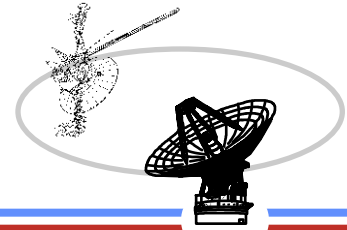




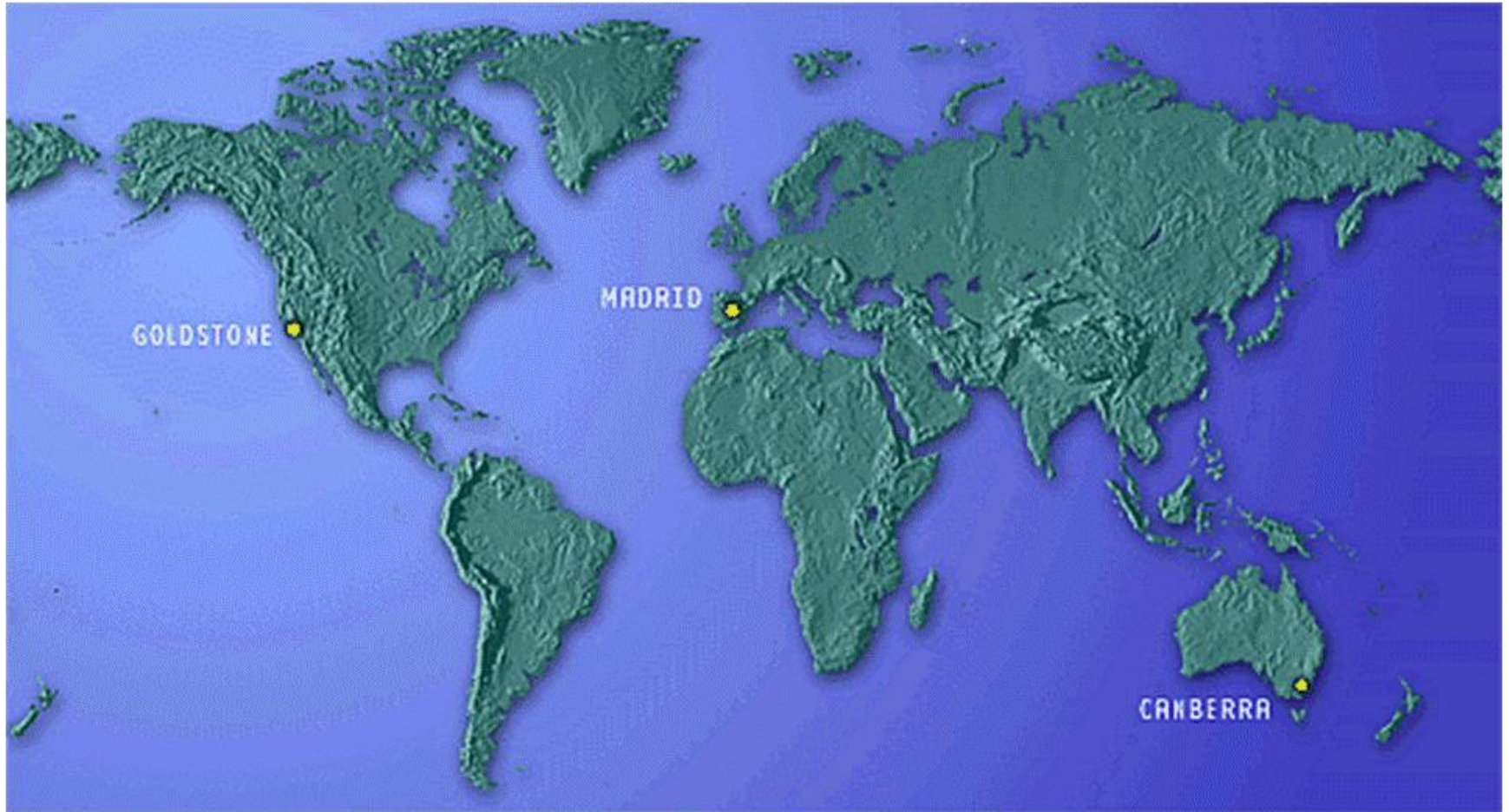
Interplanetary Network Directorate (IND)  
Deep Space Network (DSN)  
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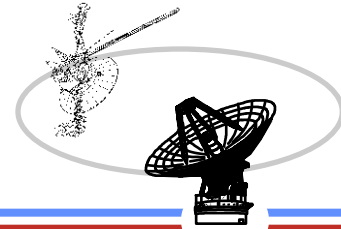
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## DSN Antenna Downtime Status and Forecast





# Interplanetary Network Directorate (IND) Deep Space Network (DSN) Resource Allocation Planning Service



## Antenna Downtime Status and Forecast

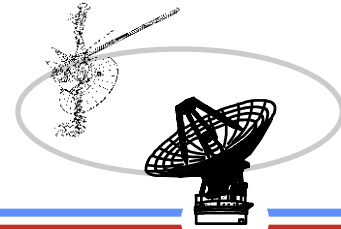
| Downtime   | Antenna     | Start Date | End Date | Weeks   | POC  | Notes   |
|--|-------------|------------|----------|---------|--|---|
| Complex downtime for NMC Automated Link Build (ALB), SOAK and Test | GDSCC       | Jan 2014   | Jan 2014 | 05      | Jim Buckley, Shirley Cizmar, Dave Taylor   | Request 6 – 8 hours per block at each complex<br>A management decision was made to move DSOC and GDSCC from week 08 to week 05.<br>DSOC is scheduled to be completed prior to NMC ALB and is not network wide downtime – JPL only<br>Week 10 scheduled for March 5.<br>Added for testing as a result of CDSCC releasing Powerhouse downtime. Also requesting additional time at MDSCC & GDSCC for A/T early June to end of August and SOAK at GDSCC prior to mid September and CDSCC & MDSCC prior to mid November 2014 |
|  | DSOC        | Feb 2014   | Feb 2014 | 07      |  |   |
|  | MDSCC       | Mar 2014   | Mar 2014 | 10      |  |   |
|  | CDSCC       | Apr 2014   | Apr 2014 | 14      |  |   |
| NMC ALB A/T and SOAK   | MDSCC       | June 2014  | Oct 2014 | 24, 42  |  |   |
|  | GDSCC       |            |          | 25, 35  |  |   |
|  | CDSCC       |            |          | 30, 41  |  |   |
| Complex downtime for Power House Commission                        | CDSCC       | Mar 2015   | Mar 2015 | 10 & 11 | John Phillips, Craig Phillips, Dave Taylor | Week 51 two 6 hour requirements to move to early 2015 timeframe (Mar 6 <sup>th</sup> & 9 <sup>th</sup> if possible)<br>Week 33 downtime requires 12 hours, week 35 downtime requires 6 hours Possible move to October/November timeframe.   |
|  |             | Aug 2015   | Aug 2015 | 33, 35  |  |   |
| DCD v.5.1 software installation                                    | GDSCC/ DSOC | 2015       | 2015     | 32      | Anna Fan, Sheila Garrett                   | All complexes require installation of DCD 5.1. A minimum of 6 hours is required. Goldstone installation is first, 30 day separation from the next install which will be CDSCC or MDSCC, a minimum of 2 week separation from the 2 <sup>nd</sup> and 3 <sup>rd</sup> install   |
|  | MDSCC       | 2015       | 2015     | 36      |  |   |
|  | CDSCC       | 2015       | 2015     | 39      |  |   |



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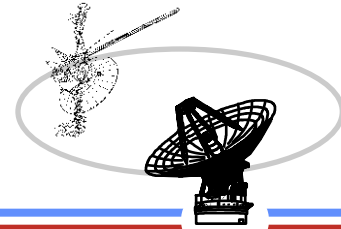


## Antenna Downtime Status and Forecast

| Downtime                       | Antenna       | Start Date                                   | End Date                                     | Weeks  | POC   | Notes   |
|--------------------------------|---------------|--|--|--|---|---|
| Grouting                       | DSS-63        | 2014<br>2015<br>2015<br>2016<br>2016<br>2017 | 2014<br>2015<br>2015<br>2016<br>2016<br>2017 | 43 – 48<br>19 & 20<br>32 & 33<br>05 – 09<br>30 – 34<br>08 – 17 | Dave Taylor,<br>David Munoz<br>Mochon,<br>Bernardo Lopez,<br>Asim Sehic | An additional week was added to first grouting in 2014 in preparation for the DSN 50 <sup>th</sup> anniversary. Nov 2014, S-Band Maser Replacement NIB<br>Requesting an additional week preferably week 43, which has been added.<br>May 2015, 70m Tune-up and calibration NIB<br>2015 groutings are only 2 weeks to allow support of NHPC<br>Per mission requirements in 2017 have reduced time to 10 weeks and will place APCA downtime as stand alone in 2018. |
| Electrical Maintenance         | DSS-24,25,26, | April 2014                                   | May 2014                                     | 16 & 19  | David Lloyd,  | Requesting downtime for preventative maintenance blocks to update electrical items –<br><b>This task is completed</b>   |
| Complex wide Electrical Maint. | SPC-10        | May 2014                                     | Aug 2014                                     | 22 & 41  |   | <b>Week 22 has been completed.</b><br>Week 34 12-hour downtime has moved to week 41 due to MOM activities   |
| RF Test Pattern                | DSS-24,25,26  | June 2014                                    | June 2014                                    | 23   | Karen Frazier   | Request two 16-hour downtimes. This request is being released to GDSCC planning. All Apollo site antennas will be performing this task during the 2 days of downtime  |



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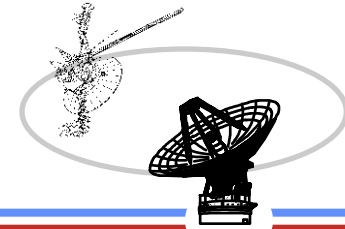


## Antenna Downtime Status and Forecast

| Downtime                                  | Antenna                    | Start Date                       | End Date                          | Weeks                         | POC  | Notes  |
|---|----------------------------|----------------------------------|-----------------------------------|-------------------------------|--|--|
| Complex downtime for SPC-60 Power Cutover | MDSCC                      | Apr 2014                         | Aug 2014                          | 15, 19, 23, 27, 32, 34        | Anna Fan, <b>Craig Phillips</b> , Javier Lopez-Perea | <b>Weeks 15 &amp; 19 have been completed.</b> Week 34 is the last downtime for this task. They may have to compress time between specific dates and hours for each downtime. Anna will clarify list of tasks during downtime         |
| Depot Level Maintenance                   | DSS-45<br>DSS-65<br>DSS-34 | May 2014<br>May 2014<br>Jan 2015 | May 2014<br>June 2014<br>Feb 2015 | 19 – 21<br>22 – 24<br>05 – 08 | John Phillips for David Munoz Mochon                 | <b>Weeks 19 – 21 have been completed</b> DSS-45 required additional blocks to work on the 250W transmitter problems prior to DLM downtime. 2 blocks scheduled in week 12   |
| HV Electrical Distribution                | MDSCC                      | May 2014                         | May 2014                          | 21 & 22                       | Renee Miller   | Spanish Gov. mandated requirement each year. Requirement not needed at CDSCC. GDSCC using electrical maintenance for task. <b>This task was completed.</b>   |
| Quad Leg Work                             | DSS-14                     | May 2014                         | Dec 2014                          | 19, 29, 50                    | David Allen, Erik Holmgren                           | <b>Week 19 task was completed.</b> Quad Leg Work downtime requires a total of 12 prime shift days with tracking available off shift. In weeks 19 and 29 there will be five downtimes M – F and week 50 two downtimes Tues and Thurs. |
| Elevation Cable Wrap                      | DSS-15                     | June 2014                        | July 2014                         | 25 – 27                       | Marwah Buck  | Moved from weeks 29-31. Erik Holmgren will follow up to confirm activities with staff. Planning in progress, parts have been ordered.  |



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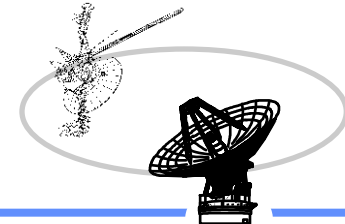
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## Antenna Downtime Status and Forecast

| Downtime                    | Antenna                    | Start Date                             | End Date                                 | Weeks                         | POC  | Notes   |
|-----------------------------|----------------------------|--|--|-------------------------------|--|---|
| Replace Sub Reflector Cable | DSS-14                     | Jul 2014                               | Jul 2014                                 | 28                            | Jeff Mason   | Request 5 days. Tracking available during night hours after the first 2 nights.   |
| 80kW Prep                   | DSS-26                     | July 2014<br>Oct 2014                  | July 2014<br>June 2015                   | 28 – 31<br>44- 24             | Erik Holmgren<br>Pam Rothman,<br><b>Daniel Olson</b> | Moved from weeks 23-26. Swap with Elevation Cable Wrap.<br>Downtime will start in week 44 and end week 24. Downtime will end in preparation the NHPC Pluto encounter in mid July.<br>AZ Track will be NIB to the 80Kw facility prep                                 |
| AZ Track Level C/O          | DSS-54<br>DSS-55<br>DSS-65 | Aug 2014                               | Aug 2014                                 | 32<br>33<br>34                | Renee Miller   | 34M antenna requires 10 hour blocks each year 1 each week. These are scheduled to overlap with maintenance activities in each week. Will check for CDSCC/GDSCC  |
| TXR RF Characterization     | MDSCC                      | Oct 2014                               | Oct 2014                                 | 42 & 43                       | Harout Matossian                                     | Requires 12-hour downtimes for each antenna in weeks 42 and 43. Task will occur on antenna maintenance days.  |
| 70M Tune-up and calibration | DSS-14<br>DSS-43<br>DSS-63 | Dec 1, 2014<br>Mar 9, 2015<br>May 2015 | Dec 15, 2014<br>Mar 21, 2015<br>May 2015 | 49 & 50<br>11 & 12<br>19 & 20 | David Allen<br>John Phillips                         | These are proposed dates at this time and are In preparation for NHPC Pluto Encounter 2014 HBA Shimming shortened. Requesting an additional 2 weeks for this downtime to regain time from the shortening of the HBA downtime. This is scheduled NIB to May Grouting |



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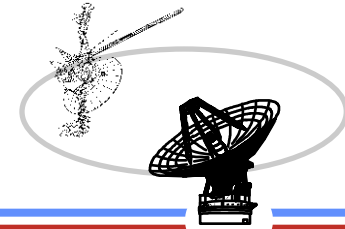
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## Antenna Downtime Status and Forecast

| Downtime                | Antenna | Start Date | End Date   | Weeks   | POC                          | Notes   |
|-------------------------|---------|------------|------------|---------|------------------------------|---|
| Ka U/L Engineering Test | DSS-25  | Jan 2015   | Jan 2015   | 4       | Andre Jongeling              | The Engineers are requesting 4 daylight days T-F 8 hours each to complete this task. Monday is a holiday. |
| Antenna Inspections     | GDSCC   | Mar 2015   | Apr 2015   | 13 & 14 | Dave Taylor<br>Andrew Brooks | 2015 Antenna Inspections moved to March - April timeframe   |
|                         |         | Apr 2018   | Apr 2018   | 15 & 16 |                              |   |
| AZ Track Replacement    | DSS-55  | Aug 2015   | Oct 2015   | 34 – 44 | Pam Rothman,<br>Asim Sehic   | Downtime will begin one day late on DOY 230 vice 229 due to Cassini activities                            |
| Antenna Inspections     | CDSCC   | Jan 2016   | Jan 2016   | 01 & 02 | Dave Taylor<br>Andrew Brooks |   |
| APCA                    | DSS-14  | March 2016 | May 2016   | 10 – 21 | Anna Fan,<br>Barzia Tehrani  | DSS-14 needs to be scheduled first,   |
|                         | DSS-43  | Nov 2017   | Jan 2018   | 44 – 03 |                              | DSS-43 extended to 12 weeks   |
|                         | DSS-63  | Feb 2018   | April 2018 | 18 – 29 |                              | DSS-63 APCA is now stand alone and moved to 2018 at this time.  |



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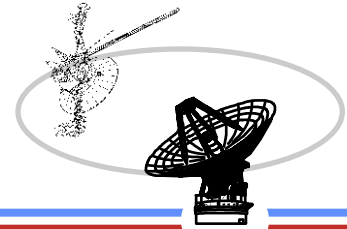
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## Antenna Downtime Status and Forecast

| Downtime            | Antenna | Start Date   | End Date    | Weeks   | POC                          | Notes  |
|---------------------|---------|--------------|-------------|---------|------------------------------|--|
| SWUPS Installation  | CDSCC   | Apr 5 2016   | Apr 5 2016  | 14      | Anna Fan,<br>Dave Taylor     | These blocks are proposed at this time 12 hour blocks for each downtime<br>Must be done in daylight. There is a connection to the power house.<br>This will be scheduled in the April 2016 timeframe. Two blocks in a 3 week period. Need to avoid InSight activities. |
|                     |         | Apr 20 2016  | Apr 20 2016 | 16      |                              |  |
|                     |         | May 4 2016   | May 4 2016  | 18      |                              |  |
| Antenna Inspections | MDSCC   | Apr 2017     | Apr 2017    | 16 & 17 | Dave Taylor<br>Andrew Brooks |  |
| XX/Ka Installation  | DSS-25  | Jan 2018     | April 2018  | 01 - 14 | Wendy Hodgkin                | XX/Ka requires 14 weeks - AZ Track will be NIB in weeks 05-14  |
|                     | DSS-24  | Apr 30, 2018 | Jul 9, 2018 | 18 - 27 |                              | Ka2 Tune-up is NIB weeks 18 & 19 and scheduled prior to JWST launch in 2018<br>Needs to happen as soon after JNO end of mission as possible  |



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## Antenna Downtime Status and Forecast

| Downtime       | Antenna | Start Date   | End Date     | Weeks   | POC            | Notes  |
|----------------|---------|--------------|--------------|---------|----------------|--|
| Ka2 Tune-up    | DSS-24  | Apr 30, 2018 | May 13, 2018 | 18 & 19 | Wendy Hodgkin  | This is NIB to XX/Ka Installation  |
|                | DSS-34  | May 28, 2018 | Jun 4, 2018  | 22 & 23 |                |  |
|                | DSS-54  | Sep 3, 2018  | Sep 16, 2018 | 36 & 37 |                |  |
| Pedestal Rehab | DSS-54  | Feb 2019     | Oct 2019     | 06 - 43 | Bernardo Lopez | This downtime has moved tentatively to 2019. More information will follow. |

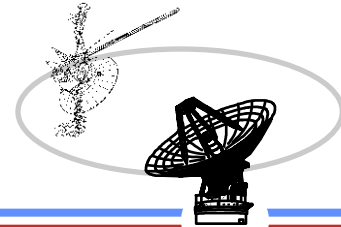




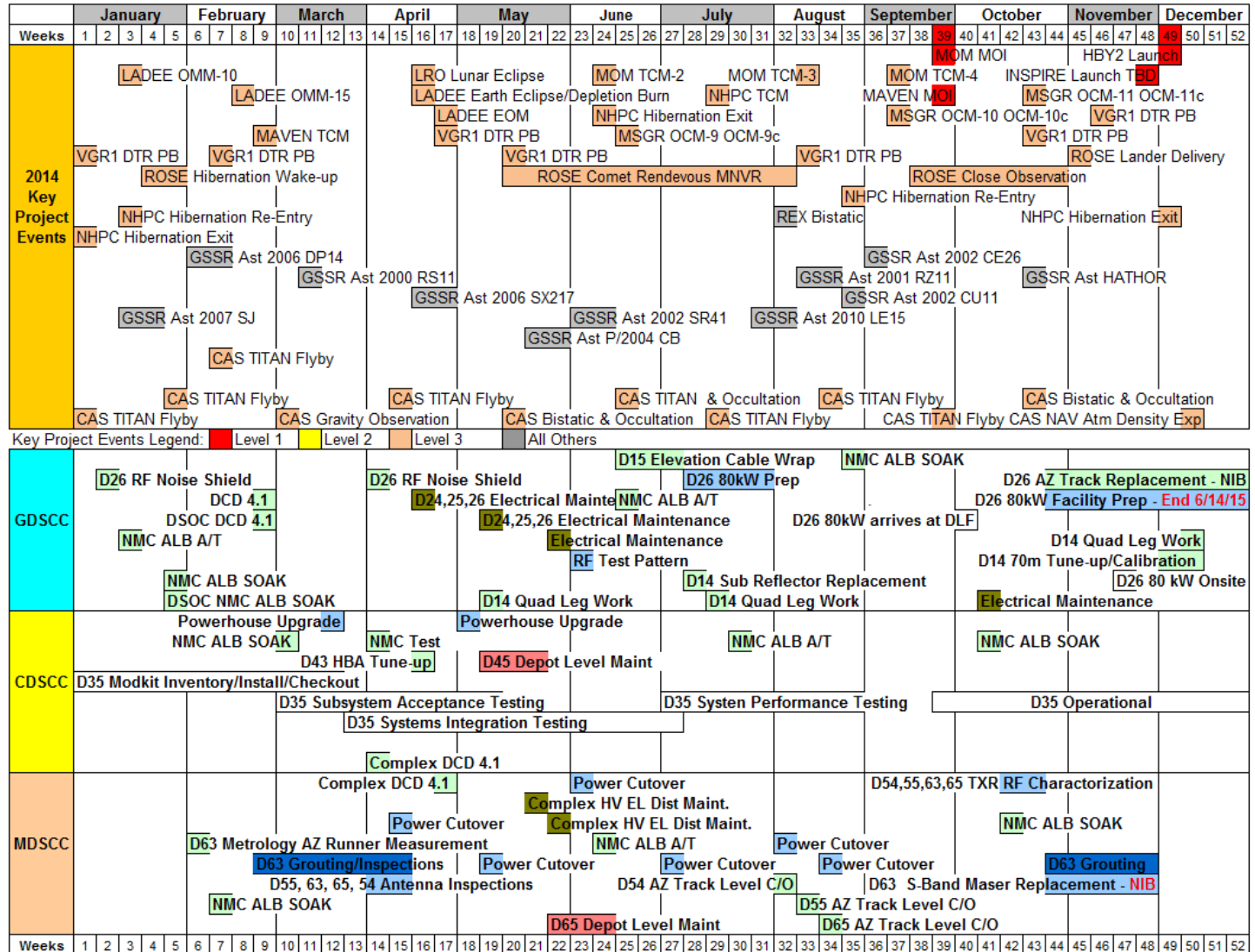
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# Interplanetary Network Directorate (IND) Deep Space Network (DSN) Resource Allocation Planning Service



- 2014 -



Revised: June 3, 2014

Downtime June 4, 2014



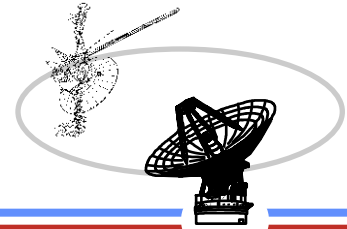








# Interplanetary Network Directorate (IND) Deep Space Network (DSN) Resource Allocation Planning Service



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**- 2019 -**

|                                  | January  |   |   |   | February |            |   |   | March |               |    |    | April |    |    |    | May |               |    |    | June |       |    |    | July |               |    |    | August |    |    |    | September |                 |    |    | October |    |    |    | November |    |    |    | December |    |    |    |    |    |    |    |    |
|----------------------------------|--|---|---|---|----------|------------|---|---|-------|---------------|----|----|-------|----|----|----|-----|---------------|----|----|------|-------|----|----|------|---------------|----|----|--------|----|----|----|-----------|-----------------|----|----|---------|----|----|----|----------|----|----|----|----------|----|----|----|----|----|----|----|----|
| Weeks                            | 1  | 2 | 3 | 4 | 5        | 6          | 7 | 8 | 9     | 10            | 11 | 12 | 13    | 14 | 15 | 16 | 17  | 18            | 19 | 20 | 21   | 22    | 23 | 24 | 25   | 26            | 27 | 28 | 29     | 30 | 31 | 32 | 33        | 34              | 35 | 36 | 37      | 38 | 39 | 40 | 41       | 42 | 43 | 44 | 45       | 46 | 47 | 48 | 49 | 50 | 51 | 52 |    |
| 2019<br>Key<br>Project<br>Events |  |   |   |   |          | SPP Beacon |   |   |       | SPP Solar Enc |    |    |       |    |    |    |     | ORX Tag 1 Reh |    |    |      | Tag 1 |    |    |      | SPP Solar Enc |    |    |        |    |    |    |           | SPP Venus Flyby |    |    |         |    |    |    |          |    |    |    |          |    |    |    |    |    |    |    |    |
|                                  | Key Project Events Legend: <span style="color: red;">■</span> Level 1 <span style="color: yellow;">■</span> Level 2 <span style="color: orange;">■</span> Level 3 <span style="color: gray;">■</span> All Others |   |   |   |          |            |   |   |       |               |    |    |       |    |    |    |     |               |    |    |      |       |    |    |      |               |    |    |        |    |    |    |           |                 |    |    |         |    |    |    |          |    |    |    |          |    |    |    |    |    |    |    |    |
|                                  | GDSCC  |   |   |   |          |            |   |   |       |               |    |    |       |    |    |    |     |               |    |    |      |       |    |    |      |               |    |    |        |    |    |    |           |                 |    |    |         |    |    |    |          |    |    |    |          |    |    |    |    |    |    |    |    |
|                                  | CDSCC  |   |   |   |          |            |   |   |       |               |    |    |       |    |    |    |     |               |    |    |      |       |    |    |      |               |    |    |        |    |    |    |           |                 |    |    |         |    |    |    |          |    |    |    |          |    |    |    |    |    |    |    |    |
|                                  | MDSCC  |   |   |   |          |            |   |   |       |               |    |    |       |    |    |    |     |               |    |    |      |       |    |    |      |               |    |    |        |    |    |    |           |                 |    |    |         |    |    |    |          |    |    |    |          |    |    |    |    |    |    |    |    |
|                                  | D54 Pedestal Rehab - Proposed  |   |   |   |          |            |   |   |       |               |    |    |       |    |    |    |     |               |    |    |      |       |    |    |      |               |    |    |        |    |    |    |           |                 |    |    |         |    |    |    |          |    |    |    |          |    |    |    |    |    |    |    |    |
|                                  | Weeks  | 1 | 2 | 3 | 4        | 5          | 6 | 7 | 8     | 9             | 10 | 11 | 12    | 13 | 14 | 15 | 16  | 17            | 18 | 19 | 20   | 21    | 22 | 23 | 24   | 25            | 26 | 27 | 28     | 29 | 30 | 31 | 32        | 33              | 34 | 35 | 36      | 37 | 38 | 39 | 40       | 41 | 42 | 43 | 44       | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 |

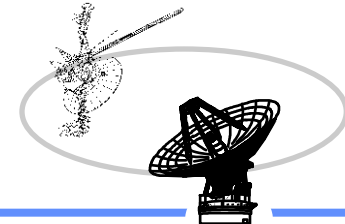
Revised: March 27, 2014

Downtime June 4, 2014



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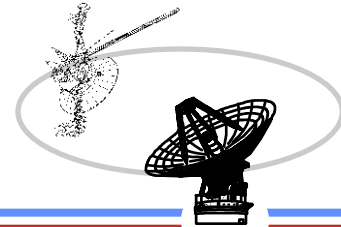
## DSN Downtime 2014

| 2014   |                           |                  |                  |                 |         |           |         |
|--------|---------------------------|------------------|------------------|-----------------|---------|-----------|---------|
| Site   | Details                   | Start            | End              | Duration (Days) | Weeks   | Start DOY | End DOY |
| DSS 65 | Depot Level Maintenance   | 05/26/2014 06:00 | 06/13/2014 17:00 | 18              | 22 - 24 | 146       | 164     |
| DSS 24 | RF Pattern Test           | 06/04/2014 13:00 | 06/05/2014 05:00 | 1               | 23 - 23 | 155       | 156     |
| DSS 25 | RF Pattern Test           | 06/04/2014 13:00 | 06/05/2014 05:00 | 1               | 23 - 23 | 155       | 156     |
| DSS 26 | RF Pattern Test           | 06/04/2014 13:00 | 06/05/2014 05:00 | 1               | 23 - 23 | 155       | 156     |
| SPC 60 | Complex Power Cutover     | 06/05/2014 05:00 | 06/05/2014 17:00 | 0               | 23 - 23 | 156       | 156     |
| DSS 24 | RF Pattern Test           | 06/06/2014 13:00 | 06/07/2014 05:00 | 1               | 23 - 23 | 157       | 158     |
| DSS 25 | RF Pattern Test           | 06/06/2014 13:00 | 06/07/2014 05:00 | 1               | 23 - 23 | 157       | 158     |
| DSS 26 | RF Pattern Test           | 06/06/2014 13:00 | 06/07/2014 05:00 | 1               | 23 - 23 | 157       | 158     |
| SPC 60 | NMC ALB A/T               | 06/10/2014 01:00 | 06/10/2014 07:00 | 0               | 24 - 24 | 161       | 161     |
| DSS 15 | Elevation Cable Wrap      | 06/16/2014 15:00 | 07/05/2014 00:00 | 18              | 25 - 27 | 167       | 186     |
| SPC 10 | NMC ALB A/T               | 06/19/2014 12:15 | 06/19/2014 18:15 | 0               | 25 - 25 | 170       | 170     |
| SPC 60 | Complex Power Cutover     | 07/03/2014 05:00 | 07/03/2014 17:00 | 0               | 27 - 27 | 184       | 184     |
| SPC 60 | HV DIST MAINT - NIB       | 07/03/2014 05:00 | 07/03/2014 17:00 | 0               | 27 - 27 | 184       | 184     |
| DSS 26 | 80KW Prep                 | 07/07/2014 14:00 | 08/02/2014 00:00 | 25              | 28 - 31 | 188       | 214     |
| DSS 14 | Sub Reflector Replacement | 07/07/2014 16:00 | 07/10/2014 00:00 | 2               | 28 - 28 | 188       | 191     |
| DSS 14 | Sub Reflector Replacement | 07/10/2014 16:00 | 07/11/2014 00:00 | 0               | 28 - 28 | 191       | 192     |
| DSS 14 | Sub Reflector Replacement | 07/11/2014 16:00 | 07/12/2014 00:00 | 0               | 28 - 28 | 192       | 193     |
| DSS 14 | Quad Leg Work             | 07/14/2014 14:00 | 07/14/2014 23:00 | 0               | 29 - 29 | 195       | 195     |
| DSS 14 | Quad Leg Work             | 07/15/2014 14:35 | 07/15/2014 23:35 | 0               | 29 - 29 | 196       | 196     |
| DSS 14 | Quad Leg Work             | 07/16/2014 14:00 | 07/16/2014 23:00 | 0               | 29 - 29 | 197       | 197     |
| DSS 14 | Quad Leg Work             | 07/17/2014 14:00 | 07/17/2014 23:00 | 0               | 29 - 29 | 198       | 198     |
| DSS 14 | Quad Leg Work             | 07/18/2014 14:00 | 07/18/2014 23:00 | 0               | 29 - 29 | 199       | 199     |
| SPC 40 | NMC ALB A/T               | 07/24/2014 21:00 | 07/25/2014 03:00 | 0               | 30 - 30 | 205       | 206     |
| SPC 60 | Complex Power Cutover     | 08/07/2014 05:00 | 08/07/2014 17:00 | 0               | 32 - 32 | 219       | 219     |



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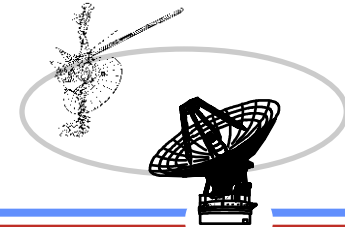
## DSN Downtime 2014

| 2014   |                                |                  |                  |                 |         |           |         |
|--------|--------------------------------|------------------|------------------|-----------------|---------|-----------|---------|
| Site   | Details                        | Start            | End              | Duration (Days) | Weeks   | Start DOY | End DOY |
| DSS 54 | AZ Track Level C/O             | 08/07/2014 21:00 | 08/08/2014 07:00 | 0               | 32 - 32 | 219       | 220     |
| DSS 55 | AZ Track Level C/O             | 08/11/2014 21:00 | 08/12/2014 07:00 | 0               | 33 - 33 | 223       | 224     |
| DSS 65 | AZ Track Level C/O             | 08/18/2014 21:00 | 08/19/2014 07:00 | 0               | 34 - 34 | 230       | 231     |
| SPC 60 | Complex Power Cutover          | 08/20/2014 05:00 | 08/20/2014 17:00 | 0               | 34 - 34 | 232       | 232     |
| SPC 10 | NMC ALB SOAK                   | 08/29/2014 00:00 | 08/29/2014 06:00 | 0               | 35 - 35 | 241       | 241     |
| SPC 40 | NMC ALB SOAK                   | 10/09/2014 00:00 | 10/09/2014 06:00 | 0               | 41 - 41 | 282       | 282     |
| SPC 10 | Complex Electrical Maintenance | 10/09/2014 14:00 | 10/10/2014 02:00 | 0               | 41 - 41 | 282       | 283     |
| DSS 55 | TXR RF Characterization        | 10/13/2014 07:00 | 10/13/2014 19:00 | 0               | 42 - 42 | 286       | 286     |
| DSS 65 | TXR RF Characterization        | 10/14/2014 07:00 | 10/14/2014 19:00 | 0               | 42 - 42 | 287       | 287     |
| SPC 60 | NMC ALB SOAK                   | 10/16/2014 00:00 | 10/16/2014 06:00 | 0               | 42 - 42 | 289       | 289     |
| DSS 63 | TXR RF Characterization        | 10/16/2014 07:00 | 10/16/2014 19:00 | 0               | 42 - 42 | 289       | 289     |
| DSS 54 | TXR RF Characterization        | 10/17/2014 07:00 | 10/17/2014 19:00 | 0               | 42 - 42 | 290       | 290     |
| DSS 55 | TXR RF Characterization        | 10/20/2014 07:00 | 10/20/2014 19:00 | 0               | 43 - 43 | 293       | 293     |
| DSS 63 | Grouting                       | 10/20/2014 08:00 | 11/28/2014 16:00 | 39              | 43 - 48 | 293       | 332     |
| DSS 63 | S-Band Maser Replacement - NIB | 10/20/2014 08:00 | 11/28/2014 16:00 | 39              | 43 - 48 | 293       | 332     |
| DSS 65 | TXR RF Characterization        | 10/21/2014 07:00 | 10/21/2014 19:00 | 0               | 43 - 43 | 294       | 294     |
| DSS 63 | TXR RF Characterization        | 10/23/2014 07:00 | 10/23/2014 19:00 | 0               | 43 - 43 | 296       | 296     |
| DSS 54 | TXR RF Characterization        | 10/24/2014 07:00 | 10/24/2014 19:00 | 0               | 43 - 43 | 297       | 297     |
| DSS 26 | 80kW Prep - Proposed           | 10/27/2014 15:00 | 06/14/2015 00:00 | 229             | 44 - 24 | 300       | 165     |
| DSS 26 | AZ Track Replacement - NIB     | 10/27/2014 15:00 | 06/14/2015 00:00 | 229             | 44 - 24 | 300       | 165     |
| DSS 14 | 70M Tune-up/Calibration        | 12/01/2014 15:00 | 12/13/2014 00:00 | 11              | 49 - 50 | 335       | 347     |
| DSS 14 | Quad Leg Work                  | 12/09/2014 14:00 | 12/09/2014 23:00 | 0               | 50 - 50 | 343       | 343     |
| DSS 14 | Quad Leg Work                  | 12/11/2014 14:00 | 12/11/2014 23:00 | 0               | 50 - 50 | 345       | 345     |





# Interplanetary Network Directorate (IND) Deep Space Network (DSN) Resource Allocation Planning Service



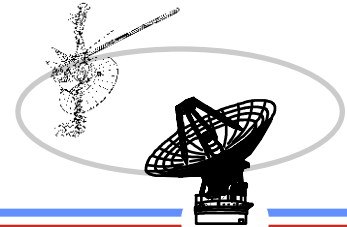
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## DSN Downtime 2015

| 2015   |                                       |                  |                  |                 |         |           |         |
|--------|---------------------------------------|------------------|------------------|-----------------|---------|-----------|---------|
| Site   | Details                               | Start            | End              | Duration (Days) | Weeks   | Start DOY | End DOY |
| DSS 25 | Ka U/L                                | 01/20/2015 15:00 | 01/20/2015 23:00 | 0               | 04 - 04 | 20        | 20      |
| DSS 25 | Ka U/L                                | 01/21/2015 15:00 | 01/21/2015 23:00 | 0               | 04 - 04 | 21        | 21      |
| DSS 25 | Ka U/L                                | 01/22/2015 15:00 | 01/22/2015 23:00 | 0               | 04 - 04 | 22        | 22      |
| DSS 25 | Ka U/L                                | 01/23/2015 15:00 | 01/23/2015 23:00 | 0               | 04 - 04 | 23        | 23      |
| DSS 34 | Depot Level Maintenance               | 01/26/2015 21:00 | 02/20/2015 05:00 | 24              | 05 - 08 | 26        | 51      |
| SPC 40 | Complex Powerhouse Upgrade - Proposed | 03/03/2015 21:00 | 03/04/2015 03:00 | 0               | 10 - 10 | 62        | 63      |
| SPC 40 | Complex Powerhouse Upgrade - Proposed | 03/09/2015 21:00 | 03/10/2015 03:00 | 0               | 11 - 11 | 68        | 69      |
| DSS 43 | 70m Tune-up/Calibration - Proposed    | 03/09/2015 21:00 | 03/21/2015 06:00 | 11              | 11 - 12 | 68        | 80      |
| DSS 14 | Antenna Inspection - Proposed         | 03/23/2015 15:00 | 03/24/2015 03:00 | 0               | 13 - 13 | 82        | 83      |
| DSS 26 | Antenna Inspection - Proposed         | 03/24/2015 15:00 | 03/25/2015 03:00 | 0               | 13 - 13 | 83        | 84      |
| DSS 24 | Antenna Inspection - Proposed         | 03/25/2015 15:00 | 03/26/2015 03:00 | 0               | 13 - 13 | 84        | 85      |
| DSS 25 | Antenna Inspection - Proposed         | 03/25/2015 15:00 | 03/26/2015 03:00 | 0               | 13 - 13 | 84        | 85      |
| DSS 15 | Antenna Inspection - Proposed         | 03/26/2015 15:00 | 03/27/2015 03:00 | 0               | 13 - 13 | 85        | 86      |
| DSS 14 | Antenna Inspection - Proposed         | 03/27/2015 15:00 | 03/28/2015 03:00 | 0               | 13 - 13 | 86        | 87      |
| DSS 26 | Antenna Inspection - Proposed         | 03/31/2015 15:00 | 04/01/2015 03:00 | 0               | 14 - 14 | 90        | 91      |
| DSS 25 | Antenna Inspection - Proposed         | 04/01/2015 15:00 | 04/02/2015 03:00 | 0               | 14 - 14 | 91        | 92      |
| DSS 24 | Antenna Inspection - Proposed         | 04/01/2015 15:00 | 04/02/2015 03:00 | 0               | 14 - 14 | 91        | 92      |
| DSS 15 | Antenna Inspection - Proposed         | 04/02/2015 15:00 | 04/03/2015 03:00 | 0               | 14 - 14 | 92        | 93      |
| DSS 63 | 70m Tune-up/Calibration - NIB         | 05/04/2015 06:00 | 05/17/2015 17:00 | 13              | 19 - 20 | 124       | 137     |
| DSS 63 | Grouting - Proposed                   | 05/04/2015 06:00 | 05/17/2015 17:00 | 13              | 19 - 20 | 124       | 137     |
| DSS 63 | Grouting - Proposed                   | 08/03/2015 05:00 | 08/16/2015 17:00 | 14              | 32 - 33 | 215       | 228     |
| SPC 10 | DSOC DCD                              | 08/09/2015 22:00 | 08/10/2016 04:00 | 366             | 32 - 32 | 221       | 223     |
| SPC 40 | Complex Powerhouse Upgrade - Proposed | 08/12/2015 21:00 | 08/13/2015 09:00 | 0               | 33 - 33 | 224       | 225     |



Interplanetary Network Directorate (IND)  
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 Resource Allocation Planning Service



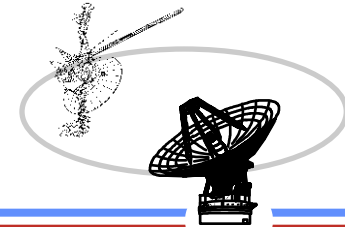
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## DSN Downtime 2015

| 2015   |                                 |                  |                  |                 |         |           |         |
|--------|---------------------------------|------------------|------------------|-----------------|---------|-----------|---------|
| Site   | Details                         | Start            | End              | Duration (Days) | Weeks   | Start DOY | End DOY |
| DSS 55 | AZ Track Replacement - Proposed | 08/17/2015 06:00 | 10/31/2015 00:00 | 75              | 34 - 44 | 229       | 304     |
| SPC 60 | DCD                             | 08/22/2015 22:00 | 08/23/2016 04:00 | 366             | 34 - 34 | 234       | 236     |
| SPC 40 | Complex Powerhouse Upgrade      | 08/26/2015 21:00 | 08/27/2015 03:00 | 0               | 35 - 35 | 238       | 239     |
| SPC 40 | DCD                             | 09/26/2015 22:00 | 09/27/2015 22:00 | 1               | 39 - 39 | 269       | 270     |



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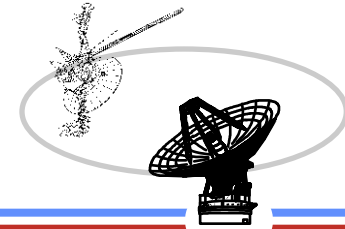
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## DSN Downtime 2016

| 2016   |                               |                  |                  |                 |         |           |         |
|--------|-------------------------------|------------------|------------------|-----------------|---------|-----------|---------|
| Site   | Details                       | Start            | End              | Duration (Days) | Weeks   | Start DOY | End DOY |
| DSS 43 | Antenna Inspection - Proposed | 01/04/2016 22:00 | 01/05/2016 14:00 | 1               | 01 - 01 | 4         | 5       |
| DSS 34 | Antenna Inspection - Proposed | 01/05/2016 22:00 | 01/06/2016 14:00 | 1               | 01 - 01 | 5         | 6       |
| DSS 45 | Antenna Inspection - Proposed | 01/06/2016 22:00 | 01/07/2016 14:00 | 1               | 01 - 01 | 6         | 7       |
| DSS 35 | Antenna Inspection - Proposed | 01/07/2016 22:00 | 01/08/2016 14:00 | 1               | 01 - 01 | 7         | 8       |
| DSS 43 | Antenna Inspection - Proposed | 01/11/2016 22:00 | 01/12/2016 06:00 | 0               | 02 - 02 | 11        | 12      |
| DSS 34 | Antenna Inspection - Proposed | 01/12/2016 22:00 | 01/13/2016 06:00 | 0               | 02 - 02 | 12        | 13      |
| DSS 63 | Grouting - Proposed           | 02/01/2016 06:00 | 03/04/2016 17:00 | 32              | 05 - 09 | 32        | 64      |
| DSS 14 | APCA - Proposed               | 03/07/2016 15:00 | 05/27/2016 00:00 | 80              | 10 - 21 | 67        | 148     |
| SPC 40 | SWUPS Installation - Proposed | 04/05/2016 21:00 | 04/06/2016 09:00 | 0               | 14 - 14 | 96        | 97      |
| SPC 40 | SWUPS Installation - Proposed | 04/20/2016 21:00 | 04/21/2016 09:00 | 0               | 16 - 16 | 111       | 112     |
| SPC 40 | SWUPS Installation - Proposed | 05/04/2016 21:00 | 05/05/2016 09:00 | 0               | 18 - 18 | 125       | 126     |
| DSS 63 | Grouting - Proposed           | 07/25/2016 06:00 | 08/26/2016 17:00 | 32              | 30 - 34 | 207       | 239     |



Interplanetary Network Directorate (IND)  
 Deep Space Network (DSN)  
 Resource Allocation Planning Service



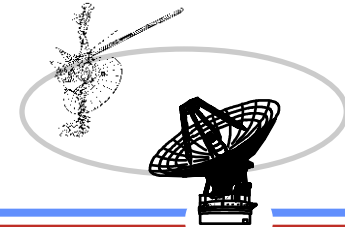
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## DSN Downtime 2017

| 2017   |                               |                  |                  |                 |         |           |         |
|--------|-------------------------------|------------------|------------------|-----------------|---------|-----------|---------|
| Site   | Details                       | Start            | End              | Duration (Days) | Weeks   | Start DOY | End DOY |
| DSS 63 | Grouting                      | 02/20/2017 06:00 | 04/28/2017 17:00 | 67              | 08 - 17 | 51        | 118     |
| DSS 55 | Antenna Inspection - Proposed | 04/17/2017 07:00 | 04/17/2017 23:00 | 1               | 16 - 16 | 107       | 107     |
| DSS 65 | Antenna Inspection - Proposed | 04/18/2017 07:00 | 04/18/2017 23:00 | 1               | 16 - 16 | 108       | 108     |
| DSS 63 | Antenna Inspection - Proposed | 04/19/2017 07:00 | 04/19/2017 23:00 | 1               | 16 - 16 | 109       | 109     |
| DSS 54 | Antenna Inspection - Proposed | 04/20/2017 07:00 | 04/20/2017 23:00 | 1               | 16 - 16 | 110       | 110     |
| DSS 55 | Antenna Inspection - Proposed | 04/24/2017 07:00 | 04/24/2017 15:00 | 0               | 17 - 17 | 114       | 114     |
| DSS 65 | Antenna Inspection - Proposed | 04/25/2017 07:00 | 04/25/2017 15:00 | 0               | 17 - 17 | 115       | 115     |
| DSS 54 | Antenna Inspection - Proposed | 04/28/2017 07:00 | 04/28/2017 15:00 | 0               | 17 - 17 | 118       | 118     |
| DSS 43 | APCA - Proposed               | 10/30/2017 21:00 | 01/19/2018 06:00 | 80              | 44 - 03 | 303       | 19      |



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## DSN Downtime 2018

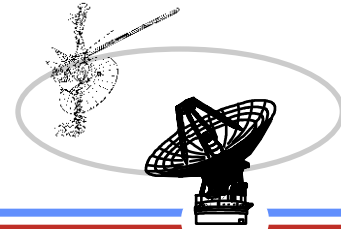
| 2018   |                            |                  |                  |                 |         |           |         |
|--------|----------------------------|------------------|------------------|-----------------|---------|-----------|---------|
| Site   | Details                    | Start            | End              | Duration (Days) | Weeks   | Start DOY | End DOY |
| DSS 25 | XX/Ka Installation         | 01/04/2018 15:00 | 04/07/2018 00:00 | 92              | 01 - 14 | 4         | 97      |
| DSS 25 | AZ Track Replacement - NIB | 01/29/2018 15:00 | 04/07/2018 00:00 | 67              | 05 - 14 | 29        | 97      |
| DSS 14 | Antenna Inspection         | 04/08/2018 15:00 | 04/09/2018 06:00 | 1               | 14 - 15 | 98        | 99      |
| DSS 26 | Antenna Inspection         | 04/09/2018 15:00 | 04/10/2018 06:00 | 1               | 15 - 15 | 99        | 100     |
| DSS 25 | Antenna Inspection         | 04/10/2018 15:00 | 04/11/2018 06:00 | 1               | 15 - 15 | 100       | 101     |
| DSS 15 | Antenna Inspection         | 04/11/2018 15:00 | 04/12/2018 06:00 | 1               | 15 - 15 | 101       | 102     |
| DSS 14 | Antenna Inspection         | 04/15/2018 15:00 | 04/16/2018 00:00 | 0               | 15 - 16 | 105       | 106     |
| DSS 26 | Antenna Inspection         | 04/16/2018 15:00 | 04/17/2018 00:00 | 0               | 16 - 16 | 106       | 107     |
| DSS 24 | Antenna Inspection         | 04/17/2018 15:00 | 04/18/2018 06:00 | 1               | 16 - 16 | 107       | 108     |
| DSS 24 | Ka2 Tune-up - NIB          | 04/30/2018 15:00 | 05/13/2018 00:00 | 12              | 18 - 19 | 120       | 133     |
| DSS 24 | XX/Ka Installation         | 04/30/2018 15:00 | 07/07/2018 00:00 | 67              | 18 - 27 | 120       | 188     |
| DSS 63 | APCA                       | 04/30/2018 21:00 | 07/20/2018 06:00 | 80              | 18 - 29 | 120       | 201     |
| DSS 34 | Ka2 Tune-up - Proposed     | 05/28/2018 21:00 | 06/04/2018 06:00 | 6               | 22 - 23 | 148       | 155     |
| DSS 54 | KA2 Tune-up                | 09/03/2018 07:00 | 09/14/2018 17:00 | 11              | 36 - 37 | 246       | 257     |



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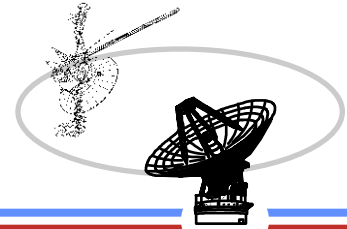


## DSN Downtime 2019

| 2019   |                |                  |                  |                 |         |           |         |
|--------|----------------|------------------|------------------|-----------------|---------|-----------|---------|
| Site   | Details        | Start            | End              | Duration (Days) | Weeks   | Start DOY | End DOY |
| DSS 54 | Pedestal Rehab | 02/05/2019 06:00 | 10/26/2019 17:00 | 263             | 06 - 43 | 36        | 299     |



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Resource Allocation Planning Service

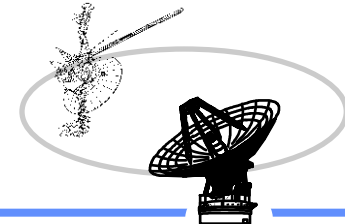


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## Future assets new/upgrades

- ❑ DSS-35 Installation and Operational 2013 – 2014
  - ❑ Modkit Installation October 1, 2013 – March 21, 2014 weeks 47 – 12
  - ❑ Acceptance Testing March 5, 2014 – May 6, 2013, weeks 10 – 19
  - ❑ System Integration Testing March 14, 2014 – June 30, 2014 weeks 13 – 27
  - ❑ Operations Systems Performance Testing June 30, 2014 – August 28, 2014, weeks 27 – 35
  - ❑ Operational September 26, 2014
  
- ❑ DSS-26 80kW Installation 2014 – 2015
  - ❑ 80kW arrive at DLF October, 2014, week 40
  - ❑ DDR September, 2015, week 38
  
- ❑ DSS-36 Installation and Operational 2016
  - ❑ Modkit inventory/install/checkout November 23, 2015 – March 21, 2016 Weeks 48 – 12
  - ❑ Acceptance testing March 22, 2016 – May 13, 2016 weeks 12 – 19
  - ❑ System Integration Testing March 29, 2014 June 30, 2016 Weeks 13 – 26
  - ❑ Operations System Performance Testing June 30, 2016 – August 29, 2016 weeks 26 – 35
  - ❑ Operational date 9/23/2-16



## Antenna Downtime Status and Forecast

DSN Resource Implementation Planning Matrix by Complex

| Complex | Station | Subnet | S-Band |          | X-Band   |          | Ka-Band  |     | Ka Phase 2 | X-Band ACQ AID | 80KW     |
|---------|---------|--------|--------|----------|----------|----------|----------|-----|------------|----------------|----------|
|         |         |        | Down   | Up       | Down     | Up       | Down     | Up  |            |                |          |
| 10      | DSS-24  | 34B1   | ✓      | ✓        | ✓        | ✓        | N/A      | N/A | ✓          | ✓              | N/A      |
| 10      | DSS-25  | 34B2   | N/A    | N/A      | ✓        | ✓        | ✓        | ✓   | N/A        | N/A            | N/A      |
| 10      | DSS-26  | 34B2   | N/A    | N/A      | ✓        | ✓        | ✓        | N/A | N/A        | N/A            | 10/01/15 |
| 10      | DSS-15  | 34HEF  | ✓      | 12/21/13 | ✓        | ✓        | N/A      | N/A | N/A        | N/A            | N/A      |
| 10      | DSS-14  | 70M    | ✓      | ✓        | ✓        | ✓        | N/A      | N/A | N/A        | N/A            | N/A      |
| 40      | DSS-33* | 34B2   | N/A    | N/A      | 10/01/19 | 10/01/19 | 10/01/19 | N/A | N/A        | N/A            | N/A      |
| 40      | DSS-34  | 34B1   | ✓      | ✓        | ✓        | ✓        | ✓        | N/A | ✓          | ✓              | N/A      |
| 40      | DSS-35* | 34B2   | N/A    | N/A      | 09/29/14 | 09/29/14 | 09/29/14 | N/A | N/A        | N/A            | N/A      |
| 40      | DSS-36* | 34B2   | N/A    | N/A      | 09/26/16 | 09/26/16 | 09/26/16 | N/A | N/A        | N/A            | N/A      |
| 40      | DSS-45  | 34HEF  | ✓      | ✓        | ✓        | ✓        | N/A      | N/A | N/A        | N/A            | N/A      |
| 40      | DSS-43  | 70M    | ✓      | ✓        | ✓        | ✓        | N/A      | N/A | N/A        | N/A            | N/A      |
| 60      | DSS-54  | 34B1   | ✓      | ✓        | ✓        | ✓        | ✓        | N/A | ✓          | ✓              | N/A      |
| 60      | DSS-55  | 34B2   | N/A    | N/A      | ✓        | ✓        | ✓        | N/A | N/A        | N/A            | N/A      |
| 60      | DSS-56  | 34B2   | N/A    | N/A      | 09/28/20 | 09/28/20 | 09/28/20 | N/A | N/A        | N/A            | N/A      |
| 60      | DSS-65  | 34HEF  | ✓      | ✓        | ✓        | ✓        | N/A      | N/A | N/A        | N/A            | N/A      |
| 60      | DSS-63  | 70M    | ✓      | ✓        | ✓        | ✓        | N/A      | N/A | N/A        | N/A            | N/A      |

N/A = Not Applicable or Capability Not Planned

xx/xx/xx = Capability Date Recently Changed

As of: 4/9/2014

✓✓✓ = Capability Recently Exists

✓ = Capability Exists

\* = To Be Commissioned