FAILURE AND ANOMOLY CHRONOLOGY SINCE JULY 1968

I. CATASTROPHIC FAILURES--Any component failure within the launch or on-orbit vehicle which voids the mission. 25X1

1.	THORAD/AGENA (CORONA 113)	17 Feb 71	THOR TURBOPUMP SYSTEM FAILURE
2.			
3.			
4.	TITAN IIIB/AGENA (GAMBIT 4335)	20 MAY 72	AGENA ORBIT ATTITUDE CONTROL SYSTEM REGULATOR FAILURE
5.	TITAN IIIB/AGENA (GAMBIT 4339)	26 Jun 73	TENTATIVELY AGENA PROPULSION SYSTEM FAILURE

II. SEVERE MISSION IMPACT--Any failure which has significantly degrading effect upon the planned mission.

1.			
2.	GAMBIT (110)	Jul 70	SECOND HALF OF MISSION UNSUCCESSFUL.

Shortly after the successful recovery of RV #1, the Extended Command System (ECS) malfunctioned due to an overheat condition in the ECS clock oscillator oven. Since the payload could no longer be commanded, recovery of RV #2 was attempted through the use of the Minimal Command System (MCS). As a result of a piece parts failure in the Switch-over electronics (SOE) box, RV #2 could not be recovered. Deorbit of the vehicle and the attached RV #2 was partially controlled through the use of the MCS and the backup stabilization system.

25X1

HEXAGON GAMBIT [ ] EARPOP

3.	HEXAGON (467)	Jul 71	FAILED TO RECOVER THE THIRD BUCKET.

This first mission of the HEXAGON Program had some parachute problems. Although parachute damage or other anomalies occurred on three of four reentry vehicles, RV #1, #2, and #4 were successfully recovered. Because of parachute cone damage, RV #1 was allowed to softland in the water and subsequently retrieved. RV #2 and #4 were successfully aerially recovered. However, on RV #3 the main chute failed at deployment and the RV impacted in the ocean and sank. Activities of an experimental nature are currently in progress to recover the film capsule from the ocean floor.

4.	ARROYO (989)	Oct 71	POWER CONTROL OSCILLATOR OR SYNTHESIZER FAILURE--MISSION ENDED.

This EARPOP mission was launched on 16 September 1971 and performed exceedingly well until mid-October 1971 at which time the spacecraft suffered a power failure; thus ending the mission.

5.	HEXAGON (467)	Feb 72	BREAK IN FILM TO ONE CAMERA. 25X1

The film in one camera broke after the second RV was full. The mission continued another three weeks but only in a monoscopic photography mode.

6.	CORONA (846)	25 May 72	REDUCED LIFETIME.

The solar array did not deploy after injection into orbit which reduced the effective life from 18 days to six days. Shortly after injection, a control gas pressure leak developed which appeared would further shorten the lifetime; however, the leak being pressure sensitive decreased to the point at which its original power reduction became pacing and the mission was completed in six days.

7. [redacted]

[redacted]

[redacted]

III. ORBITAL ANOMALIES--An equipment failure or partial failure which occurred during the mission, but was of minimal impact as a result of: (1) the nature of the failure, (2) the ability to switch to a redendant system, and (3) the development of work-around procedures. 25X1

1. [redacted]

[redacted]

2. [redacted]

3. GAMBIT ORBITAL ANOMALIES

4328	18 Aug 70	Attitude Control Systems errors on RACS, switched to PACS and continued.
		Incomplete door operation (mechanical hang-up).

4329	23 Oct 70	Roll Joint Breakstrip (use redundant)
		SPS chamber break-through (no impact)
		Erratic APTC shutter (incorrect gear face)
4331	22 Apr 71	Transponder # 1 (low signal strength).
		Eccentric film wrap (crinkling on film edges)
		Focus offset (infra-red filter left out of camera)
4332	12 Aug 71	Transponder # 2 failure (use Transponder # 1).
4333	23 Oct 72	Focus Adjust System (blown fuse, no platen drive).
	25X1	Primary Attitude Control System Failure (motor drive circuit piece part failure-use RACS).

4. [redacted]

5. STREWMAN ORBITAL ANOMALIES

2737	16 Jul 71	HARVESTER payload antenna failure. 50% mission capability lost.

THRESHER/REAPER tape recorder failures terminated TI capability.

6. HEXAGON ORBITAL ANOMALIES

1201	15 Jun 71	Attitude control system thrusters. High use of control gas during solo phase of flight. No mission impact. Contamination of vehicle external surface causing batteries to overheat.
1202	20 Jan 72	Attitude control system thrusters. High use of control gas during mission. Contamination of vehicle external surface.
1203	7 Jul 72	Tracking problems restricted scan modes and rewind velocities. Degradation of Thruster valves required transfer to redundant Attitude Control System. Redundant Thruster heating problem required reduction in mission length of 3 days.
1204	10 Oct 72	Out of spec bias of 3 degrees in yaw gyro channel of Primary Attitude Control System.
1205	9 Mar 73	Mapping camera system thermal shutter malfunctioned. A 50 degree north limit was set for operation which was graduall raised to 62 degrees north by the end of the mission.
1206	13 Jul 73	Negative bias was observed on Primary Attitude Control System. Switched to Redundant Attitude Control System.

7. P-11 ORBITAL ANOMALIES

The majority of P-11 anomalies during the course of the program have been associated with failures of:

- o S Band Transmitters
- o Tape Recorders
- o SIGINT Receiver Parts

URSALA 7338	7 Jul 72	Payload overheating resuted in six day loss of pulse radar data.
MABELI 7339	20 Jan 72	Degraded sensitivity in one receiver.
		Phase encoder anomaly- 45 day loss of power data.

8. POPPY ORBITAL ANOMALIES

[redacted]	30 Sep 69	Failure of three sub-satellites prior to MND. (Two failures within [redacted] severely reduced capability.)
	14 Dec 71	Abnormal solar cell degradation. Stabilization problem with one sub-satellite.

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