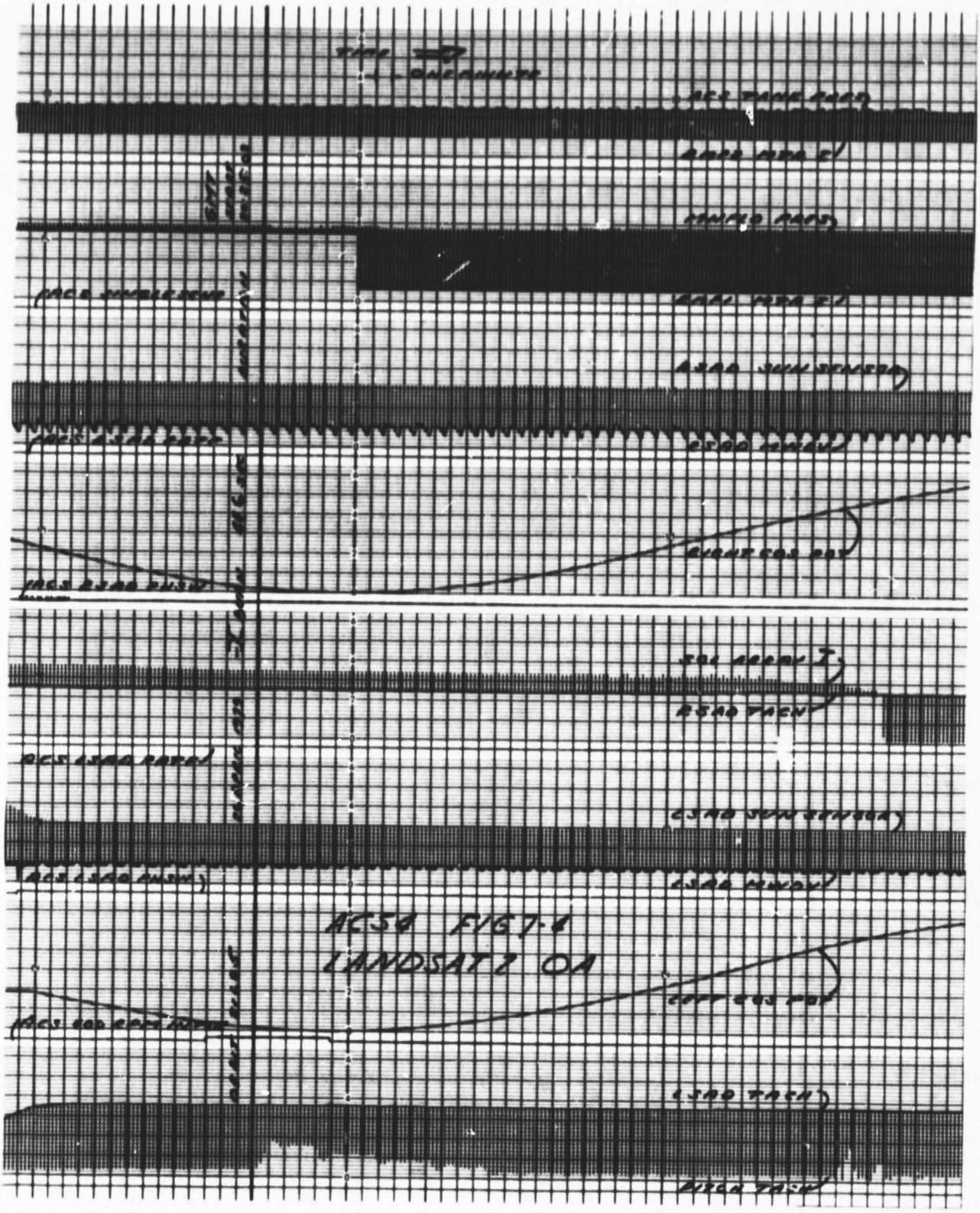

Figure 7-4. ACS 4 - Landsat-2 OA

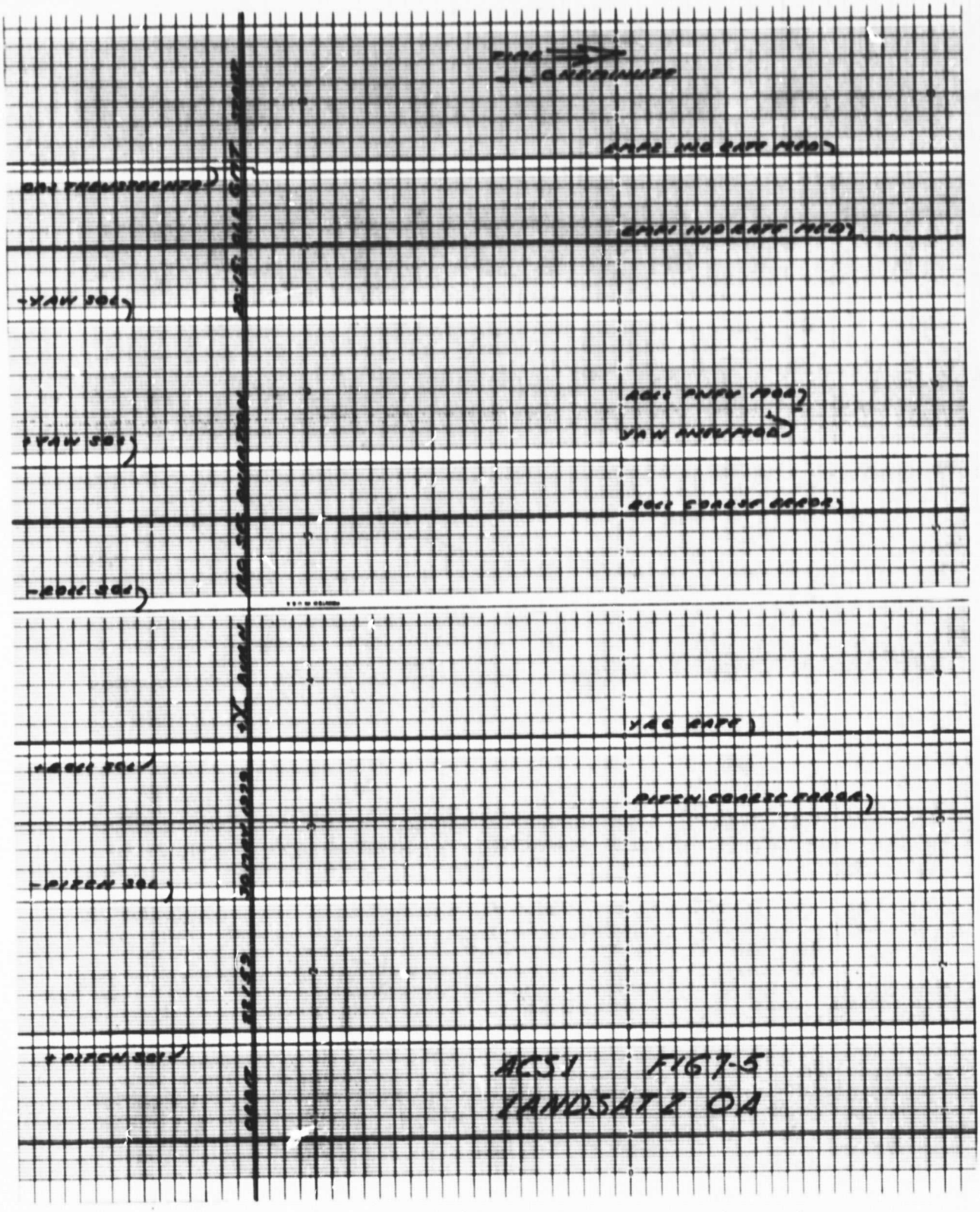

Figure 7-5. ACS 1 - Landsat-2 OA

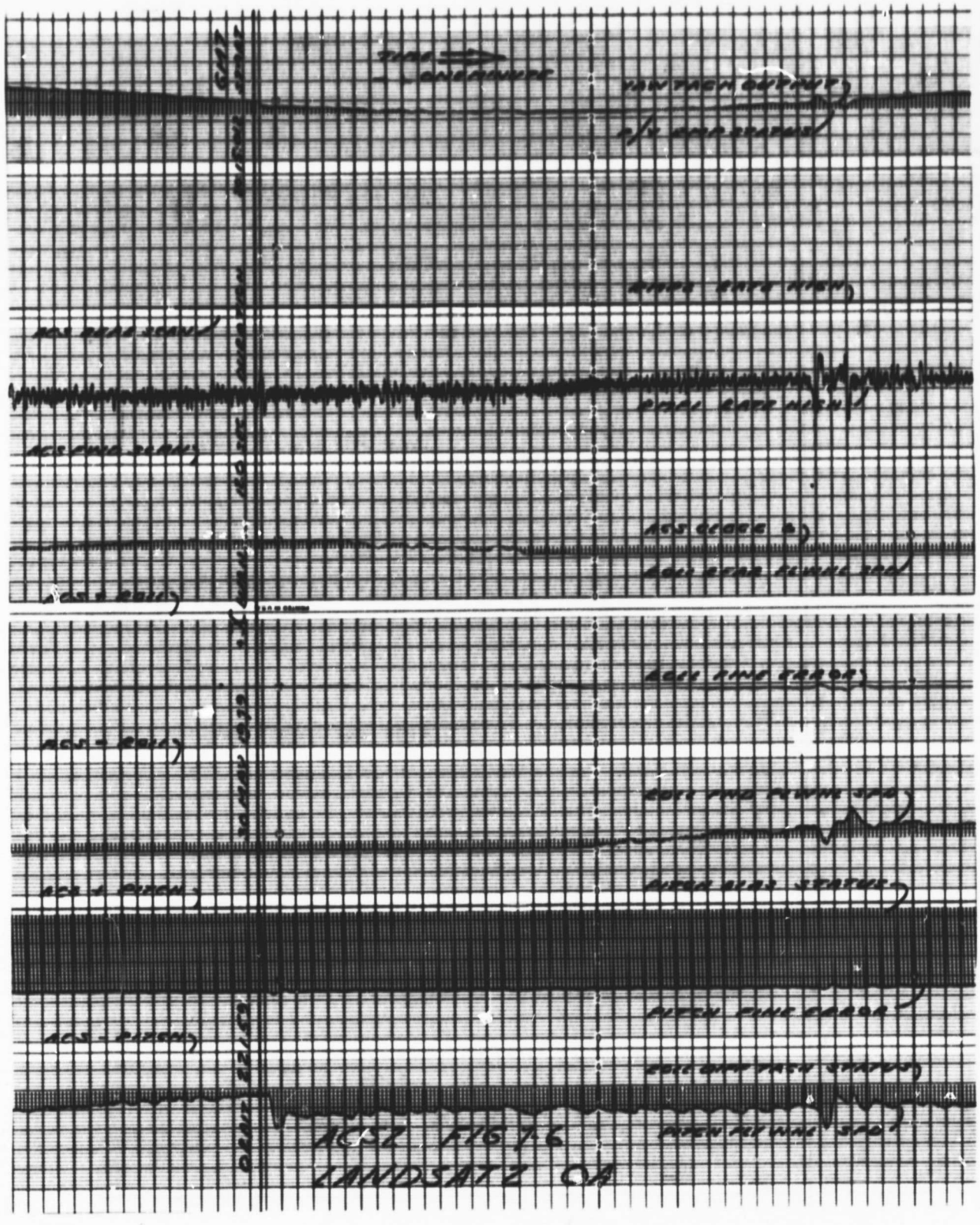

Figure 7-6. ACS 2 - Landsat-2 OA

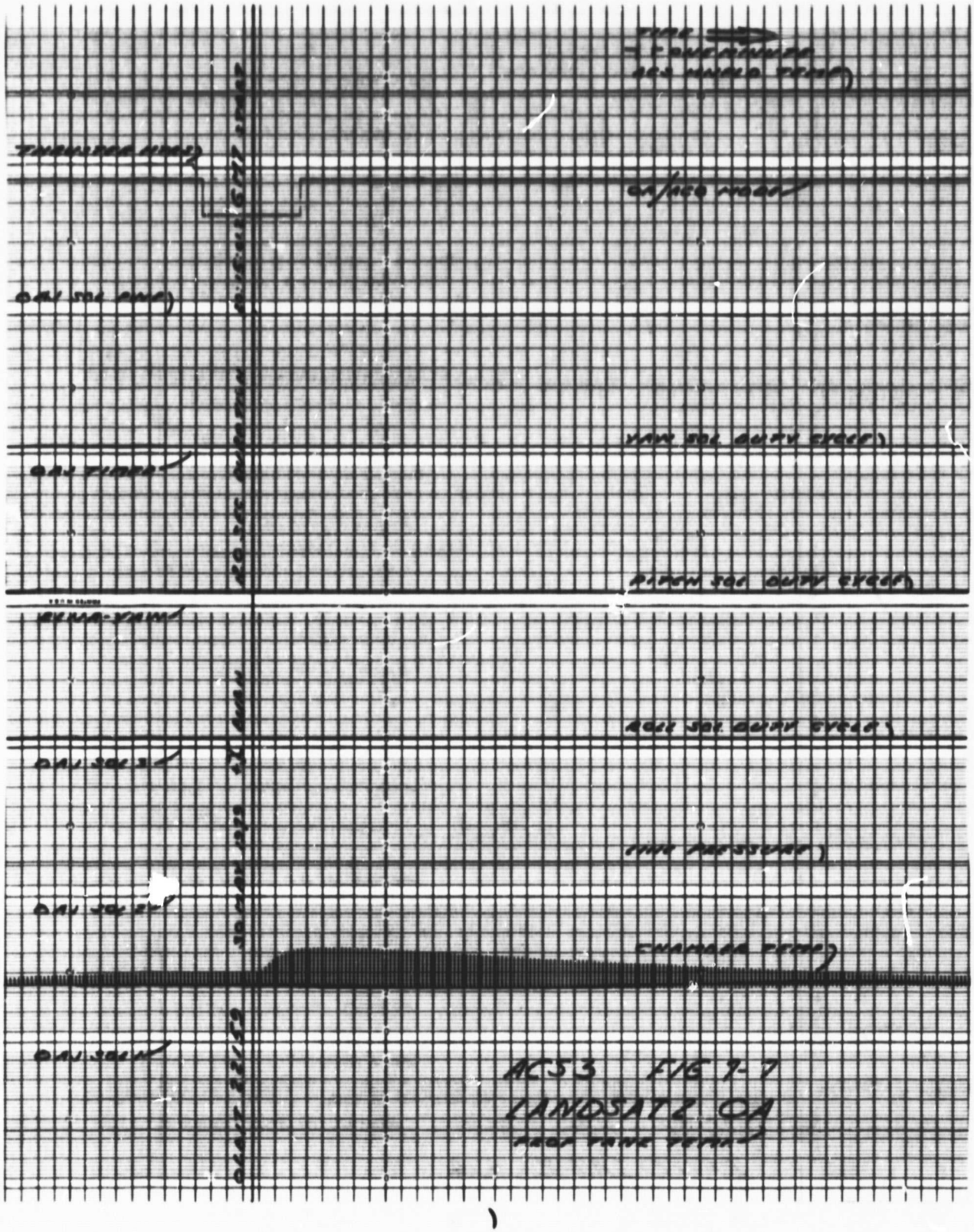

Figure 7-7. ACS 3 - Landsat-2 OA

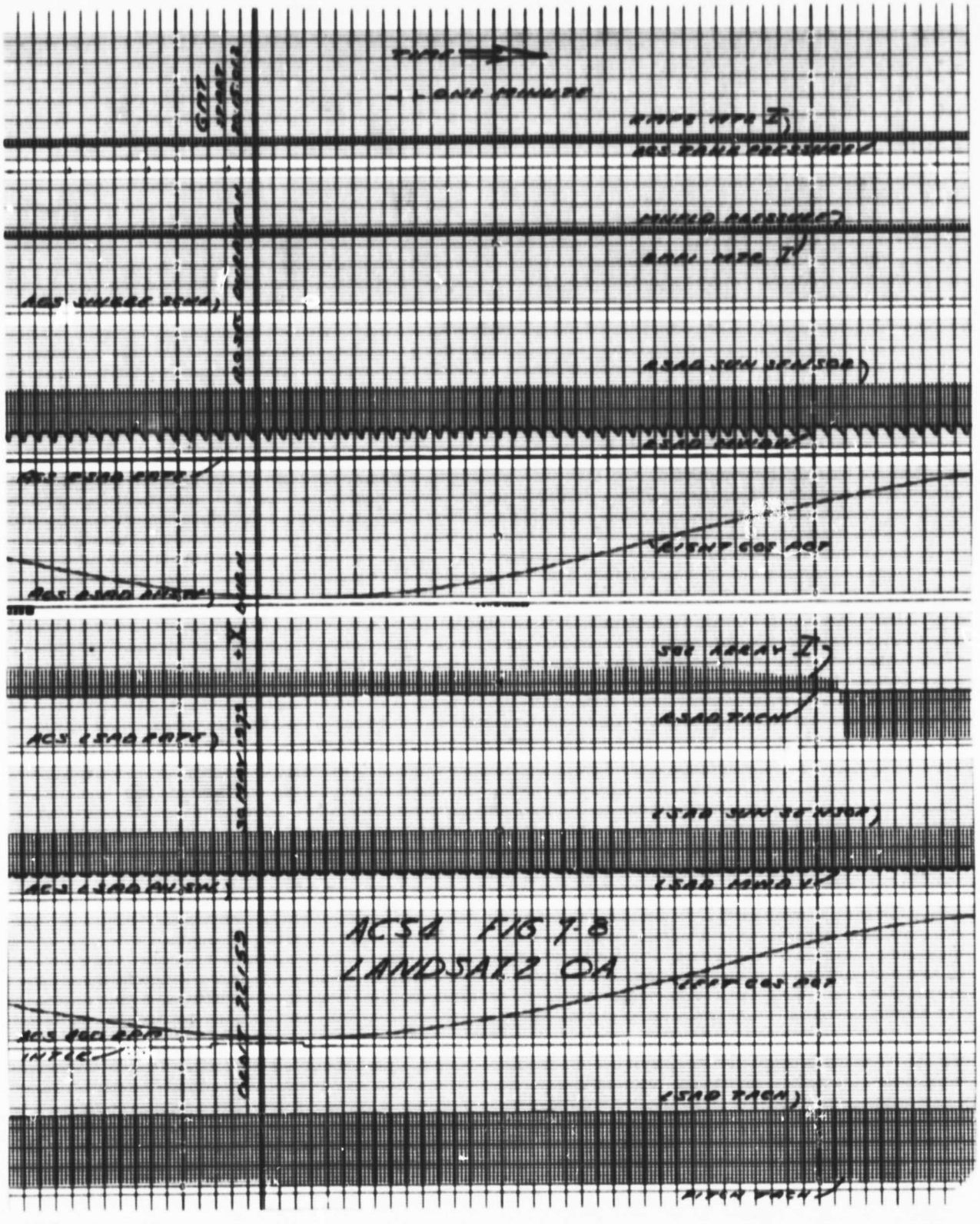

Figure 7-8. ACS 4 - Landsat-2 OA

FOLDOUT FRAME

Table 7-1. Landsat-2 Orbit Adjust Summary

Orbit Adjust No.	Orbit No.	Epoch (Burn Start Time)	Burn Axis		Burn Duration (Seconds)		Post Burn Freon Status (PSIA)	Hydrazine Consumed (Lbs)	Post Burn Hydrazine Tank P. (PSIA)	Burn Efficiency (%)	Δa (Meters)	Δi (Degrees)
			(-Y)	(±X)	(-Y)	(±X)						
1	32	25 Jan 75 00:34:00.8		-X		4.8	1947.19	0.02	539.96	104.3	39	0.0
2	71	27 Jan 75 19:57:00.8		+X		4.8	1923.78	0.02	547.46	90.1	-36	0.0
3	79	28 Jan 75 09:49:00.8		-X		420.0	1919.50	1.62	547.46	107.0	3455	0.0
4	86	28 Jan 75 21:13:00.8		-X		420.0	1916.40	1.51	502.46	107.0	3233	0.0
5	163	3 Feb 75 10:36:00.8		+X		420.0	1884.35	1.42	468.75	97.0	-2974	0.0
6	191	5 Feb 75 10:15:00.8		+X		360.0	1874.51	1.15	438.71	97.5	-2421	0.0
7	212	6 Feb 75 22:31:00.8		+X		308.8	1865.15	0.95	416.21	98.6	-2009	0.0
8	880	26 Mar 75 21:44:00.8		-X		12.8	1837.05	0.04	397.47	107.6	82	0.0
9	1632	19 May 75 18:54:00.8		-X		24.0	1757.46	0.07	401.21	107.6	154	0.0
10	2958	22 Aug 75 22:11:58.8		-X		22.0	1640.00	0.07	404.96	110.3	146	0.0
11	14157	2 Nov 77 23:47:01.2	-Y		5.2		1085.19	0.02	425.22	*	2.1	0.0
12	14171	3 Nov 77 23:47:07.2	-Y		60.0		1097.50	0.18	419.94	125.2	23.8	0.002
13	14185	4 Nov 77 23:52:49.2	-Y		60.0		1085.19	0.16	417.14	130.7	28.7	0.002
14	14324	14 Nov 77 23:07:01.2 23:11:42.4	-Y	+X	300.0	18.8	1065.50	0.97	401.19	97.1	128.4	0.007
15	14352	16 Nov 77 23:18:01.2 23:22:42.4	-Y	+X	300.0	18.8	1047.79	0.82	388.54	115.8	104.6	0.009
16	14382	19 Nov 77 02:06:01.2		+X		50.0	1048.00	0.18	385.80	100.9	-311.9	0.0
17	14514	28 Nov 77 14:08:01.2	-Y		300.0		1035.87	0.87	373.95	99.6	197.3	0.007
18	14542	30 Nov 77 14:17:01.2 14:22:41.2	-Y	+X	420.0	80.0	1025.30	1.43	356.13	105.8	-208.0	0.010
19	14570	2 Dec 77 14:27:31.2 14:36:11.2	-Y	+X	600.0	80.0	999.87	1.74	336.17	103.0	-131.0	0.014
20	14617	5 Dec 77 23:22:01.2	-Y		600.0		986.50	1.56	319.94	99.0	281.5	0.013
21	14645	7 Dec 77 23:32:01.2 23:41:05.2	-Y	+X	600.0	56.0	986.50	1.56	305.16	100.1	-17.6	0.012

19	14570	2 Dec 77 14:27:31.2 14:36:11.2	-Y	+X	600.0	80.0	999.87	1.74	336.17	103.0	-131.0	0.014
20	14617	5 Dec 77 23:22:01.2	-Y		600.0		986.50	1.56	319.94	99.0	281.5	0.013
21	14645	7 Dec 77 23:32:01.2 23:41:05.2	-Y	+X	600.0	56.0	986.50	1.56	305.16	100.1	-17.6	0.012
22	14673	9 Dec 77 23:43:31.2 23:52:43.2	-Y	+X	600.0	48.0	963.00	1.47	292.22	103.3	9.8	0.012
23	14714	12 Dec 77 22:23:00.2 22:26:14.0	-Y	+X	599.8	46.0	961.19	1.68	278.20	100.8	31.0	0.011
24	14828	13 Dec 77 22:23:00.2 22:32:14.0	-Y	+X	599.8	46.0	949.57	1.24	269.30	103.4	31.3	0.011
25	14807	19 Dec 77 14:21:01.2 14:30:13.2	-Y	+X	600.0	48.0	937.19	1.39	259.92	101.0	30.6	0.011
26	14812	19 Dec 77 22:57:30.2 23:06:42.0	-Y	+X	599.8	46.0	935.99	1.48	250.36	104.7	23.1	0.011
27	14840	21 Dec 77 23:09:00.2 23:18:04.0	-Y	+X	599.8	48.0	922.21	1.36	242.44	99.4	-42.5	0.010
28	15058	6 Jan 78 14:21:32.2 14:30:19.2	-Y	+X	569.0	42.0	900.06	1.59	236.39	98.8	31.9	0.009
29	15105	9 Jan 78 23:14:31.2 23:23:49.2	-Y	+X	600.0	48.0	887.88	0.77	232.22	97.0	-12.0	0.009
30	15119	10 Jan 78 23:20:31.2 23:29:46.0	-Y	+X	600.8	46.0	887.88	1.47	224.58	101.8	-32.8	0.010
31	15127	11 Jan 78 13:06:01.2 13:15:16.0	-Y	+X	600.8	46.0	878.71	1.33	218.32	101.2	-30.8	0.009
32	15133	11 Jan 78 23:26:01.2	-Y		600.8		877.81	0.70	215.55	101.9	109.4	0.009
33	15155	13 Jan 78 13:18:01.2 13:27:48.0	-Y	+X	600.8	14.0	863.19	1.31	209.91	99.5	43.5	0.009
34	15197	16 Jan 78 13:35:01.2 13:44:42.0	-Y	+X	600.8	20.0	863.19	1.11	205.20	98.5	15.9	0.008
35	15211	17 Jan 78 13:41:01.2 13:50:56.0	-Y	+X	601.8	7.0	854.24	0.71	202.49	96.2	61.5	0.008
36	15225	18 Jan 78 13:46:01.2 13:55:26.0	-Y	+X	600.8	36.0	838.57	1.27	197.50	94.8	-43.0	0.008
37	15295	23 Jan 78 14:15:01.2 14:24:46.0	-Y	+X	600.8	16.0	835.90	0.91	194.14	99.8	27.7	0.008
38	15309	24 Jan 78 14:21:01.2 14:36:46.0	-Y	+X	600.8	16.0	814.93	1.05	191.03	84.2	21.7	0.007
39	15314	24 Jan 78 22:57:00.0 23:06:50.0	-Y	+X	600.0	10.0	814.13	1.02	187.50	92.2	45.0	0.007
40	15323	25 Jan 78 14:27:01.2 14:36:46.0	-Y	+X	600.8	16.0	811.82	1.02	186.48	90.6	- 4.6	0.007
		25 Jan 78										

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		13:27:48.0		+X		14.0	863.19	1.31	209.91	99.5	43.5	0.000
34	15197	16 Jan 78 13:35:01.2 13:44:42.0	-Y	+X	600.8	20.0	863.19	1.11	205.20	98.5	15.9	0.008
35	15211	17 Jan 78 13:41:01.2 13:50:56.0	-Y	+X	601.8	7.0	854.24	0.71	202.49	96.2	61.5	0.008
36	15225	18 Jan 78 13:46:01.2 13:55:26.0	-Y	+X	600.8	36.0	838.57	1.27	197.50	94.8	-43.0	0.008
37	15295	23 Jan 78 14:15:01.2 14:24:46.0	-Y	+X	600.8	16.0	835.90	0.91	194.14	99.8	27.7	0.008
38	15309	24 Jan 78 14:21:01.2 14:36:46.0	-Y	+X	600.8	16.0	814.93	1.05	191.03	84.2	21.7	0.007
39	15314	24 Jan 78 22:57:00.0 23:06:50.0	-Y	+X	600.0	10.0	814.13	1.02	187.50	92.2	45.0	0.007
40	15323	25 Jan 78 14:27:01.2 14:36:46.0	-Y	+X	600.8	16.0	811.82	1.02	186.48	9[illegible] 6	- 4.6	0.007
41	15328	25 Jan 78 23:03:31.2 23:12:02.0	-Y	+X	600.8	30.0	806.81	1.03	182.05	88.8	- 32.8	0.007
42	15337	26 Jan 78 14:32:01.2 14:51:42.0	-Y	+X	600.8	20.0	807.40	0.99	179.25	90.5	14.7	0.007
43	15398	30 Jan 78 23:31:54.2 23:42:12.0	-Y	+X	637.8	20.0	801.57	1.04	176.34	85.3	- 1.9	0.007
44	15412	31 Jan 78 23:38:01.2 23:47:42.0	-Y	+X	600.8	20.0	801.60	0.97	174.20	82.9	- 5.4	0.006
45	15426	1 Feb 78 23:44:01.2 23:53:46.0	-Y	+X	600.8	16.0	801.57	0.95	172.50	88.0	4.5	0.006
46	15440	2 Feb 78 23:50:01.2	-Y		600.8		801.57	0.92	171.78	100.5	54.5	0.006
47	19246	2 Nov 78 22:39:02.0		-X		20.0	616.59	0.03	172.49	93.9	55.0	0.0
48	20514	1 Feb 79 21:00:02		-X		34.0	539.50	0.05	172.50	106.6	106.0	0.0
49	21685	26 Apr 79 20:25:02		-X		44.6	468.59	0.07	172.49	109.8	143.0	0.0
50	22159	30 May 79 20:[illegible]:012		+X		12.0	443.93	0.02	172.49	105.4	- 39.1	0.0

* - Burn too short to influence tracking data.

Table 7-2. Landsat-2 OAS Telemetry Values

Func.	Name	Units	Orbit							
			50	5102	10191	15211	20252	21843	22331	22721
2001	Prop. Tank Temp.	DGC	23.03	23.89	23.05	24.48	23.05	21.39	21.39	21.04
2003	Thrust Chamber No. 1 (-X) Temp.*	DGC	24.84	25.12	21.75	20.83	24.16	30.61	30.93	28.37
2004	Thrust Chamber No. 2 (+X) Temp.*	DGC	37.34	38.55	37.60	35.32	37.77	37.21	38.23	39.60
2005	Thrust Chamber No. 3 (-Y) Temp.*	DGC	47.22	46.35	49.78	78.50*	48.95	35.84	34.47	34.05
2006	Line Pressure	PSIA	545.60	413.25	419.94	205.21	172.49	172.47	172.47	172.47

* Orbit adjust heaters were ON.

SECTION 8

MAGNETIC MOMENT COMPENSATING ASSEMBLY (MMCA)

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SECTION 8

MAGNETIC MOMENT COMPENSATING ASSEMBLY (MMCA)

The spacecraft was corrected for unbalanced magnetic moments in Orbits 293 and 321 as reported earlier. These adjustments were made on the pitch magnetic rod of the MMCA.

No adjustment to the MMCA dipoles was made during this report period.

Orbital averages of MMCA telemetry functions for selected orbits are given in Table 8-1.

Table 8-1. Landsat-2 MMCA Telemetry Values

Function	Name	Units	Orbit							
			50	5102	10191	15211	20252	21843	22331	22721
4001	A1 Board Temp	^{o}C	20.56	19.47	19.12	18.82	18.90	18.25	18.41	18.25
4002	A2 Board Temp	^{o}C	D	D	D	D	D	D	D	D
4003	Hall Current	TMV	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40
4004	Yaw Flux Density	TMV	3.05	3.07	3.07	3.07	3.07	3.07	3.07	3.07
4005	Pitch Flux Density	TMV	3.15	2.90	2.90	2.90	2.90	2.90	2.90	2.90
4006	Roll Flux Density	TMV	2.99	2.97	2.97	2.97	2.97	2.96	2.97	2.97

D = Defective Telemetry Function (Pre-launch)

SECTION 9

UNIFIED S-BAND/PREMODULATION PROCESSOR (USB/PMP)

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SECTION 9

UNIFIED S-BAND/PREMODULATION PROCESSOR (USB/PMP)

The USB Subsystem has operated nominally in this report period.

Table 9-1 shows telemetry values since launch. All are nominal. The transmitter has maintained a steady indicated power output of greater than 1.3 watts since launch.

USB transmitted signal levels measured at Goldstone with the spacecraft successively at the same points in space show continuous satisfactory USB performance.

Table 9-1. Landsat-2 USB/PMP Telemetry Values

Func.	Name	Units	Orbits								
			15	5091	10641	15211	20251	21076	21843	22331	22721
11001	USB Rcvr AGC	dBm	-112.72	-124.29	-124.85	-126.13	-131.50	-124.26	-122.27	-126.68	-125.92
11002	USB Xmtr Pwr	W	1.36	1.38	1.39	1.39	1.36	1.34	1.35	1.35	1.36
11003	USB Rcvr Error	kHz	- 2.15	- 2.97	- 3.43	- 4.98	- 4.35	- 4.14	- 4.36	- 4.44	- 4.16
11004	USB Xpond Temp	DGC	25.88	27.49	29.06	33.03	28.50	28.45	25.52	25.34	25.33
11005	USB Xpond Press	PSI	17.08	16.49	15.96	16.03	15.09	14.98	14.67	14.58	14.59
11007	USB Xmtr A -15V	VDC	2.36	F	F	F	F	F	F	F	F
11008	USB Xmtr B -15V	VDC	F	2.42	2.39	2.36	2.43	2.37	2.40	2.40	2.42
11009	USB Range -15V	VDC	2.07	2.06	2.06	2.06	2.05	2.05	2.05	2.05	2.05
11101	PMP Pwr A Volt	VDC	- 15.10	F	F	F	F	F	F	F	F
11102	PMP Pwr B Volt	VDC	F	- 14.99	- 14.99	- 14.96	- 14.99	- 14.92	- 14.90	- 14.91	- 14.88
11103	PMP Temp A	DGC	37.30	34.67	37.49	43.12	36.56	34.66	28.95	29.51	28.78
11104	PMP Temp B	DGC	28.34	36.08	38.64	44.11	37.64	36.69	31.15	31.81	31.25

F = Unit Off

SECTION 10

ELECTRICAL INTERFACE SUBSYSTEM (EIS)

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SECTION 10

ELECTRICAL INTERFACE SUBSYSTEM (EIS)

The Auxiliary Processing Unit (APU) consisting of Search Track Data, Time Code Data, and Back-up Timers operated satisfactorily throughout this report period. Telemetry for the APU is shown in Table 10-1, and is nominal.

Table 10-1. Landsat-2 APU Telemetry Functions

Function	Description	Unit	Orbit							
			21	5102	10192	15211	20252	21843	22331	22721
13200	APU, -24.5 VDC	TMV	D	D	D	D	D	D	D	D
13201	APU, -12 Volts	TMV	2.42	2.45	2.45	2.45	2.45	2.45	2.44	2.45
13202	APU, Temp	DGC	27.44	27.70	28.78	30.64	28.47	26.21	26.08	25.79

D - Defective Telemetry (Prelaunch)

The Power Switch Module (PSM) containing the switching relays for power to the OAS, MSS, WBPA-1, WBPA-2, WBVTR-1, WBVTR-2, RBV and PRM, functioned normally. During this report period, the MSS, WBPA-2 and WBVTR-2 power circuits, have been operated on a regular basis. RBV and WBPA-1 power circuits have been used for limited operation.

The Interface Switching Module performed all switchings normally during this report period.

SECTION 11
THERMAL SUBSYSTEM (THM)
LANDSAT-2

SECTION 11

THERMAL SUBSYSTEM (THM)

Landsat-2's Thermal Control Subsystem has provided satisfactory temperature control for all of the spacecraft equipment since launch.

Table 11-1 summarizes average subsystem temperature telemetry values taken from representative orbits that occurred over the 54 months of Landsat-2's existence.

Average temperatures in the sensory ring bays are plotted in Figure 11-1.

During this report period, sun intensity decreased from 0.989 to 0.969 times the mean value. In addition, spacecraft night length increased as the sun angle decreased. Consequently, the average spacecraft temperatures were slightly lower this quarter.

A history of compensation load switching is shown in Table 11-2. All compensation loads remained off during this report period.

Table 11-1. Thermal Subsystem Analog Telemetry
(Average Value for Frames of Data Received in NBTR Playback)

Function No.	Function Description	Unit	Orbits							
			31	6103	10193	14311	19691	21643	22331	22721
7001	THM TH01 STI	DGC	19.40	19.97	19.59	19.66	19.06	18.36	17.38	17.97
7002	THM TH02 SBO	DGC	17.18	17.47	17.65	17.36	17.15	17.07	16.43	17.30
7003	THM TH03 STI	DGC	18.73	18.50	18.65	18.02	17.62	17.03	16.46	16.98
7004	THM TH10 TCB	DGC	19.38	19.34	19.94	21.30	19.47	18.04	17.09	17.62
7005	THM TH04 STI	DGC	17.19	16.76	17.27	16.70	16.06	15.73	16.47	15.73
7006	THM TH05 SBO	DGC	17.42	16.66	16.65	16.36	16.26	15.75	15.68	15.65
7007	OA -X Thruster	DGC	19.66	19.65	19.44	19.70	19.50	19.73	19.06	19.47
7008	THM TH06 STO	DGC	14.78	13.94	13.57	13.34	13.36	12.67	12.77	13.56
7009	THM TH06 SBI	DGC	18.18	16.41	16.10	17.91	17.76	16.67	16.77	16.66
7010	THM TH07 STI	DGC	16.08	17.44	17.11	17.10	16.64	16.09	16.20	15.97
7011	THM TH08 STO	DGC	19.34	19.23	19.00	18.92	18.99	19.26	19.47	19.08
7012	THM TH09 SBI	DGC	21.44	20.93	20.94	01.46	20.64	20.17	20.39	19.88
7013	THM TH10 SBO	DGC	18.56	18.20	18.59	19.12	18.49	17.83	17.91	17.53
7014	THM TH11 STI	DGC	21.65	21.93	22.75	24.58	22.28	20.91	19.97	19.64
7015	THM TH12 SBO	DGC	28.93	26.69	26.06	29.56	26.07	22.33	21.85	21.66
7016	THM TH13 STI	DGC	28.21	25.62	25.73	29.30	24.85	20.08	20.06	19.71
7017	RBV Beam Ctr Ln	DGC	20.38	19.92	20.16	21.25	19.46	18.85	18.49	18.14
7018	THM TH14 STO	DGC	36.18	36.45	39.64	35.01	26.12	21.13	21.41	21.26
7019	NBR Rad Outbd B4	DGC	3.72	3.93	2.44	2.65	2.40	1.47	1.59	1.36
7020	THM TH15 SBI	DGC	33.07	25.56	27.07	31.02	26.22	19.92	20.75	19.70
7021	THM TH16 STI	DGC	33.26	25.40	26.87	29.22	25.26	20.83	20.92	20.36
7022	THM TH17 SBI	DGC	21.77	23.74	23.75	25.97	23.26	20.36	19.61	19.62
7023	THM TH18 SBO	DGC	21.67	23.36	23.69	25.27	23.23	21.75	20.64	21.23
7030	THM TH03 RVR	DGC	15.50	15.14	15.59	16.06	14.75	14.76	14.53	14.97
7033	THM TH12 RVR	DGC	23.05	24.59	27.14	31.18	26.24	22.28	21.84	21.63
7035	THM TH18 RVR	DGC	19.53	20.39	20.20	21.03	20.10	18.76	18.06	18.81
7040	THM TH01 TCB	DGC	19.42	19.73	19.96	19.66	19.07	18.64	17.90	18.56
7041	THM TH02 TCB	DGC	17.55	17.39	17.42	16.94	16.95	16.61	15.87	16.57
7042	THM TH03 TCB	DGC	16.81	16.32	16.04	17.08	16.00	16.27	15.90	16.60
7043	THM TH04 TCB	DGC	19.90	18.33	18.16	19.16	19.09	18.66	18.45	18.53
7044	THM TH05 TCB	DGC	15.42	15.75	15.44	15.17	15.27	14.59	14.57	14.39
7045	THM TH07 TCB	DGC	17.76	17.33	17.01	16.92	16.76	16.44	16.60	16.27
7046	THM TH09 TCB	DGC	19.30	18.81	18.82	19.31	18.84	18.23	18.56	18.03
7048	THM TH11 TCB	DGC	23.27	23.74	24.99	27.06	24.56	22.03	21.83	21.47
7049	THM TH12 TCB	DGC	23.04	23.94	26.83	30.59	25.79	21.01	20.71	20.48
7050	THM TH13 TCB	DGC	22.89	24.67	27.61	31.99	26.50	20.24	20.11	19.89
7051	THM TH14 TCB	DGC	25.07	27.69	31.17	36.18	29.34	21.69	22.61	22.16
7052	THM TH16 TCB	DGC	22.22	24.29	25.62	29.18	24.41	20.85	20.72	20.72
7053	THM TH17 TCB	DGC	23.52	24.86	25.00	26.83	24.94	23.37	21.57	21.81
7054	THM TH18 TCB	DGC	20.01	20.99	21.41	21.17	20.12	20.63	18.99	20.86
7060	THM Shutter By 1	DEG	22.54	26.65	27.36	24.93	18.87	14.52	6.87	11.21
7061	THM Shutter By 2	DEG	19.34	21.13	17.89	11.72	12.28	12.27	7.17	11.08
7062	THM Shutter By 3	DEG	22.75	11.99	28.91	19.01	9.12	12.40	7.55	13.29
7063	THM Shutter By 4	DEG	33.89	33.00	32.90	27.37	30.00	27.70	26.98	26.57
7064	THM Shutter By 5	DEG	7.50	2.90	2.42	1.79	.88	.57	1.00	.63
7065	THM Shutter By 7	DEG	17.06	14.11	8.88	6.89	9.55	5.50	7.80	5.61
7067	THM Shutter By 9	DEG	33.75	34.12	33.70	36.71	34.50	31.50	33.71	32.31
7068	THM Shutter By 10	DEG	37.46	37.09	40.64	48.39	38.37	29.58	29.46	27.13
7069	THM Shutter By 11	DEG	52.25	17.39	22.81	46.32	27.08	9.80	7.48	3.78
7070	THM Shutter By 12	DEG	61.38	67.46	80.70	83.62	78.16	49.46	48.09	46.50
7071	THM Shutter By 13	DEG	63.60	74.14	81.89	81.89	80.04	46.95	45.56	44.14
7072	THM Shutter By 14	DEG	59.44	72.14	72.91	71.60	70.11	38.82	38.56	36.46
7073	THM Shutter By 15	DEG	67.78	82.12	83.87	83.96	82.61	48.39	47.32	46.08
7076	THM Shutter By 16	DEG	45.20	61.13	68.30	76.94	61.63	39.05	36.99	36.90
7075	THM Shutter By 17	DEG	57.88	67.62	68.67	78.13	69.71	58.76	43.00	43.32
7076	THM Shutter By 18	DEG	40.49	45.84	47.49	46.15	40.01	43.53	42.87	41.42
7080	THM Q1 T Zener V	VDC	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85
7081	THM Q2 T Zener V	VDC	4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.90
7082	THM Q3 T Zener V	VDC	5.05	5.05	5.04	5.04	5.03	5.03	5.03	5.03
7083	THM Q1 S Zener V	VDC	4.97	4.96	4.96	4.97	4.95	4.95	4.95	4.95
7084	THM Q2 S Zener V	VDC	4.98	4.99	4.98	5.00	4.98	4.98	4.98	4.98
7085	THM Q3 S Zener V	VDC	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15
7090	THM PSM Mount	DGC	21.02	21.71	21.28	22.79	21.14	18.65	18.70	18.43
7091	THM Ind Attitude	DGC	17.79	17.24	16.95	16.98	16.58	15.65	15.71	15.43
7092	THM RBV Radiator	DGC	16.01	16.24	15.71	16.06	16.70	14.75	14.56	14.44
7093	THM RBVC Ctr Bm	DGC	20.74	19.31	19.44	20.64	19.29	17.47	17.52	17.21
7094	THM WBVTR Root	DGC	13.77	15.72	13.90	14.91	13.77	11.89	11.67	11.59
7095	THM WBVTR Rad Ct	DGC	3.64	5.55	4.45	5.36	4.76	3.88	3.91	4.16
7096	THM WBVTR Strap	DGC	15.90	17.63	15.29	15.98	15.02	13.46	13.04	13.14
7097	THM WB Mt Bay 1	DGC	22.91	22.49	16.47	16.44	17.87	16.29	15.65	15.66
7098	THM WB Mat Bay 1	DGC	22.07	20.14	16.20	16.50	18.35	16.27	15.27	15.16
7099	THM WBVTR Sep 3	DGC	18.03	18.12	17.79	17.36	16.92	16.13	15.49	15.95
7100	THM WBVTR Sep 17	DGC	21.83	23.51	22.98	24.85	22.48	19.83	19.13	19.12
7101	THM WBVTR 1 Cent	DGC	22.45	23.78	20.33	20.91	19.93	18.32	17.62	17.82
7102	THM WBVTR 2 Bay	DGC	17.34	17.29	17.04	16.92	16.41	15.32	15.12	15.11
7103	THM WBVTR 2 Bay 15	DGC	21.77	23.87	23.50	26.26	23.08	18.82	18.93	18.21
7104	THM WBVTR 2 Ctr	DGC	20.74	22.34	19.94	21.14	19.86	17.21	16.90	16.49
7105	THM NBTR B Sep 6	DGC	p7.82	17.86	17.29	17.67	17.13	14.91	14.89	14.64
7106	THM NBTR B Sep 1	DGC	22.11	23.85	24.92	26.10	24.23	19.34	19.48	18.95
7107	THM NBTR Bm Ctr	DGC	20.32	21.21	20.59	21.90	20.26	17.56	17.47	17.15
7108	THM MBS Mount 14	DGC	20.59	22.86	23.83	26.90	22.94	18.08	18.24	17.67
7109	THM OA - Y Thruster	DGC	25.64	27.51	29.91	36.27	28.45	21.48	21.47	21.11
7110	THM MBS WBVTR Bm	DGC	16.75	18.21	16.84	17.55	16.47	14.55	14.33	14.21
7111	THM OA +X Thruster	DGC	20.33	20.43	17.54	17.84	18.82	17.21	16.53	16.72
7130	THM Aux P1 T	DGC	34.18	29.67	12.01	8.87	13.84	5.56	11.07	9.93
7131	THM Aux P2 T	DGC	2.90	6.97	28.16	8.49	27.13	7.70	5.40	5.47

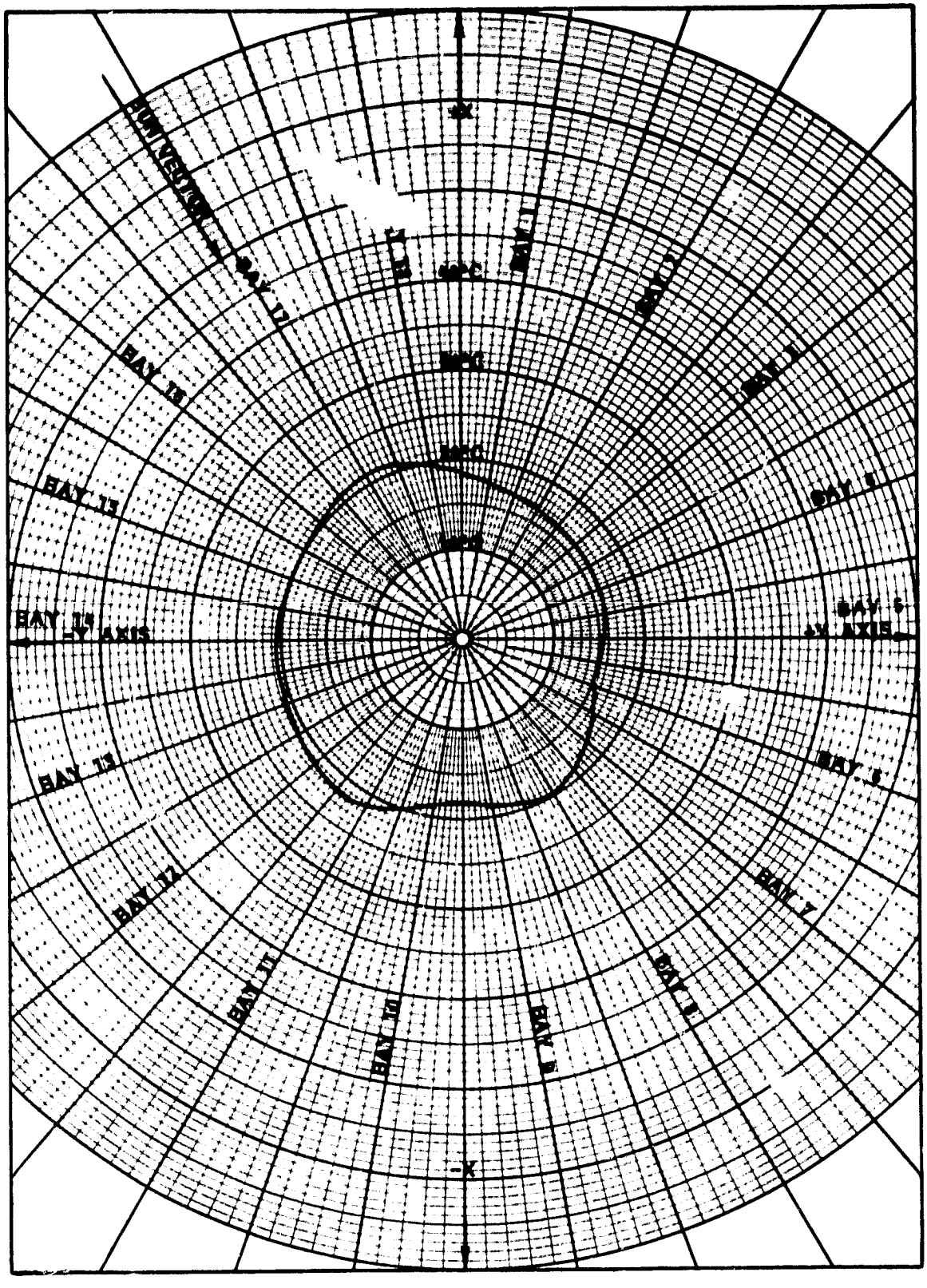

Figure 11-1. Landsat-2 Sensory Ring Average Bay Temperatures - Orbit 22721, 11 July 1979

Table 11-2. Landsat-2 Compensation Load History

	Compensation Load Status*							
Orbits	1	2	3	4	5	6	7	8
Launch	0	0	0	0	0	0	0	0
2	X	X	X	X	X	0	X	X
237	X	X	X	X	X	0	0	0
272	X	X	X	X	X	0	X	X
306	X	X	0	X	X	0	0	0
572	X	X	0	X	X	0	0	X
1367	X	X	X	X	X	0	0	X
1645	X	X	0	X	X	0	0	X
1657	X	X	X	X	X	0	0	X
4202	0	0	X	X	0	0	0	0
4372	0	0	X	X	0	0	0	X
6735	0	X	X	0	0	X	0	0
8312	X	X	0	0	X	0	0	0
9753	X	X	0	0	0	0	0	0
14727	0	0	0	0	0	0	0	0

*NOTE X = ON
0 = OFF

SECTION 12

NARROWBAND TAPE RECORDERS (NBR)

LANDSAT-2

SECTION 12

NARROWBAND TAPE RECORDERS (NBR)

NBR-A failed during a playback in Orbit 20267 on 15 January 1979. NBR-B continues to operate satisfactorily. Both recorders had alternated in Record and Playback modes with nominal one minute overlap.

To conserve use, NBR-B is limited in operation to record payload activity, and to record one full orbit per day to allow evaluation of spacecraft health.

Table 12-1 gives cumulative operating hours for both Recorders by mode, and Table 12-2 gives typical telemetry values.

Table 12-1. NBR Operating Hours by Mode

NBR	ON	OFF	Playback	Record
A*	18320	16724	720	17600
B	20694	18661	825	19869

* NBR-A failed Orbit 20267 (15 January 1979)

Table 12-2. Narrowband Tape Recorder Telemetry Values, Landsat-2

Func	Name	Units	Orbits							
			36/37	4980/4981	11460/11461	15211/15212	20710	21903	22261	22739
10001	A - Motor I	mA								
	Record		132.0	130.2	125.50	114.68	Q	Q	Q	Q
	P/B		108.0	93.7	92.30	99.47	Q	Q	Q	Q
10101	B - Motor I	mA								
	Record		148.5	135.7	129.10	119.27	111.55	108.54	110.05	108.54
	P/B		143.6	135.7	127.65	119.09	N	N	N	N
10002	A - Pwr Sup. I	mA								
	Record		170.5	162.5	152.13	152.92	Q	Q	Q	Q
	P/B		410.0	399.3	472.26	386.14	Q	Q	Q	Q
10102	B - Pwr Sup. I	mA								
	Record		260.0	264.5	264.47	270.12	270.89	270.89	274.00	267.69
	P/B		481.0	489.2	479.90	479.70	N	N	N	N
10003	A - Rec. Temp.	DGC	26.1	24.2	21.64	25.40	19.68	19.04	19.25	19.25
10103	B - Rec. Temp.	DGC	27.0	26.2	24.71	23.68	21.81	20.96	23.51	23.08
10004	A - Pwr Sup	VDC	-24.87	-25.1	-25.09	-25.08	Q	Q	Q	Q
10104	B - Pwr Sup	VDC	-24.55	-24.6	-24.61	-24.73	-24.62	-24.62	-24.62	-24.62

Q = Unit Failure
N = Data Not Available Since Loss of NBR-1

SECTION 13

WIDEBAND TELEMETRY SUBSYSTEM (WBTS)
LANDSAT-2

SECTION 13

WIDEBAND TELEMETRY SUBSYSTEM (WBTS)

The WBTS has operated nominally in this report period.

Table 13-1 shows typical telemetry values. All are nominal.

WPA transmitted signal levels, measured at Goldstone with the spacecraft successively at the same points in space, show continuous satisfactory WPA performance.

Table 13-1. Typical Wideband Subsystem Telemetry

Func	Name	Units	Orbit								
			47	5091	10641	15211	20248	21002	21843	22258 / 22331	22721
12001 12101	Temp TWT Coll.	DGC	34.38 30.00	F 32.16	F 34.65	33.12 30.00	33.12 29.37	33.12 27.81	18.71 29.38	32.50 29.38	18.67 29.38
12002 12102	Cur. Helix	mA	4.29 4.41	F 4.59	F 4.61	3.90 4.70	3.90 4.88	3.90 4.85	F 4.86	3.84 4.86	F 4.87
12003 12103	Cur. Cath.	mA	46.04 46.42	F 46.00	F 44.07	44.93 44.62	44.93 45.58	44.93 45.79	F 44.85	44.93 44.81	F 44.85
12004 12104	Fwd. Pwr.	dBm	42.93 43.81	F 43.61	F 43.51	42.87 43.61	42.82 43.70	42.87 43.70	F 43.59	42.87 43.57	F 43.58
12005 12105	Refl. Pwr.	dBm	26.50 37.50	F 37.08	F 36.90	25.44 37.17	25.44 37.44	25.44 37.37	F 37.14	25.33 36.57	F 37.53
12227	Mod. A Loop Stress	Hz	2.14	F	1.60	1.77	1.64	1.51	1.29	1.39	1.65
12228	Mod. B Loop Stress	Hz	1.51	- 0.22	0.28	- 0.66	- 0.05	-.38	-0.48	-0.23	-0.08
12229	Temp. Mod	DGC	18.51	17.97	17.41	16.00	17.29	17.00	16.53	19.00	16.67
12232	+15 VDC Pwr Sply	TMV	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65
12234	-15 VDC Pwr Sply	TMV	4.27	4.04	3.99	4.10	4.10	4.15	4.14	4.12	4.16
12236	+5 VDC Pwr Sply	TMV	3.57	3.51	3.50	3.55	3.55	3.55	3.55	3.56	3.55
12238	-5 VDC Pwr Sply	TMV	4.20	4.07	4.02	4.08	4.07	4.10	4.09	4.08	4.16
12240	-24 VDC Unreg Pwr	TMV	6.20	5.90	5.92	5.92	5.85	5.85	5.97	5.77	5.95
12242	Temp. Inv.	DGC	24.12	22.53	22.18	22.17	22.02	21.46	21.34	20.50	21.27

F Unit Off

SECTION 14

ATTITUDE MEASUREMENT SENSOR (AMS)
LANDSAT-2

SECTION 14

ATTITUDE MEASUREMENT SENSOR (AMS)

The AMS is a passive radiometric balance sensor which operates in the 14-16 micron IR band. AMS telemetry Values are shown in Table 14-1.

The AMS was launched in the OFF mode (CMD 774), turned ON during Orbit 6, and has been performing normally since then.

Table 14-1. Landsat-2 AMS Temperature Telemetry

Func	Name	Units	Orbit Number							
			50	5102	10191	15211	20252	21843	22331	22721
3004	Case Temp 1	DGC	19.00	18.68	18.36	18.67	18.37	17.49	17.56	17.28
3005	Assembly - Temp 2	DGC	18.70	18.30	17.97	18.28	18.08	17.21	17.27	17.02

SECTION 15

WIDEBAND VIDEO TAPE RECORDERS (WBVTR)
LANDSAT-2

SECTION 15

WIDEBAND VIDEO TAPE RECORDERS (WBVTR)

WBVTR-1 has not been in use since Orbit 10249 on 26 January 1977 because of failures of two of its Record/Playback heads (head 1, Orbit 2683, 3 August 1975; head 3, Orbit 10064 on 13 January 1977).

Twice in 1975, for an undetermined reason, WBVTR-2 stopped Rewind prematurely; once during Orbit 1913 on 9 June and again during Orbit 3854 on 26 October. This abnormality has not occurred since.

On 21 December 1976, during Orbit 9738, a playback of MSS data from WBVTR-2 of Landsat-2 was unusable due to high bit error counts. This anomaly has been experienced many times since then. The condition exists due to a tape overspeed of approximately 27%, caused by the servo voltage input being zero during the time of the anomaly. A simple operational procedure (Switch from Playback to Record to Playback) restores normal operation.

Table 15-1 gives typical non-modal telemetry values for WBVTP-1 and WBVTR-2. Tables 15-2 and 15-3 show the modal telemetry values for Record, Playback, Rewind, and Standby operational modes.

Figure 15-1 shows tape usage for WBVTR-2.

Table 15-1. Telemetry Values for WBVTR-1 and 2

Func	Name	Units	Orbits							
			45/46	4879	11871	17715	20251	21903	22261	22739
13022	Tape Unit Pres	PSI	16.52	16.39	16.12	15.99	15.99	15.86	15.86	15.86
13023	Tape Unit Temp	DGC	20.74	20.12	16.69	16.30	18.12	16.30	15.92	16.30
13024	Elec U. Temp	DGC	25.00	21.68	13.85	13.46	14.98	14.23	14.23	14.23
13032	Limiter Volt	VPP	1.48	1.41	F	F	F	F	F	F
13034	+5.6 VDC Conv	VDC	5.70	5.67	F	F	F	F	F	F
13122	Tape Unit Press	PSI	16.12	15.33	14.54	13.35	13.10	12.95	12.95	12.82
13123	Tape Unit Temp	DGC	21.50	23.08	19.92	17.46	21.70	17.84	17.84	17.84
13124	Elect. U. Temp	DGC	23.50	22.72	16.63	16.92	22.25	18.84	18.84	18.84
13132	Limiter Volt	VPP	1.30	1.28	1.34	1.34	1.34	1.34	1.34	1.34
13134	+5.6 VDC Conv	VDC	5.71	5.85	5.66	5.80	5.64	5.77	5.77	5.77

F = Unit Off

Table 15-2. Function Values by Mode, Landsat-2 WBVTR-1 Telemetry

Func	Name	Units	Orbits					
			31/46	2642	4878	7628/7643	10050/10081	10249*
13029	Input P/B Voltage	VPP						
	Record		0.0	0.0	0.0	0.0	0.0	0.0
	Playback		0.60	0.32	0.30	0.32	0.35	0.35
	Rewind		0.0	0.0	0.0	0.0	0.0	0.0
	Standby		0.0	0.0	0.0	0.0	0.0	0.0
13028	Capstan Motor I	AMP						
	Record		0.31	0.33	0.31	0.33	0.31	0.32
	Playback		0.26	0.31	0.30	0.35	0.30	0.35
	Rewind		0.19	0.23	0.28	0.31	0.28	0.30
	Standby		0.0	0.0	0.0	0.0	0.0	0.0
13030	Headwheel Motor I	AMP						
	Record		0.50	0.50	0.53	0.50	0.56	0.52
	Playback		0.49	0.49	0.53	0.53	0.44	0.45
	Rewind		0.44	0.44	0.47	0.47	0.45	0.44
	Standby		0.45	0.45	0.46	0.44	0.44	0.44
13031	Recorder Input I	AMP						
	Record		3.69	3.69	3.62	3.62	3.62	3.52
	Playback		3.37	3.86	3.86	3.34	3.86	3.86
	Rewind		2.23	2.19	2.23	2.28	2.23	3.21
	Standby		1.78	1.95	1.95	1.81	1.95	1.86
13033	Servo Voltage	PCT						
	Record		0.0	0.0	0.0	0.0	0.0	0.0
	Playback		50.01	50.08	50.37	50.04	49.61	50.08
	Rewind		0.0	0.0	0.0	0.0	0.0	0.0
	Standby		0.0	0.0	0.0	0.0	0.0	0.0
13026	Capstan Motor Spd	PCT						
	Record		88.61	88.03	85.13	85.03	87.45	88.61
	Playback		88.35	86.87	85.13	87.45	94.90	88.87
	Rewind		100.2	98.48	96.73	98.48	96.00	96.52
	Standby		0.0	0.0	0.0	0.0	0.0	0.0
13027	Headwheel Mo Spd	PCT						
	Record		96.72	95.07	93.96	94.07	94.16	94.28
	Playback		97.28	94.52	92.86	92.86	94.44	94.80
	Rewind		98.6	96.73	96.73	96.73	96.73	96.60
	Standby		98.39	95.62	95.07	93.96	95.07	93.96

* Unit not used since Orbit 10249.

Table 15-3. Function Values by Mode - Landsat-2 WBVTR-2 Telemetry

Func	Name	Units	Orbits						
			31/46	4878	10198/10199	15303/15286	20249	21903	22261	22739
13129	Input P/B Voltage	VPP	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0
	Record		0.35	0.34	0.34	0.33	0.36	0.36	0.34	0.35
	Playback		0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0
	Rewind		0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0
	Standby									
13128	Capstan Motor I	AMP	0.33	0.38	0.32	0.34	0.37	0.37	0.37	0.32
	Record		0.33	0.35	0.35	0.36	0.32	0.32	0.34	0.35
	Playback		0.20	0.15	0.18	0.18	0.18	0.15	0.15	0.15
	Rewind		0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0
	Standby									
13130	Headwheel Motor I	AMP	0.47	0.48	0.49	0.47	0.49	0.47	0.48	0.48
	Record		0.48	0.48	0.49	0.47	0.47	0.48	0.47	0.47
	Playback		0.44	0.41	0.43	0.41	0.40	0.40	0.40	0.40
	Rewind		0.43	0.41	0.44	0.40	0.41	0.40	0.41	0.40
	Standby									
13131	Recorder Input I	AMP	2.90	2.90	2.90	2.93	2.93	2.90	2.87	2.90
	Record		3.14	3.11	3.20	3.11	3.08	3.11	3.08	3.08
	Playback		1.80	1.80	1.80	1.78	1.75	1.73	1.73	1.73
	Rewind		1.51	1.62	1.49	1.48	1.46	1.46	1.42	1.44
	Standby									
13133	Servo Voltage	PCT	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0
	Record		49.00	49.43	49.45	49.71	50.01	49.72	49.72	49.72
	Playback		0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0
	Rewind		0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0
	Standby									
13126	Capstan Motor Spd	PCT	112.10	105.33	105.30	103.96	102.59	103.27	102.59	102.59
	Record		112.10	103.96	105.07	102.59	101.90	101.22	101.22	101.22
	Playback		120.43	117.68	117.14	116.31	115.63	115.63	115.63	115.63
	Rewind		0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0
	Standby									
13127	Headwheel Mo Spd	PCT	98.08	95.48	95.01	93.40	92.88	93.40	92.88	92.88
	Record		97.04	94.44	94.80	93.40	92.85	92.36	92.88	92.36
	Playback		98.6	96.52	96.81	94.44	93.92	93.40	93.40	93.40
	Rewind		100.79	96.00	95.95	94.96	92.88	93.92	93.40	93.40
	Standby									

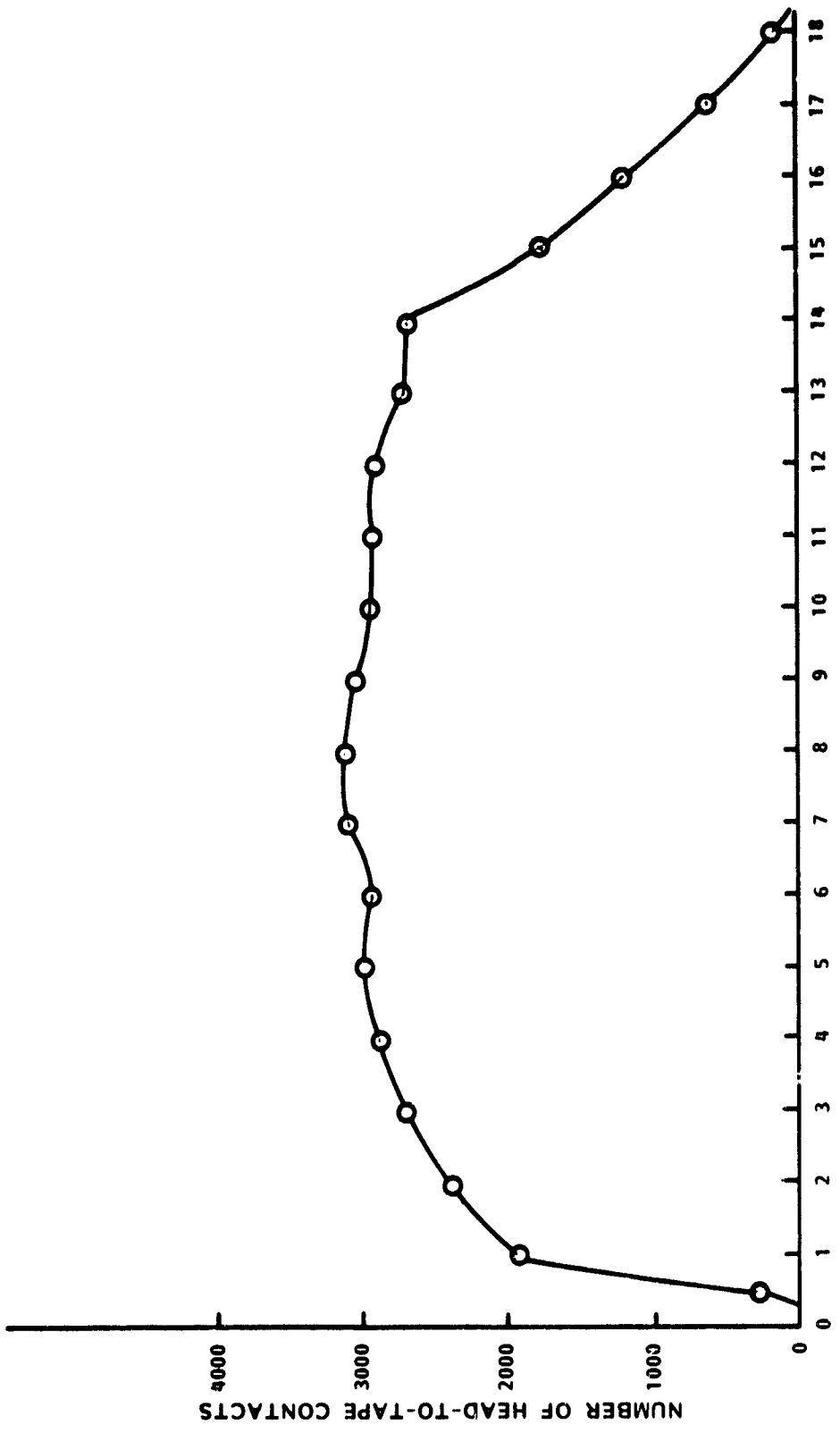

Figure 15-1. Landsat-2 WBVTR-2 Tape Usage Thru Orbit 22957

SECTION 16
RETURN BEAM VIDICON (RBV)
LANDSAT-2

SECTION 16

RETURN BEAM VIDICON (RBV)

RBV was on for quarterly engineering test during this report period. Telemetry data was normal.

Table 16-1 gives typical telemetry values for the RBV Subsystem. Tables 16-2, 16-3 and 16-4 gives telemetry values for Prepare, Read and Hold modes for the three RBV cameras.

Table 16-1. RBV Telemetry Values

Func	Name	Units	Orbits								
			54	5662	10157	15228	17739	19075	19712	21002	22258
14001	CCC Board Temp.	DGC	19.65	20.41	20.15	21.57	18.28	18.83	19.39	19.39	18.31
14002	CCC Pwr. Sup. Temp	DGC	20.52	20.80	20.17	22.79	18.83	19.94	20.49	19.94	18.56
14003	15 VDC Sup.	TMV	3.92	4.00	3.84	3.77	3.92	3.95	3.95	3.92	3.92
14004	+6V, -5.25 VDC Sup.	TMV	2.92	3.13	3.03	2.93	3.05	3.07	3.07	3.07	3.07
14100			N	0.70	1.95	1.18	1.15	0.75	1.45	1.77	1.23
14200 *	VID Output V	TMV	1.05	1.26	0.88	1.18	0.67	1.70	2.40	1.70	1.27
14300			1.03	1.31	1.10	1.17	0.70	1.60	2.17	1.27	1.23
14102			3.85	3.82	3.70	3.85	3.80	3.92	3.80	3.80	3.82
14202 *	Comb. Align Cur.	TMV	3.91	3.88	3.92	3.91	3.97	3.87	3.97	3.97	3.91
14302			3.90	3.83	3.75	3.74	3.85	3.85	3.97	3.85	3.85
14103			24.24	26.51	23.00	29.43	22.70	23.26	26.02	26.02	22.15
14203 *	Elec Temp.	DGC	19.84	22.05	20.18	19.86	19.28	18.18	22.60	20.39	19.00
14303			25.05	29.42	23.42	35.07	22.60	23.70	29.24	29.24	24.65
14104			23.44	26.28	23.15	28.66	21.70	22.26	26.13	24.47	21.98
14204 *	LV Pwr Sup T.	DGC	18.14	20.61	18.90	18.07	17.18	16.62	21.05	17.73	19.04
14304			25.36	29.47	24.00	35.25	23.26	23.26	29.34	28.34	23.65
14105			4.00	3.96	3.84	3.84	4.00	3.97	4.00	4.00	3.98
14205 *	Defl. Pwr. Sup. +10 VDC	TMV	3.97	3.94	3.82	3.81	3.95	3.97	3.97	3.97	3.97
14305			4.00	3.96	3.96	4.00	4.00	4.00	4.00	4.00	4.00
14106			3.67	3.63	3.26	3.54	3.67	3.67	3.67	3.67	3.67
14206 *	L.V.P.S. +6V, -6.3 VDC	TMV	3.65	3.62	3.34	3.50	3.65	3.65	3.65	3.65	3.65
14306			3.70	3.68	3.42	3.72	3.70	3.70	3.70	3.70	3.70
14107			2.61	2.61	2.60	2.51	2.77	2.67	2.65	2.77	2.77
14207 *	Ther. Elec. Cur.	TMV	2.49	2.51	2.44	2.40	2.60	2.55	2.55	2.57	2.65
14307			2.57	2.57	2.71	2.44	2.72	2.57	2.67	2.67	2.70
14108			2.43	2.50	2.46	2.44	2.55	2.55	2.55	2.55	2.55
14208 *	Vid. Fil. Cur.	TMV	2.40	2.36	2.39	2.30	2.40	2.40	2.42	2.40	2.42
14308			2.58	2.54	2.59	2.47	2.60	2.60	2.57	2.57	2.57
14110			2.98	2.96	2.98	2.98	2.97	2.97	2.97	2.97	2.97
14210 *	Vid. Tgt. Volt	TMV	2.86	2.96	2.60	2.88	3.00	3.00	3.10	3.10	3.07
14310			2.63	2.58	2.37	2.52	2.62	2.62	2.67	2.62	2.62
14113			2.92	2.81	2.98	2.79	3.35	2.90	2.90	3.35	3.56
14213 *	Vert Def V	TMV	3.15	3.05	3.16	3.12	3.10	3.12	3.12	3.10	3.12
14313			3.79	3.44	3.04	3.47	4.00	4.00	3.50	3.50	3.50
14114			19.87	19.21	19.85	19.82	21.99	22.55	21.99	21.99	21.31
14214 *	Vid FPT	DGC	20.55	19.80	20.46	20.24	20.54	21.06	21.06	21.06	19.70
14314			20.65	20.56	20.38	21.57	22.40	22.86	22.86	22.40	21.38
14115			21.04	21.31	21.02	21.41	17.07	17.62	18.18	18.18	18.18
14215 *	Foc Coil T	DGC	20.67	21.26	19.17	21.06	17.62	17.62	18.18	17.62	17.62
14315			22.25	22.89	20.61	24.14	18.62	19.18	20.28	20.28	19.18

* - 141XX Refers to Camera 1
142XX Refers to Camera 2
143XX Refers to Camera 3
N - Data not available

Table 16-2. Camera #1 (Blue) Telemetry (Values in TMV)

Func	Name	Units	Mode	Orbits 054	5663	10157	15228	17739	19712	21002	22258
14101	Focus I	TMV	Prep	1.68	1.74	1.67	1.77	1.67	1.70	1.70	1.68
			Read	2.80	2.85	2.80	2.90	2.80	2.82	2.82	2.77
			Hold	0.65	0.69	0.65	0.75	0.65	0.65	0.67	0.65
14109	Grid V	TMV	Prep	0.80	0.78	0.80	0.77	0.80	0.80	0.77	0.77
			Read	2.42	2.42	2.45	2.45	2.42	2.42	2.42	2.42
			Hold	3.95	3.98	3.95	3.97	3.95	3.95	3.95	3.95
14111	Cath I	TMV	Prep	3.05	3.02	3.05	3.02	3.02	3.02	3.02	3.02
			Read	0.83	0.83	0.85	0.82	0.82	0.85	0.85	0.82
			Hold	0.38	0.37	0.37	0.37	0.37	0.37	0.37	0.37
14112	Hor Def	TMV	Prep	1.75	1.77	1.77	1.77	1.77	1.77	1.77	1.77
			Read	3.25	3.25	3.21	3.25	3.22	3.25	3.25	3.22
			Hold	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0
14120	+500 V	TMV	Prep	0.85	0.90	0.92	0.90	0.95	0.90	0.90	.90
			Read	4.05	4.05	4.05	4.05	4.02	4.05	4.05	4.05
			Hold	4.05	4.05	4.05	4.05	4.02	4.02	4.02	4.02

Table 16-3. Camera #2 (Yellow) Telemetry (Values in TMV)

Func	Name	Units	Mode	Orbits 054	5663	10157	15228	17739	19712	21002	22258
14201	Focus I	TMV	Prep	1.56	1.54	1.50	1.50	1.50	1.50	1.50	1.50
			Read	2.65	2.65	2.65	2.65	2.62	2.62	2.62	2.62
			Hold	0.54	0.53	0.54	0.50	0.50	0.50	0.50	0.50
14209	Grid V	TMV	Prep	0.75	0.80	0.80	0.75	0.77	0.80	0.80	0.77
			Read	2.25	2.22	2.25	2.20	2.25	2.25	2.22	2.22
			Hold	4.05	4.11	4.11	4.10	4.07	4.10	4.07	4.07
14211	Cath I	TMV	Prep	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05
			Read	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
			Hold	0.37	0.35	0.35	0.35	0.35	0.37	0.35	0.35
14212	Hor Def	TMV	Prep	1.85	1.87	1.87	1.85	1.85	1.85	1.85	1.85
			Read	3.25	3.31	3.24	3.30	3.30	3.30	3.30	3.30
			Hold	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0
14220	+500V	TMV	Prep	1.15	1.14	1.15	1.12	1.12	1.12	1.12	1.12
			Read	4.25	4.27	4.27	4.27	4.27	4.27	4.27	4.27
			Hold	4.25	4.27	4.27	4.27	4.27	4.27	4.27	4.27

Table 16-4. Camera #3 (Red) Telemetry (Values in TMV)

			Hold	0.37	0.35	0.35					
14212	Hor Def	TMV	Prep	1.85	1.87	1.87	1.85	1.85	1.85	1.85	1.85
			Read	3.25	3.31	3.24	3.30	3.30	3.30	3.30	3.30
			Hold	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0
14220	+500V	TMV	Prep	1.15	1.14	1.15	1.12	1.12	1.12	1.12	1.12
			Read	4.25	4.27	4.27	4.27	4.27	4.27	4.27	4.27
			Hold	4.25	4.27	4.27	4.27	4.27	4.27	4.27	4.27

Table 16-4. Camera #3 (Red) Telemetry (Values in TMV)

				Orbit							
Func	Name	Units	Mode	054	5863	10157	15228	17739	19712	21002	22258
14301	Focus I	TMV	Prep	1.79	1.85	1.77	1.95	1.77	1.80	1.82	1.75
			Read	2.85	2.93	2.85	3.02	2.85	2.90	2.92	2.85
			Hold	0.65	0.72	0.69	0.80	0.67	0.70	0.72	0.65
14309	Grid V	TMV	Prep	0.75	0.75	0.77	0.77	0.77	0.77	0.77	0.77
			Read	2.65	2.66	2.66	2.72	2.67	2.70	2.70	2.72
			Hold	4.08	4.13	4.12	4.12	4.10	4.10	4.10	4.10
14311	Cath I	TMV	Prep	3.25	3.22	3.23	3.22	3.22	3.22	3.22	3.22
			Read	0.54	0.55	0.55	0.55	0.55	0.55	0.55	0.55
			Hold	0.39	0.40	0.40	0.40	0.40	0.40	0.40	0.40
14312	Hor Def	TMV	Prep	2.05	2.07	2.07	2.07	2.02	2.02	2.02	2.02
			Read	3.25	3.42	3.42	3.40	3.40	3.40	3.40	3.40
			Hold	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0
14320	+500 V	TMV	Prep	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
			Read	4.25	4.27	4.27	4.27	4.25	4.25	4.25	4.25
			Hold	4.25	4.27	4.27	4.27	4.25	4.25	4.25	4.25

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SECTION 17

MULTISPECTRAL SCANNER SUBSYSTEM (MSS)

LANDSAT-2

SECTION 17

MULTISPECTRAL SCANNER SUBSYSTEM (MSS)

The MSS Subsystem has operated nominally in this period. Infrequent late line-starts are being observed in the data.

Figure 17-1 shows the number of scenes imaged at each geographic location this quarter. Figure 17-2 shows scenes imaged since launch. Only those scenes received by U.S. and Pakistan ground stations are shown. Scenes (57% of total) transmitted to Canada, Italy, Iran, Japan, Sweden, and Brazil are not shown.

Table 17-1 shows typical telemetry values since launch. All are nominal.

Sun calibrations, performed every month, show performance is nominal. Figures 17-3 to 17-10 show the history of sensor responsivity to stimuli from six levels of illumination from the Cal lamp. Two typical sensors from each of the bands are shown. They are all taken in the mode prime-low gain-compressed. Values shown with triangles were taken in the high gain mode. The line length is a satisfactory 3239 words.

In early July 1979, late line starts began occurring in Landsat MSS data similiar to the MSS late line starts on Landsat-3. The MSS continues to be used in normal operation.

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177                   130333                                              111
178                    3433                       1      3   111          1111122222
179                   234223         2            1     33   443222222111          11233
180                    14121        22            11114      23333333211111  1       32
181                   2259559       2                 *      222222122112222          221
182                     12554     111           1145         3333                      22
183                   123431944333311          1144
184                   41111111111              1112222222         1
185                   33444444444                 11 1111222      443         23222
186                   3    111111                 2222222222                  34444
187                   54444445954                 12222222                    34344
188                    111111 2                 11111                         32232
189                     9555444443
190                     111111
191                     111222221
192                     1111111
193                     1113332
194                        11111
195                        13333
196                        1222
197                      111222
198                        212
199                         22
200                          1
201                         1
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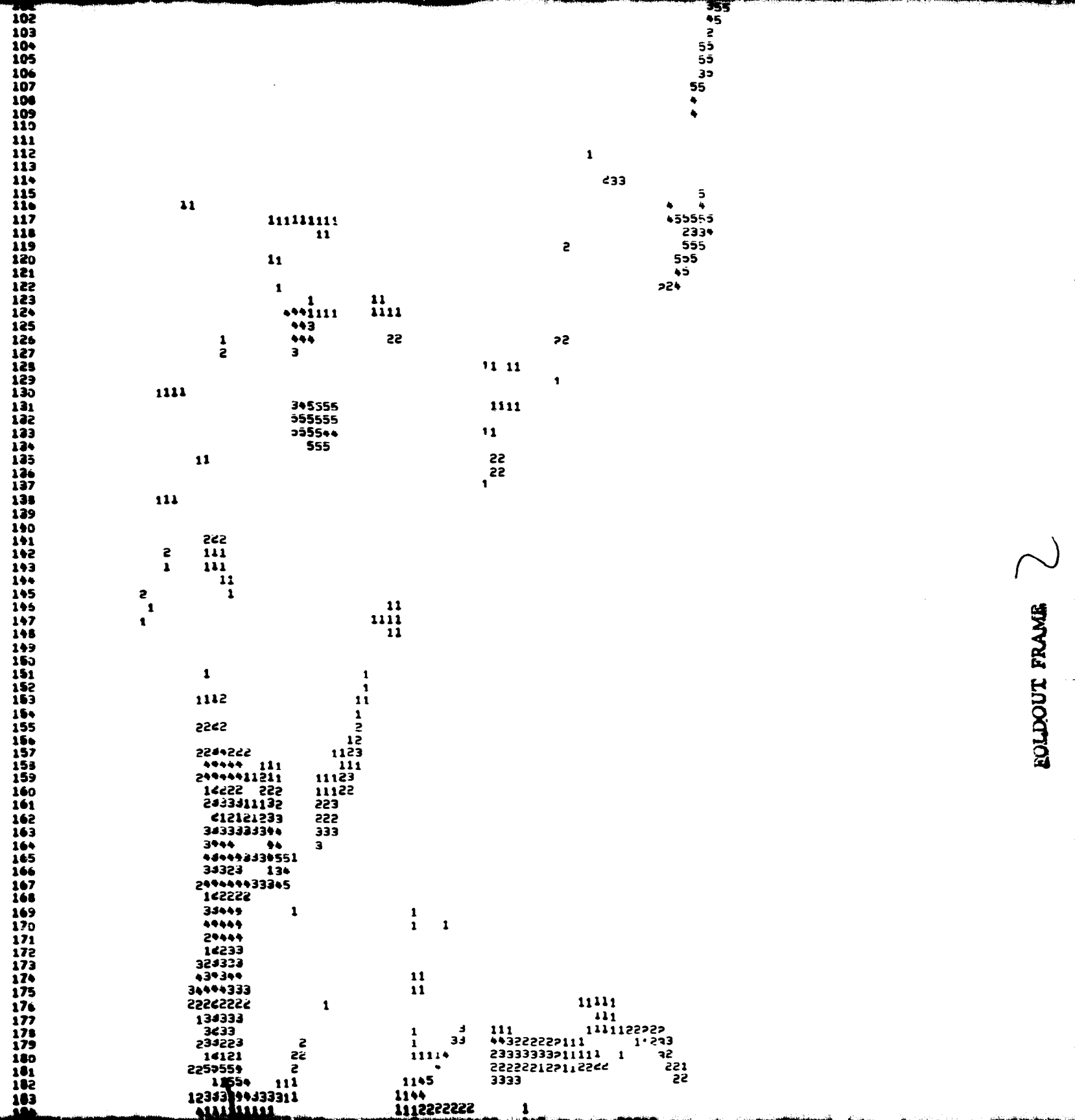

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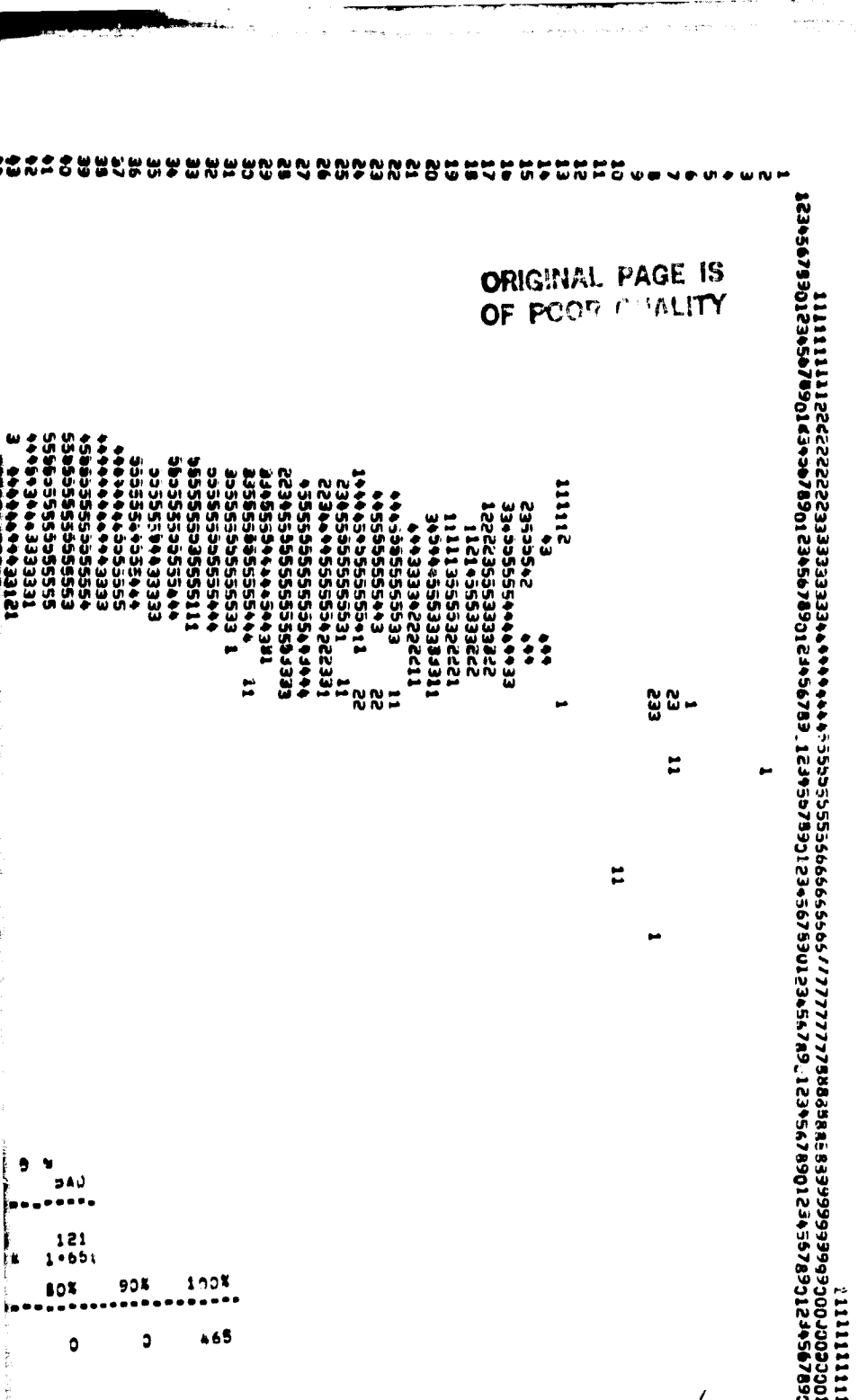
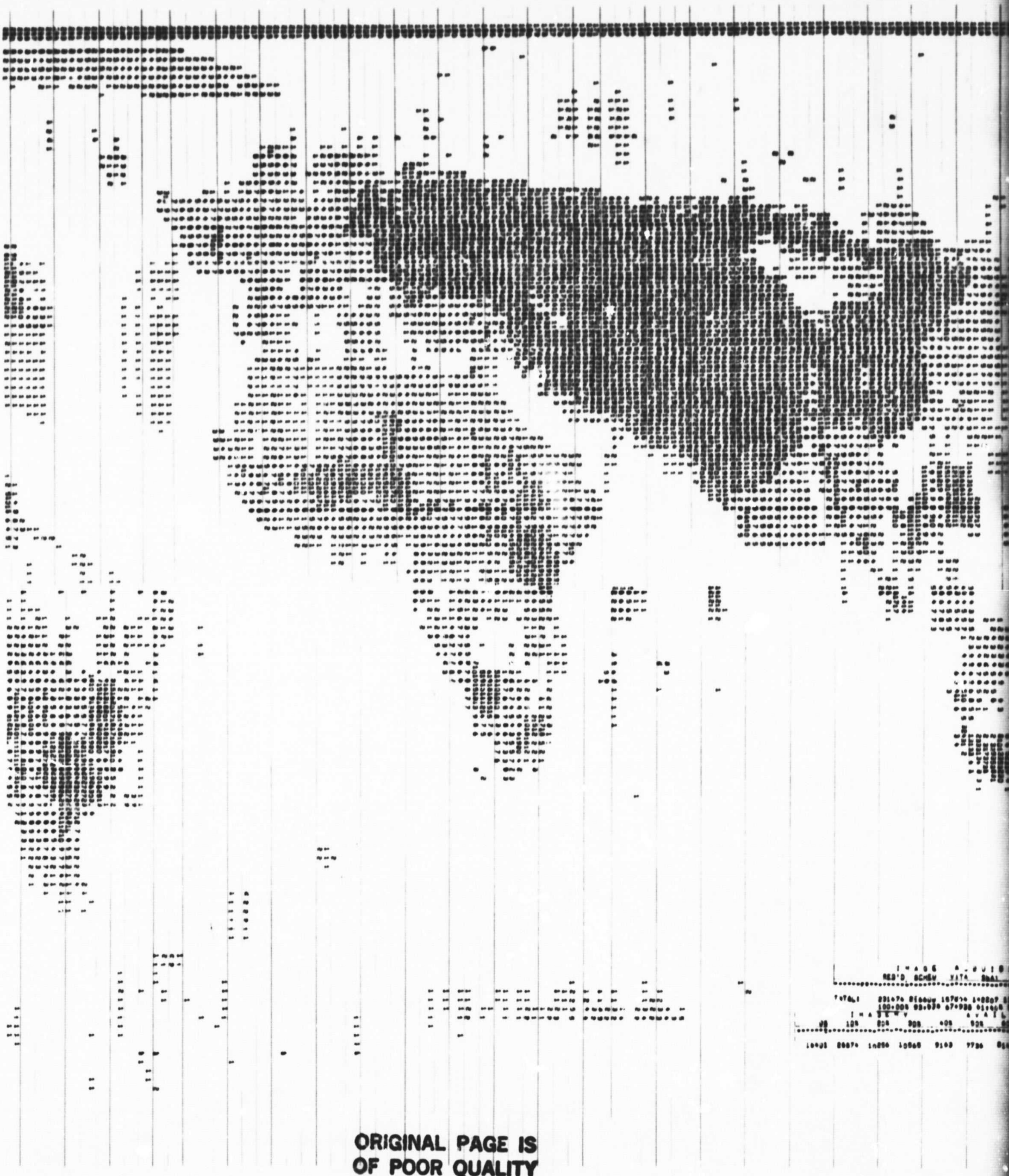


Figure 17-1. MSS Scenes This Quarter
Landsat-2 (Cycles 86-90)



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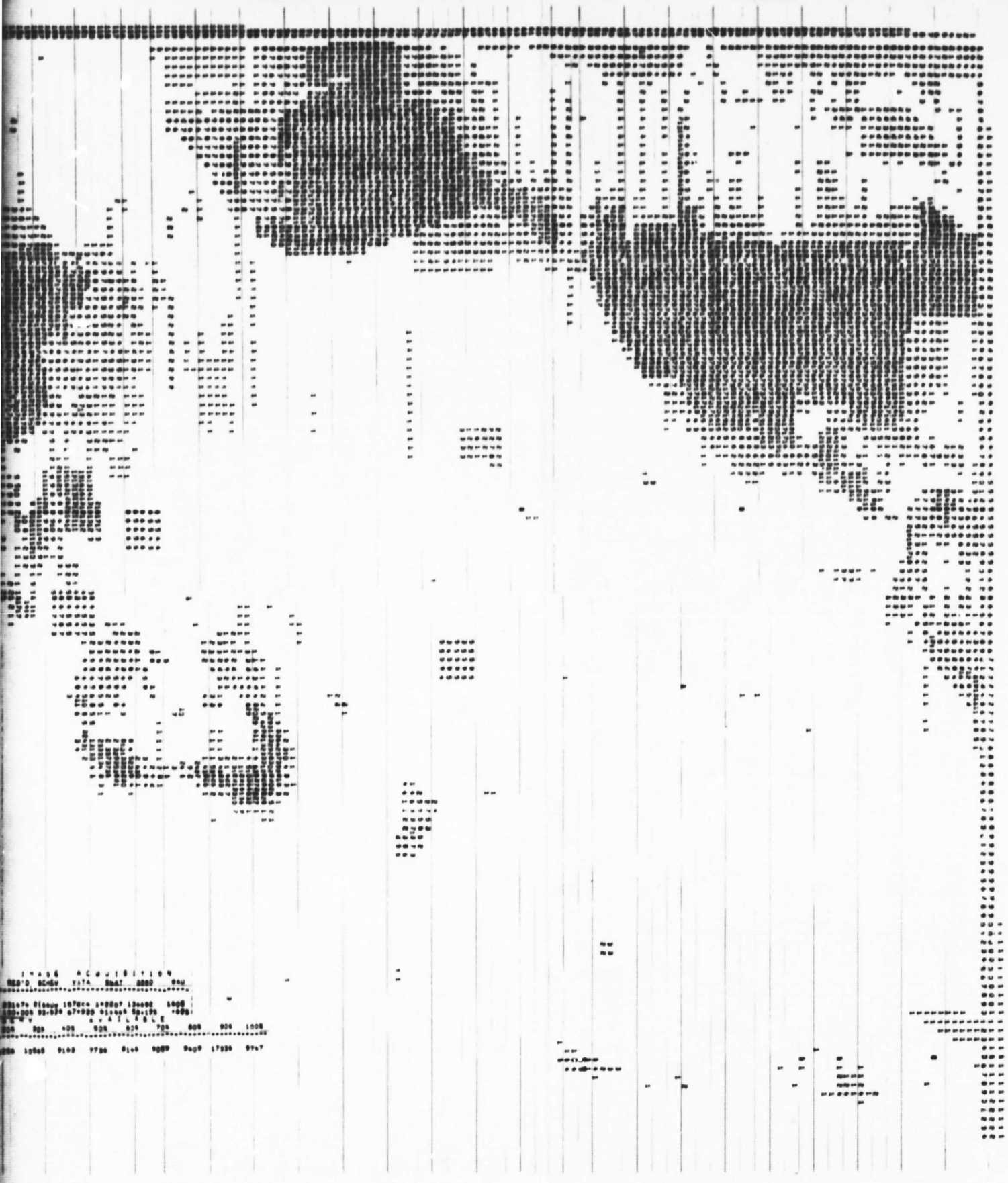

Figure 17.2. MSS Scenes Since Launch
Landsat-2

Table 17-1. MSS Telemetry - Landsat-2

Func	Name	Units	Orbits							
			27	5091	10192	15211	20242	21759	22331	22721
15040	MUX -6 V	TMV	4.05	4.04	4.05	4.05	4.05	4.05	4.05	4.05
15041	A/D SUPPLY	TMV	5.95	5.95	5.95	5.95	5.92	5.92	5.94	5.93
15042	AVERAGE DENSITY DATA TRANS	TMV	1.71	1.95	2.62	1.98	2.12	2.42	2.41	2.42
15043	FIBER OPTICS PLATE 1 TEMP	DGC	18.13	21.75	20.15	21.04	19.33	17.99	17.47	17.17
15044	FIBER OPTICS PLATE 2 TEMP	DGC	17.87	20.28	18.5	19.50	17.62	16.07	15.57	15.27
15045	MUX TEMP	DGC	23.38	23.63	24.68	28.27	25.12	21.05	20.15	20.41
15046	ELEC COVER TEMP	DGC	20.25	22.96	20.01	21.02	19.37	17.76	17.20	16.99
15047	PWR. SUP. TEMP	DGC	19.45	21.62	20.66	21.75	19.92	17.81	17.32	17.15
15048	SCAN MIR REG. TEMP	DGC	18.30	21.13	20.94	22.37	20.19	17.25	16.81	16.55
15049	SCAN MIR DRIVE ELEC. TEMP	DGC	18.96	21.42	21.25	22.64	20.63	17.48	17.08	16.89
15050	SCAN MIR DRIVE COVER TEMP	DGC	17.26	21.21	20.85	22.25	20.06	17.23	16.77	16.46
15051	SCAN MIR TEMP	DGC	17.26	20.89	20.46	22.06	19.55	17.01	16.47	16.08
15052	ROT. SHUT HOUSING TEMP	DGC	23.26	20.28	18.58	19.58	17.74	16.20	15.61	15.37
15053	SCAN MIR REG VOLT	TMV	4.70	4.57	4.63	4.63	4.58	4.63	4.64	4.64
15054	CAL LAMP CURRENT	TMV	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
15055	BAND 1 15 VDC	TMV	4.98	4.97	4.97	4.97	4.97	4.97	4.97	4.97
15056	BAND 2 15 VDC	TMV	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
15057	BAND 3 15 VDC	TMV	4.95	4.95	4.95	4.95	4.94	4.95	4.95	4.95
15058	BAND 4 15 VDC	TMV	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
15059	TLM -15 V	TMV	5.06	5.07	5.07	5.07	5.07	5.07	5.07	5.07
15060	+12 V/-6 V	TMV	5.03	5.02	5.01	5.02	5.01	5.01	5.01	5.01
15061	LOGIC +5 V	TMV	4.81	4.83	4.85	4.83	4.85	4.86	4.91	4.88
15062	RECT. +19 V	TMV	5.03	5.05	5.05	5.05	5.02	5.06	5.05	5.05
15063	RECT. -19 V	TMV	3.60	3.60	3.60	3.60	3.61	3.60	3.61	3.60
15064	BAND 1 HVA	TMV	4.95	4.95	4.95	4.95	4.95	4.95	4.95	4.95
15065	BAND 1 HVB	TMV	F	F	F	F	F	F	F	F
15066	BAND 2 HVA	TMV	4.70	4.75	4.73	4.73	4.72	4.72	4.72	4.71
15067	BAND 2 HVB	TMV	F	F	F	F	F	F	F	F
15068	BAND 3 HVA	TMV	4.72	4.73	4.75	4.75	4.75	4.75	4.75	4.75
15069	BAND 3 HVB	TMV	F	F	F	F	F	F	F	F
15070	SHUT MOT. CONTR. INTEG	TMV	2.60	2.60	2.60	2.58	2.59	2.60	2.60	2.60
15071	SCAN MIRROR DRIVE CLOCK	TMV	2.00	2.00	2.01	2.00	2.00	2.00	2.01	2.01

F = Unit OFF

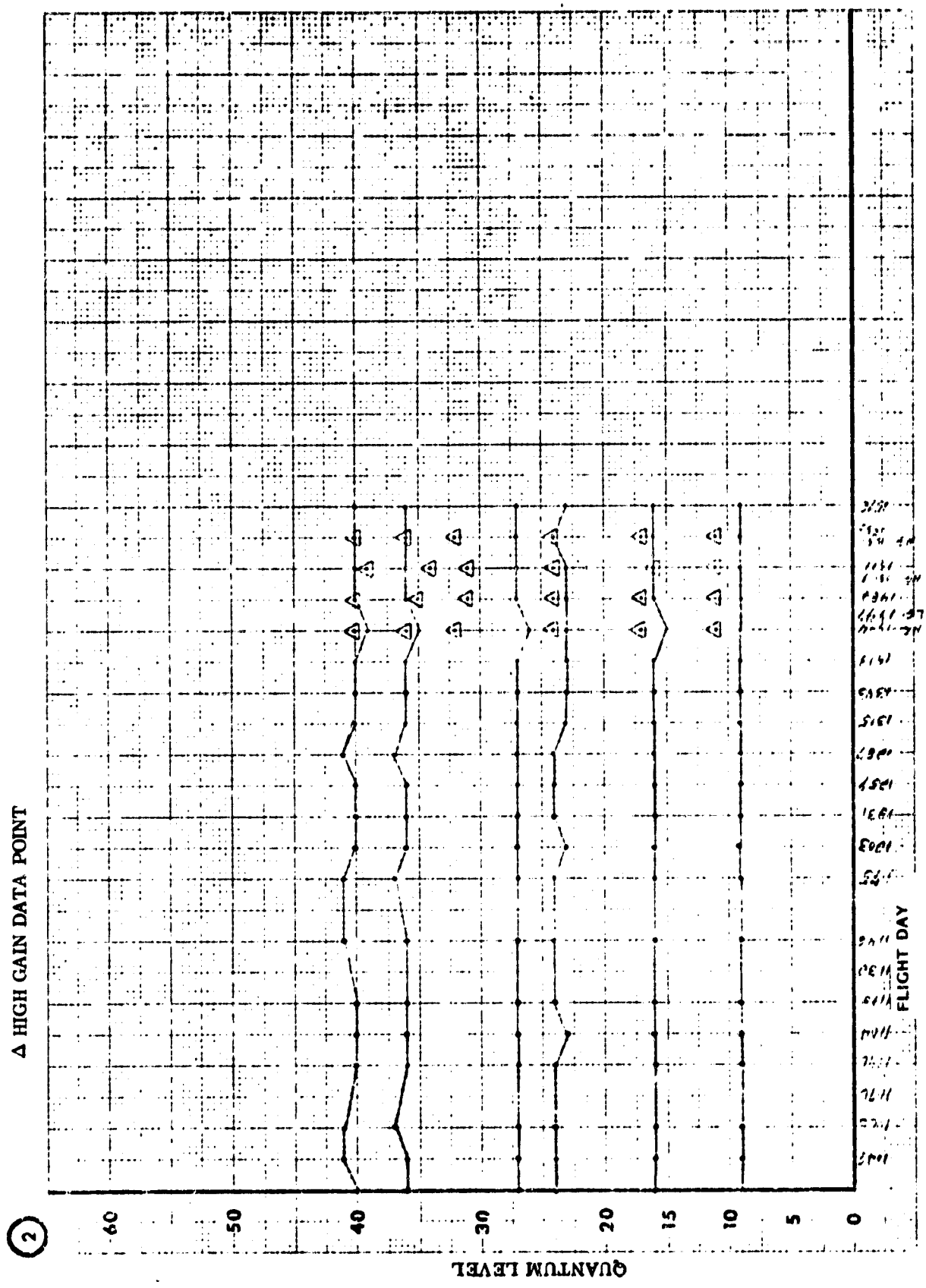

Figure 17.3. Landsat-2 Sensor 2 Response to Six Light Levels of Cal Lamp

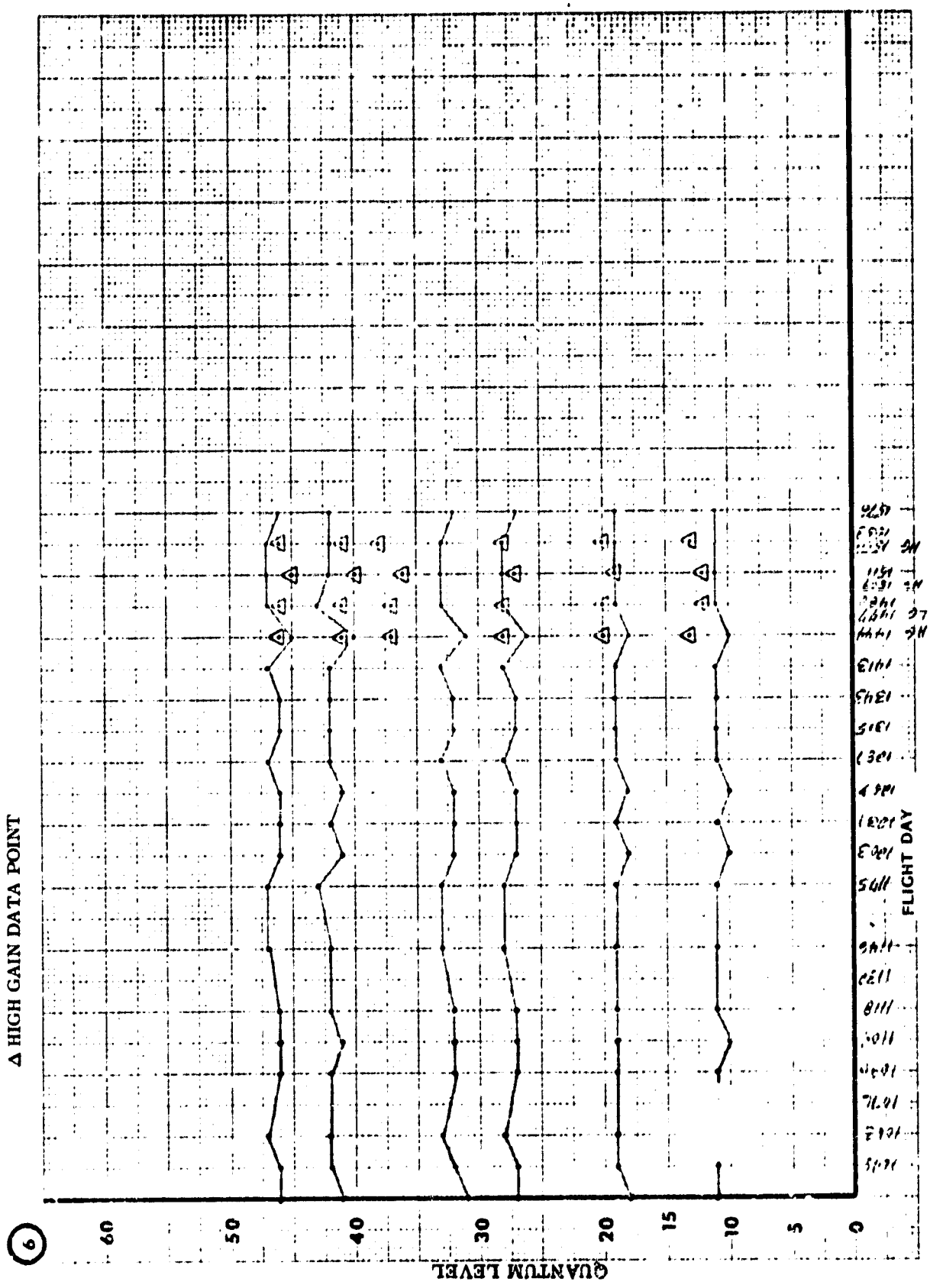

Figure 17-4. Landsat-2 Sensor 6 Response to Six Light Levels of Cal Lamp

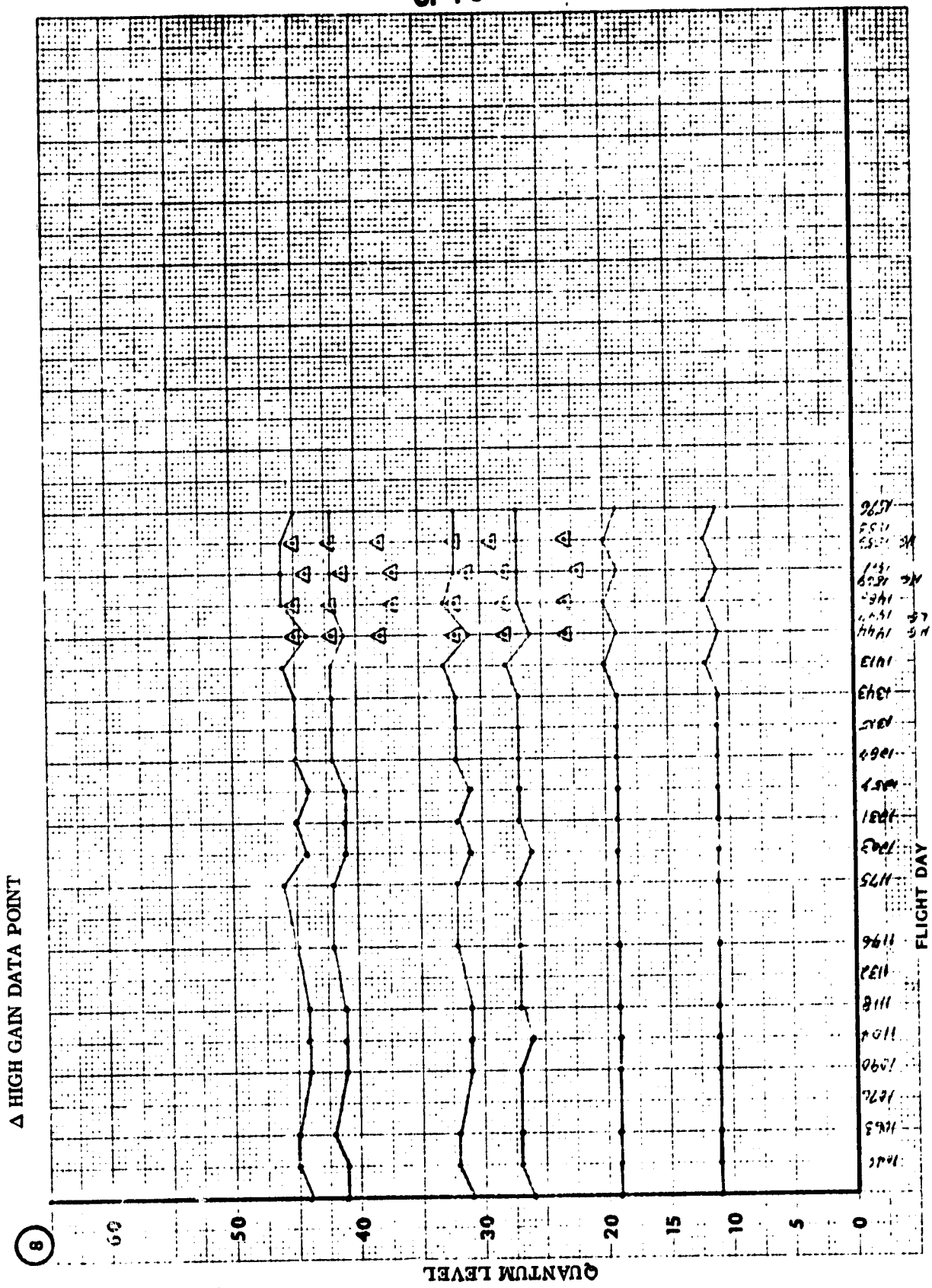

Figure 17.5. Landsat-2 Sensor 8 Response to Six Light Levels from Cal Lamp

C-2

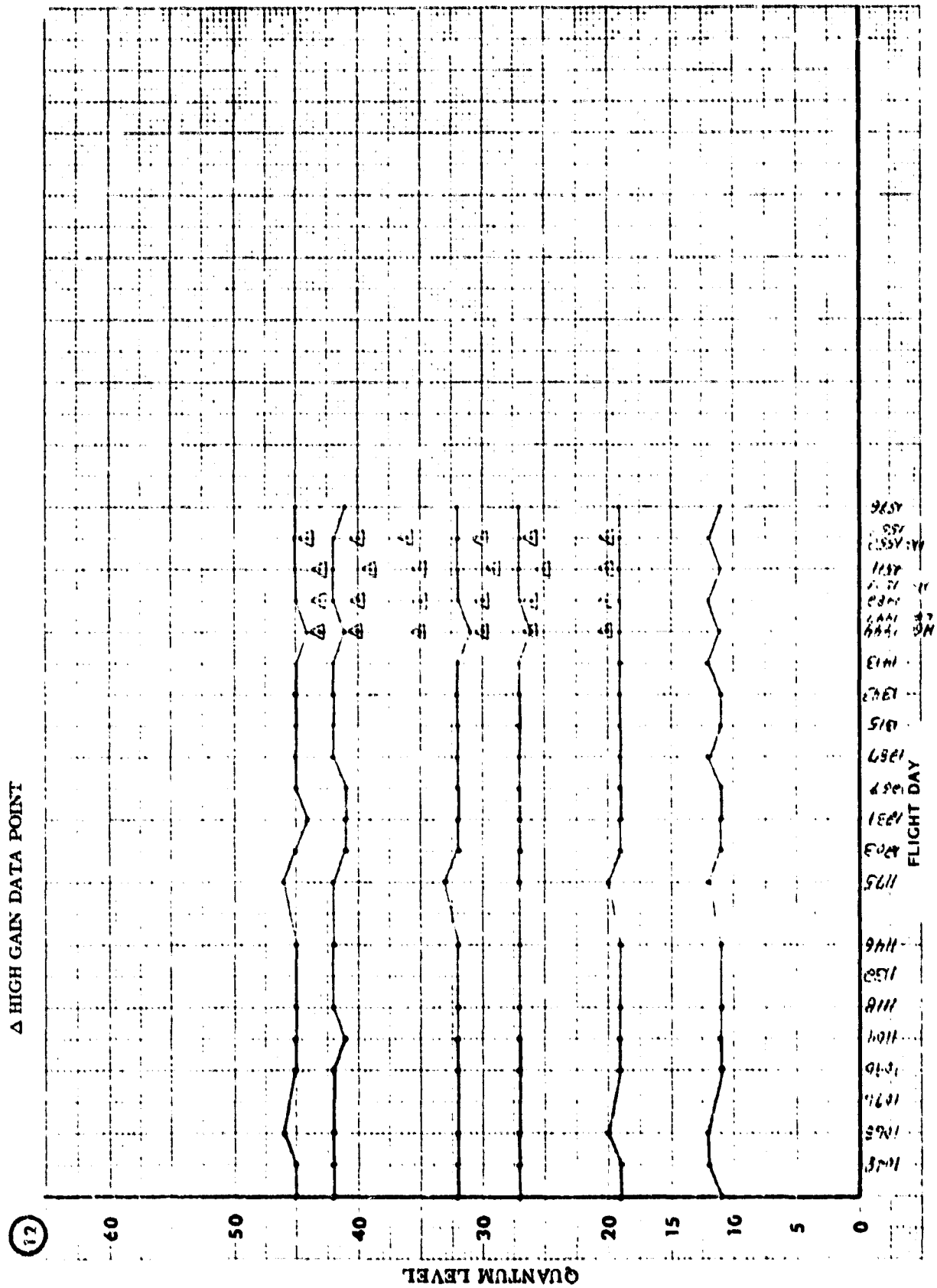

Figure 17-6. Landsat-2 Sensor 12 Response to Six Light Levels from Cal Lamp

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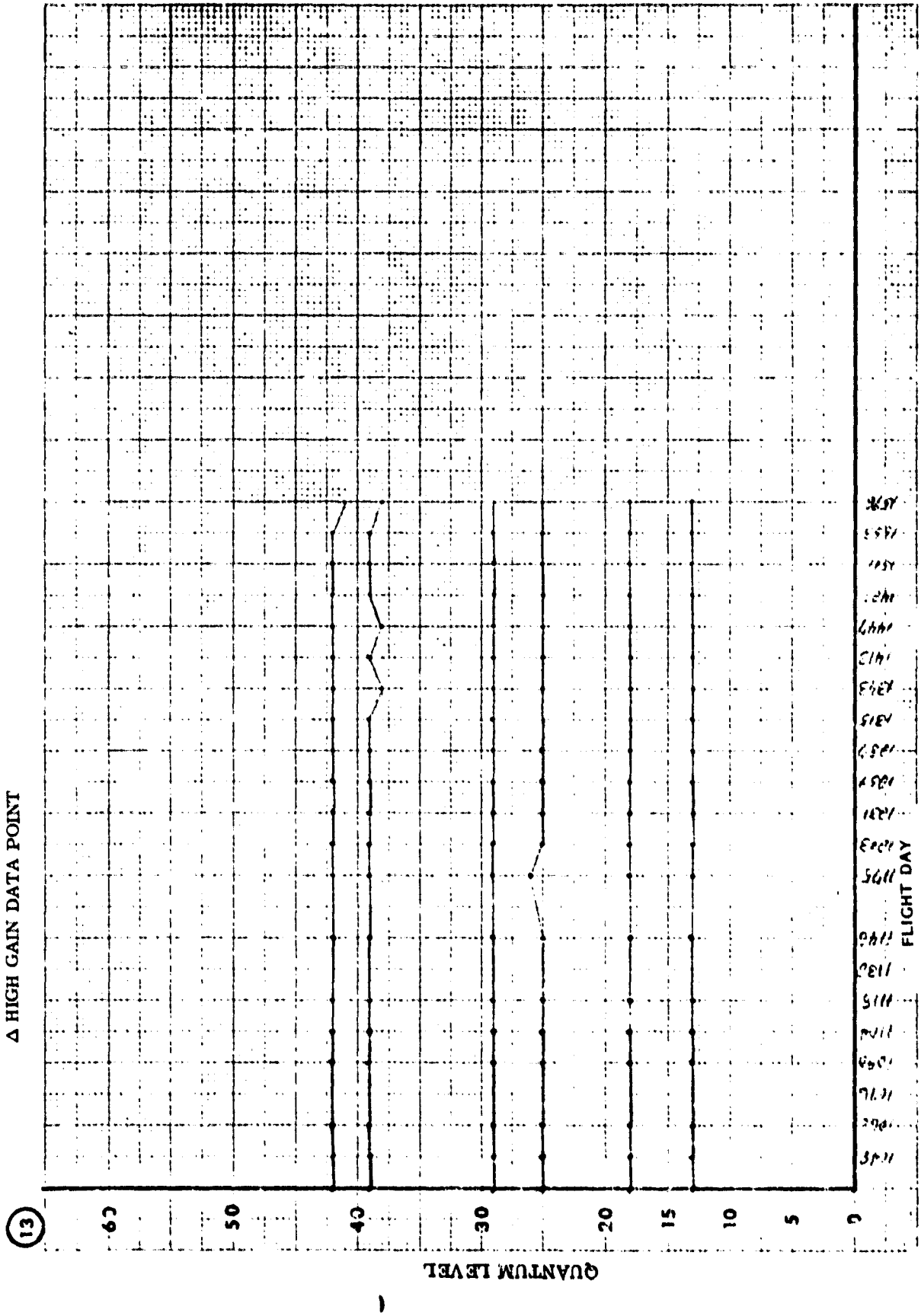

Figure 17-7. Land t-2 Sensor 13 Response to Six Light Levels from Cal Lamp

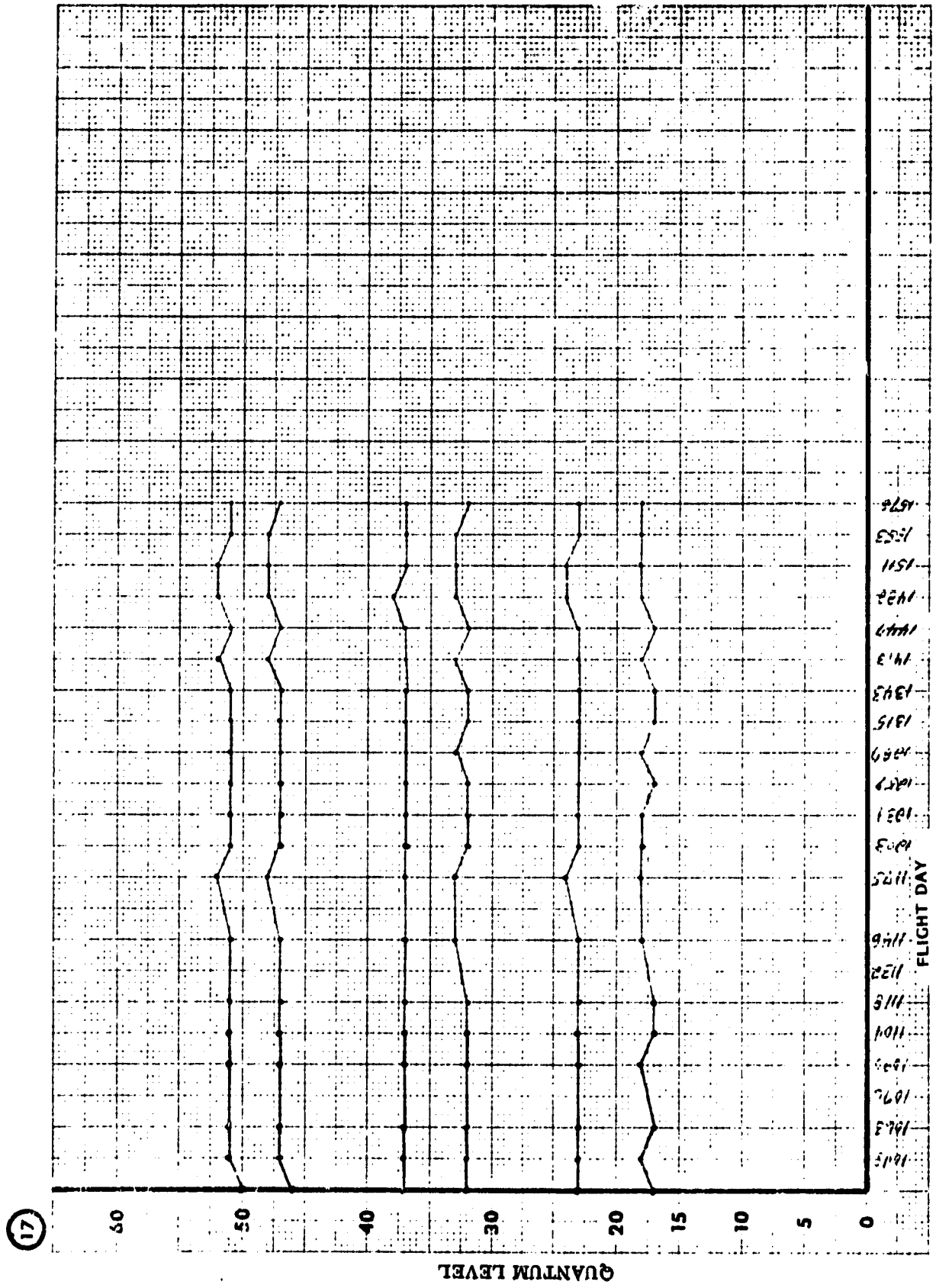

Figure 17-8. Landsat-2 Sensor 17 Response to Six Light Levels from Cal Lamp

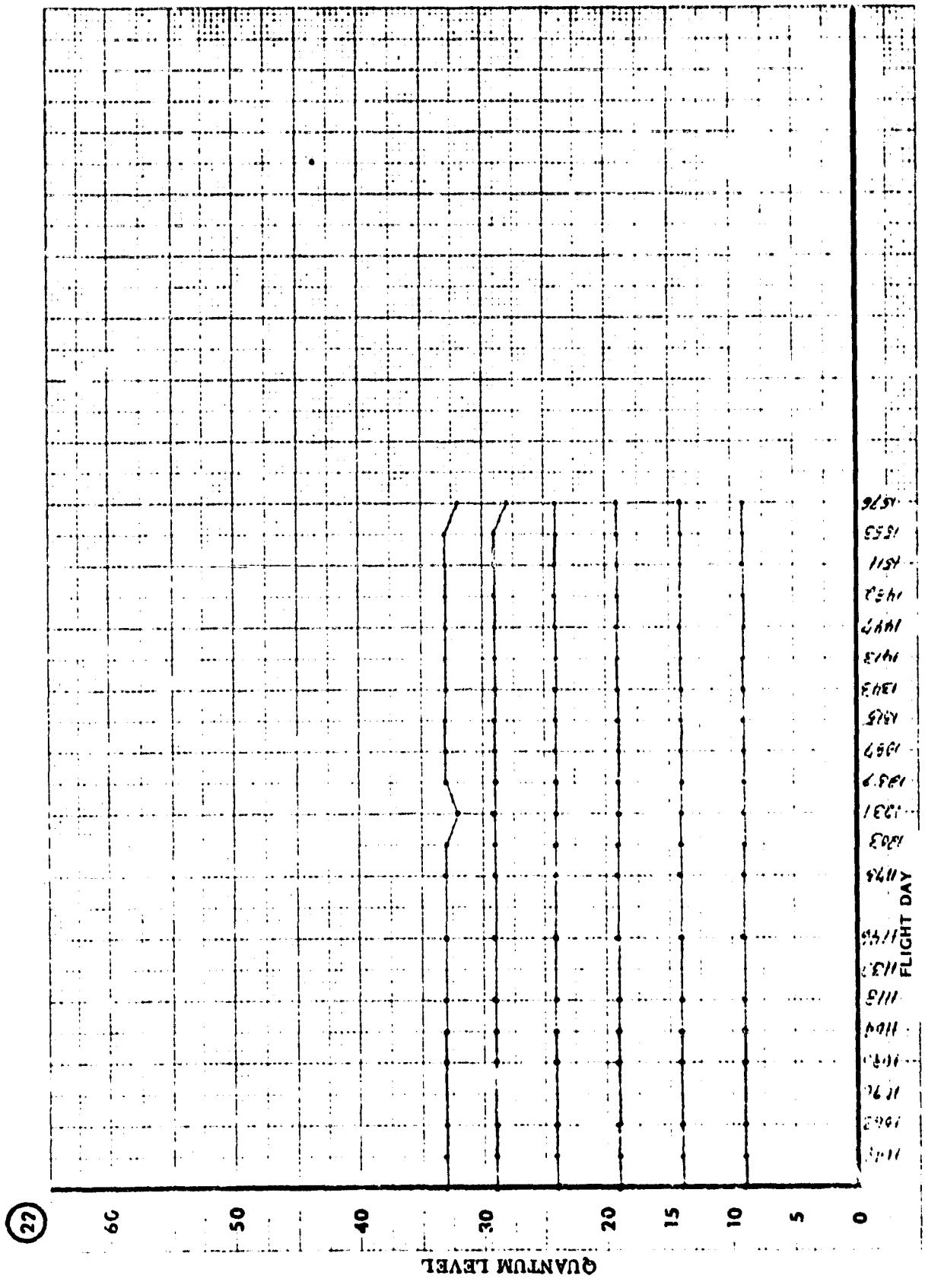

Figure 17-9. Landsat-2 Sensor 22 Response to Six Light Levels from Cal Lamp

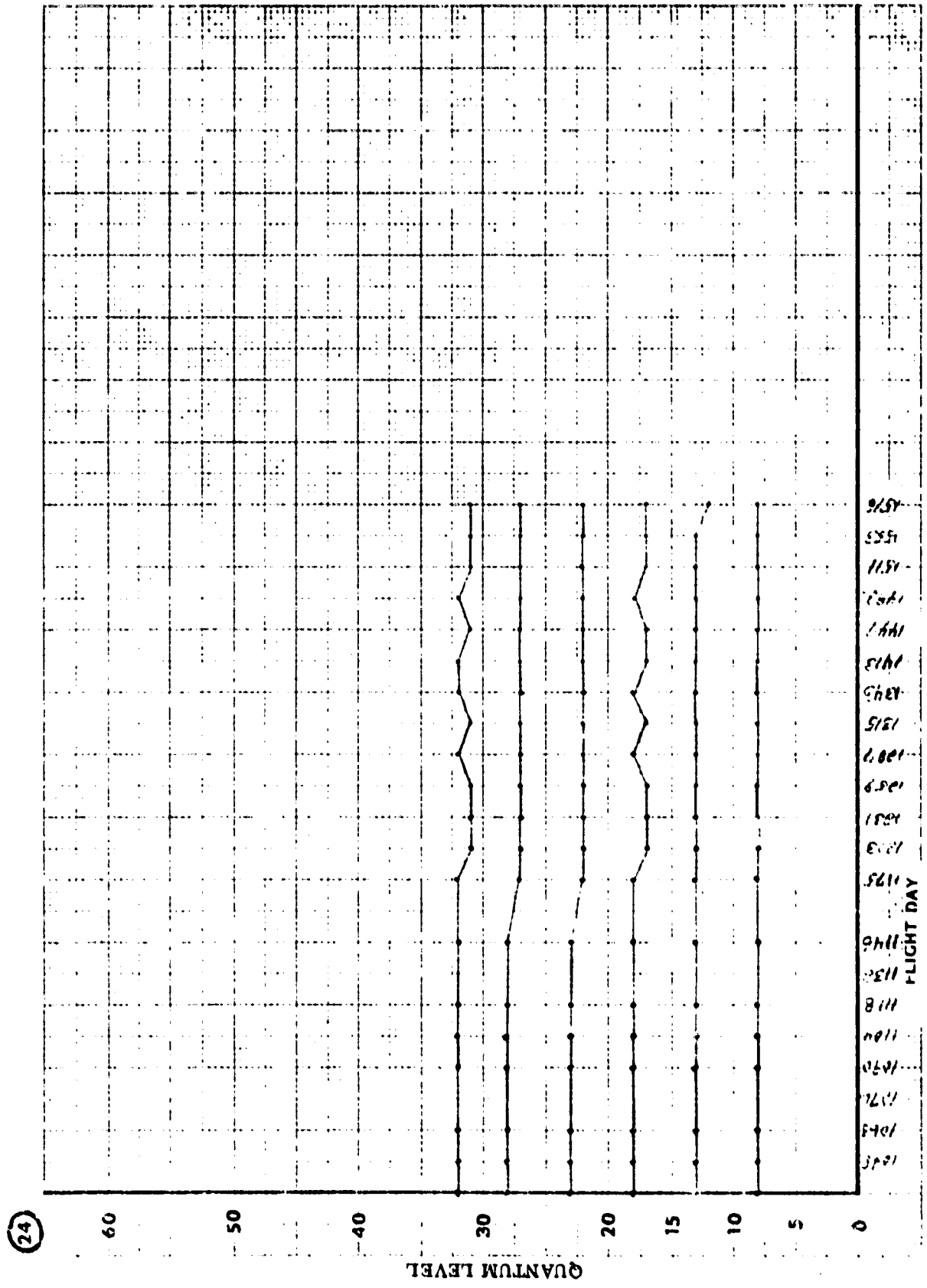

Figure 17-10. Landsat-2 Sensor 24 Response to Six Light Levels from Cal Lamp

SECTION 18

DATA COLLECTION SYSTEM (DCS)

LANDSAT-2

SECTION 18

DATA COLLECTION SUBSYSTEM (DCS)

The DCS Subsystem was turned OFF during Orbit 15857 on 4 March 1978, and the function assumed by Landsat-3. The subsystem is capable of resuming operational status if desired.

APPENDIX A

LANDSAT-2 ANOMALIES AND OBSERVATIONS

Appendix A. Landsat-2 Anomalies and Observations

Date	Anomaly/Observation	How Observed	Comments
Prelaunch	Forward Scanner Pressure Leak	Spacecraft Integration	Before launch pressure increased. After launch pressure decreased. No anticipated effect on Scanner or S/C mission.
Prelaunch	Defective TLM Functions 1264, 4002, 13200	Spacecraft Integration	Functions measure non-critical temperatures. Sensors failed prior to launch. Mission unaffected.
3, 8, 75	Unencoded command 781, CIU Channel B Off, received by spacecraft from RF Interference. Commands 782 or 786, switch comedecs; and commands 780 or 784, switch PWM regulator, received at other times.	On-Line	Non-Landsat OCC Authorized Unencoded commands received in Orbit 619, 640, 743, 1575, 1700, 2605, 3164, 4769, 5035, 7925, 8721, 8804, 9523, 9863, 10268, 10466, 10523, 10583, 10603, 13309, 14508, 14864, 15553, 16279, 17394, 19792, 22333
3, 17, 75	MMCA Pitch Flux Density TLM Drift	Off-Line	Telemetry decreased 8 counts and indicates increased flux density on charged magnet. Probable sensor drift. No apparent effect on S/C performance
4, 5, 75	WBVTR-1 Rewind Failure (MDR E01252)	On-Line	WBVTR-1 failed to execute Rewind command or prematurely terminated rewinds due to false BOT signal. Subsequent commands or Fool-Logic techniques allowed return to operation. Investigation Committee report issued. Problems occurred Orbit 1021, 1532, 1566, 2238. Operation restricted to 300 thru 1500 feet.
6, 9, 75	WBVTR-2 had Short Rewind (MDR E01255)	On-Line	WBVTR-2 started rewind but stopped prematurely in Orbit 1919 and again in Orbit 3854. Investigation Committee did not define a probable cause but assigned a momentary False BOT as reason for short rewind. Unit remains operational.
8/3/75	WBVTR-1 data did not provide sync to ground station (MDR D04930)	On-Line	One head circuit of WBVTR-1 failed to operate. 25% of data lost in data stream. Operation discontinued until early 1976, when it was used with RBV only.
11, 14, 75	8 SS False End-of-Line Codes (MDR D04940)	Off-Line	Occasional End-of-Line codes occurring in preamble or along video data. Creates 4 black and 4 white words in scene data. Occurs over magnetic anomalies with low incidence rate. Operation continued
1, 25, 76	Solar Array Current Notch (MDR D04934)	On-Line	In Orbit 5123, abnormal drops in solar array current appeared for portion of satellite day. S/C operation unaffected because solar array has excess power to date.
7, 30, 76	Battery 6 Turned Off, Subsequent Battery 1, 2, 5, 6, 7 and 8 Turned Off.	On-Line & Off-Line	Battery 6 decreased in load share and rose in charge share thereby causing overcharge. Temperature increased and unit was turned off in Orbit 7601. (Returned to service in Orbit 7992.) See Table 3-2 for history of all battery restoration cycles.
7, 29, 76	WBVTR-2 Automatic Shutdown by SMART	On-Line	SMART circuits detected high headwheel currents in Orbit 7720 and shutdown WBVTR-2. WBVTR-2 operation was normal; high headwheel current assigned to slippest phase. Normal operation resumed after reset.
12, 21, 76	WBVTR-2 had 30% high P/B speed (MDRD04936)	On-Line	Ground equipment would not synch on WBVTR-2 P/B data during Orbit 9738 P/B. Analysis showed P/B speed was 30% high. Toggling, record to P/B, restored normal operation. Occurred frequently this quarter requiring replay of garbled data or lost data.
1, 15, 77	WBVTR-1 second head failed (MDR D04937)	On-Line	Observation of CRT trace during WBVTR-1 RBV P/B data in Orbit 10086 showed second head failed. Operation discontinued.
9, 12, 77	Payload Automatic Inhibit from ECAM by SMART	On-Line	SMART circuits detected S/C unreg bus low voltage on Orbit 13342 caused by operation problems. Inhibited further payload operation from ECAM. Reset returned S/C to normal. Recurred during Orbits 14865, 15013, 15156, 16685, 16698, 16744. Reset returned S/C to normal each time.
1, 3, 79	COMSTOR went to an indeterminate mode MDR #D04546	On-Line	During loading of ECAM in Orbit 20193 a command abort occurred during or at end of "Serial Data Transfer On," command 007. COMSTOR went from Activate to an indeterminate mode. COMSTOR was reloaded and is performing normally.
1, 15, 79	NBTR-1 failed during P/B MDR D04947	On-Line	NBTR-1 halted after 35 seconds of P/B in Orbit 20266. Subsequent operation attempts unsuccessful. Unit has 18320 in-flight operation hours. Motor current is high.
4/25/79	RMP2 (Ball Bearing Gyro) current high beginning Orbit 21672. Sensitivity decreased on 1 May 1979 (MDR D04949)	On-Line	RMP1 (Gas Bearing Gyro) turned on in Orbit 21737 (30 April 1979) and enabled in Orbit 21754 on 1 May 1979. RMP2 run-down tests indicate failure of unit.
7/1/79	MSS late line starts were detected in early July 1979	Off-Line	MSS continues to be used in normal operation. Anomaly also occurs in Landsat-3.

APPENDIX B

LANDSAT-2 SPACECRAFT ORBIT REFERENCE TABLES

APPENDIX B

LANDSAT-2

SPACECRAFT ORBIT REFERENCE TABLES

FROM JANUARY 1979 THROUGH APRIL 1980

ORBIT 20070 TO 26846

FLIGHT DAY 1440 THROUGH 1925

Landsat-2

January 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	1	1440	20070-20083	182-195	14	80
2	2	1441	20084-20097	196-209	15	80
3	3	1442	20098-20111	210-223	16	80
4	4	1443	20112-20125	224-237	17	80
5	5	1444	20126-20139	238-251	18	80
6	6	1445	20140-20153	1- 14	1	81
7	7	1446	20154-20167	15- 28	2	81
8	8	1447	20168-20181	29- 42	3	81
9	9	1448	20182-20195	43- 56	4	81
10	10	1449	20196-20209	57- 70	5	81
11	11	1450	20210-20223	71- 84	6	81
12	12	1451	20224-20237	85- 98	7	81
13	13	1452	20238-20251	99-112	8	81
14	14	1453	20252-20265	113-126	9	81
15	15	1454	20266-20279	127-140	10	81
16	16	1455	20280-20293	141-154	11	81
17	17	1456	20294-20306	155-167	12	81
18	18	1457	20307-20320	168-181	13	81
19	19	1458	20321-20334	182-195	14	81
20	20	1459	20335-20348	196-209	15	81
21	21	1460	20349-20362	210-223	16	81
22	22	1461	20363-20376	224-237	17	81
23	23	1462	20377-20390	238-251	18	81
24	24	1463	20391-20404	1- 14	1	82
25	25	1464	20405-20418	15- 28	2	82
26	26	1465	20419-20432	29- 42	3	82
27	27	1466	20433-20446	43- 56	4	82
28	28	1467	20447-20460	57- 70	5	82
29	29	1468	20461-20474	71- 84	6	82
30	30	1469	20475-20488	85- 98	7	82
31	31	1470	20489-20502	99-112	8	82

Landsat-2

February 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	32	1471	20503-20516	113-126	9	82
2	33	1472	20517-20530	127-140	10	82
3	34	1473	20531-20544	141-154	11	82
4	35	1474	20545-20557	155-167	12	82
5	36	1475	20558-20571	168-181	13	82
6	37	1476	20572-20585	182-195	14	82
7	38	1477	20586-20599	196-209	15	82
8	39	1478	20600-20613	210-223	16	82
9	40	1479	20614-20627	224-237	17	82
10	41	1480	20628-20641	238-251	18	82
11	42	1481	20642-20655	1- 14	1	83
12	43	1482	20656-20669	15- 28	2	83
13	44	1483	20670-20683	29- 42	3	83
14	45	1484	20684-20699	43- 56	4	83
15	46	1485	20698-20711	57- 70	5	83
16	47	1486	20712-20725	71- 84	6	83
17	48	1487	20726-20739	85- 98	7	83
18	49	1488	20740-20753	99-112	8	83
19	50	1489	20754-20767	113-126	9	83
20	51	1490	20768-20781	127-140	10	83
21	52	1491	20782-20795	141-154	11	83
22	53	1492	20796-20808	155-167	12	83
23	54	1493	20809-20822	168-181	13	83
24	55	1494	20823-20836	182-195	14	83
25	56	1495	20837-20850	196-209	15	83
26	57	1496	20851-20864	210-223	16	83
27	58	1497	20865-20878	224-237	17	83
28	59	1498	20879-20892	238-251	18	83

Landsat-2

March 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	60	1499	20893-20906	1- 14	1	84
2	61	1500	20907-20920	15- 28	2	84
3	62	1501	20921-20934	29- 42	3	84
4	63	1502	20935-20948	43- 56	4	84
5	64	1503	20949-20962	57- 70	5	84
6	65	1504	20963-20976	71- 84	6	84
7	66	1505	20977-20990	85- 98	7	84
8	67	1506	20991-21004	99-112	8	84
9	68	1507	21005-21018	113-126	9	84
10	69	1508	21019-21032	127-140	10	84
11	70	1509	21033-21046	141-154	11	84
12	71	1510	21047-21059	155-167	12	84
13	72	1511	21060-21073	168-181	13	84
14	73	1512	21074-21087	182-195	14	84
15	74	1513	21088-21101	196-209	15	84
16	75	1514	21103-21115	210-223	16	84
17	76	1515	21116-21129	224-237	17	84
18	77	1516	21130-21143	238-251	18	84
19	78	1517	21144-21157	1- 14	1	85
20	79	1518	21158-21171	15- 28	2	85
21	80	1519	21172-21185	29- 42	3	85
22	81	1520	21186-21199	43- 56	4	85
23	82	1521	21200-21213	57- 70	5	85
24	83	1522	21214-21227	71- 84	6	85
25	84	1523	21228-21241	85- 98	7	85
26	85	1524	21242-21255	99-112	8	85
27	86	1525	21256-21269	113-126	9	85
28	87	1526	21270-21283	127-140	10	85
29	88	1527	21284-21297	141-154	11	85
30	89	1528	21298-21310	155-167	12	85
31	90	1529	21311-21324	168-181	13	85

Landsat-2

April 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	91	1530	21325-21338	182-195	14	85
2	92	1531	21339-21352	196-209	15	85
3	93	1532	21353-21366	210-223	16	85
4	94	1533	21367-21380	224-237	17	85
5	95	1534	21381-21394	238-251	18	85
6	96	1535	21395-21408	1- 14	1	86
7	97	1536	21409-21422	15- 29	2	86
8	98	1537	21423-21436	29- 42	3	86
9	99	1538	21437-21450	43- 56	4	86
10	100	1539	21451-21464	57- 70	5	86
11	101	1540	21465-21478	71- 84	6	86
12	102	1541	21479-21492	85- 98	7	86
13	103	1542	21493-21506	99-112	8	86
14	104	1543	21507-21520	113-126	9	86
15	105	1544	21521-21534	127-140	10	86
16	106	1545	21535-21548	141-154	11	86
17	107	1546	21549-21561	155-167	12	86
18	108	1547	21562-21575	168-181	13	86
19	109	1548	21576-21589	182-195	14	86
20	110	1549	21590-21603	196-209	15	86
21	111	1550	21604-21617	210-223	16	86
22	112	1551	21618-21631	224-237	17	86
23	113	1552	21632-21645	238-251	18	86
24	114	1553	21646-21659	1- 14	1	87
25	115	1554	21660-21673	15- 28	2	87
26	116	1555	21674-21687	29- 42	3	87
27	117	1556	21688-21701	43- 56	4	87
28	118	1557	21702-21715	57- 70	5	87
29	119	1558	21716-21729	71- 84	6	87
30	120	1559	21730-21743	85- 98	7	87

Landsat-2

May 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	121	1560	21744-21757	99-112	8	87
2	121	1561	21758-21771	113-126	9	87
3	123	1562	21772-21785	127-140	10	87
4	124	1563	21786-21799*	141-154*	11	87
5	125	1564	*21800-21812	*155-167	12	87
6	126	1565	21813-21826	168-181	13	87
7	127	1566	21827-21840	182-195	14	87
8	128	1567	21841-21854	196-209	15	87
9	129	1568	21855-21868	210-223	16	87
10	130	1569	21869-21882	224-237	17	87
11	131	1570	21883-21896	238-251	18	87
12	132	1571	21897-21910	1- 14	1	88
13	133	1572	21911-21924	15- 28	2	88
14	134	1573	21925-21938	29- 42	3	88
15	135	1574	21939-21952	43- 56	4	88
16	136	1575	21953-21966	57- 70	5	88
17	137	1576	21967-21980	71- 84	6	88
18	138	1577	21981-21994	85- 98	7	88
19	139	1578	21995-22008	99-112	8	88
20	140	1579	22009-22022	113-126	9	88
21	141	1580	22023-22036	127-140	10	88
22	142	1581	22037-22050*	141-154*	11	88
23	143	1582	*22051-22063	*155-169	12	88
24	144	1583	22064-22077	168-181	13	88
25	145	1584	22078-22091	182-195	14	88
26	146	1585	22092-22105	196-209	15	88
27	147	1586	22106-22119	210-223	16	88
28	148	1587	22120-22133	224-237	17	88
29	149	1538	22134-22147	238-251	18	88
30	150	1589	22148-22161	1- 14	1	89
31	151	1590	22162-22175	15- 28	2	89

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Landsat-2

June 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	152	1591	22176-22189	29- 42	3	89
2	153	1592	22190-22203	43- 56	4	89
3	154	1593	22204-22217	57- 70	5	89
4	155	1594	22218-22231	71- 84	6	89
5	156	1595	22232-22245	85- 98	7	89
6	157	1596	22246-22259	99-112	8	89
7	158	1597	22260-22273	113-126	9	89
8	159	1598	22274-22287	127-140	10	89
9	160	1599	22288-22301*	141-154*	11	89
10	161	1600	*22302-22314	*155-167	12	89
11	162	1601	22315-22328	168-181	13	89
12	163	1602	22329-22342	182-195	14	89
13	164	1603	22343-22356	196-209	15	89
14	165	1604	22357-22370	210-223	16	89
15	166	1605	22371-22384	224-237	17	89
16	167	1606	22385-22398	238-251	18	89
17	168	1607	22399-22412	1- 14	1	90
18	169	1608	22413-22426	15- 28	2	90
19	170	1609	22427-22440	29- 42	3	90
20	171	1610	22441-22454	43- 56	4	90
21	172	1611	22455-22468	57- 70	5	90
22	173	1612	22469-22482	71- 84	6	90
23	174	1613	22483-22496	85- 98	7	90
24	175	1614	22497-22510	99-112	8	90
25	176	1615	22511-22524	113-126	9	90
26	177	1616	22525-22538	127-140	10	90
27	178	1617	22539-22552*	141-154*	11	90
28	179	1618	*22553-22565	*155-167	12	90
29	180	1619	22566-22579	168-181	13	90
30	181	1620	22580-22593	182-195	14	90

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Landsat-2

July 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	182	1621	22594-22607	196-209	15	90
2	183	1622	22608-22621	210-223	16	90
3	184	1623	22622-22635	224-237	17	90
4	185	1624	22636-22649	238-251	18	90
5	186	1625	22650-22663	1- 14	1	91
6	187	1626	22664-22677	15- 28	2	91
7	188	1627	22678-22691	29- 42	3	91
8	189	1628	22692-22705	43- 56	4	91
9	190	1629	22706-22719	57- 70	5	91
10	191	1630	22720-22733	71- 84	6	91
11	192	1631	22734-22747	85- 98	7	91
12	193	1632	22748-22761	99-112	8	91
13	194	1633	22762-22775	113-126	9	91
14	195	1634	22776-22789	127-140	10	91
15	196	1635	22790-22802	141-153	11	91
16	197	1636	22803-22816	154-167	12	91
17	198	1637	22817-22830	168-181	13	91
18	199	1638	22831-22844	182-195	14	91
19	200	1639	22845-22858	196-209	15	91
20	201	1640	22859-22872	210-223	16	91
21	202	1641	22873-22886	224-237	17	91
22	203	1642	22887-22900	238-251	18	91
23	204	1643	22901-22914	1- 14	1	92
24	205	1644	22915-22928	15- 28	2	92
25	206	1645	22929-22942	29- 42	3	92
26	207	1646	22943-22956	43- 56	4	92
27	208	1647	22957-22970	57- 70	5	92
28	209	1648	22971-22984	71- 84	6	92
29	210	1649	22985-22998	85- 98	7	92
30	211	1650	22999-23012	99-112	8	92
31	212	1651	23013-23026	113-126	9	92

Landsat-2

August 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	213	1652	23027-23040	127-140	10	93
2	214	1653	23041-23053	141-153	11	93
3	215	1654	23054-23067	154-167	12	93
4	216	1655	23068-23081	168-181	13	93
5	217	1656	23082-23095	182-195	14	93
6	218	1657	23096-23109	196-209	15	93
7	219	1658	23110-23123	210-223	16	93
8	220	1659	23124-23137	224-237	17	93
9	221	1660	23138-23151	238-251	18	93
10	222	1661	23152-23165	1- 14	1	94
11	223	1662	23166-23179	15- 28	2	94
12	224	1663	23180-23193	29- 42	3	94
13	225	1664	23194-23207	43- 56	4	94
14	226	1665	23208-23221	57- 70	5	94
15	227	1666	23222-23235	71- 84	6	94
16	228	1667	23236-23249	85- 98	7	94
17	229	1668	23250-23263	99-112	8	94
18	230	1669	23264-23277	113-126	9	94
19	231	1670	23278-23291	127-140	10	94
20	232	1671	23292-23304	141-153	11	94
21	233	1672	23305-23318	154-167	12	94
22	234	1673	23319-23332	168-181	13	94
23	235	1674	23333-23346	182-195	14	94
24	236	1675	23347-23360	196-209	15	94
25	237	1676	23361-23374	210-223	16	94
26	238	1677	23375-23388	224-237	17	94
27	239	1678	23389-23402	238-251	18	94
28	240	1679	23403-23416	1- 14	1	95
29	241	1680	23417-23430	15- 28	2	95
30	242	1681	23431-23444	29- 42	3	95
31	243	1682	23445-23458	43- 56	4	95

Landsat-2

September 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	244	1683	23459-23472	57- 70	5	95
2	245	1684	23473-23486	71- 84	6	95
3	246	1685	23487-23500	85- 98	7	95
4	247	1686	23501-23514	99-112	8	95
5	248	1687	23515-23528	113-126	9	95
6	249	1688	23529-23542	127-140	10	95
7	250	1689	23543-23555	141-153	11	95
8	251	1690	23556-23569	154-167	12	95
9	252	1691	23570-23583	168-181	13	95
10	253	1692	23584-23597	182-195	14	95
11	254	1693	23598-23611	196-209	15	95
12	255	1694	23612-23625	210-223	16	95
13	256	1695	23626-23639	224-237	17	95
14	257	1696	23640-23653	238-251	18	95
15	258	1697	23654-23667	1- 14	1	96
16	259	1698	23668-23681	15- 28	2	96
17	260	1699	23682-23695	29- 42	3	96
18	261	1700	23696-23709	43- 56	4	96
19	262	1701	23710-23723	57- 70	5	96
20	263	1702	23724-23737	71- 84	6	96
21	264	1703	23738-23751	85- 98	7	96
22	265	1704	23752-23765	99-112	8	96
23	266	1705	23766-23779	113-126	9	96
24	267	1706	23780-23793	127-140	10	96
25	268	1707	23794-23806	141-153	11	96
26	269	1708	23807-23820	154-167	12	96
27	270	1709	23821-23834	168-181	13	96
28	271	1710	23835-23848	182-195	14	96
29	272	1711	23849-23862	196-209	15	96
30	273	1712	23863-23876	210-223	16	96

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October 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	274	1713	23877-23890	224-237	17	96
2	275	1714	23891-23904	238-251	18	96
3	276	1715	23905-23918	1- 14	1	97
4	277	1716	23919-23932	15- 28	2	97
5	278	1717	23933-23946	29- 42	3	97
6	279	1718	23947-23960	43- 56	4	97
7	280	1719	23961-23974	57- 70	5	97
8	281	1720	23975-23988	71- 84	6	97
9	282	1721	23989-24002	85- 98	7	97
10	283	1722	24003-24016	99-112	8	97
11	284	1723	24017-24030	113-126	9	97
12	285	1724	24031-24044*	127-140*	10	97
13	286	1725	*24045-24057	*141-153	11	97
14	287	1726	24058-24071	154-167	12	97
15	288	1727	24072-24085	168-181	13	97
16	289	1728	24086-24099	182-195	14	97
17	290	1729	24100-24113	196-209	15	97
18	291	1730	24114-24127	210-223	16	97
19	292	1731	24128-24141	224-237	17	97
20	293	1732	24142-24155	238-251	18	97
21	294	1733	24156-24169	1- 14	1	98
22	295	1734	24170-24183	15- 28	2	98
23	296	1735	24184-24197	29- 42	3	98
24	297	1736	24198-24211	43- 56	4	98
25	298	1737	24212-24225	57- 70	5	98
26	299	1738	24226-24239	71- 84	6	98
27	300	1739	24240-24253	85- 98	7	98
28	301	1740	24254-24267	99-112	8	98
29	302	1741	24268-24281	113-126	9	98
30	303	1742	24282-24295*	127-140*	10	98
31	304	1743	*24296-24308	*141-153	11	98

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November 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	305	1744	24309-24322	154-167	12	98
2	306	1745	24323-24336	168-181	13	98
3	307	1746	24337-24350	182-195	14	98
4	308	1747	24351-24364	196-209	15	98
5	309	1748	24365-24378	210-223	16	98
6	310	1749	24379-24392	224-237	17	98
7	311	1750	24393-24406	238-251	18	98
8	312	1751	24407-24420	1- 14	1	99
9	313	1752	24421-24434	15- 28	2	99
10	314	1753	24435-24448	29- 42	3	99
11	315	1754	24449-24462	43- 56	4	99
12	316	1755	24463-24476	57- 70	5	99
13	317	1756	24477-24490	71- 84	6	99
14	318	1757	24491-24504	85- 98	7	99
15	319	1758	24505-24518	99-112	8	99
16	320	1759	24519-24532	113-126	9	99
17	321	1760	24533-24546*	127-140*	10	99
18	322	1761	*24547-24559	*141-153	11	99
19	323	1762	24560-24573	154-167	12	99
20	324	1763	24574-24587	168-181	13	99
21	325	1764	24588-24601	182-195	14	99
22	326	1765	24602-24615	196-209	15	99
23	327	1766	24616-24629	210-223	16	99
24	328	1767	24630-24643	224-237	17	99
25	329	1768	24644-24657	238-251	18	99
26	330	1769	24658-24671	1- 14	1	100
27	331	1770	24672-24685	15- 28	2	100
28	332	1771	24686-24699	29- 42	3	100
29	333	1772	24700-24713	43- 56	4	100
30	334	1773	24714-24727	57- 70	5	100

*Revised

Landsat-2

December 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	335	1774	24728-24741	71- 84	6	100
2	336	1775	24742-24755	85- 98	7	100
3	337	1776	24756-24769	99-112	8	100
4	338	1777	24770-24783	113-126	9	100
5	339	1778	24784-24797*	127-140*	10	100
6	340	1779	*24798-24810	*141-153	11	100
7	341	1780	24811-24824	154-167	12	100
8	342	1781	24825-24838	168-181	13	100
9	343	1782	24839-24852	182-195	14	100
10	344	1783	24853-24866	196-209	15	100
11	345	1784	24867-24880	210-223	16	100
12	346	1785	24881-24894	224-237	17	100
13	347	1786	24895-24908	238-251	18	100
14	348	1787	24909-24922	1- 14	1	101
15	349	1788	24923-24936	15- 28	2	101
16	350	1789	24937-24950	29- 42	3	101
17	351	1790	24951-24964	43- 56	4	101
18	352	1791	24965-24978	57- 70	5	101
19	353	1792	24979-24992	71- 84	6	101
20	354	1793	24993-25006	85- 98	7	101
21	355	1794	25007-25020	99-112	8	101
22	356	1795	25021-25034	113-126	9	101
23	357	1796	25035-25048*	127-140*	10	101
24	358	1797	*25049-25061	*141-153	11	101
25	359	1798	25062-25075	154-167	12	101
26	360	1799	25076-25089	168-181	13	101
27	361	1800	25090-25103	182-195	14	101
28	362	1801	25104-25117	196-209	15	101
29	363	1802	25118-25131	210-223	16	101
30	364	1803	25132-25145	224-237	17	101
31	365	1804	25146-25159	238-251	18	101

*Revised

Landsat-2

January 1980

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	1	1805	25160-25173	1- 14	1	102
2	2	1806	25174-25187	15- 28	2	102
3	3	1807	25188-25201	29- 42	3	102
4	4	1808	25202-25215	43- 56	4	102
5	5	1809	25216-25229	57- 70	5	102
6	6	1810	25230-25243	71- 84	6	102
7	7	1811	25244-25257	85- 98	7	102
8	8	1812	25258-25271	99-112	8	102
9	9	1813	25272-25285	113-126	9	102
10	10	1814	25286-25299*	127-140*	10	102
11	11	1815	*25300-25312	*141-153	11	102
12	12	1816	25313-25326	154-167	12	102
13	13	1817	25327-25340	168-181	13	102
14	14	1818	25341-25354	182-195	14	102
15	15	1819	25355-25368	196-209	15	102
16	16	1820	25369-25382	210-223	16	102
17	17	1821	25383-25396	224-237	17	102
18	18	1822	25397-25410	238-251	18	102
19	19	1823	25411-25424	1- 14	1	103
20	20	1824	25425-25438	15- 28	2	103
21	21	1825	25439-25452	29- 42	3	103
22	22	1826	25453-25466	43- 56	4	103
23	23	1827	25467-25480	57- 70	5	103
24	24	1828	25481-25494	71- 84	6	103
25	25	1829	25495-25508	85- 98	7	103
26	26	1830	25509-25522	99-112	8	103
27	27	1831	25523-25536	113-126	9	103
28	28	1832	25537-25550*	127-140*	10	103
29	29	1833	*25551-25563	*141-153	11	103
30	30	1834	25564-25577	154-167	12	103
31	31	1835	25578-25591	168-181	13	103

*Revised

Landsat-2

February 1980

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	32	1836	25592-25605	182-195	14	103
2	33	1837	25606-25619	196-209	15	103
3	34	1838	25620-25633	210-223	16	103
4	35	1839	25634-25647	224-237	17	103
5	36	1840	25648-25661	238-251	18	103
6	37	1841	25662-25675	1- 14	1	104
7	38	1842	25676-25689	15- 28	2	104
8	39	1843	25690-25703	29- 42	3	104
9	40	1844	25704-25717	43- 56	4	104
10	41	1845	25718-25731	57- 70	5	104
11	42	1846	25732-25745	71- 84	6	104
12	43	1847	25746-25759	85- 98	7	104
13	44	1848	25760-25773	99-112	8	104
14	45	1849	25774-25787	113-126	9	104
15	46	1850	25788-25801	127-140	10	104
16	47	1851	25802-25814	141-153	11	104
17	48	1852	25815-25828	154-167	12	104
18	49	1853	25829-25842	168-181	13	104
19	50	1854	25843-25856	182-195	14	104
20	51	1855	25857-25870	196-209	15	104
21	52	1856	25871-25884	210-223	16	104
22	53	1857	25885-25898	224-237	17	104
23	54	1858	25899-25912	238-251	18	104
24	55	1859	25913-25926	1- 14	1	105
25	56	1860	25927-25940	15- 28	2	105
26	57	1861	25941-25954	29- 42	3	105
27	58	1862	25955-25968	43- 56	4	105
28	59	1863	25969-25982	57- 70	5	105
29	60	1864	25983-25996	71- 84	6	105

Landsat-2

March 1980

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	61	1865	25997-26010	85- 98	7	105
2	62	1866	26011-26024	99-112	8	105
3	63	1867	26025-26038	113-126	9	105
4	64	1868	26039-26051	127-139	10	105
5	65	1869	26052-26065	140-153	11	105
6	66	1870	26066-26079	154-167	12	105
7	67	1871	26080-26093	168-181	13	105
8	68	1872	26094-26107	182-195	14	105
9	69	1873	26108-26121	196-209	15	105
10	70	1874	26122-26135	210-223	16	105
11	71	1875	26136-26149	224-237	17	105
12	72	1876	26150-26163	238-251	18	105
13	73	1877	26164-26177	1-14	1	106
14	74	1878	26178-26191	15-28	2	106
15	75	1879	26192-26205	29-42	3	106
16	76	1880	26206-26219	43-56	4	106
17	77	1881	26220-26233	57-70	5	106
18	78	1882	26234-26247	71-84	6	106
19	79	1883	26248-26261	85-98	7	106
20	80	1884	26262-26275	99-112	8	106
21	81	1885	26276-26289	113-126	9	106
22	82	1886	26290-26302	127-139	10	106
23	83	1887	26303-26316	140-153	11	106
24	84	1888	26317-26330	154-167	12	106
25	85	1889	26331-26344	168-181	13	106
26	86	1890	26345-26358	182-195	14	106
27	87	1891	26359-26372	196-209	15	106
28	88	1892	26373-26386	210-223	16	106
29	89	1893	26387-26400	224-237	17	106
30	90	1894	26401-26414	238-251	18	106
31	91	1895	26415-26428	1-14	1	107

Landsat-2

April 1980

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	92	1896	26429-26442	15- 28	2	107
2	93	1897	26443-26456	29- 42	3	107
3	94	1898	26457-26470	43- 56	4	107
4	95	1899	26471-26484	57- 70	5	107
5	96	1900	26485-26498	71- 84	6	107
6	97	1901	26499-26512	85- 98	7	107
7	98	1902	26513-26526	99-112	8	107
8	99	1903	26527-26540	113-126	9	107
9	100	1904	26541-26553	127-139	10	107
10	101	1905	26554-26567	140-153	11	107
11	102	1906	26568-26581	154-167	12	107
12	103	1907	26582-26595	168-181	13	107
13	104	1908	26596-26609	182-195	14	107
14	105	1909	26610-26623	196-209	15	107
15	106	1910	26624-26637	210-223	16	107
16	107	1911	26638-26651	224-237	17	107
17	108	1912	26652-26665	238-251	18	107
18	109	1913	26666-26679	1- 14	1	108
19	110	1914	26680-26693	15- 28	2	108
20	111	1915	26694-26707	29- 42	3	108
21	112	1916	26708-26721	43- 56	4	108
22	113	1917	26722-26735	57- 70	5	108
23	114	1918	26736-26749	71- 84	6	108
24	115	1919	26750-26763	85- 98	7	108
25	116	1920	26764-26777	99-112	8	108
26	117	1921	26778-26791	113-126	9	108
27	118	1922	26792-26804	127-139	10	108
28	119	1923	26805-26818	140-153	11	108
29	120	1924	26819-26832	154-167	12	108
30	121	1925	26833-26846	168-181	13	108

APPENDIX C

LANDSAT-2 DOCUMENTS ISSUED THIS REPORT PERIOD

APPENDIX C

LANDSAT-2 DOCUMENTS ISSUED THIS REPORT PERIOD

No.	Document No.	Title and Date
1	PIR-14NO-L-2-252	Landsat-2, RMP-2 Deactivation, dated 7 May 1979
2	PIR-14NO-L-2-256	Benign Anomaly in MSS of Landsat-2, dated 15 May 1979

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INTRODUCTION

This is the 7th report in a continuing series of documents issued at launch, and quarterly thereafter, to present flight performance analyses of the Landsat-3 spacecraft. The previously issued documents are:

Document No.	Title	Date
78SDS4203	Landsat-3 Launch and Flight Activation Evaluation Report 5 to 9 March 1978, through Orbit 50 and Orbit Adjust Operation.	17 March 1978
78SDS4216	Landsat-1, Landsat-2, and Landsat-3 Flight Evaluation Report, 23 January 1978 to 23 April 1978	3 May 1978
78SDS4232	Landsat-2 and Landsat-3 Flight Evaluation Reports, 23 April 1978 to 23 July 1978	1 August 1978
78SDS4250	Landsat-2 and Landsat-3 Flight Evaluation Report 23 July 1978 to 23 October 1978	1 November 1978
79SDS4227	Landsat-2 and Landsat-3 Flight Evaluation Report 23 January 1979 to 23 April 1979	1 June 1979

This report contains analysis of flight performance for Orbits 5590 to 6860 for Landsat 3.

SECTION I

SUMMARY

LANDSAT-3 OPERATIONS

SECTION 1

SUMMARY LANDSAT-3 OPERATIONS

The Landsat-3 spacecraft was launched from the Western Test Range on 5 March 1978 at 064:17:54:00.551 GMT. The launch and orbital injection phase of the spacecraft were nominal and deployment of the spacecraft followed predictions.

All systems performed normally until Orbit 41, 8 March 1978, when cell 4 of the "B" COMSTOR would not load and verify properly. Subsequent orbits would not verify and dummy commands "000" were used in cell 4 until 18 March 1978, when cell 4 changed to all "ones." The "B" COMSTOR was then taken out of operational use until Orbit 1897 (19 June 1978) when it was activated for processing spacecraft commands after a test for its stability.

The ECAM halted on 4 May 1978 due to a fixed core checksum error. It again halted on 31 May 1978 when core location 0403 (octal) contained a discrepancy. Neither error affects spacecraft operation. The onboard checksum value for ECAM has been changed to accommodate the core errors and ECAM operation has been normal since then.

The RBV Camera 1 had intermittent white level saturation during an RBV image which was first detected in Orbit 55, 9 March 1978. It was more prevalent in the first 5% of occasional images. Operational use of the RBV was not interrupted.

The Band 5 sensors are continuously contaminated by gas molecules and output response declines with molecular build-up. The gas molecules are removed by periodic outgassing cycles. However, the Band 5 sensors have a long term sensor decline as measured by initial measurements after outgassing, so that the current response is only 2/3 the initial response at launch.

On 11 July 1978, sensor 25, showed no output when Band 5 was turned ON after the seventh outgas cycle. Only sensor 26 is active in Band 5.

Band 5 was turned off in Orbit 5410 on 28 March 1979 during the investigation of the MSS late line start anomaly and has remained off to the end of this report period.

In late August 1978, processed MSS data showed occasional late line starts. The anomaly increased in frequency in September 1978, but after a switch-to-scan monitor source B was not seen between October 1978, and January 1979. In January and February 1979, the anomaly began appearing again. In late March 1979, intermittent burst of late line starts became severe enough to disrupt processing. Special tests were made in March and April 1979 without success in identifying the anomaly cause. Since early April the anomaly has been infrequent.

In early December 1978, data from Brazil and from processing of MSS data revealed extra scan monitor pulses occurring as early line starts or extra end of line codes (4 black, 4 white pixels) in the scene data. They occur only over magnetic anomalies, i.e., Brazil and Africa, at a low incidence rate. Landsat-1 and Landsat-2 had similar occurrences.

The RMP2 (Ball Bearing Gyro) input current increased and returned to normal. RMP 1 (Gas Bearing Gyro) was turned on in Orbit 6207 (24 May 1979) and enabled in Orbit 6220 on 25 May 1979. RMP2 rundown tests were normal indicating RMP2 can serve as a backup to RMP1.

During a playback of WBVTR-1 in Orbit 6351 on 4 June 1979, the MSS data suddenly became noisy, with MFSE counts of about 2000. Operation with RBV data was normal. WBVTR-1 was returned to service for RBV data only, during Orbit 6701 on 29 June 1979, and operates satisfactorily in that capacity.

The spacecraft continues to perform its mission satisfactorily with MSS, RBV, DCS, and both Wideband Telemetry Systems in use. Table 1-1 shows cumulative in-orbit payload system performance.

Table 1-1. In-Orbit Payload Systems Performance-Launch thru Orbit 7066 (7/25/79), Landsat-3

RBV	Total Scenes Imaged	39,750
	Total Area Imaged (million sq. n mi.	347
	ON TIME (hr.)	374
	ON/OFF Cycles	3,871
	% Real Time Images	91
	% Recorded Images	9
MSS	Total Scenes Imaged	94,468
	Total Area Imaged (million sq. n mi.)	836
	ON TIME (hr.)	1,187
	ON/OFF Cycles	8,100
	% Real Time Images	78
	% Recorded Images	22
DCS	Messages at OCC	464,758
	Users	31
	ON TIME (hr.)	12,111
WPA-1	ON TIME (hr.)	442
	ON/OFF Cycles	3,011
WPA-2	ON TIME (hr.)	1,052
	ON/OFF Cycles	5,524
WBVTR-1	% Record Mode	38
	% Playback Mode	41
	% Rewind Mode	20
	% Standby Mode	1
	Time Head-Tape Contact (hr.)	148
	Cycles Head-Tape Contact	2,090
	ON TIME (hr.)	188
WBVTR-2	% Record Mode	38
	% Playback Mode	41
	% Rewind Mode	20
	% Standby Mode	1
	MFSE Count in P/B	5
	Time Head-Tape Contact (hr.)	320
	Cycles Head-Tape Contact	5,493
	ON TIME (hr.)	404

SECTION 2

ORBITAL PARAMETERS

LANDSAT-3

SECTION 2

ORBITAL PARAMETERS

At the close of this report period, Landsat-3's ground track error was 0.04 mm East (longitude) at the equator.

High solar activity continues to affect spacecraft drag. Consequently, a minus X axis orbit adjust was performed during Orbit 6848 (9 July 1979) to maintain the spacecraft's ground track.

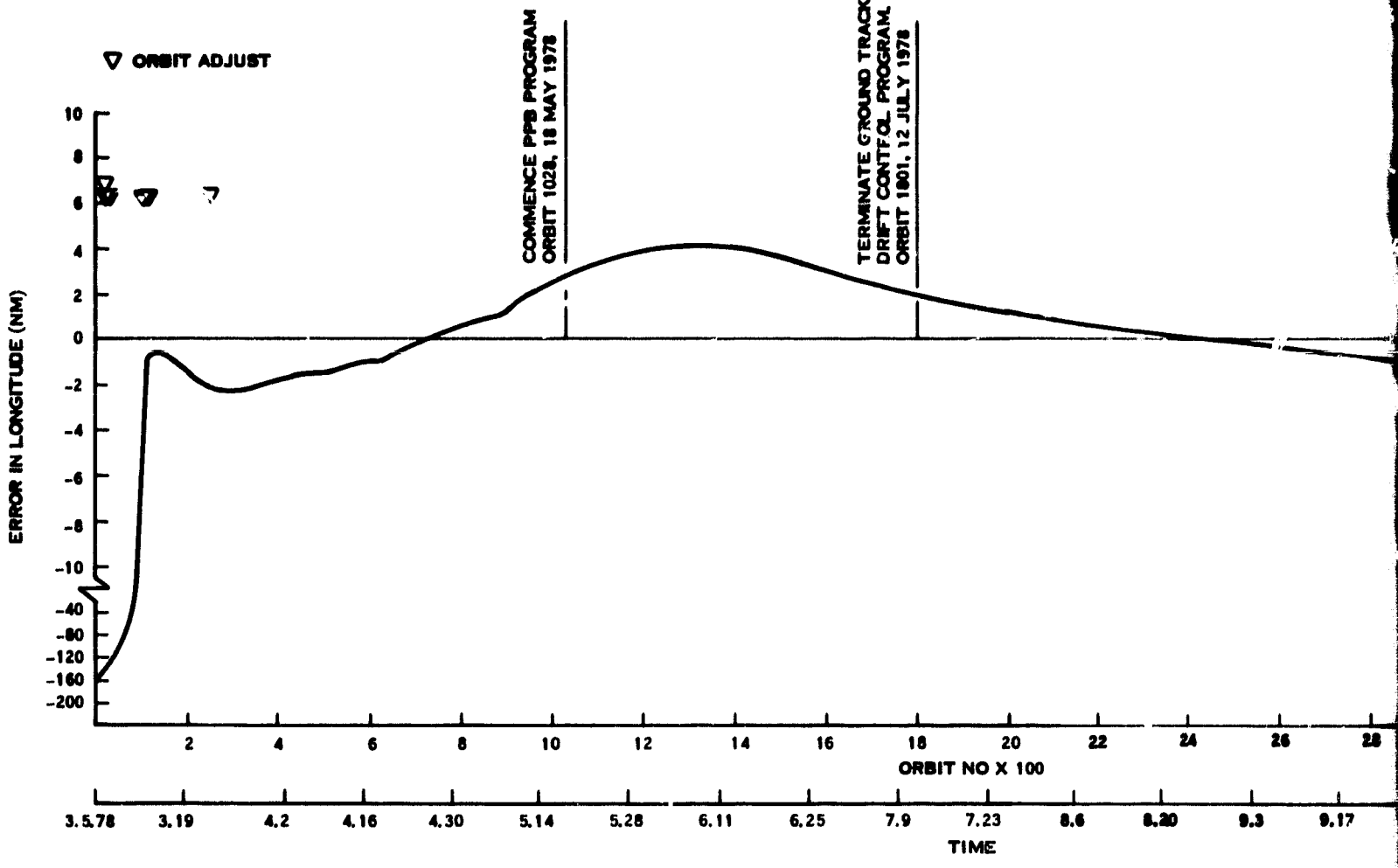
Error in longitude as a function of time since launch, orbit maintenance burns and the Pitch Position Bias Program are shown in Figure 2-1.

Figure 2-2 shows the mean local time for the spacecraft's descending equatorial crossings. The mean local time crossings for Landsats 2 and 3 respectively are 09:24:38 MLT and 09:30:48 MLT.

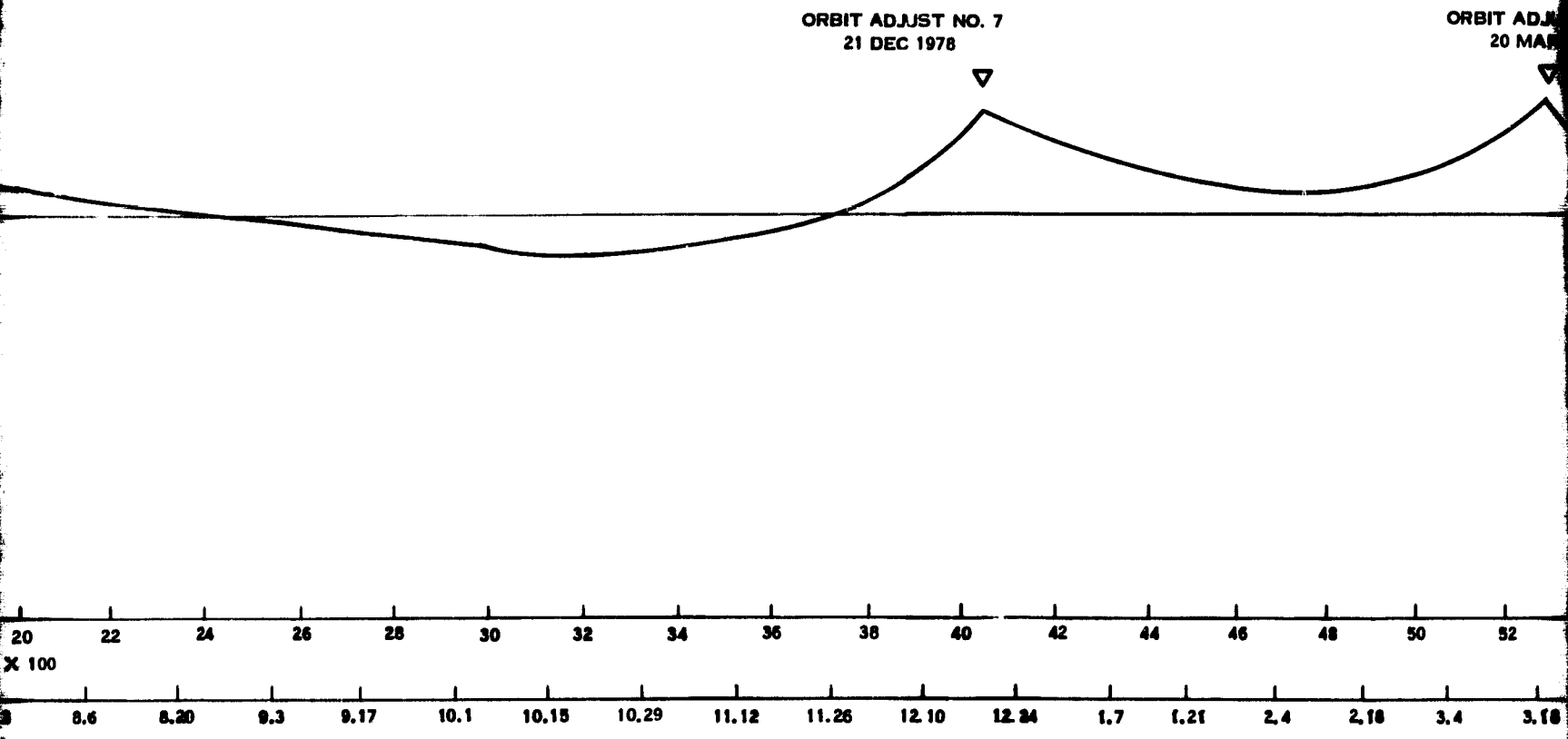
Phasing relationships between Landsats 2 and 3 are shown in Figure 2-3. Landsat-3 leads Landsat-2 at their descending equatorial crossings by 45.58 GMT minutes.

The Brouwer Mean Orbital parameters for Landsat-3 are given in Table 2-1.

Appendix B provides the spacecraft orbit reference tables for January 1979 through April 1980.



FOLDOUT FRAME

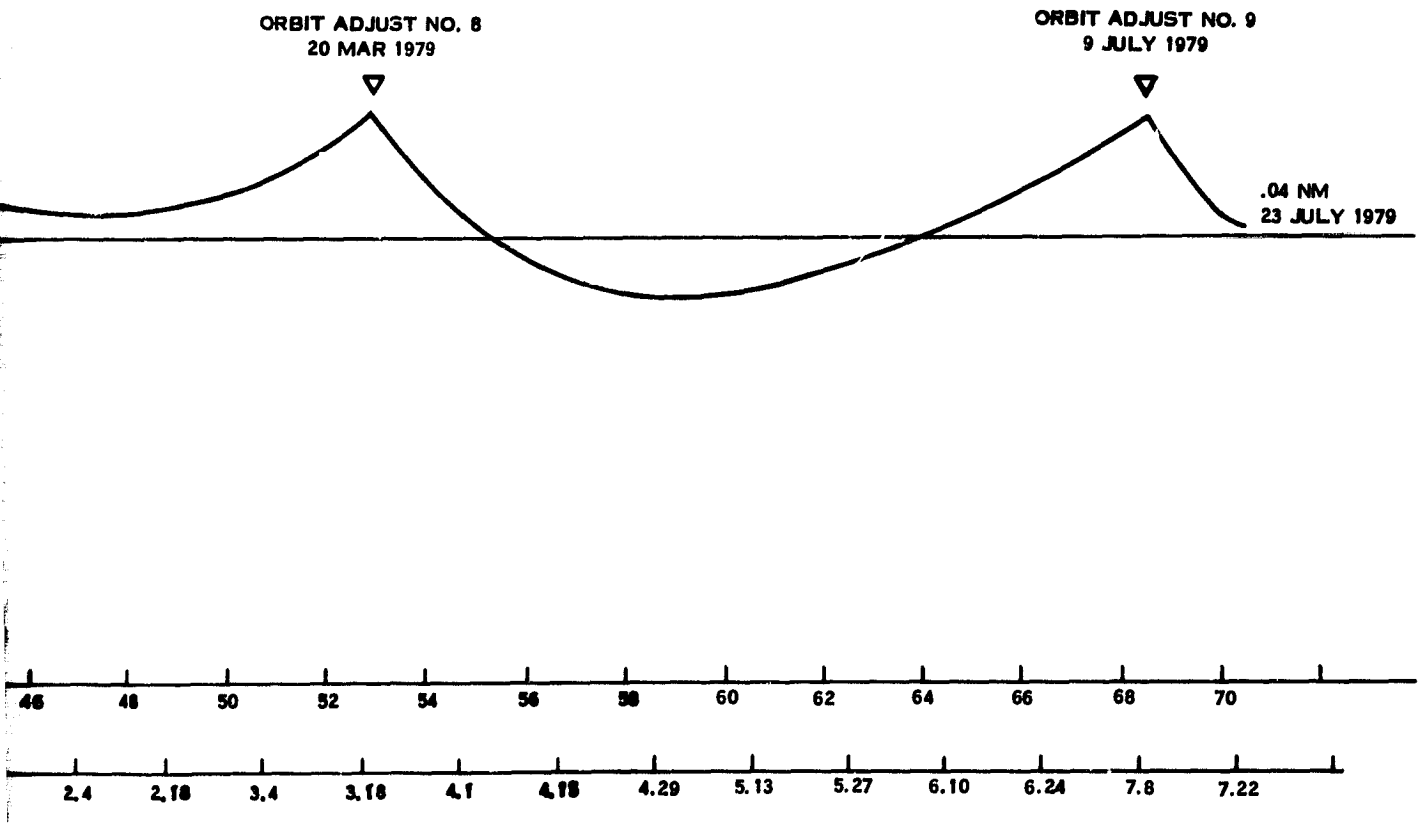


20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52

X 100

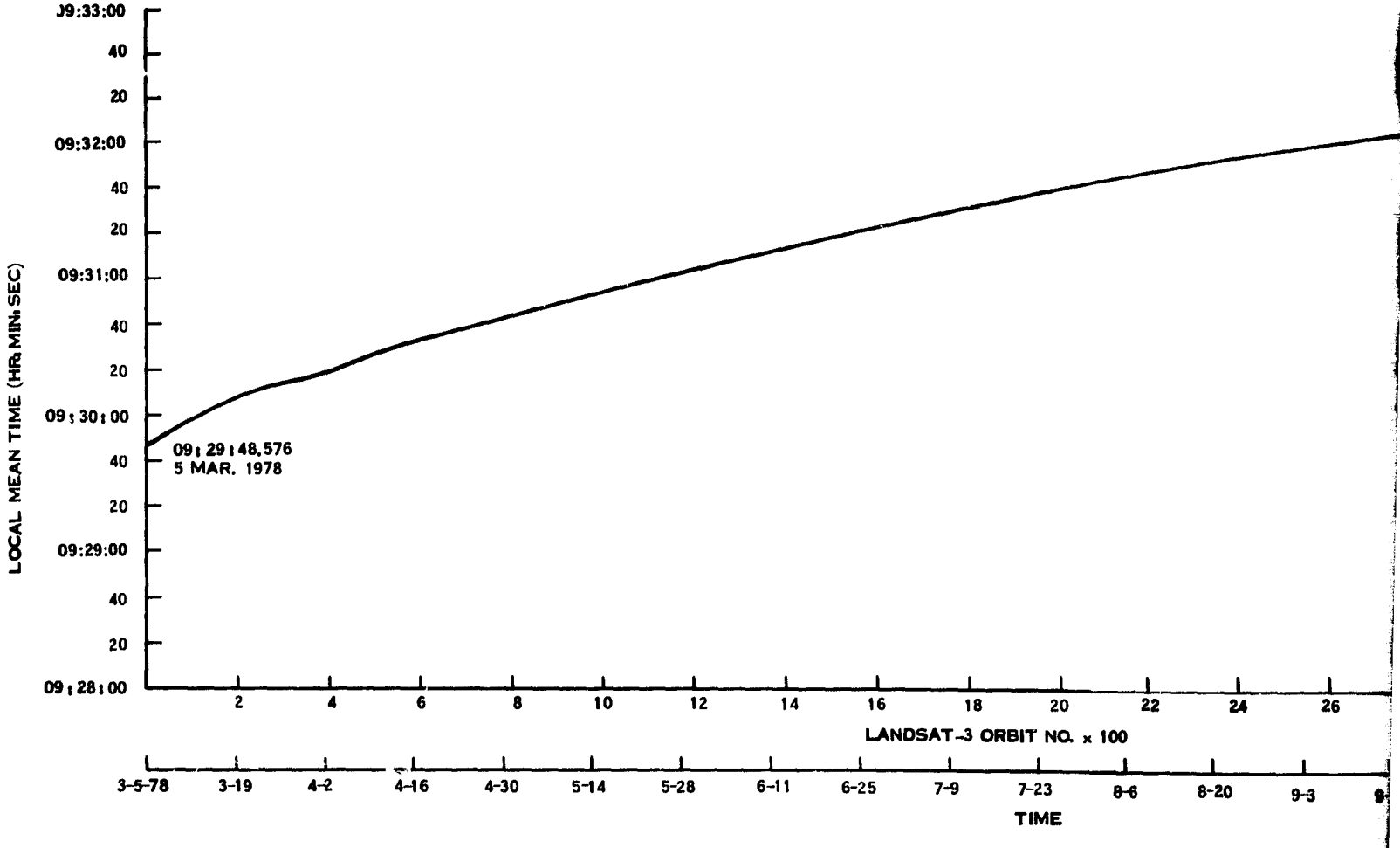
8.6 8.20 9.3 9.17 10.1 10.15 10.29 11.12 11.26 12.10 12.24 1.7 1.21 2.4 2.18 3.4 3.18

FOLDOUT FRAME 2

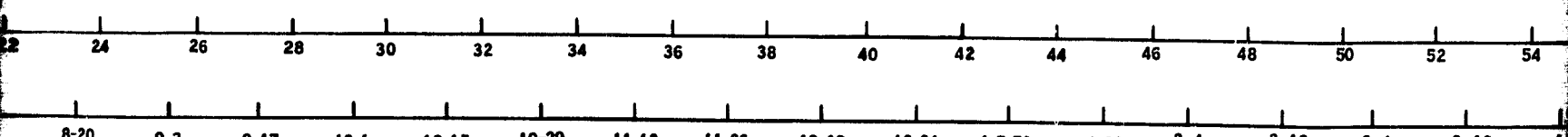


FOLDOUT FRAME 3

Figure 2-1. Landsat-3 Ground Track



FOLDOUT FRAME



FOLDOUT FRAME 2

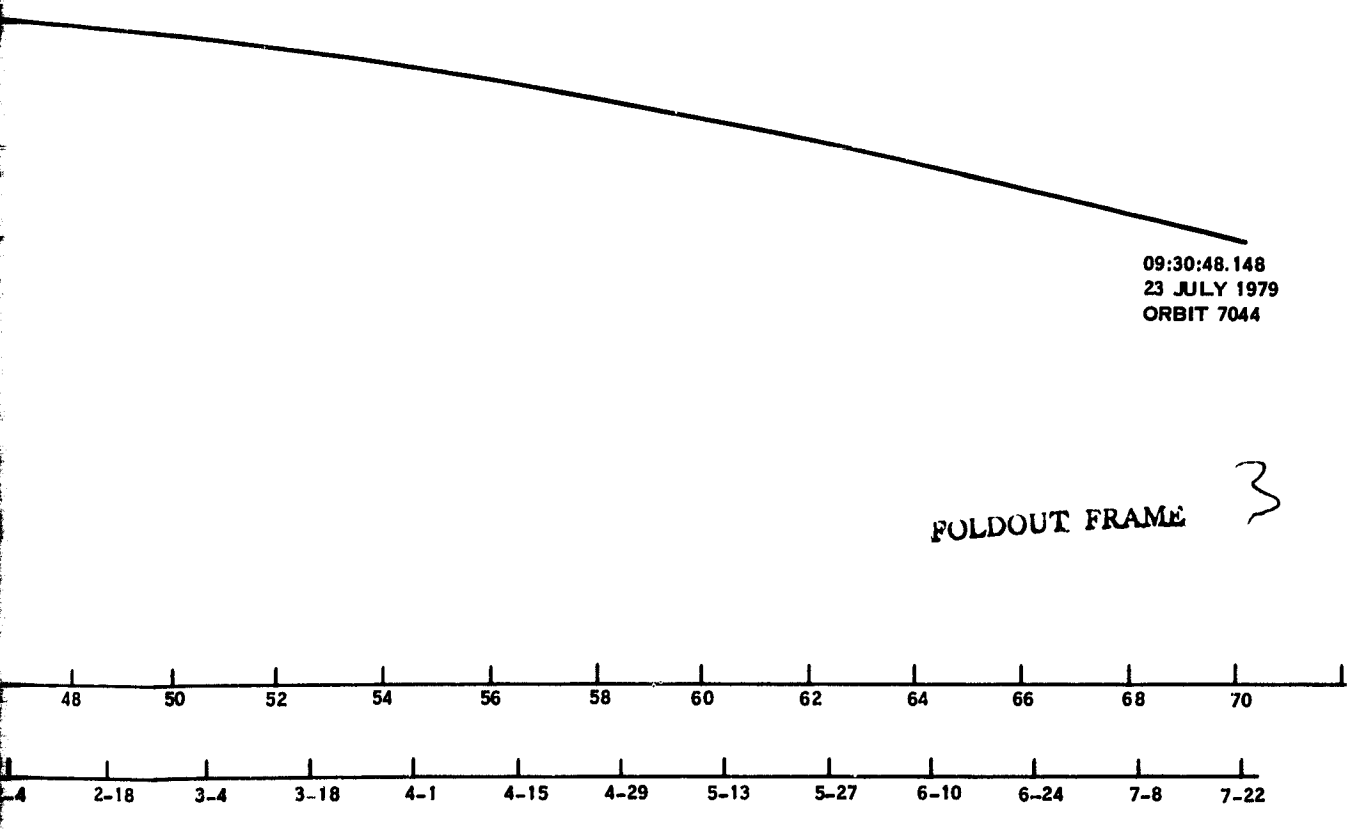
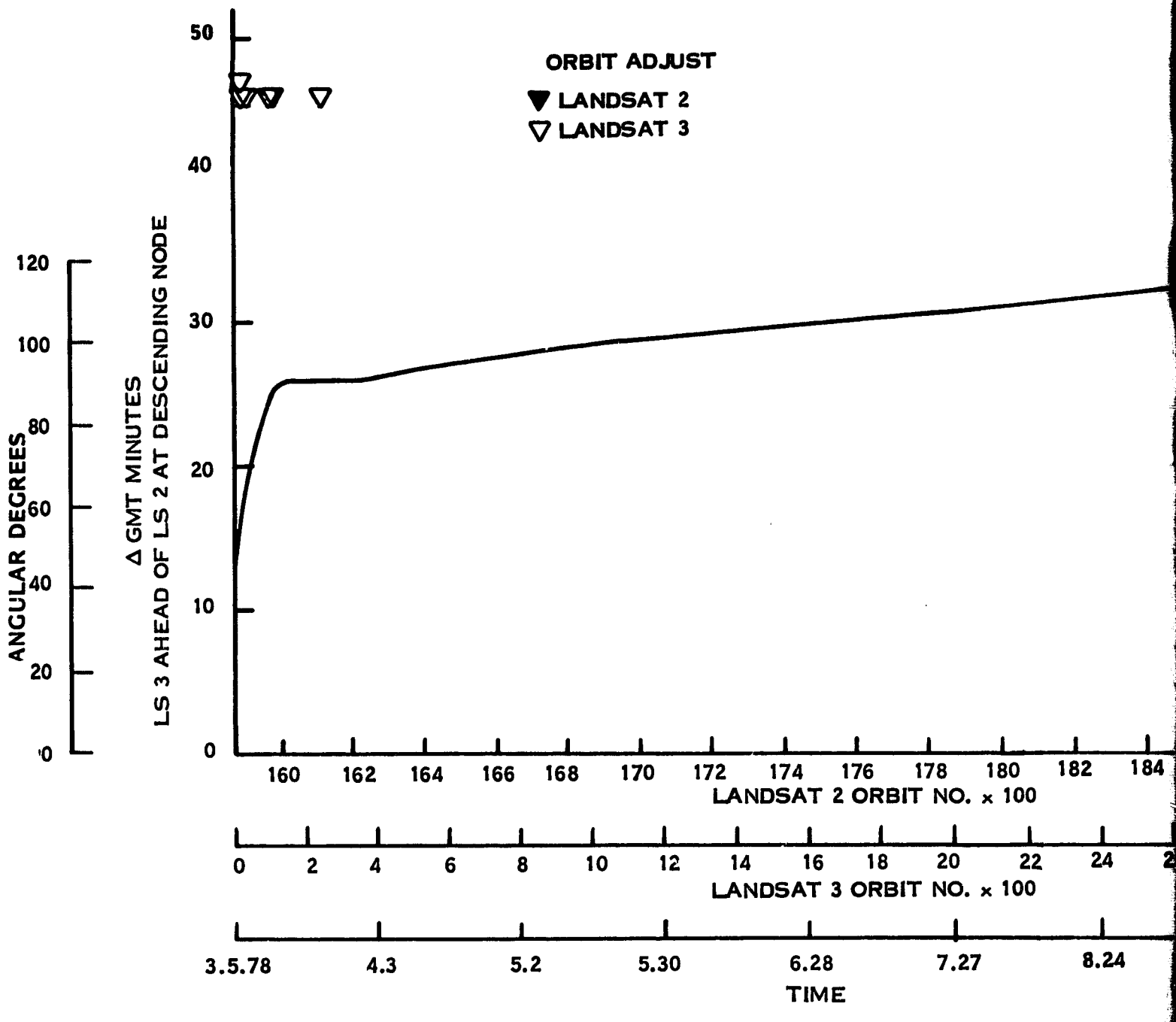
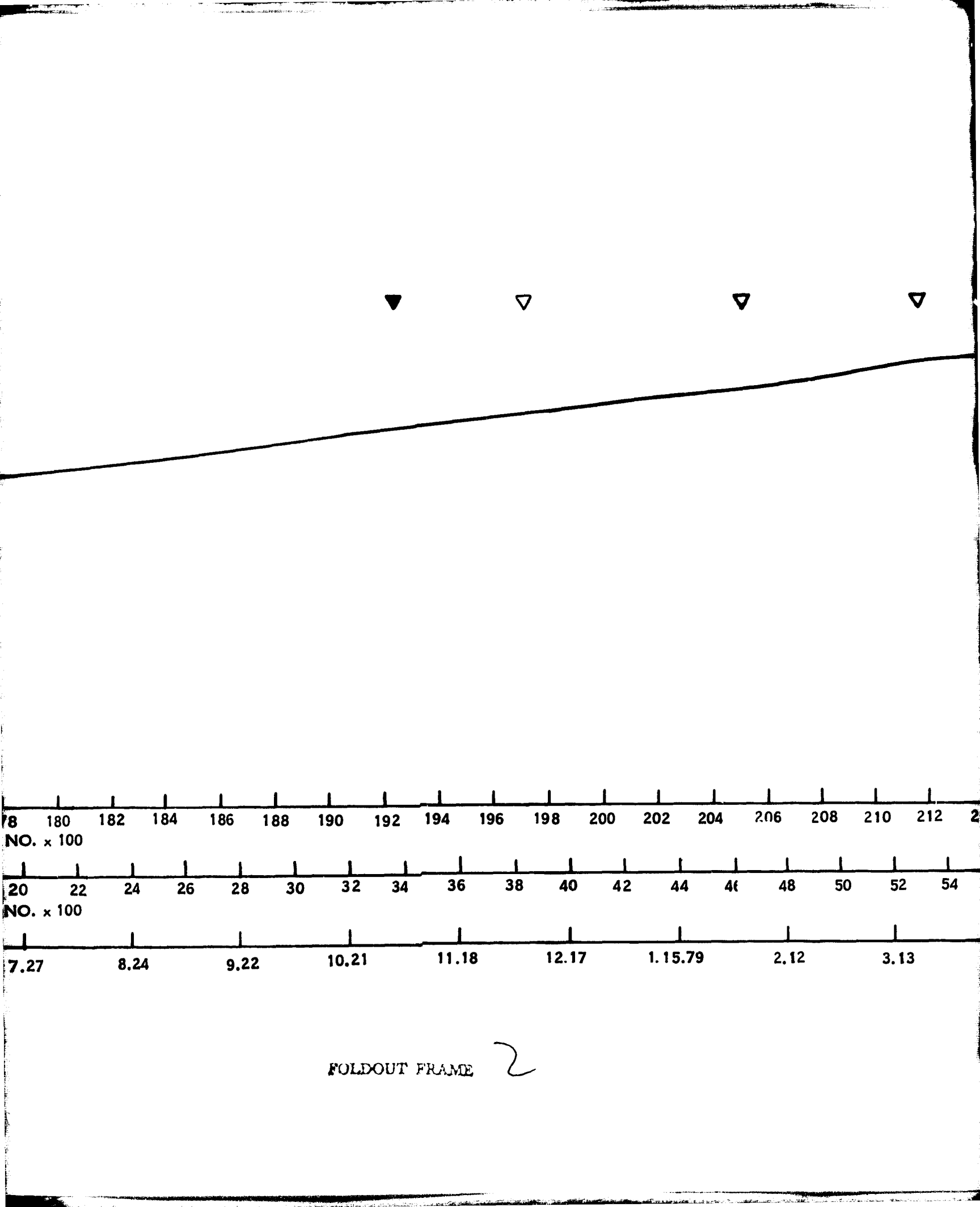


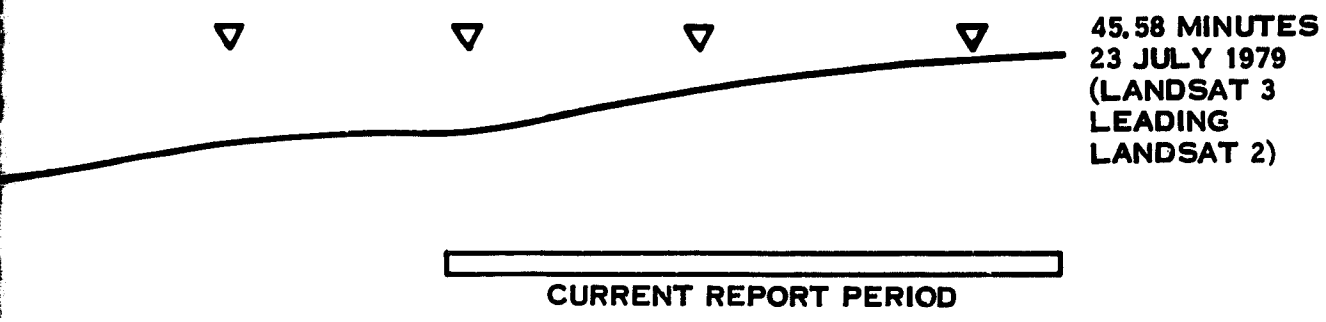
Figure 2-2. Local Mean Time at Descending Node, Landsat-3



FOLDOUT FRAME



FOLDOUT FRAME 2



CURRENT REPORT PERIOD

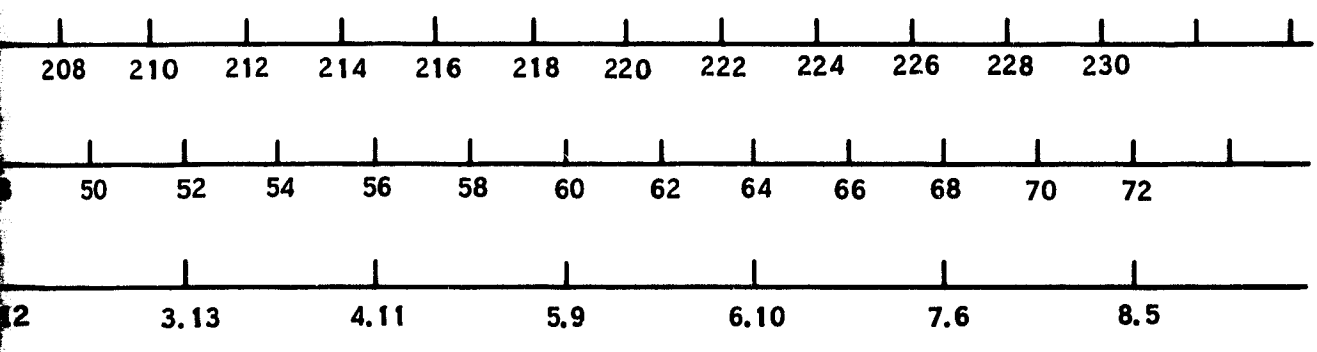


Figure 2-3. Drift in Angular Phasing Between Landsat-2 and Landsat-3

FOLDOUT FRAME 2

Table 2-1. Landsat-3 Brouwer Mean Orbital Parameters

Element / Date	Apogee (KM)	Perigee (KM)	Inclination (Deg.)	Semi-Major Axis (KM)	Eccentricity	Anomolistic Period (Min)	Nodal Period (Min)	Argument of Perigee (Deg)	Right Ascension (Deg)	Mean Anomaly (Deg)
Nominal	915.99	899.67	99.1487	7285.9970	0.001120	103.15516	103.269	302.5609	125.6747	98.1039
5 Mar 1978[1]	913.96	897.30	99.1348	7283.7988	0.001143	103.10848	103.2	306.5555	125.6244	94.3356
14 Mar 1978[2]	916.67	898.83	99.1249	7285.9149	0.001225	103.15341	103.26	258.6162	133.8339	281.4021
20 Apr 1978	917.37	897.84	99.1213	7285.7685	0.001340	103.15031	103.266	154.0432	171.2200	25.7708
23 July 1978	916.56	898.66	99.1116	7285.7740	0.001228	103.15042	103.266	261.2939	263.2883	213.2205
23 Oct 1978	917.14	898.21	99.0994	7285.8163	0.001299	103.15184	103.266	14.6621	354.1226	56.7372
16 Jan 1979	917.92	897.60	99.0866	7285.9014	0.001395	103.15364	103.269*	136.6106	77.9191	35.4071
24 Apr 1979	916.79	898.47	99.0693	7285.7693	0.001257	103.15084	103.267	227.3165	174.3771	145.8921
23 July 1979	916.69	898.64	99.0612	7285.8090	0.001239	103.15168	103.267	348.2335	262.8420	28.8221

1. Post Launch.
2. After the sequence of phasing maneuvers completed in Orbit 115.
3. * Corrected since previous report.

SECTION 3
POWER SUBSYSTEM (PWR)
LANDSAT-3

SECTION 3

POWER SUBSYSTEM (PWR)

The Power Subsystem on Landsat-3 has performed satisfactorily throughout this report period.

The solar arrays continued to provide excess energy above spacecraft and payload requirements and are expected to support the Landsat-3 mission through 1980. The percentage degradation of the arrays is plotted as a function of days in orbit in Figure 3-1, along with the pre-launch predicted array degradation. The array degradation at the end of 15 months in orbit was 8.8%. The projected values of midday array current for the first year are plotted in Figure 3-2. Here the array current is adjusted for sun intensity and array degradation, as well as sun angle. Along with the same curve is plotted the actual telemetry values observed until the end of the current report period.

The battery packs on-line ranged from 8.5 to 11.9% depth of discharge (DOD) during this report period. Battery voltages have been maintained within suitable limits with Landsat-3 power management procedure, excess array energy being dissipated through auxiliary loads. Temperatures ranged from 16.03°C to 22.16°C during this report period.

The power subsystem electronics have performed well during this report period with all regulated voltages stable. Table 3-1 shows major subsystem parameters and Table 3-2 shows power subsystem telemetry for selected orbits. Some parameters in Table 3-1 may be slightly different from those in Table 3-2 because Table 3-1 uses a power management time span (night followed by day), whereas the time span used in Table 3-2 is the playback period from the NBR.

Figure 3-3 shows the actual and predicted variation in sun angle to orbit plane and solar panels for Landsat-3.

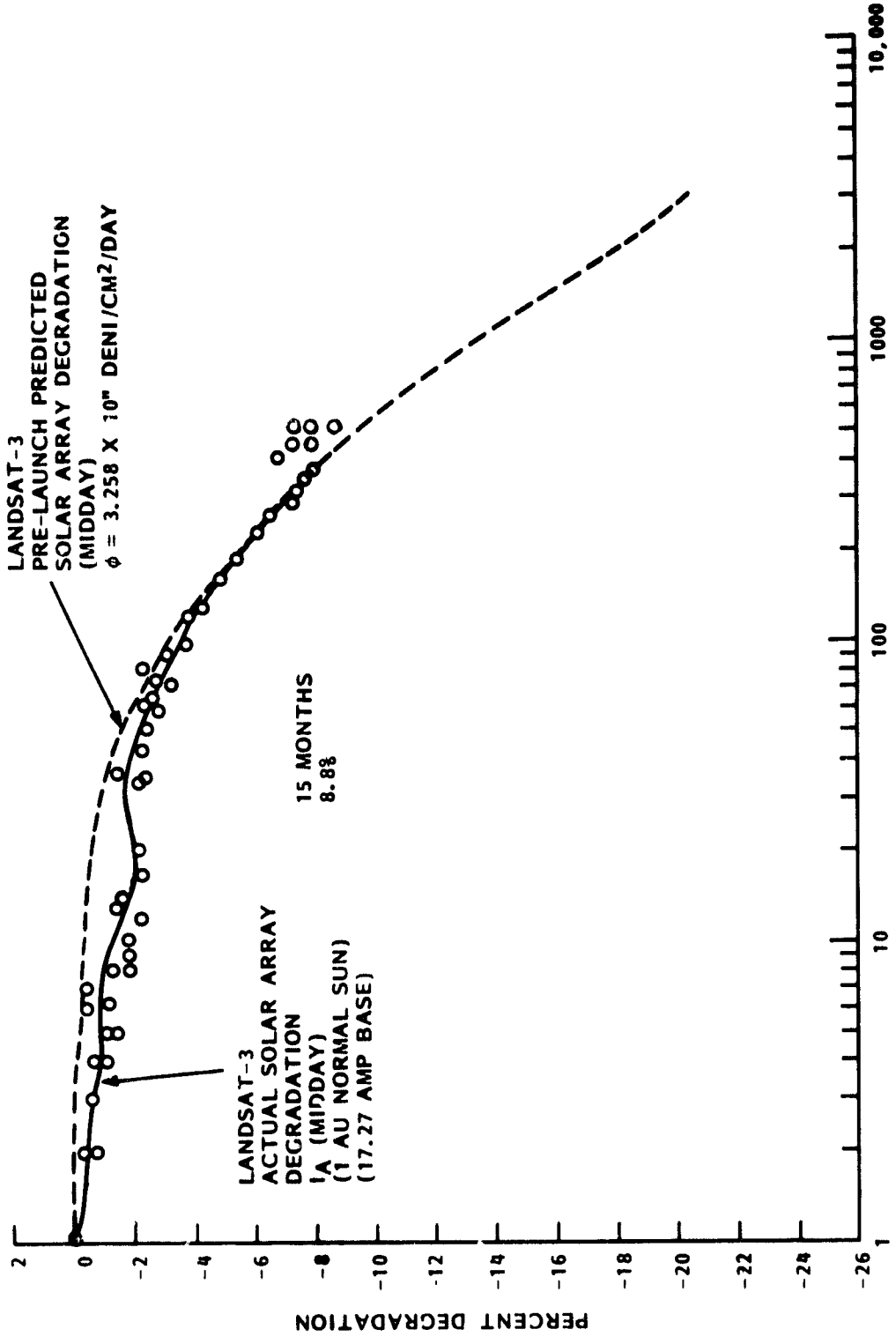


Figure 3-1. Landsat-3 I_A (Midday) Degradation vs Days

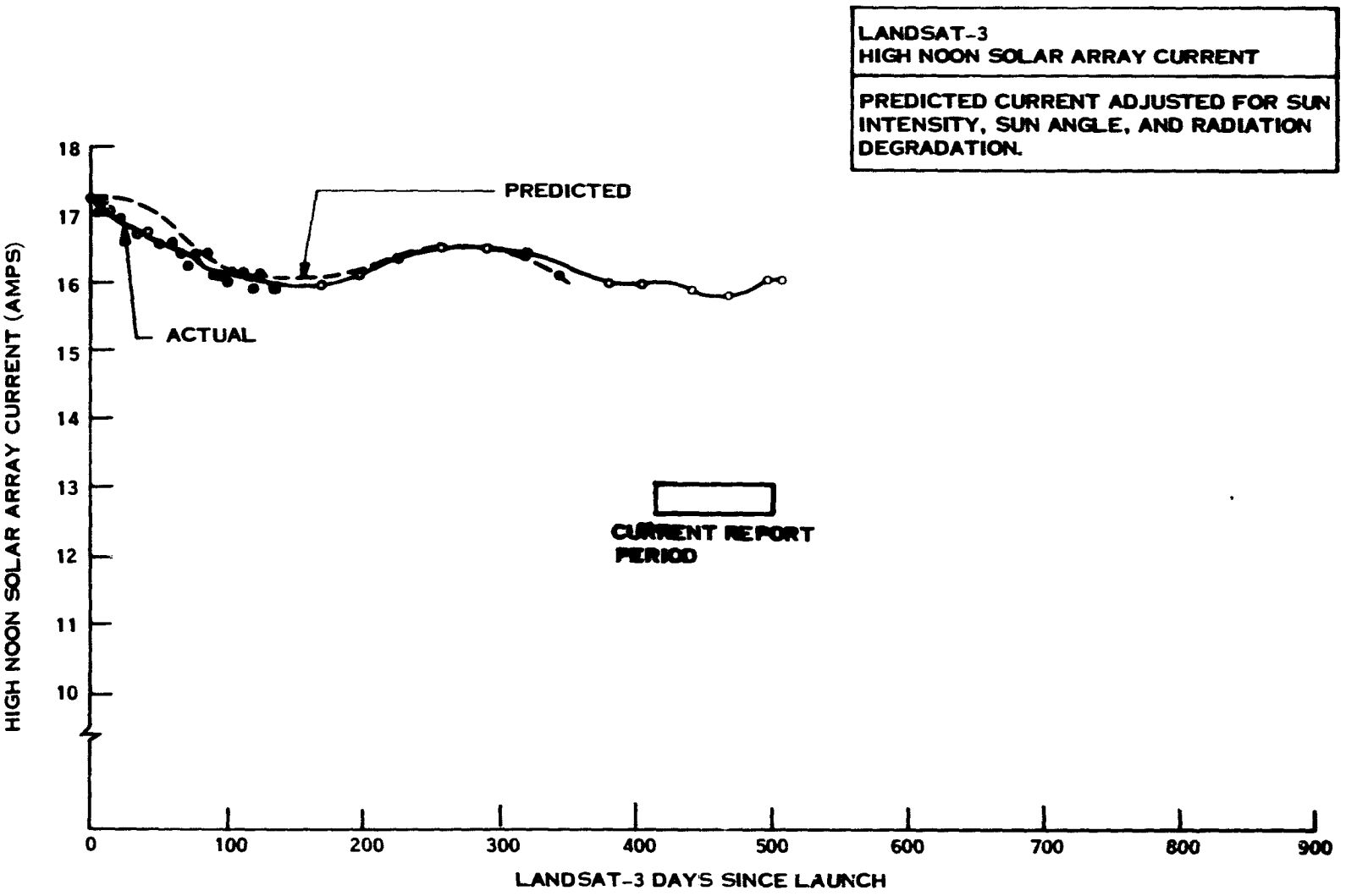


Figure 3-2. Landsat-3 Midday Solar Array Current

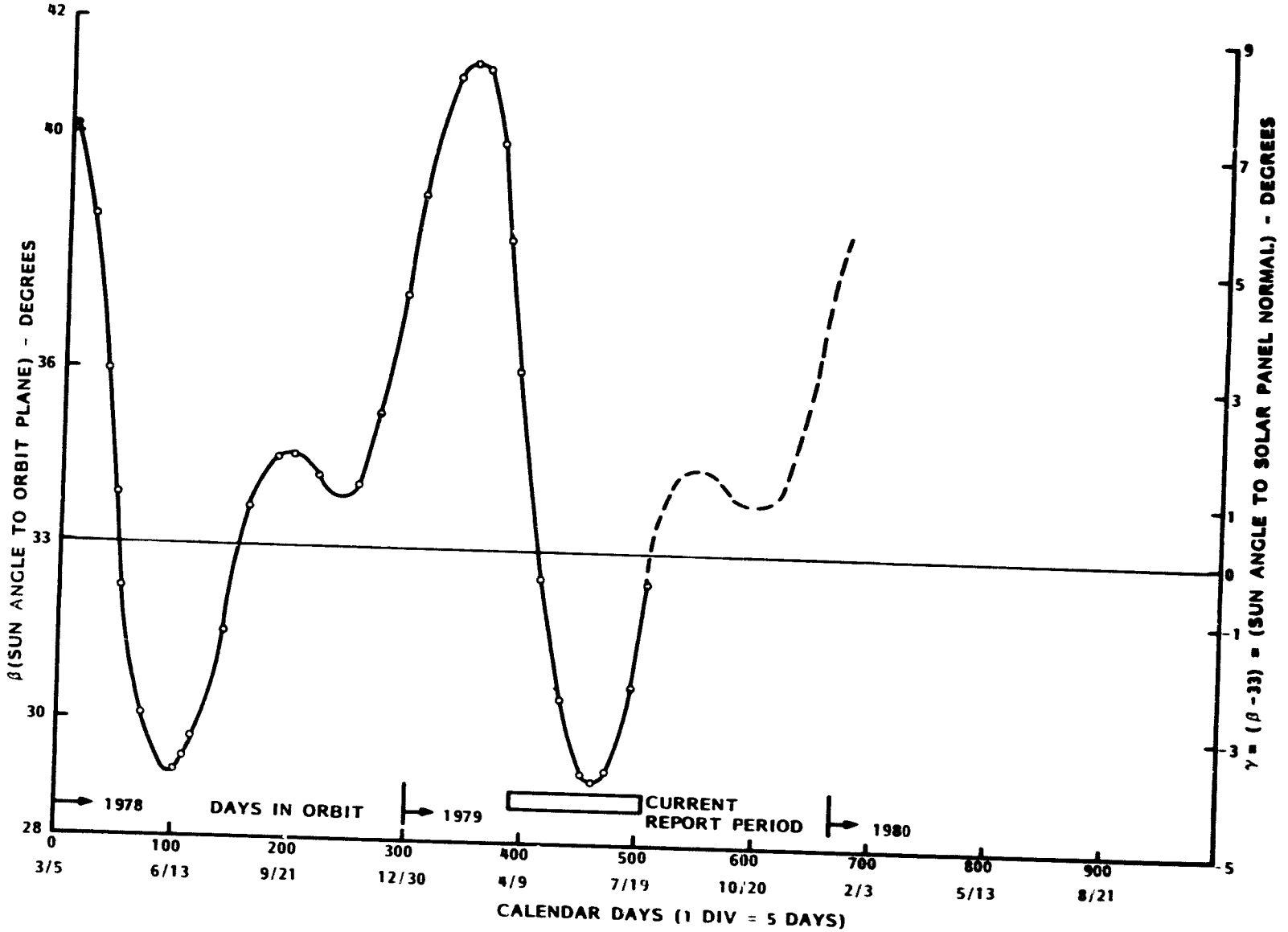


Figure 3-3. Landsat-3 Actual β (Orbit Plane) and α (Solar Panel) Sun Angles

Table 3-1. Landsat-3 Major Power Subsystem Parameters

Description	Orbit							
	65	1464	2711	4001	5262	6011	6440	6661
Batt 1 Max	32.41	32.92	32.92	33.00	32.83	33.09	32.75	33.26
2 Chge	32.41	32.83	32.92	33.00	32.83	33.00	32.75	33.26
3 Volt*	32.50	33.00	33.00	33.09	32.92	33.17	32.84	33.34
4	32.32	32.83	32.83	33.00	32.75	33.00	32.66	33.17
5	32.41	32.92	32.92	33.00	32.83	33.09	32.75	33.26
6	32.41	32.92	33.00	33.09	32.92	33.09	32.75	33.26
7	32.54	33.04	33.04	33.21	32.96	33.21	32.87	33.38
8	32.32	32.84	32.92	33.00	32.75	33.00	32.66	33.26
Average	32.41	32.91	32.94	33.05	32.85	33.08	32.75	33.27
Batt 1 End-of-Night	29.60	29.51	28.58	29.94	29.51	29.77	29.17	29.60
2 Volt*	29.51	29.51	28.49	29.85	29.51	29.68	29.09	29.51
3	29.75	29.67	28.75	30.09	29.67	29.84	29.34	29.75
4	29.51	29.51	28.49	29.85	29.51	29.68	29.09	29.51
5	29.60	29.60	28.66	29.94	29.60	29.77	29.17	29.60
6	29.60	29.60	28.58	29.94	29.51	29.77	29.17	29.60
7	29.76	29.68	28.75	30.10	29.68	29.93	29.34	29.76
8	29.51	29.43	28.94	29.85	29.43	29.68	29.09	29.51
Average	29.60	29.56	28.60	29.94	29.55	29.77	29.18	29.60
Batt 1 Chge	12.51	12.79	12.70	12.85	12.71	12.76	12.66	12.81
2 Share	11.78	12.43	11.90	12.33	11.88	12.23	12.26	12.29
3 (%)	11.64	11.90	12.16	11.82	11.75	12.35	12.26	12.55
4	12.31	12.16	12.50	12.06	12.31	12.58	12.67	12.42
5	14.25	13.17	13.65	13.71	13.89	13.10	13.11	13.10
6	12.54	12.77	12.30	12.38	12.60	12.77	12.61	12.83
7	12.84	12.40	12.63	12.48	12.69	12.43	12.57	12.32
8	12.11	12.39	12.17	12.37	12.16	11.77	11.86	11.68
Batt 1 Load	12.65	12.94	12.66	12.83	12.97	12.94	13.00	13.02
2 Share	11.94	12.28	11.73	12.04	11.73	11.93	11.88	12.02
3 (%)	11.99	12.53	12.77	12.64	12.89	12.97	12.89	12.96
4	12.06	12.33	11.97	11.66	11.51	11.85	11.79	11.61
5	13.86	12.96	12.84	12.82	12.62	12.39	12.03	12.47
6	11.97	12.34	13.40	13.86	14.36	14.06	14.16	14.10
7	12.80	12.63	12.37	11.99	11.75	11.96	12.22	11.91
8	12.51	11.99	12.26	12.12	12.17	11.89	12.02	11.91
Batt 1 Temp	15.70	16.67	16.86	19.31	17.98	17.16	17.34	17.17
2 In.	14.31	16.20	15.82	18.68	16.53	16.32	16.46	16.27
3 (°C)	15.26	20.33	16.68	18.55	17.34	17.18	17.14	17.20
4	19.46	20.33	20.79	22.12	21.41	21.26	21.20	21.22
5	19.57	17.74	19.45	22.12	22.02	18.88	18.64	18.59
6	15.49	17.16	16.91	18.49	17.38	17.24	17.26	17.38
7	20.71	19.80	20.99	23.04	22.67	20.89	20.65	20.70
8	17.55	17.88	18.44	21.48	20.59	18.36	18.28	18.14
Average	17.26	17.86	18.24	20.47	19.49	18.41	18.37	18.33
S/C Reg Bus Pwr. (W)	148.90	151.90	150.43	184.00	132.06	142.92	123.49	149.81
Comp Load Pwr. (W) (P/O S/C Reg Bus Pwr)	0.00	5.89	5.39	5.39	5.39	0.00	0.00	0.00
P/L Reg Bus Pwr. (W)	14.30	10.60	30.14	27.69	11.52	22.72	9.14	21.00
C/D Ratio	1.26	1.44	1.06	1.13	1.14	1.04	1.08	1.17
Total Charge (A-M)	253.00	274.31	310.63	275.53	221.05	268.06	223.49	301.24
Total Discharge (A-M)	200.70	190.94	293.80	243.98	193.53	258.15	206.22	257.84
Solar Array (A-M)	1252.00	1132.00	1152.00	1163.50	1162.20	1,112.60	1 093.20	1,090.90
S.A. Peak I (Amp)	16.08	16.93	16.85	17.29	16.93	16.48	16.41	16.14
Midday Array I (Amp)	17.38	16.05	16.14	16.49	15.97	15.79	15.53	15.79
Sun Angle (Deg) (γ)	7.40	- 3.77	1.64	3.43	5.69	-2.41	-3.93	-2.54
Max R Pad Temp (°C)	58.40	59.60	59.60	+ 65.69	60.80	59.60	59.60	58.40
Min R Pad Temp (°C)	- 38.67	- 42.67	- 39.34	- 40.00	- 37.40	-46.00	-41.34	-41.34
Max L Pad Temp (°C)	53.84	53.07	54.61	+ 58.46	56.15	53.84	53.84	53.84
Min L Pad Temp (°C)	- 40.71	- 45.48	- 43.57	- 43.57	- 40.71	-44.29	-46.43	-45.71

* All Voltages are Negative

FOLDOUT FRAME

Table 3-2. Landsat-3 Power Subsystem Analog Telemetry (Average Value for Data Received in NBTR Playback)

Function	Description	Unit*	Orbit							
			56	1464	2711	4001	5261	6011	6440	6861
6001	Batt 1 Disc 1	Amp	0.74	0.73	1.00	0.79	0.77	0.75	0.74	0.77
6002	2		0.69	0.70	0.94	0.75	0.73	0.71	0.70	0.74
6003	3		0.60	0.71	0.99	0.76	0.71	0.73	0.73	0.77
6004	4		0.73	0.70	0.96	0.72	0.71	0.70	0.69	0.71
6005	5		0.80	0.73	1.06	0.81	0.81	0.74	0.73	0.77
6006	6		0.64	0.69	0.98	0.78	0.73	0.75	0.75	0.79
6007	7		0.74	0.72	1.01	0.75	0.74	0.71	0.71	0.73
6008	8		0.72	0.68	0.98	0.75	0.73	0.69	0.69	0.72
6011	Batt 1 Chg I	Amp	0.62	0.63	0.59	0.62	0.34	0.55	0.44	0.60
6012	2		0.59	0.63	0.55	0.59	0.32	0.52	[illegible]3	0.57
6013	3		0.62	0.59	0.57	0.57	0.31	0.53	0.43	0.60
6014	4		0.63	0.58	0.58	0.58	0.33	0.54	0.44	0.60
6015	5		0.72	0.61	0.63	0.66	0.37	0.56	0.46	0.62
6016	6		0.62	0.58	0.57	0.60	0.34	0.54	0.44	0.61
6017	7		0.66	0.59	0.59	0.60	0.34	0.56	0.43	0.58
6018	8		0.62	0.64	0.57	0.59	0.32	0.50	0 [illegible]1	0.54
6021	Batt 1 Volt	VDC	31.06	31.50	31.25	31.59	31.53	31.65	31.36	31.56
6022	2		31.04	31.47	31.23	31.56	31.49	31.62	31.33	31.52
6023	3		31.18	31.60	31.26	31.69	31.62	31.75	31.46	31.65
6024	4		31.00	31.43	31.18	31.52	31.45	31.57	31.28	31.48
6025	5		31.09	31.52	31.27	31.61	31.55	31.67	31.38	31.58
6026	6		31.10	31.54	31.29	[illegible].63	31.56	31.68	31.39	31.59
6027	7		31.24	31.66	31.41	31.75	31.68	31.80	31.52	31.71
6028	8		31.00	31.43	31.19	31.53	31.46	31.58	31.29	31.49
6031	Batt 1 Temp	DGC	15.79	16.71	16.92	19.22	18.20	17.08	17.33	17.22
6032	2		14.55	16.18	15.95	18.53	16.83	16.17	16.44	16.44
6033	3		15.33	17.07	16.72	18.46	17.59	17.11	17.14	17.37
6034	4		19.47	20.36	20.78	22.07	21.54	21.21	21.17	21.43
6035	5		19.58	17.81	19.45	22.06	22.15	18.86	18.62	18.70
6036	6		15.56	17.17	16.93	18.40	17.61	17.18	17.24	17.54
6037	7		20.71	19.83	21.01	22.99	22.79	20.87	20.61	20.93
6038	8		17.63	17.87	18.50	21.38	20.85	18.24	18.30	18.17

6034	4		19.47	20.36	20.78	22.07	21.54	21.21	21.17	21.43
6035	5		19.58	17.81	19.45	22.06	22.15	18.86	18.62	18.70
6036	6		15.56	17.17	16.93	18.40	17.61	17.18	17.24	17.54
6037	7		20.71	19.83	21.01	22.99	22.79	20.87	20.61	20.93
6038	8		17.63	17.87	18.50	21.38	20.85	18.24	18.30	18.17
6040	Rt. Pad Temp	DGC	28.58	24.33	26.76	29.98	29.19	25.35	24.40	16.15
6041	Rt. Pad VM	VDC	34.03	34.75	34.43	34.67	34.70	35.15	34.99	35.36
6042	Rt. Pad VN	VDC	33.83	34.80	34.47	34.66	34.51	34.88	34.62	34.86
6044	Lt. Pad Temp	DGC	23.63	18.08	21.63	24.58	25.05	20.13	19.17	10.94
6045	Lt. Pad VF	VDC	34.05	34.76	34.44	34.67	34.66	34.82	34.58	34.81
6046	Lt. Pad VG	VDC	33.65	34.36	34.04	34.27	34.27	34.41	34.17	34.42
6050	S/C UR Bus V	VDC	31.26	31.76	31.50	31.79	31.74	31.84	31.55	31.73
6051	S/C RG Bus V	VDC	24.58	24.60	24.60	24.61	24.61	24.61	24.61	24.61
6052	Aux Reg AV	VDC	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52
6053	Aux Reg BV	VDC	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52
6054	Solar I	Amp	16.73	15.89	15.85	16.18	15.70	15.56	15.35	15.13
6055	S/C RG Bus I	Amp	T	T	T	T	T	T	T	T
6056	S/C RG Bus I	Amp	6.08	6.20	6.24	6.65	5.36	5.79	5.29	5.84
6058	PC Mod T1	DGC	20.30	21.67	20.95	23.25	21.09	21.56	21.11	21.64
6059	PC Mod T2	DGC	18.44	19.99	19.49	21.47	20.12	20.03	20.05	20.19
6070	P/L RG Bus V	VDC	24.64	24.66	24.66	24.66	24.66	24.66	24.66	24.66
6071	P/L UR Bus V	VDC	31.27	31.76	31.51	31.79	31.76	31.85	31.57	31.75
6072	P/L RG Bus I	Amp	T	T	T	T	T	T	T	T
6073	P Aux AV	VDC	23.63	23.65	23.70	23.69	23.64	23.68	23.66	23.68
6074	P Aux BV	VDC	23.68	23.68	23.72	23.70	23.70	23.70	23.70	23.70
6075	PR Mod T1	DGC	17.36	18.61	18.45	20.05	18.65	18.61	18.53	18.63
6076	PR Mod T2	DGC	16.77	18.21	17.95	19.61	18.36	18.13	18.15	18.26
6079	Fuse Blow V	VDC	24.66	24.68	24.69	24.69	24.68	24.69	24.68	24.68
6080	Shunt 1 I	Amp	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00
6081	2		0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00
6082	3		0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00
6083	4		0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00
6084	5		0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00
6085	6		0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00
6086	7		0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00
6087	8		0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00
6100	P/L RG Bus I	Amp	0.58	0.43	1.23	0.97	0.46	0.82	0.62	0.74
Total No.	Major Frames	Frm	372	785	388	785	382	785	748	502

* All Voltages are Negative

SECTION 4

ATTITUDE CONTROL SUBSYSTEM (ACS)
LANDSAT-3

SECTION 4

ATTITUDE CONTROL SYSTEM (ACS)

Since launch, Landsat-3's Attitude Control System has consistently maintained correct spacecraft attitude.

In order to conserve freon, Pitch and Roll pneumatic gating is minimized by Pitch Position Bias programs that are implemented during spacecraft night. Stored Pitch Position Bias sequences maintain Pitch flywheel speed below the gating threshold while Roll wheel momentum is unloaded - as required - by two to three night scheduled momentary enables. When it is necessary to unload Roll wheel momentum in daylight, real time momentary enables are commanded - provided payloads are OFF.

The effects of solar activity on Landsat-3's Pitch flywheel response have diminished substantially during this report period. Alterations in the Pitch Position Bias schedule to control Pitch flywheel speed have all been routine.

Table 4-1 lists the PPB sequences implemented during this quarter and Figures 4-1 and 4-2 summarize Landsat-3's pneumatic gating patterns since launch.

Table 4-1. Landsat 3 Pitch Position Bias, Pneumatic Gating Summary

Period		Repetitive Implementation Sequence			Minutes Positioned About Satellite Midnight, T_o		Resulting Average Number of Pitch Gates
From Orbit	To Orbit	N_o*	$N_o + 1$	$N_o + 2$	From	To	
5776 23 April 79	5789 24 April 79	$+2.9^o$	$+2.9^o$	$+2.9^o$	$T_o - 10.0$	T_o	4.29 (+P)
5790 24 April 79	5924 4 May 79	$+2.9^o$	$+2.9^o$	$+2.9^o$	$T_o - 10.0$	$T_o + 3.0$	.52 (+P)
5925 4 May 79	5982 8 May 79	$+2.0^o$	$+2.0^o$	+2.0	$T_o - 10.0$	$T_o + 6.0$	.49 (+P)
5983 8 May 79	6079 15 May 79	$+2.0^o$	$+2.0^o$	+2.0	T - 10.0	$T_o + 9.0$	0
6080 15 May 79	6176 22 May 79	+2.0	+2.0	+2.0	T - 10.0	$T_o + 7.0$	.44 (-P)
6177 22 May 79	7045 23 Jul 79	+2.0	+2.0	+2.0	$T_o - 7.0$	$T_o + 7.0$	.08 (+P)

Flywheel duty cycles remain low (3 to 8 percent) and dual scanner operation is normal.

As shown in Figures 4-3 and 4-4, both SADS continue to track the sun. However, since Orbit 1870 (17 July 1978) the LSAD's motor winding voltage has been gradually increasing (ref. PIR 14N0-L3-261). Friction buildup in the second and/or third stage (Wabble Gear) gear reduction is suspected.

LSAD average motor winding voltage has increased from 6.37 volts in Orbit 24 (7 March 1978) to 8.13 volts in Orbit 6571 (19 June 1979); performance may be affected if the average motor winding voltage increases to 13.2 volts (18.0 volts peak).

LSAD average motor winding voltage vs. time since launch is plotted in Figure 4-5. A linear regression of the data points plotted after Orbit 1870 (17 July 1978) predicts LSAD average motor winding voltage will increase to 13.2 volts in January 1982. If a second order polynomial with its vertex at launch is fitted to all of the data points, the resulting curve passes through 13.2 volts in July 1980, which is 18 months sooner than the date predicted by the linear regression.

Present conditions do not warrant altering the LSAD's operational mode and no action will be taken at this time. LSAD performance, however, will be monitored closely in the future.

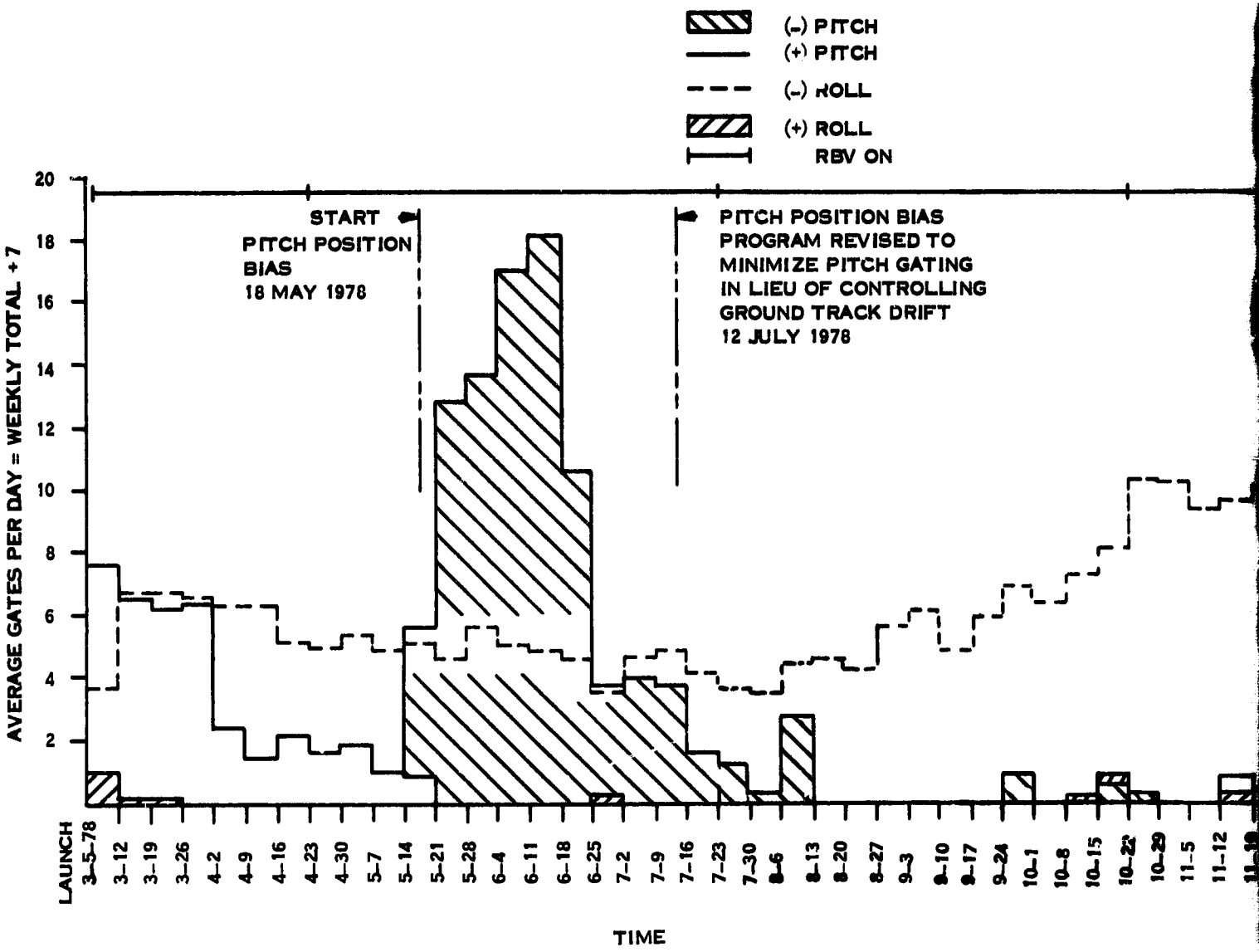
RMP1 (gas bearing) replaced RMP2 (ball bearing) in Orbit 6220 (25 May 1979) - ref. PIR 14N0-L3-257. Degraded performance in the RMP2 appeared in Orbits 6201 and 6204 (24 May 1979) only. Motor current increased to 120 ma and spikes appeared in the High Rate telemetry signature.

The symptoms were identical to those evident in Landsat-2's RMP2 failure, consequently the decision to transfer command from RMP2 to RMP1 was implemented.

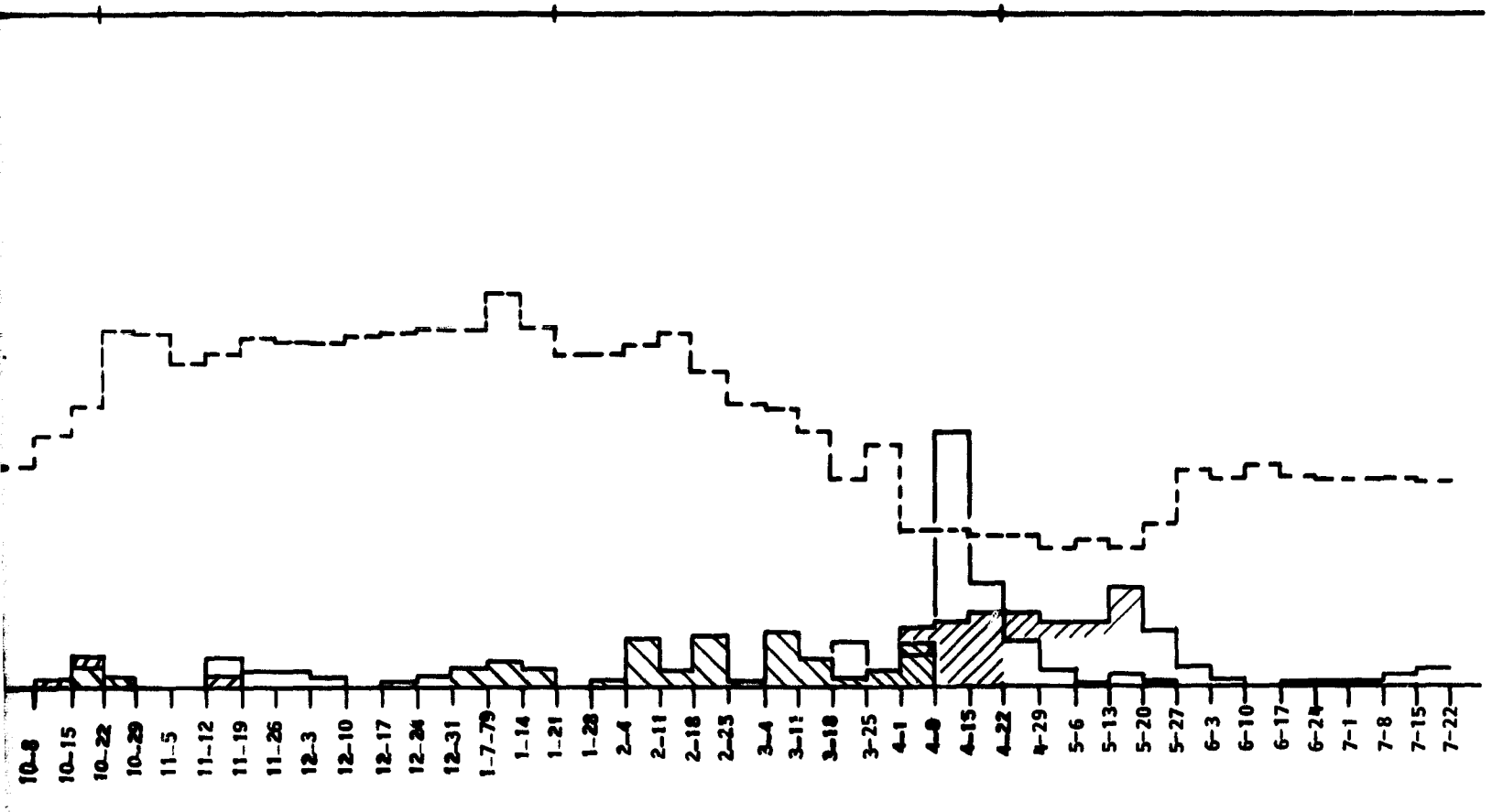
The RMP2 was disabled via the coast down procedure in Orbit 6220 (25 May 1979). The gyro came to rest in approximately six minutes - which is a normal value - indicating the RMP2 may be used again in the future.

An orbit adjust was conducted (see Section 7) during Orbit 6848 (9 July 1979) with the ACS in the Orbit Adjust mode and with pneumatics enabled; spacecraft attitude was successfully maintained during the procedure.

Other than the anomalies discussed earlier, systems' temperatures, pressures, voltages and currents have all been normal as shown in the telemetry summary, Tables 4-2, 4-3 and 4-4.

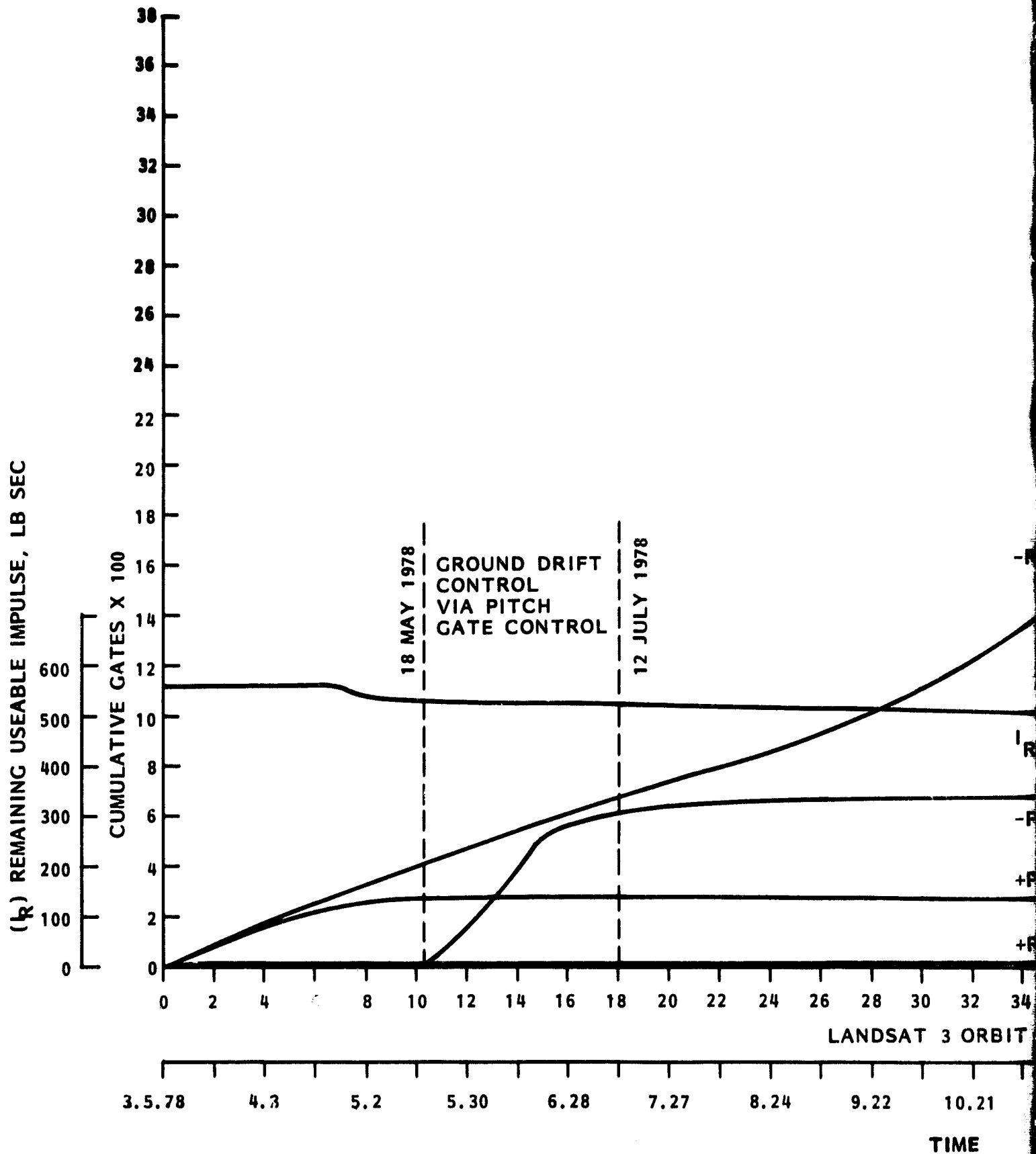


FOLDOUT FRAME



FOLDOUT FRAME 2

Figure 4-1. Landsat-3 Gating Frequency vs Time



FOLDOUT FRAME

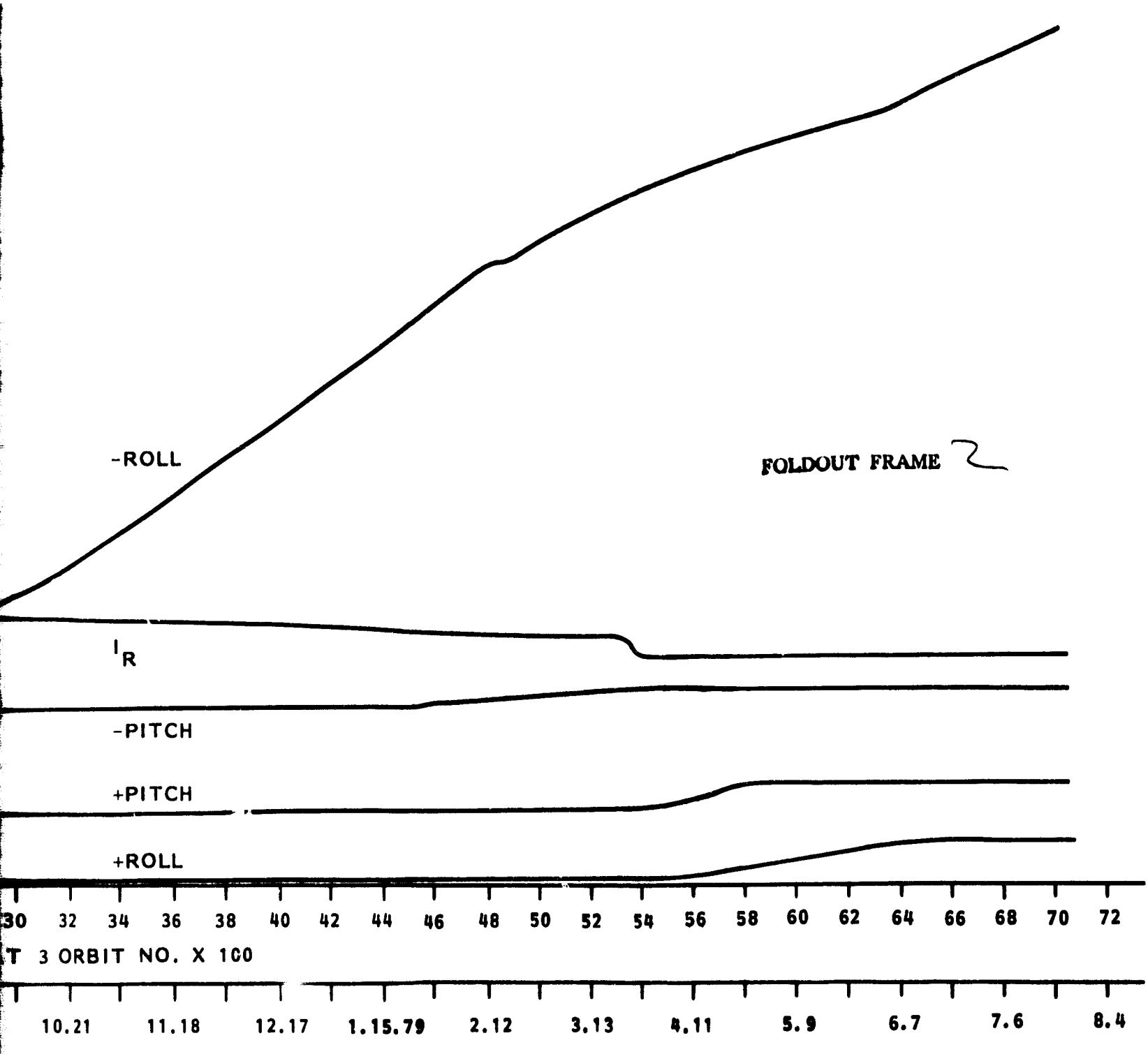


Figure 4-2. Landsat-3 Cumulative Gating History

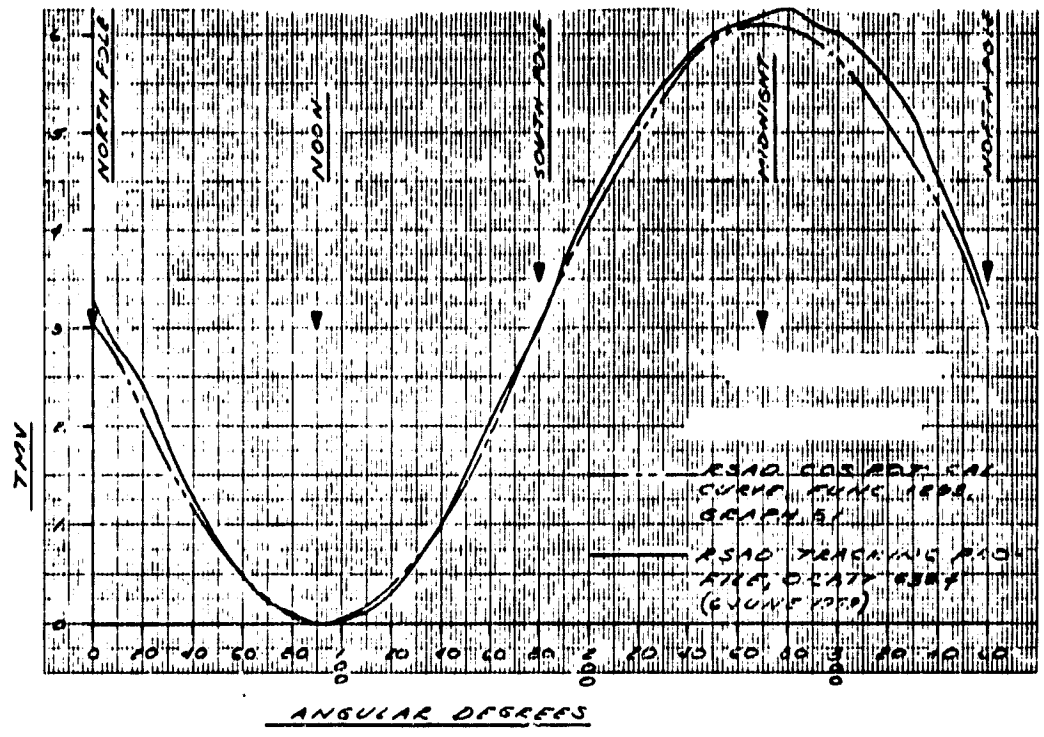


Figure 4-3. Landsat-3 RSAD Tracking Profile

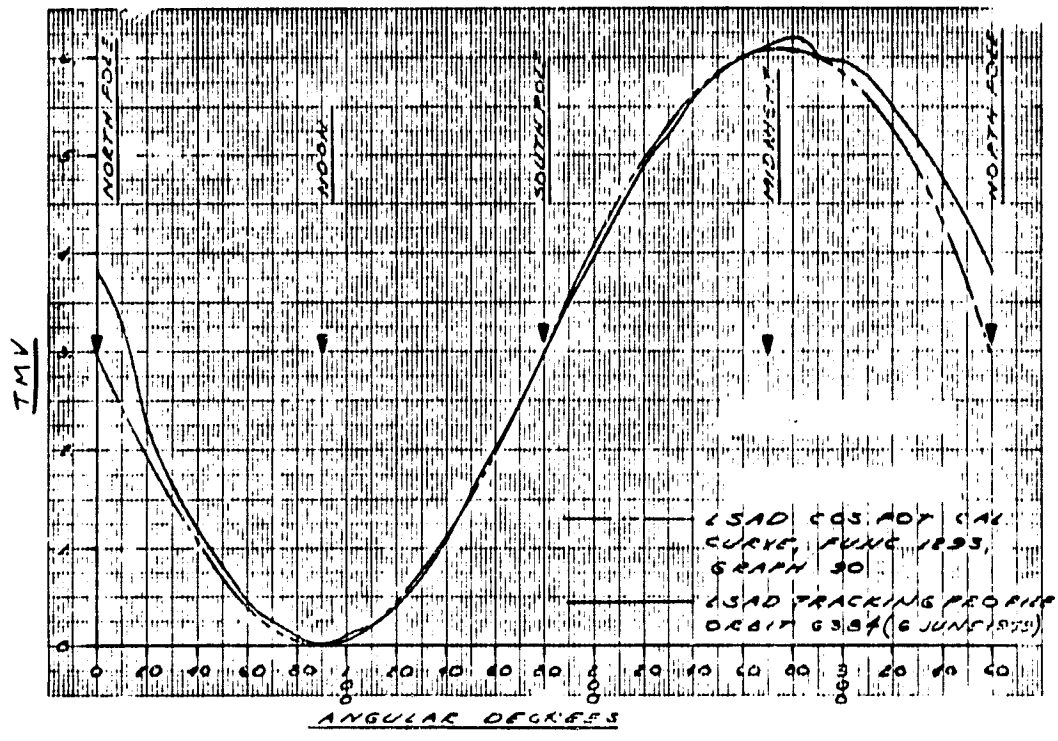


Figure 4-4. Landsat-3 LSAD Tracking Profile

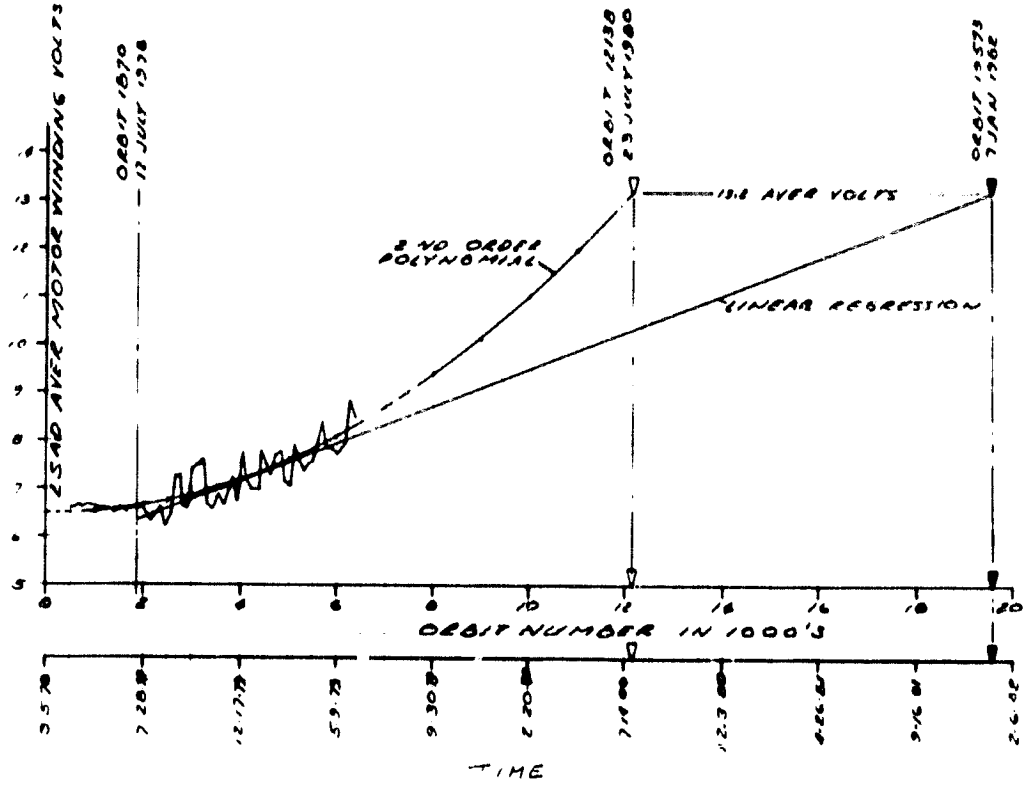


Figure 4-5. Landsat-3 LSAD Motor Winding Volts vs. Time

Table 4-2. Landsat-3 ACS Voltages and Currents

Func	Name	Units	Orbits							
			50	1431	2700	4001	5152	6011	6440	6812
1081	RMP 1 MTR Volts	VDC	F	F	F	F	F	F	32.85	32.85
1082	RMP 1 MTR Current	Amps	F	F	F	F	F	F	.21	.21
1080	RMP 1 Supply Volts	VDC	F	F	F	F	F	F	23.59	23.59
1091	RMP 2 MTR Volts	VDC	30.50	30.57	30.56	30.51	30.[illegible]	30.56	F	F
1092	RMP 2 MTR Current	Amps	0.11	0.11	0.11	0.11	0.11	.11	F	F
1090	RMP 2 Supply Volts	VDC	23.66	23.65	23.63	23.60	23.61	23.61	F	F
1220	SAD RT MTR WNDNG Volts	VDC	4.64	4.05	4.10	4.09	4.15	4.09	4.44	4.10
1240	SAT LT MTR WNDNG Volts	VDC	6.30	6.50	7.09	7.20	7.26	8.00	8.08	9.13
1227	SAT RT -15 VDC Conv.	VDC	15.48	15.48	15.48	15.48	15.48	15.48	15.48	15.48
1247	SAT LT -15 VDC Conv.	VDC	14.93	14.94	14.94	14.94	14.94	14.94	14.94	14.94
1056	CLB $\pm$ 6 VDC	TMV	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35
1055	CLB $\pm$ 10 VDC	TMV	2.88	2.88	2.87	2.88	2.87	2.87	2.87	2.87
1057	CLB Power Supply Volts	TMV	2.94	2.90	2.90	2.90	2.89	2.89	2.89	2.88

Table 4-3. Landsat-3 ACS Attitude Errors and Driver Duty Cycles

Func	Name	Units	Orbit							
			051	1431	2700	4001	5152	6011	6440	6812
1041	Pitch Fine Error	DGC	- 0.13	- 1.27*	0.40	- 0.64	- 0.18	- 0.52	- 0.39	- 0.41
1043	Pitch Flywheel Speed	RPM	-199.28	311.67	151.87	- 8.81	131.48	- 13.84	67.56	- 2.25
1038	Pitch Mtr Drvr CCW	PCT	5.04	2.02	4.83	6.30	2.89	3.78	2.87	3.44
1039	Pitch Mtr Drvr CW	PCT	2.92	5.41	6.85	5.19	4.77	3.64	4.38	3.77
1030	Roll Fine Error	DEG	0.13	- 0.19	0.18	0.14	- 0.17	0.16	- 0.11	- 0.14
1027	Roll Rear Flywheel SPD	RPM		801.37	804.05	782.98	770.35	770.77	781.55	783.74
1026	Roll Fwd Flywheel SPD	RPM	76.	*46.75	741.37	746.07	730.17	725.11	742.03	719.21
1022	Roll Rear Mtr Drvr CCW	PCT	1.05	0.04	0.59	0.74	0.57	0.21	0.10	0.41
1025	Roll Rear Mtr Drvr CW	PCT	6.94	6.00	7.12	6.97	6.56	5.71	5.51	5.30
1023	Roll Fwd Mtr Drvr CCW	PCT	1.03	0.01	0.35	0.78	0.72	0.20	0.06	0.26
1024	Roll Fwd Mtr Drvr Cw	PCT	7.49	5.30	6.85	7.72	7.32	7.03	7.28	7.00
1035	Yaw Tach	RPM	24.29	2.80	5.44	- 15.53	13.27	- 75.62	85.44	99.31
1033	Yaw Mtr Drvr CW	PCT	2.90	1.52	2.43	2.18	1.95	1.41	1.63	1.91
1034	Yaw Mtr Drvr CCW	PCT	2.73	1.42	2.00	2.00	1.76	1.60	1.11	1.18
1221	SAD Right Tach	D/M	3.22	4.06	4.00	3.98	3.97	3.98	3.98	3.96
1241	SAD Left Tach	D/M	3.75	3.76	3.76	3.75	3.73	3.74	3.74	3.76

* Pitch Position Bias Implemented in this Orbit

Table 4-4. Landsat-3 ACS Subsystem Temperature and Pressure Averages

Func	Name	Units	Orbit							
			50	1431	2700	4001	5152	6011	6440	6812
1084	RMP 1 Gyro Temperature	DGC	18.78	22.30	23.20	25.47	23.94	25.53	54.53	54.53
1094	RMP 2 Gyro Temperature	DGC	77.52	17.99	78.00	78.00	78.00	78.07	26.33	26.59
1222	SAD RT MTR HSNG Temp	DGC	21.32	26.71	27.31	29.33	27.49	29.78	31.53	31.40
1242	SAD LT MTR HSNG Temp	DGC	26.72	30.10	31.52	33.82	32.78	33.48	32.30	32.54
1223	SAD RT MTR WNDNG Temp	DGC	19.94	25.37	25.68	27.54	25.43	28.23	29.82	29.40
1243	SAD LT MTR WNDNG Temp	DGC	27.03	29.47	30.97	33.29	32.29	33.36	32.50	33.37
1228	SAD RT HSG Pressure	PSI	6.93	7.00	7.00	7.01	6.87	6.87	6.93	6.86
1248	SAD LT HSG Pressure	PSI	7.31	7.31	7.25	7.26	5.69	5.61	5.64	5.62
1007	FWD Scanner MTR Temp	DGC	21.59	24.35	26.30	29.97	27.36	28.98	29.03	29.26
1016	Rear Scanner MTR Temp	DGC	22.64	24.86	26.17	29.06	27.22	28.46	29.12	29.15
1003	FWD Scanner Pressure	PSI	7.27	6.19	5.98	5.84	5.46	5.23	5.23	5.12
1012	Rear Scanner Pressure	PSI	6.93	7.14	7.04	6.88	6.69	6.59	6.60	6.50
1212	Gas Tank Pressure	PSI	1999.29	1963.84	1937.44	1912.31	1787.44	1764.78	1749.75	1724.94
1210	Gas Tank Temperature	DGC	19.70	23.31	24.54	27.14	25.51	26.58	26.65	26.59
1213	Manifold Pressure	PSI	59.21	59.98	59.45	59.50	59.82	59.87	59.90	59.91
1211	Manifold Temperature	DGC	19.80	23.42	24.68	27.31	25.68	26.73	26.84	26.75
1059	CLG Power Sup Card Temp	DGC	32.36	34.73	36.07	38.20	37.02	37.63	37.05	37.31
1260	THO1 EBP	DGC	23.15	25.88	27.50	29.87	28.90	29.49	27.57	27.77
1261	THO2 EBP	DGC	18.71	21.90	23.49	25.87	24.56	25.55	25.62	25.73
1262	THO3 EBP	DGC	16.64	20.93	22.00	24.26	22.65	24.38	26.75	26.69
1263	THO1 STS	DGC	- 1.25	0.14	2.44	3.92	3.41	3.80	4.43	4.47
1264	THO2 STS	DGC	- 10.75	- 9.90	- 7.24	- 6.43	- 6.29	-5.7-	-4.81	-4.90
1265	THO3 STS	DGC	5.33	4.66	9.62	10.75	11.71	10.46	10.38	10.62
1266	THO4 STS	DGC	- 11.52	- 7.46	- 3.79	- 1.23	- 2.46	-.88	-1.19	-.68
1267	THO5 STS	DGC	6.37	6.39	9.91	10.51	10.80	10.56	11.24	11.13
1224	SAD R FSST	DGC	31.58	40.59	40.37	41.79	39.78	42.27	42.48	42.29
1244	SAD L FSST	DGC	40.97	41.54	42.91	44.14	44.15	43.56	43.45	43.49

SECTION 5

COMMAND/CLOCK SUBSYSTEM (CMD)

LANDSAT-3

SECTION 5

COMMAND/CLOCK SUBSYSTEM (CMD)

The Command Clock Subsystem operated nominally in this report period.

The spacecraft clock was reset during Orbit 5972 on 7 May 1979 from 2318 ms fast to 318 ms fast, and again during Orbit 6991 on 20 July, 1979 from 2035 ms fast to 35 ms fast.

Figures 5-1, 5-2, and 5-3 show clock performance since launch.

Table 5-1 shows typical telemetry values since launch. All telemetry values are nominal.

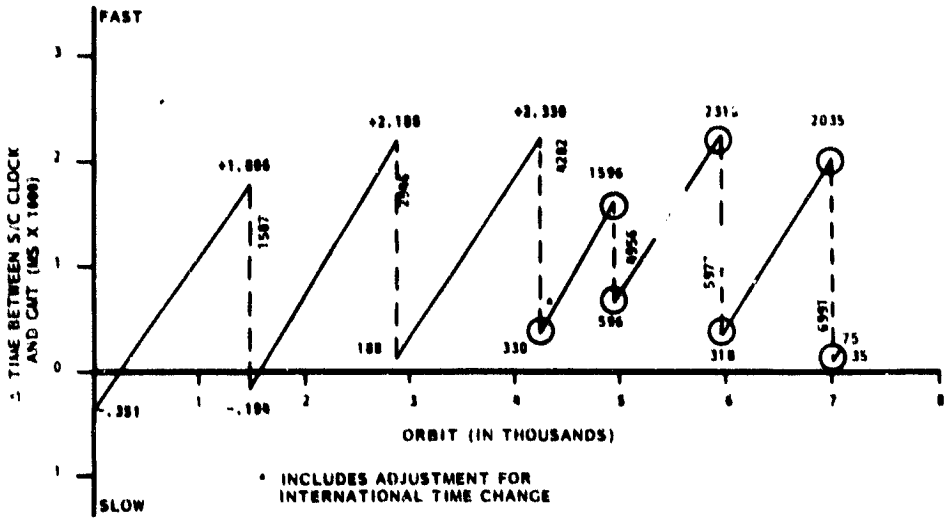


Figure 5-1. Landsat-3 Clock Drift from GMT

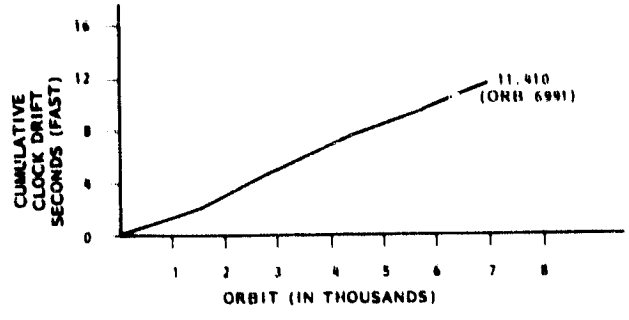


Figure 5-2. Landsat-3 Cumulative Clock Drift

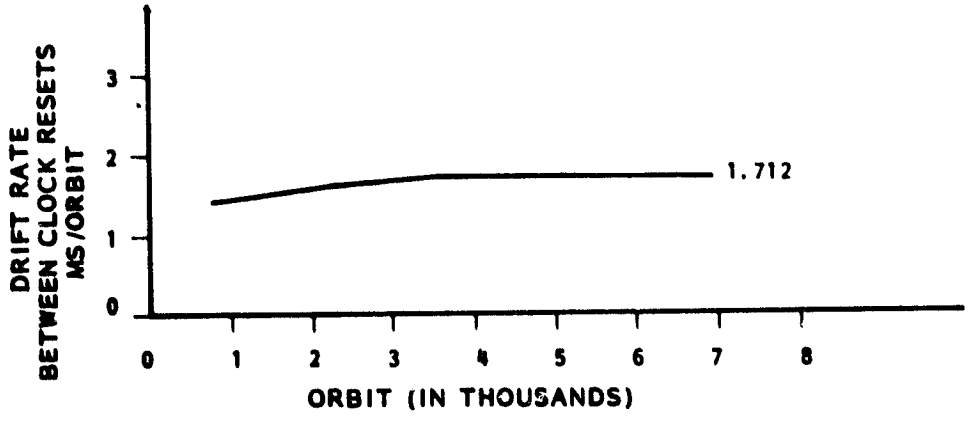


Figure 5-3. Landsat-3 Clock Drift Rate

Table 5-1. Command Clock Telemetry Summary

Fun	Name	Units	Orbit							
			34	1431	2711	4001	5152	6011	6410	6812
8005	Pri. Power Supply Temp	DGC	41.25	42.97	42.81	44.04	43.09	43.58	43.77	43.26
8006	Red. Power Supply Temp	DGC	41.59	43.37	43.18	44.41	43.75	44.10	44.23	43.89
8007	Pri. Osc. Temp	DGC	30.28	30.77	30.34	31.95	31.11	31.17	31.38	30.89
8008	Red. Osc. Temp	DGC	31.21	31.61	31.15	32.53	31.62	31.62	31.84	31.25
8009	Pri. Osc. Output	TMV	1.05	1.06	1.06	1.08	1.07	1.07	1.04	1.07
8010	Red. Soc. Output	TMV	1.24	1.25	1.25	1.25	1.25	1.25	1.25	1.25
8011	100 KHz	TMV	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.12
8012	10 KHz	TMV	3.07	3.07	3.06	3.07	3.06	3.06	3.06	3.06
8013	2.5 KHz	TMV	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95
8014	400 Hz	TMV	4.45	4.45	4.45	4.45	4.45	4.45	4.45	4.45
8015	Pri. + 4V Power Supply	VDC	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05
8016	Red. + 4V Power Supply	VDC	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97
8017	Pri. + 6V Power Supply	VDC	2.28	2.27	2.27	2.27	2.27	2.28	2.27	2.27
8018	Red. + 6V Power Supply	VDC	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
8019	Pri. - 5V Power Supply	VDC	5.25	5.25	5.25	5.25	5.25	5.25	5.52	5.25
8020	Red. - 6V Power Supply	VDC	5.23	5.23	5.23	5.23	5.23	5.23	5.23	5.23
8021	Pri. - 23V Power Supply	VDC	5.70	5.70	5.70	5.70	5.70	5.70	5.70	5.70
8022	Red. - 23V Power Supply	VDC	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80
8023	Pri. - 29V Power Supply	VDC	5.42	5.43	5.43	5.43	5.43	5.43	5.43	5.43
8024	Red. - 29V Power Supply	VDC	5.38	5.40	5.39	5.40	5.40	5.40	5.40	5.40
8101	CIU A - 12V	VDC	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95
8102	CIU B 12V	VDC	3.98	3.98	3.99	3.99	3.99	3.99	3.99	3.99
8103	CIU A - 5V	VDC	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12
8104	CIU B - 5V	VDC	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15
8105	CIU A Temp.	DGC	22.53	22.01	22.02	23.04	22.63	22.32	22.36	22.10
8106	CIU B Temp.	DGC	20.36	19.96	19.98	20.83	20.48	20.22	20.24	20.04
8201	Receiver RF-A Temp.	DGC	28.70	28.79	28.48	30.06	29.10	29.24	29.49	28.72
8202	Receiver RF-B Temp.	DGC	21.74	21.76	21.30	23.37	22.11	22.25	22.60	21.57
8203	D MOD A Temp	DGC	36.00	36.55	36.35	37.59	36.94	36.87	37.05	36.55
8204	D MOD B Temp	DGC	25.27	25.50	25.21	26.79	25.91	25.74	26.03	25.36
8205	Receiver A AGC	DBM	-84.89	-86.05	-88.71	-92.78	-86.70	-86.50	-86.61	-90.11
8206	Receiver B AGC	DBM	F	F	F	F	F	F	F	F
8207	Amp. A Output	TMV	2.41	2.35	2.44	2.39	2.48	2.45	2.40	2.31
8208	Amp. B Output	TMV	F	F	F	F	F	F	F	F
8209	Freq. Shift Key A Out	TMV	1.09	1.08	1.08	1.08	1.09	1.08	1.08	1.08
8210	Freq. Shift Key B Out	TMV	F	F	F	F	F	F	F	F
8211	Amp. A Output	TMV	1.12	1.10	1.11	1.10	1.12	1.11	1.11	1.10
8212	Amp. B Output	TMV	F	F	F	F	F	F	F	F
8215	D MOD A - 15V	TMV	5.01	5.02	5.02	5.02	5.02	5.02	5.02	5.02
8216	D MOD B - 15V	TMV	F	F	F	F	F	F	F	F
8217	Regulator A - 10V	TMV	5.52	5.52	5.52	5.52	5.52	5.52	5.52	5.52
8218	Regulator B - 10V	TMV	F	F	F	F	F	F	F	F
8311	ECAM Memory Temp	DGC	16.18	15.43	15.22	16.79	15.93	15.83	16.05	15.66
8312	ECAM Pwr. Sup Temp	DGC	19.59	16.80	16.43	18.99	17.70	17.28	17.79	16.89

F = Unit OFF

SECTION 6

TELEMETRY SUBSYSTEM (TLM)

LANDSAT-3

SECTION 6

TELEMETRY SUBSYSTEM (TLM)

The TLM Subsystem has operated nominally during this report period. Table 6-1 shows typical telemetry values since launch. All are nominal. Landsat-3 has redundant capability and "A" units have been operated since launch. Telemetry format "0" (fast verify) is in use.

Table 6-1. TMP Telemetry Values

Func	Name	Units	Orbit							
			33	1431	2711	4001	5152	6011	6440	6812
09001	Power Supply A +5V	TMV	4.70	4.69	4.69	4.68	4.68	4.70	4.70	4.70
09002	Power Supply B +5V	TMV	F	F	F	F	F	F	F	F
09003	Power Supply A +15V	TMV	4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.90
09004	Power Supply B +15V	TMV	F	F	F	F	F	F	F	F
09005	Power Supply A -6V	TMV	5.65	5.65	5.65	5.65	5.65	5.65	5.65	5.65
09006	Power Supply B -6V	TMV	F	F	F	F	F	F	F	F
09007	Power Supply A -15V	TMV	4.97	4.97	4.97	4.97	4.97	4.97	4.97	4.97
09008	Power Supply B -15V	TMV	F	F	F	F	F	F	F	F
09009	Power Supply A -22V	TMV	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35
09010	Power Supply B -22V	TMV	F	F	F	F	F	F	F	F
09011	Power Supply A +6V	TMV	4.82	4.82	4.82	4.82	4.81	4.82	4.82	4.82
09012	Power Supply B +6V	TMV	F	F	F	F	F	F	F	F
09013	Power Supply A Temp	DGC	26.66	26.85	27.81	30.38	30.88	27.47	27.48	27.31
09014	Power Supply B Temp	DGC	25.10	23.50	24.56	27.50	28.06	24.17	24.22	23.99
09015	Temperature C	DGC	19.19	19.48	20.60	23.74	24.28	20.10	20.20	19.91
09100	Reflected Power	DBM	7.61	7.79	6.94	7.05	6.31	7.12	6.98	7.05
09101	XMTR A -20 VDC	TMV	3.87	3.90	3.90	3.90	3.90	3.90	3.90	3.90
09102	XMTR B -20 VDC	TMV	F	F	F	F	F	F	F	F
09103	XMTR A - Temp	DGC	21.01	17.73	19.16	21.49	22.43	18.69	18.43	18.44
09104	XMTR B - Temp	DGC	21.89	18.60	20.05	22.43	23.45	19.59	19.30	19.30
09105	XMTR A Power Output	DBM	28.72	28.86	28.90	28.96	28.90	28.64	28.58	28.57
09106	XMTR B Power Output	DBM	F	F	F	F	F	F	F	F

F = Unit OFF

SECTION 7

ORBIT ADJUST SUBSYSTEM (OAS)

LANDSAT-3

SECTION 7

ORBIT ADJUST SUBSYSTEM (OAS)

An orbit adjust was performed during Orbit 6848 (9 July 1979) to correct the spacecraft's eastward ground track drift. The ACS was commanded into the Orbit Adjust mode with pneumatics enabled and the OA system's performance was normal.

The minus X thruster was fired for 16.0 seconds and the spacecraft's altitude was increased by 118.0 meters.

Burn efficiency was calculated at 112.3%.

Figures 7-1, 7-2, 7-3 and 7-4 show the OA and ACS system's performance during the orbit adjust maneuver.

Table 7-1 summarizes all of the OAS system's operations since launch.

Table 7-2 shows typical telemetry values for the OAS during its quiescent periods. Variations in thrust chamber temperatures shown in Table 7-2 are consistent with variations in sun intensity and sun angle.

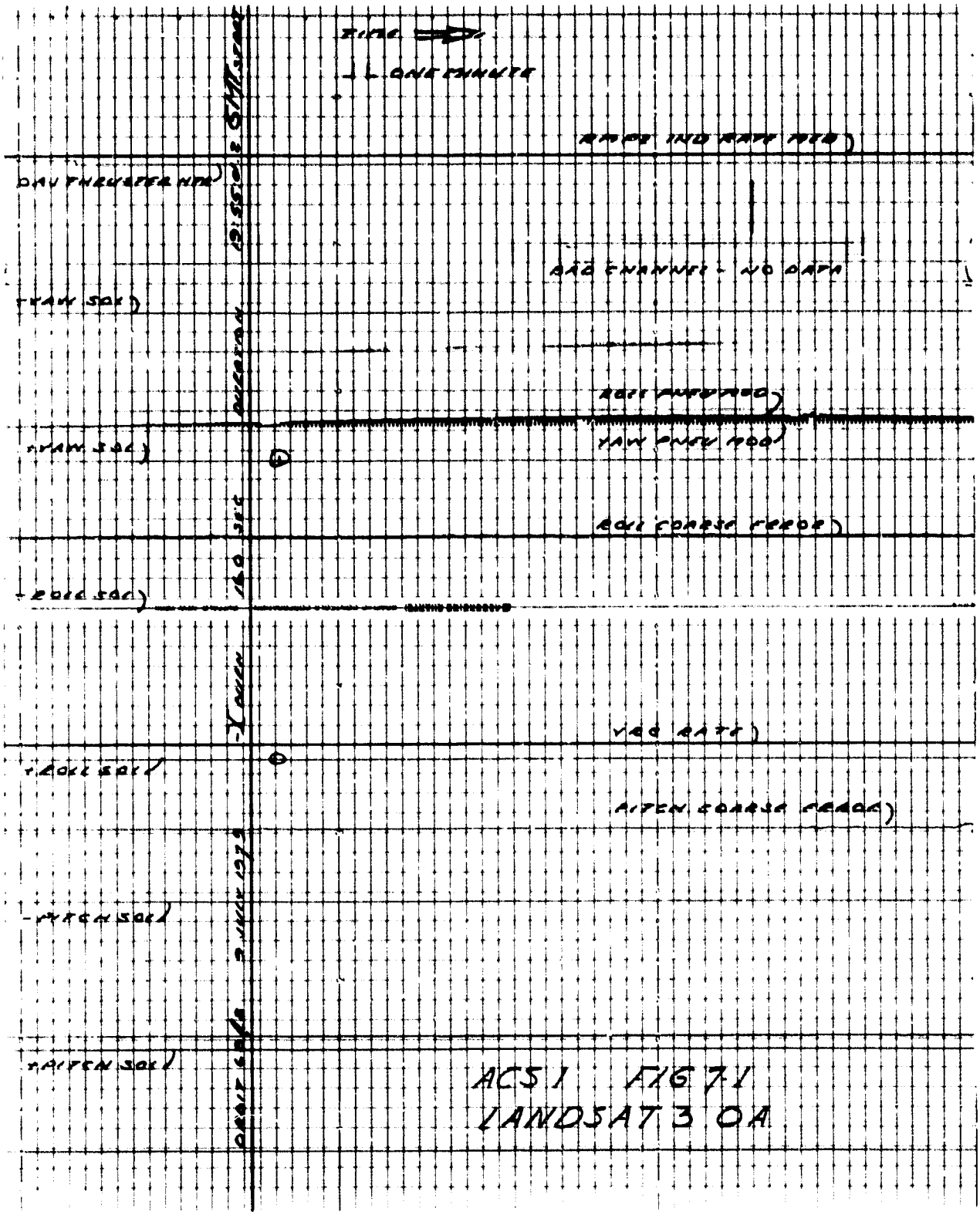


Figure 7-1. ACS 1 - Landsat-3 OA

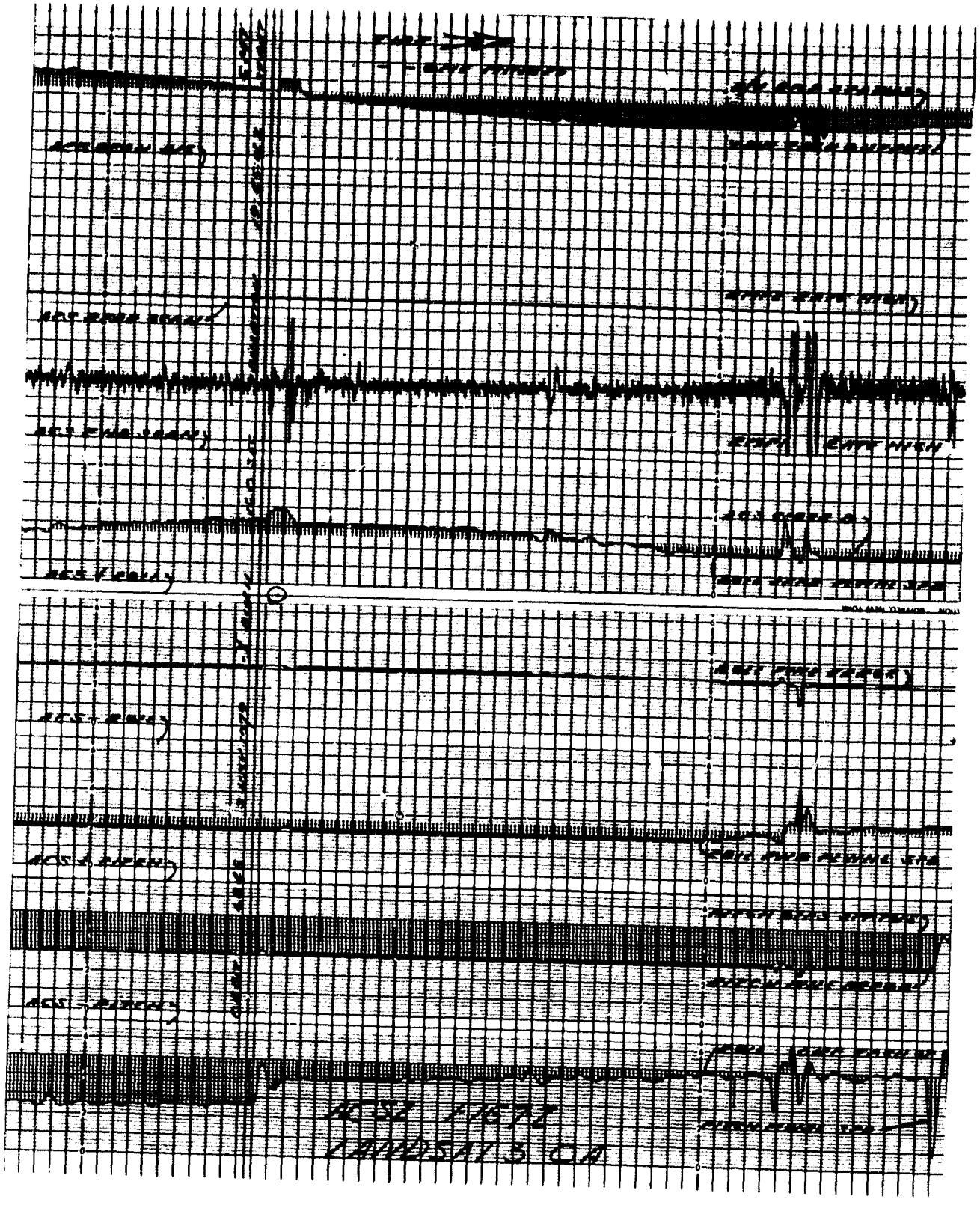


Figure 7-2. ACS 2 - Landsat-3 OA

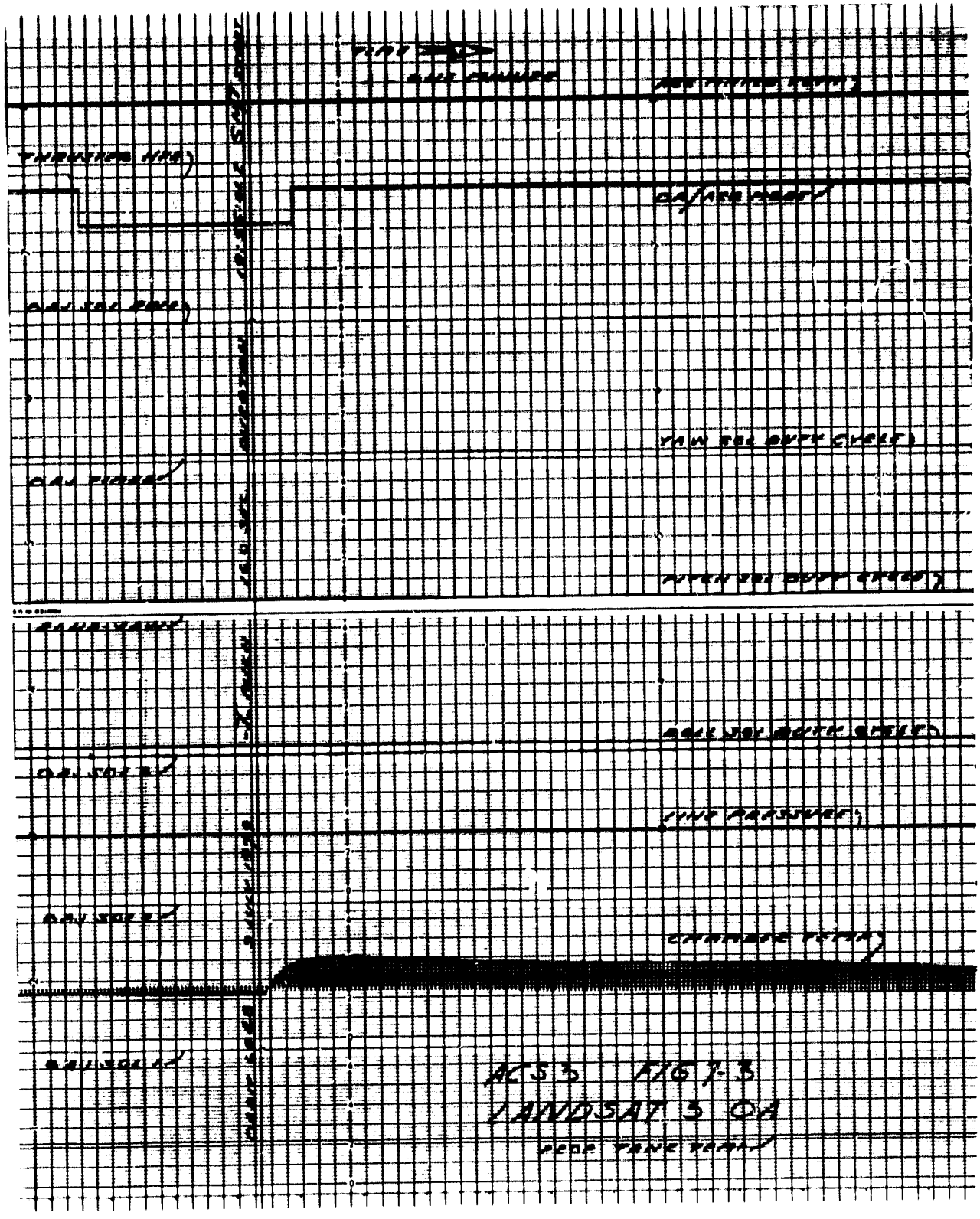


Figure 7-3. ACS 3 - Landsat-3 OA

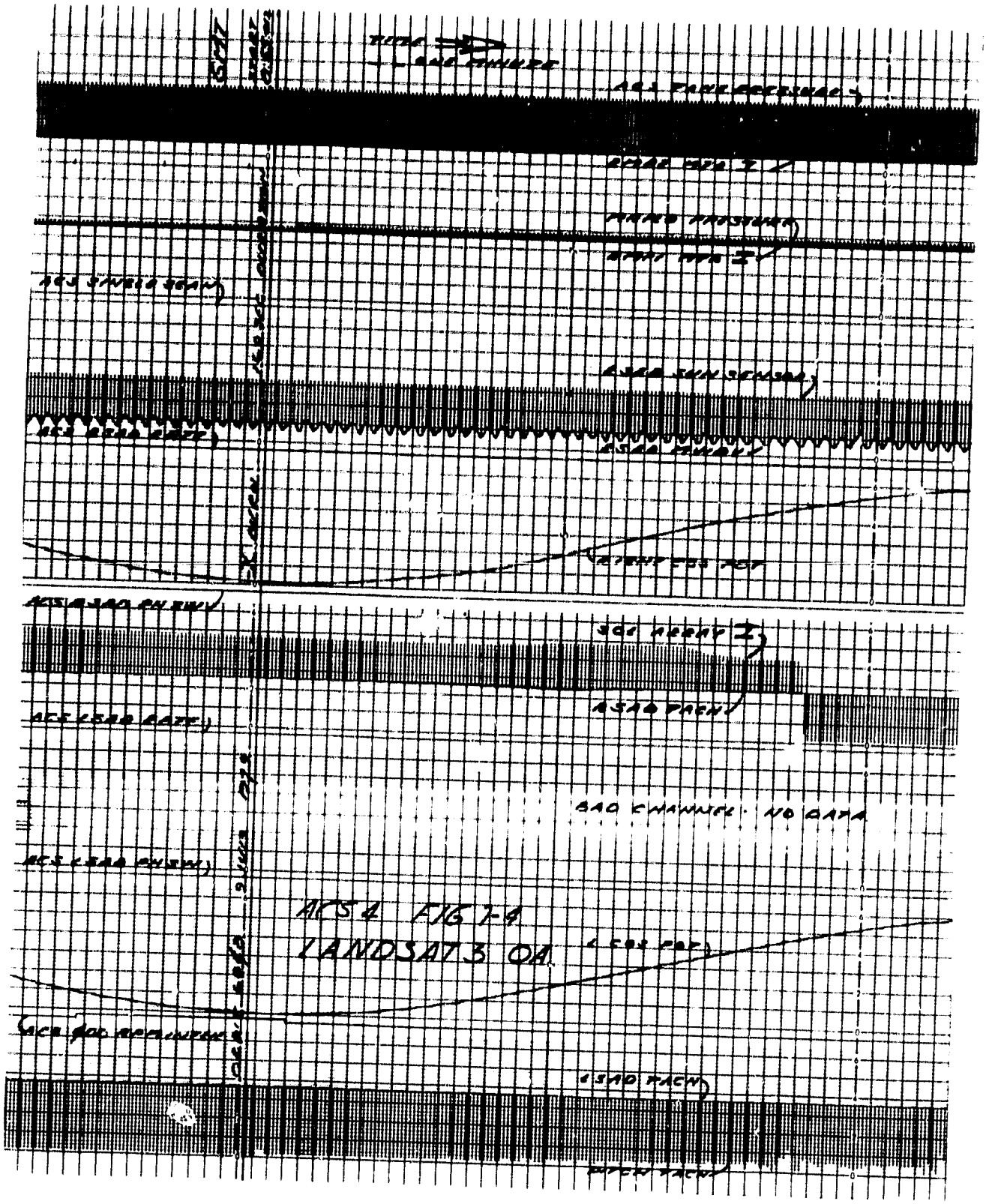


Figure 7-4. ACS 4 - Landsat-3 OA

Table 7-1. Landsat-3 Orbit Adjust Summary

Orbit Adjust No.	Orbit No.	Epoch (Burn Start Time)	Burn Axis	Burn Duration (secs)	Post-Burn Frecn Status (psia)	Hydra-Zine Consumed (lbs)	Post-Burn Hz Tank P (psia)	Burn Efficiency (%)	Δa (Meters)	Δi (degrees)
1	26	7 Mar 78 14:33:11.4	+X	5.2	N	0.02	532.44	N	N	0.0
2	26	7 Mar 78 14:40:01.2	-X	5.2	2006.12	0.02	532.44	N	N	0.0
3	30	7 Mar 78 21:23:01.2	+X	420.0	2012.09	1.58	532.44	107.2	-3662.2	0.0
4	109	13 Mar 78 21:00:01.2	-X	660.0	2004.51	2.30	476.20	103.7	4932.5	0.0
5	115	13 Mar 78 23:43:09.2	-X	112.0	2016.25	0.36	424.17	108.1	804.0	0.0
6	253	22 Mar 78 21:00:01.2	+X	4.8	2012.46	0.01	419.94	109.5	- 35.7	0.0
7	4059	21 Dec 78 19:47:01.2	-X	12.8	1899.96	0.04	434.96*	101.1	85.7	0.0
8	5301	20 Mar 79 21:20:03	-X	18.8	1779.94	0.06	434.94	109.7	137.7	0.0
9	6848	9 July 79 19:55:01.2	-X	16.0	1724.96	0.05	431.21	112.3	118.0	0.0

N - Data Not Available

* - Pressure increased due to seasonal temperature increase.

Table 7-2. Landsat-3 OAS Telemetry Values

Func	Name	Units	Orbit							
			140	1430	2700	4001	5152	6011	6440	6812
2001	Prop. Tank Temp.	DGC	15.55	17.64	18.05	19.72	19.72	17.64	17.65	17.70
2003	Thrust Chamber No. 1 (-x) Temp.	DGC	28.15	35.34	32.15	33.01	30.03	35.36	36.28	34.67
2004	Thrust Chamber Nc. 2 (+x) Temp.	DGC	32.88	36.77	35.97	38.21	35.34	36.41	36.79	36.28
2005	Thrust Chamber No. 3 (-y) Temp.	DGC	50.31	36.51	43.96	49.62	53.01	39.30	37.27	38.37
2006	Line Pressure	psia	416.59	427.44	430.62	434.94	436.08	431.19	431.19	431.83

SECTION 8

MAGNETIC MOMENT COMPENSATING ASSEMBLY (MMCA)

LANDSAT-3

SECTION 8

MAGNETIC MOMENT COMPENSATION ASSEMBLY (MMCA)

The MMCA's operational mode has not been altered from its launch configuration.

Presently, no plan exists to implement MMCA compensation. Payload operations have not generated unusual magnetic torques that result in buildup of spacecraft momentum.

MMCA telemetry values are shown in Table 8-1.

Table 8-1. MMCA Telemetry Values

Func	Name	Units	Orbit							
			4	1431	2700	4001	5152	6011	6440	6812
4001	A1 Board Temp	DGC	17.66	17.52	17.56	16.23	17.79	17.17	17.40	17.05
4002	A1 Board Temp	DGC	20.31	20.23	20.31	21.06	20.59	19.98	20.18	19.82
4003	Hall Current	TMV	3.65	3.62	3.62	3.62	3.62	3.62	3.62	3.62
4004	Yaw Flux Density	TMV	3.24	3.22	3.23	3.23	3.23	3.25	3.25	3.25
4005	Pitch Flux Density	TMV	3.20	3.19	3.20	3.18	3.19	3.18	3.18	3.18
4006	Roll Flux Density	TMV	3.15	3.12	3.12	3.11	3.12	3.12	3.12	3.12

SECTION 9

UNIFIED S-BAND/PREMODULATION PROCESSOR (USB/PMP)

LANDSAT-3

SECTION 9

UNIFIED S-BAND/PREMODULATION PROCESSOR (USB/PMP)

The USB Subsystem has operated nominally in this report period.

Table 9-1 shows telemetry values since launch. All are nominal. The transmitter has maintained a steady indicated power output of about 1.6 watts since launch.

USB transmitter signal levels measured at Goldstone with the spacecraft successively at the same points in space show continuous satisfactory USB performance.

Table 9-1. Landsat-3 USB/PMP Telemetry Values

Func	Description	Units	Orbit							
			50	1521	2721	4001	5152	6081	6410	6801
11001	USB Rcvr AGC	dBm	-101.62	-93.62	-109.30	-108.06	-90.23	-90.40	-131.09	-131.38
11002	USB Xmtr Pwr	W	1.65	1.65	1.67	1.69	1.66	1.63	1.65	1.65
11003	USB Rcvr Error	KHz	1.81	3.63	2.92	3.76	4.52	2.89	5.99	4.86
11004	USB Xpond Temp	DGC	24.63	22.50	23.81	25.78	26.57	23.46	23.99	23.51
11005	USB Xpond Press	PSI	17.00	16.95	17.00	17.00	17.00	16.99	17.00	17.00
11007	USB Xmtr A -15V	VDC	F	F	F	F	F	F	F	F
11008	USB Xmtr B -15V	VDC	2.35	2.36	2.36	2.36	2.36	2.35	2.35	2.35
11009	USB Range -15V	VDC	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05
11101	PMP Pwr A Volt	VDC	F	F	F	F	F	F	F	F
11102	PMP Pwr B Volt	VDC	- 15.11	-15.10	- 15.10	- 15.06	-15.06	-15.08	- 15.03	- 15.08
11103	PMP Temp A	DGC	21.48	17.29	19.79	22.71	24.75	18.30	18.65	18.92
11104	PMP Temp B	DGC	25.96	22.18	24.48	27.64	29.77	23.25	24.08	23.87

F = Unit OFF

SECTION 10
ELECTRICAL INTERFACE SUBSYSTEM (EIS)
LANDSAT-3

SECTION 10

ELECTRICAL INTERFACE SUBSYSTEM (EIS)

Search Track Data and Backup Timers in the Auxiliary Processing Unit (APU) operated satisfactorily throughout this report period. Telemetry for the APU is shown in Table 10-1.

The Power Switching Module (PSM), containing the switching relays for power to the OAS, MSS, WBVTR No. 1 and No. 2, RBV and PRM, functioned normally. During this report period, the MSS, RBV, WBVTR-1 and WBVTR No. 2 power circuits, have been operated on a regular basis.

The Interface Switching Module performed all switchings normally during this report period.

The Auxiliary Load Controller (ALC) performed all switching normally during this report period.

Table 10-1. Landsat-3 APU Telemetry Functions

Func	Description	Unit	Orbit							
			43	1464	2700	4001	5152	6011	6440	6812
13200	APU, -24.5 Vdc	TMV	2.62	2.62	2.63	2.63	2.63	2.63	2.63	2.63
13201	APU, -12 Volts	TMV	2.42	2.43	2.43	2.43	2.43	2.43	2.43	2.43
13202	APU Temp	DGC	24.43	23.24	23.78	25.00	24.75	23.84	23.96	23.53

SECTION 11

THERMAL SUBSYSTEM (THM)

LANDSAT-3

SECTION 11

THERMAL SUBSYSTEM (THM)

Since launch Landsat-3's Thermal Control Subsystem has provided satisfactory temperature control for all of the spacecraft equipment.

Table 11-1 summarizes average subsystem temperature telemetry values occurring over the 16 months of Landsat-3's existence.

Average temperatures in the sensory ring bays are plotted in Figure 11-1.

During this report period, sun intensity decreased from 0.989 to 0.696 times the mean value. In addition, spacecraft night length increased as the sun angle decreased. Consequently, the average spacecraft temperatures were slightly lower this quarter.

A history of compensation load switching is shown in Table 11-2.

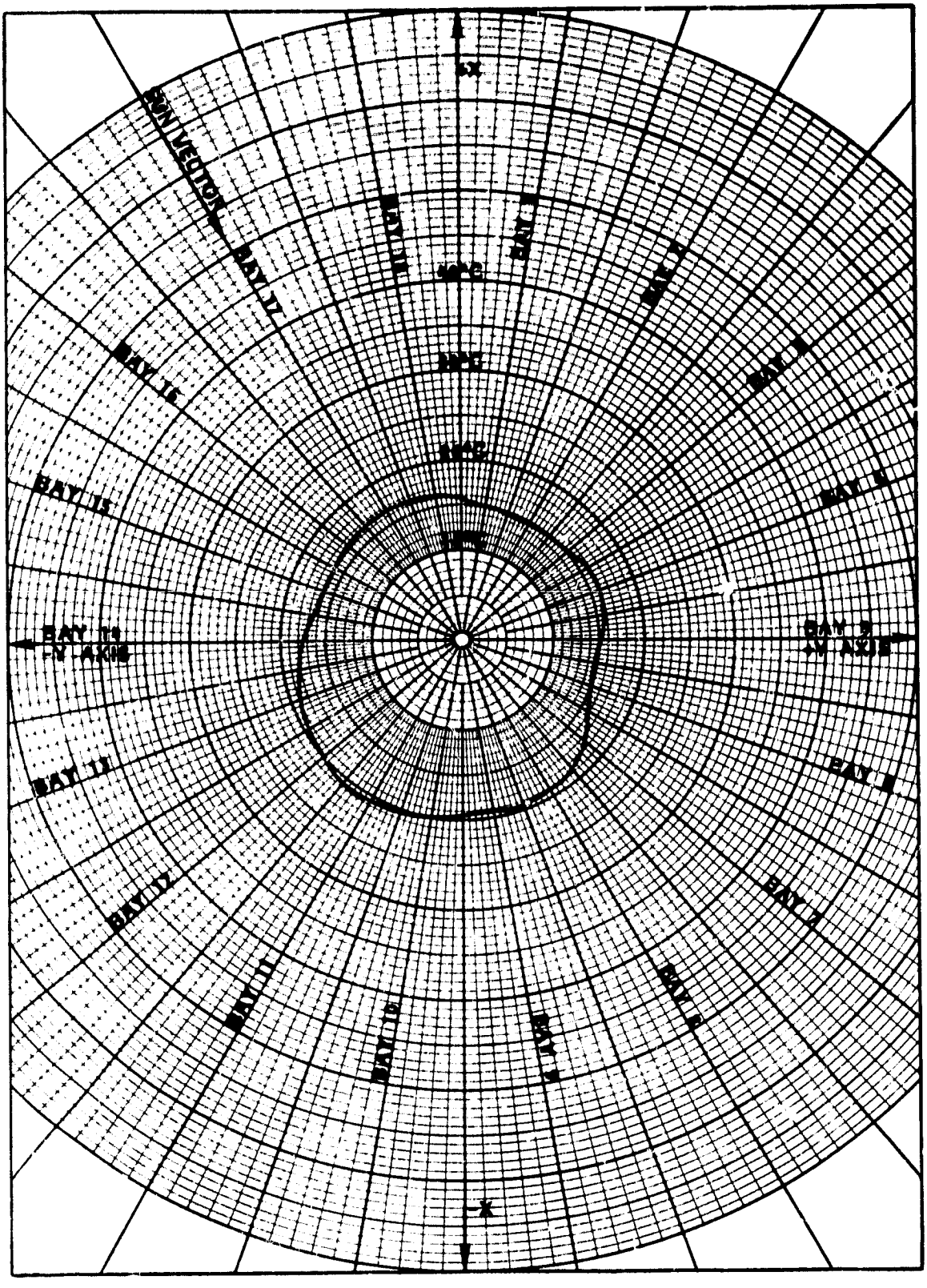


Figure 11-1. Landsat-3 Sensory Ring Average Bay Temperatures, Orbit 6812, 7 July 1979

FOLDOUT FRAME

ORIGINAL PAGE IS
OF POOR QUALITY

Table 11-1. Landsat-3 Thermal Subsystem Analog Telemetry
(Average Value for Frames of Data Received in NBTR Playback)

Function No.	Name	Unit	Orbit							
			50	1464	2700	4001	5152	6011	6440	6812
7001	THM TH02SBM	DGC	15.52	14.89	15.31	17.27	16.38	15.22	15.33	14.01
7002	THM TH01SBO	DGC	16.73	15.99	16.59	18.30	17.60	16.58	16.54	15.50
7003	THM TH03SBI	DGC	16.40	16.13	16.30	18.38	17.15	15.92	16.02	14.82
7004	THM TH10TCB	DGC	19.92	19.09	19.77	21.21	20.92	19.90	19.92	19.52
7005	THM TH11SBM	DGC	21.11	19.84	20.75	22.42	22.38	20.67	20.70	20.35
7006	THM TH05SBA	DGC	15.74	15.97	15.89	17.00	16.23	15.99	15.99	15.38
7007	OA-X THRUSTER	DGC	20.20	21.05	20.88	21.90	21.05	21.55	21.95	21.29
7008	THM TH02TCB	DGC	16.55	15.91	16.64	18.17	17.39	16.02	16.37	15.05
7009	THM TH07SBM	DGC	16.08	16.48	16.08	17.90	16.48	16.80	16.80	16.04
7010	THM TH08SBI	DGC	17.93	18.02	17.97	19.59	18.47	18.51	18.79	17.95
7011	THM TH09SBM	DGC	20.02	20.07	20.17	21.48	20.74	20.63	20.88	20.26
7012	THM TH10SBO	DGC	18.84	18.61	18.94	20.03	19.55	19.20	19.32	18.90
7013	THM TH04SBM	DGC	16.47	16.69	16.44	18.19	16.99	16.51	16.40	15.48
7014	THM TH11STO	DGC	20.46	19.41	20.20	21.60	21.60	20.12	20.15	19.95
7015	THM TH12SBI	DGC	21.64	19.51	20.92	22.93	23.46	20.50	20.37	20.27
7016	THM TH12STO	DGC	21.45	19.36	20.52	22.57	23.22	20.21	19.99	20.26
7017	RBV BEAM CTR LN	DGC	20.89	20.14	20.61	22.30	21.52	20.78	20.99	20.37
7018	THM TH13SBM	DGC	21.88	18.94	20.59	22.99	23.74	20.09	19.82	19.77
7019	NBR RAD OUTBD B4	DGC	2.73	2.53	2.68	3.68	3.26	2.42	2.71	2.20
7020	THM TH13STM	DGC	22.42	19.84	21.24	23.52	24.30	20.76	20.54	20.65
7021	THM TH14SBI	DGC	20.86	17.50	19.42	22.12	23.04	18.49	18.30	18.16
7022	THM TH14STO	DGC	20.48	17.00	19.17	21.48	22.47	18.19	17.88	17.84
7023	THM TH15SBM	DGC	19.95	16.18	18.42	21.37	22.64	17.22	16.95	16.98
7030	THM TH15STO	DGC	19.43	15.90	18.31	21.05	22.04	17.22	16.82	16.89
7031	THM TH16SBM	DGC		14.76	16.60	19.51	20.31	15.52	15.27	15.27
7032	THM TH16SBI	DGC		16.95	18.45	20.98	21.12	17.33	17.35	17.03
7033	THM TH16TCB	DGC	16.17	16.41	16.63	17.61	16.98	16.47	16.53	16.01
7034	THM TH18SBM	DGC		16.15	17.43	19.56	19.34	16.68	16.71	16.23
7035	THM TH17STM	DGC	18.04	16.47	17.53	19.23	19.05	16.48	16.74	16.21
7040	THM TH18TCB	DGC	16.45	15.64	16.29	18.07	17.44	16.28	16.42	15.00
7041	THM TH06STO	DGC	13.27	13.52	13.48	14.77	13.85	13.63	13.73	13.13
7042	THM TH03TCB	DGC	16.49	16.88	15.96	18.54	16.68	16.37	15.97	14.71
7043	THM TH04TCB	DGC	17.98	18.16	18.07	19.25	18.41	18.03	18.00	17.22
7044	THM TH17STO	DGC	17.99	16.13	17.22	19.95	19.68	16.29	16.00	16.13
7045	THM TH07TCB	DGC	16.16	16.41	16.36	18.03	16.64	17.05	17.16	16.29
7046	THM TH09TCB	DGC	18.83	18.84	19.14	20.03	19.69	19.40	19.48	19.12
7048	THM TH11TCB	DGC	21.59	20.07	21.18	22.75	23.10	20.93	20.86	20.73
7049	THM TH12TCB	DGC	21.45	18.86	20.22	22.33	23.20	19.99	19.49	19.77
7050	THM TH13TCB	DGC	22.25	19.31	20.99	23.27	23.92	20.48	20.20	20.09
7051	THM TH14TCB	DGC	20.75	16.97	19.35	22.05	23.39	18.20	17.96	17.93
7052	THM TH16TCB	DGC	19.57	17.00	18.73	21.49	22.20	17.70	17.69	17.50
7053	THM TH17TCB	DGC	18.98	17.58	18.52	20.76	20.36	17.68	17.54	17.41
7054	THM TH18TCB	DGC	17.23	15.95	16.89	18.29	18.05	16.14	16.37	15.77
7060	THM SHUTTER BAY 1	DEG	9.90	2.14	7.17	28.60	21.84	12.39	13.85	3.28
7061	THM SHUTTER BAY 2	DEG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7062	THM SHUTTER BAY 3	DEG	1.07	7.02	1.07	21.36	4.77	3.66	1.14	0.59
7063	THM SHUTTER BAY 4	DEG	6.60	9.78	12.79	21.24	15.35	6.69	8.58	4.26
7064	THM SHUTTER BAY 5	DEG	6.00	3.33	3.34	4.67	6.11	1.38	2.67	2.68
7065	THM SHUTTER BAY 7	DEG	0.00	1.08	0.00	11.54	3.11	1.37	6.55	0.00

7048	THM TH11TCB	DGC	21.59	20.07	22.18	22.75	23.10	18.99	19.49	19.77
7049	THM TH12TCB	DGC	21.45	18.86	20.22	22.33	23.20	20.48	20.20	20.09
7050	THM TH13TCB	DGC	22.25	19.31	20.99	23.27	23.92	18.20	17.96	17.93
7051	THM TH14TCB	DGC	20.75	16.97	19.35	22.05	23.39	17.70	17.69	17.50
7052	THM TH16TCB	DGC	19.57	17.00	18.73	21.49	22.20	17.68	17.54	17.41
7053	THM TH17TCB	DGC	18.98	17.58	18.52	20.76	20.36	16.[illegible]	16.37	15.77
7054	THM TH18TCB	DGC	17.23	15.95	16.89	18.29	18.05	[illegible]	[illegible]85	3.28
7060	THM SHUTTER BAY 1	DEG	9.90	2.14	7.17	28.60	21.84	0.[illegible]	[illegible]0	0.60
7061	THM SHUTTER BAY 2	DEG	0.00	0.00	0.00	0.00	0.00	3.65	4	0.59
7062	THM SHUTTER BAY 3	DEG	1.07	7.02	1.07	21.36	4.77	6.69	8.58	4.26
7063	THM SHUTTER BAY 4	DEG	6.60	9.78	12.79	21.24	15.35	1.38	2.67	2.68
7064	THM SHUTTER BAY 5	DEG	6.00	3.33	3.34	4.67	6.11	1.37	6.55	0.00
7065	THM SHUTTER BAY 7	DEG	0.00	1.08	0.00	11.54	3.11	31.52	32.29	30.67
7067	THM SHUTTER BAY 9	DEG	28.82	28.00	30.02	35.45	33.75	30.16	30.47	27.73
7068	THM SHUTTER BAY 10	DEG	30.27	23.56	28.97	39.49	37.81	35.34	34.53	33.82
7069	THM SHUTTER BAY 11	DEG	40.32	29.52	36.78	47.31	50.02	31.14	28.95	29.73
7070	THM SHUTTER BAY 12	DEG	40.17	24.08	33.63	48.54	54.20	23.72	22.31	19.98
7071	THM SHUTTER BAY 13	DEG	36.13	15.57	28.23	43.10	46.66	0.51	0.00	0.00
7072	THM SHUTTER BAY 14	DEG	13.76	0.00	6.80	25.64	35.01	1.90	0.88	0.00
7074	THM SHUTTER BAY 16	DEG	17.35	0.00	7.71	31.09	35.41	0.35	3.83	0.00
7075	THM SHUTTER BAY 17	DEG	18.29	1.30	11.20	33.68	32.43	0.00	0.60	0.00
7076	THM SHUTTER BAY 18	DEG	11.42	0.00	4.59	21.69	20.70	4.93	4.92	4.93
7080	THM Q1 T ZENER V	TMV	4.93	4.92	4.92	4.93	4.93	5.09	5.09	5.09
7081	THM Q2 T ZENER V	TMV	5.08	5.09	5.09	5.09	5.10	5.05	5.05	5.05
7082	THM Q3 T ZENER V	TMV	5.05	5.05	5.05	5.06	5.06	5.01	5.01	5.00
7083	THM Q1 S ZENER V	TMV	5.01	5.00	5.01	5.01	5.02	4.90	4.90	4.90
7084	THM Q2 S ZENER V	TMV	4.90	4.89	4.90	4.91	4.91	5.04	5.04	5.03
7085	THM Q3 S ZENER V	TMV	5.03	5.04	5.04	5.05	5.05	17.81	18.24	17.44
7090	THM TH ECAM M	DGC	19.34	17.31	17.50	19.43	18.34	18.88	18.75	18.62
7091	THM IND ATTITUDE	DGC	21.11	18.05	19.78	22.42	23.27	12.71	13.09	12.29
7092	THM RBV RADIATOR	DGC	13.10	12.15	12.65	14.67	14.01	17.31	17.70	16.81
7093	THM RBVC CTR BM	DGC	17.80	16.70	17.22	19.63	18.79	9.32	9.67	9.17
7094	THM WBVTR BOOT	DGC	10.23	9.71	10.37	12.41	12.16	0.02	0.01	- 0.17
7095	THM WBVTR RAD CT	DGC	- 1.22	- 0.55	- 0.09	1.57	0.82	11.82	12.17	11.51
7096	THM WBVTR STRAP	DGC	12.84	12.03	12.85	14.76	14.48	13.80	14.76	13.85
7097	THM WBMT BAY 1	DGC	17.05	13.95	16.34	16.71	17.17	13.24	14.30	13.41
7098	THM WBMT BAY 18	DGC	16.50	13.48	15.34	16.39	16.91	14.45	14.68	13.66
7099	THM WBVTR SEP 3	DGC	15.40	14.69	15.23	16.98	16.26	16.38	16.65	16.19
7100	THM WBVTR SEP 17	DGC	18.42	16.38	17.78	19.82	20.05	14.76	15.17	14.41
7101	THM WBVTR 1 CENT	DGC	16.46	14.89	16.15	17.74	17.75	15.16	15.34	14.62
7102	THM VTR2 BAY 4	DGC	15.75	15.46	15.67	17.28	16.57	15.94	16.20	15.94
7103	THM VTR2 BAY 15	DGC	18.42	15.87	17.28	19.84	20.56	14.50	15.00	14.54
7104	THM WBVTR2 CTR	DGC	16.52	15.00	15.89	17.96	18.22	15.35	15.45	14.85
7105	THM NBTRB SEP 6	DGC	15.98	15.54	15.78	17.26	16.93	18.37	18.41	18.09
7106	THM NBTRB SEP 1	DGC	20.40	17.72	19.24	21.79	22.49	16.31	16.67	15.98
7107	THM NBTR BM CTR	DGC	17.71	16.40	16.99	19.45	19.08	14.39	14.52	14.27
7108	THM MSS MOUNT 14	DGC	16.14	14.79	15.72	18.69	19.05	19.54	19.25	19.19
7109	OA-Y THRUSTER	DGC	23.15	18.41	21.05	23.89	25.20	12.87	13.24	12.65
7110	THM MSS WBVTR BM	DGC	13.97	13.76	14.01	16.23	15.88	14.38	15.17	14.25
7111	OA +X THRUSTER	DGC	16.80	14.47	16.06	17.14	17.07	35.75	29.73	37.39
7130	THM AUX P1 T	DGC	36.47	34.99	24.69	40.35	24.84	27.49	31.92	30.29
7131	THM AUX P2 T	DGC	33.24	16.09	34.33	14.68	34.66			

Table 11-2. Landsat-3 Compensation Load History

Orbits	Compensation Load Status*							
	1	2	3	4	5	6	7	8
Launch	0	0	0	0	0	0	0	0
3	0	0	X	X	X	0	X	X
34	0	0	X	X	X	X	X	X
48	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	X
3074	X	X	X	X	X	0	X	X
3081	0	0	0	0	0	0	0	X
5571	0	0	0	0	0	0	0	0

*Note: X = ON
0 = OFF

SECTION 12
NARROWBAND TAPE RECORDERS (NBR)
LANDSAT-3

SECTION 12

NARROWPAND TAPE RECORDERS (NBR)

The Narrowband Recorder Subsystem operated satisfactorily throughout th , entire report period, both Recorders alternating in Record and Playback modes with a nominal one minute overlap.

Table 12-1 gives cumulative operating hours for both Recorders by mode, and Table 12-2 gives typical telemetry values.

Table 12-1. NBR Operating Hours by Mode

NBR	On	Off	Playback	Record
A	6320	5799	248	6072
B	6320	5799	248	6072

Table 12-2. Narrow Band Tape Recorder Telemetry Values

			Orbits							
Func	Name	Units	30/31	1524/25	2795/96	3903/3911	5151, 5152	6042/6043	6440 6449	6880/6881
10001	A-Motor Current	mA								
	Record		182.47	182.47	182.47	182.47	182.42	182.47	182.47	184.02
	P/B		179.38	177.83	177.83	177.83	177.83	179.36	179.38	180.93
10101	B Motor Current	mA								
	Record		150.00	143.88	139.29	140.81	133.16	133.16	130.10	130.10
	P/B		142.34	142.34	134.69	133.16	128.57	123.98	123.38	123.98
10002	A-Pwr Supply Cur	mA								
	Record		167.57	170.95	167.57	170.95	167.57	170.95	170.95	170.95
	P/B		387.12	383.75	380.39	383.75	383.75	387.13	383.75	387.13
10102	B-Pwr Supply Cur	mA								
	Record		186.67	186.66	183.33	186.66	186.66	190.00	186.66	186.66
	P/B		406.62	419.95	419.95	413.32	413.32	423.32	423.32	423.32
10003	A-Recorder Temp	DGC	20.43	17.61	20.43	22.39	22.61	20.87	21.09	18.04
10103	B-Recorder Temp	DGC	19.35	2.,.30	21.52	20.87	23.04	20.22	21.30	21.30
10004	A-Pwr Supply	VDC	-24.37	-24.38	-24.50	-24.50	-24.50	-24.50	-24.50	-24.50
10104	B-Pwr Supply	BDC	-24.38	-24.38	-24.50	-24.62	-24.62	-24.50	-24.50	-24.50

SECTION 13

WIDEBAND TELEMETRY SUBSYSTEM (WBTS)

LANDSAT-3

SECTION 13

WIDEBAND TELEMETRY SUBSYSTEM (WBTS)

The WBTS has operated nominally in this report period.

Table 13-1 shows typical telemetry values.

Signal levels measured at Goldstone with the spacecraft successively at the same points in space, show continuously satisfactory performance.

Table 13-1. Typical Wideband Subsystem Telemetry

Func*	Name	Units	Orbit							
			34/50	1521	2721	4001	5151/5152	6081	6350	6801
12001	Temp TWT Coll	DGC	39.38	39.13	38.13	34.81	31.88	31.88	31.88	31.88
12101			29.07	30.00	26.60	29.07	26.37	26.60	26.60	26.60
12002	Cur. Helix	mA	4.73	4.79	4.80	4.71	4.87	4.94	4.94	4.91
12102			6.50	6.22	6.06	6.12	6.05	6.16	6.16	6.07
12003	Cur. Cath	mA	44.50	44.40	44.03	43.88	43.94	43.89	43.92	43.88
12103			40.32	39.53	39.41	39.32	39.50	39.31	39.42	39.32
12004	Forward Power	dBm	42.04	42.25	42.26	42.25	42.26	42.24	42.25	42.24
12104			42.46	42.79	42.79	42.75	42.74	42.77	42.78	42.76
12005	Refl. Pwr.	dBm	30.00	30.00	28.62	28.65	28.74	28.66	28.56	28.55
12105			31.80	31.74	31.35	31.31	31.44	31.50	31.33	31.08
12227	Mod A Loop Stress	MHz	+1.45	-0.81	-1.04	-1.3₄	-1.25	-1.30	-1.37	-1.52
12228	Mod B Loop Stress	MHz	1.26	0.10	0.05	0.01	-0.06	0.42	0.40	0.08
12229	Temp. Mod	DGC	14.51	17.25	17.14	18.36	16.00	16.17	16.32	17.51
12232	+15 VDC Pwr Supply	TMV	2.68	2.69	2.69	2.68	2.69	2.69	2.69	2.69
12234	-15 VDC Pwr Supply	TMV	4.38	4.34	4.35	4.33	4.38	4.37	4.39	4.35
12236	+5 VDC Pwr Supply	TMV	4.05	4.05	4.05	4.05	4.04	4.05	4.05	4.05
12238	-5 VDC Pwr Supply	TMV	5.18	5.13	5.13	5.16	5.16	5.18	5.19	5.17
12240	-24 VDC Unreg Pwr	TMV	6.15	6.12	6.12	6.08	6.10	6.20	6.19	6.13
12242	Temp. Inv.	DGC	18.45	17.75	18.30	19.81	19.05	17.98	17.99	18.40

* 120XX applies to WPA-1; 121XX applies to WPA-2; 122XX applies to modulator.

SECTION 14

ATTITUDE MEASUREMENT SENSOR (AMS)
LANDSAT-C

SECTION 14

ATTITUDE MEASUREMENT SENSOR (AMS)

The AMS is a passive radiometric balance sensor which operates in the 14 - 16 micron IR Band. AMS Telemetry Values are shown in Table 14-1.

The AMS was launched in the OFF mode (CMD 774). It was turned ON during Orbits 5 and 17 and has been performing normally since then.

Table 14-1. AMS Telemetry Values

Func	Name	Unit	Orbits							
			6	1431	2706	4001	5152	6011	6440	6812
3004	Case - Temp 1	DGC	19.23	17.71	19.25	21.70	22.41	18.42	18.25	18.21
3005	Assembly - Temp 2	DGC	19.62	18.30	19.79	22.27	23.08	18.93	18.72	18.74

SECTION 16

WIDEBAND VIDEO TAPE RECORDERS (WBVTR)
LANDSAT-3

SECTION 15

WIDEBAND VIDEO TAPE RECORDERS (WBVTR)

During a playback of WBVTR-1 in Orbit 6351 on 4 June 1979, the MSS data suddenly became noisy, with MFSE counts of about 2000. All subsequent playbacks of MSS data have been noisy, even when repeating a prior good playback. The telemetry is all nominal, and the noisy data are clearly not related to tape footage. RBV data was recorded and appeared to playback nominally, but is being studied. Meanwhile, the recorder was returned to service for RBV data only during Orbit 6701 on 29 June 1979. The quality of its data is being studied.

WBVTR-2 continues to operate satisfactorily. MFSE counts average about five (5) per 10-second interval.

Tables 15-1, 15-2 and 15-3 show typical telemetry values for various recorded functions and modes. Figure 15-1 shows tape usage for Recorders 1 and 2.

Table 15-1. Telemetry Values for WBVTR-1 and -2

Func	Name	Unit	Orbits							
			42/45	1525/30	2795/96	4021	5152	6011/6281	6352/6409 6410	6812/6840
13022	Tape Unit Press	PSI	16.25	16.12	16.12	16.12	16.00	15.86	15.86	15.73
13023	Tape Unit Temp	DGC	16.08	13.62	15.92	15.54	16.93	13.04	13.45	13.09
13024	Elect U. Temp	DGC	18.42	12.69	15.38	14.10	15.79	11.97	12.73	12.17
13032	Limiter Volt	VPP	1.38	1.38	1.38	1.40	1.40	1.38	1.39	1.32
13034	+ 5.6 VDC Conv	VDC	5.67	5.47	5.30	5.65	5.64	5.56	5.38	5.47
13122	Tape Unit Press	PSI	17.15	17.00	17.00	17.13	17.15	17.01	17.00	17.02
13123	Tape Unit Temp	DGC	16.75	16.30	15.26	18.45	17.84	13.59	14.65	14.23
13124	Elect. U. Temp	DGC	19.62	18.07	14.79	19.41	17.33	12.36	15.08	13.39
13132	Limiter Volt	VPP	1.31	1.31	1.33	1.31	1.32	1.30	1.32	1.29
13134	+ 5.6 VDC Conv	VDC	5.42	5.27	5.70	5.53	5.61	5.60	5.66	5.58

Table 15-2. Telemetry Values for WBVTR-1

Func	Name	Units	Orbit							
			42/45	1524/25	2795/96*	3903	5151/52	6042*/6044	6601*	6840/6880
13029	InputP/B Voltage	VPP								
	Record		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Playback		0.89	0.86	0.45	0.70	0.79	0.46	0.43	0.93
	Rewind		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Standby		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13028	Capstan Motor 1	AMP								
	Record		0.35	0.33	0.35	0.32	0.28	0.28	0.31	0.31
	Playback		0.40	0.34	0.30	0.28	0.28	0.30	0.29	0.31
	Rewind		0.23	0.16	0.17	0.17	0.17	0.15	0.17	0.16
	Standby		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13030	Headwheel Motor 1	AMP								
	Record		0.50	0.48	0.47	0.45	0.45	0.42	0.42	0.42
	Playback		0.48	0.42	0.48	0.45	0.44	0.41	0.42	0.41
	Rewind		0.41	0.37	0.40	0.37	0.37	0.35	0.36	0.34
	Standby		0.43	0.37	0.41	0.38	0.36	0.34	0.36	0.34
13031	Recorder Input I	AMP								
	Record		3.17	2.89	3.03	2.82	2.82	2.72	2.72	2.72
	Playback		3.03	2.58	3.24	2.65	2.61	2.92	2.92	2.40
	Rewind		1.60	1.42	1.64	1.40	1.37	1.32	1.32	1.30
	Standby		1.28	1.25	1.32	1.10	1.07	1.12	1.12	1.12
13033	Servo Voltage	PCT								
	Record		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Playback		49.10	49.43	49.27	49.60	49.60	49.71	49.49	49.60
	Rewind		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Standby		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13026	Capstan Motor Spd	PCT								
	Record		101.64	102.82	101.64	102.23	102.23	102.23	102.23	102.23
	Playback		101.05	102.82	100.45	102.23	102.23	100.45	100.45	102.23
	Rewind		108.15	106.38	107.56	105.58	105.78	105.19	105.78	102.23
	Standby		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13027	Headwheel Motor Spd	PCT								
	Record		101.13	101.13	102.18	101.13	101.13	101.13	101.13	101.13
	Playback		101.65	101.13	100.60	101.13	101.65	100.08	100.08	101.13
	Rewind		102.71	102.18	103.23	102.18	102.18	102.18	102.70	105.19
	Standby		102.71	102.18	101.65	100.60	101.65	102.70	102.70	102.18

* WBR payloads switched in this period to MSS to WBR-1; RBV to WBR-2

Table 15-3. Telemetry Values for WBVTR-2

Func	Name	Units	Orbit							
			42/45	1530	2795/96*	3903	5151/55	6044*/ 6063	6407/ 6448	6840/ 6880
13129	Input P/B Voltage	VPP								
	Record		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Playback		0.58	0.61	0.80	0.58	0.55	0.88	0.51	0.53
	Rewind		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Standby		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13128	Capstan Motor 1	AMP								
	Record		0.45	0.37	0.32	0.27	0.28	0.30	0.27	0.27
	Playback		0.28	0.37	0.28	0.30	0.33	0.25	0.26	0.26
	Rewind		0.18	0.20	0.13	0.17	0.18	0.15	0.15	0.15
	Standby		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13130	Headwheel Motor 1	AMP								
	Record		0.43	0.48	0.45	0.47	0.50	0.37	0.48	0.46
	Playback		0.47	0.47	0.45	0.45	0.47	0.44	0.44	0.44
	Rewind		0.40	0.42	0.40	0.40	0.41	0.39	0.40	0.38
	Standby		0.42	0.42	0.39	0.40	0.40	0.39	0.40	0.46
13131	Recorder Input 1	AMP								
	Record		2.39	2.67	2.15	2.15	2.39	2.00	1.95	1.92
	Playback		2.79	2.64	1.82	2.24	2.36	1.79	2.12	2.12
	Rewind		1.20	1.28	1.00	1.03	1.13	0.93	1.13	1.23
	Standby		1.03	1.05	0.91	0.84	0.91	0.82	0.91	0.96
13133	Servo Voltage	PCT								
	Record		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Playback		50.29	50.49	50.68	50.68	50.68	50.78	50.68	50.58
	Rewind		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Standby		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13126	Capstan Motor Spd	PCT								
	Record		98.35	98.35	99.00	98.35	98.35	96.90	98.35	98.35
	Playback		96.41	97.06	99.00	97.06	97.06	98.35	97.06	97.06
	Rewind		98.35	99.00	97.70	97.70	97.70	97.06	98.35	98.35
	Standby		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13127	Headwheel Motor Spd	PCT								
	Record		104.09	104.09	103.48	103.48	104.09	103.48	103.48	102.87
	Playback		102.87	102.87	104.09	102.87	102.87	103.48	102.87	102.87
	Rewind		103.97	105.32	104.70	104.70	105.32	104.09	105.93	105.93
	Standby		104.10	105.32	104.70	102.87	105.32	103.48	102.87	103.48

* WBR payloads switched in this period to MSS to WBR-1; RBV to WBR-2

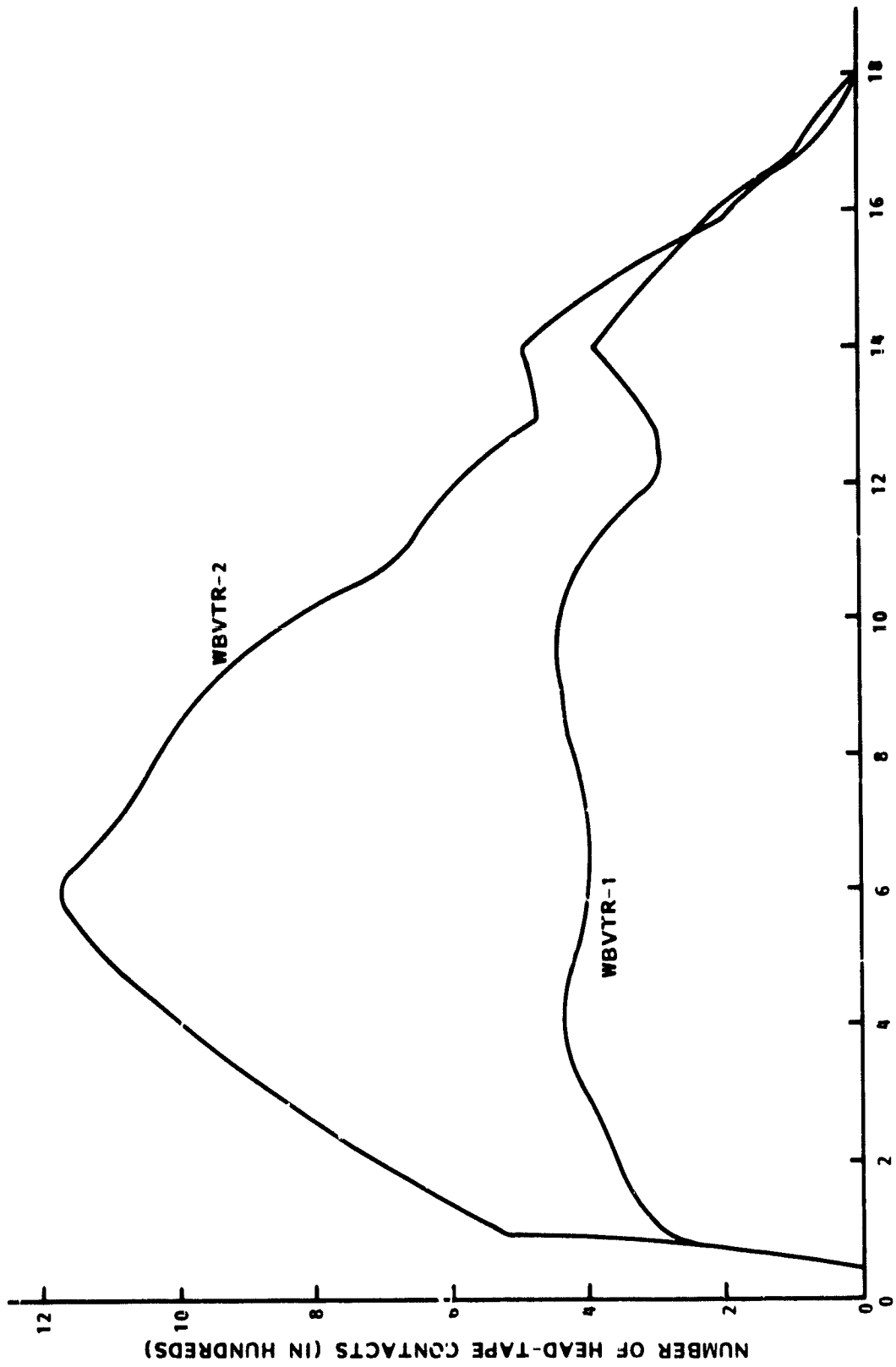


Figure 15-1. Landsat-3 WBVTR Tape Footage Thru Orbit 7090

SECTION 16

RETURN BEAM VIDICON (RBV)

LANDSAT-3

SECTION 16

RETURN BEAM VIDICON (RBV)

The RBV operated satisfactorily during this period.

The white-clip anomaly continues to occur occasionally in the first five percent of the image format of Camera 1. No cause has been determined to date.

RBV scenes are transmitted to Canada, Brazil, Italy, Sweden and Japan, as well as to U.S. stations.

Table 16-1 gives typical telemetry values for the RBV subsystem. Tables 16-2 and 16-3 give telemetry values for Prepare, Read and Hold modes for the two RBV Cameras.

Table 16-1. RBV Telemetry Values

Func	Name	Unit	Orbit							
			34	1525	2795	3903	5155	6082	6448	6840
14001	CCC Board Temp	DGC	21.84	20.49	21.05	21.60	22.15	21.05	22.15	21.43
14002	CCC Pwr. Sup. Temp	DGC	23.39	21.60	22.15	23.26	23.81	22.15	23.25	22.63
14003	15 Vdc Sup.	TMV	4.00	4.00	4.00	3.97	3.97	3.97	3.97	3.99
14004	+6 V, 5, VDC Sup.	TMV	3.07	3.07	3.07	3.05	3.05	3.05	3.05	3.05
14100 *	VID Output V	TMV	0.83	1.10	2.17	3.20	1.15	1.80	1.80	1.73
14200			0.76	1.50	1.92	2.22	1.77	1.60	1.57	1.44
14102 *	Comb. Align Cur.	TMV	4.15	4.15	4.17	4.15	4.15	4.15	4.15	3.94
14202			4.13	4.15	4.15	4.15	4.15	4.12	4.15	4.15
14103 *	Elec Temp	DGC	19.23	18.28	18.28	20.49	19.39	19.39	20.49	18.99
14203			23.46	20.39	22.60	26.47	26.47	22.05	23.98	22.40
14104 *	LV Pwr Sup T.	DGC	19.05	18.39	17.83	21.15	20.05	21.15	21.15	19.14
14204			23.10	19.94	22.15	26.02	26.02	22.70	24.70	21.87
14105 *	Defl. Pwr. Sup. +10 VDC	TMV	4.02	4.00	4.02	4.02	4.02	4.02	4.02	4.02
14205			4.05	4.05	4.07	4.07	4.07	4.07	4.07	4.05
14106 *	I, V, P, S, +6 V, 6.3 VDC	TMV	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
14206			3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
14107 *	Fhcr. Elec. Cur.	TMV	3.02	3.52	3.70	2.72	2.72	2.85	2.80	2.85
14207			2.57	2.57	2.50	2.55	2.57	2.65	2.57	2.52
14108 *	Vid. Fil. Cur.	TMV	2.62	2.57	2.60	2.57	2.55	2.57	2.57	2.57
14208			2.38	2.62	2.65	2.60	2.57	2.57	2.57	2.60
14110 *	Vid. Fgt. Volt	TMV	3.55	3.52	3.37	3.37	3.37	3.37	3.37	3.37
14210			3.06	3.32	3.32	3.45	3.42	3.30	3.42	3.32
14113 *	Vert Def V	TMV	3.20	2.95	3.05	3.02	3.02	3.02	3.02	3.03
14213			2.78	2.97	2.95	2.95	2.95	2.95	2.95	2.83
14114 *	VID FTP	DGC	24.10	23.10	23.65	22.55	22.55	22.55	22.90	17.92
14214			23.90	22.09	22.60	21.57	21.57	21.57	21.40	18.91
14115	Foc Coil T	DGC	19.80	18.18	18.73	21.49	21.49	19.28	19.28	19.05
14215			20.00	18.18	18.73	21.49	22.05	19.83	19.83	19.04

* 141XX refers to Camera 1; 142XX refers to Camera 2

Table 16-2. Camera No. 1 Telemetry (Values in TMV)

Func	Name	Units	Mode	Orbit							
				34	1525	2795	3903	5155	6082	6448	6840
14101	Focus 1	TMV	Prep	1,65	1,62	1,62	1,65	1,65	1,65	1,65	1,65
			Read	2,77	2,77	2,77	2,80	2,77	2,80	2,80	2,80
			Hold	0,55	0,52	0,55	0,55	0,52	0,55	0,55	0,55
14109	Grid V	TMV	Prep	0,70	0,72	0,72	0,72	0,72	0,72	0,72	0,75
			Read	2,20	2,22	2,22	2,20	2,20	2,22	2,22	2,22
			Hold	4,15	4,17	4,15	4,17	4,17	4,17	4,17	4,17
14111	Cath 1	TMV	Prep	3,10	3,12	3,12	3,10	3,10	3,10	3,10	3,12
			Read	0,77	0,77	0,77	0,77	0,77	0,77	0,77	0,77
			Hold	0,40	0,40	0,40	0,40	0,37	0,40	0,40	0,40
14112	Hor Def	TMV	Prep	2,00	2,00	2,02	2,02	2,02	2,02	2,02	2,05
			Read	3,42	3,45	3,47	3,45	3,45	3,45	3,47	3,45
			Hold	0,00	0,02	0,02	0,02	0,02	0,02	0,02	0,02
14120	+ 500 V	TMV	Prep	1,07	1,05	1,07	1,05	1,05	1,05	1,05	1,07
			Read	4,17	4,17	4,20	4,20	4,17	4,17	4,20	4,20
			Hold	4,17	4,17	4,20	4,17	4,20	4,17	4,17	4,17

Table 16-3. Camera No. 2 Telemetry (Values in TMV)

Func	Name	Units	Mode	Orbit							
				34	1525	2795	3903	5155	6082	6448	6840
14201	Focus 1	TMV	Prep	1,57	1,55	1,57	1,57	1,60	1,55	1,57	1,57
			Read	2,70	2,67	2,70	2,70	2,72	2,67	2,70	2,70
			Hold	0,50	0,47	0,50	0,50	0,52	0,55	0,50	0,50
14209	Grid V	TMV	Prep	0,55	0,55	0,55	0,55	0,55	0,55	0,55	0,55
			Read	1,90	1,92	1,92	1,90	1,90	1,90	1,90	1,92
			Hold	4,15	4,17	4,17	4,20	4,17	4,15	4,17	4,15
14211	Cath 1	TMV	Prep	3,30	3,32	3,32	3,30	3,30	3,32	3,3	3,32
			Read	0,90	0,92	0,92	0,90	0,90	0,90	0,92	0,92
			Hold	0,40	0,40	0,40	0,40	0,40	0,40	0,40	0,42
14212	Hor Def	TMV	Prep	1,67	1,72	1,65	1,70	1,70	1,70	1,70	1,70
			Read	3,45	3,05	3,05	3,02	3,02	3,02	3,02	3,02
			Hold	0,00	0,02	0,05	0,00	0,00	0,02	0,0	0,02
14220	+ 500 V	TMV	Prep	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10
			Read	4,25	4,25	4,25	4,25	4,22	4,25	4,25	4,25
			Hold	4,25	4,25	4,25	4,25	4,22	4,22	4,20	4,22

SECTION 17

MULTISPECTRAL SCANNER SUBSYSTEM (MSS)

LANDSAT-3

SECTION 17

MULTISPECTRAL SCANNER SUBSYSTEM (MSS)

When the MSS was returned to service during Orbit 5814 on 26 April 1979 after completion of a series of tests, the late line-start anomaly had virtually disappeared. Operations are currently satisfactory although infrequent late line-starts are still seen.

Table 17-1 shows typical telemetry values since launch. All are nominal.

Figure 17-1 shows the number of scenes imaged at each geographic location this quarter. Band 5 was OFF throughout this quarter; therefore, no scenes were taken in the N-S (night) passage.

Figure 17-2A and 2B similarly show the number of scenes imaged at each geographic location since launch. Figure 17-2A shows the scenes taken during the north-to-south passage. Figure 17-2B shows the scenes taken during the south-to-north passage (the night side of the earth) by the IR Sensors of Band 5. Antarctica is at the top of Figure 17-2B, and the northernmost latitudes are at the bottom. Only those scenes received by the U.S. ground stations are shown in Figures 17-1 and 2. Scenes transmitted (62% of total) to Canada, Brazil, Iran, Japan and Italy are not shown.

Figure 17-3 to 17-10 show the history of sensor responsivity to stimuli from six (6) levels of illumination from the Cal lamp. Two (2) typical sensors from each of Band 1 thru 4 are shown. They are all taken in the prime-low gain-compressed mode. Values shown with triangles were taken in high gain. The 6% rise on GMT Day 310 and the 12% drop on GMT Day 344, present on all sensors, is being studied. There now appears to be a recovery trend from the 12% drop.

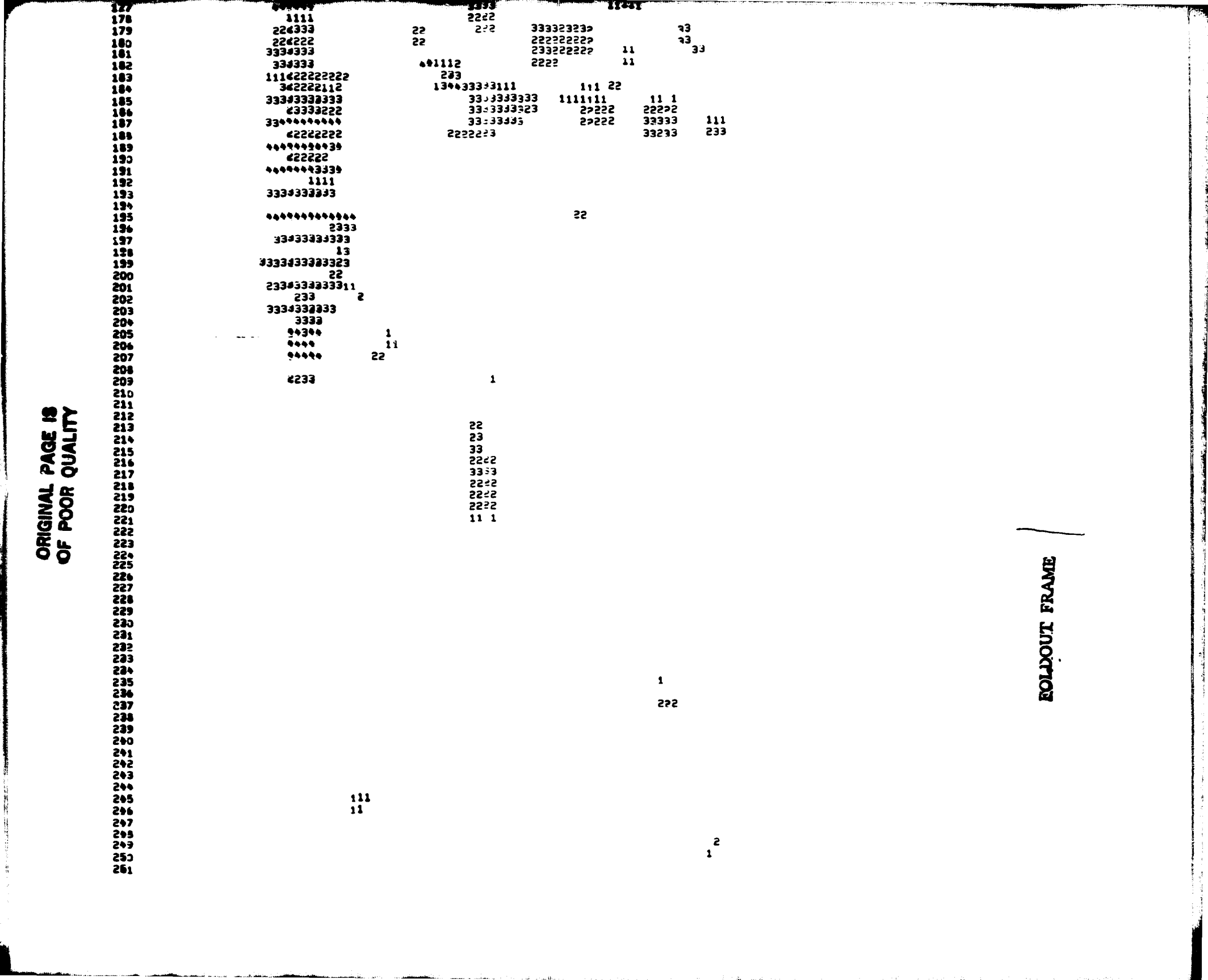
Band 5 continues in its 17th outgas cycle. Table 17-2 shows the history of the gain of Sensor 26.

Table 17-1. MSS Analog Telemetry - Landsat 3

Func	Name	Units	Orbit							
			50	1521	2721	4001	5152	6011	6410	6812
15021	Band 5 15V	TMV	F	4.80	F	4.75	4.75	F	F	F
15022	Band 5 PA Case Temp	DGC	11.15	13.80	14.27	17.16	16.28	11.89	12.00	11.82
15025	Ch 25 Bias	TMV	F	3.67	Q	Q	Q	Q	Q	Q
15026	Ch 26 Bias	TMV	F	3.61	F	3.60	3.55	F	F	F
15040	Mux -6 V	VDC	6.19	6.17	6.18	6.18	6.13	6.18	6.17	6.19
15041	A/D Conv Ref. Voltage	VDC	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3 60
15042	Avg Den Data Trans	TMV	1.92	2.13	2.06	2.20	2.17	2.30	2.22	2.20
15043	Fiber Opt Plate 1 Temp	DGC	13.92	15.31	16.70	19.09	18.62	13.61	13.65	13.60
15044	Fiber Opt Plate 2 Temp	DGC	12.66	13.59	14.62	17.18	16.57	11.69	11.74	11.71
15045	Multiplexer Temp	DGC	18.37	17.29	17.87	21.05	18.88	16.54	15.96	16.53
15046	Elect. Cover Temp	DGC	14.23	17.99	18.81	21.40	20.12	13.62	13.55	13.72
15047	Power Supply Temp	DGC	14.31	15.70	16.77	19.76	18.25	13.37	13.15	13.43
15048	Scan Mirror Reg Temp	DGC	12.61	13.77	15.17	18.16	16.74	11.59	11.04	11.74
15049	Scan Mirror Drive Elect. T.	DGC	12.94	14.45	15.76	18.99	17.13	12.06	11.41	12.23
15050	Scan Mirror Drive Coil T	DGC	12.69	13.85	15.27	18.14	17.02	11.78	11.39	11.87
15051	Scan Mirror Temp	DGC	12.25	13.16	14.73	17.45	13.60	11.21	10.89	11.26
15052	Rot Sht Hsg Temp	DGC	13.93	15.11	16.40	18.78	18.19	13.12	13.17	13.09
15053	Scn Mirror Reg Volt	VDC	24.02	23.34	23.35	23.35	23.38	23.33	23.24	23.35
15054	Cal Lamp Current	mA	112.50	112.56	112.50	112.50	112.50	111.70	110.00	110.00
15055	BD 1 15V	TMV	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07
15056	BD 2 15 V	TMV	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05
15057	BD 3 15 V	TMV	5.10	5.10	5.10	5.10	5.10	5.10	5.10	5.10
15058	BD 4 15 V	TMV	5.02	5.02	5.02	5.01	5.02	5.01	5.03	5.03
15059	TLM -15 V	VDC	- 15.17	- 15.17	- 15.17	- 15.17	-15.17	-15.17	-15.17	-15.17
15060	SM Reg +12 V/-6 V	TMV	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
15061	Logic +5 V	TMV	4.87	4.87	4.85	4.87	4.87	4.86	4.86	4.87
15062	+19 V Rect Out	TMV	5.90	5.89	6.02	5.90	5.89	6.00	6.00	6.00
15063	-19 V Rect Out	TMV	4.30	4.22	4.31	4.22	4.22	4.29	4.30	4.30
15064	BD 1 HVA	TMV	5.00	5.00	5.02	5.02	5.02	5.00	5.00	5.00
15065	BD 1 HVB	TMV	F	F	F	F	F	F	F	F
15066	BD 2 HVA	TMV	5.04	5.05	5.05	5.05	5.05	5.04	5.05	5.05
15067	BD 3 HVB	TMV	F	F	F	F	F	F	F	F
15068	BD 3 HVA	TMV	5.00	5.02	5.02	5.02	5.02	5.01	5.01	5.02
15069	BD 3 HVB	TMV	F	F	F	F	F	F	F	F
15070	Shtr Mtr Cor. Int.	TMV	2.55	2.54	2.53	2.53	2.54	2.56	2.58	2.57
15071	Scan Mirror Drive	VDC	- 7.95	- 7.99	- 8.01	- 8.02	- 8.01	-8.01	-8.01	-8.01
15080	RAD Cool 1st Stg T	DGC	F	-112.60	-112.63	-111.81	-112.97	-27.88	-27.88	-27.88
15081	RAD Cool 2nd Stg W T	DGC	F	-181.00	-181.00	-181.00	-181.00	-28.27	-28.12	-28.12
15082	RAD Cool 2nd Stg N T	DGC	F	-180.52	-180.89	-180.47	-180.68	*	*	*

F = Unit Off
Q = Unit Failure

* Out of Calibration Range



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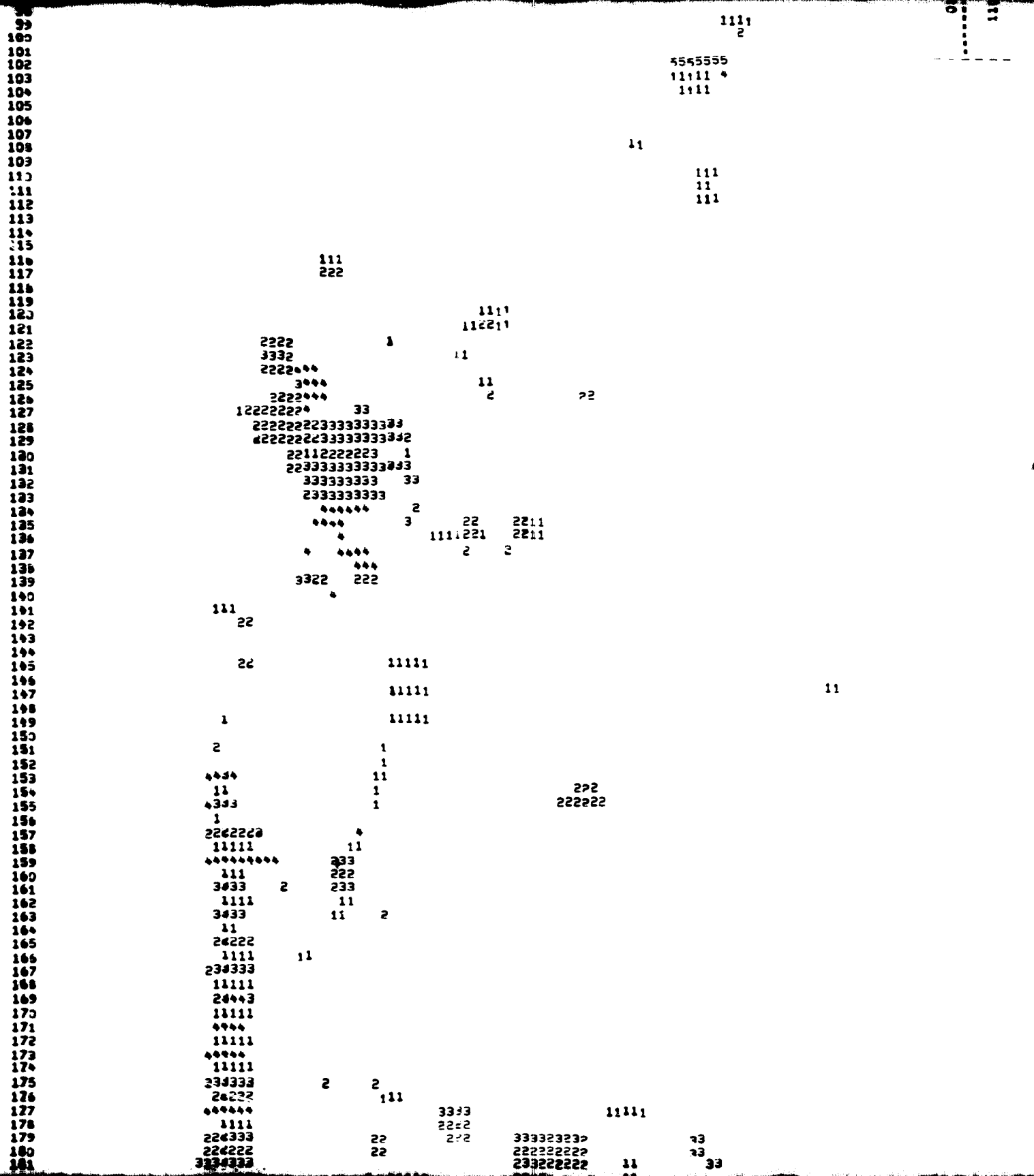

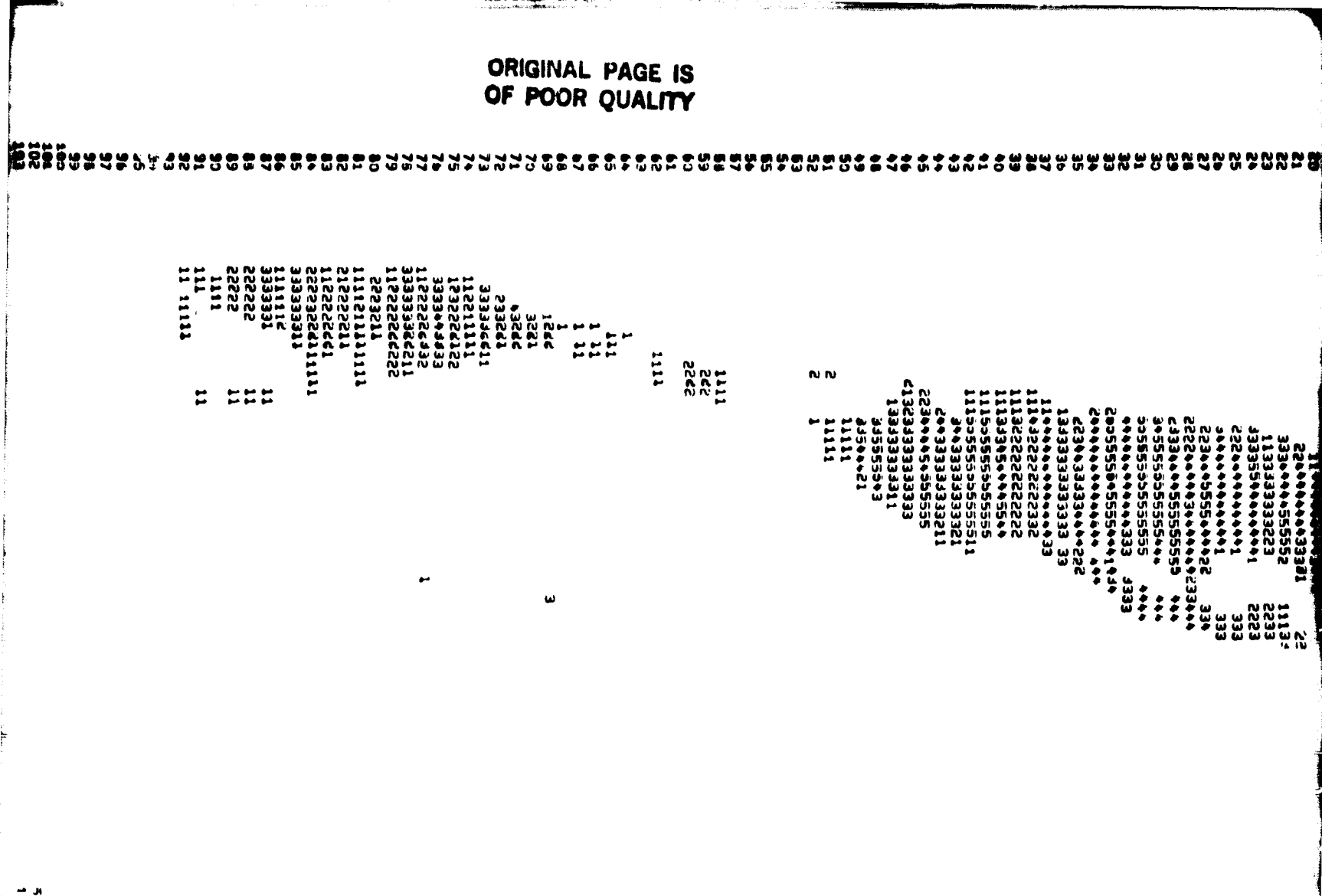

	IMAGE REQ'D	IMAGE SCHED	ACQUISITION VITA	ACQUISITION SLAT	ACQUISITION GOOD	ACQUISITION BAD
TOTALS	7270	4936	4595	4594	1472	156
	100.00%	67.89%	63.20%	63.19%	20.25%	2.13%

IMAGERY 0%	10%	20%	30%	40%	AVAILABLE 50%	60%	70%	80%	90%	100%
110	325	0	172	0	0	222	0	0	0	643

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Figure 17

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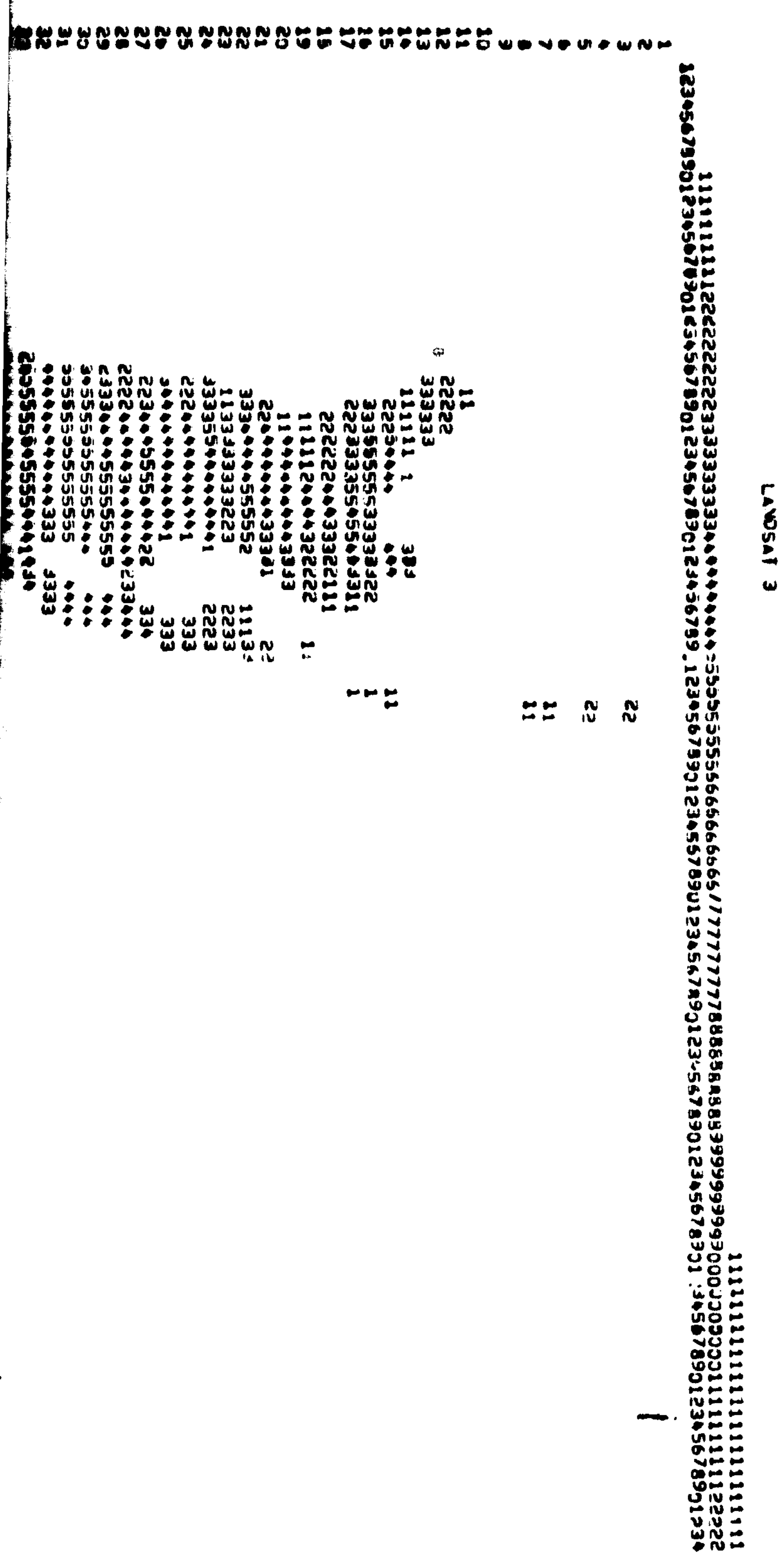

Figure 17-1. MSS Scenes in This Quarter - Landsat-3 Cycles 23-27

4

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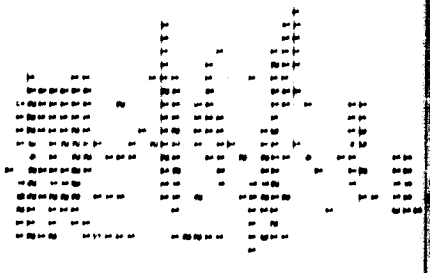

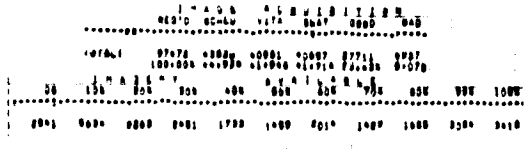

Figure 17-2A. Map of MSS Scenes in N-S Passages (Daylight) Since Launch Landsat-3 Cycles 1-27

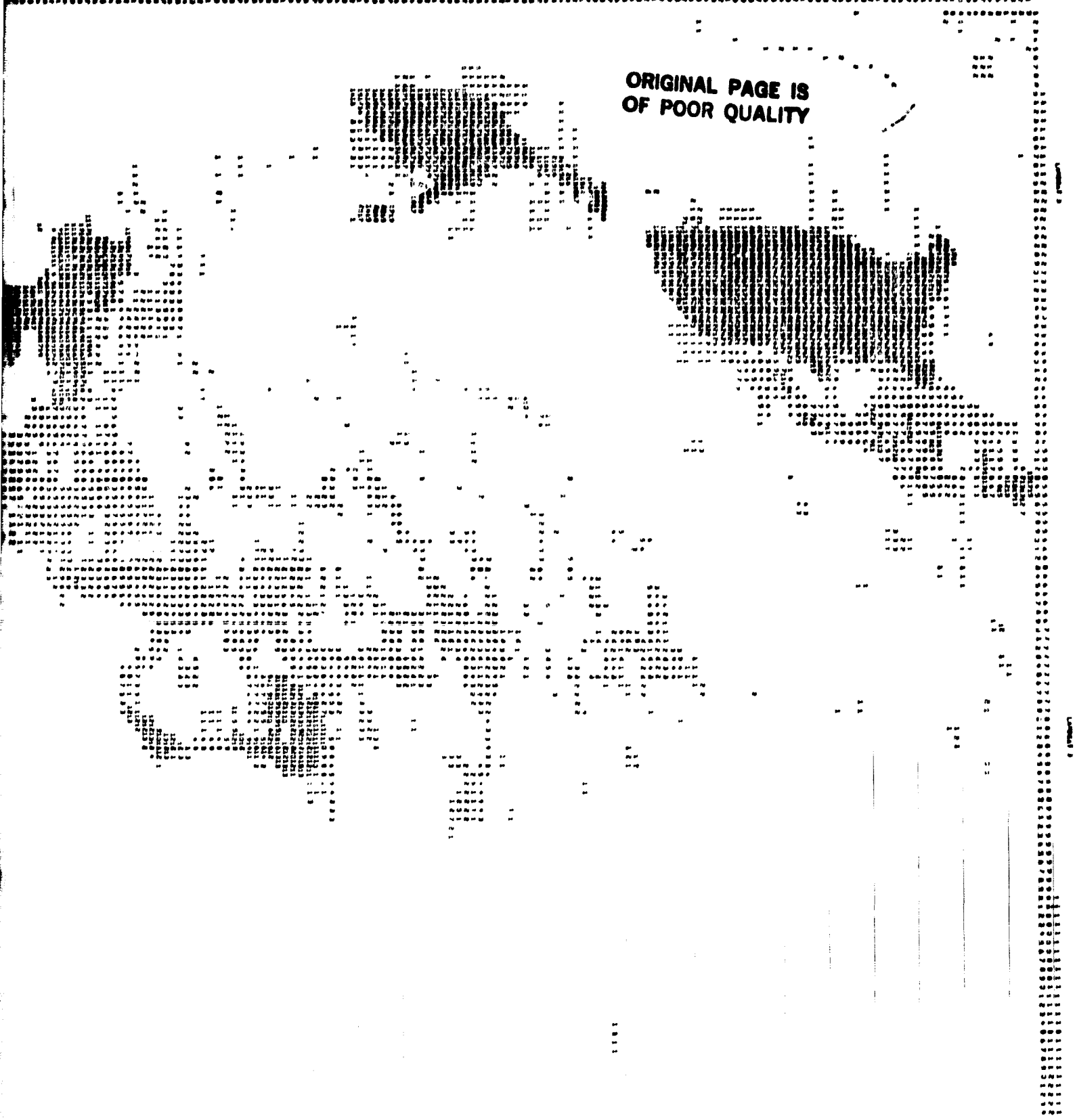

Figure 17-2B. Map of MSS Scenes in S-N Passages (Night) Since Launch Landsat-3 Cycles 1-27

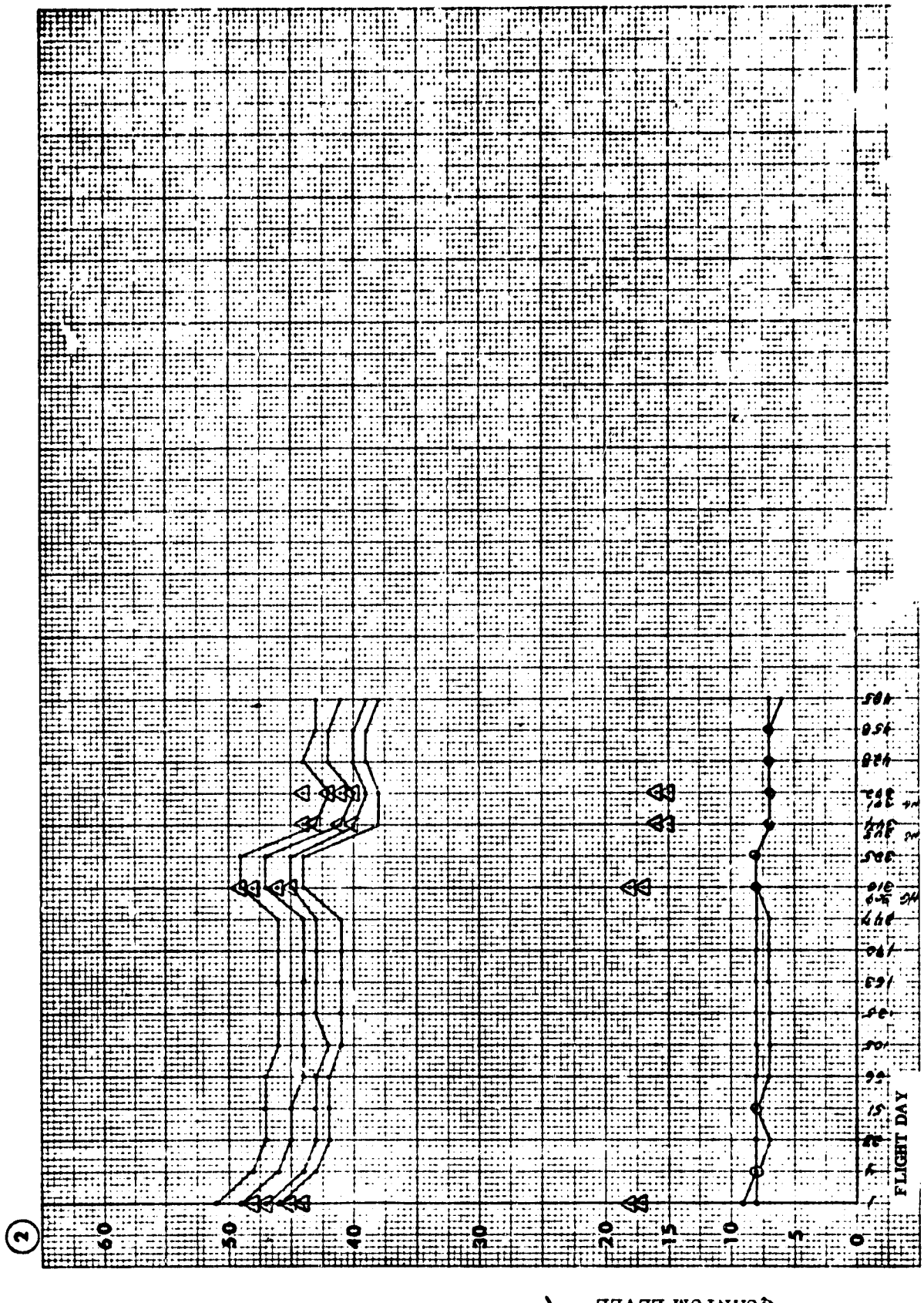

Figure 17-3. Landsat-3 Sensor 2 Response to Six Positions in the Cal Wedge

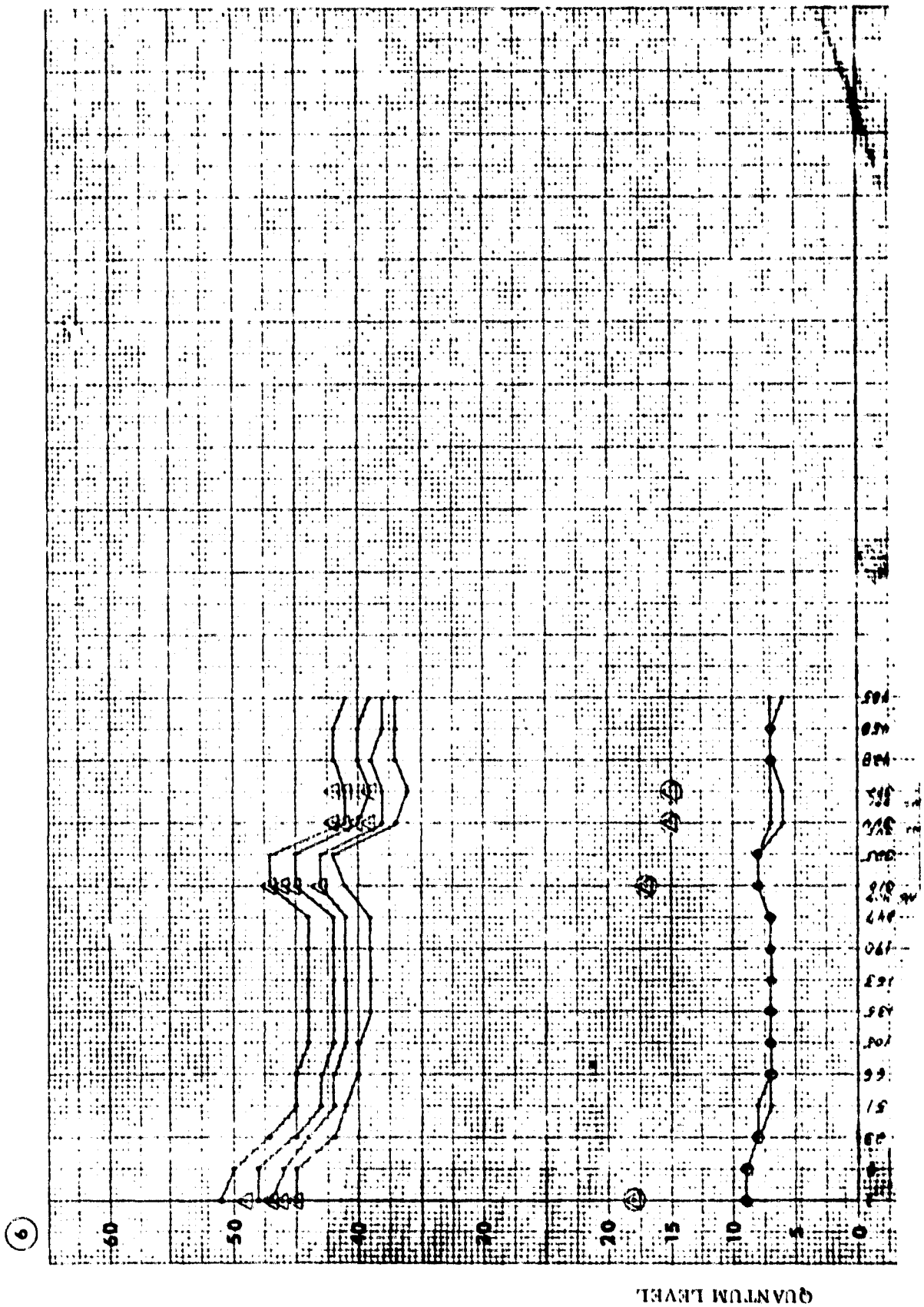

Figure 17-4. Landsat-3 Sensor 6 Response to Six Light Levels from Cal Lamp

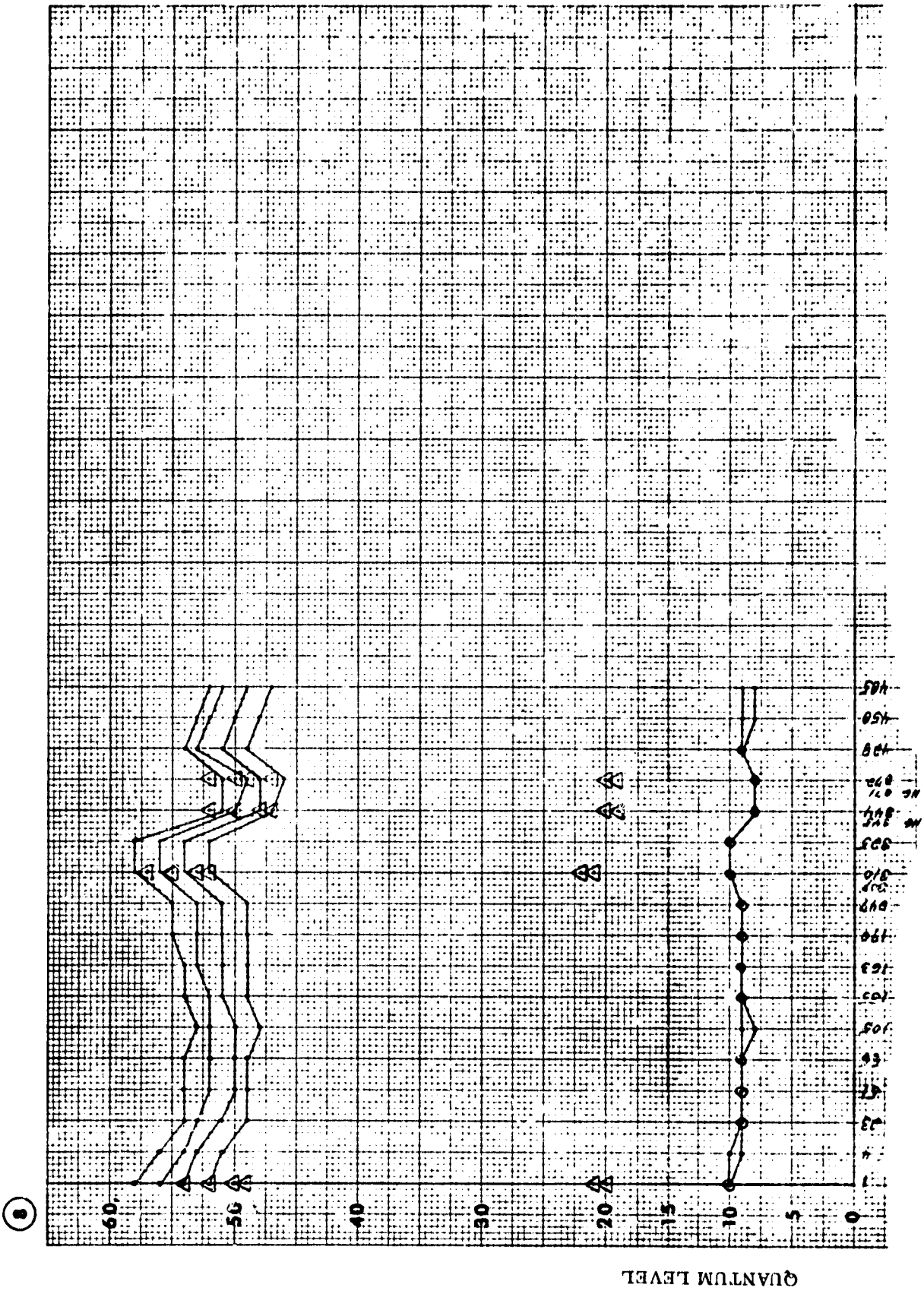

Figure 17-5. Landsat-3 Sensor 8 Response to Six Light Levels from Cal Lamp

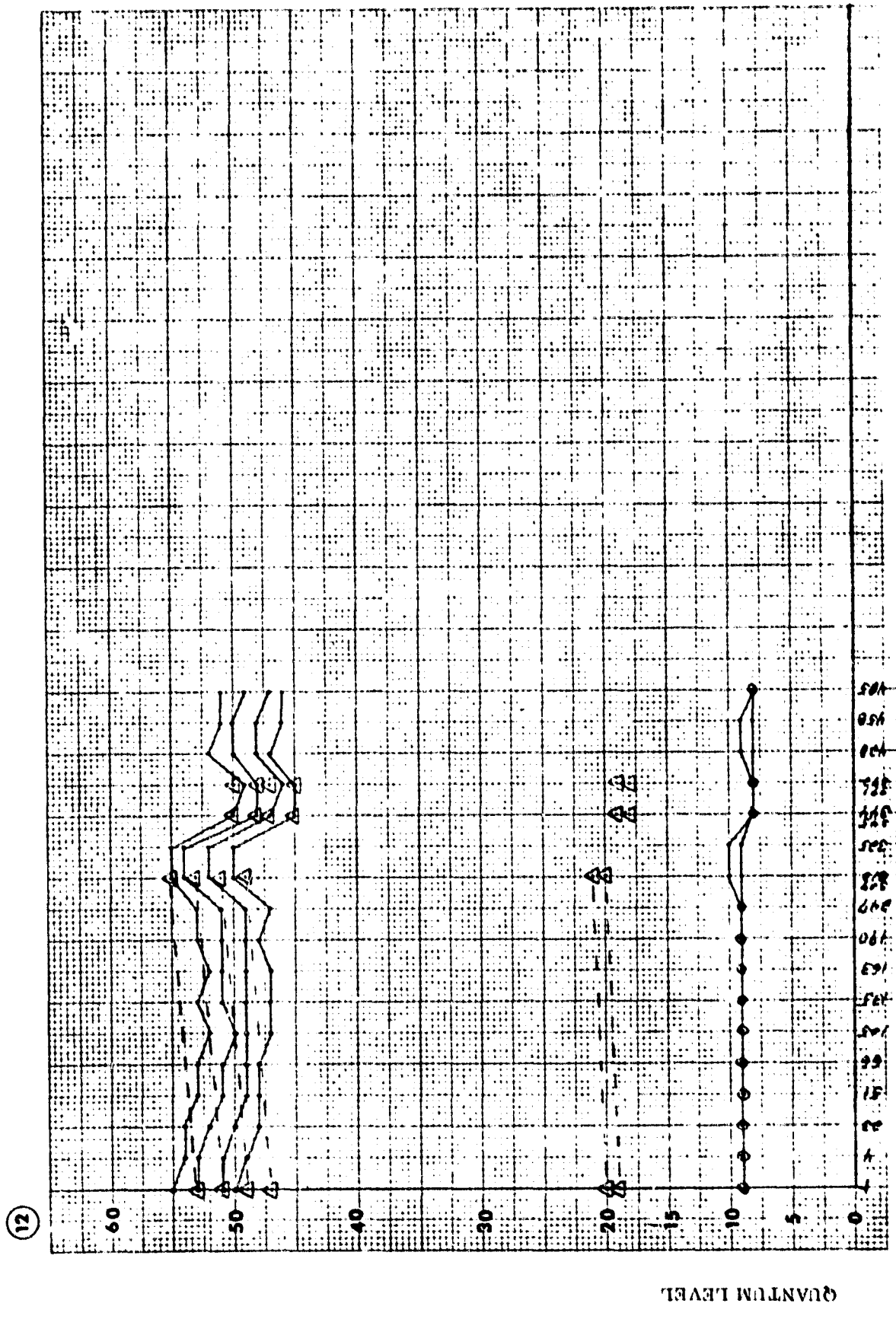

Figure 17-6. Landsat-3 Sensor 12 Response to Six Light Levels from Cal Lamp

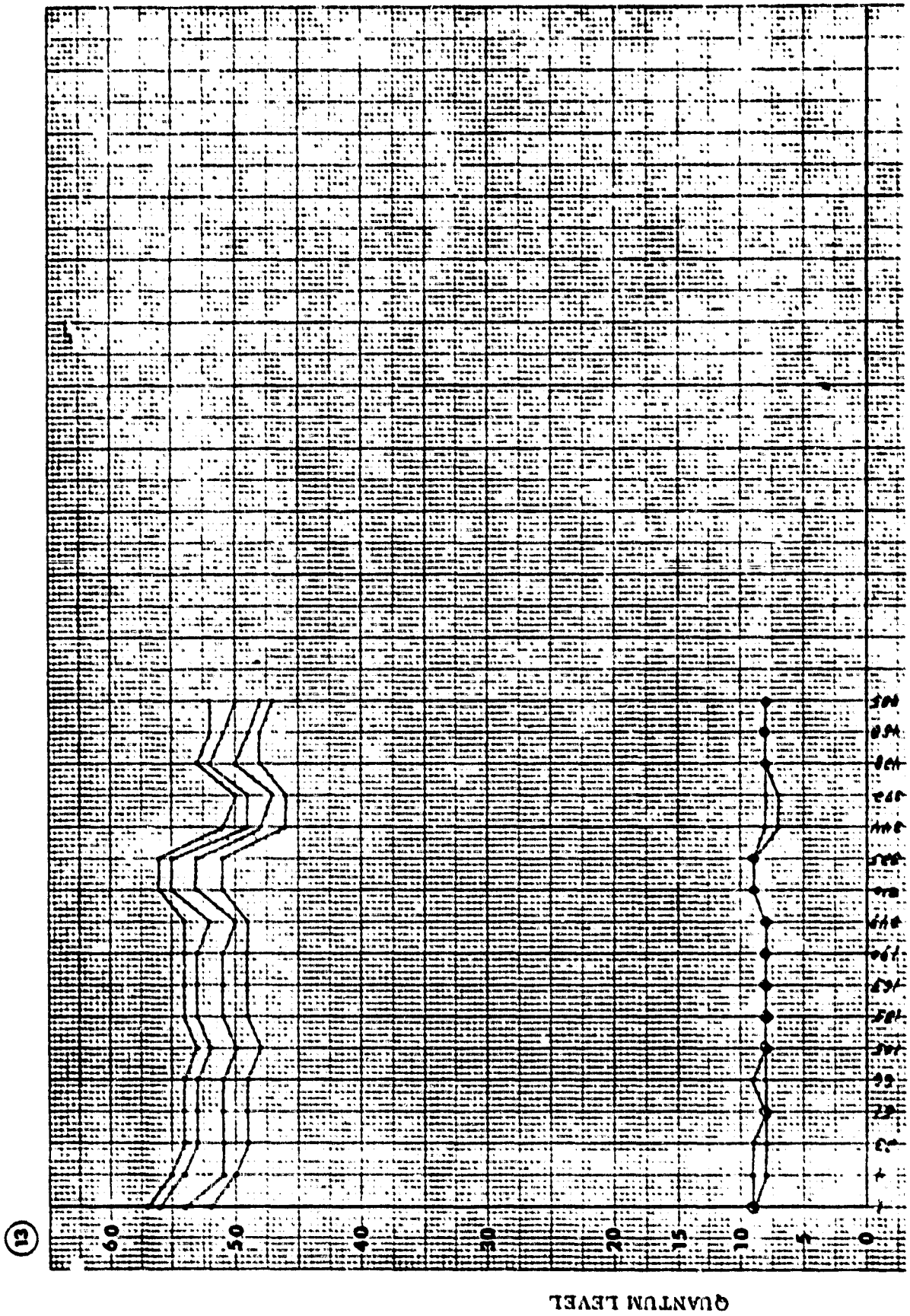

Figure 17-7. Landsat-3 Sensor 13 Response to Six Light Levels from Cal Lamp

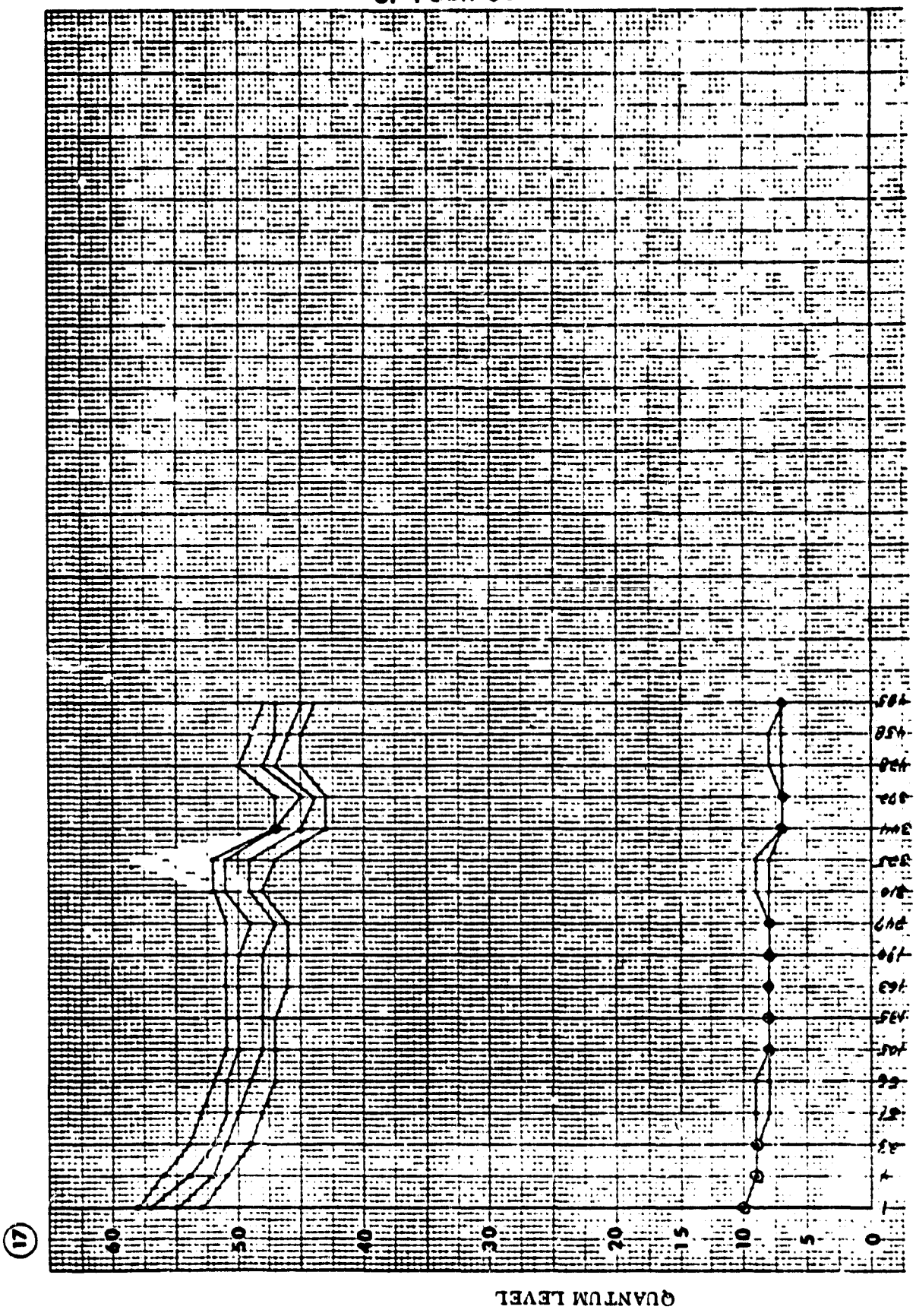

Figure 17-8. Landsat-3 Sensor 17 Response to Six Light Levels from Cal Lamp

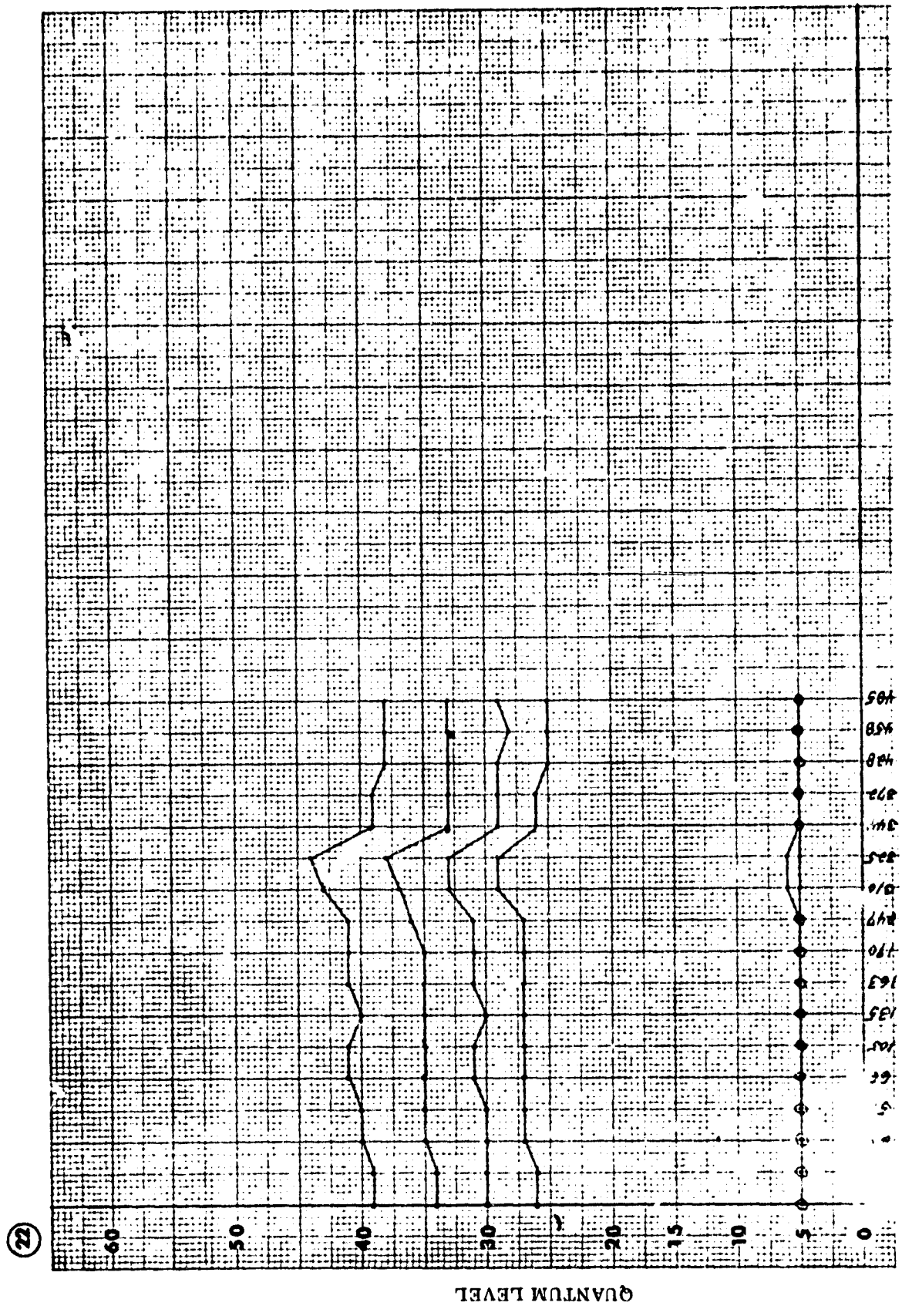

Figure 17-9. Landsat-3 Sensor 22 Response to Six Light Levels from Cal Lamp

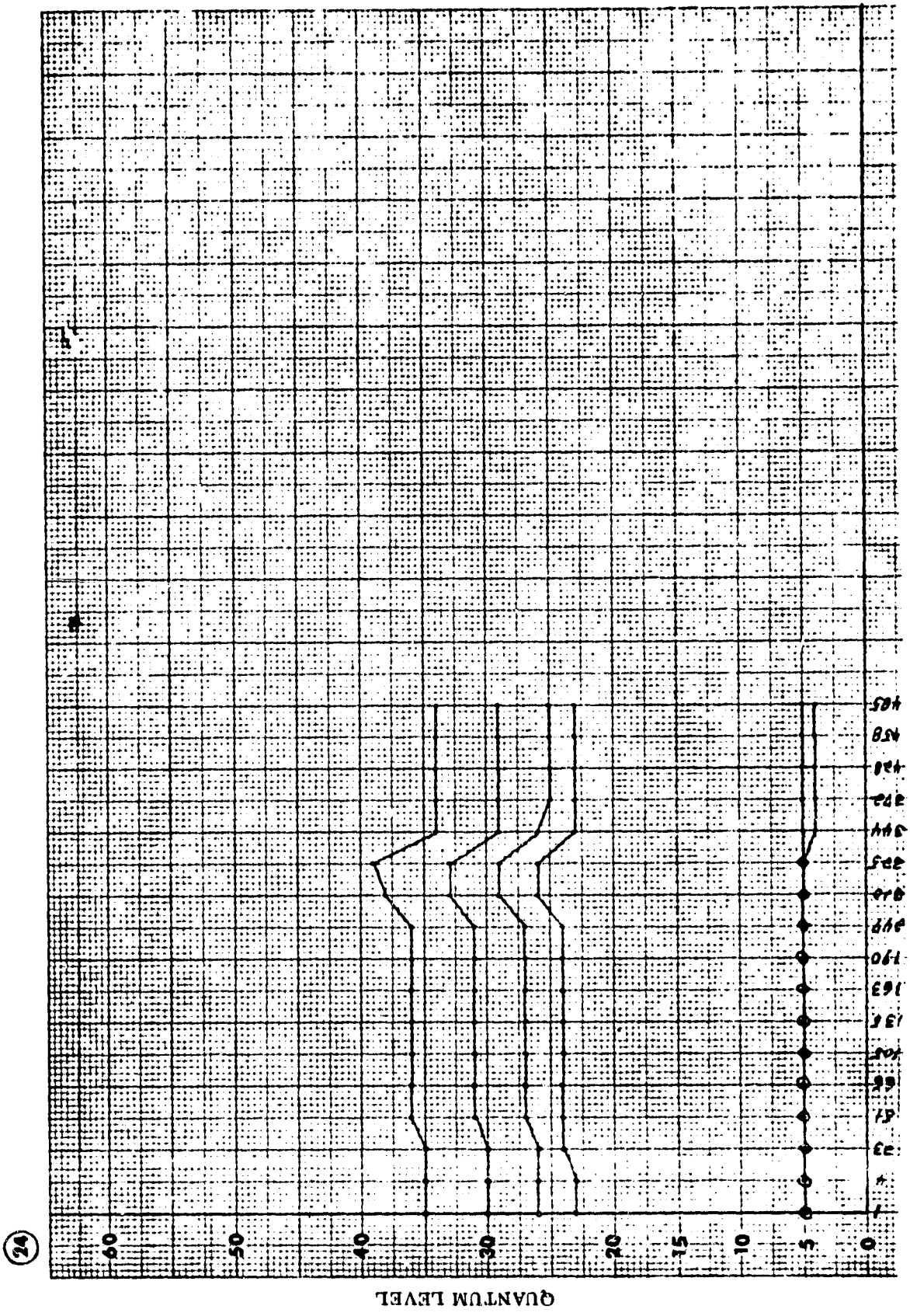

Figure 17-10. Landsat-3 Sensor 24 Response to Six Positions in the Cal Wedge

Table 17-2. Gain for Sensors Measured Immediately After Cooldown and Normalized to Gain Step 6

Date	After Outgas Cycle	Orbit	Sens. 25	Sens. 26	Comment
1978:					
3-21	1	222	42.72	39.54	
4-3	2	403	(38.95)	(35.66)	36 hours after Cooldown
4-17	3	598	42.45	39.1	
5-3	4	821	(40.11)	(37.42)	2 hours after Cooldown
5-25	5	1120	40.23	38.14	
6-19	6	1476	35.47	34.61	
7-12	7	1790	Q	33.57	
8-11	8	2215	Q	32.63	
9-8	9	2606	Q	31.16	
10-13	10	3095	Q	31.18	
11-9	11	3471	Q	29.67	
12-7	12	3861	Q	28.11	
1979:					
1-2	13	4224	Q	27.45	
1-29	14	4600	Q	27.32	
2-23	15	4949	Q	26.81	
3-19	16	5283	Q	26.78	

Q = Sensor Failed

SECTION 18
DATA COLLECTION SYSTEM (DCS)
LANDSAT-3

SECTION 18

DATA COLLECTION SUBSYSTEM (DCS)

The DCS Subsystem performed nominally during this report period.

Figure 18-1 shows the number of DCS messages received in each 18-day cycle at OCC. The percentage of good messages is about 95%. The declining number of DCS messages is due mainly to the transfer of this function from Landsat to the GOES satellite by Government users. As other users are found, the number of messages is expected to rise accordingly.

There are 31 users and 218 DCP's are in the data base. Of these DCP's about 62 are active daily.

Table 18-1 shows telemetry values since launch. All are nominal.

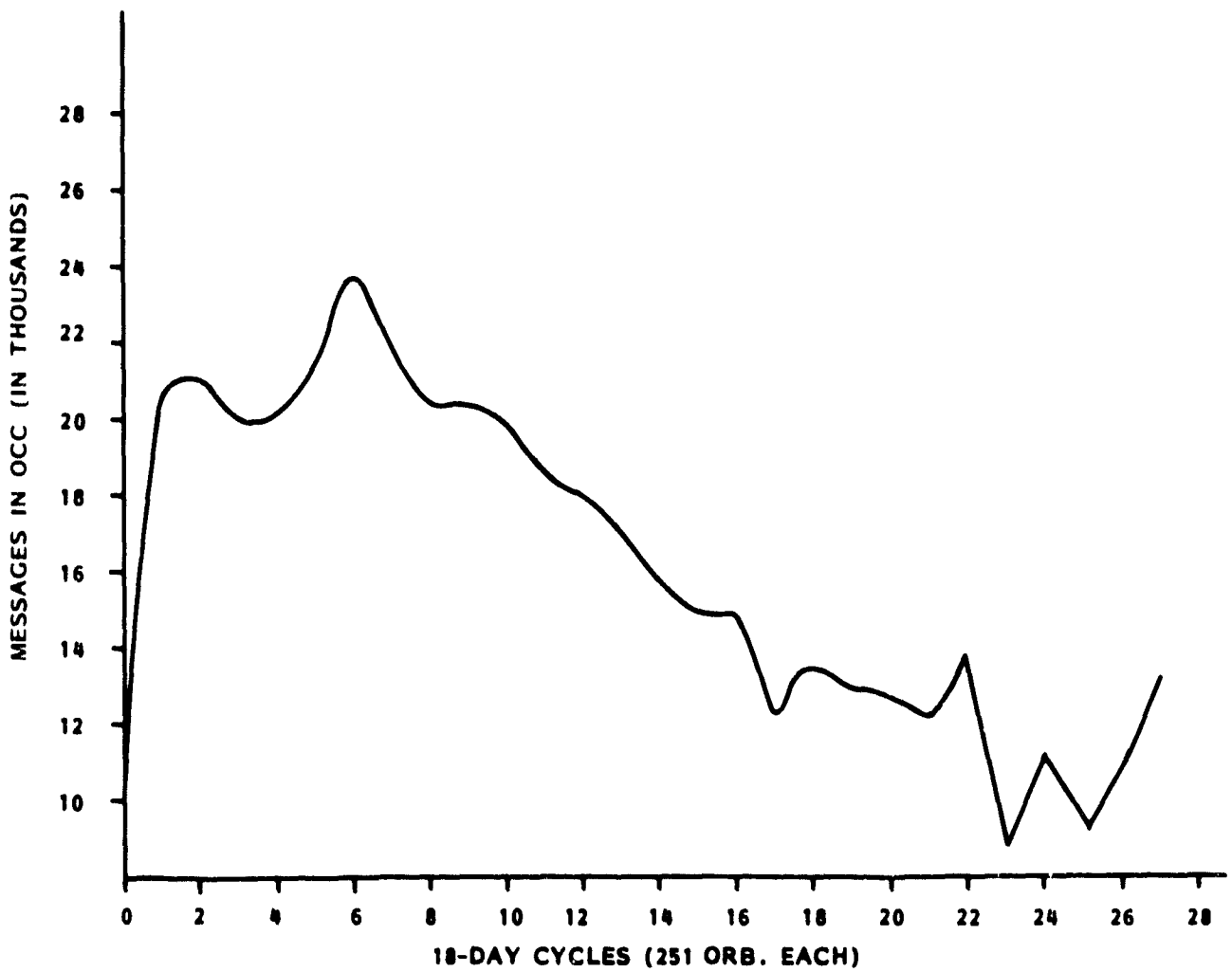

Figure 18-1. Landsat-3 Number of DCS Messages for Each 18-Day Cycle

Table 18-1. DCS Telemetry Values

Func	Name	Units	Orbit							
			43	1521	2721	4001	5152	6011	6410	6817
16001	Receiver 1 Sig Strength	dBm	-125.00	-127.21	-123.45	-128.11	-130.01	-127.25	-125.00	-130.96
16002	Receiver 1 Temp	DGC	19.05	19.00	20.17	21.68	22.09	19.70	19.70	19.73
16003	Rec-1 Pwr Input Volt	VDC	2.35	2.34	2.35	2.36	2.37	2.34	2.34	2.34
16004	Receiver 2 Sig Strength	dBm	F	F	F	F	F	F	F	F
16005	Receiver 2 Temp.	DGC	F	F	F	F	F	F	F	F
16006	Receiver 2 Input Volt	VDC	F	F	F	F	F	F	F	F

F = Unit Off

APPENDIX A

LANDSAT-3 ANOMALIES AND OBSERVATIONS

APPENDIX A

LANDSAT-3 ANOMALIES AND OBSERV

Date	Anomaly/Observation	How Observed	
3/6/78	Cell 4 of B Comstor would not verify. MDR D04942	On-Line	Cell 4 of B Comstor woul when all "1's" appeared operational.
3/9/78	RBV had intermittent white level saturation in first 5% of image. MDR D04939	Off-Line	White level saturation oc
4/3/78	Sensor responsivity was observed to be successively lower at first turn-on after each outgas cycle.	Off-Line	Study being made to dete tamination.
5/4/78	ECAM halted on checksum. MDR D04941	On-Line	ECAM halted on internal changed and operation co changed and returned to
7/11/78	No output from sensor 25 video on MSS Band 5. MDR D04943	On-Line	First operation after 7th 1-4 normal.
7/16/78	SMART #6 analog WBVTR-1 EOT detection fired while in monitor mode (Orbit 1857)	On-Line	Variable end of tape (EO normal detection. No eff
7/19/78	SMART #4 and 5 digital EOT detection for WBVTR-1 and WBVTR-2 fired in Orbit 1897.	On-Line	Operation to end of tape matic shutdown and inhibi
7/24/78	SMART #2 fired due to WBVTR-1 high headwheel current (HWI) in Orbit 1971	On-Line	Subsequent test operation reset.
8/27/78	Intermittent delayed line start pulse on MSS. MDR D04944	Off-Line	Delayed line start genera visible when commanded scan code still not visibl built up to a peak in late report period.
11/4/78	SMART #7 analog WBVTR-2 EOT detection fired while in monitor mode (Orbit 3465)	On-Line	Variable end of tape (EO normal detection. No eff
11/17/78	SMART #1 fired due to low unregulated voltage in Orbit (3576)	On-Line	Simultaneous MSS and R bus voltage reached -26. reset and normal operat Reoccurred in Orbit 393 program error which ha normal operation resume
12/6/78	MSS False End-of-Line Codes (MDR D 04948)	Off-Line	Occasional extra scan m extra 4 black and 4 white incident rate; i.e., Bra
5/24/79	RMP2 (Ball Bearing Gyro) current high then returned to normal. (MDR D04950)	On-Line	RMP1 (Gas Bearing Gyr RMP2 rundown test show
6/4/79	WBVTR-1 Minor Frame Sync Errors increased from 8 to 2000 during Playback in Orbit 6351 on 4 June 1929. (MDR D04951)	On-Line	WBVTR-1 tests show MS and is operational. Cau

FOLDOUT FRAME

PPENDIX A

IALIES AND OBSERVATIONS

	Comments
ell 4 of B Comstor would not load properly in Orbits 41, 45 and 48. Operational use discontinued on 3/16/78 hen all "1's" appeared in cell 4. Tested and operation resumed in Orbit 1897 on 19 July 1978 with cell 4 non-perational.	
hite level saturation occurred in first 5% of images at intermittent occurrence.	
udy being made to determine if responsivity decline due to sensor deterioration or to non-water vapor con-mination.	
CAM halted on internal check on Orbit 839 (5 May 1978). Memory fault not critical and stable. Checksum hanged and operation continued. Reoccurred at new non-critical memory location on 31 May 1978. Checksum hanged and returned to operation.	
irst operation after 7th outgas cycle showed no output from sensor 25. Sensor 26 operated nominall, . Bands -4 normal.	
ariable end of tape (EOT) protection circuit presently set inside normal operating range and fires indicating ormal detection. No effect on operation as circuit is in monitor mode.	
peration to end of tape caused SMART #4 and 5 circuit to fire before primary mechanical EOT switch. Auto-atic shutdown and inhibit of payloads occurred. Recorder returned to operation and SMART #4 and 5 reset.	
ubsequent test operation showed normal HWI and normal operation of recorder resumed. SMART #2 was eset.	
elayed line start generated by mux after apparent miss of scan monitor pulse No. 1. Mid scan code not isible when commanded on. Switched to scan monitor light source B. Anomaly not seen in this mode. Mid can code still not visible when commanded on. Anomaly absent October 1978 to January 1979. Occurrences uilt up to a peak in late March 1979 and then subsided. Reoccurrences from mid May 1979 to end of this eport period.	
ariable end of tape (EOT) protection circuit presently set inside normal operating range and fires indicating ormal detection. No effect on operation as circuit is in monitor mode.	
imultaneous MSS and RBV playbacks during spacecraft night discharged the batteries until the unregulated us voltage reached -26.5 volts. The SMART triggered and shut down payload operation. The SMART #1 was eset and normal operation resumed. Mission planning instructed to prohibit dual simultaneous P/B at night. eoccurred in Orbit 3939 (12/13/78) during night playback due to low power caused by power management rogram error which has been corrected. Recurred in orbit 5639 (13 April 1979). SMART #1 was reset and ormal operation resumed.	
ccasional extra scan monitor pulses occurring in preamble or along video data cause early line starts or xtra 4 black and 4 white (End-of-Line Code) pixels in scene data. Occurs over magnetic anomalies with low ncident rate; i.e., Brazil, Africa. Operation continued.	
MP1 (Gas Bearing Gyro) turned on in Orbit 6207 (24 May 1979) and enabled in Orbit 6220 (25 May 1979). MP2 rundown test showed RMP2 normal and can serve as a backup.	
BVTR-1 tests show MSS data is bad but RBV data is good. WBVTR-1 assigned to RBV only on 29 June 1979 nd is operational. Cause of anomaly not established.	

FOLDOUT FRAME 2

APPENDIX B

LANDSAT-3 SPACECRAFT ORBIT REFERENCE TABLES

APPENDIX B

LANDSAT-3

SPACECRAFT ORBIT REFERENCE TABLES

FROM 1 JANUARY 1979 THROUGH 30 APRIL 1980

ORBITS 4202 to 10978

FLIGHT DAY 302 THROUGH 787

Landsat-3

January 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	1	302	4202-4215	57- 70	5	17
2	2	303	4216-4229	71- 84	6	17
3	3	304	4230-4243	85- 98	7	17
4	4	305	4244-4257	99-112	8	17
5	5	306	4258-4271	113-126	9	17
6	6	307	4272-4284	127-139	10	17
7	7	308	4285-4298	140-153	11	17
8	8	309	4299-4312	154-167	12	17
9	9	310	4313-4326	168-181	13	17
10	10	311	4327-4340	182-195	14	17
11	11	312	4341-4354	196-209	15	17
12	12	313	4355-4368	210-223	16	17
13	13	314	4369-4382	224-237	17	17
14	14	315	4383-4396	238-251	18	17
15	15	316	4397-4410	1- 14	1	18
16	16	317	4411-4424	15- 28	2	18
17	17	318	4425-4438	29- 42	3	18
18	18	319	4439-4452	43- 56	4	18
19	19	320	4453-4466	57- 70	5	18
20	20	321	4467-4480	71- 84	6	18
21	21	322	4481-4494	85- 98	7	18
22	22	323	4495-4508	99-112	8	18
23	23	324	4509-4522	113-126	9	18
24	24	325	4523-4535	127-139	10	18
25	25	326	4536-4549	140-153	11	18
26	26	327	4550-4563	154-167	12	18
27	27	328	4564-4577	168-181	13	18
28	28	329	4578-4591	182-195	14	18
29	29	330	4592-4605	196-209	15	18
30	30	331	4606-4619	210-223	16	18
31	31	332	4620-4633	224-237	17	18

Landsat-3

February 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	32	333	4634-4647	238-251	18	18
2	33	334	4648-4661	1- 14	1	19
3	34	335	4662-4675	15- 28	2	19
4	35	336	4676-4689	29- 42	3	19
5	36	337	4690-4703	43- 56	4	19
6	37	338	4704-4717	57- 70	5	19
7	38	339	4718-4731	71- 84	6	19
8	39	340	4732-4745	85- 98	7	19
9	40	341	4746-4759	99-112	8	19
10	41	342	4760-4773	113-126	9	19
11	42	343	4774-4786	127-139	10	19
12	43	344	4787-4800	140-153	11	19
13	44	345	4801-4814	154-167	12	19
14	45	346	4815-4828	168-181	13	19
15	46	347	4829-4842	182-195	14	19
16	47	348	4843-4856	196-209	15	19
17	48	349	4857-4870	210-223	16	19
18	49	350	4871-4884	224-237	17	19
19	50	351	4885-4898	238-251	18	19
20	51	352	4899-4912	1- 14	1	20
21	52	353	4913-4926	15- 28	2	20
22	53	354	4927-4940	29- 42	3	20
23	54	355	4941-4954	43- 56	4	20
24	55	356	4955-4968	57- 70	5	20
25	56	357	4969-4982	71- 84	6	20
26	57	358	4983-4996	85- 98	7	20
27	58	359	4997-5010	99-112	8	20
28	59	360	5011-5024	113-126	9	20

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March 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	60	361	5025-5037	127-139	10	20
2	61	362	5038-5051	140-153	11	20
3	62	363	5052-5065	154-167	12	20
4	63	364	5066-5079	168-181	13	20
5	64	365	5080-5093	182-195	14	20
6	65	366	5094-5107	196-209	15	20
7	66	367	5108-5121	210-223	16	20
8	67	368	5122-5135	224-237	17	20
9	68	369	5136-5149	238-251	18	20
10	69	370	5150-5163	1- 14	1	21
11	70	371	5164-5177	15- 28	2	21
12	71	372	5178-5191	29- 42	3	21
13	72	373	5192-5205	43- 56	4	21
14	73	374	5206-5219	57- 70	5	21
15	74	375	5220-5233	71- 84	6	21
16	75	376	5234-5247	85- 98	7	21
17	76	377	5248-5261	99-112	8	21
18	77	378	5262-5275	113-126	9	21
19	78	379	5276-5288	127-139	10	21
20	79	380	5289-5302	140-153	11	21
21	80	381	5303-5316	154-167	12	21
22	81	382	5317-5330	168-181	13	21
23	82	383	5331-5344	182-195	14	21
24	83	384	5345-5358	196-209	15	21
25	84	385	5359-5372	210-223	16	21
26	85	386	5373-5386	224-237	17	21
27	86	387	5387-5400	238-251	18	21
28	87	388	5401-5414	1- 14	1	22
29	88	389	5415-5428	15- 28	2	22
30	89	390	5429-5442	29- 42	3	22
31	90	391	5443-5456	43- 56	4	22

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April 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	91	392	5457-5470	57- 70	5	22
2	92	393	5471-5484	71- 84	6	22
3	93	394	5485-5498	85- 98	7	22
4	94	395	5499-5512	99-112	8	22
5	95	396	5513-5526	113-126	9	22
6	96	397	5527-5539	127-139	10	22
7	97	398	5540-5553	140-153	11	22
8	98	399	5554-5567	154-167	12	22
9	99	400	5568-5581	168-181	13	22
10	100	401	5582-5595	182-195	14	22
11	101	402	5596-5609	196-209	15	22
12	102	403	5610-5623	210-223	16	22
13	103	404	5624-5637	224-237	17	22
14	104	405	5638-5651	238-251	18	22
15	105	406	5652-5665	1- 14	1	23
16	106	407	5666-5679	15- 28	2	23
17	107	408	5680-5693	29- 42	3	23
18	108	409	5694-5707	43- 56	4	23
19	109	410	5708-5721	57- 70	5	23
20	110	411	5722-5735	71- 84	6	23
21	111	412	5736-5749	85- 98	7	23
22	112	413	5750-5763	99-112	8	23
23	113	414	5764-5777	113-126	9	23
24	114	415	5778-5790	127-139	10	23
25	115	416	5791-5804	140-153	11	23
26	116	417	5805-5818	154-167	12	23
27	117	418	5819-5832	168-181	13	23
28	118	419	5833-5846	182-195	14	23
29	119	420	5847-5860	196-209	15	23
30	120	421	5861-5874	210-223	16	23

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May 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	121	422	5875-5888	224-237	17	23
2	122	423	5889-5902	238-251	18	23
3	123	424	5903-5916	1- 14	1	24
4	123	425	5917-5930	15- 28	2	24
5	125	426	5931-5944	29- 42	3	24
6	126	427	5945-5958	43- 56	4	24
7	127	428	5959-5972	57- 70	5	24
8	128	429	5973-5986	71- 84	6	24
9	129	430	5987-6000	85- 98	7	24
10	130	431	6001-6014	99-112	8	24
11	131	432	6015-6028	113-126	9	24
12	132	433	6029-6041	127-139	10	24
13	133	434	6042-6055	140-153	11	24
14	134	435	6056-6069	154-167	12	24
15	135	436	6070-6083	168-181	13	24
16	136	437	6084-6097	182-195	14	24
17	137	438	6098-6111	196-209	15	24
18	138	439	6112-6125	210-223	16	24
19	139	440	6126-6139	224-237	17	24
20	140	441	6140-6153	238-251	18	24
21	141	442	6154-6167	1- 14	1	25
22	142	443	6168-6181	15- 28	2	25
23	143	444	6182-6195	29- 42	3	25
24	144	445	6196-6209	43- 56	4	25
25	145	446	6210-6223	57- 70	5	25
26	146	447	6224-6237	71- 84	6	25
27	147	448	6238-6251	85- 98	7	25
28	148	449	6252-6265	99-112	8	25
29	149	450	6266-6279	113-126	9	25
30	150	451	6280-6292	127-139	10	25
31	151	452	6293-6306	140-153	11	25

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June 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	152	453	6307-6320	154-167	12	25
2	153	454	6321-6334	168-181	13	25
3	154	455	6335-6348	182-195	14	25
4	155	456	6349-6362	196-209	15	25
5	156	457	6363-6376	210-223	16	25
6	157	458	6377-6390	224-237	17	25
7	158	459	6391-6404	238-261	18	25
8	159	460	6405-6418	1- 14	1	26
9	160	461	6419-6432	15- 28	2	26
10	161	462	6433-6446	29- 42	3	26
11	162	463	6447-6460	43- 56	4	26
12	163	464	6461-6474	57- 70	5	26
13	164	465	6475-6488	71- 84	6	26
14	165	466	6489-6502	85- 98	7	26
15	166	467	6503-6516	99-112	8	26
16	167	468	6517-6530	113-126	9	26
17	168	469	6531-6543	127-139	10	26
18	169	470	6544-6557	140-153	11	26
19	170	471	6558-6571	154-167	12	26
20	171	472	6572-6585	168-181	13	26
21	172	473	6586-6599	182-195	14	26
22	173	474	6600-6613	196-209	15	26
23	174	475	6614-6627	210-223	16	26
24	175	476	6628-6641	224-237	17	26
25	176	477	6642-6655	238-251	18	26
26	177	478	6656-6669	1- 14	1	27
27	178	479	6670-6683	15- 28	2	27
28	179	480	6684-6697	29- 42	3	27
29	180	481	6698-6711	43- 56	4	27
30	181	482	6712-6725	57- 70	5	27

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July 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	182	483	6726-6739	71- 84	6	27
2	183	484	6740-6753	85- 98	7	27
3	184	485	6754-6767	99-112	8	27
4	185	486	6768-6781	113-126	9	27
5	186	487	6782-6794	127-139	10	27
6	187	488	6795-6808	140-153	11	27
7	188	489	6809-6822	154-167	12	27
8	189	490	6823-6836	168-181	13	27
9	190	491	6837-6850	182-195	14	27
10	191	492	6851-6864	196-209	15	27
11	192	493	6865-6878	210-223	16	27
12	193	494	6879-6892	224-237	17	27
13	194	495	6893-6906	238-251	18	27
14	195	496	6907-6920	1- 14	1	28
15	196	497	6921-6934	15- 28	2	28
16	197	498	6935-6948	29- 42	3	28
17	198	499	6949-6962	43- 56	4	28
18	199	500	6963-6976	57- 70	5	28
19	200	501	6977-6990	71- 84	6	28
20	201	502	6991-7004	85- 98	7	28
21	202	503	7005-7018	99-112	8	28
22	203	504	7019-7032	113-126	9	28
23	204	505	7033-7045	127-139	10	28
24	205	506	7046-7059	140-153	11	28
25	206	507	7060-7073	154-167	12	28
26	207	508	7074-7087	168-181	13	28
27	208	509	7088-7101	182-195	14	28
28	209	510	7102-7115	196-209	15	28
29	210	511	7116-7129	210-223	16	28
30	211	512	7130-7143	224-237	17	28
31	212	513	7144-7157	238-251	18	28

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August 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	213	514	7158-7171	1-14	1	29
2	214	515	7172-7185	15-28	2	29
3	215	516	7186-7199	29-42	3	29
4	216	517	7200-7213	43-56	4	29
5	217	518	7214-7227	57-70	5	29
6	218	519	7228-7241	71-84	6	29
7	219	520	7242-7255	85-98	7	29
8	220	521	7256-7269	99-112	8	29
9	221	522	7270-7283	113-126	9	29
10	222	523	7284-7296	127-139	10	29
11	223	524	7297-7310	140-153	11	29
12	224	525	7311-7324	154-167	12	29
13	225	526	7325-7338	168-181	13	29
14	226	527	7339-7352	182-195	14	29
15	227	528	7353-7366	196-209	15	29
16	228	529	7367-7380	210-223	16	29
17	229	530	7381-7394	224-237	17	29
18	230	531	7395-7408	238-251	18	29
19	231	532	7409-7422	1-14	1	30
20	232	533	7423-7436	15-28	2	30
21	233	534	7437-7450	29-42	3	30
22	234	535	7451-7464	43-56	4	30
23	235	536	7465-7478	57-70	5	30
24	236	537	7479-7492	71-84	6	30
25	237	538	7493-7506	85-98	7	30
26	238	539	7507-7520	99-112	8	30
27	239	540	7521-7534	113-126	9	30
28	240	541	7535-7548*	127-140*	10	30
29	241	542	7549*-7561	141*-153	11	30
30	242	543	7562-7575	154-167	12	30
31	243	544	7576-7589	168-181	13	30

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September 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	244	545	7590-7603	182-195	14	30
2	245	546	7604-7617	196-209	15	30
3	246	547	7618-7631	210-223	16	30
4	247	548	7632-7645	224-237	17	30
5	248	549	7646-7659	238-251	18	30
6	249	550	7660-7673	1-14	1	31
7	250	551	7674-7687	15-28	2	31
8	251	552	7688-7701	29-42	3	31
9	252	553	7702-7715	43-56	4	31
10	253	554	7716-7729	57-70	5	31
11	254	555	7730-7743	71-84	6	31
12	255	556	7744-7757	85-98	7	31
13	256	557	7758-7771	99-112	8	31
14	257	558	7772-7785	113-126	9	31
15	258	559	7786-7799*	127-140*	10	31
16	259	560	7800*-7812	141*-153	11	31
17	260	561	7813-7826	154-167	12	31
18	261	562	7827-7840	168-181	13	31
19	262	563	7841-7854	182-195	14	31
20	263	564	7855-7868	196-209	15	31
21	264	565	7869-7882	210-223	16	31
22	265	566	7883-7896	224-237	17	31
23	266	567	7897-7910	238-251	18	31
24	267	568	7911-7924	1-14	1	32
25	268	569	7925-7938	15-28	2	32
26	269	570	7939-7952	29-42	3	32
27	270	571	7953-7966	43-56	4	32
28	271	572	7967-7980	57-70	5	32
29	272	573	7981-7994	71-84	6	32
30	273	574	7995-8008	85-98	7	32

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October 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	274	575	8009-8022	99-112	8	32
2	275	576	8023-8036	113-126	9	32
3	276	577	8037-8050*	127-140*	10	32
4	277	578	8051*-8063	141*-153	11	32
5	278	579	8064-8077	154-167	12	32
6	279	580	8078-8091	168-181	13	32
7	280	581	8092-8105	182-195	14	32
8	281	582	8106-8119	196-209	15	32
9	282	583	8120-8133	210-223	16	32
10	283	584	8134-8147	224-237	17	32
11	284	585	8148-8161	238-251	18	32
12	285	586	8162-8175	1-14	1	33
13	286	587	8176-8189	15-28	2	33
14	287	588	8190-8203	29-42	3	33
15	288	589	8204-8217	43-56	4	33
16	289	590	8218-8231	57-70	5	33
17	290	591	8232-8245	71-84	6	33
18	291	592	8246-8259	85-98	7	33
19	292	593	8260-8273	99-112	8	33
20	293	594	8274-8287	113-126	9	33
21	294	595	8288-8301*	127-140*	10	33
22	295	596	8302*-8314	141*-153	11	33
23	296	597	8315-8328	154-167	12	33
24	297	598	8329-8342	168-181	13	33
25	298	599	8343-8356	182-195	14	33
26	299	600	8357-8370	196-209	15	33
27	300	601	8371-8384	210-223	16	33
28	301	602	8385-8398	224-237	17	33
29	302	603	8399-8412	238-251	18	33
30	303	604	8413-8426	1-14	1	34
31	304	605	8427-8440	15-28	2	34

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November 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	305	606	8441-8454	29- 42	3	34
2	306	607	8455-8468	43- 56	4	34
3	307	608	8469-8482	57- 70	5	34
4	308	609	8483-8496	71- 84	6	34
5	309	610	8497-8510	85- 98	7	34
6	310	611	8511-8524	99-112	8	34
7	311	612	8525-8538	113-126	9	34
8	312	613	8539-8552*	127-140*	10	34
9	313	614	8553*-8565	141*-153	11	34
10	314	615	8566-8579	154-167	12	34
11	315	616	8580-8593	168-181	13	34
12	316	617	8594-8607	182-195	14	34
13	317	618	8608-8621	196-209	15	34
14	318	619	8622-8635	210-223	16	34
15	319	620	8636-8649	224-237	17	34
16	320	621	8650-8663	238-251	18	34
17	321	622	8664-8677	1- 14	1	35
18	322	623	8678-8691	15- 28	2	35
19	323	624	8692-8705	29- 42	3	35
20	324	625	8706-8719	43- 56	4	35
21	325	626	8720-8733	57- 70	5	35
22	326	627	8734-8747	71- 84	6	35
23	327	628	8748-8761	85- 98	7	35
24	328	629	8762-8775	99-112	8	35
25	329	630	8776-8789	113-126	9	35
26	330	631	8790-8803*	127-140*	10	35
27	331	632	8804*-8816	141*-153	11	35
28	332	633	8817-8830	154-167	12	35
29	333	634	8831-8844	168-181	13	35
30	334	635	8845-8858	182-195	14	35

* Revised

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December 1979

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	335	636	8859-8872	196-209	15	35
2	336	637	8873-8886	210-223	16	35
3	337	638	8887-8900	224-237	17	35
4	338	639	8901-8914	238-251	18	35
5	339	640	8915-8928	1- 14	1	36
6	340	641	8929-8942	15- 28	2	36
7	341	642	8943-8956	29- 42	3	36
8	342	643	8957-8970	43- 56	4	36
9	343	644	8971-8984	57- 70	5	36
10	344	645	8985-8998	71- 84	6	36
11	345	646	8999-9012	85- 98	7	36
12	346	647	9013-9026	99-112	8	36
13	347	648	9027-9040	113-126	9	36
14	348	649	9041-9054*	127-140*	10	36
15	349	650	9055*-9067	141*-153	11	36
16	350	651	9068-9081	154-167	12	36
17	351	652	9082-9095	168-181	13	36
18	352	653	9096-9109	182-195	14	36
19	353	654	9110-9123	196-209	15	36
20	354	655	9124-9137	210-223	16	36
21	355	656	9138-9151	224-237	17	36
22	356	657	9152-9165	238-251	18	36
23	357	658	9166-9179	1- 14	1	37
24	358	659	9180-9193	15- 28	2	37
25	359	660	9194-9207	29- 42	3	37
26	360	661	9208-9221	43- 56	4	37
27	361	662	9222-9235	57- 70	5	37
28	362	663	9236-9249	71- 84	6	37
29	363	664	9250-9263	85- 98	7	37
30	364	665	9264-9277	99-112	8	37
31	365	666	9278-9291	113-126	9	37

* Revised

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January 1980

Date	GMT Day	Flight Day	Spacecraft Orbit	Cycle Orbits	Cycle Day	Cycle
1	1	667	9292-9305*	127-140*	10	37
2	2	668	9306*-9318	141*-153	11	37
3	3	669	9319-9332	154-167	12	37
4	4	670	9333-9346	168-181	13	37
5	5	671	9347-9360	182-195	14	37
6	6	672	9361-9374	196-209	15	37
7	7	673	9375-9388	210-223	16	37
8	8	674	9389-9402	224-237	17	37
9	9	675	9403-9416	238-251	18	37
10	10	676	9417-9430	1- 14	1	38
11	11	677	9431-9444	15- 28	2	38
12	12	678	9445-9458	29- 42	3	38
13	13	679	9459-9472	43- 56	4	38
14	14	680	9473-9486	57- 68	5	38
15	15	681	9487-9500	71- 84	6	38
16	16	682	9501-9514	85- 98	7	38
17	17	683	9515-9528	99-112	8	38
18	18	684	9529-9542	113-126	9	38
19	19	685	9543-9555	127-139	10	38
20	20	686	9556-9569	140-153	11	38
21	21	687	9570-9583	154-167	12	38
22	22	688	9584-9597	168-181	13	38
23	23	689	9598-9611	182-195	14	38
24	24	690	9612-9625	196-209	15	38
25	25	691	9626-9639	210-223	16	38
26	26	692	9640-9653	224-237	17	38
27	27	693	9654-9667	238-251	18	38
28	28	694	9668-9681	1- 14	1	39
29	29	695	9682-9695	15- 28	2	39
30	30	696	9696-9709	29- 42	3	39
31	31	697	9710-9723	43- 56	4	39

* Revised

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February 1980

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	32	698	9724-9737	57- 70	5	39
2	33	699	9738-9751	71- 84	6	39
3	34	700	9752-9765	85- 98	7	39
4	35	701	9766-9779	99-112	8	39
5	36	702	9780-9793	113-126	9	39
6	37	703	9794-9807	127-140	10	39
7	38	704	9808-9820	141-153	11	39
8	39	705	9821-9834	154-167	12	39
9	40	706	9835-9848	168-181	13	39
10	41	707	9849-9862	182-195	14	39
11	42	708	9863-9876	196-209	15	39
12	43	709	9877-9890	210-223	16	39
13	44	710	9891-9904	224-237	17	39
14	45	711	9905-9918	238-251	18	39
15	46	712	9919-9932	1- 14	1	40
16	47	713	9933-9946	15- 28	2	40
17	48	714	9947-9960	29- 42	3	40
18	49	715	9961-9924	43- 56	4	40
19	50	716	9975-9988	57- 70	5	40
20	51	717	9989-10002	71- 84	6	40
21	52	718	10003-10016	85- 98	7	40
22	53	719	10017-10030	99-112	8	40
23	54	720	10031-10044	113-126	9	40
24	55	721	10045-10058	127-140	10	40
25	56	722	10059-10071	141-153	11	40
26	57	723	10072-10085	154-167	12	40
27	58	724	10086-10099	168-181	13	40
28	59	725	10100-10113	182-195	14	40
29	60	726	10114-10127	196-209	15	40

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March 1980

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	61	727	10128-10141	210-223	16	40
2	62	728	10142-10155	224-237	17	40
3	63	729	10156-10169	238-251	18	40
4	64	730	10170-10183	1- 14	1	41
5	65	731	10184-10197	15- 28	2	41
6	66	732	10198-10211	29- 42	3	41
7	67	733	10212-10225	43- 56	4	41
8	68	734	10226-10239	57- 70	5	41
9	69	735	10240-10253	71- 84	6	41
10	70	736	10254-10267	85- 98	7	41
11	71	737	10268-10281	99-112	8	41
12	72	738	10282-10295	113-126	9	41
13	73	739	10296-10309	127-140	10	41
14	74	740	10310-10322	141-153	11	41
15	75	741	10323-10336	154-167	12	41
16	76	742	10337-10350	168-181	13	41
17	77	743	10351-10364	182-195	14	41
18	78	744	10365-10378	196-209	15	41
19	79	745	10379-10392	210-223	16	41
20	80	746	10393-10406	224-237	17	41
21	81	747	10407-10420	238-251	18	41
22	82	748	10421-10434	1- 14	1	42
23	83	749	10435-10448	15- 28	2	42
24	84	750	10449-10462	29- 42	3	42
25	85	751	10463-10476	43- 56	4	42
26	86	752	10477-10490	57- 70	5	42
27	87	753	10491-10504	71- 84	6	42
28	88	754	10505-10518	85- 98	7	42
29	89	755	10519-10532	99-112	8	42
30	90	756	10533-10546	113-126	9	42
31	91	757	10547-10560	127-140	10	42

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April 1980

Date	GMT Day	Flight Day	Spacecraft Orbits	Cycle Orbits	Cycle Day	Cycle
1	92	758	10561-10573	141-153	11	42
2	93	759	10574-10587	154-167	12	42
3	94	760	10588-10601	168-181	13	42
4	95	761	10602-10615	182-195	14	42
5	96	762	10616-10629	196-209	15	42
6	97	763	10630-10643	210-223	16	42
7	98	764	10644-10657	224-237	17	42
8	99	765	10658-10671	238-251	18	42
9	100	766	10672-10685	1- 14	1	43
10	101	767	10686-10699	15- 28	2	43
11	102	768	10700-10713	29- 42	3	43
12	103	769	10714-10727	43- 56	4	43
13	104	770	10728-10741	57- 70	5	43
14	105	771	10742-10755	71- 84	6	43
15	106	772	10756-10769	85- 98	7	43
16	107	773	10770-10783	99-112	8	43
17	108	774	10784-10797	113-126	9	43
18	109	775	10798-10811	127-140	10	43
19	110	776	10812-10825	141-154	11	43
20	111	777	10826-10838	155-167	12	43
21	112	778	10839-10852	168-181	13	43
22	113	779	10853-10866	182-195	14	43
23	114	780	10867-10880	196-209	15	43
24	115	781	10881-10894	210-223	16	43
25	116	782	10895-10908	224-237	17	43
26	117	783	10909-10922	238-251	18	43
27	118	784	10923-10936	1- 14	1	44
28	119	785	10937-10950	15- 28	2	44
29	120	786	10951-10964	29- 42	3	44
30	121	787	10965-10978	43- 56	4	44

APPENDIX C

LANDSAT-3 DOCUMENTS ISSUED THIS REPORT PERIOD

APPENDIX C

LANDSAT-3 DOCUMENTS ISSUED THIS REPORT PERIOD

No.	Document No.	Title and Date
1	PIR-14NO-L-3-251	Special Tests for MSS Line Start Anomaly - Landsat-3, dated 3 May 1979
2	PIR-14NO-L-3-253	MSS Band 5 Landsat-3: Sixteenth Outgas Cycle and Subsequent Operations, dated 3 May 1979
3	PIR-14NO-L-3-254	MSS "Scan Monitor OFF" Scene Overlap, dated 3 May 1979
4	PIR-14NO-L-3-255	MSS Line Start Anomaly - Test History and Cooldown Tests, dated 9 May 1979
5	PIR-14NO-L-3-257	Landsat-3, RMP2 Deactivation, dated 1 June 1979
6	PIR-14NO-L-3-258	WBVTR-1 In Landsat-3: Noisy Output, dated 5 June 1979
7	PIR-14NO-L-3-259	Tests of WBVTR-1 of Landsat-3, dated 28 June 1979
8	PIR-14NO-L-3-260	Landsat-3 MSS Late Line Start Anomaly Correlation, dated 10 July 1979
9	PIR-14NO-L-3-261	Landsat-3 Gradual Increase In the Left Solar Array Drive (LSAD) Motor Winding Voltage, dated 20 July 1979