



# **JOINT USERS RESOURCE ALLOCATION REVIEW BOARD (JURAP)**

*January 16, 2003*



***NASA / Jet Propulsion Laboratory  
California Institute of Technology***



**Jet Propulsion Laboratory**  
California Institute of Technology

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Pasadena, CA 91109-8099

(818) 354-4321



February 3, 2003

Refer to: 930-03-001-ESB:lc

TO: Distribution

FROM: Eugene S. Burke

SUBJECT: Minutes for the Joint Users Resource Allocation Planning Committee Meeting held January 16, 2003.

**NEXT JURAP MEETING:**  
**Thursday, March 20, 2003**  
**JPL Bldg. 303, Room 411 – 1:00 p.m.**  
**There will be no meeting held in February**

Attendees:

Andujo, A.  
Baldwin, J.  
Bartoo, R.  
Brower, G.  
Brymer, B.

Compton, B.  
Doody, D.  
Gage, K.  
Hall, J.  
Hampton, E.

Kim, K.  
Lacey, N.  
Martinez, G.  
Morris, D.  
Ryan, R.

Ryne, M.  
Slade, M.  
Valencia, J.  
Waldherr, S.

The Joint Users Resource Allocation Planning Committee meets monthly to review the status of Flight Projects, the requirements of other resource users, and to identify future requirements and outstanding conflicts. The last regular meeting was held on November 21, 2002 at the Jet Propulsion Laboratory.

***Introductory Remarks / Conflict Resolutions – E. Burke***

Mr. Burke discussed the successful return to service of DSS-24 and other scheduled downtimes, and also spoke about matters discussed during the NASA Headquarters Science Prioritization Board meeting, such as the Rosetta launch slip, which was due to a problem with the Ariane 5 launch vehicle. At this time the Project is working on a redesign that will most likely delay its launch past 2003. Other issues discussed were the Mars missions planned for 2007 through 2009 and any foreseeable support issues.

***RARB Action Items – D. Morris***

Action Item 3 is now closed. A. Haldeman modified the GSSR/Mars Resource Request, in order to reduce resource constraints. The Mars program endorsed this request, and RAP Scheduling has been able to work the requests in.

Action Item 5 is now closed. The GOES-N action has been closed with an unofficial scheduled launch date of April 1, 2005. The launch vehicle has been changed from an Atlas to a Delta-III, which will require modification of the spacecraft. The Project would like to use a Delta-IV launch vehicle, which would allow them to launch as early as April 1.

All but one Action Item has been closed.

**SPECIAL REPORTS*****NASA Headquarters Science Prioritization Board Meeting – D. Morris***

D. Morris presented highlights of their recent trip. Seven active missions will be at Mars during the 2003-2004 period. Viewperiod overlaps with other missions range from 20% - 80%, but most contention is expected to be resolved. The only real problem area during the crunch period seems to be the 70m DSS Maintenance. Unfortunately, there is no other option than using 34m antennas since the majority of Mars viewing taking place during daylight hours. Another issue brought to the attention of the Board was the recent typhoon that shut down Guam. If such an event were to occur during the high activity period there would be very little time, if any, to pick up support for TDRS, particularly during the previously planned GOES-N launch.

***DSS-27 Downtime Proposal – J. Valencia***

A new Downtime proposal has been prepared for DSS-27 to perform Configuration Control Group (CCG) Microwave Switch Replacement (MSR). The time proposed is in week 23 DOY 155-157. The JURAP members submitted this downtime for approval, and there was no objection from any of the Projects. RAP Scheduling has so far been able to make the time available with little or no impact to the Projects.

***Resource Analysis Team – K. Kim and N. Lacey***

The Rosetta launch has been changed to a date to be determined later. No other changes have been made to the DSN Mission Set since the last JURAP meeting in November. For a complete listing of Ongoing and Advanced Planning Projects visit the following link for the RAPSO website: <http://rapweb.jpl.nasa.gov/tmodmiss.pdf>

On December 27, 2002, NSP implementation and the 20kW X-band transmitter were completed at DSS-24. No other changes have been made to the DSN Resource Implementation Planning Matrix since the last JURAP meeting in November. For a complete listing of the DSN Resource Implementation visit the following link for the RAPSO website: <http://rapweb.jpl.nasa.gov/tmodplns.pdf>

The following studies are on hold during the preparation of the RARB meeting:

- Lunar-A Load Study redo due to changed launch date
- Messenger Load Study

- ST5 Load Study

A review and status of the RARB timeline was discussed.

- January 22, 2003 - A preliminary RARB Red Book will be posted on the RAPWEB for Projects/User's review.
- January 31, 2003 - Complete Projects/Users Review.
- February 6, 2003 - Post final Contentions and Recommendations on the RAPWEB

To see a more detailed RARB timeline and RARB materials please visit the following link:

<http://rapweb.jpl.nasa.gov/RARB-RED.htm>

#### ***DSS Downtime Forecast – J. Valencia***

In 2003, there is a new proposal to perform a Microwave Switch Replacement at DSS-27 in week 23 DOY 155-157. There are no changes to Downtime schedules in 2004, 2005 or 2006 since the last JURAP meeting in November. Please see the attached Downtime report for pending Downtime proposals or visit the following link on the RAPS0 website:

<http://rapweb.jpl.nasa.gov/planning.htm>

#### ***DSN Operations – J. Buckley***

There was no presentation given at this month's JURAP.

#### ***Goldstone Solar System Radar – M. Slade***

The GSSR Project experienced many problems with Goldstone support resulting in a total loss of data from recent observations. On January 5, during a DSS-14/Greenbank support, DSS-14 experienced hardware problems with the subreflector controller and the APA. Although the problems were resolved the time allocated with Greenbank was missed. On January 13, during a DSS-14/Greenbank support, a communications failure was experienced due to a new information security firewall installed by CSOC. Although several submissions were made for modifications to the firewall rules well in advance, the policy changes were not made until after the support was completed.

#### ***Radio Astronomy / Special Activities – G. Martinez***

It was reported that four Clock Synchronization activities during the last month were successful, yielding 100% data capture. Two Cat M&E activities suffered an antenna stop, and a minor tape malfunction, but managed to gather 99.93% data. A brief ACS controller failure at one of the DSS-65 SGP activities resulted in a 99.83% data collection. One Gravity Probe-B support at DSS-63 lost sub-reflector controller sub-system support, but no data loss resulted.

#### ***JURAP Science Advisor – E. Smith***

There was no presentation given at this month's JURAP.

### **FLIGHT PROJECTS REPORTS**

***Voyager – J. Hall***

Both Voyager spacecraft are healthy and all operations are nominal. Overall DSN support was reported as good. The Voyager 1 support experienced problems with rain at DSS-65 which resulted in 18 hours of lost data, and a monthly 4.1% overall data loss. Voyager 2 suffered a minor outage caused by rain at DSS-45, but resulted in a mere .3% data loss for the month.

***Cassini – D. Doody***

The spacecraft and Huygens Probe are in good health and all operations are nominal, and DSN support has been excellent. The Probe Relay Test #5 was completed with S-Band simulation data being transmitted from the DSN. Overall, the test was successful. The 40-day Gravity Wave Experiment # 2 also was successfully completed.

***ISTP, WIND, POLAR, SOHO, GEOTAIL, Cluster II – A. Chang***

There was no presentation given at this month's JURAP.

***NOZOMI – M. Ryne***

The Nozomi spacecraft is in good health. In an effort to keep the spacecraft warm and powered the spacecraft is off angle by 90 degrees from the Earth to position the solar panels toward the Sun. This has caused degraded data reception and commanding to and from the spacecraft. Range and Delta-DOR data is being successfully gathered, but Doppler data is unusable. The spacecraft successfully completed the Earth Swingby 1 on December 21, 2002, and was only 12 kilometers off target. The spacecraft is still suffering from thermal issues, and the processor damage from the solar flare in April 2002 is much worse than originally thought. During the months of March and April 2003, no tracking supports will be attempted, as the angle and distance of the spacecraft will make it impossible.

***MAP, ACE, and IMAGE, Genesis – S. Waldherr***

There was no presentation given at this month's JURAP.

***Mars Global Surveyor – E. Brower***

The spacecraft is in good health. The mission is confident that they will complete most of their objectives for the current extended mission phase ending in August 2004. The Project believes that the Mission will be extended out to 2008, as there is enough Hydrazine fuel to maintain a steady orbit well beyond January 2008.

***Mars Odyssey – B. Mase / P. Poon***

There was no presentation given at this month's JURAP.

***INTEGRAL – D. Holmes***

The spacecraft is healthy, has successfully completed its performance verification phase, and is now performing science observations. The Project is concerned about the large amount of discrepancies experienced with the DSN.

***Ulysses – B. Brymer***

All operations and supports with the Ulysses spacecraft are nominal. The Project was very pleased overall with the NSP support at DSS-24.

***Galileo – B. Compton***

The Project is pleased that the tape recorder is now functional after suffering high radiation during the Amalthea Close Approach. Due to the delay caused by the tape recorder, mission operations have been extended to the end of February, and the Project is seeking additional support time. The Project thanked the other missions for their help in clearing time for Galileo. The J35 Impact sequence is being completed and impact is expected on September 21, 2003. A request for impact sequence support has been submitted and is being negotiated.

***Stardust - R. Ryan***

The Stardust spacecraft is healthy. DSN support has been very good with a few exceptions. The Interstellar collection period has been completed and the collection gel has been covered. The Navigational-Camera periscope calibration is scheduled for January.

***Pioneer 10 - R. Ryan***

It is assumed that the spacecraft is healthy, although the DSN has been unable to track the spacecraft due not being able to lock on to the low signal of about -183dBm. The Arecibo Observatory was able to see the signal, but was also unable to lock on to the spacecraft.

***Chandra – K. Gage***

The Chandra spacecraft is in good health. The spacecraft suffered some problems with its Momentum Unloading Propulsion System thruster. The thruster performance issue did not hinder the spacecraft's observation schedule due to extended support provided by the DSN. The Project thanked the other missions that assisted by clearing time for the troubleshooting supports.



**RAPSO**

**Resource Allocation Planning  
and Scheduling Office**



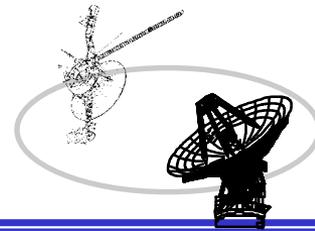
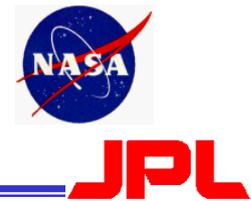
**Jet Propulsion Laboratory  
California Institute of Technology**

# **Joint Users Resource Allocation Planning (JURAP) Meeting**

**January 16, 2003**

## **Action Item Status From August 13, 2002 RARB (Resource Allocation Review Board)**

**David G. Morris**



## Resource Allocation Planning & Scheduling Office (RAPSO)

# Action Item Summary

<i>AI#</i>	<i>Year</i>	<i>Month(s)</i>	<i>System</i>	<i>Responsible</i>	<i>Due Date</i>	<i>Status</i>
01	2003	Jan-Dec	DSMS P & C	R. Miller	9/19/2002	Closed

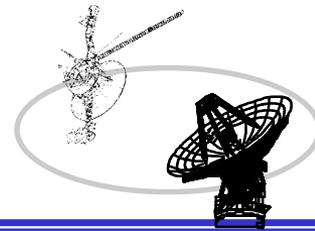
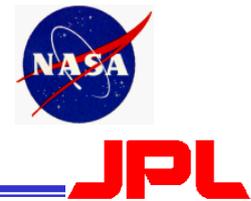
**ACTION:** Investigate and Negotiate the feasibility of alternate assets providing current DSN Catalog Maintenance and Enhancement (CAT M&E) radio sources.

**RESPONSE:** (9/19/02) The Reference Frame and Calibration Project reevaluated requirements which reduced scheduling constraints for acquiring sources. Therefore forecasted allocations should prove adequate with only some missed periods in 2003.

<i>AI#</i>	<i>Year</i>	<i>Month(s)</i>	<i>System</i>	<i>Responsible</i>	<i>Due Date</i>	<i>Status</i>
02			DSMS Engineering	J. Statman	9/19/2002	Closed

**ACTION:** Provide date when 810-5 will be updated with revised G/T values based upon new X/X/Ka feeds on the 34m BWG. (Reference page 28 of DSMS Engineering presentation.)

**RESPONSE:** (10/18/02) Module 104 will be published by 7/1/2002; measurements will be taken in February 2003.



## Resource Allocation Planning & Scheduling Office (RAPSO)

# Action Item Summary

<i>AI#</i>	<i>Year</i>	<i>Month(s)</i>	<i>System</i>	<i>Responsible</i>	<i>Due Date</i>	<i>Status</i>
03	2003	July-August	GSSR & Mars Program Office	A. Haldeman C. Edwards	12/12/2002	Closed

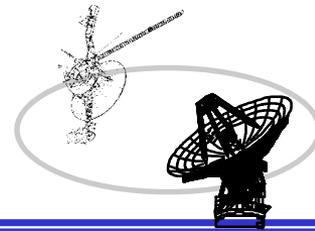
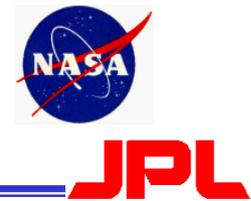
**ACTION:** Investigate and negotiate the conflicting requirements for GSSR-Mars Landing Survey vs. ongoing Mars Program spacecraft support.

**RESPONSE:** (11/14/02) The GSSR-Mars Landing Survey reevaluated requirements which reduced scheduling constraints and those are proceeding through RAP. The first two allocation requests have been inserted into weeks 28 and 29 without any conflicts. Requests for weeks 31-38 are inserted and these weeks will be negotiated soon.

<i>AI#</i>	<i>Year</i>	<i>Month(s)</i>	<i>System</i>	<i>Responsible</i>	<i>Due Date</i>	<i>Status</i>
04	2003	October	SGP	P. Wolken	9/19/2002	Closed

**ACTION:** Consult with the Project for a decision regarding all SGP recommendations made by RAPSO and provide RARB Representative authority to negotiate recommendations that reduce SGP support.

**RESPONSE:** (11/14/02) Closed with SGP CSR.



## Resource Allocation Planning & Scheduling Office (RAPSO)

# Action Item Summary

<i>AI#</i>	<i>Year</i>	<i>Month(s)</i>	<i>System</i>	<i>Responsible</i>	<i>Due Date</i>	<i>Status</i>
05	2003	December	NASA HQ Code S	B. Geldzahler	10/17/2002	Closed

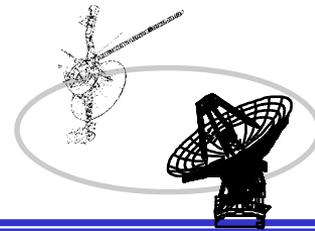
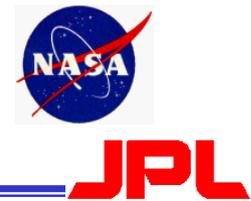
**ACTION:** Coordinate NASA Code Y to NOAA support for GOES N to be outside the 2003 – 2004 High Activity period. R. Skidmore states that the GOES-N Project is aware of the contentions and GSFC representatives will work with the Project for a decision to resolve the issues.

**RESPONSE:** (11/26/2002) Launch Date is now Not Earlier Than (NET) April 1, 2004.

<i>AI#</i>	<i>Year</i>	<i>Month(s)</i>	<i>System</i>	<i>Responsible</i>	<i>Due Date</i>	<i>Status</i>
06	2003- 2004	December- April	DSMS Plans & Commit Office and Mars Program	R. Miller C. Edwards	10/11/2002	Closed

**ACTION:** Develop planning envelope for Mars Program to plan their critical support within. This is to preserve and assure other missions' committed support throughout this period as well as needed DSS Maintenance as presently defined.

**RESPONSE:** (11/22/2002) RAPSO has presented and received concurrence from Mars Program and DSMS Plans and Commitments Office for the definition of this planning envelope.



## Resource Allocation Planning & Scheduling Office (RAPSO)

# Action Item Summary

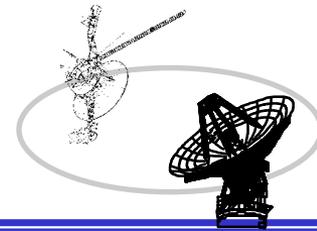
<i>AI#</i>	<i>Year</i>	<i>Month(s)</i>	<i>System</i>	<i>Responsible</i>	<i>Due Date</i>	<i>Status</i>
07	2003-2004	December-April	Mars Program	B. Arroyo	06/01/2003	Open

**ACTION:** Multi-mission DSN Allocation and Planning (MDAP) provide a Mars Program coordinated input to Resource Allocation (Mid-Range) Planning Team (RAPT) of at least one week per week at least 6 months prior to the schedule week. This action will use the result of Action Item 6 to clarify the scope of resources in which to plan to.

<i>AI#</i>	<i>Year</i>	<i>Month(s)</i>	<i>System</i>	<i>Responsible</i>	<i>Due Date</i>	<i>Status</i>
08	2005	April-June	RAPSO	N. Lacey	10/17/2002	Closed

**ACTION:** Coordinate new plan for DSS-63 Antenna Controller Replacement Task with DSMS Engineering based upon newly defined requirements provided by Cassini.

**RESPONSE:** (11/19/2002) The DSS-63 Antenna Controller Replacement with the concurrence of DSMS Engineering is now planned for 09/19/05 - 11/06/05, Weeks 38 - 44, DOY 262 - 310.



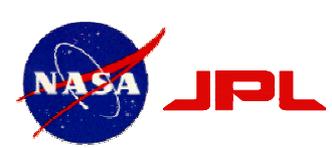
## Resource Allocation Planning & Scheduling Office (RAPSO)

# Action Item Summary

<i>AI#</i>	<i>Year</i>	<i>Month(s)</i>	<i>System</i>	<i>Responsible</i>	<i>Due Date</i>	<i>Status</i>
09	2005	July	RAPSO	N. Lacey	10/17/2002	Closed

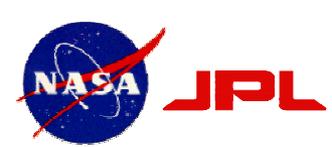
**ACTION:** Coordinate new plan for DSS-43 Antenna Controller Replacement Task with DSMS Engineering based upon newly defined requirements provided by Cassini.

**RESPONSE:** (11/19/2002) The DSS-43 Antenna Controller Replacement with the concurrence of DSMS Engineering is now planned for 07/25/05 - 09/11/05, Weeks 30 - 36, DOY 206 - 254.



## **JURAP Resource Allocation Review**

# **Special Report DSS-27 June 2003 Downtime Proposal**



# **JURAP Resource Allocation Review Analysis and Recommendations 2003- June (Weeks 23-26)**

## **EVENTS**

**DSS-27 Downtime Proposal for CCG Task, Week 23, DOY 155 – 157, Wednesday through Friday**

**Cassini Conjunction beginning in Week 25**

**GBRA RA500 SOC-M4 quarterly epoch in week 24**

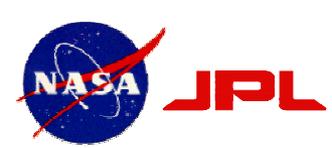
**Genesis maneuver in week 24, continuous on DOY 162 and 163**

**GSSR Asteroid 1998FH12 in week 26, DOY 177 - 179**

**Mars Exploration Rover-A continuous launch and TCM support**

**Mars Exploration Rover-B launch in week 26 and continuous support**

**Mars Express launch support in weeks 23 and 24**



# **JURAP Resource Allocation Review Analysis and Recommendations 2003- June (Weeks 23-26)**

## **EVENTS**

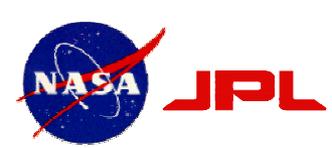
**Mars Odyssey THEMIS II beginning in week 25**

**MUSES-C TCM support in weeks 23 and 24**

**Nozomi TCM in week 24, DOY 163, Earth and Lunar Swingby in week 25**

**Stardust Deep Space Maneuver 3 and TCM in week 23**

**Voyager 2 MAGROL in week 25, DOY 171**



# **JURAP Resource Allocation Review Analysis and Recommendations 2003- June (Weeks 23-26)**

## **RECOMMENDATION**

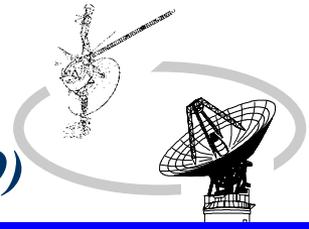
**DSS-27 Downtime Proposal for CCG task in week 23, DOY 155 – 157. Project/Users supports have been re-allocated: ACE, Geotail, SOHO, and Cluster 2 SSO to accommodate the requested downtime.**

## **ANALYSIS**

**(34HSB) Low unsupportable time is forecast on DSS-27, however, changes are required to user requests in week 23 to approve the DSS-27 CCG Task.**



Interplanetary Network Directorate  
DEEP SPACE MISSION SYSTEMS (DSMS)



**JPL**

*Resource Allocation Planning & Scheduling Office (RAPSO)*

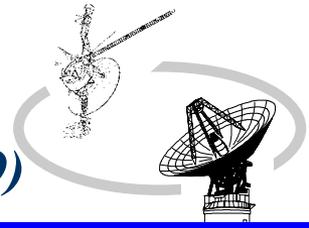
**JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE**



# **Resource Analysis Team**

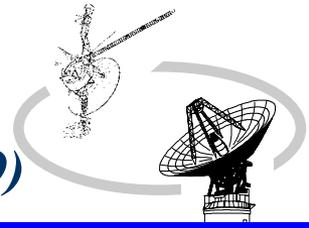
**January 16, 2003**

***Kevin Kim***



## ◆ RESOURCE NEGOTIATION STATUS

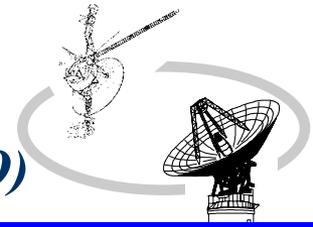
- 2003 WEEKS 09 – 12 (THRU 03/23/2003) WAS RELEASED TO DSN ON 01/13/2003.
- 2003 WEEKS 13 – 16 (THRU 04/20/2003) IS DUE TO BE RELEASED ON 01/31/2003.
- 2003 WEEKS 23 – 26 (THRU 06/29/2003) WILL GO INTO NEGOTIATIONS STARTING 01/24/2003.



◆ **SPECIAL STUDIES/ACTIVITIES**

◆ **ON-GOING ACTIVITIES**

- MADB/TIGRAS TESTING AND TRAINING
- DOWNTIME PLANNING
- LUNAR-A LOAD STUDY REDO DUE TO CHANGED LAUNCH
- MESSENGER LOAD STUDY
- ST5 LOAD STUDY



◆ **RARB – FEBRUARY 11, 2003**

- TIMELINE POSTED FOR FEBRUARY 11, 2003 IS AVAILABLE ON RAPWEB.
- NASA HEADQUARTERS SCIENCE REVIEW ON 01/14/2003.
- RARB REDBOOK PRELIMINARY v1.0 FOR PROJECTS/USERS' REVIEW IS DUE 01/22/2003 (14 WORKDAYS REMAINING).
- RARB REDBOOK FINAL v2.0 FOR RARB IS DUE 02/06/2003 (3 WORKDAYS REMAINING).

**[HTTP://RAPWEB.JPL.NASA.GOV](http://rapweb.jpl.nasa.gov)**

## DSN Resource Implementation Planning Matrix

Station	Subnet	Delivery Date	S-Band Down	S-Band Up	X-Band Down	X-Band Up	20kW X-Band	Ka-Band Down	Ka-Band Up	NSP
DSS-14	70M	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	TBD	N/A	<b>05/13/03</b>
DSS-15	34HEF	XXXX	XXXX	N/A	XXXX	XXXX	XXXX	TBD	N/A	<b>04/10/03</b>
DSS-16	26M	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A
DSS-24	34B1	XXXX	XXXX	XXXX	XXXX	<b>XXXX</b>	<b>XXXX</b>	10/01/05	N/A	<b>XXXX</b>
DSS-25	34B2	XXXX	N/A	N/A	XXXX	XXXX	<b>09/01/03</b>	XXXX	XXXX	<b>03/09/03</b>
DSS-26	34B2	04/02/03	N/A	N/A	04/02/03	04/02/03	04/02/03	04/02/03	N/A	04/02/03
DSS-27	34HSB	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A
DSS-34	34B1	XXXX	XXXX	XXXX	XXXX	XXXX	04/07/03	01/01/05	N/A	04/07/03
DSS-43	70M	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	TBD	N/A	02/10/03
DSS-45	34HEF	XXXX	XXXX	N/A	XXXX	XXXX	XXXX	TBD	N/A	<b>05/03/03</b>
DSS-46	26M	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A
DSS-54	34B1	XXXX	XXXX	XXXX	XXXX	XXXX	09/08/03	08/01/06	N/A	<b>05/13/03</b>
DSS-55	34B2	11/01/03	N/A	N/A	11/01/03	11/01/03	11/01/03	11/01/03	N/A	11/01/03
DSS-63	70M	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	TBD	N/A	04/21/03
DSS-65	34HEF	XXXX	XXXX	N/A	XXXX	XXXX	XXXX	TBD	N/A	02/10/03
DSS-66	26M	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A
XXXX = Capability Currently Exists										
N/A = Capability Not Planned										01/16/03

# DSN User / Mission Planning Set

## 2002 - 2012

ONGOING/PLANNED PROJECTS				
Project	Acronym	Launch or Start	EOPM	EOEM
DSN Antenna Calibration	DSN	--	--	--
DSS Maintenance	DSS	--	--	--
European VLBI Network	EVN	--	--	--
Ground Based Radio Astronomy	GBRA	--	--	--
Reference Frame Calibration	DSN	--	--	--
Space Geodesy	SGP	--	--	--
Pioneer 10 ACS	PN10	03/03/72	07/01/97	10/01/04
Voyager 2	VGR2	08/20/77	10/15/89	09/30/07
Voyager 1	VGR1	09/05/77	12/31/80	09/30/07
Goldstone Solar System Radar	GSSR	04/01/85	--	--
Galileo	GLLO	10/18/89	12/07/97	09/21/03
Ulysses	ULYS	10/06/90	09/11/95	09/30/04
ISTP - Geotail	GTL	07/24/92	07/24/95	09/30/07
ISTP - Wind	WIND	11/01/94	11/01/97	09/30/07
ISTP - SOHO	SOHO	12/02/95	05/02/98	09/30/07
ISTP - Polar	POLR	02/22/96	08/23/97	09/30/07
Gravity Probe B	GPB	06/01/96	01/01/05	TBD
Mars Global Surveyor	MGS	11/07/96	02/01/01	01/03/08
Advance Composition Explorer	ACE	08/25/97	02/01/01	09/30/07
Cassini	CAS	10/15/97	06/30/08	06/30/10
Nozomi (Planet-B)	NOZO	07/03/98	12/31/05	TBD
Stardust	SDU	02/07/99	01/14/06	---
Chandra X-ray Observatory	CHDR	07/23/99	07/24/09	07/24/14
Imager for Magnetopause-to-Aurora Global Exploration	IMAG	03/25/00	05/30/02	09/30/07
Cluster 2 - S/C #2 (Samba)	CLU2	07/16/00	02/15/03	09/30/07
Cluster 2 - S/C #3 (Rumba)	CLU3	07/16/00	02/15/03	09/30/07
Cluster 2 - S/C #1 (Salsa)	CLU1	08/09/00	02/15/03	09/30/07
Cluster 2 - S/C #4 (Tango)	CLU4	08/09/00	02/15/03	09/30/07
2001 Mars Odyssey	M01O	04/07/01	08/24/04	05/29/08
Microwave Anisotropy Probe	MAP	06/30/01	10/01/03	10/01/06
Genesis	GNS	08/08/01	09/08/04	---
Mission Enhancement by Ground-based Astronomy	MEGA	02/01/02	12/31/03	---
International Gamma Ray Astrophysics Lab	INTG	10/17/02	12/18/04	12/18/07

# DSN User / Mission Planning Set

## 2002 - 2012

Rosetta	ROSE	??/??/??	??/??/??	---
Space Infrared Telescope Facility	STF	04/15/03	07/24/08	---
MUSES - C	MUSC	05/05/03	06/05/07	---
Mars Express Orbiter	MEX	05/23/03	02/11/06	08/03/08
Mars Exploration Rover - A	MERA	05/30/03	04/06/04	05/11/04
Mars Exploration Rover - B	MERB	06/25/03	04/27/04	06/15/04
Deep Impact	DIF	01/02/04	08/05/05	---
Messenger	MSGR	03/10/04	04/06/10	---
Lunar - A	LUNA	08/14/04	04/11/05	---
Space Technology 5	ST5	11/19/04	02/27/05	TBD
RadioAstron	RADA	03/15/05	06/15/10	TBD
Mars Reconnaissance Orbiter	MRO	08/10/05	12/31/10	12/31/15
Stereo Ahead	STA	11/15/05	02/18/08	---
Stereo Behind	STB	11/15/05	02/18/08	---

# DSN User / Mission Planning Set 2002 - 2012

ADVANCED PLANNING PROJECTS				
Project	Acronym	Launch or Start	EOPM	EOEM
Selene	SELE	07/23/05	09/30/06	---
New Horizons	NHRZ	01/10/06	03/18/17	TBD
Dawn	DAWN	05/27/06	07/26/15	TBD
Mars Competed Scout 2007	M07S	09/04/07	08/19/08	TBD
Kepler	KPLR	10/01/07	07/31/11	TBD
Mars CNES Premier Orbiter 2009	M09P	09/11/09	08/22/10	08/09/12
Mars ASI/NASA Science Orbiter 2009	M09O	10/04/09	08/29/12	TBD
Mars Science Laboratory 2009	M09L	10/25/09	03/04/12	TBD
Advanced Radio Interferometry between Space and Earth (ARISE)	ARSE	06/15/10	06/15/15	---
VLBI Space Observatory Programme (VSOP-2)	VSP2	06/15/10	06/15/15	---
Mars CNES MSR Lander 2011	M11L	10/30/11	09/10/14	TBD
Mars CNES MSR Orbiter 2013	M13O	11/28/13	08/21/16	TBD

# **DSN Antenna Downtime Status and Forecast**

**Jose Valencia**

**January 16 2003**

**<http://rapweb.jpl.nasa.gov/planning>**

# Antenna Downtime Status And Forecast 2003

- The listed tasks have negotiated and scheduled approved antenna downtime :
  1. Network Simplification Project (NSP) implementation at DSS-14, 15, 25, 34, 43, 45, 54, and 63
  2. 20Kwatt X-band transmitter installation at DSS-54
  3. 20Kwatt X-band transmitter installation at DSS-25
  4. Servo Drive upgrade at DSS-16
  5. Servo Drive upgrade at DSS-66
  6. Servo Drive upgrade at DSS-43
  
- NIB tasks to NSP are:
  1. Antenna painting, CCG, Ka Encoder, Azimuth Axle replacement at DSS-34
  2. Antenna Painting at DSS-45
  3. Ka Encoder, and Azimuth Axle replacement at DSS-54
  4. Servo Drive Upgrade at DSS-63

# Antenna Downtime Status And Forecast 2003

- Conflict resolution for DSS-27 antenna downtime proposal for CCG (Configuration Control Group) task in week 23 (3-days) is being worked.
  - CCG task is in contention with Cluster SSO, GTL, ACE, and SOHO
  - The optimum time frame for scheduling this task is Wednesday - Friday with CCG NIB to maintenance on Friday

# Antenna Downtime Status And Forecast 2004

- The listed antenna down time proposals will be addressed at February 2003 RARB
  1. Proposal for antenna downtime for Hydrostatic Bearing upgrade DSS-14 in weeks 41-47.
    - First Hydrostatic Bearing Upgrade for the 70M sub-net, no major antenna structure teardown is required, the task will replace all obsolete pumps/motors, and add several sensors and monitoring points. Downtime includes installation, system checkout, and 1 mission track for performance and functional verification
  2. Proposal for antenna downtime for the Antenna Controller Replacement (ACR) task at DSS-45 in weeks 43-49

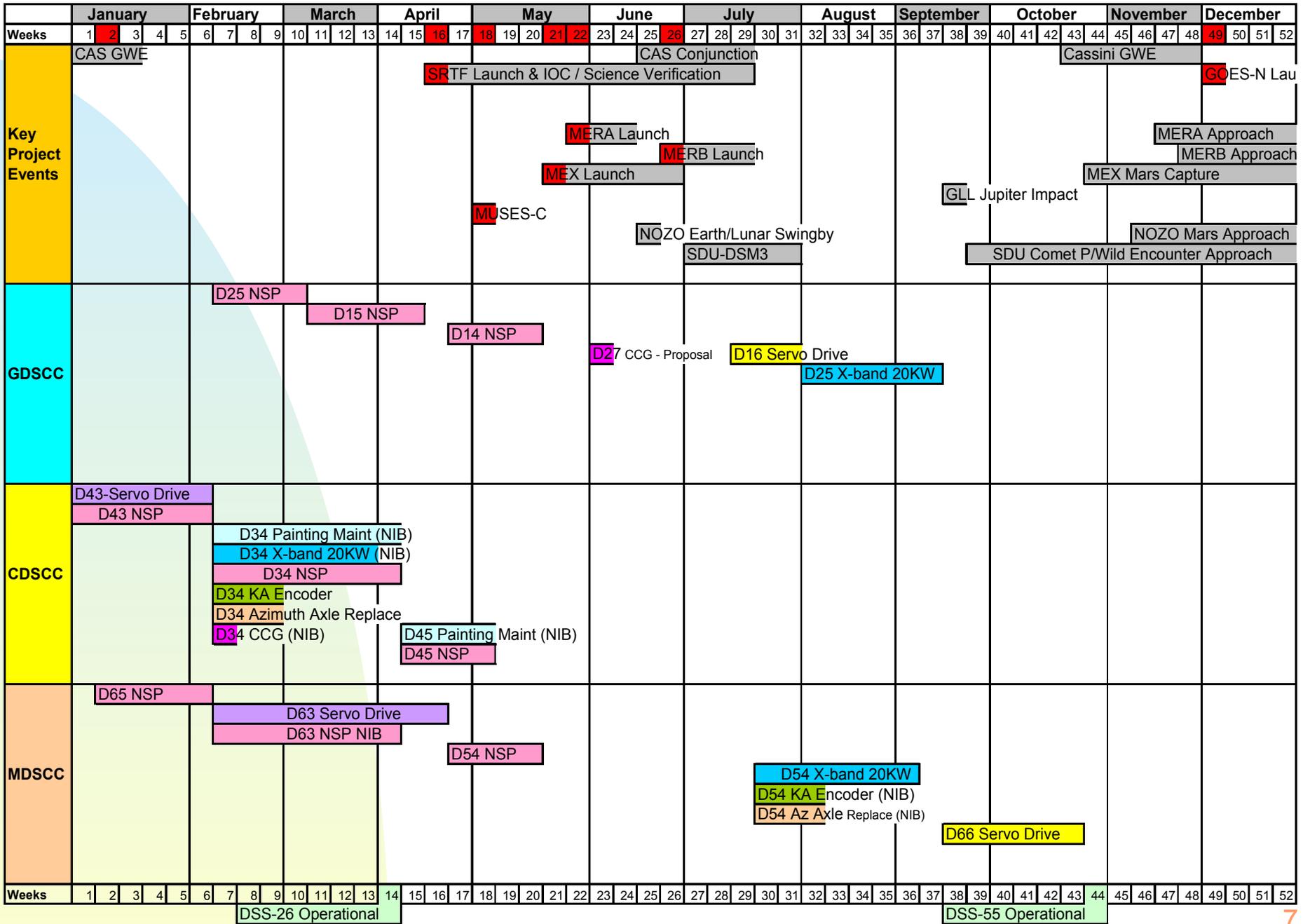
# Antenna Downtime Status And Forecast 2005

- The listed antenna down time proposals will be addressed at February 2003 RARB :
  1. Proposals for antenna downtime times for the Microwave Subsystem Controller (USC) task at DSS-15, 24, 25, 26, 27, 34, 43, 54, 55, 63, 65
  2. Proposal for antenna downtime for the X/X-Ka band task at DSS-34 in weeks 18-25
  3. Proposal for downtime for the Antenna Controller Replacement (ACR) task at DSS-43 downtime in weeks 30-36
  4. Proposal for downtime for the Antenna Controller Replacement (ACR) task at DSS-63 downtime in weeks 38-44

# Antenna Downtime Status And Forecast 2006

- Proposal for antenna downtime for the X/X-Ka band task at DSS-24 in weeks 36-42

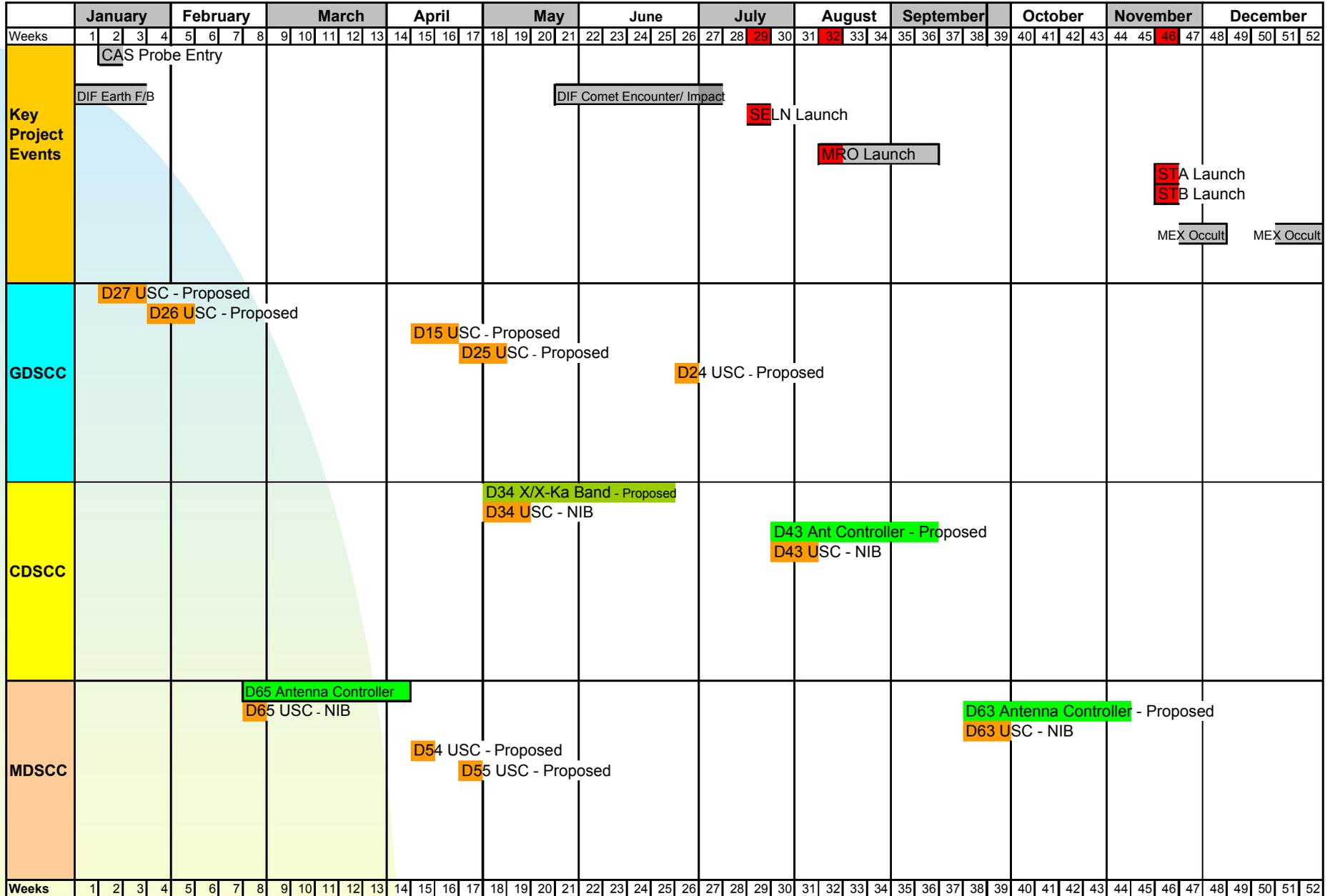
# Antenna Down-time Status And Forecast 2003



# Antenna Downtime Status And Forecast 2004

	January					February				March				April					May					June					July					August					September					October				November				December													
Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53												
<b>Key Project Events</b>	Saturn Approach																																			CAS SOI										CAS PRM										CAS PROBE C/O & REL									
	DIF Launch					LUNAR Launch										DIF Earth F/B																																																	
	EDL MERA Surface Ops																				EDL MERB Surface Ops																																												
	MEX MarsCapture					MEX Occultation										MEX Solar Corona										MEX Occult																																							
	MSGR Launch										MSGR Venus Flyby										ST-5 Launch																																												
	NOZO MOI					SDU Comet Encounter										GNS Earth Return & B/U Orbit																																																	
	ULYS Jupiter Encounter																																																																
	<b>GDSCC</b>	D15 Antenna Controller										D14 Antenna Controller										D14 Hydrostatic Bearing - Proposed										D14 USC - NIB																																	
D15 Antenna Controller										D14 Antenna Controller										D14 Hydrostatic Bearing - Proposed										D14 USC - NIB																																			
<b>CDSCC</b>	D46 Servo Drive										D45 Antenna Controller - Proposed										D45 USC - NIB																																												
	D46 Servo Drive										D45 Antenna Controller - Proposed										D45 USC - NIB																																												
<b>MDSCC</b>																																																																	
Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53												

# Antenna Downtime Status And Forecast 2005





# ***Goldstone Solar System Radar***



***Martin A. Slade***

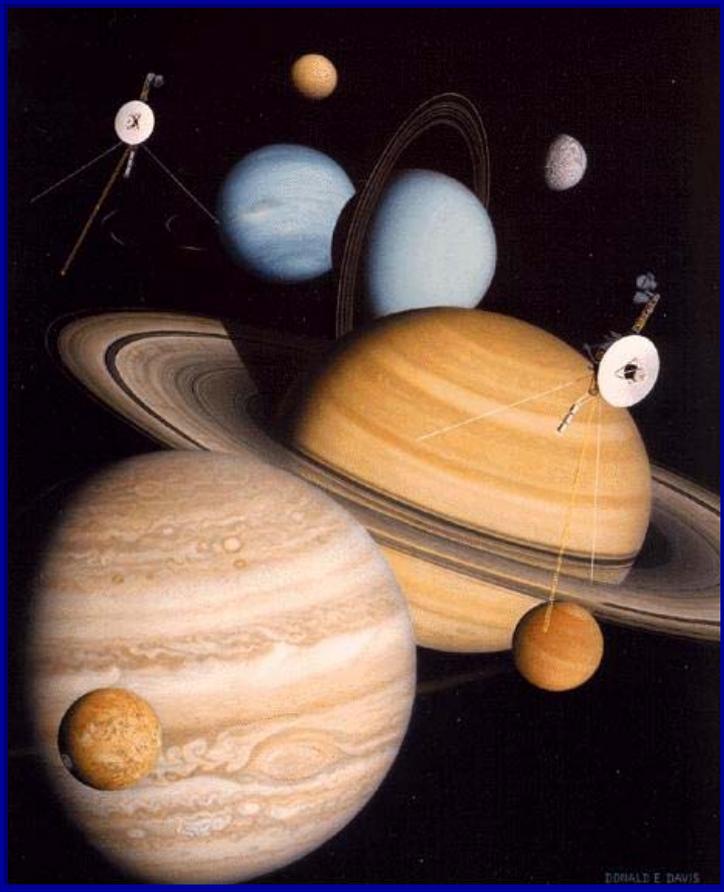
***January 16, 2003***

***NASA Jet Propulsion Laboratory***

***Joint Users Resource Allocation Planning Committee Meeting***



- The GSSR DSS-14 - Greenbank Telescope (GBT) track on January 5, 2003, in support of MESSENGER Project science goals, was a complete disaster due to subreflector controller and antenna pointing assembly failures. Even after all subsystems seemed to work, the pointing was still off by greater than 0.5 beamwidths. As of today, there is still no explanation of these failures.
- This incident was potentially very damaging to our credibility with the GBT community, and only the complete success of the next GBT track may have mitigated the appearance of incompetence at GDSCC.
- The most time-consuming failure was the SRC one, since the usual reboot did not fix the problem. Three Dr's were written: one against the SRC and two against the APA:
  - G102146 (SRC)
  - G102147 (APA)
  - G102148 (APA pointing)
- The second 2003 GSSR DSS-14 - Greenbank Telescope (GBT) track on January 13 had its own problems in startup due to the CSOC firewall ruleset at GDSCC not being modified in a timely fashion for this experiment. Ingenious workarounds and some luck enabled excellent data to be collected and all science goals to be achieved.



# VOYAGER

## FLIGHT OPERATIONS

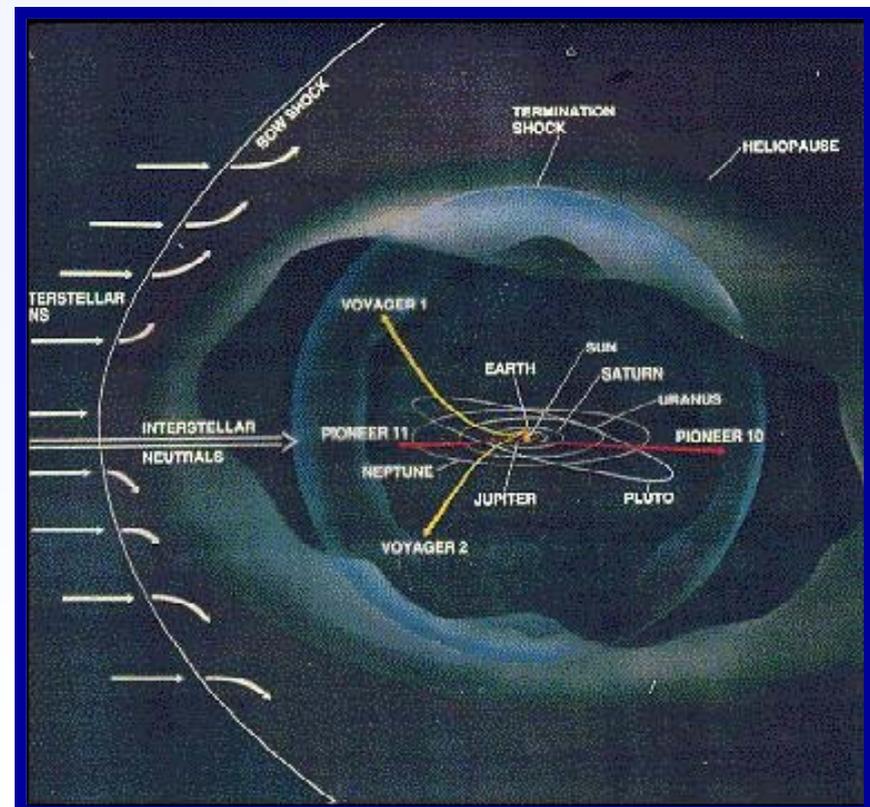
### JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

Jefferson Hall  
January 16, 2003

*NASA Jet Propulsion Laboratory*



<http://voyager.jpl.nasa.gov>





# VOYAGER

## FLIGHT OPERATIONS



### FLIGHT SYSTEM STATUS

#### MISSION STATUS

#### VOYAGER 1

- \* HELIOCENTRIC DISTANCE – 88.1 AU, RTLT – 24h19m00s
- \* SPACECRAFT REMAINS HEALTHY
- \* MAJOR ACTIVITY: DTR PLAYBACK, PMPCAL, ASCAL, & MAGROL

#### VOYAGER 2

- \* HELIOCENTRIC DISTANCE – 69.3 AU, RTLT – 19h25m18s
- \* SPACECRAFT REMAINS HEALTHY
- \* MAJOR ACTIVITY: PMPCAL, MAGROL



# VOYAGER

## FLIGHT OPERATIONS



**JPL**

### GROUND SYSTEM STATUS

(November 16, 2002 - January 10, 2003)

- DSN - OVERALL SUPPORT – GOOD
- Voyager 1: Most of the outages were caused by rain at DSS-65. Others outages were caused by film height alarms at DSS-63, maser problem at DSS-15, and CS problem at DSS-34.
- Voyager 2: One small outage caused by rain at DSS-45



# VOYAGER

## FLIGHT OPERATIONS

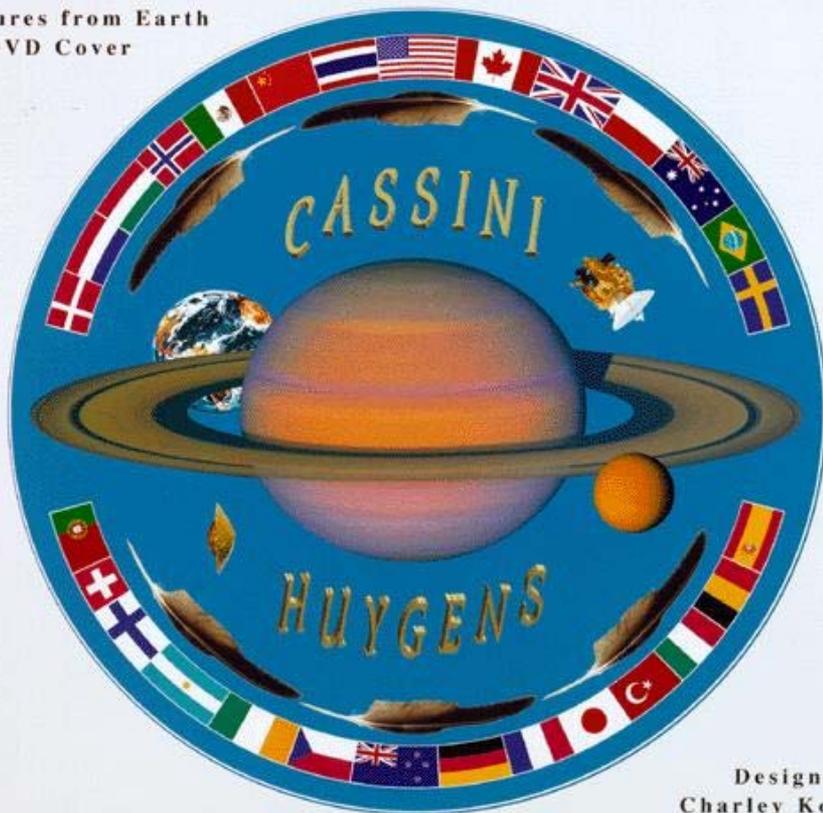


### TOTAL SUPPORT TIME, OUTAGE TIME, % OF OUTAGE TIME

S/C	SCHED. SUPPORT	ACTUAL SUPPORT	70M TIME	SIGNIFICANT OUTAGE TIME	% OF OUTAGE TIME
31	521.6	519.9	105.2	18.5(2.9)	4.1
32	466.4	466.4	0.0	1.1(0.3)	0.3

**VOYAGER HOMEPAGE - <http://voyager.jpl.nasa.gov>**

Signatures from Earth  
DVD Cover



Design by  
Charley Kohlhase

CASSINI

<http://saturn.jpl.nasa.gov/cassini/index.shtml>

## **Joint Users Resource Allocation Planning (JURAP) Committee Meeting**

**Dave Doody**  
**January 16, 2003**

*NASA / Jet Propulsion Laboratory*



# Cassini

---

- In Space Science Subphase

- Space Science observations ongoing, S/C frequently off Earth between DSN playback tracks
- Tour advanced science planning continues
- Huygens Probe Relay Test #5 conducted at DSS54 DOY 331
  - Basically successful, but optical coupler problem in U/L path limited data collection time
- 40-day Gravitational Wave Experiment #2 completed Tuesday Jan 14

- Operations

- Daily ops going well, excellent DSN support; excellent NOPE support
- DSS25 Monopulse, Abberation Correction have been basically problem-free
- DSS25 Ka-band TXR performed well for GWE#2 except when X-band TXR failed...
- DSS25 X-band TXR performed well except when new klystron was installed...
  - Swapped in new X-band klystron to correct failure on DOY 348
  - New klystron failed on four sequential passes, bringing Ka-TXR down (shared M/G set)
  - Swapped to a “burned-in” X-band klystron DOY 353
- Positive reporting for the >120 U/L Transfers eliminated the type of errors seen during GWE#1
- Minor S/C instrument adjustments, cals, and anomalies being worked near real time
- SSR anomaly DOY 014 was caused by commands in sequence. Fully recovered same day.
  - Did not enter safing. Normal command sequence continued executing.
  - No additional DSN support needed.
- AACS and CDS Flight Software testing, procedure testing, and CMD file preparation completed
  - Uplink & in-flight checkout February through April
  - This is the Tour FSW
- Additional 2-way NSP TRK passes being scheduled for Nav



# Cassini

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- Thanks from Dr. John Armstrong...

“Please extend my thanks--and the thanks of my fellow Cassini GWE colleagues Hugo Wahlquist, Luciano Iess, and Bruno Bertotti--to all those in the Cassini Project, the JPL Divisions, and the DSN who have contributed to the success of these observations!”



# NOZOMI/PLANET-B

Presentation to:  
**Joint Users Resource Allocation Planning Committee**

Mark Ryne

January 16, 2003

<http://www.isas.ac.jp/e/enterp/missions/nozomi/cont.html>





# Significant Events

*Nozomi/Planet-B*

- **Maneuver DV15 (3.5 m/s on Nov 22, 2002)**
- **Maneuver DV15c (1.3 m/s on Dec 16, 2002)**
- **Turn spacecraft off Earth point (Dec 17-19, 2002)**
  - **Between 90 and 110 degrees**
  - **Telemetry and command - Degraded**
  - **Tracking SRA range and  $\Delta$ DOR data - Degraded**
  - **Tracking Doppler data - Unusable**
- **Earth swingby (Dec 21, 2002)**
  - **Altitude = 29,518 km**
  - **Delivery error approximately 12 km in B-Plane**
- **Maneuver DV15c2 (3.1 m/s on Jan 4, 2003)**



# DSMS Support

*Nozomi/Planet-B*

- **$\Delta$ DOR campaign**
  - Goldstone/Canberra baseline - 2
  - Goldstone/Madrid baseline - 2
  - Total of 13  $\Delta$ DOR measurements since spacecraft recovery in October 2002
  - All  $\Delta$ DOR measurements attempted were successful
  - Two successful measurements since turning off Earth point
- **Doppler and SRA range tracking**
  - Data frequently degraded because of Earth pointing errors
  - No tracking within 24 hours of Earth swingby due to concern about uplink power damage to spacecraft
- **Orbit determination deliveries to ISAS on Dec 9, 12 and 27 2002 and Jan 2 and 13 2004**
  - Support maneuver design and Earth swingby targeting



# Current and Upcoming Activities

*Nozomi/Planet-B*

- **Sparse Doppler and SRA range tracking through April 2003 due to poor link margin**
  - **Attempt one  $\Delta$ DOR every two weeks**
- **Earth2 swingby  $\Delta$ DOR campaign**
  - **Total of 5  $\Delta$ DOR measurements in May and June 2003**
  - **Goldstone/Madrid baseline only**
  - **Support critical Earth2 swingby targeting maneuver**
  - **Rapid delivery of orbit determination solutions**
- **Earth2 swingby on June 19, 2003**
- **Possible Earth2 correction maneuver on July 4, 2003**



# Concerns

*Nozomi/Planet-B*

- **Spacecraft thermal issues still not resolved**
- **Mars arrival date still not well determined**
- **Computer processor damage in April 2002 solar flare more extensive than previously thought**
- **These issues to be discussed at Network Operational Working Group meeting on January 24, 2003**



<http://mars.jpl.nasa.gov/mgs/>

*Mars Global Surveyor*  
**Flight Operations  
Status**

**E.E. Brower**  
*January 16, 2003*

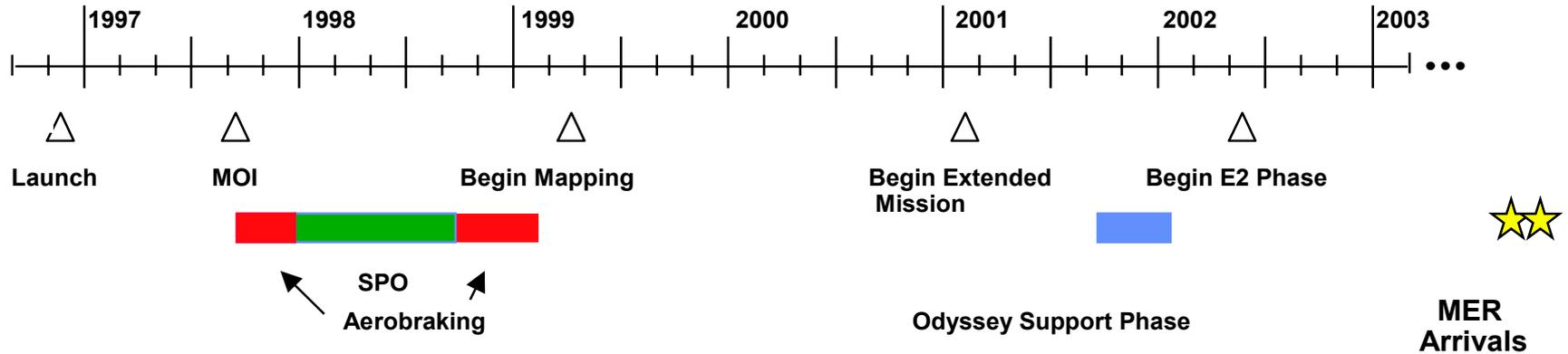
# *Mars Global Surveyor*

## **AGENDA**

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- Project Snapshot
- Recent Events/Accomplishments
- Mission Assessment
- Comments

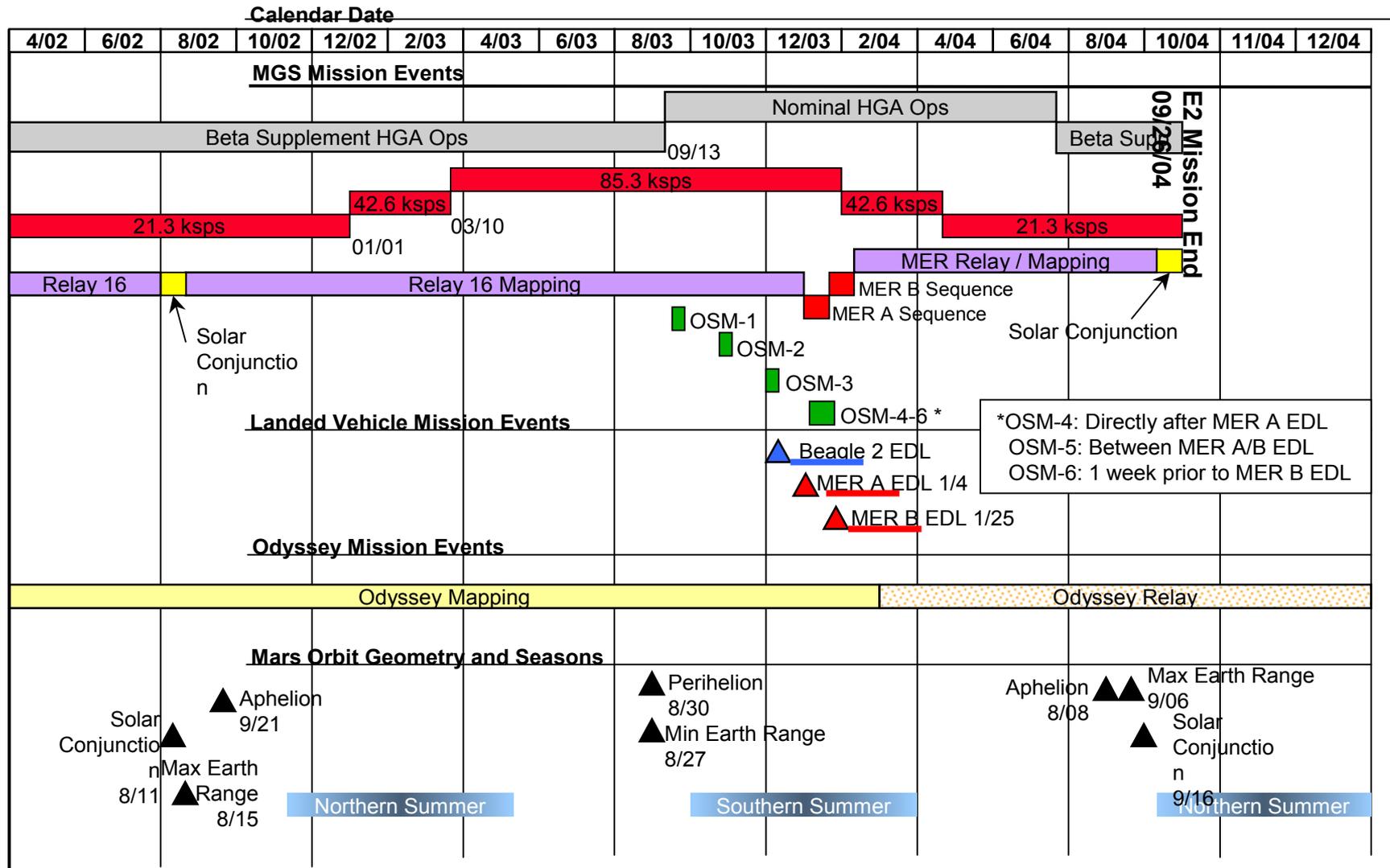
# Mars Global Surveyor Project Snapshot



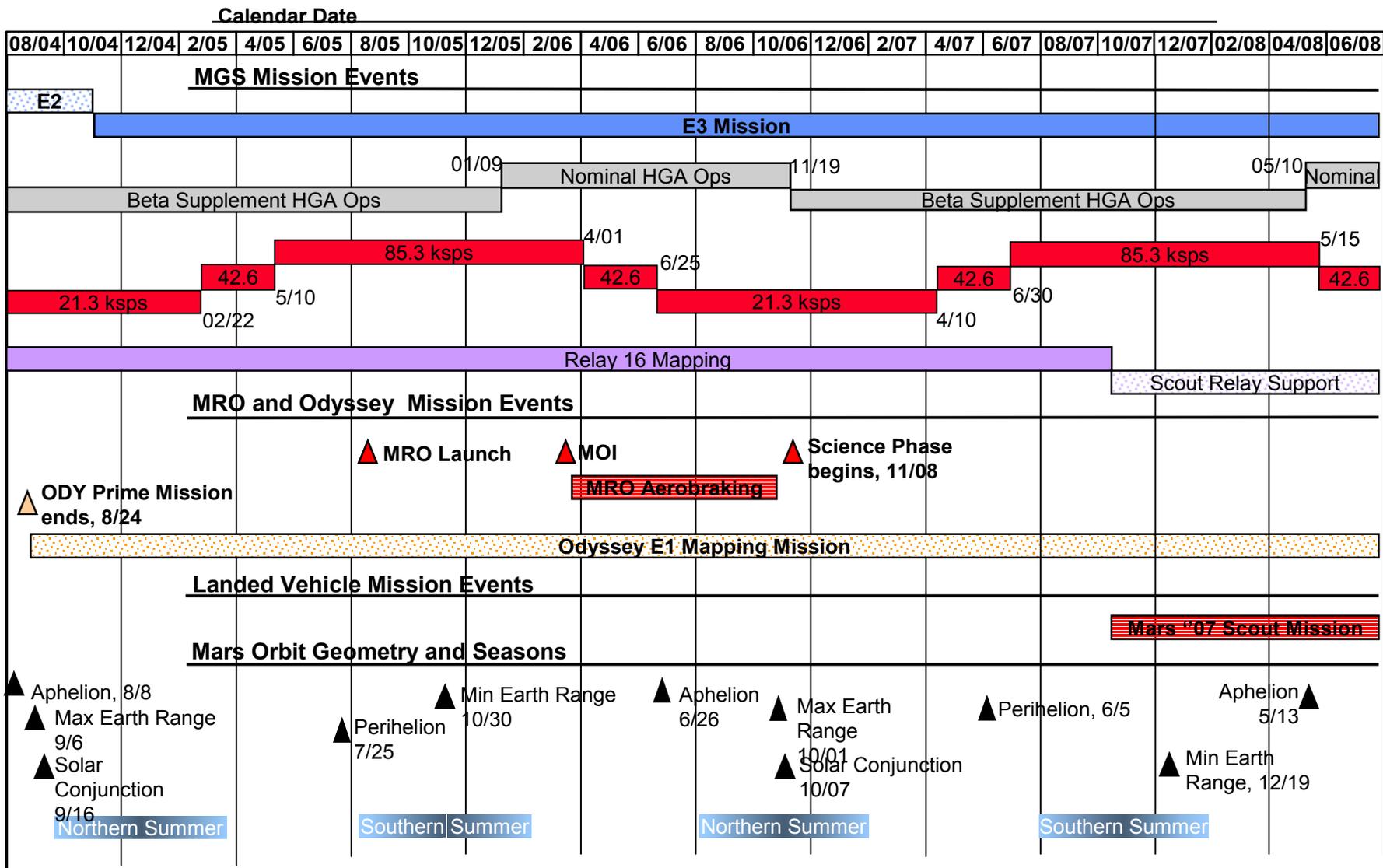
PHASE NAME	START DATE	END DATE	ORBITS	ORBITE
<b>PRELAUNCH PHASE</b>	<b>1994-10-12</b>	<b>1996-11-06</b>		
<b>LAUNCH PHASE</b>	<b>1996-11-06</b>	<b>1996-11-07</b>		
<b>CRUISE PHASE</b>	<b>1996-11-07</b>	<b>1997-09-12</b>		
<b>INSERTION PHASE</b>	<b>1997-09-12</b>	<b>1999-03-09</b>	<b>1</b>	<b>1683</b>
<b>MAPPING PHASE(687DAYS)</b>	<b>1999-03-09</b>	<b>2001-01-31</b>	<b>1</b>	<b>8505</b>
<b>EXTENDED MISSION PHASE</b>	<b>2001-02-01</b>	<b>2002-04-22</b>	<b>8506</b>	<b>13960</b>
<b>EXTENDED EXTENDED (E2)</b>	<b>2002-04-22</b>	<b>2004-08-19</b>	<b>13961</b>	<b>29416</b>

**MGS**

# Mars Global Surveyor E2 Mission Timeline



# Mars Global Surveyor Proposed E3 Mission Timeline



MGS





# *Mars Global Surveyor*

## Recent Accomplishments

---

- Successfully Accomplished 501 ROTOs to Date
- Reduced Fuel Consumption With Nadir Dwell Period 180 Min/Day
  - 15.08 kg of Usable Hydrazine Remaining (20.34 kg Total Fuel Mass)
  - Average Daily Usage: 3.5 g/day
  - 20-day spacecraft downtrack prediction improved to 30 m
  - MOC targeting accuracy improved 0.02 deg. to 0.005 deg.(300m)
- Completed Second Mars Year of Mapping in December
  - This extended mission data set added over 55,000 images to the 140,000 picture two year total
- Monthly DDOR Experiments Performed
- Complete PSA failure response procedure/script/testing
- Performed monthly RS Egress occultations
- Working E3 (Extend Mission 3) detail (Sept 04 - FY 2008)

# *Mars Global Surveyor*

## Mission Assessment

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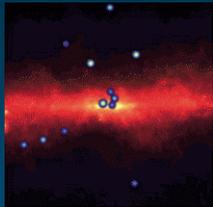
- **Spacecraft is in good health.**
- **Expect to fulfill most extended mission objectives (complete MER site coverage may become E2 mission objective).**
- **Expect to satisfy MER EDL Requirements.**
- **Chances of operation through 2008 are good.**

# *Mars Global Surveyor*

## Comments

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- **None**



# *INTEGRAL*



<http://sci.esa.int/home/integral/index.cfm>

## **Joint Users Resource Allocation Planning (JURAP) Committee Meeting**

Dwight P. Holmes  
January 16, 2003

*NASA / Jet Propulsion Laboratory*



# ***INTEGRAL***

---



## **The MISSION**

- Integral moved from the commissioning phase into the performance verification phase in the beginning of December.
- On 30 December Integral had entered the Primary Observation phase.
- During the Primary Observation phase, Integral will be operated by an automatic timeline and has entered an eclipse season.
- Integral is currently making Gamma Ray observations of Cygnus X-1 and the Galactic Plane.



# INTEGRAL



## OPERATIONS

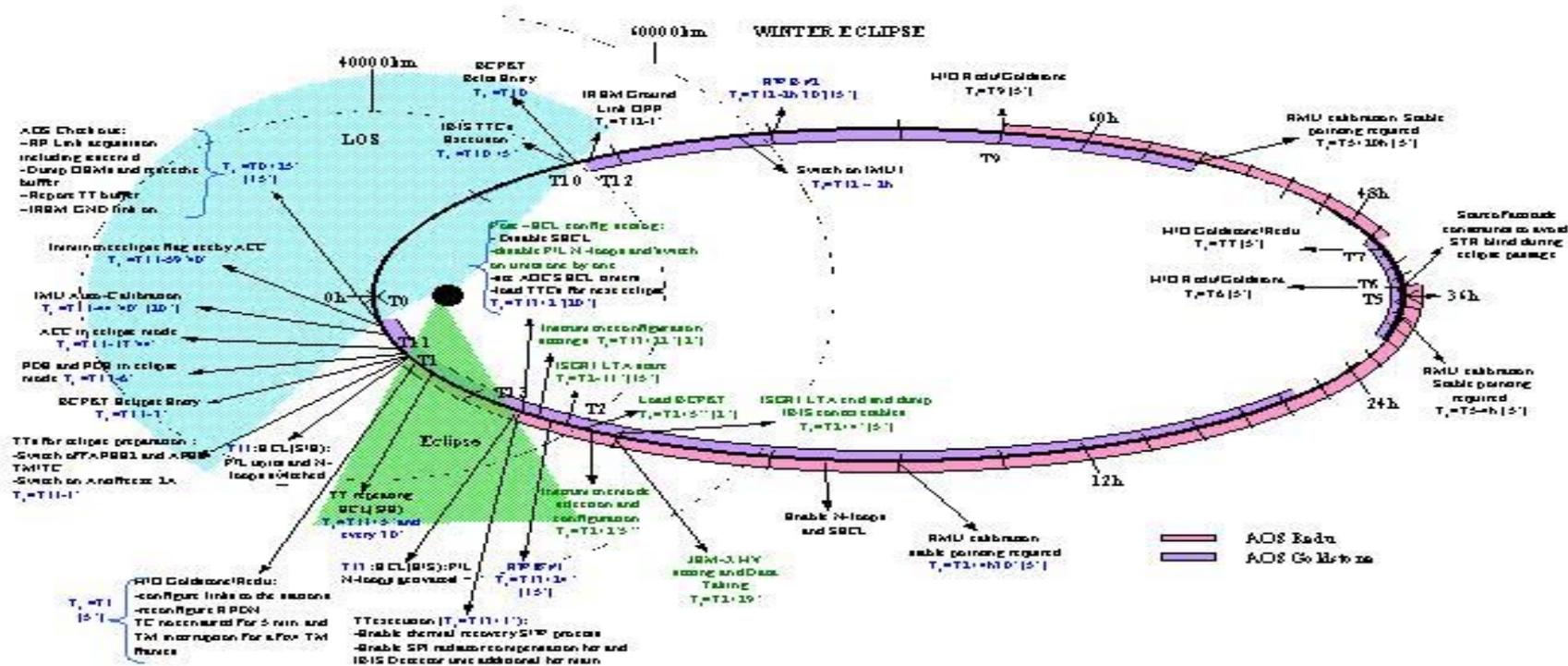
- DSN Status
  - The first week in December DSN noted 5 TCP Halts, with an addition 3 distributed throughout the remainder of the month.
    - There have been no TCP halts that have affected data return since.
  - Integral's first use of DSS-24 following the return to service in the NSP mode did not work – identified as procedural
  - ESA has generally been satisfied with recent support, however, continuing small number of single frame losses have been a concern.
  - Perspective
    - ESA is tracking anomalies since launch
    - NASA Stations - 6 (but only primary ones; DSN tracking 41 DRs)
    - ESA Stations - 12



# INTEGRAL



## INTEGRAL Reference Orbit

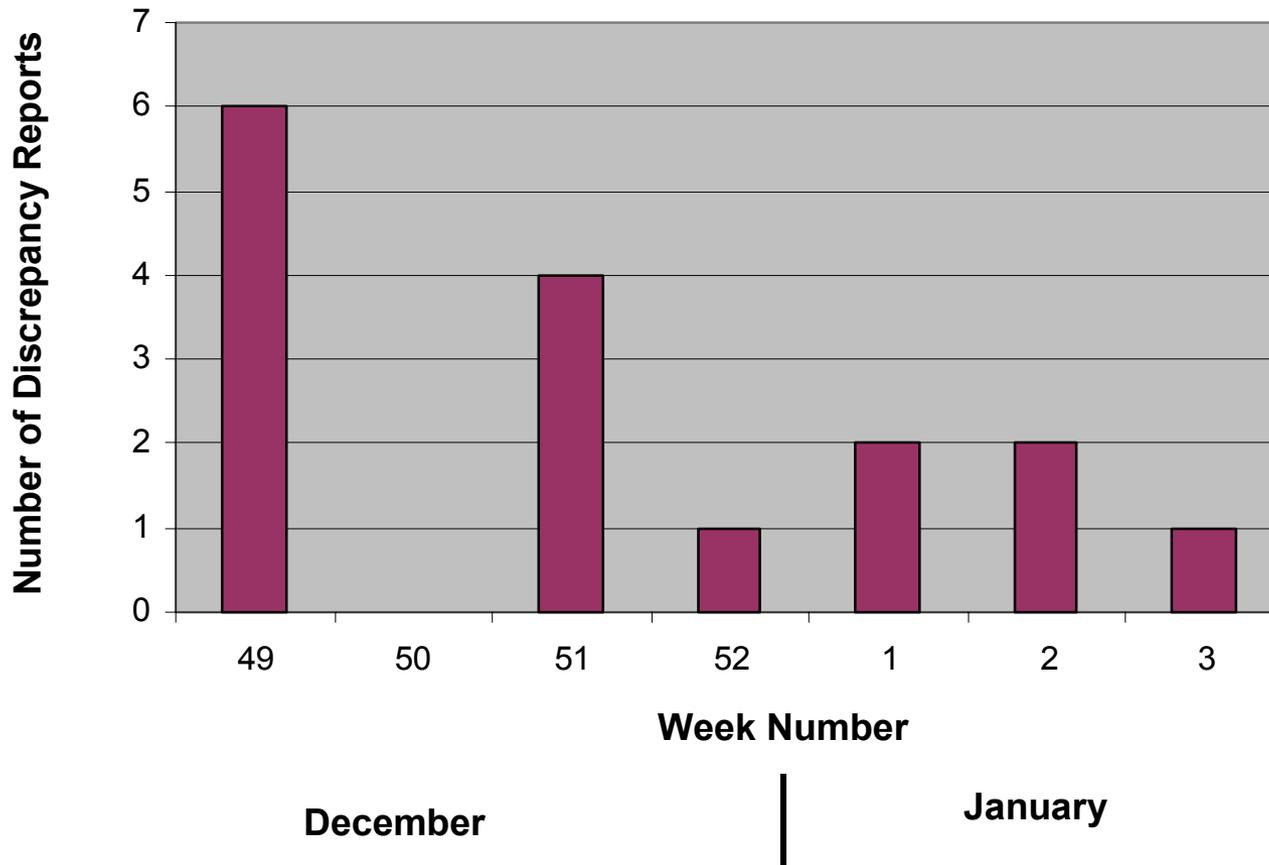




# INTEGRAL



## INTEGRAL Number of Discrepancy Reports by Week (12/2/2002–1/15/2003)





# ulysses

## **JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE**

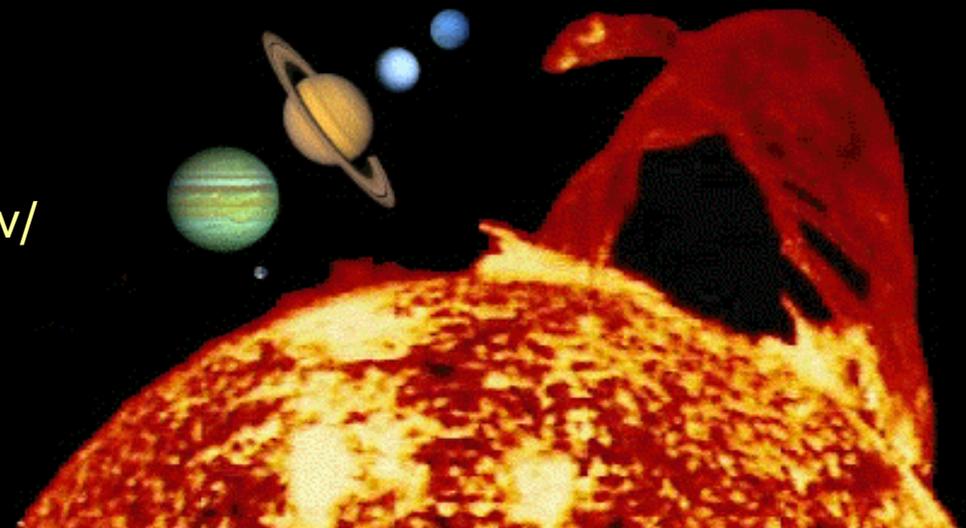
**B. Brymer**

**January 16, 2003**

*NASA Jet Propulsion Laboratory*



<http://ulysses.jpl.nasa.gov/>



# ULYSSES

*JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE*

- **SPACECRAFT OPERATIONS ARE NOMINAL**
- **SPACECRAFT POWER AND THERMAL RECONFIGURATIONS AND INSTRUMENT CALIBRATIONS ARE PERFORMED AS REQUIRED**
- **SPACECRAFT EARTH POINTING MANEUVERS ARE BEING PERFORMED EVERY 5 DAYS**

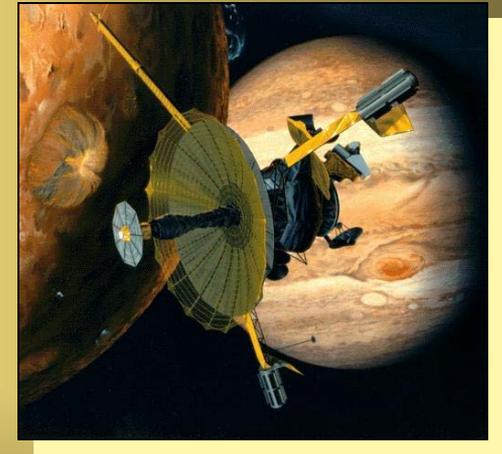
# Galileo

Journey to Jupiter

## JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE



**Brad Compton**  
January 16, 2003



NASA / Jet Propulsion Laboratory

<http://galileo.jpl.nasa.gov/>



# GALILEO MILLENNIUM MISSION

## ROUTINE ACTIVITIES

- Propulsion maintenance.
- Gyro Scale Factor test.
- Science instrument MROs.
- SITURN.



# GALILEO MILLENNIUM MISSION

## SIGNIFICANT EVENTS

- After a cumulative 90 hours of applying current to the suspect parts in the tape recorder motor driver to anneal radiation damage sustained at Amalthea, the recorder has been restored sufficiently to start playback. Playback was initiated on December 12, 2002.
- Due to the delay in initiating playback and the unique science observations that were recorded, the project has requested additional passes through February (see attached). The Galileo project extends its thanks for the cooperation we have and continue to receive from the other projects/users. Special thanks to Ulysses, GBRA and SOHO.

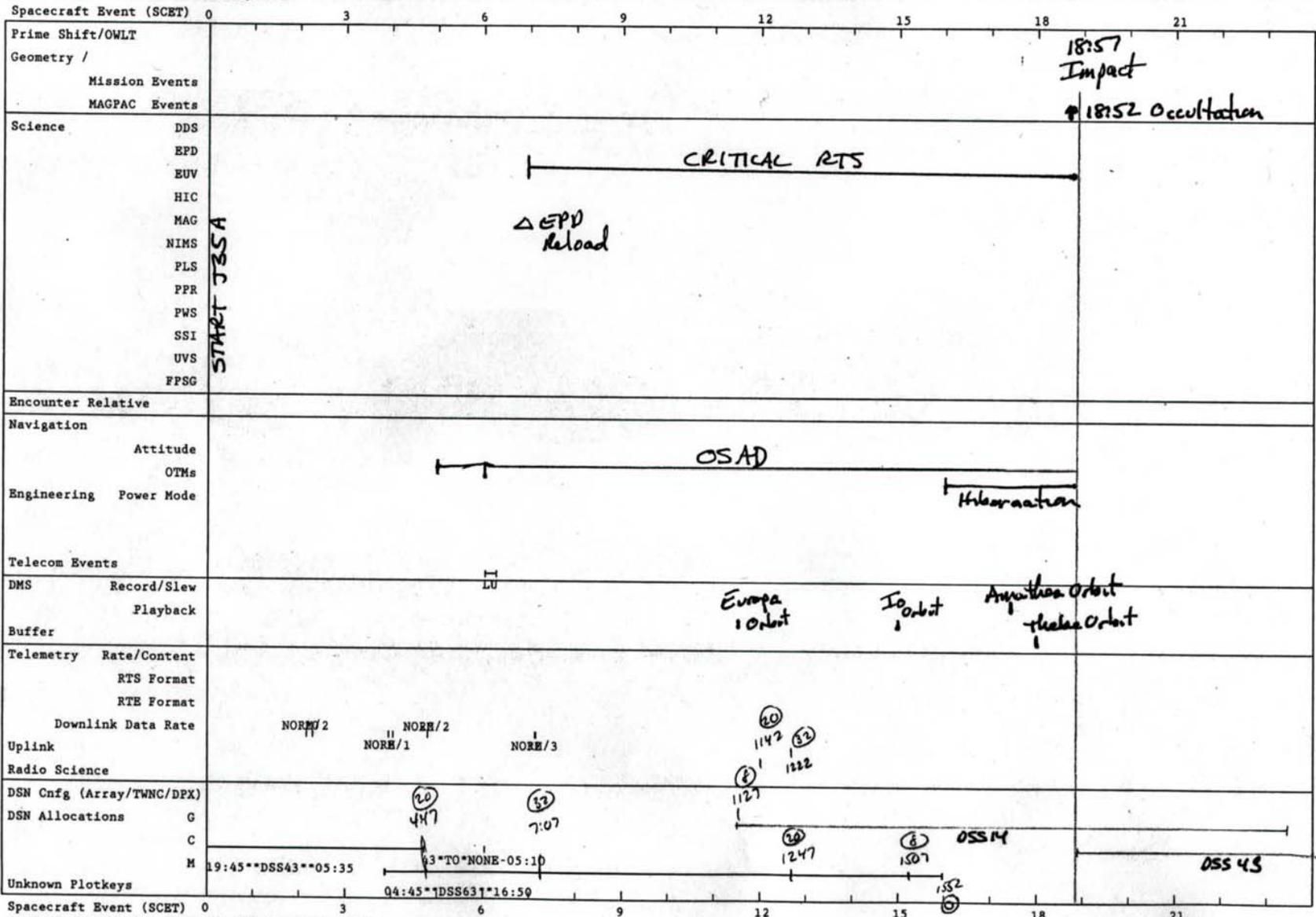


# GALILEO MILLENNIUM MISSION

## PROJECT PLANS

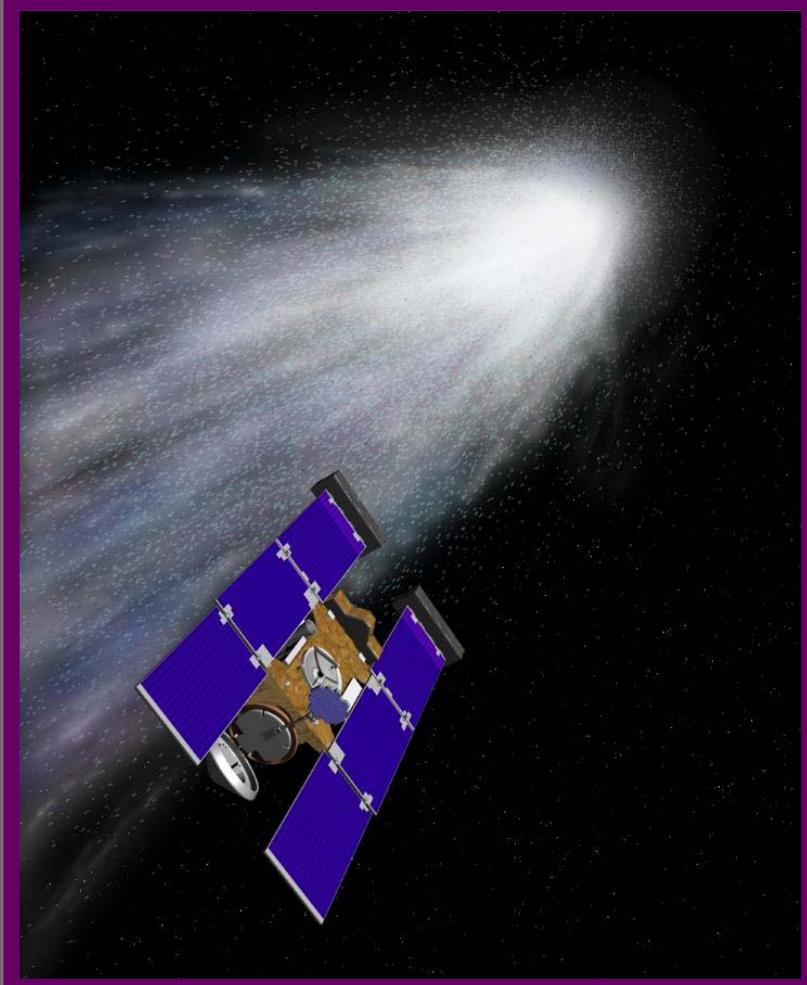
- Continue to negotiate additional tracking time to complete A34 playback.
- Develop a plan for the passive monitoring of the spacecraft (March – September).
- Complete development of the J35 real-time science sequence.
- Galileo impacts Jupiter September 21, 2003.

03  
DOY 264



Spacecraft Event (SCET) 0 3 6 9 12 15 18 21  
STATION ALLOCATIONS FILE FOR 255-264\_VIEW-PERIOD

Plotted on Thu Jan 09 15:57:39 2003



# STARDUST

**JOINT USERS**

**RESOURCE ALLOCATION**

**PLANNING COMMITTEE**

**R. E. Ryan**

**January 16, 2003**

NASA Jet Propulsion Laboratory

*<http://stardust.jpl.nasa.gov>*

### STATUS

**SPACECRAFT IS HEALTHY (1/16/03)**

**PRESENTLY 2.7 AU from EARTH**

**00:45:23 RTLT**

**2.0 AU from SUN**

**BIT RATE IS AT 504 bps (on HGA/34 HEF)**

**EARTH RANGE IS INCREASING**

**S/C COMING BACK TOWARD THE SUN, BUT EARTH IS MOVING AWAY**

### CURRENT ACTIVITIES

- **INTERSTELLAR PARTICLE COLLECTION PERIOD 2 WAS SUCCESSFULLY COMPLETED AND THE AEROGEL GRID STOWED ON DECEMBER 9**
- **NAVCAM PERISCOPE CALIBRATION TEST PLANNED FOR JANUARY 24**
- **CIDA INSTRUMENT TURN-ON DELAYED TO FEBRUARY 4**
  - **GROUND PROBLEMS ON JANUARY 14 PLANNED DATE**
- **IPN SUPPORT HAS BEEN GOOD THIS PAST PERIOD**
  - **NSP DEMOS WITH DSS 24 GENERALLY GOOD (DECEMBER 11 AND 17)**  
**DSS 43 DEMO WILL BE FEBRUARY 3, AND DSS 65 ON FEBRUARY 6**

### *MISSION PLAN REVISION*

**LOCATION OF DSM-3 (TCM-8) AND TCM-9 MOVED  
ORIGINAL DATES WERE                      NEW**

DSM 3-1	6/30/03	6/17/03
DSM 3-2	7/2/03	6/18/03
TCM 9	7/9/03	7/17/03

**THESE MANEUVERS ARE DURING A LONG CONJUNCTION PERIOD  
THE SPACECRAFT IS UNDER 3 DEGREES SEP FROM 4/02/03 TO 4/17/03  
AND AGAIN FROM 7/24/03 TO 10/05/03  
MINIMUM SEP OF 0.9 DEGREES IS 8/16/03**

**A MISSION CHANGE REQUEST (MCR) WAS APPROVED  
BASED ON OPERATIONAL EXPERIENCE AND RISK REDUCTION**

**A POSSIBLE FALLBACK OPTION IS TCM 9 ON OCTOBER 23**

<http://stardust.jpl.nasa.gov>

### UPCOMING EVENTS

**DSMS NSP DEMOS**

**DSS 43 ON FEBRUARY 3**

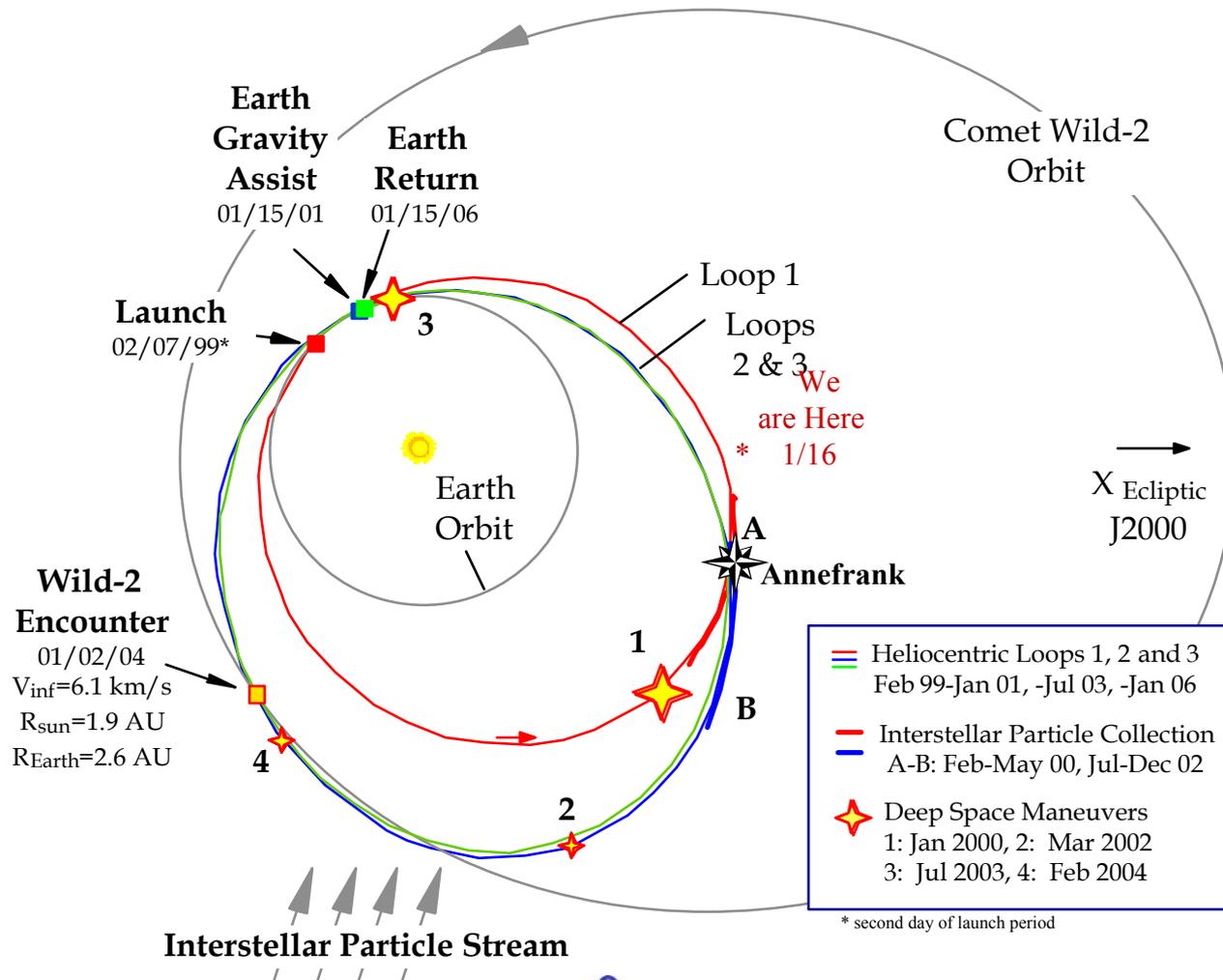
**DSS 65 ON FEBRUARY 6**

**DSS 25 (IN LATE FEBRUARY)**

**DSM-3/TCM 8 - JUNE 17 AND 18, 2003  
(TWO PARTS)**

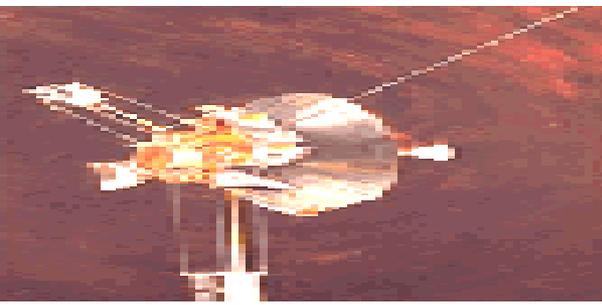
# STARDUST

## Report to JURAP



January 16, 2003





# PIONEER 10



AMES RESEARCH CENTER

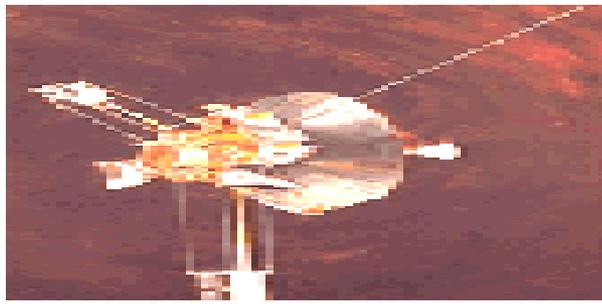
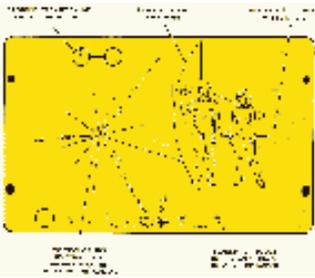
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**Report to**

**Joint Users Resource Allocation Planning Committee**

**R. E. Ryan**

**January 16, 2003**



# *PIONEER 10*

**Report to JURAP**

## **PIONEER 10 STATUS**

**SPACECRAFT ASSUMED TO BE OKAY - 81.8 AU from Earth  
A ROUNDTRIP CYCLE WAS ATTEMPTED ON DECEMBER 4 AND 5**

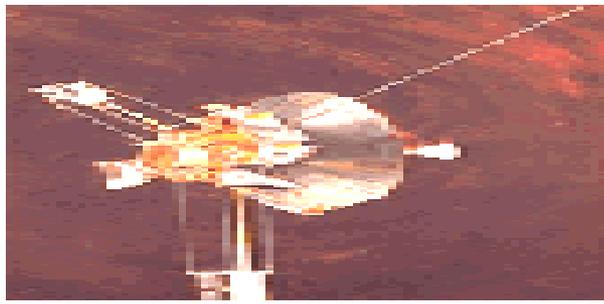
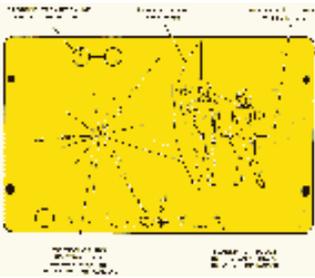
- **GOLDSTONE UPLINKED AT 350 KW FOR ABOUT 3 HOURS**
- **AN RTLT LATER (22:25) MADRID SEARCHED AND FOUND THE SIGNAL  
BUT COULD NOT LOCK TELEMETRY DESPITE NUMEROUS ATTEMPTS**
  - **THE SIGNAL LEVEL WAS -183 dbm WITH A -0.6 TO -1.3 db MARGIN**
  - **THE ELEVATION WAS ABOUT 26 DEGREES AND THE RESIDUAL 0.2 hz**

• **THE SETI INSTITUTE ALSO PARTICIPATED IN THE SEARCH FROM THE  
ARECIBO DISH IN PUERTO RICO**

**THEY DETECTED PIONEER 10 SIGNAL ALSO, USING THEIR TARGETED  
SEARCH SYSTEM AND THE NEW SEARCH SYSTEM.**

**THEY REPORTED THAT THE SIGNAL WAS WEAKER THAN WHAT THEY SAW  
IN THEIR MARCH OBSERVATION.**





# *PIONEER 10*

## **Report to JURAP**

### **PIONEER STATUS**

**PROJECT ESTIMATES THAT HIGH GAIN ANTENNA POINTING IS GOOD  
COULD BE SEEING SOME EFFECT OF LOW RTG OUTPUT**

- **WE ARE PLANNING TWO MORE ATTEMPTS  
(AWAITING CLEARANCE FOR HIGH POWER UPLINK)**
- **DSS14 TO DSS 14 ON JANUARY 23**
  - **U/L IS (022/2355-0145) AND D/L IS (023/2300-0100)**
  - **AMES PLANS TO TURN OFF THE GTT INSTRUMENT**
- **DSS 14 TO DSS 63 ON FEBRUARY 7**
  - **U/L IS (038/0100-0230) AND D/L IS (038/2330-0130)**

*THANKS AGAIN TO THE TRACKING STATIONS, THE NOPEs, AND TO ALL WHO PARTICIPATE*

[http://spaceprojects.arc.nasa.gov/Space\\_Projects/pioneer/PNhome.html](http://spaceprojects.arc.nasa.gov/Space_Projects/pioneer/PNhome.html)

