CLASSIFIED MESSAGE

~~TOP SECRET~~

[redacted]

PRIORITY

[redacted]

VC INFO CITE

~~TOP SECRET~~ 162336Z CITE [redacted]

PRIORITY [redacted]

CORONA/PEI

SUBJ: MSN 1039 PHOTOGRAPHIC EVALUATION INTERIM REPORT (PEIR)

REF: [redacted]

1. NUMERICAL SUMMARY

MSN NO AND DATES:	1039-1, 22-27 FEBRUARY 1967
	1039-2, 27 FEBRUARY - 5 MARCH 1967
LAUNCH DATE AND TIME:	2232Z, 22 FEBRUARY 1967
VEHICLE NUMBER:	1635
CAMERA SYSTEM:	J-39
PAN CAMERA NOS:	FWD-LOOKING 236
	AFT-LOOKING 237
MSN 1039-1 S/I NO:	D103/131/132
MSN 1039-2 S/I NO:	D103/125/125
RECOVERY RFVS:	MSN 1039-1 81
	MSN 1039-2 177

2. CAMERA SETTINGS

~~TOP SECRET~~

GROUP 1
EXCLUDED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION

[redacted]

 COPY NO.

FWD-LOOKING 0.225 INCH SLIT WRATTEN
23A FILTER

AFT-LOOKING 0.175 INCH SLIT WRATTEN
21 FILTER

3. PERFORMANCE SUMMARY

THE OVERALL IMAGE QUALITY OF MSN 1339-1 AND -2 IS SUPERIOR TO THAT OF THE LAST TWO MISSIONS. THE AFT-LOOKING IMAGE IS SLIGHTLY SUPERIOR TO THAT OF THE FORWARD-LOOKING IMAGERY. ANALYSIS OF THE ATMOSPHERIC CONDITIONS SHOWED A LOW PERCENTAGE OF CLEAR TERRAIN AREAS.

4. ANOMALIES

A. THE DIGIT TWO OF THE CAMERA NUMBERS 206 AND 207 WERE UNREADABLE.

CAUSE: ON ALL 200 SERIES J-1 INSTRUMENTS THE SERIAL NUMBER LAMP HOUSING APERTURE WHICH IS INTREGAL WITH THE DATA BLOCK HOUSING DOES NOT PROVIDE SUFFICIENT ILLUMINATION FOR THE LARGER 200 SERIES NUMBER MASK, CAUSING A PARTIAL CUT-OFF OF THE SERIAL NUMBER IN THE VICINITY OF THE DIGIT TWO.

ACTION: NONE REQUIRED. THE POSSIBILITY OF CONFUSION BECAUSE OF THE PARTIALLY MISSING SERIAL NUMBER BETWEEN 200 SERIES INSTRUMENTS, AND 100 SERIES IS REMOTE.

B. THE BINARY SERIAL INDEX LAMP WAS BLOOMED ON BOTH INSTRUMENTS FOR 1339-1 AND ON THE SLAVE INSTRUMENT FOR 1339-2.

CAUSE: THE SERIAL INDEX BIT IMAGE DENSITY IS PRODUCED BY THE SAME LAMP WHICH PROVIDES THE ILLUMINATION FOR THE SERIAL

NUMBER. THE INDEX IMAGE IS PRODUCED BY A SMALL HOLE IN THE NUMBER MASK ADJACENT TO THE SERIAL NUMBER. THIS METHOD OF IMAGING IS CONSIDERABLY MORE SUSCEPTIBLE TO GROSS IMAGE BLOOMING, WITH VARIATIONS IN LAMP BRIGHTNESS. THE INTENSITY OF THE SERIAL NUMBER/SERIAL INDEX LAMP IS BASED ON A COMPROMISE BETWEEN SERIAL NUMBER READABILITY AND MINIMUM SERIAL INDEX BLOOMING.

ACTION: NONE REQUIRED.

C. THE 230 PPS TIMING PULSES WERE MISSING ON THE FIRST 2 TO 5 INCHES OF THE FIRST FRAME OF A FEW PASSES ON THE SLAVE CAMERA FOR 1339-1 AND 1339-2.

CAUSE: BOTH CAMERAS EXPERIENCED 230PPS TIME TRACE ANOMALIES DURING A/P ALTITUDE TESTING. THESE TRACE ANOMALIES STARTED AT APPARENTLY RANDOM TIMES DURING SCAN, INDEPENDENTLY BETWEEN CAMERAS, UP TO 8.5 FRAMES MAXIMUM. THIS ANOMALY WAS CORRECTED DURING TESTING BY INSTALLATION OF NEW 230PPS SCAN HEAD LAMPS. THIS ANOMALY WAS NOT PRESENT DURING PRE-FLIGHT READINESS TESTING.

ACTION: AS A RESULT OF A STUDY ITEK-BOSTON MADE CONCERNING THIS PROBLEM, EXTENSIVE ELECTRICAL CHANGES WERE RECOMMENDED AND WILL BE INCORPORATED ON FLIGHT SYSTEMS J-49 AND J-50.

D. VEILING OF THE STARBOARD LOOKING HORIZON CAMERAS ON BOTH INSTRUMENTS WAS NOTED BEGINNING ON PASS 035 AND CONTINUING THROUGHOUT 1339-1.

CAUSE: THE CAUSE IS UNKNOWN. ANALYSIS OF ORIGINAL NEGATIVES AND DUPE POSITIVES INDICATED THAT THE MAGNITUDE OF THE VEILING CONDITION IN THE FWD-LOOKING INSTRUMENT WAS CONSIDERABLY LESS THAN IN THE AFT-LOOKING INSTRUMENT. THE VEILING CONDITION GRAD-

UALLY BECAME DETECTABLE ON PASS D35 AND CONTINUED THROUGH TO THE END OF 1039-1, CLEARING ABRUPTLY FOLLOWING THE FIRST MISSION RECOVERY. MISSIONS 1034 AND 1038 WERE ALSO AFFECTED BY SIMILAR VEILING, WHILE THE INTERVENING THREE MISSIONS APPEARED UNAFFECTED. THE HORIZON BOOTS, ON ALL SIX OF THESE PAYLOADS HAD BEEN PAINTED.

ACTION: UNDER CONTINUING INVESTIGATION (MONITOR: A/P [redacted].

E. A VERY SLIGHT BASE RUB IS APPARENT THROUGHOUT THE FORWARD CAMERA RECORD. IT APPEARS AS A VERY SUBTLE MINUS DENSITY LINE PARALLEL TO THE MAJOR AXIS OF THE FILM ABOUT 3/4 OF AN INCH FROM CAMERA NUMBER EDGE.

CAUSE: THIS PROBLEM APPEARED DURING PRE-FLIGHT READINESS AS A MINOR BASE ABRASION. THIS ABRASION WAS CAUSED BY THE SUPPLY CASSETTE CONSTANT TENSION ASSEMBLY AT THE FINAL MECHANICAL APERTURE.

ACTION: NONE REQUIRED.

5. COMMENTS

A. AN ANALYSIS OF THE INDEX PHOTOGRAPHY FROM MISSION 1039-1 AND -2 YIELDED THE FOLLOWING INFORMATION:

1039-1

TOTAL INDEX FRAMES	456
CLEAR AND TERRAIN	66 OR 14.5 PERCENT
CLEAR AND SNOW	61 OR 13.4 PERCENT

1039-2

TOTAL INDEX FRAMES	462
CLEAR AND TERRAIN	64 OR 14 PERCENT
CLEAR AND SNOW	52 OR 11.4 PERCENT

B. MISSION 1039 EXPERIENCED A HIGH THERMAL ENVIRONMENT AND RELATIVELY HEAVY CLOUD COVER AND APPARENT HAZE CONDITIONS, SIMILAR TO THOSE EXPERIENCED IN MISSION 1038. NORMALLY, THESE FACTORS ARE CONSIDERED CONTRIBUTORY TO DEGRADING IMAGE QUALITY. HOWEVER, IN SPITE OF THE ABOVE, MISSION 1039 PRODUCED PHOTOGRAPHIC QUALITY NORMALLY EXPECTED FROM THIS SYSTEM.

C. THE DUPLICATION REPORT REQUESTED BY THE PET (REF PEIR MSN 1038 PARA B AND C). COMMITTEE WAS REVIEWED AND FOUND IN GENERAL TO BE IN AGREEMENT WITH THEIR ANALYSIS.

6. CHARACTERISTIC ANOMALIES

THERE ARE CERTAIN CHARACTERISTIC ANOMALIES WHICH ARE CONSIDERED INHERENT TO THE OPERATION OF THE CORONA SYSTEM. WHILE THESE ITEMS WARRANT ATTENTION TO PREVENT FURTHER DEGRADATION IT IS NOT FELT THAT SPECIFIC ACTION ITEMS SHOULD BE ASSIGNED. A SUMMARY OF THESE ITEMS AND THE DEGREE OR DEGRADATION IS PRESENTED BELOW.

A. RAIL SCRATCHES ARE CONTINUOUS ALONG BOTH FILM EDGES THROUGHOUT THE MISSION. THEIR SEVERITY IS CONSIDERED NORMAL AND CAMPARABLE TO PAST SYSTEMS.

B. DENDRITIC STATIC DISCHARGE - LESS THAN NORMAL.

C. SCRATCHES WITHIN THE FORMATS OF BOTH PAN CAMERAS CAUSED BY THE SCAN HEAD ROLLERS ARE LESS THAN NORMAL.

D. THE FOG PATTERNS EXHIBITED ON BOTH PAN CAMERAS IS CONSIDERED MINOR AND LESS THAN NORMAL.

E. RAGGED FORMAT EDGE EXHIBITED ON THE AFT-LOOKING INSTRUMENT FOR THE ENTIRE MISSION IS GREATER THAN NORMAL.