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FROM: Eugene S. Burke

SUBJECT: August 12, 2003 Resource Allocation Review Board (RARB) Meeting Minutes

The following are the Minutes of the NASA/JPL Deep Space Network (DSN) Resource Allocation Review Board (RARB) Meeting held at JPL on August 12, 2003. The purpose of this Review is to address the oversubscription of the DSN 26/34/70-meter tracking assets. The Review Board consists of Project Managers, Project Scientists, and key JPL Interplanetary Network Directorate (IND) Deep Space Mission System (DSMS) Managers or their representatives. The Board is responsible for reviewing new or changed requirements, adopting recommendations to reduce periods of heavy contention, and for controlling changes to requirements. This Review addressed contention in 2004, 2005, and 2006.

Review Board Members

The following Review Board Members or their representatives were in attendance:

Peter Doms	JPL	Chairman
Gene Burke	JPL	Resource Allocation Planning & Scheduling Office Manager
Donald Burnett	Caltech	Genesis Project Scientist
Albert Chang	JPL	Nozomi, Lunar-A Project Representative
Bob Farquhar	APL	MESSENGER, New Horizons Project Representative
Tom Frascchetti	JPL	DAWN Project Manager
David Gallagher	JPL	SIRTF Project Manager
Roger Gibbs	JPL	Mars 2001 Odyssey Project Manager
Ed Hirst	JPL	Genesis Project Representative
Chris Jacobs	JPL	Reference Frame Calibration Project Representative
Ken Kimball	JPL	DSMS Engineering Program Office Representative
Mike Klein	JPL	Radio Astronomy Project Manager
Rob Lock	JPL	Mars Reconnaissance Orbiter Project Representative
Jan Ludwinski	JPL	Mars Exploration Rover Project Representative
Ron Mahmot	GSFC	Space Science Mission Operations Project Manager (SOHO, WIND, Polar, Geotail, Cluster II, ACE, Image, MAP)
Daniel Mandl	GSFC	ST-5 Project Representative
Ed Massey	JPL	Ulysses/Voyager Project Manager
Dennis Matson	JPL	Cassini Program Scientist
John McKinney	JPL	Deep Impact Project Representative
Rich Miller	JPL	DSMS Plans & Commitments Office Manager
Dan Ossing	APL	STEREO Project Representative
Steve Ostro	JPL	GSSR Project Scientist
Ken Riley	Lockheed	CSOC JPL Program Manager
Bob Ryan	JPL	Stardust Project Representative

Dave Seal	JPL	Cassini Program Representative
Rance Skidmore	Omitron	GOES Project Representative
Martin Slade	JPL	GSSR Project Manager
Joel Smith	JPL	Muses-C, U.S. Space VLBI Project Manager
Tommy Thompson	JPL	Mars Express Orbiter U.S. Project Representative
Tom Thorpe	JPL	Mars Global Surveyor Project Manager
Phil Varghese	JPL	Planetary Flight Projects Mission Management Office
Joe Wackley	JPL	DSMS Operations Office Program Manager
Steve Waldherr	JPL	INTEGRAL Representative
Brent Williams	SAO	Chandra Project Representative
Richard Zurek	JPL	2001 Mars Reconnaissance Orbiter Project Scientist

Review Materials

These Minutes include the material included in the bound handout book, as well as the presentations distributed at the RARB:

Agenda

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2. Overview, Contention SummaryG. Burke
3. Action ItemsD. Morris
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5. JPL DSMS Engineering Program Office K. Kimball
6. JPL DSMS Operations Program Office.....J. Hodder
7. New Or Modified Project Requirements
 - Mars Reconnaissance Orbiter..... R. Lock
 - SOHO RequirementsR. Mahmot
8. DSMS Mid-Range Scheduling Process Review.....K. Riley
9. Resource Contentions
 - Analysis & Recommendations.....N. Lacey
 - Projects Responses..... Projects
 - Discussion / Decisions..... All
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Introduction – P. Doms, RARB Chairman

Mr. Doms welcomed the Review Board and all the mission representatives to the RARB and expressed excitement as we enter into the much-anticipated Asset Contention Period (ACP). He discussed some issues of the strategic plan now in development, and described some of the larger architecture decisions for the future of the DSN.

A major development for the DSN under development is Optical Communications. Some designs are being looked at that involve a ground-based and space-based optical networks, or a combined optical and RF network. As part of the Optical Communications initiative, it is hoped to employ large arrays of small antennas at each of the longitudes. If arrays of smaller antennas prove to work out in the next decade, decommissioning of the 70-meter subnet will be considered. Otherwise, the 70-meter subnets will see further investments to expand their capabilities and extend their life. Uplink capabilities would prove to be a challenge without the 70-meter antennas, and those issues must be considered before any decision is made to decommission the 70-meter subnet.

The very important Near-Earth mission’s support is being investigated for improvement. Areas of investigation for improvement are higher data rates and different frequencies. So far, the Network has been able to meet all the commitments to newer missions with upgrades such as the deployment of Ka-band. The future of the aging 26-meter subnet is being investigated for options to replace capabilities, or to perform upgrades and improvements.

Smaller scale strategic thrusts are being developed to increase the DSN's capabilities, such as expanding Ka-band for tracking and navigation. This will require a substantial investment, but should provide dramatic improvements to navigation. Also in development are evolutionary improvements in DSN science and Radio Astronomy capabilities. Flexible Testing infrastructure upgrades are being developed to provide a more realistic emulation of the operational environments. Economically beneficial Wideband Ground Communications Network developments are being planned to increase the network bandwidth from T1 to T3 circuits.

Although some funding is available for both major developments and strategic thrusts, all preparations are not in place. JPL management is working with NASA to develop funding and technological plans for the future of the DSN by putting together a series of reviews of JPL plans and the budget. JPL will be working with the Executive Management Board (newly formed by NASA Code SE) and the Solar System Exploration Division, to review JPL long-range plans and some shorter-range issues. Code S has put together a one-time Review Board to look at liability and operability issues, as well as other near-term performance and commitment fulfillment.

In mid-September, JPL will announce the award of the DSN Operations and Management contract. JPL management is pleased with the way the process has been moving along.

On October 22 and 23, the DSN will go through a final large-scale Operational Readiness Review before the ACP. Individual mission MRR's will continue as planned.

Overview, Contention Summary – E. Burke

Mr. Burke introduced the members of the Review Board, gave an overview of unsupportable time at all the subnets, and a brief description of the contention resolution process.

August 2002 RARB Action Items Review – D. Morris

Mr. Morris stated that all Action Items have been responded to and closed, with the exception of Action Item 1, which is in progress.

Action Item #1 - Pending - (a.k.a. 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) at least 6 months prior to the scheduled week. This action will use the result of Action Item 6 (of 8/13/02 RARB) to clarify the scope of planned resources.

Response: (8/4/03) Present status: Weeks in December 2003 plus January 2004 have been delivered.

Action Item #2 - Closed - Analyze proposed DSS-45 downtime (10/18/2004 – 12/05/2004) for Antenna Controller Replacement (ACR) and Microwave Switch Controller (USC).

Response: (3/20/03) Presentation of contention analysis approved at March 2003 JURAP meeting.

Action Item #3 - Closed - Provide Cassini Occultation Plans regarding DSS-25 planned downtime.

Response: (02/18/03) Information provided showed Cassini's need for DSS-25 prior to February 19 and after April 30.

Action Item #4 - Closed - Provide impact to Mars Express requested weekly Bi-Static Radio Science requirement during planned DSS-43 downtime.

Response: (2/19/03) Mars Express requests that the Bi-Static experiments be moved to another 70m antenna in each week that DSS-43 is down. When assigned to a different 70m antenna, use just one antenna instead of using DSS-63 one week and DSS-14 the next.

NASA Office of Space Science Code S – C. Holmes for B. Geldzahler

Mr. Holmes discussed some aspects of the NASA Space Science budget, stating that Congress has already approved it. The \$7,707M budget was \$47M higher than what was requested by the President, with an overall increase of \$303M from 2003. There were significant increases and decreases to certain projects such as New Frontiers, James Webb Space Telescope and Space Interferometry Mission. The budget includes Presidential recommendations that NASA as a whole transition to "Full Cost Accounting". At this time it is not known when the Senate will ratify the budget.

It was announced that the Mars Phoenix mission has been selected as the Mars Northern Latitude Lander. The Sun-Earth Connection Office established a Board to review their missions and has recommended extending the Ulysses mission to return to the Sun for a solar pass from the fall of 2007 through March of 2008. The spacecraft will not require a full-time uplink during the solar pass, as in previous passes. The European Space Agency (ESA) Engineering team and the JPL operations team working with DSMS have devised a method of maintaining nutation control of Ulysses without a full-time uplink. ESA is in the process of proposing funding for their part of the Ulysses mission. All Ulysses support allocations will be dealt with as the Voyager missions are, in that time is allocated on a time available basis. The Board considered an extended mission for Genesis called Exodus, in which it would return to Heliospace after its delivers its sample to Earth, but the Board rejected funding the extension.

In anticipation of the high activity period, NASA established a Headquarters Prioritization Board, which consists of representatives of each NASA science division. The Board was established to provide prioritization guidance in the event of an unsolvable conflict, and meets prior to each RARB to review the recommendations and set priorities for the next RARB meeting.

In July of this year, Dr. Barry Geldzahler visited Tidbinbilla and Parkes after he attended the International Astronomer Union (IAU) conference in Australia and was very pleased with the progress they have made in completing the engineering upgrades.

The request for funding for upgrades to the DSN as outlined by Mr. Doms, has been taken very seriously and will be discussed at the next Code SE Executive Management Board.

JPL DSMS Engineering Program Office – K. Kimball (for J. Statman)

Mr. Kimball discussed recently completed, and tasks in progress, and emphasized tasks that must be completed before the 2003 – 2004 ACP.

The 20kW Transmitter upgrades have been completed and are operational at DSS-24,34, and 26, with plans to complete DSS-25 and 54 before the ACP. The 20kW transmitters replace the 4kW transmitters, providing a more powerful and better uplink capability, as well as standardization to all 34-meter antennas, allowing missions more scheduling flexibility.

The Network Simplification Project (NSP) version 3.2.7, is now available at all DSN stations with the exception of DSS-27, but preparations are in place to upgrade DSS-27 after the ACP. The NSP software upgrade to version 4.1 is scheduled for completion by September 3, 2003, providing ST-5 command capability, Turbo-Code (which will add a new error-correcting method), and miscellaneous anomaly fixes.

The Delta-DOR capability is installed and operational, providing Navigators with an additional tool to aid in more precise targeting.

X/X/Ka Feeds have been installed at DSS-26 and will be installed at DSS-55 when operations begin in November. This upgrade will provide Ka-band downlink capability, and improved X-band BWG downlink sensitivity at 0.5-2.5dB, depending on the operations mode and reference antenna.

34-meter antenna arraying is available at Goldstone, and is scheduled for completion at Canberra and Madrid in August. The ability to array 34-meter antennas provides users 70-meter performance when the 70-meter antennas are unavailable. Progress on the newest DSN antenna, DSS-55, is in the final phases of construction and is expected to become operational on schedule.

All DSN pre-ACP work continues on schedule and there are no setbacks foreseen. After the ACP, beginning in 2004, the HEF and 70-meter antennas are planned to have a significant amounts of downtime for refurbishment and replacement of the antenna controllers. Much of this work is still in planning stages.

It is not expected that the New Norcia upgrades will be completed by November 1. More than likely, the work will be completed by late November. The primary reason for the delay is due to ITAR (International Traffic in Arms Regulations) issues. It is important to note that New Norcia is a backup antenna.

JPL DSMS Operations Program Office – J. Hodder (for J. Wackley)

Mr. Hodder gave an update on the progress of the selection of the new contractor for the DSN contract, and stated that all scheduled milestones are being met for the January 1, 2004 deadline. An announcement of the winner of the M & O contract is expected in mid-September, and the phase-in period will begin October 1st. Once the winner of the contract is announced there will be an open briefing for all mission managers to discuss the transition and some of the details of the new contract.

A report on the status of the NSP upgrades at all the stations revealed that the latest version 4.1.1, which includes Turbo-Code, will be fully deployed by early September, and that the testing is going very well.

The Space Link Extension (SLE) has been working out well. So far INTEGRAL, Mars Express and Hayabusa have utilized the new capability. There were some early problems on INTEGRAL, which was the first spacecraft to utilize it, but it seems that all but minor issues have been resolved. MEX and Hayabusa have had no issues with the SLE.

Preparations for the ACP have been proceeding on schedule. The position of Tracking Support Specialist has been filled and trained and placed in the operations control team as of July 5th. The 70m servo drive rehabilitation has been completed, and a new long-range maintenance plan has been prepared and is ready to be published for the ACP, to help avoid an extreme amount of maintenance during this period. The maintenance plan also includes the availability of critical spares.

In May, the DSN Operations Working Group (DOWG) and the Logistics Operations Working Group (LOWG) met to discuss operational issues and plan preparations for the ACP. The goal of the DSMS Triage Plan is to enhance capabilities and management oversight into real-time operations during the ACP and should be released by September 1st. The plan contains an escalation process that will expedite critical and efficient decisions. Some practice exercises are planned to test the effectiveness of the process.

Mr. Ken Riley was introduced to discuss results of changes and improvements to the mid-range scheduling process. Currently the process is not fully supporting the requirement to provide 26 weeks of conflict-free schedules to the missions so support preparations can be made well in advance.

Mid-Range Scheduling Process – K. Riley

Short-term changes implemented by the RAPSO team were discussed, as well as the long-term changes to the mid-range process ensuring that 26 weeks of conflict-free schedules would be provided to all projects. The major concern of the process was that the RAPSO and DSN scheduling teams have resided as separate groups and lacked continuity. In an effort to provide continuity and more readily available communication between the teams, the RAPSO and DSN scheduling teams have now been placed under one group.

The overall scheduling process was a concern to some missions. The present process is very manual. Many new tools are being introduced which cause changes to the process, so the process itself needs to be examined for improvement. The most pressing need at this point is to produce 26 weeks of conflict-free schedules. It will require partnership and teamwork on behalf of the RAPSO, DSMS and each of the flight projects. In order to achieve the goal within the next 6 weeks to provide the 26-weeks of conflict-free schedules, changes have been implemented that are recognized as a resource impact, but are necessary to achieve the goal. Once the short-term goal is reached of getting 26 weeks worth of schedules out, a hard look will be taken at the end-to-end process.

The plan for the long-term is to realign the CSOC Resource Analysis Team and DSN Scheduling Team under a single supervisor with end-to-end process responsibility, and to support a joint review of the scheduling process by the Projects and DSMS, identifying a roadmap to improve the process and tools.

Another area that requires scrutiny is the fact that many of the tools being used for this process are old and are very manpower intensive. In cooperation between 930 and 940, and 3x and 4x, a special team is being assembled to assess tools and plan near- and long-term implementation strategy.

The following process has been implemented in the near-term to ensure that the 26 conflict-free weeks are produced: A compressed 3-week review process will produce 3 schedule weeks. At the beginning of week 1, a 3-week preview schedule will be derived from raw requirements and posted for user review. At the end of the first week, schedulers will have submitted changes to reflect correct requirements. Throughout week 2 of the process, schedulers will provide changes to resolve conflicts in the schedules, and at the end of week 2, unresolved conflicts will be discussed at the weekly RAP meeting. In week 3 of the process, RAPSO will input changes from the Friday meeting and facilitate resolution of outstanding issues if needed, and if necessary escalate unresolved issues, then publish a conflict-free schedule.

Once the 26-week goal has been achieved at the end of September, it will then be possible to provide some relief to the schedulers and conduct the Friday morning RAP meeting every 2 weeks, resolving 3 schedule weeks at a time. However, to address the long-term issues, the entire scheduling process and tools will be assessed utilizing the Value Stream Mapping Technique, which will involve an end-to-end review by stakeholders to develop the desired "Future State" and most importantly, a roadmap to reach that "Future State".

Presentations: New or Modified Project Requirements

Mars Reconnaissance Orbiter – R. W. Zurek

Dr. Zurek gave an overview presentation of the Mars Reconnaissance Orbiter mission describing the spacecraft itself, the instruments aboard the spacecraft and their function, as well as the different mission phases in detail. The MRO spacecraft will be launched aboard an Atlas V-401 launch vehicle built by Lockheed/Martin.

The theme of the MRO mission is "Follow the Water". The primary objectives of the mission are to characterize the present climate of Mars; to look for evidence that helps scientists understand the past climates of Mars; to advance our understanding of the surface of Mars, particularly the surface composition; to determine where the aqueous minerals reside (which would be the tell-tale evidence of past bodies of water on Mars), and to advance our understanding of the sub-surface of Mars. Other mission objectives of the MRO mission are to identify and characterize other prime sites for future Mars exploration, as well as to return scientific data for future 2007 and 2009 missions, and to advance our understanding of Mars' ability to support life, or to answer the question of why not.

The instruments aboard MRO are designed to operate at a much higher spatial resolution than previous missions. There is one region that has not been looked at on any other Mars mission and that is the near-infrared. MRO will carry an instrument to help determine if there are fine-grain aqueous materials better seen in near-infrared.

SOHO: High Gain Antenna Anomaly – R. Mahmot

Mr. Mahmot discussed the problems with the SOHO spacecraft's High Gain Antenna. In 1995 the SOHO spacecraft was launched into a HALO orbit at L1. Its orbit instruments and mission were designed for continuous observing of the Sun in order to meet its science objectives. Until very recently the SOHO spacecraft has primarily used the 26-meter subnet for routine support, except for the maneuver and safing support when the spacecraft's low-gain antenna was utilized and 34-meter antenna support was required.

In May of 2003, the spacecraft suffered an anomaly in the High Gain Antenna pointing mechanism motor. This mechanism maintains the spacecraft's antenna pointing to Earth. Since then the project has been able to determine the nature of the problem and develop a method of working around it. Due to the nature of the spacecraft's HALO orbit and the failed antenna pointing motor, the spacecraft is unable to communicate nominally with the 26-meter subnet for approximately 18 – 25 days every 3 months. These keyhole periods are broken up into three segments, each segment requiring a combination of 34- and 70-meter support, and the spacecraft's High and Low Gain Antennas. As a result of these keyhole periods, the SOHO project is asking the DSN for additional support including the 34-meter and 70-meter subnets. The anomaly is in no way a threat to the health or safety of the spacecraft, but the loss of consistent high rate telemetry can compromise the science return.

SOHO: Science Return – R. Bush

Dr. Bush discussed the scientific successes of the SOHO project and explained the value of the project's science data to the scientific community. A key to being able to manage this anomaly is to understand its nature then plan and adapt the observations to it, and perform lower priority observations during the keyhole periods. He stated that NASA recently ranked SOHO third out of 14 missions in the Sun-Earth connection program in terms of science achievements and relevance to research, in understanding the relationship between the Earth and Sun. One of the key benefits that cannot be duplicated from Earth is the 60-day continuous observing periods. It is hoped that the spacecraft will be able to observe the Sun through a whole 11-year solar cycle.

Some of the more important observations undertaken by SOHO were described, which can suffer significant losses due to the keyhole phenomenon. Helioseismology is the study of the Sun's interior, and requires an uninterrupted time series. G-modes search, in particular, would be severely compromised. Total Solar Irradiance (TSI) measurements would be severely compromised by extended and repeated gaps, and MDI high rate data (also MDI magnetograms) would be lost without 70-meter antenna support during the central part of keyholes.

ESA is studying the feasibility of a Central On-Board Software (COBS) patch, to optimize the use of the onboard Solid State Recorder. This patch is hoped to be available in early 2004, but probably not in time for the December/January keyhole. The data produced by the SOHO spacecraft is not available from any other source. The loss of any science data from SOHO is a very valuable loss to the scientific community.

Resource Contention Summary – N. Lacey

Presentations were made of the Loading Study Initial Conditions, and Changes in Project Requirements. The approach used in identifying and evaluating contentions for this Review has changed. For the years addressed in this Review, each month is evaluated for contentions. There is a description of critical events, an analysis of potential problems, and proposed recommendations listed for each month. Background/source information is also shown (view the "*Red Book*" by clicking the link).

The following are the results from the RARB negotiations described in detail, which will be used as the new baseline for DSN resource allocation.

August 12, 2003 RARB Contention Resolution Minutes

2004 Contention Period - May - Weeks 19 - 22

Mars Program agreed to accommodate regularly required maintenance performed on the 70m antennas, on a case by case basis.

2004 Contention Period - June - Weeks 23 - 26

DSS-43 downtime proposal to re-balance the antenna was placed on hold pending a risk assessment to the Cassini Saturn Orbit Insertion. David Seal wanted it noted that the Cassini mission would be performing its Saturn Orbit Insertion, requiring DSS-43 support, on DOY 183, only 4 days after the antenna would return to service. Ron Gillette contested the downtime, stating that he believes the risk to the Cassini mission is too great if the antenna is not available. Rich Miller suggested that a risk assessment be performed before final approval is granted. Mr. Gillette accepted the Action to have 940 perform a risk assessment by September 12, 2003.

Mars Program agreed to accommodate regularly required maintenance performed on 70m antennas through week 25, DOY 170, on a case by case basis.

Cluster agreed to remove DSS-43 from SSO support request in week 26.

DSS previously agreed to delete DSS-43 bearing maintenance and reduce DSS-14 routine maintenance to one 8-hour support in week 25.

GBRA agreed to change M-wave spectroscopy support from 70m to DSS-14,63 in week 26.

M01O agreed to change 2 standalone passes planned on the 70m and all passes on the 70m and DSS-43,63 in week 26 to DSS-14,63. M01O also agreed to MSPA three passes per week with NOZO radio science in weeks 25 and 26.

NOZO agreed to MSPA three passes per week with M01O in weeks 25 and 26.

ULYS agreed to delete two 5-hour passes planned at DSS-43,63 in week 25 and six passes in week 26. Increase two 5-hour 34BWG1 passes in week 25 to 7 hours and increase six 5-hour 34BWG1 passes to 7 hours in week 26.

VGR1 previously agreed to change U/L support from 70m to DSS-14,63 in week 26.

VGR2 previously agreed to delete two 4-hour routine passes planned at DSS-43 in week 25. Delete seven 4-hour passes in week 26 and change U/L support planned at DSS-43 to BLF support using DSS-34.

WMAP agreed to change their routine request on two passes in week 25 and seven passes in week 26 from 70m to DSS-14,63, with the provision that WMAP could be supported with two 1-hour ranging supports per week at DSS-34 during the DSS-43 downtime.

2004 Contention Period - July - Weeks 27 - 31

None.

2004 Contention Period - August - Weeks 32 - 35

DSS-45 downtime proposal for life extension in weeks 33 – 35 was approved by all Board Members and was uncontested by any Project representative.

Cluster previously agreed to remove DSS-45 from SSO resource request in weeks 33 – 35 and from MSO request in week 35.

M01O previously agreed to reduce 1 DSS-63 pass in week 33 to 4 hours and change the resources allocated on the support requested at DSS-15/45 to DSS-15 only, in weeks 33 and 34.

MGS previously agreed to change the allocated resources for 2 to 3 passes from 34HEF to DSS-15/65, in weeks 33 – 35.

RFC agreed to support the CAT M&E requested in week 33 at DSS-15/65.

SDU previously agreed to change the allocated resources on 1 pass/week from 34HEF to DSS-15/65 in weeks 33 – 35.

SGP agreed to delete the DSS-45 support planned in week 34.

ULYS previously agreed to delete the 5 to 6 D/L passes planned at DSS-45/65 in weeks 33 – 35 and increase the 5 to 6 passes planned at DSS-24/54 from 5 hours to 7 hours.

VGR2 previously agreed to change allocated resources on 7 passes from DSS-43/45 to DSS-43 only, in weeks 33 – 35.

2004 Contention Period - September - Weeks 36 - 40

DSS-45 downtime proposal for life extension was approved by all Board Members and was uncontested by Project representatives.

CHDR agreed to move seven 34BWG1 passes to the 26m and increase pass duration from 1 hour to 2 hours.

Cluster previously agreed to remove DSS-45 from SSO resource request.

DSN previously agreed to reduce DSS-34, DSS-43, DSS-63, and DSS-65 antenna calibrations to 4.5 hours.

GBRA agreed to reduce M-wave spectroscopy support at DSS-43 and DSS-63 to 4 hours and move week 37 DSS-45 Host Country support to week 29.

IMAG previously agreed to change allocated resources on 6 of the 13 passes planned on the 34BWG1 to DSS-16/15,66/65.

MGS previously agreed to change allocated resources on 2 to 3 passes from 34HEF to DSS-15,65.

RFC agreed to move the CAT M&E pair planned in weeks 38 and 39 to weeks 25 and 26.

SGP agreed to move the DSS-45 support planned in week 38 and 40 to weeks 27 and 29.

STF previously agreed to move 14 passes from DSS-25,34,54 to DSS-15,25,55,65.

ULYS previously agreed to delete the 6 D/L passes planned at DSS-45/65 in weeks 36 – 39 and increase the 6 passes planned at DSS-24,54 from 5 hours to 7 hours.

VGR2 previously agreed to change allocated resources on 6 to 7 passes from DSS-43/45 to DSS-43.

2004 Contention Period - October - Weeks 41 - 44

DSS-45 downtime proposal for life extension in weeks 41 and 42 was approved by all Board Members and was uncontested by any Project representative.

Cluster previously agreed to remove DSS-45 from SSO resource request in weeks 41 and 42.

DSN previously agreed to move week 42 DSS-45 antenna calibration to week 50 and reduce weeks 42 and 43 DSS-24 and DSS-34 antenna calibrations to 4.5 hours.

GBRA agreed to move week 41 DSS-45 Host Country support to week 26.

MSGR agreed to change allocated resources from DSS-26/34/54 to DSS-26/54.

RFC agreed to delete the DSS-15/45 CAT M&E in week 42.

SDU previously agreed to remove DSS-45 from allocated resources in weeks 41 and 42.

SGP agreed to delete the week 41 DSS-45 crustal dynamics.

SOHO previously agreed to reduce the 5-day continuous TSO request to 3 days in week 41 and reduce the routine 9.5-hour passes to 6 hours in weeks 41 and 42.

STF previously agreed to move 14 passes requested at DSS-25/34/54 and the 34HEF in weeks 41 – 43 to DSS-15/25/26/55.

ULYS previously agreed to reduce 3 – 4 passes requested on the 34BWG1 subnet to 6 hours and change the allocated resources to DSS-24/54.

VGR2 previously agreed to reduce routine support requested at DSS-43/45, DSS-43/34, and DSS-34/45 to 6-hour passes and change the allocated resources to DSS-43.

2004 Contention Period - November - Weeks 45 - 48

DSS-14 downtime proposal for antenna controller replacement in week 48 was approved by all Board Members and was uncontested by any Project representative.

DSN previously agreed to delete week 48 DSS-14 antenna calibration.

GBRA agreed to delete week 48 DSS-14 M-wave spectroscopy.

GPB previously agreed to move BR088n SOC-M4 from week 48 to week 50.

GSSR agreed to delete week 48 Mercury observations.

M01O previously agreed to change week 48 allocated resources on standalone and MSPA passes with MGS from 70m to DSS-43/63.

MGS previously agreed to change week 48 allocated resources from 70m to DSS-43/63 on the 2 MSPA passes with M01O.

NOZO previously agreed to change week 48 allocated resources from DSS-14/63 to DSS-63.

VGR1 previously agreed to change week 48 allocated resources on the U/L pass from 70m to DSS-43/63 and move the recorded DTR P/B recovery from week 48 to week 50.

2004 Contention Period - December - Week 49 - 53

DSS-14 downtime proposal for antenna controller replacement in week 49 was approved by all Board Members and was uncontested by any Project representative.

DSN previously agreed to delete the week 49 DSS-14 antenna calibrations.

GBRA agreed to delete DSS-14 planet radio astronomy in week 49 and move DSS-14 M-wave spectroscopy to week 50.

M01O previously agreed to change week 49 allocated resources on standalone and MSPA passes with MGS from 70m to DSS-43/63.

MGS previously agreed to change week 49 allocated resources from 70m to DSS-43/63 on the 2 MSPA passes with M01O.

NOZO previously agreed to change week 49 allocated resources from DSS-14/63 to DSS-63.

VGR1 previously agreed to change week 49 allocated resources on routine U/L pass from 70m to DSS-63 and change 7 passes planned at DSS-63/65 to DSS-15/65.

WMAP agreed to change week 49 allocated resources from 70m to DSS-43/63.

2005 Contention Period - January - Weeks 01 - 04

DSS-27 and DSS-63 downtime proposals were approved by all Board Members and was uncontested by any Project representative.

CAS agreed to change four passes from DSS 14/63 to DSS-14, and previously agreed to change from DSS-15/24/25/26/54/55/65 and DSS-15/24/25/54/55/65 to DSS-25/65 in weeks 03 and 04.

Cluster previously agreed to remove DSS-27 from resource request in weeks 01 and 04.

GBRA agreed to delete DSS-63 Host Country support in week 03, plan three 8-hour supports for DSS-43 Host Country in week 04, and move M-wave spectroscopy and new proposals from 70m to DSS-14/43 in weeks 03 & 04.

GPB previously agreed to move supports from week 04 to week 07.

M01O previously agreed to change one 10-hour 70m pass to 13 hours, move to DSS-43, and MSPA with MGS in weeks 01 and 02. In weeks 03 and 04 change four 70m passes from 10 hours to 13 hours, move to DSS-43, and MSPA with MGS. Of the remaining three 10-hour 70m passes in weeks 03 and 04, reduce one pass to 4 hours and move to DSS-43, move one pass to DSS-43, and move one pass to DSS-14/43.

MEX previously agreed to move orbital science and occultation DSS-14/63 passes to DSS-14/65 in weeks 03 and 04.

MGS previously agreed to reduce one 70m pass in weeks 01 and 02 and four 70m passes in weeks 03 and 04 from 14 hours to 13 hours, move to DSS-43, and MSPA with M01O. Change 34BWG1 passes to DSS-24/34/65, and DSS-25/34/55 passes to DSS-25/34/65.

MSGR agreed to change 34BWG1 support to DSS-24/34/55 in week 04.

NOZO previously agreed to move 70m passes to DSS-14 in weeks 03 and 04.

SGP agreed to move DSS-15 support in week 02 to week 04.

SOHO previously agreed to delete TSO support and restore routine support in week 01.

WMAP agreed to move 70m passes to DSS-14/43 in weeks 03 and 04.

2005 Contention Period - February Weeks 05 - 08

DSS-65 downtime proposal was approved by all Board Members and was uncontested by any Project representative.

M01O previously agreed to MSPA two to three 10-hour 70m passes with MGS.

MGS previously agreed to reduce seven 34HEF passes in weeks 05 – 07 to 10 hours and change allocated resources from 34HEF to DSS-15/45. MSPA two to three 10-hour 34BWG1 passes with M01O on the 70m in weeks 05 – 08.

RFC agreed to change CAT M&E support from DSS-15/45/15/65 to DSS-15/45/15/63 in weeks 05 and 06 and change DSS-15/65 clock sync support to DSS-14/63 in weeks 05 and 07.

SDU previously agreed to change the 1 pass per week planned at the 34HEF to DSS-15/45 in weeks 05 – 07.

SGP agreed to change the 24-hour crustal dynamics supports at DSS-65 in week 06 and at DSS-15 in week 08 each to three 8-hour supports. Move the DSS-65 supports from week 06 to week 04.

STF previously agreed to change support planned at 34HEF and DSS-15/34/65 to DSS-15/45/55.

2005 Contention Period - March Weeks 09 - 13

DSS previously agreed to reduce DSS-24 maintenance from 8 hours to 6 hours in week 10 and reduce DSS-27 maintenance from 8 hours to 6 hours in weeks 09 and 13.

M01O agreed to MSPA five mapping passes with MEX orbital science on 70m in weeks 09 and 10.

MEX agreed to increase duration of five passes from 6 hours to 10 hours and MSPA with M01O on 70m in weeks 09 and 10. Move two passes from DSS-24/54 to DSS-14/63 in week 09 and two passes from DSS-24/55 to DSS-14/63 in weeks 10 and 11. Move five passes from DSS-24/55 to DSS-24/54 in week 11 and seven passes from DSS-24/55 to DSS-24/54 in weeks 12 and 13.

MGS agreed to move DSS-15/45/63 passes to DSS-25/45/55 and 34BWG1 passes to DSS-25/34/55 in weeks 11-13.

STF previously agreed to change DSS-15/34/65 passes to DSS-15/45/55.

ULYS previously agreed to move 34BWG1 passes to DSS-63/15 in weeks 09 and 10.

2005 Contention Period - April Weeks 14 - 17

DSS-65 downtime proposal was approved by all Board Members and was uncontested by any Project representative.

CAS agreed to change four passes from DSS-24/25/26/55/65 to DSS-24/25/26/55 and from DSS-14/25,63/65 to DSS-14/25,63/55 in week 15. Change from DSS-24/25/26/54/55/65 to DSS-24/25/26/54/55 in week 16. Change from DSS-15/24/25/26/54/65 to DSS-15/24/25/26/54 in week 17.

DSS previously agreed to reduce DSS-27 maintenance from 8 hours to 6 hours in week 17.

Hayabusa previously agreed to change resources from DSS-25/34/65 to DSS-25/34/55.

MEX previously agreed to change orbital science resources from DSS-24/55 to DSS-24/54 in week 14, from DSS-26/55 to DSS-24/63 in week 15, and from DSS-24/54 to DSS-24/63 in week 17.

MGS previously agreed to change mapping and beta supplement resources from DSS-14/45/63 to DSS-15/45/55 in week 14, from DSS-25/45/65 to DSS-25/45/55 in weeks 15 and 16, and from 34HEF to DSS-15/45/54 in week 17.

MSGR agreed to change resources from DSS-26/34/65 to DSS-26/45/55 in week 15.

RFC agreed to change DSS-15/65 clock sync support to DSS-14/63 in week 17.

SDU previously agreed to change support from 34HEF passes to DSS-15/45 passes in weeks 15 – 17.

STF previously agreed to change 34HEF passes to DSS-15/45/55 in week 14, to DSS-25/45/55 in weeks 15 and 16, and to DSS-25/45/54 in week 17.

2005 Contention Period - May Weeks 18 - 21

DSS-65 downtime proposal was approved by all Board Members and was uncontested by any Project representative.

CAS agreed to change four passes from DSS-15/24/25/26/54/55/65 to DSS-15/24/25/26/54/55. Change DSS-14/25,63/65 pass to DSS-14/25,63/55 in week 20.

DSS previously agreed to reduce DSS-16 maintenance from 8 hours to 6 hours in week 18 and DSS-27 maintenance from 8 hours to 6 hours in week 21.

MEX previously agreed to move three DSS-24/54 passes to DSS-26/55.

MGS previously agreed to change 34HEF passes to DSS-15/45/55.

RFC agreed to change DSS-15/65 Clock Sync support to DSS-14/63 in weeks 19 and 21.

SDU previously agreed to change from 34HEF passes to DSS-15/45 passes.

SGP agreed to delete DSS-65 support in week 20.

STF previously agreed to change 34HEF passes to DSS-15/45/55.

ULYS previously agreed to change 34BWG1 passes to DSS-63/15 in week 18.

2005 Contention Period - June Weeks 22 - 26

DSS previously agreed to reduce DSS-16 maintenance from 8 hours to 6 hours in week 24, and reduce DSS-27 maintenance from 8 hours to 6 hours in week 25.

GBRA agreed to move DSS-45 Host Country support from week 25 to week 26.

MEX previously agreed to move orbital science passes from DSS-24/54 to DSS-26/55 in weeks 22 – 24 and from DSS-26/54 to DSS-26/55 in week 26.

MGS previously agreed to move mapping and beta supplement passes from DSS-24/45/54 to DSS-26/45/55 in week 24 and from DSS-26/34/54 to DSS-26/45/55 in week 26.

ULYS previously agreed to change 10-hour 34BWG1 passes to DSS-63/15 in week 26.

2005 Contention Period - July Weeks 27 - 30

DSS-43 downtime proposal for antenna controller replacement, hydrostatic bearing, microwave subsystem controller, in week 29, was approved by all Board Members and was uncontested by any Project representative.

DSS previously agreed to move DSS-43 bearing maintenance from Monday to Wednesday, and move DSS-45 maintenance from Wednesday to Monday, in week 27.

GBRA agreed to move DSS-43 Host Country support from week 29 to week 28 and move M-wave spectroscopy and new proposals from 70m to DSS-14/63 in week 29.

M01O previously agreed to move mapping passes from 70m to DSS-14/63 in week 29.

MEGA move imagery support from week 29 to week 28.

MEX previously agreed to move bi-static radar from DSS-43 to DSS-63 in week 29.

VGR2 previously agreed to change U/L support in week 29 to DSS-34.

WMAP agreed to move from 70m to DSS-14/63 in week 29 with the provision that WMAP could be supported with two 1-hour ranging supports per week at DSS-34 during the DSS-43 downtime.

2005 Contention Period - August Weeks 31 - 34

GBRA agreed to move M-wave spectroscopy to DSS-63 in week 31.

M01O previously agreed to reduce four of seven 10-hour passes to 8 hours and move from DSS-14/63 to DSS-63 in week 31.

2005 Contention Period - September Weeks 35 - 39

DSS-43 downtime proposal for antenna controller replacement, hydrostatic bearing, microwave subsystem controller, in weeks 37 – 39, was approved by all Board Members and was uncontested by any Project representative.

GBRA agreed to move M-wave spectroscopy and new proposals from 70m to DSS-14/63 in weeks 38 and 39.

M01O previously agreed to move mapping from 70m to DSS-14/63 in weeks 37 – 39.

MEGA delete astrometry support in week 37.

MEX previously agreed to move bi-static radar from DSS-43 to DSS-63 in weeks 37 – 39.

STF previously agreed to move from 70m to DSS-14/63 in weeks 37 – 39.

VGR2 previously agreed to change U/L support in weeks 37 – 39 to DSS-34 and move ASCAL and MAGROL support in week 37 to DSS-45.

WMAP agreed to move from 70m to DSS-14/63 in weeks 37 – 39 with the provision that WMAP could be supported with two 1-hour ranging supports per week at DSS-34 during the DSS-43 downtime.

2005 Contention Period - October Weeks 40 - 43

DSS-43 downtime proposal for antenna controller replacement, hydrostatic bearing, microwave subsystem controller was approved by all Board Members and was uncontested by any Project representative.

Cluster previously agreed to move SSO support from DSS-46/34/45/43 to DSS-46/34/45.

GBRA agreed to move M-wave spectroscopy and new proposals support from 70m to DSS-14/63 in weeks 40 – 43 and delete Host Country support in week 42.

M01O previously agreed to move mapping from 70m to DSS-14/63.

MEX previously agreed to move bi-static radar from DSS-43 to DSS-63.

STF previously agreed to move from 70m to DSS-14/63.

VGR2 previously agreed to change weekly U/L support to DSS-34.

WMAP agreed to move routine and maneuver passes from 70m to DSS-14/63 with the provision that WMAP could be supported with two 1-hour ranging supports per week at DSS-34 during the DSS-43 downtime.

2005 Contention Period - November Weeks 44 - 47

DSS-43 downtime proposal for antenna controller replacement, hydrostatic bearing, microwave subsystem controller was approved by all Board Members and was uncontested by any Project representative.

Cluster previously agreed to move SSO from DSS-46/34/45/43 to DSS-46/34/45 in weeks 44 – 47 and move MSO from DSS-46/34/45/43 to DSS-46/34/45 in week 44.

DSS previously agreed to move DSS-14 bearing maintenance from Tuesday to Wednesday in week 44.

EVN previously agreed to reduce E500 J-M4 support from 16 hours to 9 hours in week 46.

GBRA previously agreed to move M-wave spectroscopy and new proposals support from 70m to DSS-14/63 in weeks 44 – 47, delete GBRA RA500 observation in week 45 and delete one 9-hour M-wave spectroscopy support in week 47.

M01O previously agreed to reduce 7 passes from 10 hours to 7 hours and move support from 70m to DSS-14. Change request in week 46 to MSPA two passes with MGS and five passes with MEX.

MEX previously agreed to move the bi-static radar pass from DSS-43 to DSS-63 in weeks 44 and 45. In week 46 increase five 6-hour passes to 7-hours and MSPA with M01O at DSS-14 and delete two passes. In week 47 reduce orbital science from 10.9-hour passes to 8-hour passes in week 47.

MGS previously agreed to reduce 70m request from one 10-hour standalone mapping and beta supplement pass and one 10-hour MSPA pass with M01O to two 7-hour MSPA passes with M01O at DSS-14 in week 46.

STB previously agreed to move phasing support from DSS-26/43/54 to DSS-26/34/54 in week 47.

STF previously agreed to move from 70m to DSS-14/63 in weeks 44 and 45.

VGR2 previously agreed to change weekly U/L support to DSS-34.

WMAP previously agreed to move from 70m to DSS-14/63 with the provision that WMAP could be supported with two 1-hour ranging supports per week at DSS-34 during the DSS-43 downtime.

2005 Contention Period - December Weeks 48 - 52

DSS-43 downtime proposal for antenna controller replacement, hydrostatic bearing, microwave subsystem controller was approved by all Board Members and was uncontested by any Project representative.

Cluster previously agreed to move weekly SSO support from DSS-46/34/45/43 to DSS-46/34/45 and move MSO support from DSS-46/34/45/43 to DSS-46/34/45 in week 52.

GBRA agreed to move M-wave spectroscopy and new proposals support from 70m to DSS-14/63. In weeks 48, 51 and 52 reduce planetary radio astronomy, Host Country, M-wave spectroscopy and new proposals support from 9 hours to 4.5 hours.

GSSR reduce GODR support from 9 hours to 4 hours in weeks 48 and 52.

M01O agreed to move mapping support from 70m to DSS-14/63. In weeks 48, 51 and 52 reduce three of seven 10-hour passes to 7 hours and MSPA the 7 passes with MEX orbital science.

MEGA agreed to delete imagery support in week 51.

MEX previously agreed to move bi-static radar from DSS-43 to DSS-63. In weeks 48, 51 and 52 MSPA orbital science activity with M01O and reduce 7 occultation passes from 10.9 hours to 5 hours.

STB previously agreed to move phasing support from DSS-26/43/54 to DSS-26/34/54 in week 48 and move maneuver support from DSS-26/43/54 to DSS-26/34/54 in week 49 and 52.

VGR2 previously agreed to change weekly U/L support to DSS-34 and move the MAGROL at DSS-43 to DSS-45 in week 50.

WMAP agreed to move from 70m to DSS-14/63 with the provision that WMAP could be supported with two 1-hour ranging supports per week at DSS-34 during the DSS-43 downtime.

2006 Contention Period - January Weeks 01 - 04

DSN previously agreed to reduce antenna calibration time from 9 hours to 4.5 hours on the 70m subnets.

GBRA agreed to change week 04 DSS-43 Host Country 24-hour event to three 8-hour supports and move 1 support each to weeks 02 – 04, reduce DSS-63 Host Country support from 8 hours to 6 hours in weeks 01 – 04, reduce week 01 VLBA SOC-M4 support at DSS-14/63 from 10 hours to 8 hours, reduce M-wave spectroscopy, planet R/AST, and new proposals support from 9 hours to 6 hours.

M01O previously agreed to MSPA 4 passes per week with MGS.

MGS previously agreed to MSPA 4 passes per week with M01O.

2006 Contention Period - February Weeks 05 - 08

GBRA agreed to reduce new proposals from 9 hours to 4 hours in weeks 05 – 08, reduce week 06 VLBA SOC-M4 support from 10 hours to 8 hours, and change DSS-14/63 RA500 SOC-M4 24-hour support to three 8-hour supports in

week 07.

M01O previously agreed to MSPA 4 passes per week with MGS on the 70m.

MEX previously agreed to move support from DSS-24/54 to 70m and MSPA one to two 6-hour passes with MGS in weeks 05 and 06.

MGS previously agreed to MSPA 4 passes per week with M01O on the 70m. In weeks 05 and 06, move 1 to 2 passes per week from the 70m, 34BWG2 to the 70m and MSPA with MEX one 6-hour pass in week 05 and two 6-hour passes in week 06. Add one 4-hour pass in week 05 and two 4-hour passes in week 06 on the 34BWG1 subnet.

SGP agreed to delete support at DSS-15 in week 06.

2006 Contention Period - March Weeks 09 - 13

Cluster previously agreed to change SSO support antennas from DSS-16/27/24/15 to DSS-16/27/24/14 in weeks 10 and 11.

DSS previously agreed to change week 10, DSS-43 routine maintenance to bearing maintenance. Change week 11 DSS-43 bearing maintenance to routine maintenance and reduce support from 8 hours to 6 hours.

GBRA agreed to reduce M-wave spectroscopy, planet R/AST, and new proposals from 9 hours to 6 hours in weeks 10 and 11. Reduce VLBA SOC-M4 support from 10 hours to 8 hours and move from week 10 to week 09.

M01O previously agreed to MSPA 4 passes with MGS on the 70m in weeks 09, 12, and 13.

MGS previously agreed to MSPA 4 passes with M01O on the 70m in weeks 09, 12, and 13 and move 5 passes in week 10 and 3 passes in week 11 to the 34BWG2.

SGP agreed to move crustal dynamics support from week 10 to week 11.

STA previously agreed to move 7 week 09 prime science passes and 5 week 10 passes from DSS-26/34/55 to DSS-26/45/55 and move SECCHI campaign passes from DSS-15/34/55 to DSS-25/45/65 in week 12 and 13.

2006 Contention Period - April Weeks 14 - 17

GBRA agreed to change week 16 Host Country 24-hour support at DSS-43 to three 8-hour supports. Reduce M-wave spectroscopy, planet R/AST, and new proposals from 9 hours to 6 hours. Move week 14 VLBA SOC-M4 support to week 15 and reduce support from 10 hours to 8 hours.

M01O agreed to increase 70m MSPA passes with MGS from three to seven and increase durations from 10 hours to 11 hours, reduce 2 passes from 10 hours to 7 hours, and move to DSS-14/63.

MGS agreed to increase 70m MSPA passes with M01O from three to seven and increase durations from 10 hours to 11 hours, and reduce 2 passes from 10 hours to 7 hours and move to DSS-14/64. Move remaining 2 to 3 passes to the 34HEF.

MRO agreed to move 8 passes in weeks 14 – 16 and 5 passes in week 17 from DSS-15/34/55 to 34HEF, 34BWG2.

SGP agreed to reduce support from 24 hours to 12 hours in week 16.

ULYS previously agreed to reduce support from 10 hours to 6 hours and move passes from the 34BWG1 to DSS-43/34.

2006 Contention Period - May Weeks 18 - 21

DSS-63 downtime proposal for antenna controller replacement was approved by all Board Members and was uncontested by any Project representative.

CAS agreed to delete tour array support at DSS-63/65 and use DSS-14/25 and remove DSS-15 and DSS-65 from the antenna requirement for tour passes in week 21.

DSS previously agreed to reduce 1 DSS-14 routine maintenance from 8 hours to 6 hours in week 21.

GBRA delete Host Country at DSS-63 in week 21, move M-wave spectroscopy and new proposals from 70m to DSS-14/43, delete DSS-14/63 RA500 SOC-M4 array and use DSS-14.

M01O previously agreed to move four 70m mapping passes to DSS-14/43 and MSPA with MGS in week 21.

MGS previously agreed to move four 70m, 34BWG1 mapping passes to DSS-14/43 and MSPA with M01O. Use split passes of 5 hours each for 5 standalone passes at DSS-14/43/65 and 5 passes on the DSS-45, 34BWG2 in week 21.

SOHO previously agreed to reduce TSO support from 5 days to 4 days and move all passes to the 26m in week 21.

STF previously agreed to move week 21 passes from 70m to DSS-14/43.

ULYS previously agreed to move 34BWG1 passes to DSS-43 and reduce from 10 hours to 4 hours in week 21.

VGR1 previously agreed to move week 21 routine U/L support from DSS-14/63 to DSS-14.

WMAP move week 21 passes from 70m to DSS-14/43.

2006 Contention Period - June Weeks 22 - 26

DSS-63 downtime proposal for antenna controller replacement was approved by all Board Members and was uncontested by any Project representative.

CAS previously agreed to move week 22 passes from DSS-15/24/26/54/55/65 to DSS-24/26/55.

DSS previously agreed to delete 1 of 2 DSS-14 routine maintenance supports in week 25.

EVN agreed to delete DSS-63 calibration and DSS-14/63 array supports in weeks 22 and 23.

GBRA agreed to reduce M-wave spectroscopy and new proposals support from 9 hours to 6 hours. Reduce planet R/AST supports from 9 hours to 4 hours. Delete DSS-14/63 VLBA array; reduce support from 10 hours to 8 hours, and use DSS-14.

GSSR agreed to reduce support from 5.2 hours to 4 hours, move 1 Mercury support from week 24 to week 25, and delete one of two supports in week 26. Reduce GODR supports from 8 hours to 4 hours in weeks 24 and 26.

M01O agreed to MSPA all seven passes with MGS, move 4 to 5 passes to DSS-14, and increase pass duration from 10 hours to 12 hours. Move remaining two to three passes to DSS-43; reduce duration from 10 hours to 9 hours and MSPA with MGS.

MGS agreed to move four to five passes from 34BWG1 in week 22 and four to five passes from 70m, 34BWG1 in weeks 23 – 26 to DSS-14, increase pass duration from 10 hours to 12 hours, and MSPA with M01O. Move two to

three passes from 70m, 34BWG1 to DSS-43, reduce pass duration from 10 hours to 9 hours, and MSPA with M01O. Move remaining two to three standalone 70m, 34BWG1 passes to 34BWG1.

MRO agreed to move two to four 70m passes to DSS-43 and move two passes to the 34HEF in week 22. Move four to five passes from 34BWG1, 34BWG2 to the 34BWG1. Move three to four passes per week from DSS-15/45/55 to the 34HEF.

SGP agreed to delete DSS-45 support in week 22.

STF previously agreed to move passes from the 70m to DSS-14/43.

ULYS previously agreed to reduce passes from 10 hours to 6 hours and move from 70m to DSS-34 in week 22, reduce all passes in weeks 23 – 26 from 10 hours to 6 hours, move passes in weeks 23 – 25 and two passes in week 26 to DSS-43/34, and move remaining 2 passes in week 26 to DSS-34.

VGR1 previously agreed to move routine U/L support from DSS-14/63 to DSS-14.

WMAP move routine and maneuver passes from the 70m to DSS-14/43.

2006 Contention Period - July Weeks 27 - 30

DSS-63 downtime proposal for antenna controller replacement was approved by all Board Members and was uncontested by any Project representative.

CAS agreed to move tour array passes from DSS-63/65 to DSS-14/25 and remove DSS-15 and DSS-65 antenna requirement for routine tour support.

DSN previously agreed to delete week 25 antenna calibration support at DSS-63 and reduce all remaining 70m supports from 8 hours to 4.5 hours.

DSS previously agreed to reduce DSS-14 routine maintenance from two 8-hour supports per week to one 8-hour support per week during DSS-63 downtime for ACR.

GBRA agreed to delete DSS-63 Host country and change week 29 DSS-43 Host Country from 24 hours to three 8-hour supports. Move M-wave spectroscopy and new proposals from the 70m to DSS-14/43 and reduce support from 9 hours to 6 hours and reduce planet R/AST support from 9 hours to 4 hours. Move week 27 VLBA SOC-M4 array support from DSS-14/63 to DSS-14 and reduce support from 10 hours to 8 hours.

GSSR agreed to reduce Mercury support from 5.2 hours to 4 hours in weeks 27 and 30 and move week 27 support to week 28.

M01O agreed to move four to five 70m passes per week to DSS-14, increase pass duration from 10 hours to 12 hours and MSPA with MGS. Move two to three 70m passes to DSS-43; reduce pass duration from 10 hours to 9 hours and MSPA with MGS.

MGS agreed to move four to five 70m, 34BWG1 passes per week to DSS-14, increase pass duration from 10 hours to 12 hours and MSPA with M01O. Move two to three 70m, 34BWG1 passes to DSS-43; reduce pass duration from 10 hours to 9 hours and MSPA with M01O. Move remaining two to three standalone 70m, 34BWG1 passes to DSS-43 and reduce pass duration from 10 hours to 9 hours.

MRO agreed to MSPA 2 to 3 passes with MGS and move 3 passes from the 34HEF to DSS-26/34/55.

RADA agreed to move passes from the 70m to DSS-14/43.

RFC agreed to delete CAT M&E supports.

SGP agreed to delete support in weeks 28 and 30.

STF previously agreed to move supports from the 70m to DSS-14/43.

WMAP agreed to move 70m routine supports from the 70m to DSS-14/43.

2006 Contention Period - August Weeks 31 - 35

DSS-63 downtime proposal for antenna controller replacement ending in week 35 was approved by all Board Members and was uncontested by any Project representative.

CAS previously agreed to remove DSS-15 and DSS-65 antenna requirement from routine tour support.

DSN previously agreed to delete DSS-63 antenna calibration and reduce all remaining supports from 8 hours to 4.5 hours.

DSS previously agreed to reduce DSS-14 routine maintenance from two 8-hour supports per week to one 8-hour and one 6-hour support per week.

GBRA agreed to delete DSS-63 Host Country, move all M-wave spectroscopy from the 70m to DSS-14/43, reduce support from 9 hours to 6 hours, and delete 1 support in weeks 31, 32, 34, and 35. Reduce new proposals support from 9 hours to 6 hours and move support from the 70m to DSS-14/43. Reduce planet R/AST support from 9 hours to 4 hours. Move week 32 VLBA SOC-M4 support to week 33, change DSS-14/63 to DSS-14, and reduce support from 10 hours to 8 hours.

GSSR agreed to move Mercury support from weeks 31 to week 32 and from week 33 to week 35.

M01O agreed to increase 70m MSPA passes with MGS from three to six. Move three 70m MSPA passes per week with MGS to DSS-14. Change one standalone pass per week to MSPA with MGS and move to DSS-14. Move two passes from the 70m to DSS-43, reduce pass duration from 10 hours to 8 hours and MSPA with MGS.

MEGA agreed to change 24-hour imagery support to three 8-hour supports in week 34.

MGS agreed to increase 70m MSPA passes with M01O from three passes per week to six passes per week. Move three 70m MSPA passes to DSS-14. Move one standalone pass from 70m, 34BWG1 to DSS-14 and MSPA with M01O. Move two 70m, 34BWG1 passes to DSS-43, reduce pass duration from 10 hours to 8 hours, and MSPA with M01O. Move remaining three to four passes from 70m, 34BWG1 to DSS-26/34/55 and MSPA with MRO.

RADA agreed to move support from the 70m to DSS-14/43.

STF previously agreed to move supports from the 70m to DSS-14/43.

ULYS previously agreed to move 70m support to the 34BWG1 and reduce supports from 10 hours to 6 hours in week 33. Reduce weeks 34 and 35 support from 10 hours to 6 hours.

VGR1 previously agreed to delete 4-hour supports at DSS-14/63, move 70m routine U/L passes from DSS-14/63 to DSS-14, delete weeks 31 – 35 supports at DSS-15/65/54/24/14/63, and add six 6-hour supports at DSS-24/54/15/65 in weeks 32 – 35.

WMAP agreed to move 70m routine supports from the 70m to DSS-14/43.

2006 Contention Period - September Weeks 36 - 39

CAS previously agreed to remove DSS-15 and DSS-65 antenna requirement from routine tour support.

GBRA agreed to reduce M-wave spectroscopy, new proposals, and planet R/AST from 9 hours to 6 hours and reduce week 36 VLBA SOC-M4 DSS-14/63 simultaneous support from 10 hours to 8 hours.

M01O agreed to increase MSPA 10-hour mapping passes with MGS from three to five.

MGS agreed to increase MSPA mapping passes with M01O from three to five. Delete all 34HEF, 34BWG2 5-hour standalone mapping passes. Move remaining four to five passes from 70m, 34BWG1 to the 70m and use full view at DSS-14 and DSS-63.

RFC CAT M&E agreed to delete support in week 36.

SGP agreed to delete support in weeks 36, 38, and 39.

2006 Contention Period - October Weeks 40 - 43

DSS previously agreed to delete 1 routine maintenance at DSS-14 and one 6-hour maintenance at DSS-63 each week and reduce DSS-25 and DSS-26 maintenance from 8 hours to 6 hours in weeks 40 – 42.

M01O agreed to move three 70m mapping passes to DSS-43, and MSPA with MGS. MSPA one additional pass per week with MEX at DSS-14/63.

MEX agreed to MSPA one additional solar corona pass with M01O at DSS-14/63.

MGS agreed to move three passes from 34HEF to DSS-43, reduce pass duration from 14 hours to 10 hours, and MSPA with M01O. Reduce remaining six to seven mapping and beta supplement passes planned on 34HEF, DSS-34/54, and 34BWG2 from 10 – 14 hours to 8 hours each. NOTE: The projects would prefer to utilize MSPA rather than reduce MGS support. The recommendation to reduce MGS rather than MSPA with MRO is was made because MRO is beginning its transition to prime science and Solar conjunction in these weeks. However, if the MRO Project can agree to MSPA 5 to 9 passes with MGS during this period, it should support the requirements for both missions.

SGP agreed to change 24-hour crustal dynamics at DSS-65 in week 42 and DSS-45 in week 43 to three 8-hour supports.

ULYS previously agreed to reduce 3 to 5 passes planned at DSS-34 from 10 hours to 4 hours.

VGR1 previously agreed to reduce 12 to 14 passes at DSS-26 and DSS-55 from 6 hours to 4 hours.

VGR2 previously agreed to reduce seven passes planned at DSS-43 from 8 hours to 6 hours in weeks 41 and 42.

2006 Contention Period - November Weeks 44 - 48

DSS-45 downtime proposal for beginning in week 44 was approved by all Board Members and was uncontested by any Project representative.

Cluster previously agreed to delete DSS-45 requirement for SSO and MSO array passes.

Dawn agreed to change passes from 34HEF to DSS-15/65.

EVN agreed to reduce E500 J-M4 support from 12 hours to 8 hours in weeks 44 – 46.

GBRA agreed to reduce VLBA SOC-M4 support from 10 hours to 8 hours in week 44.

M01O agreed to increase MSPA passes with MEX planned at DSS-14/63 from 2 – 3 passes per week to 4 passes per week.

MEX agreed to increase MSPA passes with M01O from 2 – 3 passes per week to 4 passes per week planned at DSS-14/63.

MGS agreed to move seven passes from 34HEF to DSS-15/34/65, reduce passes from 14 hours to 8 hours, and MSPA with MRO. Move the remaining two to three passes from 34BWG1 to DSS-34, 34BWG2.

MRO agreed to move seven 34HEF passes to DSS-15/34/65 and MSPA with MGS in weeks 45 – 48.

RFC agreed to move CAT M&E support from week 47 to week 44 and reduce support from 24 hours to 12 hours.

SGP agreed to reduce crustal dynamics support in week 45 and 47 from 24 hours to 8 hours and delete DSS-45 support in weeks 46 and 48.

ULYS previously agreed to reduce 3 to 4 passes per week from 10 hours to 8 hours in weeks 44 – 47.

VGR2 previously agreed to move DSS-45 passes to DSS-43/34 and reduce passes from 8 hours to 6 hours.

2006 Contention Period - December Weeks 49 - 52

DSS-45 downtime proposal for was approved by all Board Members and was uncontested by any Project representative.

Cluster previously agreed to remove DSS-15 and DSS-45 from the resource request for SSO and MSO passes.

DSN previously agreed to reduce DSS-43 antenna calibration from 8 hours to 4.5 hours.

GBRA agreed to reduce week 50 M-wave spectroscopy from 9 hours to 6 hours and use DSS-14/63. Reduce new proposals from 9 hours to 4 hours and reduce planet R/AST from 9 hours to 6 hours.

M01O previously agreed to MSPA one additional 70m standalone pass per week with MGS.

MGS previously agreed to reduce one 34HEF, 34BWG1, 34BWG2 pass per week from 14 hours to 10 hours, move to 70m and MSPA with M01O. Reduce four 34HEF, 34BWG1, 34BWG2 passes in week 49, three passes in weeks 50 and 52, and five passes in week 51 from 14 hours to 8 hours and move to 70m. Reduce remaining 34HEF, 34BWG1, 34BWG2 passes, two in week 49, three in weeks 50 and 52, and one in week 51, from 14 hours to 8 hours, move to 34HEF, and MSPA with MRO. Delete all 4-hour passes on 34BWG1, 34BWG2.

MRO previously agreed to MSPA 1 to 3 passes with MGS on the 34HEF in weeks 49 – 52. Move Ka Ops demo support from DSS-24/34/55 to DSS-25/34/55.

SGP agreed to delete crustal dynamics supports.

ULYS previously agreed to reduce support from 10 hours to 6 hours and use DSS-43/34.

New Action Items

#	Year	Month	System	Responsible	Due	Status	Action
1	2003 - 2004	December - April	Mars Program	Belinda Arroyo	06/01/2003	Pending	(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) 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.
2	2004	June - July	Cassini	Ron Gillette and David Seal	09/12/2003	Closed	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.
3	2006	July	MRO	Rob Locke and Jim Hodder	10/09/2003	Open	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.
4	2006	July and September	RFC	Chris Jacobs	09/12/2003	Open	Investigate and propose alternative support versus the recommended deletion of Reference Frame Calibration (RFC) Catalog Enhancement and Maintenance (Cat M&E) support.
5	2004 - 2005		DSMS Engrg	Jeff Osman and John Cucchissi	1/15/2004	Open	Distribute plan for 26m subnet antenna hydraulic system refurbishment. This will then be worked by the Resource Analysis Team to coordinate DSS-16/46/66 downtimes with Operations and Flight Projects.
6	2005	October	Polar	Nap Lacey	09/18/2003	Closed	Update mission set to show that Polar will end their mission as of October 1, 2005. RESPONSE: (09/10/03) The RAPSO Mission Set has been updated to reflect the new End of Mission date of October 1, 2005