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(Including Cover Sheet)

CORONA "J" FLIGHT DATA BOOK

SYSTEM NO. J-16

VEHICLE NO. 1180

MISSION NO. 1014-1

CAMERA NOS. 162, 139

Prepared by [redacted]

Checked by:

Approved by

Approved by

Manager

[redacted]

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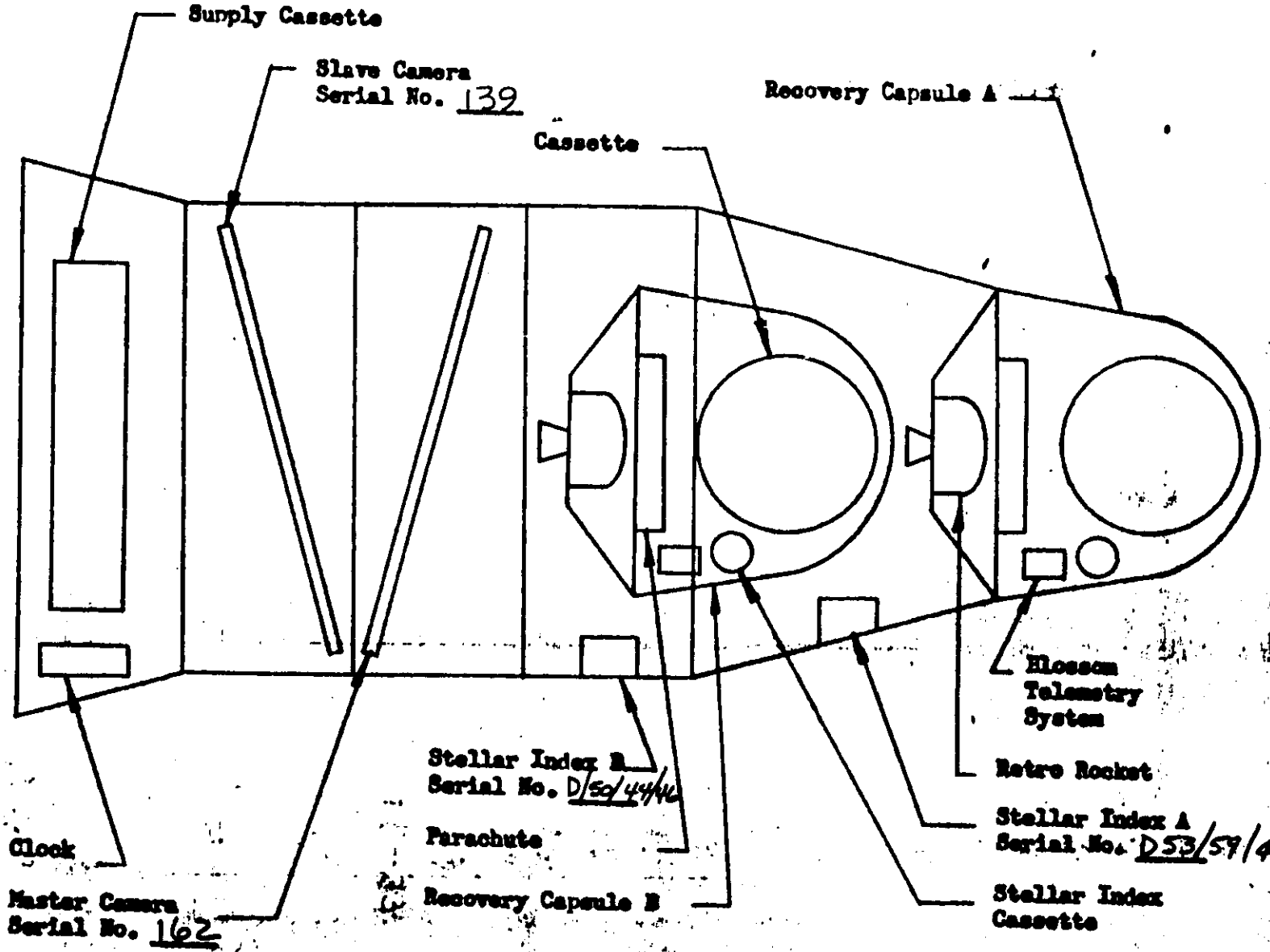
SYSTEM NO. [illegible]
VEHICLE NO. 1160
MISSION NO. 10
CAMERA NOS. 139, 162

VEHICLE LAYOUT



SYSTEM NO. [redacted]
VEHICLE NO. [redacted]
MISSION NO. [redacted]
CAMERA NOS. [redacted]

[redacted]

GENERAL FLIGHT DATA:

Master Camera Serial No. 162

Slave Camera Serial No. 139

Stellar Index "A" Serial No. D53/59/42

Stellar Index "B" Serial No. D 50/44/46

Launch Date 11-18-64

Reactivation Date —

Reactivation Orbit No. —

Orbital Parameters: (Rev. 40)

Period 89.7 Min. Eccentricity 0.0134

Perigee 102.3 NM Perigee Latitude 67.8 Deg. N South Ba

Apogee 198.4 NM Inclination Angle 70.03 Deg.

Recovery Orbit No. [redacted]

Recovery Date 11-23-64

REMARKS:

[redacted]

SYSTEM NO. JL-16 J
VEHICLE NO. 1180
MISSION NO. 1014-1
CAMERA NOS. 162, 139

LENS SETTINGS AND FILM TYPES:

Panoramic Camera Settings:	Camera No. 162	Camera No. 139
Panoramic Optics Slit Width	0.250 in.	0.175 in.
Panoramic Optics Filter Type	WRATTEN 25	WRATTEN 21
Horizon Optics Exp. Time	1/100 sec.	1/100 sec.
Horizon Optics Aperture	SUPPLY F6.8 TAKE-UP F8.0	SUPPLY F8.0 TAKE-UP F6.8
Horizon Optics Filter Type	WRATTEN 25	WRATTEN 25

Stellar Index Camera Settings:

	Stellar Index A		Stellar Index B	
	Stellar	Index	Stellar	Index
Exposure Time	2.0 SEC.	1/500 SEC.	2.0 SEC	1/500 SEC
Aperture Setting	F 1.8	F 4.5	F 1.8	F 4.5
Filter Type	NONE	WRATTEN 21	NONE	WRATTEN 21

Ratio: One Stellar Index Frame Per 7 Master Camera Frames.

Film:

Panoramic Cameras:	Camera No. 162	Camera No. 139
Type	7J-40	7J-40
Length	16000 ft.	16000 ft.
Splices	4	4
Emul. Data	77-7-9-4	77-7-9-4

Stellar Index Cameras:

	Stellar Index A		Stellar Index B	
	Stellar	Index	Stellar	Index
Type	3J-34	7J-33	3J-34	7J-33
Emul. Data	44-30-7-4	31-4-7-4	44-30-7-4	31-4-7-4

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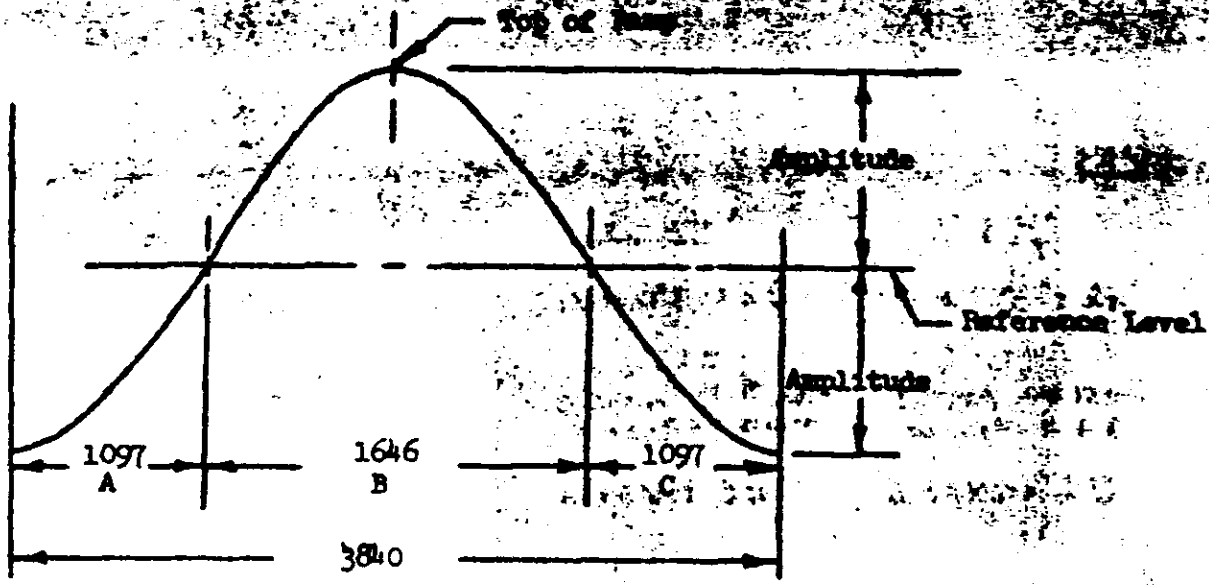
VEHICLE NO. 1180

MISSION NO. 1014-1

CAMERA NOS. 162, 139

V/H RAMP CONFIGURATION AND CONSTANTS:



Cycle Rate Computation:

A. 0 to 1097 Sec Up Ramp: CPS = R+A Sin (1.5 X -1.5707963)

B. 1097 to 2743 Sec Up Ramp: CPS = R+A Sin (2 X -2.0943951) ≤ .4625

C. 2743 to 3840 Sec Up Ramp: CPS = R+A Sin (1.5 X -0.7853982)

FMC Rate Computation:

$$\text{FMC Rate (In/Sec)} = 2\pi \left(\frac{0.3223}{CP}\right) = 2.02507 \times CPS$$

$$\text{FMC Rate (Radians/Sec)} = 2\pi \frac{(0.3224)}{(24\ CP)} = 0.84378 \times CPS$$

Scan Velocity Computation:

$$\text{Scan Velocity (In/Sec)} = \frac{48\pi}{CP} = 150.796 \times CPS$$

$$\text{Scan Velocity (Radians/Sec)} = \frac{48\pi}{24\ CP} = 6.28319 \times CPS$$

$$\text{Exposure Time (Milliseconds)} = 1000 \left(\frac{CP \times SLIT}{48\pi}\right) = 6.63146 \left(\frac{SLIT}{CPS}\right)$$

WHERE: $X = \frac{\text{Time Up Ramp (Seconds)}}{1047.6942}$ $\qquad R = \frac{1}{2}(CPS_{top} + CPS_{bottom})$

$A = \frac{1}{2}$ (CPS top - CPS bottom) $\qquad CP$ = Camera Cycle Period in Sec/Cycle

CPS = Camera Cycle Rate in Cycles/Sec

SLIT = Slit Width in Inches

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SYSTEM NO. SF-16
VEHICLE NO. 1180
MISSION NO. 3014-
CAMERA NOS. 1162, 139

CYCLE PERIOD DATA:

PRE-FLIGHT CYCLE PERIODS:

V/H Ramp Level	V/H Ramp Amplitude	Cycle Period Seconds		Time Up Ramp Sec
		Master	Slave	
6	6	3.120	3.153	825
6	6	2.407	2.417	2275
6	6	2.416	2.426	2290
6	6	3.060	3.100	875
6	6	2.432	2.442	2313
6	6	3.041	3.072	904
6	6	2.438	2.449	2325
6	6	3.017	3.047	925

IN-FLIGHT CYCLE PERIODS

V/H Ramp Level	V/H Ramp Amplitude	Cycle Period Seconds		Orbit No.	Time Up Ramp Sec
		Master	Slave		
6	6	3.095	3.150	9	825
6	6	2.412	2.448	16	2275
6	6	2.425	2.460	32	2290
6	6	3.060	3.120	41	875
6	6	2.440	2.470	48	2313
6	6	3034	3.094	57	904
6	6	2.465	2.490	64	2325
6	6	3.025	3.090	73	925

SYSTEM NO. J-16
VEHICLE NO. 1180
MISSION NO. 1014-1
CAMERA NOS. 162, 139

LENS DATA SUMMARY: Master Camera No. 162

Lens Serial No. 1372435

Slit Width 0.250 Inch

Filter Type WRATTEN 25

Equivalent Operational Focal Length 609.527 MM

Resolution:

Static:

	Lines/MM	Film Type	Target Contrast
Bench Test	257	SO-132	HIGH
Other	154	SO-132	LOW

Dynamic:

Itek Post Vibration	166	SO132	HIGH
Itek Post Vibration	126	SO132	LOW
AP	189	SO 132	HIGH
AP	116	SO 132	LOW
Other			

Note: Itek Post Vibration Resolution of 166 lines/MM Reported In Message No. [redacted] dated 11/18/64

Distortion - Positive (Pincushion)

Angle Off Axis Deg.	3°	2°	1°	0°	359°	358°	357°		
Distortion Millimeters	.006	.004	.001	.000	N/A	N/A	N/A		

* N/A - Not Available

[redacted]

SYSTEM NO. S-16
VEHICLE NO. 1120
MISSION NO. 1014-7
CAMERA NOS. 162, 139

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LENS DATA SUMMARY: (Horizon Cameras for [illegible] Camera No. 162)

	Take-Up	Supply
Lens Serial No.	812284	814016
Exposure Time	1/100 Sec.	1/100 Sec.
Filter Type	WRATTEN 25	WRATTEN 25
Aperture	F 8.0	F 6.8
Operational Focal Length	54.50 MM	54.42 MM
Radial Distortion:		
10° off Axis	.000 MM	.003 MM
20° off Axis	-.001 MM	.009 MM
Tangential Distortion (Maximum Vector)	N/A MM	.006 MM
Resolution:		

Angle off Axis Deg.								0	10	15	20	25	27.5	
Radial Resolution								170	125	108	95	82	45	
Tangential Resolution								170	123	100	89	55	42	

N/A Lines/MM Avg. 100.6 Lines/MM Avg.

Note:

1. Distortion and resolution are read at equivalent operational focal length.
2. Resolution in lines per mm on SO 132 film and HIGH contrast target.

[redacted]

[redacted]

SYSTEM NO. J-16 Page 10 of 23

VEHICLE NO. 1680

MISSION NO. 1614-1

CAMERA NOS. 162, 139

[redacted]

LENS DATA SUMMARY: Slave Camera No. 139

Lens Serial No. 112435

Slit Width 0.175 Inch

Filter Type WRATTEN 21

Equivalent Operational Focal Length 609.602 MM

Resolution:

Static:

	Lines/MM	Film Type	Target Contrast
Bench Test	273	SO 132	HIGH
[redacted]	143	SO 132	LOW

Dynamic:

Itek [redacted]	178	SO 132	HIGH
Itek [redacted]	126	SO 132	LOW
AP	190	SO 132	HIGH
AP	116	SO 132	LOW
Other			

NOTE: Itek Post Vibration Resolution of 178 lines/MM Reported In Message No. [redacted] dated 11/18/64

Distortion - Positive (Pincushion)

Angle Off Axis Deg.	3°	2°	1°	0°	359°	358°	357°		
Distortion Millimeters	.003	.002	.000	.000	.000	.001	.002		

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[redacted]

[redacted]

SYSTEM NO. J-16

VEHICLE NO. 1180

MISSION NO. 1014-1

CAMERA NOS. 162, 139

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LENS DATA SUMMARY: (Horizon Cameras for SLAVE Camera No. 139)

	Take-Up	Supply
Lens Serial No.	812305	814024
Exposure Time	1/100 Sec.	1/100 Sec.
Filter Type	WRATTEN 25	WRATTEN 25
Aperture	F 6.8	F8.0
Operational Focal Length	55.02 MM	55.10 MM
Radial Distortion:		
10° off Axis	.003 MM	.004 MM
20° off Axis	.001 MM	.006 MM
Tangetial Distortion (Maximum Vector)	.005 MM	.002 MM

Resolution:

Take-Up:

Angle off Axis Deg.	0	5	10	15	20	25	27.5
Radial Resolution	116	110	96	84	65	79	58
Tangetial Resolution	103	109	100	82	64	53	41

Supply:

0	10	15	20	25	27.5	
170	125	69	57	74	56	
170	123	75	59	55	40	

82.9 Lines/MM Avg. 89.4 Lines/MM Avg.

NOTE:

1. Distortion and resolution are read at equivalent operational focal length.
2. Resulution in lines per MM on SO-130 (SUPPLY) SO-132 (TAKEUP) film and HIGH contrast target.

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VEHICLE NO. 1380
MISSION NO. 11014-1
CAMERA NOS. 162, 139

DEFINITION OF PANORAMIC CAMERA FORMAT CALIBRATIONS:

1.0 Measurements are made with respect to collimator targets fixed with respect to the mechanical interface between the total payload assembly and the orbital vehicle.

2.0 Two sets of three targets each, are aligned to be coplanar within ±5" of arc so positioned to form an angle of 135.00° ±5" to the mechanical interface for master camera calibrations and an angle of 45.00°±5" to the mechanical interface for slave camera calibrations.

2.1 One target, Target 1 of each set is imaged on the Terrain format.

2.2 The second and third targets of each set are at angles of 75.00° ±5" from target one and are imaged on the horizon formats.

3.0 The indicated center of format for the panoramic cameras is given by the intersection of a line through the center of mass of the central shrinkage marker drawn normal to the edge of format containing the shrinkage marker and a line parallel to the same edge located at a position half-way between the format edges.

4.0 The indicated principal points of the horizon cameras are the points of intersection of lines joining opposite fiducials.

5.0 Xvo and Yvo are the offsets of Target 1 from the indicated center of format of the panoramic cameras as defined in Paragraph 3.

6.0 Xs, Ys and Xt, Yt are the offsets of Targets 2 and 3 from the indicated principal points of the supply and take-up horizon cameras respectively.

7.0 The indicated flight direction is the direction of vehicle travel during orbit. The forward edge of format is the edge opposite the shrinkage markers for the master camera and is the edge containing the shrinkage markers for the slave camera.

8.0 Dimensions A, B and C are the spacings of the shrinkage markers and dimensions D and E are the spacings of the Y Axis fiducials. Techniques for exact measurement of these dimensions have not been developed. The figures quoted are measurements made on hand processed film without control of shrinkage.

9.0 The format dimensions are measured to the best estimate of format edge.

10.0 Measurement of the angle between the indicated axis of the panoramic cameras and the line of intersection of the plane defined in Paragraph 2 on the format is obtained from the offset dimensions Dax and Day of Target 1 for each camera.

11.0 Measurement of the angle between the indicated axis of the horizon cameras and the line of intersection of the plane defined in Paragraph 2 on the format is made by measuring the scan direction offset of the targets defined in Paragraph 2.2 at a fixed distance from the target center in the Y direction. Dimensions Dtx, Dty, Dsx and Dsy are the offsets of these measurements.

SYSTEM NO. J-1[illegible]
VEHICLE NO. 1180[illegible]
MISSION NO. 1014-[illegible]
CAMERA NOS. 162, 139

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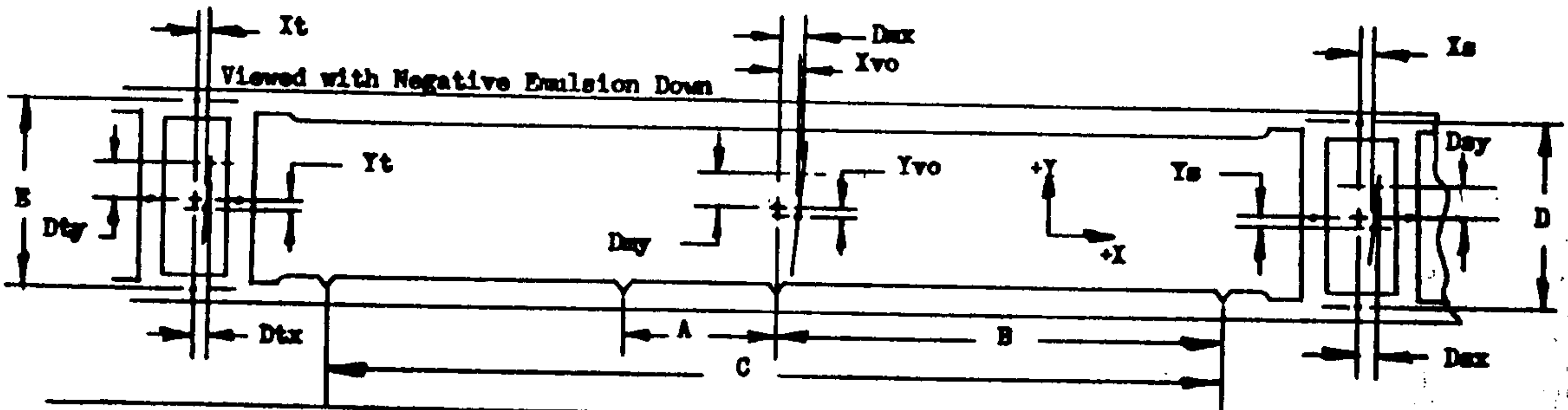
FORMAT DIMENSIONS: (PANORAMIC CAMERAS)



Camera No. 162 — Vehicle Motion ↓ — Scan Direction ←

A	76.1	Xt	+0.231 *	Dtx	+0.227 *
B	355.1	Yt	-0.098 *	Dty	+2.854 *
C	709.9	Xs	-0.526 *	Dsx	-0.522 *
D	56.468	Ys	-0.050 *	Dsy	+2.910 *
E	56.436	Xvo	+1.375 *	Dmx	+1.382 *
		Yvo	+0.794 *	Dmy	+3.794 *

Format Dimensions:

	Panoramic	Take-Up	Supply
Height	55.787	N/A	N/A
Width	754.0	N/A	N/A

Camera No. 139 — Vehicle Motion ↓ — Scan Direction ←

A	76.1	Xt	+ 0.102 *	Dtx	+ 0.098 *
B	355.1	Yt	- 0.014 *	Dty	+2.149 *
C	710.2	Xs	+ 0.258 *	Dsx	+ 0.249 *
D	56.450	Ys	+ 0.100 *	Dsy	-2.519 *
E	56.483	Xvo	- 0.731 *	Dmx	-2.738 *
		Yvo	+1.448 *	Dmy	+4.448 *

Format Dimensions:

	Panoramic	Take-Up	Supply
Height	55.129	N/A	N/A
Width	756.2	N/A	N/A

Notes:
1. All dimensions are in millimeters and are average dimensions of three formats.
2. Height of main format is taken at center of format.
*3. Dt, Dm, Ds, X and Y dimensions are taken 10MM above point defining target center.
4. Format Sign Convention

-X+Y	+X+Y
-X-Y	+X-Y

* INSTRUMENTS 162 AND 139 WERE [illegible] CALIBRATED A[illegible] SYSTEM.

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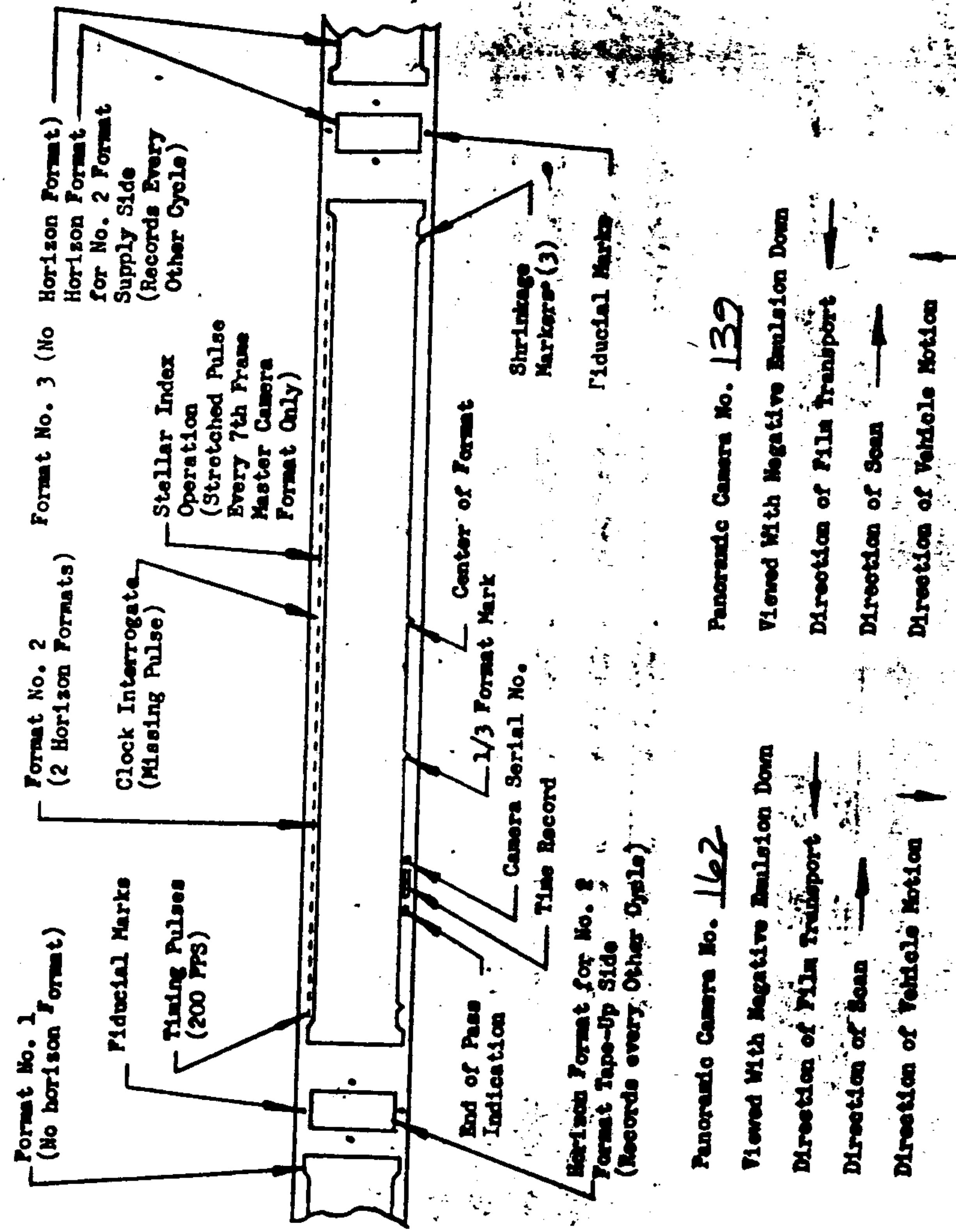
SYSTEM NO. LAJ-1?
VEHICLE NO. 1130
MISSION NO. 1014-1
CAMERA NOS. 162, 139

FORMAT LAYOUT: (PANORAMIC CAMERAS)


Format No. 1 (No horizon Format)
Fiducial Marks
Timing Pulses (200 PPS)
Format No. 2 (2 Horizon Formats)
Clock Interrogate (Missing Pulse)
Format No. 3 (No Horizon Format)
Stellar Index Operation (Stretched Pulse Every 7th Frame Master Camera Format Only)
Horizon Format for No. 2 Format Supply Side (Records Every Other Cycle)
End of Pass Indication
Horizon Format for No. 2 Format Tape-Up Side (Records every Other Cycle)
Time Record
Camera Serial No.
1/3 Format Mark
Center of Format
Shrinkage Markers (3)
Fiducial Marks
Panoramic Camera No. 162
Viewed With Negative Emulsion Down
Direction of Film Transport
Direction of Scan
Direction of Vehicle Motion
Panoramic Camera No. 139
Viewed With Negative Emulsion Down
Direction of Film Transport
Direction of Scan
Direction of Vehicle Motion

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SYSTEM NO. [redacted]

VEHICLE NO. 1180

MISSION NO. 1014-1

CAMERA NOS. 162, 139

LENS DATA SUMMARY STELLAR INDEX D53/59/49: 1014-1 MISSION

	Stellar	Index
Lens Serial No.	1205	813058
Reseau Serial No.	49	59
Filter Type	NONE	WRATTEN 21
Aperture	F 1.8	F 4.5
Exposure Time	2.0 Sec.	1/500 Sec.
Equivalent Focal Length	N/A MM	38.08 MM

Resolution:

Angle Off Axis	0	10	20	30	35
Resolution L/MM High Contrast	92	92	107	82	77

NOTE: Index Resolution of 71.4 Lines/MM AWAR

Read From 50130 Film.

Distortion:

All distortions less than maximum allowable. Full Data to be reported as part of Photogeniometer Data Reduction.

Alignment:

.0007 "/1.937 Inches .0007 "/2.25 Inches

[redacted]

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VEHICLE NO. 1180

MISSION NO. 1014-1 TOP SECRET

CAMERA NOS. 162, 139

LENS DATA SUMMARY STELLAR INDEX D50/44/46 1014-2 MISSION

	Stellar		Index	
Lens Serial No.	11166		813048	
Reseau Serial No.	46		44	
Filter Type	NONE		WRATTEN 21	
Aperture	F 1.8		F 4.5	
Exposure Time	2.0	Sec.	1/500	Sec.
Equivalent Focal Length	N/A	MM	38.41	MM

Resolution:

Angle Off Axis	0	10	20	30	35
Resolution L/MM High Contrast	73	73	104	104	79

NOTE: Index Resolution of 73.9 Lines/MM AWAR

Read From 50-130 Film.

Distortion:

All distortions less than maximum allowable. Full Data to be reported as part of Photogeniometer Data Reduction.

Alignment:

.0005 "/1.937 Inches .0009 "/2.25 Inches

[redacted]

[redacted]

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VEHICLE NO. 1180
MISSION NO. 1013-1
CAMERA NOS. 162 & 139 TOP SECRET

PRELIMINARY CLOCK CORRELATION:

ORBIT	SYSTEM TIME	CLOCK TIME	DIFFERENCE
PRE-LAUNCH	69081.651	310546.256	
9	35026.074	362890.682	
16	74148.570	402013.180	
25	34690.473	448955.086	
32	73898.961	488163.576	
41	34523.989	535188.607	
48	73628.286	374 21.994	
57	34229.195	84422.906	
64	73334.065	123527.779	
73	33937.690	170531.406	
79	67733.270	204326.988	

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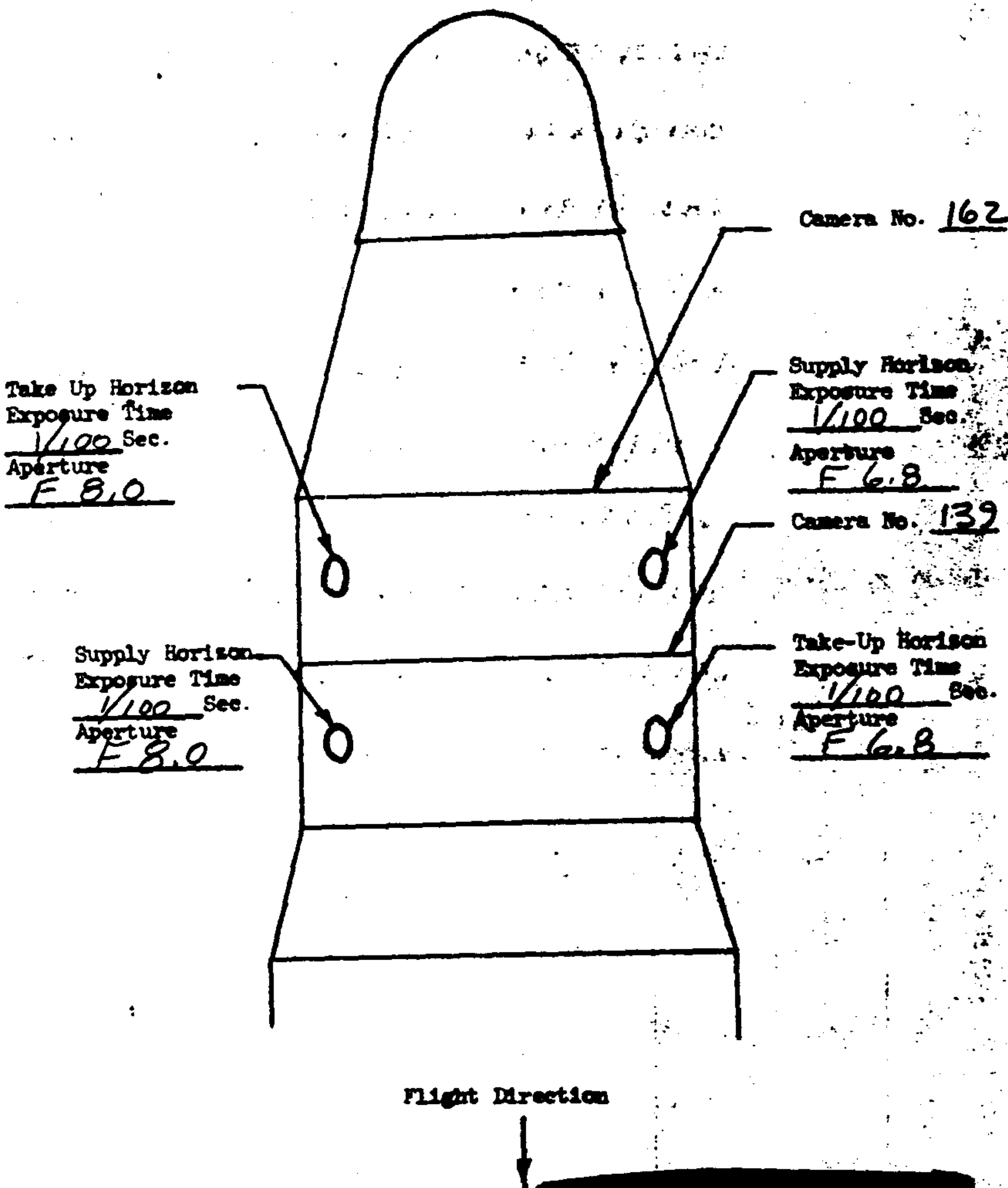
HORIZON LENS SETTINGS (Viewed from top of vehicle inflight)



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SYSTEM NUMBER J-16
VEHICLE NUMBER 118C
MISSION NUMBER 1C14-1
PANORAMIC CAMERA NUMBERS 162 AND 139
STELLAR/INDEX CAMERA NUMBER C53/59/49

PERFORMANCE ESTIMATE

SUB	PROG		CAM NO.	PAN FR.	FR	LAT. ON	LAT. OFF	TIME ON ZC	TIME ON ST	TUR NO	DUR SEC.	SOLAR SEC	SOLAR ON	SOLAR OFF	EXPOS. ON	EXPOS. OFF
LAUNCH			162	143	2C											
LAUNCH			139	142												
1	4	0	162	14	C2	249	247	1879512		6	6	2029	33	21	23	4.3	4.3
1	4	C	139	14		25C	248	1879512		6	6	2029	33	20	22	3.0	3.0
2	1	1	162	55	C8	265	260	1884582		6	6	1708	126	2	9	4.1	4.0
2	1	1A	139	10		266	265	1884582		6	6	1708	24	1	2	3.2	3.2
2	1	1B	139	6		261	260	1884695		6	6	1822	14	8	9	3.2	3.2
3	6	1	162	39	C5	255	250	19	3777	6	6	1916	92	14	19	4.1	4.1
3	6	1	139	38		256	251	19	3777	6	6	1916	92	13	19	2.9	2.9
4	6	1	162	43	C7	263	258	19	9C05	6	6	1756	103	4	11	4.1	4.1
4	6	1	139	42		264	259	19	9C05	6	6	1756	103	4	10	2.9	2.9
4	6	2	162	24	C3	251	248	19	9235	6	6	1987	56	18	21	4.1	4.1
4	6	2	139	24		252	249	19	9235	6	6	1987	56	17	21	2.9	2.9
6	6	1	162	24	C3	256	253	1919929		6	6	1909	57	13	17	4.1	4.1
6	6	1	139	24		256	253	1919929		6	6	1909	57	13	16	2.9	2.9
6	6	2	162	23	C4	242	238	1920169		6	6	2149	55	27	31	4.1	4.2
6	6	2	139	23		243	239	1920169		6	6	2149	55	27	30	2.9	3.0
6	6	3	162	53	C7	233	225	192C307		6	6	2287	135	35	42	4.3	4.4
6	6	3	139	52		234	226	192C307		6	6	2287	135	34	42	3.0	3.1
7	3	1	162	40	C6	256	251	1925307		6	6	1904	93	13	19	4.0	4.0
7	3	1	139	40		257	252	1925307		6	6	1904	93	12	18	2.8	2.8
7	3	2	162	38	C5	248	243	1925448		6	6	2044	90	21	27	4.0	4.1
7	3	2	139	38		249	244	1925448		6	6	2044	90	21	26	2.8	2.8
8	7	1	162	93	14	258	245	1930667		6	6	1876	216	11	24	3.9	3.9
8	7	1	139	92		258	246	1930667		6	6	1876	216	11	23	2.7	2.8
9	7	C	162	16	C2	138	141	1934958		6	6	792	51-49-47			5.6	5.5
9	7	C	139	15		137	140	1934958		6	6	792	51-50-48			4.2	4.1
1C	2	1	162	19	C3	2C2	301	1942345		6	6	2793	55	58	59	5.1	5.2
1C	2	1	139	19		2C3	300	1942345		6	6	2793	55	57	59	3.5	3.6
14	3	1	162	2C	C3	222	218	1963574		6	6	2487	53	45	47	4.6	4.7
14	3	1	139	20		223	219	1963574		6	6	2487	53	44	47	3.2	3.3
16	1	0	162	16	C2	238	236	1974087		6	6	2231	39	31	33	4.3	4.4
16	1	C	139	16		239	236	1974C87		6	6	2231	39	30	32	3.0	3.0
17	1	1	162	27	C4	265	263	1978964		6	6	1726	64	1	5	4.1	4.1
17	1	1	139	27		266	263	1978964		6	6	1726	64	1	4	2.9	2.9
21	9	1	162	26	C3	252	248	2C14378		6	6	2008	58	17	21	3.9	4.0
21	9	1	139	25		252	249	2C14378		6	6	2008	58	16	20	2.8	2.8
21	9	2	162	78	12	246	234	2C14481		6	6	2110	187	23	35	4.0	4.1
21	9	2	139	77		246	235	2C14481		6	6	2110	187	23	34	2.8	2.9
22	9	1	162	25	C3	257	254	2C19675		6	6	1920	57	12	15	3.9	3.9
22	9	1	139	25		257	254	2C19675		6	6	1920	57	11	15	2.8	2.8
22	9	2	162	159	23	246	221	2C19866		6	6	2110	394	23	46	4.0	4.4
22	9	2	139	157		246	222	2C19866		6	6	2110	394	23	46	2.8	3.1
23	6	1	162	27	C4	265	263	2C24880		6	6	1742	62	1	4	4.0	4.0
23	6	1	139	27		266	263	2C24880		6	6	1742	62	0	4	2.8	2.8

23	6	2	162	118	17	259	243	2025018	6	6	1880	279	9	26	3.9	4.0
23	6	2	139	117		259	244	2C25018	6	6	1880	279	8	26	2.8	2.8
26	2	1	162	23	C3	238	235	2041531	6	6	2239	55	31	34	4.2	4.2
26	2	1	139	22		239	235	2041531	6	6	2239	55	30	34	3.0	3.1
30	2	1	162	23	C3	222	218	2063320	6	6	2500	62	46	49	4.6	4.8
30	2	1	139	23		223	219	2C63320	6	6	2500	62	45	48	3.3	3.3
32	2	0	162	16	C2	238	235	2C73836	6	6	2252	40	31	34	4.3	4.4
32	2	0	139	16		239	236	2C73836	6	6	2252	40	31	33	3.0	3.0
33	2	1	162	27	C4	265	263	2C78713	6	6	1747	64	0	4	4.2	4.2
33	2	1	139	27		266	263	2C78713	6	6	1747	64	0	4	2.9	2.9
35	7	1	162	46	C7	265	260	21 3081	6	6	1752	107	-0	6	4.0	4.0
35	7	1	139	45		266	261	21 3081	6	6	1752	107	-0	6	2.8	2.8
37	7	1	162	50	C7	244	237	2114249	6	6	2157	122	25	32	4.1	4.2
37	7	1	139	50		245	237	2114249	6	6	2157	122	24	32	2.9	2.9
37	7	2	162	29	C4	232	227	2114452	6	6	2359	72	37	42	4.2	4.3
37	7	2	139	29		232	228	2114452	6	6	2359	72	37	41	3.0	3.1
38	7	1	162	43	C6	254	248	2119470	6	6	1995	102	15	21	4.0	4.0
38	7	1	139	43		254	248	2119470	6	6	1995	102	14	20	2.8	2.9
38	7	2	162	74	11	232	220	2119827	6	6	2352	191	37	48	4.2	4.5
38	7	2	139	73		233	221	2119827	6	6	2352	191	36	47	3.0	3.2
39	4	1	162	28	C4	265	263	2124614	6	6	1758	64	-0	4	4.0	4.0
39	4	1	139	27		266	263	2124614	6	6	1758	64	-0	3	2.8	2.8
39	4	2	162	25	C3	259	256	2124753	6	6	1897	58	8	12	4.0	4.0
39	4	2	139	25		26C	256	2124753	6	6	1897	58	8	11	2.8	2.8
39	4	3	162	78	12	249	237	2124941	6	6	2085	190	20	32	4.0	4.2
39	4	3	139	77		249	238	2124941	6	6	2085	190	19	31	2.8	2.9
41	8	0	162	15	02	138	141	2134458	6	6	839	49	-55	-53	5.9	5.8
41	8	0	139	15		137	140	2134458	6	6	839	49	-56	-53	4.1	4.0
41	8	1	162	69	1C	249	240	2135692	6	6	2073	165	19	30	4.0	4.1
41	8	1	139	68		25C	240	2135692	6	6	2073	165	18	29	2.8	2.9
46	2	1	162	27	C3	223	219	2163027	6	6	2497	70	45	49	4.4	4.5
46	2	1	139	26		224	220	2163C27	6	6	2497	70	44	48	3.2	3.3
47	1	1	162	22	C4	234	230	2168250	6	6	2340	57	35	39	4.5	4.6
47	1	1	139	22		234	231	2168250	6	6	2340	57	35	38	3.1	3.2
48	1	0	162	16	C2	238	235	2173565	6	6	2272	40	31	34	4.4	4.5
48	1	0	139	16		239	236	2173565	6	6	2272	40	30	33	3.1	3.1
51	1	1	162	64	C5	265	258	22 2804	6	6	1770	151	-1	8	4.0	4.0
51	1	1	139	63		266	259	22 2804	6	6	1770	151	-2	7	2.8	2.8
51	1	2	162	24	C3	250	246	22 3116	6	6	2082	56	18	22	4.0	4.0
51	1	2	139	24		25C	247	22 3116	6	6	2082	56	18	21	2.8	2.9
52	1	1	162	88	13	265	255	22 8186	6	6	1772	208	-1	12	4.0	4.0
52	1	1	139	86		266	256	22 8186	6	6	1772	208	-2	11	2.8	2.8
52	1	2	162	25	C4	252	248	22 8462	6	6	2048	58	16	20	4.0	4.0
52	1	2	139	25		252	249	22 8462	6	6	2048	58	15	19	2.8	2.9
52	1	3	162	24	C3	245	241	22 8582	6	6	2167	55	24	27	4.1	4.1
52	1	3	139	23		245	242	22 8582	6	6	2167	55	23	27	2.9	2.9
53	1	1	162	44	C6	263	258	2213616	6	6	1820	102	1	8	4.0	4.0
53	1	1	139	43		264	259	2213616	6	6	1820	102	1	7	2.8	2.8
53	1	2	162	25	C4	253	250	2213811	6	6	2015	57	14	18	4.0	4.0
53	1	2	139	25		254	251	2213811	6	6	2015	57	13	17	2.8	2.8
53	1	3	162	58	C8	232	222	2214175	6	6	2380	151	37	47	4.3	4.5
53	1	3	139	58		232	223	2214175	6	6	2380	151	36	46	3.0	3.2
54	1	1	162	37	C5	264	260	2218975	6	6	1797	85	0	5	4.0	4.0
54	1	1	139	36		265	261	2218975	6	6	1797	85	-0	5	2.8	2.8
54	1	2	162	69	1C	256	247	2219138	6	6	1960	164	10	21	4.0	4.0

54	1	2	139	68		257	248	2219138	6	6	1960	164	10	20	2.8	2.9
54	1	3	162	24	C4	242	238	2219395	6	6	2217	57	27	31	4.1	4.1
54	1	3	139	24		242	239	2219395	6	6	2217	57	26	30	2.9	2.9
54	1	4	162	55	08	230	221	2219574	6	6	2396	142	38	47	4.3	4.5
54	1	4	139	54		231	222	2219574	6	6	2396	142	38	46	3.0	3.2
55	9	1	162	89	12	265	256	2224327	6	6	1769	208	-1	11	3.9	3.9
55	9	1	139	87		266	256	2224327	6	6	1769	208	-2	11	2.8	2.8
55	9	2	162	31	C5	248	244	2224671	6	6	2114	72	20	25	4.0	4.0
55	9	2	139	31		249	244	2224671	6	6	2114	72	19	24	2.8	2.9
55	9	3	162	34	C5	241	236	2224779	6	6	2222	80	27	32	4.0	4.1
55	9	3	139	33		242	237	2224779	6	6	2222	80	26	32	2.9	2.9
56	9	1	162	94	13	252	239	2229983	6	6	2053	225	16	30	3.9	4.1
56	9	1	139	92		253	239	2229983	6	6	2053	225	15	29	2.8	2.9
57	9	C	162	16	C2	137	140	2234164	6	6	855	48	-59	-56	5.4	5.3
57	9	C	139	15		136	139	2234164	6	6	855	48	-60	-57	4.0	4.0
62	1	1	162	23	C4	237	234	2262515	6	6	2295	56	31	35	4.2	4.3
62	1	1	139	22		238	235	2262515	6	6	2295	56	30	34	3.1	3.2
62	1	2	162	21	C3	223	220	2262739	6	6	2518	55	45	49	4.5	4.6
62	1	2	139	20		224	221	2262739	6	6	2518	55	44	48	3.3	3.4
64	1	0	162	16	C2	238	235	2273272	6	6	2294	40	31	34	4.4	4.5
64	1	0	139	16		239	236	2273272	6	6	2294	40	30	33	3.1	3.1
67	4	1	162	43	C6	263	258	23 2575	6	6	1860	101	1	8	4.0	4.0
67	4	1	139	42		263	258	23 2575	6	6	1860	101	0	7	2.9	2.9
68	4	1	162	63	C9	265	259	23 7888	6	6	1793	150	-2	7	4.0	4.0
68	4	1	139	62		266	259	23 7888	6	6	1793	150	-3	6	2.9	2.9
68	4	2	162	24	C3	245	241	23 8282	6	6	2187	57	23	27	4.1	4.2
68	4	2	139	24		246	242	23 8282	6	6	2187	57	22	26	2.9	3.0
69	4	1	162	25	C4	254	251	2313509	6	6	2035	58	12	16	4.0	4.1
69	4	1	139	25		255	251	2313509	6	6	2035	58	12	16	2.9	2.9
69	4	2	162	57	C8	232	222	2313874	6	6	2400	151	36	46	4.3	4.6
69	4	2	139	57		233	223	2313874	6	6	2400	151	36	45	3.1	3.2
70	4	1	162	31	C5	252	248	2318924	6	6	2072	74	15	20	4.0	4.1
70	4	1	139	31		253	248	2318924	6	6	2072	74	14	19	2.9	2.9
70	4	2	162	23	C3	243	239	2319084	6	6	2232	56	25	29	4.1	4.2
70	4	2	139	23		243	240	2319084	6	6	2232	56	24	28	2.9	3.0
71	3	1	162	27	C4	265	263	2324035	6	6	1805	64	-2	1	4.1	4.1
71	3	1	139	27		266	263	2324035	6	6	1805	64	-3	0	2.9	2.9
71	3	2	162	25	C3	260	257	2324155	6	6	1924	59	5	9	4.1	4.1
71	3	2	139	25		261	258	2324155	6	6	1924	59	4	8	2.9	2.9
71	3	3	162	31	C5	248	243	2324380	6	6	2150	74	20	25	4.1	4.2
71	3	3	139	30		248	244	2324380	6	6	2150	74	19	24	2.9	3.0
72	3	1	162	34	C5	261	256	2329524	6	6	1906	80	4	9	4.1	4.1
72	3	1	139	33		261	257	2329524	6	6	1906	80	3	9	2.9	2.9
72	3	2	162	45	C6	254	247	2329656	6	6	2039	110	13	20	4.1	4.1
72	3	2	139	45		254	248	2329656	6	6	2039	110	12	19	2.9	2.9
73	3	C	162	16	C2	138	141	2333872	6	6	877	48	-61	-58	5.4	5.3
73	3	0	139	15		137	140	2333872	6	6	877	48	-62	-60	4.0	4.0
78	4	1	162	23	C4	224	220	2362427	6	6	2538	64	45	49	4.8	4.9
78	4	1	139	22		225	221	2362427	6	6	2538	64	44	48	3.5	3.6
79	2	1	162	21	C3	234	230	2367657	6	6	2391	55	35	38	4.5	4.6
79	2	1	139	22		234	231	2367657	6	6	2391	55	34	38	3.0	3.1

C. RAMP PROFILE, R-6 A-6
R=0.3506, A=0.0806, PERIOD=3840
TIME PERIOD CPS GAV

0	3.704	C.27C0	0.02442
100	3.692	C.27C8	0.02449
2C0	3.659	C.2733	0.02472
300	3.606	C.2773	0.C2508
4C0	3.535	C.2829	0.02558
5C0	3.451	C.2898	0.02621
600	3.356	C.2980	0.02695
7C0	3.255	C.3C72	0.C2779
8C0	3.151	C.3174	0.02870
9C0	3.047	C.3282	0.02968
1C00	2.946	C.3395	0.03070
11C0	2.848	C.3511	0.C3175
1200	2.729	C.3664	0.03314
13C0	2.624	C.3811	0.03447
14CC	2.533	C.3947	0.C3570
1500	2.459	C.4C67	0.C3679
1600	2.400	C.4167	0.03769
17C0	2.357	C.4243	0.C3838
18C0	2.330	C.4292	0.C3882
19CC	2.319	C.4312	0.C39C0
2CC0	2.324	C.43C4	0.03892
21CC	2.344	C.4266	0.C3858
22CC	2.381	C.42C1	0.C3799
23CC	2.433	C.411C	0.C3717
24C0	2.5C2	C.3997	0.03616
25CC	2.586	C.3867	0.C3498
26C0	2.685	C.3724	0.C3368
27CC	2.799	C.3572	0.03231
28C0	2.906	C.3441	0.03112
29CC	3.CC6	C.3327	0.C3CC9
3C00	3.1C9	C.3216	0.C2909
31C0	3.214	C.3112	0.02815
32CC	3.316	C.3016	0.C2727
33CC	3.414	C.2929	0.C2649
340C	3.503	C.2855	0.C2582
35C0	3.580	C.2794	0.02527
360C	3.640	C.2747	0.C2485
37CC	3.682	C.2716	0.C2457
380C	3.7C2	C.27C1	0.C2443

E. PRELIMINARY SMCCTHED CLOCK CORRELATION

REV	CLCCK TIME	COR SYSTEM TIME
C	310459.368	68994.763
C	31C546.256	69081.651
9	3628SC.682	35026.074
16	4C2C13.18C	74148.570
25	448S55.C86	34690.473
32	488163.576	73898.961
41	535188.6C7	34523.989
48	37421.594	73628.286
57	84422.9C6	34229.195
64	123527.779	73334.065
73	17C531.4C6	33937.690
79	204326.588	67733.270

RATIC CLOCK TC SYSTEM= 0.1C000000590 01

F. NOTES

1) DATA INDICATE NEAR-NOMINAL ORBIT AND CAMERA SYSTEM.
2) FRAMES TO FEET - PAN X 2.645 STELLAR X 0.099 INDEX X 0.198
3) LAST 5 FRAMES OF GPN 79-2-1 CONTAINED IN SECOND CAPSULE.
4) BECAUSE OF INCLINATION ANGLE AND NEAR NOON LAUNCH, A 5-INCH STELLAR BAFFLE HAD TO BE USED INSTEAD OF THE USUAL 11-INCH. EXPECT USABLE BUT SOMEWHAT DEGRADED STELLAR PHOTOGRAPHY BECAUSE OF EARTH FLARE.