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(Including Cover Sheet)

CORONA "J" FLIGHT DATA BOOK

SYSTEM NO. J-18

VEHICLE NO. 1608

MISSION NO. 1016-1

CAMERA NOS. 132 & 133

Prepared by [redacted]

Checked by: [redacted]

Approved by: _____

Approved by: [redacted] Manager

[redacted]

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SYSTEM NO. J-18
VEHICLE NO. 1608
MISSION NO. 1016-1
CAMERA NOS. 132 & 133

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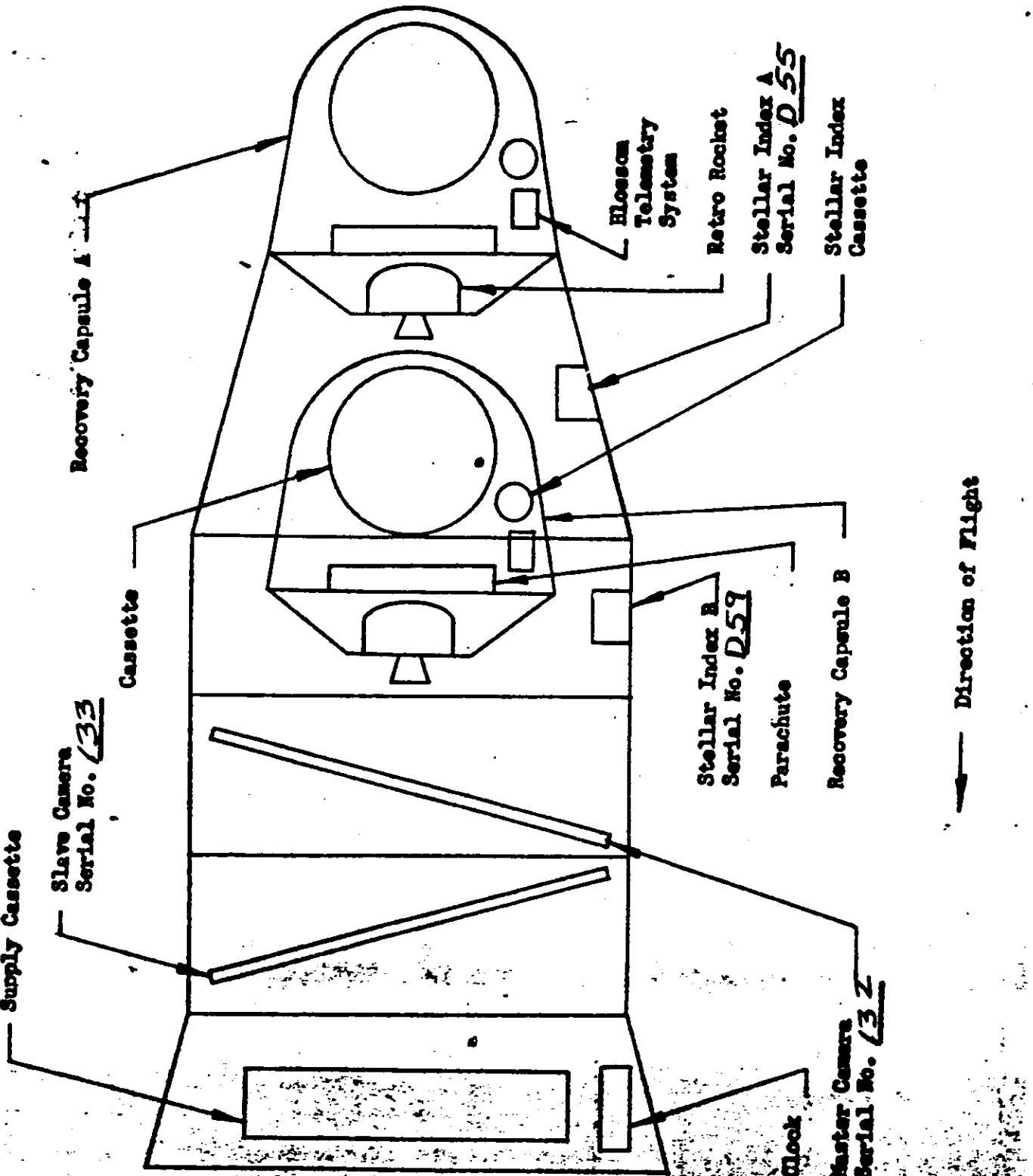
VEHICLE LAYOUT:



SYSTEM NO. J-18
VEHICLE NO. 1608
MISSION NO. 1016-1
CAMERA NOS. 132 & 133

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GENERAL FLIGHT DATA:

Master Camera Serial No. 132

Slave Camera Serial No. 133

Stellar Index "A" Serial No. D 55

Stellar Index "B" Serial No. D 59

Launch Date 1/15/65

Reactivation Date N/A

Reactivation Orbit No. N/A

Orbital Parameters: (Rev. 10)

Period 90.643 Min. Eccentricity .01898

Perigee 98.721 NM Perigee Latitude 26.559 Deg. N

Apogee 235.69 NM Inclination Angle 74.942 Deg. N

Recovery Orbit No. 81

Recovery Date 1/20/65

REMARKS:

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SYSTEM NO. J-18
VEHICLE NO. 1608
MISSION NO. 1016-1
CAMERA NOS. 132 & 133

LENS SETTINGS AND FILM TYPES:

Panoramic Camera Settings:	Camera No. 132	Camera No. 133
Panoramic Optics Slit Width	.250 x 2.218 in.	.175 x 2.218 in.
Panoramic Optics Filter Type	WRATTEN 25	WRATTEN 21
Horizon Optics Exp. Time	1/100 sec.	1/100 sec.
Horizon Optics Aperture	F8.0 Supply / F8.0 Take-up	F8.0 Supply / F8.0 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	1/500	2	1/500
Aperture Setting	F/1.8	F/4.5	F/1.8	F/4.5
Filter Type	N/A	WRATTEN 21	N/A	WRATTEN 21

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

Film:

Panoramic Cameras:	Camera No. 132	Camera No. 133
Type	7J-40	7J-40
Length	16000 ft.	16000 ft.
Splices	5	6
Emul. Data	79-8-11-4	79-8-11-4

Stellar Index Cameras:

	Stellar Index A		Stellar Index B	
	Stellar	Index	Stellar	Index
Type	3J-34	7J-33	3J-34	7J-33
Emul. Data	44-30-9-4	33-1-9-4	44-30-9-4	33-1-9-4

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SYSTEM NO. J-10

VEHICLE NO. 1608

MISSION NO. 1016-1

CAMERA NOS. 132 & 133

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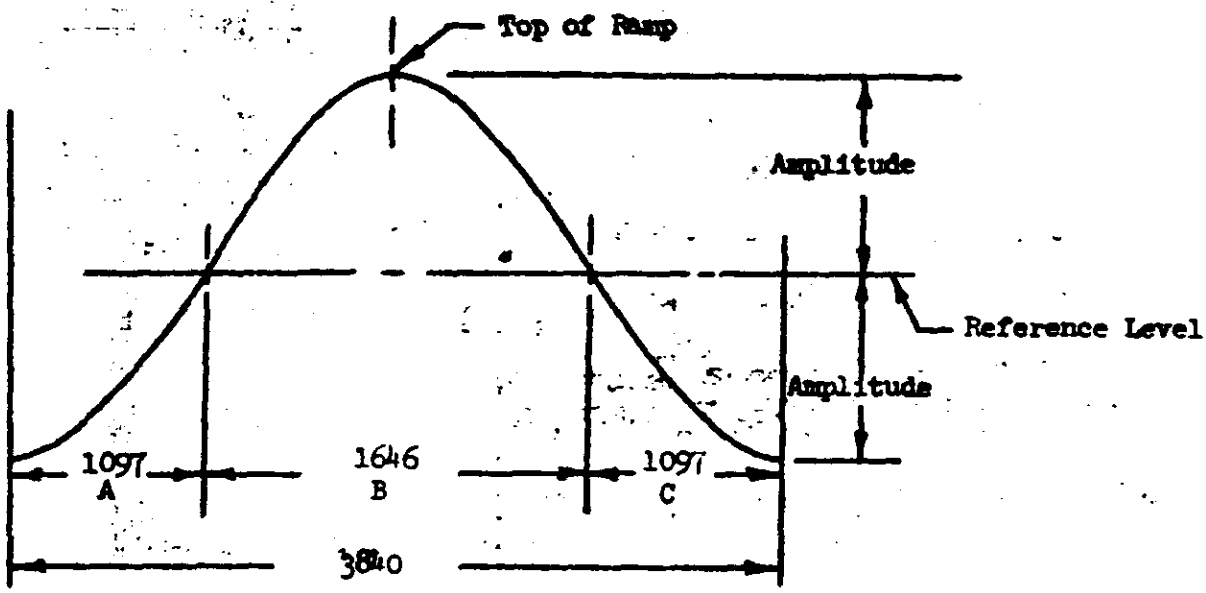
V/H RAMP CONFIGURATION AND CONSTANTS:



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) $\leq$ .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: $X = \frac{\text{Time Up Ramp (Seconds)}}{1047.6942}$ $\quad R = \frac{1}{2}$ (CPS(top) + CPS(bottom))

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

CPS = Camera Cycle Rate in Cycles/Sec

SLIT = Slit Width in Inches

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SYSTEM NO. J-18
VEHICLE NO. 1608
MISSION NO. 1016-1
CAMERA NOS. 132 & 133

[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	
7	4	4.946	4.920	212
7	4	2.250	2.240	1714
7	4	2.236	2.229	1745
7	4	2.224	2.227	1775
7	4	2.213	2.226	1835
7	4	2.213	2.225	1870

IN-FLIGHT CYCLE PERIODS

V/H Ramp Level	V/H Ramp Amplitude	Cycle Period Seconds		Orbit No.	Time Up Ramp Sec
		Master	Slave		
7	4	4.920	4.920	9	212
7	4	2.262	2.285	16	1714
7	4	2.270	2.285	32	1745
7	4	2.250	2.270	47	1775
7	4	2.249	2.280	63	1835
7	4	2.260	2.280	79	1870

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SYSTEM NO. J-18
VEHICLE NO. 1608
MISSION NO. 1016-1
CAMERA NOS. 132 & 133

LENS DATA SUMMARY: Master Camera No. 132

Lens Serial No. 1082435

Slit Width .250 x 2.218 Inch

Filter Type WRATTEN 25

Equivalent Operational Focal Length 609.625 MM

Resolution:

Static:

	Lines/MM	Film Type	Target Contrast
Bench Test	237	SO-132	HIGH
Other	156	SO-132	LOW

Dynamic:

Itek Post Vibration	174	SO-132	HIGH
Itek Post Vibration	128	SO-132	LOW
AP	189	SO-132	HIGH
AP	119	SO-132	LOW
Other			

Note: Itek Post Vibration Resolution of 174 lines/MM Reported In Message No. _____ dated _____

Distortion - Positive (Pincushion)

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

[redacted]

SYSTEM NO. J-18
VEHICLE NO. 1608
MISSION NO. 1016-1
CAMERA NOS. 132 & 133

LENS DATA SUMMARY: (Horizon Cameras for [redacted] Camera No. 132)

	Take-Up	Supply
Lens Serial No.	813551	814012
Exposure Time	1/100 Sec.	1/100 Sec.
Filter Type	WRATTEN 25	WRATTEN 25
Aperture	F/8.0	F/6.8
Operational Focal Length	54.90 MM	55.05 MM
Radial Distortion:		
10° off Axis	.001 MM	.000 MM
20° off Axis	.001 MM	.001 MM
Tangential Distortion (Maximum Vector)	.003 MM	.003 MM

Resolution:

Angle off Axis Deg.	0	10	15	20	25	30		0	10	15	20	25	27.5	
Radial Resolution	170	132	92	79	86	53		160	89	65	63	85	80	
Tangential Resolution	170	98	79	62	55	47		160	93	76	75	59	42	

140 Lines/MM Avg. 139 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.

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SYSTEM NO. J-18
VEHICLE NO. 1608
MISSION NO. 1016-1
CAMERA NOS. 132 & 133

LENS DATA SUMMARY: Slave Camera No. 133
Lens Serial No. 1102435
Slit Width .175 X 2.218 Inch
Filter Type WRATTEN 21
Equivalent Operational Focal Length 609.60 MM
Resolution:

Static:

	Lines/MM	Film Type	Target Contrast
Bench Test	274	SO-132	HIGH
Other	162	SO-132	LOW

Dynamic:

Itek Post-Vibration	194	SO-132	HIGH
Itek Post Vibration	130	SO-132	LOW
AP	198	SO-132	HIGH
AP	126	SO-132	LOW
Other			

NOTE: Itek Post Vibration Resolution of 194 lines/MM Reported In Message No. _____ dated _____.

Distortion - Positive (Pincushion)

Angle Off Axis Deg.	3	2	1	0	359	358	357		
Distortion Millimeters	.005	.003	.001	1000	N/A	N/A	N/A		

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SYSTEM NO. J-18
VEHICLE NO. 1608
MISSION NO. 1016-1
CAMERA NOS. 132 & 133

[redacted]

LENS DATA SUMMARY: (Horizon Cameras for SLAVE Camera No. 133)

	Take-Up	Supply
Lens Serial No.	814030	814020
Exposure Time	1/100 Sec.	1/100 Sec.
Filter Type	WRATTEN 25	WRATTEN 25
Aperture	F/6.8	F/8.0
Operational Focal Length	55.26 MM	54.69 MM
Radial Distortion:		
10° off Axis	.003 MM	.001 MM
20° off Axis	.004 MM	.001 MM
Tangetial Distortion (Maximum Vector)	.004 MM	.003 MM

Resolution:

Angle off Axis Deg.	0	10	15	20	25	27.5	
Radial Resolution	160	118	92	75	68	71	
Tangetial Resolution	160	116	116	66	62	42	

0	10	15	20	25	27.5	
170	90	65	60	71	56	
170	116	89	63	52	42	

145 Lines/MM Avg. 140 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]

SYSTEM NO. J-18
VEHICLE NO. 1608
MISSION NO. 1016-1
CAMERA NOS. 132 & 133

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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.

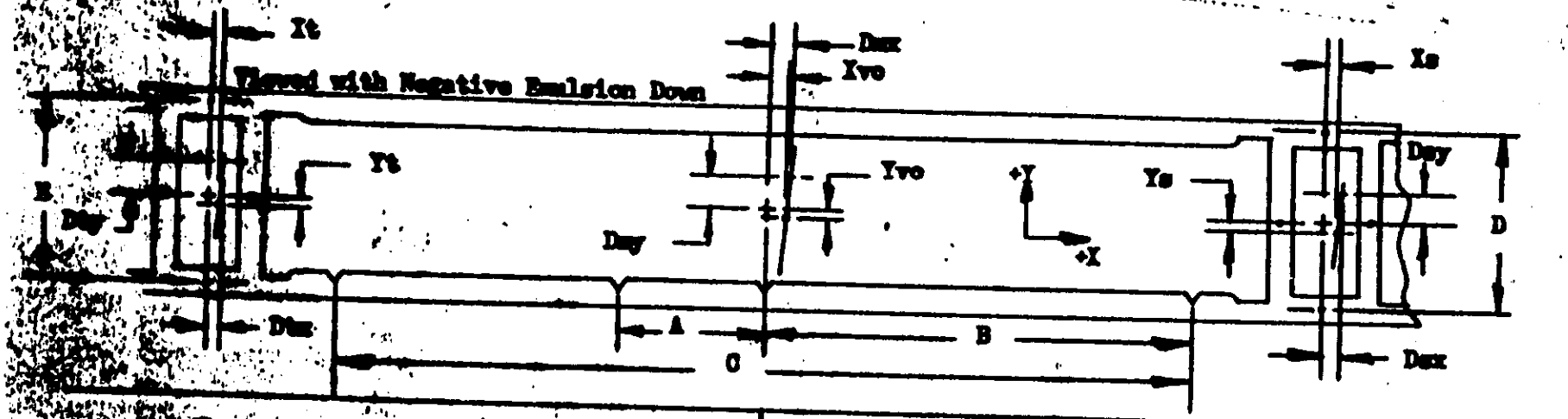
10.0 Measurement of the angle between the indicated axis of the panoramic cameras and the line of intersection of the plane defined in Paragraph 2 on the format is obtained from the offset dimensions Dax and Day of Target 1 for each camera.

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 Dbx, Dby, Dax and Day are the offsets of these measurements.

[redacted]

SYSTEM NO. J-10
VEHICLE NO. 1608
MISSION NO. 1014-1
CAMERA NOS. 132 & 133

FORMAT DIMENSIONS: (PANORAMIC CAMERAS)



Camera No. 132	Vehicle Motion	Seam Direction
A 76.1	Xt +0.490	Dtx +0.478
B 355.3	Yt +0.093	Dty +2.599
C 710.5	Xs +0.390	Dsx +0.390
D 56.511	Ys +0.028	Dsy +3.069
E 56.498	Xvo +1.121	Dax +1.109
	Yvo +1.358	Day +4.358

Format Dimensions:

	Panoramic	Take-Up	Supply
Height	59.375	N/A	N/A
Width	75.54	N/A	N/A

Camera No. 133	Vehicle Motion	Seam Direction
A 76.1	Xt +0.005	Dtx +0.013
B 355.3	Yt +0.058	Dty +2.435
C 710.6	Xs -0.056	Dsx -0.071
D 56.512	Ys +0.125	Dsy -1.287
E 56.421	Xvo -0.992	Dax -1.002
	Yvo +0.727	Day +3.727

Format Dimensions:

	Panoramic	Take-Up	Supply
Height	56.299	N/A	N/A
Width	754.1	N/A	N/A

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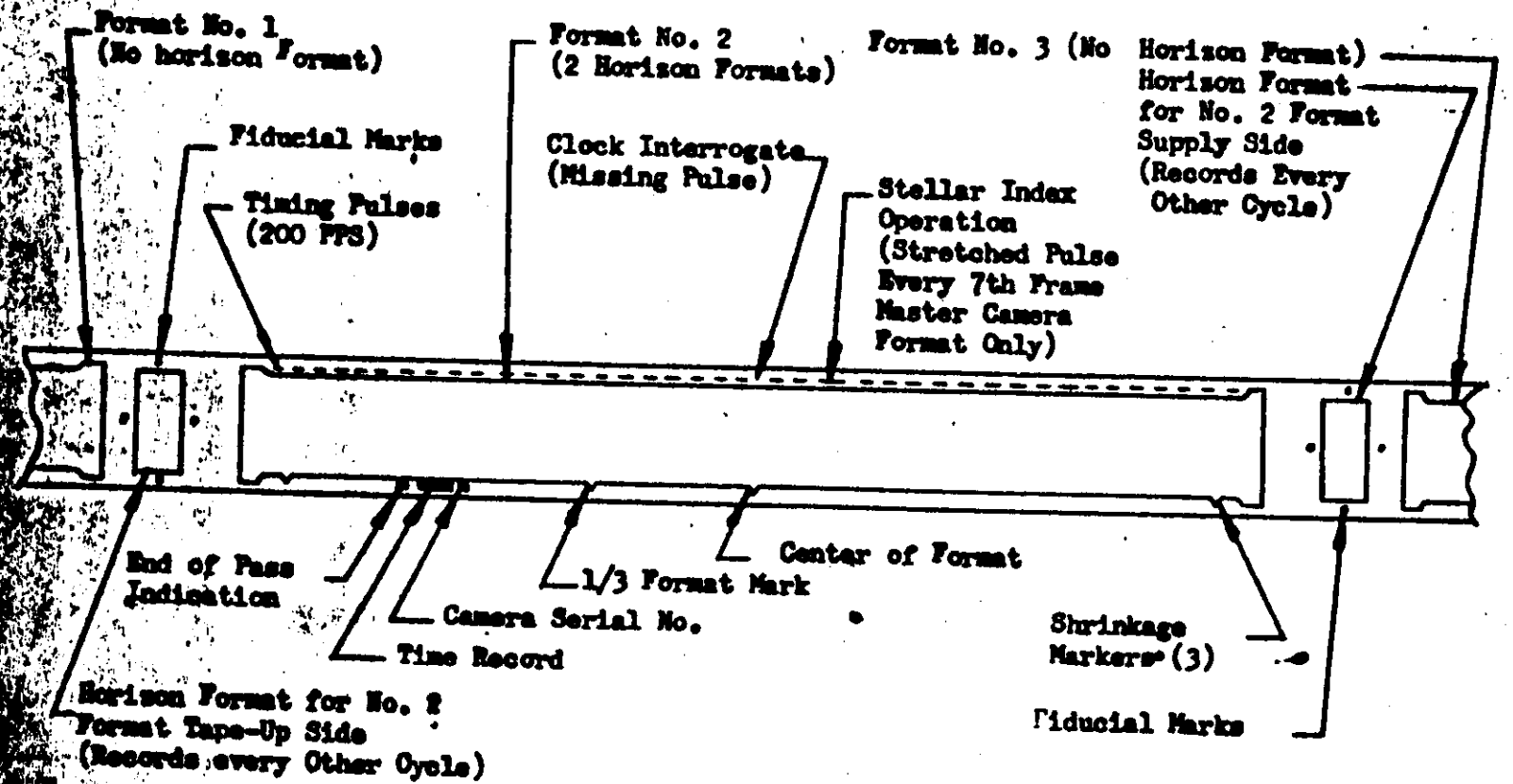
Notes: 1. All dimensions are in millimeters and are average dimensions of three formats.
2. Height of main format is taken at center of format.
3. Dt, Da, Ds, X and Y dimensions are taken 10MM above point defining target center.
4. Format Sign Convention

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

[redacted]

FORMAT LAYOUT: (PANORAMIC CAMERAS)



Panoramic Camera No. 132

Viewed With Negative Emulsion Down

Direction of Film Transport ←

Direction of Scan →

Direction of Vehicle Motion ↓

Panoramic Camera No. 133

Viewed With Negative Emulsion Down

Direction of Film Transport →

Direction of Scan →

Direction of Vehicle Motion ↓

[redacted]

SYSTEM NO. J-18
VEHICLE NO. 1608
MISSION NO. 1016-1
CAMERA NOS. 132 & 133

LENS DATA SUMMARY STELLAR INDEX D55/55/50 1 MISSION

	Stellar	Index
Lens Serial No.	11220	813067
Reseau Serial No.	55	50
Filter Type	NONE	WRATTEN 21
Aperture	F/1.8	F/4.5
Exposure Time	2 Sec.	1/500 Sec.
Equivalent Focal Length	N/A MM	38.406 MM

Resolution:

Angle Off Axis	0	10	20	30	35
Resolution L/MM High Contrast	82/82	84/84	108/89	98/51	79/16

NOTE: Index Resolution of 73 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:

.0002 "/.937 Inches .0004 "/2.25 Inches

[redacted]

PRELIMINARY CLOCK CORRELATION:

ORBIT	CORRECTED SYSTEM TIME	CLOCK TIME	DIFFERENCE
9	36932.054	215619.829	
16	76481.013	255168.792	
25	37537.863	302625.646	
32	77078.279	342166.066	
41	38125.748	389613.539	
47	72224.753	423712.548	
56	33263.770	471151.569	
63	72786.657	510674.460	
72	33816.369	21233.264	
79	73347.237	60764.136	

SYSTEM NO. J-18
VEHICLE NO. 1608
MISSION NO. 1016-1
CAMERA NOS. 132 & 133

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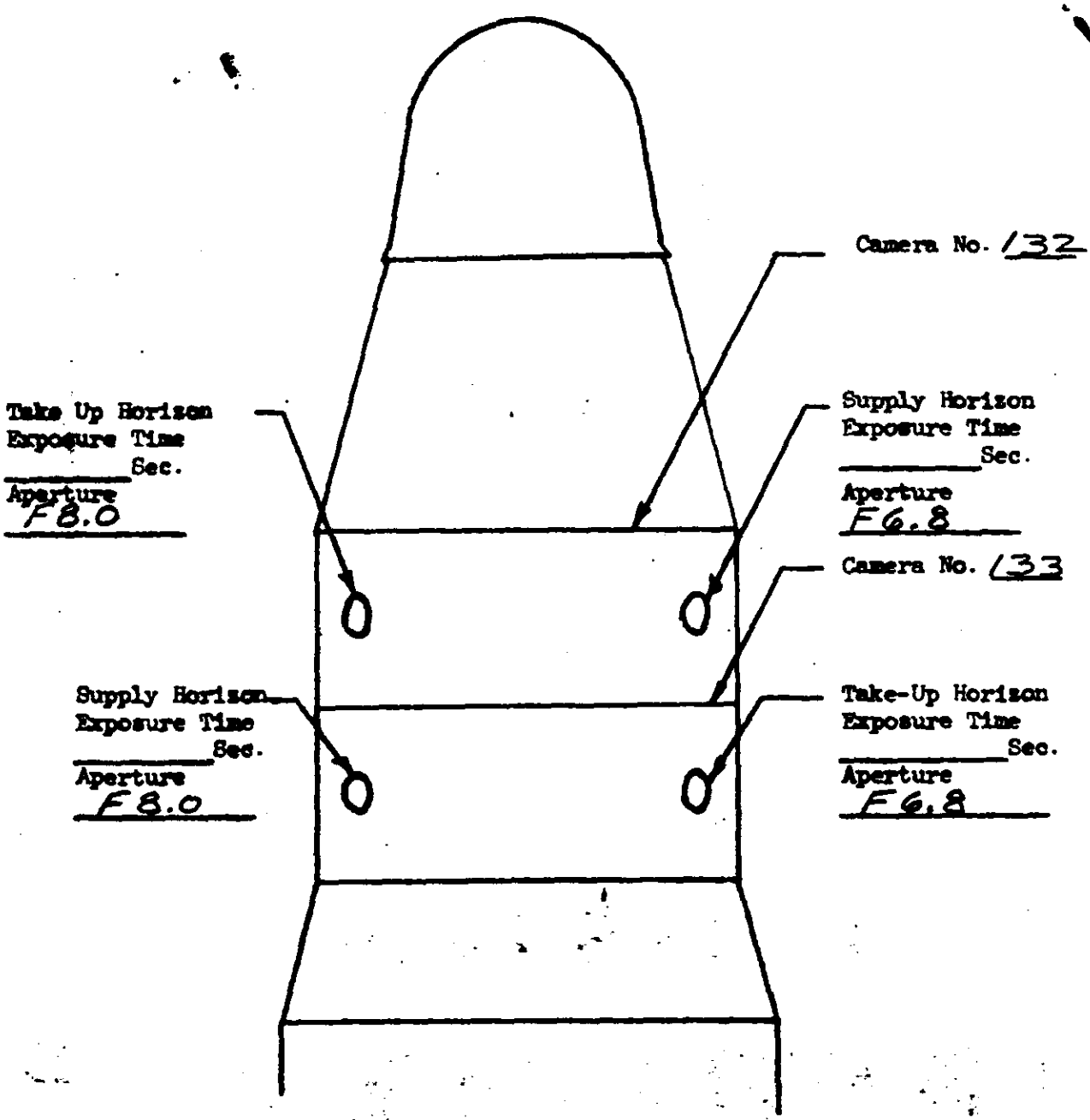
HORIZON LENS SETTINGS (Viewed from top of vehicle inflight)



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A. 1016-1
B. DRY
C. PERFORMANCE ESTIMATE

SUB	PROG		CAM NO.	PAN FR.	SI FR	LAT. ON	LAT. OFF	TIME ON ZD ST	TUR NO	TUR SEC.	DUR SOLAR SEC	EXPOS. ON	EXPOS. OFF
LAUNCH			132	120	17								
LAUNCH			133	120									
1	4	0	132	15	02	252	250	1581014	7	4 1376	40 16 18	4.8	4.7
1	4	0	133	15		253	251	1581014	7	4 1376	40 15 17	3.3	3.3
2	2	1	132	20	03	263	260	1586266	7	4 1185	57 4 8	5.1	4.9
2	2	1	133	20		264	261	1586266	7	4 1185	57 3 7	3.5	3.4
3	6	1	132	42	06	257	250	16 5411	7	4 1292	112 11 18	4.7	4.4
3	6	1	133	42		258	251	16 5411	7	4 1292	112 10 17	3.3	3.1
5	6	1	132	25	03	252	248	1616373	7	4 1379	64 16 20	4.4	4.3
5	6	1	133	25		253	249	1616373	7	4 1379	64 15 19	3.1	3.0
5	6	2	132	52	08	246	237	1616474	7	4 1479	127 22 30	4.2	4.0
5	6	2	133	52		247	238	1616474	7	4 1479	127 22 30	3.0	2.8
6	6	1	132	33	04	258	253	1621714	7	4 1281	89 10 15	4.7	4.4
6	6	1	133	33		259	253	1621714	7	4 1281	89 9 15	3.3	3.2
6	6	2	132	24	04	241	237	1621994	7	4 1561	55 27 31	4.1	4.0
6	6	2	133	23		241	238	1621994	7	4 1561	55 27 30	2.9	2.8
6	6	3	132	63	09	233	223	1622109	7	4 1676	146 34 43	3.9	3.8
6	6	3	133	62		234	224	1622109	7	4 1676	146 34 43	2.8	2.7
6	6	4	132	38	05	201	304	1622590	7	4 2157	88 61 64	3.9	4.0
6	6	4	133	37		202	303	1622590	7	4 2157	88 60 64	2.8	2.9
6	6	5	132	21	03	306	310	1622716	7	4 2283	49 65 67	4.1	4.2
6	6	5	133	20		305	309	1622716	7	4 2283	49 65 66	2.9	3.0
8	6	1	132	107	16	262	245	1632524	7	4 1266	272 6 23	4.6	4.0
8	6	1	133	105		263	246	1632524	7	4 1266	272 5 22	3.3	2.8
9	2	0	132	10	01	139	142	1636864	7	4 168	50-57-55	9.1	9.0
9	2	0	133	10		137	140	1636864	7	4 168	50-59-56	6.4	6.3
10	2	1	132	85	12	203	310	1644316	7	4 2186	205 60 67	3.9	4.2
10	2	1	133	84		204	309	1644316	7	4 2186	205 59 66	2.8	3.0
14	3	1	132	31	05	222	218	1665781	7	4 1911	70 44 48	3.9	3.9
14	3	1	133	30		223	219	1665781	7	4 1911	70 43 48	2.8	2.8
15	3	1	132	23	03	248	245	1670818	7	4 1511	56 20 23	4.3	4.2
15	3	1	133	23		249	246	1670818	7	4 1511	56 19 22	3.0	3.0
15	3	2	132	24	03	240	237	1670943	7	4 1636	56 27 31	4.1	4.0
15	3	2	133	23		241	238	1670943	7	4 1636	56 27 30	2.9	2.9
15	3	3	132	24	04	233	229	1671058	7	4 1751	56 35 38	4.0	3.9
15	3	3	133	24		234	230	1671058	7	4 1751	56 34 37	2.8	2.8
16	3	0	132	16	02	238	235	1676424	7	4 1682	37 30 32	4.1	4.1
16	3	0	133	16		238	236	1676424	7	4 1682	37 29 32	2.9	2.8
18	8	1	132	21	03	262	259	17 496	7	4 1287	57 5 8	4.8	4.6
18	8	1	133	21		263	260	17 496	7	4 1287	57 4 8	3.4	3.2
19	8	1	132	29	04	254	250	17 6068	7	4 1425	70 14 18	4.2	4.1
19	8	1	133	29		255	251	17 6068	7	4 1425	70 13 17	3.0	2.9
20	8	1	132	94	14	261	246	1711402	7	4 1326	236 7 22	4.5	4.0
20	8	1	133	93		261	247	1711402	7	4 1326	236 6 21	3.2	2.8
21	8	1	132	37	05	254	248	1716955	7	4 1444	88 14 20	4.2	4.0
21	8	1	133	36		255	249	1716955	7	4 1444	88 13 19	3.0	2.9

[redacted]

[redacted]

21	8	2	132	77	11	243	231	1717129	7	4	1618	177	25	37	3.9	3.8
21	8	2	133	76		244	232	1717129	7	4	1618	177	25	36	2.8	2.7
22	5	1	132	29	04	257	253	1722335	7	4	1390	73	11	15	4.4	4.2
22	5	1	133	29		258	254	1722335	7	4	1390	73	10	14	3.1	3.0
22	5	2	132	85	12	232	220	1722729	7	4	1784	191	36	47	3.8	3.8
22	5	2	133	84		233	220	1722729	7	4	1784	191	35	47	2.7	2.7
24	8	1	132	103	15	256	241	1733229	7	4	1407	247	12	28	4.2	3.9
24	8	1	133	102		257	241	1733229	7	4	1407	247	11	27	3.0	2.7
25	4	1	132	71	10	249	239	1738778	7	4	1515	168	19	30	4.1	3.9
25	4	1	133	71		250	239	1738778	7	4	1515	168	18	29	2.9	2.7
26	1	1	132	25	04	303	307	1745028	7	4	2330	62	66	68	4.2	4.3
26	1	1	133	25		302	306	1745028	7	4	2330	62	66	68	3.0	3.0
30	3	1	132	31	04	224	220	1766352	7	4	1920	71	43	48	3.9	3.9
30	3	1	133	29		225	220	1766352	7	4	1920	71	43	47	2.9	2.9
32	3	0	132	17	02	238	235	1777019	7	4	1716	39	30	33	4.0	4.0
32	3	0	133	16		239	236	1777019	7	4	1716	39	30	32	3.0	3.0
34	5	1	132	23	04	262	258	18	1109	7	4	1338	57	6	9	4.5	4.3
34	5	1	133	22		262	259	18	1109	7	4	1338	57	5	9	3.2	3.1
36	5	1	132	97	14	256	241	1812081	7	4	1444	232	12	27	4.2	3.9
36	5	1	133	96		256	242	1812081	7	4	1444	232	11	27	3.0	2.7
37	5	1	132	50	07	257	249	1817501	7	4	1429	121	11	19	4.2	4.0
37	5	1	133	49		257	250	1817501	7	4	1429	121	10	18	3.0	2.8
37	5	2	132	51	07	244	236	1817708	7	4	1636	116	25	32	3.9	3.8
37	5	2	133	51		245	237	1817708	7	4	1636	116	24	31	2.8	2.7
37	5	3	132	79	11	233	221	1817877	7	4	1805	177	36	47	3.8	3.8
37	5	3	133	78		234	222	1817877	7	4	1805	177	35	46	2.7	2.7
38	7	1	132	43	06	253	247	1822994	7	4	1490	103	15	22	4.1	4.0
38	7	1	133	43		254	247	1822994	7	4	1490	103	14	21	2.9	2.8
38	7	2	132	105	15	241	226	1823185	7	4	1680	237	27	43	3.9	3.8
38	7	2	133	104		242	226	1823185	7	4	1680	237	26	42	2.7	2.6
39	5	1	132	130	19	262	243	1828280	7	4	1331	318	5	26	4.4	3.8
39	5	1	133	130		263	243	1828280	7	4	1331	318	4	25	3.1	2.7
40	6	1	132	75	11	261	250	1833734	7	4	1351	189	6	18	4.5	4.1
40	6	1	133	75		262	251	1833734	7	4	1351	189	5	18	3.1	2.9
40	6	2	132	57	08	247	239	1833962	7	4	1580	133	21	30	4.0	3.9
40	6	2	133	57		248	240	1833962	7	4	1580	133	20	29	2.8	2.7
41	8	1	132	47	07	205	301	1840037	7	4	2220	114	61	67	4.0	4.2
41	8	1	133	47		206	300	1840037	7	4	2220	114	61	67	2.8	3.0
47	8	0	132	16	02	238	235	1872166	7	4	1748	37	31	33	4.1	4.1
47	8	0	133	15		238	236	1872166	7	4	1748	37	30	32	3.0	3.0
52	9	1	132	105	15	252	237	1912710	7	4	1524	244	16	32	4.1	3.8
52	9	1	133	104		253	238	1912710	7	4	1524	244	15	31	2.9	2.7
54	3	1	132	27	04	257	253	1923500	7	4	1448	67	10	15	4.3	4.2
54	3	1	133	26		258	254	1923500	7	4	1448	67	9	14	3.1	3.0
54	3	2	132	35	05	251	246	1923602	7	4	1550	83	17	22	4.1	4.0
54	3	2	133	34		252	247	1923602	7	4	1550	83	16	22	3.0	2.9
55	2	1	132	42	06	260	254	1928883	7	4	1399	107	7	14	4.4	4.2
55	2	1	133	42		261	255	1928883	7	4	1399	107	6	13	3.2	3.0
55	2	2	132	24	03	250	246	1929063	7	4	1580	56	19	22	4.1	4.0
55	2	2	133	23		250	247	1929063	7	4	1580	56	18	22	2.9	2.9
56	3	1	132	58	08	250	242	1934487	7	4	1600	134	18	27	4.0	3.9
56	3	1	133	58		251	242	1934487	7	4	1600	134	17	26	2.8	2.7
57	2	1	132	58	09	205	303	1940607	7	4	2282	145	62	71	4.1	4.4
57	2	1	133	58		206	302	1940607	7	4	2282	145	62	70	2.9	3.1

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61	3	1	132	24	03	239	236	1961830	7	4	1777	56	29	33	4.1	4.0
61	3	1	133	24		240	237	1961830	7	4	1777	56	28	32	2.8	2.8
62	3	1	132	24	04	242	239	1967218	7	4	1734	57	26	30	4.1	4.1
62	3	1	133	24		243	239	1967218	7	4	1734	57	25	29	2.9	2.8
62	3	2	132	24	03	236	233	1967311	7	4	1826	56	32	36	4.0	4.0
62	3	2	133	24		237	234	1967311	7	4	1826	56	31	35	2.8	2.8
63	4	0	132	17	02	238	235	1972727	7	4	1811	40	31	34	4.1	4.1
63	4	0	133	17		238	236	1972727	7	4	1811	40	30	33	2.9	2.9
69	8	1	132	30	05	258	253	2018615	7	4	1509	72	9	14	4.2	4.1
69	8	1	133	30		258	254	2018615	7	4	1509	72	9	13	3.0	2.9
69	8	2	132	48	07	242	235	2018870	7	4	1763	109	27	34	3.9	3.8
69	8	2	133	47		243	235	2018870	7	4	1763	109	26	33	2.8	2.7
69	8	3	132	73	10	232	221	2019015	7	4	1909	168	36	48	3.8	3.9
69	8	3	133	72		233	222	2019015	7	4	1909	168	36	47	2.7	2.8
70	3	1	132	51	07	260	253	2024005	7	4	1469	123	7	15	4.2	4.0
70	3	1	133	50		261	254	2024005	7	4	1469	123	6	14	3.0	2.8
70	3	2	132	38	06	248	243	2024202	7	4	1665	87	20	26	3.9	3.9
70	3	2	133	38		249	243	2024202	7	4	1665	87	19	25	2.8	2.7
71	2	1	132	44	06	260	254	2029439	7	4	1463	107	6	14	4.2	4.1
71	2	1	133	43		261	255	2029439	7	4	1463	107	6	13	3.0	2.9
72	4	1	132	80	11	257	246	2034923	7	4	1515	187	10	22	4.1	3.8
72	4	1	133	79		258	247	2034923	7	4	1515	187	9	22	2.9	2.7
77	6	1	132	22	04	222	218	2062649	7	4	2085	55	47	51	4.3	4.3
77	6	1	133	21		223	219	2062649	7	4	2085	55	46	50	3.1	3.2
79	6	0	132	17	02	237	234	2073292	7	4	1864	40	32	35	4.2	4.2
79	6	0	133	16		237	235	2073292	7	4	1864	40	31	34	3.1	3.1

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

A REVOLUTION 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
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

NOTE - T/M DATA INDICATES NORMAL INSTRUMENT OPERATION

J- 18 RAMP R- 7 A- 4

[redacted]

[redacted]

R= 0.3250 A= 0.1290 [redacted]

TIME	PERIOD	CPS	GAV
0	5.102	0.1960	0.01773
50	5.093	0.1963	0.01776
100	5.068	0.1973	0.01785
150	5.026	0.1990	0.01800
200	4.969	0.2013	0.01820
250	4.898	0.2042	0.01847
300	4.814	0.2077	0.01879
350	4.720	0.2119	0.01916
400	4.617	0.2166	0.01959
450	4.507	0.2219	0.02007
500	4.392	0.2277	0.02059
550	4.274	0.2340	0.02116
600	4.154	0.2407	0.02177
650	4.033	0.2479	0.02243
700	3.913	0.2555	0.02311
750	3.795	0.2635	0.02383
800	3.680	0.2718	0.02458
850	3.568	0.2803	0.02535
900	3.459	0.2891	0.02615
950	3.355	0.2980	0.02695
1000	3.256	0.3071	0.02778
1050	3.162	0.3163	0.02861
1100	3.070	0.3257	0.02946
1150	2.959	0.3380	0.03057
1200	2.856	0.3502	0.03167
1250	2.762	0.3621	0.03275
1300	2.676	0.3737	0.03380
1350	2.598	0.3849	0.03481
1400	2.528	0.3955	0.03577
1450	2.466	0.4055	0.03667
1500	2.411	0.4147	0.03751
1550	2.363	0.4231	0.03827
1600	2.322	0.4307	0.03895
1650	2.287	0.4372	0.03955
1700	2.258	0.4428	0.04005
1750	2.236	0.4473	0.04045
1800	2.219	0.4506	0.04076
1850	2.208	0.4528	0.04096
1900	2.203	0.4539	0.04105
1950	2.204	0.4538	0.04104
2000	2.210	0.4525	0.04093
2050	2.222	0.4500	0.04070
2100	2.240	0.4465	0.04038
2150	2.264	0.4418	0.03996
2200	2.294	0.4360	0.03943
2250	2.330	0.4292	0.03882
2300	2.372	0.4215	0.03812
2350	2.422	0.4129	0.03735
2400	2.478	0.4035	0.03650
2450	2.542	0.3934	0.03558
2500	2.613	0.3827	0.03461
2550	2.692	0.3714	0.03359

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2600	2.780	0.3597	0.03254
2650	2.876	0.3477	0.03145
2700	2.980	0.3355	0.03035
2750	3.089	0.3237	0.02928
2800	3.180	0.3145	0.02844
2850	3.276	0.3053	0.02761
2900	3.376	0.2962	0.02679
2950	3.481	0.2873	0.02598
3000	3.590	0.2786	0.02520
3050	3.703	0.2701	0.02443
3100	3.819	0.2619	0.02369
3150	3.937	0.2540	0.02297
3200	4.057	0.2465	0.02229
3250	4.178	0.2394	0.02165
3300	4.298	0.2327	0.02104
3350	4.416	0.2265	0.02048
3400	4.530	0.2208	0.01997
3450	4.638	0.2156	0.01950
3500	4.740	0.2110	0.01908
3550	4.832	0.2070	0.01872
3600	4.913	0.2035	0.01841
3650	4.981	0.2007	0.01816
3700	5.036	0.1986	0.01796
3750	5.074	0.1971	0.01782
3800	5.097	0.1962	0.01775

PAYLOAD J-18 VEH 1608 MISSION 1016-1
ORDER FIT 1

SYS TIME I/P	CL TIME I/P	COMP SYS TM	DELTA ST	REV	STA
36932.055	215619.82890	36932.05390	0.00183	9	1
76481.012	255168.79190	76481.01320	-0.00042	16	1
37537.861	302625.64590	37537.86270	-0.00075	25	1
77078.281	342166.06590	77078.27900	0.00218	32	1
38125.745	389613.53890	38125.74750	-0.00213	41	1
72224.753	423712.54790	72224.75330	-0.00003	47	1
33263.768	471151.56890	33263.76980	-0.00117	56	1
72786.652	510674.45990	72786.65710	-0.00476	63	1
33816.371	21233.26390	33816.36860	0.00306	72	1
73347.239	60764.13590	73347.23690	0.00220	79	1

A0=-0.17868775470 06 A1= 0.999999905733D 00
SIGMA=0.00217 NO. POINTS= 10
RATIO OF CLOCK TIME TO SYS TIME= 0.100000009427D 01

PAYLOAD J-18 VEH 1608 MISSION 1016-1
3 ORDER FIT 2 GCT

SYS TIME I/P	CL TIME I/P	COMP SYS TM	DELTA ST	REV	STA
36932.055	215619.82890	36932.05580	-0.00003	9	1
76481.012	255168.79190	76481.01390	-0.00111	16	1
37537.861	302625.64590	37537.86230	-0.00040	25	1
77078.281	342166.06590	77078.27800	0.00311	32	1
38125.745	389613.53890	38125.74620	-0.00086	41	1
72224.753	423712.54790	72224.75200	0.00124	47	1
33263.768	471151.56890	33263.76890	-0.00024	56	1

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72786.652	510674.45990	72786.65670	-0.00441	63	1
33816.371	21233.26390	33816.36930	0.00236	72	1
73347.239	60764.13590	73347.23870	0.00034	79	1

A0=-0.17868774170 06 A1= 0.999999835513D 00
A2= 0.86343391711050-13
SIGMA=0.00187 NO. POINTS= 10

[redacted]