

TOP SECRET

PRIORITY

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T O P S E C R E T 252242Z

1966 FEB 25 23 22Z **OUT 57837**



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SUBJ: MISSION 1029 PHOTOGRAPHIC EVALUATION INTERIM REPORT (PEIR)

REF A
B



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1. NUMERICAL SUMMARY

MSN NO AND DATES: 1029-1, 2-7 FEBRUARY 1966
 1029-2, 7-12 FEBRUARY 1966

LAUNCH DATE AND TIME: 2 FEBRUARY 1966/2132Z

VEHICLE NUMBER: 1623

CAMERA SYSTEM: J-27

PAN CAMERA NOS: FWD LOOKING (MASTER) 178
 AFT LOOKING (SLAVE) 179

S/I CAMERA NOS: MSN 1029-1, D79/94/91
 MSN 1029-2, D76/70/94

RECOVERY REVS: D81 AND D160

28 FEB 1966

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2. CAMERA SETTINGS

FWD LOOKING 0.275 INCH SLIT
 WRITTEN 25 FILTER

AFT LOOKING 0.175 INCH SLIT
 WRITTEN 21 FILTER

3. PERFORMANCE SUMMARY



GROUP 1
Excluded from automatic
downgrading and
declassification

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THE OVERALL IMAGE QUALITY OF THE MISSION WAS CONSIDERED SOMEWHAT LESS THAN RECENT MISSIONS. HOWEVER, SOME TARGET AREAS WERE DESCRIBED BY THE PI'S AS BEING BETTER THAN MISSION 1028. THE REDUCTION IN OVERALL QUALITY IS ATTRIBUTED TO BLOWING SNOW, ATMOSPHERIC HAZE AND CLOUDS. NO PORTABLE CORN TARGETS WERE RECORDED BECAUSE OF CLOUD COVER.

4. ANOMALIES - PANORMIC CAMERAS

ANOMALIES, INCLUDING THOSE REPORTED IN THE [REDACTED] MESSAGES (REF A AND B), WERE REVIEWED:

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A. LIGHT LEAKS

CAUSE: LIGHT LEAKS WERE TRACED TO (1) THE PAN CAMERA DRUM FELT SEAL AND (2) THE -1 ABLATIVE SHELL.

ACTION: (1) INVESTIGATION OF SUPPLEMENTARY DRUM FELT SEALS IS IN PROCESS. [REDACTED] (2) A FILM CHUTE HAS BEEN DESIGNED FOR THE -1 ABLATIVE SHELL AREA AND WILL BE INCORPORATED IN J-30 NOW SCHEDULED AS MISSION 1031.

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B. INTERMITTENT HORIZON CAMERA FIDUCIALS, DATA BLOCK INDEX LAMPS AND SERIAL NUMBER IN THE FWD CAMERA.

CAUSE: A REVIEW OF THE FORWARD CAMERA DP'S INDICATED THAT THE 200 CYCLE TIMING PIPS WERE FLUCTUATING SLIGHTLY WITH THE OTHER LAMPS. THERE WERE NO RELATED FLUCTUATIONS NOTED ON THE AFT CAMERA LAMPS. SINCE THE ONLY COMMON FEATURE TO ALL THE ABOVE LAMPS IS REGULATED POWER, IT IS SUSPECTED THAT THERE WAS A POOR CONNECTION INTERNAL TO THE FORWARD CAMERA.

ACTION: IMPLEMENTATION OF SHORTER INTERCONNECTING

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CABLES FOR THE PAD SYSTEMS RUN AND THERMAL ALTITUDE CHAMBER WILL ALLOW MORE MEANINGFUL LAMP CHECKS PRIOR TO FLIGHT. BOTH ACTIONS ARE CURRENTLY BEING TAKEN UNDER IMPLEMENTATION OF THE "FACTORY TO PAD" PHILOSOPHY. NO FURTHER ACTION IS PLANNED.

C. DENDRITIC STATIC

CAUSE: EXTENSIVE STATIC DISCHARGE WAS OBSERVED DURING PRE-SPLICING AND PRE-PROCESSING PHASES [REDACTED] PROBABLY MOST, IF NOT ALL, OF THE DENDRITIC EDGE STATIC MARKING OCCURRED AT THESE OPERATIONS. PRECAUTIONS NORMALLY USED TO PREVENT STATIC DISCHARGES WERE NOT EFFECTIVE WITH THIS MISSION.

ACTION: INVESTIGATE SUPPLEMENTAL TECHNIQUES TO PRECLUDE THE STATIC DISCHARGE DURING UNWINDING. [REDACTED]

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D. VEILED HORIZON IMAGERY AND SOFT APPEARING FOCUS

CAUSE: SOME EXTERNAL SUBSTANCE OR PHENOMENA VEILS THE H.O. IMAGES. THIS STARBOARD VEILING NORMALLY STOPS DURING THE FIRST MISSION. THE AFT CAMERA H.O. WAS GOOD THROUGH PASS D01 AND PROGRESSIVELY DEGRADED FOR THE BALANCE OF THE FLIGHT.

ACTION: INVESTIGATE PARTICLES EXTERNAL TO THE VEHICLE.

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E. FILM CREASE

CAUSE: IT WAS NOT POSSIBLE TO ADEQUATELY EVALUATE THE MARKING ON THE DUPLICATE POSITIVE.

ACTION: EXAMINE THE ORIGINAL NEGATIVE WHEN AVAILABLE.

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F. RAGGED FORMAT EDGE

CAUSE: AN INSTRUMENT WILL OCCASIONALLY EXHIBIT AN EXCESSIVE AMOUNT OF EMULSION PARTICLE BUILD-UP, EITHER DUE TO A LOCALIZED PITTED OR ROUGHENED AREA AND/OR AN OVERALL RAIL MICRO-ROUGHNESS.

ACTION: THERE IS NO ANTICIPATED CHANGE IN THE RAIL PRODUCTION MANUFACTURE FINISHING TECHNIQUES UNTIL J-38 AND UP, AT WHICH TIME ALL RAILS WILL BE POLISHED AND BUFFED. THIS TECHNIQUE SHOULD ESSENTIALLY LESSEN RAIL SCRATCHING AND EMULSION BUILDUP PROBLEMS. NO FURTHER ACTION.

5. ANOMALIES - STELLAR/INDEX CAMERAS

A. FOREIGN PARTICLES IN MISSION 1029-1 STELLAR PHOTOGRAPHY:

CAUSE: INVESTIGATION HAS SHOWN THAT THE PARTICLES APPEAR TO BE VEHICLE ORIENTED. INVESTIGATIONS AT BIRD HAVE NOT SUBSTANTIATED THAT THESE ARE VENTED FUEL PARTICLES.

ACTION: CONTINUING INVESTIGATION TO ATTEMPT TO ASCERTAIN THE SOURCE OF THE FOREIGN PARTICLES.

B. ABNORMAL STELLAR IMAGERY - MISSION 1029-1

CAUSE: THE STELLAR CAMERA SHUTTER EXPOSURE TIME EXCEEDED TWO SECONDS ON 56 FRAMES OUT OF 419. AT TIMES THE SHUTTER DID NOT CLOSE UNTIL AFTER THE PLATEN WAS RAISED. HOWEVER, THE AVAILABLE STELLAR IMAGERY DID PERMIT ATTITUDE DETERMINATION WITH SOMEWHAT MORE THAN NOMINAL EFFORT.

ACTION: (1) CONTINUING EVALUATION OF STELLAR CAMERA SHUTTER DESIGN, MANUFACTURE, ASSEMBLY AND TESTING TO PRECLUDE

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FUTURE OCCURRENCE OF THIS PROBLEM. (2)

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THE POSSIBILITY OF DECREASING EXPOSURE IN THE STELLAR PHOTOGRAPHY TO REDUCE SMEARED IMAGERY IS UNDER INVESTIGATION.

C. S/I CAMERA FAILURE - MISSION 1029-2

CAUSE: DELAY IN OPERATION OF RELAY K702 UNTIL PASS

D134. AFTER PASS D134 OPERATION WAS NORMAL.

ACTION: INVESTIGATE COMPONENT FAILURE HISTORY AND ASSOCIATED EQUIPMENT CIRCUITRY.

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D. IMAGED INDEX RESEAU EDGE - MISSION 1029-1

CAUSE: INSUFFICIENT MASKING OF THE INDEX CAMERA RESEAU PLATE RESULTED IN A MINOR RESEAU EDGE EXPOSURE IN APPROXIMATELY SIX ADJACENT FRAMES.

ACTION: EXAMINE PROCEDURES AT BOSTON TO ASSURE ADEQUATE TESTING AND EVALUATION.

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6. REPORT ON PREVIOUSLY ASSIGNED ACTION ITEMS

A SUMMARY OF ALL ACTION ITEMS ESTABLISHED AT THE PEIR MEETINGS, FROM MISSION 1024, HAS BEEN PREPARED AT A/P. THE PEIR MEMBERS REVIEWED AND CONCURRED WITH THE FORMAT AND CONTENT OF THE SUMMARY. THE SUMMARY WILL BE PUBLISHED AND DISTRIBUTED AT THE NEXT PEIR MEETING. THE DISPOSITION OF ACTION ITEMS WILL BE CARRIED IN THE SUMMARY AND NOT IN THE PEIR MESSAGE.

7. REMARKS

THERE ARE CERTAIN CHARACTERISTIC ANOMALIES THAT ARE CONSIDERED INHERENT TO THE OPERATION OF THE CORONA SYSTEM. WHILE THESE ITEMS WARRANT ATTENTION TO PREVENT FURTHER DEGRADATION IT IS

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NOT FELT THAT SPECIFIC ACTION ITEMS SHOULD BE ASSIGNED. A SUMMARY OF THESE ITEMS AND THE DEGREE OF DEGRADATION IS PRESENTED BELOW.

ANOMALY	FWD CAMERA	AFT CAMERA
1. SCRATCHES IN FORMAT	LESS THAN NORMAL	LESS THAN NORMAL
2. RAIL SCRATCHES	NORMAL	NORMAL
3. LIGHT LEAKS	NORMAL; SEE 4-A	NORMAL; SEE 4-A
4. MINUS DENSITY STREAKS	LESS THAN NORMAL	LESS THAN NORMAL

T O P S E C R E T

--END OF MESSAGE--

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