~~TOP SECRET~~

C [redacted]

Copy No. [redacted]

24 January 1969

CHANGE #10

PEIR ACTION ITEM SUMMARY

1. This change incorporates action items for Missions 1048, 1105, and 1049. In addition to the thirty new items, there are twenty-two revised items, and the usual updated machine summaries. The earlier versions of the revised items and machine summaries should be destroyed.

2. PET members should review these items to assure concurrence, as the items have not been fully coordinated with all members. Any member may contribute to the disposition of any item, including those the editor considers closed.

3. The statements made in these items are those of PET members, and do not necessarily represent an A/P position. The A/P function is to edit and publish the Summary.

[redacted]
Manager
Advanced Projects

[redacted]

cc: [redacted]

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

~~TOP SECRET~~ C [redacted]

[redacted]

~~HANDLE VIA~~ [redacted]
CONTROL SYSTEM ONLY

~~TOP SECRET~~ C[redacted]

DATE 22 JANUARY 1969

J-SYSTEM PERFORMANCE EVALUATION TEAM

OPEN ACTION ITEMS

ITEM NO.	DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	MONIT
168/1101	FOG, CORONA	STELLAR FILM DISIC	METERING ROLLER	NY
168/1101	FOG, ELECTROSTATIC	STELLAR FILM DISIC	CAUSE UNKNOWN	NY
189/1102	QUALITY EVALUATION	MAIN FILM	PROCESS/PRINTING	NPC
200/1046	QUALITY EVALUATION	MAIN FILM S0230	FILM GRAININESS	NPC
208/1103	FOG, CORONA	MAIN FILM A	PMU BUILDUP SLOW	AP
222/1104	FOG, LIGHT LEAK	MAIN FILM FA	FOREBODY, A SRV	AP
223/1104	FOG, LIGHT LEAK	MAIN FILM	CAUSE UNKNOWN	AP
228/1104	TIME WORDS SOFT	INDEX FILM DISIC	SLP MOUNTING	NY
241/1048	FOG, ELECTROSTATIC	MAIN FILM FA	PRE-PROCESSING	AP
241/1048	FOG, ELECTROSTATIC	MAIN FILM A	METERING ROLLER	AP
242/1048	FOG, LIGHT LEAK	MAIN FILM FA	MAIN CAMERA DRUMS	AP
245/1048	IMAGERY MISSING	HOR CAMERA M	CIRCUIT MARGINAL	BOS
247/1048	FAILURE, DRIVE	MAIN CAMERA F	FILM TORN	AP
248/1105	IMAGERY SOFT	MAIN CAMERA FA	FILM DISTURBANCE	BOS A
257/1105	DENS VAR, +D STRKS	MAIN FILM FA	FILM STRAIN	BOS
260/1105	DENS VAR, -D SPOTS	MAIN FILM	FILM MANUF/PROCESS	[redacted]
261/1105	IMAGERY SOFT	MAIN FILM A S0121	FILM CURL	BOS A
262/1049	IMAGERY SOFT	MAIN CAMERA MS	FOCUS SHIFT	BOS A
262/1049	FOCUS SHIFT	MAIN CAMERA	THERMAL DISTORTION	BOS A
263/1049	IMAGERY SOFT	MAIN CAMERAS	CAUSE UNKNOWN	BOS

~~TOP SECRET~~ C[redacted]

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J-SYSTEM PERFORMANCE EVALUATION TEAM

NUMERICAL INDEX TO ACTION ITEMS

ITEM NO.	DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	MONITOR
001/1024	INDEX LIGHTS WEAK	MAIN CAMERA M	CIRCUIT MARGINAL	AP X BOSX
002/1024	TIME READOUT PROB.	MAIN CAMERA MS	PROCESSING	NPCX[redacted]X
003/1024	TIME WORD ERROR	MAIN CAMERA S	CAUSE UNKNOWN	AP X[redacted]
004/1024	SMEAR PULSE LONG	MAIN CAMERA M	CIRCUIT DESIGN	AP X
005/1024	VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	AP X
006/1024	FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	AP X BOSX
006/1024	FOG, LIGHT LEAK	MAIN FILM MS	FOREBODY, A SRV	AP X
007/1024	FOG, ELECTROSTATIC	MAIN FILM MS	PRE-PROCESSING	[redacted] X
008/1024	FILM SCRATCHES	MAIN FILM MS	SCAN ROLLER, RAIL	BOSX
009/1024	FOREIGN PART. IMAGE	STELLAR CAMERA A	CAUSE UNKNOWN	AP X
010/1024	IMAGERY SMEARED	STELLAR CAMERA AB	ATTITUDE, VEHICLE	AP X
011/1024	SPLICE SEPARATION	STELLAR FILM	PROCESSING	[redacted] X
012/1024	FILM TITLING	MAIN FILM	MISSION REPORTS	AP X
013/1024	FILM TITLING	DATA INCOMPLETE	MISSION REPORTS	AP X
014/1024	QUALITY EVALUATION	MAIN FILM	ORIGINAL NEGATIVES	[redacted]X
015/1024	QUALITY EVALUATION	MAIN FILM	PROCESSING	AP X
016/1025	FOCUS, SOFT	HOR CAMERA M	PLATEN MALFUNCTION	BOSX
017/1025	FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	AP X BOSX
017/1025	FOG, LIGHT LEAK	MAIN FILM MS	FOREBODY, A SRV	AP X
018/1025	FILM SCRATCHES	MAIN FILM MS	SCAN ROLLER, RAIL	BOSX
019/1025	IMAGERY SMEARED	STELLAR CAMERA AB	ATTITUDE, VEHICLE	AP X
020/1025	FILM SCRATCHES	STELLAR FILM A	CAUSE UNKNOWN	AP X
020/1025	FILM SCRATCHES	INDEX FILM A	CAUSE UNKNOWN	AP X
021/1025	FILM CREASE	INDEX FILM B	PROCESSING	[redacted] X
022/1025	QUALITY EVALUATION	MAIN FILM	PROCESSING	AP X
023/1026	DATA LAMPS OUT	MAIN CAMERA SA	CIRCUIT MAL, CF SW	BOSX
024/1026	FILM CREASE	MAIN FILM M	SPLICE	[redacted] X AP X
025/1026	FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	AP X BOSX
025/1026	FOG, LIGHT LEAK	MAIN FILM	FOREBODY, A SRV	AP X
026/1026	VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	AP X
027/1026	FOG, LIGHT FLARE	HOR CAMERA STBD	CAUSE UNKNOWN	AP X
027/1026	IMAGE DENSITY HIGH	HOR CAMERA STBD	EXPOSURE SETTINGS	AP X
028/1026	SHUTTER MALFUNCT.	STELLAR CAMERA A	INTERNAL FRICTION	AP X BOSX
029/1026	IMAGERY SMEARED	EMC ERROR	COMMAND PROB. -V/H	AP X
030/1026	QUALITY EVALUATION	MAIN FILM	PROCESSING	AP X
031/1026	IMAGE DENSITY LOW	MAIN FILM	ILLUMINATION LOW	AP X
032/1027	FIDUCIAL DENS. VAR.	HOR CAMERA S	EMULSION PARTICLES	AP X
033/1027	FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	AP X BOSX
033/1027	FOG, LIGHT LEAK	MAIN FILM	FOREBODY, A SRV	AP X
034/1027	METERING MALF	S/I PROGRAMMER	STEPPER SWITCH	AP X BOSX
035/1027	QUALITY EVALUATION	MAIN FILM	PROCESSING	AP X
036/1028	TIMING LIGHT MALF.	MAIN CAMERA M	CIRCUIT MARGINAL	BOSX AP X
037/1028	VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	NPCX AP X
038/1028	FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	AP X BOSX

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J-SYSTEM PERFORMANCE EVALUATION TEAM

NUMERICAL INDEX TO ACTION ITEMS

ITEM NO.	DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	MONITOR
038/1028	FOG, LIGHT LEAK	MAIN FILM S	BOOT, MAINS	AP X
039/1028	FOG, ELECTROSTATIC	MAIN FILM MS	PRE-PROCESSING	[redacted] X
040/1028	IMAGERY SOFT	MAIN CAMERA SA	FOCUS, OFF-PEAK	BOSX
041/1028	FILM SCRATCHES	MAIN FILM MS	CAUSE UNKNOWN	BOSX
042/1028	FORMAT EDGE RAGGED	MAIN CAMERA MS	EMULSION BUILDUP	AP X BOSX
043/1028	DENS VAR, -D STRKS	MAIN CAMERA MS	EMULSION PARTICLES	AP X BOSX
044/1028	SHUTTER MALFUNCT.	INDEX CAMERA B	CAUSE UNKNOWN	AP X BOSX
045/1028	IMAGERY SOFT	MAIN CAMERA MF	TRACKING ANOMALY	AP X BOSX
046/1028	DENS VAR, -D SPOTS	MAIN FILM SA	FILM MANUFACTURE	EK X
047/1028	FILM CREASE	MAIN FILM M	SPLICE	EK X
048/1028	IMAGE DENSITY LOW	MAIN FILM MS	ATMOSPHERICS	EK X AP X
049/1028	QUALITY EVALUATION	MAIN FILM	PROCESSING	AP X
050/1029	FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	AP X BOSX
050/1029	FOG, LIGHT LEAK	MAIN FILM	FOPEBODY, A SRV	AP X
051/1029	DATA LAMPS VARY	MAIN CAMERA MF	CIRCUIT MARGINAL	AP X
052/1029	FOG, ELECTROSTATIC	MAIN FILM MS	PRE-PROCESSING	[redacted] X
053/1029	VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	AP X
054/1029	FILM CREASE	MAIN FILM M	SPLICE	EK X AP X
055/1029	FORMAT EDGE RAGGED	MAIN CAMERA MS	EMULSION BUILDUP	BOSX
056/1029	FOREIGN PART, IMAGE	STELLAR CAMERA A	CAUSE UNKNOWN	AP X
057/1029	SHUTTER MALFUNCT.	STELLAR CAMERA A	INTERNAL FRICTION	AP X BOSX
058/1029	CIRCUIT MALF	S/I CAMERA B	FAILURE, PARTIAL	BOSX
059/1029	RESEAU EDGE IMAGE	INDEX CAMERA A	MASKING IMPROPER	BOSX
060/1030	VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	AP X
061/1030	SOP MARK MISSING	MAIN CAMERA M	LAMP FAILURE	BOSX
062/1030	FILM SCRATCHES	INDEX FILM A	PROCESSING	[redacted] X
063/1030	FILM SCRATCHES	MAIN FILM SA	FILM MANUFACTURE	EK X
064/1030	QUALITY EVALUATION	DATA NON-CORREL.	MISSION REPORTS	EK X
065/1030	FILTER SELECTION	MAIN CAMERA F	QUALITY EVALUATION	AP X
066/1031	RECOVERY LACKING	MAIN FILM S	FAILURE, TAKEUP B	AP X
067/1031	FILM SCRATCHES	MAIN FILM SA	CAUSE UNKNOWN	AP X
068/1031	IMAGERY SOFT	INDEX CAMERA B	FOCUS ADJUSTMENT	BOSX
069/1031	VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	AP X
070/1031	SHUTTER MALFUNCT.	STELLAR CAMERA B	INTERNAL FRICTION	BOSX
071/1031	FRAMES MISSING	S/I FILM ENDS B	CIRCUIT DESIGN	AP X
072/1031	FOG, LIGHT FLARE	STELLAR CAMERA B	BAFFLE DESIGN	AP X
073/1033	SOP MARK MISSING	MAIN CAMERA S	LAMP FAILURE	BOSX
074/1033	TIMING LIGHT MALF.	MAIN CAMERA M	CIRCUIT HEATING	AP X
075/1033	VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	AP X
076/1033	SHUTTER MALFUNCT.	STELLAR CAMERA B	INTERNAL FRICTION	BOSX
077/1033	FILM SCRATCHES	MAIN FILM M BASE	CAUSE UNKNOWN	AP X
078/1033	FILM SCRATCHES	MAIN FILM M	CAUSE UNKNOWN	AP X
079/1033	METAL CHIP	MAIN FILM M	CAUSE UNKNOWN	AP X
080/1033	FRAMES MISSING	S/I FILM ENDS B	CIRCUIT DESIGN	AP X

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NUMERICAL INDEX TO ACTION ITEMS

ITEM NO.	DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	MONITOR	
081/1033	IMAGERY SOFT	MAIN CAMERA MS	FOCUS SHIFT	AP X	BOSX
081/1033	FOCUS SHIFT	MAIN CAMERA MS	THERMAL DISTORTION	AP X	BOSX
082/1033	TIME WORD ERROR	MAIN CAMERA M	CLOCK OUTPUT STORE	AP X	
083/1034	FOG, CORONA	MAIN FILM M	PMU EXHAUSTION	AP X	
084/1034	FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	AP X	
085/1034	VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	AP X	
086/1034	FRAMES MISSING	S/I FILM ENDS B	CIRCUIT DESIGN	AP X	
087/1034	CORREL. LAMP MALF	INDEX CAMERA A	CIRCUIT MARGINAL	AP X	BOSX
088/1034	FRAME MISSING	INDEX CAMERA A	CAUSE UNKNOWN	AP X	BOSX
089/1036	SOP MARK MISSING	MAIN CAMERA MF	LAMP FAILURE	BOSX	
090/1036	FOG, B+F HIGH	STELLAR FILM AB	PROCESSING	[redacted] X	
091/1036	RESEAU EDGE IMAGED	INDEX CAMERA A	MASKING IMPROPER	BOSX	
092/1036	IMAGERY SOFT	MAIN CAMERA SA	TRACKING ANOMALY	AP X	BOSX
093/1036	FILM SCRATCHES	MAIN FILM SA	CAUSE UNKNOWN	AP X	
094/1035	IMAGE DENSITY HIGH	HOR CAMERAS STBD	EXPOSURE SETTINGS	NPCX	
095/1035	FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	BOSX	AP X
096/1035	FOREIGN PART. IMAGE	STELLAR CAMERA AB	DENS VAR, -D SPOT	BOSX	AP X
097/1035	DENS VAR, -D STRKS	MAIN CAMERA MS	EMULSION PARTICLES	BOSX	AP X
098/1035	DENS VAR, -D STRKS	MAIN FILM M	FILM MANUFACTURE	EK X	
099/1035	FOG, ELECTROSTATIC	MAIN FILM M	PRESSURE MARKING	BOSX	
100/1035	BATTERY LEAKAGE	MAIN FILM MS	RECOVERY CAPSULE B	AP X	
101/1035	SCAN TRACE ANOMALY	MAIN CAMERA MS PG	SCAN RATE IRREG.	BOSX	
102/1037	FOG, B+F HIGH	MAIN FILM MS	PROCESSING	[redacted] X	
103/1037	FILM SCRATCHES	MAIN FILM MS	POLISHED RAILS	AP X	
104/1037	FOG, LIGHT SPILL	MAIN FILM MS	RAILHOLE LAMPS	BOSX	
105/1037	FOG, LIGHT LEAK	MAIN FILM MS	BOOT, HOR CAMERA	AP X	
106/1037	FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUM	AP X	
106/1037	EXPOSURE, DOUBLE	S/I CAMERAS AB	COMMAND SHIFT	BOSX	
107/1037	CORREL. LAMP IMAGE	INDEX CAMERA AB	MASKING IMPROPER	BOSX	
108/1037	DENS VAR, -D STRKS	MAIN FILM S	CAUSE UNKNOWN	EK X	
109/1037	DENS VAR, +D STRKS	MAIN FILM S	CAUSE UNKNOWN	EK X	
109/1037	RAILHOLE IMAGES	MAIN CAMERA MS PG	QUALITY VARIATION	BOSX	
110/1037	SCAN TRACE DENSITY	MAIN CAMERA MS PG	LAMP ADJUSTMENT	BOSX	
111/1038	QUALITY EVALUATION	MAIN FILM	PROCESS/PRINTING	NPCX	
112/1038	FORMAT EDGE RAGGED	MAIN CAMERA MS	EMULSION BUILDUP	AP X	
113/1038	EXPOSURE, DOUBLE	S/I CAMERAS AB	COMMAND SHIFT	BOSX	AP X
114/1038	DENS VAR, +D LINE	MAIN FILM S	FILM MANUFACTURE	[redacted] X	
115/1038	FILM GREASE	MAIN FILM M	SPLICE	AP X	
116/1038	VEILED IMAGES	HOR CAMERA STBD	SATHERMAL DISTORTION	AP X	
117/1039	SERIAL NO ILLEG	MAIN CAMERA MS	MASK, SERIAL NO.	BOSX	
118/1039	INDEX MARK BLOOMED	MAIN CAMERA MS	LAMP ADJUSTMENT	BOSX	
119/1039	TIMING LIGHT MALF.	MAIN CAMERA S	CIRCUIT MARGINAL	BOSX	
120/1039	VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	AP X	
121/1039	DENS VAR, -D LINE	MAIN FILM MF	FILM ABRASION	AP X	

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J-SYSTEM PERFORMANCE EVALUATION TEAM

NUMERICAL INDEX TO ACTION ITEMS

ITEM NO.	DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	MONITOR
122/1040	FOG, ELECTROSTATIC	MAIN FILM SF	PRE-PROCESSING	[redacted] X
123/1040	DENS VAR, -D STRKS	MAIN CAMERA MS	EMULSION PARTICLES	BOSX
124/1040	IMAGERY SMEARED	MAIN CAMERA MA	FILM DISTURBANCE	BOSX
124/1040	IMAGERY SMEARED	MAIN CAMERA MA	BANDING	BOSX
125/1040	IMAGERY SMEARED	MAIN CAMERA SF	FILM DISTURBANCE	BOSX AP X
125/1040	IMAGERY SMEARED	MAIN CAMERA SF	BANDING	BOSX AP X
126/1040	DENS VAR, +D SPOTS	MAIN CAMERA SF	METER ROLLER-INPUT	AP X
127/1040	FOREIGN PART. IMAGE	INDEX CAMERA A	DENS VAR, -D SPOTS	BOSX
128/1040	RESEAU EDGE IMAGE	INDEX CAMERA A	MASKING DEFECT	BOSX
129/1040	FOG, EDGE	STELLAR FILM B	CAUSE UNKNOWN	AP X
130/1040	EDGE MARKS	STELLAR FILM B	PROCESSING	[redacted] X
131/1041	IMAGERY SOFT	MAIN CAMERA SA	TRACKING ANOMALY	BOSX
132/1041	TIMING LIGHT MALF.	MAIN CAMERA MS	CIRCUIT MARGINAL	AP X
133/1041	SHUTTER MALFUNCT.	HOR CAMERA	CAUSE UNKNOWN	BOSX
134/1041	DENS VAR, -D STRKS	MAIN CAMERA S	EMULSION PARTICLES	BOSX
135/1041	FOREIGN PART. IMAGE	STELLAR CAMERA A	DENS VAR, -D SPOTS	BOSX
136/1041	FOG, B+F HIGH	S/I FILM AB	RADIATION	AP X
137/1042	FILM SCRATCHES	MAIN FILM SA	PRE-PROCESSING	BOSX
138/1042	IMAGERY SOFT	MAIN CAMERA MF	TRACKING ANOMALY	BOSX AP X
139/1042	IMAGE DENSITY LOW	HOR CAMERA PORT	APERTURE LOOSE	BOSX
140/1042	DENS VAR, -D SPOT	MAIN FILM SA	FOREIGN PARTICLE	AP X
141/1042	METERING UNEVEN	INDEX CAMERA	NORMAL FUNCTION	AP X
142/1042	FRAME UNEXPOSED	S/I CAMERA A	NORMAL FUNCTION	AP X
143/1042	FILM SCRATCHES	INDEX FILM	CAUSE UNKNOWN	AP X
144/1042	FIDUCIALS UNREAD.	STELLAR CAMERA A	LAMP ADJUSTMENT	BOSX
145/1043	FAILURE, TENSION	MAIN CAMERA MF	FILM OUT OF RAILS	BOSX AP X
145/1043	FAILURE, TENSION	MAIN CAMERA MF	BANDING	BOSX AP X
146/1043	DENS VAR, +D LINE	MAIN CAMERA MF	FILTER DISTORTION	BOSX
147/1043	TIME READOUT PRLB.	MAIN CAMERA MS	MASK MISALIGNED	BOSX
149/1043	RAILHOL IMAGE LOSS	MAIN CAMERA MS PG	EMULSION BUILDUP	BOSX
149/1043	DENS VAR, -D SPOT	STELLAR CAMERA B	FOREIGN PARTICLE	AP X
150/1043	DENS VAR, -D STRKS	MAIN CAMERA SA	FOREIGN PARTICLES	BOSX
151/1101	IMAGERY SOFT	MAIN CAMERA A	FOCUS, OFF-PEAK	BOSX
152/1101	IMAGERY SOFT	MAIN CAMERA FA	FILM DISTURBANCE	BOSX
152/1101	IMAGERY SOFT	MAIN FILM FA	THERMAL DISTORTION	BOSX
153/1101	IMAGERY SMEARED	MAIN CAMERA FA	FILM DISTURBANCE	BOSX
154/1101	FOG, LIGHT LEAK	MAIN FILM FA	MAIN CAMERA DRUMS	AP X
155/1101	IMAGERY SOFT	HOR CAMERAS	CIRCUIT ADJUST	BOSX
156/1101	IMAGES VIGNETTED	HOR CAMERAS	BOOT DISTORTION	AP X
157/1101	FILM SCRATCHES	MAIN FILM A	DRUM ROLLERS	AP X
158/1101	SCAN TRACE BROKEN	MAIN CAMERA FA	EMULSION BUILDUP	AP X
159/1101	RAILHOL IMAGE LOSS	MAIN CAMERA FA	EMULSION BUILDUP	AP X
160/1101	IMAGERY SMEARED	EMC ERROR	CIRCUIT NOISE	AP X
161/1101	TIME WORD MISSING	MAIN CAMERA FA	NORMAL FUNCTION	AP X

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NUMERICAL INDEX TO ACTION ITEMS

ITEM NO.	DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	MONITOR
162/1101	IMAGERY MISSING	HOR CAMERA A	CIRCUIT MARGINAL	AP X
163/1101	TIME WORD ERROR	MAIN CAMERA FA	DDSC & SLP COND.	NPCX AP X
164/1101	EXPOSURE LONG	INDEX FILM DISIC	TIMER SETTING	AP X
165/1101	FOGGED FORMAT	STELLAR FILM DISIC	PRESSURE PAD	NY X
166/1101	FOG, LIGHT LEAK	STELLAR FILM DISIC	INDEX LENS MOUNT	NY X AP X
167/1101	FOG, LIGHT FLARE	STELLAR FILM DISIC	BAFFLE DESIGN	AP X NY X
168/1101	FOG, CORONA	STELLAR FILM DISIC	METERING ROLLER	NY
168/1101	FOG, ELECTROSTATIC	STELLAR FILM DISIC	CAUSE UNKNOWN	NY
169/1101	DENS VAR, -D SPOTS	INDEX FILM DISIC	FOREIGN PARTICLES	NY X
169/1101	DENS VAR, -D SPOTS	STELLAR FILM DISIC	FOREIGN PARTICLES	NY X
170/1101	FOG, ELECTROSTATIC	STELLAR FILM DISIC	SKEW BEADS	NY X
171/1101	IMAGE CONTRAST LOW	INDEX FILM DISIC	EXPOSURE/ PROCESS [redacted]	X
172/1044	FORMAT EDGE RAGGED	MAIN CAMERA FA	EMULSION BUILDUP	AP X
173/1044	VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	AP X
174/1044	TIME WORD MISSING	MAIN FILM FA	CIRCUIT MARGINAL	AP X
175/1044	EMULSION CRACKS	MAIN FILM FA	CAUSE UNKNOWN	AP X
176/1044	IMAGERY SMEARED	MAIN CAMERA FA	FILM DISTURBANCE	AP X
177/1044	IMAGE DETAIL LOW	MAIN FILM FA	FILM LATITUD LIMIT	NROX NPCX
178/1102	IMAGERY SMEARED	MAIN CAMERA F	FILM DISTURBANCE	BOSX AP X
178/1102	IMAGERY SMEARED	MAIN CAMERA F	THERMAL DISTORTION	BOSX AP X
179/1102	SCAN TRACE BROKEN	MAIN CAMERA FA	EMULSION BUILDUP	BOSX
180/1102	FOG, LIGHT LEAK	MAIN FILM FA	SRV/FAIR. INTER.	AP X
180/1102	FOG, LIGHT LEAK	MAIN FILM FA	MAIN CAMERA DRUMS	AP X
181/1102	FILM SCRATCHES	MAIN FILM A	CAUSE UNKNOWN	AP X
182/1102	TIME WORD ERROR	MAIN CAMERA FA	DDSC CIRCUITRY	AP X
183/1102	TIMING LIGHT MALF	MAIN CAMERA FA	CIRCUIT MARGINAL	BOSX
184/1102	FOG, LIGHT FLARE	STELLAR FILM DISIC	BAFFLE DESIGN	AP X NY X
185/1102	FOG, ELECTROSTATIC	STELLAR FILM DISIC	SKEW BEADS	AP X
186/1102	FOG, CORONA	STELLAR FILM DISIC	METERING ROLLER	NY X AP X
186/1102	FOG, ELECTROSTATIC	STELLAR FILM DISIC	CAUSE UNKNOWN	NY X
187/1102	DENS VAR, -D SPOTS	STELLAR FILM DISIC	FOREIGN PARTICLES	AP X
188/1102	EXPOSURE MULTIPLE	INDEX FILM DISIC	SHUTTER MALFUNCT.	NY X
189/1102	QUALITY EVALUATION	MAIN FILM	PROCESS/PRINTING	NPC
190/1045	FIDUCIALS MISSING	MAIN CAMERA F	CIRCUIT MALF	BOSX AP X
191/1045	VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	AP X
192/1045	FRAMES MISSING	STELLAR FILM A	CIRCUIT MALF	BOSX AP X
192/1045	FRAMES MISSING	INDEX FILM A	CIRCUIT MALF	BOSX AP X
193/1045	SCAN TRACE MISSING	MAIN CAMERA SA	CIRCUIT MALF	AP X
193/1045	PAIHOL IMAGE LOSS	MAIN CAMERA MS PG	EMULSION BUILDUP	AP X
194/1045	BANDING, MINUS D	MAIN CAMERA MS	SCAN RATE IRREG.	AP X
195/1045	SHUTTER MALFUNCT.	STELLAR CAMERA B	CAUSE UNKNOWN	BOSX
195/1045	EMULSION CRACKS	STELLAR CAMERA B	CAUSE UNKNOWN	BOSX
196/1046	IMAGERY SOFT	MAIN CAMERA MF	EMULSION BUILDUP	EK X BOSX
197/1046	FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	AP X

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ITEM NO.	DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	MONITOR
197/1046	FOG, LIGHT LEAK	MAIN FILM MS	SRV/FAIR.INTER.	AP X
198/1046	SCAN RATE IRREG.	MAIN CAMERA MF	NORMAL FUNCTION	AP X
199/1046	FILM CURL	MAIN FILM MS	PRE-PROCESSING	[redacted] X
200/1046	QUALITY EVALUATION	MAIN FILM	S0230FILM GRAININESS	NPC BOSX
201/1046	FOG, SITMARKS	MAIN FILM	S0230NORMAL FUNCTION	AP X
202/1103	IMAGERY SOFT	MAIN FILM FA	TRACKING ANOMALY	BOSX
202/1103	IMAGERY SOFT	MAIN FILM FA	FILM DEFORMATION	BOSX
203/1103	DATA LAMPS OUT	MAIN CAMERA A	CIRCUIT MAL, CF SW	BOSX
204/1103	FAILHOLE MISSING	MAIN CAMERA FA	NORMAL FUNCTION	AP X
205/1103	CIRCUIT MALF	MAIN CAMERA	DATA LAMPS OUT	BOSX
206/1103	FOG, LIGHT SPILL	MAIN FILM	MASK, SLP	BOSX AP X
207/1103	TIME WORDS SOFT	MAIN CAMERA FA	NORMAL FUNCTION	AP X
208/1103	FOG, CORONA	MAIN FILM A	PMU BUILDUP SLOW	AP
209/1103	DENS VAR, +D SPOTS	MAIN CAMERA F	METER ROLLER	AP X
210/1103	FOG, ELECTROSTATIC	STELLAR FILM DISIC	SKEW BEADS	AP X
211/1103	DENS VAR, -D SPOTS	STELLAR FILM DISIC	FOREIGN PARTICLES	AP X
211/1103	DENS VAR, -D SPOTS	INDEX FILM DISIC	FOREIGN PARTICLES	AP X
212/1103	FOG, CORONA	STELLAR FILM DISIC	CAUSE UNKNOWN	AP X
212/1103	FOG, ELECTROSTATIC	STELLAR FILM DISIC	CAUSE UNKNOWN	AP X
213/1103	FOG, ELECTROSTATIC	INDEX FILM DISIC	PRE-PROCESSING	AP X
214/1103	TIME WORDS SOFT	STELLAR FILM DISIC	SLP MOUNTING	AP X
214/1103	TIME WORDS SOFT	INDEX FILM DISIC	SLP MOUNTING	AP X
215/1047	IMAGERY SOFT	MAIN CAMERA FA	MAINPLATE BUCKLED	BOSX
216/1047	SHUTTER MALFUNCT.	STELLAR CAMERA B	CAUSE UNKNOWN	BOSX
217/1047	FILM SCRATCHES	MAIN FILM A	CAUSE UNKNOWN	AP X
218/1047	TAKEUP MALFUNCT.	MAIN FILM A	CAUSE UNKNOWN	BOSX AP X
218/1047	FILM CREASES, MULT	MAIN FILM A	TAKEUP MALFUNCT.	BOSX AP X
219/1047	DENS VAR, -D STRKS	MAIN FILM A	NORMAL FUNCTION	AP X
220/1047	TIMING LIGHT MALF.	MAIN CAMERA FA	CIRCUIT MARGINAL	AP X
221/1104	SHUTTER MALFUNCT.	HCP CAMERA	FAILURE, PARTIAL	AP X
222/1104	FOG, LIGHT LEAK	MAIN FILM FA	FOREBODY, A SRV	AP
223/1104	FOG, LIGHT LEAK	MAIN FILM	CAUSE UNKNOWN	AP
224/1104	FOG, CORONA	MAIN FILM FA	CAUSE UNKNOWN	AP X
225/1104	CIRCUIT MALF	MAIN CAMERA	FRAME PARTIAL	AP X
226/1104	FOG, ELECTROSTATIC	STELLAR FILM DISIC	SKEW BEADS	AP X
227/1104	DENS VAR, -D SPOTS	STELLAR FILM DISIC	FOREIGN PARTICLES	AP X
227/1104	DENS VAR, -D SPOTS	INDEX FILM DISIC	FOREIGN PARTICLES	AP X
228/1104	TIME WORDS SOFT	INDEX FILM DISIC	SLP MOUNTING	NY
229/1104	DENS VAR, +D STRKS	STELLAR FILM DISIC	PATIO PIN SEAL	AP X
229/1104	FOG, LIGHT LEAK	STELLAR FILM DISIC	PATIO PIN SEAL	AP X
230/1104	FOG, CORONA	STELLAR FILM DISIC	CAUSE UNKNOWN	AP X
230/1104	FOG, ELECTROSTATIC	STELLAR FILM DISIC	CAUSE UNKNOWN	AP X
231/1104	FOG, CORONA	INDEX FILM DISIC	CAUSE UNKNOWN	AP X
231/1104	FOG, ELECTROSTATIC	INDEX FILM DISIC	CAUSE UNKNOWN	AP X

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J-SYSTEM PERFORMANCE EVALUATION TEAM

NUMERICAL INDEX TO ACTION ITEMS

ITEM NO.	DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	MONITOR
232/1104	EXPOSURE, OVER	STELLAR FILM DISIC	NORMAL FUNCTION	AP X
233/1104	FILTER SELECTION	MAIN CAMERA A	QUALITY EVALUATION	BOSX
234/1104	FOG, CORONA	MAIN FILM F SO1	RPMU MALFUNCTION	AP X
234/1104	FOG, ELECTROSTATIC	MAIN FILM F SO1	RPMU MALFUNCTION	AP X
235/1104	PMU MALFUNCTION	MAIN FILM FA	FOG, CORONA	AP X
236/1048	TIME WORD ERROR	MAIN CAMERA F	CLOCK OUTPUT	AP X
237/1048	IMAGERY SOFT	MAIN CAMERA F	TRACKING ANOMALY	AP X
238/1048	DENS VAR, +D SPOTS	MAIN CAMERA A	FOREIGN PARTICLES	AP X
239/1048	FOG, ELECTROSTATIC	MAIN FILM A	CONST-TENSN ASSY	AP X
240/1048	EXPOSURE MULTIPLE S/I	CAMERAS AB	PLATEN LIFT CAM	BOSX
241/1048	FOG, ELECTROSTATIC	MAIN FILM FA	PRE-PROCESSING	AP
241/1048	FOG, ELECTROSTATIC	MAIN FILM A	METERING ROLLER	AP
242/1048	FOG, LIGHT LEAK	MAIN FILM FA	MAIN CAMERA DRUMS	AP
243/1048	FOREIGN OBJ. IMAGE	INDEX CAMERA B	THERMAL TAPE	AP X
244/1049	TIMING LIGHT FAIL.	MAIN CAMERA FA	CIRCUIT MARGINAL	AP X
245/1048	IMAGERY MISSING	HOR CAMERA M	CIRCUIT MARGINAL	BOS
246/1048	TIME WORD MISSING	MAIN FILM FA	CIRCUIT MARGINAL	AP X
247/1048	FAILURE, DRIVE	MAIN CAMERA F	FILM TORN	AP BOS
248/1105	IMAGERY SOFT	MAIN CAMERA FA	FILM DISTURBANCE	BOS AP
249/1105	IMAGERY SOFT	MAIN CAMERA	FILM DEFORMATION	AP X
250/1105	FILM ABRASION	MAIN FILM	FILM DEFORMATION	AP X
251/1105	DENS VAR, +D STRKS	MAIN FILM	TRACKING ANOMALY	BOSX
251/1105	FILM DISTORTION	MAIN FILM	TRACKING ANOMALY	BOSX
252/1105	FILM SCRATCHES	MAIN FILM	DRUM ROLLERS	BOSX
253/1105	FAILURE, TRANSPORT	MAIN CAMERA FA	FILM DEPLETION	BOSX AP X
254/1105	VEILED IMAGES	HOR CAMERA PORT	CAUSE UNKNOWN	AP X
255/1105	FILM DAMAGE	MAIN FILM FA	CAUSE UNKNOWN	AP X
256/1105	FOG, ELECTROSTATIC	MAIN FILM FA	FOREIGN PARTICLES	BOSX AP X
257/1105	DENS VAR, +D STRKS	MAIN FILM FA	FILM STRAIN	BOS
258/1105	FOG, ELECTROSTATIC	MAIN FILM FA	PRE-PROCESSING	AP X
259/1105	FOG, LIGHT SPILL	MAIN FILM FA	STEERING ROLLERS	AP X
260/1105	DENS VAR, -D SPOTS	MAIN FILM	FILM MANUF [redacted]	EK
261/1105	IMAGERY SOFT	MAIN FILM A SO12	FILM CURL	BOS AP
262/1049	IMAGERY SOFT	MAIN CAMERA MS	FOCUS SHIFT	BOS AP
262/1049	FOCUS SHIFT	MAIN CAMERA	THERMAL DISTORTION	BOS AP
263/1049	IMAGERY SOFT	MAIN CAMERAS	CAUSE UNKNOWN	BOS
264/1049	FOG, SITMARKS	MAIN FILM SO23	NORMAL FUNCTION	AP X
265/1049	VEILED IMAGES	HOR CAMERA PORT	CAUSE UNKNOWN	AP X

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DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONI
APERTURE LOOSE	IMAGE DENSITY LOW	HOR CAMERA PORT	139/1042	BOSX
ATMOSPHERICS	IMAGE DENSITY LOW	MAIN FILM MS	048/1028	EK X
ATTITUDE, VEHICLE	IMAGERY SMEARED	STELLAR CAMERA AB	019/1025	AP X
ATTITUDE, VEHICLE	IMAGERY SMEARED	STELLAR CAMERA AB	010/1024	AP X
BAFFLE DESIGN	FOG, LIGHT FLARE	STELLAR CAMERA B	072/1031	AP X
BAFFLE DESIGN	FOG, LIGHT FLARE	STELLAR FILM DISIC	167/1101	AP X
BAFFLE DESIGN	FOG, LIGHT FLARE	STELLAR FILM DISIC	184/1102	AP X
BANDING	FAILURE, TENSION	MAIN CAMERA MF	145/1043	BOSX
BANDING	IMAGERY SMEARED	MAIN CAMERA MA	124/1040	BOSX
BANDING	IMAGERY SMEARED	MAIN CAMERA SF	125/1040	BOSX
BANDING, VENUS D	MAIN CAMERA MS	SCAN RATE IRPEG.	194/1045	AP X
BATTERY LEAKAGE	MAIN FILM MS	RECOVERY CAPSULE B	100/1035	AP X
BOOT DISTORTION	IMAGES VIGNETTED	HOR CAMERAS	156/1101	AP X
BOOT, HOR CAMERA	FOG, LIGHT LEAK	MAIN FILM MS	105/1037	AP X
BOOT, MAINS	FOG, LIGHT LEAK	MAIN FILM S	038/1028	AP X
CAUSE UNKNOWN	DENS VAR, +D STRKS	MAIN FILM S	108/1037	EK X
CAUSE UNKNOWN	DENS VAR, -D STRKS	MAIN FILM S	108/1037	EK X
CAUSE UNKNOWN	EMULSION CRACKS	MAIN FILM FA	175/1044	AP X
CAUSE UNKNOWN	EMULSION CRACKS	STELLAR CAMERA B	195/1045	BOSX
CAUSE UNKNOWN	FILM DAMAGE	MAIN FILM FA	255/1105	AP X
CAUSE UNKNOWN	FILM SCRATCHES	INDEX FILM	143/1042	AP X
CAUSE UNKNOWN	FILM SCRATCHES	INDEX FILM A	020/1025	AP X
CAUSE UNKNOWN	FILM SCRATCHES	MAIN FILM A	181/1102	AP X
CAUSE UNKNOWN	FILM SCRATCHES	MAIN FILM A	217/1047	AP X
CAUSE UNKNOWN	FILM SCRATCHES	MAIN FILM M	078/1033	AP X
CAUSE UNKNOWN	FILM SCRATCHES	MAIN FILM M BASE	077/1033	AP X
CAUSE UNKNOWN	FILM SCRATCHES	MAIN FILM MS	041/1028	BOSX
CAUSE UNKNOWN	FILM SCRATCHES	MAIN FILM SA	067/1031	AP X
CAUSE UNKNOWN	FILM SCRATCHES	MAIN FILM SA	093/1036	AP X
CAUSE UNKNOWN	FILM SCRATCHES	STELLAR FILM A	020/1025	AP X
CAUSE UNKNOWN	FOG, CORONA	INDEX FILM DISIC	231/1104	AP X
CAUSE UNKNOWN	FOG, CORONA	MAIN FILM FA	224/1104	AP X
CAUSE UNKNOWN	FOG, CORONA	STELLAR FILM DISIC	230/1104	AP X
CAUSE UNKNOWN	FOG, CORONA	STELLAR FILM DISIC	212/1103	AP X
CAUSE UNKNOWN	FOG, EDGE	STELLAR FILM B	129/1040	AP X
CAUSE UNKNOWN	FOG, ELECTROSTATIC	INDEX FILM DISIC	231/1104	AP X
CAUSE UNKNOWN	FOG, ELECTROSTATIC	STELLAR FILM DISIC	230/1104	AP X
CAUSE UNKNOWN	FOG, ELECTROSTATIC	STELLAR FILM DISIC	212/1103	AP X
CAUSE UNKNOWN	FOG, ELECTROSTATIC	STELLAR FILM DISIC	186/1102	NY X
CAUSE UNKNOWN	FOG, LIGHT FLARE	HOR CAMERA STBD	168/1101	NY
CAUSE UNKNOWN	FOG, LIGHT LEAK	MAIN FILM	027/1026	AP X
CAUSE UNKNOWN	FOREIGN PART.IMAGE	STELLAR CAMERA A	223/1104	AP
CAUSE UNKNOWN	FOREIGN PART.IMAGE	STELLAR CAMERA A	056/1028	AP X
			009/1024	AP X

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DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONITOR
CAUSE UNKNOWN	FRAME MISSING	INDEX CAMERA A	088/1034	AP X BO
CAUSE UNKNOWN	IMAGERY SOFT	MAIN CAMERAS	263/1049	BOS
CAUSE UNKNOWN	METAL CHIP	MAIN FILM M	079/1033	AP X
CAUSE UNKNOWN	SHUTTER MALFUNCT.	HOR CAMERA	133/1041	BOSX
CAUSE UNKNOWN	SHUTTER MALFUNCT.	INDEX CAMERA B	044/1028	AP X BO
CAUSE UNKNOWN	SHUTTER MALFUNCT.	STELLAR CAMERA B	195/1045	BOSX
CAUSE UNKNOWN	SHUTTER MALFUNCT.	STELLAR CAMERA B	216/1047	BOSX
CAUSE UNKNOWN	TAKEUP MALFUNCT.	MAIN FILM A	218/1047	BOSX AP
CAUSE UNKNOWN	TIME WORD ERROR	MAIN CAMERA S	003/1024	AP X
CAUSE UNKNOWN	VEILED IMAGES	HOR CAMERA PORT	265/1049	AP X
CAUSE UNKNOWN	VEILED IMAGES	HOR CAMERA PORT	254/1105	AP X
CIRCUIT ADJUST	IMAGERY SOFT	HOR CAMERAS	155/1101	BOSX
CIRCUIT DESIGN	FRAMES MISSING	S/I FILM ENDS B	080/1033	AP X
CIRCUIT DESIGN	FRAMES MISSING	S/I FILM ENDS B	086/1034	AP X
CIRCUIT DESIGN	FRAMES MISSING	S/I FILM ENDS B	071/1031	AP X
CIRCUIT DESIGN	SMEAR PULSE LONG	MAIN CAMERA M	004/1024	AP X
CIRCUIT HEATING	TIMING LIGHT MALF.	MAIN CAMERA M	074/1033	AP X
CIRCUIT MAL, CF SW	DATA LAMPS OUT	MAIN CAMERA A	203/1103	BOSX
CIRCUIT MAL, CF SW	DATA LAMPS OUT	MAIN CAMERA SA	023/1026	BOSX
CIRCUIT MALF	FIDUCIALS MISSING	MAIN CAMERA F	190/1045	BOSX AP
CIRCUIT MALF	FRAMES MISSING	INDEX FILM A	192/1045	BOSX AP
CIRCUIT MALF	FRAMES MISSING	STELLAR FILM A	192/1045	BOSX AP
CIRCUIT MALF	MAIN CAMERA	DATA LAMPS OUT	205/1103	BOSX
CIRCUIT MALF	MAIN CAMERA	FRAME PARTIAL	225/1104	AP X
CIRCUIT MALF	S/I CAMERA B	FAILURE, PARTIAL	058/1029	BOSX
CIRCUIT MALF	SCAN TRACE MISSING	MAIN CAMERA SA	193/1045	AP X
CIRCUIT MARGINAL	CORREL. LAMP MALF	INDEX CAMERA A	087/1034	AP X BO
CIRCUIT MARGINAL	DATA LAMPS VARY	MAIN CAMERA MF	051/1029	AP X
CIRCUIT MARGINAL	IMAGERY MISSING	HOR CAMERA A	162/1101	AP X
CIRCUIT MARGINAL	IMAGERY MISSING	HOR CAMERA M	245/1048	BOS
CIRCUIT MARGINAL	INDEX LIGHTS WEAK	MAIN CAMERA M	001/1024	AP X BO
CIRCUIT MARGINAL	TIME WORD MISSING	MAIN FILM FA	246/1049	AP X
CIRCUIT MARGINAL	TIME WORD MISSING	MAIN FILM FA	174/1044	AP X
CIRCUIT MARGINAL	TIMING LIGHT MALF	MAIN CAMERA FA	183/1102	BOSX
CIRCUIT MARGINAL	TIMING LIGHT MALF.	MAIN CAMERA FA	220/1047	AP X
CIRCUIT MARGINAL	TIMING LIGHT MALF.	MAIN CAMERA FA	244/1048	AP X
CIRCUIT MARGINAL	TIMING LIGHT MALF.	MAIN CAMERA M	036/1028	BOSX AP
CIRCUIT MARGINAL	TIMING LIGHT MALF.	MAIN CAMERA MS	132/1041	AP X
CIRCUIT MARGINAL	TIMING LIGHT MALF.	MAIN CAMERA S	119/1039	BOSX
CIRCUIT NOISE	IMAGERY SMEARED	FMC ERROR	160/1101	AP X
CLOCK OUTPUT	TIME WORD ERROR	MAIN CAMERA F	236/1048	AP X
CLOCK OUTPUT STORE	TIME WORD ERROR	MAIN CAMERA M	082/1033	AP X
COMMAND REJR. -V/H	IMAGERY SMEARED	FMC ERROR	029/1026	AP X
COMMAND SHIFT	EXPOSURE, DOUBLE	S/I CAMERAS AB	113/1038	BOSX AP

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DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONITO
COMMAND SHIFT	EXPOSURE, DOUBLE	S/I CAMERAS AB	106/1037	BOSX
CONST-TENSN ASSY	FOG, ELECTROSTATIC	MAIN FILM A	239/1049	AP X
CORREL. LAMP IMAGE	INDEX CAMERA AB	MASKING IMPROPER	107/1037	BOSX
CORREL. LAMP MALF	INDEX CAMERA A	CIRCUIT MARGINAL	087/1034	AP X
DATA INCOMPLETE	MISSION REPORTS	FILM TITLING	013/1024	AP X
DATA LAMPS OUT	CIRCUIT MALF	MAIN CAMERA	205/1103	BOSX
DATA LAMPS OUT	MAIN CAMERA A	CIRCUIT MAL, CF SW	203/1103	BOSX
DATA LAMPS OUT	MAIN CAMERA SA	CIRCUIT MAL. CF SW	023/1026	BOSX
DATA LAMPS VARY	MAIN CAMERA MF	CIRCUIT MARGINAL	051/1029	AP X
DATA NON-CORREL.	MISSION REPORTS	QUALITY EVALUATION	064/1030	EK X
DDSC & SLP COND.	TIME WORD ERROR	MAIN CAMERA FA	163/1101	NPCK
DDSC CIRCUITRY	TIME WORD ERROR	MAIN CAMERA FA	182/1102	AP X
DENS VAR, +D LINE	MAIN CAMERA MF	FILTER DISTORTION	146/1043	BOSX
DENS VAR, +D LINE	MAIN FILM S	FILM MANUFACTURE	114/1039	EK X
DENS VAR, +D SPOTS	MAIN CAMERA A	FOREIGN PARTICLES	238/1049	AP X
DENS VAR, +D SPOTS	MAIN CAMERA F	METER ROLLER	209/1103	AP X
DENS VAR, +D SPOTS	MAIN CAMERA SF	METER ROLLER-INPUT	126/1040	AP X
DENS VAR, +D STRKS	MAIN FILM	TRACKING ANOMALY	251/1105	BOSX
DENS VAR, +D STRKS	MAIN FILM FA	FILM STRAIN	257/1105	BOS
DENS VAR, +D STRKS	MAIN FILM S	CAUSE UNKNOWN	108/1037	EK X
DENS VAR, +D STRKS	STELLAR FILM DISIC	PATIO PIN SEAL	229/1104	AP X
DENS VAR, -D LINE	MAIN FILM MF	FILM ABRASION	121/1039	AP X
DENS VAR, -D SPOT	FOREIGN PART.IMAGE	STELLAR CAMERA AB	096/1035	BOSX A
DENS VAR, -D SPOT	MAIN FILM SA	FOREIGN PARTICLE	140/1042	AP X
DENS VAR, -D SPOT	STELLAR CAMERA B	FOREIGN PARTICLE	149/1043	AP X
DENS VAR, -D SPOTS	FOREIGN PART.IMAGE	INDEX CAMERA A	127/1040	BOSX
DENS VAR, -D SPOTS	FOREIGN PART.IMAGE	STELLAR CAMERA A	135/1041	BOSX
DENS VAR, -D SPOTS	INDEX FILM DISIC	FOREIGN PARTICLES	169/1101	NY X
DENS VAR, -D SPOTS	INDEX FILM DISIC	FOREIGN PARTICLES	227/1104	AP X
DENS VAR, -D SPOTS	INDEX FILM DISIC	FOREIGN PARTICLES	211/1103	AP X
DENS VAR, -D SPOTS	MAIN FILM	FILM MANUF[redacted]	260/1105	EK
DENS VAR, -D SPOTS	MAIN FILM SA	FILM MANUFACTURE	046/1029	EK X
DENS VAR, -D SPOTS	STELLAR FILM DISIC	FOREIGN PARTICLES	211/1103	AP X
DENS VAR, -D SPOTS	STELLAR FILM DISIC	FOREIGN PARTICLES	227/1104	AP X
DENS VAR, -D SPOTS	STELLAR FILM DISIC	FOREIGN PARTICLES	169/1101	NY X
DENS VAR, -D SPOTS	STELLAR FILM DISIC	FOREIGN PARTICLES	187/1102	AP X
DENS VAR, -D STRKS	MAIN CAMERA MS	EMULSION PARTICLES	043/1029	AP X B
DENS VAR, -D STRKS	MAIN CAMERA MS	EMULSION PARTICLES	123/1040	BOSX
DENS VAR, -D STRKS	MAIN CAMERA MS	EMULSION PARTICLES	097/1035	BOSX A
DENS VAR, -D STRKS	MAIN CAMERA S	EMULSION PARTICLES	134/1041	BOSX
DENS VAR, -D STRKS	MAIN CAMERA SA	FOREIGN PARTICLES	150/1043	BOSX
DENS VAR, -D STRKS	MAIN FILM A	NORMAL FUNCTION	219/1047	AP X
DENS VAR, -D STRKS	MAIN FILM M	FILM MANUFACTURE	098/1035	EK X
DENS VAR, -D STRKS	MAIN FILM S	CAUSE UNKNOWN	108/1037	EK X

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DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONIT
DRUM ROLLERS	FILM SCRATCHES	MAIN FILM	252/1105	BOSX
DRUM ROLLERS	FILM SCRATCHES	MAIN FILM A	157/1101	AP X
EDGE MARKS	STELLAR FILM B	PROCESSING	120/1040	[redacted] X
EMULSION BUILDUP	FORMAT EDGE RAGGED	MAIN CAMERA FA	172/1044	AP X
EMULSION BUILDUP	FORMAT EDGE RAGGED	MAIN CAMERA MS	112/1038	AP X
EMULSION BUILDUP	FORMAT EDGE RAGGED	MAIN CAMERA MS	042/1028	AP X
EMULSION BUILDUP	FORMAT EDGE RAGGED	MAIN CAMERA MS	055/1029	BOSX
EMULSION BUILDUP	IMAGERY SOFT	MAIN CAMERA MF	196/1046	EK X
EMULSION BUILDUP	RAILHOL IMAGE LOSS	MAIN CAMERA FA	159/1101	AP X
EMULSION BUILDUP	RAILHOL IMAGE LOSS	MAIN CAMERA MS PG	148/1043	BOSX
EMULSION BUILDUP	RAILHOL IMAGE LOSS	MAIN CAMERA MS PG	103/1045	AP X
EMULSION BUILDUP	SCAN TRACE BROKEN	MAIN CAMERA FA	179/1102	BOSX
EMULSION BUILDUP	SCAN TRACE BROKEN	MAIN CAMERA FA	158/1101	AP X
EMULSION CRACKS	MAIN FILM FA	CAUSE UNKNOWN	175/1044	AP X
EMULSION CRACKS	STELLAR CAMERA B	CAUSE UNKNOWN	105/1045	BOSX
EMULSION PARTICLES	DENS VAR, -D STRKS	MAIN CAMERA MS	123/1040	BOSX
EMULSION PARTICLES	DENS VAR, -D STRKS	MAIN CAMERA MS	097/1035	BOSX
EMULSION PARTICLES	DENS VAR, -D STRKS	MAIN CAMERA MS	043/1029	AP X
EMULSION PARTICLES	DENS VAR, -D STRKS	MAIN CAMERA S	134/1041	BOSX
EMULSION PARTICLES	FIDUCIAL DENS.VAR.	HOR CAMERA S	032/1027	AP X
EXPOSURE LONG	INDEX FILM DISIC	TIMER SETTING	164/1101	AP X
EXPOSURE MULTIPLE	INDEX FILM DISIC	SHUTTER MALFUNCT.	189/1102	NY X
EXPOSURE MULTIPLE	S/I CAMERAS AB	PLATEN LIFT CAM	240/1049	BOSX
EXPOSURE SETTINGS	IMAGE DENSITY HIGH	HOR CAMERA STBD	027/1026	AP X
EXPOSURE SETTINGS	IMAGE DENSITY HIGH	HOR CAMERAS STBD	094/1035	APEX
EXPOSURE/ PROCESS	IMAGE CONTRAST LOW	INDEX FILM DISIC	171/1101	[redacted] X
EXPOSURE, DOUBLE	S/I CAMERAS AB	COMMAND SHIFT	106/1037	BOSX
EXPOSURE, DOUBLE	S/I CAMERAS AB	COMMAND SHIFT	113/1038	BOSX
EXPOSURE, OVER	STELLAR FILM DISIC	NORMAL FUNCTION	232/1104	AP X
FAILURE, DRIVE	MAIN CAMERA F	FILM TORN	247/1049	AP
FAILURE, PARTIAL	CIRCUIT MALF	S/I CAMERA B	058/1029	BOSX
FAILURE, PARTIAL	SHUTTER MALFUNCT.	HOR CAMERA	221/1104	AP X
FAILURE, TAKEUP S	RECOVERY LACKING	MAIN FILM S	066/1031	AP X
FAILURE, TENSION	MAIN CAMERA MF	BANDING	145/1043	BOSX
FAILURE, TENSION	MAIN CAMERA MF	FILM OUT OF RAILS	145/1043	BOSX
FAILURE, TRANSPORT	MAIN CAMERA FA	FILM DEPLETION	253/1105	BOSX
FIDUCIAL DENS.VAR.	HOR CAMERA S	EMULSION PARTICLES	032/1027	AP X
FIDUCIALS MISSING	MAIN CAMERA F	CIRCUIT MALF	190/1045	BOSX
FIDUCIALS UNREAD.	STELLAR CAMERA A	LAMP ADJUSTMENT	144/1042	BOSX
FILM ABRASION	DENS VAR, -D LINE	MAIN FILM MF	121/1039	AP X
FILM ABRASION	MAIN FILM	FILM DEFORMATION	250/1105	AP X
FILM GREASE	INDEX FILM B	PROCESSING	021/1025	[redacted] X
FILM GREASE	MAIN FILM M	SPLICE	024/1026	EK X
FILM GREASE.	MAIN FILM M	SPLICE	047/1029	EK X

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DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONIT
FILM CREASE	MAIN FILM M	SPLICE	054/1029	EK X
FILM CREASE	MAIN FILM M	SPLICE	115/1038	AP X
FILM CREASES, MULT	MAIN FILM A	TAKEUP MALFUNCT.	218/1047	BOSX
FILM CURL	IMAGERY SOFT	MAIN FILM A S0121	261/1105	BOS
FILM CURL	MAIN FILM MS	PRE-PROCESSING	199/1046	[redacted] X
FILM DAMAGE	MAIN FILM FA	CAUSE UNKNOWN	255/1105	AP X
FILM DEFORMATION	FILM ABRASION	MAIN FILM	250/1105	AP X
FILM DEFORMATION	IMAGERY SOFT	MAIN CAMERA	249/1105	AP X
FILM DEFORMATION	IMAGERY SOFT	MAIN FILM FA	202/1103	BOSX
FILM DEPLETION	FAILURE, TRANSPORT	MAIN CAMERA FA	253/1105	BOSX
FILM DISTORTION	MAIN FILM	TRACKING ANOMALY	251/1105	BOSX
FILM DISTURBANCE	IMAGERY SMEARED	MAIN CAMERA F	176/1102	BOSX
FILM DISTURBANCE	IMAGERY SMEARED	MAIN CAMERA FA	176/1044	AP X
FILM DISTURBANCE	IMAGERY SMEARED	MAIN CAMERA FA	153/1101	BOSX
FILM DISTURBANCE	IMAGERY SMEARED	MAIN CAMERA MA	124/1040	BOSX
FILM DISTURBANCE	IMAGERY SMEARED	MAIN CAMERA SF	125/1040	BOSX
FILM DISTURBANCE	IMAGERY SOFT	MAIN CAMERA FA	152/1101	BOSX
FILM DISTURBANCE	IMAGERY SOFT	MAIN CAMERA FA	248/1105	BOS
FILM GRAININESS	QUALITY EVALUATION	MAIN FILM S0230	200/1046	NPC
FILM LATITUD LIMIT	IMAGE DETAIL LOW	MAIN FILM FA	177/1044	NROX
FILM MANUF/PROCESS	DENS VAR, -D SPOTS	MAIN FILM	260/1105	EK
FILM MANUFACTURE	DENS VAR, +D LINE	MAIN FILM S	114/1038	EK X
FILM MANUFACTURE	DENS VAR, -D SPOTS	MAIN FILM SA	044/1028	EK X
FILM MANUFACTURE	DENS VAR, -D STRKS	MAIN FILM M	098/1035	EK X
FILM MANUFACTURE	FILM SCRATCHES	MAIN FILM SA	063/1030	EK X
FILM OUT OF RAILS	FAILURE, TENSION	MAIN CAMERA MF	145/1043	BOSX
FILM SCRATCHES	INDEX FILM	CAUSE UNKNOWN	143/1042	AP X
FILM SCRATCHES	INDEX FILM A	CAUSE UNKNOWN	020/1025	AP X
FILM SCRATCHES	INDEX FILM A	PROCESSING	062/1030	[redacted] X
FILM SCRATCHES	MAIN FILM	DRUM ROLLERS	252/1105	BOSX
FILM SCRATCHES	MAIN FILM A	CAUSE UNKNOWN	191/1102	AP X
FILM SCRATCHES	MAIN FILM A	CAUSE UNKNOWN	217/1047	AP X
FILM SCRATCHES	MAIN FILM A	DRUM ROLLERS	157/1101	AP X
FILM SCRATCHES	MAIN FILM M	CAUSE UNKNOWN	078/1033	AP X
FILM SCRATCHES	MAIN FILM M BASE	CAUSE UNKNOWN	077/1033	AP X
FILM SCRATCHES	MAIN FILM MS	CAUSE UNKNOWN	041/1028	BOSX
FILM SCRATCHES	MAIN FILM MS	POLISHED RAILS	103/1037	AP X
FILM SCRATCHES	MAIN FILM MS	SCAN ROLLER, RAIL	019/1025	BOSX
FILM SCRATCHES	MAIN FILM MS	SCAN ROLLER, RAIL	008/1024	BOSX
FILM SCRATCHES	MAIN FILM SA	CAUSE UNKNOWN	067/1031	AP X
FILM SCRATCHES	MAIN FILM SA	CAUSE UNKNOWN	093/1036	AP X
FILM SCRATCHES	MAIN FILM SA	FILM MANUFACTURE	063/1030	EK X
FILM SCRATCHES	MAIN FILM SA	PRE-PROCESSING	137/1042	BOSX
FILM SCRATCHES	STELLAR FILM A	CAUSE UNKNOWN	020/1025	AP X

ALPHABETICAL INDEX TO ACTION ITEMS

DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONITOR
FILM STRAIN	DENS VAR, +D STPKS	MAIN FILM FA	257/1105	BOS
FILM TITLING	DATA INCOMPLETE	MISSION REPORTS	013/1024	AP X
FILM TITLING	MAIN FILM	MISSION REPORTS	012/1024	AP X
FILM TORN	FAILURE, DRIVE	MAIN CAMERA F	247/1048	AP BO
FILTER DISTORTION	DENS VAR, +D LINE	MAIN CAMERA MF	146/1043	BOSX
FILTER SELECTION	MAIN CAMERA A	QUALITY EVALUATION	233/1104	BOSX
FILTER SELECTION	MAIN CAMERA F	QUALITY EVALUATION	065/1030	AP X
FMC ERROR	CIRCUIT NOISE	IMAGERY SMEARED	160/1101	AP X
FMC ERROR	COMMAND PROB. -V/H	IMAGERY SMEARED	029/1026	AP X
FOCUS ADJUSTMENT	IMAGERY SOFT	INDEX CAMERA B	068/1031	BOSX
FOCUS SHIFT	IMAGERY SOFT	MAIN CAMERA MS	081/1033	AP X BO
FOCUS SHIFT	IMAGERY SOFT	MAIN CAMERA MS	262/1049	BOS AP
FOCUS SHIFT	MAIN CAMERA	THERMAL DISTORTION	262/1049	BOS AP
FOCUS SHIFT	MAIN CAMERA MS	THERMAL DISTORTION	081/1033	AP X BO
FOCUS, OFF-PEAK	IMAGERY SOFT	MAIN CAMERA A	151/1101	BOSX
FOCUS, OFF-PEAK	IMAGERY SOFT	MAIN CAMERA SA	040/1028	BOSX
FOCUS, SOFT	HOR CAMERA M	PLATEN MALFUNCTION	016/1025	BOSX
FOG, B+F HIGH	MAIN FILM MS	PROCESSING	102/1037 [redacted]	X
FOG, B+F HIGH	S/I FILM AB	RADIATION	136/1041 AP	X
FOG, B+F HIGH	STELLAR FILM AB	PROCESSING	090/1036 [redacted]	X
FOG, CORONA	INDEX FILM DISIC	CAUSE UNKNOWN	231/1104	AP X
FOG, CORONA	MAIN FILM A	PMU BUILDUP SLOW	208/1103	AP
FOG, CORONA	MAIN FILM F SC180	PMU MALFUNCTION	234/1104	AP X
FOG, CORONA	MAIN FILM FA	CAUSE UNKNOWN	224/1104	AP X
FOG, CORONA	MAIN FILM M	PMU EXHAUSTION	083/1034	AP X
FOG, CORONA	PMU MALFUNCTION	MAIN FILM FA	235/1104	AP X
FOG, CORONA	STELLAR FILM DISIC	CAUSE UNKNOWN	230/1104	AP X
FOG, CORONA	STELLAR FILM DISIC	CAUSE UNKNOWN	212/1102	AP X
FOG, CORONA	STELLAR FILM DISIC	METERING ROLLER	196/1102	NY X AP
FOG, CORONA	STELLAR FILM DISIC	METERING ROLLER	168/1101	NY
FOG, EDGE	STELLAR FILM B	CAUSE UNKNOWN	129/1040	AP X
FOG, ELECTROSTATIC	INDEX FILM DISIC	CAUSE UNKNOWN	231/1104	AP X
FOG, ELECTROSTATIC	INDEX FILM DISIC	PRE-PROCESSING	213/1103	AP X
FOG, ELECTROSTATIC	MAIN FILM A	CONST-TENSN ASSY	239/1048	AP X
FOG, ELECTROSTATIC	MAIN FILM A	METERING ROLLER	241/1048	AP
FOG, ELECTROSTATIC	MAIN FILM F SC180	PMU MALFUNCTION	234/1104	AP X
FOG, ELECTROSTATIC	MAIN FILM FA	FOREIGN PARTICLES	256/1105	BOSX A
FOG, ELECTROSTATIC	MAIN FILM FA	PRE-PROCESSING	258/1105	AP X
FOG, ELECTROSTATIC	MAIN FILM FA	PRE-PROCESSING	241/1048	AP
FOG, ELECTROSTATIC	MAIN FILM M	PRESSURE MARKING	009/1035	BOSX
FOG, ELECTROSTATIC	MAIN FILM MS	PRE-PROCESSING	007/1024 [redacted]	X
FOG, ELECTROSTATIC	MAIN FILM MS	PRE-PROCESSING	039/1028	X
FOG, ELECTROSTATIC	MAIN FILM MS	PRE-PROCESSING	052/1029	X
FOG, ELECTROSTATIC	MAIN FILM SF	PRE-PROCESSING	122/1040	X

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DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONIT
FOG, ELECTROSTATIC	STELLAR FILM DISIC	CAUSE UNKNOWN	168/1101	NY
FOG, ELECTROSTATIC	STELLAR FILM DISIC	CAUSE UNKNOWN	230/1104	AP X
FOG, ELECTROSTATIC	STELLAR FILM DISIC	CAUSE UNKNOWN	212/1103	AP X
FOG, ELECTROSTATIC	STELLAR FILM DISIC	CAUSE UNKNOWN	186/1102	NY X
FOG, ELECTROSTATIC	STELLAR FILM DISIC	SKEW BEADS	185/1102	AP X
FOG, ELECTROSTATIC	STELLAR FILM DISIC	SKEW BEADS	170/1101	NY X
FOG, ELECTROSTATIC	STELLAR FILM DISIC	SKEW BEADS	210/1103	AP X
FOG, ELECTROSTATIC	STELLAR FILM DISIC	SKEW BEADS	226/1104	AP X
FOG, LIGHT FLARE	HOR CAMERA STBD	CAUSE UNKNOWN	027/1026	AP X
FOG, LIGHT FLARE	STELLAR CAMERA B	BAFFLE DESIGN	072/1031	AP X
FOG, LIGHT FLARE	STELLAR FILM DISIC	BAFFLE DESIGN	194/1102	AP X
FOG, LIGHT FLARE	STELLAR FILM DISIC	BAFFLE DESIGN	167/1101	AP X
FOG, LIGHT LEAK	MAIN FILM	CAUSE UNKNOWN	223/1104	AP
FOG, LIGHT LEAK	MAIN FILM	FOREBODY, A SRV	025/1026	AP X
FOG, LIGHT LEAK	MAIN FILM	FOREBODY, A SRV	050/1029	AP X
FOG, LIGHT LEAK	MAIN FILM	FOREBODY, A SRV	033/1027	AP X
FOG, LIGHT LEAK	MAIN FILM FA	FOREBODY, A SRV	222/1104	AP
FOG, LIGHT LEAK	MAIN FILM FA	MAIN CAMERA DRUMS	186/1102	AP X
FOG, LIGHT LEAK	MAIN FILM FA	MAIN CAMERA DRUMS	154/1101	AP X
FOG, LIGHT LEAK	MAIN FILM FA	MAIN CAMERA DRUMS	242/1049	AP
FOG, LIGHT LEAK	MAIN FILM FA	SRV/FAIR.INTER.	186/1102	AP X
FOG, LIGHT LEAK	MAIN FILM MS	BOOT, HOR CAMERA	105/1037	AP X
FOG, LIGHT LEAK	MAIN FILM MS	FOREBODY, A SRV	006/1024	AP X
FOG, LIGHT LEAK	MAIN FILM MS	FOREBODY, A SRV	017/1025	AP X
FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUM	105/1037	AP X
FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	095/1035	BOSX
FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	017/1025	AP X
FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	025/1026	AP X
FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	033/1027	AP X
FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	038/1028	AP X
FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	050/1029	AP X
FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	084/1034	AP X
FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	006/1024	AP X
FOG, LIGHT LEAK	MAIN FILM MS	MAIN CAMERA DRUMS	197/1046	AP X
FOG, LIGHT LEAK	MAIN FILM MS	SRV/FAIR.INTER.	197/1046	AP X
FOG, LIGHT LEAK	MAIN FILM S	BOOT, MAINS	038/1028	AP X
FOG, LIGHT LEAK	STELLAR FILM DISIC	INDEX LENS MOUNT	166/1101	NY X
FOG, LIGHT LEAK	STELLAR FILM DISIC	PATIO PIN SEAL	229/1104	AP X
FOG, LIGHT SPILL	MAIN FILM	MASK, SLP	206/1103	BOSX
FOG, LIGHT SPILL	MAIN FILM FA	STEERING ROLLERS	259/1105	AP X
FOG, LIGHT SPILL	MAIN FILM MS	RAILHOLE LAMPS	104/1037	BOSX
FOG, SITMARKS	MAIN FILM	S0230 NORMAL FUNCTION	264/1049	AP X
FOG, SITMARKS	MAIN FILM	S0230 NORMAL FUNCTION	201/1046	AP X
FOGGED FORMAT	STELLAR FILM DISIC	PRESSURE PAD	165/1101	NY X

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DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONITOR
FOREBODY, A SRV	FOG, LIGHT LEAK	MAIN FILM	033/1027	AP X
FOREBODY, A SRV	FOG, LIGHT LEAK	MAIN FILM	025/1026	AP X
FOREBODY, A SRV	FOG, LIGHT LEAK	MAIN FILM	050/1029	AP X
FOREBODY, A SRV	FOG, LIGHT LEAK	MAIN FILM FA	222/1104	AP
FOREBODY, A SRV	FOG, LIGHT LEAK	MAIN FILM MS	017/1025	AP X
FOREBODY, A SRV	FOG, LIGHT LEAK	MAIN FILM MS	006/1024	AP X
FOREBODY, A SRV	FOG, LIGHT LEAK	THERMAL TAPE	243/1048	AP X
FOREIGN OBJ. IMAGE	INDEX CAMERA B	DENS VAR, -D SPOTS	127/1040	BOSX
FOREIGN PART.IMAGE	INDEX CAMERA A	CAUSE UNKNOWN	009/1024	AP X
FOREIGN PART.IMAGE	STELLAR CAMERA A	CAUSE UNKNOWN	056/1029	AP X
FOREIGN PART.IMAGE	STELLAR CAMERA A	DENS VAR, -D SPOTS	135/1041	BOSX
FOREIGN PART.IMAGE	STELLAR CAMERA A	DENS VAR, -D SPOT	096/1035	BOSX AP
FOREIGN PART.IMAGE	STELLAR CAMERA AR	MAIN FILM SA	140/1042	AP X
FOREIGN PARTICLE	DENS VAR, -D SPOT	STELLAR CAMERA B	149/1043	AP X
FOREIGN PARTICLE	DENS VAR, -D SPOT	MAIN CAMERA A	239/1048	AP X
FOREIGN PARTICLES	DENS VAR, +D SPOTS	INDEX FILM DISIC	227/1104	AP X
FOREIGN PARTICLES	DENS VAR, -D SPOTS	INDEX FILM DISIC	211/1103	AP X
FOREIGN PARTICLES	DENS VAR, -D SPOTS	INDEX FILM DISIC	169/1101	NY X
FOREIGN PARTICLES	DENS VAR, -D SPOTS	STELLAR FILM DISIC	169/1101	NY X
FOREIGN PARTICLES	DENS VAR, -D SPOTS	STELLAR FILM DISIC	211/1103	AP X
FOREIGN PARTICLES	DENS VAR, -D SPOTS	STELLAR FILM DISIC	227/1104	AP X
FOREIGN PARTICLES	DENS VAR, -D SPOTS	STELLAR FILM DISIC	187/1102	AP X
FOREIGN PARTICLES	DENS VAR, -D STRKS	MAIN CAMERA SA	150/1043	BOSX
FOREIGN PARTICLES	FOG, ELECTROSTATIC	MAIN FILM FA	256/1105	BOSX AP
FORMAT EDGE RAGGED	MAIN CAMERA FA	EMULSION BUILDUP	172/1044	AP X
FORMAT EDGE RAGGED	MAIN CAMERA MS	EMULSION BUILDUP	112/1038	AP X
FORMAT EDGE RAGGED	MAIN CAMERA MS	EMULSION BUILDUP	055/1029	BOSX
FORMAT EDGE RAGGED	MAIN CAMERA MS	EMULSION BUILDUP	042/1028	AP X B
FRAME MISSING	INDEX CAMERA A	CAUSE UNKNOWN	098/1034	AP X B
FRAME PARTIAL	CIRCUIT MALF	MAIN CAMERA	225/1104	AP X
FRAME UNEXPOSED	S/I CAMERA A	NORMAL FUNCTION	142/1042	AP X
FRAMES MISSING	INDEX FILM A	CIRCUIT MALF	192/1045	BOSX A
FRAMES MISSING	S/I FILM ENDS B	CIRCUIT DESIGN	086/1034	AP X
FRAMES MISSING	S/I FILM ENDS B	CIRCUIT DESIGN	071/1031	AP X
FRAMES MISSING	S/I FILM ENDS B	CIRCUIT DESIGN	080/1033	AP X
FRAMES MISSING	STELLAR FILM A	CIRCUIT MALF	192/1045	BOSX A
HOR CAMERA	CAUSE UNKNOWN	SHUTTER MALFUNCT.	133/1041	BOSX
HOR CAMERA	FAILURE, PARTIAL	SHUTTER MALFUNCT.	221/1104	AP X
HOR CAMERA A	CIRCUIT MARGINAL	IMAGERY MISSING	162/1101	AP X
HOR CAMERA M	CIRCUIT MARGINAL	IMAGERY MISSING	245/1048	BOS
HOR CAMERA M	PLATEN MALFUNCTION	FOCUS, SOFT	016/1025	BOSX
HOR CAMERA PORT	APERTURE LOOSE	IMAGE DENSITY LOW	139/1042	BOSX
HOR CAMERA PORT	CAUSE UNKNOWN	VEILED IMAGES	254/1105	AP X
HOR CAMERA PORT	CAUSE UNKNOWN	VEILED IMAGES	265/1049	AP X

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DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONIT
HOR CAMERA S	EMULSION PARTICLES	FIDUCIAL DENS.VAR.	032/1027	AP X
HOR CAMERA STBD	CAUSE UNKNOWN	FOG, LIGHT FLARE	027/1026	AP X
HOR CAMERA STBD	EXPOSURE SETTINGS	IMAGE DENSITY HIGH	027/1026	AP X
HOR CAMERA STBD	THERMAL DISTORTION	VEILED IMAGES	026/1026	AP X
HOR CAMERA STBD	THERMAL DISTORTION	VEILED IMAGES	037/1028	NPCX
HOR CAMERA STBD	THERMAL DISTORTION	VEILED IMAGES	075/1033	AP X
HOR CAMERA STBD	THERMAL DISTORTION	VEILED IMAGES	085/1034	AP X
HOR CAMERA STBD	THERMAL DISTORTION	VEILED IMAGES	053/1029	AP X
HOR CAMERA STBD	THERMAL DISTORTION	VEILED IMAGES	069/1031	AP X
HOR CAMERA STBD	THERMAL DISTORTION	VEILED IMAGES	060/1030	AP X
HOR CAMERA STBD	THERMAL DISTORTION	VEILED IMAGES	005/1024	AP X
HOR CAMERA STBD	THERMAL DISTORTION	VEILED IMAGES	120/1039	AP X
HOR CAMERA STBD	THERMAL DISTORTION	VEILED IMAGES	191/1045	AP X
HOR CAMERA STBD	THERMAL DISTORTION	VEILED IMAGES	173/1044	AP X
HOR CAMERA STBD SA	THERMAL DISTORTION	VEILED IMAGES	116/1038	AP X
HOR CAMERAS	BOOT DISTORTION	IMAGES VIGNETTED	156/1101	AP X
HOR CAMERAS	CIRCUIT ADJUST	IMAGERY SOFT	155/1101	BOSX
HOR CAMERAS STBD	EXPOSURE SETTINGS	IMAGE DENSITY HIGH	094/1035	NPCX
ILLUMINATION LOW	IMAGE DENSITY LOW	MAIN FILM	031/1026	AP X
IMAGE CONTRAST LOW	INDEX FILM DISIC	EXPOSURE/ PROCESS	171/1101	[redacted]X
IMAGE DENSITY HIGH	HOR CAMERA STBD	EXPOSURE SETTINGS	027/1026	AP X
IMAGE DENSITY HIGH	HOR CAMERAS STBD	EXPOSURE SETTINGS	094/1035	NPCX
IMAGE DENSITY LOW	HOR CAMERA PORT	APERTURE LOOSE	139/1042	BOSX
IMAGE DENSITY LOW	MAIN FILM	ILLUMINATION LOW	031/1026	AP X
IMAGE DENSITY LOW	MAIN FILM MS	ATMOSPHERICS	048/1028	[redacted]X
IMAGE DETAIL LOW	MAIN FILM FA	FILM LATITUD LIMIT	177/1044	NPCX
IMAGERY MISSING	HOR CAMERA A	CIRCUIT MARGINAL	162/1101	AP X
IMAGERY MISSING	HOR CAMERA M	CIRCUIT MARGINAL	245/1048	BOS
IMAGERY SMEARED	EMC ERROR	CIRCUIT NOISE	160/1101	AP X
IMAGERY SMEARED	EMC ERROR	COMMAND PROB. -V/H	029/1026	AP X
IMAGERY SMEARED	MAIN CAMERA F	FILM DISTURBANCE	178/1102	BOSX
IMAGERY SMEARED	MAIN CAMERA F	THERMAL DISTORTION	178/1102	BOSX
IMAGERY SMEARED	MAIN CAMERA FA	FILM DISTURBANCE	176/1044	AP X
IMAGERY SMEARED	MAIN CAMERA FA	FILM DISTURBANCE	153/1101	BOSX
IMAGERY SMEARED	MAIN CAMERA MA	BANDING	124/1040	BOSX
IMAGERY SMEARED	MAIN CAMERA MA	FILM DISTURBANCE	124/1040	BOSX
IMAGERY SMEARED	MAIN CAMERA SF	BANDING	125/1040	BOSX
IMAGERY SMEARED	MAIN CAMERA SF	FILM DISTURBANCE	125/1040	BOSX
IMAGERY SMEARED	STELLAR CAMERA AB	ATTITUDE, VEHICLE	019/1025	AP X
IMAGERY SMEARED	STELLAR CAMERA AB	ATTITUDE, VEHICLE	010/1024	AP X
IMAGERY SOFT	HOR CAMERAS	CIRCUIT ADJUST	155/1101	BOSX
IMAGERY SOFT	INDEX CAMERA 3	FOCUS ADJUSTMENT	068/1031	BOSX
IMAGERY SOFT	MAIN CAMERA	FILM DEFORMATION	240/1105	AP X
IMAGERY SOFT	MAIN CAMERA A	FOCUS, OFF-PEAK	151/1101	BOSX

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DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONITO
IMAGERY SOFT	MAIN CAMERA F	TRACKING ANOMALY	237/1049	AP X
IMAGERY SOFT	MAIN CAMERA FA	FILM DISTURBANCE	248/1105	BOS A
IMAGERY SOFT	MAIN CAMERA FA	FILM DISTURBANCE	152/1101	BOSX
IMAGERY SOFT	MAIN CAMERA FA	MAINPLATE BUCKLED	215/1047	BOSX
IMAGERY SOFT	MAIN CAMERA MF	EMULSION BUILDUP	196/1046	EK X B
IMAGERY SOFT	MAIN CAMERA MF	TRACKING ANOMALY	138/1042	BOSX A
IMAGERY SOFT	MAIN CAMERA MF	TRACKING ANOMALY	045/1028	AP X B
IMAGERY SOFT	MAIN CAMERA MS	FOCUS SHIFT	081/1033	AP X B
IMAGERY SOFT	MAIN CAMERA MS	FOCUS SHIFT	262/1049	BOS A
IMAGERY SOFT	MAIN CAMERA SA	FOCUS, OFF-PEAK	040/1028	BOSX
IMAGERY SOFT	MAIN CAMERA SA	TRACKING ANOMALY	131/1041	BOSX
IMAGERY SOFT	MAIN CAMERA SA	TRACKING ANOMALY	092/1036	AP X B
IMAGERY SOFT	MAIN CAMERAS	CAUSE UNKNOWN	263/1049	BOS
IMAGERY SOFT	MAIN FILM A S0121	FILM CURL	261/1105	BOS A
IMAGERY SOFT	MAIN FILM FA	FILM DEFORMATION	202/1103	BOSX
IMAGERY SOFT	MAIN FILM FA	THERMAL DISTORTION	152/1101	BOSX
IMAGERY SOFT	MAIN FILM FA	TRACKING ANOMALY	202/1103	BOSX
IMAGES VIGNETTED	HOR CAMERAS	BOOT DISTORTION	156/1101	AP X
INDEX CAMERA	NORMAL FUNCTION	METERING UNEVEN	141/1042	AP X
INDEX CAMERA A	CAUSE UNKNOWN	FRAME MISSING	088/1034	AP X B
INDEX CAMERA A	CIRCUIT MARGINAL	CORREL. LAMP MALF	087/1034	AP X B
INDEX CAMERA A	DENS VAR, -D SPOTS	FOREIGN PART.IMAGE	127/1040	BOSX
INDEX CAMERA A	MASKING DEFECT	RESEAU EDGE IMAGED	128/1040	BOSX
INDEX CAMERA A	MASKING IMPROPER	RESEAU EDGE IMAGED	091/1036	BOSX
INDEX CAMERA A	MASKING IMPROPER	RESEAU EDGE IMAGED	059/1029	BOSX
INDEX CAMERA AP	MASKING IMPROPER	CORREL. LAMP IMAGE	107/1037	BOSX
INDEX CAMERA B	CAUSE UNKNOWN	SHUTTER MALFUNCT.	044/1028	AP X B
INDEX CAMERA B	FOCUS ADJUSTMENT	IMAGERY SOFT	068/1031	BOSX
INDEX CAMERA B	THERMAL TAPE	FOREIGN OBJ. IMAGE	243/1048	AP X
INDEX FILM	CAUSE UNKNOWN	FILM SCRATCHES	143/1042	AP X
INDEX FILM A	CAUSE UNKNOWN	FILM SCRATCHES	020/1025	AP X
INDEX FILM A	CIRCUIT MALF	FRAMES MISSING	192/1045	BOSX A
INDEX FILM A	PROCESSING	FILM SCRATCHES	062/1030	[redacted] X
INDEX FILM B	PROCESSING	FILM CREASE	021/1025	[redacted] X
INDEX FILM DISIC	CAUSE UNKNOWN	FOG, CORONA	231/1104	AP X
INDEX FILM DISIC	CAUSE UNKNOWN	FOG, ELECTROSTATIC	231/1104	AP X
INDEX FILM DISIC	EXPOSURE/ PROCESS	IMAGE CONTRAST LOW	171/1101	[redacted] X
INDEX FILM DISIC	FOREIGN PARTICLES	DENS VAR, -D SPOTS	169/1101	NY X
INDEX FILM DISIC	FOREIGN PARTICLES	DENS VAR, -D SPOTS	227/1104	AP X
INDEX FILM DISIC	FOREIGN PARTICLES	DENS VAR, -D SPOTS	211/1103	AP X
INDEX FILM DISIC	PRE-PROCESSING	FOG, ELECTROSTATIC	213/1103	AP X
INDEX FILM DISIC	SHUTTER MALFUNCT.	EXPOSURE MULTIPLE	188/1102	NY X
INDEX FILM DISIC	SLP MOUNTING	TIME WORDS SOFT	214/1103	AP X
INDEX FILM DISIC	SLP MOUNTING	TIME WORDS SOFT	228/1104	NY

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DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONITO
INDEX FILM DISIC	TIMER SETTING	EXPOSURE LONG	164/1101	AP X
INDEX LENS MOUNT	FOG, LIGHT LEAK	STELLAR FILM DISIC	166/1101	NY X
INDEX LIGHTS WEAK	MAIN CAMERA M	CIRCUIT MARGINAL	001/1024	AP X
INDEX MARK BLOOMED	MAIN CAMERA MS	LAMP ADJUSTMENT	118/1039	BOSX
INTERNAL FRICTION	SHUTTER MALFUNCT.	STELLAR CAMERA A	028/1026	AP X
INTERNAL FRICTION	SHUTTER MALFUNCT.	STELLAR CAMERA A	057/1029	AP X
INTERNAL FRICTION	SHUTTER MALFUNCT.	STELLAR CAMERA B	076/1033	BOSX
INTERNAL FRICTION	SHUTTER MALFUNCT.	STELLAR CAMERA B	070/1031	BOSX
LAMP ADJUSTMENT	FIDUCIALS UNREAD.	STELLAR CAMERA A	144/1042	BOSX
LAMP ADJUSTMENT	INDEX MARK BLOOMED	MAIN CAMERA MS	118/1039	BOSX
LAMP ADJUSTMENT	SCAN TRACE DENSITY	MAIN CAMERA MS PG	110/1037	BOSX
LAMP FAILURE	SOP MARK MISSING	MAIN CAMERA M	061/1030	BOSX
LAMP FAILURE	SOP MARK MISSING	MAIN CAMERA MF	089/1036	BOSX
LAMP FAILURE	SOP MARK MISSING	MAIN CAMERA S	073/1033	BOSX
MAIN CAMERA	DATA LAMPS OUT	CIRCUIT MALF	205/1103	BOSX
MAIN CAMERA	FILM DEFORMATION	IMAGERY SOFT	249/1105	AP X
MAIN CAMERA	FRAME PARTIAL	CIRCUIT MALF	225/1104	AP X
MAIN CAMERA	THERMAL DISTORTION	FOCUS SHIFT	262/1049	BOS
MAIN CAMERA A	CIRCUIT MAL, OF SW	DATA LAMPS OUT	203/1103	BOSX
MAIN CAMERA A	FOCUS, OFF-PEAK	IMAGERY SOFT	151/1101	BOSX
MAIN CAMERA A	FOREIGN PARTICLES	DENS VAR, +D SPOTS	236/1049	AP X
MAIN CAMERA A	QUALITY EVALUATION	FILTER SELECTION	233/1104	BOSX
MAIN CAMERA DRUM	FOG, LIGHT LEAK	MAIN FILM MS	105/1037	AP X
MAIN CAMERA DRUMS	FOG, LIGHT LEAK	MAIN FILM FA	154/1101	AP X
MAIN CAMERA DRUMS	FOG, LIGHT LEAK	MAIN FILM FA	180/1102	AP X
MAIN CAMERA DRUMS	FOG, LIGHT LEAK	MAIN FILM FA	242/1049	AP
MAIN CAMERA DRUMS	FOG, LIGHT LEAK	MAIN FILM MS	006/1024	AP X
MAIN CAMERA DRUMS	FOG, LIGHT LEAK	MAIN FILM MS	197/1044	AP X
MAIN CAMERA DRUMS	FOG, LIGHT LEAK	MAIN FILM MS	095/1035	BOSX
MAIN CAMERA DRUMS	FOG, LIGHT LEAK	MAIN FILM MS	084/1034	AP X
MAIN CAMERA DRUMS	FOG, LIGHT LEAK	MAIN FILM MS	050/1029	AP X
MAIN CAMERA DRUMS	FOG, LIGHT LEAK	MAIN FILM MS	025/1024	AP X
MAIN CAMERA DRUMS	FOG, LIGHT LEAK	MAIN FILM MS	017/1025	AP X
MAIN CAMERA DRUMS	FOG, LIGHT LEAK	MAIN FILM MS	033/1027	AP X
MAIN CAMERA DRUMS	FOG, LIGHT LEAK	MAIN FILM MS	038/1028	AP X
MAIN CAMERA F	CIRCUIT MALF	FIDUCIALS MISSING	190/1045	BOSX
MAIN CAMERA F	CLOCK OUTPUT	TIME WORD ERROR	236/1048	AP X
MAIN CAMERA F	FILM DISTURBANCE	IMAGERY SMEARED	178/1102	BOSX
MAIN CAMERA F	FILM TORN	FAILURE, DRIVE	247/1048	AP
MAIN CAMERA F	METER ROLLER	DENS VAR, +D SPOTS	209/1103	AP X
MAIN CAMERA F	QUALITY EVALUATION	FILTER SELECTION	065/1030	AP X
MAIN CAMERA F	THERMAL DISTORTION	IMAGERY SMEARED	178/1102	BOSX
MAIN CAMERA F	TRACKING ANOMALY	IMAGERY SOFT	237/1048	AP X
MAIN CAMERA FA	CIRCUIT MARGINAL	TIMING LIGHT MALF	183/1102	BOSX

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DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONITO
MAIN CAMERA FA	CIRCUIT MARGINAL	TIMING LIGHT MALF.	220/1047	AP X
MAIN CAMERA FA	CIRCUIT MARGINAL	TIMING LIGHT MALF.	244/1048	AP X
MAIN CAMERA FA	DDSC & SLP COND.	TIME WORD ERROR	163/1101	NPCX
MAIN CAMERA FA	DDSC CIRCUITRY	TIME WORD ERROR	182/1102	AP X
MAIN CAMERA FA	EMULSION BUILDUP	FORMAT EDGE RAGGED	172/1044	AP X
MAIN CAMERA FA	EMULSION BUILDUP	RAILHOL IMAGE LOSS	159/1101	AP X
MAIN CAMERA FA	EMULSION BUILDUP	SCAN TRACE BROKEN	158/1101	AP X
MAIN CAMERA FA	EMULSION BUILDUP	SCAN TRACE BROKEN	179/1102	BOSX
MAIN CAMERA FA	FILM DEPLETION	FAILURE, TRANSPORT	253/1105	BOSX
MAIN CAMERA FA	FILM DISTURBANCE	IMAGERY SMEARED	176/1044	AP X
MAIN CAMERA FA	FILM DISTURBANCE	IMAGERY SMEARED	153/1101	BOSX
MAIN CAMERA FA	FILM DISTURBANCE	IMAGERY SOFT	152/1101	BOSX
MAIN CAMERA FA	FILM DISTURBANCE	IMAGERY SOFT	248/1105	BOS
MAIN CAMERA FA	MAINPLATE BUCKLED	IMAGERY SOFT	215/1047	BOSX
MAIN CAMERA FA	NORMAL FUNCTION	RAILHOLE MISSING	204/1103	AP X
MAIN CAMERA FA	NORMAL FUNCTION	TIME WORD MISSING	161/1101	AP X
MAIN CAMERA FA	NORMAL FUNCTION	TIME WORDS SOFT	207/1103	AP X
MAIN CAMERA M	CIRCUIT DESIGN	SMEAR PULSE LONG	004/1024	AP X
MAIN CAMERA M	CIRCUIT HEATING	TIMING LIGHT MALF.	074/1033	AP X
MAIN CAMERA M	CIRCUIT MARGINAL	INDEX LIGHTS WEAK	001/1024	AP X
MAIN CAMERA M	CIRCUIT MARGINAL	TIMING LIGHT MALF.	036/1028	BOSX
MAIN CAMERA M	CLOCK OUTPUT STORE	TIME WORD ERROR	082/1033	AP X
MAIN CAMERA M	LAMP FAILURE	SOP MARK MISSING	061/1030	BOSX
MAIN CAMERA MA	BANDING	IMAGERY SMEARED	124/1040	BOSX
MAIN CAMERA MA	FILM DISTURBANCE	IMAGERY SMEARED	124/1040	BOSX
MAIN CAMERA MF	BANDING	FAILURE, TENSION	145/1043	BOSX
MAIN CAMERA MF	CIRCUIT MARGINAL	DATA LAMPS VARY	051/1029	AP X
MAIN CAMERA MF	EMULSION BUILDUP	IMAGERY SOFT	196/1046	[redacted] X
MAIN CAMERA MF	FILM OUT OF RAILS	FAILURE, TENSION	145/1043	BOSX
MAIN CAMERA MF	FILTER DISTORTION	DENS VAR, +D LINE	146/1043	BOSX
MAIN CAMERA MF	LAMP FAILURE	SOP MARK MISSING	089/1036	BOSX
MAIN CAMERA MF	NORMAL FUNCTION	SCAN RATE IRREG.	198/1046	AP X
MAIN CAMERA MF	TRACKING ANOMALY	IMAGERY SOFT	045/1028	AP X
MAIN CAMERA MF	TRACKING ANOMALY	IMAGERY SOFT	138/1042	BOSX
MAIN CAMERA MS	CIRCUIT MARGINAL	TIMING LIGHT MALF.	132/1041	AP X
MAIN CAMERA MS	EMULSION BUILDUP	FORMAT EDGE RAGGED	112/1038	AP X
MAIN CAMERA MS	EMULSION BUILDUP	FORMAT EDGE RAGGED	042/1028	AP X
MAIN CAMERA MS	EMULSION BUILDUP	FORMAT EDGE RAGGED	055/1029	BOSX
MAIN CAMERA MS	EMULSION PARTICLES	DENS VAR, -D STRKS	043/1029	AP X
MAIN CAMERA MS	EMULSION PARTICLES	DENS VAR, -D STRKS	123/1040	BOSX
MAIN CAMERA MS	EMULSION PARTICLES	DENS VAR, -D STRKS	097/1035	BOSX
MAIN CAMERA MS	FOCUS SHIFT	IMAGERY SOFT	081/1033	AP X
MAIN CAMERA MS	FOCUS SHIFT	IMAGERY SOFT	262/1049	BOS
MAIN CAMERA MS	LAMP ADJUSTMENT	INDEX MARK BLOOMED	118/1039	BOSX

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DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONITO
MAIN CAMERA MS	MASK MISALIGNED	TIME READOUT PROB.	147/1043	BOSX
MAIN CAMERA MS	MASK, SERIAL NO.	SERIAL NO ILLEG	117/1039	BOSX
MAIN CAMERA MS	PROCESSING	TIME READOUT PROB.	002/1024	MPCX E
MAIN CAMERA MS	SCAN RATE IRREG.	BANDING, MINUS D	194/1045	AP X
MAIN CAMERA MS	THERMAL DISTORTION	FOCUS SHIFT	081/1033	AP X B
MAIN CAMERA MS PG	EMULSION BUILDUP	RAILHOL IMAGE LOSS	193/1045	AP X
MAIN CAMERA MS PG	EMULSION BUILDUP	RAILHOL IMAGE LOSS	148/1043	BOSX
MAIN CAMERA MS PG	LAMP ADJUSTMENT	SCAN TRACE DENSITY	110/1037	BOSX
MAIN CAMERA MS PG	QUALITY VARIATION	RAILHOLE IMAGES	109/1037	BOSX
MAIN CAMERA MS PG	SCAN RATE IRREG.	SCAN TRACE ANOMALY	101/1035	BOSX
MAIN CAMERA S	CAUSE UNKNOWN	TIME WORD ERROR	003/1024	AP X
MAIN CAMERA S	CIRCUIT MARGINAL	TIMING LIGHT MALF.	119/1039	BOSX
MAIN CAMERA S	EMULSION PARTICLES	DENS VAR, -D STRKS	134/1041	BOSX
MAIN CAMERA S	LAMP FAILURE	SOP MARK MISSING	073/1033	BOSX
MAIN CAMERA SA	CIRCUIT MAL, CF SW	DATA LAMPS OUT	025/1026	BOSX
MAIN CAMERA SA	CIRCUIT MALF	SCAN TRACE MISSING	193/1045	AP X
MAIN CAMERA SA	FOCUS, OFF-PEAK	IMAGERY SOFT	040/1029	BOSX
MAIN CAMERA SA	FOREIGN PARTICLES	DENS VAR, -D STRKS	150/1043	BOSX
MAIN CAMERA SA	TRACKING ANOMALY	IMAGERY SOFT	131/1041	BOSX
MAIN CAMERA SA	TRACKING ANOMALY	IMAGERY SOFT	092/1036	AP X B
MAIN CAMERA SF	BANDING	IMAGERY SMEARED	125/1040	BOSX A
MAIN CAMERA SF	FILM DISTURBANCE	IMAGERY SMEARED	125/1040	BOSX A
MAIN CAMERA SF	METER ROLLER-INPUT	DENS VAR, +D SPOTS	126/1040	AP X
MAIN CAMERAS	CAUSE UNKNOWN	IMAGERY SOFT	263/1049	BOS
MAIN FILM	CAUSE UNKNOWN	FOG, LIGHT LEAK	223/1104	AP
MAIN FILM	DRUM ROLLERS	FILM SCRATCHES	252/1105	BOSX
MAIN FILM	FILM DEFORMATION	FILM ABRASION	250/1105	AP X
MAIN FILM	FILM MANUF/PROCESS	DENS VAR, -D SPOTS	260/1105	[redacted]
MAIN FILM	FOREBODY, A SRV	FOG, LIGHT LEAK	033/1027	AP X
MAIN FILM	FOREBODY, A SRV	FOG, LIGHT LEAK	025/1026	AP X
MAIN FILM	FOREBODY, A SRV	FOG, LIGHT LEAK	050/1029	AP X
MAIN FILM	ILLUMINATION LOW	IMAGE DENSITY LOW	031/1026	AP X
MAIN FILM	MASK, SLP	FOG, LIGHT SPILL	206/1103	BOSX A
MAIN FILM	MISSION REPORTS	FILM TITLING	012/1024	AP X
MAIN FILM	ORIGINAL NEGATIVES	QUALITY EVALUATION	014/1024	[redacted] X
MAIN FILM	PROCESS/PRINTING	QUALITY EVALUATION	189/1102	MPC
MAIN FILM	PROCESS/PRINTING	QUALITY EVALUATION	111/1038	MPCX
MAIN FILM	PROCESSING	QUALITY EVALUATION	015/1024	AP X
MAIN FILM	PROCESSING	QUALITY EVALUATION	022/1025	AP X
MAIN FILM	PROCESSING	QUALITY EVALUATION	030/1026	AP X
MAIN FILM	PROCESSING	QUALITY EVALUATION	049/1028	AP X
MAIN FILM	PROCESSING	QUALITY EVALUATION	035/1027	AP X
MAIN FILM	TRACKING ANOMALY	DENS VAR, +D STRKS	251/1105	BOSX
MAIN FILM	TRACKING ANOMALY	FILM DISTORTION	251/1105	BOSX

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DESCRIPTOR		DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONITC
MAIN FILM	S0230	FILM GRAININESS	QUALITY EVALUATION	200/1046	NPC
MAIN FILM	S0230	NORMAL FUNCTION	FOG, SITMARKS	201/1046	AP X
MAIN FILM	S0230	NORMAL FUNCTION	FOG, SITMARKS	264/1049	AP X
MAIN FILM A		CAUSE UNKNOWN	FILM SCRATCHES	217/1047	AP X
MAIN FILM A		CAUSE UNKNOWN	FILM SCRATCHES	181/1102	AP X
MAIN FILM A		CAUSE UNKNOWN	TAKEUP MALFUNCT.	218/1047	BOSX
MAIN FILM A		CONST-TENSN ASSY	FOG, ELECTROSTATIC	239/1048	AP X
MAIN FILM A		DRUM ROLLERS	FILM SCRATCHES	157/1101	AP X
MAIN FILM A		METERING ROLLER	FOG, ELECTROSTATIC	241/1048	AP
MAIN FILM A		NORMAL FUNCTION	DENS VAR, -D STRKS	219/1047	AP X
MAIN FILM A		PNU BUILDUP SLOW	FOG, CORONA	208/1103	AP
MAIN FILM A		TAKEUP MALFUNCT.	FILM CREASES, MULT	218/1047	BOSX
MAIN FILM A	S0121	FILM CURL	IMAGERY SOFT	261/1105	BOS
MAIN FILM F	S0180	PNU MALFUNCTION	FOG, CORONA	234/1104	AP X
MAIN FILM F	S0180	PNU MALFUNCTION	FOG, ELECTROSTATIC	234/1104	AP X
MAIN FILM FA		CAUSE UNKNOWN	EMULSION CRACKS	175/1044	AP X
MAIN FILM FA		CAUSE UNKNOWN	FILM DAMAGE	255/1105	AP X
MAIN FILM FA		CAUSE UNKNOWN	FOG, CORONA	224/1104	AP X
MAIN FILM FA		CIRCUIT MARGINAL	TIME WORD MISSING	174/1044	AP X
MAIN FILM FA		CIRCUIT MARGINAL	TIME WORD MISSING	246/1048	AP X
MAIN FILM FA		FILM DEFORMATION	IMAGERY SOFT	202/1103	BOSX
MAIN FILM FA		FILM LATITUD LIMIT	IMAGE DETAIL LOW	177/1044	NROX
MAIN FILM FA		FILM STRAIN	DENS VAR, +D STRKS	257/1105	BOS
MAIN FILM FA		FOG, CORONA	PNU MALFUNCTION	235/1104	AP X
MAIN FILM FA		FOREBODY, A SRV	FOG, LIGHT LEAK	222/1104	AP
MAIN FILM FA		FOREIGN PARTICLES	FOG, ELECTROSTATIC	256/1105	BOSX
MAIN FILM FA		MAIN CAMERA DRUMS	FOG, LIGHT LEAK	242/1048	AP
MAIN FILM FA		MAIN CAMERA DRUMS	FOG, LIGHT LEAK	180/1102	AP X
MAIN FILM FA		MAIN CAMERA DRUMS	FOG, LIGHT LEAK	154/1101	AP X
MAIN FILM FA		PRE-PROCESSING	FOG, ELECTROSTATIC	241/1048	AP
MAIN FILM FA		PRE-PROCESSING	FOG, ELECTROSTATIC	258/1105	AP X
MAIN FILM FA		SRV/FAIR.INTER.	FOG, LIGHT LEAK	180/1102	AP X
MAIN FILM FA		STEERING ROLLERS	FOG, LIGHT SPILL	259/1105	AP X
MAIN FILM FA		THERMAL DISTORTION	IMAGERY SOFT	152/1101	BOSX
MAIN FILM FA		TRACKING ANOMALY	IMAGERY SOFT	202/1103	BOSX
MAIN FILM M		CAUSE UNKNOWN	FILM SCRATCHES	078/1033	AP X
MAIN FILM M		CAUSE UNKNOWN	METAL CHIP	079/1033	AP X
MAIN FILM M		FILM MANUFACTURE	DENS VAR, -D STRKS	098/1035	EK X
MAIN FILM M		PNU EXHAUSTION	FOG, CORONA	083/1034	AP X
MAIN FILM M		PRESSURE MARKING	FOG, ELECTROSTATIC	099/1035	BOSX
MAIN FILM M		SPLICE	FILM CREASE	115/1038	AP X
MAIN FILM M		SPLICE	FILM CREASE	047/1028	EK X
MAIN FILM M		SPLICE	FILM CREASE	024/1026	EK X
MAIN FILM M		SPLICE	FILM CREASE	054/1029	EK X

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DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONITR
MAIN FILM M BASE	CAUSE UNKNOWN	FILM SCRATCHES	077/1033	AP X
MAIN FILM MF	FILM ABRASION	DENS VAR, -D LINE	121/1039	AP X
MAIN FILM MS	ATMOSPHERICS	IMAGE DENSITY LOW	048/1028	EK X
MAIN FILM MS	BOOT, HOR CAMERA	FOG, LIGHT LEAK	105/1037	AP X
MAIN FILM MS	CAUSE UNKNOWN	FILM SCRATCHES	041/1028	BOSX
MAIN FILM MS	FOREBODY, A SRV	FOG, LIGHT LEAK	017/1025	AP X
MAIN FILM MS	FOREBODY, A SRV	FOG, LIGHT LEAK	006/1024	AP X
MAIN FILM MS	MAIN CAMERA DRUM	FOG, LIGHT LEAK	105/1037	AP X
MAIN FILM MS	MAIN CAMERA DRUMS	FOG, LIGHT LEAK	095/1035	BOSX
MAIN FILM MS	MAIN CAMERA DRUMS	FOG, LIGHT LEAK	006/1024	AP X
MAIN FILM MS	MAIN CAMERA DRUMS	FOG, LIGHT LEAK	017/1025	AP X
MAIN FILM MS	MAIN CAMERA DRUMS	FOG, LIGHT LEAK	025/1026	AP X
MAIN FILM MS	MAIN CAMERA DRUMS	FOG, LIGHT LEAK	038/1028	AP X
MAIN FILM MS	MAIN CAMERA DRUMS	FOG, LIGHT LEAK	033/1027	AP X
MAIN FILM MS	MAIN CAMERA DRUMS	FOG, LIGHT LEAK	084/1034	AP X
MAIN FILM MS	MAIN CAMERA DRUMS	FOG, LIGHT LEAK	050/1029	AP X
MAIN FILM MS	MAIN CAMERA DRUMS	FOG, LIGHT LEAK	197/1046	AP X
MAIN FILM MS	POLISHED RAILS	FILM SCRATCHES	103/1037	AP X
MAIN FILM MS	PRE-PROCESSING	FILM CURL	199/1046	[redacted] X
MAIN FILM MS	PRE-PROCESSING	FOG, ELECTROSTATIC	052/1029	[redacted] X
MAIN FILM MS	PRE-PROCESSING	FOG, ELECTROSTATIC	039/1028	[redacted] X
MAIN FILM MS	PRE-PROCESSING	FOG, ELECTROSTATIC	007/1024	[redacted] X
MAIN FILM MS	PROCESSING	FOG, B+F HIGH	102/1037	[redacted] X
MAIN FILM MS	RAILHOLE LAMPS	FOG, LIGHT SPILL	104/1037	BOSX
MAIN FILM MS	RECOVERY CAPSULE 3	BATTERY LEAKAGE	100/1035	AP X
MAIN FILM MS	SCAN ROLLER, RAIL	FILM SCRATCHES	008/1024	BOSX
MAIN FILM MS	SCAN ROLLER, RAIL	FILM SCRATCHES	019/1025	BOSX
MAIN FILM MS	SRV/FAIR.INTER.	FOG, LIGHT LEAK	197/1046	AP X
MAIN FILM S	BOOT, MAINS	FOG, LIGHT LEAK	038/1028	AP X
MAIN FILM S	CAUSE UNKNOWN	DENS VAR, +D STRKS	108/1037	EK X
MAIN FILM S	CAUSE UNKNOWN	DENS VAR, -D STRKS	108/1037	EK X
MAIN FILM S	FAILURE, TAKEUP B	RECOVERY LACKING	066/1031	AP X
MAIN FILM S	FILM MANUFACTURE	DENS VAR, +D LINE	114/1039	EK X
MAIN FILM SA	CAUSE UNKNOWN	FILM SCRATCHES	093/1036	AP X
MAIN FILM SA	CAUSE UNKNOWN	FILM SCRATCHES	067/1031	AP X
MAIN FILM SA	FILM MANUFACTURE	DENS VAR, -D SPOTS	046/1028	EK X
MAIN FILM SA	FILM MANUFACTURE	FILM SCRATCHES	063/1030	EK X
MAIN FILM SA	FOREIGN PARTICLE	DENS VAR, -D SPOT	140/1042	AP X
MAIN FILM SA	PRE-PROCESSING	FILM SCRATCHES	137/1042	BOSX
MAIN FILM SF	PRE-PROCESSING	FOG, ELECTROSTATIC	122/1040	[redacted] X
MAINPLATE BUCKLED	IMAGERY SET	MAIN CAMERA FA	215/1047	BOSX
MASK MISALIGNED	TIME READOUT PROB.	MAIN CAMERA MS	147/1042	BOSX
MASK, SERIAL NO.	SERIAL NUMBERS	MAIN CAMERA MS	117/1039	BOSX
MASK, SLP	FOG, LIGHT SPILL	MAIN FILM	206/1103	BOSX

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DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONITO
MASKING DEFECT	RESEAU EDGE IMAGED	INDEX CAMERA A	128/1040	BOSX
MASKING IMPROPER	CORREL. LAMP IMAGE	INDEX CAMERA AB	107/1037	BOSX
MASKING IMPROPER	RESEAU EDGE IMAGED	INDEX CAMERA A	091/1036	BOSX
MASKING IMPROPER	RESEAU EDGE IMAGED	INDEX CAMERA A	059/1029	BOSX
METAL CHIP	MAIN FILM M	CAUSE UNKNOWN	079/1033	AP X
METER ROLLER	DENS VAR, +D SPOTS	MAIN CAMERA F	209/1103	AP X
METER ROLLER-INPUT	DENS VAR, +D SPOTS	MAIN CAMERA SF	126/1040	AP X
METERING MALF	S/I PROGRAMMER	STEPPER SWITCH	034/1027	AP X B
METERING ROLLER	FOG, CORONA	STELLAR FILM DISIC	168/1101	NY
METERING ROLLER	FOG, CORONA	STELLAR FILM DISIC	196/1102	NY X A
METERING ROLLER	FOG, ELECTROSTATIC	MAIN FILM A	241/1049	AP
METERING UNEVEN	INDEX CAMERA	NORMAL FUNCTION	141/1042	AP X
MISSION REPORTS	FILM TITLING	DATA INCOMPLETE	013/1024	AP X
MISSION REPORTS	FILM TITLING	MAIN FILM	012/1024	AP X
MISSION REPORTS	QUALITY EVALUATION	DATA NON-CORREL.	064/1030	[redacted] X
NORMAL FUNCTION	DENS VAR, -D STRKS	MAIN FILM A	219/1047	AP X
NORMAL FUNCTION	EXPOSURE, OVER	STELLAR FILM DISIC	232/1104	AP X
NORMAL FUNCTION	FOG, SITMARKS	MAIN FILM SO230	201/1046	AP X
NORMAL FUNCTION	FOG, SITMARKS	MAIN FILM SO230	264/1049	AP X
NORMAL FUNCTION	FRAME UNEXPOSED	S/I CAMERA A	142/1042	AP X
NORMAL FUNCTION	METERING UNEVEN	INDEX CAMERA	141/1042	AP X
NORMAL FUNCTION	PAILHOLE MISSING	MAIN CAMERA FA	204/1103	AP X
NORMAL FUNCTION	SCAN RATE IRREG.	MAIN CAMERA MF	198/1046	AP X
NORMAL FUNCTION	TIME WORD MISSING	MAIN CAMERA FA	161/1101	AP X
NORMAL FUNCTION	TIME WORDS SOFT	MAIN CAMERA FA	207/1103	AP X
ORIGINAL NEGATIVES	QUALITY EVALUATION	MAIN FILM	014/1024	[redacted] X
PATIO PIN SEAL	DENS VAR, +D STRKS	STELLAR FILM DISIC	229/1104	AP X
PATIO PIN SEAL	FOG, LIGHT LEAK	STELLAR FILM DISIC	229/1104	AP X
PLATEN LIFT CAM	EXPOSURE MULTIPLE	S/I CAMERAS AB	240/1048	BOSX
PLATEN MALFUNCTION	FOCUS, SOFT	HOR CAMERA M	016/1025	BOSX
PMU BUILDUP SLOW	FOG, CORONA	MAIN FILM A	208/1103	AP
PMU EXHAUSTION	FOG, CORONA	MAIN FILM M	083/1034	AP X
PMU MALFUNCTION	FOG, CORONA	MAIN FILM F SO180	234/1104	AP X
PMU MALFUNCTION	FOG, ELECTROSTATIC	MAIN FILM F SO180	234/1104	AP X
PMU MALFUNCTION	MAIN FILM FA	FOG, CORONA	235/1104	AP X
POLISHED RAILS	FILM SCRATCHES	MAIN FILM MS	103/1037	AP X
PRE-PROCESSING	FILM CURL	MAIN FILM MS	199/1046	[redacted] X
PRE-PROCESSING	FILM SCRATCHES	MAIN FILM SA	137/1042	BOSX
PRE-PROCESSING	FOG, ELECTROSTATIC	INDEX FILM DISIC	213/1103	AP X
PRE-PROCESSING	FOG, ELECTROSTATIC	MAIN FILM FA	241/1049	AP
PRE-PROCESSING	FOG, ELECTROSTATIC	MAIN FILM FA	258/1105	AP X
PRE-PROCESSING	FOG, ELECTROSTATIC	MAIN FILM MS	007/1024	[redacted] X
PRE-PROCESSING	FOG, ELECTROSTATIC	MAIN FILM MS	052/1029	[redacted] X
PRE-PROCESSING	FOG, ELECTROSTATIC	MAIN FILM MS	039/1028	[redacted] X

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DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONITOR
PRE-PROCESSING	FOG, ELECTROSTATIC	MAIN FILM SF	122/1040	[redacted]
PRESSURE MARKING	FOG, ELECTROSTATIC	MAIN FILM M	099/1035	BOSX
PRESSURE PAD	FOGGED FORMAT	STELLAR FILM DISIC	165/1101	NY X
PROCESS/PRINTING	QUALITY EVALUATION	MAIN FILM	111/1038	NPCX
PROCESS/PRINTING	QUALITY EVALUATION	MAIN FILM	189/1102	NPC
PROCESSING	EDGE MARKS	STELLAR FILM B	130/1040	[redacted]X
PROCESSING	FILM CREASE	INDEX FILM B	021/1025	[redacted]X
PROCESSING	FILM SCRATCHES	INDEX FILM A	062/1030	[redacted]X
PROCESSING	FOG, B+F HIGH	MAIN FILM MS	102/1037	[redacted]X
PROCESSING	FOG, B+F HIGH	STELLAR FILM AB	090/1036	[redacted]X
PROCESSING	QUALITY EVALUATION	MAIN FILM	015/1024	AP X
PROCESSING	QUALITY EVALUATION	MAIN FILM	022/1025	AP X
PROCESSING	QUALITY EVALUATION	MAIN FILM	030/1026	AP X
PROCESSING	QUALITY EVALUATION	MAIN FILM	049/1028	AP X
PROCESSING	QUALITY EVALUATION	MAIN FILM	035/1027	AP X
PROCESSING	SPLICE SEPARATION	STELLAR FILM	011/1024	[redacted]X
PROCESSING	TIME READOUT PROB.	MAIN CAMERA MS	002/1024	NPCX
QUALITY EVALUATION	DATA NON-CORREL.	MISSION REPORTS	064/1030	[redacted]X
QUALITY EVALUATION	FILTER SELECTION	MAIN CAMERA A	233/1104	BOSX
QUALITY EVALUATION	FILTER SELECTION	MAIN CAMERA F	065/1030	AP X
QUALITY EVALUATION	MAIN FILM	ORIGINAL NEGATIVES	014/1024	[redacted]X
QUALITY EVALUATION	MAIN FILM	PROCESS/PRINTING	189/1102	NPC
QUALITY EVALUATION	MAIN FILM	PROCESS/PRINTING	111/1038	NPCX
QUALITY EVALUATION	MAIN FILM	PROCESSING	015/1024	AP X
QUALITY EVALUATION	MAIN FILM	PROCESSING	030/1026	AP X
QUALITY EVALUATION	MAIN FILM	PROCESSING	022/1025	AP X
QUALITY EVALUATION	MAIN FILM	PROCESSING	049/1028	AP X
QUALITY EVALUATION	MAIN FILM	PROCESSING	035/1027	AP X
QUALITY EVALUATION	MAIN FILM S0230	FILM GRAININESS	200/1046	NPC
QUALITY VARIATION	PAILHOLE IMAGES	MAIN CAMERA MS PG	109/1037	BOSX
RADIATION	FOG, B+F HIGH	S/I FILM AB	136/1041	AP X
RAILHOL IMAGE LOSS	MAIN CAMERA FA	EMULSION BUILDUP	159/1101	AP X
RAILHOL IMAGE LOSS	MAIN CAMERA MS PG	EMULSION BUILDUP	148/1043	BOSX
RAILHOL IMAGE LOSS	MAIN CAMERA MS PG	EMULSION BUILDUP	193/1045	AP X
RAILHOLE IMAGES	MAIN CAMERA MS PG	QUALITY VARIATION	109/1037	BOSX
RAILHOLE LAMPS	FOG, LIGHT SPILL	MAIN FILM MS	104/1037	BOSX
RAILHOLE MISSING	MAIN CAMERA FA	NORMAL FUNCTION	204/1103	AP X
RECOVERY CAPSULE R	BATTERY LEAKAGE	MAIN FILM MS	100/1035	AP X
RECOVERY LACKING	MAIN FILM S	FAILURE, TAKEUP B	066/1031	AP X
RESEAU EDGE IMAGED	INDEX CAMERA A	MASKING DEFECT	128/1040	BOSX
RESEAU EDGE IMAGED	INDEX CAMERA A	MASKING IMPROPER	091/1036	BOSX
RESEAU EDGE IMAGED	INDEX CAMERA A	MASKING IMPROPER	059/1029	BOSX
S/I CAMERA A	NORMAL FUNCTION	FRAME UNEXPOSED	142/1042	AP X
S/I CAMERA B	FAILURE, PARTIAL	CIRCUIT MALF	058/1029	BOSX

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DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONIT
S/I CAMERAS AB	COMMAND SHIFT	EXPOSURE, DOUBLE	106/1037	BOSX
S/I CAMERAS AB	COMMAND SHIFT	EXPOSURE, DOUBLE	113/1038	BOSX
S/I CAMERAS AB	PLATEN LIFT CAM	EXPOSURE MULTIPLE	240/1048	BOSX
S/I FILM AB	RADIATION	FOG, B+F HIGH	136/1041	AP X
S/I FILM ENDS B	CIRCUIT DESIGN	FRAMES MISSING	086/1034	AP X
S/I FILM ENDS B	CIRCUIT DESIGN	FRAMES MISSING	090/1033	AP X
S/I FILM ENDS B	CIRCUIT DESIGN	FRAMES MISSING	071/1031	AP X
S/I PROGRAMMER	STEPPER SWITCH	METERING MALF	034/1027	AP X
SCAN RATE IRREG.	BANDING, MINUS D	MAIN CAMERA MS	194/1045	AP X
SCAN RATE IRREG.	MAIN CAMERA MF	NORMAL FUNCTION	198/1046	AP X
SCAN RATE IRREG.	SCAN TRACE ANOMALY	MAIN CAMERA MS PG	101/1035	BOSX
SCAN ROLLER, RAIL	FILM SCRATCHES	MAIN FILM MS	018/1025	BOSX
SCAN ROLLER, RAIL	FILM SCRATCHES	MAIN FILM MS	008/1024	BOSX
SCAN TRACE ANOMALY	MAIN CAMERA MS PG	SCAN RATE IRREG,	101/1035	BOSX
SCAN TRACE BROKEN	MAIN CAMERA FA	EMULSION BUILDUP	158/1101	AP X
SCAN TRACE BROKEN	MAIN CAMERA FA	EMULSION BUILDUP	179/1102	BOSX
SCAN TRACE DENSITY	MAIN CAMERA MS PG	LAMP ADJUSTMENT	110/1037	BOSX
SCAN TRACE MISSING	MAIN CAMERA SA	CIRCUIT MALF	193/1045	AP X
SERIAL NO ILLEG	MAIN CAMERA MS	MASK, SERIAL NO.	117/1039	BOSX
SHUTTER MALFUNCT.	EXPOSURE MULTIPLE	INDEX FILM DISIC	188/1102	NY X
SHUTTER MALFUNCT.	HDR CAMERA	CAUSE UNKNOWN	133/1041	BOSX
SHUTTER MALFUNCT.	HDR CAMERA	FAILURE, PARTIAL	221/1104	AP X
SHUTTER MALFUNCT.	INDEX CAMERA B	CAUSE UNKNOWN	044/1028	AP X
SHUTTER MALFUNCT.	STELLAR CAMERA A	INTERNAL FRICTION	028/1026	AP X
SHUTTER MALFUNCT.	STELLAR CAMERA A	INTERNAL FRICTION	057/1029	AP X
SHUTTER MALFUNCT.	STELLAR CAMERA B	CAUSE UNKNOWN	195/1045	BOSX
SHUTTER MALFUNCT.	STELLAR CAMERA B	CAUSE UNKNOWN	216/1047	BOSX
SHUTTER MALFUNCT.	STELLAR CAMERA B	INTERNAL FRICTION	070/1031	BOSX
SHUTTER MALFUNCT.	STELLAR CAMERA B	INTERNAL FRICTION	076/1032	BOSX
SKEW BEADS	FOG, ELECTROSTATIC	STELLAR FILM DISIC	210/1103	AP X
SKEW BEADS	FOG, ELECTROSTATIC	STELLAR FILM DISIC	226/1104	AP X
SKEW BEADS	FOG, ELECTROSTATIC	STELLAR FILM DISIC	185/1102	AP X
SKEW BEADS	FOG, ELECTROSTATIC	STELLAR FILM DISIC	170/1101	NY X
SLP MOUNTING	TIME WORDS SOFT	INDEX FILM DISIC	228/1104	NY
SLP MOUNTING	TIME WORDS SOFT	INDEX FILM DISIC	214/1103	AP X
SLP MOUNTING	TIME WORDS SOFT	STELLAR FILM DISIC	214/1103	AP X
SMEAR PULSE LONG	MAIN CAMERA M	CIRCUIT DESIGN	004/1024	AP X
SOP MARK MISSING	MAIN CAMERA M	LAMP FAILURE	061/1030	BOSX
SOP MARK MISSING	MAIN CAMERA MF	LAMP FAILURE	089/1036	BOSX
SOP MARK MISSING	MAIN CAMERA S	LAMP FAILURE	073/1033	BOSX
SPLICE	FILM GREASE	MAIN FILM M	054/1029	EK X
SPLICE	FILM GREASE	MAIN FILM M	024/1026	EK X
SPLICE	FILM GREASE	MAIN FILM M	047/1028	EK X
SPLICE	FILM GREASE	MAIN FILM M	115/1038	AP X

ALPHABETICAL INDEX TO ACTION ITEMS

DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONITO
SPLICE SEPARATION	STELLAR FILM	PROCESSING	011/1024	[redacted] X
SRV/FAIR.INTER.	FOG, LIGHT LEAK	MAIN FILM FA	180/1102	AP X
SRV/FAIR.INTER.	FOG, LIGHT LEAK	MAIN FILM MS	197/1046	AP X
STEERING ROLLERS	FOG, LIGHT SPILL	MAIN FILM FA	259/1105	AP X
STELLAR CAMERA A	CAUSE UNKNOWN	FOREIGN PART.IMAGE	009/1024	AP X
STELLAR CAMERA A	CAUSE UNKNOWN	FOREIGN PART.IMAGE	056/1029	AP X
STELLAR CAMERA A	DENS VAR, -D SPOTS	FOREIGN PART.IMAGE	135/1041	BOSX
STELLAR CAMERA A	INTERNAL FRICTION	SHUTTER MALFUNCT.	057/1029	AP X
STELLAR CAMERA A	INTERNAL FRICTION	SHUTTER MALFUNCT.	028/1026	AP X
STELLAR CAMERA A	LAMP ADJUSTMENT	FIDUCIALS UNREAD.	144/1042	BOSX
STELLAR CAMERA AB	ATTITUDE, VEHICLE	IMAGERY SMEARED	019/1025	AP X
STELLAR CAMERA AB	ATTITUDE, VEHICLE	IMAGERY SMEARED	010/1024	AP X
STELLAR CAMERA AB	DENS VAR, -D SPOT	FOREIGN PART.IMAGE	096/1035	BOSX
STELLAR CAMERA B	BAFFLE DESIGN	FOG, LIGHT FLARE	072/1031	AP X
STELLAR CAMERA B	CAUSE UNKNOWN	EMULSION CRACKS	195/1045	BOSX
STELLAR CAMERA B	CAUSE UNKNOWN	SHUTTER MALFUNCT.	195/1045	BOSX
STELLAR CAMERA B	CAUSE UNKNOWN	SHUTTER MALFUNCT.	216/1047	BOSX
STELLAR CAMERA B	FOREIGN PARTICLE	DENS VAR, -D SPOT	149/1043	AP X
STELLAR CAMERA B	INTERNAL FRICTION	SHUTTER MALFUNCT.	076/1033	BOSX
STELLAR CAMERA B	INTERNAL FRICTION	SHUTTER MALFUNCT.	070/1031	BOSX
STELLAR FILM	PROCESSING	SPLICE SEPARATION	011/1024	[redacted] X
STELLAR FILM A	CAUSE UNKNOWN	FILM SCRATCHES	020/1025	AP X
STELLAR FILM A	CIRCUIT MALF	FRAMES MISSING	192/1045	BOSX
STELLAR FILM AB	PROCESSING	FOG, B+F HIGH	090/1034	[redacted] X
STELLAR FILM B	CAUSE UNKNOWN	FOG, EDGE	129/1040	AP X
STELLAR FILM B	PROCESSING	EDGE MARKS	130/1040	[redacted] X
STELLAR FILM DISIC	BAFFLE DESIGN	FOG, LIGHT FLARE	167/1101	AP X
STELLAR FILM DISIC	BAFFLE DESIGN	FOG, LIGHT FLARE	184/1102	AP X
STELLAR FILM DISIC	CAUSE UNKNOWN	FOG, CORONA	212/1103	AP X
STELLAR FILM DISIC	CAUSE UNKNOWN	FOG, CORONA	230/1104	AP X
STELLAR FILM DISIC	CAUSE UNKNOWN	FOG, ELECTROSTATIC	230/1104	AP X
STELLAR FILM DISIC	CAUSE UNKNOWN	FOG, ELECTROSTATIC	212/1103	AP X
STELLAR FILM DISIC	CAUSE UNKNOWN	FOG, ELECTROSTATIC	186/1102	NY X
STELLAR FILM DISIC	CAUSE UNKNOWN	FOG, ELECTROSTATIC	168/1101	NY
STELLAR FILM DISIC	FOREIGN PARTICLES	DENS VAR, -D SPOTS	169/1101	NY X
STELLAR FILM DISIC	FOREIGN PARTICLES	DENS VAR, -D SPOTS	211/1103	AP X
STELLAR FILM DISIC	FOREIGN PARTICLES	DENS VAR, -D SPOTS	227/1104	AP X
STELLAR FILM DISIC	FOREIGN PARTICLES	DENS VAR, -D SPOTS	187/1102	AP X
STELLAR FILM DISIC	INDEX LENS MOUNT	FOG, LIGHT LEAK	166/1101	NY X
STELLAR FILM DISIC	METERING ROLLER	FOG, CORONA	168/1101	NY
STELLAR FILM DISIC	METERING ROLLER	FOG, CORONA	186/1102	NY X
STELLAR FILM DISIC	NORMAL FUNCTION	EXPOSURE, OVER	232/1104	AP X
STELLAR FILM DISIC	PATIO PIN SEAL	DENS VAR, +D STRKS	229/1104	AP X
STELLAR FILM DISIC	PATIO PIN SEAL	FOG, LIGHT LEAK	229/1104	AP X

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DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONITOR
STELLAR FILM DISIC	PRESSURE PAD	FOGGED FORMAT	165/1101	NY X
STELLAR FILM DISIC	SKEW BEADS	FOG, ELECTROSTATIC	226/1104	AP X
STELLAR FILM DISIC	SKEW BEADS	FOG, ELECTROSTATIC	185/1102	AP X
STELLAR FILM DISIC	SKEW BEADS	FOG, ELECTROSTATIC	170/1101	NY X
STELLAR FILM DISIC	SKEW BEADS	FOG, ELECTROSTATIC	210/1103	AP X
STELLAR FILM DISIC	SLP MOUNTING	TIME WORDS SOFT	214/1103	AP X
STEPPER SWITCH	METERING MALF	S/I PROGRAMMER	034/1027	AP X BC
TAKEUP MALFUNCT.	FILM CREASES, MULT	MAIN FILM A	218/1047	BOSX AP
TAKEUP MALFUNCT.	MAIN FILM A	CAUSE UNKNOWN	218/1047	BOSX AP
THERMAL DISTORTION	FOCUS SHIFT	MAIN CAMERA	262/1049	BOS AP
THERMAL DISTORTION	FOCUS SHIFT	MAIN CAMERA MS	081/1033	AP X BC
THERMAL DISTORTION	IMAGERY SMEARED	MAIN CAMERA F	178/1102	BOSX AP
THERMAL DISTORTION	IMAGERY SOFT	MAIN FILM FA	152/1101	BOSX
THERMAL DISTORTION	VEILED IMAGES	HOR CAMERA STBD	120/1039	AP X
THERMAL DISTORTION	VEILED IMAGES	HOR CAMERA STBD	173/1044	AP X
THERMAL DISTORTION	VEILED IMAGES	HOR CAMERA STBD	191/1045	AP X
THERMAL DISTORTION	VEILED IMAGES	HOR CAMERA STBD.	085/1034	AP X
THERMAL DISTORTION	VEILED IMAGES	HOR CAMERA STBD	075/1033	AP X
THERMAL DISTORTION	VEILED IMAGES	HOR CAMERA STBD	037/1029	NPCX AP
THERMAL DISTORTION	VEILED IMAGES	HOR CAMERA STBD	026/1026	AP X
THERMAL DISTORTION	VEILED IMAGES	HOR CAMERA STBD	069/1031	AP X
THERMAL DISTORTION	VEILED IMAGES	HOR CAMERA STBD	060/1030	AP X
THERMAL DISTORTION	VEILED IMAGES	HOR CAMERA STBD	053/1029	AP X
THERMAL DISTORTION	VEILED IMAGES	HOR CAMERA STBD	005/1024	AP X
THERMAL DISTORTION	VEILED IMAGES	HOR CAMERA STBD SA	116/1038	AP X
THERMAL TAPE	FOREIGN OBJ. IMAGE	INDEX CAMERA B	243/1048	AP X
TIME READOUT PROB.	MAIN CAMERA MS	MASK MISALIGNED	147/1043	BOSX
TIME READOUT PROB.	MAIN CAMERA MS	PROCESSING	002/1024	NPCX BC
TIME WORD ERROR	MAIN CAMERA F	CLOCK OUTPUT	236/1048	AP X
TIME WORD ERROR	MAIN CAMERA FA	DDSC & SLP COND.	163/1101	NPCX AP
TIME WORD ERROR	MAIN CAMERA FA	DDSC CIRCUITRY	182/1102	AP X
TIME WORD ERROR	MAIN CAMERA M	CLOCK OUTPUT STORE	082/1033	AP X
TIME WORD ERROR	MAIN CAMERA S	CAUSE UNKNOWN	003/1024	AP X
TIME WORD MISSING	MAIN CAMERA FA	NORMAL FUNCTION	161/1101	AP X
TIME WORD MISSING	MAIN FILM FA	CIRCUIT MARGINAL	246/1048	AP X
TIME WORD MISSING	MAIN FILM FA	CIRCUIT MARGINAL	174/1044	AP X
TIME WORDS SOFT	INDEX FILM DISIC	SLP MOUNTING	228/1104	NY
TIME WORDS SOFT	INDEX FILM DISIC	SLP MOUNTING	214/1103	AP X
TIME WORDS SOFT	MAIN CAMERA FA	NORMAL FUNCTION	207/1103	AP X
TIME WORDS SOFT	STELLAR FILM DISIC	SLP MOUNTING	214/1103	AP X
TIMER SETTING	EXPOSURE LONG	INDEX FILM DISIC	164/1101	AP X
TIMING LIGHT MALF	MAIN CAMERA FA	CIRCUIT MARGINAL	183/1102	BOSX
TIMING LIGHT MALF.	MAIN CAMERA FA	CIRCUIT MARGINAL	220/1047	AP X
TIMING LIGHT MALF.	MAIN CAMERA FA	CIRCUIT MARGINAL	244/1048	AP X

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ALPHABETICAL INDEX TO ACTION ITEMS

DESCRIPTOR	DESCRIPTOR	DESCRIPTOR	ITEM NO.	MONITO
TIMING LIGHT MALF.	MAIN CAMERA M	CIRCUIT HEATING	C74/1033	AP X
TIMING LIGHT MALF.	MAIN CAMERA M	CIRCUIT MARGINAL	036/1029	BOSX A
TIMING LIGHT MALF.	MAIN CAMERA MS	CIRCUIT MARGINAL	132/1041	AP X
TIMING LIGHT MALF.	MAIN CAMERA S	CIRCUIT MARGINAL	119/1039	BOSX
TRACKING ANOMALY	DENS VAR, +D STRKS	MAIN FILM	251/1105	BOSX
TRACKING ANOMALY	FILM DISTORTION	MAIN FILM	251/1105	BOSX
TRACKING ANOMALY	IMAGERY SOFT	MAIN CAMERA F	237/1048	AP X
TRACKING ANOMALY	IMAGERY SOFT	MAIN CAMERA MF	138/1042	BOSX A
TRACKING ANOMALY	IMAGERY SOFT	MAIN CAMERA MF	C45/1028	AP X B
TRACKING ANOMALY	IMAGERY SOFT	MAIN CAMERA SA	131/1041	BOSX
TRACKING ANOMALY	IMAGERY SOFT	MAIN CAMERA SA	C92/1036	AP X B
TRACKING ANOMALY	IMAGERY SOFT	MAIN FILM FA	202/1103	BOSX
VEILED IMAGES	HOR CAMERA PORT	CAUSE UNKNOWN	254/1105	AP X
VEILED IMAGES	HOR CAMERA PORT	CAUSE UNKNOWN	265/1049	AP X
VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	005/1024	AP X
VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	191/1045	AP X
VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	173/1044	AP X
VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	120/1039	AP X
VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	C37/1028	NPO X A
VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	C75/1033	AP X
VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	C95/1024	AP X
VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	C53/1029	AP X
VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	C60/1030	AP X
VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	069/1031	AP X
VEILED IMAGES	HOR CAMERA STBD	THERMAL DISTORTION	C26/1025	AP X
VEILED IMAGES	HOR CAMERA STBD SA	THERMAL DISTORTION	116/1038	AP X

~~TOP SECRET~~ C [redacted]

Date: 2-21-67
Rev A: 10-30-68

PEIR ACTION ITEM 099/1035

SUBJECT: 1)Fog, electrostatic 2)Main film M 3)Pressure marking

MONITOR: BOS [redacted]

PROBLEM: Small crescent-shaped fog patterns were observed in intermittent groups adjacent to the rail hole images on the data block edge of the master film. The distance between the patterns is approximately one centimeter and parallel to the rail holes. Images were random and did not occur after the middle of the "A" mission. These images also appeared randomly through the H.O. margins. Images were present with and without nodal traces (of this PG system) and did not interfere with the rail hole images.

CAUSE: Unknown. These images were not observed in the ground test material. The condition is probably due to pressure marking.

ACTION: None indicated. Review test material to verify lack of test history.

DISPOSITION: 10-30-68. This is a one-time only anomaly, with the precise cause remaining undetermined. Similar markins, associated with film tracking, have been observed in (Boston) test. Recommend this item be closed. [redacted] memo of 10-22-68); ITEM CLOSED

[redacted]

Date: 2-23-67
Rev A: 1-20-69

PEIR ACTION ITEM 111/1038

SUBJECT: 1) Quality evaluation 2) Main film 3) Process/printing

MONITOR: NPC

PROBLEM: AFSPPF uses a three contrast level duplicating system whereas [redacted] uses a single level system. It is noted that approximately 15 percent of mission 1038-2 (processed by AFSPPF) was duplicated using SO-233 which produces the lowest contrast results.

CAUSE: The use of a multi-level contrast duplication may have unknown effects on information content.

ACTION: The PET requests that a detailed report of the duplication of mission 1038 be prepared by NPIC for the next PET meeting.

DISPOSITION: 1-20-69 ITEM CLOSED

2-24-67
Rev. A: 1-21-69

PEIR ACTION ITEM 115/1038

SUBJECT: 1)Crease 2)Main film M 3)Splice

MONITOR: A/P [redacted]

PROBLEM: A crease in the material was noted beginning on frame 139, pass D-38, of the forward record and continues through frame 141 where it leaves the material at the time track edge. It extends about one-quarter inch into the format. Frame 142 of the same pass contains a manufacturing splice.

CAUSE: A defect similar to this has been noted on at least one previous mission. It is explained by a mistracking in the camera system that results from a tension transient caused by splice adhesive interfering with the removal of film from the supply spool.

ACTION: Stay abreast of changes in splice manufacturing capability.

DISPOSITION: Among the 14 systems for which action items have been recorded, this is the fourth instance of a crease occurring in conjunction with a splice. See items 024, 047, and 054. All have occurred on the master film, however, it appears that the mechanism of the anomaly has not been identical in all cases. Recorded data about the creases is not sufficient for a complete evaluation. It appears desirable to keep this item open for collection and evaluation of data on all four creases. [redacted]

1-21-69. Details on all four anomalies were assembled in May 1967. Three of the cases were consistent with the PET explanation in that they started on the take-up side of the splice at distances ranging from 60 to 228 inches. The anomaly noted under item 047/1028 is similar in appearance but is located on the supply side of a splice at a distance of 80 inches. This condition does not seem to be consistent with the explanation. Since film manufacture seemed to be a possible cause of the problem, detailed data on the creases was furnished to EK. No specific cause has been reported by EK. However, a repetition of this anomaly has not been detected. Therefore, it is recommended that this item be closed. [redacted]
ITEM CLOSED

Date : 11-23-67
Rev A : 10-30-68
Rev B : 12-12-68

PEIR ACTION ITEM 151/1101

SUBJECT: 1) ~~Soft imagery~~ Imagery soft 2) Main camera A 3) ~~Off-peak focus~~ Focus, off-peak

MONITOR: BOS [redacted]

ANOMALY: All the photographic imagery from the aft pan camera was degraded. The better CORN target readings indicated that the aft-looking camera produced resolution of approximately 12 feet intrack and 16 feet crosstrack, as opposed to 6/10 feet for the forward-looking camera.

CAUSE: The aft camera was not correctly focused. Computed analysis of lens fabrication data showed a back focus shift of 1/1000 less than anticipated. In addition, an ambient versus altitude test has shown an added shift of approximately one-half of a thousandth at the focal plane. The forward camera was focused in a position that permitted the above changes without going out of focus.

ACTION: After final test and acceptance of each lens, a computer analysis of the actual fabrication data will be made. Variation from the nominal will also be confirmed in the lens-only test chamber. The results of these data will be used for final lens settings.

DISPOSITION: This focus problem raises interesting questions. That is, what is the relationship between ground and flight focus and is the focus, as set on the ground, best for the flight situation? To answer this fundamental question, a through-focus test is being planned for CR-3. A second question arises as to the relationship between the results of Boston and A/P dynamic resolution testing. This relationship is being studied now to insure that each Corona flight will have the optimum focus setting. (1101 PET comment)

10-30-68 Best focus has been attained, with the correction being applicable to all future J-1 and J-3 cameras. Recommend item be closed. (From [redacted] memo of 10-22-68)

12-12-68 Note subsequent out-of-focus items: 178/1102, 202/1103, 237/1048, and 248/1105.

ITEM CLOSED

~~TOP SECRET~~ C [redacted]
No. [redacted]

Date : 11-23-67
Rev. A: 10-30-68

PEIR ACTION ITEM 155/1101

SUBJECT: 1) Imagery soft 2) Hor cameras 3) Circuit adjustment

MONITOR: BOS ([redacted])

ANOMALY: The horizon imagery was not as sharp in some cases as normally expected. This was neither "veiling", as has occurred in the past, nor did it appear to be an out-of-focus condition.

CAUSE: The cause is unknown. The most probable cause is the timing of the shutter opening solenoid with the open position on the shutter. That is, the shutter should be closed prior to the end of solenoid travel. This problem is not related to vignetting.

ACTION: Review present assembly and timing techniques, and re-evaluate the photographic test data.

DISPOSITION: 10-30-68 A review was made of assembly procedures and testing controls to prevent further recurrence of this problem. This was made effective for CR-2 and on. Recommend this item be closed. (From [redacted] memo of 10-22-68) ITEM CLOSED

~~TOP SECRET~~ C [redacted]

~~TOP SECRET~~ C [redacted]
No. [redacted]

Date : 11-23-67
Rev. A: 11-25-68

PEIR ACTION ITEM 163/1101

SUBJECT: 1) Time word error 2) Main camera FA 3) DDSC & SLP cond.

MONITOR: NPIC [redacted], A/P [redacted]

ANOMALY: Three instances of pan data block anomalies were noted during PET review of the material.

CAUSE: As of the time of PET review, NPIC had read approximately 25% of the pan data blocks. Consequently, the data were not sufficient to draw conclusions.

ACTION: (1) NPIC will supply the Corona resident office with a list of all improper data blocks, with descriptions of data block anomalies and other data mark anomalies (smear pulse, serial number, etc.) on the associated frames.

(2) A/P will perform analysis to isolate any problems.

DISPOSITION: 11-25-68 Ref. Action Item 182/1102. There have been several modifications to the DDSC and the SLP conditioner subsequent to the 1101 flight, including component isolation, grounding modifications, and changes to the interrogation circuitry. Time word anomalies from these sources were significantly reduced on Mission 1102, and negligible on Missions 1103, 1104, and 1105. No further action is recommended. [redacted] ITEM CLOSED

~~TOP SECRET~~ C [redacted]

Date : 1-10-68
Rev A : 1-20-69

PEIR ACTION ITEM 177/1044

SUBJECT: 1) Low image detail 2) Main film FA 3) Film latitude limit

MONITOR: NPIC ([redacted]), NRO ([redacted])

ANOMALY: High light and low light imagery often appears on the ON and DP with lower contrast and less image detail relative to mid-light exposures.

CAUSE: Densitometry measurements have demonstrated that high-light and low-light imagery has often been recorded in the toe and shoulder region of the standard Trenton-processed D Log E characteristic curve for 3404 film where the density response to the image forming light is poor.

ACTION: A new method of processing flight film type 3404 has been developed that extends the better density response to light zone beyond the present Trenton processed limitations by lowering the process gamma significantly in the toe and shoulder regions of the D Log E characteristic curve.

DISPOSITION: Four lengths of film type 3404, each approximately 2000 feet long from Mission 1044 were processed using the new experimental dual gamma process. A preliminary evaluation has been made that compares the low gamma processed portions of this mission with the standard Trenton processed portions.

Collectively the PET team evaluation indicates:

A. A high percentage of the imagery was recorded at densities below 1.2, or on those portions of the dual gamma and conventional (full development) curves that are essentially identical. Therefore, differences in quality at these densities are small and subtle and probably a result of variables other than the mode of processing.

B. In particular instances where high reflectance subjects were recorded, there is generally a preference for the dual gamma processed material.

PEIR ACTION ITEM 177/1044 (Cont'd)

C. As a general conclusion, the PET believes that dual gamma processing will provide better information content overall than the Trenton processed film and recommends, subject to NPIC P.I. evaluation, that [redacted] have the capability as soon as practical to process full (16,000 feet) payloads.

NPIC will conduct a subjective PI evaluation of the dual gamma processed film (and/or duplicate positive copies) versus the Trenton processed film and report results by 22 December. If the results of this evaluation are favorable, [redacted] should be authorized by NRO to proceed to implement dual gamma processing for full corona payloads.

[redacted]

1-20-69 The dual-gamma viscous process has been used successfully in a modified Yardleigh unit to treat both 3404 and SO-230 full flight loads. The results have been good, and the process is considered as most satisfactory for the Corona system. No further action is required under this item. [redacted] ITEM CLOSED

~~TOP SECRET~~ C[redacted]

No. [redacted]

Date : 2-14-68
Rev. A: 11-25-68

PEIR ACTION ITEM 178/1102

SUBJECT: 1) Imagery smeared 2) Main camera F 3) Film disturbance
1) Imagery smeared 2) Main camera F 3) Thermal distortion

MONITOR: BOS [redacted]; A/P [redacted]

ANOMALY: Crosstrack smear.

CAUSE: For the first time there is identifiable evidence of image degradation due to the uncompensated cross track smear and that caused by lift above the rails. The forward-looking camera exhibited additional smearing. This added smear occurred on the take-up side only and is attributed to an unidentified transient which caused film disturbance in the scan direction.

ACTION: (1) Boston continue current test endeavors to determine source of transients for early implementation. (2) Boston will investigate and propose a long range approach for solution of the basic uncompensated smear. (3) A/P to insure that future CR flights will have a paint pattern which will allow payload on-orbit operation between 60 degrees and 80 degrees Fahrenheit.

DISPOSITION: Acknowledgement is made of the post operational failure of the forward-camera. The image smear discussed above has no known or perceived correlation to this failure. (PET comment)

Ref. Action Item 153/1101 for a similar situation for CR1.

The A/P design objective is to attain a paint mosaic pattern that maintains panoramic camera temperatures within 70° ± 10°. The specified range for instrument operation is 70° + 30°. Mission 1102 operations occurred within the predicted ranges of 53°-82° for #1, and 50°-75° for #2. However, #1 (aft-looking) was at the lower limit of the prediction for most of the second mission segment. The #2 (forward-looking) unit operated at 65°-70° for the first mission, and at 51°-60° for the second.

~~TOP SECRET~~ C[redacted]

PEIR ACTION ITEM 178/1102

11-25-68. A relationship of the scan head rollers with the end of format steering rollers has been established that reduces dynamic film disturbances at the initiation of the scanning exposure. In addition, the drum rollers are raised to further suppress any film disturbance. These adjustments are applicable on all future cameras.

Studies of equipment design and methods to significantly reduce crosstrack smear are continuing. (Extracted from Boston memo dated 10-22-68, [redacted].

Smeared imagery similar to that described above was not recorded for Mission 1104 (MIP 115), although film disturbances were mentioned in the 1103 PEIR as possibly contributing to minor degradation. Because of the more severe image disturbances encountered on Mission 1105, and the depth to which these disturbances were analyzed, action shall be closed on this item and carried to item 248/1105.

Ref. Boston [redacted] for analysis of the post-operational failure mentioned by the PET.

ITEM CLOSED

No. [redacted]

Date: 2-14-68
Rev A: 10-30-68

PEIR ACTION ITEM 183/1102

SUBJECT: 1) Timing light malfunction 2) Main camera FA 3) Circuit marginal

MONITOR: BOS [redacted]

ANOMALY: The frequency marks were occasionally weak or partially missing or completely missing on some frames from both pan cameras.

CAUSE: This problem has been experienced on other systems and is attributed to the starting characteristics of the neon bulb (dark effect possibly aggravated by low temperature).

ACTION: Boston is currently testing a circuit change which will keep the neon bulbs on during all camera operations. This change should correct this problem.

DISPOSITION: Ref Action Item 119/1039 for similar J1 experience.
10-30-68 Modifications of the circuit to permit continuous operation of the timing lamp during camera operation has corrected this malfunction. This correction is applicable to all future J-3 cameras only. Recommend this item be closed. (Extracted from Boston memo dated 10-22-68, [redacted]
ITEM CLOSED

Date : 2-14-68
Rev A : 10-29-68

PEIR ACTION ITEM 188/1102

SUBJECT: 1) Multiple exposure 2) ~~Index film, DISIC~~ 3) Shutter malfunction

MONITOR: N.Y. [redacted]

ANOMALY: Beginning with revolution 182 of 1102-2, most terrain frames are seriously degraded by what appears to be multiple exposures at a level significantly less than normal exposure. Between revolutions 149 and 182 some slight degradation was noted intermittently. Measured separations of exposures in the flight and film transport directions are consistent with image, film transport and shutter disc velocities. This indicates incomplete closing of the capping shutter as the likely failure. Failure was initially quite intermittent, becoming progressively more frequent until it was prevalent by the end of the mission. Analysis indicates that the terrain capping shutter was slightly open during the times when it was commanded closed.

CAUSE: (1) Electrical: Failures in any one of four electrical components of the terrain capping solenoid circuit would present a voltage across the solenoid during normal off periods that would provide a force opposing the spring return shutter closing. Tests at N. Y. indicate that this would result in both the slight cracking of the capping shutter and the intermittent nature of the failure. Although initial analysis of T/M indicated that a failure of this nature did not occur, investigation of this possible failure mode and more detailed analysis of the corresponding T/M will continue.

(2) Mechanical: No measurements are available that would pinpoint a particular type of mechanical failure. Of the several possible failures considered, contamination by dirt or lubricant breakdown or damage to the solenoid balls and races appeared most likely.

ACTION: N.Y. will continue analysis to determine if T/M overall accuracy and sampling are adequate to indicate whether an electrical failure can be detected. N.Y. will also investigate alternate lubricants and capping shutter actuation methods

DISPOSITION: Shutter life test is in progress. Results and recommendations for improvements to the shutter mechanism will be made after completion of current tests. [redacted] 6-18-68)

10-29-68 Investigation and tests at New York have resulted in the following conclusions, extracted from N.Y. [redacted]

1. TM was insufficient to positively determine if the failure was electrical.
2. A possible problem was marginal voltage rating of a capping blade drive transistor. This has been changed on later systems.
3. Alternate means of capping mechanism actuation would involve marginal improvement at best.
4. A materials change has been specified after life testing of the snubber mechanism indicated finish and wear particle problems.
5. Lubricant testing failed to indicate that lubricant was the cause.

ITEM CLOSED

No. [redacted]

Date: 5-22-68
Rev A: 10-30-68

PEIR ACTION ITEM 190/1045

SUBJECT: 1) Fiducials missing 2) Main camera F 3) Circuit malfunction [redacted]

MONITOR: BOS [redacted], A/P [redacted]

ANOMALY: The fiducials were missing from both forward camera H.O. formats for a short segment of the first mission. The anomaly occurred on the third frame of the last operation on rev 8 and ended 11 frames later on the third frame of the first operation on rev 9. This anomaly did not hinder product interpretation other than in the affected area.

CAUSE: Unknown

ACTION: Determine possible causes.

DISPOSITION: The more probable cause of this anomaly appears to be a problem within the lamp synch unit. Other functions dependent upon the center-of-format switch appeared normal. [redacted] 9-4-68)

10-30-68 The precise cause of this anomaly is undeterminable. Recommend this item be closed. (From [redacted] memo dated 10-22-68).

Further action on this item should be continued under Action Item 245/1048, which describes a comparable anomaly. [redacted] ITEM CLOSED

No [redacted]

Date: 5-22-68
Rev A: 10-30-68

PEIR ACTION ITEM 195/1045

SUBJECT: 1) ~~Shutter open~~ Shutter malfunction 2) Stellar camera B 3) Cause unknown
1) Emulsion cracks 2) Stellar camera B 3) Cause unknown

MONITOR: BOS [redacted]

ANOMALY: The first segment of 1045-2 stellar record presents an anomalistic appearance. Titled frame 001 appears normal. Frames 002 thru 006 appear dense, with evidence of open shutter during transport; the reseau was sharply imaged between frames. Immediately prior to frame 001 are seven very dense exposures.

CAUSE: Unknown

ACTION: Determine probable causes.

DISPOSITION: The reported imaged reseau is actually a series of fine emulsion cracks. The seven exposures prior to titled frame 001 are preflight operations, taken to verify camera operation during installation.

The best estimate of anomalistic frames 002 to 006 is a temporary shutter malfunction. Subsequent frames appeared normal. [redacted] 6-25-68)

10-30-68 Very extensive efforts have been extended to obtain a shutter design with zero defects. These shutters have not attained that level of performance. Through these design efforts, reliability has been significantly improved. Recommend no further action and this item be closed. (From [redacted] memo of 10-22-68).

PEIR ACTION ITEM 195/1045

Ref. Action Items 028/1026, 057/1029, and 216/1047. Items 28 and 57 describe the efforts to improve shutter performance in 1966. Subsequent flight results indicated adequate functioning of the improved shutters, until Mission 1045. Item 216 describes a comparable shutter failure.

Disposition shall be continued under item 216/1047. [redacted] ITEM CLOSED

No. [redacted]

Date: 6-20-68
Rev. A: 1-20-69

PEIR ACTION ITEM 196/1046

SUBJECT: 1) Imagery soft 2) Main camera MF 3) Emulsion buildup

MONITOR: [redacted], BOS [redacted]

ANOMALY: Imagery was out of focus on the binary block side. Imagery improved in quality and focus across the film width.

CAUSE: Apparent cause of this discrepancy was due to emulsion buildup on scan head rollers affecting the focus.

ACTION: E.K. will investigate the potential of improving the abrasion resistance of SO-230.

Boston will investigate potential improvements in the manufacture and/or polishing of rails or other film contact points, to minimize film abrasion.

DISPOSITION: Emulsion dust was observed on the hub roller of the 1046-2 SRV. (See ref [redacted]). The dust formed two circumferential bands around the roller with a spacing similar to the markings introduced onto the film by the camera rails.

Tests of the physical hardness of SO-230 compared to type 3404 film at E.K. indicate that there is no significant difference between these two films. Observations made on a special postflight test in the Boston high vacuum chamber indicated that:

(1) Emulsion dust (from rail scratches) was generated when using both type 3404 and SO-230 film.

(2) Emulsion dust was generated on both cameras.

(3) A larger amount of emulsion dust from SO-230 film was observed on both cameras.

PEIR ACTION ITEM 196/1046 (Cont'd)

(4) The amount of dust generated by one camera was greater on both films than that produced by the other.

There are plans to conduct additional ground (altitude/environmental) testing of SO-230 in a J-1 system upon determination that additional smoothing of the rail surfaces can be readily achieved. Boston will determine the feasibility of obtaining Dr. A. tests while the J-1 and J-3 is undergoing these tests. (1046 PET comment)

01-20-69 Attempts to improve the rail surfaces, with no effect to camera performance, have shown no potential improvement. Rail marking which causes emulsion buildup is peculiar to each rail; every effort is made to minimize this while maintaining good tracking and camera performance. Future investigation of SO-205 and its performance characteristic in the CR camera should remain active. Preflight altitude/environmental testing should identify potential problems. Recommend this item be closed. (From Boston memo dated 10-22-68, [redacted]

More elaborate EK tests, subsequent to those reported above, indicate that such film film types as 3404, 3400, SO-230, and 2402 are all comparable for abrasion resistance or susceptibility to surface scratching. Although results of microscopic analyses are not yet complete, EK was unable to differentiate surface characteristics or dusting characteristics between SO-230 and other high-definition films. (From [redacted]

Recent A/P environmental testing of the J43 system using SO-230 film indicates only slightly more emulsion buildup than considered "normal". However, the same system under ambient conditions experienced rapidly-building emulsion deposits during resolution testing; a different SO-230 supply spool was used. These deposits are attributed to supply spool storage conditions; the same spool had been used during the J50 environmental test and no excessive buildup was noted, although no special system examination was made. (Extracted from A/P [redacted]

The following conclusions are summarized from the Boston, EK, and A/P statements.

1. Emulsion buildup is more a function of the individual rail characteristics of a system than of the type of film (3404 or SO-230) used.

2. Satisfactory performance of SO-230 may be significantly affected by storage environment conditions.

3. Buildup of emulsion is a camera system problem likely to recur. Significant system improvement does not appear feasible.

PEIR ACTION ITEM 196/1046 (Cont'd)

Also refer to Action Item 248/1105 for focal anomalies with UTB-type film.

Mission 1049 was the second J-1 mission to be flown with a full load of SO-230; analogous focal anomalies were experienced (ref. Action Item 262/1049). The 1049 PET considered that the film did not contribute to the lower performance of that mission, and expressed no reservations concerning use of SO-230 for future missions.

Further action under this item is not recommended, however the investigations of thin-base films are recommended to continue separately. [redacted]

ITEM CLOSED

No. [redacted]

Date: 9-5-68
Rev A: 10-31-68

PEIR ACTION ITEM 199/1046

SUBJECT: 1) Film curl 2) Main film MS 3) Pre-processing

MONITOR: [redacted]

ANOMALY: Prior to processing, the SO-230 film was observed to have greater than normal curl.

CAUSE: Unknown

ACTION: Analyze curl characteristics of SO-230, relative to type 3404.

DISPOSITION: Observations made during a special postflight test in the Boston high vacuum chamber indicate that the film flatness of 3404 and SO-230 film appeared similar. Analysis of curl characteristics have been initiated at E.K. but has not been completed. (1046 PET comment)

10-31-68 SO-230 curl characteristics compare closely with 3404, tending to remain flat at all test conditions. As a result of this investigation, every coating is being analyzed for low humidity curl characteristics. (From [redacted]

No. [redacted]

Date: 9-5-68
Rev A: 01-20-69

PEIR ACTION ITEM 200/1046

SUBJECT: ~~1) Film graininess~~ ~~2) Main film MS~~ ~~3) Normal function~~
1) Quality Evaluation 2) Main film, SO-230 3) Film graininess

MONITOR: NPIC [redacted], BOS [redacted]

ANOMALY: Some increase in graininess was observed on this mission.

CAUSE: This may be due in part to the apparent overexposure observed on this mission. The mission received a significant proportion of primary processing (approximately 34%) and an unusually low amount of full processing (approximately 19%

ACTION: (1) NPIC is making an analysis of the graininess of SO-230. These fimdings will be reported.

(2) Boston is making an analysis of the relative differences in photographic speed of SO-230 and 3404 film when exposued in a vacuum.

DISPOSITION: The granularity of SO-230 is slightly greater than 3404. The combinati of faster film speed with only slightly greater grain size makes type SO-230 film a desirable film for both J-1 and J-3 use. The resolving power of SO-230 compares to that of 3404.

There was a reduction in the camera slit widths because of the increase in photographic speed of SO-230 when compared to type 3404 film. Slit widths of 0.110 and 0.140 inch used on this mission provided a 2/3 stop (0.20 log E) exposure reduction from the normal 3404 slits. (1046 PET comment)

1-20-69 An SO-230 Systems Capability Report concludes that SO-230 appears to have approximately the same graininess as type 3404. The photointerpreters report that any differences which do exist are insufficient to affect interpretability. Further, any graininess differences disappear upon duplication. Recommend this item be closed. (From [redacted] memo of 10-22-68).

The amount of apparent overexposure noted for Mission 1046 probably reflects seasonal illumination variation as well as some uncertainty concerning operational sensitivity. The slits were chosen, according to furnished criteria, to provide exposure equivalent to the usual mission using 3404, with most frames between the full and intermediate processing levels. Further flight experience shall indicate necessary adjustments to exposure criteria for the operational environment; some quality improvement may be anticipated with proper exposure, including possible graininess reduction.

The same speed difference was used for Mission 1049, which also had SO-230 film. However, the slits were wider than would be indicated by the speed difference in order to produce better exposure at 60° N latitude in midwinter. Therefore, more southernly photography received more exposure than necessary for this film. Use of the dual-gamma process reduced this problem by allowing greater exposure latitude for bright scene areas. [redacted]

No. [redacted]

Date: 9-5-68
Rev A: 11-25-68

PEIR ACTION ITEM 202/1103

SUBJECT: 1) ~~Soft imagery~~ Imagery soft 2) Main film FA 3) Tracking anomaly
1) Imagery soft 2) Main film FA 3) Film deformation

MONITOR: BOS [redacted]

ANOMALY: An area ranging from about 1-5 inches of disturbed imagery occurred on the forward-looking unit with a similar but smaller area on the aft. The area of major disturbance (on the first mission segment only) was found to be confined to the first five frames following a long sit period. However, a smaller soft focus area persisted throughout the mission. About 1.75% of the frames and about 0.2% of the total area coverage was affected by this anomaly.

CAUSE: A long sit period, usually in excess of six hours, deforms the film where it passes around various rollers, or thru air twists. Normally, camera transport tensions tend to eliminate these deformations. In mission 1103 this was not true, as it is believed that the take-up tensions on the 1103-1 portion of the mission were lower than specified.

ACTION: Investigations and tests are continuing at Boston to better understand this anomaly.

DISPOSITION: 11-25-68; Ref. Action Item 178/1102 (Rev. A) which will improve tracking and minimize excursions of the film from the focal plane.

The second item, film deformation due to extended inoperative periods, is not completely identified. With sit periods of six hours or longer, film deformations put the film outside of the focal plane, and in poor focus. The effected frames should be advanced prior to a normal operation.

Recommend continued study to obtain precise data on film deformation, and the possibilities of its elimination. Recommend this item be closed. (From [redacted] memo of 10-22-68)

Improvement in the film excursions from the focal plane will be continued under Action Item 248/1105.

No further action is recommended beyond the current Boston studies. [redacted]
ITEM CLOSED

~~TOP SECRET~~ C [redacted]

No. [redacted]

Date: 9-5-68
Rev A: 10-30-68

PEIR ACTION ITEM 203/1103

SUBJECT: 1) CF switch malfunction; Circuit malfunction; CF switch 2) Main camera A 3) Data lamps out

MONITOR: BOS [redacted]

ANOMALY: The aft camera frames 15, 16, 17 on pass D08 and frame 28 on pass D218 exhibit a loss of SLP data blocks. The horizon imagery and fiducials associated with this anomaly and instrument shut down on D08, frames 16, 17, 18, 19 exhibited heavier density.

CAUSE: Due to marginal CF switch overtravel adjustment, switch actuation was not completed during the reported frames.

ACTION: All subsequent systems and procedures will be reviewed for correct switch adjustments.

DISPOSITION: Ref. Action Item 023/1026.

10-30-68 Action instituted per above ref. Recommend item be closed (from [redacted] memo of 10-22-68). ITEM CLOSED

~~TOP SECRET~~ C [redacted]

No. [redacted]

Date: 9-5-68
Rev A: 10-30-68

PEIR ACTION ITEM 205/1103

SUBJECT: 1) Circuit Malfunction ~~switch adjust~~ 2) Main camera 3) Data lamps out

MONITOR: BOS [redacted]

ANOMALY: The horizon imagery and fiducials associated with frames 13 and 15 of pass D06 are missing.

CAUSE: During the flight readiness at A/P, a crack was noted in the support case of the ½ rev. switch. This switch was replaced. Apparent cause of the failure is believed to be a result of this switch replacement.

ACTION: All subsequent systems and procedures will be reviewed for correct switch installation and adjustment.

DISPOSITION: 10-30-68 Action instituted per Action Items 023/1026 and 203/1103. Recommend item be closed (from [redacted] memo of 10-22-68).
ITEM CLOSED

No [redacted]

Date: 9-5-68
Rev A: 10-30-68

PEIR ACTION ITEM 206/1103

SUBJECT: 1) ~~Fog, light leak~~ Fog, light spill 2) Main film 3) ~~Camera~~ Mask, SLP

MONITOR: BOS [redacted], A/P [redacted]

ANOMALY: A fog pattern associated with the binary time word occasionally appears on one or more frames near the end of an operation of the forward-looking camera.

CAUSE: These fog patterns approximately match two edges of the SLP block. A possible cause is light reflections. Lack of applicable original negative material limits analysis.

ACTION: Continue investigation of causes from original negatives and test film.

DISPOSITION: 10-30-68 The cause has been determined to be light from the SLP data block exposing the following frame. Improved masking is instituted on all future units, and has eliminated this defect. Recommend this item be closed. (From [redacted] memo of 10-22-68) ITEM CLOSED

No. [redacted]

Date: 9-9-68
Rev A: 11-25-68

PEIR ACTION ITEM 215/1047

SUBJECT: 1) Imagery soft ~~Soft imagery~~ 2) Main camera FA 3) Buckled mainplate

MONITOR: BOS [redacted]

ANOMALY: A small area on the supply end of both camera formats had soft imagery. The aft soft imagery was intermittent while the area of soft imagery on the forward camera persisted throughout the mission. The area extended into the format up to six inches and is up to one inch wide.

CAUSE: A distorted main plate will cause the film to track with a bias. Review of the flight material shows that the bias exists. This caused the film to buckle away from the focus plane.

ACTION: Maintain camera main plate flatness when mating units to the payload structure.

DISPOSITION: Also ref. Action Items 040/1028, 045/1028, 081/1033, 092/1036, 131/1041, 138/1042, 151 & 152/1101, and 195/1046.

11-25-68: Ref. Action Items 131/1041 and 138/1042. Recommend this item be closed. (From [redacted] memo of 10-22-68)

An extensive review of film disturbances and excursions from the focal plane is being conducted under Action Item 248/1105. Further action shall be carried under that item [redacted]. ITEM CLOSED

No. [redacted]

Date: 9-9-68
Rev A: 10-30-68
Rev B: 1-20-69
PEIR ACTION ITEM 216/1047

SUBJECT: 1) Shutter malfunction 2) Stellar camera B 3) Cause unknown

MONITOR: BOS [redacted]

ANOMALY: The "B" Stellar shutter appears to have remained partially open from frame 79 to the end of the mission. This anomaly caused almost all subsequent frames to be unsuitable for stellar reduction.

CAUSE: The evidence available is characteristic of a shutter failure.

ACTION: Some 2-3 years ago the Stellar shutter was extensively reworked to increase reliability. Since this rework, the shutter has proven highly reliable. Considering the performance history, the remaining five J-1 S/I camera systems are considered acceptable for flight. Boston is to review possible shelf life effects.

DISPOSITION: Ref. Action Items 028/1026, 057/1029, 070/1031, 076/1033, and 133/1041. 10-30-68 All evidence confirms a shutter malfunction after frame 79. There is no data and/or experience regarding shelf life effects or limits. There is no evidence available that warrants any rework on the four remaining S/I units. Recommend this item be closed. (From [redacted] memo of 10-22-68).

1-20-69 Action continued from item 195/1045 which describes an apparent temporary failure during one operation. Similar malfunctions were not experienced on subsequent Missions 1048 and 1049. No further action is indicated, per the Boston recommendation. ITEM CLOSED

Date: 9-9-68
Rev A: 10-30-68

PEIR ACTION ITEM 218/1047

SUBJECT: 1) Takeup malfunction 2) Main film A 3) Film creases, multiple
1) Takeup malfunction 2) Main film A 3) Cause unknown

MONITOR: BOS [redacted], A/P [redacted]

ANOMALY: The first 13 frames of the aft record recovered in the "B" SRV were physically damaged, including some crumpled film and multiple perpendicular creases. These creases occurred at several frequencies, are very sharp, and caused plus density lines along the creases. Creasing started approximately one foot from the core end of the film.

CAUSE: The precise cause is unknown. However, several pertinent observations were made both during the defilming operation and during post-analysis:

(1) The first several frames were wrapped on the take-up spool in a direction opposite to normal spool rotation.

(2) The free end of the record which is wrapped into the roll during initial wrap-up was only about one foot long instead of the usual eight feet.

(3) The film that was in contact with the B-bucket hub rollers was badly crumpled and actually jammed between the hub rollers.

(4) A pattern (pressure spots) caused by the "B" hub was found to be in agreement with the previous J1 mission (1046). On 1047 this pattern occurred twice, once in the normal location and again at a new position. This indicates that the "B" take-up spool did start to wrap correctly.

Preliminary tests performed independently by A/P and Boston prior to the PET meeting failed to reveal the failure mechanism.

ACTION: (1) Perform a film failure analysis of the "A" to "B" transfer and cut and wrap sequence.

(2) Perform a circuit analysis of the "A" to "B" transfer function with the AGENA interface.

DISPOSITION: The first 13 frames (approximately 35 feet) of photography at the core of the aft camera "B" spool, following the cut and wrap function, contained extensive physical damage.

Examination of the damaged film revealed two sets of plus density set screw hole imprints in the film that correspond to the set screw hole pattern around the core of the take-up cassette.

One set of imprints approximately 7½ feet from the "A" bucket water seal cut indicates that the "B" take-up spool of the #2 camera cinched up the film with the "B" take-up spool turning in the normal direction. The second set of imprints which are approximately 6 feet from the "A" water seal cut may have been created by film slippage of up to approximately 1½ feet at the take-up core during the initial film wrap. However, the second set of set screw hole imprints in the film match the core

ACTION ITEM 218/1047 (Cont'd)

pattern of holes when the take-up spool is turned in a direction opposite from normal. A check of the original negative from Mission 1046 revealed a normal cut and wrap with only one set of plus density set screw hole imprints approximately 7½ feet from the "A" bucket water seal cut.

Examination of the last two feet of film next to the "A" bucket water seal cut revealed extensive film fold over marks. These fold over marks indicate that the tail of film at the core of the "B" take-up spool was crumpled under successive film wraps and initiated the formation of the egg-shaped roll that was reported by telemetry and reported again during the post-flight despooling operation at [redacted]

Multiple plus-density creases are present in the 13 frames of photography following cut and wrap. Creasing is at right angles to the long axis of the film. The pitch of the creasing is frequently quite regular and generally ranges between 0.1 inches apart to 0.5 inches apart. Adjacent creases are indented in the same direction as opposed to an accordion effect. The pattern of creasing on the 7 feet of film next to the "A" bucket water seal cut match a corresponding pattern of creases in the next section of film. This appears to indicate that the multiple creasing occurred when the film was in intimate contact with the core of the take-up cassette. Creasing apparently occurred when adjacent film wraps on the take-up core slipped as the roll made adjustments for the interwrap spaces created by film fold over observed in the film exhibit. Additional film folds were present approximately 13 to 15 feet from the cut film end.

The width of the original negative was measured by E.K. and found within normal tolerances.

Evaluation of the electrical circuitry associated with the film take-up revealed that no electrical failure mode could be found that would cause the take-up spool to turn in a direction opposite from normal and then reverse to the normal direction for the balance of Mission 1047-2.

No specific cause for the failure mode has been demonstrated. [redacted]

10-30-68 Boston concurs with these symptoms and the overall malfunction analysis. Recommend this item be closed. (From [redacted] memo of 10-22-68) ITEM CLOSED

[redacted]

Date: 9-9-68
Rev A: 1-20-69

PEIR ACTION ITEM 220/1047

SUBJECT: 1) Timing light malfunction 2) Main camera FA 3) Circuit marginal

MONITOR: A/P [redacted]

ANOMALY: The time track is erratic and is missing for approximately 30% of the mission on the fwd camera (218). In most instances the streaked pulse is followed by a restart of the time track imagery. On aft camera 219, the time track is missing up to the first 18 inches of the first frame of several passes.

CAUSE: These two anomalies are related and associated with the "dark effect" of neon lamps. After periods of inactivity, especially in a low light environment, the threshold level required to fire the neon lamps is increased. In some cases this level is marginal and requires an extended pulse such as the streaked pulse to ionize the lamp. Once the lamp is on, the level required to sustain ignition is less.

ACTION: Evaluate modifications to subsequent J-1 systems which increase the current level to the lamp.

DISPOSITION: Ref. Action Items 183/1102 and 119/1039.

1-20-69 This appears to be the most severe recent disturbance of this type. A modification was made to J-49 and J-50 per Action Item 036/1028. Both systems experienced partially missing time tracks on the first frame of several passes; the loss was described as of little consequence. Ref. Action Item 244/1048. No further action is contemplated. [redacted] ITEM CLOSED

Date: 10-25-68

PEIR ACTION ITEM 236/1048

SUBJECT: 1) Time word error 2) Main Camera F 3) Clock output

MONITOR: A/P [redacted]

ANOMALY: The number ten light on the forward camera binary block came on at random during the mission.

CAUSE: This anomaly was noted during attitude/environmental testing. The problem was considered to be a loose connection and subsequently repaired. The lamp anomaly did not occur during the remainder of ground testing. The probable cause appears to be the clock signal to the number ten bit.

ACTION: None

DISPOSITION: ITEM CLOSED

~~TOP SECRET~~ C[redacted]
No. [redacted]

Date: 10-25-68

PEIR ACTION ITEM 237/1048

SUBJECT: 1) Imagery Soft 2) Main Camera F 3) Tracking anomaly

MONITOR: A/P [redacted]

ANOMALY: The end areas of the forward formats had a larger than normal soft area.

CAUSE: When the film tracks with a bias to one rail it causes a film plane change, with some loss in image quality. These areas changed in size throughout the mission, ranging from larger-than-normal to normal.

ACTION: Continued monitoring of the vehicle interface mounting to the camera main plate to minimize plate disturbances.

No other action recommended.

DISPOSITION: Reference Action Item 215/1047 (Boston action). ITEM CLOSED.

Date: 10-25-68

PSIR ACTION ITEM 238/1048

SUBJECT: 1) Density Variation, +D spots 2) Main Camera A 3) Foreign particles

MONITOR: A/P [redacted]

ANOMALY: Two rows of plus-density spots are present throughout the aft-looking camera record from Mission 1048-1. The spots are located 1.0 and 1.1 inches respectively from the time track edge of the film, and the spacing between the spots is 2.3 inches.

CAUSE: This anomaly occurred as a result of foreign particles on the second SRV take-up cassette hub rollers. As the material passed through the hub it was marked in a repetitive pattern.

ACTION: This anomaly is considered as part of the previously-reported characteristic problems associated with the corona system.

No additional action recommended.

DISPOSITION: Also reference Action Items 126/1040 and 209/1103 for similar marking caused by foreign particles on metering rollers. This is the first occurrence of marking at the hub rollers. ITEM CLOSED.

Date: 10-25-68

PEIR ACTION ITEM 239/1048

SUBJECT: 1) Fog, electrostatic 2) Main Film A 3) Constant-tension assembly

MONITOR: A/P [redacted]

ANOMALY: A longitudinal plus-density line near the rail scratches along the time track edge of the film, and two plus-density lines between the rail scratches and time track appear on the aft-looking camera material from Mission 1048-2.

CAUSE: This line is an exposure caused by an electrostatic discharge. The line diminished on the fifth frame of a pass and starts again on the sixth frame, which indicates the constant-tension assembly as being the probable point of occurrence.

ACTION: This is the first reported occurrence of this anomaly.

No action recommended.

DISPOSITION: While the constant-tension assembly has not previously caused electrostatic marking in flight, it has occasionally been associated with some form of marking during altitude/environmental testing. This marking during test has been attributed to either a sticking roller or to supply spool tension misadjustment. The J-49 system did not produce marking by the constant-tension assembly during any test. The assembly was specifically observed during pre-flight confidence operations, and proper function verified. ITEM CLOSED.

Date: 10-25-68

PEIR ACTION ITEM 240/1048

SUBJECT: 1) Exposure Multiple 2) S/I Cameras AB 3) Platen lift cam

MONITOR: BOS [redacted]

ANOMALY: The Stellar/Index cameras of Mission 1048-1 experienced double exposures on frames 92 and 363. The S/I cameras of Mission 1048-2 experienced a triple exposure on frame 01, a double exposure on frame 03, and five exposures on frame 102.

CAUSE: These multiple-exposed frames apparently occur as a result of an efficiency loss in the S/I drive motor due to a slightly higher bus current drain at the faster pan camera scan rates. At these higher rates there is not enough time alloted for the platen to lift the required distance to trip the metering switch before the metering switch is actuated. The present drive motors are designed to operate at 37 RMP, and a loss of 1 RPM could conceivably cause the anomaly described.

ACTION: The present cam has approximately a 10° dwell time. Installing cams with a much larger dwell would allow the metering switch to be tripped earlier in the platen travel, thus allowing completion of a normal cycle at operational pan camera cycle rates. This correction is presently being processed for all future systems.

DISPOSITION: The only S/I multiple exposures previously reported have been attributed to command switchover from first to second mission segments, similar to that reported for frame 01 of 1048-2, above. Reference Action Items 106/1037 and 113/1038.

The cam change is incorporated in S/I units for Missions 1049 and following. No further action is recommended at this time. ITEM CLOSED.

Date: 10-25-68

PEIR ACTION ITEM 241/1048

SUBJECT: 1) Fog, electrostatic 2) Main Film FA 3) Pre-processing
1) Fog, electrostatic 2) Main Film A 3) Metering roller

MONITOR: A/P [redacted]

ANOMALY: Traces of dendritic static are detectable at random throughout the mission on both pan camera records.

CAUSE: The majority of this marking occurred during ground handling. While in flight, the aft camera record was occasionally marked at 6.3 intervals by dendritic type static discharges. The static was discharged through a foreign particle embedded in the metering roller.

ACTION: A continuing effort is maintained for prevention of foreign particles in the system.

DISPOSITION: Reference Action Item 238/1048 for other marking affecting pan film caused by foreign particles.

Foreign particles have been responsible for many other anomalies (Ref. Action Items 140/1042, 149/1043, 150/1043, etc.); the problem is considered serious from the technical, as well as the security aspect.

A naturalization program is recommended, after preliminary screening to assure the foreign particles to be of friendly national origin. Once this is completed, normal security investigation of the particles may proceed.

The PET considers it a requirement that all particles of foreign extraction contained within the payload system during pre-flight preparations be rigidly controlled from the security aspect, and that this function shall be performed by Headquarters security personnel. Only after this has been accomplished can the technical evaluation of the merits of particle location proceed.

~~TOP SECRET~~ C[redacted]
No. [redacted]

Date: 10-25-68

PEIR ACTION ITEM 242/1048

SUBJECT: 1) Fog, light leak 2) Main Film FA 3) Main Camera Drums

MONITOR: A/P [redacted]

ANOMALY: Light leaks of varying intensity affected some frames of both camera records on most passes. On forward camera operations, the last, next to last, and fifth frames were often affected. On aft camera operations, the third from end, and fourth and fifth frames were affected. The intensity of the marking was proportional to the length of the set time and was noted as being minor.

CAUSE: Except for one very faint diffuse mark, all light leakage can be traced to characteristic camera drum sources which can not be completely eliminated without functional hazard to the cameras. The exception noted may be due to a drum leak or a small leak of the forward camera output horizon camera boot.

ACTION: The extent of light leakage observed in this mission is considered to be within system control limits. It is noted that A/P is currently reviewing light leakage test methods and procedures to assure continuing adequate control. No specific action is recommended.

[redacted]

Date: 10-25-68

PEIR ACTION ITEM 243/1048

SUBJECT: 1)Foreign Object image 2) Index Camera B 3) Thermal tape

MONITOR: A/P [redacted]

ANOMALY: An obstruction of varying length and width is present on frames 8 through 159 of the Index camera from Mission 1048-2.

CAUSE: The image of this obstruction is out of focus, and its relative position changes slightly throughout the mission. The obstruction appears to be a piece of thermal tape, external to the camera, that became dislodged during the mission.

ACTION: Continue close inspection of thermal tape prior to flight.

DISPOSITION: No further action recommended. ITEM CLOSED.

Date: 10-25-68

PEIR ACTION ITEM 244/1048

SUBJECT: 1) Timing light malfunction 2) Main Camera FA 3) Circuit marginal

MONITOR: A/P [redacted]

ANOMALY: The time track of both cameras is missing at the beginning of scan on the first frame of most operations.

CAUSE: The previously reported dark effect phenomenon, though considerable curtailed, has apparently not been eliminated. As described in earlier reports the neon lamps appear to need a slightly higher voltage level to initiate firing after extended periods of inactivity. The final circuit improvement was effected on this system prior to flight.

ACTION: The usefulness of the first frame of each pass is limited, due to slow scan rate during camera start up. The loss of the time track in this area is considered of little consequence. No additional action is recommended, and this anomaly will be considered characteristic for future J-1 systems.

DISPOSITION: Reference Action Items 036/1028, 119/1039, and 220/1047. Similar effects were not noted during pre-flight testing of this system. ITEM CLOSED.

Date: 10-30-68

PEIR ACTION ITEM 245/1048

SUBJECT: 1) Imagery Missing 2) Horizon Camera M 3) Circuit Marginal

MONITOR: BOS [redacted]

ANOMALY: The horizon cameras on the Master unit did not operate on frames 86, 88, 90, 92 of pass D84. The fiducials were not imaged on frames 86, 88, and 90, but were imaged on frame 92.

CAUSE: When energized, relay K105 supplies unregulated voltage to the horizon camera shutter solenoids thru one set of contacts, and a regulated voltage pulse to the horizon camera fiducials thru the other set of contacts. Because of the independent power sources and the manifestation of the failure, the only independent failure mode component is the contacts of relay K185.

ACTION: Review this component failure history and circuit, in order to re-confirm its reliability.

DISPOSITION: A review of the horizon shutter and fiducial command relay and circuit has been conducted by Boston. The results of this review do not indicate any design or reliability problems with this particular relay/circuit. The J1 and J3 relays are different types from different vendors. Both types have been used since the start of the M/J series, and have no record of failure; all camera field failure reports from the J1/J3 systems to date were reviewed. This item is considered closed with no subsequent action required. (Extracted from memo; [redacted] to [redacted] 10/21/68).

Reference Action Item 162/1101, which attributes a comparable anomaly on CR-1 to marginally adjusted overtravel of the thermally-sensitive 1/2 RPC switch. Action Item 190/1045 describes a comparable J1 anomaly, where only the fiducials were missing; the cause was started as indeterminable.

Date: 10-25-68

PEIR ACTION ITEM 246/1048

SUBJECT: 1) Time word missing 2) Main Film FA 3) Circuit marginal

MONITOR: A/P [redacted]

ANOMALY: The time words are missing on frame 16 forward of pass D40, frame 113 forward of pass D53, and on frame 109 aft of pass D84.

CAUSE: In all cases the serial number, serial index, and the number 30 index was imaged on the material. The anomaly was noted on two occasions in the altitude/environmental test, and is associated with the clock either not receiving or not acting upon the interrogate command.

ACTION: This is not considered a failure but a peculiarity of the clock and readout system. No action recommended.

DISPOSITION: Reference Action Item 174/1044. ITEM CLOSED.

Date: 10-25-68

PEIR ACTION ITEM 247/1048

SUBJECT: 1) Failure, Drive 2) Main Camera F 3) Film torn

MONITOR: A/P [redacted] BOS [redacted]

ANOMALY: The forward camera failed on rev D181, with six inches of frame 70 being the last recovered photography. Post-flight analysis indicates the camera drive system was disconnected from the drive motor assembly. The failure prevented electrical shutdown of the camera, which resulted in the main drive motor being continuously powered. The recovered tail end of film was torn, and not a waterseal cut.

CAUSE: Unknown

ACTION: A full test program for failure analysis is not feasible due to the risk involved, with the necessity of using flight hardware from a future mission. However, limited tests will be conducted to determine what area within the film path could cause the film to tear in a manner similar to that experienced in flight.

DISPOSITION: A possible cause is a mechanical failure in the main drive assembly. Three major areas of data supporting this failure mode are:

(1) Telemetry data indicated the main drive motor and tachometer assemblies were intact after the failure, with operate power continuously on. The tach also responded to V/H voltage changes.

(2) The lens drive and the film metering control linkage were inoperative.

(3) Vehicle attitude data indicated a normal instrument coastdown at time of failure. A transient load on the drive assembly, caused by adhesive seepage at a manufacturing splice located 152 frames previous to the failure, could be a contributing factor. A transient load could have partially fractured a pin or pins in the camera drive system.

COMMENTS:

(1) Other failure modes were analyzed but not considered as likely as that described above.

(2) The condition of the damaged film in the 1048-2 bucket is considered to be an effect and not a cause of the failure.

(3) The time of the film tear, in relation to known camera parameters, indicates that it probably occurred after the camera shut-down. An exhaustive analysis of telemetry and flight film has failed to reveal the direct cause of the tear. (1048 PET comments)

Date: 12-20-68

PEIR ACTION ITEM 248/1105

SUBJECT: 1) Imagery soft 2) Main camera FA 3) Film disturbance

MONITOR: BOS [redacted], A/P [redacted]

ANOMALY: Imagery from this mission, in general, is significantly degraded when compared with Mission 1104. The image quality is extremely variable and evidences soft focus and image smearing. Fwd camera performance was less variable on 1105-2 than on 1105-1, while the aft camera imagery generally remained constant throughout both portions. Further evidence of this unusual condition is obtained by noting that the MIP frame for Mission 1105-1 was chosen from the aft camera, whereas the MIP frame from Mission 1105-2 was chosen from the fwd camera.

CAUSE: The image quality variations are directly attributable to the interaction of the UTB with the CR-5 system.

ACTION: Investigation of the anomaly.

DISPOSITION: The difference in image quality variability between the fwd and aft instruments is readily explainable. The fwd camera contained a third generation lens, whereas the aft camera had a second generation lens. While the maximum resolution of the third generation lens is higher than that of the second, its depth of focus is considerably more critical; the second generation lens has a significantly greater tolerance to variations in film excursions.

Mission 1105 was the first system to fly with a full load of SO-380 film. Modifications were made to CR-5 to enable reliable handling of UTB. The major modification was a reduction in system film tensions from 46 to 36 oz. It would appear that this reduction in tension caused an inflight variability in film lift and dynamics in the scan head area during exposure. This variability was not observed in extensive simulated environmental testing.

UTB has received extensive testing with the J-3 camera series, which has included film handling, tracking environmental and film flatness evaluations. In particular, CR-5 was subjected to "Dr. A" (film flatness) testing in the altitude/environmental chamber in full flight configuration, the first time that film flatness testing had been undertaken at A/P in a simulated environment. The results of these tests were considered acceptable. The mission image quality variations indicate significantly greater film plane excursions than were experienced in this simulated environmental testing. There is not a clear understanding of why the flight results were incompatible with the simulated environmental tests.

Observations suggest film plane variations during flight but these are not fully verified:

(1) A film tension change between 1105-1 and 1105-2 may have caused the

noticeable improvement of 1105-2 fwd imagery, e.g., the fifth frame anomaly disappeared.

(2) Rub markings on the back of the film base indicates greater than normal buckling.

(3) Image quality change across the web suggest greater lift at the format center line.

(4) Reduced smearing of imagery on the 50 foot 3404 film section when compared with adjoining UTB was apparent.

(5) A differential moisture loss across the film web, due to outgassing of the film may have caused film buckle.

(6) Rail scratching was significantly less than normally encountered.

Re-examination of the UTB test of Mission 1103 indicated that the test material did not exhibit the variability experienced on Mission 1105. Even in retrospect, there are no indications from the 1103 test that would have precluded flying UTB on Mission 1105. (1105 PET comments)

Reference Action Item 257/1105 for further discussion of the system tension reduction, and Item 261/1105 for discussion of soft color imagery. Other Action Items referring to soft or smeared imagery include 040/1028 and 151/1101 (focus); 081/1033, 152/1101, and 215/1047 (focal shift-thermal distortion); 124-125/1040, 152-153/1101, 176/1044, 178/1102, 202/1103, and 237/1048 (film disturbance); 045/1028, 092/1036, 131/1041, 138/1042, 202/1103, and 237/1048 (tracking anomaly); and 196/1046 (emulsion buildup).

Date: 12-20-68

PEIR ACTION ITEM 249/1105

SUBJECT: 1) Imagery soft 2) Main Camera 3) Film deformation

MONITOR: A/P [redacted]

ANOMALY: The fifth frame of many aft camera operations has a half-inch out-of-focus band along the binary edge.

CAUSE: The binary edge of the fifth frame of many operates shows severe variation in image quality. The image undulates from good to bad on 1105-1 but was noticeably improved on 1105-2. Frame five of the next operation is in a twist condition during camera shutdown, thus causing film deformation along the inboard edge. The lack of this anomaly in part 2 suggests a film tension change and/or less film curl (web differential).

ACTION: Effective on CR-3 are modifications which lengthen the air twists and are expected to reduce this effect. No further action is recommended.

DISPOSITION: ITEM CLOSED

[redacted]

Date: 12-20-68

PEIR ACTION ITEM 250/1105

SUBJECT: 1) Film abrasion 2) Main Film 3) Film deformation

MONITOR: A/P [redacted]

ANOMALY: A base rub reported throughout 1105-2

CAUSE: The base rub is faintly visible on the O/N material only when viewed by grazing light. The actual cause of this minor anomaly is unknown.

ACTION: Degradation is so minor that no action is recommended.

DISPOSITION: Rub markings on the back of the film base indicate greater than normal buckling. (1105 PET comment) Ref. Action Item 248/1105. ITEM CLOSED.

Date: 12-20-68

PEIR ACTION ITEM 251/1105

SUBJECT: 1) Density Variation; + D streak 2) Main Film 3) Tracking anomaly
1) Film distortion 2) Main Film 3) Tracking anomaly

MONITOR: BOS [redacted]

ANOMALY: A plus-density streak 0.1 inch wide, located outside the active format area along the time track edge of the film, begins in forward frame 10 of pass D197 and ends at a manufacturer's splice frame 73, pass D198. Frames 10 to 19 on pass D197 exhibit edge fluting along with the plus-D streak.

CAUSE: The ultra thin base was apparently rubbing against a flange. Variations in edge tension are considered the cause of the film path change.

ACTION: This is a normal characteristic of ultra thin base film. No action required.

DISPOSITION: The original negative of these passes was not available for PET investigation. ITEM CLOSED.

Date: 12-20-68

PEIR ACTION ITEM 252/1105

SUBJECT: 1) Film Scratches 2) Main Film 3) Drum Rollers

MONITOR: BOS [redacted]

ANOMALY: There is an intermittent emulsion scratch located 1/2 inch from the data block edge, beginning in pass D64 and continuing to the end of the mission. This scratch is up to 10 inches long and is present at the takeup end of the frames.

CAUSE: The more probable cause of this intermittent emulsion scratch was a sticking drum roller.

ACTION: Continuing attention to general instrument roller condition during pre-launch testing.

DISPOSITION: ITEM CLOSED

Date: 12-20-68

PEIR ACTION ITEM 253/1105

SUBJECT: 1) Failure, Transport 2) Main Camera FA 3) Film depletion

MONITOR: BOS [redacted], A/P [redacted]

ANOMALY: Both panoramic cameras failed at film depletion.

CAUSE: Both failures were in the film transport system and were directly related to film depletion. In the aft looking unit, a film wrap-up on the frame metering roller, sheared the drive pin, but apparently enough drag was retained in the gear drive to stall the unit. This stalled condition caused an abnormal power consumption. The forward looking unit failed in a similar manner, but the unit was free enough to continue rotation. Film wrap-up following film depletion appears to be one characteristic possible failure mode for the panoramic cameras.

ACTION: The primary adverse effect of this anomaly is the continuous power usage. A modification to the internal camera operate command is being incorporated in all future CR systems. This modification will remove power and eliminate the possibility of this anomaly occurring.

DISPOSITION: No further action is required. ITEM CLOSED

Date: 12-20-68

PEIR ACTION ITEM 254/1105

SUBJECT: 1) Veiled images 2) Horizon cameras, port 3) Cause unknown

MONITOR: A/P [redacted]

ANOMALY: Veiling of the port horizon imagery from both pan cameras gradually developed as the mission progressed. Imagery appeared sharp at the beginning of mission 1105-1. The horizon imagery was still well defined and usable throughout both mission segments.

CAUSE: This is the first 1100-series mission to exhibit veiled horizon imagery and the first mission including the 1000 series to produce veiled imagery on the port side. Investigation has failed to reveal any known cause.

ACTION: No new action is contemplated at this time.

DISPOSITION: Ref. Action Item 191/1045 for a summary of veiled horizon imagery on J-1 missions. ITEM CLOSED.

Date: 12-20-68

PSIR ACTION ITEM 255/1105

SUBJECT: 1) Film damage 2) Main film FA 3) Cause unknown

MONITOR: A/P [redacted]

ANOMALY: Holes were torn in the film near the water seal cuts of Mission 1105-2 on the outside wraps on the takepup spools of both cameras. A hole, 1/4 x 1/8 inch, was torn in the color film (aft camera) 23 3/4 inches from the water seal cut. Additionally, an emulsion scratch, 1/16 x 2 inches, is located about 16 inches from the water seal cut. On the UTB film (FWD camera) there are two holes: One is 1 5/8 x 1/8 inch located 61 inches from the water seal cut; the other hole is triangular, 1/4 inch on a side located 30 1/2 inches from the water seal cut. There is no trace of other mechanical damage in the vicinity of the holes on either film. A crease about 10 inches long following the larger hole on the UTB film, occurred during processing. A search of the recovery bucket produced no torn pieces of film.

CAUSE: Thorough analysis of system operation has provided no clue to the cause.

ACTION: These anomalies are unique in the history of the program. No further action is known or recommended.

DISPOSITION: ITEM CLOSED

Date: 12-20-68

PEIR ACTION ITEM 256/1105

SUBJECT: 1) Fog, electrostatic 2) Main film FA 3) Foreigh particles

MONITOR: BOS [redacted], A/P [redacted]

ANOMALY: Plus-Density marks, approximately 0.01 to 0.02 inches in size, are present in the aft-looking camera record from both mission segments. They occur near the film center with a repeating pattern of approximately 6 1/4 inches. A second sequence of marks occurs 3/8 inches in from the time rack with a pattern repetition interval of approximately 1 9/16 inches. Usually, the marks have a characteristic spider-like appearance of fine lines emanating from a common center. The marks are often associated with a single fine emulsion scratch that begins near the start of scan and terminates just before the end of scan; this scratch is interrupted by the spider marks. The marks and scratches are not observed in the horizon format area.

The fwd-looking camera record exhibits a plus-density mark approximately 0.01 inche in size repeating at intervals of 2 6/15 inches. Similar marks to the fwd-looking camera record are soft in appearance and are soft in appearance and are not associated with a common scratch.

All marking has occurred randomly throughout both mission segments. At the start of the mission, no marks were present in either the fwd or aft camera photography.

CAUSE: The marking appears to be an electrostatic discharge associated with foreign particle buildup on various roller surfaces. The scratches noted in the aft camera record appear to be related to the static dischrage marks.

ACTION: Continued attention to cleanliness prior to flight. Particles carried by film cannot be completely eliminated.

DISPOSITION: While both glow and dendritic type static marking patterns were evident on the color film (aft camera), they are extremely minor in nature.
ITEM CLOSED

Date: 12-20-68

PEIR ACTION ITEM 257/1105

SUBJECT: 1) Density variation; ±D streaks 2) Main film FA 3) Film strain

MONITOR: BOS [redacted]

ANOMALY: A wavy plus-density streak is present intermittently throughout the material from the fwd and aft cameras from Missions 1105-1 and 2. The streak is approximately 0.2 to 0.3 inches wide. In addition, photography from the fwd camera of 1105-2 contained an intermittent minus-density streak approximately 0.2 inches wide. Degradation to the imagery is minor in both cases.

CAUSE: Normal air twists in the camera film path induce buckles in the film that cause strain sensitization and desensitization. In particular, the air twist from the supply cassette to the input nod roller on the fwd instrument and the short film twist located on the output side of the shuttle assemblies are considered the most likely areas of strain induced marking. This anomaly is peculiar to the use of UTB film.

ACTION: Lengthening the air twist on the output side of the shuttle assembly and increasing patch length in the area of the wing bracket and constant tension assembly on the fwd-looking instrument with effectivity on CR-8 and up is expected to eliminate film streaking with UTB film.

DISPOSITION: Plus-density streaking was characteristic of the fwd and aft-looking cameras during preflight testing with UTB film. Film tensions were set lower as a result of system testing which indicated that UTB had severe strain sensitivity that caused serious plus-density marks on the film. This marking took the shape of both continuous "wavy" lines through the center of the format, and sperm shaped marks. This marking was serious with normal (46 oz.) tensions and considerably reduced with the lower tensions (36 oz.). (1105 PET comment)

Date: 12-20-68

PEIR ACTION ITEM 258/1105

SUBJECT: 1) Fog, electrostatic 2) Main film FA 3) Pre-processing

MONITOR: A/P [redacted]

ANOMALY: Dendritic static is present along the film edges of a few frames of the fwd and aft-looking camera records of both mission segments. In most cases, static marking is outside the active format area.

CAUSE: These marks are characteristic of static discharge between the film edge and either roller or spool flanges during system operation or defilming.

ACTION: This static is characteristic of the system and requires continual monitoring to minimize its effect.

DISPOSITION: No further action recommended. ITEM CLOSED

Date: 12-20-68

PEIR ACTION ITEM 259/1105

SUBJECT: 1) Fog, Light spill 2) Main film FA 3) Steering rollers

MONITOR: A/P [redacted]

ANOMALY: A minor light leak fog band, located within two inches of the take-up end of the format, appears on the first frame of both pan cameras on a few passes. Occasionally, other frames within a pass were similarly affected. The degradation is very minor.

CAUSE: These fog patterns result from the unique location of the steering rollers at the ends of the formats on this system. Image-forming light passed through the film in the platen and struck film of the following frame just above the horizon camera guide rollers.

ACTION: No action is required.

DISPOSITION: Since this anomaly is unique to the CR-5 configuration no further action is required. ITEM CLOSED

~~TOP SECRET~~ [redacted]
No. [redacted]

Date: 12-20-68

PEIR ACTION ITEM 260/1105

SUBJECT: 1) Density Variation, -D spots 2) Main film 3) Film manufacture/ process

MONITOR: [redacted]

ANOMALY: Minus density spots on original negative of 1105-2.

CAUSE: Random minus-density spots ranging in size from .025 to .050 inch were infrequently observed on both the SO-380 and 3404 film. These spots contain no imagery. The cause of this anomaly is currently unknown. Probable causes include desensitization within these areas, or foreign material on the surface of the film preventing penetration of the viscous developer.

ACTION: E.K. continue evaluating potential causes of this anomaly.

[redacted]

Date: 12-20-68

PEIR ACTION ITEM 261/1105

SUBJECT: 1) Imagery soft 2) Main film A SO-121 3) Film curl

MONITOR: BOS [redacted] A/P [redacted]

ANOMALY: The image quality of the SO-121 record was extremely variable, and ranged from good to very poor. The amount of good quality imagery is limited and is generally restricted to the edges and ends of the format. The center portion of the format is generally poor.

CAUSE: This condition would appear to have been caused by the film being curled away from the focal plane during exposure.

ACTION: No action was recommended by the PET

DISPOSITION: Ref. Action Item 248/1105.

Date: 1-20-69

PEIR ACTION ITEM 262/1049

SUBJECT: 1) Imagery soft 2) Main camera MS 3) Focus shift
1) Focus shift 2) Main camera MS 3) Thermal distortion

MONITOR: BOS [redacted], A/P [redacted]

ANOMALY: Both pan cameras exhibited out-of-focus areas throughout both mission segments. The general magnitude of the overall image softness tended to increase during the mission. A significant percentage of out-of-focus imagery is exhibited in the fwd camera record, and to a lesser degree by the aft camera. A significant difference in image quality was noted near the end of 1049-1. This difference was not as obvious in 1049-2. The majority of material from both cameras in 1049-2 was of comparable quality and considered poorer than 1049-1.

CAUSE: There are several potential contributory factors to the focal degradation. These include thermal distortion of the lens cells and/or rails, emulsion buildup changing film lift characteristics, and other possible sources. The PET believes, for Mission 1049, that the thermal problem is the major consideration. The camera system average temperatures at launch were normal. The ascent thermal environment was more severe than recent J-1 flights, but normal for the particular injection profile. Following the ascent phase, the system temperature increased to approximately 11°F above predicted levels.

ACTION:

(1) Increase test samples of thermal furfaces and re-evaluate acceptance criteria.
(2) Recommended shorter launch window to accommodate thermal extremes within mission duration.
(3) Review ascent profiles and effects on thermal surfaces from high ascent temperature.
(4) Determine possibility of insulating lens cell.

DISPOSITION: The reasons for the difference between predicted and actual orbit temperatures cannot be completely explained. However, three factors could have contributed:

(1) Less than optimum, but acceptable, thermal surfaces could account for a 2 to 3°F increase.
(2) Winter solar flux is greater and could account for a 2 to 3°F increase.
(3) The contribution of higher ascent thermal environment resulting from a lower injection altitude is unknown.

The following table summarizes the orbit thermal environment as measured by telemetry:

THERMAL SUMMARY

TEMPERATURES - DEGREE FAHRENHEIT

	Predicted Range	Actual (Average)		
Time	Pan Camera	No. 224	No. 225	Supply Cassette
Lift Off	50-70	65	65	60
Rev 9	78-94	100-104*	97-100	83
Rev 25	76-92	101-105*	98-101	88
Rev 57	74-90	99	99	92
Rev 89	68-83	93	93	87
Rev 99	1st Recovery	6° drop	6° drop	3° drop
Rev 106	67-82	85	85	82
Rev 177	61-76	77	77	74
Rev 179	2nd Recovery			

*Some thermal sensors out of band-high.

Although there is no specific data concerning vacuum-temperature effects on SO-230, it is believed that the film sensitometric characteristics were not altered beyond that normally experienced in Corona missions. The PET considered type SO-230 film did not contribute to the lower performance of this mission, and is considered acceptable for future missions.

The true impact of the dynamic thermal environment upon the optical path, in a quanitative sense, cannot be explicitly defined. Assuming design similarity between the lens configuration in the J-1 and J-3 systems, data can be extrapolated from J-3 tests. Flight data depicting the temperatures of the lens have not been determined for the J-1 systems, because no provision for the necessary sliprings was made in the design.

The technical information relied upon is that which was determined with a J-3 lens configuration. The composite thermal sensitivity consists of three parts:

(1) Equilibrium temperature throughout the lens cell and cone assembly.
(2) Temperature gradient through the cone and scan head with respect to the cell.
(3) Sinusoidal thermal environment across the barrel with a period approximating 1 1/2 hours to simulate day/night light variation on orbit.

(Above items are 1049 PET comments)

The band of soft imagery from the aft camera may be associated with this problem, as described in Action Item 263/1049.

Date: 1-20-69

PSIR ACTION ITEM 263/1049

SUBJECT: 1) Imagery soft 2) Main camera S 3) Cause unknown

MONITOR: BOS [redacted]

ANOMALY: A band of soft imagery, one quarter of the format width, along the outboard edge of the aft camera during 1049-1.

CAUSE: The cause is unknown.

ACTION: No action is recommended at this time.

DISPOSITION: Ref. Action Items 081/1033 and 196/1046 for descriptions of similar soft bands on previous missions. This condition on Mission 1049 may be associated with the soft imagery reported in Action Item 262/1049.

Date: 1-20-69

PEIR ACTION ITEM 264/1049

SUBJECT: 1) Fog sitmarks 2) Main film 3) Normal function

MONITOR: A/P [redacted]

ANOMALY: Minor minus-density bands were reported on material from both pan cameras.

CAUSE: Similar bands have been observed on Mission 1046 material, as well as film from most ground tests using SO-230. This is a characteristic of the film during extended inoperative periods. The bands are images of system film path components which are formed as a function of environment, not because of a light leak.

ACTION: No action recommended.

DISPOSITION: Ref. Action Item 201/1046. This "negative fogging" shall be considered a characteristic of SO-230 film.

ITEM CLOSED

Date: 1-20-69

PEIR ACTION ITEM 265/1049

SUBJECT: 1) Veiled images 2) Horizon cameras, Port 3) Cause unknown

MONITOR: A/P [redacted]

ANOMALY: Veiling was noted on the number 225 port horizon camera. It was heavy at first, diminishing during the first mission and clearing after five operations of the second segment. This is the first case of port-side veiling on a J-1.

CAUSE: Unknown

ACTION: No action required.

DISPOSITION: Ref. Action Item 254/1105 for the only other case of port horizon veiling. A summary of veiled horizon imagery on J-1 missions is presented in Action Item 191/1045. ITEM CLOSED