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CORONA "J" FLIGHT DATA BOOK

SYSTEM NO. J-14

VEHICLE NO. 1611

MISSION NO. 1017-1

CAMERA NOS. 140 & 165

Prepared by [REDACTED]

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MISSION NO. 1017-1
CAMERA NOS. 140 & 165

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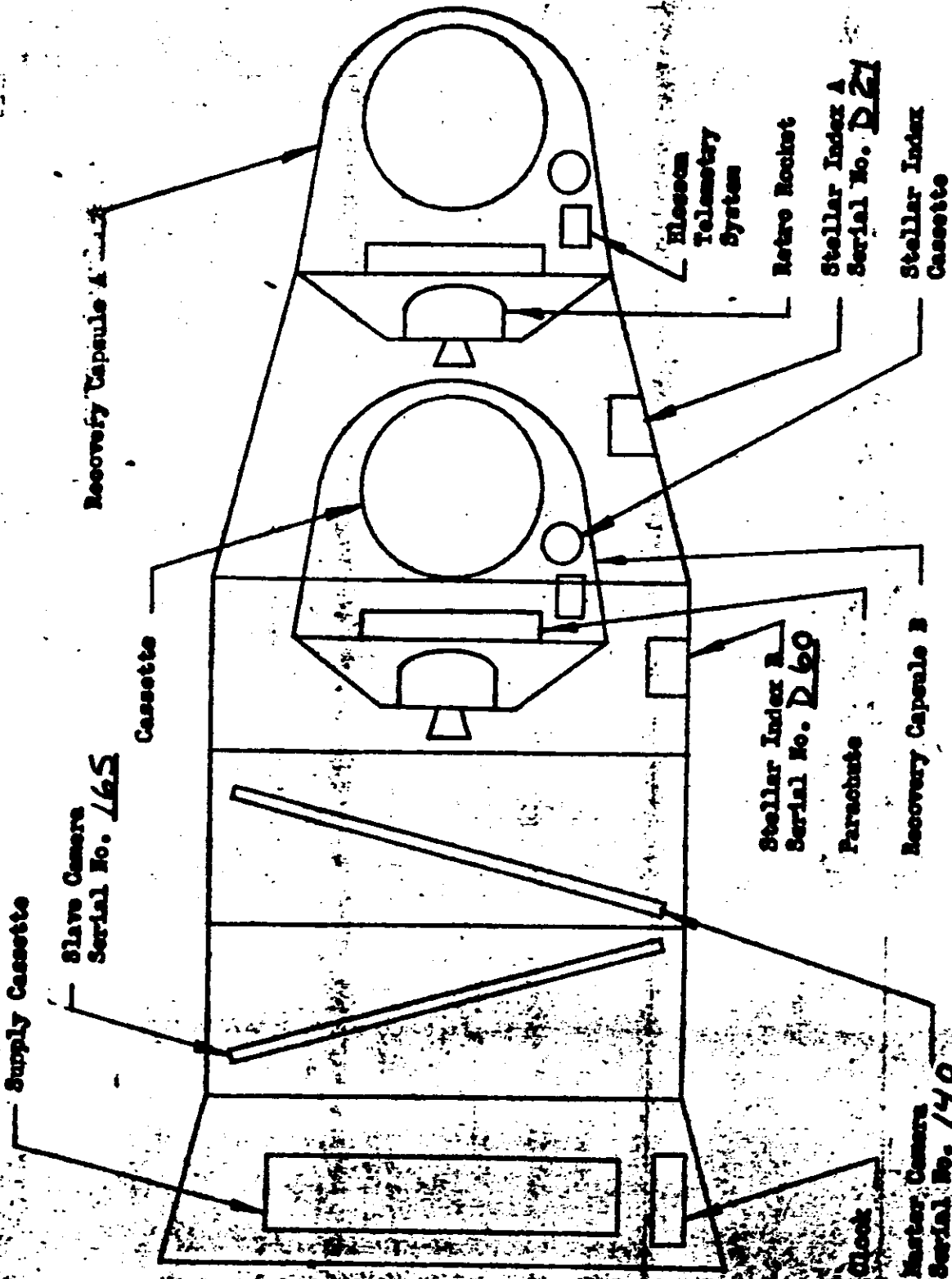
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VEHICLE LAYOUT:

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GENERAL FLIGHT DATA:

Master Camera Serial No. 140

Slave Camera Serial No. 165

Stellar Index "A" Serial No. D 21/21/21

Stellar Index "B" Serial No. D 60/68/1

Launch Date 2/25/65

Reactivation Date N/A

Reactivation Orbit No. N/A

Orbital Parameters: (Rev. 40)

Period 89.99 Min.

Eccentricity 0.0145

Perigee 97.29 NM

Perigee Latitude 25.98 Deg. N DESC.

Apogee 201.90 NM

Inclination Angle 75.07 Deg.

Recovery Orbit No. 81

Recovery Date 2 MARCH 1965

REMARKS:

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SYSTEM NO. J-14
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CAMERA NOS. 140 & 165

LENS SETTINGS AND FILM TYPES:

Panoramic Camera Settings:

	Camera No. <u>140</u>	Camera No. <u>165</u>
Panoramic Optics Slit Width	<u>0.250</u> in.	<u>0.175</u> in.
Panoramic Optics Filter Type	<u>WRATTEN 25</u>	<u>WRATTEN 21</u>
Horison Optics Exp. Time	<u>1/100</u> sec.	<u>1/100</u> sec.
Horison Optics Aperture	<u>F6.8 SUPPLY</u> <u>F8.0 TAKE-UP</u>	<u>F8.0 SUPPLY</u> <u>F6.8 TAKE-UP</u>
Horison Optics Filter Type	<u>WRATTEN 25</u>	<u>WRATTEN 25</u>

Stellar Index Camera Settings:

	Stellar Index A		Stellar Index B	
	Stellar	Index	Stellar	Index
Exposure Time	<u>2.0</u>	<u>1/500</u>	<u>2.0</u>	<u>1/500</u>
Aperture Setting	<u>F1.8</u>	<u>F4.5</u>	<u>F1.8</u>	<u>F4.5</u>
Filter Type	<u>NONE</u>	<u>WRATTEN 21</u>	<u>NONE</u>	<u>WRATTEN 21</u>
Ratio: One Stellar Index Frame Per	<u>7</u>		Master Camera Frames.	

Film:

Panoramic Cameras:

	Camera No. <u>140</u>	Camera No. <u>165</u>
Type	<u>SO-132</u>	<u>SO-132</u>
Length	<u>16000</u> ft.	<u>16000</u> ft.
Splices	<u>5</u>	<u>4</u>
Emul. Data	<u>85-51-12-4</u>	<u>85-51-12-4</u>

Stellar Index Cameras:

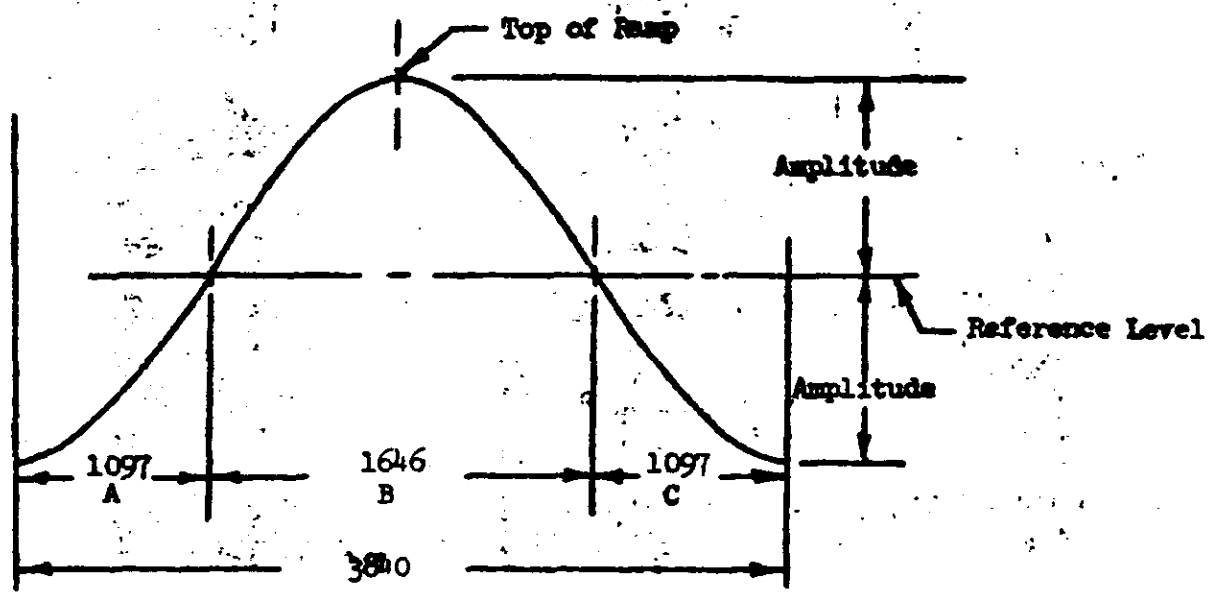
	Stellar Index A		Stellar Index B	
	Stellar	Index	Stellar	Index
Type	<u>SO-102</u>	<u>SO-130</u>	<u>SO-102</u>	<u>SO-130</u>
Emul. Data	<u>85-51-12-4</u>	<u>85-51-12-4</u>	<u>85-51-12-4</u>	<u>85-51-12-4</u>

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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:

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

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

Scan Velocity Computation:

$$\text{Scan Velocity (In/Sec)} = \frac{48 \pi}{CP} = 159.796 \times CPS$$

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

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

WHERE: $X = \frac{\text{Time Up Ramp (Seconds)}}{1047.6942}$ $R = \frac{1}{2} (CPS(\text{top}) + CPS(\text{bottom}))$
 $A = \frac{1}{2} (CPS \text{ top} - CPS \text{ bottom})$ $CP = \text{Camera Cycle Period in Sec/Cycle}$
 CPS = Camera Cycle Rate in Cycles/Sec
 SLIT = Slit Width in Inches

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CYCLE PERIOD DATA:

PRE-FLIGHT CYCLE PERIODS:

V/H Ramp Level	V/H Ramp Amplitude	Cycle Period Seconds		Time Up Ramp Sec
		Master	Slave	
5	6	4.226	4.253	125
5	6	2.308	2.285	1617
5	6	4.198	4.223	174
5	6	2.283	2.260	1658
4	6	2.225	2.226	1645
4	6	2.215	2.221	1765

IN-FLIGHT CYCLE PERIODS

V/H Ramp Level	V/H Ramp Amplitude	Cycle Period Seconds		Orbit No.	Time Up Ramp Sec
		Master	Slave		
5	6	4.085	4.115	9	125
5	6	2.320	2.298	16	1617
5	6	4.064	4.108	25	174
5	6	2.278	2.281	32	1658
4	6	2.240	2.235	48	1645
4	6	2.215	2.217	63	1765

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SYSTEM NO. J-14
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CAMERA NOS. 140 & 165



COPY NO. _____

LENS DATA SUMMARY: Master Camera No. 140

Lens Serial No. 1192435

Slit Width 0.250 Inch

Filter Type WRATTEN 25

Equivalent Operational Focal Length 609.628 mm

Resolution:

Static:

	Lines/MM	Film Type	Target Contrast
bench Test	<u>153</u>	<u>S0-132</u>	<u>LOW</u>
Other	<u>237</u>	<u>S0-132</u>	<u>HIGH</u>

Dynamic:

Itak <u>[REDACTED]</u>	<u>165</u>	<u>S0-132</u>	<u>HIGH</u>
Itak <u>[REDACTED]</u>	<u>129</u>	<u>S0-132</u>	<u>LOW</u>
AP	<u>171</u>	<u>S0-132</u>	<u>HIGH</u>
AP	<u>120</u>	<u>S0-132</u>	<u>LOW</u>
Other	_____	_____	_____

Note: Itak Post Vibration Resolution of 171 lines/MM Reported In

Message No. [REDACTED] dated 2/26/65

Distortion - Positive (Pinpoint)

Angle Off Axis Deg.	3	2	1	0	359	358	357		
Distortion Millimeters	.007	.005	.001	.000	.001	.004	.007		



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CAMERA NOS. 140 & 165



COPY NO. _____

LENS DATA SUMMARY: (Harrison Cameras for ~~XXXXXXXX~~, Camera No. 140)

	Take-Up	Supply
Lens Serial No.	<u>812314</u>	<u>813524</u>
Exposure Time	<u>1/100 Sec.</u>	<u>1/100 Sec.</u>
Filter Type	<u>UNWRITTEN 2S</u>	<u>UNWRITTEN 2S</u>
Aperture	<u>F8.0</u>	<u>F6.8</u>
Operational Focal Length	<u>55.13 MM</u>	<u>55.22 MM</u>
Radial Distortion:		
10° off Axis	<u>.002 MM</u>	<u>.000 MM</u>
20° off Axis	<u>.005 MM</u>	<u>.008 MM</u>
Tangential Distortion (Maximum Vector)	<u>.008 MM</u>	<u>.009 MM</u>
Resolution:		

Angle off Axis Deg.	0	5	10	15	20	25	27.5	0	5	10	15	20	25	27.5
Radial Resolution	116	116	96	53	65	66	51	164	145	128	112	103	118	91
Tangential Resolution	116	102	95	73	68	51	42	141	129	119	102	91	60	51

79 Lines/MM Avg. 112 Lines/MM Avg.

Notes:

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



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CAMERA NOS. 140 & 165

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LENS DATA SUMMARY: Slave Camera No. 165

Lens Serial No. 143 2435

Slit Width 0.175 Inch

Filter Type WRATTEN 21

Equivalent Operational Focal Length 609.58 MM

Resolution:

Static:

	<u>Lines/MM</u>	<u>Film Type</u>	<u>Target Contrast</u>
Bench Test	<u>239</u>	<u>S0-132</u>	<u>HIGH</u>
Other	<u>140</u>	<u>S0-132</u>	<u>LOW</u>

Dynamic:

Itek [REDACTED]	<u>183</u>	<u>S0-132</u>	<u>HIGH</u>
Itek [REDACTED]	<u>130</u>	<u>S0-132</u>	<u>LOW</u>
AP	<u>182</u>	<u>S0-132</u>	<u>HIGH</u>
AP	<u>113</u>	<u>S0-132</u>	<u>LOW</u>
Other	_____	_____	_____

NOTE: Itek Post Vibration Resolution of 182 lines/MM Reported In

Message No. [REDACTED] dated 7/25/65

Distortion - Positive (Pincushion)

Angle Off Axis Deg.	3	2	1	0	359	358	357		
Distortion Millimeters	<u>.002</u>	<u>.001</u>	<u>.000</u>	<u>.000</u>	<u>.001</u>	<u>.003</u>	<u>.004</u>		

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 CAMERA NOS. 140 + 165

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LENS DATA SUMMARY: (Horizon Cameras for SLAVE Camera No. 165)

	<u>Take-Up</u>	<u>Supply</u>
Lens Serial No.	<u>814026</u>	<u>813552</u>
Exposure Time	<u>1/100</u> Sec.	<u>1/100</u> Sec.
Filter Type	<u>WRATTEN 25</u>	<u>WRATTEN 25</u>
Aperture	<u>F6.8</u>	<u>F8.0</u>
Operational Focal Length	<u>54.60</u> MM	<u>54.11</u> MM
Radial Distortion:		
10° off Axis	<u>1.000</u> MM	<u>1.003</u> MM
20° off Axis	<u>1.006</u> MM	<u>1.010</u> MM
Tangential Distortion (Maximum Vector)	<u>1.003</u> MM	<u>1.007</u> MM

Resolution:

Angle off Axis Deg.	0	10	15	20	25	27.5	
Radial Resolution	170	105	72	63	65	51	
Tangential Resolution	170	104	80	63	65	46	

Angle off Axis Deg.	0	10	15	20	25	27.5	
Radial Resolution	165	140	114	101	77	48	
Tangential Resolution	165	138	112	94	55	42	

88 Lines/MM Avg. 104 Lines/MM Avg.

NOTE:

- Distortion and resolution are read at equivalent operational focal length.
- Resolution is lines per MM on 50-132 film and H16H contrast target.

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**TWO CAMERA
FOR CLIMATE**

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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 $\pm 5^\circ$ of arc so positioned to form an angle of $75.00^\circ \pm 5^\circ$ to the mechanical interface for master camera calibrations and an angle of $75.00^\circ \pm 5^\circ$ 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 $75.00^\circ \pm 5^\circ$ 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 X_{v0} and Y_{v0} are the offsets of Target 1 from the indicated center of format of the panoramic cameras as defined in Paragraph 3.
- 6.0 X_s , Y_s and X_t , Y_t 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 D_{x1} and D_{y1} 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 seen direction offset of the targets defined in Paragraph 2.2 at a fixed distance from the target center in the indicated direction. Dimensions D_{x1} , D_{y1} , D_{x2} and D_{y2} are the offsets of these measurements.

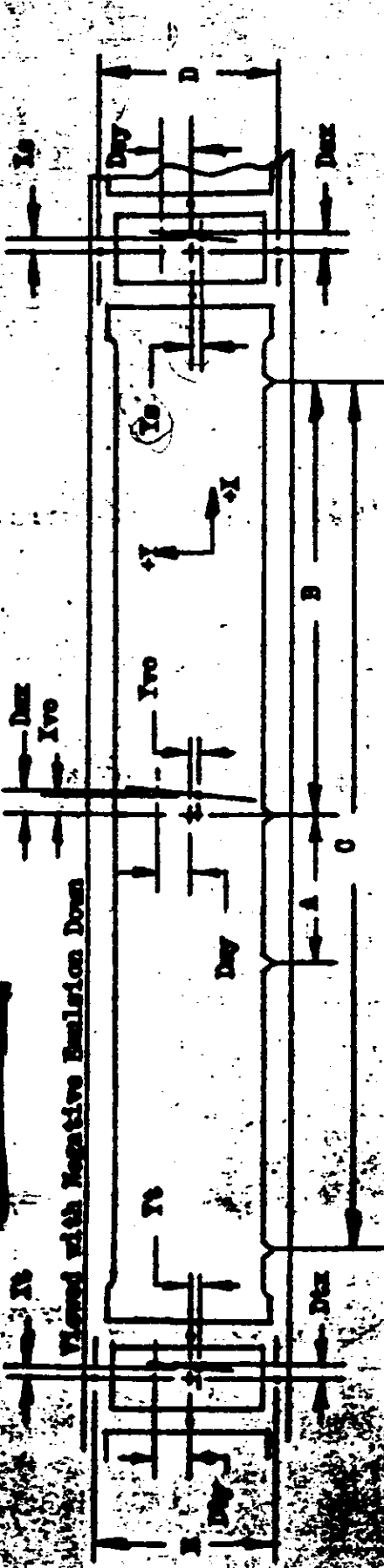
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FORMAT DIMENSIONS: (PANORAMIC CAMERAS)

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Camera No.	Vehicle Motion	Scan Direction
A <u>76.1</u>	Xc <u>+1.126</u>	Dxc <u>-0.124</u>
B <u>355.2</u>	Yc <u>-0.178</u>	Dyc <u>+1.989</u>
C <u>710.1</u>	Zc <u>-0.003</u>	Dzc <u>-0.016</u>
D <u>56,430</u>	Xc <u>+0.014</u>	Dxc <u>-2.205</u>
E <u>56,489</u>	Yc <u>-0.703</u>	Dyc <u>-0.704</u>
	Zc <u>+0.233</u>	Dzc <u>+3.233</u>

Format Dimensions:

Panoramic	Take-Up	Supply
Height	<u>56.004</u>	<u>N/A</u>
Width	<u>755.3</u>	<u>N/A</u>

Notes: 1. All dimensions are in millimeters and are average dimensions of three formats.
 2. Weight of main format is taken at center of format.
 3. X, Y, Z, Dc, Xc and Yc dimensions are taken 100mm above point defining target center.



Format Sign Convention

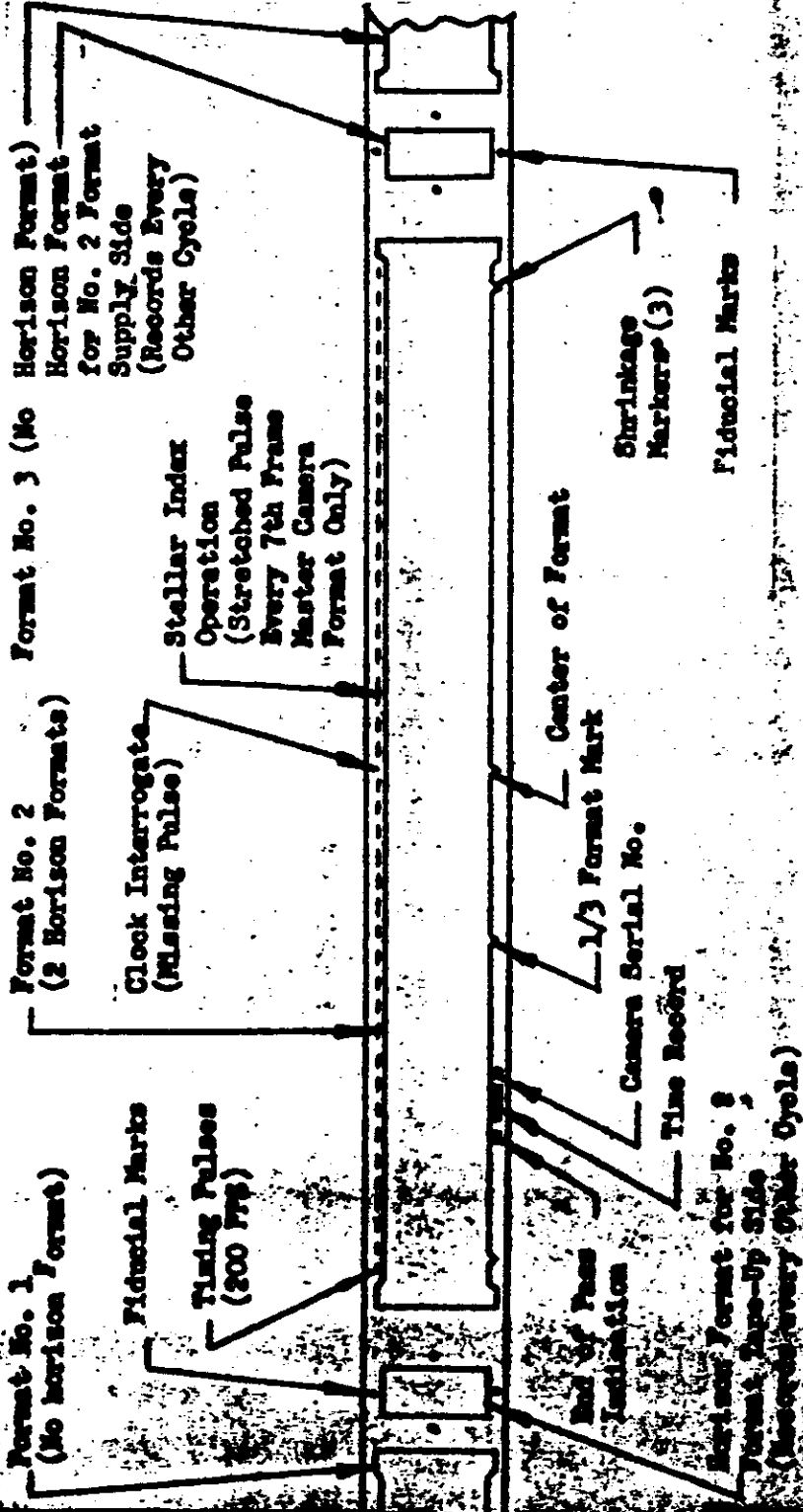
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FORMAT LAYOUT: (PANORAMIC CAMERAS)



Panoramic Camera No. <u>140</u>	Panoramic Camera No. <u>165</u>
Viewed With Negative Emulsion Down	Viewed With Negative Emulsion Down
Direction of Film Transport →	Direction of Film Transport ←
Direction of Scan →	Direction of Scan →
Direction of Vehicle Motion →	Direction of Vehicle Motion ↓

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LENS DATA SUMMARY STELLAR INDEX D21/21/21: A MISSION

	<u>Stellar</u>	<u>Index</u>
Lens Serial No.	<u>10485</u>	<u>811711</u>
Reseau Serial No.	<u>21</u>	<u>21</u>
Filter Type	<u>NONE</u>	<u>WRITTEN 21</u>
Aperture	<u>F1.8</u>	<u>F4.5</u>
Exposure Time	<u>2.0</u> Sec.	<u>1/500</u> Sec.
Equivalent Focal Length	<u>85 (NOM.)</u> MM	<u>38.19</u> MM

Resolution:

Angle Off Axis	0	10	20	30	35
Resolution L/MM High Contrast	<u>74/80</u>	<u>76/75</u>	<u>101/78</u>	<u>90/48</u>	<u>77/33</u>

NOTE: Index Resolution of 70.0 Lines/MM AWAR

Read From 4400 Film.

Distortion:

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

Alignment:

.0013 ± 1.931 Inches .0013 ± 2.25 Inches

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CAMERA NOS. 140+165

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LENS DATA SUMMARY STELLAR INDEX D60/68/01: B MISSION

	<u>Stellar</u>	<u>Index</u>
Lens Serial No.	<u>10554</u>	<u>817015</u>
Reseau Serial No.	<u>01</u>	<u>68</u>
Filter Type	<u>NONE</u>	<u>WRITTEN 21</u>
Aperture	<u>F1.8</u>	<u>F4.5</u>
Exposure Time	<u>2.0</u> ✓ Sec.	<u>1/500</u> Sec.
Equivalent Focal Length	<u>85 (NOM.)</u> MM	<u>38.06</u> MM

Resolution:

Angle Off Axis	0	10	20	30	35
Resolution L/MM High Contrast	104/104	117/104	104/93	75/42	75/30

NOTE: Index Resolution of 71.7 ✓ Lines/MM AWAR
Read From 4400 Film.

Distortion:

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

Alignment:

.0010 "1.937 Inches .0005 "2.25 Inches

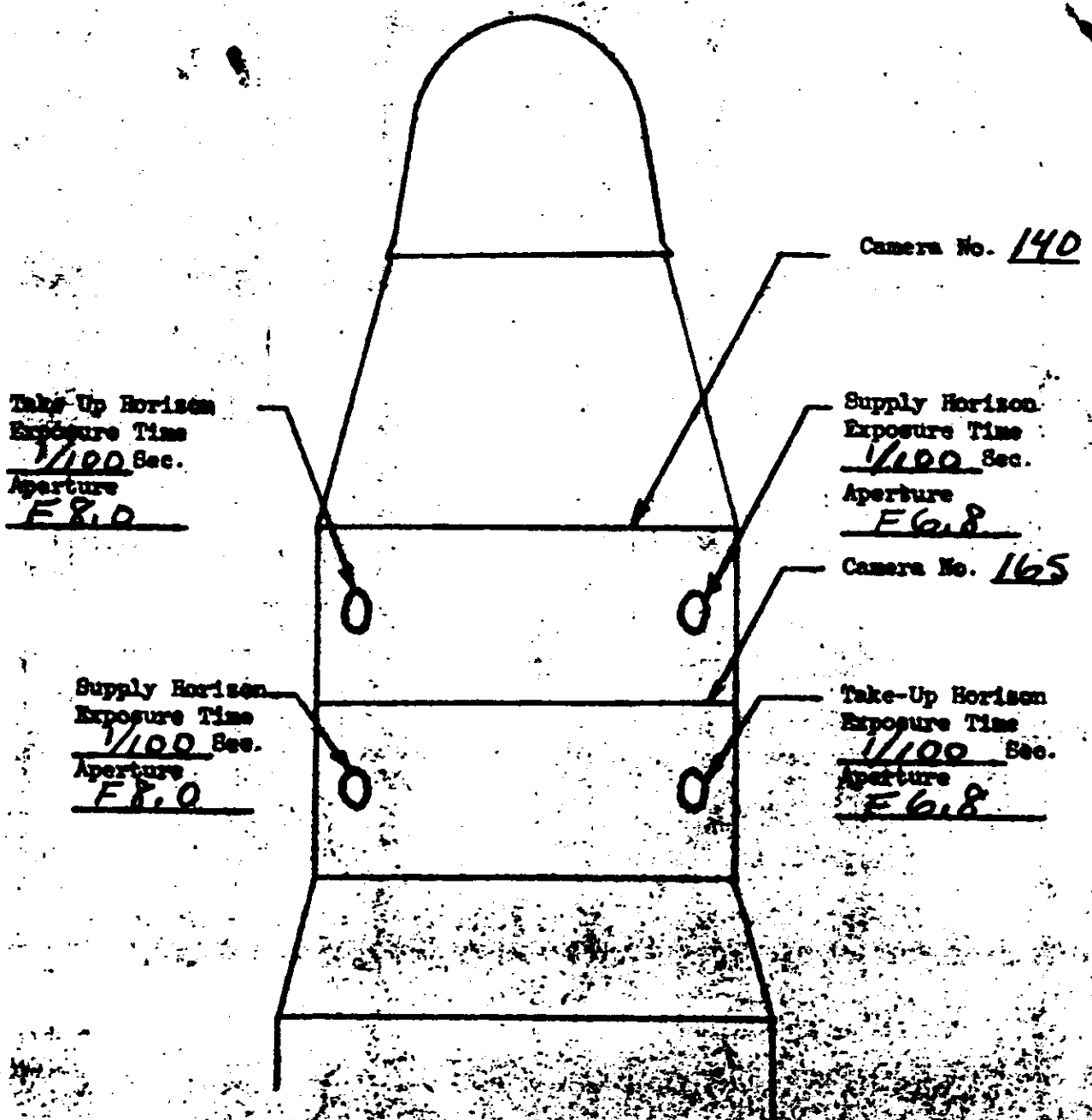
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HORIZON LINE SETTINGS (Viewed from top of aircraft in flight)



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Flight Direction

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A. 1017-1

B. DRY

C. PERFORMANCE ESTIMATE

COPY NO. _____

PERFORMANCE ESTIMATE - MISSION 1017-1, LAUNCH 2144Z 2-25-65
OPERATIONS SUMMARY

FWD PAN CAMERA NUMBER 140

OPN NO	FRA	LAT	LONG	HEIGHT	RANGE	DA	S-TIM	L-TIM
PRE-FLT	163	34.8	-120.5	122	1			
1 4 0	9	ON 52.4	-152.0	687839	712947	25	83628	13 05
		OFF 51.0	-151.1	681247	706107	25	83652	13 10
2 1 1	26	ON 74.3	135.3	832868	863488	26	02186	09 37
		OFF 72.2	150.8	806739	836360	26	02261	10 40
2 1 2	71	ON 70.7	157.3	793414	822527	26	02299	11 07
		OFF 60.8	177.7	728774	755431	26	02493	12 32
4 7 1	50	ON 69.5	116.0	781045	809687	26	13135	11 22
		OFF 62.4	130.2	735489	762401	26	13272	12 21
4 7 2	30	ON 51.6	140.4	681501	706370	26	13452	13 05
		OFF 47.2	143.0	662593	686750	26	13524	13 17
5 7 1	76	ON 70.4	90.2	787020	815890	26	18517	11 09
		OFF 59.3	111.2	717506	743736	26	18729	12 36
5 7 2	29	ON 52.6	117.0	684742	709734	26	18840	13 02
		OFF 48.1	119.8	665493	689759	26	18912	13 14
5 7 3	24	ON 40.7	123.4	638241	661482	26	19029	13 30
		OFF 37.1	124.7	627314	650145	26	19084	13 37
6 7 1	72	ON 71.4	63.9	793669	822792	26	23897	10 53
		OFF 61.2	86.2	726815	753397	26	24099	12 26
6 7 2	30	ON 57.6	90.2	707511	733363	26	24161	12 43
		OFF 53.1	94.0	685858	710892	26	24236	12 59
6 7 3	45	ON 28.6	104.8	606571	628624	26	24618	13 49
		OFF 22.1	106.5	597180	618882	26	24718	13 57
7 5 1	29	ON 55.9	69.0	698046	723540	26	29592	12 49
		OFF 51.4	72.4	677493	702211	26	29665	13 03
7 5 2	30	ON 47.9	74.5	662861	687028	26	29721	13 13
		OFF 43.4	76.8	645723	669245	26	29793	13 23
7 5 3	38	ON 35.0	80.1	619942	642497	26	29924	13 39
		OFF 29.4	81.8	607385	629469	26	30009	13 47
8 3 1	32	ON 65.7	34.0	750598	778083	26	34823	11 56
		OFF 61.0	41.1	723129	749572	26	34909	12 26
9 4 0	11	ON 38.9	-115.7	1086575	1127013	26	39189	03 10
		OFF 41.8	-114.6	1073915	1113857	26	39236	03 15
9 4 1	53	ON 51.8	26.7	677336	702048	26	40454	13 01
		OFF 43.4	31.3	644057	667517	26	40598	13 22
10 8 1	75	ON 5.1	19.4	598340	620084	26	46584	14 14
		OFF -6.5	21.8	622630	645284	26	46760	14 26
16 8 0	16	ON 38.1	-125.4	621990	644621	26	78494	13 26
		OFF 35.7	-124.5	615482	637869	26	78532	13 30
20 4 1	28	ON 67.8	117.2	749832	777287	27	13206	11 28
		OFF 63.7	124.9	725125	751644	27	13284	12 01
20 4 2	29	ON 52.0	136.8	667987	692347	27	13482	12 51
		OFF 47.5	139.5	650308	674003	27	13553	13 03
21 4 1	38	ON 72.6	77.6	786077	814911	27	18495	10 18
		OFF 67.8	94.3	749480	776922	27	18606	11 27
21 4 2	35	ON 63.9	102.0	725408	751937	27	18681	11 59
		OFF 58.6	108.6	697526	723000	27	18774	12 27
21 4 3	29	ON 53.0	113.4	671751	696253	27	18867	12 48



			OFF	48.5	116.3	653638	677458	27	18939	13	00	
22	4	1	28	ON	70.6	63.4	768460	796623	27	23946	10	52
			OFF	66.8	74.0	741949	769106	27	24028	11	36	
22	4	2	28	ON	57.9	86.6	693546	718870	27	24187	12	29
			OFF	53.5	90.3	673662	698236	27	24259	12	45	
22	4	3	23	ON	41.9	96.8	630736	653695	27	24443	13	14
			OFF	38.4	98.2	620562	643140	27	24498	13	21	
22	4	4	37	ON	29.0	101.3	600346	622166	27	24643	13	36
			OFF	23.4	102.8	593515	615079	27	24728	13	43	
23	3	1	41	ON	57.8	63.9	692682	717974	27	29589	12	28
			OFF	51.4	69.0	664379	688604	27	29594	12	51	
23	3	2	30	ON	48.9	70.6	654392	678241	27	29735	12	58
			OFF	44.4	73.0	638290	661533	27	29806	13	08	
23	3	3	41	ON	35.5	76.6	612978	635271	27	29945	13	25
			OFF	29.4	78.5	600943	622786	27	30039	13	34	
24	9	1	55	ON	68.7	24.1	752406	779959	27	34792	11	16
			OFF	60.4	38.5	704910	730663	27	34946	12	16	
24	9	2	57	ON	55.8	43.1	682819	707738	27	35023	12	35
			OFF	46.9	49.0	646700	670259	27	35167	13	02	
24	9	3	23	ON	44.7	50.1	639097	662370	27	35202	13	07
			OFF	41.3	51.7	628189	651053	27	35256	13	14	
25	8	0	12	ON	38.8	-119.1	1065067	1104664	27	39217	02	57
			OFF	41.8	-117.9	1051796	1090874	27	39265	03	02	
25	8	1	75	ON	51.9	23.3	665362	689623	27	40488	12	48
			OFF	40.4	29.3	625328	648084	27	40670	13	15	
25	8	2	35	ON	32.4	32.2	606319	628363	27	40793	13	28
			OFF	27.3	33.7	598010	619743	27	40871	13	35	
30	5	1	24	ON	41.1	-84.5	625882	648660	27	67661	13	09
			OFF	37.5	-83.1	616377	638797	27	67717	13	16	
32	2	0	16	ON	38.2	-128.7	617409	639869	27	78507	13	13
			OFF	35.7	-127.8	611580	633821	27	78546	13	17	
33	2	1	21	ON	70.7	173.6	758647	786437	27	83352	10	43
			OFF	67.9	-178.2	739606	766674	27	83412	11	17	
35	8	1	47	ON	72.5	119.9	772212	900518	28	07704	10	08
			OFF	66.7	138.9	730802	757535	28	07835	11	26	
36	8	1	39	ON	72.5	97.2	771401	799677	28	13103	10	07
			OFF	67.8	113.8	736655	763610	28	13213	11	15	
36	8	2	29	ON	59.9	126.7	693743	719075	28	13358	12	09
			OFF	55.5	130.9	673795	698374	28	13432	12	27	
39	8	1	76	ON	59.8	58.6	691247	716485	28	29558	12	07
			OFF	48.4	67.7	644418	667891	28	29746	12	46	
39	8	2	25	ON	41.9	70.9	624279	646996	28	29848	13	01
			OFF	38.3	72.3	615102	637475	28	29904	13	07	
41	8	1	22	ON	55.8	17.1	671902	696409	28	40424	12	22
			OFF	52.4	19.8	658138	682127	28	40480	12	33	
41	8	2	36	ON	49.9	21.4	648592	672222	28	40521	12	41
			OFF	44.4	24.4	630547	653499	28	40608	12	54	
48	8	0	16	ON	38.0	-131.8	611301	633532	28	78499	13	01
			OFF	35.4	-130.9	606168	628206	28	78538	13	05	
50	1	1	53	ON	70.6	148.1	742456	769632	01	02339	10	31
			OFF	63.6	164.0	701612	727241	01	02478	11	37	
52	1	1	38	ON	70.6	102.4	741170	768297	01	13134	10	28
			OFF	65.7	115.1	711074	737061	01	13236	11	20	
52	1	2	29	ON	59.8	123.6	681981	706869	01	13341	11	56
			OFF	55.5	127.8	663711	687910	01	13413	12	14	

52	1	3	68	ON	51.9	130.5	649971	673653	01	13472	12	26
				OFF	41.9	135.9	619139	641663	01	13630	12	50
54	8	1	64	ON	69.6	60.4	732593	759394	01	23953	10	40
				OFF	60.5	77.5	683572	708520	01	24126	11	51
54	8	2	40	ON	56.8	81.3	667638	691985	01	24188	12	08
				OFF	50.9	85.8	645027	668523	01	24285	12	27
54	8	3	24	ON	42.4	90.3	619482	642019	01	24419	12	48
				OFF	38.8	91.7	611078	633301	01	24474	12	54
54	8	4	39	ON	34.9	93.2	603442	625379	01	24535	13	01
				OFF	29.3	94.9	595633	617276	01	24621	13	10
55	6	1	30	ON	70.6	34.4	738337	765357	01	29329	10	26
				OFF	66.7	45.2	713762	739850	01	29412	11	10
55	6	2	34	ON	54.9	60.2	659197	683227	01	29618	12	14
				OFF	49.8	63.8	640831	664169	01	29700	12	30
55	6	3	28	ON	47.6	65.0	633812	656887	01	29735	12	35
				OFF	43.4	67.1	621673	644293	01	29801	12	45
56	8	1	77	ON	61.8	30.5	688090	713209	01	34899	11	43
				OFF	50.3	40.8	642115	665502	01	35090	12	27
63	3	1	24	ON	32.9	-110.4	598134	619871	01	73143	12	57
				OFF	29.4	-109.3	594153	615741	01	73197	13	02
67	6	1	31	ON	70.5	122.4	727312	753913	02	07697	10	18
				OFF	66.6	133.0	703879	729594	02	07779	11	01
68	6	1	86	ON	53.8	126.1	647394	670980	02	13400	12	07
				OFF	41.3	133.1	611433	633669	02	13599	12	39
70	5	1	127	ON	65.9	66.4	697668	723148	02	23983	11	05
				OFF	47.6	84.7	626515	649316	02	24292	12	23
70	5	2	25	ON	42.0	87.4	612421	634694	02	24379	12	35
				OFF	38.5	88.8	605199	627201	02	24434	12	42
71	7	1	23	ON	70.7	31.1	724910	751420	02	29280	10	12
				OFF	67.9	39.5	707295	733139	02	29342	10	47
71	7	2	121	ON	54.0	57.9	646332	669878	02	29586	12	04
				OFF	36.5	66.9	601363	623221	02	29862	12	45
72	6	1	64	ON	61.5	27.9	675002	699627	02	34857	11	32
				OFF	52.2	36.6	639542	662832	02	35012	12	09
72	6	2	65	ON	50.0	38.0	632615	655646	02	35047	12	16
				OFF	40.5	42.7	608404	630526	02	35196	12	37
78	4	1	24	ON	49.9	-98.1	629266	652171	02	67425	12	11
				OFF	46.4	-96.1	619594	642135	02	67491	12	20
81	8	1	36	ON	75.0	128.0	765639	793695	02	83070	07	36
				OFF	73.2	152.0	735539	762453	02	83172	09	14
81	8	2	47	ON	69.6	168.0	708963	734870	02	83265	10	19
				OFF	63.6	-179.1	677856	702588	02	83393	11	13

OPERATIONS SUMMARY

AFT PAN CAMERA NUMBER 165

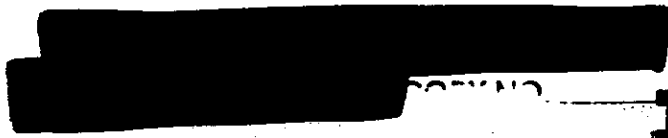
OPN NO	FRA	LAT	LONG	HEIGHT	RANGE	DA	S-TIM	L-TIM	
PRE-FLT	156	34.8	-120.5	122	1				
1	4 0	8	ON	53.4	-152.8	687839	712947	25 83628	13 02
			OFF	51.9	-151.7	681247	706107	25 83652	13 07
2	1 1	26	ON	74.7	130.8	832868	863488	26 02186	09 19
			OFF	72.8	147.4	806739	836360	26 02261	10 27
2	1 2	73	ON	71.4	154.4	793414	822527	26 02299	10 55
			OFF	61.7	176.5	728774	755431	26 02493	12 27
4	7 1	51	ON	70.2	113.5	781045	809687	26 13135	11 12
			OFF	63.3	128.9	735489	762401	26 13272	12 16
4	7 2	30	ON	52.6	139.7	681501	706370	26 13452	13 02

			OFF	48.1	142.5	662593	686750	26	13524	13	15
5	7	1	77 ON	71.1	87.5	787020	815890	26	18517	10	58
			OFF	60.2	110.1	717506	743736	26	18729	12	32
5	7	2	30 ON	53.5	116.3	684742	709734	26	18840	12	59
			OFF	49.0	119.2	665493	689759	26	18912	13	12
5	7	3	24 ON	41.6	122.9	638241	661482	26	19029	13	28
			OFF	38.0	124.4	627314	650145	26	19084	13	35
6	7	1	73 ON	72.0	60.8	793669	822792	26	23897	10	41
			OFF	62.1	85.0	726815	753397	26	24099	12	21
6	7	2	30 ON	58.5	89.3	707511	733363	26	24161	12	39
			OFF	54.0	93.2	685858	710892	26	24236	12	56
6	7	3	46 ON	29.5	104.4	606571	628624	26	24618	13	48
			OFF	22.9	106.2	597180	618882	26	24718	13	56
7	5	1	29 ON	56.8	68.2	698046	723540	26	29592	12	45
			OFF	52.3	71.7	677493	702211	26	29665	13	01
7	5	2	30 ON	48.8	73.9	662861	687028	26	29721	13	11
			OFF	44.3	76.3	645723	669245	26	29793	13	21
7	5	3	38 ON	35.8	79.7	619942	642497	26	29924	13	37
			OFF	30.2	81.5	607385	529469	26	30009	13	46
8	3	1	31 ON	66.6	32.3	750598	778083	26	34823	11	49
			OFF	61.9	39.9	723129	749572	26	34909	12	21
9	4	0	11 ON	37.4	-116.4	1086575	1127013	26	39189	03	07
			OFF	40.3	-115.3	1073915	1113857	26	39236	03	12
9	4	1	54 ON	52.7	26.0	677336	702048	26	40454	12	58
			OFF	44.3	30.9	644057	667517	26	40598	13	20
10	8	1	76 ON	6.0	19.2	598340	620084	26	46584	14	13
			OFF	-5.6	21.5	622630	645284	26	46760	14	25
16	8	0	16 ON	39.0	-125.8	621990	644621	26	78494	13	24
			OFF	36.5	-124.9	615482	637869	26	78532	13	29
20	4	1	28 ON	68.6	115.1	749832	777287	27	13206	11	20
			OFF	64.5	123.5	725125	751644	27	13284	11	55
20	4	2	29 ON	52.8	136.1	667987	692347	27	13482	12	49
			OFF	48.4	139.0	650308	674003	27	13553	13	01
21	4	1	38 ON	73.1	74.1	786077	814911	27	18495	10	04
			OFF	68.6	92.2	749480	776922	27	18606	11	19
21	4	2	35 ON	64.7	100.5	725408	751937	27	18681	11	53
			OFF	59.5	107.6	697526	723000	27	18774	12	23
21	4	3	29 ON	53.8	112.7	671751	696253	27	18867	12	45
			OFF	49.4	115.7	653638	677458	27	18939	12	58
22	4	1	28 ON	71.3	60.7	768460	796623	27	23946	10	41
			OFF	67.6	72.1	741949	769106	27	24028	11	28
22	4	2	28 ON	58.8	85.6	693546	718870	27	24187	12	25
			OFF	54.4	89.6	673662	598236	27	24259	12	42
22	4	3	23 ON	42.8	96.4	630736	653695	27	24443	13	12
			OFF	39.3	97.8	620562	643140	27	24498	13	19
22	4	4	37 ON	29.8	101.0	600346	622166	27	24643	13	34
			OFF	24.3	102.6	593515	615079	27	24728	13	42
23	3	1	41 ON	58.7	63.0	692682	717974	27	29589	12	25
			OFF	52.3	68.4	664379	688604	27	29694	12	48
23	3	2	29 ON	49.8	70.0	654392	678241	27	29735	12	55
			OFF	45.3	72.5	638290	661533	27	29806	13	06
23	3	3	41 ON	36.3	76.2	612978	635271	27	29945	13	23
			OFF	30.2	78.2	600943	622786	27	30039	13	33
24	9	1	55 ON	69.4	21.9	752406	779959	27	34792	11	07
			OFF	61.3	37.3	704910	730663	27	34946	12	11

[REDACTED]

COPY NO.

24	9 2	58	ON	56.7	42.2	682819	707738	27	35023	12	32
			OFF	47.8	48.5	646700	570259	27	35167	13	00
24	9 3	23	ON	45.6	49.6	639097	662370	27	35202	13	05
			OFF	42.1	51.2	628189	651053	27	35256	13	12
25	8 0	12	ON	37.4	-119.7	1065067	1104664	27	39217	02	54
			OFF	40.4	-118.6	1051796	1090874	27	39265	03	00
25	8 1	75	ON	52.8	22.6	665362	689623	27	40488	12	45
			OFF	41.2	28.9	625328	648084	27	40670	13	13
25	8 2	35	ON	33.3	31.8	606319	628363	27	40793	13	27
			OFF	28.2	33.4	598010	619743	27	40871	13	34
30	5 1	23	ON	42.0	-84.9	625882	648660	27	67661	13	08
			OFF	38.4	-83.4	616377	638797	27	67717	13	14
32	2 0	16	ON	39.1	-129.1	617409	639869	27	78507	13	11
			OFF	36.6	-128.2	611580	633821	27	78546	13	16
33	2 1	21	ON	71.3	170.8	758647	786437	27	83352	10	32
			OFF	68.7	-180.3	739606	766674	27	83412	11	09
35	8 1	47	ON	73.1	116.6	772212	800518	28	07704	09	54
			OFF	67.5	137.1	730802	757535	28	07835	11	18
36	8 1	39	ON	73.1	93.8	771401	799677	28	13103	09	53
			OFF	68.6	111.7	736655	763610	28	13213	11	07
36	8 2	30	ON	60.8	125.6	693743	719075	28	13358	12	04
			OFF	56.4	130.1	673795	698374	28	13432	12	24
39	8 1	76	ON	60.7	57.6	691247	716485	28	29558	12	02
			OFF	49.2	67.1	644418	667891	28	29746	12	44
39	8 2	25	ON	42.8	70.5	624279	646996	28	29848	12	59
			OFF	39.2	72.0	615102	637475	28	29904	13	06
41	8 1	23	ON	56.7	16.3	671902	696409	28	40424	12	19
			OFF	53.3	19.1	658138	682127	28	40490	12	31
41	8 2	36	ON	50.7	20.8	648592	672222	28	40521	12	38
			OFF	45.2	23.9	630547	653499	28	40608	12	52
48	8 0	17	ON	38.8	-132.2	611301	633532	28	78499	12	59
			OFF	36.3	-131.2	606168	628206	28	78538	13	04
50	1 1	52	ON	71.2	145.4	742456	769632	01	02339	10	20
			OFF	64.5	162.6	701612	727241	01	02478	11	31
52	1 1	37	ON	71.3	99.8	741170	768297	01	13134	10	18
			OFF	66.5	113.4	711074	737061	01	13236	11	14
52	1 2	29	ON	60.7	122.6	681981	706869	01	13341	11	52
			OFF	56.4	126.9	663711	687910	01	13413	12	11
52	1 3	68	ON	52.8	129.8	649971	673653	01	13472	12	23
			OFF	42.8	135.4	619139	641663	01	13530	12	48
54	8 1	64	ON	70.4	58.0	732593	759394	01	23953	10	31
			OFF	61.4	76.4	683572	708520	01	24126	11	47
54	8 2	40	ON	57.7	80.4	667638	691985	01	24188	12	04
			OFF	51.7	85.2	645027	668523	01	24285	12	25
54	8 3	24	ON	43.2	89.8	619482	642019	01	24419	12	46
			OFF	39.7	91.3	611078	633301	01	24474	12	53
54	8 4	39	ON	35.7	92.8	603442	625379	01	24535	13	00
			OFF	30.1	94.6	595633	617276	01	24621	13	08
55	6 1	30	ON	71.3	31.8	738337	765357	01	29329	10	16
			OFF	67.5	43.4	713762	739850	01	29412	11	03
55	6 2	34	ON	55.7	59.5	659197	683227	01	29618	12	11
			OFF	50.6	63.2	640831	664169	01	29700	12	27
55	6 3	28	ON	48.5	64.5	633812	656887	01	29735	12	33
			OFF	44.2	66.7	621673	644293	01	29801	12	43
56	8 1	77	ON	62.6	29.3	688090	713209	01	34899	11	38



			OFF	51.2	40.1	642115	665502	01	35090	12	25	
63	3	1	24	ON	33.7	-110.7	598134	619871	01	73143	12	56
				OFF	30.2	-109.6	594153	615741	01	73197	13	01
67	6	1	31	ON	71.2	119.9	727312	753913	02	07697	10	07
				OFF	67.4	131.3	703879	729594	02	07779	10	54
68	6	1	87	ON	54.6	125.4	647394	670980	02	13400	12	04
				OFF	42.1	132.7	611433	633669	02	13599	12	37
70	5	1	128	ON	66.7	64.7	697668	723148	02	23983	10	58
				OFF	48.4	84.2	626515	649316	02	24292	12	21
70	5	2	25	ON	42.9	87.0	612421	634694	02	24379	12	34
				OFF	39.4	88.5	605199	627201	02	24434	12	41
71	7	1	23	ON	71.4	28.5	724910	751420	02	29280	10	01
				OFF	68.6	37.6	707295	733139	02	29342	10	39
71	7	2	120	ON	54.8	57.2	646332	669878	02	29586	12	01
				OFF	37.3	66.6	601363	623221	02	29862	12	43
72	6	1	64	ON	62.3	26.8	675002	699627	02	34857	11	28
				OFF	53.0	35.9	639542	662832	02	35012	12	07
72	6	2	66	ON	50.8	37.4	632615	655646	02	35047	12	13
				OFF	41.3	42.3	608404	630526	02	35196	12	35
78	4	1	23	ON	50.7	-98.6	629266	652171	02	67425	12	09
				OFF	47.2	-96.6	619594	642135	02	67481	12	18
81	8	1	36	ON	75.1	123.6	765639	793695	02	83070	07	18
				OFF	73.7	148.5	735539	762453	02	83172	09	00
81	8	2	46	ON	70.3	165.7	708963	734870	02	83265	10	10
				OFF	64.4	-180.5	677856	702588	02	83393	11	07

NOTE - LAST 5 FRAMES OF OPERATION 081-08-2 ARE CONTAINED IN THE B MISSION CAPSULE

PHOTOGRAPHIC SUMMARY

FWD PAN CAMERA NO 140			0.2500	SLIT	W/25	FILTER	4404	FILM				
DPN NO	FRA	FEET	ET	S-EL	S-DIR	EV	FULL	INT	PRI			
PRE-FLT	163	431.1										
1	4	0	9	23.8	ON	233	27.6	40.1	11.72	11.94	11.34	10.74
					OFF	235	28.9	40.6	11.73	11.96	11.36	10.76
2	1	1	26	68.8	ON	199	3.4	36.6	11.49	10.20	9.60	9.00
					OFF	205	7.5	36.3	11.53	10.81	10.21	9.61
2	1	2	71	187.8	ON	209	9.6	36.3	11.56	11.05	10.45	9.85
					OFF	231	20.3	37.5	11.70	11.75	11.15	10.55
4	7	1	50	132.2	ON	210	11.2	35.9	11.57	11.20	10.60	10.00
					OFF	225	18.8	36.8	11.67	11.69	11.09	10.49
4	7	2	30	79.3	ON	246	28.5	39.7	11.79	11.95	11.35	10.75
					OFF	252	32.2	41.5	11.83	12.00	11.40	10.80
5	7	1	76	201.0	ON	205	10.1	35.7	11.53	11.09	10.49	9.89
					OFF	227	21.7	37.2	11.68	11.80	11.20	10.60
5	7	2	29	76.7	ON	240	27.7	39.2	11.76	11.94	11.34	10.74
					OFF	247	31.5	40.9	11.80	11.99	11.39	10.79
5	7	3	24	63.5	ON	258	37.4	44.5	11.86	12.05	11.45	10.85
					OFF	262	40.0	46.6	11.88	12.07	11.47	10.87
6	7	1	72	190.4	ON	204	8.8	35.5	11.53	10.96	10.36	9.76
					OFF	226	19.9	36.6	11.67	11.74	11.14	10.54
6	7	2	30	79.3	ON	233	23.4	37.4	11.72	11.85	11.25	10.65
					OFF	241	27.4	38.8	11.77	11.93	11.33	10.73
6	7	3	45	119.0	ON	270	45.9	52.7	11.93	12.10	11.50	10.90
					OFF	273	49.8	58.9	11.94	12.10	11.50	10.90



COPY NO.

			29	76.7	ON 233	24.9	37.7	11.72	11.89	11.29	10.69
					OFF 240	28.8	39.2	11.76	11.95	11.36	10.76
7	5	2	30	79.3	ON 246	31.8	40.5	11.80	12.00	11.40	10.80
					OFF 253	35.4	42.6	11.83	12.03	11.43	10.83
7	5	3	38	100.5	ON 263	41.8	47.6	11.89	12.08	11.48	10.88
					OFF 267	45.6	51.8	11.92	12.09	11.49	10.89
8	3	1	32	84.6	ON 216	15.5	35.4	11.61	11.52	10.92	10.32
					OFF 226	20.2	36.2	11.67	11.75	11.15	10.55
9	4	0	11	29.1	ON 140	-40.1	45.7	10.99	0.	0.	0.
					OFF 141	-38.0	44.0	10.99	0.	0.	0.
9	4	1	53	140.2	ON 232	28.6	38.6	11.71	11.95	11.35	10.75
					OFF 245	35.6	42.2	11.79	12.03	11.43	10.83
10	8	1	75	198.4	ON 260	56.8	80.6	11.87	12.07	11.47	10.87
					OFF 248	56.8	99.1	11.81	12.07	11.47	10.87
16	8	0	16	42.3	ON 253	40.3	43.5	11.84	12.07	11.47	10.87
					OFF 255	42.1	45.0	11.85	12.08	11.48	10.88
20	4	1	28	74.1	ON 211	13.4	32.8	11.57	11.38	10.78	10.18
					OFF 219	17.8	33.2	11.63	11.55	11.05	10.45
20	4	2	29	76.7	ON 241	29.0	36.1	11.77	11.96	11.36	10.76
					OFF 247	32.9	37.8	11.80	12.01	11.41	10.81
21	4	1	38	100.5	ON 197	6.9	32.5	11.48	10.73	10.13	9.53
					OFF 208	13.3	32.5	11.56	11.37	10.77	10.17
21	4	2	35	92.6	ON 218	17.7	33.0	11.62	11.64	11.04	10.44
					OFF 228	22.9	34.0	11.69	11.84	11.24	10.64
21	4	3	29	76.7	ON 238	28.2	35.6	11.75	11.95	11.35	10.75
					OFF 244	32.1	37.2	11.79	12.00	11.40	10.80
22	4	1	28	74.1	ON 201	9.8	32.3	11.51	11.07	10.47	9.87
					OFF 210	14.5	32.4	11.57	11.46	10.86	10.26
22	4	2	28	74.1	ON 229	23.6	34.0	11.69	11.86	11.26	10.66
					OFF 236	27.7	35.2	11.74	11.94	11.34	10.74
22	4	3	23	60.8	ON 253	37.7	39.9	11.83	12.05	11.45	10.85
					OFF 256	40.5	41.9	11.85	12.07	11.47	10.87
22	4	4	37	97.9	ON 263	47.6	48.7	11.89	12.10	11.50	10.90
					OFF 265	51.2	53.9	11.90	12.10	11.50	10.90
23	3	1	41	108.4	ON 228	23.7	33.8	11.69	11.86	11.26	10.66
					OFF 239	29.6	35.7	11.75	11.97	11.37	10.77
23	3	2	30	79.3	ON 243	31.9	36.6	11.78	12.00	11.40	10.80
					OFF 249	35.7	38.5	11.81	12.04	11.44	10.84
23	3	3	41	108.4	ON 259	42.9	43.5	11.87	12.08	11.48	10.88
					OFF 263	47.4	48.1	11.89	12.10	11.50	10.90
24	9	1	55	145.5	ON 204	12.4	31.9	11.53	11.30	10.70	10.10
					OFF 222	21.2	33.0	11.65	11.78	11.18	10.58
24	9	2	57	150.8	ON 231	25.6	34.1	11.70	11.90	11.30	10.70
					OFF 245	33.6	37.2	11.79	12.02	11.42	10.82
24	9	3	23	60.8	ON 248	35.5	38.1	11.81	12.03	11.43	10.83
					OFF 252	38.4	39.8	11.83	12.06	11.46	10.86
25	8	0	12	31.7	ON 141	-42.1	42.4	11.00	0.	0.	0.
					OFF 142	-39.7	40.7	11.01	0.	0.	0.
25	8	1	75	198.4	ON 238	29.3	35.1	11.75	11.97	11.37	10.77
					OFF 254	39.2	40.1	11.84	12.06	11.46	10.86
25	8	2	35	92.6	ON 261	45.4	45.2	11.88	12.09	11.49	10.89
					OFF 264	49.0	49.4	11.90	12.10	11.50	10.90
30	5	1	24	63.5	ON 251	39.0	38.5	11.83	12.06	11.46	10.86
					OFF 255	41.9	40.5	11.85	12.08	11.48	10.88
32	2	0	16	42.3	ON 257	41.5	39.6	11.86	12.08	11.48	10.88



33	2	1	21	55.5	ON 213	43.5	41.2	11.87	12.09	11.49	10.89
					OFF 219	9.8	30.0	11.58	11.06	10.46	9.86
35	8	1	47	124.3	ON 206	13.3	30.1	11.63	11.38	10.78	10.18
					OFF 220	6.9	29.7	11.54	10.73	10.13	9.53
36	8	1	39	103.2	ON 205	14.7	29.8	11.64	11.47	10.87	10.27
					OFF 216	6.9	29.5	11.53	10.72	10.12	9.52
36	8	2	29	76.7	ON 233	13.4	29.5	11.61	11.38	10.78	10.18
					OFF 241	22.0	30.6	11.72	11.81	11.21	10.61
39	8	1	76	201.0	ON 228	26.4	31.6	11.77	11.92	11.32	10.72
					OFF 248	22.1	29.9	11.69	11.81	11.21	10.61
39	8	2	25	66.1	ON 257	33.1	33.2	11.81	12.01	11.41	10.81
					OFF 260	38.9	36.0	11.86	12.06	11.46	10.86
41	8	1	22	58.2	ON 236	41.9	37.9	11.88	12.08	11.48	10.88
					OFF 242	26.2	30.4	11.74	11.91	11.31	10.71
41	8	2	36	95.2	ON 246	29.5	31.4	11.77	11.97	11.37	10.77
					OFF 254	31.9	32.2	11.80	12.00	11.40	10.80
48	8	0	16	42.3	ON 261	36.8	34.3	11.84	12.04	11.44	10.84
					OFF 263	42.8	35.8	11.88	12.08	11.48	10.88
50	1	1	53	140.2	ON 215	45.0	37.3	11.89	12.09	11.49	10.89
					OFF 231	0.4	27.7	11.60	9.65	9.05	8.45
52	1	1	38	100.5	ON 212	8.8	27.4	11.70	10.96	10.36	9.76
					OFF 224	0.3	27.3	11.58	9.62	9.02	8.42
52	1	2	29	76.7	ON 236	6.5	27.0	11.66	10.67	10.07	9.47
					OFF 243	12.9	27.3	11.74	11.34	10.74	10.14
52	1	3	68	179.9	ON 249	17.3	27.8	11.78	11.62	11.02	10.42
					OFF 261	20.8	28.3	11.81	11.77	11.17	10.57
54	8	1	64	169.3	ON 211	30.3	30.7	11.88	11.98	11.38	10.78
					OFF 231	1.7	26.8	11.58	9.89	9.29	8.69
54	8	2	40	105.8	ON 238	12.2	26.8	11.71	11.29	10.69	10.09
					OFF 248	16.0	27.2	11.75	11.55	10.95	10.35
54	8	3	24	63.5	ON 259	21.9	28.1	11.80	11.81	11.21	10.61
					OFF 263	29.9	30.2	11.87	11.97	11.37	10.77
54	8	4	39	103.2	ON 266	33.2	31.3	11.89	12.01	11.41	10.81
					OFF 269	36.7	32.8	11.91	12.04	11.44	10.84
55	6	1	30	79.3	ON 212	41.6	35.5	11.93	12.08	11.48	10.88
					OFF 221	0.3	26.8	11.58	9.62	9.02	8.42
55	6	2	34	89.9	ON 245	5.4	26.5	11.64	10.52	9.92	9.32
					OFF 253	18.0	27.2	11.79	11.55	11.06	10.46
55	6	3	28	74.1	ON 256	23.0	28.1	11.84	11.84	11.24	10.64
					OFF 262	25.1	28.6	11.85	11.89	11.29	10.69
56	8	1	77	203.7	ON 231	29.1	29.6	11.88	11.95	11.36	10.76
					OFF 251	10.9	26.3	11.70	11.17	10.57	9.97
63	3	1	24	63.5	ON 271	22.5	27.8	11.82	11.82	11.22	10.62
					OFF 273	39.0	31.6	11.93	12.06	11.46	10.86
67	6	1	31	82.0	ON 221	42.2	33.2	11.95	12.08	11.48	10.88
					OFF 230	0.3	24.4	11.64	9.61	9.01	8.41
68	6	1	86	227.5	ON 254	5.4	24.1	11.70	10.52	9.92	9.32
					OFF 268	19.3	24.7	11.84	11.71	11.11	10.51
70	5	1	127	335.9	ON 231	31.6	27.4	11.92	11.99	11.39	10.79
					OFF 261	6.2	23.5	11.70	10.64	10.04	9.44
70	5	2	25	66.1	ON 267	25.5	25.4	11.88	11.90	11.30	10.70
					OFF 270	30.9	26.7	11.92	11.99	11.39	10.79
71	7	1	23	60.8	ON 215	34.2	27.8	11.93	12.02	11.42	10.82
					OFF 222	-0.0	23.6	11.60	0.	0.	0.
						3.9	23.4	11.65	10.28	9.68	9.08



71	7 2	121	520.0	ON 249	19.2	24.1	11.82	11.71	11.11	10.51
				OFF 270	36.2	28.2	11.93	12.04	11.44	10.84
72	6 1	64	169.3	ON 239	11.3	23.2	11.75	11.21	10.61	10.01
				OFF 254	21.0	24.1	11.84	11.78	11.18	10.58
72	6 2	65	171.9	ON 257	23.2	24.5	11.86	11.84	11.24	10.64
				OFF 268	32.4	26.7	11.92	12.00	11.40	10.80
78	4 1	24	63.5	ON 258	23.4	23.3	11.86	11.85	11.25	10.65
				OFF 262	26.9	23.9	11.89	11.93	11.33	10.73
81	8 1	36	95.2	ON 208	-10.9	23.0	11.55	0.	0.	0.
				OFF 219	-4.5	22.2	11.63	0.	0.	0.
81	8 2	47	124.3	ON 230	1.4	21.6	11.70	9.85	9.25	8.65
				OFF 243	8.9	21.3	11.78	10.97	10.37	9.77

PHOTOGRAPHIC SUMMARY

AFT	PAN	CAMERA	NO	165	0.1750	SLIT	W/21	FILTER	4404	FILM
OPN	NO	FRA	FEET	ET	S-EL	S-DIR	EV	FULL	INT	PRI
PRE-FLT	156	412.6								
1	4 0	8	21.2	ON 334	26.9	39.1	12.23	12.58	11.98	11.38
				OFF 337	28.1	39.7	12.25	12.60	12.00	11.40
2	1 1	26	68.8	ON 283	2.4	32.2	12.00	10.67	10.07	9.47
				OFF 292	6.5	32.9	12.04	11.33	10.73	10.13
2	1 2	73	193.1	ON 298	8.7	33.4	12.07	11.59	10.99	10.39
				OFF 330	19.4	36.2	12.22	12.37	11.77	11.17
4	7 1	51	134.9	ON 299	10.3	33.4	12.08	11.75	11.16	10.56
				OFF 323	17.9	35.3	12.19	12.30	11.70	11.10
4	7 2	30	79.3	ON 352	27.7	38.8	12.31	12.59	11.99	11.39
				OFF 362	31.5	40.6	12.35	12.64	12.04	11.44
5	7 1	77	203.7	ON 292	9.1	32.9	12.04	11.64	11.04	10.44
				OFF 325	20.9	36.0	12.20	12.42	11.82	11.22
5	7 2	30	79.3	ON 344	26.9	38.2	12.28	12.58	11.98	11.38
				OFF 355	30.7	40.0	12.32	12.63	12.03	11.43
5	7 3	24	63.5	ON 370	36.7	43.7	12.38	12.59	12.09	11.49
				OFF 376	39.4	45.8	12.41	12.71	12.11	11.51
6	7 1	73	193.1	ON 291	7.8	32.4	12.04	11.49	10.89	10.29
				OFF 323	19.1	35.2	12.19	12.35	11.75	11.15
6	7 2	30	79.3	ON 334	22.5	36.3	12.24	12.48	11.88	11.28
				OFF 346	26.6	37.8	12.29	12.57	11.97	11.37
6	7 3	46	121.7	ON 389	45.4	51.7	12.45	12.74	12.14	11.54
				OFF 393	49.4	57.9	12.47	12.75	12.15	11.55
7	5 1	29	76.7	ON 332	24.1	36.6	12.23	12.52	11.92	11.32
				OFF 343	28.1	38.2	12.28	12.60	12.00	11.40
7	5 2	30	79.3	ON 352	31.0	39.6	12.31	12.64	12.04	11.44
				OFF 361	34.7	41.8	12.35	12.68	12.08	11.48
7	5 3	38	100.5	ON 376	41.2	46.7	12.41	12.72	12.12	11.52
				OFF 383	45.0	50.9	12.43	12.74	12.14	11.54
8	3 1	31	82.0	ON 307	14.6	33.6	12.12	12.11	11.51	10.91
				OFF 321	19.4	34.9	12.18	12.37	11.77	11.17
9	4 0	11	29.1	ON 196	-41.3	46.2	11.47	0.	0.	0.
				OFF 197	-39.2	44.3	11.48	0.	0.	0.
9	4 1	54	142.8	ON 331	27.8	37.6	12.22	12.59	11.99	11.39
				OFF 350	34.9	41.3	12.30	12.68	12.08	11.48
10	8 1	76	201.0	ON 372	56.7	79.2	12.39	12.72	12.12	11.52
				OFF 355	57.0	97.7	12.32	12.72	12.12	11.52
16	8 0	16	42.3	ON 362	39.6	42.6	12.35	12.72	12.12	11.52
				OFF 365	41.5	44.2	12.37	12.73	12.13	11.53
20	4 1	28	74.1	ON 300	12.4	30.6	12.08	11.96	11.36	10.76





		COPY NO.		OFF 312	16.9	31.7	12.14	12.25	11.65	11.05
20	4 2	29	76.7	ON 344	28.2	35.2	12.28	12.60	12.00	11.40
				OFF 353	32.2	37.0	12.32	12.65	12.05	11.45
21	4 1	38	100.5	ON 280	5.9	29.1	11.98	11.25	10.65	10.05
				OFF 296	12.4	30.4	12.06	11.95	11.35	10.75
21	4 2	35	92.6	ON 310	16.8	31.4	12.13	12.24	11.64	11.04
				OFF 325	22.1	32.9	12.20	12.46	11.86	11.26
21	4 3	29	76.7	ON 340	27.4	34.7	12.26	12.58	11.98	11.38
				OFF 349	31.4	36.3	12.30	12.64	12.04	11.44
22	4 1	28	74.1	ON 286	8.8	29.5	12.01	11.61	11.01	10.41
				OFF 299	13.6	30.5	12.07	12.05	11.45	10.85
22	4 2	28	74.1	ON 326	22.8	32.9	12.20	12.48	11.88	11.28
				OFF 337	26.9	34.2	12.25	12.58	11.98	11.38
22	4 3	23	60.8	ON 361	37.0	39.1	12.35	12.70	12.10	11.50
				OFF 366	39.9	41.1	12.37	12.72	12.12	11.52
22	4 4	37	97.9	ON 377	47.0	47.7	12.41	12.75	12.15	11.55
				OFF 380	50.7	52.9	12.42	12.75	12.15	11.55
23	3 1	41	108.4	ON 325	22.9	32.7	12.20	12.49	11.89	11.29
				OFF 341	28.8	34.8	12.27	12.61	12.01	11.41
23	3 2	29	76.7	ON 348	31.1	35.7	12.29	12.64	12.04	11.44
				OFF 356	35.0	37.7	12.33	12.68	12.08	11.48
23	3 3	41	108.4	ON 371	42.3	42.7	12.39	12.73	12.13	11.53
				OFF 377	46.8	47.2	12.41	12.75	12.15	11.55
24	9 1	55	145.5	ON 290	11.4	29.6	12.03	11.97	11.27	10.67
				OFF 316	20.3	31.7	12.16	12.40	11.80	11.20
24	9 2	58	153.4	ON 330	24.8	33.1	12.22	12.53	11.93	11.33
				OFF 350	32.9	36.3	12.30	12.65	12.06	11.46
24	9 3	23	60.8	ON 355	34.8	37.3	12.32	12.68	12.08	11.48
				OFF 361	37.7	39.0	12.35	12.70	12.10	11.50
25	8 0	12	31.7	ON 198	-43.3	42.9	11.48	0.	0.	0.
				OFF 199	-41.0	41.0	11.49	0.	0.	0.
25	8 1	75	198.4	ON 340	28.5	34.2	12.26	12.60	12.00	11.40
				OFF 363	38.5	39.3	12.36	12.71	12.11	11.51
25	8 2	35	92.6	ON 374	44.8	44.3	12.40	12.74	12.14	11.54
				OFF 379	48.5	48.4	12.42	12.75	12.15	11.55
30	5 1	23	60.8	ON 359	38.2	37.7	12.34	12.71	12.11	11.51
				OFF 365	41.2	39.7	12.36	12.73	12.13	11.53
32	2 0	16	42.3	ON 367	40.8	38.8	12.37	12.72	12.12	11.52
				OFF 371	42.8	40.3	12.39	12.73	12.13	11.53
33	2 1	21	55.5	ON 303	8.8	27.3	12.09	11.61	11.01	10.41
				OFF 313	12.4	28.0	12.14	11.95	11.35	10.75
35	8 1	47	124.3	ON 293	5.9	26.4	12.05	11.24	10.64	10.04
				OFF 314	13.8	27.9	12.15	12.06	11.46	10.86
36	8 1	39	103.2	ON 292	5.9	26.2	12.04	11.24	10.64	10.04
				OFF 308	12.5	27.4	12.12	11.96	11.36	10.76
36	8 2	30	79.3	ON 333	21.1	29.4	12.23	12.43	11.83	11.23
				OFF 345	25.5	30.6	12.28	12.55	11.95	11.35
39	8 1	76	201.0	ON 328	21.3	28.8	12.21	12.44	11.84	11.24
				OFF 356	32.3	32.4	12.33	12.65	12.05	11.45
39	8 2	25	66.1	ON 370	38.1	35.2	12.38	12.70	12.10	11.50
				OFF 375	41.2	37.1	12.40	12.72	12.12	11.52
41	8 1	23	60.8	ON 340	25.3	29.4	12.26	12.55	11.95	11.35
				OFF 348	28.6	30.5	12.29	12.61	12.01	11.41
41	8 2	36	95.2	ON 354	31.1	31.4	12.32	12.64	12.04	11.44
				OFF 365	36.1	33.5	12.37	12.69	12.09	11.49



48	8 0	17	45.0	ON 376	42.1	35.0	12.41	12.73	12.13	11.53
				UFF 379	44.3	36.5	12.42	12.74	12.14	11.54
50	1 1	52	137.5	ON 308	-0.5	25.2	12.12	0.	0.	0.
				OFF 331	7.9	26.1	12.22	11.51	10.91	10.31
52	1 1	37	97.9	ON 304	-0.7	24.8	12.10	0.	0.	0.
				OFF 321	5.5	25.4	12.18	11.19	10.59	9.99
52	1 2	29	76.7	ON 339	12.0	26.2	12.26	11.92	11.32	10.72
				OFF 350	16.4	26.9	12.30	12.23	11.63	11.03
52	1 3	68	179.9	ON 359	20.0	27.6	12.34	12.39	11.79	11.19
				OFF 377	29.5	30.1	12.41	12.62	12.02	11.42
54	8 1	64	169.3	ON 302	0.7	24.5	12.09	10.35	9.75	9.15
				OFF 332	11.3	25.7	12.23	11.86	11.26	10.66
54	8 2	40	105.8	ON 342	15.1	26.3	12.27	12.15	11.55	10.95
				OFF 356	21.1	27.4	12.33	12.43	11.83	11.23
54	8 3	24	63.5	ON 373	29.2	29.5	12.40	12.61	12.01	11.41
				OFF 378	32.4	30.7	12.42	12.65	12.05	11.45
54	8 4	39	103.2	ON 384	36.0	32.2	12.44	12.69	12.09	11.49
				OFF 389	40.9	34.8	12.45	12.72	12.12	11.52
55	6 1	30	79.3	ON 302	-0.7	24.2	12.09	0.	0.	0.
				OFF 316	4.4	24.7	12.16	11.03	10.43	9.83
55	6 2	34	89.9	ON 351	17.1	26.4	12.31	12.25	11.66	11.06
				OFF 362	22.2	27.4	12.35	12.46	11.86	11.26
55	6 3	28	74.1	ON 367	24.3	27.9	12.37	12.52	11.92	11.32
				OFF 375	28.3	29.0	12.40	12.60	12.00	11.40
56	8 1	77	203.7	ON 330	10.0	25.1	12.22	11.73	11.13	10.53
				OFF 359	21.7	27.1	12.34	12.45	11.85	11.25
63	3 1	24	63.5	ON 389	38.3	30.9	12.46	12.71	12.11	11.51
				OFF 392	41.4	32.6	12.47	12.73	12.13	11.53
67	6 1	31	82.0	ON 315	-0.7	21.9	12.15	0.	0.	0.
				OFF 329	4.4	22.4	12.21	11.02	10.42	9.82
68	6 1	87	230.1	ON 363	18.5	24.0	12.36	12.33	11.73	11.13
				OFF 385	30.8	26.8	12.44	12.63	12.03	11.43
70	5 1	128	338.6	ON 330	5.3	21.9	12.22	11.15	10.55	9.95
				OFF 375	24.7	24.8	12.40	12.53	11.93	11.33
70	5 2	25	66.1	ON 384	30.1	26.1	12.44	12.63	12.03	11.43
				OFF 388	33.4	27.2	12.45	12.66	12.06	11.46
71	7 1	23	60.8	ON 303	-1.0	21.1	12.10	0.	0.	0.
				OFF 313	2.9	21.5	12.14	10.76	10.16	9.56
71	7 2	120	317.4	ON 353	18.3	23.3	12.32	12.32	11.72	11.12
				OFF 384	35.4	27.7	12.43	12.68	12.08	11.48
72	6 1	64	169.3	ON 338	10.4	22.0	12.25	11.77	11.17	10.57
				OFF 360	20.2	23.4	12.34	12.40	11.80	11.20
72	6 2	66	174.6	ON 365	22.4	23.8	12.36	12.47	11.87	11.27
				OFF 380	31.6	26.1	12.42	12.65	12.05	11.45
78	4 1	23	60.8	ON 365	22.6	22.6	12.37	12.48	11.88	11.28
				OFF 372	26.1	23.3	12.39	12.56	11.96	11.36
81	8 1	36	95.2	ON 293	-12.0	18.8	12.05	0.	0.	0.
				OFF 308	-5.5	18.9	12.12	0.	0.	0.
81	8 2	46	121.7	ON 325	0.5	19.3	12.20	10.30	9.70	9.10
				OFF 344	8.0	20.0	12.28	11.51	10.91	10.31

STELLAR-INDEX SUMMARY

CAMERA DATA	ET	FILM	FILTER	GRID	ASSEMBLY NO	D21
STELLAR	2.0	4401	NONE	21		
INDEX	1/500	4400	W/21	21		



COPY NO.

PERFORMANCE SUMMARY

OPN NO	FR	STEL FEET	INDX FEET	SYS TIME	LAT ON	LONG ON	LAT OFF	LONG OFF	SEC DJR
PRE-FLT	23	2.28	4.55						
1 4 0	1	0.10	0.20	2313	52	-152	50	-151	24
2 1 1	4	0.40	0.79	0036	74	135	72	150	75
2 1 2	10	0.99	1.98	0038	70	157	60	177	194
4 7 1	7	0.69	1.39	0338	69	115	62	130	137
4 7 2	4	0.40	0.79	0344	51	140	47	143	72
5 7 1	11	1.09	2.18	0508	70	90	59	111	212
5 7 2	4	0.40	0.79	0514	52	116	48	119	72
5 7 3	4	0.40	0.79	0517	40	123	37	124	55
6 7 1	10	0.99	1.98	0638	71	63	61	86	202
6 7 2	4	0.40	0.79	0642	57	90	53	93	75
6 7 3	7	0.69	1.39	0650	28	104	22	106	100
7 5 1	4	0.40	0.79	0813	55	69	51	72	73
7 5 2	4	0.40	0.79	0815	47	74	43	76	72
7 5 3	6	0.59	1.19	0818	34	80	29	81	95
8 3 1	4	0.40	0.79	0940	65	34	60	41	86
9 4 0	2	0.20	0.40	1053	38	-115	41	-114	47
9 4 1	7	0.69	1.39	1114	51	26	43	31	134
10 8 1	11	1.09	2.18	1256	5	19	-6	21	176
16 8 0	2	0.20	0.40	2148	38	-125	35	-124	38
20 4 1	4	0.40	0.79	0340	67	117	63	124	78
20 4 2	5	0.50	0.99	0344	51	136	47	139	71
21 4 1	5	0.50	0.99	0508	72	77	67	94	111
21 4 2	5	0.50	0.99	0511	63	101	58	108	93
21 4 3	4	0.40	0.79	0514	52	113	48	116	72
22 4 1	4	0.40	0.79	0639	70	63	66	73	82
22 4 2	4	0.40	0.79	0643	57	86	53	90	72
22 4 3	3	0.30	0.59	0647	41	96	38	98	55
22 4 4	6	0.59	1.19	0650	28	101	23	102	85
23 3 1	6	0.59	1.19	0813	57	53	51	59	105
23 3 2	4	0.40	0.79	0815	48	70	44	72	71
23 3 3	6	0.59	1.19	0819	35	76	29	78	94
24 9 1	8	0.79	1.58	0939	68	24	60	38	154
24 9 2	8	0.79	1.58	0943	55	43	46	49	144
24 9 3	3	0.30	0.59	0946	44	50	41	51	54
25 8 0	2	0.20	0.40	1053	38	-119	41	-117	48
25 8 1	10	0.99	1.98	1114	51	23	40	29	182
25 8 2	5	0.50	0.99	1119	32	32	27	33	78
30 5 1	4	0.40	0.79	1847	41	-84	37	-83	56
32 2 0	2	0.20	0.40	2148	38	-128	35	-127	39
33 2 1	3	0.30	0.59	2309	70	173	67	-178	60
35 8 1	7	0.69	1.39	0208	72	119	66	138	131
36 8 1	5	0.50	0.99	0338	72	97	67	113	110
36 8 2	5	0.50	0.99	0342	59	126	55	130	74
39 8 1	10	0.99	1.98	0812	59	58	48	67	188
39 8 2	4	0.40	0.79	0817	41	70	38	72	56
41 8 1	3	0.30	0.59	1113	55	17	52	19	56
41 8 2	5	0.50	0.99	1115	49	21	44	24	87
48 8 0	3	0.30	0.59	2148	37	-131	35	-130	39
50 1 1	7	0.69	1.39	0038	70	148	63	164	139
52 1 1	6	0.59	1.19	0338	70	102	65	115	102
52 1 2	4	0.40	0.79	0342	59	123	55	127	72

~~TOP SECRET~~
~~TOP SECRET~~

52	1	3	9	0.89	1.78	0344	51	130	41	135	158
54	8	1	10	0.99	1.98	0639	69	60	60	77	173
54	8	2	5	0.50	0.99	0643	56	81	50	85	97
54	8	3	4	0.40	0.79	0646	42	90	38	91	55
54	8	4	5	0.50	0.99	0648	34	93	29	94	86
55	6	1	5	0.50	0.99	0808	70	34	66	45	83
55	6	2	4	0.40	0.79	0813	54	50	49	63	92
55	6	3	4	0.40	0.79	0815	47	65	43	67	66
56	8	1	11	1.09	2.18	0941	61	30	50	40	191
63	3	1	4	0.40	0.79	2019	32	-110	29	-109	54
67	6	1	4	0.40	0.79	0208	70	122	66	133	92
68	6	1	13	1.29	2.57	0343	53	126	41	133	199
70	5	1	18	1.78	3.56	0639	65	66	47	84	309
70	5	2	3	0.30	0.59	0646	42	87	38	88	55
71	7	1	4	0.40	0.79	0808	70	31	67	39	52
71	7	2	17	1.68	3.37	0813	53	57	36	66	276
72	6	1	9	0.89	1.78	0940	61	27	52	36	155
72	6	2	9	0.89	1.78	0944	49	37	40	42	149
78	4	1	4	0.40	0.79	1843	49	-98	46	-96	56
81	8	1	5	0.50	0.99	2304	75	127	73	151	102
81	8	2	7	0.69	1.39	2307	69	168	63	-179	118

RAMP PROFILE

R- 4 A- 6

R= 0.3547 A= 0.1059

TUR	PER	CPS	ANG V
100	4.002	0.2499	0.02260
200	3.951	0.2531	0.02289
300	3.870	0.2584	0.02337
400	3.764	0.2657	0.02403
500	3.639	0.2748	0.02485
600	3.502	0.2855	0.02582
700	3.359	0.2977	0.02692
800	3.215	0.3110	0.02813
900	3.075	0.3252	0.02941
1000	2.941	0.3400	0.03075
1100	2.815	0.3553	0.03213
1200	2.664	0.3754	0.03395
1300	2.534	0.3947	0.03570
1400	2.424	0.4126	0.03731
1500	2.335	0.4283	0.03874
1600	2.265	0.4414	0.03993
1700	2.215	0.4514	0.04083
1800	2.184	0.4578	0.04141
1900	2.171	0.4605	0.04165
2000	2.177	0.4594	0.04155
2100	2.201	0.4544	0.04110
2200	2.243	0.4458	0.04032
2300	2.304	0.4339	0.03925
2400	2.386	0.4192	0.03791
2500	2.487	0.4021	0.03636
2600	2.609	0.3832	0.03466
2700	2.752	0.3634	0.03286
2800	2.890	0.3460	0.03130
2900	3.020	0.3311	0.02994

[REDACTED]

COPY NO. _____

~~TOP SECRET~~
~~TOP SECRET~~

3000	3.159	0.3166	0.02863
3100	3.302	0.3029	0.02739
3200	3.446	0.2902	0.02625
3300	3.585	0.2789	0.02523
3400	3.716	0.2691	0.02434
3500	3.830	0.2611	0.02362
3600	3.922	0.2550	0.02306
3700	3.985	0.2509	0.02269
3800	4.016	0.2490	0.02252

RAMP PROFILE

R- 5 A- 6

R= 0.3428 A= 0.1059

TUR	PER	CPS	ANG V
100	4.202	0.2380	0.02152
200	4.146	0.2412	0.02182
300	4.056	0.2465	0.02230
400	3.940	0.2538	0.02295
500	3.804	0.2629	0.02378
600	3.655	0.2736	0.02475
700	3.499	0.2858	0.02585
800	3.343	0.2991	0.02705
900	3.192	0.3133	0.02834
1000	3.048	0.3281	0.02968
1100	2.912	0.3434	0.03106
1200	2.751	0.3635	0.03287
1300	2.612	0.3828	0.03462
1400	2.496	0.4007	0.03624
1500	2.401	0.4164	0.03767
1600	2.328	0.4295	0.03885
1700	2.275	0.4395	0.03975
1800	2.242	0.4459	0.04033
1900	2.229	0.4486	0.04058
2000	2.235	0.4475	0.04047
2100	2.260	0.4425	0.04002
2200	2.305	0.4339	0.03925
2300	2.369	0.4220	0.03817
2400	2.455	0.4073	0.03684
2500	2.563	0.3902	0.03529
2600	2.693	0.3713	0.03358
2700	2.845	0.3515	0.03179
2800	2.993	0.3341	0.03022
2900	3.133	0.3192	0.02887
3000	3.282	0.3047	0.02756
3100	3.437	0.2910	0.02632
3200	3.593	0.2783	0.02517
3300	3.745	0.2670	0.02415
3400	3.888	0.2572	0.02326
3500	4.013	0.2492	0.02254
3600	4.114	0.2431	0.02199
3700	4.184	0.2390	0.02162
3800	4.218	0.2371	0.02144

RATE ESTIMATE **
FWD PAN CAMERA NUMBER 140
TUR/



CONT'D.

DPN NO	FR	R	A	DUR
1 4 0	9	5	6 ON	1352
			OFF	24
2 1 1	26	4	6 ON	963
			OFF	75
2 1 2	71	4	6 ON	1076
			OFF	194
4 7 1	50	4	6 ON	1088
			OFF	137
4 7 2	30	4	6 ON	1405
			OFF	72
5 7 1	76	4	6 ON	1030
			OFF	212
5 7 2	29	4	6 ON	1353
			OFF	72
5 7 3	24	4	6 ON	1542
			OFF	55
6 7 1	72	4	6 ON	1028
			OFF	202
6 7 2	30	4	6 ON	1292
			OFF	75
6 7 3	45	4	6 ON	1749
			OFF	100
7 5 1	29	4	6 ON	1294
			OFF	73
7 5 2	30	4	6 ON	1423
			OFF	72
7 5 3	38	4	6 ON	1625
			OFF	85
8 3 1	32	4	6 ON	1147
			OFF	86
9 4 0	11	5	6 ON	80
			OFF	47
9 4 1	53	5	6 ON	1355
			OFF	134
10 8 1	75	5	6 ON	2145
			OFF	176
16 8 0	16	5	6 ON	1585
			OFF	38
20 4 1	28	5	6 ON	1164
			OFF	78
20 4 2	29	5	6 ON	1440
			OFF	71
21 4 1	38	5	6 ON	1037
			OFF	111
21 4 2	35	5	6 ON	1223
			OFF	93
21 4 3	29	5	6 ON	1409
			OFF	72
22 4 1	28	5	6 ON	1080
			OFF	82
22 4 2	28	5	6 ON	1321
			OFF	72
22 4 3	23	5	6 ON	1577
			OFF	55



22	4	4	37	5	6 ON 1776
					OFF 85
23	3	1	41	5	6 ON 1307
					OFF 105
23	3	2	30	5	6 ON 1453
					OFF 71
23	3	3	41	5	6 ON 1663
					OFF 94
24	9	1	55	5	6 ON 1102
					OFF 154
24	9	2	57	5	6 ON 1333
					OFF 144
24	9	3	23	5	6 ON 1511
					OFF 54
25	8	0	12	5	6 ON 128
					OFF 48
25	8	1	75	5	6 ON 1400
					OFF 182
25	8	2	35	5	6 ON 1704
					OFF 78
30	5	1	24	5	6 ON 1547
					OFF 56
32	2	0	16	5	6 ON 1622
					OFF 39
33	2	1	21	4	6 ON 1113
					OFF 60
35	8	1	47	4	6 ON 1049
					OFF 131
36	8	1	39	4	6 ON 1035
					OFF 110
36	8	2	29	4	6 ON 1290
					OFF 74
39	8	1	76	4	6 ON 1260
					OFF 188
39	8	2	25	4	6 ON 1550
					OFF 56
41	8	1	22	4	6 ON 1333
					OFF 56
41	8	2	36	4	6 ON 1431
					OFF 87
48	8	0	16	4	6 ON 1610
					OFF 39
50	1	1	53	4	6 ON 1147
					OFF 139
52	1	1	38	4	6 ON 1125
					OFF 102
52	1	2	29	4	6 ON 1332
					OFF 72
52	1	3	68	4	6 ON 1463
					OFF 158
54	8	1	64	4	6 ON 1115
					OFF 173
54	8	2	40	4	6 ON 1351
					OFF 97
54	8	3	24	4	6 ON 1582



 COPY NO. _____

					OFF	55
54	8	4	39	4	6 ON	1698
					OFF	86
55	6	1	30	4	6 ON	1093
					OFF	83
55	6	2	34	4	6 ON	1382
					OFF	82
55	6	3	28	4	6 ON	1499
					OFF	66
56	8	1	77	4	6 ON	1252
					OFF	191
63	3	1	24	4	6 ON	1715
					OFF	54
67	6	1	31	4	6 ON	1166
					OFF	82
68	6	1	86	4	6 ON	1468
					OFF	199
70	5	1	127	4	6 ON	1253
					OFF	309
70	5	2	25	4	6 ON	1649
					OFF	55
71	7	1	23	4	6 ON	1119
					OFF	62
71	7	2	121	4	6 ON	1425
					OFF	276
72	6	1	64	4	6 ON	1322
					OFF	155
72	6	2	65	4	6 ON	1512
					OFF	149
78	4	1	24	4	6 ON	1515
					OFF	56
81	8	1	36	4	6 ON	1051
					OFF	102
81	8	2	47	4	6 ON	1246
					OFF	118



RATE ESTIMATE **
AFT PAN CAMERA NUMBER 165

OPN	NO	FR	R	A	TUR/ DUR
1	4	0	8	5	6 ON 1352
					OFF 24
2	1	1	26	4	6 ON 963
					OFF 75
2	1	2	73	4	6 ON 1076
					OFF 194
4	7	1	51	4	6 ON 1088
					OFF 137
4	7	2	30	4	6 ON 1405
					OFF 72
5	7	1	77	4	6 ON 1030
					OFF 212
5	7	2	30	4	6 ON 1353
					OFF 72
5	7	3	24	4	6 ON 1542
					OFF 55



6	7	1	73	4	6 ON 1028
					OFF 202
6	7	2	30	4	6 ON 1292
					OFF 75
6	7	3	46	4	6 ON 1749
					OFF 100
7	5	1	29	4	6 ON 1294
					OFF 73
7	5	2	30	4	6 ON 1423
					OFF 72
7	5	3	38	4	6 UN 1625
					OFF 85
8	3	1	31	4	6 ON 1147
					OFF 86
9	4	0	11	5	6 ON 80
					OFF 47
9	4	1	54	5	6 ON 1355
					OFF 134
10	8	1	76	5	6 ON 2145
					OFF 176
16	8	0	16	5	6 ON 1585
					OFF 38
20	4	1	28	5	6 ON 1164
					OFF 78
20	4	2	29	5	6 ON 1440
					OFF 71
21	4	1	38	5	6 ON 1037
					OFF 111
21	4	2	35	5	6 UN 1223
					OFF 93
21	4	3	29	5	6 ON 1409
					OFF 72
22	4	1	28	5	6 ON 1080
					OFF 82
22	4	2	28	5	6 ON 1321
					OFF 72
22	4	3	23	5	6 ON 1577
					OFF 55
22	4	4	37	5	6 ON 1776
					OFF 85
23	3	1	41	5	6 ON 1307
					OFF 105
23	3	2	29	5	6 ON 1453
					OFF 71
23	3	3	41	5	6 ON 1663
					OFF 94
24	9	1	55	5	6 ON 1102
					OFF 154
24	9	2	58	5	6 ON 1333
					OFF 144
24	9	3	23	5	6 ON 1511
					OFF 54
25	8	0	12	5	6 ON 128
					OFF 48
25	8	1	75	5	6 ON 1400



TYND.

					OFF	182
25	8	2	35	5	6 ON	1704
					OFF	78
30	5	1	23	5	6 ON	1547
					OFF	56
32	2	0	16	5	6 ON	1622
					OFF	39
33	2	1	21	4	6 ON	1113
					OFF	60
35	8	1	47	4	6 ON	1049
					OFF	131
36	8	1	39	4	6 ON	1035
					OFF	110
36	8	2	30	4	6 ON	1290
					OFF	74
39	8	1	76	4	6 ON	1260
					OFF	188
39	8	2	25	4	6 ON	1550
					OFF	56
41	8	1	23	4	6 ON	1333
					OFF	56
41	8	2	36	4	6 ON	1431
					OFF	87
48	8	0	17	4	6 ON	1610
					OFF	39
50	1	1	52	4	6 ON	1147
					OFF	139
52	1	1	37	4	6 ON	1125
					OFF	102
52	1	2	29	4	6 ON	1332
					OFF	72
52	1	3	68	4	6 ON	1463
					OFF	158
54	8	1	64	4	6 ON	1115
					OFF	173
54	8	2	40	4	6 ON	1351
					OFF	97
54	8	3	24	4	6 ON	1582
					OFF	55
54	8	4	39	4	6 ON	1698
					OFF	86
55	6	1	30	4	6 ON	1093
					OFF	83
55	6	2	34	4	6 ON	1382
					OFF	82
55	6	3	28	4	6 ON	1499
					OFF	66
56	8	1	77	4	6 ON	1252
					OFF	191
63	3	1	24	4	6 ON	1715
					OFF	54
67	6	1	31	4	6 ON	1166
					OFF	82
68	6	1	87	4	6 ON	1468
					OFF	199



OFF NO. _____

70 5 1 128 4 6 ON 1253
 OFF 309
 70 5 2 25 4 6 ON 1649
 OFF 55
 71 7 1 23 4 6 ON 1119
 OFF 62
 71 7 2 120 4 6 ON 1425
 OFF 276
 72 6 1 64 4 6 ON 1322
 OFF 155
 72 6 2 66 4 6 ON 1512
 OFF 149
 78 4 1 23 4 6 ON 1515
 OFF 56
 81 8 1 36 4 6 ON 1051
 OFF 102
 81 8 2 46 4 6 ON 1246
 OFF 118



** - INST. RATES - FWD AND AFT CAMERAS
 THIS SECTION OF REVISED PERFORMANCE ESTIMATE PER AWA J2616-68
 HAS NOT BEEN COMPLETED TO DATE AND IS OMITTED FROM MESSEGE

CLOCK SUMMARY
 PRELIMINARY CLOCK CORRELATION

		ORDER FIT 1			
SYS TIME I/P	CL TIME I/P	COMP SYS TM	DELTA ST	REV	STA
39254.186	248168.90990	39254.18790	-0.00131	9	1
78553.383	287468.10890	78553.38430	-0.00072	16	1
39280.941	334595.66990	39280.94230	-0.00037	25	1
78566.138	373880.86490	78566.13470	0.00384	32	1
39282.744	420997.47490	39282.74170	0.00234	41	1
78557.801	460272.53990	78557.80420	-0.00245	48	1
33860.903	501975.64490	33860.90650	-0.00290	56	1
39258.754	507373.49190	39258.75310	0.00174	57	1
73215.655	4459.48490	73215.65590	-0.00023	63	1
33811.864	51455.69690	33811.86490	-0.00054	72	1
73162.737	90806.57190	73162.73730	0.00061	79	1

AO=-0.20891470610 06 AI= 0.9999999354150 00
 SIGMA=0.00184 NO. POINTS= 11
 RATIO OF CLOCK TIME TO SYS TIME= 0.1000000064580 01

		ORDER FIT 2			
SYS TIME I/P	CL TIME I/P	COMP SYS TM	DELTA ST	REV	STA
39254.186	248168.90990	39254.18730	-0.00073	9	1
78553.383	287468.10890	78553.38410	-0.00050	16	1
39280.941	334595.66990	39280.94240	-0.00047	25	1
78566.138	373880.86490	78566.13500	0.00357	32	1
39282.744	420997.47490	39282.74210	0.00197	41	1
78557.801	460272.53990	78557.80450	-0.00282	48	1
33860.903	501975.64490	33860.90670	-0.00316	56	1
39258.754	507373.49190	39258.75340	0.00151	57	1
73215.655	4459.48490	73215.65600	-0.00030	63	1
33811.864	51455.69690	33811.86460	-0.00028	72	1



73162.737 90806.57190 73162.73670 0.00123 79 1
A0=-0.2089147109D 06 A1= 0.999999959130D 00
A2=-0.2721879380359D-13
SIGMA=0.00181 NO. POINTS= 11



CLOCK OPERATIONS

OPN	NO	FR	S-TIM	DEC	BINARY
1	4	0	9 ON	83628 206143	01100010010010111111000011000
			OFF	83652 206167	01100010010011101101111011000
2	1	1	26 ON	2186 211101	01100100101010010010101001000
			OFF	2261 211176	01100100101100100101001000000
2	1	2	71 ON	2299 211214	01100100101101101111101011000
			OFF	2493 211408	01100100110011101010010000000
4	7	1	50 ON	13135 222050	01101001111000011011011010000
			OFF	13272 222187	01101001111100100110111111000
4	7	2	30 ON	13452 222367	01101010000010000110100011000
			OFF	13524 222439	01101010000100010011001011000
5	7	1	76 ON	18517 227432	01101100011100101011001000000
			OFF	18729 227644	01101100100011001001001100000
5	7	2	29 ON	18840 227755	01101100100110100001111111000
			OFF	18912 227827	01101100101000101110100111000
5	7	3	24 ON	19029 227944	01101100101100010011001000000
			OFF	19084 227999	011011001011011111110100011000
6	7	1	72 ON	23897 232812	01101111000000110110111100000
			OFF	24099 233014	01101111000111000001011110000
6	7	2	30 ON	24161 233076	01101111001000111010100100000
			OFF	24236 233151	011011110010110011010000011000
6	7	3	45 ON	24618 233532	01101111010110110101001100000
			OFF	24718 233632	01101111011001111000100000000
7	5	1	29 ON	29592 238507	01110001101110101001111111000
			OFF	29665 238580	01110001110000111000100100000
7	5	2	30 ON	29721 238636	01110001110010100101111100000
			OFF	29793 238708	01110001110100110010100100000
7	5	3	38 ON	29924 238838	01110001111000110000011110000
			OFF	30009 238923	01110001111011010110011111000
8	3	1	32 ON	34823 243738	01110100001110010010110010000
			OFF	34909 243824	01110100010000111010110000000
9	4	0	11 ON	39189 248104	01110110010011100010001000000
			OFF	39236 248151	01110110010100111101111011000
9	4	1	53 ON	40464 249378	01110110111010011010011010000
			OFF	40598 249512	01110110111110100000001000000
10	8	1	75 ON	46584 255499	01111001110101001101011111000
			OFF	46760 255675	01111001111010100101001111000
16	8	0	16 ON	78494 287409	10001001000011000001101101000
			OFF	78532 287447	10001001000100001011111011000
20	4	1	28 ON	13206 308521	10010011000111010100000101000
			OFF	13284 308599	10010011001001101100011011000
20	4	2	29 ON	13482 308797	10010011001111101111001001000
			OFF	13553 308868	10010011010001111001110100000
21	4	1	38 ON	18495 313810	10010101101000101110001010000
			OFF	18606 313921	10010101101100000110111101000
21	4	2	35 ON	18681 313996	10010101101110011001011100000
			OFF	18774 314089	10010101110001001111000101000
21	4	3	29 ON	18867 314182	10010101110100000100101110000
			OFF	18939 314254	10010101110110010001010110000



22	4	1	28	ON	23946	319261	10011000001111000100101001000
				OFF	24028	319343	10011000010001100100110011000
22	4	2	28	ON	24187	319502	10011000010110011011010110000
				OFF	24259	319574	10011000011000100111111110000
22	4	3	23	ON	24443	319758	10011000011110001111010110000
				OFF	24498	319813	100110000111111111010110001000
22	4	4	37	ON	24643	319958	10011000100100010101111110000
				OFF	24728	320043	10011000100110111011111111000
23	3	1	41	ON	29589	324904	10011010111011010010001000000
				OFF	29694	325009	10011010111110011111001101000
23	3	2	30	ON	29735	325049	10011010111111101101010101000
				OFF	29806	325120	10011011000001111000000000000
23	3	3	41	ON	29945	325259	10011011000110000111011111000
				OFF	30039	325353	10011011001000111111000101000
24	9	1	55	ON	34792	330107	10011101011010000100001111000
				OFF	34946	330261	10011101011110110001000001000
24	9	2	57	ON	35023	330338	10011101100001000111011010000
				OFF	35167	330482	10011101100101100000101010000
24	9	3	23	ON	35202	330516	10011101100110100011000100000
				OFF	35256	330570	10011101101000001100100010000
25	8	0	12	ON	39217	334531	10011111100001000100110111000
				OFF	39265	334579	10011111100010100010100111000
25	8	1	75	ON	40488	335803	1010000000111111001001111000
				OFF	40670	335985	10100000001101011100101101000
25	8	2	35	UN	40793	336108	10100000010001001100111100000
				OFF	40871	336186	10100000010011100101010010000
30	5	1	24	ON	67661	362976	10101101000101001001100000000
				OFF	67717	363032	10101101000110110110111000000
32	2	0	16	ON	78507	373822	10110010010000001001000110000
				OFF	78546	373861	10110010010001010101010001000
33	2	1	21	ON	83352	378667	10110100100011111111111111000
				OFF	83412	378727	10110100100101110101001011000
35	8	1	47	ON	7704	389418	10111001101100000110000010000
				OFF	7835	389549	10111001110000000101111001000
36	8	1	39	ON	13103	394818	10111100010000111000111010000
				OFF	13213	394928	10111100010100001111110000000
36	8	2	29	ON	13358	395073	10111100011000101010111101000
				OFF	13432	395147	10111100011010111011011111000
39	8	1	76	ON	29558	411273	11000100000111000011100101000
				OFF	29746	411461	11000100001100110010110001000
39	8	2	25	ON	29848	411563	11000100001111111001111111000
				OFF	29904	411619	11000100010001100111010111000
41	8	1	22	ON	40424	422139	11001001010010101010001111000
				OFF	40480	422195	11001001010100010111100111000
41	8	2	36	ON	40521	422236	11001001010101100111101100000
				OFF	40608	422323	11001001011000010001100111000
48	8	0	16	ON	78499	460213	11011011011100100101100001000
				OFF	78538	460252	11011011011101110001101100000
50	1	1	53	ON	2339	470454	11100000010101000111011110000
				OFF	2478	470593	11100000011001010110111101000
52	1	1	38	ON	13134	481249	11100101011110100011011101000
				OFF	13236	481351	11100101100001101010101011000
52	1	2	29	ON	13341	481456	11100101100100110111110000000
				OFF	13413	481528	11100101100111000100011000000
52	1	3	68	ON	13472	481587	11100101101000110111100111000

			OFF	13630	481745	11100101101101101100001101000
54	8	1	ON	23953	492068	11101010101000101110010100000
			OFF	24126	492241	11101010101110000000001101000
54	8	2	ON	24188	492303	111010101011111111001010011000
			OFF	24285	492400	11101010110010110110110000000
54	8	3	ON	24419	492534	11101010110110111100011110000
			OFF	24474	492589	11101010111000100111111001000
54	8	4	ON	24535	492650	11101010111010011110000100000
			OFF	24621	492736	11101010111101000111000000000
55	6	1	ON	29329	497443	11101101001100110000010111000
			OFF	29412	497526	11101101001111010010011110000
55	6	2	ON	29618	497733	11101101010101100110110001000
			OFF	29700	497815	11101101011000000110111011000
55	6	3	ON	29735	497850	11101101011001001011010010000
			OFF	29801	497916	11101101011011001100001100000
56	8	1	ON	34899	503014	11101111101101100010011100000
			OFF	35090	503205	11101111111001001100100010000
63	3	1	ON	73143	4387	00000010000101111000010111000
			OFF	73197	4441	00000010000111100001110101000
67	6	1	ON	7697	25341	00001100000101010110001001000
			OFF	7779	25423	000011000001111011001001001000
68	6	1	ON	13400	31043	0000111011001101011011011011000
			OFF	13599	31242	00001110111001011011100010000
70	5	1	ON	23983	41627	00010011110110010110101111000
			OFF	24292	41936	00010011111111111001001000000
70	5	2	ON	24379	42023	00010100000010011100001011000
			OFF	24434	42078	00010100000100000111001100000
71	7	1	ON	29280	46924	00010110011000000000011100000
			OFF	29342	46986	00010110011001111001100010000
71	7	2	ON	29586	47230	00010110100001010110000110000
			OFF	29862	47506	00010110101001110001001010000
72	6	1	ON	34857	52501	00011001000010001101000001000
			OFF	35012	52656	00011001000110111011110000000
72	6	2	ON	35047	52691	000110010010000000000000111000
			OFF	35196	52840	00011001001100100011001000000
78	4	1	ON	67425	85069	00101000100100000110011001000
			OFF	67481	85125	00101000100101110011110001000
81	8	1	ON	83070	100714	00110000000011000110000100000
			OFF	83172	100816	00110000001001010100100000000
81	8	2	ON	83265	100909	00110000000111011111110010000
			OFF	83383	101027	00110000001011000110010111000

NOTE - SYSTEM TIME WAS RESET AT [REDACTED] AT 1600Z ON 1 MARCH 1965 DURING REV 60. ALL SYSTEM TIMES PRIOR TO REV 60 HAVE BEEN ADJUSTED BY MINUS 100 MILLISECONDS IN ORDER TO PERFORM THE CLOCK TO SYSTEM TIME CORRELATION. FINAL TIME CORRELATION WILL FOLLOW AS SOON AS POSSIBLE

[REDACTED] COPY NO. _____

TAD SECRET