XYXI [redacted]

CLASSIFICATION CHANGED TO [redacted]
By authority of AFC-85-2
5 APR 1966

DOWNGRADED AT 3 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS.
DOD DIRECTIVE 5200.10

[illegible]

[illegible] AFB CALIF

[illegible] CALIF

[illegible] CALIF

[illegible] CALIF

[illegible] AFB CALIF [illegible]

[illegible] AFB CALIF [illegible]

INFO [illegible] AFB CALIF [illegible]

DET 1 [illegible] AIR FORCE [illegible] CALIF [illegible]

[illegible] PATRICK AFB FLORIDA

HQ [illegible] AFB DAYTON [illegible] AFB CALIF

HQ AIR FORCE [illegible] AFB

OHIO

[illegible] 05-171 240-5

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] FOR COL

[illegible] [redacted]

OFFICE SYMBOL	[redacted]				
NAME (SIGNATURE)			[illegible], JR., COLONEL, USAF		
DATE			[illegible]		[illegible]

AFBMD Form 11
1 Nov 59

COORDINATION SHEET

Replaces AFBMD Form 11, 1 Jun 59

AIR FORCE (DPS, Ogden, Utah)

[redacted] [redacted]

[illegible] VANDENBERG AFB CALIFORNIA

[illegible] [illegible] [illegible] AFB FOR [illegible] [illegible] AFLC/[illegible]

[illegible] AFB FOR [illegible]. [illegible] ONE FLASH REPORT OF THE LAUNCHING OF DISCOVERER 34/[illegible] [illegible] [illegible]/.

1. DISCOVERER 34 CONSISTING OF THOR BOOSTER [illegible], [illegible] AND AGENA B [illegible] [illegible] NO. 1117 WAS LAUNCHED FROM [illegible] [illegible] 75-3 PAD 1 AT [illegible]30.91 [illegible] OF 5 NOV 1961. THE PRIMARY LAUNCH OBJECTIVE, TO PLACE THE DISCOVERER [illegible] WITH PAYLOAD IN A NEAR-POLAR ORBIT, WAS ACCOMPLISHED, HOWEVER, AN ABNORMALLY LONG ORBITAL PERIOD RESULTED FROM [illegible] AND [illegible] [illegible] VELOCITY AT INJECTION. [illegible] FROM [illegible] [illegible] TRACKING [illegible] [illegible] AN INJECTION ALTITUDE OF 157 STATUTE MILES, AN INJECTION [illegible] VELOCITY OF APPROXIMATELY [illegible],100 FPS, AND AN INJECTION [illegible] PATH ANGLE OF ABOUT 0 DEG. TRACKING STATIONS AT KODIAK AND HAWAII HAVE CONFIRMED ORBITAL STATUS, HOWEVER, THE PERIOD WAS IN EXCESS OF 97 MINUTES.

2. PRELIMINARY EVALUATION INDICATES THAT LAUNCH TEST OBJECTIVES WERE ACHIEVED AS FOLLOWS: (REF. DETAILED TEST OBJECTIVES, [illegible] [illegible], SECTION 2).

A. DISCOVERER BOOSTER - OBJECTIVE ACHIEVED.

AT BOOSTER CUTOFF VEHICLE POSITION WAS WITHIN A [illegible] OF 5 NM RADIUS, FLIGHT PATH ANGLE WAS WITHIN PLUS/MINUS 4 DEG, AND VELOCITY WAS WITHIN 200 FPS OF THE NOMINAL VALUE. BOOSTER [illegible] AND [illegible] [illegible] WERE [illegible] AND [illegible] [illegible]/[illegible] BY THE GROUND-GUIDANCE [illegible] AND VEHICLE RESPONSE TO THE [illegible] APPEARS TO HAVE BEEN NORMAL. [illegible] OCCURRED AT T PLUS 147.7 SEC

[illegible]

[redacted] [redacted]

WITH PROPELLANT DEPLETION OCCURRING ALMOST SIMULTANEOUSLY WITH RECEPTION OF THE SECOND GUIDANCE COMMAND FOR MECO. VERNIER ENGINE SOLO OPERATION LASTED 9.0 SEC WITH VECO OCCURRING AT T PLUS 156.7 SEC. SEPARATION WAS INITIATED BY A GROUND GUIDANCE COMMAND AT T PLUS 160.8 SEC. GROUND GUIDANCE SYSTEM DATA INDICATE THE BOOSTER COAST APOGEE ALTITUDE WAS 123.63 NM (NOMINAL=123.5NM) AND THE BOOSTER COAST APOGEE VELOCITY WAS 9490 FPS (NOMINAL=9514FPS). THOR 330 WAS THE THIRD DISCOVERER BOOSTER TO BE EQUIPPED WITH A MODIFIED OXIDIZER [illegible] IN AN ATTEMPT TO MINIMIZE THE LONGITUDINAL OSCILLATION PROBLEM. THOR AND AGENA INSTRUMENTATION INDICATED NO [illegible] IMPROVEMENT.

B. AGENA AIRFRAME AND ADAPTER - OBJECTIVE ACHIEVED.

NO EVIDENCE OF STRUCTURAL PROBLEMS IN THE AGENA AIRFRAME OR ADAPTER HAS BEEN NOTED.

THE [illegible] SATISFACTORILY PROVIDED THE [illegible] MECHANISM FOR COMPLETE SEPARATION AT T PLUS 165.1 SEC.

C. AGENA PROPULSION SYSTEM - OBJECTIVE ACHIEVED.

AGENA ENGINE IGNITION OCCURRED IN A NORMAL MANNER AT T PLUS 204.8 SEC AND THE ENGINE OPERATED SATISFACTORILY FOR 238.0 SEC. ENGINE SHUTDOWN OCCURRED AT T PLUS 442.8 SEC DUE TO PROPELLANT DEPLETION. THE INTEGRATOR DATA SHOW THAT THE PRESELECTED SEQUENCE VELOCITY GAIN OF 16,300 FPS HAD BEEN ATTAINED AT 439.2 SEC OR APPROXIMATELY 3.6 SEC PRIOR TO THE ACTUAL SHUTDOWN. THE INTEGRATOR WAS NOT EFFECTIVE IN PRODUCING SHUTDOWN BECAUSE AGENA

[redacted]

OF THE SHUTDOWN CIRCUITRY WAS NOT COMPLETED UNTIL APPROXIMATELY 439.7 SEC. EXTRAPOLATION OF ACCELEROMETER DATA INDICATES THAT THE TOTAL [illegible] VELOCITY GAIN WAS 16,850 FPS. THE IMPULSE PROVIDED BY THE AGENA ENGINE WAS MORE THAN SUFFICIENT TO GIVE THE VEHICLE ORBITAL VELOCITY AT THE FLIGHT INJECTION ALTITUDE.

D. AGENA ELECTRICAL POWER SYSTEM – OBJECTIVE ACHIEVED.

NO EVIDENCE OF AGENA ELECTRICAL POWER SYSTEM PROBLEMS HAS BEEN NOTED.

E. AGENA GUIDANCE AND FLIGHT CONTROL SYSTEM – OBJECTIVE PARTIALLY ACHIEVED.

THE AGENA GUIDANCE SYSTEM RESPONDED PROPERLY TO A 6.95 SEC TIME-TO-FIRE CORRECTION AND A 2.31 SEC VELOCITY-TO-BE-GAINED CORRECTION COMMANDED BY THE GROUND GUIDANCE SYSTEM. VEHICLE ATTITUDE APPEARS TO HAVE BEEN CONTROLLED SATISFACTORILY DURING THE COAST PHASE AND THE ORBITAL BOOST PHASE, AND CONTROL GAS EXPENDITURE WAS NORMAL DURING BOTH OF THESE PERIODS. ENGINE SHUT-DOWN WAS NOT COMMANDED BY THE INTEGRATOR BECAUSE ARMING OF THE SHUTDOWN CIRCUITRY HAD NOT OCCURRED BEFORE THE INTEGRATOR HAD SENSED THE PROGRAMMED VELOCITY. THE D-TIMER PROPERLY CONTROLLED THE TIME AND SEQUENCE OF ALL PROGRAMMED EVENTS THAT WERE SCHEDULED TO OCCUR PRIOR TO LOSS OF TELEMETERED DATA AT VTS.

F. AGENA SPACE COMMUNICATIONS SYSTEM – OBJECTIVE ACHIEVED.

OPERATION OF THE ACQUISITION BEACON AND THE RADAR BEACON WAS SATISFACTORY. VTS TRACKED THE ACQUISITION BEACON FROM LIFTOFF TO

[redacted]

[redacted]

[illegible] [illegible] VANDENBERG AFB CALIFORNIA

T PLUS 300 SEC AND THE RADAR BEACON FROM LIFTOFF TO T PLUS 479 SEC. AT T PLUS 510 SEC, THE TIME OF TELEMETRY DATA FADE FOR VTS, ALL TELEMETRY CHANNELS WERE OPERATING. AT THIS TIME THE ORBITAL TIMER WAS SET AT 1482 SEC, IN THE POWER-ON POSITION, IN THE INCREASE MODE, AND [illegible] [illegible] STATE. NO GROUND COMMANDS WERE SENT DURING THE ASCENT PHASE.

G. AEROSPACE GROUND EQUIPMENT - OBJECTIVE ACHIEVED.

BOOSTER AND GENERAL STAGE CHECKOUT WAS SATISFACTORILY ACCOMPLISHED DURING THE PRE-LAUNCH COUNTDOWN BY THE AEROSPACE GROUND EQUIPMENT. DURING TASK 16 A POWER AMPLIFIER IN THE BLOCKHOUSE LANDLINE UNIT WHICH PROVIDES MANDATORY PRELAUNCH "[illegible]" DATA, MALFUNCTIONED. ELECTRICAL POWER WAS REROUTED AND NORMAL OPERATION PROCEEDED.

H. DISCOVERER SUPPORT FACILITIES - OBJECTIVE ACHIEVED.

THE AGENA TELEMETRY SIGNAL WAS RECEIVED AND RECORDED BY VTS FROM LIFTOFF TO T PLUS 5[illegible] SEC AND GOOD FLIGHT DATA WERE DERIVED FOR THE PERIOD FROM LIFTOFF TO T PLUS 510 SEC. THE VTS VERLORT RADAR PRODUCED GOOD ANALOG AND DIGITAL DATA RECORDS FOR THE PERIOD FROM LIFTOFF TO LOSS OF TRACK AT T PLUS 479 SEC WITH AN INTERMEDIATE LOSS OF 7 SEC STARTING AT T PLUS 305 SEC. STATION COMMUNICATIONS DURING THE LAUNCH OPERATION WERE ADEQUATE.

3. PRE-LAUNCH COUNTDOWN.

THE COUNTDOWN STARTED AT 0330 EST ON 5 NOV 61 AND PROCEEDED TO LIFTOFF WITH NO HOLDS. THE FOLLOWING [redacted]

[illegible]

[redacted]

[redacted]

6593 [illegible]

DUE TO AN ABNORMAL INDICATION IN THE [illegible] DURING PRE-LAUNCH CHECKS, THE [illegible] WAS [illegible] DURING TASKS 8 AND 9 RESPECTIVELY AND FOUND SATISFACTORY.

PRIOR TO TASK 13 (UNIT [illegible] REMOVAL) PAYLOAD CHANNELS APPEARED SLIGHTLY ABNORMAL. A PORTION OF TASK 9 (PAYLOAD CHECKS) WAS RERUN TO VERIFY PROPER OPERATION OF THE PAYLOAD. THE 10% PROPELLANT LOADING PART OF TASK 14 WAS PERFORMED DURING TASK 12 (COUNTDOWN EVALUATION) IN ORDER TO OBTAIN LINE FILL INFORMATION. FOLLOWING 10% LOADING, THE PROPELLANTS WERE DRAINED LEAVING NORMAL RESIDUALS IN THE LINE. A 100% LOADING WAS THEN ACCOMPLISHED DURING TASK 14 (PROPELLANT TANKING) IN ONE STEP.

THERE WERE TWO PREVIOUS LAUNCH SCHEDULES. THE FIRST ATTEMPTED LAUNCH WAS INITIATED AT 0930 PST NOVEMBER 1, 1961. THE LAUNCH WAS ABORTED DURING BOOSTER IGNITION WHEN AN ELECTRICAL MALFUNCTION OCCURRED IN THE BOOSTER ENGINE "J" BOX. NO OTHER PROBLEMS AROSE BUT HOLDS DUE TO TRAINS TOTALED 1 HR 35 MINUTES DURING THIS ABORTED LAUNCH. THE LAUNCH WAS RESCHEDULED FOR NOV 2, 1961, BUT DUE TO THOR ENGINE CIRCUITRY PROBLEMS AN ABNORMAL INDICATION IN THE THOR CEA FACILITY NO COUNTDOWN WAS ATTEMPTED.

4. PAD DAMAGE

PAD DAMAGE WAS SLIGHTLY GREATER THAN NORMAL DUE TO A POST LAUNCH FIRE AT THE BASE OF THE MAST. REQUIRING REPLACEMENT ARE [illegible] AGENA AIR CONDITIONING [illegible] AND THOR AND AGENA ELECTRICAL CABLING AT THE TOP AND BOTTOM OF THE MAST. [illegible]

[illegible] [redacted]