Joint Users Resource Allocation Planning

(JURAP)

January 15, 2004

Jet Propulsion Laboratory
California Institute of Technology

4800 Oak Grove Drive
Pasadena, CA 91109-8099

(818) 354-4321

February 18, 2004
Refer to: 930–04-002/NL:ESB

TO: Distribution

FROM: Eugene S. Burke

SUBJECT: Minutes for the Joint Users Resource Allocation Planning Committee Meeting held January 15, 2004

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NEXT JURAP MEETING:
Thursday, March 18, 2004
JPL Bldg. 303, Room 411 1:00 p.m.

Attendees:

Abramo, C.	Dillard, D.	Kehrbaum, J.	Ryan, R.
Alexander, H.	Doody, D.	Lacey, N.	Satterlee, N.
Andujo, A.	Guduru, S.	Martinez, G.	Slade, M.
Baldwin, J	Hall, J.	Martinez, K.	Waldherr, S.
Brymer, B.	Hampton, E.	Morris, D.	Ward, C.
Burke, E.	Holmes, D.	Retana, J.	

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 January 15, 2004, at the Jet Propulsion Laboratory.

Introductory Remarks – G. Burke

Mr. Burke welcomed the attendees and the new members of the RAPSO team to the JURAP meeting. E. Hampton introduced the two new members of the Resource Analysis Team, Sandhya Guduru and Nani Satterlee. D. Dillard introduced Joaquin Retana, a new member of the DSN Scheduling Team. Mr. Burke reflected on the Mars Express failure and the Mars Exploration Rover success. He indicated that the RARB Preliminary Events, Recommendations and Analyses are presently on the RAPWEB as of January 15, 2004, and that D. Morris will accompany him to NASA Headquarters for the RARB Science Review Meeting (01/22/04) prior to the February RARB.

Action Items – D. Morris

Mr. Morris reported RARB Action Item #5 is the only Action Item that remains open with a "due date" of 01/15/2004. Action Item #5 requested DSMS Engineering to distribute plan for the 26m subnet antenna hydraulic system refurbishment. The Resource Analysis Team will coordinate DSS-16, 46 and 66 downtimes with Operations and Flight Projects.

Resource Analysis Team – N. Lacey

For a complete listing of Ongoing and Advanced Planning projects visit the following link for the RAPSO website: *http://rapweb.jpl.nasa.gov/planning/tmodmiss.pdf*

Dawn and New Horizons projects were elevated to the Ongoing/Approved Projects status
Nozomi (Planet-B) mission end date was December 15, 2003
Space Infrared Telescope Facility was renamed Spitzer Space Telescope

For a complete listing of the DSN Resource Implementation visit the following link for the RAPSO website: *http://rapweb.jpl.nasa.gov/planning/tmodplns.pdf*

The Mid-Range scheduling RAP Team has completed schedule negotiations 21 weeks ahead of real time with 12 weeks of conflict-free schedules. Conflict resolutions are required for nine (9) weeks: Weeks 14, 15, 17, 18, 19, 20, 21, 22, and 23.

The Resource Analysis Team posted the preliminary Contentions/Recommendations/Analyses to the RAPWEB for Projects/Users review on Thursday, January 15, 2004.

DSN Downtime Forecast – A. Andujo

For a complete listing of Antenna Downtime Report visit the following link for the RAPSO website: *http://rapweb.jpl.nasa.gov/planning.html*

Changes to 2004 Downtime Schedule

There are no outstanding downtime requests for 2004. All previous requests have been negotiated and approved, either through the RARB, JURAP or Mid-Range Scheduling process.
No new requests will be processed during the Asset Contention Period (ACP) for November, 2003 – March, 2004, without approval from JPL/DSN Management.

Changes to 2005 Downtime Schedule:
DSMS Engineering has requested that one month be added to the existing DSS-65 Relocation, Life Extension and Antenna Controller Replacement task scheduled from Week 05 – 21 of 2005. The additional month will be at the end of the approved downtime as a weather contingency. It was also requested by DSMS management that the previously approved DSS-54, and DSS-55 USC (Microwave Switch Controller) task scheduled in Week 15 and 17 respectively, be moved to a later date outside of the DSS-65 downtime timeframe. It is proposed to move the DSS-55 USC task to Week 27 and DSS-54 to Week 28, to avoid having two or three simultaneous downtimes. The changes to the DSS-54 and DSS-55 USC tasks and the DSS-65 extension will be proposed for approval at the February 2004 RARB.

Changes to 2006 Downtime Schedule:
It has been requested that the previously approved DSS-45 ACR (Antenna Controller Replacement) task scheduled in Weeks 44 – 52 be moved to an earlier date. It is proposed to move the DSS-45 ACR task to Weeks 41 – 49. The change to the DSS-45 ACR task will be proposed for approval at the February 2004 RARB.

Changes to 2007 Downtime Schedule:
It has been requested by DSMS Engineering to add a downtime period at DSS-54 in order to add X/X-Ka Band capability, to be performed in Weeks 23 – 30 of 2007. The change to the DSS-54 X/X-Ka Band capability will be proposed for approval at the February 2004 RARB.

DSN Operations – J. Buckley
There was no presentation given at this month's JURAP.

Radio Astronomy / Special Activities – G. Martinez
The following Clock Synchronizations were reported:

DOY 320 with DSS-15 and DSS-65, DSS-65 reported an ACS problem.
DOY 333 with DSS-15 and DSS-65, No problems were reported.
DOY 344 with DSS-15 and DSS-65, No problems were reported.
DOY 346 with DSS-14 and DSS-63, DSS-63 reported that the APA hung.
DOY 361 with DSS-15 and DSS-65, DSS-65 reported an interface problem between the PCFS and EAC, no data were recorded. An RS232 cable was replaced post-track, because of the Mars requirement, replacement clock sync was put into the DSN 7-Day Schedule for DOY 016.

For the Space Geodesy Program (SPG), two (2) International VLBI Service (IVS) T2 sessions were conducted: IVS-T2023 and IVS-T2024. No problems were reported by DSS-15, the data tapes were shipped to Boon for correlation, and 100% of the data time was utilized.

For the Gravity Probe-B (GPB) Program, an experiment named BR088D was conducted. This X-

band Dual Polarization Experiment was the fourth epoch to observe the source HR8703, which will be used as a guide-star for the Gravity Probe-B mission. No problems were reported by DSS-14, DSS-43, or DSS-63. Data tapes were shipped to the Socorro correlator for processing. 100% of the data time was utilized.

Goldstone Solar System Radar – M. Slade

On DOY 008, 2004 Mercury ranging in support of testing General Relativity was successfully performed and tracking of the Near-Earth Asteroid 1989 QF is scheduled for late January/early February.

FLIGHT PROJECTS REPORTS

Nozomi, Hayabusa/MUSES-C – M. Ryne

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

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

Two ISTP missions, Polar and Wind, will soon become unmanned missions. WMAP is being re-programmed to become a non-MCD-3 type mission. There is no report for ACE or IMAGE. Genesis recently preformed a SKM, and after a second SKM, Genesis will begin the journey back to Earth for a September, 2004 return. Mr. Burke indicated that RAPSO is planning on a successful return and no additional requirements are planned.

Mars Global Surveyor – E. Brower / P. Poon

There was no presentation given at this month's JURAP, though presentation material is included with the Minutes.

Spitzer Space Telescope – J. Hunt

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

Mars Odyssey – B. Mase / P. Poon

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

Mars Exploration Rover – B. Compton / B. Toyoshima

There was no presentation given at this month's JURAP, though presentation material is included with the Minutes.

INTEGRAL/Mars Express – D. Holmes

Significant Operational Events included Delta DOR passes, which were conducted on approach to

Mars; Beagle II was released on 19 December, 2003; and Mars Express Orbit Insertion was on 25 December, 2003. Mars 2001 Odyssey contact with Beagle II following EDL was negative and subsequent attempts to find the Beagle II signal using the large Jodrell bank antenna produced negative results also.

The Mars Express Orbiter has supported a MER UHF pass using MELICOM and collected telemetry; all instruments have been turned on and are in the commissioning process; next week the Radio Science Team will conduct a Bi-Static RADAR pass at DSS-43 (test only).

Ulysses – B. Brymer

Nominal spacecraft operations continue. Spacecraft power and thermal reconfigurations are performed as required. Spacecraft Earth pointing maneuvers are being performed weekly. The DSN is providing good support. Jupiter distant encounter activity starts January 22, 2004. Jupiter closest approach is February 5, 2004.

Stardust - R. Ryan

The Stardust Encounter went very well. Predicted 238 KM Closest Approach at 19:22:59 UTC on January 2, and the actual was 236.4 KM at 19:21:32 UTC. Excellent image set as NAVCAM tracked the nucleus; Dust flux monitor and spectrometer (CIDA) received good data. Good radio science was received as DSS-14 and DSS-43 locked on the MGA carrier. Data Replays went very well as five (5) Close Approach Images were received for afternoon release. Approach Imaging went well; Comet picked up on first try November 13; Recurring NAVCAM contam-ination cleaned up, by two bake maneuvers. Excellent support by Ground Based Observation who helped with time-of-flyby.

The Spacecraft is healthy and is returning to cruise mode. DSMS support was satisfactory for this past period, with good support through the Encounter period, and excellent support from the teams. Excellent shots, movies and information are available at the Stardust Website: *http://stardust.jpl.nasa.gov*

Chandra - K. Gage

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

Voyager – J. Hall

Mission Status for Voyager 1: Heliocentric Distance – 90.4 AU, RTLT – 25h18m56s and Major Activities were ASCAL, PMPCAL, and FULMRO.

Mission Status for Voyager 2: Heliocentric Distance – 71.9 AU, RTLT – 20h16m54s and Major Activities were ASCAL, MAGROL, FULMRO, and PMPCAL.

DSN overall support has been good. Numerous outages on Voyager 1 were due to poor performance

at DSS-55 and DSS-65; Antenna problems at DSS-65 and DSS-25 were all documented on DRs. Outages on Voyager 2 were due to a Red Antenna at DSS-43 and DSS-45; High Winds at DSS-49; Red XHEMT at DSS-43. A loss of ful memory readout on DOY 352 and the MAGROL on DOY 353 was due to the inability to command from DSS-43, due to a Red XHEMT. Total Actual Support Time for January, was Voyager 1 (660.1 hours); and Voyager 2 (551.6 hours). DSS-49 support accounted for 150.0 hour of support during this reporting period.

Cassini – D. Doody

The Approach Science Observations have started The Tour mission phase begins on May 15, with Sequence S01. Saturn Orbit Insertion (SOI) is planned for July 1, 2004.

Daily Operations are going well. Huygens Probe spacecraft checkouts successfully evaluated pre-heating operations. DSN and NOPE support is excellent. They are exercising continuing FSPA Array supports as they can be scheduled, and working various minor S/C instrument anomalies and FSW installations. The DSMS statement of costs for mitigation of NOCC-R/T display system demise was received. Several copies of "Ringworld", a DVD created to show at nationwide planetariums, were distributed.

Cluster II, Geotail, Polar, SOHO, and Wind – A. Chang

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

Action Item Status From 12 August 2003 RARB

(Resource Allocation Review Board)

David G. Morris

January 15, 2004

Action Item Summary

AI#	*Year*	*Month(s)*	*System*	*Responsible*	*Due Date*	*Status*
01	**2003-2004**	**December-April**	**Mars Program**	**B. Arroyo**	**06/01/2003**	**Closed**

ACTION: (aka 8/13/02 RARB A.I. #7) 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 (of 8/13/02 RARB) to clarify the scope of resources in which to plan to.

RESPONSE: (10/06/2003) All weeks are delivered.

AI#	*Year*	*Month(s)*	*System*	*Responsible*	*Due Date*	*Status*
02	**2004**	**June - July**	**Cassini**	**R. Gillette/ D. Seal**	**09/12/2003**	**Closed**

ACTION: Prepare Risk Assessment for Cassini because of DSS-43 Rebalance Downtime planned in June 2004. Concern is that this occurs too close to the Cassini Saturn Orbit Insertion (SOI).

RESPONSE: (9/04/03) Office 930 states that this downtime is too close to this Class A event and has requested an alternative downtime plan. The Resource Analysis Team is tasked to do this.

Action Item Summary

AI#	Year	Month(s)	System	Responsible	Due Date	Status
03	2006	July	MRO	R. Lock J. Hodder	11/09/2003	Closed

ACTION: Evaluate whether Mars Reconnaissance Orbiter (MRO) could utilize Multiple Spacecraft per Aperture (MSPA) while in orbit around Mars prior to achieving their final science orbit. What affects this is the MRO orbit apogee, transmitting frequency, antenna beamwidth (34m and 70m) and Mars range.

RESPONSE: (11/13/2003) There is no physical restriction to utilizing MSPA capability by MRO. Due to risk and flexibility concerns, MRO does not wish to use MSPA in the first month after MOI, the last part of aerobraking, and during the transition to primary science orbit.

AI#	Year	Month(s)	System	Responsible	Due Date	Status
04	2006	July & Sept.	RFC	C. Jacobs	09/12/2003	Closed

ACTION: Investigate and propose alternative support versus the recommended deletion of Reference Frame Calibration (RFC) Catalog Enhancement and Maintenance (Cat M&E) support.

RESPONSE: (11/20/2003) The proposed alternative is to replace the nominal cat M&E request with a request for DSS 25 and DSS 55 using simultaneous X and Ka-bands.

Action Item Summary

AI#	Year	Month(s)	System	Responsible	Due Date	Status
05	2004-5		DSMS Engineering	J. Osman J. Cucchissi	01/15/2004	Open

ACTION: Distribute plan for 26m subnet antenna hydraulic system refurbishment. This will then be worked by the Resource Analysis Team to coordinate DSS-16, 46 and 66 downtimes with Operations and Flight Projects.

RESPONSE: (9/10/2003) Changed due date as it will take extended time to plan new implementation dates.

AI#	Year	Month(s)	System	Responsible	Due Date	Status
06	2005	October	Polar	N. Lacey	09/12/2003	Closed

ACTION: Update mission set to show that Polar will end their mission as of October 1, 2005.

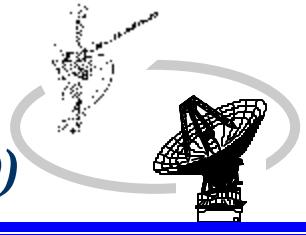
RESPONSE: (9/10/2003) Mission Set reflects this new date.

JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

Resource Analysis Team

January 15, 2004

Napoleon Lacey



– Ongoing / Approved 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	--	--	--
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	--	--
Ulysses	ULYS	10/06/90	09/11/95	03/31/08
Geotail	GTL	07/24/92	07/24/95	12/31/08
Wind	WIND	11/01/94	11/01/97	12/31/08
SOHO	SOHO	12/02/95	05/02/98	12/31/08
Polar	POLR	02/22/96	08/23/97	12/31/08
Gravity Probe B	GPB	06/01/96	05/30/05	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

– Ongoing / Approved Projects (continued) –

Project	Acronym	Launch or Start	EOPM	EOEM
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
Wilkinson Microwave Anisotropy Probe	WMAP	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	12/31/08	- - -
International Gamma Ray Astrophysics Lab	INTG	10/17/02	12/18/04	12/31/08
Hayabusa (MUSES - C)	MUSC	05/09/03	06/05/07	- - -
Mars Express Orbiter	MEX	06/02/03	02/11/06	08/03/08
Spirit (Mars Exploration Rover - A)	MER2	06/10/03	04/06/04	05/11/04

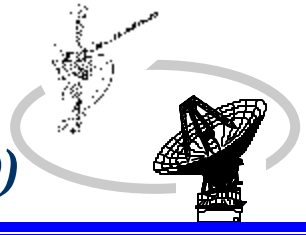
– Ongoing / Approved Projects (continued) –

Project	Acronym	Launch or Start	EOPM	EOEM
Opportunity (Mars Exploration Rover - B)	MER1	07/07/03	04/27/04	06/15/04
Spitzer Space Telescope (Space Infrared Telescope Facility)	STF	08/25/03	10/12/08	- - -
Rosetta	ROSE	02/26/04	12/31/15	- - -
Messenger	MSGR	05/11/04	04/06/10	- - -
Lunar - A	LUNA	08/30/04	04/11/05	- - -
Deep Impact	DIF	12/30/04	08/05/05	- - -
Space Technology 5	ST5	06/27/05	02/27/05	TBD
Mars Reconnaissance Orbiter	MRO	08/10/05	12/31/10	12/31/15
Stereo Ahead	STA	*02/11/06*	05/15/08	- - -
Stereo Behind	STB	*02/11/06*	05/15/08	- - -
New Horizons	*NHPC*	*01/10/06*	*03/18/17*	*TBD*
Dawn	*DAWN*	*06/17/06*	*07/26/15*	*TBD*

– Advanced / Planning Projects –

Project	Acronym	Launch or Start	EOPM	EOEM
Phoenix Scout	M07S	08/09/07	11/04/08	TBD
Kepler	KPLR	10/01/07	09/26/11	TBD
Mars Telecommunications Orbiter 2009	M09T	09/07/09	09/07/16	09/07/20
Mars Science Laboratory 2009	M09L	10/25/09	03/04/12	TBD
Space Interferometry Mission	SIM	12/31/09	06/30/20	TBD
James Webb Space Telescope	JWST	08/01/11	07/31/16	TBD
Mars Placeholder 2011	M11S	10/30/11	09/10/14	TBD
Mars Placeholder 2013	M13O	11/28/13	08/21/16	TBD

Resource Allocation Planning & Scheduling Office (RAPSO)



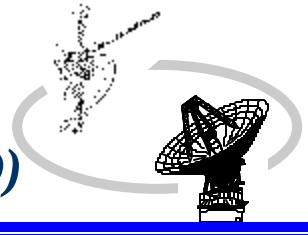
Station	Subnet	Delivery Date	S-Band Down	S-Band Up	X-Band Down	X-Band Up	20 kW X-Band	Ka-Band Down	Ka-Band Up	NSP
DSS-14	70M	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	TBD	N/A	XXXX
DSS-15	34HEF	XXXX	XXXX	N/A	XXXX	XXXX	XXXX	TBD	N/A	XXXX
DSS-16	26M	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A
DSS-24	34BWG1	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	10/23/06	N/A	XXXX
DSS-25	34BWG2	XXXX	N/A	N/A	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
DSS-26	34BWG2	XXXX	N/A	N/A	XXXX	XXXX	XXXX	XXXX	N/A	XXXX
DSS-27	34HSB	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	01/31/05
DSS-34	34BWG1	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	06/27/05	N/A	XXXX
DSS-43	70M	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	TBD	N/A	XXXX
DSS-45	34HEF	XXXX	XXXX	N/A	XXXX	XXXX	XXXX	TBD	N/A	XXXX
DSS-46	26M	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A
DSS-54	34BWG1	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	08/01/07	N/A	XXXX
DSS-55	34BWG2	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	XXXX
DSS-65	34HEF	XXXX	XXXX	N/A	XXXX	XXXX	XXXX	TBD	N/A	XXXX
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

01/07/04

- **RESOURCE NEGOTIATION STATUS**
  - **2004 WEEKS 09 – 12 (THRU 03/21/2004) WERE RELEASED TO DSN SCHEDULING ON 01/05/2004.**
  - **2004 WEEKS 13 – 16 (THRU 04/18/2004) ARE DUE TO BE RELEASED TO DSN SCHEDULING ON 01/30/2004.**
  - **2004 WEEKS 17 - 23 (THRU 06/06/2004) ARE ON HOLD**
  - **2004 WEEKS 24 – 25 (THRU 06/20/2004) WILL BE NEGOTIATED ON FRIDAY 01/16/2004.**
- **The Mid-range Scheduling process has negotiated schedules 21 weeks ahead of real-time. Currently, there are 12 weeks of conflict-free schedules. Conflict Resolutions are required for nine (9) weeks**

  Weeks 14, 15, 17, 18, 19, 20, 21, 22, and 23.

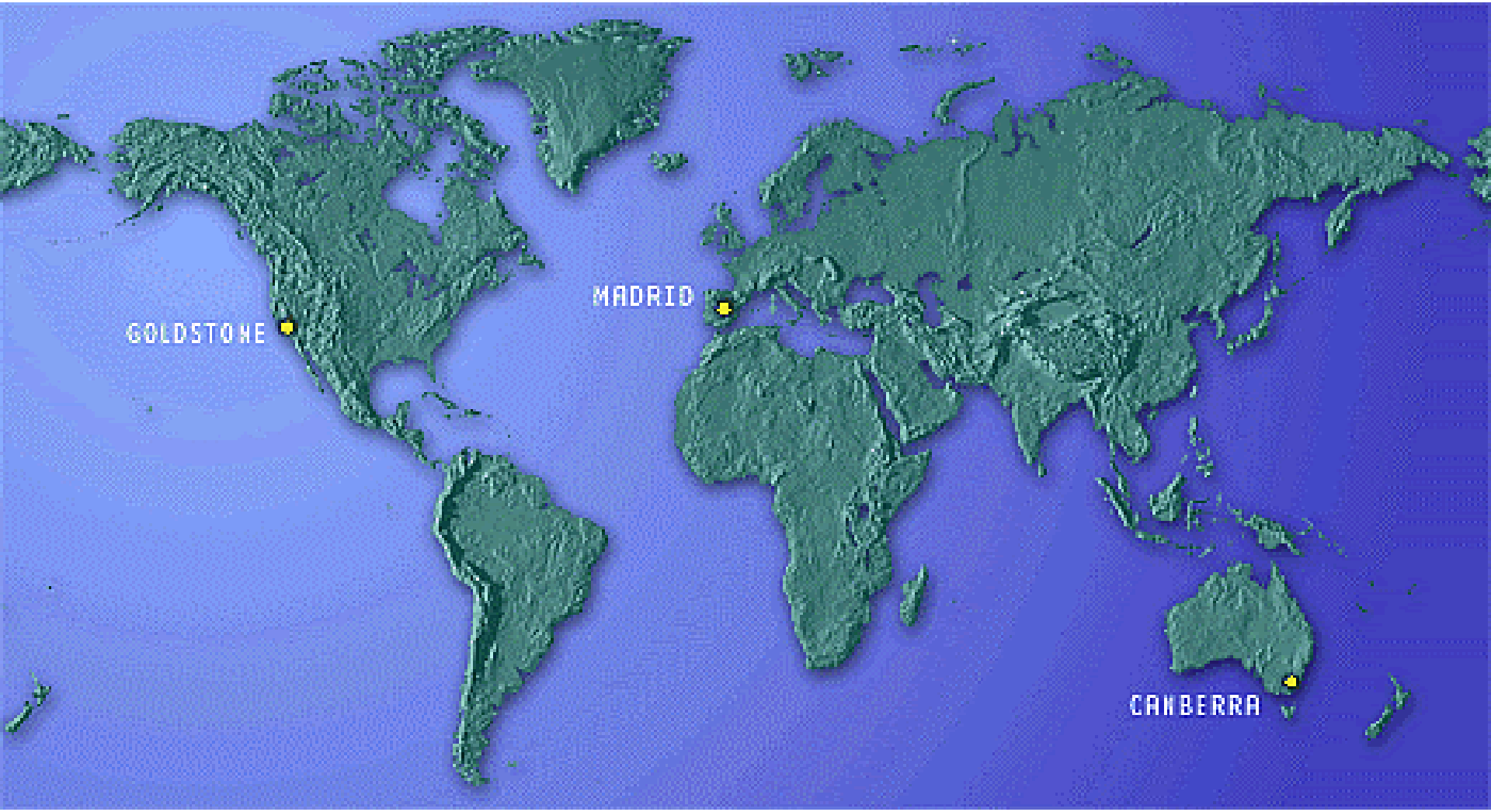


- **ON-GOING ACTIVITIES**
  - MESSENGER SPECIAL STUDY – LAUNCH CHANGE
  - -- MADB/TIGRAS TESTING AND TRAINING
  - DOWNTIME PLANNING
  - LUNAR-A LOAD STUDY – MISSION REPLAN
  - MESSENGER SPECIAL STUDY – LAUNCH CHANGE
  - PHOENIX LOAD STUDY
  - ROSETTA LOAD STUDY – MISSION REPLAN
  - ST-5 SPECIAL STUDY – LAUNCH CHANGE
  - ULYSSES EXTENDED MISSION STUDY

RARB Timeline – February 10, 2004

Calendar Date	Work Days Remaining	Milestones
10/13/2003	78 Days	Distribute Mission Set, Major Events and User Loading Profiles to Projects/Users for verification.
10/31/2003	64 Days	Deadline for Projects/Users responses to Mission Set, Major Events, and User Loading Profiles. Last day for Trajectory or Viewperiod updates and submissions.
11/07/2003	59 Days	Start preliminary requirements analysis and recommendations.
01/15/2004	17 days	Post preliminary Contentions/Recommendations to RAPWEB for Projects/Users review.
01/22/2004	13 days	NASA Headquarters Science Review.
01/28/2004	9 days	Complete Project/User Review
02/05/2004	3 Days	Post final Contentions and Recommendations on the RAPWEB
02/09/2004	1 Day	Distribute booklets to RARB Board Members
02/10/2004		**Resource Allocation Review Board Meeting**

DSN Antenna Downtime Status and Forecast



http://rapweb.jpl.nasa.gov/planning

Antenna Downtime Status and Forecast

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- It has been requested by JPL DSMS management that the previously approved DSS-54, and DSS-55 USC (Microwave Switch Controller) task scheduled in week 15 and 17 respectively, be moved to a later date outside of the DSS-65 downtime timeframe. It is proposed to move the DSS-55 USC task to week 27 and DSS-54 to week 28.

  The changes to the DSS-54 and 55 USC tasks and the DSS-65 ACR extension will be proposed for approval at the February 2004 RARB.

Antenna Downtime Status and Forecast

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Antenna Downtime Status and Forecast

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  The change to the DSS-54 X/X-Ka Band task will be proposed for approval at the February 2004 RARB.

Antenna Downtime Status And Forecast Schedule

DSN Antenna Downtime Report

Revised: January 7, 2004

2004							
Site	Description	Start	End	Duration (Days)	Weeks	Start DOY	End DOY
DSS 15	Antenna Controller Replacement	04/12/2004 00:00	06/13/2004 23:59	63	16 - 24	103	165
DSS 43	Antenna Rebalance	05/29/2004 00:00	06/06/2004 23:59	9	22 - 23	150	158
DSS 14	Antenna Controller Replacement	07/07/2004 00:00	12/07/2004 23:59	154	28 - 50	189	342
DSS 14	Hydrostatic Bearing	07/07/2004 00:00	12/07/2004 23:59	154	28 - 50	189	342
DSS 45	Life Extension	08/09/2004 00:00	12/05/2004 23:59	119	33 - 49	222	340
DSS 14	NIB - USC Installation	09/20/2004 00:00	10/03/2004 23:59	14	39 - 40	264	277
DSS 45	NIB - USC Installation	11/22/2004 00:00	12/05/2004 23:59	14	48 - 49	327	340

2005							
Site	Description	Start	End	Duration (Days)	Weeks	Start DOY	End DOY
DSS 27	NSP Implementation	01/03/2005 00:00	01/30/2005 23:59	28	01 - 04	003	030
DSS 27	NIB - USC Installation	01/10/2005 00:00	01/23/2005 23:59	14	02 - 03	010	023
DSS 63	USC Installation	01/17/2005 00:00	01/30/2005 23:59	14	03 - 04	017	030
DSS 26	USC Installation	01/24/2005 00:00	02/06/2005 23:59	14	04 - 05	024	037
DSS 65	Antenna Controller Replacement	01/31/2005 00:00	05/29/2005 23:59	119	05 - 21	031	149
DSS 65	Antenna Controller Replacement - **Proposed**	01/31/2005 00:00	07/03/2005 23:59	154	05 - 26	031	184
DSS 65	NIB - USC Installation	01/31/2005 00:00	02/06/2005 23:59	7	05 - 05	031	037
DSS 65	Relocation	01/31/2005 00:00	05/29/2005 23:59	119	05 - 21	031	149
DSS 65	Life Extension	01/31/2005 00:00	05/29/2005 23:59	119	05 - 21	031	149
DSS 25	USC Installation	02/21/2005 00:00	03/06/2005 23:59	14	08 - 09	052	065
DSS 15	USC Installation	04/11/2005 00:00	04/24/2005 23:59	14	15 - 16	101	114
DSS 54	USC Installation	04/11/2005 00:00	04/17/2005 23:59	7	15 - 15	101	107
DSS 55	USC Installation	04/25/2005 00:00	05/01/2005 23:59	7	17 - 17	115	121
DSS 34	X/X-Ka Band	05/02/2005 00:00	06/26/2005 23:59	56	18 - 25	122	177
DSS 34	NIB - USC Installation	06/13/2005 00:00	06/26/2005 23:59	14	24 - 25	164	177
DSS 24	USC Installation	06/27/2005 00:00	07/03/2005 23:59	7	26 - 26	178	184
DSS 55	USC Installation - **Proposed**	07/04/2005 00:00	07/10/2005 23:59	7	27 - 27	185	191
DSS 54	USC Installation - **Proposed**	07/11/2005 00:00	07/17/2005 23:59	7	28 - 28	192	198
DSS 43	Antenna Controller Replacement	07/18/2005 00:00	01/01/2006 23:59	168	29 - 52	199	001
DSS 43	NIB - USC Installation	07/18/2005 00:00	07/31/2005 23:59	14	29 - 30	199	212
DSS 43	Hydrostatic Bearing	07/18/2005 00:00	01/01/2006 23:59	168	29 - 52	199	001

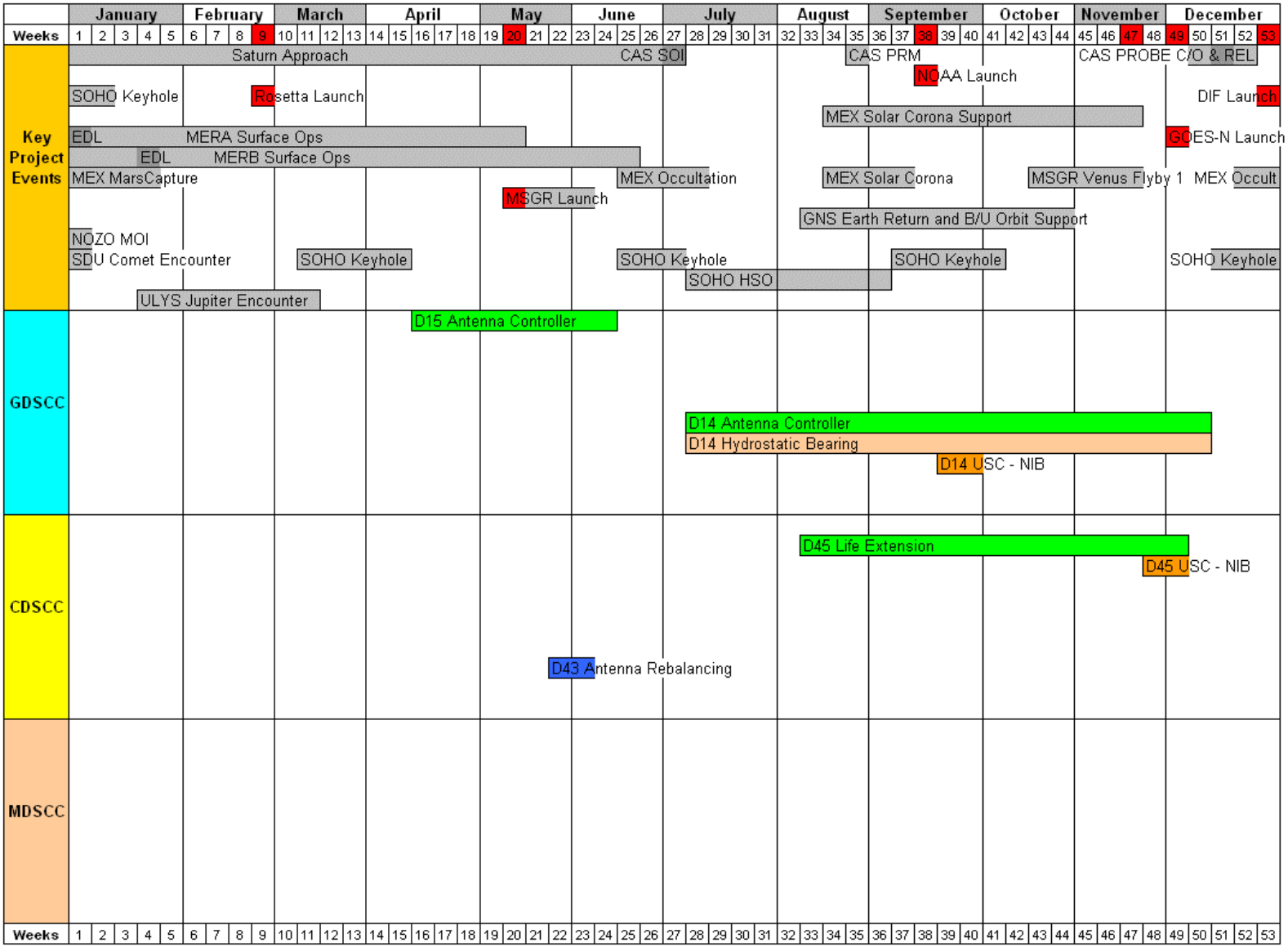
2006							
Site	Description	Start	End	Duration (Days)	Weeks	Start DOY	End DOY
DSS 63	Antenna Controller Replacement	05/22/2006 00:00	09/03/2006 23:59	105	21 - 35	142	246
DSS 24	X/X-Ka Band	09/04/2006 00:00	10/22/2006 23:59	49	36 - 42	247	295
DSS 45	Antenna Controller Replacement - **Proposed**	10/16/2006 00:00	12/17/2006 23:59	63	41 - 49	282	344
DSS 45	Antenna Controller Replacement	10/30/2006 00:00	12/31/2006 23:59	63	44 - 52	303	365

2007							
Site	Description	Start	End	Duration (Days)	Weeks	Start DOY	End DOY
DSS 54	X/X-Ka Band - **Proposed**	09/04/2006 00:00	10/22/2006 23:59	49	23 - 30	155	210

http://rapweb.jpl.nasa.gov

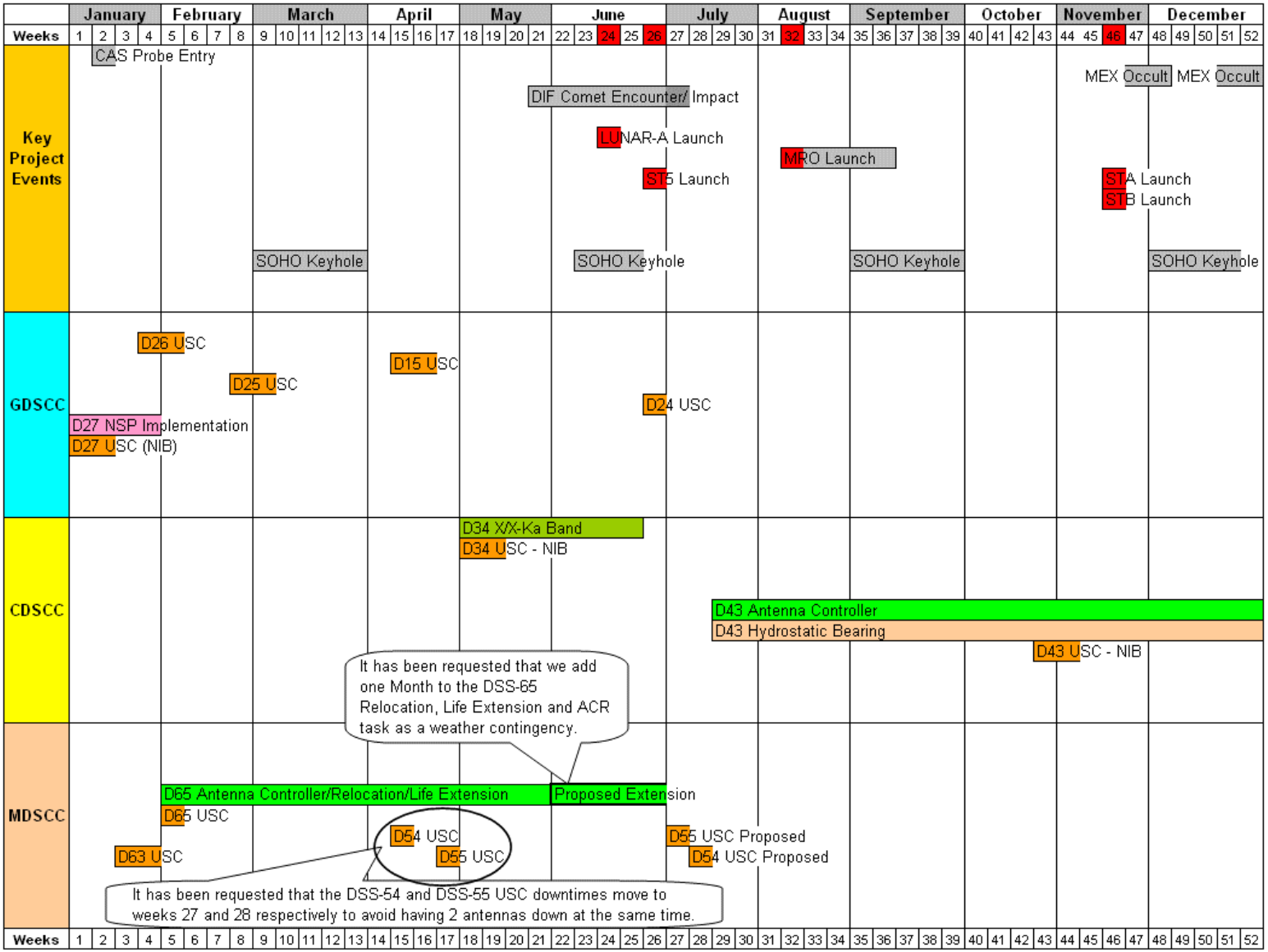
Although every effort is made to ensure the accuracy of this Downtime Planning report, changes can and do occur.
The DSN 7-Day Schedule takes precedence over this document.

Antenna Downtime Status And Forecast 2004



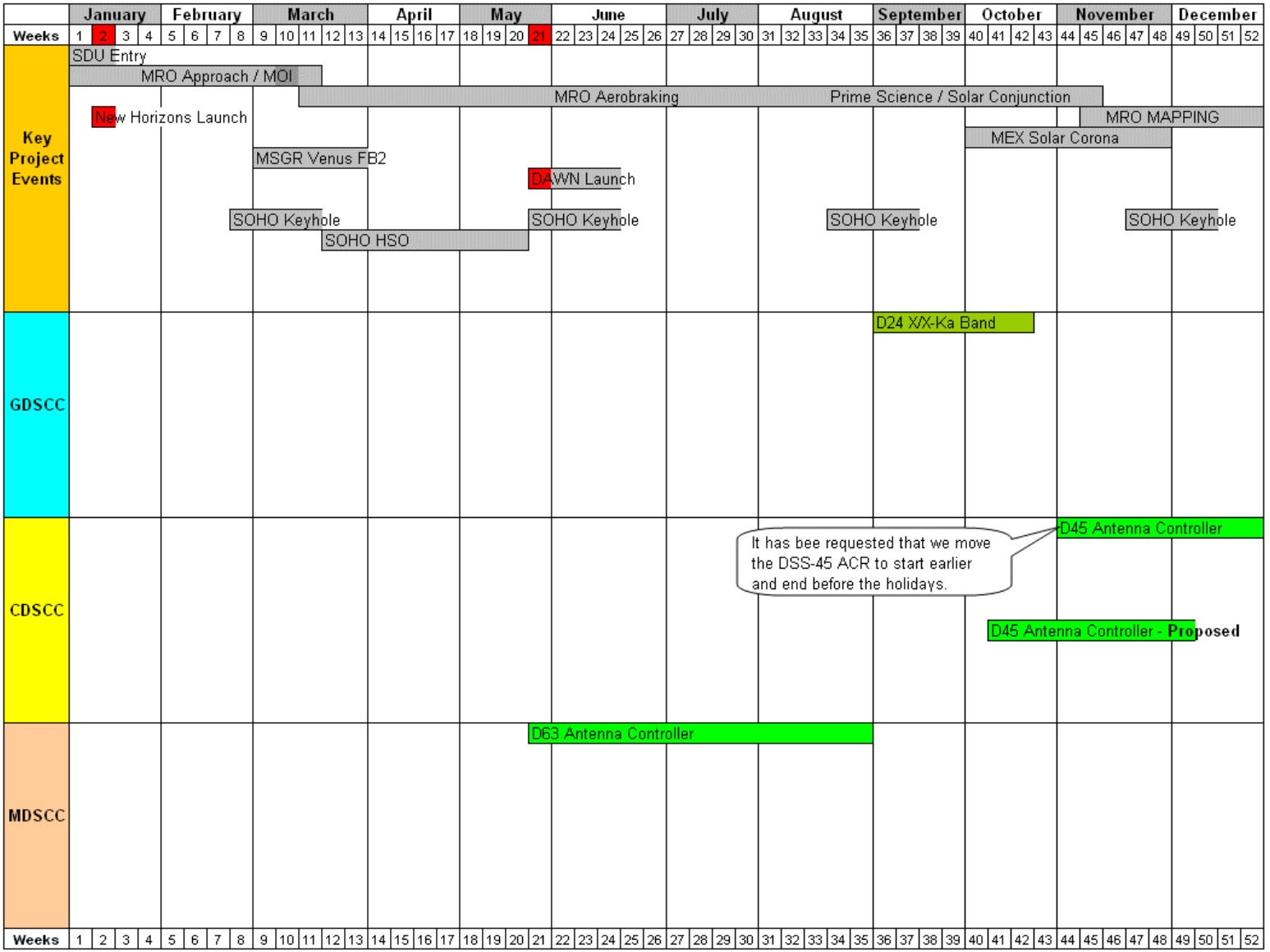
Revised: January 7, 2004

Antenna Downtime Status And Forecast 2005



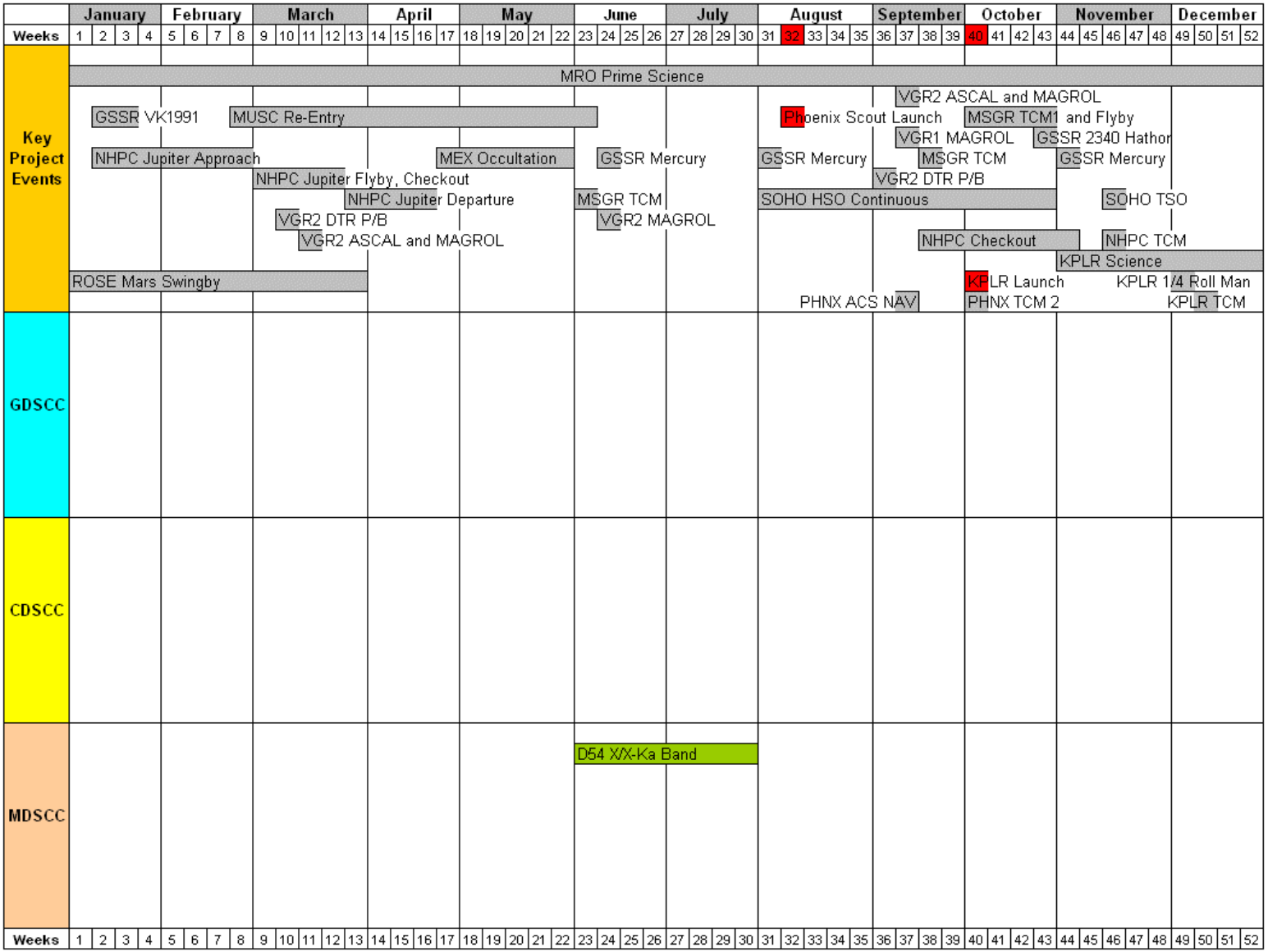
Revised: January 7, 2004

Antenna Downtime Status And Forecast 2006



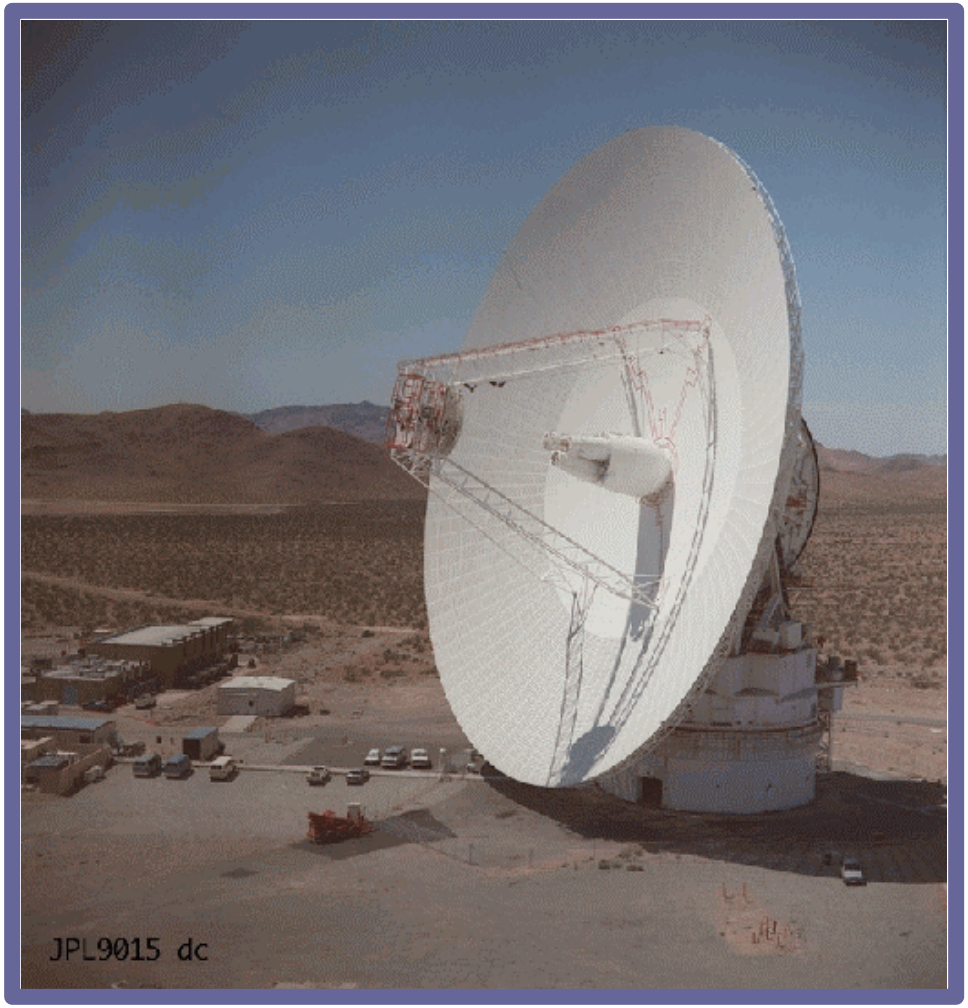
Revised: December 16, 2003

Antenna Downtime Status And Forecast 2007



Revised: January 5, 2004

Goldstone Solar System Radar



Martin A. Slade

January 15, 2004

NASA Jet Propulsion Laboratory

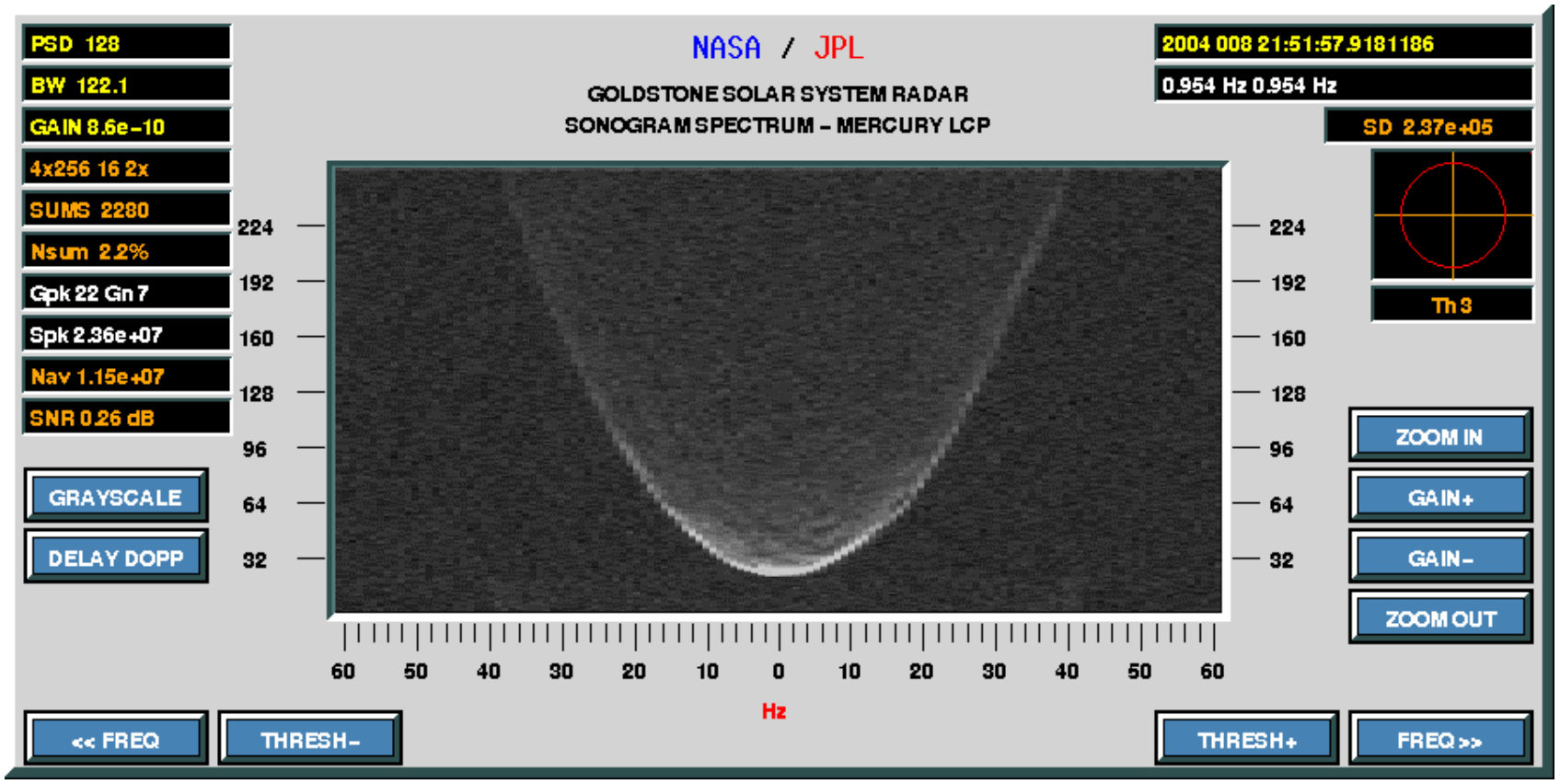
Joint Users Resource Allocation Planning Committee Meeting

Goldstone Solar System Radar (GSSR)

- **On DOY 008, Mercury ranging in support of testing General Relativity was successfully performed (real-time display on next slide).**
- **Tracking of near-Earth asteroid 1989 QF is scheduled for late January/early February**

DOY	DATE	TXON	TXOFF	DSS	TARGET	PW	BD	DEC
030	JAN-30-04	0545	0830	14	AST1989QF	520	X	+63
031	JAN-31-04	0430	0830	14	AST1989QF	520	X	+61
032	FEB-01-04	0245	0745	14	AST1989QF	520	X	+59
033	FEB-02-04	0215	0630	14	AST1989QF	520	X	+55

Real-Time Display of Radar DAS on January 8, 2004



Radio Astronomy
&
Special Activities

January 15, 2004
George Martinez

TEMPO
(Time and Earth Motion Precision Observations)

- **November**
  - **Clock Sync DOY 320**
    - **No problems were reported by DSS-15.**
    - **DSS-65 reported an ACS problem.**
    - **The data tapes were shipped to the JPL correlator for processing.**
  - **Clock Sync DOY 333**
    - **No problems were reported by either DSS-15 or DSS-65.**
    - **The data tapes were shipped to the JPL correlator for processing.**
- **Metrics**
  - **99% of data time utilized.**

TEMPO - Continued

- **December**
  - **Clock Sync DOY 344**
    - **No problems were reported by either DSS-15 or DSS-65.**
    - **Data tape sent to the JPL correlator for processing.**
  - **Clock Sync DOY 346**
    - **No problems were reported by DSS-14.**
    - **DSS-63 reported that the APA hung.**
    - **Data tape sent to the JPL correlator for processing.**
  - **Clock Sync DOY 361**
    - **No problems were reported by DSS-15.**
    - **DSS-65 reported an interface problem between the PCFS and EAC.**
      - **No data were recorded.**
      - **An RS232 cable was replaced post track.**
    - **Because of the Mars requirements, a replacement clock sync was put into the DSN 7-Day Schedule for DOY 016.**
- **Metrics**
  - **87% of data time utilized.**

Space Geodesy Program

- **IVS-T2023**
  - **The objective of the International VLBI Service (IVS) T2 sessions is to monitor the Terrestial Reference Frame (TRF) via monthly sessions. All geodetic stations participate in at least three T2 sessions each year. These sessions replace the IRIS-S sessions observed in previous years.**
  - **No problems were reported by DSS-15.**
  - **The data tape was shipped to Bonn for correlation.**

- **IVS-T2024**
  - **The objective of the International VLBI Service (IVS) T2 sessions is to monitor the Terrestial Reference Frame (TRF) via monthly sessions. All geodetic stations participate in at least three T2 sessions each year. These sessions replace the IRIS-S sessions observed in previous years.**
  - **No problems were reported by DSS-15.**
  - **The data tape was shipped to Bonn for correlation.**

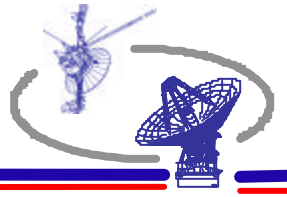
- **Metrics**
  - **100% of the data time was utilized.**

Gravity Probe-B

- **BR088D**
  - **This X-band dual polarization experiment was the fourth epoch to observe the source HR8703, which will be used as a guide star for the Gravity Probe-B mission.**
    - **This radio source is being observed for extremely accurate position (Astrometry) and measurement of its proper motion in an inertial frame.**
    - **Only Astrometric VLBI can yield this accuracy.**
  - **No problems were reported by either DSS-14, DSS-43, or DSS-63.**
  - **Data tapes were shipped to the Socorro correlator for processing**

- **Metrics**
  - **100% of data time utilized.**

- **Correlator Report**
  - **Correlator reports no anomalies detected and fringes found on all sources.**



JURAP Mission Input

Genesis/MAP/ACE/IMAGE

Steve Waldherr
TMS Manager

January 15, 2004

JURAP Mission Input

- MAP
  - Spacecraft operations continue nominally
  - TMS Manager and NOPE Team working with MAP to change tracking supports with out the use of MCD 3
- IMAGE
  - Nothing Significant to Report
- ACE
  - Nothing Significant to Report

JURAP Mission Input

- **Genesis**
  - **Days since Launch of August 8, 2001: 881 days**
  - **Days to planned completion of primary science collection: 80 days**
  - **Days to Earth Return: 237 days**
  - **Months/Days of Accumulated Science Collection: 24.4 months / 743 days**
  - **SKM-5B was successfully completed on 01/14; one more SKM to go.**
  - **Spacecraft operations continue nominally**

Mars Global Surveyor
Flight Operations Status

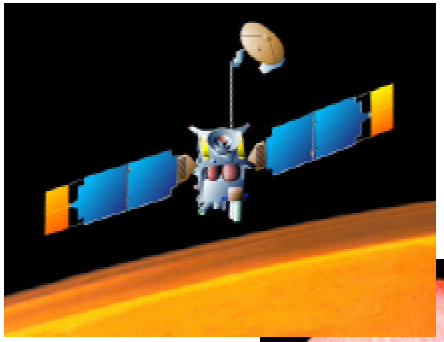
E.E. Brower

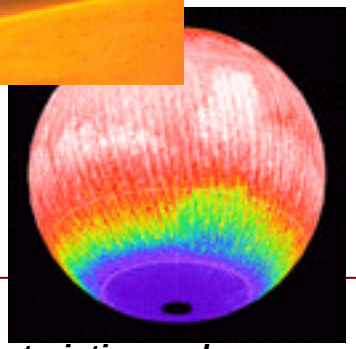
January 15, 2004

AGENDA

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

Mars Global Surveyor





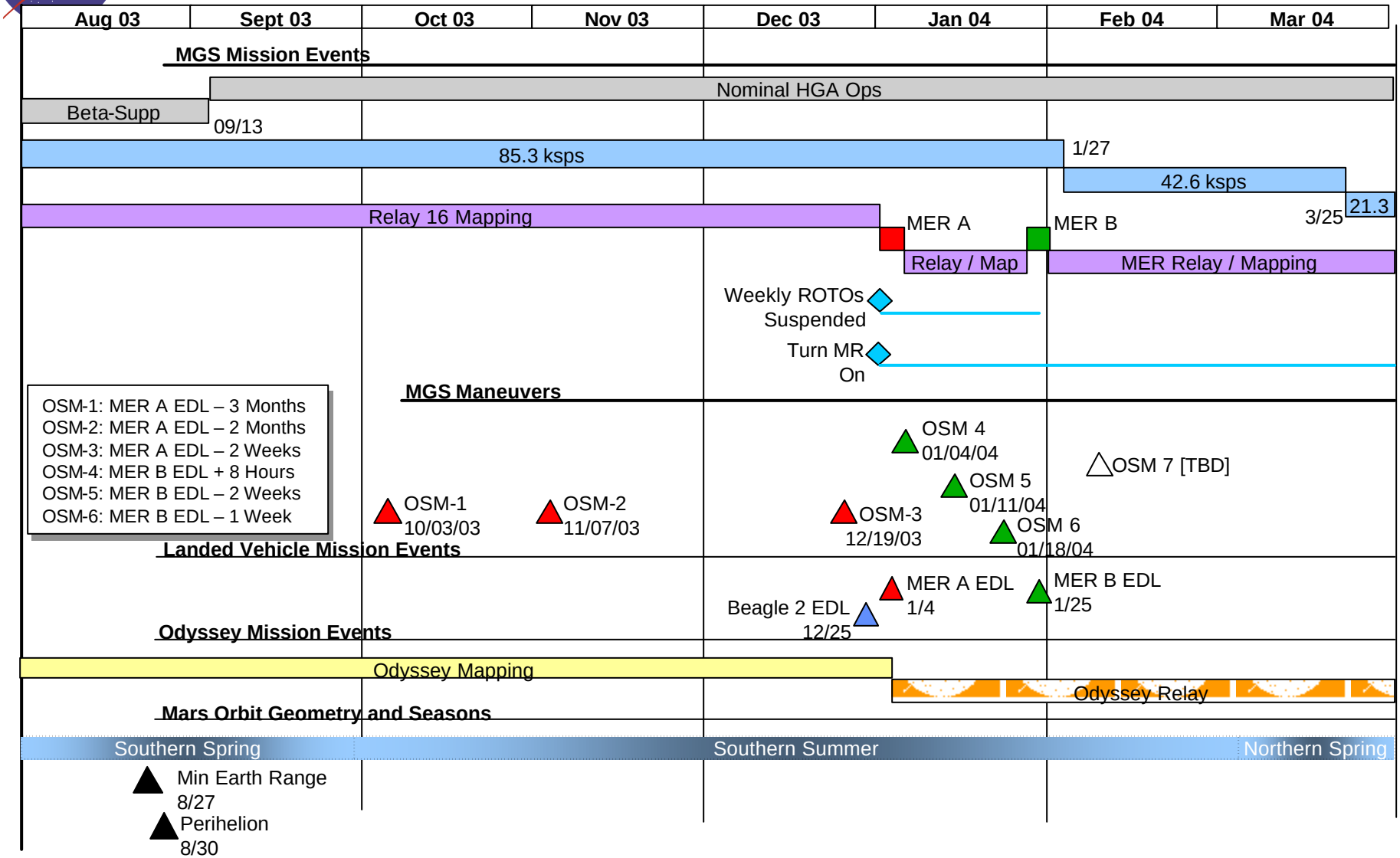
Salient Features

- ***Global mapping of Martian atmosphere, surface, magnetic field***
- ***Nadir pointed spacecraft***
- ***5 instruments (MOC imager, MOLA laser altimeter, TES - IR spectrometer, MAG magnetometer, RS radio science)***
- ***Launch date: November 1996***
- ***Mapping lifetime: One Mars year (687 days)***
- ***Provides relay capability for surface assets (Relay lifetime: 5 years)***

Science

- ***To characterize surface morphology at high spatial resolution to quantify surface characteristics and geological processes***
- ***To determine the composition and map the distribution of surface minerals, rocks, and ices; measure the surface thermophysical properties;***
- ***To determine globally the topography, geodetic figure, and gravitational field;***
- ***To establish the nature of the magnetic field and map the crustal remnant field;***
- ***To monitor global weather and thermal structure of the atmosphere;***
- ***To study surface-atmosphere interaction by monitoring surface features, polar caps, atmospheric dust, and condensate clouds over a seasonal cycle.***

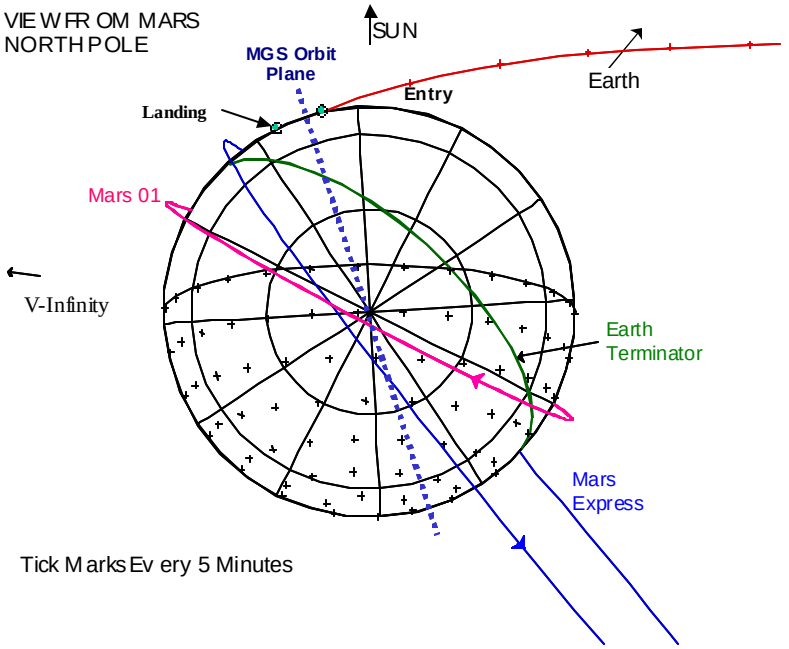
Mars Global Surveyor
Upcoming Events



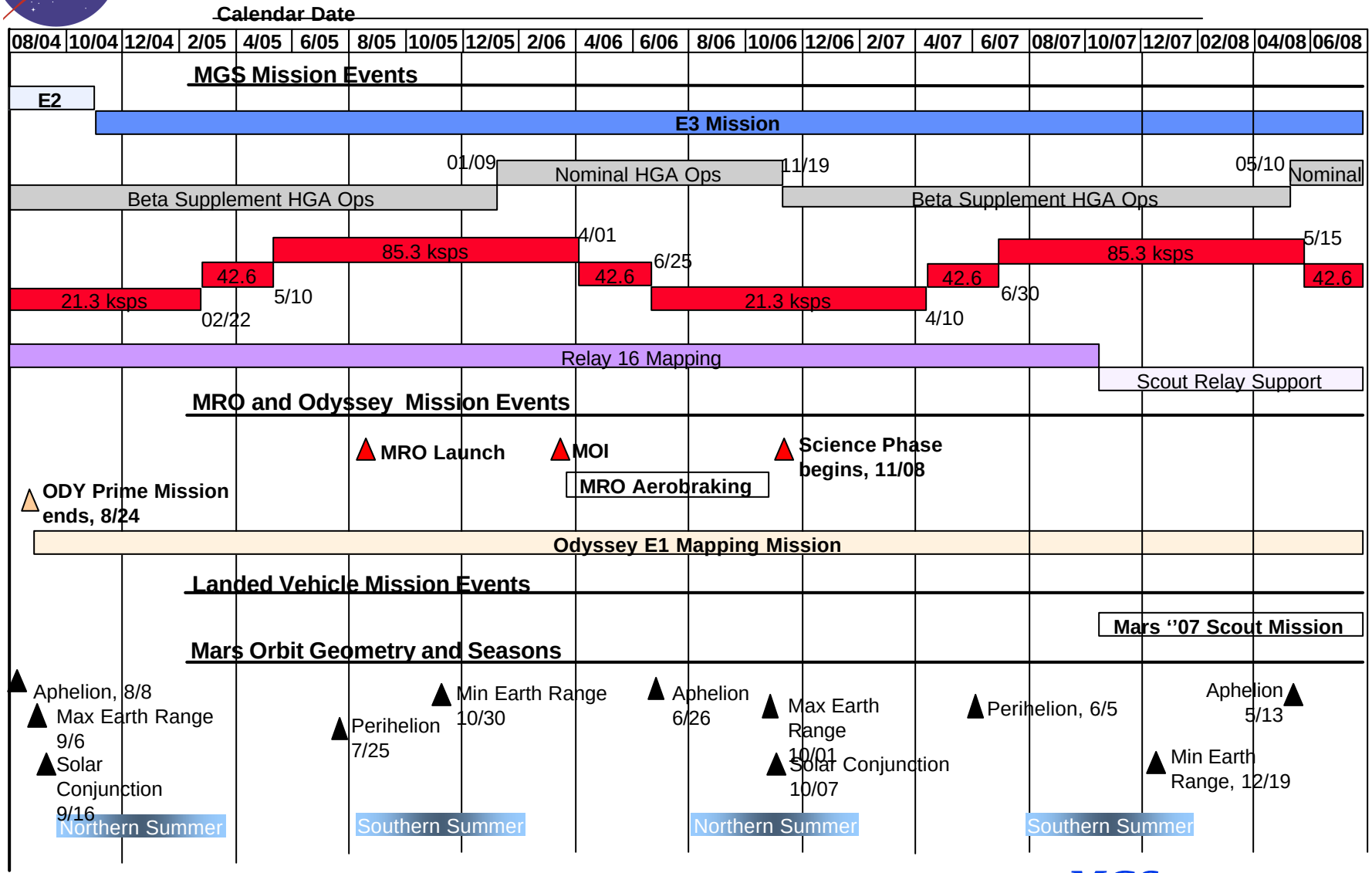
MGS

Phasing MGS for MER EDL

- **6 Maneuvers were planned (3 per MER), enabling MGS to have the most accurate over-flight times for each EDL**
- **OSM-1 Successfully Executed**
- **OSM 2 and 3 Not Required**
- **OSM-4 Successfully Executed**
- **OSM-5, & 6 Not Required**



Mars Global Surveyor
Proposed E3 Mission Timeline

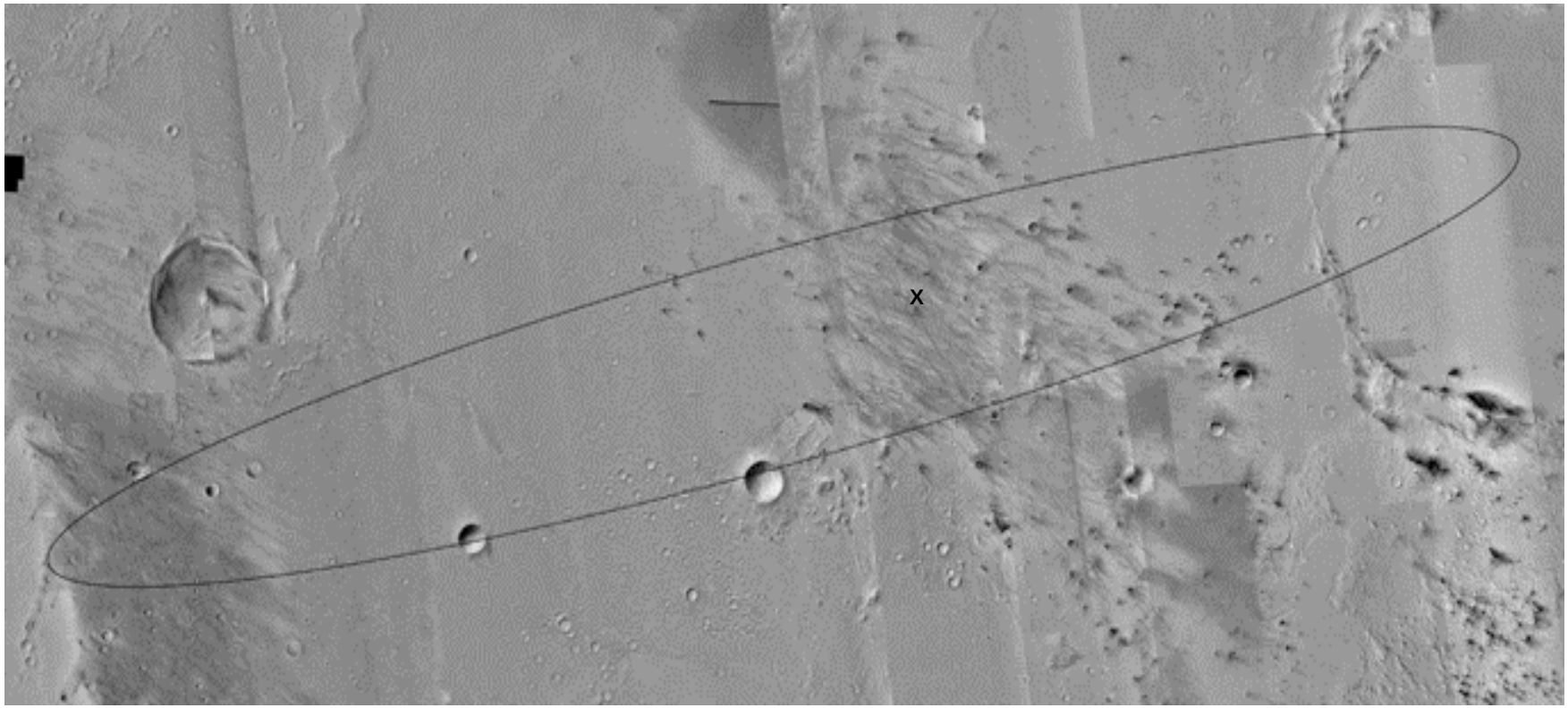


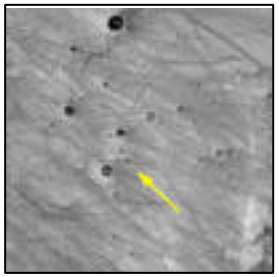
MGS

- Last 3 Months:
  - **OSM1** — **OCT 3**
  - **CPROTOs** — **NOV. 1-3**
  - **MER-A EDL Relay** — **Jan 3**
  - **OSM4** — **Jan 4**

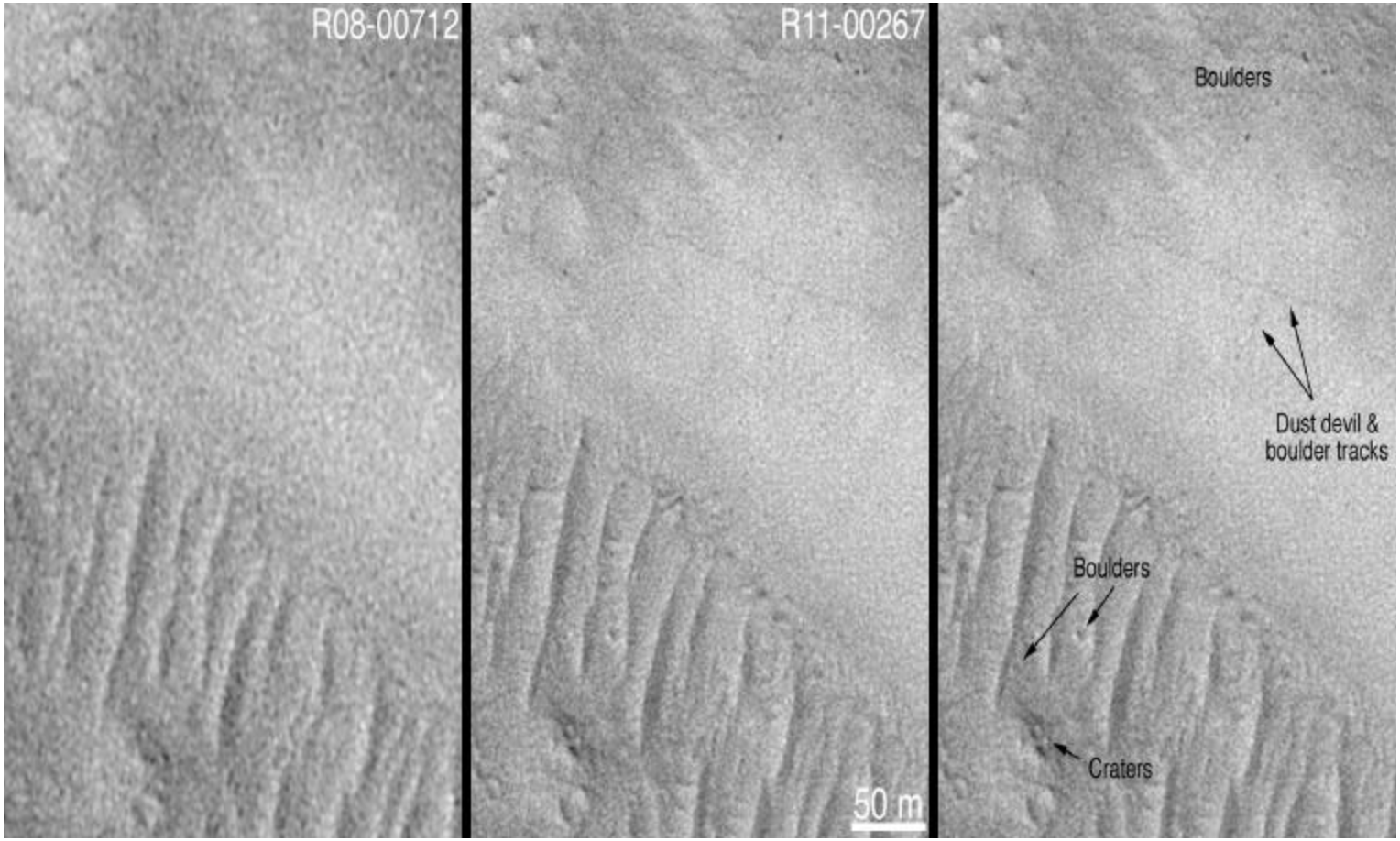
- Next 12 Months:
  - **MGS MER EDL relay** — **JAN 25**
  - **MGS MER ROVER Science relay** — **JAN-MAY**

- **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.**


X



CPROTO Gusev Image Comparison



- **None**

Report to the JURAP

January 15, 2004

Brad Compton &
Ben Toyoshima

MER-1B (Opportunity) as of 1/15/04

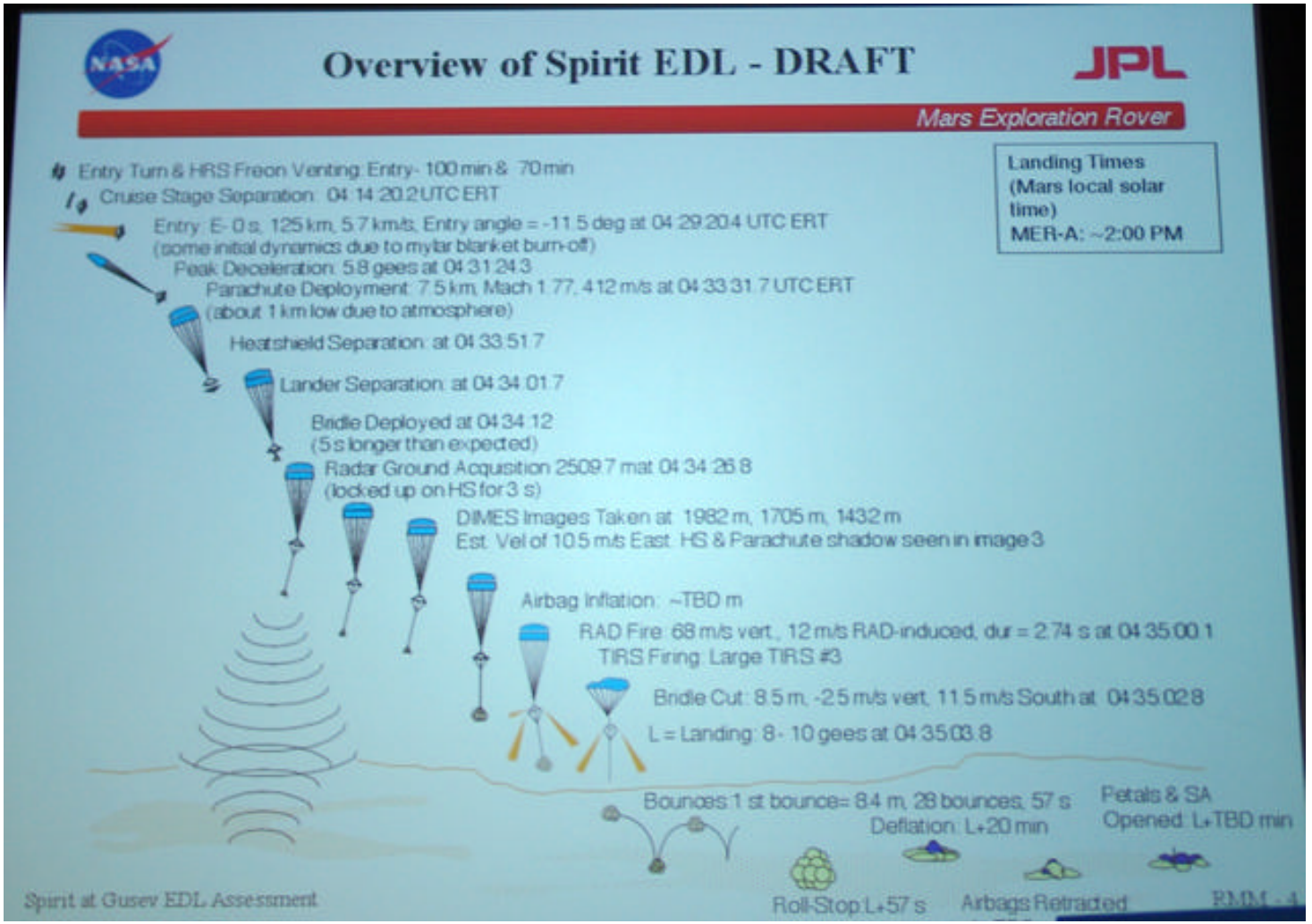
- OWLT = 10 min 16 sec
- Range = 116,000,000 mi
- Distance to Mars = 1,500,000 mi

- S/C healthy

- TCM 5 on January 16, 2004
- Near Approach phase begins 1/16/04

MER 2A EDL reconstruction

Mars Exploration Rover

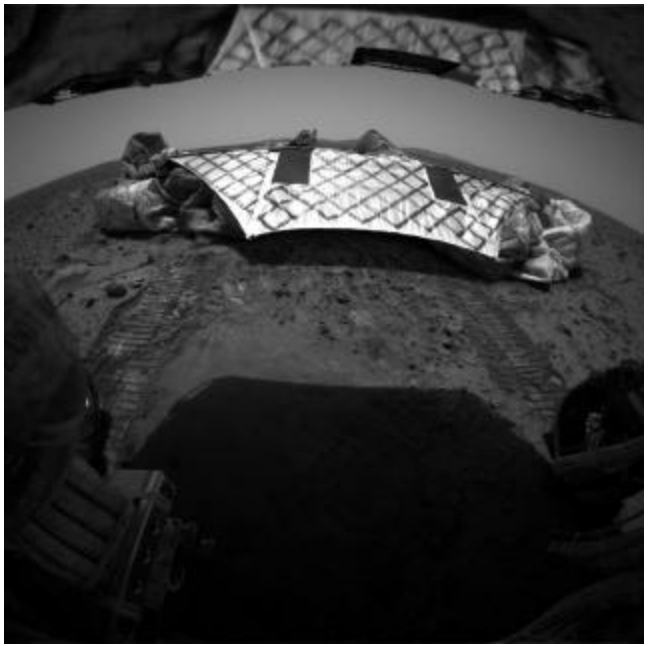


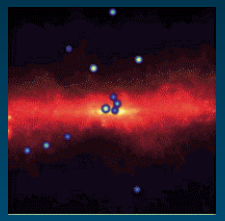
Sean O'Keefe thanks the Stations

The Vice President of the USA

MER 2A Spirit ITE

- 6-wheels on Mars! 1/14/04. Confirmed by pictures





INTEGRAL

esa

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

Joint Users Resource Allocation Planning (JURAP) Committee Meeting

Dwight P. Holmes

January 15, 2004

NASA / Jet Propulsion Laboratory

INTEGRAL

Integral Operations

- Goldstone performance in November and December 2003 was disappointing.
  - In two instances there was a total of 11 hours of lost data at Goldstone
    - Unknown anomaly at DSS-16 on DOY 321 – 345 minutes. (Could not sync to telemetry)
  - First time the DSN has delivered less than 95% of requested data
  - Due to the current network load, could not call upon DSS-24 as a backup resource
  - Data gaps are a multi element problem
    - Antenna mechanical and electrical anomalies at DSS-16 (FEA reliability including MFRs)
    - RFI from China Lake and Fort Irwin
    - Other causes of gaps are under investigation
  - There is not a similar issue with Mars Express because MEX does not have a real-time requirement.

INTEGRAL

OPERATIONS

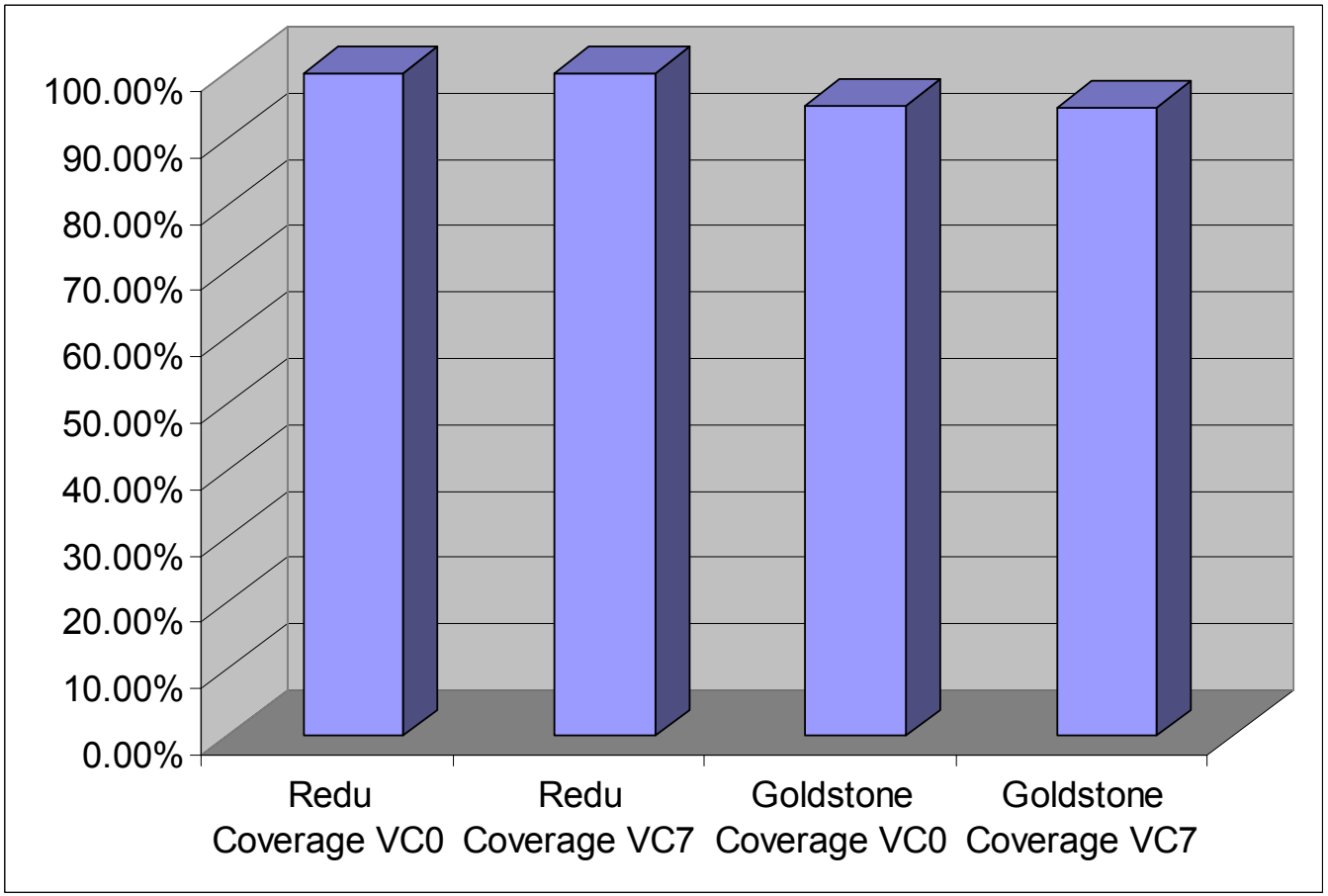
Revolution	Goldstone Theoretical Coverage (dd_hh:mm:ss.)	Goldstone Outage VC0 (dd_hh:mm:ss.)	Goldstone Outage VC7 (dd_hh:mm:ss.)	Redu Theoretical Coverage (dd_hh:mm:ss.)	Redu Outage VC0 (dd_hh:mm:ss.)	Redu Outage VC7 (dd_hh:mm:ss.)
128	00 13:04:00.000	00 0:06:09.293	00 0:19:52.421	02 7:23:00.000	00 0:16:33.174	00 0:18:32.928
129	00 12:13:00.000	00 0:07:12.721	00 0:04:39.663	02 8:13:00.000	00 0:08:36.944	00 0:04:34.373
130	00 12:48:00.000	00 0:49:40.035	00 0:47:20.506	02 7:35:00.000	00 0:02:27.191	00 0:02:06.182
131	00 12:38:00.000	00 0:22:39.960	00 0:28:02.648	02 7:36:00.000	00 0:02:51.000	00 0:03:11.420
132	00 13:13:00.000	00 0:29:07.146	00 0:37:19.998	02 6:57:00.000	00 0:04:07.816	00 0:03:38.689
133	00 12:30:00.000	00 3:50:21.913	00 3:50:12.102	02 7:22:00.000	00 0:03:16.753	00 0:02:32.122
134	00 12:08:00.000	00 0:06:38.278	00 0:05:49.218	02 7:58:00.000	00 0:01:30.252	00 0:02:29.502
135	00 12:34:00.000	00 0:13:18.467	00 0:12:08.839	02 7:32:00.000	00 0:02:26.629	00 0:01:44.630
136	00 11:44:00.000	00 0:08:54.853	00 0:10:16.970	02 8:22:00.000	00 0:01:15.364	00 0:02:19.612
137	00 12:42:00.000	00 0:03:01.247	00 0:03:09.344	02 7:05:00.000	00 0:01:25.566	00 0:01:08.252
	Tot	Tot	Tot	Tot	Tot	Tot
	05 5:34:00.000	00 6:17:03.913	00 6:38:51.709	23 4:03:00.000	00 0:44:30.689	00 0:42:17.710

Total Satellite Theoretical Coverage (dd_hh:mm:ss.)	Total Satellite Real VC0 Coverage Time (dd_hh:mm:ss.)	Total Satellite Real VC7 Coverage Time (dd_hh:mm:ss.)	Total Satellite Real VC0 Coverage Percentage	Total Satellite Real VC7 Coverage Percentage
28 09:37:00.000	28 02:35:25.398	28 02:15:50.581	98.97%	98.92%

Redu Coverage VC0	Redu Coverage VC7	Goldstone Coverage VC0	Goldstone Coverage VC7
99.87%	99.87%	95.00%	94.71%

November 2003 coverage

INTEGRAL



November 2003 coverage

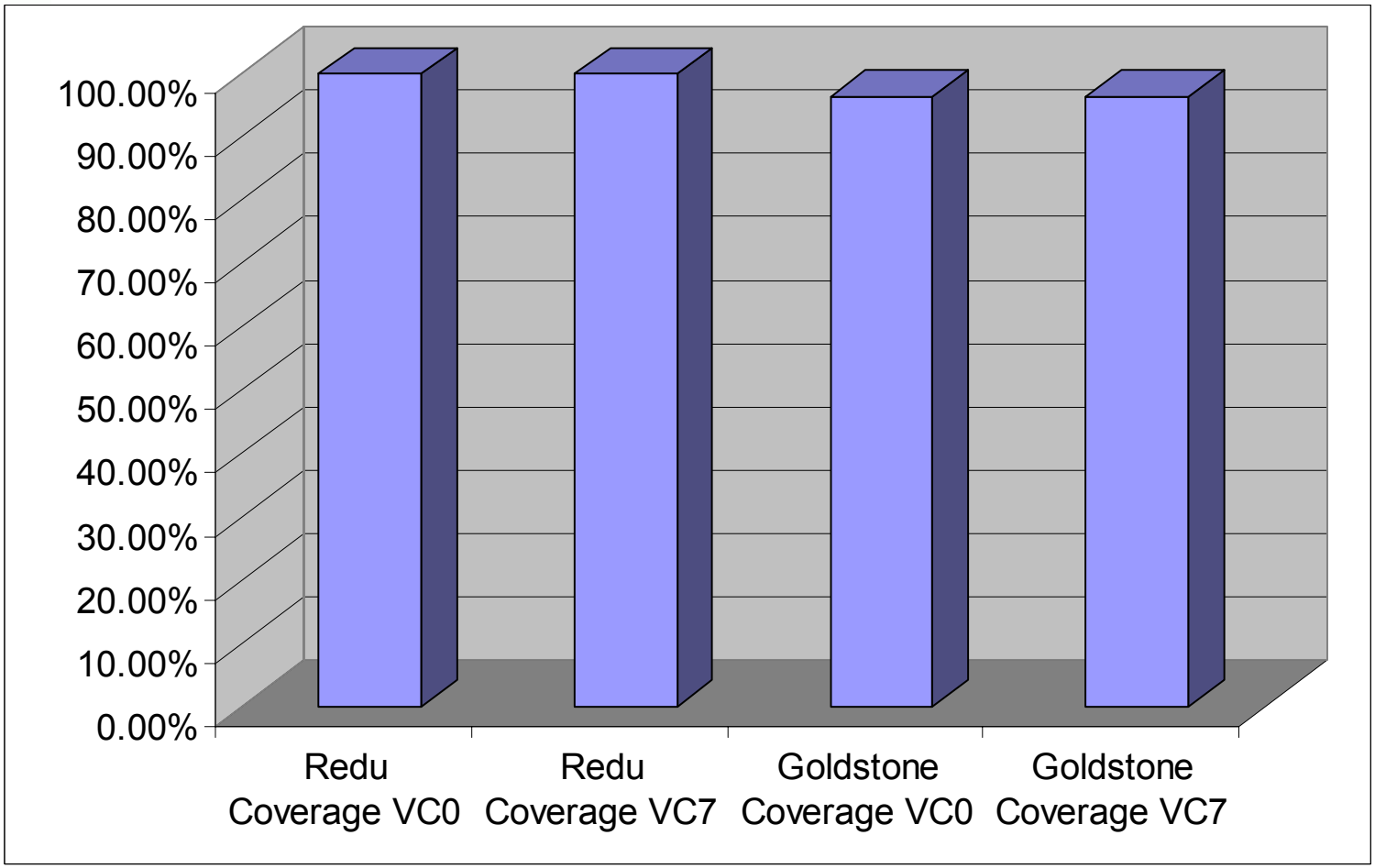
INTEGRAL

Revolution	Goldstone Theoretical Coverage (dd_hh:mm:ss.)	Goldstone Outage VC0 (dd_hh:mm:ss.)	Goldstone Outage VC7 (dd_hh:mm:ss.)	Redu Theoretical Coverage (dd_hh:mm:ss.)	Redu Outage VC0 (dd_hh:mm:ss.)	Redu Outage VC7 (dd_hh:mm:ss.)
138	00 12:29:16.000	00 0:01:37.095	00 0:01:14.654	02 7:30:36.000	00 0:09:16.504	00 0:08:01.069
139	00 12:56:54.000	00 0:16:58.786	00 0:21:00.285	02 6:58:32.000	00 0:02:11.314	00 0:01:55.880
140	00 11:42:36.000	00 0:05:06.339	00 0:16:08.852	02 7:52:15.000	00 0:01:51.002	00 0:08:43.436
141	00 11:55:18.000	00 1:05:45.406	00 1:05:31.155	02 7:50:55.000	00 0:04:52.627	00 0:04:51.757
142	00 12:35:19.000	00 0:03:23.218	00 0:03:57.903	02 7:09:14.000	00 0:01:44.440	00 0:02:14.568
143	00 12:19:08.000	00 0:03:28.592	00 0:02:52.652	02 7:24:26.000	00 0:07:20.690	00 0:06:12.317
144	00 12:51:24.000	00 0:02:28.346	00 0:01:07.175	02 6:50:15.000	00 0:03:55.778	00 0:07:12.907
145	00 12:20:00.000	00 0:04:12.344	00 0:04:01.907	02 7:10:00.000	00 0:01:46.816	00 0:01:32.003
146	00 12:36:00.000	00 3:07:02.667	00 3:06:32.668	02 7:05:00.000	00 0:08:18.206	00 0:08:47.129
147	00 12:16:00.000	00 0:06:52.049	00 0:05:56.171	02 6:56:00.000	00 0:08:29.986	00 0:07:29.922
148	00 12:52:00.000	00 00:04:17.594	00 00:04:10.782	02 06:41:00.000	00 00:04:05.690	00 00:02:55.503
	Tot	Tot	Tot	Tot	Tot	Tot
	05 16:53:55.000	00 5:01:12.436	00 5:12:34.204	25 7:28:13.000	00 0:53:53.053	00 0:59:56.491

Total Satellite Theoretical Coverage (dd_hh:mm:ss.)	Total Satellite Real VC0 Coverage Time (dd_hh:mm:ss.)	Total Satellite Real VC7 Coverage Time (dd_hh:mm:ss.)	Total Satellite Real VC0 Coverage Percentage	Total Satellite Real VC7 Coverage Percentage
31 00:22:08.000	30 18:27:02.511	30 18:09:37.305	99.20%	99.17%

Redu Coverage VC0	Redu Coverage VC7	Goldstone Coverage VC0	Goldstone Coverage VC7
99.85%	99.84%	96.33%	96.19%

December 2003 coverage



December 2003 coverage

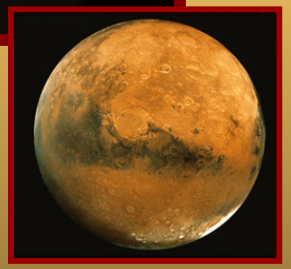
U.S. Participation in Europe's

Mars Express

Jet Propulsion Laboratory
California Institute of Technology

Presentation to the

Joint Users Resource Allocation Planning (JURAP) Meeting



Dwight P. Holmes

January 15, 2004

http://www.sci.esa.int/marsexpress/

Operations

- **Significant Operational Events**
  - **Delta DOR passes were conducted on approach to MARs**
    - **JPL NAV and ESOC Flight Dynamics teams very satisfied with results and agreement on Beagle II release point and Orbit Injection**
  - **Beagle II release on 19 December**
    - **Once released EDL fixed, no**
    - **communication with Beagle II**

  - **Mars Express Orbit Insertion on 25 December (UTC)**
    - **Operations nominal with two outstanding exceptions**
      - **Uplink predicts were anomalous and had to be completed manually**
      - **Decision to maintain contact during MOI TCM at S-band failed because spacecraft was configured with the wrong antenna**
    - **After attitude slew for main engine burn, there was no contact again until planetary occultation exit**
    - **Occultation exit was right on the money – everything after that worked near flawlessly.**

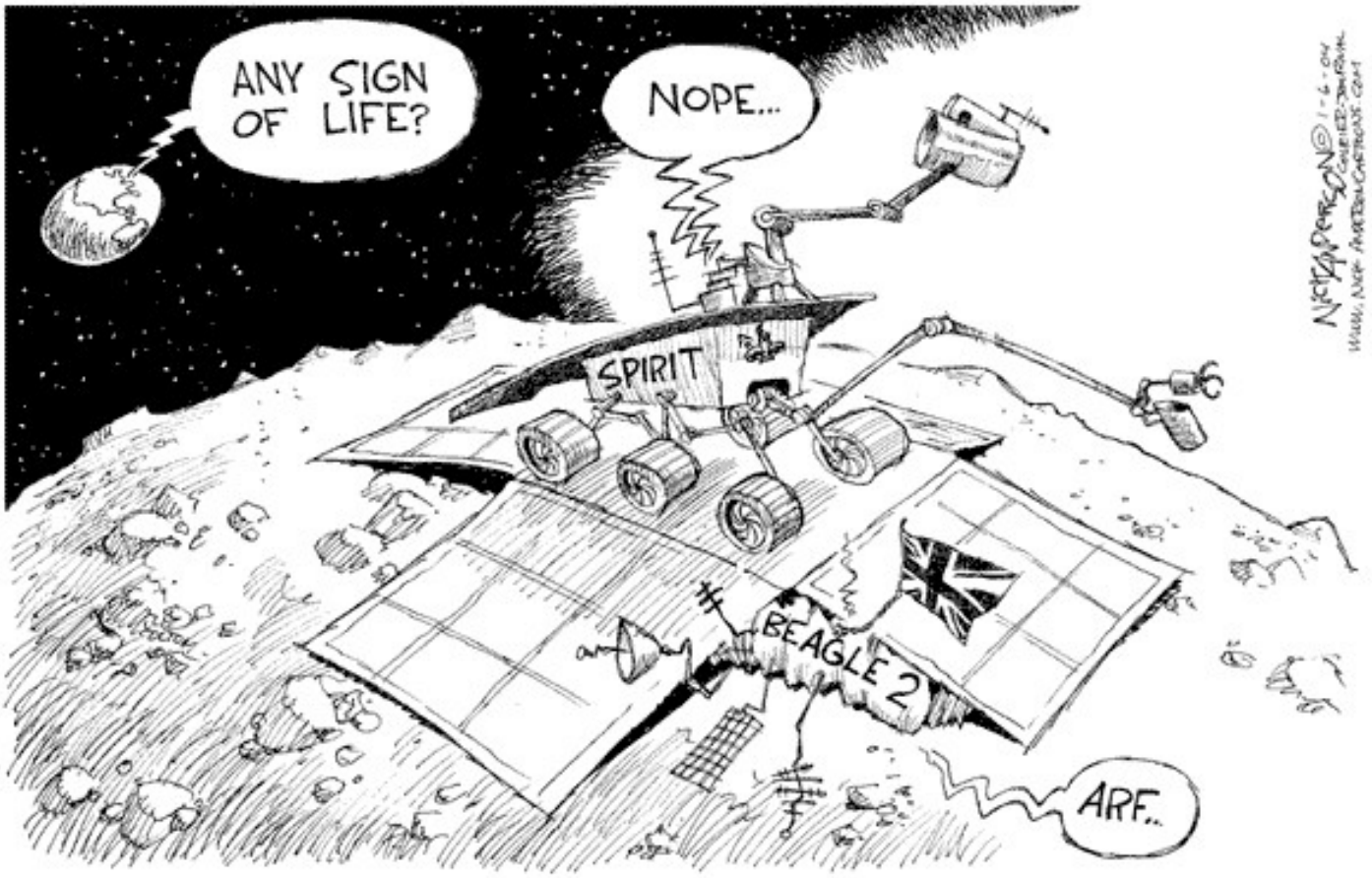
Operations

- **Operational Events (cont.)**
  - Expected Odyssey contact with Beagle II following EDL was negative
  - Subsequent attempt to find Beagle II signal using the large Jodrell bank antenna also produced negative results.
- **Orbit Maneuvers**
  - Inclination change maneuver on 30 December to transfer from a 9 deg. Equatorial to an 87 deg. Polar orbit
  - MEX has completed three apocenter lowering maneuvers with the main engine
    - Total of 10 apocenter lowering maneuvers are planned to circularize the orbit, with final operational orbit expected on 28 January
    - Due to fuel main engine performance constraints, remaining 7 maneuvers will be accomplished with maneuvering engines

Operations

- **Current Status**
  - **Beagle II communications**
    - **After a significant number of attempts with Odyssey and Mars Express, all communications results have been negative**
    - **Final attempt will let Beagle II, if alive, cycle through its com link loss timer in order to initiate comm search mode 2 (beacon dph)**
  - **Mars Express Orbiter**
    - **MEX has supported a MER UHF pass using MELICOM and collected telemetry.**
    - **All instruments have been turned on and are in the commissioning process**
    - **Next week the Radio Science team will conduct a Bi-Static RADAR pass at DSS-43 –(test only)**

What Happened to Beagle II



ulysses

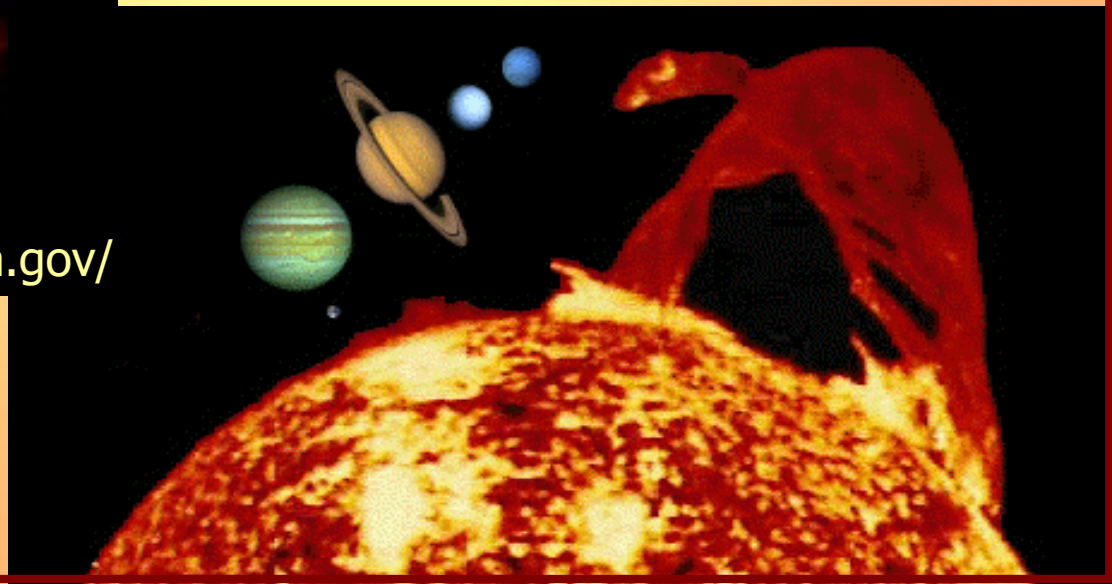
JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

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

B. Brymer

January 15, 2004

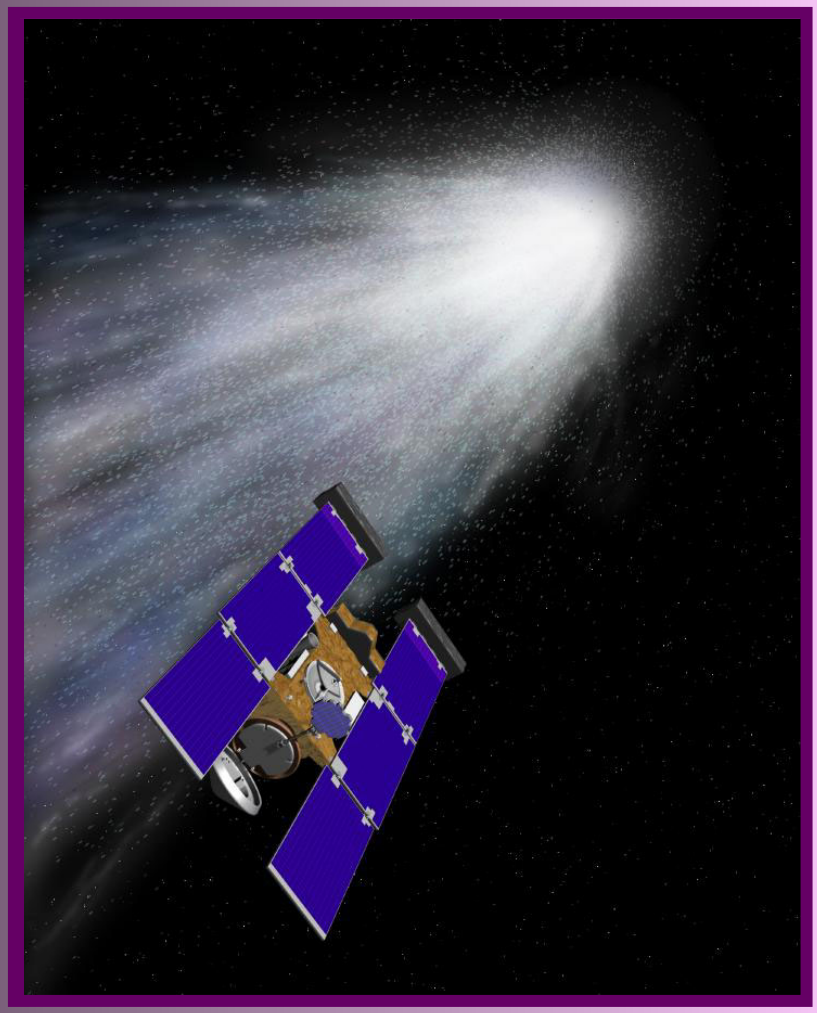
NASA Jet Propulsion Laboratory



ULYSSES

JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

- Nominal Spacecraft Operations Continue
- Spacecraft Power and Thermal Reconfigurations And Instrument Calibrations Are Performed As Required
- Spacecraft Earth Pointing Maneuvers Are Being Performed Weekly
- DSN Providing Good Support
- Jupiter Distant Encounter Activity Begins on 22 January
- Jupiter Closest Approach – 5 February



STARDUST

JOINT USERS
RESOURCE ALLOCATION
PLANNING COMMITTEE

R. E. Ryan
January 15, 2004
NASA Jet Propulsion Laboratory

http://stardust.jpl.nasa.gov

ENCOUNTER

RADIO AND OPTICAL NAV

PREDICTED 238 KM CLOSE APPROACH AT 19:22:59 UTC ON JANUARY 2
ACTUAL WAS 236.4 KM AT 19:21:32 UT

EXCELLENT IMAGE SET AS NAVCAM TRACKED THE NUCLEUS
DUST FLUX MONITOR AND SPECTROMETER (CIDA) GOT GOOD DATA
GOOD RADIO SCIENCE AS DSS 14 AND 43 LOCKED ON THE MGA CARRIER

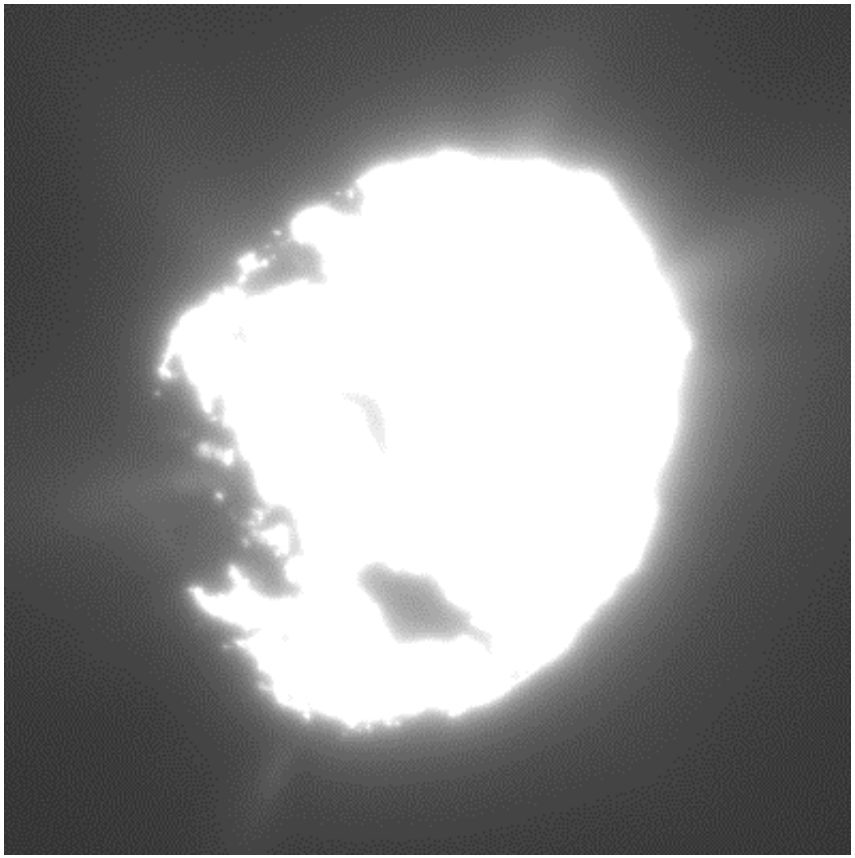
DATA REPLAYS WENT VERY WELL
5 CLOSE APPROACH IMAGES CAME FIRST (for afternoon release)

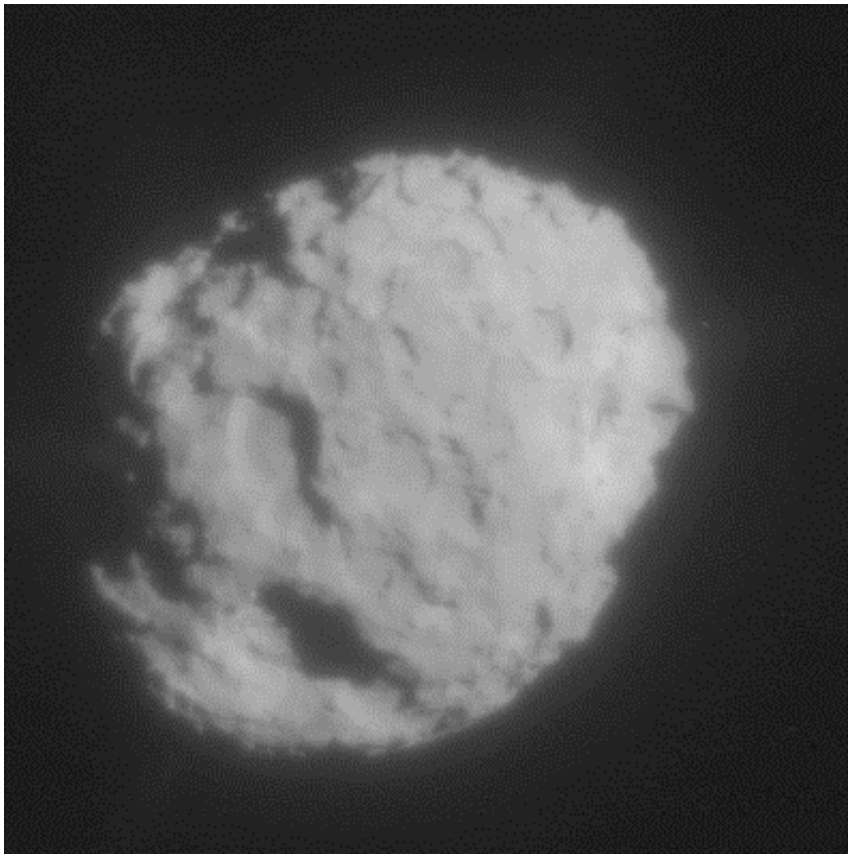
APPROACH IMAGING WENT WELL
COMET PICKED UP ON FIRST TRY ON NOVEMBER 13
RECURRING NAVCAM CONTAMINATION CLEANED UP BY TWO BAKE MANEUVERS

EXCELLENT SUPPORT BY GROUND BASED OBSERVATIONS HELPED WITH T-O-F

STARDUST

Report to JURAP





NASA JPL

January 15, 2004

STARDUST

UNIVERSITY OF WASHINGTON

LOCKHEED MARTIN

STARDUST

Report to JURAP

STATUS

SPACECRAFT IS HEALTHY (1/15/04)

PRESENTLY 2.6 AU from EARTH

00:43:00 RTLT

1.9 AU from SUN

RETURNING TO CRUISE MODE

TELEMETRY BIT RATE IS 504 bps (on HGA/34 METER)

DSMS SUPPORT SATISFACTORY THIS PAST PERIOD

GOOD SUPPORT THROUGH ENCOUNTER PERIOD

A LOT OF 70 METER REALLY HELPED WITH THE OPTICAL NAVIGATION

EXCELLENT SUPPORT FROM THE TEAMS

http://stardust.jpl.nasa.gov

(there are some good shots, movies and information)

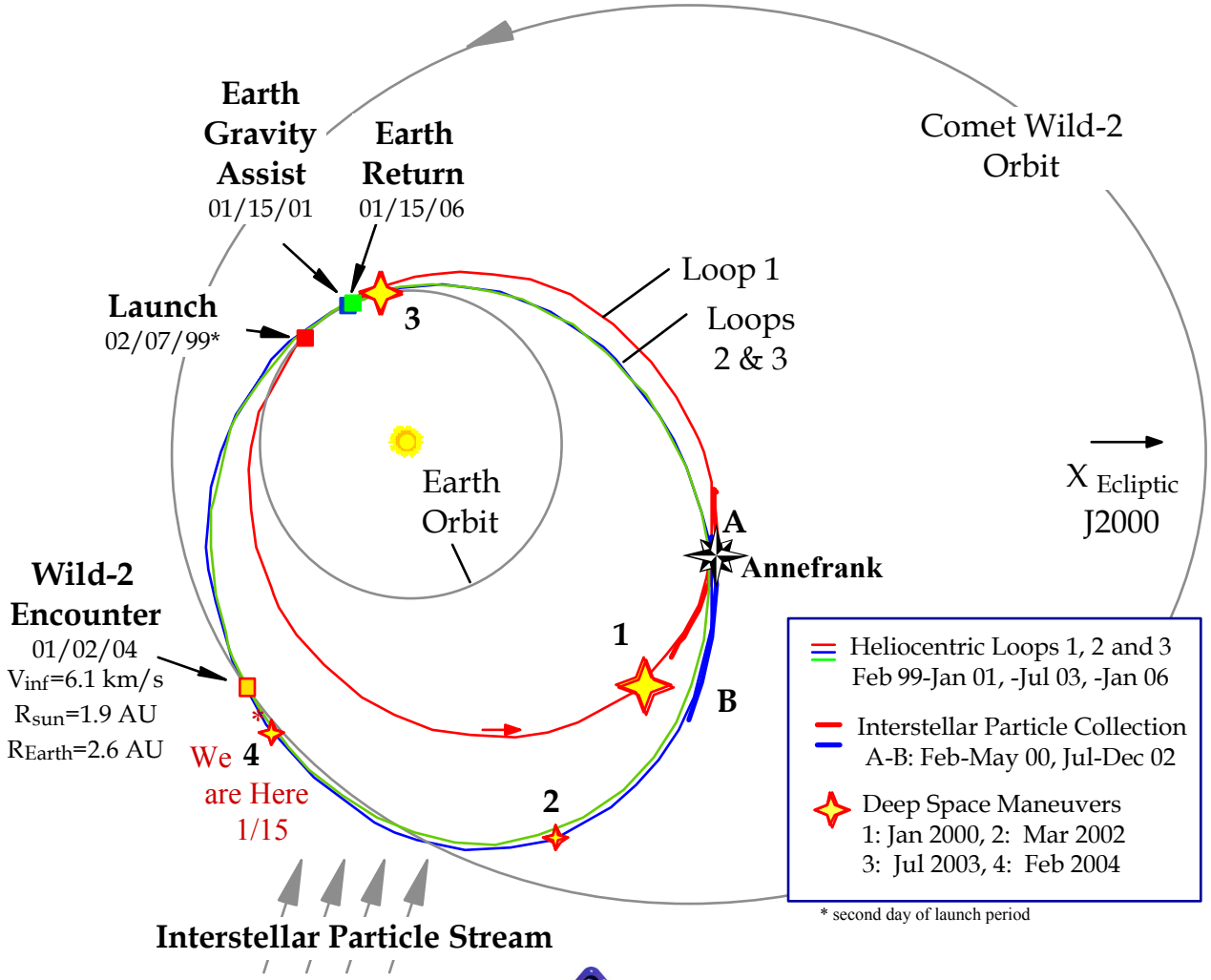
UPCOMING EVENTS

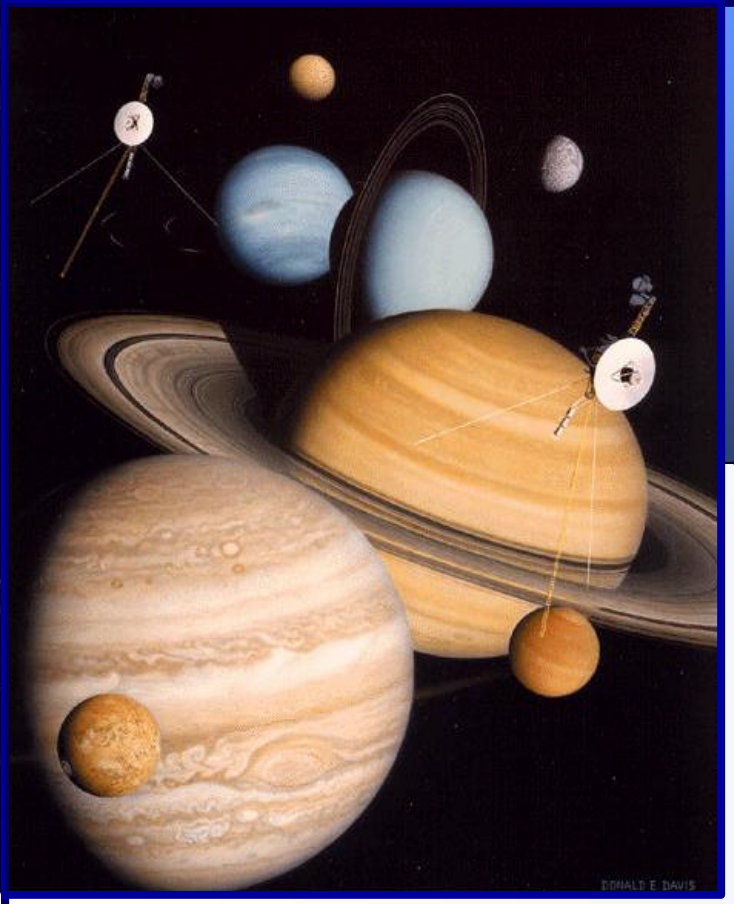
DSM-4/TCM 15 - February 4 at 1700 UTC, Over DSS 14

APHELION OF 2.68 AU FROM THE SUN

7 WEEKS CENTERED ON OCTOBER 2004

LIMITED COMMUNICATION BECAUSE OF POWER RESTRICTIONS

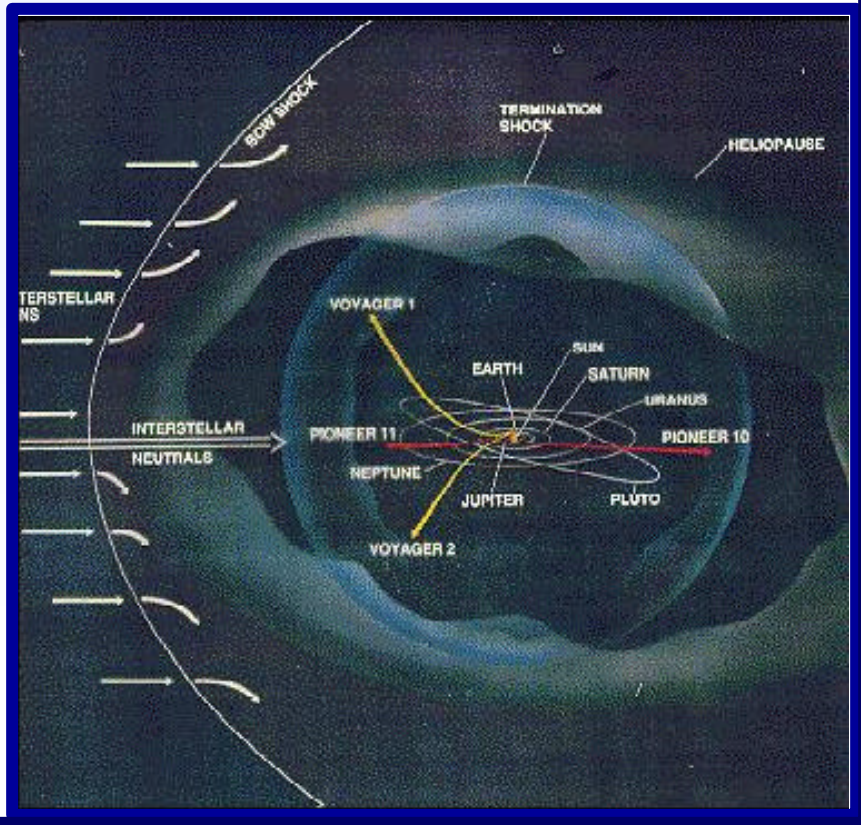

Earth Gravity Assist
01/15/01
Earth Return
01/15/06
Comet Wild-2 Orbit
Launch
02/07/99*
3
Loop 1
Loops 2 & 3
Earth Orbit
X Ecliptic J2000
A
Annefrank
Wild-2 Encounter
01/02/04
Vinf=6.1 km/s
Rsun=1.9 AU
REarth=2.6 AU
1
B
We are Here 1/15
4
2
Interstellar Particle Stream
Heliocentric Loops 1, 2 and 3
Feb 99-Jan 01, -Jul 03, -Jan 06
Interstellar Particle Collection
A-B: Feb-May 00, Jul-Dec 02
Deep Space Maneuvers
1: Jan 2000, 2: Mar 2002
3: Jul 2003, 4: Feb 2004
* second day of launch period



VOYAGER

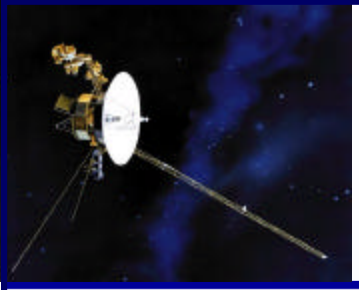
FLIGHT OPERATIONS

JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE



Jefferson Hall
January 15, 2003
NASA Jet Propulsion Laboratory

http://voyager.jpl.nasa.gov



VOYAGER

FLIGHT OPERATIONS

JPL

JPL NASA Jupiter Saturn Uranus Neptune and Beyond... VOYAGER I & II

FLIGHT SYSTEM STATUS

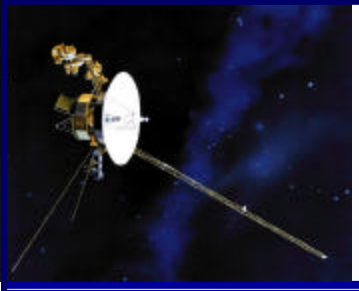
MISSION STATUS

VOYAGER 1

* HELIOCENTRIC DISTANCE – 90.4 AU, RTLT – 25h18m56s
* SPACECRAFT REMAINS HEALTHY
* MAJOR ACTIVITY: ASCAL AND PMPCAL,FULMRO

VOYAGER 2

* HELIOCENTRIC DISTANCE – 71.9 AU, RTLT – 20h16m54s
* SPACECRAFT REMAINS HEALTHY
* MAJOR ACTIVITY: ASCAL, MAGROL, FULMRO, & PMPCAL



VOYAGER

FLIGHT OPERATIONS

JPL

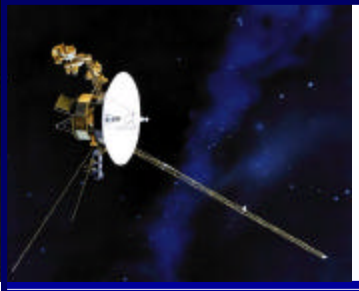
GROUND SYSTEM STATUS

(NOVEMBER 15, 2003 - January 15,2004)

• DSN - OVERALL SUPPORT – GOOD

• NUMEROUS OUTAGES ON VOYAGER 1 DUE TO POOR PERFORMANCE AT DSS-55 AND DSS-65; ANTENNA PROBLEMS AT DSS-65; RAIN AT DSS-65 AND DSS-25 [all documented on DRs]. OUTAGES ON VOYAGER 2 WERE DUE TO A RED ANTENNA DSS-43 AND 45; HIGH WINDS AT DSS-49; RED XHEMT AT DSS-43 [all documented on DRs].

• LOST THE FULL MEMORY READOUT ON DOY 352 AND THE MAGROL ON DOY 353 DUE INABILITY TO COMMAND FROM DSS-43 DUE TO A RED XHEMT.



VOYAGER

FLIGHT OPERATIONS

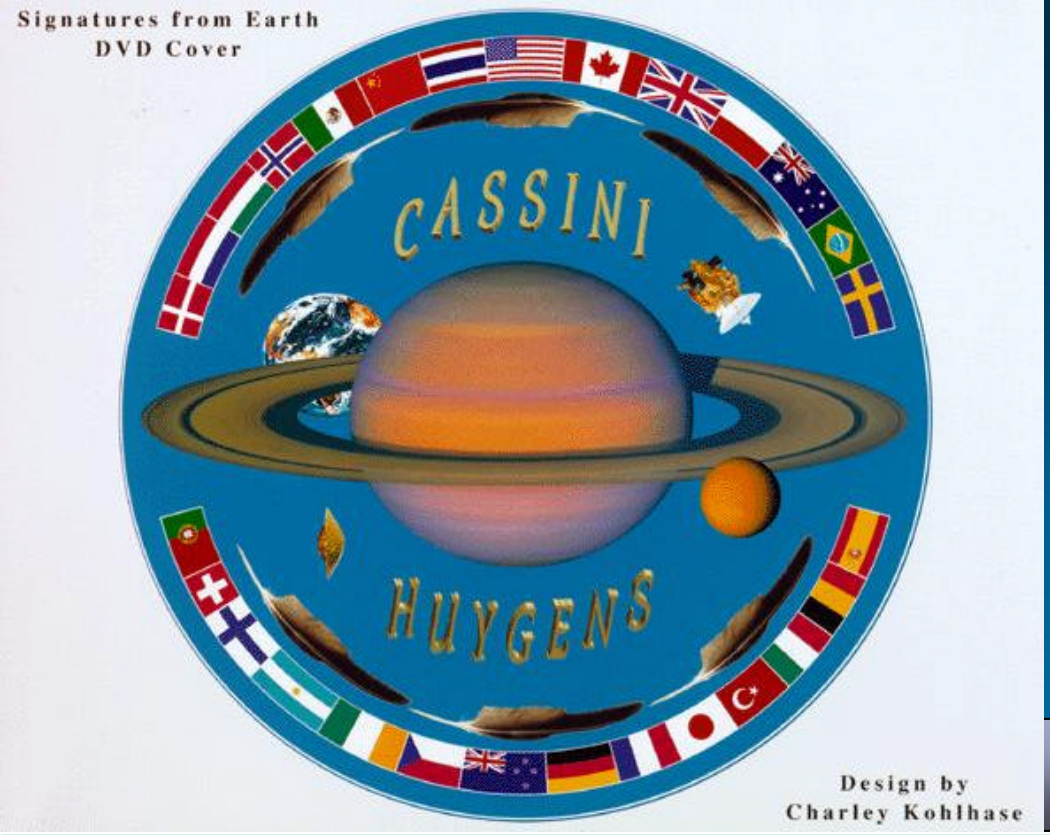
JPL

TOTAL SUPPORT TIME, OUTAGE TIME, % OF OUTAGE TIME

S/C	SCHED. SUPPORT	ACTUAL SUPPORT	70M TIME	SIGNIFICANT OUTAGE TIME	% OF OUTAGE TIME
31	660.1	660.1	91.1	12.6(2.3)	2.3
32	551.6	551.6	301.1*	22.4(3.3)	4.7

VOYAGER HOMEPAGE - http://voyager,jpl.nasa.gov

* DSS-49 support accounted for 150.0 hours of this total



CASSINI

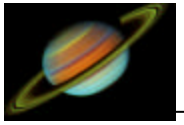
http://saturn.jpl.nasa.gov/cassini/index.shtml

Joint Users Resource Allocation Planning (JURAP) Committee Meeting

Dave Doody

January 15, 2004

NASA / Jet Propulsion Laboratory



Cassini / Huygens

- **Approach Science Phase**
  - Approach science observations have started
    - Sequence C42 began executing nominally DOY 009 UTC (5 days past opposition).
  - ESA delta-Flight Acceptance Review for Huygens in progress at Noordwijk, Netherlands
  - International astronomical community and Cassini cooperating in ground and HST Saturn observations in 2004.
- **Tour mission phase begins May 15 with sequence S01**
  - TCM20 May 27
  - Phoebe flyby June 11
  - TCM21 June 16
  - Placeholder for TCM22 if needed June 21
  - Saturn Orbit Insertion July 1 (in sequence S03)
    - HST Observations being coordinated (Boston University investigators)
  - Advanced science planning for Tour continues, as well as for Huygens Playback data delivery
- **Daily ops going well**
  - Huygens Probe spacecraft checkouts successfully evaluated pre-heating operations
  - DSN and NOPE support excellent
    - High-rate TLM Lockup problem (on carrier-subcarrier change)
      - Workaround OPDs appear successful
      - Fix expected in November 2004 DSN S/W
  - Exercising continuing FSPA Array supports as they can be scheduled
  - Working various minor S/C instrument anomalies, FSW installations
  - DSMS statement of costs for mitigation of NOCC-R/T display system demise have been received
    - Project's visibility into DSN is currently problematic
    - Impossible to mitigate for Approach Science Phase, TBD for Tour support (starting May 15)
  - "Ringworld" DVD created to capture the nationwide planetarium show recently released