28 SEP 1964 [redacted] LOGGED

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22 Pages
(Including Cover Sheet)

CORONA "J" FLIGHT DATA BOOK

SYSTEM NO. J-11 A

VEHICLE NO. 1178

MISSION NO. 1010-1

CAMERA NOS. 152 & 153

Prepared by: [redacted]

Checked by: [redacted]

Approved by: [redacted]

Approved by: [redacted] Manager

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TOP SECRET

SYSTEM NO. X-11(7)
VEHICLE NO. 1178
MISSION NO. 1010-1
CAMERA NOS. 152 & 153

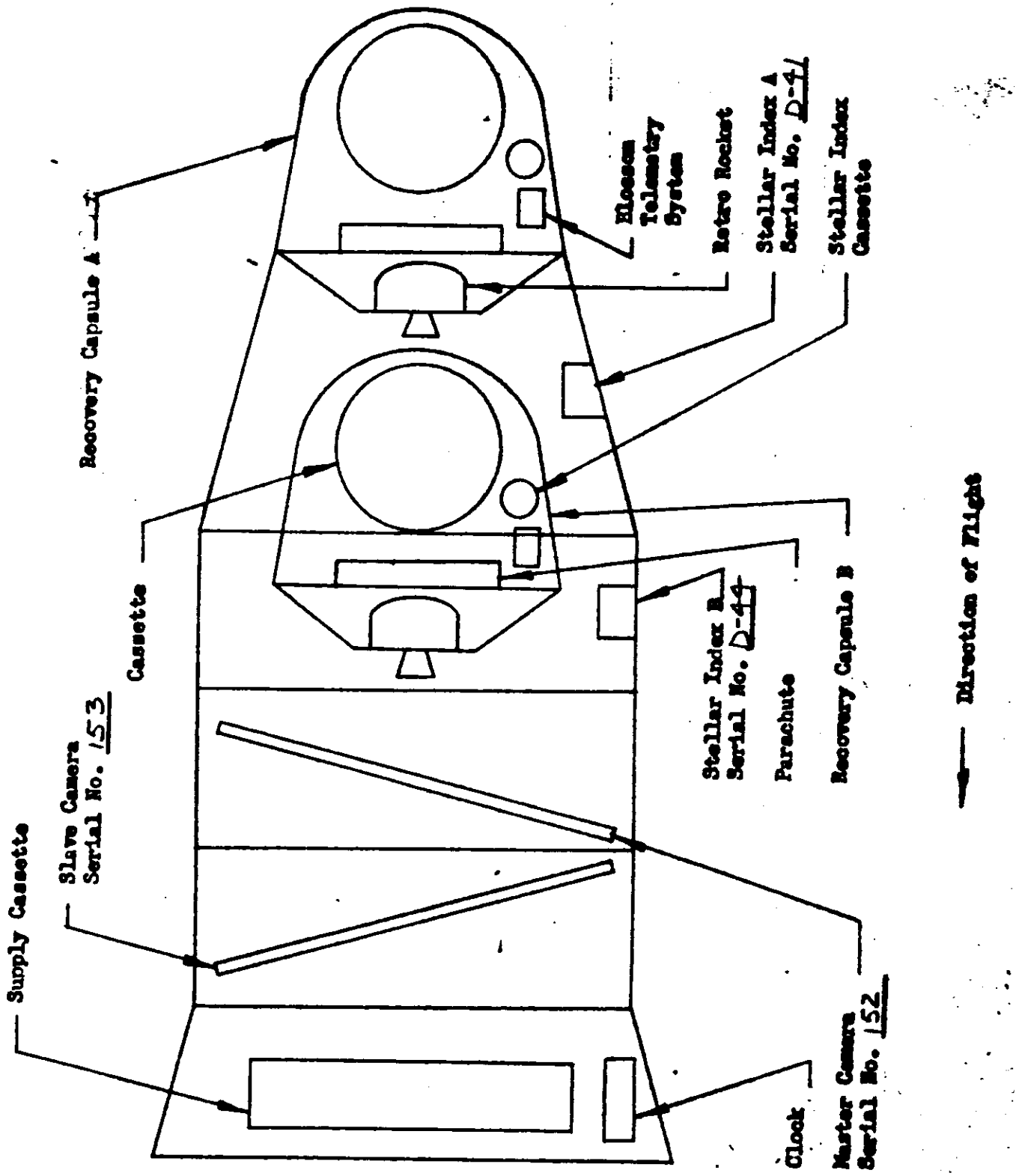
TABLE OF CONTENTS

[redacted]

SYSTEM NO. C-11A
VEHICLE NO. 1178
MISSION NO. 1010-1
CAMERA NOS. 152&153

~~TOP SECRET~~

VEHICLE LAYOUT:



SYSTEM NO. J-11A
VEHICLE NO. 1178
MISSION NO. 1010-1
CAMERA NOS. 152 & 153

TOP SECRET

GENERAL FLIGHT DATA:

Master Camera Serial No. 152

Slave Camera Serial No. 153

Stellar Index "A" Serial No. D-41

Stellar Index "B" Serial No. D-44

Launch Date 9/14/64

Reactivation Date N/A

Reactivation Orbit No. N/A

Orbital Parameters: (Rev. 1)

Period 90.971 Min. Eccentricity .02236

Perigee 97.45 NM Perigee Latitude 42.576 Deg. N

Apogee 259.19 NM Inclination Angle 84.96 Deg. N

Recovery Orbit No. 65

Recovery Date 9/18/64

REMARKS:

[redacted]

SYSTEM NO. J-11A
VEHICLE NO. 1178
MISSION NO. 1010-1
CAMERA NOS. 152 & 153

LENS SETTINGS AND FILM TYPES:

Panoramic Camera Settings:	Camera No. 152	Camera No. 153
Panoramic Optics Slit Width	.175 X 2.278 in.	.175 X 2.278 in.
Panoramic Optics Filter Type	WRATTEN 21	WRATTEN 21
Horizon Optics Exp. Time	1/100 sec.	1/100 sec.
Horizon Optics Aperture	F6.8 SUPPLY F8.0 TAKE-UP	F8.0 SUPPLY F6.8 TAKE-UP
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 SECS	1/500 SEC	2.0 SECS	1/500 SEC
Aperture Setting	F1.8	F4.5	F1.8	F4.5
Filter Type	NONE	WRATTEN 21	NONE	WRATTEN 21

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

Film:

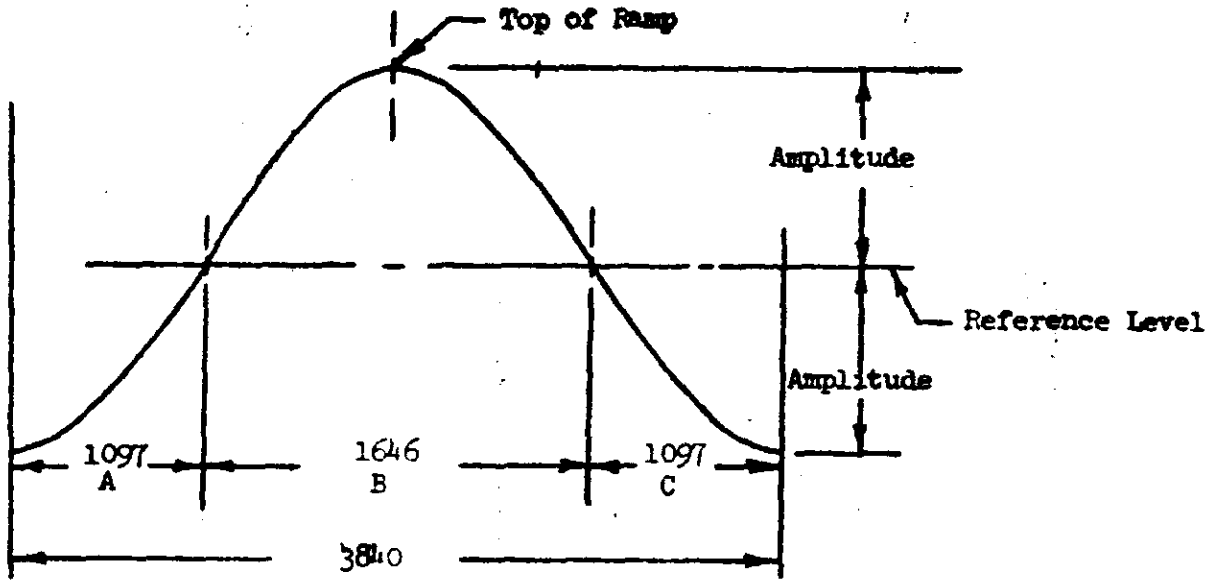
Panoramic Cameras:	Camera No. 152	Camera No. 153
Type	7J-40	7J-40
Length	16000 ft.	16000 ft.
Splices	4	4
Emul. Data	62-7-6-7-4	62-7-7-4

Stellar Index Cameras:

	Stellar Index A		Stellar Index B	
	Stellar	Index	Stellar	Index
Type	3J-34	7J-33	3J-34	7J-33
Emul. Data	7-3-6-4	28-4-5-4	7-3-6-4	28-4-5-4

SYSTEM NO. J-11A
VEHICLE NO. 1178
MISSION NO. 1010-1
CAMERA NOS. 152 & 153

√/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:

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

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

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

[redacted]

SYSTEM NO. III A
VEHICLE NO. 1178
MISSION NO. 1010-1
CAMERA NOS. 152 & 153

[redacted]

CYCLE PERIOD DATA:

PRE-FLIGHT CYCLE PERIODS:

V/H Ramp Level	V/H Ramp Amplitude	Cycle Period Seconds		Time Up Ramp Sec
		Master	Slave	
8	2	4.875	4.873	415
8	2	2.232	2.207	2100
8	2	2.234	2.209	2130
8	2	4.330	4.300	615

IN-FLIGHT CYCLE PERIODS

V/H Ramp Level	V/H Ramp Amplitude	Cycle Period Seconds		Orbit No.	Time Up Ramp Sec
		Master	Slave		
8	2	4.885	4.900	9	415
8	2	2.250	2.245	31	2100
8	2	2.243	2.255	47	2130
8	2	4.250	4.300	56	615

[redacted]

SYSTEM NO. J-11A
VEHICLE NO. 1178
MISSION NO. 1010-1
CAMERA NOS. 152 E153

LENS DATA SUMMARY: Master Camera No. 152

Lens Serial No. 1252435

Slit Width .175 X 2.278 Inch

Filter Type WRATTEN 21

Equivalent Operational Focal Length 609.577 MM

Resolution:

Static:

	Lines/MM	Film Type	Target Contrast
Bench Test	268	SO-132	HIGH
Other	148	SO-132	LOW

Dynamic:

Itek [redacted]	159	SO-132	HIGH
Itek [redacted]	128	SO-132	LOW
AP	185	SO-132	HIGH
AP	127	SO-132	LOW
Other			

Note: [redacted] Resolution of 185 lines/MM Reported In Message No. _____ dated 9/14/64

Distortion - Positive (Pincushion)

Angle Off Axis Deg.	3.0	2.0	1.0	0.0	359	358	357		
Distortion Millimeters	.005	.002	.001	.000	.000	.001	.002		

[redacted]

SYSTEM NO. J-11 A
VEHICLE NO. 1178
MISSION NO. 1010-1
CAMERA NOS. 152 & 153

LENS DATA SUMMARY: (Horizon Cameras for Panoramic Camera No. 152)

	Take-Up	Supply
Lens Serial No.	812267	812279
Exposure Time	1/100 Sec.	1/100 Sec.
Filter Type	WRATTEN 25	WRATTEN 25
Aperture	F8.0	F6.8
Operational Focal Length	54.54 MM	54.43 MM
Radial Distortion:		
10° off Axis	.015 MM	-.010 MM
20° off Axis	.022 MM	-.017 MM
Tangential Distortion (Maximum Vector)	N.A. MM	.004 MM

Resolution:

Angle off Axis Deg.	0	5	10	15	20	25	27.5
Radial Resolution	184	164	153	114	109	112	49
Tangential Resolution	164	145	142	108	91	57	44

____ Lines/MM Avg. 174 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]

TOP SECRET

SYSTEM NO. J-11A
VEHICLE NO. 1178
MISSION NO. 1010-1
CAMERA NOS. 152 & 153

LENS DATA SUMMARY: Slave Camera No. 153
Lens Serial No. 1282435 ✓
Slit Width .175 x 2.278 Inch
Filter Type WRATTEN 21
Equivalent Operational Focal Length 609.585 MM
Resolution:

Static: ✓

	Lines/MM	Film Type	Target Contrast
Bench Test	243	SO-132	HIGH
Other	139	SO-132	LOW

Dynamic:

Itek [redacted]	167	SO-132	HIGH
Itek [redacted]	128	SO-132	LOW
AP	171	SO-132	HIGH
AP	110	SO-132	LOW
Other			

NOTE: [redacted] Resolution of 171 lines/MM Reported In Message No. _____ dated 9/14/69

✓ Distortion - Positive (Pincushion)

Angle Off Axis Deg.	3.0	2.0	1.0	0.0	359	358	357		
Distortion Millimeters	.006	.003	.002	.000	.001	.003	.006		

[redacted]

[redacted]

[redacted]

TOP SECRET

SYSTEM NO. J-11
VEHICLE NO. 1178
MISSION NO. 1010-1
CAMERA NOS. 152 & 153

LENS DATA SUMMARY: (Horizon Cameras for SLAVE Camera No. 153)

	Take-Up	Supply
Lens Serial No.	814014	813527
Exposure Time	1/100 Sec.	1/100 Sec.
Filter Type	WRATTEN 25	WRATTEN 25
Aperture	F 6.8	F 8.0
Operational Focal Length	55.21 MM	55.06 MM
Radial Distortion:		
10° off Axis	.007 MM	.001 MM
20° off Axis	.015 MM	.004 MM
Tangetial Distortion (Maximum Vector)	.002 MM	.004 MM

Resolution:

Angle off Axis Deg.	0	10	15	20	25	30	
Radial Resolution	170	105	91	76	86	61	
Tangetial Resolution	170	87	85	75	55	40	

0	5	10	15	20	25	27.5
164	145	114	84	71	94	103
164	137	112	96	86	60	51

170 Lines/MM Avg. 164 Lines/MM Avg.

NOTE:

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

[redacted]

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 -15.00° ±5" to the mechanical interface for master camera calibrations and an angle of +15.00° ±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.

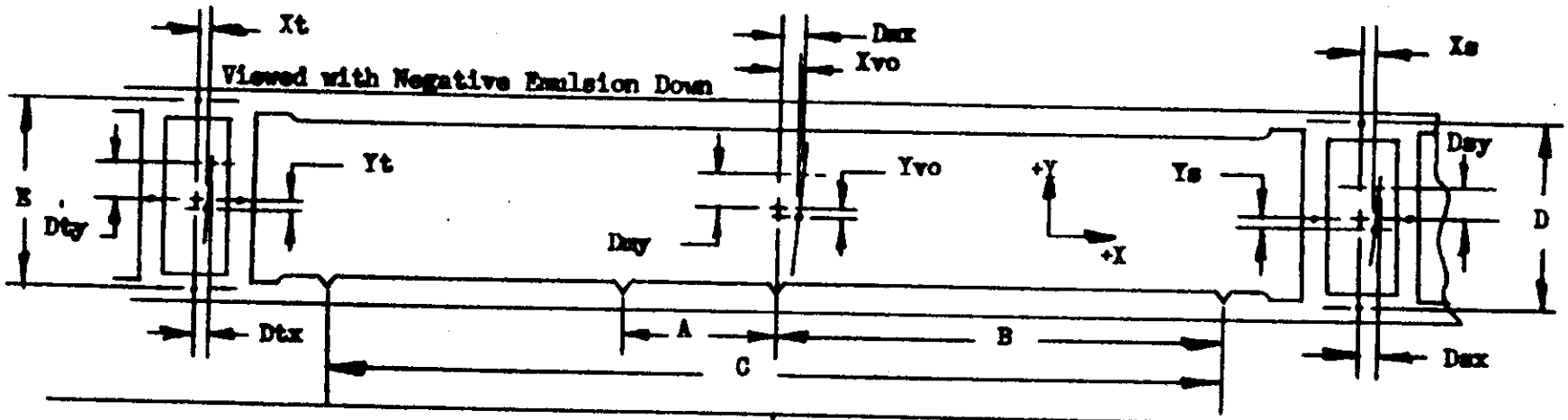
10.0 Measurement of the angle between the indicated axis of the panoramic cameras and the line of intersection of the plane defined in Paragraph 2 on the format is obtained from the offset dimensions Dmx and Dmy of Target 1 for each camera.

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.

[redacted]

SYSTEM NO. T-11
VEHICLE NO. 7178
MISSION NO. 7010-1
CAMERA NOS. 152/153

FORMAT DIMENSIONS: (PANORAMIC CAMERAS)



Camera No. 152	Vehicle Motion	Scan Direction
A 76.2	Xt +.217	Dtx +.224
B 355.4	Yt +.116	Dty -1.683
C 710.8	Xs +.335	Dax +.355
D 56.542	Ys -.228	Dsy +2.625
E 56.538	Xvo +1.300	Dax +1.306
	Yvo +.973	Dsy -1.693

Format Dimensions:

	Panoramic	Take-Up	Supply
Height	56.588	N/A	N/A
Width	754.9	N/A	N/A

Camera No. 153	Vehicle Motion	Scan Direction
A 76.2	Xt +.407	Dtx +.407
B 355.2	Yt -.154	Dty +1.752
C 710.3	Xs -.377	Dax -.377
D 56.508	Ys -.085	Dsy -1.664
E 56.450	Xvo -.212	Dax -.238
	Yvo +.381	Dsy -2.619

Format Dimensions:

	Panoramic	Take-Up	Supply
Height	56.505	N/A	N/A
Width	754.2	N/A	N/A

Note: 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, Da, De, X and Y dimensions are taken 10MM above point defining target center.
4. Format Sign Convention

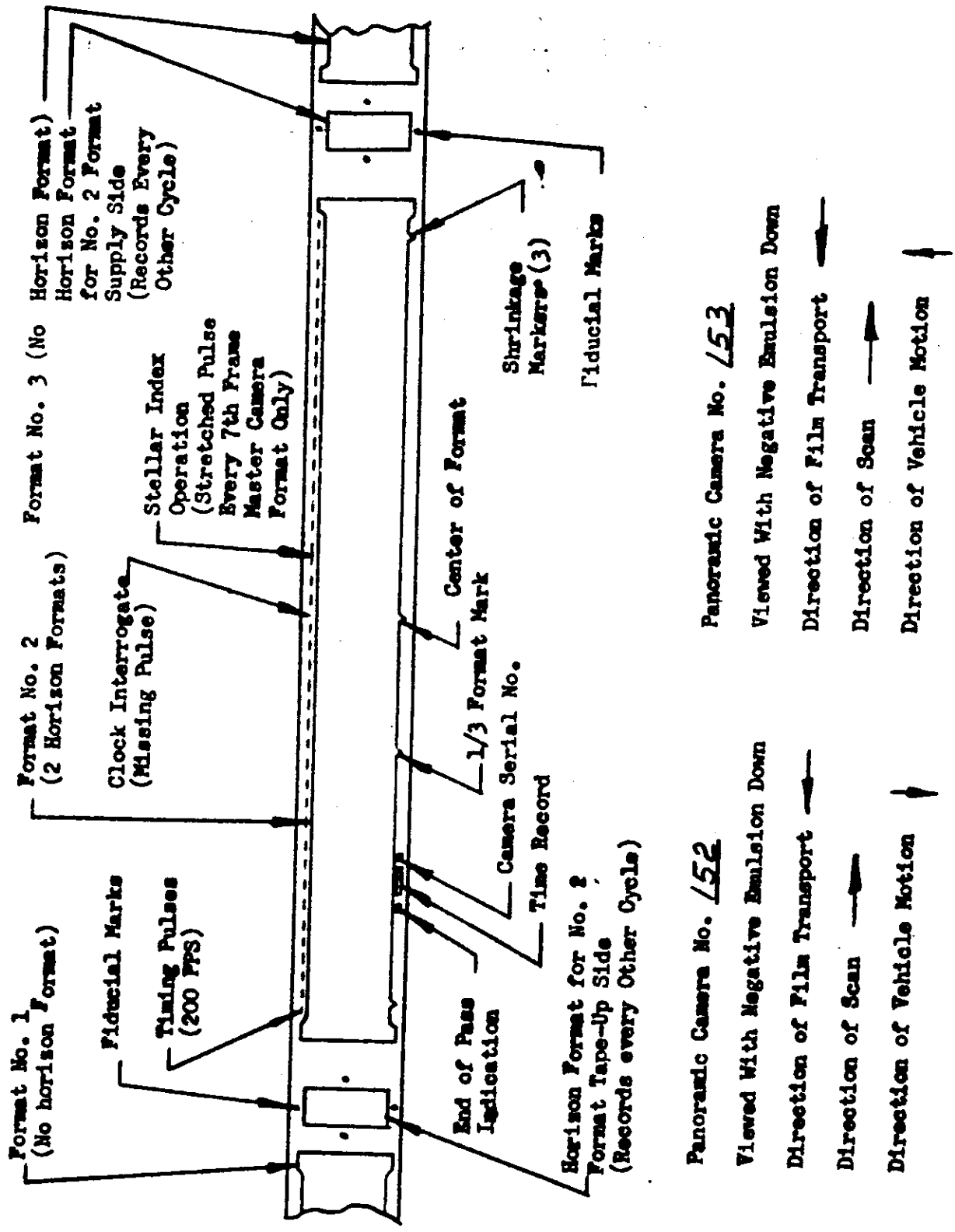
-X+Y	+X+Y
-X-Y	+X-Y

[redacted]

SYSTEM NO. J-11
VEHICLE NO. 1178
MISSION NO. 1010-1
CAMERA NOS. 152/153

[redacted] Page 13 of 21

FORMAT LAYOUT: (PANORAMIC CAMERAS)



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SYSTEM NO. J-11
VEHICLE NO. 1178
MISSION NO. 1010-1
CAMERA NOS. 152 & 153

[redacted] [redacted]

LENS DATA SUMMARY STELLAR INDEX D41/41/41: 1010-1 MISSION

	Stellar		Index	
Lens Serial No.	11002		813054	
Reseau Serial No.	41		41	
Filter Type	NONE		WRATTEN 21	
Aperture	F1.8		F4.5	
Exposure Time	2.0	Sec.	1/500	Sec.
Equivalent Focal Length	N/A	MM	38.58	MM

Resolution:

Angle Off Axis	0	10	20	30	35
Resolution L/MM High Contrast	82/92	98/92	114/96	95/93	90/23

NOTE: Index Resolution of 77 Lines/MM AWAR

Read From 4400 Film.

Distortion:

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

Alignment:

.0003 "/.937 Inches .0007 "/2.25 Inches

[redacted]

SYSTEM NO. J-11A
VEHICLE NO. 1178
MISSION NO. 1010-1
CAMERA NOS. 152 & 153

[redacted]

PRELIMINARY CLOCK CORRELATION:

ORBIT	SYSTEM TIME	CLOCK TIME	DIFFERENCE
1	1350.885	207900.452	
8	38009.962	244559.533	+.004
9	43827.119	250376.691	+.001
16	83682.854	290232.430	+.005
24	39183.422	332133.002	+.004
31	79059.548	372009.132	+.004
40	40256.318	419605.907	+.004
47	79901.823	459251.416	+.004
56	41024.549	506774.146	+.004
63	80804.928	9683.618	+.004

[redacted]

SYSTEM NO. I-71
VEHICLE NO. 1178
MISSION NO. 1010-1
CAMERA NOS. 152 153

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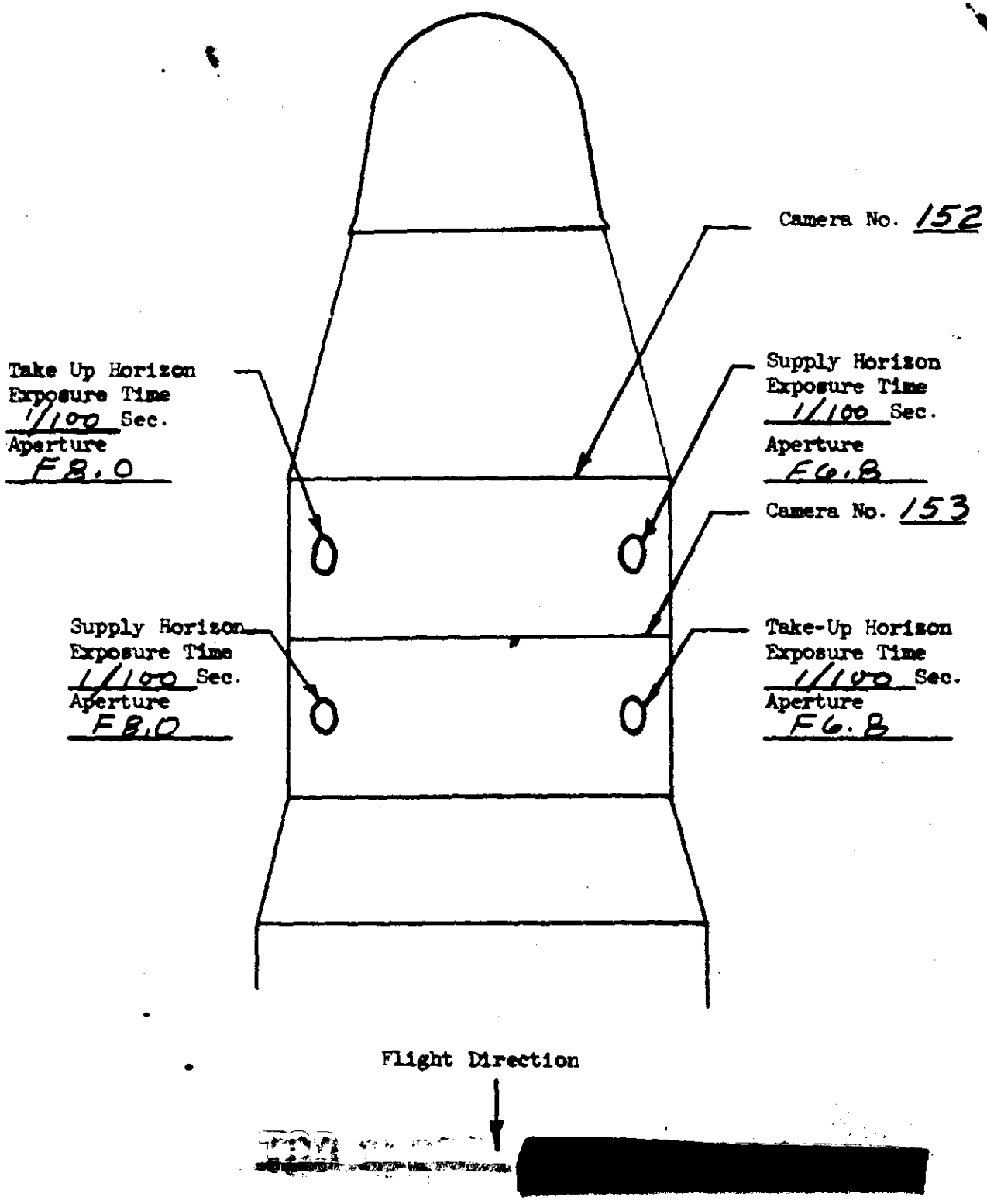
TOP SECRET

HORIZON LENS SETTINGS (Viewed from top of vehicle inflight)



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SYSTEM NUMBER J-11
VEHICLE NUMBER 1178
MISSION NUMBER 1010
PANORAMIC CAMERA NUMBERS 152 AND 153
STELLAR/INDEX CAMERA NUMBER 041/41/41

FINAL MISSION A
PERFORMANCE ESTIMATE

SUB	PROG	CAM NO.	PAN FR.	SI FR	LAT. ON	LAT. OFF	TIME ON ZD	TIME ON ST	TUR NO	DUR SEC.	SOLAR SEC	SOLAR ON	SOLAR OFF	EXPOS. ON	EXPOS. OFF
LAUNCH		152	100	14											
LAUNCH		153	100												
1	1 0	152	12	02	256	255	15	1346	8	3	2064	28	27	28	3.0 3.0
1	1 0	153	12		257	255	15	1346	8	3	2064	28	26	28	3.0 3.0
4	5 1	152	41	05	262	255	1517	637	8	3	1474	99	24	28	2.9 2.8
4	5 1	153	41		263	256	1517	637	8	3	1474	99	23	27	3.0 2.8
5	8 1	152	118	17	253	234	1523	235	8	3	1663	272	29	38	2.8 2.7
5	8 1	153	118		254	235	1523	235	8	3	1663	272	29	38	2.8 2.7
6	10 1	152	162	23	242	217	1528	853	8	2	1822	359	35	42	2.6 2.7
6	10 1	153	161		243	218	1528	853	8	2	1822	359	34	42	2.6 2.7
7	9 1	152	94	14	259	244	1534	065	8	2	1582	216	26	34	2.8 2.6
7	9 1	153	95		259	245	1534	065	8	2	1582	216	25	33	2.8 2.6
7	9 2	152	90	13	240	226	1534	344	8	2	1861	199	36	40	2.6 2.6
7	9 2	153	90		240	227	1534	344	8	2	1861	199	35	40	2.6 2.6
9	6 0	152	10	01	139	141	1543	759	8	2	363	45-26-25			5.9 5.7
9	6 0	153	10		137	140	1543	759	8	2	363	45-27-26			5.9 5.7
9	6 1	152	140	20	264	242	1544	904	8	2	1508	318	23	35	2.8 2.6
9	6 1	153	140		264	243	1544	904	8	2	1508	318	22	34	2.8 2.6
21	9 1	152	116	17	253	236	1624	132	8	2	1734	257	29	38	2.6 2.6
21	9 1	153	117		254	237	1624	132	8	2	1734	257	29	38	2.6 2.6
21	9 3	152	68	09	230	220	1624	467	8	2	2070	154	40	43	2.6 2.7
21	9 3	153	68		231	221	1624	467	8	2	2070	154	40	43	2.6 2.7
22	9 1	152	62	09	257	248	1629	528	8	2	1680	142	27	32	2.7 2.7
22	9 1	153	63		258	249	1629	528	8	2	1680	142	26	32	2.7 2.6
22	9 2	152	70	10	242	232	1629	748	8	2	1900	156	35	40	2.6 2.7
22	9 2	153	70		243	232	1629	748	8	2	1900	156	35	39	2.6 2.6
23	5 1	152	123	18	261	242	1634	936	8	2	1636	276	25	35	2.7 2.6
23	5 1	153	123		261	243	1634	936	8	2	1636	276	24	35	2.7 2.6
25	8 1	152	128	18	259	239	1645	877	8	2	1675	288	26	37	2.7 2.6
25	8 1	153	128		259	240	1645	877	8	2	1675	288	25	36	2.7 2.6
31	5 1	152	36	05	235	229	1678	963	8	2	2047	83	38	41	2.7 2.8
31	5 1	153	36		236	230	1678	963	8	2	2047	83	38	40	2.7 2.8
36	3 1	152	83	12	253	240	1719	576	8	2	1802	186	30	37	2.7 2.6
36	3 1	153	83		253	241	1719	576	8	2	1802	186	29	37	2.7 2.6
37	5 1	152	91	13	260	247	1724	915	8	2	1689	203	25	33	2.7 2.6
37	5 1	153	91		261	247	1724	915	8	2	1689	203	24	33	2.7 2.6
37	5 2	152	67	10	230	220	1725	354	8	2	2129	156	41	44	2.7 2.8
37	5 2	153	67		231	220	1725	354	8	2	2129	156	41	44	2.7 2.8
38	9 1	152	83	12	258	246	1730	401	8	2	1722	185	26	34	2.7 2.6
38	9 1	153	83		259	246	1730	401	8	2	1722	185	26	33	2.7 2.6
38	9 2	152	108	15	242	226	1730	635	8	2	1956	243	36	43	2.6 2.7

[redacted]

[redacted]

[redacted]

38	9	2	153	108		243	226	1730635	8	2	1956	243	35	43	2.6	2.7
39	10	1	152	142	20	260	239	1735826	8	2	1696	318	25	38	2.7	2.6
39	10	1	153	142		261	239	1735826	8	2	1696	318	24	37	2.7	2.6
40	5	1	152	170	25	266	241	1741189	8	2	1609	379	21	37	2.7	2.6
40	5	1	153	170		267	241	1741189	8	2	1609	379	20	36	2.7	2.6
41	3	1	152	43	06	258	252	1746764	8	2	1733	97	26	30	2.7	2.7
41	3	1	153	43		259	253	1746764	8	2	1733	97	26	30	2.7	2.7
41	3	2	152	50	07	249	242	1746896	8	2	1865	114	32	36	2.7	2.7
41	3	2	153	50		250	242	1746896	8	2	1865	114	31	36	2.7	2.7
47	3	1	152	43	06	238	231	1779793	8	2	2062	97	38	41	2.7	2.7
47	3	1	153	43		238	232	1779793	8	2	2062	97	38	41	2.7	2.7
52	4	1	152	102	15	254	238	1820424	8	2	1847	230	30	39	2.6	2.7
52	4	1	153	102		254	239	1820424	8	2	1847	230	29	38	2.6	2.7
53	8	1	152	45	06	254	248	1825866	8	2	1839	97	29	33	2.6	2.6
53	8	1	153	45		255	248	1825866	8	2	1839	97	29	33	2.6	2.6
53	8	2	152	180	26	243	215	1826028	8	2	2001	417	36	47	2.6	2.9
53	8	2	153	179		244	215	1826028	8	2	2001	417	35	47	2.6	3.0
54	7	1	152	83	12	258	246	1831261	8	2	1780	184	27	34	2.6	2.6
54	7	1	153	84		259	246	1831261	8	2	1780	184	26	34	2.6	2.6
54	7	2	152	67	09	236	226	1831583	8	2	2102	154	39	44	2.7	2.8
54	7	2	153	67		237	226	1831583	8	2	2102	154	39	44	2.6	2.8
55	4	1	152	115	17	260	243	1836684	8	2	1754	260	25	36	2.7	2.6
55	4	1	153	115		261	243	1836684	8	2	1754	260	25	36	2.7	2.6
55	4	2	152	38	05	239	234	1836991	8	2	2061	84	38	41	2.7	2.7
55	4	2	153	38		240	234	1836991	8	2	2061	84	37	40	2.7	2.7
56	6	0	152	10	01	139	142	1840953	8	2	598	45-30-28			5.8	5.6
56	6	0	153	10		137	140	1840953	8	2	598	45-31-30			5.8	5.6
56	6	1	152	37	06	272	266	1841967	8	2	1612	85	17	21	2.8	2.7
56	6	1	153	38		272	267	1841967	8	2	1612	85	17	21	2.7	2.7
56	6	2	152	116	16	260	242	1842146	8	2	1791	260	26	36	2.6	2.7
56	6	2	153	116		261	243	1842146	8	2	1791	260	25	36	2.6	2.6
61	3	1	152	36	05	243	237	1869656	8	2	2060	84	36	39	2.8	2.8
61	3	1	153	37		244	238	1869656	8	2	2060	84	35	39	2.7	2.8

AAA BB C DDD EEE FF GHH GII JJKKKKK LL M NNNN OOO PP QQ RRR SSS

A ORBITAL TIMER SUBCYCLE NUMBER
B PROGRAM NUMBER
C OPERATION NUMBER
D PAN. CAMERA SERIAL NUMBER (MASTER IS EVEN, SLAVE IS ODD)
E EST. NO OF PAN FRAMES, BASED ON COUNTER READINGS INFLITE
F EST. NUMBER OF STELLAR/INDEX FRAMES
G QUADRANT
H EST. LATITUDE OF FIRST FORMAT CENTER IN PASS
I EST. LATITUDE OF LAST FORMAT CENTER IN PASS
J ZULU DATE
K SYSTEM TIME IN SECONDS (GMT)
L FMC PROGRAMMER REFERENCE LEVEL
M FMC PROGRAMMER AMPLITUDE LEVEL
N EST. TIME UP RAMP IN SECONDS TO OPERATE COMMAND
O EST. SECONDS DURATION OF OPERATION, BETWEEN ON AND OFF
P SOLAR ELEVATION AT ITEM H
Q SOLAR ELEVATION AT ITEM I

[redacted]

[redacted]

R EST. MILLISECONDS EXPOSURE TIME AT ITEM H
S EST. MILLISECONDS EXPOSURE TIME AT ITEM I

FRAMES TO FEET,PAN X 2.645 STELLAR X 0.099,INDEX X 0.198

J-11 TIME CORRELATION-MISSION 1010-1

ORBIT	CLOCK TIME	COR SYS TM
1	2 7900.452	1350.885
8	244559.533	38009.962
9	250376.691	43827.119
16	290232.430	83682.854
24	332133.002	39183.422
31	372009.132	79059.548
40	419605.907	40256.318
47	459251.416	79901.823
56	5 6774.146	41024.549
63	0 9683.618	80804.928

RATIO OF CLOCK TIME TO SYSTEM TIME=1.00000015

RAMP PROFILES

J- 11 RAMP R- 8 A- 3
R= 0.3236 A= 0.1260 RAMP PERIOD= 3840

TIME	PERIOD	CPS	GAV
0	5.061	0.1976	0.01787
75	5.042	0.1983	0.01794
150	4.988	0.2005	0.01813
225	4.900	0.2041	0.01846
300	4.784	0.2090	0.01891
375	4.644	0.2153	0.01948
450	4.487	0.2229	0.02016
525	4.319	0.2315	0.02094
600	4.144	0.2413	0.02182
675	3.968	0.2520	0.02279
750	3.795	0.2635	0.02383
825	3.627	0.2757	0.02494
900	3.466	0.2885	0.02609
975	3.315	0.3017	0.02729
1050	3.174	0.3151	0.02850
1125	3.028	0.3303	0.02987
1200	2.872	0.3482	0.03149
1275	2.736	0.3656	0.03306
1350	2.617	0.3821	0.03456
1425	2.516	0.3974	0.03594
1500	2.432	0.4112	0.03719
1575	2.363	0.4232	0.03828
1650	2.308	0.4332	0.03918
1725	2.268	0.4410	0.03988
1800	2.241	0.4463	0.04037
1875	2.227	0.4491	[redacted]

[redacted]

[redacted]

1950	2.225	0.4494	0.04065
2025	2.237	0.4471	0.04044
2100	2.261	0.4422	0.04000
2175	2.299	0.4350	0.03934
2250	2.351	0.4254	0.03848
2325	2.417	0.4138	0.03742
2400	2.498	0.4003	0.03621
2475	2.596	0.3853	0.03484
2550	2.710	0.3689	0.03337
2625	2.843	0.3517	0.03181
2700	2.995	0.3339	0.03020
2775	3.147	0.3178	0.02874
2850	3.286	0.3043	0.02753
2925	3.435	0.2911	0.02633
3000	3.594	0.2783	0.02517
3075	3.761	0.2659	0.02405
3150	3.933	0.2542	0.02299
3225	4.109	0.2434	0.02201
3300	4.284	0.2334	0.02111
3375	4.454	0.2245	0.02031
3450	4.614	0.2167	0.01960
3525	4.757	0.2102	0.01901
3600	4.879	0.2050	0.01854
3675	4.973	0.2011	0.01819
3750	5.034	0.1986	0.01797
3825	5.060	0.1976	0.01787

J- 11 RAMP R- 8 A- 2

R= 0.3238 A= 0.1427 RAMP PERIOD= 3840

TIME	PERIOD	CPS	GAV
0	5.522	0.1811	0.01638
75	5.497	0.1819	0.01645
150	5.424	0.1844	0.01668
225	5.307	0.1884	0.01704
300	5.153	0.1941	0.01755
375	4.971	0.2012	0.01819
450	4.769	0.2097	0.01897
525	4.555	0.2195	0.01986
600	4.337	0.2306	0.02085
675	4.121	0.2427	0.02195
750	3.910	0.2557	0.02313
825	3.710	0.2696	0.02438
900	3.521	0.2840	0.02569
975	3.345	0.2989	0.02704
1050	3.183	0.3141	0.02841
1125	3.018	0.3313	0.02997
1200	2.844	0.3516	0.03180
1275	2.694	0.3713	0.03358
1350	2.564	0.3900	0.03527
1425	2.455	0.4073	0.03684
1500	2.364	0.4230	0.03825
1575	2.291	0.4366	0.03949
1650	2.233	0.4479	0.04051
1725	2.190	0.4566	0.04130

[redacted]

[redacted]

1800	2.179	0.4589	0.04151
1875	2.179	0.4589	0.04151
1950	2.179	0.4589	0.04151
2025	2.179	0.4589	0.04151
2100	2.183	0.4581	0.04143
2175	2.223	0.4498	0.04068
2250	2.278	0.4390	0.03971
2325	2.348	0.4258	0.03852
2400	2.436	0.4106	0.03714
2475	2.541	0.3936	0.03559
2550	2.666	0.3751	0.03392
2625	2.812	0.3556	0.03216
2700	2.981	0.3354	0.03034
2775	3.153	0.3172	0.02869
2850	3.312	0.3020	0.02731
2925	3.485	0.2870	0.02596
3000	3.671	0.2724	0.02464
3075	3.869	0.2584	0.02337
3150	4.078	0.2452	0.02218
3225	4.293	0.2329	0.02107
3300	4.512	0.2217	0.02005
3375	4.727	0.2116	0.01913
3450	4.932	0.2028	0.01834
3525	5.119	0.1954	0.01767
3600	5.279	0.1894	0.01713
3675	5.404	0.1851	0.01674
3750	5.486	0.1823	0.01649
3825	5.521	0.1811	0.01638

NOTES 1) TM DATA INDICATE ALL SYSTEMS OPERATIONAL AND NOMINAL ON FIRST MISSION.

2) STEREO COVERAGE IN OPERATIONS ON REVS 4 THRU 7 IS BIASED LATE FROM NOMINAL, DUE TO MISALIGNMENT OF ORBITAL TIMER TAPE WITH THE ORBIT BY THE STC WHICH WAS UNABLE TC DEVELOP ADEQUATE TRACKING DATA. REALIGNMENT WAS ACHIEVED AT [redacted] ON REV 9 BY A 35 SECOND RESET.

3) ACTUAL FMC PROGRAMMER START OCCURS 30 SECONDS UP THE RAMP FOR J-11 SYSTEM. DATA REPORTED IN TUR (ITEM N) HAVE BEEN ADJUSTED TC APPROXIMATE THE EFFECTIVE TURNON TIME WHEN USED WITH THE ACCOMPANYING PROFILES.

4) FMC PROGRAMMER PERIOD IS NOMINALLY 3840 SECONDS FOR SYSTEMS J-11, J-13 AND UP. THE FORMER NOMINAL WAS 4800 SECONDS.

5) RAMP PROFILES ARE NOMINAL, AND DO NOT INCLUDE ADJUSTMENT FOR INFLIGHT VARIATION.

6) THE TIME CORRELATION DATA HAVE HAD SYSTEM TIMES ADJUSTED TO REPRESENT THE MOST ACCURATE FIT AVAILABLE AT THIS TIME. TIME DIFFERENCES REPORTED ARE WITHIN 0.005 SECONDS.

7) THE LAST 5 FRAMES OF OPERATION ON REV 61 ARE IN THE MISSION B CAPSULE.

[redacted]