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CORONA "J" FLIGHT DATA
BOOK 1041-1
9 - 16 MAY 1967

Declassified and Released by the NRO

In Accordance with E. O. 12958

on NOV 26 1997

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12 PAGES
(NOT INCLUDING PEST)

CORONA J FLIGHT DATA BOOK

SYSTEM NO. J-48

VEHICLE NO. 1634

MISSION NO. 1841-1

CAMERA NOS. 288/289

DATE 25-16-67

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SYSTEM NO. J-40
VEHICLE NO. 1634
MISSION NO. 1041-1
CAMERA NOS. 208/209

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SYSTEM NO. J-48
VEHICLE NO. 1634
MISSION NO. 1841-1
CAMERA NOS. 288/289

GENERAL FLIGHT DATA

MASTER CAMERA SERIAL NO. 288

SLAVE CAMERA SERIAL NO. 289

S/I -1 SERIAL NO. D185/134/133

S/I -2 SERIAL NO. D182/127/127

LAUNCH DATE 25-09-67

LAUNCH TIME 21-52-40 GMT

REACTIVATION DATE N/A

REACTIVATION ORBIT NO. N/A

SEE NOTES
AT END OF P. EST. *

ORBITAL PARAMETERS (REV. 45)

PERIOD 94.347 MIN.

ECCENTRICITY 0.84468

PERIGEE 182.133 NM

PERIGEE LAT. 32.986 DEG. N

APOGEE 432.652 NM

INCL. ANGLE 85.051 DEG.

RECOVERY ORBIT NO. 93 *

RECOVERY DATE 25-10-67 *

SEE NOTES AT END OF P. EST.

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SYSTEM NO. J-48
VEHICLE NO. 1634
MISSION NO. 1841-1
CAMERA NOS. 208/209

FLIGHT LENS SETTINGS AND FILM TYPES

LENS SETTINGS

PANORAMIC CAMERA SETTINGS CAMERA NO. 208 CAMERA NO. 209

PANORAMIC OPTICS SLIT WIDTH	.225	IN	.175	IN
PANORAMIC OPTICS FILTER TYPE	WRATTEN 23A		WRATTEN 21	
HORIZON OPTICS EXP. TIME	1/100	SEC.	1/100	SEC.
HORIZON OPTICS APERTURE	F6.3	SUPPLY	F8.0	SUPPLY
HORIZON OPTICS APERTURE	F8.0	TAKE-UP	F6.3	TAKE-UP
HORIZON OPTICS FILTER TYPE	WRATTEN 25		WRATTEN 25	

STELLAR INDEX CAMERA SETTINGS

	D125/134/133		D102/127/127	
	STELLAR INDEX		STELLAR INDEX	
EXPOSURE TIME	2.0 SEC	1/500 SEC	1.0 SEC	1/500 SEC
APERTURE SETTING	F1.8	F4.5	F1.8	F4.5
FILTER TYPE	NONE	WRATTEN 21	NONE	WRATTEN 21

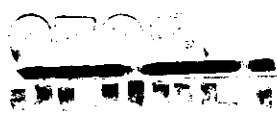
RATIO ONE STELLAR/INDEX FRAME PER 7 MASTER CAMERA FRAMES.

FILM

PANORAMIC CAMERAS	CAMERA NO. 208	CAMERA NO. 209
TYPE	7J-40	7J-40
LENGTH	16000 FT.	16000 FT.
SPLICES	2	2
EMUL. DATA	278-3-4-7	278-3-4-7
LG. BETWEEN	5700-5800-4410-	4385-5753-5862-
SPLICE TO CORE	- - -	- - -
	- - -	- - -
	- - -	- - -

STELLAR/INDEX CAMERAS

	D125/134/133		D102/127/127	
	STELLAR INDEX		STELLAR INDEX	
TYPE	3J-34	7J-33	3J-34	7J-33
EMUL. DATA	183-14-10-6	122-6-7-6	183-14-10-6	122-6-7-6



SYSTEM NO. J-48
VEHICLE NO. 1634
MISSION NO. 1841-1
CAMERA NOS. 208/209

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LENS DATA SUMMARY MASTER CAMERA NO. 208

LENS SERIAL NO. 2172435
EQUIVALENT OPERATIONAL FOCAL LENGTH 609.628 MM

RESOLUTION

STATIC		LINES/MM	FILM TYPE	TARGET CONTRAS
	BENCH TEST	253	3484	HIGH
		131	3484	LOW
DYNAMIC	[REDACTED]	201	3484	HIGH
		128	3484	LOW
	AP	178	3484	HIGH
		111	3484	LOW

NOTE [REDACTED] RESOLUTION OF 178 LINES/MM REPORTED IN [REDACTED]

DISTORTION - POSITIVE (PINCUSHION)

ANGLE OFF AXIS-DEG.	3	2	1	0	359	358	357
MILLIMETERS	0.0	0.0	0.002	0.0	0.001	0.0	0.003

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SYSTEM NO. J-4B
 VEHICLE NO. 1634
 MISSION NO. 1041-1
 CAMERA NOS. 208/209

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LENS DATA SUMMARY (HORIZONTAL CAMERAS FOR MASTER CAMERA NO. 208)

	TAKE-UP	SUPPLY
LENS SERIAL NO.	12866	12861
OPERATIONAL FOCAL LENGTH	55.00 MM	54.90 MM
RADIAL DISTORTION		
10 DEG. OFF AXIS	0.020 MM	0.018 MM
20 DEG. OFF AXIS	0.050 MM	0.050 MM
TANGENTIAL DISTORTION (MAXIMUM VECTOR)	0.025 MM	0.020 MM

RESOLUTION

ANGLE OFF AXIS-DEG.	0	5	10	15	20	25	27.5	30
TAKE-UP (RADIAL)	289	186	226	181	196	134	0	45
(TANGENTIAL)	187	207	181	138	116	109	0	62
SUPPLY (RADIAL)	209	186	184	181	156	119	0	51
(TANGENTIAL)	166	164	144	109	116	96	0	62

DYNAMIC (ZERO DEG)

TAKE-UP 0 LINES/MM
 SUPPLY 0 LINES/MM

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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SYSTEM NO. J-48
VEHICLE NO. 1634
MISSION NO. 1841-1
CAMERA NOS. 288/289

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LENS DATA SUMMARY SLAVE CAMERA NO. 289

LENS SERIAL NO. 2182435
EQUIVALENT OPERATIONAL FOCAL LENGTH 689.682 MM

RESOLUTION

STATIC		LINES/MM	FILM TYPE	TARGET CONTRAST
	BENCH TEST	245	3484	HIGH
		130	3484	LOW
DYNAMIC				
	[REDACTED]	199	3484	HIGH
		119	3484	LOW
	AP	187	3484	HIGH
		112	3484	LOW

NOTE

[REDACTED] RESOLUTION OF 187 LINES/MM REPORTED IN [REDACTED]

DISTORTION - POSITIVE (PINCUSHION)

ANGLE OFF AXIS-DEG.	3	2	1	0	359	358	357
MILLIMETERS	0.022	0.001	0.0	0.0	0.0	0.002	0.003

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SYSTEM NO. J-48
 VEHICLE NO. 1634
 MISSION NO. 1841-1
 CAMERA NOS. 288/289

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LENS DATA SUMMARY (HORIZON CAMERAS FOR SLAVE CAMERA NO. 289)

	TAKE-UP	SUPPLY
LENS SERIAL NO.	19185	19181
OPERATIONAL FOCAL LENGTH	55.00 MM	55.00 MM
RADIAL DISTORTION		
12 DEG. OFF AXIS	0.010 MM	0.010 MM
20 DEG. OFF AXIS	0.040 MM	0.030 MM
TANGENTIAL DISTORTION (MAXIMUM VECTOR)	0.010 MM	0.030 MM

RESOLUTION

ANGLE OFF AXIS-DEG.	0	5	10	15	20	25	27.5	30
TAKE-UP (RADIAL)	187	186	184	181	99	150	0	81
(TANGENTIAL)	187	185	181	189	58	86	0	62
SUPPLY (RADIAL)	187	186	184	70	55	150	0	182
(TANGENTIAL)	187	185	133	98	58	77	0	62

DYNAMIC (ZERO DEG)

TAKE-UP 2 LINES/MM
 SUPPLY 2 LINES/MM

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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SYSTEM NO. J-48
 VEHICLE NO. 1634
 MISSION NO. 1841-1
 CAMERA NOS. 288/289

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FORMAT DIMENSIONS AND CALIBRATIONS

CAMERA NO. 288

CAMERA NO. 289

A	76.188	75.988
B	354.988	354.768
C	729.988	789.428
D	56.495	56.362
E	56.742	56.476
XT	0.335	-0.162
YT	0.329	0.085
XS	0.356	-0.281
YS	-0.119	0.015
XVO	2.276	-0.240
YVO	2.977	1.678
DTX	0.329	-0.167
DTY	2.029	2.085
DSX	0.355	-0.285
DSY	-2.119	-1.985
DMX	0.211	-0.282
DMY	20.977	21.678
HEIGHT	55.371	55.764
WIDTH	753.518	755.192
DIRECTION		
FLIGHT	-Y	+Y
SCAN	+X	+X

- NOTE 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. DT, DM, DS, X, AND Y DIMENSIONS ARE TAKEN 10MM ABOVE POINT DEFINING TARGET CENTER.
 4. NEGATIVE VIEWED WITH EMULSION SIDE DOWN.
 5. FORMAT SIGN CONVENTION

1
 -X+Y 1 +X+Y
 -----1-----
 -X-Y 1 +X-Y
 1

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SYSTEM NO. J-48
VEHICLE NO. 1634
MISSION NO. 1841-1
CAMERA NOS. 288/289

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LENS DATA SUMMARY STELLAR INDEX D185/134/133 -1 MISSION

	STELLAR	INDEX
LENS SERIAL NO.	11714	821943
RESEAU SERIAL NO.	133	134
FILTER TYPE	NONE	WRATTEN 21
APERTURE	F1.8	F4.5
EXPOSURE TIME	2.8 SEC.	1/500 SEC.
EQUIVALENT FOCAL LENGTH	85 NOM	MM 38.54 MM

RESOLUTION (INDEX)

ANGLE OFF AXIS	5	10	20	30	35
HIGH CONTRAST-R/T (3428 FILM)	871/67	888/86	104/76	888/44	885/33

AWAP 71 LINES/MM
READ FROM 4488 FILM.

DISTORTION

FULL DATA TO BE REPORTED AS PART OF PHOTOGONIOMETER
DATA REDUCTION.

ALIGNMENT	STELLAR	INDEX
	-0.0082 INCHES/.937 INCHES	-0.0088 INCHES/2.25 INCHES

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SYSTEM NO. J-40
VEHICLE NO. 1634
MISSION NO. 1041-1
CAMERA NOS. 208/209

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LENS DATA SUMMARY STELLAR INDEX D102/127/127 -2 MISSION

	STELLAR	INDEX
LENS SERIAL NO.	10594	828199
RESEAU SERIAL NO.	127	127
FILTER TYPE	NONE	WRATTEN 21
APERTURE	F1.8	F4.5
EXPOSURE TIME	1.0 SEC.	1/500 SEC.
EQUIVALENT FOCAL LENGTH	85 MM	38.42 MM

RESOLUTION (INDEX)

ANGLE OFF AXIS	5	10	20	30	35
HIGH CONTRAST-R/T (3400 FILM)	063/63	079/83	099/86	095/42	086/32

AWAR 73 LINES/MM
READ FROM 4400 FILM.

DISTORTION

FULL DATA TO BE REPORTED AS PART OF PHOTOGONIOMETER
DATA REDUCTION.

ALIGNMENT	STELLAR	INDEX
	-0.0006 INCHES/.937 INCHES	-0.0003 INCHES/2.25 INCHES

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SYSTEM NO. J-40
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CAMERA NOS. 288/289

CYCLE PERIOD DATA

V/R LEVEL	RAMP AMPLITUDE	SETTING	TIME UP RAMP-SEC	---CALIBRATED---		---IN-FLIGHT---		ORBIT CYCLE PERIOD-SEC NO.
				CYCLE PERIOD-SEC MASTER	SLAVE	CYCLE PERIOD-SEC MASTER	SLAVE	
4	1		118	4.375	4.350	4.320	4.330	8
4	1		276	4.174	4.153	4.148	4.173	54
16	1		1788	2.326	2.330	2.335	2.325	61

NOTE

A, Z OR * INDICATE NO DATA AVAILABLE.

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- A. 1041-1
- B. DRY
- C. PERFORMANCE ESTIMATE - PART ONE

OPERATIONS SUMMARY

FWD PAN CAMERA NUMBER 288

OPN NO	FRA	Q	LAT	LONG	HEIGHT	RANGE	DA	H	M	S	LTIM	S-TIM
PRE-FLT	185											
1 4 0	14	ON	2 57 39	147 24W	822256	850480	9	23	24	0	1334	84240
		OFF	2 55 3	146 49W	792816	821920	9	23	24	39	1337	84279
2 4 1	23	ON	2 75 8	178 52E	1841524	1880200	10	0	53	53	1249	3233
		OFF	2 79 56	176 53W	981174	1017456	10	0	54	59	13 7	3290
2 4 2	29	ON	2 69 18	175 43W	958524	994096	10	0	55	25	1312	3325
		OFF	2 64 10	173 7W	892572	925600	10	0	56	43	1324	3403
5 9 6	63	ON	2 46 42	119 42E	729632	735568	10	5	44	14	1343	20654
		OFF	2 36 29	122 40E	645120	668624	10	5	45	43	1349	20803
6 8 3	52	ON	2 61 8	93 6E	845496	877648	10	7	15	2	1327	26102
		OFF	2 51 12	95 21E	745776	773088	10	7	17	30	1338	26250
7 8 5	32	ON	2 72 29	64 54E	959808	995328	10	8	47	3	13 6	31623
		OFF	2 64 13	68 19E	679888	912320	10	8	48	39	1321	31719
7 8 5	44	ON	2 48 5	72 6E	717760	744216	10	8	52	39	1341	31959
		OFF	2 40 21	72 57E	664000	688224	10	8	54	32	1346	32072
8 9 0	11	ON	1 39 25	116 1W	2263136	2143552	10	10	3	15	219	36195
		OFF	1 42 15	115 46W	2218800	2097408	10	10	4	3	220	36243
8 7 4	54	ON	2 61 57	45 26E	850800	882192	10	10	23	36	1325	37416
		OFF	2 51 31	47 53E	744396	772176	10	10	26	12	1337	37572
9 5 4	41	ON	2 56 52	23 8E	793760	822896	10	11	59	15	1331	43155
		OFF	2 49 20	24 31E	724576	751088	10	12	1	7	1339	43267
15 3 3	10	ON	2 44 48	117 7W	680768	725632	10	21	28	31	1340	77311
		OFF	2 43 11	116 56W	673448	694912	10	21	28	55	1341	77335
20 3 1	84	ON	2 75 20	111 53E	934896	1021392	11	5	12	42	1240	18762
		OFF	2 53 31	122 0E	784432	813216	11	5	16	59	1325	19019
20 3 4	42	ON	2 52 28	123 17E	729552	756256	11	5	18	29	1331	19109
		OFF	2 45 23	124 18E	677400	722128	11	5	20	13	1337	19213
21 5 4	55	ON	2 53 32	98 18E	782160	810864	11	6	51	22	1324	24682
		OFF	2 40 32	100 12E	697328	722016	11	6	53	49	1334	24829
21 5 0	55	ON	2 46 1	100 31E	680016	724848	11	6	54	26	1336	24866
		OFF	2 36 46	101 24E	631952	654976	11	6	56	41	1342	25001
21 5 6	58	ON	2 27 27	101 57E	608300	630944	11	6	58	56	1346	25136
		OFF	2 13 9	102 22E	611960	634240	11	7	1	10	1350	25270
23 5 6	53	ON	2 54 23	51 53E	739632	766704	11	10	1	8	1328	36068
		OFF	2 45 1	53 14E	670976	695472	11	10	3	25	1336	36205
24 5 3	93	ON	2 62 44	25 35E	797552	826832	11	11	33	55	1320	41635
		OFF	2 44 21	29 37E	665712	690000	11	11	37	57	1336	41877
26 5 4	50	ON	2 64 27	100 54E	807312	836960	12	6	25	17	13 8	23117
		OFF	2 54 53	103 40E	722264	746400	12	6	27	39	1322	23259
26 5 6	163	ON	2 47 56	124 49E	671632	696144	12	6	29	21	1320	23361
		OFF	2 21 32	126 45E	613280	635600	12	6	35	44	1342	23744
27 5 6	174	ON	2 54 17	80 5E	713776	739872	12	8	2	9	1322	28929
		OFF	2 26 4	82 52E	608736	630896	12	8	9	0	1340	29340

38	5	5	13	ON	2	58	16	55	38E	744488	771744	12	9	35	31	1317	34531
				OFF	2	55	54	56	3E	724736	751248	12	9	36	6	1328	34566
38	5	8	86	ON	2	49	58	57	8E	681728	786624	12	9	37	33	1326	34653
				OFF	2	35	48	58	36E	618464	648976	12	9	48	59	1335	34859
39	8	3	188	ON	2	62	3	38	42E	776896	885392	12	11	8	55	1311	48135
				OFF	2	43	31	34	15E	644968	668464	12	11	13	28	1338	48488
51	4	4	55	ON	2	46	18	189	37E	645744	669288	13	6	4	51	1323	21891
				OFF	2	37	13	118	38E	616888	638512	13	6	7	3	1329	22823
52	4	1	4	ON	1	27	39	79	28W	2863216	2143632	13	7	11	56	154	25916
				OFF	1	29	16	79	23W	2835848	2115888	13	7	12	27	154	25947
52	3	7	57	ON	2	57	42	83	56E	713928	748832	13	7	36	23	1312	27383
				OFF	2	47	57	85	43E	652624	676432	13	7	38	46	1321	27526
52	3	9	68	ON	2	37	58	86	45E	616944	639392	13	7	41	13	1328	27673
				OFF	2	28	13	87	22E	618728	632944	13	7	43	33	1333	27813
53	1	4	155	ON	2	59	3	59	54E	722592	749824	13	9	18	23	1318	33823
				OFF	2	33	27	53	23E	618592	632816	13	9	16	36	1338	33396
53	1	8	24	ON	2	27	4	63	44E	612112	634384	13	9	18	8	1333	33488
				OFF	2	23	5	63	55E	619296	641848	13	9	19	6	1334	33546
54	2	8	11	ON	1	38	24	126	14W	1888656	1953344	13	18	23	42	158	37422
				OFF	1	41	18	126	1W	1832888	1963568	13	18	24	38	2	37478
54	4	1	13	ON	2	71	5	38	38E	833584	864248	13	18	41	42	1244	38582
				OFF	2	63	26	32	27E	825528	835184	13	18	42	23	1252	38543
54	5	3	113	ON	2	59	5	36	13E	721184	747488	13	18	44	42	13	9
				OFF	2	48	21	39	11E	621984	644544	13	18	49	16	1326	38956
55	8	3	81	ON	2	55	16	13	26E	691688	716864	13	12	19	58	1313	44398
				OFF	2	41	47	15	21E	625424	648288	13	12	23	15	1324	44595
55	8	5	72	ON	2	13	42	16	53E	657568	681552	13	12	38	8	1337	45888
				OFF	2	1	15	17	14E	746512	773856	13	12	33	8	1341	45188
56	8	4	48	ON	2	34	21	7	44W	618976	633288	13	13	59	22	1328	58362
				OFF	2	27	46	7	21W	612384	634672	13	14	8	57	1331	58457
61	9	1	9	ON	2	35	12	126	18W	612888	634352	13	21	58	31	1325	78631
				OFF	2	34	35	126	12W	618864	633888	13	21	58	54	1326	78654
65	5	3	86	ON	2	63	37	134	14E	736488	763448	14	4	1	7	1258	14467
				OFF	2	48	58	137	39E	643824	667288	14	4	4	43	1315	14683
66	3	5	45	ON	2	62	8	111	2E	723688	758168	14	5	35	46	1259	28146
				OFF	2	54	23	113	3E	678752	695232	14	5	37	41	13	9
66	3	6	31	ON	2	51	59	113	29E	657688	681664	14	5	38	15	1312	28295
				OFF	2	46	43	114	15E	634528	657648	14	5	39	32	1316	28372
66	3	6	33	ON	2	41	19	114	57E	618816	641344	14	5	48	58	1328	28458
				OFF	2	35	56	115	16E	611536	633792	14	5	42	8	1323	28528
67	1	4	21	ON	2	55	23	89	9E	675392	788848	14	7	11	44	13	9
				OFF	2	51	54	89	48E	656224	688168	14	7	12	35	1311	25955
67	1	6	37	ON	2	41	48	91	6E	619456	642888	14	7	15	2	1319	26182
				OFF	2	35	54	91	38E	612112	634384	14	7	16	13	1322	26173
68	3	5	22	ON	2	52	4	66	5E	655952	679872	14	8	46	51	1311	31611
				OFF	2	48	17	66	42E	638896	662176	14	8	47	46	1314	31666
68	3	7	37	ON	2	42	12	67	23E	619928	642496	14	8	49	15	1318	31755
				OFF	2	36	3	67	53E	611552	633888	14	8	58	44	1322	31844
69	9	4	76	ON	2	58	28	41	4E	592888	717368	14	18	19	35	13	3
				OFF	2	45	56	43	17E	629696	652624	14	18	22	38	1315	37358
69	5	4	13	ON	2	54	8	141	31E	653632	677472	15	3	37	56	13	4

			OFF	2	51	46	141	57E	643088	666528	15	3	38	31	13	6	13111
81	8	3	78 ON	2	61	54	115	52E	697344	722816	15	5	18	28	1253	18628	
			OFF	2	58	12	118	31E	636144	659328	15	5	13	12	13	7	18792
81	8	5	81 CN	2	34	58	128	5E	613712	636848	15	5	16	52	1317	19812	
			OFF	2	21	54	128	47E	648224	671856	15	5	28	1	1323	19281	
82	3	3	53 ON	2	57	11	93	38E	666992	691328	15	6	45	46	1259	24346	
			OFF	2	48	31	95	5E	629824	652768	15	6	47	53	13	8	24473
83	2	3	38 ON	2	72	24	62	39E	779088	807584	15	8	16	17	1226	29777	
			OFF	2	65	34	67	5E	720512	746880	15	8	18	8	1246	29880	
83	2	4	14 ON	2	47	22	71	33E	625872	648656	15	8	22	27	13	8	30147
			OFF	2	44	57	71	51E	620176	642752	15	8	23	2	1310	30182	
83	2	5	164 ON	2	48	39	72	18E	614128	636480	15	8	24	4	1313	30244	
			OFF	2	14	32	73	41E	692848	718168	15	8	30	21	1325	30621	
84	5	4	24 ON	2	52	24	47	7E	642224	665632	15	9	55	38	13	4	35730
			OFF	2	48	27	47	44E	628400	651280	15	9	56	28	13	7	35788
84	5	8	5 ON	2	11	22	54	7E	717664	743984	15	10	5	24	1325	36324	
			OFF	2	10	26	50	8E	725088	751536	15	10	5	38	1326	36338	

OPERATIONS SUMMARY

AFT PAID	CAMERA	NUMBER	249																
UPN NO	FRA	G	LAT	LONG	HEIGHT	RANGE	DA	H	M	S	LTIM	S-TIM							
PRE-FLT	114																		
1	4	2	14 ON	2	57	57	147	32W	810728	840512	9	23	24	13	1333	84253			
			OFF	2	55	18	146	56W	783848	812592	9	23	24	52	1336	84292			
2	4	1	23 ON	2	75	44	177	56E	1629174	1067312	10	8	54	6	1245	3246			
			OFF	2	71	26	177	23W	969328	1005216	10	8	55	12	13	5	3312		
2	4	2	29 ON	2	69	47	176	8W	947128	982144	10	8	55	38	1310	3338			
			OFF	2	64	34	173	21W	881968	914480	10	8	56	56	1323	3416			
5	9	6	62 ON	2	46	47	119	37E	742724	728384	12	5	44	27	1342	20667			
			OFF	2	36	31	120	37E	640736	664080	10	5	46	56	1349	20816			
6	3	3	52 ON	2	61	22	92	56E	836512	867280	10	7	15	15	1326	26115			
			OFF	2	51	23	95	15E	737872	764880	10	7	17	43	1338	26263			
7	8	3	34 ON	2	70	58	64	26E	949272	983344	10	8	47	16	13	4	31636		
			OFF	2	64	36	65	5E	869408	901440	10	8	48	52	1321	31732			
7	8	5	45 ON	2	48	14	72	1E	710624	736608	10	8	52	52	1340	31972			
			OFF	2	40	24	72	53E	658784	682816	10	8	54	45	1346	32085			
8	9	2	11 ON	1	37	12	116	22W	2052752	2130640	10	10	3	28	217	36208			
			OFF	1	42	6	116	10W	2006192	2004192	10	10	4	16	219	36256			
8	7	4	54 ON	2	62	18	45	15E	840848	871776	10	10	23	49	1324	37429			
			OFF	2	51	42	47	47E	737024	754080	10	10	26	25	1337	37585			
9	5	4	41 ON	2	57	7	23	1E	784784	813584	10	11	59	28	1331	43168			
			OFF	2	49	29	24	26E	717280	743520	10	12	1	20	1338	43280			
15	3	7	17 ON	2	44	53	117	10W	674896	699536	10	21	28	44	1339	77324			
			OFF	2	43	15	117	7W	664992	689248	10	21	29	8	1340	77348			
20	3	1	34 ON	2	75	51	141	3E	973168	1009200	11	5	12	55	1236	18775			
			OFF	2	58	45	121	53E	775696	804160	11	5	17	12	1324	19032			
20	3	4	41 ON	2	52	33	123	12E	722160	748592	11	5	18	42	1331	19122			
			OFF	2	45	26	124	13E	671696	696208	11	5	20	26	1337	19226			
21	5	4	55 ON	2	58	44	98	11E	773488	801856	11	6	51	35	1324	24695			
			OFF	2	48	39	100	7E	690880	716112	11	6	54	2	1334	24842			

21	5	6	55	ON	2	46	6	188	28E	674238	698816	11	6	54	39	1336	24879	
				OFF	2	36	47	181	28E	628528	651488	11	6	56	54	1342	25814	
21	5	8	57	ON	2	27	26	181	54E	627928	638832	11	6	59	9	1346	25149	
				OFF	2	18	8	182	17E	613744	636888	11	7	1	23	1358	25283	
23	5	6	53	ON	2	54	38	51	45E	732888	758784	11	18	1	21	1328	36881	
				OFF	2	45	5	53	18E	665568	689856	11	18	3	38	1336	36218	
24	5	3	92	ON	2	67	59	26	27E	788592	817536	11	11	34	8	1319	41648	
				OFF	2	44	24	29	33E	668496	684592	11	11	38	18	1336	41898	
36	5	4	58	ON	2	64	43	188	43E	798224	827536	12	6	25	38	13	8	23138
				OFF	2	55	1	183	35E	713848	739128	12	6	27	52	1322	23272	
36	5	6	161	ON	2	48	8	184	44E	666248	698544	12	6	29	34	1328	23374	
				OFF	2	21	31	186	42E	615224	637488	12	6	35	57	1342	23757	
37	5	8	173	ON	2	54	25	88	1E	726912	732752	12	8	2	22	1322	28942	
				OFF	2	26	2	82	49E	629264	631424	12	8	9	13	1348	29353	
38	5	5	13	ON	2	58	26	55	24E	736888	763776	12	9	35	44	1317	34544	
				OFF	2	56	3	55	58E	717616	743856	12	9	36	19	1328	34579	
38	5	8	86	ON	2	52	2	57	4E	675968	788648	12	9	37	46	1325	34666	
				OFF	2	35	47	53	33E	615368	638888	12	9	41	12	1335	34872	
39	5	3	138	ON	2	62	16	33	34E	768488	796656	12	11	9	8	1311	48148	
				OFF	2	43	32	34	11E	648864	664288	12	11	13	41	1338	48421	
31	4	4	55	ON	2	46	19	159	34E	641648	665848	13	6	5	4	1323	21884	
				OFF	2	37	12	118	27E	614384	636736	13	6	7	16	1328	22836	
32	4	1	4	ON	1	25	17	79	45W	2258864	2138752	13	7	12	9	152	25929	
				OFF	1	27	6	79	41W	2823328	2182448	13	7	12	48	153	25968	
32	3	7	57	ON	2	57	58	83	52E	727184	733824	13	7	36	36	1311	27396	
				OFF	2	48	7	85	39E	648224	671856	13	7	38	59	1321	27539	
32	3	9	59	ON	2	37	49	86	43E	615136	637528	13	7	41	26	1328	27686	
				OFF	2	28	9	87	19E	611552	633888	13	7	43	46	1332	27826	
33	1	4	154	ON	2	59	12	59	49E	715616	741792	13	9	18	36	13	9	33836
				OFF	2	33	26	63	28E	618864	632256	13	9	16	49	1329	33489	
33	1	5	24	ON	2	27	3	63	41E	613368	635688	13	9	18	21	1332	33581	
				OFF	2	23	4	63	52E	621688	644384	13	9	19	19	1334	33559	
34	9	8	11	ON	1	36	29	126	33W	1867296	1939424	13	18	23	55	157	37435	
				OFF	1	39	27	126	21W	1819344	1889472	13	18	24	43	159	37483	
34	9	1	13	ON	2	71	24	38	19E	824144	854448	13	18	41	55	1242	38515	
				OFF	2	68	42	32	13E	736592	825848	13	18	42	36	1251	38556	
34	9	3	112	ON	2	59	14	36	7E	714176	748384	13	18	44	55	13	9	38695
				OFF	2	48	28	39	7E	619616	642176	13	18	49	29	1325	38969	
35	9	3	81	ON	2	55	22	13	22E	625688	718648	13	12	28	11	1313	44411	
				OFF	2	41	46	15	13E	622784	645456	13	12	23	28	1324	44688	
35	9	5	71	ON	2	13	45	16	49E	662688	686784	13	12	38	13	1337	45813	
				OFF	2	1	27	17	9E	754724	782432	13	12	33	13	1341	45193	
36	9	4	42	ON	2	34	19	7	46W	618416	632624	13	13	59	35	1328	58375	
				OFF	2	27	45	7	24W	613616	635936	13	14	1	18	1331	58478	
31	9	1	9	ON	2	36	11	126	21E	611296	633536	13	21	58	44	1325	78644	
				OFF	2	34	34	126	14W	618568	632784	13	21	51	7	1325	78667	
35	5	3	66	ON	2	63	48	134	6E	729152	755848	14	4	1	28	1257	14488	
				OFF	2	48	52	137	35E	639958	653296	14	4	4	56	1315	14696	
36	3	5	44	ON	2	62	17	118	56E	716752	742968	14	5	35	59	1259	28159	
				OFF	2	54	26	112	59E	665616	689984	14	5	37	54	13	9	28274
36	3	6	31	ON	2	52	2	113	25E	653128	676944	14	5	38	28	1311	28388	

		OFF	2	46	44	114	11E	631288	654272	14	5	39	45	1316	28385			
66	3	8	33	ON	2	41	19	114	46E	616992	639456	14	5	41	3	1319	28463	
		OFF	2	35	55	115	13E	611136	633376	14	5	42	21	1323	28541			
67	1	4	26	ON	2	55	27	89	6E	678864	694512	14	7	11	57	13	8	25917
		OFF	2	51	57	89	45E	651712	675472	14	7	12	48	1311	25968			
67	1	6	38	ON	2	41	47	91	2E	617552	648832	14	7	15	15	1319	26115	
		OFF	2	36	53	91	28E	611536	633792	14	7	16	26	1322	26186			
68	3	5	22	ON	2	52	7	66	2E	651488	675248	14	8	47	4	1311	31624	
		OFF	2	48	18	66	36E	635368	658512	14	8	47	59	1314	31679			
68	3	7	37	ON	2	42	11	67	28E	618888	648496	14	8	49	28	1318	31768	
		OFF	2	36	2	67	51E	611248	633488	14	8	58	57	1322	31857			
69	9	4	75	ON	2	58	33	41	2E	686144	711288	14	18	19	48	13	3	37188
		OFF	2	45	57	43	14E	626864	649696	14	18	22	51	1315	37371			
69	5	4	13	ON	2	54	18	141	28E	649392	673872	15	3	38	9	13	3	13889
		OFF	2	51	48	141	54E	639424	662728	15	3	38	44	13	6	13124		
61	8	3	78	ON	2	62	8	115	47E	691368	716624	15	5	18	33	1253	18633	
		OFF	2	59	13	118	28E	632968	656816	15	5	13	25	13	7	18885		
61	8	5	81	ON	2	34	57	128	3E	614544	636912	15	5	17	5	1317	19825	
		OFF	2	21	56	128	43E	652568	676352	15	5	28	14	1322	19214			
62	3	3	51	ON	2	57	14	93	26E	662168	686328	15	6	45	59	1259	24359	
		OFF	2	48	31	95	1E	627888	649928	15	6	48	6	13	8	24486		
63	2	3	38	ON	2	72	38	62	22E	774816	799888	15	8	16	38	1225	29798	
		OFF	2	65	42	66	57E	713888	739928	15	8	18	13	1245	29893			
63	2	4	14	ON	2	47	21	71	38E	623536	646248	15	8	22	48	13	8	38168
		OFF	2	44	57	71	48E	618496	641888	15	8	23	15	1318	38195			
63	2	5	159	ON	2	48	38	72	13E	613536	635872	15	8	24	17	1312	38257	
		OFF	2	14	39	73	37E	699288	724752	15	8	38	34	1324	38634			
64	5	4	23	ON	2	52	26	47	5E	638648	651984	15	9	55	43	13	3	35743
		OFF	2	48	27	47	41E	625848	648624	15	9	56	41	13	7	35881		
64	5	8	4	ON	2	11	31	58	2E	724864	751392	15	18	5	37	1325	36337	
		OFF	2	18	36	58	3E	732488	759296	15	18	5	51	1325	36351			

PHOTOGRAPHIC SUMMARY

FRD	PAI	CAMERA	NO	228	2.225"	SLIT	W/23A	FILTER	3484	FILM								
OPN	NO	FRA	FEET		ET	S-CL	S-DIR	EV	FULL	INT	PRI							
PRE-FLT	178		277.7															
1	4	8	14	37.8	ON	284	45.8	44.1	12.38	12.42	11.82	11.22						
					OFF	288	47.6	46.8	12.82	12.42	11.82	11.22						
2	4	1	23	68.8	ON	247	31.8	35.6	11.88	12.32	11.72	11.12						
					OFF	257	35.4	36.8	11.86	12.35	11.75	11.15						
2	4	2	29	76.7	ON	268	36.7	37.5	11.88	12.36	11.76	11.16						
					OFF	271	40.9	39.9	11.94	12.39	11.79	11.19						
5	9	8	63	166.6	ON	277	53.4	53.3	11.97	12.42	11.82	11.22						
					OFF	267	58.6	66.5	12.82	12.42	11.82	11.22						
6	8	3	52	137.5	ON	222	43.4	41.2	11.65	12.41	11.81	11.21						
					OFF	249	52.6	48.7	11.81	12.42	11.82	11.22						
7	8	3	32	79.3	ON	195	35.9	36.4	11.46	12.36	11.76	11.16						
					OFF	214	41.8	39.3	11.68	12.39	11.79	11.19						
7	5	5	44	116.4	ON	256	52.6	51.5	11.85	12.42	11.82	11.22						
					OFF	271	57.8	68.7	11.93	12.42	11.82	11.22						

8 9 8	11	29.1 ON	158	-24.8	31.4	11.89	8.8	8.8	8.8
		OFF	152	-21.6	38.8	11.18	8.8	8.8	8.8
8 7 4	54	142.8 ON	219	42.8	48.4	11.63	12.48	11.88	11.28
		OFF	247	58.5	48.1	11.88	12.42	11.82	11.22
9 5 4	41	188.4 ON	235	46.7	43.6	11.73	12.42	11.82	11.22
		OFF	254	52.2	52.8	11.84	12.42	11.82	11.22
15 3 8	13	26.4 ON	383	55.2	54.8	12.18	12.42	11.82	11.22
		OFF	383	56.1	56.8	12.18	12.42	11.82	11.22
28 3 1	84	222.2 ON	198	32.1	33.4	11.42	12.32	11.72	11.12
		OFF	248	46.8	41.8	11.76	12.42	11.82	11.22
28 3 4	42	185.8 ON	254	58.5	45.6	11.84	12.42	11.82	11.22
		OFF	268	55.2	52.7	11.92	12.42	11.82	11.22
21 5 4	55	145.5 ON	243	46.1	48.8	11.78	12.42	11.82	11.22
		OFF	266	53.3	49.2	11.91	12.42	11.82	11.22
21 5 6	55	145.5 ON	271	54.9	51.9	11.93	12.42	11.82	11.22
		OFF	285	59.9	64.2	12.81	12.42	11.82	11.22
21 5 8	58	153.4 ON	292	62.7	88.5	12.84	12.42	11.82	11.22
		OFF	292	62.8	98.8	12.84	12.42	11.82	11.22
23 5 6	53	148.2 ON	255	49.3	43.6	11.85	12.42	11.82	11.22
		OFF	274	55.6	52.7	11.95	12.42	11.82	11.22
24 5 3	93	246.2 ON	239	44.5	39.8	11.76	12.41	11.81	11.21
		OFF	275	56.1	53.4	11.96	12.42	11.82	11.22
36 5 4	52	132.2 ON	225	41.9	35.4	11.67	12.48	11.88	11.28
		OFF	251	49.6	41.4	11.82	12.42	11.82	11.22
36 5 6	163	431.1 ON	266	54.6	47.7	11.91	12.42	11.82	11.22
		OFF	293	64.7	92.2	12.85	12.42	11.82	11.22
37 5 5	174	468.2 ON	266	52.1	41.7	11.91	12.42	11.82	11.22
		OFF	292	64.5	82.4	12.84	12.42	11.82	11.22
38 5 5	18	34.4 ON	254	47.2	38.7	11.84	12.42	11.82	11.22
		OFF	259	48.9	42.3	11.87	12.42	11.82	11.22
38 5 8	36	227.5 ON	271	53.3	45.3	11.93	12.42	11.82	11.22
		OFF	289	61.7	63.7	12.83	12.42	11.82	11.22
39 5 5	172	285.7 ON	245	44.8	36.2	11.79	12.41	11.81	11.21
		OFF	281	57.7	52.3	11.99	12.42	11.82	11.22
51 4 4	58	145.5 ON	278	56.6	47.2	11.97	12.42	11.82	11.22
		OFF	289	62.1	58.6	12.83	12.42	11.82	11.22
52 4 1	4	18.6 ON	74	-36.2	32.8	18.86	8.8	8.8	8.8
		OFF	74	-34.5	29.4	18.87	8.8	8.8	8.8
52 3 7	57	158.8 ON	262	48.1	37.1	11.89	12.42	11.82	11.22
		OFF	288	55.5	45.3	11.98	12.42	11.82	11.22
52 3 9	68	158.7 ON	298	61.9	58.5	12.83	12.42	11.82	11.22
		OFF	292	65.7	76.8	12.84	12.42	11.82	11.22
53 1 4	158	412.6 ON	258	47.2	36.1	11.96	12.42	11.82	11.22
		OFF	292	64.2	65.8	12.83	12.42	11.82	11.22
53 1 8	24	53.5 ON	298	66.8	79.1	12.83	12.42	11.82	11.22
		OFF	298	66.4	88.2	12.82	12.42	11.82	11.22
54 4 2	11	29.1 ON	158	-26.4	26.6	11.15	8.8	8.8	8.8
		OFF	162	-23.8	26.8	11.18	8.8	8.8	8.8
54 5 1	13	34.4 ON	228	36.7	32.3	11.69	12.36	11.76	11.16
		OFF	236	39.1	31.2	11.73	12.38	11.78	11.18
54 5 3	113	298.9 ON	258	47.2	35.9	11.87	12.42	11.82	11.22

		OFF	287	68.6	54.4	12.81	12.42	11.82	11.22
55 8 3	81	214.2 ON	266	58.2	38.4	11.91	12.42	11.82	11.22
		OFF	285	59.9	52.2	12.81	12.42	11.82	11.22
55 8 5	72	198.4 ON	278	65.2	129.1	11.97	12.42	11.82	11.22
		OFF	256	58.9	129.8	11.85	12.42	11.82	11.22
56 8 4	48	125.8 ON	298	63.9	63.9	12.83	12.42	11.82	11.22
		OFF	298	66.1	77.4	12.83	12.42	11.82	11.22
61 9 1	9	23.8 ON	298	63.5	59.9	12.83	12.42	11.82	11.22
		OFF	298	64.3	62.8	12.83	12.42	11.82	11.22
65 5 3	86	227.5 ON	254	43.7	31.9	11.84	12.41	11.81	11.21
		OFF	287	55.6	42.4	11.98	12.42	11.82	11.22
66 3 5	45	119.2 ON	258	44.9	32.5	11.86	12.41	11.81	11.21
		OFF	273	51.4	37.4	11.94	12.42	11.82	11.22
66 3 6	31	82.8 ON	277	53.3	39.3	11.96	12.42	11.82	11.22
		OFF	283	57.3	44.4	12.82	12.42	11.82	11.22
66 3 8	33	87.3 ON	288	68.9	51.1	12.82	12.42	11.82	11.22
		OFF	298	64.8	59.7	12.83	12.42	11.82	11.22
67 1 4	21	55.5 ON	271	58.6	36.5	11.94	12.42	11.82	11.22
		OFF	277	53.4	39.2	11.97	12.42	11.82	11.22
67 1 6	32	79.3 ON	288	63.7	52.3	12.82	12.42	11.82	11.22
		OFF	298	63.6	57.8	12.83	12.42	11.82	11.22
68 3 5	22	58.2 ON	277	53.3	39.8	11.97	12.42	11.82	11.22
		OFF	282	56.2	42.5	11.99	12.42	11.82	11.22
68 3 7	37	97.9 ON	287	68.5	49.6	12.82	12.42	11.82	11.22
		OFF	298	64.1	59.2	12.83	12.42	11.82	11.22
69 9 4	78	291.8 ON	269	42.2	34.2	11.92	12.42	11.82	11.22
		OFF	286	58.8	44.8	12.81	12.42	11.82	11.22
68 5 4	13	34.4 ON	268	52.2	35.5	11.92	12.42	11.82	11.22
		OFF	272	54.1	37.3	11.94	12.42	11.82	11.22
61 8 3	78	185.1 ON	266	45.6	32.5	11.91	12.41	11.81	11.21
		OFF	283	55.4	38.6	12.88	12.42	11.82	11.22
61 8 5	81	214.2 ON	298	65.8	59.2	12.83	12.42	11.82	11.22
		OFF	281	69.4	98.4	11.99	12.42	11.82	11.22
62 3 3	53	148.2 ON	274	49.7	33.8	11.95	12.42	11.82	11.22
		OFF	285	56.8	48.8	12.81	12.42	11.82	11.22
63 2 3	38	128.5 ON	243	36.1	26.2	11.78	12.36	11.76	11.16
		OFF	259	42.4	28.5	11.87	12.42	11.88	11.28
63 2 4	14	37.8 ON	286	57.8	41.8	12.81	12.42	11.82	11.22
		OFF	288	59.5	43.7	12.82	12.42	11.82	11.22
63 2 5	168	423.2 ON	298	62.5	49.3	12.83	12.42	11.82	11.22
		OFF	269	68.3	129.3	11.92	12.42	11.82	11.22
64 5 4	24	63.5 ON	283	53.8	36.2	12.88	12.42	11.82	11.22
		OFF	287	57.8	38.7	12.82	12.42	11.82	11.22
64 5 6	8	13.2 ON	268	67.1	116.6	11.88	12.42	11.82	11.22
		OFF	258	66.7	118.5	11.87	12.42	11.82	11.22

PHOTOGRAPHIC SUMMARY

AFT PAN CAMERA NO 229 E.175° SLIT 4/21 FILTER 34#4 FILM
UPR NO FRA FEET ET S-EL S-DIR EV FULL INT PRI
PRE-FLT 114 331.5

1	4	8	14	37.8	ON	365	45.6	43.5	12.36	12.74	12.14	11.54
					OFF	378	47.5	45.5	12.38	12.75	12.15	11.55
2	4	1	23	58.8	ON	317	31.3	33.3	12.16	12.64	12.84	11.44
					OFF	338	35.8	35.4	12.22	12.68	12.88	11.48
2	4	2	29	76.7	ON	335	36.4	36.3	12.24	12.69	12.89	11.49
					OFF	349	48.6	39.1	12.38	12.72	12.12	11.52
5	9	6	62	164.8	ON	356	53.3	53.8	12.33	12.75	12.15	11.55
					OFF	369	58.6	66.3	12.38	12.75	12.15	11.55
6	8	3	52	137.5	ON	286	43.2	48.5	12.81	12.74	12.14	11.54
					OFF	328	52.5	48.2	12.17	12.75	12.15	11.55
7	8	3	38	79.3	ON	251	35.5	35.1	11.93	12.68	12.88	11.48
					OFF	276	48.7	38.5	11.96	12.72	12.12	11.52
7	8	5	45	119.8	ON	329	52.6	51.2	12.22	12.75	12.15	11.55
					OFF	349	57.8	68.5	12.38	12.75	12.15	11.55
8	9	7	11	29.1	ON	195	-25.9	31.6	11.46	8.8	8.8	8.8
					OFF	196	-23.4	38.8	11.47	8.8	8.8	8.8
8	7	4	54	142.8	ON	262	42.6	39.7	11.99	12.73	12.13	11.53
					OFF	318	58.4	47.7	12.17	12.75	12.15	11.55
9	5	4	41	138.4	ON	322	46.6	43.1	12.89	12.75	12.15	11.55
					OFF	326	51.9	48.6	12.28	12.75	12.15	11.55
15	3	2	17	26.4	ON	392	55.2	53.8	12.47	12.75	12.15	11.55
					OFF	393	56.1	55.7	12.47	12.75	12.15	11.55
23	3	1	84	222.2	ON	245	31.6	31.2	11.79	12.64	12.84	11.44
					OFF	328	45.9	42.4	12.12	12.75	12.15	11.55
23	3	4	41	128.4	ON	327	52.4	45.2	12.28	12.75	12.15	11.55
					OFF	345	55.2	52.4	12.28	12.75	12.15	11.55
21	5	4	55	145.5	ON	318	45.9	48.3	12.13	12.75	12.15	11.55
					OFF	348	53.2	48.8	12.26	12.75	12.15	11.55
21	5	5	55	145.5	ON	346	54.8	51.6	12.29	12.75	12.15	11.55
					OFF	363	59.9	64.8	12.36	12.75	12.15	11.55
21	5	6	57	158.8	ON	372	62.8	87.5	12.39	12.75	12.15	11.55
					OFF	372	62.8	96.8	12.39	12.75	12.15	11.55
23	5	0	53	148.2	ON	325	49.2	43.2	12.28	12.75	12.15	11.55
					OFF	349	55.6	52.4	12.38	12.75	12.15	11.55
24	5	0	92	243.3	ON	366	44.3	38.4	12.11	12.74	12.14	11.54
					OFF	351	55.1	53.1	12.31	12.75	12.15	11.55
36	5	4	58	132.2	ON	288	41.7	34.6	12.82	12.73	12.13	11.53
					OFF	328	49.5	41.8	12.18	12.75	12.15	11.55
36	5	0	151	425.8	ON	348	54.6	47.4	12.26	12.75	12.15	11.55
					OFF	374	64.7	92.8	12.48	12.75	12.15	11.55
37	5	0	173	457.6	ON	341	58.2	41.3	12.27	12.75	12.15	11.55
					OFF	373	64.8	82.3	12.42	12.75	12.15	11.55
38	5	5	13	34.4	ON	325	46.9	38.2	12.28	12.75	12.15	11.55
					OFF	332	48.8	39.9	12.23	12.75	12.15	11.55
38	5	8	56	227.5	ON	347	53.3	45.8	12.29	12.75	12.15	11.55
					OFF	373	61.8	63.6	12.38	12.75	12.15	11.55
39	5	0	185	285.7	ON	313	43.5	35.6	12.14	12.74	12.14	11.54
					OFF	363	57.7	52.1	12.34	12.75	12.15	11.55
51	4	4	58	145.5	ON	356	56.6	47.8	12.33	12.75	12.15	11.55
					OFF	369	62.2	59.5	12.38	12.75	12.15	11.55
52	4	1	4	12.6	ON	97	-38.8	38.5	18.46	8.8	8.8	8.8

			OFF	98	-36.4	29.8	18.47	0.0	0.0	0.0		
52	3	7	57	158.8	ON	336	48.8	36.7	12.24	12.75	12.15	11.55
			OFF			358	55.5	45.0	12.34	12.75	12.15	11.55
52	3	9	59	156.1	ON	371	61.9	58.3	12.39	12.75	12.15	11.55
			OFF			374	65.7	76.8	12.48	12.75	12.15	11.55
53	1	4	154	487.3	ON	330	46.9	35.6	12.22	12.75	12.15	11.55
			OFF			371	64.1	65.9	12.39	12.75	12.15	11.55
53	1	8	24	63.5	ON	371	66.8	79.1	12.39	12.75	12.15	11.55
			OFF			368	66.5	88.1	12.38	12.75	12.15	11.55
54	9	8	11	29.1	ON	283	-28.2	26.7	11.52	0.0	0.0	0.0
			OFF			287	-25.5	26.0	11.54	0.0	0.0	0.0
54	9	1	13	34.4	ON	292	36.4	29.1	12.04	12.69	12.09	11.49
			OFF			322	33.6	38.3	12.09	12.71	12.11	11.51
54	9	3	112	296.2	ON	331	46.9	35.5	12.22	12.75	12.15	11.55
			OFF			366	68.7	54.2	12.37	12.75	12.15	11.55
55	8	3	81	214.2	ON	341	58.1	38.8	12.27	12.75	12.15	11.55
			OFF			365	59.9	52.0	12.36	12.75	12.15	11.55
55	8	5	71	187.8	ON	356	65.3	129.0	12.33	12.75	12.15	11.55
			OFF			328	59.1	129.6	12.21	12.75	12.15	11.55
56	7	4	42	125.8	ON	371	64.8	63.9	12.39	12.75	12.15	11.55
			OFF			371	66.2	77.3	12.39	12.75	12.15	11.55
51	9	1	9	23.8	ON	378	63.5	59.8	12.39	12.75	12.15	11.55
			OFF			371	64.3	62.7	12.39	12.75	12.15	11.55
65	5	3	86	227.5	ON	325	43.6	31.3	12.28	12.74	12.14	11.54
			OFF			359	55.6	42.1	12.34	12.75	12.15	11.55
66	3	5	44	116.4	ON	329	44.8	32.0	12.21	12.74	12.14	11.54
			OFF			348	51.4	37.1	12.29	12.75	12.15	11.55
66	3	6	51	62.8	ON	353	53.3	39.0	12.31	12.75	12.15	11.55
			OFF			361	57.3	44.2	12.35	12.75	12.15	11.55
66	3	8	33	87.3	ON	367	61.6	51.2	12.37	12.75	12.15	11.55
			OFF			370	64.1	59.6	12.38	12.75	12.15	11.55
67	1	4	22	52.9	ON	346	58.6	36.2	12.29	12.75	12.15	11.55
			OFF			353	53.4	39.0	12.32	12.75	12.15	11.55
67	1	6	32	79.3	ON	367	60.7	50.1	12.37	12.75	12.15	11.55
			OFF			379	63.6	57.7	12.38	12.75	12.15	11.55
68	3	5	22	58.2	ON	353	53.3	38.7	12.32	12.75	12.15	11.55
			OFF			359	56.2	42.2	12.34	12.75	12.15	11.55
68	3	7	37	97.9	ON	366	62.5	49.4	12.37	12.75	12.15	11.55
			OFF			370	64.2	59.1	12.38	12.75	12.15	11.55
69	9	4	75	196.4	ON	343	48.1	33.3	12.27	12.75	12.15	11.55
			OFF			364	58.0	44.6	12.36	12.75	12.15	11.55
66	3	4	13	34.4	ON	341	52.2	35.2	12.27	12.75	12.15	11.55
			OFF			347	54.1	37.1	12.29	12.75	12.15	11.55
61	8	3	7	185.1	ON	339	45.5	30.0	12.26	12.74	12.14	11.54
			OFF			361	55.4	38.3	12.35	12.75	12.15	11.55
61	8	5	61	214.2	ON	370	65.8	59.1	12.38	12.75	12.15	11.55
			OFF			358	69.4	90.2	12.34	12.75	12.15	11.55
62	3	3	51	134.9	ON	352	49.7	32.7	12.32	12.75	12.15	11.55
			OFF			364	56.6	39.7	12.36	12.75	12.15	11.55
63	2	3	35	148.5	ON	310	35.9	25.0	12.13	12.69	12.09	11.49
			OFF			331	42.3	27.9	12.22	12.73	12.13	11.53



83	2	4	14	37.8	ON	365	57.8	48.8	12.36	12.75	12.15	11.55
					OFF	367	59.6	43.5	12.37	12.75	12.15	11.55
83	2	5	159	428.6	ON	378	62.6	49.1	12.38	12.75	12.15	11.55
					OFF	343	68.4	189.1	12.27	12.75	12.15	11.55
84	5	4	23	68.8	ON	361	53.8	35.9	12.35	12.75	12.15	11.55
					OFF	365	57.8	39.5	12.37	12.75	12.15	11.55
84	5	8	4	18.6	ON	332	67.3	116.3	12.23	12.75	12.15	11.55
					OFF	338	66.8	118.2	12.22	12.75	12.15	11.55

STELLAR-INDEX SUMMARY

CAMERA DATA	ET	FILM	FILTER	GRID	ASSEMBLY NO	D165
STELLAR	2.8	4481	NONE	134		
INDEX	1/500	4480	#/21	133		

PERFORMANCE SUMMARY

OP. NO	FR	STEL FEET	INDX FEET	H	M	S	Q	ON LAT	ON LONG	Q	OFF LAT	OFF LONG	SEC DUR		
PNE-FLT	15	1.48	2.97												
1	4	2	3	2.39	2.59	23	24	2	57	147W	2	55	146W	52	
2	4	1	4	2.42	2.79	0	53	53	2	75	178E	2	70	176W	79
2	4	2	5	2.49	2.99	2	55	25	2	69	175W	2	64	173W	91
5	9	6	14	2.99	1.98	5	44	14	2	46	119E	2	36	128E	162
6	2	3	3	2.79	1.58	7	15	2	2	61	93E	2	51	95E	161
7	2	3	5	2.49	2.99	8	47	3	2	78	64E	2	64	68E	189
7	2	5	7	2.69	1.39	8	52	39	2	48	72E	2	48	72E	126
8	9	2	2	2.28	2.48	12	3	15	1	39	116W	1	42	115W	61
8	7	4	8	2.79	1.58	12	23	36	2	51	45E	2	51	47E	169
9	5	4	7	2.69	1.39	11	59	15	2	56	23E	2	49	24E	125
15	3	5	2	2.28	2.48	21	28	31	2	44	117W	2	43	116W	37
22	3	1	13	1.29	2.57	5	12	42	2	75	111E	2	58	122E	278
23	3	4	6	2.59	1.19	5	18	29	2	52	123E	2	45	124E	117
21	3	4	9	2.89	1.78	6	51	22	2	58	98E	2	48	188E	168
21	3	6	9	2.89	1.78	6	54	26	2	46	188E	2	36	181E	148
21	3	8	9	2.89	1.78	6	58	50	2	27	181E	2	19	182E	147
23	3	0	2	2.79	1.58	12	1	8	2	54	51E	2	45	53E	152
24	3	3	14	1.39	2.77	11	33	55	2	62	26E	2	44	29E	255
36	3	4	8	2.79	1.58	6	25	17	2	64	188E	2	54	183E	155
36	3	6	24	2.38	4.75	6	29	21	2	47	184E	2	21	186E	396
37	3	0	20	2.57	5.15	8	2	9	2	54	82E	2	26	82E	424
38	3	5	3	2.38	2.59	9	35	31	2	58	55E	2	55	56E	48
38	3	8	13	1.29	2.57	9	37	33	2	49	57E	2	35	58E	219
39	3	3	15	1.58	3.17	11	2	50	2	62	38E	2	43	34E	286
51	3	4	9	2.89	1.78	6	4	51	2	46	189E	2	37	118E	145
52	4	1	1	2.18	2.22	7	11	50	1	27	79W	1	29	79W	44
52	3	7	9	2.89	1.78	7	36	23	2	57	83E	2	47	85E	156
52	3	9	9	2.89	1.78	7	41	13	2	37	86E	2	28	87E	153
53	1	4	23	2.28	4.55	9	12	23	2	59	59E	2	33	63E	386
53	1	0	4	2.42	2.79	9	18	0	2	27	63E	2	23	63E	71
54	9	2	2	2.28	2.48	12	23	42	1	38	126W	1	41	126W	61
54	9	1	2	2.28	2.48	12	41	42	2	71	32E	2	68	32E	54
54	9	3	17	1.68	3.37	10	44	42	2	59	36E	2	48	39E	287

55	8	3	12	1.19	2.38	12	19	58	2	55	13E	2	41	15E	218
55	8	5	11	1.89	2.18	12	38	8	2	13	16E	2	1	17E	193
56	8	4	6	0.59	1.19	13	59	22	2	34	7W	2	27	7W	188
61	9	1	2	0.28	0.48	21	58	31	2	36	126W	2	34	126W	36
65	5	3	13	1.29	2.57	4	1	7	2	63	134E	2	48	137E	229
66	3	5	7	0.69	1.39	5	35	46	2	62	111E	2	54	113E	128
66	3	6	5	0.49	0.99	5	38	15	2	51	113E	2	46	114E	98
66	3	8	6	0.59	1.19	5	48	58	2	41	114E	2	35	115E	91
67	1	4	4	0.48	0.79	7	11	44	2	55	89E	2	51	89E	64
67	1	6	5	0.49	0.99	7	15	2	2	41	91E	2	36	91E	84
68	3	5	4	0.48	0.79	8	46	51	2	52	66E	2	48	66E	68
68	3	7	6	0.59	1.19	8	49	15	2	42	67E	2	36	67E	182
69	9	4	12	1.19	2.38	18	19	35	2	58	41E	2	45	43E	196
68	5	4	3	0.38	0.59	3	37	56	2	54	141E	2	51	141E	48
61	5	3	11	1.89	2.18	5	18	28	2	61	115E	2	58	118E	185
61	5	5	12	1.19	2.38	5	16	52	2	34	128E	2	21	128E	282
62	3	3	8	0.79	1.58	6	45	46	2	57	93E	2	48	95E	148
63	2	3	6	0.59	1.19	8	16	17	2	72	62E	2	65	67E	116
63	2	4	3	0.38	0.59	8	22	27	2	47	71E	2	44	71E	48
63	2	5	24	2.38	4.75	8	24	4	2	48	72E	2	14	73E	398
64	5	4	4	0.48	0.79	9	55	38	2	52	47E	2	48	47E	71
64	5	8	1	0.18	0.26	18	5	24	2	11	58E	2	18	58E	27

NOTE - OPERATION 84-5-3 ACTUALLY CONSISTED OF 5 MORE FRAMES FOR THE FWD PAN CAMERA AND 6 MORE FOR THE AFT PAN CAMERA THAN WAS REPORTED. THESE FRAMES WILL BE INCLUDED IN THE 3 MISSION RECOVERY BUCKET.

NOTE - TLM DATA INDICATED NORMAL CAMERA SYSTEM PERFORMANCE DURING THE ENTIRE 4 MISSION.

- A. 1041-1
- B. DRY
- C. PERFORMANCE ESTIMATE - PART TWO

RATE ESTIMATE

FWD PAN CAMERA NUMBER 208

OPN NO	FR	R	A	TUR/	DUR	INST	INST	SCAN RATE	PCT RATE
						CPS	ANG-VEL	R/SEC I/SEC	CALIB REQD
1 4 0	14	7	3	ON	1529	0.4242	0.03578	2.664 63.94	-0.8 21.5
				OFF	39	0.4304	0.03632	2.704 64.90	-0.8 19.8
2 4 1	23	7	3	ON	1236	0.3687	0.03111	2.317 55.60	-0.8 30.4
				OFF	66	0.3838	0.03238	2.411 57.87	-0.8 28.6
2 4 2	29	7	3	ON	1332	0.3892	0.03284	2.445 58.69	-0.8 27.6
				OFF	78	0.4256	0.03422	2.548 61.16	-0.8 25.1
5 9 6	63	11	1	ON	1660	0.4142	0.03493	2.601 62.42	-0.8 6.1
				OFF	149	0.4291	0.03620	2.696 64.70	-0.8 -0.3
6 8 3	52	11	1	ON	1381	0.3326	0.02826	2.098 50.15	-0.8 3.2
				OFF	148	0.3717	0.03136	2.335 56.05	-0.8 0.8
7 8 3	34	11	1	ON	1161	0.2913	0.02458	1.830 43.92	-0.8 3.6
				OFF	96	0.3221	0.02781	2.012 48.28	-0.8 3.6
7 8 5	44	11	1	ON	1490	0.3627	0.03230	2.425 57.72	-0.8 -0.4
				OFF	113	0.4251	0.03418	2.546 61.09	-0.8 -3.0
8 9 6	11	4	1	ON	65	0.2273	0.01918	1.428 34.27	-0.8 48.3
				OFF	48	0.2273	0.01918	1.428 34.27	-0.8 47.2
8 7 4	54	11	1	ON	1285	0.3279	0.02767	2.060 49.45	-0.8 2.4
				OFF	156	0.3696	0.03119	2.322 55.74	-0.8 0.1
9 5 4	41	11	1	ON	1370	0.3513	0.02964	2.237 52.98	-0.8 1.6
				OFF	112	0.3791	0.03199	2.382 57.17	-0.8 -0.3
15 3 0	10	4	1	ON	1531	0.4533	0.03822	2.846 68.31	-0.8 10.3
				OFF	24	0.4534	0.03826	2.849 68.37	-0.8 8.9
20 3 1	04	11	1	ON	1135	0.2842	0.02398	1.786 42.86	-0.8 4.2
				OFF	257	0.3523	0.03023	2.251 54.03	-0.8 2.5
20 3 4	40	11	1	ON	1485	0.3799	0.03205	2.387 57.28	-0.8 0.6
				OFF	134	0.4012	0.03386	2.521 60.50	-0.8 -1.8
21 5 4	55	11	1	ON	1398	0.3632	0.03064	2.282 54.77	0.4 3.5
				OFF	147	0.3977	0.03356	2.499 59.97	0.4 0.4
21 5 6	55	11	1	ON	1583	0.4040	0.03416	2.543 61.04	0.4 -0.5
				OFF	135	0.4254	0.03590	2.673 64.15	0.4 -3.4
21 5 2	59	11	1	ON	1852	0.4360	0.03679	2.739 65.75	0.4 -4.9
				OFF	134	0.4360	0.03679	2.739 65.74	0.4 -4.3
23 5 6	63	11	1	ON	1469	0.3827	0.03213	2.392 57.41	0.4 2.3
				OFF	137	0.4091	0.03452	2.571 61.69	0.4 -0.9
24 5 3	93	11	1	ON	1370	0.3577	0.03019	2.248 53.95	0.4 4.1
				OFF	242	0.4114	0.03472	2.585 62.04	0.4 -1.2
26 5 4	59	11	1	ON	1301	0.3364	0.02838	2.114 50.73	0.4 -0.7
				OFF	142	0.3746	0.03161	2.354 56.49	0.4 -2.2
26 5 6	103	11	1	ON	1545	0.3975	0.03354	2.497 59.94	0.4 -3.7
				OFF	383	0.4373	0.03690	2.748 65.95	0.4 -3.6
27 5 5	174	11	1	ON	1552	0.3981	0.03359	2.501 60.03	0.2 2.9
				OFF	411	0.4360	0.03679	2.739 65.75	0.2 -4.9

38	5	5	13	11	1 ON	1465	0.3792	0.03200	2.383	57.18	0.2	2.6
					OFF	35	0.3874	0.03268	2.434	58.41	0.2	1.8
38	5	8	86	11	1 ON	1588	0.4050	0.03417	2.545	61.07	0.2	-0.2
					OFF	206	0.4319	0.03645	2.714	65.14	0.2	-4.2
39	8	3	108	11	1 ON	1411	0.3658	0.03086	2.298	55.16	0.2	3.5
					OFF	273	0.4204	0.03547	2.642	63.40	0.2	-2.4
51	4	4	55	11	1 ON	1655	0.4163	0.03512	2.615	62.77	0.2	-3.3
					OFF	132	0.4314	0.03648	2.711	65.05	0.2	-4.7
52	4	1	4	11	1 ON	56	0.1107	0.00934	0.695	16.69	0.2	-6.1
					OFF	31	0.1115	0.00941	0.701	16.81	0.2	-7.0
52	3	7	57	11	1 ON	1523	0.3921	0.03309	2.464	59.13	0.2	1.5
					OFF	143	0.4170	0.03526	2.626	63.02	0.2	-1.7
52	3	9	62	11	1 ON	1813	0.4332	0.03655	2.722	65.32	0.2	-4.2
					OFF	140	0.4362	0.03681	2.741	65.78	0.2	-4.5
53	1	4	156	11	1 ON	1524	0.3856	0.03253	2.423	58.14	-0.4	1.1
					OFF	370	0.4333	0.03656	2.722	65.34	-0.4	-5.3
53	1	8	24	11	1 ON	1969	0.4331	0.03654	2.721	65.30	-0.4	-5.0
					OFF	50	0.4324	0.03631	2.704	64.90	-0.4	-4.4
54	9	0	11	4	1 ON	247	0.2282	0.01925	1.434	34.41	-0.4	42.6
					OFF	48	0.2282	0.01925	1.434	34.41	-0.4	40.8
54	9	1	13	11	1 ON	1327	0.3410	0.02878	2.143	51.43	-0.4	4.1
					OFF	41	0.3522	0.02972	2.213	53.12	-0.4	3.6
54	9	3	113	11	1 ON	1507	0.3863	0.03259	2.427	58.25	-0.4	1.0
					OFF	274	0.4282	0.03613	2.691	64.50	-0.4	-4.5
55	0	3	81	11	1 ON	1565	0.3903	0.03360	2.502	60.06	-0.4	-0.4
					OFF	197	0.4260	0.03600	2.681	64.33	-0.4	-4.2
55	0	5	72	11	1 ON	2100	0.4167	0.03510	2.614	62.72	-0.4	-1.3
					OFF	180	0.3820	0.03228	2.404	57.69	-0.4	3.0
56	0	4	40	11	1 ON	1874	0.4332	0.03655	2.722	65.32	-0.4	-5.2
					OFF	95	0.4331	0.03654	2.721	65.31	-0.4	-5.0
56	0	1	9	11	1 ON	1854	0.4329	0.03653	2.720	65.28	-0.4	-5.1
					OFF	23	0.4335	0.03658	2.724	65.37	-0.4	-5.2
55	5	3	55	11	1 ON	1479	0.3801	0.03207	2.380	57.31	-0.4	1.7
					OFF	216	0.4193	0.03538	2.634	63.22	-0.4	-2.9
56	3	5	45	11	1 ON	1504	0.3850	0.03253	2.422	58.13	-0.4	1.2
					OFF	110	0.4070	0.03442	2.563	61.51	-0.4	-1.3
56	3	6	31	11	1 ON	1653	0.4134	0.03400	2.597	62.33	-0.4	-2.0
					OFF	77	0.4234	0.03572	2.660	63.04	-0.4	-3.5
56	3	8	33	11	1 ON	1820	0.4302	0.03630	2.723	64.87	-0.4	-4.5
					OFF	70	0.4335	0.03658	2.724	65.37	-0.4	-5.0
57	1	4	21	11	1 ON	1600	0.4057	0.03423	2.549	61.17	-0.4	-1.1
					OFF	51	0.4140	0.03493	2.601	62.42	-0.4	-2.1
57	1	6	30	11	1 ON	1804	0.4290	0.03627	2.701	64.02	-0.4	-4.5
					OFF	71	0.4332	0.03656	2.722	65.33	-0.4	-5.0
58	3	5	22	11	1 ON	1657	0.4130	0.03493	2.601	62.42	-0.4	-2.2
					OFF	55	0.4214	0.03555	2.648	63.54	-0.4	-3.2
58	3	7	37	11	1 ON	1800	0.4297	0.03625	2.700	64.79	-0.4	-4.5
					OFF	89	0.4336	0.03658	2.724	65.38	-0.4	-5.0
59	9	4	70	11	1 ON	1503	0.4010	0.03338	2.523	60.56	-0.4	0.5
					OFF	103	0.4270	0.03603	2.683	64.38	-0.4	-3.4
58	5	4	13	11	1 ON	1570	0.4000	0.03378	2.515	60.36	-0.4	-6.0

				OFF	35	0.4066	0.03431	2.555	61.31	-0.4	-6.2
81	8	3	70	1 ON	1560	0.3972	0.03352	2.496	59.98	-0.4	0.2
				OFF	172	0.4236	0.03574	2.661	63.87	-0.4	-3.1
81	8	5	81	1 ON	1952	0.4335	0.03658	2.724	65.37	-0.4	-4.6
				OFF	189	0.4196	0.03548	2.636	63.27	-0.4	-2.0
82	3	3	53	1 ON	1632	0.4121	0.03461	2.577	61.85	-0.4	-1.3
				OFF	127	0.4263	0.03597	2.679	64.29	-0.4	-3.6
83	2	3	38	1 ON	1410	0.3632	0.03065	2.282	54.78	-0.4	3.1
				OFF	103	0.3877	0.03271	2.436	58.46	-0.4	1.3
83	2	4	14	1 ON	1780	0.4282	0.03613	2.698	64.56	-0.4	-3.8
				OFF	35	0.4327	0.03634	2.786	64.94	-0.4	-4.2
83	2	5	160	1 ON	1877	0.4333	0.03656	2.723	65.34	-0.4	-4.6
				OFF	377	0.4018	0.03390	2.524	60.59	-0.4	0.8
84	5	4	24	1 ON	1725	0.4223	0.03567	2.656	63.75	-0.4	-2.3
				OFF	58	0.4284	0.03614	2.691	64.68	-0.4	-3.3
84	5	8	5	1 ON	2310	0.3892	0.03284	2.446	58.69	-0.4	1.4
				OFF	14	0.3862	0.03259	2.426	58.24	-0.4	1.7

RATE ESTIMATE

AFT PAN. CALIB. NUMBER 209

OP.	NO	FR	R	A	TIME/DUR	INST	INST	SCAN	RATE	PCT	RATE	
						CPS	ANG-VEL	R/SEC	I/SEC	CALIB	REQD	
1	4	6	14	7	3 ON	1522	0.4239	0.03577	2.663	63.92	-0.7	20.5
					OFF	39	0.4392	0.03630	2.703	64.88	-0.7	18.8
2	4	1	23	7	3 ON	1251	0.3689	0.03113	2.318	55.63	-0.7	29.5
					OFF	66	0.3830	0.03239	2.412	57.88	-0.7	27.7
2	4	2	29	7	3 ON	1343	0.3892	0.03284	2.446	58.78	-0.7	26.8
					OFF	78	0.4055	0.03422	2.548	61.15	-0.7	24.1
5	9	6	62	11	1 ON	1681	0.4139	0.03492	2.620	62.41	-0.7	5.1
					OFF	149	0.4289	0.03619	2.695	64.68	-0.7	-1.1
6	6	3	52	11	1 ON	1314	0.3330	0.02910	2.093	50.22	-0.7	2.1
					OFF	148	0.3719	0.03138	2.336	56.07	-0.7	-0.3
7	8	3	30	11	1 ON	1174	0.2921	0.02465	1.835	44.05	-0.7	2.6
					OFF	96	0.3207	0.02706	2.015	48.36	-0.7	2.5
7	3	5	45	11	1 ON	1511	0.3320	0.03230	2.405	57.73	-0.7	-1.4
					OFF	113	0.4051	0.03418	2.545	61.89	-0.7	-3.9
8	9	0	11	4	1 ON	78	0.2275	0.01920	1.430	34.31	-0.7	48.0
					OFF	48	0.2275	0.01920	1.430	34.31	-0.7	46.6
8	7	4	54	11	1 ON	1290	0.3284	0.02771	2.063	49.52	-0.7	1.3
					OFF	156	0.3690	0.03120	2.323	55.76	-0.7	-1.0
9	6	4	41	11	1 ON	1383	0.3515	0.02967	2.209	53.02	-0.7	0.7
					OFF	112	0.3792	0.03200	2.383	57.18	-0.7	-1.4
15	3	2	10	4	1 ON	1594	0.4559	0.03847	2.865	68.75	-0.7	10.2
					OFF	24	0.4564	0.03851	2.868	68.83	-0.7	0.7
20	3	1	84	11	1 ON	1151	0.2851	0.02406	1.791	42.99	-0.7	3.0
					OFF	257	0.3505	0.03025	2.253	54.06	-0.7	1.4
23	3	4	41	11	1 ON	1490	0.3800	0.03206	2.387	57.30	-0.7	-0.5
					OFF	120	0.4012	0.03385	2.521	60.50	-0.7	-2.0
21	5	4	55	11	1 ON	1411	0.3600	0.03045	2.267	54.41	-0.2	1.7
					OFF	147	0.3949	0.03332	2.481	59.55	-0.2	-1.3

21	5	6	55	11	1 ON	1596	0.4819	0.03391	2.525	68.61	-0.2	-2.2
					OFF	135	0.4223	0.03563	2.653	63.68	-0.2	-4.8
21	5	8	57	11	1 ON	1865	0.4327	0.03651	2.719	65.26	-0.2	-5.9
					OFF	134	0.4327	0.03651	2.719	65.25	-0.2	-4.8
23	5	6	53	11	1 ON	1482	0.3782	0.03191	2.376	57.83	-0.2	0.5
					OFF	137	0.4862	0.03427	2.552	61.25	-0.2	-2.5
24	5	3	92	11	1 ON	1391	0.3555	0.03088	2.234	53.61	-0.2	2.3
					OFF	242	0.4885	0.03447	2.566	61.59	-0.2	-2.6
36	5	4	53	11	1 ON	1314	0.3345	0.02822	2.182	58.44	-0.2	-2.5
					OFF	142	0.3722	0.03148	2.338	56.12	-0.2	-4.8
36	5	6	161	11	1 ON	1558	0.3947	0.03338	2.488	59.52	-0.2	-5.4
					OFF	383	0.4341	0.03662	2.727	65.45	-0.2	-4.2
37	5	6	173	11	1 ON	1565	0.3963	0.03344	2.498	59.76	-0.1	1.5
					OFF	411	0.4338	0.03661	2.726	65.42	-0.1	-5.4
38	5	5	13	11	1 ON	1478	0.3776	0.03186	2.373	56.94	-0.1	1.1
					OFF	35	0.3857	0.03254	2.423	58.16	-0.1	0.4
38	5	8	86	11	1 ON	1681	0.4031	0.03482	2.533	62.79	-0.1	-1.6
					OFF	236	0.4298	0.03627	2.781	64.82	-0.1	-5.1
39	5	3	188	11	1 ON	1424	0.3643	0.03074	2.289	54.94	-0.1	2.2
					OFF	273	0.4184	0.03538	2.629	63.89	-0.1	-3.6
31	4	4	55	11	1 ON	1668	0.4143	0.03496	2.683	62.47	-0.1	-4.5
					OFF	132	0.4293	0.03622	2.697	64.73	-0.1	-5.6
52	4	1	4	11	1 ON	69	0.1137	0.00959	0.714	17.14	-0.1	-4.8
					OFF	31	0.1145	0.00966	0.719	17.26	-0.1	-5.8
52	3	7	57	11	1 ON	1536	0.3924	0.03294	2.453	58.87	-0.1	0.8
					OFF	143	0.4159	0.03599	2.613	62.72	-0.1	-3.8
52	3	9	59	11	1 ON	1826	0.4311	0.03637	2.788	65.88	-0.1	-5.8
					OFF	146	0.4341	0.03663	2.727	65.45	-0.1	-4.9
53	1	4	154	11	1 ON	1517	0.3835	0.03237	2.418	57.85	-0.8	-0.5
					OFF	373	0.4329	0.03636	2.727	64.97	-0.8	-6.8
53	1	6	24	11	1 ON	1982	0.4386	0.03634	2.786	64.94	-0.8	-5.4
					OFF	55	0.4284	0.03611	2.689	64.54	-0.8	-4.5
54	9	4	11	4	1 ON	268	0.2273	0.01917	1.428	34.27	-0.8	41.8
					OFF	48	0.2273	0.01917	1.428	34.27	-0.8	48.8
54	9	1	13	11	1 ON	1348	0.3396	0.02866	2.134	51.22	-0.8	2.5
					OFF	41	0.3527	0.02959	2.244	52.89	-0.8	2.8
54	9	5	112	11	1 ON	1528	0.3843	0.03243	2.415	57.95	-0.8	-0.5
					OFF	274	0.4259	0.03593	2.676	64.22	-0.8	-5.5
55	5	5	81	11	1 ON	1576	0.3962	0.03343	2.489	59.74	-0.8	-1.8
					OFF	197	0.4243	0.03588	2.666	63.98	-0.8	-5.3
55	5	5	71	11	1 ON	2181	0.4137	0.03491	2.599	62.38	-0.8	-1.8
					OFF	188	0.3827	0.03212	2.392	57.41	-0.8	4.5
56	5	4	42	11	1 ON	1827	0.4388	0.03635	2.787	64.96	-0.8	-5.9
					OFF	95	0.4388	0.03634	2.786	64.94	-0.8	-5.3
61	5	1	9	11	1 ON	1877	0.4385	0.03632	2.785	64.91	-0.8	-5.8
					OFF	23	0.4311	0.03637	2.789	65.88	-0.8	-5.8
65	5	3	86	11	1 ON	1492	0.3732	0.03191	2.376	57.83	-0.8	0.1
					OFF	216	0.4172	0.03518	2.622	62.88	-0.8	-4.1
66	3	5	44	11	1 ON	1517	0.3623	0.03226	2.422	57.65	-1.2	-0.7
					OFF	115	0.4243	0.03412	2.541	62.97	-1.2	-3.8
66	3	6	31	11	1 ON	1666	0.4098	0.03457	2.575	61.79	-1.2	-3.7

				OFF	77	0.4197	0.03541	2.637	63.28	-1.2	-4.9
66	3	8	33	1 ON	1821	0.4264	0.03598	2.679	64.29	-1.2	-5.8
				OFF	78	0.4296	0.03625	2.788	64.79	-1.2	-6.1
67	1	4	28	1 ON	1619	0.4022	0.03394	2.527	60.65	-1.2	-2.8
				OFF	51	0.4184	0.03463	2.578	61.88	-1.2	-3.8
67	1	6	30	1 ON	1817	0.4261	0.03595	2.677	64.25	-1.2	-5.8
				OFF	71	0.4294	0.03623	2.698	64.75	-1.2	-6.8
68	3	5	22	1 ON	1670	0.4183	0.03462	2.578	61.87	-1.2	-3.8
				OFF	55	0.4177	0.03524	2.624	62.98	-1.2	-4.7
68	3	7	37	1 ON	1813	0.4259	0.03593	2.676	64.22	-1.2	-5.8
				OFF	89	0.4297	0.03626	2.788	64.88	-1.2	-6.8
69	9	4	75	1 ON	1596	0.3981	0.03359	2.582	60.84	-1.2	-1.3
				OFF	183	0.4232	0.03571	2.659	63.81	-1.2	-4.6
62	5	4	13	1 ON	1589	0.3969	0.03349	2.494	59.85	-1.2	-7.7
				OFF	35	0.4131	0.03481	2.533	60.78	-1.2	-7.8
61	6	3	70	1 ON	1573	0.3938	0.03323	2.475	59.39	-1.2	-1.5
				OFF	172	0.4198	0.03543	2.638	63.31	-1.2	-4.6
61	5	5	21	1 ON	1965	0.4297	0.03625	2.788	64.79	-1.2	-5.4
				OFF	159	0.4159	0.03589	2.613	62.71	-1.2	-2.1
62	3	3	51	1 ON	1645	0.4066	0.03431	2.555	61.31	-1.2	-3.8
				OFF	127	0.4222	0.03566	2.655	63.72	-1.2	-5.8
63	2	3	38	1 ON	1423	0.3624	0.03041	2.264	54.34	-1.2	1.2
				OFF	123	0.3845	0.03244	2.416	57.98	-1.2	-8.5
63	2	4	14	1 ON	1793	0.4244	0.03581	2.666	63.99	-1.2	-5.1
				OFF	35	0.4262	0.03602	2.682	64.37	-1.2	-5.4
63	2	5	159	1 ON	1898	0.4294	0.03624	2.698	64.76	-1.2	-5.7
				OFF	377	0.3983	0.03361	2.583	60.87	-1.2	0.9
64	5	4	23	1 ON	1733	0.4191	0.03536	2.633	63.19	-1.2	-3.8
				OFF	58	0.4246	0.03582	2.668	64.82	-1.2	-4.7
64	5	3	4	1 ON	2331	0.3862	0.03257	2.425	58.28	-1.2	1.6
				OFF	14	0.3832	0.03231	2.486	57.75	-1.2	2.8

RAMP PROFILE

R = 4 A = 1 PERIOD = 3862

RE = 0.0715 A = 0.1322

TUR	PER	CPS	ANG-V
4	4.428	0.2252	0.02246
10	4.383	0.2282	0.02264
20	4.287	0.2333	0.02112
30	4.141	0.2415	0.02184
40	3.959	0.2526	0.02284
50	3.754	0.2564	0.02429
60	3.539	0.2526	0.02556
70	3.323	0.3089	0.02722
80	3.116	0.3212	0.02923
90	2.921	0.3424	0.03097
100	2.742	0.3647	0.03298
110	2.578	0.3878	0.03506
120	2.495	0.4176	0.03777
130	2.241	0.4462	0.04036

1400	2.210	0.4525	0.04292
1500	2.197	0.4552	0.04117
1600	2.188	0.4571	0.04134
1700	2.182	0.4583	0.04145
1800	2.179	0.4589	0.04151
1900	2.178	0.4592	0.04153
2000	2.178	0.4591	0.04152
2100	2.181	0.4586	0.04148
2200	2.185	0.4576	0.04139
2300	2.193	0.4568	0.04125
2400	2.204	0.4537	0.04123
2500	2.220	0.4504	0.04074
2600	2.330	0.4292	0.03682
2700	2.581	0.3998	0.03616
2800	2.676	0.3738	0.03380
2900	2.847	0.3512	0.03176
3000	3.036	0.3294	0.02979
3100	3.239	0.3087	0.02792
3200	3.452	0.2897	0.02620
3300	3.669	0.2726	0.02465
3400	3.879	0.2578	0.02331
3500	4.072	0.2456	0.02221
3600	4.234	0.2362	0.02136
3700	4.351	0.2298	0.02079
3800	4.412	0.2266	0.02050

RAMP PROFILE

K= 7 A= 3 PERIOD= 3868
K= 0.3333 A= 0.1499

TUR	PER	CP5	ANG-V
0	4.788	0.2089	0.01089
100	4.752	0.2184	0.01963
200	4.661	0.2145	0.01940
300	4.522	0.2211	0.02060
400	4.347	0.2308	0.02261
500	4.147	0.2411	0.02161
600	3.934	0.2542	0.02299
700	3.719	0.2689	0.02432
800	3.508	0.2850	0.02578
900	3.309	0.3022	0.02734
1000	3.123	0.3202	0.02896
1100	2.952	0.3388	0.03064
1200	2.757	0.3627	0.03280
1300	2.593	0.3857	0.03489
1400	2.457	0.4078	0.03681
1500	2.348	0.4258	0.03851
1600	2.265	0.4415	0.03993
1700	2.223	0.4499	0.04069
1800	2.216	0.4509	0.04079
1900	2.215	0.4514	0.04082
2000	2.216	0.4512	0.04081