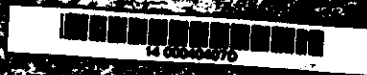


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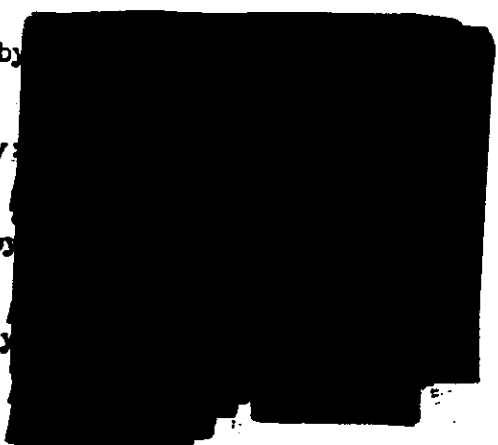
*Copy*

SP No. \_\_\_\_\_  
Copy No. \_\_\_\_\_  
*1 of 41* Pages  
(Including Cover Sheet)

CORONA "J" FLIGHT DATA BOOK

SYSTEM NO. J-20  
VEHICLE NO. 1613  
MISSION NO. 1020  
CAMERA NOS. 136/137

Prepared by  
Checked by  
Approved by  
Approved by



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

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21 JUN 1965



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SYSTEM NO. 1-20  
VEHICLE NO. 1613  
MISSION NO. 1020  
CAMERA NOS. 136/137

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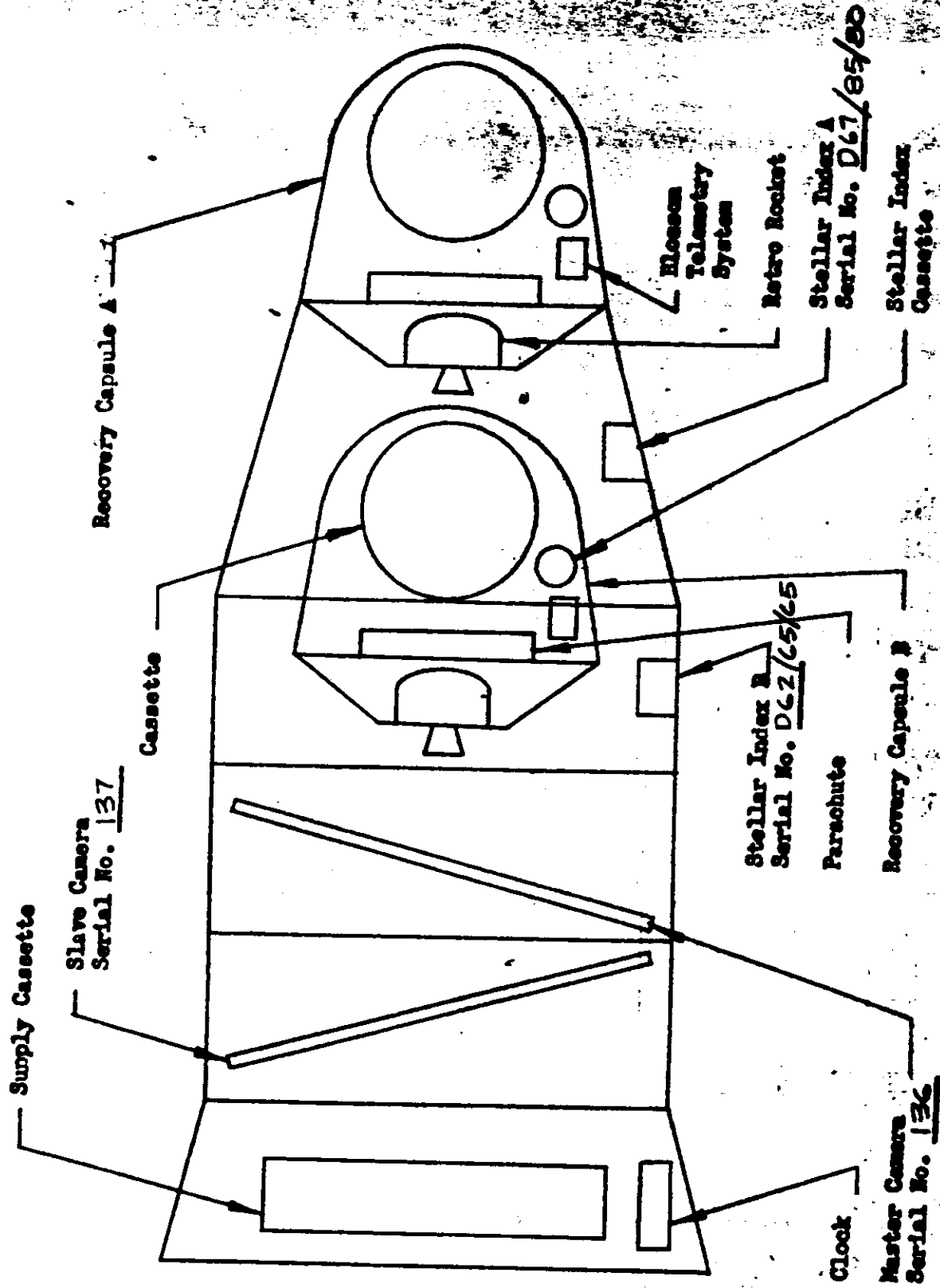
	<u>Page No.</u>
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SYSTEM NO. 1-76  
VEHICLE NO. 1071  
MISSION NO. 1020  
CAMERA NOS. 126/137

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VEHICLE LAYOUT: 1020

NO. [REDACTED]



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NO. [REDACTED]

SYSTEM NO. 1370  
VEHICLE NO. 144-13  
MISSION NO. 1020  
CAMERA NOS. 136/137

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NO. [REDACTED]

GENERAL FLIGHT DATA:

Master Camera Serial No. 136

Slave Camera Serial No. 137

Stellar Index "A" Serial No. D67/85/80

Stellar Index "B" Serial No. D62/65/65

Launch Date 6-9-65

Reactivation Date N.A.

Reactivation Orbit No. N.A.

Orbital Parameters: (Rev. 4B)

Period 89.786 Min.

Eccentricity 0.01386

Perigee 97.128 NM

Perigee Latitude 40.65 Deg. N

Apogee 196.52 NM

Inclination Angle 75.07 Deg.

Recovery Orbit No. 97

Recovery Date 6-15-65

REMARKS:

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SYSTEM NO. J-20  
VEHICLE NO. 1613  
MISSION NO. 1020  
CAMERA NOS. 136/137

LENS DATA SUMMARY: Master Camera No. 136

Lens Serial No. 1132435

Slit Width .250 Inch

Filter Type WRITTEN 25

Equivalent Operational Focal Length 609.628 MM

Resolution:

Static:

	Lines/MM	Film Type	Target Contrast
bench Test	<u>261</u>	<u>SO-132</u>	<u>HIGH</u>
Other	<u>143</u>	<u>SO-132</u>	<u>LOW</u>

Dynamic:

Itak <u>                    </u>	<u>178</u>	<u>SO-132</u>	<u>HIGH</u>
Itak <u>                    </u>	<u>128</u>	<u>SO-132</u>	<u>LOW</u>
AP	<u>184</u>	<u>SO-132</u>	<u>HIGH</u>
AP	<u>107</u>	<u>SO-132</u>	<u>LOW</u>
Other	<u>                    </u>	<u>                    </u>	<u>                    </u>

Note: Itak Post Vibration Resolution of 178 lines/MM Reported In

Message No.                      dated 6-9-65

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>.000</u>	<u>.000</u>	<u>.000</u>	<u>.000</u>	<u>.000</u>	<u>.000</u>	<u>.000</u>		

SYSTEM NO. 1-20 NO. [REDACTED] Page 6 of 41  
VEHICLE NO. 1213  
MISSION NO. 1020  
CAMERA NOS. 136/137

LENS DATA SUMMARY: (Horizon Cameras for F-105 Camera No. 136)

	Take-Up	Supply
Lens Serial No.	<u>814017</u>	<u>813518</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>F8.0</u>	<u>F6.8</u>
Operational Focal Length	<u>54.84</u> MM	<u>54.37</u> MM
Radial Distortion:		
10° off Axis	<u>.004</u> MM	<u>.009</u> MM
20° off Axis	<u>.016</u> MM	<u>.013</u> MM
Tangential Distortion (Maximum Vector)	<u>.004</u> MM	<u>.003</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	170		112	69	80	87	59	116	116	91	67	62	74	69
Tangential Resolution	170		116	89	84	67	42	116	115	89	65	64	53	41

95 Lines/MM Avg.      81 Lines/MM Avg.

Note:

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

SYSTEM NO. J 2A NO. 7

VEHICLE NO. 1613

MISSION NO. 1025

CAMERA NOS. 136/137

LENS DATA SUMMARY: Slave Camera No. 137

Lens Serial No. 1142435

Slit Width .175 Inch

Filter Type WRATTEN 21

Equivalent Operational Focal Length 609.539 MM

Resolution:

Static:

	<u>Lines/MM</u>	<u>Film Type</u>	<u>Target Contrast</u>
Bench Test	<u>245</u>	<u>SO-132</u>	<u>HIGH</u>
Other	<u>152</u>	<u>SO-132</u>	<u>LOW</u>

Dynamic:

Itek <u>                    </u>	<u>201</u>	<u>SO-132</u>	<u>HIGH</u>
Itek <u>                    </u>	<u>129</u>	<u>SO-132</u>	<u>LOW</u>
AP	<u>194</u>	<u>SO-132</u>	<u>HIGH</u>
AP	<u>102</u>	<u>SO-132</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 6-9-65.

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>.003</u>	<u>.002</u>	<u>.000</u>	<u>.000</u>	<u>.000</u>	<u>.002</u>	<u>.003</u>		

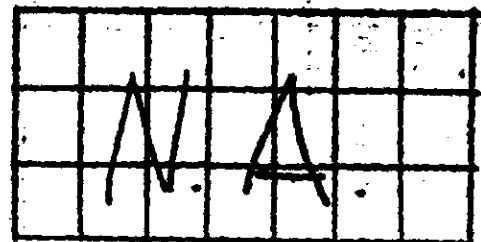
SYSTEM NO. J-20 ~~TOP SECRET~~ 812278  
 VEHICLE NO. 1618  
 MISSION NO. 1020 NO. [REDACTED]  
 CAMERA NO. 136/137

LENS DATA SUMMARY: (Horizon Cameras for SLAVE Camera No. 137)

	<u>Take-Up</u>	<u>Supply</u>
Lens Serial No.	<u>812303</u>	<u>812278</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>54.90</u> MM	<u>54.90</u> MM
Radial Distortion:		
10° off Axis	<u>.059</u> MM	<u>-.013</u> MM
20° off Axis	<u>.106</u> MM	<u>-.031</u> MM
Tangential Distortion (Maximum Vector)	<u>.004</u> MM	<u>.002</u> MM

Resolution:

Angle off Axis Deg.	0	5	10	15	20	25	27.5
Radial Resolution	184	173	172	141	130	118	91
Tangential Resolution	184	172	160	129	97	64	50



133 Lines/MM Avg.      N/A Lines/MM Avg.

NOTE:

1. Distortion and resolution are read at equivalent operational focal length.
2. Resolution in lines per MM on 50-132 film and HIGH contrast target.

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NO. [REDACTED]



SYSTEM NO. I-20  
VEHICLE NO. 1613  
MISSION NO. 1020  
CAMERA NOS. 136/137

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NO. [REDACTED]

LENS DATA SUMMARY STELLAR INDEX 067/85/80 A MISSION

	<u>Stellar</u>		<u>Index</u>
Lens Serial No.	<u>10519</u>		<u>017456</u>
Reseau Serial No.	<u>80</u>		<u>85</u>
Filter Type	<u>NONE</u>		<u>WRATTEN 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>84</u>	MM	<u>38.52</u> MM

Resolution:

Angle Off Axis	0	10	20	30	35
Resolution L/MM High Contrast	<u>93/104</u>	<u>101/101</u>	<u>113/83</u>	<u>93/40</u>	<u>85/17</u>

NOTE: Index Resolution of 72.67 Lines/MM AWAR  
Read From SO-130 Film.

Distortion:

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

Alignment:

0.0007 "/.937 Inches - 0.0005 "/2.25 Inches

[REDACTED]

[REDACTED]

[REDACTED]

VEHICLE NO. 1613

MISSION NO. 1020 NO. [REDACTED]

CAMERA NOS. 136/137

LENS DATA SUMMARY STELLAR INDEX D62/65/65 : B MISSION

	<u>Stellar</u>		<u>Index</u>	
Lens Serial No.	<u>10733</u>		<u>817458</u>	
Reseau Serial No.	<u>65</u>		<u>65</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</u>	MM	<u>38.57</u>	MM

Resolution:

Angle Off Axis	0	10	20	30	35
Resolution L/MM High Contrast	<u>74</u> 74	<u>78</u> 81	<u>101</u> 88	<u>104</u> 42	<u>91</u> 28

NOTE: Index Resolution of 73.8 Lines/MM AWAR

Read From 50-130 Film.

Distortion:

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

Alignment:

.0005 "/.937 Inches .0009 "/2.25 Inches

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NO. [REDACTED]

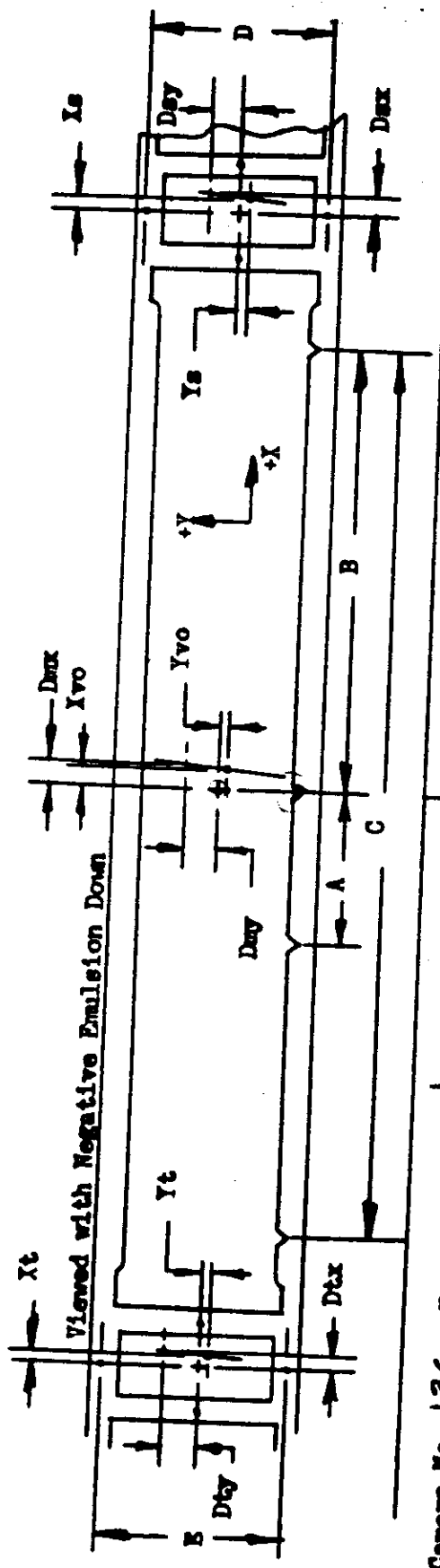
DEFINITION OF PANORAMIC CAMERA FORMAT DIMENSIONS:

- 1.0 Measurements are made with respect to collimator targets fixed with respect to the mechanical interface between the total payload assembly and the orbit 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  $X_0$  and  $Y_0$  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 scan direction offset of the targets defined in Paragraph 2.2 at a fixed distance from the target center in the Y direction. Dimensions  $D_{x1}$ ,  $D_{y1}$ ,  $D_{x2}$  and  $D_{y2}$  are the effects of these measurements.

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FORMAT DIMENSIONS: ( PANORAMIC CAMERAS)

No. [REDACTED]



Camera No.	Vehicle Motion	Scan Direction	Camera No.	Vehicle Motion	Scan Direction
A 76.175	Xt + 0.174	Dtx + 0.169	A 76.073	Xt - 0.071	Dtx - 0.053
B 354.916	Yt - 0.161	Dty + 2.859	B 354.941	Yt + 0.098	Dty + 2.098
C 710.009	Xs - 0.290	Dsx - 0.290	C 709.856	Xs + 0.226	Dsx + 0.221
D 56.433	Ys + 0.030	Dsy - 2.970	D 56.461	Ys - 0.173	Dsy - 3.173
E 56.453	Ivo + 0.267	Dsx + 0.267	E 56.470	Ivo + 0.022	Dsx + 0.036
	Ivo + 1.435	Day + 11.435		Ivo + 0.958	Day + 10.958

Format Dimensions:

Height	Panoramic	Take-Up	Supply
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Format Dimensions:

Height	Panoramic	Take-Up	Supply
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

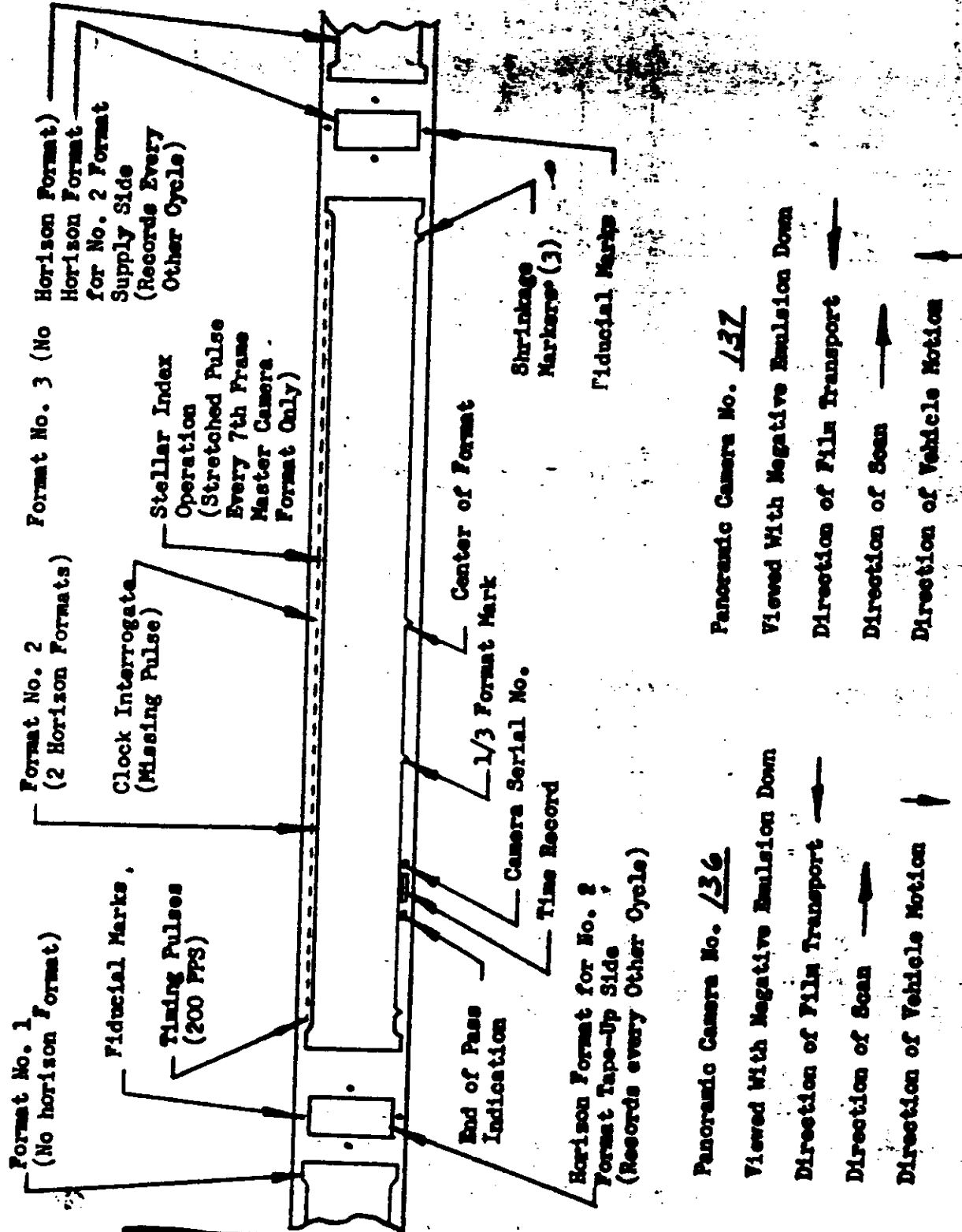
- Notes:
- All dimensions are in millimeters and are average dimensions of three formats.
  - Height of main format is taken at center of format.
  - Dt, Ds, Dv, X and Y dimensions are taken 10MM above point defining target center.
  - Format Sign Convention

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-I+Y | +I+Y  
 I-Y | +X-Y

**TOP SECRET**

NO. [REDACTED]  
 FORMAT LAYOUT: (PANORAMIC CAMERAS)



**TOP SECRET**

NO. [REDACTED]

SYSTEM NO. 1-20110  
VEHICLE NO. 1613  
MISSION NO. 1020  
CAMERA NOS. 136/137

**LENS SETTINGS AND FILM TYPES:**

**Panoramic Camera Settings:**

Panoramic Optics Slit Width  
Panoramic Optics Filter Type  
Horison Optics Exp. Time  
Horison Optics Aperture  
Horison Optics Filter Type

Camera No. 136 Camera No. 137  
250 in. 175 in.  
WRATTEN 25 WRATTEN 21  
1/100 sec. 1/100 sec.  
F6.8 SUPPLY F8.0 SUPPLY  
F6.8 TAKE-UP F6.8 TAKE-UP  
WRATTEN 25 WRATTEN 25

**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 7 Master Camera Frames.

**Film:**

**Panoramic Cameras:**

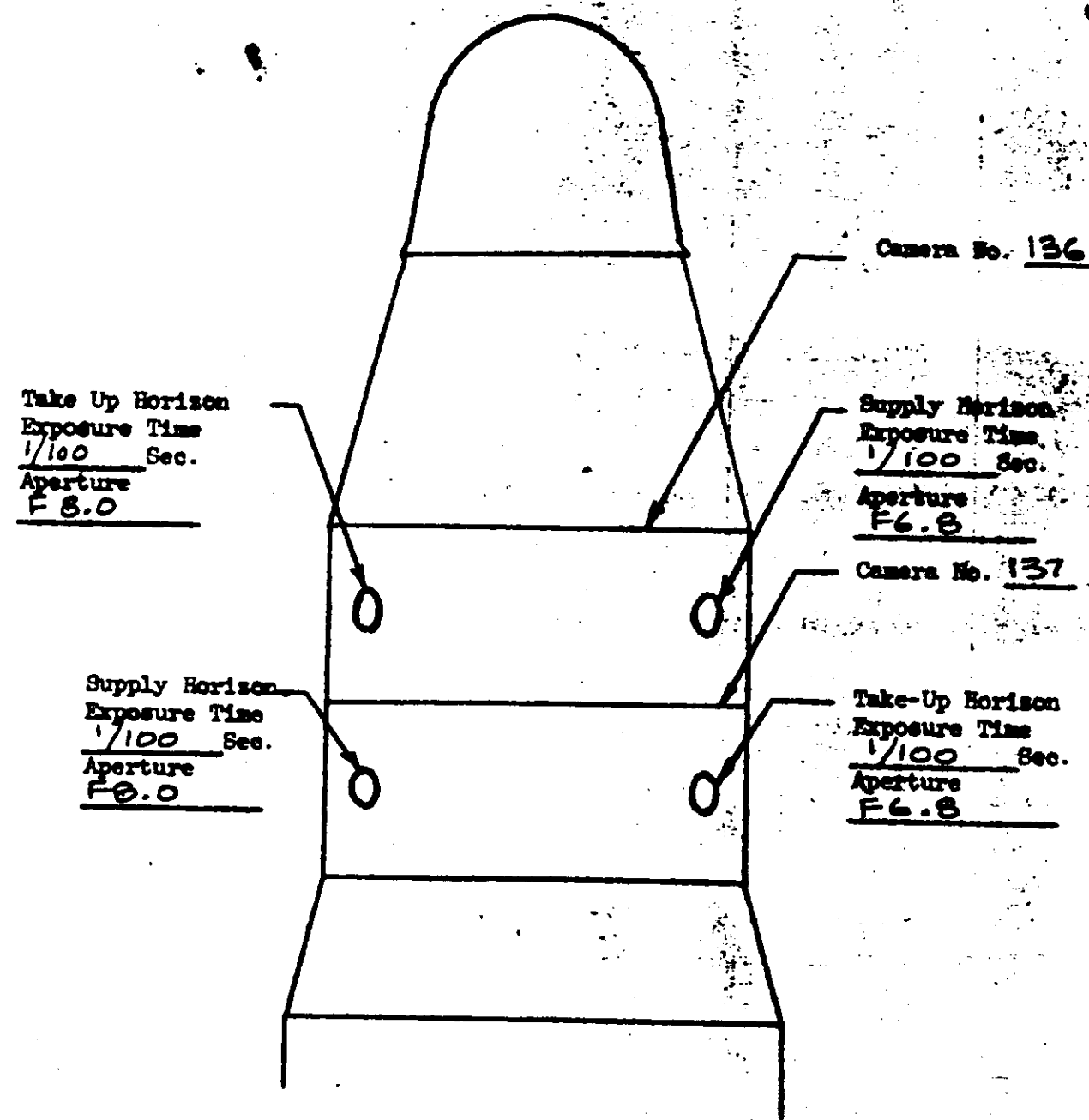
Type SO-132 SO-132  
Length 16000 ft. 16000 ft.  
Splices 4 4  
Emul. Data 97-18-17-5-5 207-6-5-5

**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>54-2-9-4</u>	<u>31-4-9-4</u>	<u>54-2-9-4</u>	<u>31-4-9-4</u>

TOP SECRET

HORIZON LINE SETTINGS (V) and (W) are the same as in the previous drawing



Take Up Horizon  
Exposure Time  
1/100 Sec.  
Aperture  
F 8.0

Camera No. 136

Supply Horizon  
Exposure Time  
1/100 Sec.  
Aperture  
F 6.8

Camera No. 137

Supply Horizon  
Exposure Time  
1/100 Sec.  
Aperture  
F 8.0

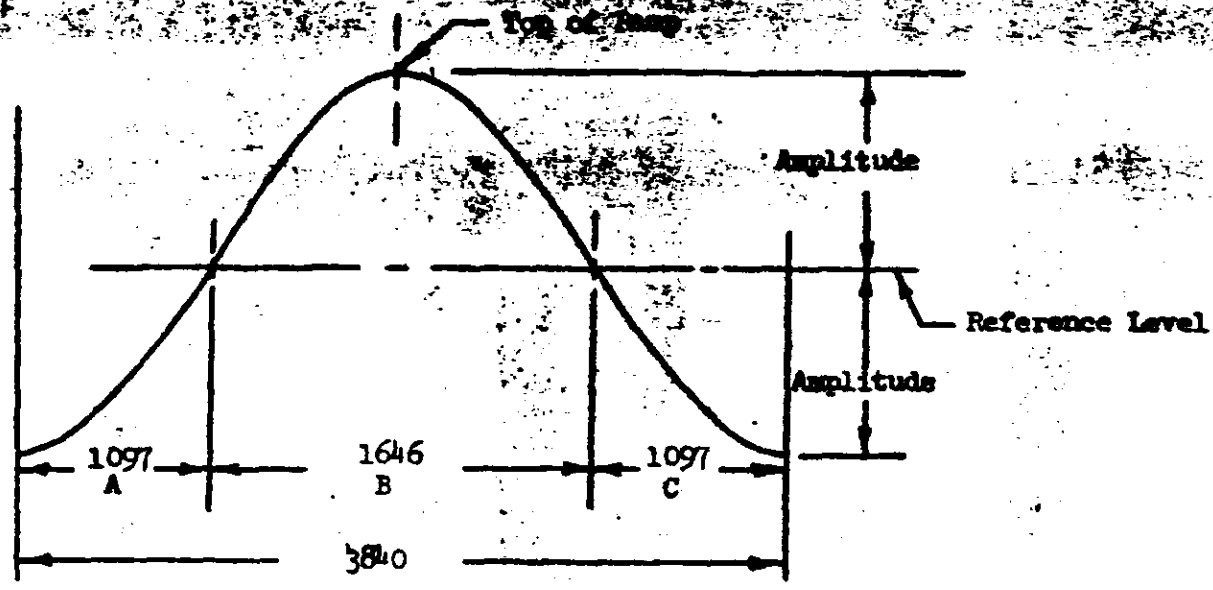
Take-Up Horizon  
Exposure Time  
1/100 Sec.  
Aperture  
F 6.8

Flight Direction

TOP SECRET

NO.

## 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:

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

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

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

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

CP = Camera Cycle Rate in Cycles/Sec  
 SLIT = Slit Width in Inches



SYSTEM NO. J-20  
 VEHICLE NO. 1613  
 MISSION NO. 1020  
 CAMERA NOS. 126/137

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NO. [REDACTED]

CYCLE PERIOD DATA:

PRE-FLIGHT CYCLE PERIODS:

V/H Ramp Level	V/H Ramp Amplitude	Cycle Period Seconds		Time Up Ramp Sec
		Master	Slave	
R6	A5	3.762	3.767	280
R6	A5	2.217	2.228	1774
R6	A4	3.900	3.903	345
R6	A4	2.211	2.220	1858
R5	A4	3.618	3.625	398
R5	A4	2.204	2.210	1895
R5	A4	3.574	3.581	435
R5	A4	2.239	2.236	2002
R5	A4	2.226	2.249	2037
R5	A4	2.207	2.214	2080

IN-FLIGHT CYCLE PERIODS

V/H Ramp Level	V/H Ramp Amplitude	Cycle Period Seconds		Orbit No.	Time Up Ramp Sec
		Master	Slave		
R6	A5	3.815	3.813	9	280
R6	A5	2.280	2.252	16	1774
R6	A4	3.932	3.931	25	345
R6	A4	2.246	2.249	32	1858
R5	A4	3.682	3.685	41	398
R5	A4	2.250	2.240	48	1895
R5	A4	3.680	3.675	57	435
R5	A4	2.239	2.236	63	2002
R5	A4	2.226	2.249	79	2037
R5	A4	2.248	2.248	95	2080

5

4

95

~~TOP SECRET~~

NO. [REDACTED]

A. 1020-1 LAUNCH 2158Z 6-9-65  
B. DRY  
C. PERFORMANCE ESTIMATE, PART 1

~~TOP SECRET~~

NO. [REDACTED]

OPERATIONS SUMMARY

FWD PAN CAMERA NUMBER		136														
OPN NO	FRA	Q	LAT	LONG	HEIGHT	RANGE	DA	H	M	S	LTIM	S-TIM				
PRE-FLT 101																
1	2	0	15	ON	2 52 20	152 08W	627493	650331	09	23	27	08	1318	84428		
				OFF	2 49 56	150 34W	620184	642747	09	23	27	47	1325	84467		
2	2	1	34	ON	2 65 27	170 36E	678456	703212	10	00	53	16	1215	03196		
				OFF	2 60 14	178 09E	655342	679227	10	00	54	49	1247	03289		
6	2	1	25	ON	2 54 48	092 41E	632911	655953	10	06	55	49	1306	24949		
				OFF	2 50 53	095 29E	620628	643208	10	06	56	52	1318	25012		
6	2	2	50	ON	2 40 09	100 55E	595371	617005	10	06	59	41	1343	25181		
				OFF	2 32 33	103 38E	585168	606421	10	07	01	38	1356	25298		
7	8	1	99	ON	2 57 43	067 27E	642606	666012	10	08	24	52	1254	30292		
				OFF	2 42 12	077 24E	598939	620707	10	08	29	01	1338	30541		
7	8	2	45	ON	2 24 44	083 12E	581705	602828	10	08	33	29	1406	30809		
				OFF	2 18 08	084 50E	584678	605912	10	08	35	09	1414	30909		
8	5	1	85	ON	2 64 40	035 58E	670396	694847	10	09	52	43	1216	35563		
				OFF	2 52 08	049 19E	623436	646122	10	09	56	16	1313	35776		
9	5	0	12	ON	1 39 51	115 11W	974260	1010322	10	11	05	25	0324	39925		
				OFF	1 42 45	113 58W	960727	996265	10	11	06	12	0330	39972		
10	2	1	60	ON	3 00 46	020 51E	624252	646967	10	13	09	29	1432	47369		
				OFF	3 10 19	022 49E	660199	684265	10	13	11	53	1443	47513		
11	4	1	30	ON	2 24 57	007 30W	581734	602858	10	14	32	52	1402	52372		
				OFF	2 20 22	006 20W	583402	604589	10	14	34	01	1408	52441		
11	4	2	37	ON	2 14 58	005 05W	588696	610080	10	14	35	23	1414	52523		
				OFF	2 09 24	003 53W	597944	619674	10	14	36	47	1421	52607		
16	5	0	16	ON	2 37 45	124 46W	591899	613404	10	21	58	50	1339	79130		
				OFF	2 35 21	123 55W	589053	610451	10	21	59	27	1343	79167		
18	7	1	73	ON	2 72 24	147 06E	707835	733700	11	00	48	26	1036	02906		
				OFF	2 63 23	171 24E	660013	684073	11	00	51	35	1217	03095		
22	1	1	65	ON	2 57 48	087 27E	636857	660046	11	06	52	32	1242	24752		
				OFF	2 48 19	094 26E	609848	632025	11	06	55	06	1312	24906		
22	1	2	53	ON	2 42 50	097 11E	598550	620303	11	06	56	32	1325	24992		
				OFF	2 35 14	100 09E	588225	609592	11	06	58	30	1339	25110		
22	1	3	31	ON	2 25 54	102 58E	584506	605734	11	07	00	52	1352	25252		
				OFF	2 21 17	104 09E	586457	607758	11	07	02	02	1358	25322		
22	1	4	22	ON	3 05 55	109 59E	649957	673637	11	07	08	53	1428	25733		
				OFF	3 09 35	110 44E	665012	689258	11	07	09	49	1432	25789		
23	8	1	65	ON	2 57 59	064 37E	636922	660114	11	08	22	19	1240	30139		
				OFF	2 48 30	071 40E	609940	632120	11	08	24	53	1311	30293		
23	8	2	38	ON	2 35 02	077 34E	587945	609302	11	08	28	23	1338	30503		
				OFF	2 29 31	079 18E	584743	605979	11	08	29	47	1347	30587		
24	6	1	102	ON	2 60 59	038 41E	647001	670572	11	09	51	18	1226	35478		
				OFF	2 46 33	050 05E	605254	627258	11	09	55	14	1315	35714		
25	6	0	12	ON	1 38 16	118 22W	960190	995707	11	11	02	28	0308	39748		
				OFF	1 41 11	117 13W	946761	981759	11	11	03	15	0314	39795		
26	7	1	58	ON	2 17 13	014 29E	591062	612534	11	13	02	22	1400	46942		
				OFF	2 08 33	016 23E	606470	628519	11	13	04	33	1410	47073		

~~TOP SECRET~~

NO. [REDACTED]

						NO.											
26	7	2	117	ON	2	01	16	017	55E	828328	849119	11	13	06	23	1417	47183
				OFF	3	18	17	022	02E	708604	734495	11	13	11	19	1439	47479
30	5	1	20	ON	2	40	23	083	00W	593044	614591	11	18	55	46	1323	68146
				OFF	2	37	21	081	50W	589412	610824	11	18	56	33	1329	68193
30	5	2	24	ON	2	23	00	077	30W	586302	607597	11	19	00	12	1350	68412
				OFF	2	19	23	076	37W	589320	610727	11	19	01	07	1354	68467
32	5	0	17	ON	2	37	57	127	22W	589799	611225	11	21	56	01	1326	78961
				OFF	2	35	28	126	28W	587485	608825	11	21	56	39	1330	78999
39	2	1	24	ON	2	58	20	061	49E	630433	653381	12	08	19	15	1226	29955
				OFF	2	54	59	064	49E	620668	643250	12	08	20	10	1239	30010
39	2	2	24	ON	2	52	24	066	46E	613959	636290	12	08	20	53	1247	30053
				OFF	2	48	54	068	59E	605972	628003	12	08	21	49	1257	30109
40	3	1	31	ON	2	59	21	038	06E	633237	656291	12	09	48	46	1221	35326
				OFF	2	54	59	042	10E	620326	642895	12	09	49	59	1238	35399
40	3	2	21	ON	2	52	22	044	08E	613565	635881	12	09	50	41	1247	35441
				OFF	2	49	24	046	02E	606796	628858	12	09	51	28	1255	35488
40	3	3	38	ON	2	42	51	049	25E	595043	616665	12	09	53	11	1310	35591
				OFF	2	37	24	051	37E	588714	610100	12	09	54	35	1321	35675
41	3	0	13	ON	1	38	21	120	47W	939459	974174	12	10	59	29	0256	39569
				OFF	1	41	17	119	38W	926011	960207	12	11	00	16	0301	39616
48	4	0	17	ON	2	38	01	129	47W	588958	610353	12	21	52	46	1313	78766
				OFF	2	35	31	128	53W	587300	608633	12	21	53	24	1317	78804
49	4	1	38	ON	2	71	06	170	49E	676260	700933	12	23	13	08	1036	83588
				OFF	2	66	43	176	42W	655400	679287	12	23	14	41	1127	83681
52	5	1	24	ON	2	45	48	136	15E	597769	619493	13	03	49	53	1254	13793
				OFF	2	42	17	137	54E	592958	614502	13	03	50	48	1302	13848
53	5	1	24	ON	2	40	48	115	53E	591261	612742	13	05	20	57	1304	19257
				OFF	2	37	16	117	15E	588348	609720	13	05	21	51	1310	19311
53	5	2	65	ON	2	33	51	118	26E	586808	608122	13	05	22	44	1316	19364
				OFF	2	24	17	121	13E	589417	610829	13	05	25	10	1330	19510
54	5	1	155	ON	2	49	26	088	58E	603669	625615	13	06	48	28	1244	24508
				OFF	2	26	56	097	52E	587826	609177	13	06	54	16	1325	24856
55	2	1	53	ON	2	56	56	060	48E	620365	642936	13	08	16	13	1219	29773
				OFF	2	49	31	066	17E	603593	625536	13	08	18	13	1243	29893
55	2	2	21	ON	2	47	02	067	40E	599267	621047	13	08	18	53	1249	29933
				OFF	2	44	00	069	11E	594807	616420	13	08	19	41	1256	29981
57	9	0	13	ON	1	38	09	123	13W	920328	954305	13	10	55	59	0243	39359
				OFF	1	41	11	122	01W	906532	939977	13	10	56	48	0248	39408
57	9	1	29	ON	1	75	03	046	50W	711006	736990	13	11	08	34	0801	40114
				OFF	2	74	01	027	30W	691688	716943	13	11	09	52	0919	40192
57	9	2	49	ON	2	09	13	034	07E	616475	638899	13	11	28	03	1344	41283
				OFF	2	01	38	035	41E	639437	662722	13	11	29	58	1352	41398
57	9	3	45	ON	3	03	46	036	47E	659651	683696	13	11	31	20	1358	41480
				OFF	3	11	16	038	20E	692563	717849	13	11	33	14	1406	41594
58	3	1	78	ON	2	35	22	004	43E	587514	608854	13	12	51	12	1310	46272
				OFF	2	23	51	008	07E	590861	612326	13	12	54	08	1326	46448
63	4	1	34	ON	2	35	21	108	28W	587427	608764	13	20	20	00	1306	73200
				OFF	2	30	19	106	51W	587458	608796	13	20	21	17	1313	73277
65	5	1	33	ON	2	68	31	176	46E	653919	677751	13	23	10	21	1057	83421
				OFF	2	64	32	174	56W	638858	662123	13	23	11	38	1131	83498
68	2	1	52	ON	2	49	46	131	48E	601031	622878	14	03	45	01	1232	13501
				OFF	2	42	15	135	40E	591266	612747	14	03	46	59	1249	13619
70	3	1	24	ON	2	42	29	090	17E	591303	612785	14	06	46	25	1247	24385
				OFF	2	38	56	091	45E	588739	610125	14	06	47	20	1254	24440
71	4	1	20	ON	2	70	11	036	01E	657846	681825	14	08	08	15	1032	29295

NO.																	
	OFF	2	67	49	042	43E	647722	671521	14	08	09	05	1059	29345			
71	4	2	31	ON	2	54	23	060	43E	608991	631135	14	08	13	01	1215	29581
	OFF	2	49	57	063	46E	600713	622547	14	08	14	12	1229	29652			
71	4	3	24	ON	2	47	27	065	13E	596911	618603	14	08	14	52	1235	29692
	OFF	2	43	57	066	59E	592640	614172	14	08	15	47	1243	29747			
71	4	4	59	ON	2	38	01	069	27E	588277	609646	14	08	17	19	1255	29839
	OFF	2	29	28	072	16E	588550	609929	14	08	19	30	1308	29970			
72	9	1	35	ON	2	57	24	035	30E	615437	637823	14	09	41	56	1203	34916
	OFF	2	52	33	039	26E	605087	627085	14	09	43	15	1221	34995			
72	9	2	56	ON	2	50	20	040	54E	601122	622971	14	09	43	51	1227	35031
	OFF	2	42	23	045	03E	591050	612523	14	09	45	56	1246	35156			
73	6	1	70	ON	2	00	00	033	48E	652603	676383	14	11	26	25	1341	41185
	OFF	3	11	31	036	11E	702667	728334	14	11	29	20	1354	41360			
75	2	1	24	ON	2	64	54	041	55W	635260	658390	14	14	08	59	1121	50939
	OFF	2	61	43	037	09W	625535	648300	14	14	09	56	1141	50996			
79	3	1	33	ON	2	34	46	110	26W	587637	608982	14	20	16	02	1254	72962
	OFF	2	30	15	109	01W	588916	610309	14	20	17	11	1301	73031			
84	8	1	47	UN	2	60	38	120	28E	618782	641293	15	03	37	48	1139	13068
	OFF	2	54	16	126	34E	604828	626817	15	03	39	34	1205	13174			
84	8	2	54	ON	2	48	43	130	16E	596052	617712	15	03	41	03	1222	13263
	OFF	2	41	07	134	00E	589014	610411	15	03	43	02	1239	13382			
85	8	1	73	ON	2	39	42	111	57E	588262	609631	15	05	13	07	1240	18787
	OFF	2	29	09	115	30E	590089	611525	15	05	15	49	1257	18949			
86	2	1	24	ON	2	42	27	088	09E	589573	610990	15	06	42	08	1234	24128
	OFF	2	38	58	089	36E	587942	609298	15	06	43	02	1241	24182			
86	2	2	34	UN	2	32	03	092	00E	588450	609825	15	06	44	48	1252	24288
	OFF	2	26	58	093	29E	592071	613581	15	06	46	05	1300	24365			
86	2	3	24	ON	2	07	10	098	06E	633159	656208	15	06	51	05	1323	24665
	OFF	2	03	08	098	56E	646742	670301	15	06	52	06	1327	24726			
87	7	1	21	ON	2	70	17	033	34E	648525	672153	15	08	03	54	1018	29034
	OFF	2	67	53	040	25E	639060	662332	15	08	04	45	1046	29085			
87	7	2	103	ON	2	56	56	056	26E	609007	631152	15	08	08	00	1153	29280
	OFF	2	42	30	065	30E	589476	610890	15	08	11	50	1233	29510			
88	5	1	55	ON	2	61	01	029	30E	617921	640401	15	09	36	35	1134	34595
	OFF	2	53	36	036	33E	602342	624238	15	09	38	38	1204	34718			
95	7	0	17	ON	2	38	49	113	59W	587412	608749	15	20	10	29	1234	72629
	OFF	2	36	18	113	03W	587422	608759	15	20	11	08	1238	72668			

OPERATIONS SUMMARY

AFT	PAN	CAMERA	NUMBER	137													
OPN	NO	FRA	Q	LAT	LONG	HEIGHT	RANGE	DA	H	M	S	LTIM	S-TIM				
PRE-FLT	101																
1	2	0	15	ON	2	53	11	152	47W	627493	650331	09	23	27	08	1315	84428
				OFF	2	50	47	151	09W	620184	642747	09	23	27	47	1323	84467
2	2	1	34	ON	2	66	14	169	03E	678456	703212	10	00	53	16	1209	03196
				OFF	2	61	03	177	06E	655342	679227	10	00	54	49	1243	03289
6	2	1	25	ON	2	55	38	091	57E	632911	655953	10	06	55	49	1303	24949
				OFF	2	51	43	094	53E	620628	643208	10	06	56	52	1316	25012
6	2	2	50	ON	2	40	58	100	32E	595371	617005	10	06	59	41	1341	25181
				OFF	2	33	22	103	19E	585168	606421	10	07	01	38	1354	25298
7	8	1	99	ON	2	58	33	066	34E	642606	666012	10	08	24	52	1251	30292
				OFF	2	43	01	076	58E	598939	620707	10	08	29	01	1336	30541
7	8	2	45	UN	2	25	33	082	56E	581705	602828	10	08	33	29	1405	30809
				OFF	2	18	57	084	35E	584678	605912	10	08	35	09	1413	30909
8	5	1	85	ON	2	65	27	034	32E	670396	694847	10	09	52	43	1210	35563

								NO.							
		OFF	2	52	58	048	41E	623436	646122	10	09	56	16	1311	35776
9	5	0	12	ON	1	38	30	115	48W	974260	1010322	10	11	05	25
		OFF	1	41	25	114	38W	960727	996265	10	11	06	12	0327	39925
10	2	1	60	ON	3	00	06	020	37E	624252	646967	10	13	09	29
		OFF	3	09	22	022	34E	660199	684265	10	13	11	53	1442	47369
11	4	1	30	ON	2	25	47	007	46W	581734	602858	10	14	32	52
		OFF	2	21	12	006	36W	583402	604589	10	14	34	01	1407	52372
11	4	2	37	ON	2	15	48	005	20W	588696	610080	10	14	35	23
		OFF	2	10	15	004	07W	597944	619674	10	14	36	47	1420	52523
16	5	0	16	ON	2	38	34	125	08W	591899	613404	10	21	58	50
		OFF	2	36	11	124	15W	589053	610451	10	21	59	27	1342	79130
18	7	1	73	ON	2	72	55	144	04E	707835	733700	11	00	48	26
		OFF	2	64	10	170	07E	660013	684073	11	00	51	35	1212	02906
22	1	1	65	ON	2	58	37	086	34E	636857	660046	11	06	52	32
		OFF	2	49	09	093	54E	609848	632025	11	06	55	06	1310	24752
22	1	2	53	UN	2	43	40	096	45E	598550	620303	11	06	56	32
		OFF	2	36	03	099	49E	588225	609592	11	06	58	30	1337	24992
22	1	3	31	ON	2	26	43	102	42E	584506	605734	11	07	00	52
		OFF	2	22	06	103	54E	586457	607758	11	07	02	02	1351	25252
22	1	4	22	ON	3	04	59	109	44E	649957	673637	11	07	08	53
		OFF	3	08	38	110	29E	665012	689258	11	07	09	49	1427	25733
23	8	1	65	ON	2	58	48	063	44E	636922	660114	11	08	22	19
		OFF	2	49	20	071	08E	609940	632120	11	08	24	53	1237	30139
23	8	2	38	ON	2	35	51	077	14E	587945	609302	11	08	28	23
		OFF	2	30	21	079	00E	584743	605979	11	08	29	47	1337	30503
24	6	1	102	ON	2	61	47	037	36E	647001	670572	11	09	51	18
		OFF	2	47	23	049	35E	605254	627258	11	09	55	14	1221	35478
25	6	0	12	ON	1	36	55	118	57W	960190	995707	11	11	02	28
		OFF	1	39	52	117	50W	946761	981759	11	11	03	15	0306	39748
26	7	1	58	ON	2	18	04	014	15E	591062	612534	11	13	02	22
		OFF	2	09	24	016	09E	606470	628519	11	13	04	33	1359	46942
26	7	2	117	ON	2	02	09	017	39E	626326	649119	11	13	06	23
		OFF	3	17	17	021	44E	708604	734495	11	13	11	19	1409	47183
30	5	1	20	ON	2	41	12	083	24W	593044	614591	11	18	55	46
		OFF	2	38	10	082	11W	589412	610824	11	18	56	33	1322	68146
30	5	2	24	ON	2	23	49	077	46W	586302	607597	11	19	00	12
		OFF	2	20	13	076	52W	589320	610727	11	19	01	07	1349	68412
32	5	0	17	ON	2	38	46	127	44W	589799	611225	11	21	56	01
		OFF	2	36	17	126	48W	587485	608825	11	21	56	39	1353	78961
39	2	1	24	ON	2	59	08	060	55E	630433	653381	12	08	19	15
		OFF	2	55	48	064	06E	620668	643250	12	08	20	10	1222	29955
39	2	2	24	UN	2	53	13	066	07E	613959	636290	12	08	20	53
		OFF	2	49	43	068	27E	605972	628003	12	08	21	49	1245	30053
40	3	1	31	ON	2	60	09	037	09E	633237	656291	12	09	48	46
		OFF	2	55	48	041	26E	620326	642895	12	09	49	59	1217	35326
40	3	2	21	UN	2	53	11	043	30E	613565	635881	12	09	50	41
		OFF	2	50	13	045	29E	606796	628858	12	09	51	28	1235	35441
40	3	3	38	ON	2	43	40	048	59E	595043	616665	12	09	53	11
		OFF	2	38	13	051	15E	588714	610100	12	09	54	35	1309	35591
41	3	0	13	ON	1	37	03	121	22W	939459	974174	12	10	59	29
		OFF	1	40	00	120	14W	926011	960207	12	11	00	16	0254	39569
48	4	0	17	ON	2	38	50	130	09W	588958	610353	12	21	52	46
		OFF	2	36	21	129	13W	587300	608633	12	21	53	24	1312	78766
49	4	1	38	ON	2	71	41	168	17E	676260	700933	12	23	13	08
		OFF	2	67	26	178	21W	655400	679287	12	23	14	41	1026	83588

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NO

						NO.											
52	5	1	24	ON	2	46	37	135	46E	597769	619493	13	03	49	53	1253	13793
				OFF	2	43	06	137	29E	592958	614502	13	03	50	48	1300	13848
53	5	1	24	ON	2	41	37	115	29E	591261	612742	13	05	20	57	1302	19257
				OFF	2	38	05	116	54E	588348	609720	13	05	21	51	1309	19311
53	5	2	65	ON	2	34	40	118	07E	586808	608122	13	05	22	44	1315	19364
				OFF	2	25	07	120	57E	589417	610829	13	05	25	10	1328	19510
54	5	1	155	ON	2	50	15	088	25E	603669	625615	13	06	48	28	1242	24508
				OFF	2	27	46	097	35E	587826	609177	13	06	54	16	1324	24856
55	2	1	53	ON	2	57	44	059	59E	620365	642936	13	08	16	13	1216	29773
				OFF	2	50	19	065	43E	603593	625536	13	08	18	13	1241	29893
55	2	2	21	ON	2	47	51	067	10E	599267	621047	13	08	18	53	1247	29933
				OFF	2	44	49	068	45E	594807	616420	13	08	19	41	1254	29981
57	9	0	13	ON	1	36	52	123	46W	920328	954305	13	10	55	59	0240	39359
				OFF	1	39	56	122	36W	906532	939977	13	10	56	48	0246	39408
57	9	1	29	ON	1	75	03	050	54W	711006	736990	13	11	08	34	0744	40114
				OFF	2	74	21	031	03W	691688	716943	13	11	09	52	0905	40192
57	9	2	49	ON	2	10	05	033	52E	616475	638899	13	11	28	03	1343	41283
				OFF	2	02	32	035	26E	639437	662722	13	11	29	58	1351	41398
57	9	3	45	ON	3	02	50	036	32E	659651	683696	13	11	31	20	1357	41480
				OFF	3	10	17	038	04E	692563	717849	13	11	33	14	1405	41594
58	3	1	78	ON	2	36	11	004	22E	587514	608854	13	12	51	12	1308	46272
				OFF	2	24	41	007	51E	590861	612326	13	12	54	08	1325	46448
63	4	1	34	ON	2	36	10	108	48W	587427	608764	13	20	20	00	1304	73200
				OFF	2	31	09	107	09W	587458	608796	13	20	21	17	1312	73277
65	5	1	33	ON	2	69	11	174	52E	653919	677751	13	23	10	21	1049	83421
				OFF	2	65	17	176	17W	638858	662123	13	23	11	38	1126	83498
68	2	1	52	ON	2	50	34	131	15E	601031	622878	14	03	45	01	1230	13501
				OFF	2	43	04	135	15E	591266	612747	14	03	46	59	1247	13619
70	3	1	24	ON	2	43	17	089	52E	591303	612785	14	06	46	25	1245	24385
				OFF	2	39	45	091	22E	588739	610125	14	06	47	20	1252	24440
71	4	1	20	ON	2	70	48	033	46E	657846	681825	14	08	08	15	1023	29295
				OFF	2	68	30	040	56E	647722	671321	14	08	09	05	1052	29345
71	4	2	31	ON	2	55	11	060	01E	608991	631135	14	08	13	01	1213	29581
				OFF	2	50	46	063	13E	600713	622547	14	08	14	12	1227	29652
71	4	3	24	ON	2	48	16	064	43E	596911	618603	14	08	14	52	1233	29692
				OFF	2	44	46	066	32E	592640	614172	14	08	15	47	1241	29747
71	4	4	59	ON	2	38	50	069	06E	588277	609646	14	08	17	19	1253	29839
				OFF	2	30	18	071	58E	588550	609929	14	08	19	30	1307	29970
72	9	1	35	ON	2	58	11	034	40E	615437	637823	14	09	41	56	1200	34916
				OFF	2	53	22	038	48E	605087	627085	14	09	43	15	1218	34995
72	9	2	56	ON	2	51	08	040	20E	601122	622971	14	09	43	51	1225	35031
				OFF	2	43	11	044	38E	591050	612523	14	09	45	56	1244	35156
73	6	1	70	ON	2	00	56	033	33E	652603	676383	14	11	26	25	1340	41185
				OFF	3	10	32	035	54E	702667	728334	14	11	29	20	1352	41360
75	2	1	24	ON	2	65	38	043	18W	635260	658390	14	14	08	59	1115	50939
				OFF	2	62	29	038	14W	625535	648300	14	14	09	56	1136	50996
79	3	1	33	ON	2	35	35	110	46W	587637	608982	14	20	16	02	1252	72962
				OFF	2	31	04	109	19W	588916	610309	14	20	17	11	1259	73031
84	8	1	47	ON	2	61	25	119	28E	618782	641293	15	03	37	48	1135	13068
				OFF	2	55	04	125	53E	604828	626817	15	03	39	34	1203	13174
84	8	2	54	ON	2	49	32	129	44E	596052	617712	15	03	41	03	1220	13263
				OFF	2	41	56	133	36E	589014	610411	15	03	43	02	1237	13382
85	8	1	73	ON	2	40	31	111	34E	588262	609631	15	05	13	07	1239	18787
				OFF	2	29	59	115	12E	590089	611525	15	05	15	49	1256	18949
86	2	1	24	ON	2	43	16	087	44E	589573	610990	15	06	42	08	1233	24128