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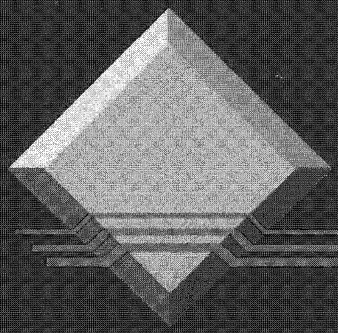

Mission 7247
Program Status Review

1 December 1998
(Final)

CL BY: [redacted]
CL REASON: 1.5 (C)
DECL ON: X1
DRV FROM: NRO SCG 4.0, 14 OCT 95

WARNING
This document shall not be used as a source for derivative classification

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Agenda

08:15-08:30	Check In/Security	
08:30-08:35	Opening Remarks	
08:35-08:50	TAOS Mission Status	
08:50-09:10	Mission 7247 Status	
09:10-10:15	Mission 7247 Technical Bulletin Highlights	
10:15-10:30	Break	
10:30-10:45	Network Operational Status Highlights	
10:45-11:00	S-Band Calibration Highlights	
11:00-11:15	BIG SHOW Beam Steering Loss	
11:15-12:00	1998 BIG SHOW ERP Analysis	
12:00-13:00	Lunch	
13:00-13:40	Conjunctive Analysis Update	
13:40-14:00	LPAR Receiver Model	
14:00-14:15	[redacted]	
14:15-15:00	Summary, Discussion, and Action Items	All

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TAOS Mission

Highlights

TAOS Mission Highlights

TAOS Payload System Support Status

- TAOS operational support activities continue to concentrate on Mission 7247 requirements
- TAOS Mission is currently scheduled to continue through September 1999
- GTE authorized to continue supporting day and swing shifts at TAOS Operations Center [redacted] 25X1
  - As of 1 October 1998 GTE operations support was to be reduced to one person
  - GTE authorized to continue two shift support
  - Duration of 2 shift support is TBD - goal is to continue through September 1999
  - Proposal submitted to provide two shift support through termination of mission on 30 September 1999

TAOS Mission Highlights

TAOS Payload System Support Status (continued)

- CSF, Surge Support and Anomaly Resolution support reduced for 1999
  - GTE TAOS support team remains intact
  - Key support personnel remain available to support TAOS operations
  - Reduced efforts require job sharing with other GTE programs
  - Job sharing may result in some latency in responding to unplanned support requests

TAOS Mission Highlights

STEP Mission 0 Vehicle Operations Support Status

- 1 SOPS, [redacted] retains Satellite Control Authority
  - Responsible for all planning functions, orbit analysis products and all satellite command/control functions
- [redacted] remains responsible for TAOS Operations at [redacted]
  - Relocated to [redacted] in July 1997
  - Utilizes 5 SOPS personnel at [redacted] for daily support activities
  - Responsibilities include [redacted] resource configuration, MUE maintenance and daily ETW operations
- GTE and [redacted] personnel assumed responsibility for TDAC data recording at [redacted] on 1 October 1998
  - Formerly the responsibility of 5 SOPS
- TAOS Mission Final Report updates submitted to the Air Force on 29 October 1998
  - Copies can be provided on request

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TAOS Mission Highlights

TAOS Experiment Support

- TAOS Category "C" [redacted] Experiments
  - GTE personnel continue to support [redacted] experiments
  - Currently investigating experiments for spring of 1999
    - Anticipate several engagements
    - [redacted]
      - [redacted]
      - [redacted]
      - [redacted]

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TAOS Mission Highlights

TAOS Experiment Support

- TAOS Category "D" [redacted]

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[redacted]

TAOS Mission Highlights

Attitude Control System Changes - 1998

- Executed 4 attitude control system changes since 1 January 1998
  - Seasonal changes in vehicle orientation required to orient solar arrays to sun
  - Changes compensate for IMU failure in July 1994
  - 6 January 1998, Pitch to Roll Momentum Bias +β
    - Payloads off 2 January at 0836Z due to Vehicle Safehold
      - Power limitations and low temperatures preclude turn on before transition
    - Transition started 6 January at 0643Z
    - Spacecraft returned to Normal Mode 7 January at 0632Z
    - RIVS resumed normal operation 15 January at 2348Z
      - Sensor unavailable for collection for approximately 13.5 days
      - Extended down time resulted from spacecraft power limitations immediately after transition

TAOS Mission Highlights

Attitude Control System Changes - 1998

- 6 May 1998, Roll to Pitch Momentum Bias transition
  - Payloads commanded off 5 May at 0307Z
  - Transition started 5 May at 1626Z
  - Spacecraft returned to Normal Mode 6 May at 1758Z
  - [redacted] resumes normal operation 8 May at 1840Z
    - [redacted] unavailable for collection for approximately 3.5 days as a result of the transition

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TAOS Mission Highlights

Attitude Control System Changes - 1998

- 29 July 1998, Pitch to Roll Momentum Bias-ß
  - Payloads commanded off 29 July at 0530Z
  - Transition started 29 July at 1605Z
  - Spacecraft returned to Normal Mode 30 July at 0340Z
  - [redacted] resumes normal operation 4 August at 0750Z
    - [redacted] unavailable for collection for approximately 6 days as a result of the transition

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TAOS Mission Highlights

Attitude Control System Changes - 1998

- 10 November 1998, Roll to Pitch Momentum Bias transition
  - Payloads commanded off at 0538Z 10 November
  - Transition started at 1630Z 10 November
  - Spacecraft returned to Normal Mode at 0159Z 11 November
  - [redacted] resumes normal operation at 2140Z 12 November
    - [redacted] unavailable for collection for approximately 2.5 days as a result of the transition

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- Next transition planned for February 1999

TAOS Mission Highlights

TAOS Vehicle Anomalies Since 1 January 1998

- Five spacecraft anomalies since 1 January 1998
  - Not including 22 Safeholds due to loss of earth presence by ACS system
- 3 problems were self-clearing
  - 31 March - C/DH fails to transfer uplinked command to LS-2
    - Second command transmission was successful
  - 6 April - No opening engineering telemetry
    - XMODEM interface errors between C/DH and Mass Memory Unit (MMU) noted
    - Errors were self-clearing, no subsequent problems
  - 4 July - Unable to command MMU to stop transfer of payload data for downlink
    - Problem cleared at next support with normal commanding
    - Resulted in 1.5 hour loss of mission data

TAOS Mission Highlights

TAOS Vehicle Anomalies Since 1 January 1998

- Two anomalies required corrective action
  - 24 August - MMU data transfer slowed by delays between message packets
    - Power cycle returned unit to normal operation
    - No loss of mission data
  - 19 November - C/DH self resets
    - Reset results in removing power to all non-essential spacecraft functions
    - All payloads and MMU removed from power bus
    - Unit returned to normal operation after reset
    - Resulted in 23.5 hours of lost [redacted] collection

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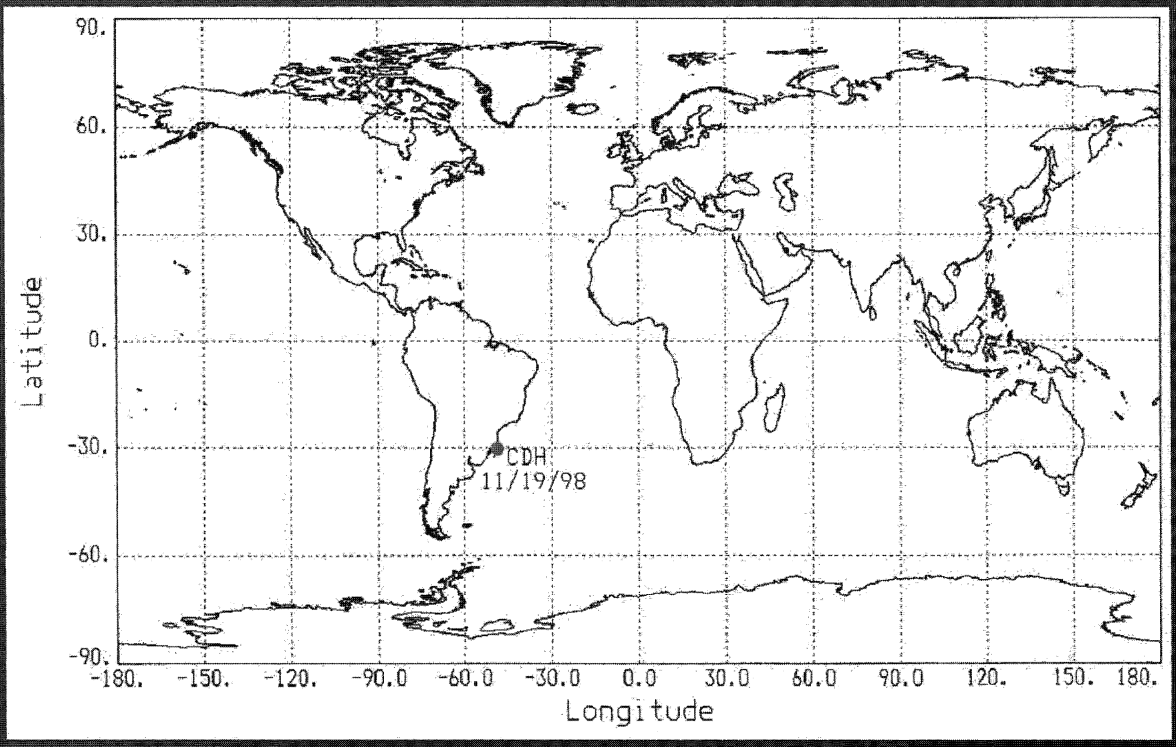
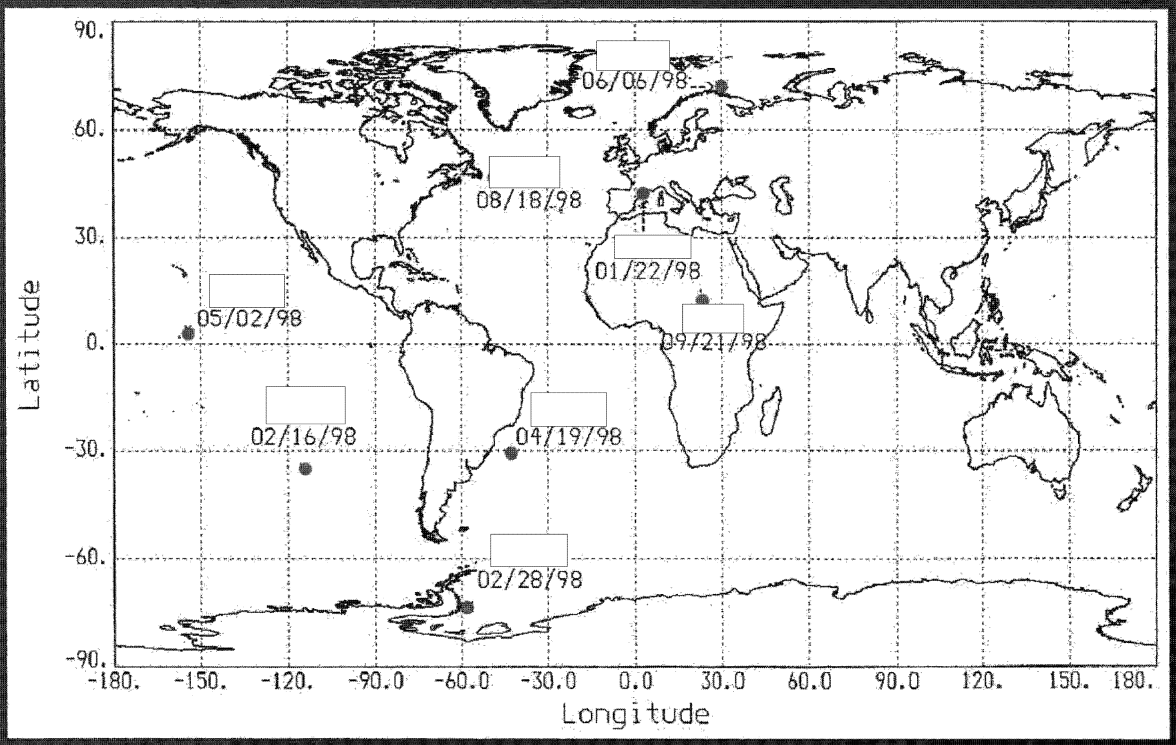
TAOS Mission Highlights

TAOS Vehicle Anomaly - Subsatellite Locations



TAOS Mission Highlights

TAOS Payload Anomalies - Subsatellite Locations



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TAOS Mission Highlights

TAOS Payload System - Cumulative Operational Time

	GFC #1	GFC #2	BIM				DCS #1	DCS #2
Pre-Launch Hours	1,456	1,305	1,362	824	510	448	955	949
On-Orbit Hours	26,365	17,573	35,086	34,176	24,893	20,583	7,215	9,399
Total Hours	27,821	18,878	36,448	35,000	25,403	21,031	8,170	10,348

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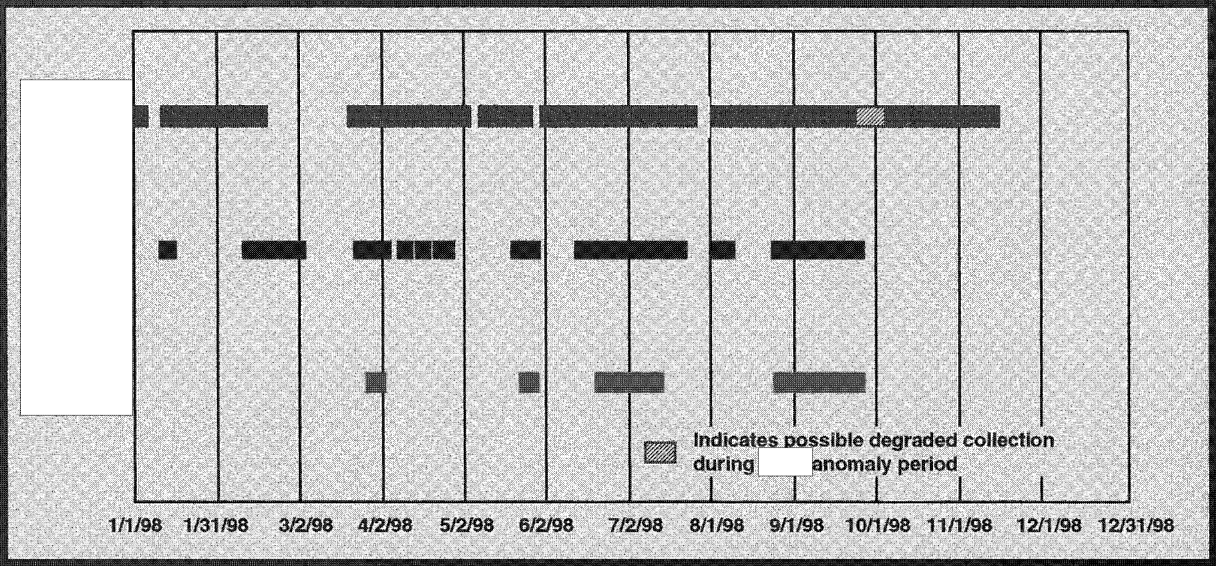
Operational time as of 10 November 1998

TAOS Mission Highlights

TAOS Sensor Availability - 1 January to 10 November 1998



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[redacted] = 5,904 hours (79% availability)
[redacted] = 2,586 hours (38% availability)
[redacted] = 1,344 hours (18% availability)

TAOS Mission Highlights

TAOS Payload System Operational Status

[redacted]	Functional	[redacted]
	Functional	
	Functional	
GFC-1	Functional	Operating normally
GFC-2	Non-operational	EEPROM corrupted
DCS-1	Functional	Intermittent operation requires occasional reset
DCS-2	Functional	Intermittent operation requires occasional reset
GPS	Non-operational	Low carrier-to-noise ratio

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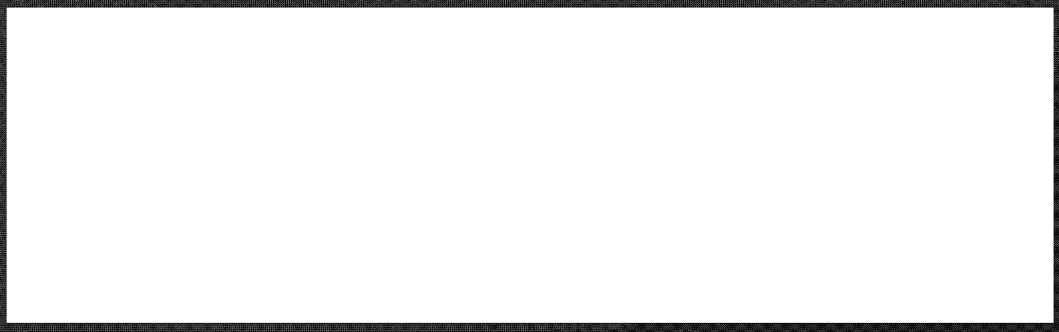
TAOS Mission Highlights

TAOS Payload System Operational Configuration



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GFC-1	Unit On - Executing Payload Executive Software
GFC-2	Unit Off - Functions as a heater when needed
DCS-1	Unit Off - No further activities anticipated
DCS-2	Unit Off - No further activities anticipated
GPS	Unit Off - Non-operational

Mission 7247

Highlights