

XXXVii

WGG001

P 280205Z
 M 6595 AEROSPACE TEST WG VANDENBERG AFB CALIF
 TO SSD LOS ANGELES CALIF
 6594 AEROSPACE TEST WG SUNNYVALE CALIF
 LOCKHEED MISSILES AND SPACE COMPANY SUNNYVALE CALIF
 ZEN/LOCKHEED MISSILES AND SPACE COMPANY VANDENBERG AFB CALIF
 ZEN/DOUGLAS AIRCRAFT COMPANY VANDENBERG AFB CALIF
 INFO ZEN/ISTRATAEROSPACE DIV VANDENBERG AFB CALIF
 5555 AEROSPACE TEST WG PATRICK AFB FLORIDA
 AFLC WRIGHT PATTERSON AFB OHIO
 SBAMA NORTON AFB CALIF
 ZEN/DET 1 AFLC VANDENBERG AFB CALIF
 ZEN/CSD NR 1 WCMR VAFB CALIF

July 5-1
RFD

SECRET FROM VWZD-27-2-46 SEQ I OF II SECTIONS
 RESTO FLASH SSD FOR SSZD SEMICLN 6594TW FOR COL MOORE SEMICLN
 MSC/SUNNYVALE FOR TWCA-3 /H.J. DREIFUSS/ SEMICLN LMSC/VAFB FOR
 DEPT 65-44 SEMICLN DAC/VAFB FOR MR HECKMAN. INFO CLN ISTRATAEROSPACE DIV
 FOR COMMAND POST AND WDOPO SEMICLN AFLCSG/VAFB FOR MR YOUNG SEMICLN
 6551TW FOR COL WIGNALL SEMICLN SBAMA/NORTON AFB FOR SBVP SEMICLN
 AFLC/WRIGHT PATTERSON AFB FOR MCGO. SUBJECT CLN FLASH REPORT
 IN THE LAUNCH OF DISCOVERER 38.
 DISCOVERER 38 CONSISTING OF THOR BOOSTER NO. 241 AND AGENA B
 ORBITAL STAGE NO. 1123 WAS LAUNCHED FROM VAFB COMPLEX 75-3 PAD 4

CLASSIFICATION CHANGED TO

CONFIDENTIAL

By Authority of AFR 205-2
6 APR 1956

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AT 1139:20.5 PST ON 27 FEB 1962. THE PRIMARY LAUNCH OBJECTIVE,
 TO PLACE THE DISCOVERER SATELLITE WITH PAYLOAD IN A NEAR-POLAR ORBIT,
 WAS ACCOMPLISHED WITH AN ORBIT THAT WAS NEAR NOMINAL. READINGS FROM VTS
 RADAR PLOTTING BOARD GAVE AN INJECTION ALTITUDE OF 140 STATUTE MILES,
 AN INJECTION EARTH REFERENCE VELOCITY OF APPROXIMATELY 25,600 FPS, AND
 FLIGHT PATH DEPARTURE AZIMUTH OF ABOUT 172
 DEG. KODIAK TRACKING STATION CONFIRMED ORBITAL STATUS THROUGH RECEPTION
 OF TELEMETRY AND RADAR BEACON SIGNAL ON THE FIRST ORBITAL PASS.

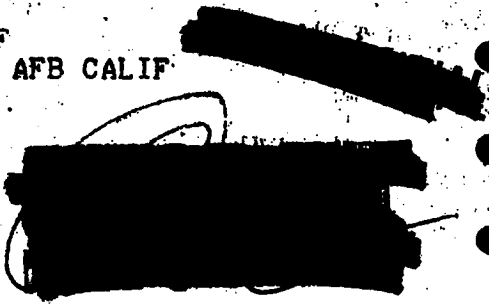
A LIST OF SIGNIFICANT LAUNCH EVENTS FOLLOWS:

LIFTOFF	ZERO	/1139:20.5 PST /
MECO /S1/	149.00 SEC	
VECO	158.17 SEC	
ENABLE D1 & D2/S2/	154.0 SEC	
D1 ON	156.72 SEC	
D1 OFF	160.86 SEC	
D1 DURATION		4.14 SEC
D2 ON	161.02 SEC	
D2 OFF	164.84 SEC	
D2 DURATION		3.82 SEC
SEPARATION COMMAND /S3/	165.32 SEC	

TWGOB
BNBRG

00209Z

FM 75 AEROSPACE TEST WG VANDENBERG AFB CALIF
TO 50 LOS ANGELES CALIF
FM 74 AEROSPACE TEST WG SUNNYVALE CALIF
LOCKHEED MISSILES AND SPACE COMPANY SUNNYVALE CALIF
ZEN/LOCKHEED MISSILES AND SPACE COMPANY VANDENBERG AFB CALIF
ZEN/DOUGLAS AIRCRAFT COMPANY VANDENBERG AFB CALIF
INFO ZEN/1STRAIAEROSPACE DIV VANDENBERG AFB CALIF
5355 AEROSPACE TEST WG PATRICK AFB FLORIDA
AFLC WRIGHT PATTERSON AFB OHIO
SAMANA NORTON AFB CALIF
ZEN/DET 1 AFLC VANDENBERG AFB CALIF
ZEN/CSD NR 1 WCMR VAFB CALIF



~~SECRET~~ FROM VWZD-27-2-46. SEC II OF II SECTIONS.

ACCOMPLISHED DURING THE PRE-LAUNCH COUNTDOWN BY THE AEROSPACE
GROUND EQUIPMENT, HOWEVER THE FOLLOWING PROBLEMS WERE ENCOUNTERED:

1. A 20 MIN DELAY IN PAYLOAD MATING DUE TO IMPROPER ARRANGEMENT OF BRACKETS THAT SUPPORT PAYLOAD ELECTRICAL HARNESS.
2. LOSS OF THE PAYLOAD SKIN TEMPERATURE MEASUREMENT. EVALUATION INDICATED THAT THE COUNT COULD PROCEED WITHOUT THIS MEASUREMENT.
3. AN IMPERATIVE PERSONNEL HIGH LIFT WAS WAS REPLACED WITH ONE FROM ANOTHER PAD.
4. DURING AGENA PROPELLANT TANKING THE FLEX PORTION OF THE PAYLOAD



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AIR CONDITIONING DUCT SEPARATED WHERE IT JOINS THE HARD LINE PORTION ON THE MAST. UPON COMPLETION OF TANKING, PERSONNEL WERE DISPATCHED TO THE PAD TO REINSTALL THE DUCT.

5. THE PAD PUBLIC ADDRESS SYSTEM BECAME INOPERATIVE BEGINNING IN TASK 6, DUE TO AN AMPLIFIER MALFUNCTION. REPAIR WAS ACCOMPLISHED AFTER THE LAUNCH.
6. A TUBE IN THE VERLORT RECEIVER REQUIRED REPLACEMENT
7. DURING PHASE I THE THOR TELEMETRY PITCH COMMAND CHANNEL MALFUNCTIONED. THIS PARAMETER WAS WAIVED.
8. DURING PHASE II THE DAC PAD FUEL FLOW METER BECAME INOPERATIVE. SINCE THE REDUNANT FLOW METER WAS OPERATIVE, NO ATTEMPT WAS MADE TO REPAIR THE INOPERATIVE FLOWMETER DURING THE COUNT.
9. AT LIFTOFF THE PAYLOAD BLANKET FAILED TO DISCONNECT FROM THE VEHICLE. THE BLANKET AND PAYLOAD DUCT WERE CARRIED WITH THE VEHICLE FOR SEVERAL HUNDRED FEET, THEN FELL.

H. DISCOVERER SYSTEM FACILITIES - OBJECTIVE ACHIEVED.

THE AGENA LINK 1 AND LINK 2 TELEMETRY SIGNALS WERE RECEIVED AND RECORDED BY VTS FROM LIFTOFF TO T PLUS 423.5 SEC AND GOOD FLIGHT DATA WERE DERIVED FROM LINK 1 FROM LIFTOFF TO T PLUS 493.5 SEC. THE VTS VERLORT RADAR PRODUCED GOOD ANALOG AND DIGITAL DATA

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RECORDS FROM LIFTOFF TO LOSS OF TRACK AT T PLUS 457.5 SEC. STATION COMMUNICATIONS DURING THE LAUNCH OPERATION WERE ADEQUATE.

3. PRE-LAUNCH COUNTDOWN

THE COUNTDOWN STARTED AT 0335 PST ON 27 FEB 1962 AND PROGRESSED TO LIFTOFF WITH ONE TECHNICAL HOLD IMPOSED AT T-15 MIN FROM 1115 TO 1125 PST FOR RANGE CLEARANCE /TRAI S/.

4. PAD DAMAGE

PAD DAMAGE WAS GENERALLY LIGHT AND NORMAL RECOVERY TIME IS EXPECTED. THE DOORS ON THE LOCKHEED FUEL TRANSFER CABINET WERE SLIGHTLY DAMAGED BY ENGINE BLAST. /SCP-4/.

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

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AGENA IGNITION 196.12 SEC / 90 PER CENT PC/

AGENA BURNOUT 441.33 SEC / 90 PER CENT PC/

AGENA BURN DURATION 245.87 SEC

VTS VERLORT RADAR FADE 457.5 SEC

VTS ACQUISITION BEACON FADE 494.5 SEC

VTS TELEMETRY FADE 499.5 SEC

2. PRELIMINARY EVALUATION INDICATES THAT LAUNCH TEST OBJECTIVES WERE ACHIEVED AS FOLLOWS:

(REF. DETAILED TEST OBJECTIVES, LMSD 446404, SECTION 2).

A. DISCOVERER BOOSTER - OBJECTIVE ACHIEVED

AT BOOSTER CUTOFF VEHICLE POSITION WAS WITHIN A SPHERE OF 5 NM RADIUS, FLIGHT PATH ANGLE WAS WITHIN PLUS OR MINUS 4 DEG, AND VELOCITY WAS WITHIN 500 FPS OF THE NOMINAL VALUE. BOOSTER STEERING AND EVENT COMMANDS WERE GENERATED AND TRANSMITTED SATISFACTORILY BY THE GROUND GUIDANCE SYSTEM AND VEHICLE RESPONSE TO THE COMMANDS APPEARS TO HAVE BEEN PROPER. MECO OCCURRED AT T PLUS 149.2 SEC AS A RESULT OF COMMAND FROM GROUND GUIDANCE SYSTEM. VERNIER ENGINE IDLE OPERATION LASTED 9.17 SEC WITH VECO OCCURRING AT T PLUS 158.17 SEC. SEPARATION WAS INITIATED BY A GROUND GUIDANCE COMMAND AT T PLUS 165.32 SEC. GROUND GUIDANCE SYSTEM DATA INDICATE THE BOOSTER COAST

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APOGEE ALTITUDE WAS 106.77 NM (NOMINAL: 106.81 NM) AND THE BOOSTER COAST APOGEE VELOCITY WAS 9980 FPS (NOMINAL: 9873 FPS).

B. AGENA AIR FRAME AND ADAPTER - OBJECTIVE ACHIEVED.

STRUCTURAL INTEGRITY WAS MAINTAINED AND NO EXCESS LOADS WERE APPLIED. THE USUAL VEHICLE LONGITUDINAL 18-20 CPS OSCILLATIONS OCCURRED DURING THE THOR BURN PERIOD. ALL PYROTECHNIC FUNCTIONS OCCURRED AT THE APPROXIMATE NOMINAL TIME. SEPARATION WAS INITIATED AT T PLUS 165.32 AND WAS COMPLETE BY T PLUS 168.07 SEC.

C. AGENA PROPULSION SYSTEM - OBJECTIVE ACHIEVED

ULLAGE ROCKET IGNITION WAS SATISFACTORY. AGENA ENGINE IGNITION OCCURRED IN A NORMAL MANNER AT T PLUS 156.12 SEC AND THE ENGINE OPERATED SATISFACTORYLY FOR 245.87 SEC. ENGINE SHUTDOWN OCCURRED AT T PLUS 441.99 SEC ON INTEGRATOR COMMAND. THE INTEGRATOR DATA SHOW A SENSIBLE VELOCITY GAIN OF 15900 FPS DURING ORBITAL STAGE BOOST. THE IMPULSE PROVIDED BY THE AGENA ENGINE WAS SUFFICIENT TO GIVE THE VEHICLE ORBITAL VELOCITY AT THE FLIGHT INJECTION ALTITUDE.

D. AGENA ELECTRICAL POWER SYSTEM - OBJECTIVE.

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

E. AGENA GUIDANCE AND FLIGHT CONTROL SYSTEM - OBJECTIVE ACHIEVED.

THE AGENA GUIDANCE SYSTEM RESPONDED PROPERLY TO A 7.96 SEC

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TIME-TO-FIRE CORRECTION AND A 4.14 SEC VELOCITY-TO-BE-GAINED CORRECTION COMMANDED BY THE GROUND GUIDANCE SYSTEM. VEHICLE ALTITUDE APPEARS TO HAVE BEEN CONTROLLED SATISFACTORYLY DURING THE COAST PHASE AND THE ORBITAL BOOST PHASE, AND CONTROL GAS EXPENDITURE WAS NORMAL DURING BOTH OF THOSE PERIODS. ENGINE SHUTDOWN WAS COMMANDED SATISFACTORYLY BY THE INTEGRATOR, AND THE D-TIMER PROPERLY CONTROLLED THE TIME AND SEQUENCE OF ALL PROGRAMMED EVENTS THAT WERE SCHEDULED TO OCCUR PRIOR TO LOSS OF TELEMETRIED DATA AT VIS. HYDRAULIC SYSTEM PERFORMANCE WAS ADEQUATE.

F. AGENA SPACE COMMUNICATIONS SYSTEM - OBJECTIVE ACHIEVED.

OPERATION OF THE ACQUISITION BEACON AND THE RADAR BEACON WAS SATISFACTORY. VIS TRACKED THE ACQUISITION BEACON FROM LIFTOFF TO T PLUS 494.2 SEC AND THE RADAR BEACON FROM LIFTOFF TO T PLUS 427.2 SEC. AT T PLUS 493.2 SEC, THE TIME OF LINK 1 TELEMETRY DATA FADE FOR VIS, ALL TELEMETRY CHANNELS WERE OPERATING. AT THIS TIME THE ORBITAL TIMER WAS SET AT 2462 SEC (STEP 2), IN THE RESET-ON POSITION, IN THE INCREASE MODE, AND ALTERNATE RE-ENTRY DISARM STATE. NO GROUND COMMANDS WERE SENT DURING THE ASCENT PHASE.

G. AEROSPACE GROUND EQUIPMENT - OBJECTIVE ACHIEVED.

BOOSTER AND ORBITAL STAGE CHECKOUT WAS SATISFACTORYLY

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