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10 Pages
(Including Cover Sheet)

CORONA "J" FLIGHT DATA BOOK ADDENDUM "A"

SYSTEM NO. J-12

VEHICLE NO. 1605

MISSION NO. 1009

CAMERA NOS. 154-155

Prepared by: [redacted]

Checked by:

Approved by:

Approved by:

Program Manager

[redacted]

SYSTEM NO. J-12
VEHICLE NO. 1605
MISSION NO. 1009
CAMERA NOS. 154 -155

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SYSTEM NO. J-12
VEHICLE NO. 1605
MISSION NO. 1009
CAMERA NOS. 154-155

[redacted]

GENERAL FLIGHT DATA:

Master Camera Serial No. 154

Slave Camera Serial No. 155

Stellar Index "A" Serial No. D 56/54/56

Stellar Index "B" Serial No. D 38/38/34

Launch Date 5 AUGUST 1964

Reactivation Date —

Reactivation Orbit No. —

Orbital Parameters: (Rev. 112)

Period 90.60 Min. Eccentricity 0.0194

Perigee 102 NM Perigee Latitude 62.3 Deg. N

Apogee 242 NM Inclination Angle 80.0 Deg. N

Recovery Orbit No. 128

Recovery Date 13 AUG 1964

REMARKS:

SYSTEM NO. J-12
VEHICLE NO. 1605
MISSION NO. 1009
CAMERA NOS. 154-155

CYCLE PERIOD DATA:

PRE-FLIGHT CYCLE PERIODS:

V/H Ramp Level	V/H Ramp Amplitude	Cycle Period Seconds		Time Up Ramp Sec
		Master	Slave	
9	4	4.210	4.180	1050
9	4	4.026	4.000	1115
8	4	3.678	3.660	1168
8	4	3.550	3.540	1230

IN-FLIGHT CYCLE PERIODS

V/H Ramp Level	V/H Ramp Amplitude	Cycle Period Seconds		Orbit No.	Time Up Ramp Sec
		Master	Slave		
9	4	4.270	4.270	56	1050
9	4	4.080	4.072	72	1115
8	4	3.740	3.728	88	1168
8	4	3.610	3.610	103	1230

SYSTEM NO. J-12

VEHICLE NO. 1605

MISSION NO. 1009-2

CAMERA NOS. 154-155

PRELIMINARY CLOCK CORRELATION

ORBIT	SYSTEM TIME	CLOCK TIME	DELTA SYS. TIME	DELTA CLOCK TIME	ERROR
NOTE! PRELIMINARY CLOCK CORRELATION WILL BE FURNISHED AT A LATER DATE. PROBLEMS WERE ENCOUNTERED WITH THE 15th BIT OF THE BINARY WORD.					

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SYSTEM NUMBER J-12
VEHICLE NUMBER 1605
MISSION NUMBER 1009
PANORAMIC CAMERA NUMBERS 154 AND 155
STELLAR/INDEX CAMERA NUMBER D38/38/34

PERFORMANCE ESTIMATE

SUB	PROG		CAM NO.	PAN FR.	SI FR	LAT. ON	LAT. OFF	TIME ON ZD	TIME ON ST	TUR NO	TUR SEC.	DUR SOLAR SEC	EXPOS. ON	EXPOS. OFF
C/W			154	4	0									
C/W			155	4										
49	9	0	154	14	02	220	217	09	5263	9	4	2729	31	49	49	4.0	4.1
49	9	0	155	14		220	218	09	5263	9	4	2729	31	49	49	3.2	3.2
52	9	1	154	39	06	280	277	0920	571	9	4	1754	102	22	27	4.6	4.3
52	9	1	155	39		180	278	0920	571	9	4	1754	102	22	27	3.7	3.5
52	9	2	154	115	16	266	248	0920	893	9	4	2076	270	37	46	4.0	3.9
52	9	2	155	115		266	249	0920	893	9	4	2076	270	36	46	3.2	3.1
52	9	3	154	50	07	246	238	0921	198	9	4	2381	114	47	49	3.8	3.9
52	9	3	155	50		247	239	0921	198	9	4	2381	114	47	49	3.1	3.1
53	9	1	154	112	16	274	258	0926	181	9	4	1926	270	30	41	4.2	3.9
53	9	1	155	111		275	259	0926	181	9	4	1926	270	30	41	3.4	3.1
53	9	2	154	50	07	256	248	0926	489	9	4	2234	114	43	46	3.9	3.9
53	9	2	155	50		256	249	0926	489	9	4	2234	114	42	46	3.1	3.1
53	9	3	154	93	14	243	228	0926	684	9	4	2430	216	48	50	3.8	3.9
53	9	3	155	93		244	229	0926	684	9	4	2430	216	48	50	3.1	3.2
54	1	1	154	335	48	275	225	0931	600	9	4	1907	784	29	50	4.2	3.9
54	1	1	155	333		276	226	0931	600	9	4	1907	784	29	50	3.4	3.2
55	1	1	154	249	35	271	233	0937	131	9	4	2001	577	33	50	4.1	3.8
55	1	1	155	248		271	234	0937	131	9	4	2001	577	33	50	3.3	3.1
56	8	0	154	12	02	139	142	0941	577	9	4	1010	53-15-12			8.1	7.8
56	8	0	155	12		137	140	0941	577	9	4	1010	53-16-14			6.5	6.2
56	8	1	154	128	18	262	242	0942	717	9	4	2150	298	39	48	4.0	3.9
56	8	1	155	128		262	243	0942	717	9	4	2150	298	39	48	3.2	3.1
61	2	1	154	48	07	242	234	0970	224	9	4	2469	112	48	50	3.9	4.0
61	2	1	155	48		243	235	0970	224	9	4	2469	112	48	50	3.2	3.2
65	6	0	154	13	02	220	218	10	5906	9	4	2802	35	49	49	4.7	4.8
65	6	0	155	13		221	219	10	5906	9	4	2802	35	49	49	3.8	3.8
69	6	1	154	80	11	274	263	1026	826	9	4	1972	192	30	39	4.2	4.0
69	6	1	155	79		275	264	1026	826	9	4	1972	192	30	39	3.4	3.2
69	6	2	154	70	10	258	248	1027	090	9	4	2236	161	42	47	3.9	3.9
69	6	2	155	69		259	248	1027	090	9	4	2236	161	41	47	3.1	3.1
69	6	3	154	68	10	243	233	1027	317	9	4	2463	158	49	52	3.9	4.0
69	6	3	155	68		244	233	1027	317	9	4	2463	158	49	52	3.1	3.2
70	7	1	154	156	22	265	242	1032	417	9	4	2127	360	37	50	3.9	3.8
70	7	1	155	155		266	243	1032	417	9	4	2127	360	37	49	3.2	3.1
72	4	0	154	13	02	139	142	1042	225	9	4	1065	54-16-14			7.6	7.3
72	4	0	155	13		137	141	1042	225	9	4	1065	54-18-15			6.0	5.8
72	4	1	154	102	15	257	242	1043	425	9	4	2265	235	43	50	3.9	3.9
72	4	1	155	102		258	242	1043	425	9	4	2265	235	42	49	3.1	3.1
82	7	1	154	80	11	275	264	1111	122	8	4	2013	185	29	38	4.0	3.8
82	7	1	155	80		275	265	1111	122	8	4	2013	185	29	38	3.2	3.1

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 82   7 2 154   76 11 261 250 1111353   8 4 2244 171 41 47 3.8 3.8
 82   7 2 155   76    262 251 1111353   8 4 2244 171 40 47 3.0 3.0
 85   7 1 154   90 13 266 253 1127588   8 4 2176 205 37 46 3.9 3.8
 85   7 1 155   90    267 254 1127588   8 4 2176 205 36 45 3.1 3.0
 85   7 2 154   41 06 243 237 1127941   8 4 2529  93 50 53 3.8 3.9
 85   7 2 155   41    244 238 1127941   8 4 2529  93 50 52 3.0 3.1
 85   7 3 154   58 08 231 222 1128121   8 4 2708 138 54 54 3.9 4.1
 85   7 3 155   58    232 222 1128121   8 4 2708 138 54 54 3.1 3.3
 86   6 1 154  131 19 261 242 1133105   8 4 2258 293 40 51 3.8 3.8
 86   6 1 155  131    262 243 1133105   8 4 2258 293 40 51 3.0 3.0
    YAW PROGRAMMER ENABLED AT 42689.  (SEE NOTE 2)
 88   3 0 154   14 02 138 142 1142836   8 4 1122  53-19-16 6.9 6.6
 88   3 0 155   14    137 140 1142836   8 4 1122  53-20-17 5.5 5.3
   YAW PROGRAMMER DISABLED AT 42928.
 88   3 1 154   76 11 261 250 1143980   8 4 2266 172 40 47 3.8 3.8
 88   3 1 155   76    262 251 1143980   8 4 2266 172 40 47 3.1 3.0
 96   4 1 154   40 05 311 321 12 2184   8 4 3428 139 39 32 5.7 6.2
 96   4 1 155   40    310 320 12 2184   8 4 3428 139 40 33 4.6 5.0
 99   4 1 154   95 14 254 240 1217506   8 4 2417 216 46 53 3.8 3.8
 99   4 1 155   95    255 240 1217506   8 4 2417 216 45 53 3.0 3.1
100   4 1 154   54 08 243 235 1223109   8 4 2587 123 52 55 3.8 3.9
100   4 1 155   54    244 235 1223109   8 4 2587 123 51 54 3.1 3.1
100   4 2 154   70 10 231 220 1223288   8 4 2766 169 55 56 4.0 4.2
100   4 2 155   69    232 220 1223288   8 4 2766 169 55 56 3.2 3.4
101   2 1 154   49 07 259 252 1228304   8 4 2349 110 42 47 3.8 3.8
101   2 1 155   49    260 252 1228304   8 4 2349 110 42 46 3.1 3.1
101   2 2 154   47 06 245 238 1228516   8 4 2561 109 51 54 3.9 3.9
101   2 2 155   47    246 238 1228516   8 4 2561 109 50 53 3.1 3.2
    YAW PROGRAMMER ENABLED AT 33175.
102   2 1 154   49 07 260 253 1233725   8 4 2338 110 41 46 3.8 3.8
102   2 1 155   49    261 254 1233725   8 4 2338 110 41 46 3.1 3.1
103   2 0 154   14 02 138 142 1238001   8 4 1179  54-20-17 6.9 6.7
103   2 0 155   15    137 141 1238001   8 4 1179  54-21-18 5.2 5.0
   YAW PROGRAMMER DISABLED AT 55175.
    YAW PROGRAMMER ENABLED AT  1925.  (SEE NOTE 3)
112   3 2 154   27 04 315 321 13 2823   8 4 3506  95 39 34 6.0 6.4
112   3 2 155   26    314 320 13 2823   8 4 3506  95 39 35 4.8 5.1
115   3 1 154   94 14 254 239 1318095   8 4 2480 216 37 46 3.8 3.9
115   3 1 155   93    254 240 1318095   8 4 2480 216 36 46 3.1 3.2
116   3 1 154   49 07 255 248 1323514   8 4 2468 111 36 41 3.8 3.8
116   3 1 155   49    256 248 1323514   8 4 2468 111 35 40 3.1 3.1
116   3 2 154   39 05 243 238 1323686   8 4 2640  89 44 47 3.9 4.0
116   3 2 155   39    244 238 1323686   8 4 2640  89 43 47 3.1 3.2
116   3 3 154   62 09 231 220 1323875   8 4 2829 154 51 54 4.1 4.3
116   3 3 155   61    232 221 1323875   8 4 2829 154 50 54 3.3 3.5
117   2 1 154   55 08 254 246 1328961   8 4 2483 126 36 42 3.8 3.9
117   2 1 155   55    255 247 1328961   8 4 2483 126 36 42 3.1 3.1
118   2 1 154   61 09 252 243 1334428   8 4 2523 139 38 44 3.8 3.9
118   2 1 155   61    253 244 1334428   8 4 2523 139 37 44 3.1 3.1
   YAW PROGRAMMER DISABLED AT 38750

AAA BB C DDD EEE FF GHH GII JJKKKKK LL M NNNN OOO PP QQ RRR SSS
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A ORBITAL TIMER SUBCYCLE NUMBER
B PROGRAM NUMBER
C OPERATION NUMBER
D PAN. CAMERA SERIAL NUMBER (MASTER IS EVEN, SLAVE IS ODD)
E EST. NO OF PAN FRAMES, BASED ON COUNTER READINGS INFLITE
F EST. NUMBER OF STELLAR/INDEX FRAMES
G QUADRANT
H EST. LATITUDE OF FIRST FORMAT CENTER IN PASS
I EST. LATITUDE OF LAST FORMAT CENTER IN PASS
J ZULU DATE
K SYSTEM TIME IN SECONDS (GMT)
L FMC PROGRAMMER REFERENCE LEVEL
M FMC PROGRAMMER AMPLITUDE LEVEL
N EST. TIME UP RAMP IN SECONDS TO OPERATE COMMAND
O EST. SECONDS DURATION OF OPERATION, BETWEEN ON AND OFF
P SOLAR ELEVATION AT ITEM H
Q SOLAR ELEVATION AT ITEM I
R EST. MILLISECONDS EXPOSURE TIME AT ITEM H
S EST. MILLISECONDS EXPOSURE TIME AT ITEM I

FRAMES TO FEET,PAN X 2.645 STELLAR X 0.099,INDEX X 0.198

NOTES.

1) LAST 5 FRAMES OF UP 49-2-1 PRECEED C/W FRAMES
2) YAW PROGRAMMER WAS NOT ACTIVATED FOR SUFFICIENT TIME TO ALLOW VEHICLE TO STABILIZE.
3) YAW PROGRAMMER MALFUNCTIONED FOR THE FOLLOWING OPERATIONS. BEST ESTIMATE IS THAT A PERMANENT CORRECTION OF 3.04 DEGREES FOR NEGATIVE YAW ERROR WAS MAINTAINED.
4) CLOCK CORRELATION DATA SHOWS SEVERAL DISCONTINUITIES FURTHER ANALYSIS REQUIRES APPROX. ONE WEEK

FOLLOWING IS THE BEST ESTIMATE OF THE RAMPS USED ON B MISSION

J- 12 RAMP R- 8 A- 4
R= 0.2925 A= 0.1523 RAMP PERIOD= 4800

TIME	PERIOD	CPS	GAV
0	7.133	0.1402	0.01268
100	7.082	0.1412	0.01277
200	6.936	0.1442	0.01304
300	6.707	0.1491	0.01349
400	6.414	0.1559	0.01410
500	6.079	0.1645	0.01488
600	5.722	0.1748	0.01581
700	5.360	0.1866	0.01688
800	5.005	0.1998	0.01807
900	4.668	0.2142	0.01937
1000	4.355	0.2296	0.02077
1100	4.067	0.2459	0.02224
1200	3.805	0.2628	0.02377
1300	3.571	0.2801	0.02533
1400	3.343	0.2991	0.02706
1500	3.104	0.3222	0.02914

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1600	2.902	0.3446	0.03117
1700	2.734	0.3658	0.03308
1800	2.596	0.3852	0.03484
1900	2.484	0.4025	0.03641
2000	2.397	0.4173	0.03774
2100	2.330	0.4291	0.03881
2200	2.284	0.4378	0.03959
2300	2.257	0.4430	0.04007
2400	2.248	0.4448	0.04023
2500	2.257	0.4430	0.04007
2600	2.284	0.4378	0.03959
2700	2.330	0.4291	0.03881
2800	2.397	0.4173	0.03774
2900	2.484	0.4025	0.03641
3000	2.596	0.3852	0.03484
3100	2.734	0.3658	0.03308
3200	2.902	0.3446	0.03117
3300	3.104	0.3222	0.02914
3400	3.343	0.2991	0.02706
3500	3.571	0.2801	0.02533
3600	3.805	0.2628	0.02377
3700	4.067	0.2459	0.02224
3800	4.355	0.2296	0.02077
3900	4.668	0.2142	0.01937
4000	5.005	0.1998	0.01807
4100	5.360	0.1866	0.01688
4200	5.722	0.1748	0.01581
4300	6.079	0.1645	0.01488
4400	6.414	0.1559	0.01410
4500	6.707	0.1491	0.01349
4600	6.936	0.1442	0.01304
4700	7.082	0.1412	0.01277
4800	7.133	0.1402	0.01268

J- 12 RAMP R- 9 A- 4

R= 0.2795 A= 0.1658 RAMP PERIOD= 4800

TIME	PERIOD	CPS	GAV
0	8.795	0.1137	0.01028
100	8.712	0.1148	0.01038
200	8.472	0.1180	0.01068
300	8.104	0.1234	0.01116
400	7.645	0.1308	0.01183
500	7.135	0.1402	0.01268
600	6.608	0.1513	0.01369
700	6.090	0.1642	0.01485
800	5.600	0.1786	0.01615
900	5.148	0.1943	0.01757
1000	4.738	0.2111	0.01909
1100	4.371	0.2288	0.02069
1200	4.046	0.2472	0.02235
1300	3.760	0.2660	0.02405
1400	3.488	0.2867	0.02593
1500	3.207	0.3118	0.02820
1600	2.974	0.3362	0.03041

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1700	2.784	0.3592	0.03249
1800	2.629	0.3804	0.03441
1900	2.505	0.3993	0.03611
2000	2.408	0.4153	0.03756
2100	2.335	0.4282	0.03873
2200	2.285	0.4376	0.03958
2300	2.255	0.4434	0.04010
2400	2.246	0.4453	0.04028
2500	2.255	0.4434	0.04010
2600	2.285	0.4376	0.03958
2700	2.335	0.4282	0.03873
2800	2.408	0.4153	0.03756
2900	2.505	0.3993	0.03611
3000	2.629	0.3804	0.03441
3100	2.784	0.3592	0.03249
3200	2.974	0.3362	0.03041
3300	3.207	0.3118	0.02820
3400	3.488	0.2867	0.02593
3500	3.760	0.2660	0.02405
3600	4.046	0.2472	0.02235
3700	4.371	0.2288	0.02069
3800	4.738	0.2111	0.01909
3900	5.148	0.1943	0.01757
4000	5.600	0.1786	0.01615
4100	6.090	0.1642	0.01485
4200	6.608	0.1513	0.01369
4300	7.135	0.1402	0.01268
4400	7.645	0.1308	0.01183
4500	8.104	0.1234	0.01116
4600	8.472	0.1180	0.01068
4700	8.712	0.1148	0.01038
4800	8.795	0.1137	0.01028

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