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(Including Cover Sheet)



CORONA "J" FLIGHT DATA BOOK

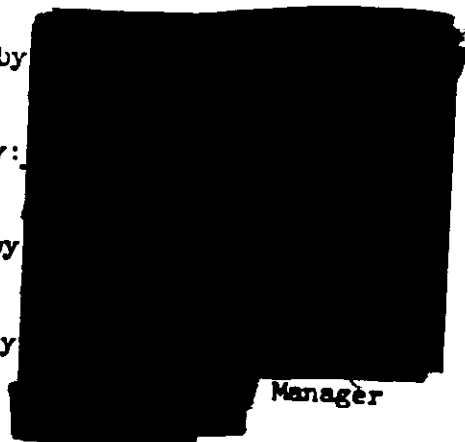
SYSTEM NO. J-24
VEHICLE NO. 1619
MISSION NO. 1024-1
CAMERA NOS. 172 + 173

Prepared by

Checked by:

Approved by

Approved by



Manager

Declassified and Released by the N R O
In Accordance with E. O. 12958
on NOV 26 1997

LOGGED
4 OCT 1965



SYSTEM NO. F24
VEHICLE NO. 7679
MISSION NO. 1024-1
CAMERA NOS. 1724173

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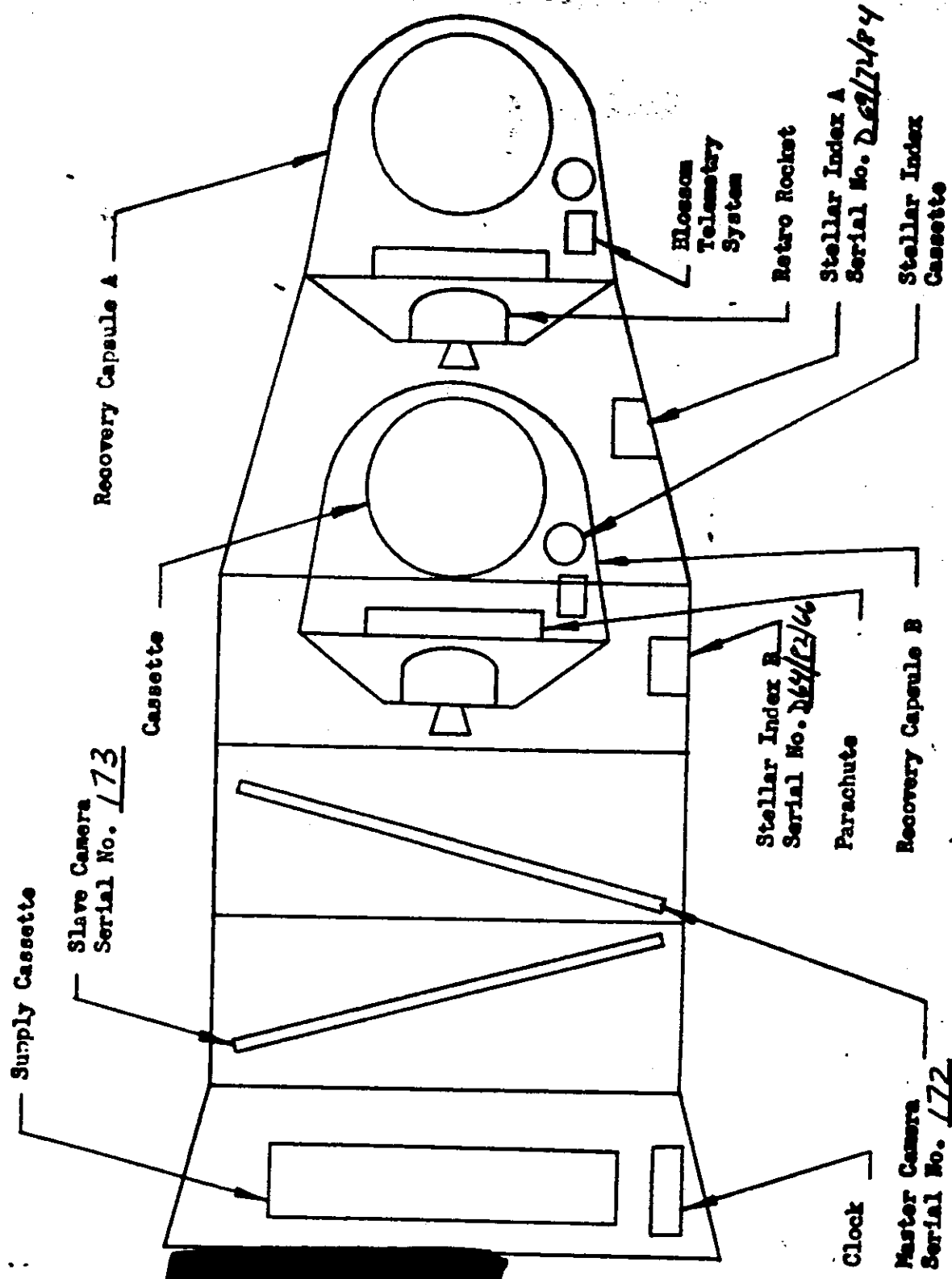
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SYSTEM NO. 224
VEHICLE NO. 1679
MISSION NO. 1624-1
CAMERA NOS. 172-4173

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VEHICLE LAYOUT: NO. [REDACTED]



SYSTEM NO. J-24
VEHICLE NO. 1619
MISSION NO. 1024-1
CAMERA NOS. 172 & 173

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GENERAL FLIGHT DATA:

Master Camera Serial No. 172

Slave Camera Serial No. 173

Stellar Index "A" Serial No. D69/72/84

Stellar Index "B" Serial No. D64/82/66

Launch Date 09-22-65

Reactivation Date N/A

Reactivation Orbit No. N/A

Orbital Parameters: (Rev. 41)

Period 90.078 Min.

Eccentricity 0.01522

Perigee 95.934 NM

Perigee Latitude 18.44 Deg. N

Apogee 205.32 NM

Inclination Angle 80.06 Deg. N

Recovery Orbit No. 81

Recovery Date 09-27-65

REMARKS:

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VEHICLE NO. 1619
MISSION NO. 1024-1
CAMERA NOS. 172 & 173

LENS SETTINGS AND FILM TYPES:

Panoramic Camera Settings:

	Camera No. <u>172</u>	Camera No. <u>173</u>
Panoramic Optics Slit Width	<u>0.225</u> in.	<u>0.150</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 SEC</u>	<u>1/500</u>	<u>2.0 SEC</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>172</u>	Camera No. <u>173</u>
Type	<u>7J-40-1</u>	<u>7J-40</u>
Length	<u>16000</u> ft.	<u>16000</u> ft.
Splices	<u>5</u>	<u>5</u>
Emul. Data	<u>213-5-6-5</u>	<u>213-5-6-5</u>

Stellar Index Cameras:

	Stellar Index A		Stellar Index B	
Type	Stellar	Index	Stellar	Index
	<u>3J-34</u>	<u>7J-33</u>	<u>3J-34</u>	<u>7J-33</u>
	<u>124-35-8-5</u>	<u>104-14-6-5</u>	<u>124-35-8-5</u>	<u>104-14-6-5</u>



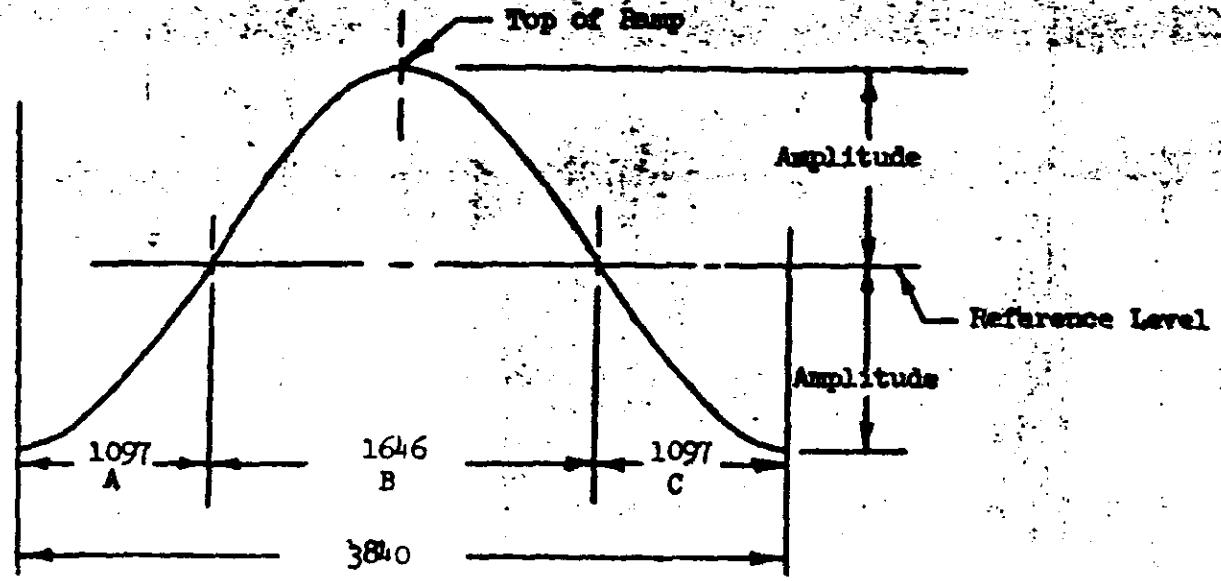
VEHICLE NO. 1619

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MISSION NO. 1024-1

CAMERA NOS. 172 & 173

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

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

Scan Velocity Computation:

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

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

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

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

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

CPS = Camera Cycle Rate in Cycles/Sec

SLIT = Slit Width in Inches

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SYSTEM NO. 1724
 VEHICLE NO. 1719
 MISSION NO. 1629-1
 CAMERA NOS. 172 + 173

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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	
6	4	4.222	4.197	10
6	4	2.314	2.314	1530
6	4	2.280	2.280	1575
6	4	2.254	2.250	1653
6	4	2.252	2.248	1686

IN-FLIGHT CYCLE PERIODS

V/H Ramp Level	V/H Ramp Amplitude	Cycle Period Seconds		Orbit No.	Time Up Ramp Sec
		Master	Slave		
6	4	4.270	4.175	09	10
6	4	2.320	2.325	16	1530
6	4	2.300	2.302	32	1575
6	4	2.274	2.269	47	1653
6	4	2.267	2.260	63	1686

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SYSTEM NO. J-24
 VEHICLE NO. 1619
 MISSION NO. 1024-1
 CAMERA NOS. 172 & 173

LENS DATA SUMMARY: Master Camera No. 172

Lens Serial No. 1602435

Slit Width 0.225 Inch

Filter Type WRATTEN 25

Equivalent Operational Focal Length 609.602 MM

Resolution:

Static:

	Lines/MM	Film Type	Target Contrast
Range Test	<u>264</u>	<u>3404</u>	<u>HIGH</u>
Other	<u>141</u>	<u>3404</u>	<u>LOW</u>

Dynamic:

Itek ^{POST} Vibration	<u>198</u>	<u>3404</u>	<u>HIGH</u>
Itek Post Vibration	<u>131</u>	<u>3404</u>	<u>LOW</u>
AP	<u>161</u>	<u>3404</u>	<u>HIGH</u>
AP	<u>113</u>	<u>3404</u>	<u>LOW</u>
Other	<u> </u>	<u> </u>	<u> </u>

Note: Itek Post Vibration Resolution of 198 lines/MM Reported In

Message No. dated 09-23-65

Distortion - Positive (Pincushion)

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

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SYSTEM NO. J-24
VEHICLE NO. 1619
MISSION NO. 1024-1
CAMERA NOS. 172 & 173

NO. [REDACTED]

LENS DATA SUMMARY: (Horizon Cameras for [REDACTED] Camera No. 172)

	Take-Up	Supply
Lens Serial No.	<u>812276</u>	<u>812288</u>
Exposure Time	<u>1/100</u> Sec.	<u>1/100</u> Sec.
Filter Type	<u>WRITTEN 25</u>	<u>WRITTEN 25</u>
Aperture	<u>F8.0</u>	<u>F6.8</u>
Operational Focal Length	<u>5419</u> MM	<u>5540</u> MM
Radial Distortion:		
10° off Axis	<u>.008</u> MM	<u>.003</u> MM
20° off Axis	<u>.015</u> MM	<u>.005</u> MM
Tangential Distortion (Maximum Vector)	<u>.008</u> MM	<u>.005</u> MM

Resolution:

Angle off Axis Deg.	0°	5°	10°	15°	20°	25°	27.5°	0°	5°	10°	15°	20°	25°	27.5°	
Radial Resolution	184	164	162	141	122	125	56	164	164	162	127	122	112	46	
Tangential Resolution	164	145	142	115	97	60	44	164	162	142	108	91	64	41	
	<u>DYNAMIC</u>							<u>148</u>	<u>144</u>						

Notes:

- Distortion and resolution are read at equivalent operational focal length.
- Resolution in lines per mm on 3404 film and HIGH contrast target.

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SYSTEM NO. J-24
 VEHICLE NO. 1619
 MISSION NO. 1024-1
 CAMERA NOS. 172 + 173

LENS DATA SUMMARY: Slave Camera No. 173

Lens Serial No. 1522435
 Slit Width 0.150 Inch
 Filter Type WRATTEN 21
 Equivalent Operational Focal Length 609.628 MM
 Resolution:

Static:

	<u>Lines/MM</u>	<u>Film Type</u>	<u>Target Contrast</u>
Bench Test	<u>241</u>	<u>3404</u>	<u>HIGH</u>
Other	<u>138</u>	<u>3404</u>	<u>LOW</u>

Dynamic:

Itek -Vibration	<u>201</u>	<u>3404</u>	<u>HIGH</u>
Itek Post Vibration	<u>129</u>	<u>3404</u>	<u>LOW</u>
AP	<u>181</u>	<u>3404</u>	<u>HIGH</u>
AP	<u>111</u>	<u>3404</u>	<u>LOW</u>
Other	<u> </u>	<u> </u>	<u> </u>

NOTE: Itek Post Vibration Resolution of 201 lines/MM Reported In

Message No. dated 07-23-65.

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>.002</u>	<u>.002</u>	<u>.004</u>		

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SYSTEM NO. J-24
 VEHICLE NO. 1619
 MISSION NO. 1024-1
 CAMERA NOS. 172 & 173

LENS DATA SUMMARY: (Horizon Cameras for SLAVE Camera No. 173)

	<u>Take-Up</u>	<u>Supply</u>
Lens Serial No.	<u>814018</u>	<u>813555</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>54.93</u> MM	<u>54.70</u> MM
Radial Distortion:		
10° off Axis	<u>.003</u> MM	<u>.001</u> MM
20° off Axis	<u>.012</u> MM	<u>.005</u> MM
Tangential Distortion (Maximum Vector)	<u>.004</u> MM	<u>.007</u> MM

Resolution:

Angle off Axis Deg.	0°	10°	15°	20°	25°	27.5°
Radial Resolution	170	112	97	86	92	71
Tangential Resolution	170	104	91	95	55	42

DYNAMIC 140

Angle off Axis Deg.	0°	10°	15°	20°	25°	30°
Radial Resolution	170	111	96	75	77	40
Tangential Resolution	170	104	89	66	55	35

139

NOTE:

1. Distortion and resolution are read at equivalent operational focal length.
2. Resolution in lines per MM on 3404 film and HIGH contrast target.

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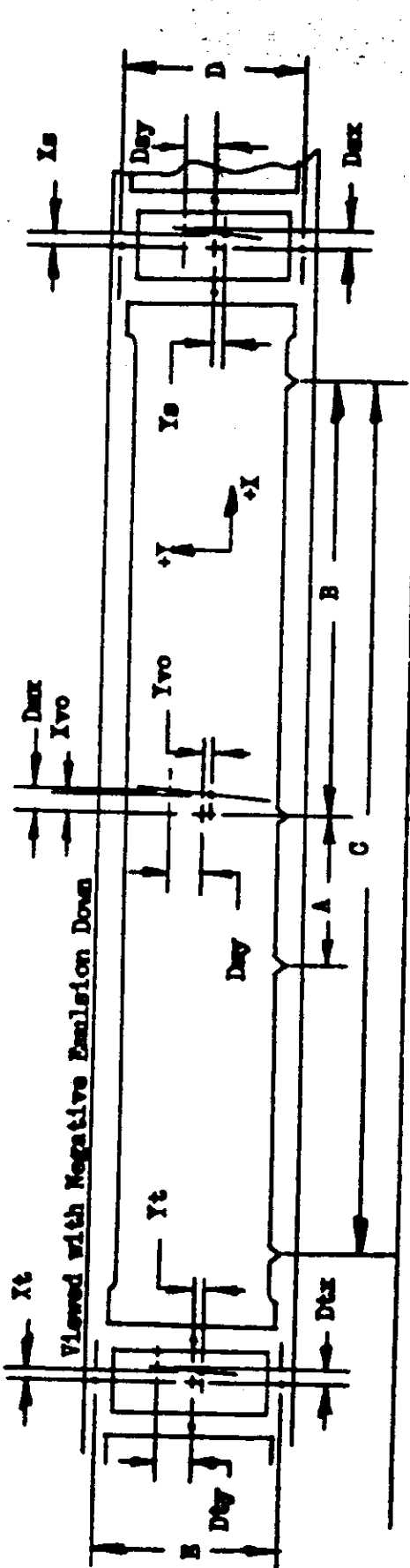
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DEFINITION OF PANORAMIC CAMERA FORMAT CALIBRATIONS:

- 2.0 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 $\pm 15.00^\circ \pm 5^\circ$ to the mechanical interface for master camera calibrations and an angle of $\pm 15.00^\circ \pm 5^\circ$ 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_v and Y_v 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_{ax} and D_{ay} 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 D_{tx} , D_{ty} , D_{ax} and D_{ay} are the effects of these measurements.

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FORMAT DIMENSIONS: (PANORAMIC CAMERAS)



Camera No.	Vehicle Motion	Scan Direction
A <u>172</u>	$X_t - 0.063$	$D_{tx} - 0.074$
B <u>354,865</u>	$X_t - 0.187$	$D_{ty} + 2.813$
C <u>209,636</u>	$X_s - 0.508$	$D_{tx} - 0.473$
D <u>56,469</u>	$X_s - 0.045$	$D_{ty} - 2.045$
E <u>56,533</u>	$X_{vo} - 0.030$	$D_{tx} - 0.023$
	$X_{vo} + 1.504$	$D_{ty} + 21.504$

Format Dimensions:

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

- 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. D_t , D_s , D_v , X and Y dimensions are taken 10MM above point defining target center.
 4. Format Sign Convention

$$\begin{matrix} +X, Y \\ -X, Y \end{matrix}$$

Format Dimensions:

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

Camera No.	Vehicle Motion	Scan Direction
A <u>173</u>	$X_t - 0.134$	$D_{tx} - 0.143$
B <u>354,780</u>	$X_t + 0.032$	$D_{ty} + 2.039$
C <u>709,500</u>	$X_s - 0.094$	$D_{tx} - 0.089$
D <u>56,525</u>	$X_s + 0.072$	$D_{ty} - 1.928$
E <u>56,487</u>	$X_{vo} + 0.212$	$D_{tx} + 0.362$
	$X_{vo} + 0.833$	$D_{ty} + 20.525$

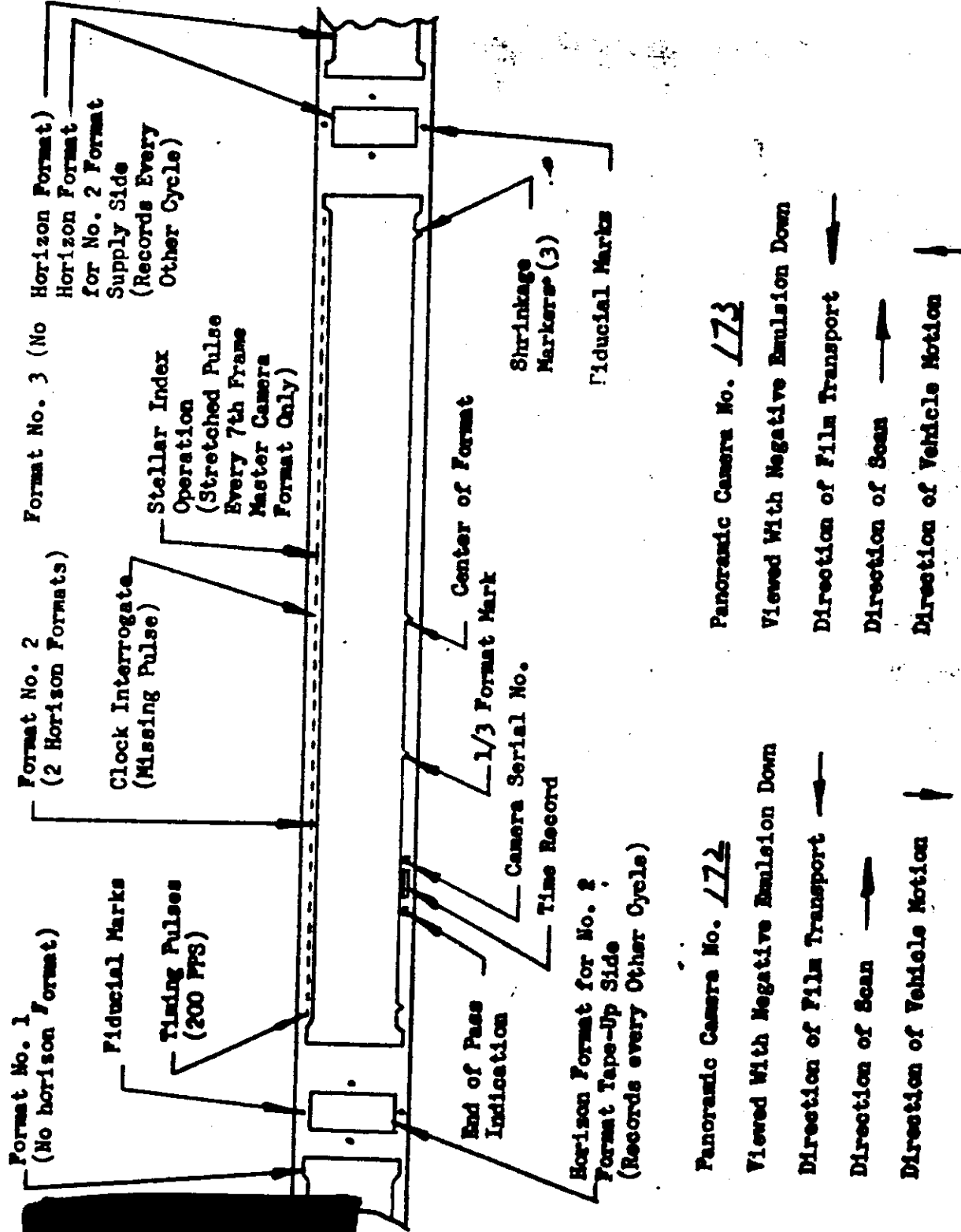
SYSTEM NO. TC 29
 VEHICLE NO. 1618
 MISSION NO. 1014-1
 CAMERA NOS. 172 & 173

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FORMAT LAYOUT: (PANORAMIC CAMERAS)



Format No. 1
(No horizon format)

Fiducial Marks

Timing Pulses
(200 FPS)

Format No. 2
(2 Horizon Formats)

Clock Interrogate
(Missing Pulse)

Format No. 3 (No Horizon Format)

Horizon Format
for No. 2 Format
Supply Side
(Records Every
Other Cycle)

Stellar Index
Operation
(Stretched Pulse
Every 7th Frame
Master Camera
Format Only)

End of Pass
Indication

Camera Serial No.

Time Record

1/3 Format Mark

Center of Format

Shrinkage
Marker (3)

Fiducial Marks

Horizon Format for No. 2
Format Tape-Up Side
(Records every Other Cycle)

Panoramic Camera No. 172

Viewed With Negative Emulsion Down

Direction of Film Transport →

Direction of Scan →

Direction of Vehicle Motion →

Panoramic Camera No. 173

Viewed With Negative Emulsion Down

Direction of Film Transport →

Direction of Scan →

Direction of Vehicle Motion →

SYSTEM NO. J-24

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VEHICLE NO. 1619

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MISSION NO. 1024-1

CAMERA NOS. 172 + 173

NO [REDACTED]

LENS DATA SUMMARY STELLAR INDEX D69/72/84: A MISSION

	<u>Stellar</u>	<u>Index</u>
Lens Serial No.	<u>10505</u>	<u>817710</u>
Reseau Serial No.	<u>84</u>	<u>72</u>
Filter Type	<u>NONE</u>	<u>WRITTEN 21</u>
Aperture	<u>F1.8</u>	<u>F4.5</u>
Exposure Time	<u>2</u> Sec.	<u>1/500</u> Sec.
Equivalent Focal Length	<u>84 (NOMINAL)MM</u>	<u>38.57</u> MM

Resolution:

Angle Off Axis	0	10	20	30	35
Resolution L/MM High Contrast	<u>84/84</u>	<u>84/74</u>	<u>99/71</u>	<u>99/55</u>	<u>86/53</u>

NOTE: Index Resolution of 74 Lines/MM AWAR

Read From 3400 Film.

Distortion:

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

Alignment:

-0.0003 "/.937 Inches 1.0009 "/2.25 Inches

[REDACTED]

[REDACTED]

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SYSTEM NO. J-24
VEHICLE NO. 1619
MISSION NO. 1024-1
CAMERA NOS. 172 & 173

NO. [REDACTED]

LENS DATA SUMMARY STELLAR INDEX D 64/82/66: B MISSION

	<u>Stellar</u>	<u>Index</u>
Lens Serial No.	<u>10578</u>	<u>817462</u>
Reseau Serial No.	<u>66</u>	<u>82</u>
Filter Type	<u>NONE</u>	<u>WRITTEN 21</u>
Aperture	<u>F1.8</u>	<u>F4.5</u>
Exposure Time	<u>2</u> Sec.	<u>1/500</u> Sec.
Equivalent Focal Length	<u>84(NOMINAL)</u> MM	<u>38.377</u> MM

Resolution:

Angle Off Axis	0	10	20	30	35
Resolution L/MM					
High Contrast	<u>83/83</u>	<u>86/86</u>	<u>107/88</u>	<u>96/42</u>	<u>84/18</u>

NOTE: Index Resolution of 72 Lines/MM AWAR
Read From 3400 Film.

Distortion:

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

Alignment:

-.0007 "/.937 Inches -.0004 "/2.25 Inches

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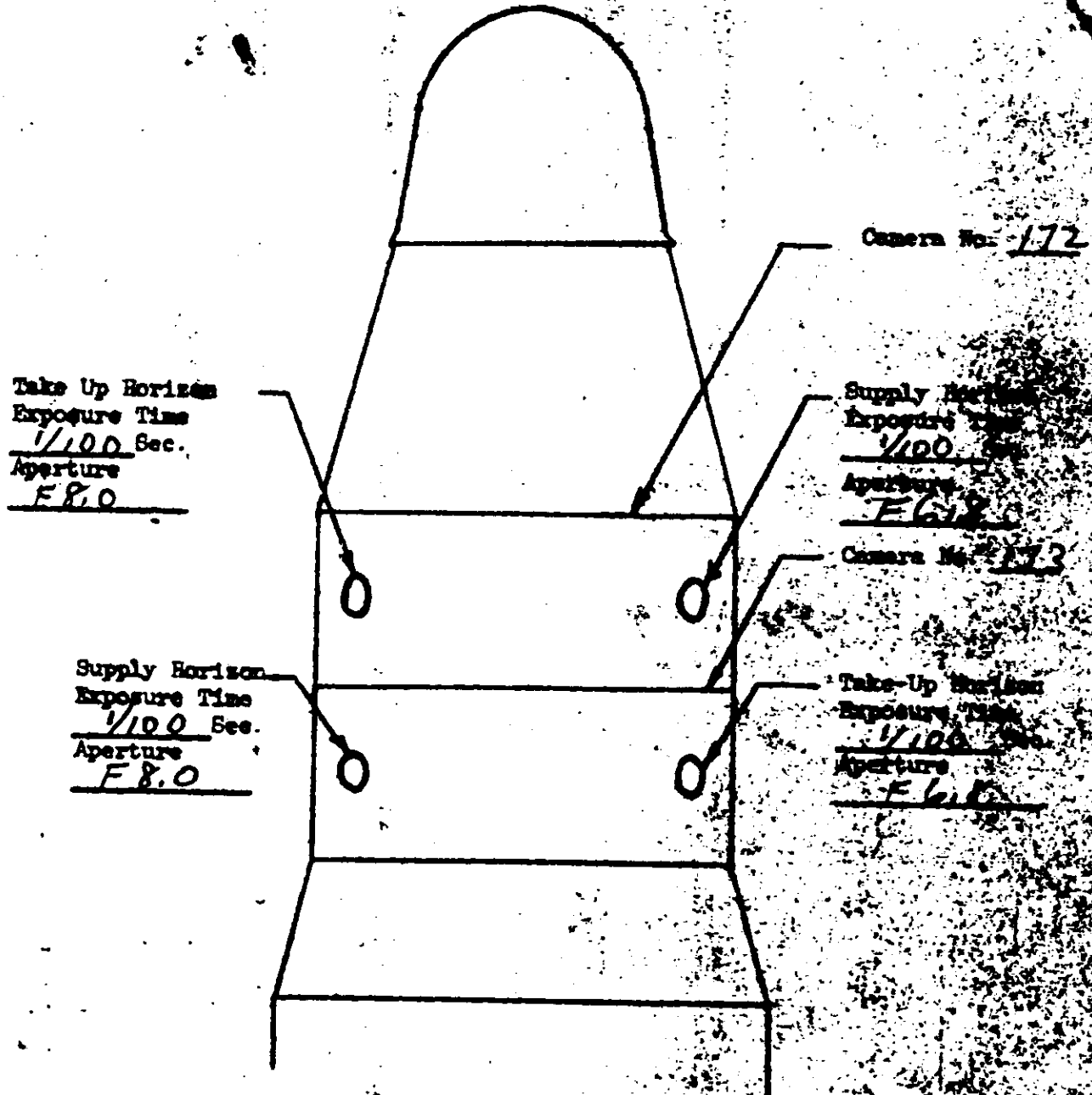
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SYSTEM NO. T-84
SERIAL NO. 1619
MOUNTING NO. 1029-1 TOP
CAMERA NOS. 172-173 TOP

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



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Flight Direction



NO. _____



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- CONTROL NO. [REDACTED]

A. 1024-1 LAUNCH AT 2131Z ON 09/22/65

B. DRY

C. FINAL PERFORMANCE ESTIMATE, PART 1

10001
10002
10003
10004
1001C
10011
10012
10013
11001
11002
11003
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11005
11006
11007
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1101C
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OPERATIONS SUMMARY

FWD PAN CAMERA NUMBER 172

OPN NO	FRA	Q	LAT	LONG	HEIGHT	RANGE	DA	H	M	S	LTIM	S-TIM
PRE-FLT	110											
1 4 0	11 ON	2 62 41	154 24W	783532	812269	22	22	57	47	1240	82667	
	OFF	2 60 59	153 5W	773191	801534	22	22	58	14	1245	82694	
5 7 1	21 ON	2 75 56	91 12E	867776	899734	23	4	54	31	1059	17671	
	OFF	2 72 31	101 31E	842304	873285	23	4	55	38	1141	17738	
5 7 2	71 ON	2 60 51	116 12E	769554	797758	23	4	58	52	1243	17932	
	OFF	2 48 28	122 19E	704224	729951	23	5	2	4	1311	18124	
5 7 3	21 ON	2 46 0	123 6E	692715	718008	23	5	2	42	1315	18162	
	OFF	2 42 32	124 5E	677350	702063	23	5	3	35	1319	18215	
7 9 1	62 ON	2 52 17	75 30E	722433	748849	23	8	1	22	13 3	28882	
	OFF	2 41 58	78 52E	675105	699732	23	8	3	59	1319	29039	
7 9 2	69 ON	2 37 29	79 56E	657515	681481	23	8	5	7	1324	29107	
	OFF	2 26 45	81 55E	624000	646706	23	8	7	48	1335	29268	
7 9 3	19 ON	2 24 15	82 18E	618055	640538	23	8	8	25	1337	29305	
	OFF	2 21 22	82 43E	612206	634470	23	8	9	8	1340	29348	
7 9 4	28 ON	2 19 46	82 56E	609382	631540	23	8	9	32	1341	29372	
	OFF	2 15 29	83 30E	603452	625388	23	8	10	36	1344	29436	
9 4 0	11 UN	1 38 54	123 8W	1156793	1199990	23	10	39	48	227	38388	
	OFF	1 41 53	122 25W	1145787	1188551	23	10	40	35	230	38435	
9 4 1	99 ON	2 60 13	25 54E	758960	786762	23	10	59	35	1243	39575	
	OFF	2 43 35	33 4E	676190	700859	23	11	3	51	1316	39831	
16 4 0	10 UN	2 37 10	124 9W	637306	660512	23	21	36	20	1319	77780	
	OFF	2 35 25	123 47W	631337	654319	23	21	36	46	1321	77806	
18 4 1	30 ON	2 66 7	176 39E	775321	803745	24	0	29	6	1215	1746	
	OFF	2 60 45	178 37W	744246	771489	24	0	30	32	1236	1832	
20 6 1	48 ON	2 59 11	137 3E	733288	760116	24	3	31	11	1239	12671	
	OFF	2 50 57	141 8E	691461	716706	24	3	33	19	1257	12799	
21 6 1	140 ON	2 60 8	113 44E	737381	764363	24	5	1	3	1236	18063	
	OFF	2 37 11	122 25E	634225	657316	24	5	6	54	1316	18414	
21 6 2	34 ON	3 14 42	129 28E	626946	649763	24	5	19	43	1357	19183	
	OFF	3 20 11	130 11E	646668	670225	24	5	21	4	14 1	19264	
22 3 1	54 ON	2 58 23	92 11E	726768	753349	24	6	31	37	1240	23497	
	OFF	2 49 10	96 26E	681279	706140	24	6	33	59	1259	23639	
22 3 2	38 ON	2 43 36	98 10E	657372	681332	24	6	35	24	13 8	23724	
	OFF	2 37 24	99 41E	634278	657370	24	6	36	57	1315	23817	
22 3 3	18 ON	2 0 14	105 2E	592574	614102	24	6	46	9	1346	24369	
	OFF	3 2 32	105 21E	596829	618517	24	6	46	50	1348	24410	
23 5 1	91 ON	2 59 17	68 56E	730506	757228	24	8	1	29	1237	28889	
	OFF	2 44 14	75 18E	659185	683213	24	8	5	20	13 6	29120	
23 5 2	33 ON	2 34 40	77 34E	624822	647559	24	8	7	45	1318	29265	
	OFF	2 29 36	78 30E	610646	632852	24	8	9	1	1323	29341	
25 2 1	105 UN	2 58 19	24 10E	723138	749581	24	11	1	57	1238	39717	
	OFF	2 41 12	30 45E	645808	669334	24	11	6	19	13 9	39979	
29 7 1	51 ON	3 20 22	51 13W	652445	676219	24	17	21	57	1357	62517	
	OFF	3 29 1	49 55W	691690	716943	24	17	24	6	14 4	62646	

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- CONTROL NO. [REDACTED]

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CONTROL NO.

32	8	0	10	ON	2	37	19	127	5W	627743	650590	24	21	37	59	13	9	77879	11045
				OFF	2	35	35	126	43W	622441	645089	24	21	38	25	1311		77905	11046
34	9	1	42	ON	2	70	22	167	57E	780783	809416	25	0	29	33	1141		1773	11047
				OFF	2	63	3	176	43E	738310	765328	25	0	31	34	1218		1894	11048
35	9	1	54	ON	2	74	24	136	7E	806058	835654	25	1	58	25	11	2	7105	11049
				OFF	2	65	12	152	4E	749040	776465	25	2	1	5	12	9	7265	11050
36	9	1	139	ON	2	64	30	130	4E	744000	771234	25	3	31	21	1211		12681	11051
				OFF	2	41	34	141	12E	639418	662704	25	3	37	15	13	2	13035	11052
37	9	1	105	ON	2	36	50	119	38E	623334	646015	25	5	8	31	13	7	18511	11053
				OFF	2	20	58	122	20E	590412	611860	25	5	12	27	1321		18747	11054
38	7	1	125	ON	2	59	16	88	47E	714150	740253	25	6	32	54	1228		23574	11055
				OFF	2	39	15	96	25E	630313	653256	25	6	38	0	13	3	23880	11056
39	9	1	16	ON	2	47	25	71	30E	659277	683309	25	8	6	2	1252		29162	11057
				OFF	2	44	45	72	19E	648878	672519	25	8	6	42	1256		29202	11058
39	9	2	91	ON	2	34	35	74	45E	615884	638286	25	8	9	15	13	8	29355	11059
				OFF	2	20	38	77	2E	589661	611082	25	8	12	43	1320		29563	11060
40	1	1	166	ON	2	66	14	37	35E	749099	776527	25	9	31	12	12	1	34272	11061
				OFF	2	39	23	51	2E	629521	652435	25	9	38	7	13	2	34687	11062
41	2	1	70	ON	2	55	27	22	55E	692585	717873	25	11	4	8	1235		39848	11063
				OFF	2	44	16	27	7E	645662	669182	25	11	6	59	1255		40019	11064
46	7	1	20	ON	2	39	41	85	3W	626909	649725	25	18	38	29	1258		67109	11065
				OFF	2	36	31	84	21W	617616	640083	25	18	39	16	13	1	67156	11066
47	7	1	20	ON	2	37	41	107	16W	620340	642909	25	20	9	3	1259		72543	11067
				OFF	2	34	33	106	37W	611929	634183	25	20	9	50	13	3	72590	11068
50	4	1	48	ON	2	71	20	163	25E	766851	794953	26	0	30	27	1124		1827	11069
				OFF	2	63	6	173	54E	721087	747453	26	0	32	44	12	8	1964	11070
52	4	1	62	ON	2	60	33	130	32E	706216	732019	26	3	33	31	1215		12811	11071
				OFF	2	50	19	135	45E	660724	684811	26	3	36	9	1239		12969	11072
52	4	2	33	ON	2	45	42	137	19E	643205	666633	26	3	37	20	1246		13040	11073
				OFF	2	40	30	138	43E	625965	648745	26	3	38	38	1253		13118	11074
53	4	1	43	ON	2	67	29	101	24E	741059	768182	26	5	1	43	1147		18103	11075
				OFF	2	60	16	108	3E	703877	729592	26	5	3	39	1215		18219	11076
53	4	2	92	ON	2	42	46	115	29E	632505	655531	26	5	8	7	1250		18487	11077
				OFF	2	28	43	118	25E	597298	619004	26	5	11	37	13	5	18697	11078
54	7	1	117	ON	2	46	36	91	42E	645049	668546	26	6	37	12	1244		23832	11079
				OFF	2	28	41	95	45E	596933	618626	26	6	41	40	13	4	24100	11080
56	1	1	101	ON	2	59	25	40	37E	696940	722393	26	9	34	1	1216		34441	11081
				OFF	2	43	24	47	18E	632752	655787	26	9	38	6	1247		34686	11082
57	1	1	20	ON	2	77	52	18	2W	803920	833434	26	10	58	38	946		39518	11083
				OFF	2	75	4	4	48W	782203	810889	26	10	59	40	1040		39580	11084
57	1	2	20	ON	2	52	37	21	30E	666077	690365	26	11	5	49	1231		39949	11085
				OFF	2	49	18	22	48E	652927	676720	26	11	6	40	1237		40000	11086
63	5	1	20	ON	2	38	34	110	7W	614727	637085	26	20	9	35	1249		72575	11087
				OFF	2	35	22	109	26W	606962	629030	26	20	10	23	1252		72623	11088
66	7	1	50	ON	2	66	12	168	17E	720155	746486	27	0	32	35	1145		1955	11089
				OFF	2	57	57	174	53E	681131	705987	27	0	34	46	1214		2086	11090
69	7	1	93	ON	2	64	22	102	10E	707960	733829	27	5	3	9	1151		18189	11091
				OFF	2	49	19	110	51E	644495	667972	27	5	7	3	1230		18423	11092
69	7	2	37	ON	2	42	40	112	54E	622990	645659	27	5	8	43	1240		18523	11093
				OFF	2	37	3	114	14E	608324	630443	27	5	10	7	1247		18607	11094
69	7	3	21	ON	2	24	2	116	33E	588015	609374	27	5	13	21	1259		18801	11095
				OFF	2	20	48	117	0E	586153	607442	27	5	14	9	13	2	18849	11096
70	5	1	104	ON	2	52	18	87	2E	654748	678610	27	6	36	19	1224		23779	11097
				OFF	2	36	25	91	43E	606509	628560	27	6	40	19	1247		24019	11098

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- CONTROL NO.

72	3	1	102	ON	2	60	22	37	24E	686473	711531	27	9	34	16	12	3	34456	11099
				OFF	2	44	25	44	26E	626529	649331	27	9	38	20	1236	34700		11100
73	2	1	34	ON	2	54	17	18	11E	660170	684236	27	11	5	51	1218	39951		11101
				OFF	2	48	56	20	21E	640485	663811	27	11	7	13	1228	40033		11102

OPERATIONS SUMMARY

AFT	PAN	CAMERA	NUMBER	173																
OPN NO	FRA	Q	LAT	LONG	HEIGHT	RANGE	DA	H	M	S	LTIM	S-TIM								
PRE-FLT	113																			
1	4	0	11	ON	2	63	45	155	23W	783532	812269	22	22	57	47	1236	82667		12001	
				OFF	2	62	2	153	57W	773191	801534	22	22	58	14	1242	82694		12002	
5	7	1	21	ON	2	76	48	87	12E	867776	899734	23	4	54	31	1043	17671		12003	
				OFF	2	73	31	99	0E	842304	873285	23	4	55	38	1131	17738		12004	
5	7	2	71	ON	2	61	55	115	21E	769554	797758	23	4	58	52	1240	17932		12005	
				OFF	2	49	28	121	54E	704224	729951	23	5	2	4	13	9	18124		12006
5	7	3	21	ON	2	47	0	122	44E	692715	718008	23	5	2	42	1313	18162		12007	
				OFF	2	43	30	123	46E	677350	702063	23	5	3	35	1318	18215		12008	
7	9	1	62	UN	2	53	18	75	0E	722433	748849	23	8	1	22	13	1	28882		12009
				OFF	2	42	56	78	33E	675105	699732	23	8	3	59	1318	29039		12010	
7	9	2	69	ON	2	38	26	79	40E	657515	681481	23	8	5	7	1323	29107		12011	
				OFF	2	27	39	81	43E	624000	646706	23	8	7	48	1334	29268		12012	
7	9	3	19	ON	2	25	8	82	7E	618055	640538	23	8	8	25	1336	29305		12013	
				OFF	2	22	15	82	32E	612206	634470	23	8	9	8	1339	29348		12014	
7	9	4	28	ON	2	20	39	82	46E	609382	631540	23	8	9	32	1340	29372		12015	
				OFF	2	16	21	83	20E	603452	625388	23	8	10	36	1343	29436		12016	
9	4	0	11	ON	1	37	15	123	36W	1156793	1199990	23	10	39	48	225	38388		12017	
				OFF	1	40	14	122	56W	1145787	1188551	23	10	40	35	228	38435		12018	
9	4	1	99	ON	2	61	16	25	6E	758960	786762	23	10	59	35	1240	39575		12019	
				OFF	2	44	33	32	44E	676190	700859	23	11	3	51	1314	39831		12020	
16	4	0	11	ON	2	38	5	124	25W	637306	660512	23	21	36	20	1318	77780		12021	
				OFF	2	36	20	124	2W	631337	654319	23	21	36	46	1320	77806		12022	
18	4	1	30	ON	2	67	9	175	23E	775321	803745	24	0	29	6	1210	1746		12023	
				OFF	2	61	46	179	26W	744246	771489	24	0	30	32	1232	1832		12024	
20	6	1	48	ON	2	60	11	136	19E	733288	760116	24	3	31	11	1236	12671		12025	
				OFF	2	51	55	140	41E	691461	716706	24	3	33	19	1256	12799		12026	
21	6	1	140	ON	2	61	9	112	58E	737381	764363	24	5	1	3	1232	18063		12027	
				OFF	2	38	6	122	9E	634225	657316	24	5	6	54	1315	18414		12028	
21	6	2	34	ON	3	13	48	129	18E	626946	649763	24	5	19	43	1356	19183		12029	
				OFF	3	19	15	130	0E	646668	670225	24	5	21	4	14	1	19264		12030
22	3	1	54	ON	2	59	23	91	29E	726768	753349	24	6	31	37	1237	23497		12031	
				OFF	2	50	8	96	1E	681279	706140	24	6	33	59	1258	23639		12032	
22	3	2	39	ON	2	44	32	97	51E	657372	681332	24	6	35	24	13	6	23724		12033
				OFF	2	38	18	99	25E	634278	657370	24	6	36	57	1314	23817		12034	
22	3	3	18	ON	2	1	6	104	53E	592574	614102	24	6	46	9	1345	24369		12035	
				OFF	3	1	40	105	12E	596829	618517	24	6	46	50	1347	24410		12036	
23	5	1	91	ON	2	60	18	68	12E	730506	757228	24	8	1	29	1234	28889		12037	
				OFF	2	45	11	74	58E	659185	683213	24	8	5	20	13	5	29120		12038
23	5	2	33	ON	2	35	34	77	20E	624822	647559	24	8	7	45	1317	29265		12039	
				OFF	2	30	29	78	17E	610646	632852	24	8	9	1	1322	29341		12040	
25	2	1	105	ON	2	59	19	23	29E	723138	749581	24	11	1	57	1235	39717		12041	
				OFF	2	42	8	30	27E	645808	669334	24	11	6	19	13	8	39979		12042
29	7	1	52	ON	3	19	26	51	24W	652445	676219	24	17	21	57	1356	62517		12043	
				OFF	3	28	1	50	8W	691690	716943	24	17	24	6	14	3	62646		12044
32	8	0	11	ON	2	38	13	127	20W	627743	650590	24	21	37	59	13	8	77879		12045

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- CONTROL NO. [REDACTED]

OFF 2 45 18	44 7E	626529	649331	27 9 38	20 1234	34700	12100
73 2 1 35 ON 2 55 13	17 41E	660170	684236	27 11 5	51 1216	39951	12101
OFF 2 49 50	19 58E	640485	663811	27 11 7	13 1227	40033	12102

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PHOTOGRAPHIC SUMMARY

FWD PAN CAMERA NO		172	0.2250 SLIT W/25		FILTER		3404 FILM		
OPN NO	FRA	FEET	ET	S-EL	S-DIR	EV	FULL	INT	PRI
PRE-FLT	110	291.0							
1 4 0	11	29.1	ON 229	26.8	33.9	11.69	11.93	11.33	10.73
			OFF 233	28.4	34.4	11.72	11.95	11.35	10.75
5 7 1	21	55.5	ON 208	13.6	31.7	11.55	11.39	10.79	10.19
			OFF 214	17.4	31.6	11.60	11.63	11.03	10.43
5 7 2	71	187.8	ON 235	28.6	33.7	11.73	11.95	11.35	10.75
			OFF 262	39.1	38.6	11.88	12.06	11.46	10.86
5 7 3	21	55.5	ON 267	41.1	39.9	11.91	12.07	11.47	10.87
			OFF 273	43.8	42.0	11.95	12.09	11.49	10.89
7 9 1	62	164.0	ON 258	36.0	36.4	11.86	12.04	11.44	10.84
			OFF 277	44.3	42.0	11.97	12.09	11.49	10.89
7 9 2	69	182.5	ON 285	47.7	45.3	12.01	12.10	11.50	10.90
			OFF 299	54.7	55.8	12.08	12.10	11.50	10.90
7 9 3	19	50.3	ON 302	56.1	58.9	12.09	12.10	11.50	10.90
			OFF 304	57.5	62.8	12.10	12.10	11.50	10.90
7 9 4	28	74.1	ON 305	58.2	65.1	12.11	12.10	11.50	10.90
			OFF 307	59.8	71.9	12.12	12.10	11.50	10.90
9 4 0	11	29.1	ON 159	-38.5	37.4	11.17	0.00	0.00	0.00
			OFF 160	-36.0	36.1	11.17	0.00	0.00	0.00
9 4 1	99	261.9	ON 253	29.2	33.2	11.83	11.96	11.36	10.76
			OFF 284	43.2	40.6	12.00	12.09	11.49	10.89
16 4 0	10	26.5	ON 287	48.5	43.6	12.02	12.10	11.50	10.90
			OFF 289	49.8	45.1	12.03	12.10	11.50	10.90
18 4 1	30	79.3	ON 231	23.8	30.2	11.70	11.86	11.26	10.66
			OFF 241	28.8	31.4	11.77	11.96	11.36	10.76
20 6 1	48	127.0	ON 243	30.3	31.5	11.77	11.98	11.38	10.78
			OFF 259	37.6	34.5	11.87	12.05	11.45	10.85
21 6 1	140	370.3	ON 241	29.4	31.1	11.76	11.97	11.37	10.77
			OFF 283	48.8	42.5	12.00	12.10	11.50	10.90
21 6 2	34	89.9	ON 286	57.4	124.5	12.01	12.10	11.50	10.90
			OFF 278	54.0	130.9	11.97	12.10	11.50	10.90
22 3 1	54	142.8	ON 246	31.1	31.4	11.79	11.99	11.39	10.79
			OFF 264	39.2	35.0	11.90	12.06	11.46	10.86
22 3 2	38	100.5	ON 275	43.8	37.9	11.95	12.09	11.49	10.89
			OFF 284	48.7	42.2	12.00	12.10	11.50	10.90
22 3 3	18	47.6	ON 301	63.4	99.5	12.08	12.10	11.50	10.90
			OFF 299	62.8	104.9	12.08	12.10	11.50	10.90
23 5 1	91	240.7	ON 246	30.2	31.0	11.79	11.98	11.38	10.78
			OFF 275	43.3	37.4	11.95	12.09	11.49	10.89
23 5 2	33	87.3	ON 289	50.8	44.2	12.03	12.10	11.50	10.90
			OFF 295	54.4	49.1	12.06	12.10	11.50	10.90
25 2 1	105	277.7	ON 249	31.2	30.9	11.81	11.99	11.39	10.79
			OFF 280	45.9	38.8	11.98	12.10	11.50	10.90
29 7 1	51	134.9	ON 273	54.8	132.4	11.95	12.10	11.50	10.90
			OFF 258	48.4	140.1	11.86	12.10	11.50	10.90
32 8 0	10	26.5	ON 287	49.3	40.1	12.02	12.10	11.50	10.90
			OFF 289	50.7	41.4	12.03	12.10	11.50	10.90

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CONTROL NO. [REDACTED]

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- CONTROL NO. [REDACTED]

34	9	1	42	111.1	ON	226	19.6	26.9	11.67	11.72	11.12	10.52	13047
					OFF	241	26.9	28.1	11.76	11.93	11.33	10.73	13048
35	9	1	54	142.8	ON	218	15.1	26.7	11.62	11.50	10.90	10.30	13049
					OFF	236	24.8	27.5	11.74	11.88	11.28	10.68	13050
36	9	1	139	367.7	ON	239	25.5	27.4	11.75	11.90	11.30	10.70	13051
					OFF	283	46.1	36.2	12.00	12.10	11.50	10.90	13052
37	9	1	105	277.7	ON	290	50.0	39.3	12.03	12.10	11.50	10.90	13053
					OFF	304	61.0	57.0	12.10	12.10	11.50	10.90	13054
38	7	1	125	330.6	ON	252	30.5	28.3	11.83	11.98	11.38	10.78	13055
					OFF	287	48.1	37.3	12.02	12.10	11.50	10.90	13056
39	9	1	16	42.3	ON	276	41.2	32.4	11.96	12.07	11.47	10.87	13057
					OFF	280	43.5	33.8	11.98	12.09	11.49	10.89	13058
39	9	2	91	240.7	ON	294	51.9	40.7	12.05	12.10	11.50	10.90	13059
					OFF	304	61.4	57.0	12.10	12.10	11.50	10.90	13060
40	1	1	166	439.1	ON	238	23.8	26.5	11.75	11.86	11.26	10.66	13061
					OFF	288	48.1	36.8	12.02	12.10	11.50	10.90	13062
41	2	1	70	185.1	ON	262	34.1	28.9	11.88	12.02	11.42	10.82	13063
					OFF	281	44.0	33.6	11.99	12.09	11.49	10.89	13064
46	7	1	20	52.9	ON	288	48.1	35.3	12.02	12.10	11.50	10.90	13065
					OFF	292	50.7	37.5	12.04	12.10	11.50	10.90	13066
47	7	1	20	52.9	ON	290	49.8	36.4	12.03	12.10	11.50	10.90	13067
					OFF	293	52.4	38.8	12.05	12.10	11.50	10.90	13068
50	4	1	48	127.0	ON	228	18.4	24.2	11.69	11.68	11.08	10.48	13069
					OFF	246	26.9	25.3	11.80	11.93	11.33	10.73	13070
52	4	1	62	164.0	ON	253	29.4	25.5	11.84	11.97	11.37	10.77	13071
					OFF	272	39.0	28.6	11.94	12.06	11.46	10.86	13072
52	4	2	33	87.3	ON	280	43.1	30.6	11.98	12.09	11.49	10.89	13073
					OFF	287	47.7	33.4	12.02	12.10	11.50	10.90	13074
53	4	1	43	113.7	ON	238	22.5	24.1	11.75	11.82	11.22	10.62	13075
					OFF	253	29.6	25.4	11.84	11.97	11.37	10.77	13076
53	4	2	92	243.3	ON	285	45.8	31.9	12.01	12.10	11.50	10.90	13077
					OFF	300	57.3	42.9	12.08	12.10	11.50	10.90	13078
54	7	1	117	309.5	ON	279	42.4	29.8	11.98	12.08	11.48	10.88	13079
					OFF	300	57.4	42.6	12.08	12.10	11.50	10.90	13080
56	1	1	101	267.1	ON	259	30.5	25.0	11.87	11.98	11.38	10.78	13081
					OFF	286	45.3	30.9	12.01	12.09	11.49	10.89	13082
57	1	1	20	52.9	ON	219	10.1	23.7	11.63	11.10	10.50	9.90	13083
					OFF	225	14.0	23.2	11.67	11.43	10.83	10.23	13084
57	1	2	20	52.9	ON	273	36.9	26.8	11.95	12.05	11.45	10.85	13085
					OFF	279	40.0	28.0	11.98	12.07	11.47	10.87	13086
63	5	1	20	52.9	ON	294	49.8	32.2	12.05	12.10	11.50	10.90	13087
					OFF	297	52.5	34.4	12.07	12.10	11.50	10.90	13088
66	7	1	50	132.3	ON	247	23.7	22.1	11.80	11.86	11.26	10.66	13089
					OFF	264	32.0	23.6	11.90	12.00	11.40	10.80	13090
69	7	1	93	246.0	ON	253	25.6	21.8	11.83	11.90	11.30	10.70	13091
					OFF	281	40.2	25.6	11.99	12.07	11.47	10.87	13092
69	7	2	37	97.9	ON	291	46.4	28.5	12.04	12.10	11.50	10.90	13093
					OFF	297	51.4	31.7	12.07	12.10	11.50	10.90	13094
69	7	3	21	55.5	ON	305	61.9	44.2	12.10	12.10	11.50	10.90	13095
					OFF	305	64.2	48.9	12.11	12.10	11.50	10.90	13096
70	5	1	104	275.1	ON	279	37.4	24.4	11.98	12.05	11.45	10.85	13097
					OFF	299	52.0	31.9	12.08	12.10	11.50	10.90	13098
72	3	1	102	269.8	ON	264	29.6	22.0	11.90	11.97	11.37	10.77	13099
					OFF	290	44.9	27.0	12.03	12.09	11.49	10.89	13100

~~TOP SECRET~~

- CONTROL NO. [REDACTED]

~~TOP SECRET~~

- CONTROL NO. [REDACTED]

73 2 1	34	89.9	ON	276	35.6	23.2	11.96	12.03	11.43	10.83	13101
			OFF	284	40.7	24.9	12.00	12.07	11.47	10.87	13102

PHOTOGRAPHIC SUMMARY

AFT PAN	CAMERA NO	173	0.1500	SLIT	W/21	FILTER	3404	FILM			
OPN NO	FRA	FEET	ET	S-EL	S-DIR	EV	FULL	INT	PRI		
PRE-FLT	113	298.9									
1 4 0	11	29.1	ON	347	25.9	32.6	12.29	12.56	11.96	11.36	14001
			OFF	353	27.4	33.2	12.31	12.59	11.99	11.39	14002
5 7 1	21	55.5	ON	314	12.4	27.6	12.15	11.96	11.36	10.76	14003
			OFF	324	16.3	28.9	12.19	12.22	11.62	11.02	14004
5 7 2	71	187.8	ON	356	27.6	32.5	12.33	12.59	11.99	11.39	14005
			OFF	395	38.3	37.7	12.48	12.71	12.11	11.51	14006
5 7 3	21	55.5	ON	403	40.3	39.0	12.51	12.72	12.12	11.52	14007
			OFF	412	43.1	41.1	12.54	12.73	12.13	11.53	14008
7 9 1	62	164.0	ON	389	35.2	35.5	12.46	12.68	12.08	11.48	14009
			OFF	418	43.6	41.1	12.56	12.74	12.14	11.54	14010
7 9 2	69	182.5	ON	430	47.0	44.3	12.60	12.75	12.15	11.55	14011
			OFF	451	54.2	54.6	12.67	12.75	12.15	11.55	14012
7 9 3	19	50.3	ON	455	55.6	57.6	12.68	12.75	12.15	11.55	14013
			OFF	458	57.1	61.4	12.69	12.75	12.15	11.55	14014
7 9 4	28	74.1	ON	460	57.9	63.7	12.70	12.75	12.15	11.55	14015
			OFF	463	59.6	70.3	12.71	12.75	12.15	11.55	14016
9 4 0	11	29.1	ON	242	-39.9	37.9	11.77	0.00	0.00	0.00	14017
			OFF	242	-37.4	36.4	11.77	0.00	0.00	0.00	14018
9 4 1	99	261.9	ON	382	28.3	32.1	12.43	12.60	12.00	11.40	14019
			OFF	429	42.4	39.7	12.60	12.73	12.13	11.53	14020
16 4 0	11	29.1	ON	433	47.8	42.7	12.61	12.75	12.15	11.55	14021
			OFF	436	49.1	44.1	12.62	12.75	12.15	11.55	14022
18 4 1	30	79.3	ON	349	22.8	28.7	12.30	12.48	11.88	11.28	14023
			OFF	365	27.9	30.4	12.36	12.59	11.99	11.39	14024
20 6 1	48	127.0	ON	369	29.4	30.5	12.38	12.62	12.02	11.42	14025
			OFF	395	36.7	33.7	12.48	12.69	12.09	11.49	14026
21 6 1	140	370.3	ON	367	28.5	30.0	12.37	12.60	12.00	11.40	14027
			OFF	431	48.1	41.6	12.60	12.75	12.15	11.55	14028
21 6 2	34	89.9	ON	435	57.9	123.3	12.62	12.75	12.15	11.55	14029
			OFF	423	54.6	130.0	12.58	12.75	12.15	11.55	14030
22 3 1	54	142.8	ON	374	30.2	30.4	12.40	12.63	12.03	11.43	14031
			OFF	402	38.4	34.1	12.50	12.71	12.11	11.51	14032
22 3 2	39	103.2	ON	418	43.1	37.1	12.56	12.73	12.13	11.53	14033
			OFF	432	48.0	41.2	12.61	12.75	12.15	11.55	14034
22 3 3	18	47.6	ON	457	63.6	97.7	12.69	12.75	12.15	11.55	14035
			OFF	454	63.0	103.2	12.68	12.75	12.15	11.55	14036
23 5 1	91	240.7	ON	374	29.3	30.0	12.40	12.62	12.02	11.42	14037
			OFF	418	42.6	36.5	12.56	12.73	12.13	11.53	14038
23 5 2	33	87.3	ON	440	50.2	43.2	12.63	12.75	12.15	11.55	14039
			OFF	448	53.8	48.0	12.66	12.75	12.15	11.55	14040
25 2 1	105	277.7	ON	379	30.3	29.9	12.42	12.63	12.03	11.43	14041
			OFF	426	45.2	37.9	12.59	12.74	12.14	11.54	14042
29 7 1	52	137.5	ON	416	55.5	131.5	12.55	12.75	12.15	11.55	14043
			OFF	392	49.3	139.5	12.47	12.75	12.15	11.55	14044
32 8 0	11	29.1	ON	436	48.6	39.1	12.62	12.75	12.15	11.55	14045
			OFF	439	50.0	40.5	12.63	12.75	12.15	11.55	14046
34 9 1	42	111.1	ON	341	18.5	25.0	12.27	12.33	11.73	11.13	14047

~~TOP SECRET~~

- CONTROL NO. [REDACTED]

~~TOP SECRET~~

CONTROL NO.

35	9	1	55	145.5	OFF 363	25.9	26.9	12.36	12.56	11.96	11.36	14048
					ON 330	14.0	23.6	12.22	12.08	11.48	10.88	14049
					OFF 357	23.8	26.2	12.33	12.51	11.91	11.31	14050
36	9	1	140	370.3	ON 361	24.5	26.2	12.35	12.53	11.93	11.33	14051
					OFF 427	45.4	35.4	12.59	12.74	12.14	11.54	14052
37	9	1	106	280.4	ON 438	49.3	38.4	12.63	12.75	12.15	11.55	14053
					OFF 458	60.5	55.5	12.69	12.75	12.15	11.55	14054
38	7	1	125	330.6	ON 380	29.5	27.3	12.42	12.62	12.02	11.42	14055
					OFF 433	47.4	36.5	12.61	12.75	12.15	11.55	14056
39	9	1	16	42.3	ON 416	40.4	31.6	12.55	12.72	12.12	11.52	14057
					OFF 422	42.8	33.0	12.57	12.73	12.13	11.53	14058
39	9	2	93	246.0	ON 444	51.2	39.7	12.64	12.75	12.15	11.55	14059
					OFF 458	60.9	55.6	12.69	12.75	12.15	11.55	14060
40	1	1	166	439.1	ON 360	22.8	25.1	12.34	12.48	11.88	11.28	14061
					OFF 435	47.4	35.9	12.62	12.75	12.15	11.55	14062
41	2	1	70	185.1	ON 395	33.2	28.0	12.48	12.66	12.06	11.46	14063
					UFF 425	43.2	32.8	12.58	12.74	12.14	11.54	14064
46	7	1	20	52.9	ON 435	47.4	34.4	12.62	12.75	12.15	11.55	14065
					OFF 441	50.0	36.6	12.64	12.75	12.15	11.55	14066
47	7	1	20	52.9	ON 442	49.1	35.6	12.64	12.75	12.15	11.55	14067
					UFF 447	51.7	37.9	12.66	12.75	12.15	11.55	14068
50	4	1	49	129.6	ON 349	17.4	22.1	12.30	12.28	11.68	11.08	14069
					OFF 376	25.9	24.2	12.41	12.56	11.96	11.36	14070
52	4	1	63	166.6	ON 386	26.4	24.5	12.45	12.60	12.00	11.40	14071
					OFF 416	38.1	27.8	12.55	12.70	12.10	11.50	14072
52	4	2	33	87.3	ON 428	42.3	29.8	12.59	12.73	12.13	11.53	14073
					OFF 438	46.9	32.6	12.63	12.75	12.15	11.55	14074
53	4	1	43	113.7	ON 364	21.5	22.6	12.36	12.44	11.84	11.24	14075
					OFF 387	28.7	24.4	12.45	12.61	12.01	11.41	14076
53	4	2	93	246.0	ON 435	45.0	31.1	12.62	12.74	12.14	11.54	14077
					OFF 457	56.6	41.8	12.69	12.75	12.15	11.55	14078
54	7	1	118	312.1	ON 426	41.6	29.0	12.59	12.73	12.13	11.53	14079
					OFF 457	56.7	41.6	12.69	12.75	12.15	11.55	14080
56	1	1	102	269.8	ON 395	29.5	24.1	12.48	12.62	12.02	11.42	14081
					OFF 436	44.5	30.2	12.62	12.74	12.14	11.54	14082
57	1	1	21	55.5	ON 334	9.0	18.8	12.23	11.63	11.03	10.43	14083
					OFF 343	12.9	19.9	12.27	12.00	11.40	10.80	14084
57	1	2	21	55.5	ON 415	36.1	26.0	12.55	12.69	12.09	11.49	14085
					OFF 423	39.2	27.3	12.58	12.71	12.11	11.51	14086
63	5	1	21	55.5	ON 447	49.0	31.4	12.65	12.75	12.15	11.55	14087
					OFF 451	51.8	33.5	12.67	12.75	12.15	11.55	14088
66	7	1	50	132.3	ON 376	22.8	20.7	12.41	12.48	11.88	11.28	14089
					OFF 402	31.0	22.7	12.50	12.64	12.04	11.44	14090
69	7	1	94	248.6	ON 384	24.6	20.7	12.44	12.53	11.93	11.33	14091
					OFF 427	39.4	24.9	12.59	12.71	12.11	11.51	14092
69	7	2	37	97.9	ON 442	45.6	27.8	12.64	12.74	12.14	11.54	14093
					OFF 451	50.6	30.9	12.67	12.75	12.15	11.55	14094
69	7	3	21	55.5	ON 463	61.3	42.9	12.71	12.75	12.15	11.55	14095
					OFF 463	63.7	47.4	12.71	12.75	12.15	11.55	14096
70	5	1	104	275.1	ON 423	36.6	23.7	12.58	12.69	12.09	11.49	14097
					OFF 454	51.2	31.1	12.68	12.75	12.15	11.55	14098
72	3	1	102	269.8	ON 401	28.7	21.1	12.50	12.61	12.01	11.41	14099
					OFF 440	44.0	26.3	12.63	12.74	12.14	11.54	14100
73	2	1	35	92.6	ON 420	34.7	22.5	12.56	12.68	12.08	11.48	14101

~~TOP SECRET~~

- CONTROL NO.

~~TOP SECRET~~

- CONTROL NO. [REDACTED]

OFF 432 39.8 24.2 12.61 12.72 12.12 11.52

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STELLAR-INDEX SUMMARY

CAMERA DATA	ET	FILM	FILTER	GRID	ASSEMBLY NO	D69
STELLAR	2.0	3401	NONE	72		
INDEX	1/500	3400	w/21	84		

PERFORMANCE SUMMARY

OPN NO	FR	STEL FEET	INDX FEET	H	M	S	Q	ON LAT	ON LONG	Q	OFF LAT	OFF LONG	SEC DUR
PRE-FLT	15	1.48	2.97										
1 4 0	2	0.20	0.40	22	57	47	2	62	154W	2	60	153W	27
5 7 1	3	0.30	0.59	4	54	31	2	75	91E	2	72	101E	67
5 7 2	10	0.99	1.98	4	58	52	2	60	116E	2	48	122E	192
5 7 3	3	0.30	0.59	5	2	42	2	46	123E	2	42	124E	53
7 9 1	9	0.89	1.78	8	1	22	2	52	75E	2	41	78E	157
7 9 2	10	0.99	1.98	8	5	7	2	37	79E	2	26	81E	161
7 9 3	2	0.20	0.40	8	8	25	2	24	82E	2	21	82E	43
7 9 4	4	0.40	0.79	8	9	32	2	19	82E	2	15	83E	64
9 4 0	2	0.20	0.40	10	39	48	1	38	123W	1	41	122W	47
9 4 1	14	1.39	2.77	10	59	35	2	60	25E	2	43	33E	256
16 4 0	2	0.20	0.40	21	36	20	2	37	124W	2	35	123W	26
18 4 1	4	0.40	0.79	0	29	6	2	66	176E	2	60	178W	86
20 6 1	7	0.69	1.39	3	31	11	2	59	137E	2	50	141E	128
21 6 1	20	1.98	3.96	5	1	3	2	60	113E	2	37	122E	351
21 6 2	5	0.50	0.99	5	19	43	3	14	129E	3	20	130E	81
22 3 1	7	0.69	1.39	6	31	37	2	58	92E	2	49	96E	142
22 3 2	6	0.59	1.19	6	35	24	2	43	98E	2	37	99E	93
22 3 3	2	0.20	0.40	6	46	9	2	0	105E	3	2	105E	41
23 5 1	13	1.29	2.57	8	1	29	2	59	68E	2	44	75E	231
23 5 2	5	0.50	0.99	8	7	45	2	34	77E	2	29	78E	76
25 2 1	15	1.48	2.97	11	1	57	2	58	24E	2	41	30E	262
29 7 1	7	0.69	1.39	17	21	57	3	20	51W	3	29	49W	129
32 8 0	2	0.20	0.40	21	37	59	2	37	127W	2	35	126W	26
34 9 1	6	0.59	1.19	0	29	33	2	70	167E	2	63	176E	121
35 9 1	7	0.69	1.39	1	58	25	2	74	136E	2	65	152E	160
36 9 1	20	1.98	3.96	3	31	21	2	64	130E	2	41	141E	354
37 9 1	15	1.48	2.97	5	8	31	2	36	119E	2	20	122E	236
38 7 1	18	1.78	3.56	6	32	54	2	59	88E	2	39	96E	306
39 9 1	2	0.20	0.40	8	6	2	2	47	71E	2	44	72E	40
39 9 2	13	1.29	2.57	8	9	15	2	34	74E	2	20	77E	208
40 1 1	24	2.38	4.75	9	31	12	2	66	37E	2	39	51E	415
41 2 1	10	0.99	1.98	11	4	8	2	55	22E	2	44	27E	171
46 7 1	3	0.30	0.59	18	38	29	2	39	85W	2	36	84W	47
47 7 1	3	0.30	0.59	20	9	3	2	37	107W	2	34	106W	47
50 4 1	7	0.69	1.39	0	30	27	2	71	163E	2	63	173E	137
52 4 1	9	0.89	1.78	3	33	31	2	60	130E	2	50	135E	158
52 4 2	4	0.40	0.79	3	37	20	2	45	137E	2	40	138E	78
53 4 1	6	0.59	1.19	5	1	43	2	67	101E	2	60	108E	116
53 4 2	14	1.39	2.77	5	8	7	2	42	115E	2	28	118E	210
54 7 1	16	1.58	3.17	6	37	12	2	46	91E	2	28	95E	268
56 1 1	15	1.48	2.97	9	34	1	2	59	40E	2	43	47E	245
57 1 1	3	0.30	0.59	10	58	38	2	77	18W	2	75	4W	62
57 1 2	2	0.20	0.40	11	5	49	2	52	21E	2	49	22E	51

~~TOP SECRET~~

CONTROL NO. [REDACTED]

~~TOP SECRET~~ [REDACTED] - CONTROL NO. [REDACTED]

63	5	1	3	0.30	0.59	20	9	35	2	38	110W	2	35	109W	48	15044
66	7	1	7	0.69	1.39	0	32	35	2	66	168E	2	57	174E	131	15045
69	7	1	14	1.39	2.77	5	3	9	2	64	102E	2	49	110E	234	15046
69	7	2	5	0.50	0.99	5	8	43	2	42	112E	2	37	114E	84	15047
69	7	3	3	0.30	0.59	5	13	21	2	24	116E	2	20	117E	48	15048
70	5	1	15	1.48	2.97	6	36	19	2	52	87E	2	36	91E	240	15049
72	3	1	14	1.39	2.77	9	34	16	2	60	37E	2	44	44E	244	15050
73	2	1	5	0.50	0.99	11	5	51	2	54	18E	2	48	20E	82	15051

~~TOP SECRET~~ [REDACTED] - CONTROL NO. [REDACTED]

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- CONTROL NO. [REDACTED]

A. 1024-1 LAUNCH AT 2131Z UN 09/22/65
B. DRY
C. FINAL PERFORMANCE ESTIMATE, PART 2

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RATE ESTIMATE

FWD PAN CAMERA NUMBER 172

OPN NO	FR	R	A	TUR/ DUR	INST CPS	INST ANG VEL	SCAN R/SEC	RATE I/SEC	PCT CALIB	RATE REQD
1 4 0	11	8	3 ON	1207	0.3431	0.02895	2.155	51.73	-0.2	0.0
			OFF	27	0.3488	0.02943	2.192	52.60	-0.2	0.3
5 7 1	21	6	4 ON	846	0.3104	0.02619	1.951	46.81	-0.2	1.1
			OFF	67	0.3201	0.02701	2.011	48.27	-0.2	0.9
5 7 2	71	6	4 ON	1107	0.3519	0.02969	2.211	53.06	-0.2	0.7
			OFF	192	0.3912	0.03301	2.458	58.99	-0.2	1.8
5 7 3	21	6	4 ON	1337	0.3991	0.03367	2.508	60.18	-0.2	2.0
			OFF	53	0.4083	0.03445	2.566	61.57	-0.2	1.9
7 9 1	62	6	4 ON	1267	0.3854	0.03252	2.422	58.12	-0.2	3.0
			OFF	157	0.4145	0.03498	2.605	62.51	-0.2	3.0
7 9 2	69	6	4 ON	1492	0.4262	0.03596	2.678	64.26	-0.2	3.0
			OFF	161	0.4468	0.03770	2.807	67.38	-0.2	2.2
7 9 3	19	6	4 ON	1690	0.4508	0.03803	2.832	67.97	-0.2	2.1
			OFF	43	0.4540	0.03831	2.853	68.47	-0.2	1.8
7 9 4	28	6	4 ON	1757	0.4559	0.03847	2.865	68.76	-0.2	1.7
			OFF	64	0.4592	0.03874	2.885	69.24	-0.2	1.4
9 4 0	11	6	4 ON	43	0.2383	0.02011	1.497	35.93	-0.2	6.1
			OFF	47	0.2390	0.02016	1.501	36.03	-0.2	5.4
9 4 1	99	6	4 ON	1230	0.3779	0.03189	2.374	56.98	-0.2	6.1
			OFF	256	0.4248	0.03585	2.669	64.06	-0.2	5.5
16 4 0	10	6	4 ON	1510	0.4289	0.03619	2.695	64.68	-0.2	0.4
			OFF	26	0.4323	0.03648	2.716	65.19	-0.2	0.2
18 4 1	30	6	4 ON	1066	0.3449	0.02910	2.167	52.00	-0.2	-0.6
			OFF	86	0.3610	0.03046	2.268	54.43	-0.2	-0.4
20 6 1	48	6	4 ON	1184	0.3626	0.03059	2.278	54.68	-1.7	-1.5
			OFF	128	0.3876	0.03270	2.435	58.45	-1.7	-1.1
21 6 1	140	6	4 ON	1171	0.3600	0.03038	2.262	54.29	-1.7	-1.6
			OFF	351	0.4237	0.03575	2.662	63.90	-1.7	-1.4
21 6 2	34	6	4 ON	2292	0.4277	0.03608	2.687	64.49	-1.7	-1.6
			OFF	81	0.4161	0.03511	2.614	62.74	-1.7	-1.1
22 3 1	54	6	4 ON	1207	0.3674	0.03100	2.308	55.40	-1.7	-1.2
			OFF	142	0.3948	0.03331	2.480	59.53	-1.7	-0.9
22 3 2	38	6	4 ON	1434	0.4103	0.03462	2.578	61.88	-1.7	-0.8
			OFF	93	0.4244	0.03581	2.667	64.00	-1.7	-1.2
22 3 3	18	6	4 ON	2079	0.4493	0.03791	2.823	67.75	-1.7	-2.7
			OFF	41	0.4466	0.03768	2.806	67.35	-1.7	-2.5
23 5 1	91	6	4 ON	1207	0.3675	0.03101	2.309	55.41	-1.7	-0.6
			OFF	231	0.4106	0.03465	2.580	61.92	-1.7	-0.4
23 5 2	33	6	4 UN	1583	0.4323	0.03648	2.717	65.20	-1.7	-0.9
			OFF	76	0.4406	0.03718	2.768	66.44	-1.7	-1.5
25 2 1	105	6	4 ON	1229	0.3718	0.03137	2.336	56.06	-1.7	-0.5
			OFF	262	0.4189	0.03535	2.632	63.18	-1.7	-0.6
29 7 1	51	6	4 ON	2416	0.4085	0.03447	2.566	61.60	-1.7	-2.0
			OFF	129	0.3855	0.03252	2.422	58.13	-1.7	-1.6

~~TOP SECRET~~

- CONTROL NO. [REDACTED]