

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

9
(Including Cover Sheet)



CORONA "J" FLIGHT DATA BOOK

SYSTEM NO. J-16

VEHICLE NO. 1180

MISSION NO. 1014-2

CAMERA NOS. 162, 139

Prepared by: [Redacted]

Checked by: [Redacted]

Approved by: [Redacted]

Approved by: [Redacted] Manager

for

Declassified and Released by the NRO

In Accordance with E. O. 12958

on NOV 26 1997

[Redacted]

7 DEC 1964

LOGGED

~~TOP SECRET~~

SYSTEM NO. 1016
VEHICLE NO. 1180
MISSION NO. 1010-2
CAMERA NOS. 162, 139

TABLE OF CONTENTS

Vehicle Layout

General Flight Data

Lens Settings and Film Types

V/H Ramp Configuration and Constants

Cycle Period Data

Lens Data Summary Master Camera

Lens Data Summary Master Camera Horizon Optics

Lens Data Summary Slave Camera

Lens Data Summary Slave Camera Horizon Optics

Definition of Panoramic Camera Format Calibrations

Panoramic Camera Format Calibration Dimensions

Panoramic Camera Format Layout

Lens Data Summary Stellar Index "A"

Lens Data Summary Stellar Index "B"

Preliminary Clock Correlation

Horizon Lens Settings

Performance Estimate

Page No. ADDITION T
SP 4-352
PAGE

—

3

—

—

4

—

—

—

—

—

—

—

—

—

5

—

6-9

(4A)

(7A)

(17A)

(19A-23)



SYSTEM NO. 210
 VEHICLE NO. 180
 MISSION NO. 1014-2
 CAMERA NOS. 162, 139

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	6	2.992	3.021	948
6	6	2.485	2.497	2391
6	6	2.512	2.525	2428
6	6	2.590	2.606	2513
6	6	2.942	2.970	1007
6	6	2.555	2.570	2469

IN-FLIGHT CYCLE PERIODS

V/H Ramp Level	V/H Ramp Amplitude	Cycle Period Seconds		Orbit No.	Time Up Ramp Sec
		Master	Slave		
6	6	3.012	3.084	89	948
6	6	2.500	2.510	95	2391
6	6	2.525	2.586	111	2428
6	6	2.620	2.672	127	2513
6	6	2.968	3.040	137	1007
6	6	2.580	2.640	143	2469

SYSTEM NO. J-16 5 of 9
 VEHICLE NO. 1180
 MISSION NO. 1014-2
 CAMERA NOS. 162, 139

PRELIMINARY CLOCK CORRELATION:

ORBIT	SYSTEM TIME	CLOCK TIME	DIFFERENCE
<u>79</u>	<u>67733.273</u>	<u>204326.988</u>	
<u>89</u>	<u>33607.924</u>	<u>256601.642</u>	
<u>95</u>	<u>67085.615</u>	<u>290079.335</u>	
<u>105</u>	<u>32960.882</u>	<u>342354.605</u>	
<u>111</u>	<u>67032.232</u>	<u>376425.957</u>	
<u>121</u>	<u>32870.778</u>	<u>428664.507</u>	
<u>127</u>	<u>66643.768</u>	<u>462437.499</u>	
<u>137</u>	<u>32466.894</u>	<u>514660.628</u>	
<u>143</u>	<u>66232.636</u>	<u>11555.460</u>	

RATIO OF CLOCK TO SYSTEM TIME = 1.000000062



FOR OFFICIAL USE ONLY

SYSTEM NUMBER J-16
 VEHICLE NUMBER 1180
 MISSION NUMBER 1014-2
 PANORAMIC CAMERA NUMBERS 162 AND 139
 STELLAR/INDEX CAMERA NUMBER D50/44/46

PERFORMANCE ESTIMATE

SUB	PROG	CAM	PAN	SI	LAT.	TIME ON	TUR	DUR	SOLAR	EXPOS.	
CUT/WRAP	NO.	FR.	FR	ON	OFF	ZD	NO	SEC.	SEC	ON	OFF
CUT/WRAP	162	4	0								
CUT/WRAP	139	4									
83	8 1	162	55 08	265	259	24 2189	6 6	1814	129 -3	4	4.0 4.0
83	8 1	139	54	266	260	24 2189	6 6	1814	129 -4	4	2.9 2.9
84	8 1	162	86 12	254	241	24 7809	6 6	2054	210 12	26	4.0 4.2
84	8 1	139	85	254	242	24 7809	6 6	2054	210 11	25	2.9 3.0
85	8 1	162	25 04	253	250	2413189	6 6	2056	57 12	16	4.0 4.0
85	8 1	139	24	254	251	2413189	6 6	2056	57 11	15	2.9 2.9
85	8 2	162	108 15	240	222	2413425	6 6	2292	280 28	46	4.2 4.6
85	8 2	139	106	240	223	2413425	6 6	2292	280 27	45	3.0 3.3
86	8 1	162	46 07	253	247	2418568	6 6	2058	109 12	19	4.0 4.1
86	8 1	139	45	254	248	2418568	6 6	2058	109 11	18	2.9 2.9
86	8 2	162	27 04	242	238	2418764	6 6	2253	64 25	29	4.1 4.2
86	8 2	139	26	243	239	2418764	6 6	2253	64 24	29	3.0 3.0
86	8 3	162	19 02	201	301	2419406	6 6	2896	55 67	70	5.2 5.3
86	8 3	139	18	202	300	2419406	6 6	2896	55 66	69	3.7 3.8
87	7 1	162	126 18	260	243	2423829	6 6	1939	296 4	24	3.9 4.0
87	7 1	139	123	260	244	2423829	6 6	1939	296 3	23	2.8 2.9
89	7 0	162	16 03	138	141	2433543	6 6	898	49-64-61		5.5 5.4
89	7 0	139	16	137	140	2433543	6 6	898	49-65-62		3.8 3.8
95	8 1	162	21 03	238	234	2467241	6 6	2337	54 30	33	4.5 4.5
95	8 1	139	21	238	235	2467241	6 6	2337	54 29	33	3.1 3.2
98	9 1	162	50 07	260	253	2482992	6 6	1958	116 3	11	3.9 4.0
98	9 1	139	49	260	254	2482992	6 6	1958	116 2	10	2.8 2.8
99	9 1	162	46 06	254	247	25 2082	6 6	2073	109 11	18	4.0 4.0
99	9 1	139	45	254	248	25 2082	6 6	2073	109 10	17	2.8 2.9
100	9 1	162	94 14	254	240	25 7459	6 6	2074	228 11	26	4.0 4.1
100	9 1	139	92	254	241	25 7459	6 6	2074	228 10	25	2.8 3.0
101	9 1	162	25 03	257	253	2512783	6 6	2021	58 7	11	4.0 4.0
101	9 1	139	25	257	254	2512783	6 6	2021	58 6	10	2.8 2.9
101	9 2	162	133 19	242	220	2513040	6 6	2278	346 24	48	4.1 4.6
101	9 2	139	130	242	221	2513040	6 6	2278	346 23	47	3.0 3.3
102	9 1	162	69 10	263	255	2518020	6 6	1883	162 -2	8	3.9 4.0
102	9 1	139	67	264	256	2518020	6 6	1883	162 -2	8	2.8 2.8
102	9 2	162	45 07	251	244	2518267	6 6	2130	107 14	21	4.0 4.1
102	9 2	139	44	251	245	2518267	6 6	2130	107 13	21	2.9 2.9
102	9 3	162	68 09	242	231	2518417	6 6	2280	171 24	36	4.1 4.3
102	9 3	139	67	242	232	2518417	6 6	2280	171 23	35	3.0 3.1
104	4 1	162	79 12	260	250	2528839	6 6	1949	190 2	15	4.0 4.1
104	4 1	139	78	261	251	2528839	6 6	1949	190 1	14	2.8 2.9
104	4 2	162	24 03	248	245	2529066	6 6	2175	57 17	21	4.1 4.1
104	4 2	139	24	249	245	2529066	6 6	2175	57 16	20	2.9 2.9
106	1 1	162	21 03	231	228	2540091	6 6	2447	55 35	39	4.5 4.6
106	1 1	139	21	232	229	2540091	6 6	2447	55 34	38	3.2 3.2
111	4 1	162	21 03	237	233	2566893	6 6	2374	55 30	34	4.6 4.6

111	4	1	139	21		237	234	2566893	6	6	2374	55	29	33	3.2	3.2
114	9	1	162	33	05	258	254	2582645	6	6	2001	77	3	8	3.9	4.0
114	9	1	139	33		259	255	2582645	6	6	2001	77	2	8	2.8	2.8
115	9	1	162	71	10	263	254	26 1531	6	6	1911	168	-2	8	3.9	4.0
115	9	1	139	70		263	255	26 1531	6	6	1911	168	-3	8	2.8	2.9
116	9	1	162	94	13	260	248	26 6958	6	6	1964	223	0	16	3.9	4.0
116	9	1	139	92		261	249	26 6958	6	6	1964	223	0	15	2.8	2.9
116	9	2	162	31	05	245	240	26 7243	6	6	2248	73	20	25	4.1	4.2
116	9	2	139	30		245	241	26 7243	6	6	2248	73	19	24	2.9	3.0
117	9	1	162	33	05	256	252	2612411	6	6	2043	76	6	11	4.0	4.0
117	9	1	139	32		257	253	2612411	6	6	2043	76	5	10	2.8	2.9
117	9	2	162	150	21	243	218	2612652	6	6	2284	393	22	49	4.1	4.7
117	9	2	139	146		243	219	2612652	6	6	2284	393	21	48	3.0	3.4
118	9	1	162	57	08	260	253	2617710	6	6	1967	135	0	10	4.0	4.0
118	9	1	139	56		261	254	2617710	6	6	1967	135	0	9	2.8	2.9
118	9	2	162	75	11	251	240	2617884	6	6	2141	184	12	25	4.0	4.2
118	9	2	139	74		252	241	2617884	6	6	2141	184	11	24	2.9	3.0
118	9	3	162	68	10	237	226	2618118	6	6	2375	177	28	40	4.2	4.5
118	9	3	139	67		238	227	2618118	6	6	2375	177	27	39	3.0	3.2
119	9	1	162	42	06	261	256	2623067	6	6	1949	97	-0	6	3.9	4.0
119	9	1	139	41		262	257	2623067	6	6	1949	97	-1	5	2.8	2.8
119	9	2	162	76	10	246	235	2623338	6	6	2219	188	18	30	4.1	4.3
119	9	2	139	75		247	236	2623338	6	6	2219	188	17	29	2.9	3.0
120	1	1	162	119	17	260	244	2628470	6	6	1978	282	1	20	3.9	4.1
120	1	1	139	116		261	245	2628470	6	6	1978	282	0	19	2.8	2.9
122	1	1	162	21	03	232	228	2639708	6	6	2468	55	34	38	4.5	4.6
122	1	1	139	20		232	229	2639708	6	6	2468	55	33	37	3.3	3.4
125	3	1	162	22	04	239	236	2655706	6	6	2344	56	25	29	4.4	4.5
125	3	1	139	21		240	237	2655706	6	6	2344	56	25	28	3.2	3.3
127	1	1	162	21	03	233	229	2666568	6	6	2457	57	33	37	4.7	4.8
127	1	1	139	21		233	230	2666568	6	6	2457	57	32	36	3.3	3.4
130	7	1	162	34	04	263	259	2682166	6	6	1940	81	-3	1	4.0	4.0
130	7	1	139	34		263	259	2682166	6	6	1940	81	-4	1	2.9	2.9
130	7	2	162	31	05	255	250	2682320	6	6	2094	75	6	11	4.1	4.1
130	7	2	139	31		255	251	2682320	6	6	2094	75	5	11	2.9	2.9
131	7	1	162	25	03	255	251	27 1294	6	6	2095	58	6	10	4.1	4.1
131	7	1	139	24		255	252	27 1294	6	6	2095	58	5	9	2.9	2.9
131	7	2	162	23	04	247	243	27 1433	6	6	2234	56	16	20	4.2	4.2
131	7	2	139	23		248	244	27 1433	6	6	2234	56	15	19	3.0	3.0
132	7	1	162	31	04	253	249	27 6705	6	6	2133	75	9	14	4.1	4.1
132	7	1	139	31		254	249	27 6705	6	6	2133	75	8	13	2.9	3.0
132	7	2	162	29	04	245	241	27 6841	6	6	2270	72	18	23	4.2	4.3
132	7	2	139	29		246	241	27 6841	6	6	2270	72	17	22	3.0	3.1
133	7	1	162	45	07	266	261	2711821	6	6	1877	107	-8	-1	4.0	4.0
133	7	1	139	44		266	261	2711821	6	6	1877	107	-9	-1	2.9	2.9
133	7	2	162	32	04	257	253	2712006	6	6	2062	76	4	9	4.1	4.1
133	7	2	139	31		258	253	2712006	6	6	2062	76	3	8	2.9	2.9
133	7	3	162	103	15	238	221	2712330	6	6	2385	279	26	45	4.3	4.8
133	7	3	139	101		239	221	2712330	6	6	2385	279	25	44	3.1	3.4
134	8	1	162	37	05	260	256	2717312	6	6	1994	88	-0	5	4.0	4.1
134	8	1	139	36		261	256	2717312	6	6	1994	88	-1	4	2.9	2.9
134	8	2	162	88	13	249	235	2717529	6	6	2212	222	14	29	4.1	4.4
134	8	2	139	86		249	236	2717529	6	6	2212	222	13	28	3.0	3.1
135	3	2	162	108	15	260	246	2722686	6	6	1987	258	-0	17	4.0	4.1
135	3	2	139	106		261	247	2722686	6	6	1987	258	-1	16	2.8	2.9

136	9	1	162	124	18	258	240	2728118	6	6	2046	300	3	23	4.0	4.2
136	9	1	139	121		258	241	2728118	6	6	2046	300	2	22	2.8	3.0
137	7	0	162	16	02	138	141	2732401	6	6	958	48-71-67			5.4	5.3
137	7	0	139	16		137	140	2732401	6	6	958	48-72-68			3.8	3.7
137	7	1	162	51	08	201	309	2734419	6	6	2976	166	66	77	5.3	5.6
137	7	1	139	50		202	308	2734419	6	6	2976	166	65	76	3.8	4.0
142	2	1	162	21	03	233	229	2760780	6	6	2477	56	31	35	4.6	4.7
142	2	1	139	20		234	230	2760780	6	6	2477	56	30	34	3.4	3.5
143	3	1	162	25	03	237	233	2766084	6	6	2406	64	26	31	4.4	4.5
143	3	1	139	24		238	234	2766084	6	6	2406	64	25	30	3.2	3.3

D. RAMP PROFILE, R-6 A-6

R=0.3506, A=0.0806, PERIOD=3840

TIME	PERIOD	CPS	GAV
0	3.704	0.2700	0.02442
100	3.692	0.2708	0.02449
200	3.659	0.2733	0.02472
300	3.606	0.2773	0.02508
400	3.535	0.2829	0.02558
500	3.451	0.2898	0.02621
600	3.356	0.2980	0.02695
700	3.255	0.3072	0.02779
800	3.151	0.3174	0.02870
900	3.047	0.3282	0.02968
1000	2.946	0.3395	0.03070
1100	2.848	0.3511	0.03175
1200	2.729	0.3664	0.03314
1300	2.624	0.3811	0.03447
1400	2.533	0.3947	0.03570
1500	2.459	0.4067	0.03679
1600	2.400	0.4167	0.03769
1700	2.357	0.4243	0.03838
1800	2.330	0.4292	0.03882
1900	2.319	0.4312	0.03900
2000	2.324	0.4304	0.03892
2100	2.344	0.4266	0.03858
2200	2.381	0.4201	0.03799
2300	2.433	0.4110	0.03717
2400	2.502	0.3997	0.03616
2500	2.586	0.3867	0.03498
2600	2.685	0.3724	0.03368
2700	2.799	0.3572	0.03231
2800	2.906	0.3441	0.03112
2900	3.006	0.3327	0.03009
3000	3.109	0.3216	0.02909
3100	3.214	0.3112	0.02815
3200	3.316	0.3016	0.02727
3300	3.414	0.2929	0.02649
3400	3.503	0.2855	0.02582
3500	3.580	0.2794	0.02527
3600	3.640	0.2747	0.02485
3700	3.682	0.2716	0.02457
3800	3.702	0.2701	0.02443

E. PRELIMINARY SMOOTHED CLOCK CORRELATION

REV	CLOCK TIME	COR SYSTEM TIME
79	204326.988	67733.273
89	256601.642	33607.924
95	290079.335	67085.615
105	342354.605	32960.882
111	376425.957	67032.232
121	428664.507	32870.778
127	462437.499	66643.768
137	514660.628	32466.894
143	11555.460	66232.636

RATIO CLOCK TO SYSTEM= 0.1000000062D 01

F. NOTES

- 1) DATA INDICATE NEAR-NOMINAL ORBIT AND CAMERA SYSTEM.
- 2) FRAMES TO FEET - PAN X 2.645 STELLAR X 0.099 INDEX X 0.198
- 3) LAST 5 FRAMES OF OPN 79-2-1 CONTAINED IN SECOND CAPSULE.
- 4) BECAUSE OF INCLINATION ANGLE AND NEAR NOON LAUNCH, A 5-INCH STELLAR BAFFLE HAD TO BE USED INSTEAD OF THE USUAL 11-INCH. EXPECT USABLE BUT SOMEWHAT DEGRADED STELLAR PHOTOGRAPHY BECAUSE OF EARTH FLARE.
- 5) LAST 2 FRAMES OF OPN 143-3-1 REMAIN WITH VEHICLE.