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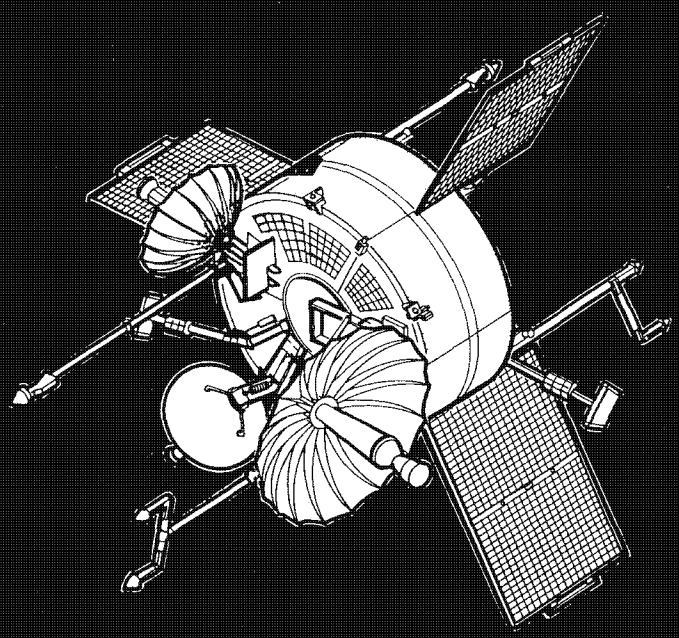
TOP SECRET [redacted] ZARF/UMBRA

MISSION 7300 MONTHLY COLLECTION SUMMARY



Sensitive Intelligence Sources and Methods Involved National Security Information

UNAUTHORIZED DISCLOSURE SUBJECT TO CRIMINAL SANCTIONS

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TOP SECRET [redacted] ZARF/UMBRA Handle via BYEMAN TALENT-KEHOLE COMINT Channels Jointly

This document contains codeword material

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BYE-96410-88
Sheet Count: __
Copy _____ of 39

25 October 1988

MISSION 7300 MONTHLY SUMMARY

SEPTEMBER 1988

This document is prepared by the [redacted] to provide a composite historical record of Mission 7300 events that occurred during the month. Included is spacecraft status and a summary of the month's tasking and collection highlights. The overall classification of this document is **TOP SECRET [redacted] ZARF UMBRA, Handle Via BYEMAN TALENT-KEYHOLE COMINT CHANNELS JOINTLY.**

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Approved by:

[redacted]

Lt. Colonel, USAF
Commander, [redacted]

CLASSIFIED BY MULITPLE SOURCES

Review on 25 October 2008

-WARNING NOTICE-
SENSITIVE INTELLIGENCE SOURCES AND METHODS INVOLVED

Table of Contents

Section I: SPACECRAFT

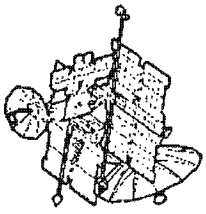
In September, the Mission 7300 program had four satellites in orbit: RAQUEL 1A, FARRAH I, FARRAH II, and FARRAH III. R1A, FI & FII were performing low altitude SIGINT missions under [redacted]

Each spacecraft is in a near-circular orbit ranging from 310 nm (RAQUEL 1A) to 435 nm (FARRAH III) altitude, with an inclination close to polar. These spacecraft are spin stabilized so that the vehicle's nadir pointing position is near polar for optimal coverage of the Northern Hemisphere while permitting world wide access. The RAQUEL and FARRAH spacecraft are configured with deployable, high-gain narrow beamwidth parabolic reflectors and low-gain omni-directional antennas. The high-gain dishes are used in determining signal location from target emitter sidelobes, while the low-gain omni-directional antennas are used to collect target emitter mainbeams and to provide sidelobe inhibit protection for the high-gain dishes.

Mission 7300 utilizes both the Consolidated Space Test Center's and the Air Force Satellite Control Network's (AFSCN's) resources for command, status telemetry, and payload transmissions. Readout of wideband payload data occurs at remote tracking stations and is relayed in real, or near real time, via communications satellite to the [redacted]

The following is a brief description of each Mission 7300 spacecraft and the payload objectives.

RAQUEL 1A (Mission 7345) - The primary mission of RAQUEL is to search for, locate, and identify new or unusual signals and to collect emitter mainbeam technical intelligence data on signals in the 4-18 GHz frequency range in accordance with the National SIGINT Requirements List (NSRL). Additional mission requirements include the collection and reporting of operational ELINT data. The payload pulse



[redacted]

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A Technical Intelligence (TI) receiver is included as part of the CW measurement system. The geopositioning accuracy for RAQUEL 1A varies from [redacted] depending upon frequency at the 400 nm slant range.

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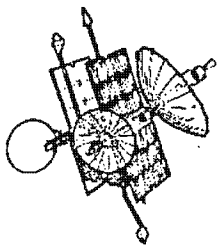
FARRAH I and FARRAH II (Missions 7346/7347) - The primary mission of FARRAH is to acquire data to satisfy General Search (GS), Operational ELINT (OE), and Technical Intelligence (TI) requirements on signals in the 2-18 GHz frequency range. General Search requirements include high priority Soviet, Chinese and other directed target areas, special signals/activities of known interest, high priority SIGINT targets and strategic and tactical targets associated with weapon systems undergoing development. Operational ELINT is collected for the purposes of Indications and Warning (I&W), SALT monitoring and force positioning. TI collection is in accordance with PEG requirements and is generally against known high priority signals and new signals discovered through the search process. A high gain antenna subsystem provides sidelobe intercept of emitters and a low gain antenna subsystem provides near horizon-to-horizon coverage of intercepts of emitter mainbeams. The following pulse and CW emitter measurements are made:



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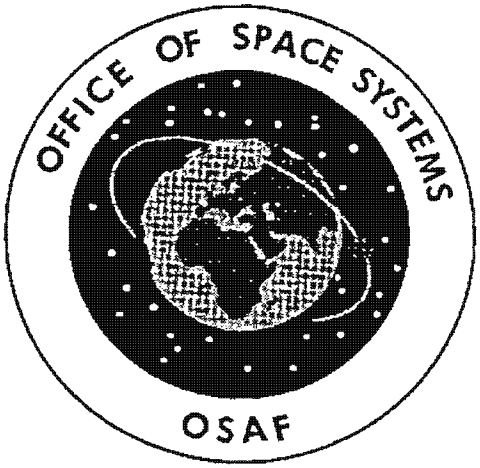
FARRAH III (MISSION [redacted] 25X1

The current status of each vehicle and payload will be found in Appendix C.



Section II: TASKING HIGHLIGHTS

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SEPT ON ORBIT SPACECRAFT STATUS 1988

S/C	AVG TSKS (MIN/DAY)	RRR TSKS (TSK/WK)	T/R CYCLES (CY/WK)	EDPS SUPP (XPOND/WK)	% SUN
R1A 126	15	13	0	0	100
F-1 76	125	23	26	61	100
F-II 51	336	213	156	72	100

R1A 126

T/R FAILED 03 MAR 87.
TRANSPOND TASKING BEGAN 06 SEP 87. PER KWBEAM DIRECTION.

F-1 76

DH ON (28 OCT 82) **
T/R #1 ANOMALY 1.1 ONLY (10 DEC 84).
T/R #1 FAILED 30 JUL 88.
T/R #3 HARD STALL 22 MAR 87.
D/H BIT LATCHES 16 FEB 88 - 26 FEB 88.

F-II 51

TI RCVR FAILURE (08 DEC 85) OPERATIONAL (09 MAR 87).
T/R #3 RESUMED NORMAL OPERATION (15 NOV 86).

OPERATIONAL STATUS

RECEIVERS T/R CUM CY (REM-CY) *

R1A 126 — RECEIVERS

BANDS	DF	OM	TI
2			
3			
4			
5			
6			
7	X	X	X
8			

T/R	CUM CY (REM-CY)
1	3647
2	15266
3	2535

F-1 76 — RECEIVERS

BANDS	DF	OM	TI
1			
2			
3			
4			
5			
6			
7			
8	X		

T/R	CUM CY (REM-CY)
1	8763
2	10678 (2758)
3	7201

F-II 51 — RECEIVERS

BANDS	DF	OM	TI
1			
2			
3			
4			
5			
6			
7			
8			

T/R	CUM CY (REM-CY)
1	9896 (3540)
2	8955 (4481)
3	9045 (4391)

[redacted]

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* T/R CYCLES REMAINING TO REACH MEAN CYCLE LIFE AT 50% CONFIDENCE LEVEL.

** D/H DATA-HANDLER.

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