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PROGRAM 989 OVERVIEW

Approved Program:

3 Missions/Yr

Elint/Comint/Telint Missions

Search/EOB/Tech Intelligence Collection Capability

Historical Performance:

28 Flights to Date (1st Flight 1 Jul 63)

25 Successes (2 Booster Failures, 1 Spacecraft Failure)

Missions have lasted up to two years

Current Mean Mission Duration (Design) is 9-10 months

Location Capability is 5 NM for some mission types

Current Status:

On Orbit -	4419	Sep 69	Savant	Soviet TLM, Search & Locate
	4422	Mar 70	Tivoli	Tech Intell - 50mhz - 4 ghz
	4421	May 70	Tripos/Sousea	Search & Locate + CW 4-12gc
	4423	Nov 70	Tophat	Troposcatter Mapping
Approved -	4427	May 71	Arroyo	Microwave Mapping
	4425	Sep 71	Ursala	EOB/Search 2-12gc
	4424	Nov 71	Mabeli	ABM Power & Polarization

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SUBJECT

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PROGRAM 989
ON ORBIT VEHICLE STATUS

Vehicle No. / Payload Name	Launch Date	Primary Mission	Frequency Range (MHZ)	Remarks
4418 TIVOLI II	19 Mar 69	DC/Tech Intell CHICOM TLM	50-4020	Dormant Status
4419 SAVANT II	22 Sep 69	DC/Type B&M Soviet TLM	61-76 163-248	~ 40 taskings/wk
4422 TIVOLI II	4 Mar 70	DC/Tech Intell CHICOM TLM	50-4020	Test bed for new ACS ~ 40 taskings/wk
4421 TRIPOS IV SOUSEA III	20 May 70	GS/DF, CW Capability	4000-8000 8000-12000	~50 taskings/wk

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ST PAUL, MINNESOTA 55101 MADE IN U.S.A CATALOG NO 15-1006-4 Visual Products Division 3M "3M BRAND" MOUNTING FRAME

3 OCT 1970

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PROGRAM 989
PRE-LAUNCH VEHICLE STATUS

Vehicle No./ Payload Name	Proposed Launch Date	Primary Mission	Frequency Range (MHZ)	Remarks
4423 TOPHAT I	18 Nov 70	Map and copy Troposcatter Comm	450-1000	Testing in progress, ship to VAFB 2 Nov, mate to Agena 6 Nov.
4427 ARROYO I	15 Mar 71	Map microwave comm sites	1200-2200 3400-3900	New ACS, mass stab & spin makeup system being introduced.
4424* MABELI	May 71	Tech intell Soviet ABM sites	151-165 387-426 862-964 1500-2500	80% design complete. P/L deliv sched early Jan 71. P/L measures main beam parameters. (Power, Polariz)
4425* URSALA I	Sep 71	Gen search/ABM EOB	2000-12,000	Two P/Ls on order. Design Progressing on schedule. System has monopulse DF Capability.
4426	Nov 71	Undefined	Undefined	Late mission approval may slide launch to 72

*Dual configuration (846/467)

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SPACECRAFT 4421/TRIPOS IV – SOUSEA III

MISSION DESCRIPTION

General search and EOB mission for pulsed radars.

GENERAL DESCRIPTION

Spacecraft 4421 is another of the advanced structure family of spacecraft in this program. Two "firsts" for this spacecraft are its all-UHF telemetry transmission capability and its capability of reading out any two of its three 1-MHz tape recorders without an intervening acquisition.

PAYLOAD DESCRIPTION

The TRIPOS IV (4 to 8 GHz) and SOUSEA III (8 to 12 GHz) payloads measure frequency, pulsewidth, PRF, and power of pulsed radars. Radio frequency is measured on a pulse-by-pulse basis to permit measurement of frequency-jumping emitters. The payloads also measure the several frequencies of emitters operating at simultaneous multiple frequencies. Up to three different frequencies can be measured on a single pulse, and up to six frequencies can be measured on two successive pulses.

The orbital system comprises two separate antenna and receiver front-end subsystems, a common frequency measuring subsystem, three dual-channel tape recorders, two UHF telemetry transmitters, and a command and control subsystem. Each receiver is connected to its own pencil-beam signal antenna and two broadbeam inhibit antennas.

MISSION SUCCESS

Excellent

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Veh. No./Midron NR	Name(s)	Launch	Life(Days)	Mission/Target
4051 7301	Hitch Hiker	3-18-63 (1st Flight)	0	Van Allen Belt
4201	Hitch Hiker I	6-26-63	75	Van Allen Belt
4001	Pundit I	10-29-63	237	Type B TLM
4101 7302	Pundit II	12-21-63	81	Type B TLM
4301 7304	Noah's Ark	7-6-64	126	ABM Search
4202	Hitch Hiker II	8-14-64	730	Van Allen Belt
4102 7303/7306	Pundit III	10-8-64	0	Type B TLM
4302 7305	Step 13/Plymouth Rock III	10-23-64	123	150-230 MHz/1000-2650 MHz
4401 7309	Pundit IV	4-28-65	810	Type B TLM/MG [redacted] 25X1
4402 7307/7308	Fanion I/Tripos I	6-25-65	630	4000-8000 MHz Search
4403 7312	Magnum	8-3-65	585	100-250 MHz ABM
4404 7313	Leige/Plicat	5-14-66	0	168-178 MHz/153-162 MHz
4405 7314	Sampan I/Sousea I	8-16-66	424	2000-4000 MHz/8000-12000 MH
4406 7315	Fanion II/Tripos II	9-16-66	82	4000-8000 MHz Search
4408 7316/7319	Slewto/Pennon	5-9-67	94/75	Hen House TI/[redacted] 25X1
4409 7320	Savant I	6-16-67	494	Types B&M TLM (Pre-D)
4410 7321	Facade	11-2-67	97	250-2250 MHz ABM
4412 7324	Tivoli I	1-24-68	469	100-4020 MHz ABM TI
4411 7322/7323	Lampan I/Sampan II	3-14-68	368	1000-4000 MHz Search
4420 7326/7327	Tripos III/Sousea II	6-20-68	569	4000-12000 MHz Search
4413 7325	Vampan I	9-18-68	374	100-1000 MHz ABM Search
4414	Aztec I —	-	-	Optical Surface Evaluation
4415	Aztec II —	-	-	Optical Surface Evaluation
4416	Calsat —	-	-	SCF Calibration
4418 7330	Tivoli II	3-19-69	520	50-4020 MHz TI (Pre-D)
(4419 7331	VAMPAN II) never flew			
4417 7328/7329	Lampan II/Sampan III	5-1-69	291	1000-4000 MHz Search
4419 7336	Savant II	9-22-69	601	Types B & M TLM (Pre-D) 25X1
4407 7317	Weston	9-30-69	321	[redacted]
4422 7335	Tivoli III	3-4-70	577	50-4020 MHz TI (Pre-D)
4421 7333	Tripos IV/Sousea III	5-20-70	-	4000-12000 MHz Search
4423 7334	Tophat I	11-18-70	-	450-1000 MHz Tropo Copy
4427 7337	Arroyo	9-10-71	30	Microwave Map
† 4424 7339	Mabeli	1-20-72	-	ABM Main Beam TI
4425 7338	Ursala I	7-7-72	-	2000-12000 MHz EOB
4426 7342	Ursala II	10 NOV-73	-	2000-12000 MHz EOB
4428 7340	Tophat II	10 Apr 1-74 (10 APR)	-	450-1000 MHz Tropo Copy
4429 7341	Raquel I	29 Oct X-74	-	4000-18000 MHz Search/TI
4430 7343	Ursala III	8 JUL 76 ~~1-74~~	-	2000-12000 MHz EOB
4431 7344	Ursala IV	16 MAR 79 ~~1-75~~	-	2000-12000 MHz EOB
7345	Raquel IA	16 MAR 78 8-76		
7346	FARRAH I	11 MAY-82		
7347	FARRAH II	25 JUN-84		

LORRI I (12h)
LORRI II (12h)

18 JUN 80
18 MAR 86 - PTO

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