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DEPARTMENT OF THE AIR FORCE
OFFICE OF SPECIAL PROJECTS (OSAF)
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REPLY TO
ATTN OF: SP-1

12 JUN 1972

SUBJECT: Gambit Mission Summary

TO: DNRO (Dr McLucas)

Attached is the summary for Mission 4335.

LEW ALLEN, JR.
Major General, USAF
Director

1 Atch
Mission 4335 Summary

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SUMMARY

MISSION 4335

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Handle Via
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Control System Only

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GAMBIT

MISSION SUMMARY

Mission No. 4335

Vehicle No. Satellite Control Section (SCS) 4785
Payload Adapter Section 1085
Titan IIIB-35
Photographic Payload FM-35

Operation No. 6574

Launch 1530Z, 20 May 1972
Vandenberg AFB, CA

Recoveries None - Failed to achieve orbit

Probable Impact Point 14.1 degrees South 37.9 degrees East (Africa)

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MISSION HISTORY AND PERFORMANCE

I. Pre-launch

A. Satellite Control Section (SCS)

(1) The launch was slipped from 17 to 18 May to resolve an Extended Command System 16-bit telemetry anomalous signature.

(2) The launch was subsequently slipped to 19 May to permit the removal and replacement of a PCM master unit.

B. Photographic Payload Section (PPS)

Optical testing resulted in acceptance resolution of 170 L/mm, 2:1 single pass based on an interferometrically derived modulation curve.

C. Titan Booster

No significant problems were encountered.

D. Bell Telephone Laboratory (BTL) Ground Guidance Station

The final launch slip to 20 May was to permit resolution of a ground guidance computer problem.

II. Flight

Vehicle 4785 failed to achieve orbit. Data analysis indicates that there was a failure in the Augmented Control Subsystem (ACS) pneumatics between the control gas supply and the attitude control thrusters. This near total loss of pneumatic reaction control impulse resulted in an attitude error (both magnitude and direction) during the Agena staging and ascent burn such that the vehicle failed to achieve an orbit. Malfunction analysis concludes that the ACS regulator was the cause of the failure. The only failure mechanism within the regulator that satisfies all the failure criteria is a failed diaphragm.

III. Impact Analysis

A detailed impact point analysis has been completed using all available data. The most probable impact point is 14.1 degrees South 37.9 degrees East. The three-sigma perturbed footprint is a 26 nm corridor from 7 degrees South 34 degrees East to 21.5 degrees South 41 degrees East.

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