Interplanetary Network Directorate (IND)

Near Earth Networks Conference
Deep Space Network at Wallops Flight Facility

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June 26, 2003

Interplanetary Network Directorate (IND)
Deep Space Missions Systems (DSMS)

Resource Allocation Planning & Scheduling Office (RAPSO)

DSN User / Mission Planning Set
2003 - 2013

ONGOING/PLANNED PROJECTS				
Project	Acronym	Launch or Start	EOPM	EOEM
DSN Antenna Calibration	DSN	--	--	--
DSS Maintenance	DSS	--	--	--
European VLBI Network	EVN	--	--	--
Ground Based Radio Astronomy	GBRA	--	--	--
Reference Frame Calibration	DSN	--	--	--
Space Geodesy	SGP	--	--	--
Voyager 2	VGR2	08/20/77	10/15/89	09/30/07
Voyager 1	VGR1	09/05/77	12/31/80	09/30/07
Goldstone Solar System Radar	GSSR	04/01/85	--	--
Galileo	GLLO	10/18/89	12/07/97	09/21/03
Ulysses	ULYS	10/06/90	09/11/95	09/30/04
ISTP - Geotail	GTL	07/24/92	07/24/95	09/30/07
ISTP - Wind	WIND	11/01/94	11/01/97	09/30/07
ISTP - SOHO	SOHO	12/02/95	05/02/98	09/30/07
ISTP - Polar	POLR	02/22/96	08/23/97	09/30/07
Gravity Probe B	GPB	06/01/96	01/01/05	TBD
Mars Global Surveyor	MGS	11/07/96	02/01/01	01/03/08
Advance Composition Explorer	ACE	08/25/97	02/01/01	09/30/07
Cassini	CAS	10/15/97	06/30/08	06/30/10
Nozomi (Planet-B)	NOZO	07/03/98	12/31/05	TBD
Stardust	SDU	02/07/99	01/14/06	- - -
Chandra X-ray Observatory	CHDR	07/23/99	07/24/09	07/24/14
Imager for Magnetopause-to-Aurora Global Exploration	IMAG	03/25/00	05/30/02	09/30/07
Cluster 2 - S/C #2 (Samba)	CLU2	07/16/00	02/15/03	09/30/07
Cluster 2 - S/C #3 (Rumba)	CLU3	07/16/00	02/15/03	09/30/07
Cluster 2 - S/C #1 (Salsa)	CLU1	08/09/00	02/15/03	09/30/07
Cluster 2 - S/C #4 (Tango)	CLU4	08/09/00	02/15/03	09/30/07
2001 Mars Odyssey	M01O	04/07/01	08/24/04	05/29/08
Wilkinson Microwave Anisotropy Probe	WMAP	06/30/01	10/01/03	10/01/06
Genesis	GNS	08/08/01	09/08/04	- - -
Mission Enhancement by Ground-based Astronomy	MEGA	02/01/02	12/31/03	- - -
Mars Exploration Rover - B	MER1	06/25/03	04/27/04	06/15/04
Space Infrared Telescope Facility	STF	08/27/03	07/24/08	- - -
Rosetta	ROSE	02/26/04	12/31/15	- - -
Messenger	MSGR	03/10/04	04/06/10	- - -
Lunar - A	LUNA	08/14/04	04/11/05	- - -
Space Technology 5	ST5	11/19/04	02/27/05	TBD
Deep Impact	DIF	12/31/04	08/05/05	- - -
RadioAstron	RADA	03/15/05	06/15/10	TBD
Mars Reconnaissance Orbiter	MRO	08/10/05	12/31/10	12/31/15
Stereo Ahead	STA	11/15/05	02/18/08	- - -
Stereo Behind	STB	11/15/05	02/18/08	- - -

ADVANCED PLANNING PROJECTS				
Project	Acronym	Launch or Start	EOPM	EOEM
New Horizons	NHPC	01/10/06	03/18/17	TBD
Dawn	DAWN	05/27/06	07/26/15	TBD
Mars Competed Scout 2007	M07S	08/19/07	08/23/08	08/22/10
Kepler	KPLR	10/01/07	07/31/11	TBD
Mars Telesat 2009	M09T	10/04/09	08/29/20	TBD
Mars Science Laboratory 2009	M09L	10/25/09	03/04/12	TBD
James Webb Space Telescope	JWST	08/01/11	07/31/16	TBD
Advanced Radio Interferometry between Space and Earth (ARISE)	ARSE	06/15/10	06/15/15	- - -
VLBI Space Observatory Programme (VSOP-2)	VSP2	06/15/10	06/15/15	- - -
Space Interferometry Mission	SIM	12/31/09	06/30/20	TBD
Mars CNES MSR Lander 2011	M11L	10/30/11	09/10/14	TBD
Mars CNES MSR Orbiter 2013	M13O	11/28/13	08/21/16	TBD

Resource Allocation Planning & Scheduling Office (RAPSO)

DSN 26M LEO User / Mission Planning Set
2003 - 2012

ONGOING/PLANNED PROJECTS					
Project	Acronym	Support	Launch or Start	Commit End of Support	Potential End of Support
IMP-8	IMP8	ROUTINE-V	10/26/73	12/31/08	12/31/08
TDRS-1	TDR1	E	04/04/83	09/30/01	12/31/08
LANDSAT 5	LAN5	E	03/01/84	01/01/04	
EARTH RADIATION BUDGET SAT	ERBS	E	10/05/84	09/30/98	09/30/03
TDRS-3	TDR3	E	09/29/88	09/30/01	12/31/08
TDRS-4	TDR4	E	03/13/89	09/30/01	12/31/08
HUBBLE SPACE TELESCOPE	HST	E	04/24/90	04/24/10	
TDRS-5	TDR5	E	08/02/91	08/02/01	12/31/08
TDRS-6	TDR6	E	01/13/93	01/13/03	12/31/08
GOES-8	GO08	E	04/13/94	09/30/03	
GOES-9	GO09	E	05/22/95	09/30/04	
TDRS-7	TDR7	E	07/13/95	12/31/08	12/31/15
RADARSAT-1	RSAT	B	11/04/95	09/30/03	04/01/04
ROSSI X-RAY TIMING EXPLORER	XTE	E	12/30/95	09/30/04	
TOMS-EP	TEP	E	07/02/96	03/31/04	
GOES-10	GO10	E	04/25/97	05/22/03	09/30/05
TRMM	TRMM	E	11/27/97	03/31/04	12/31/04
GOES-11	GO11	E	05/03/00	05/03/05	05/03/07
TDRS-8	TDR8	E	06/30/00	09/30/10	09/30/14
GOES-12	GO12	E	07/24/01	07/24/06	07/23/08
TDRS-9	TDR9	E	03/08/02	03/08/13	03/08/17
TDRS-10	TD10	E	12/04/02	12/03/13	12/03/17
ProSEDS	PSDS	LEOP	TBD		
NOAA-N	NO18	LEOP	06/01/04	06/11/04	
GOES-N	GO13	LEOP	07/01/04	07/31/09	
GOES-O	GO14	LEOP	04/01/07	03/31/12	
NOAA-N'	NO19	LEOP	03/01/08	03/11/08	
GOES-P	GO15	LEOP	10/01/08	10/01/13	

Interplanetary Network Directorate (IND)
Deep Space Missions Systems (DSMS)

Resource Allocation Planning & Scheduling Office (RAPSO)

DSN User / Future Mission Planning Set (DRAFT)

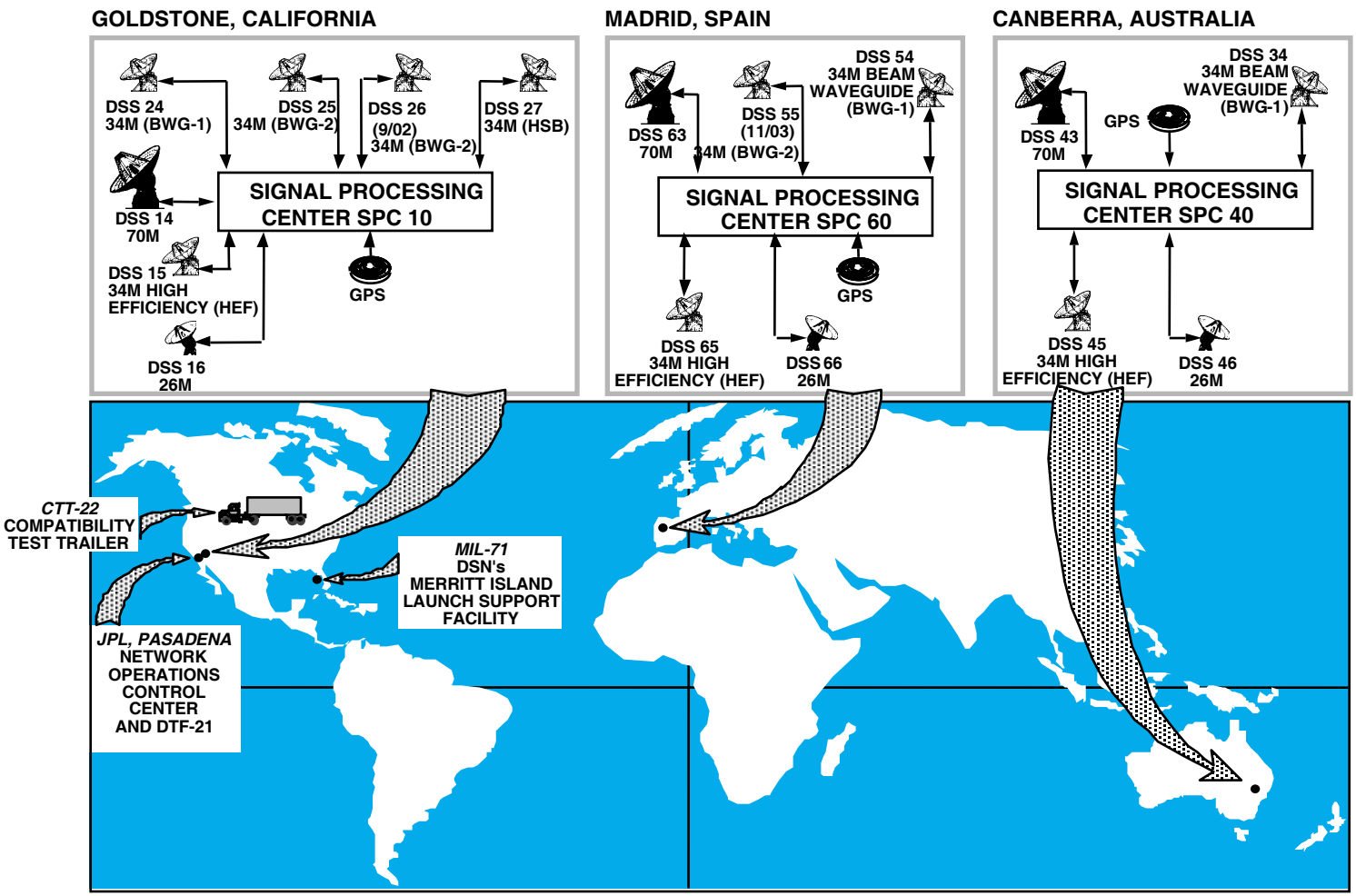
2006 - 2030

FUTURE NASA PROJECTS				
Project	Code S Theme	Launch or Start	EOPM	EOEM
Laser Interferometer Space Antenna (LISA)	SEU	06/01/11	07/01/14	07/01/21
Inflation Probe	SEU	09/01/14	09/01/19	--
Constellation-X	SEU	01/01/11	01/01/16	01/01/21
Dark Energy Probe	SEU	09/01/11	09/01/14	09/01/16
Black Hole Finder Probe	SEU	06/01/11	07/01/14	--
Big Bang Observer	SEU	07/01/21	07/01/26	07/01/31
Black Hole Imager	SEU	01/01/21	01/01/26	01/01/31
Discovery Mission 11	ASO	09/01/08	09/01/13	--
Terrestrial Planet Finder (TPF)	ASO	04/01/14	03/31/19	03/31/24
Single Aperture Far-Infrared Observatory	ASO	06/01/17	05/31/22	05/31/27
Discovery Mission 13	ASO	04/01/12	04/01/17	--
Space Ultraviolet/Optical Telescope	ASO	01/01/21	01/01/26	01/31/31
Life Finder	ASO	04/01/24	04/01/29	04/01/34
Planet Imager	ASO	04/01/29	04/01/34	04/01/39
Discovery Mission 15	ASO	01/01/16	01/01/21	--
South Pole Aitken Basin Sample Return *	ESS	03/08/11	08/08/11	--
Mars Scouts 2011	ESS	10/30/11	09/10/14	--
Discovery Mission 12	ESS	04/01/10	03/31/15	--
Venus In-situ Explorer (VISE) *	ESS	04/01/15	03/31/20	--
Comet Surface Sample Return (CSSR) *	ESS	07/15/18	09/20/23	--
Jupiter Icy Moons Tour/Orbiter	ESS	04/01/11	03/31/21	--
Discovery Mission 14	ESS	09/01/14	09/01/19	--
Mars Scouts 2014	ESS	09/01/14	10/01/16	--
Mars Long Lived Lander Network	ESS	10/01/14	01/01/16	01/01/17
Jupiter Polar Orbiter with Probes	ESS	01/01/16	01/01/21	--
Discovery Mission 16	ESS	09/01/18	10/01/23	--
Mars Scouts 2018	ESS	09/01/18	10/01/22	--
Mars Upper Atmosphere Orbiter (Mars Aeronomy)	ESS	09/25/18	10/01/21	--
Mars Sample Return	ESS	09/01/20	10/01/24	--
Europa Lander	ESS	04/01/20	04/01/26	--
Titan Explorer	ESS	02/01/19	02/01/29	--
Heliospheric Imager and Galactic Observer	SEC	01/01/14	01/01/19	--
Inner Heliosphere Sentinals	SEC	01/01/09	01/01/14	--
Interstellar Probe	SEC	09/01/20	01/01/37	01/01/45
Solar Polar Imager	SEC	02/15/15	08/15/22	08/15/25
IO Electrodynamics	SEC	01/01/17	01/01/23	--
Stellar Imager	SEC	01/01/19	01/01/24	01/01/29
Solar Connections Observatory For Planetary Environs (SCOPE)	SEC	01/01/16	01/01/21	01/01/26
Particle Acceleration Solar Orbiter (PASO)	SEC	01/01/14	01/01/22	--
Neptune Orbiter	SEC	01/01/23	01/01/37	--
L1-Diamond	SEC	04/01/18	03/31/21	03/31/24
Solar Imaging Radio Array (SIRA)	SEC	06/01/18	06/01/23	--
Sun-Heliosphere-Earth Constellation	SEC	01/01/26	01/01/36	01/01/41
Venus Aeronomy	SEC	06/01/19	06/01/21	--
Space Technology-9 (ST-9)	NMP	01/01/09	01/01/10	--

* New Frontier Missions

FUTURE INTERNATIONAL MISSION SUPPORT (DRAFT)				
Project	Agency	Launch or Start	EOPM	EOEM
Bepi-Colombo	ESA	06/24/09	06/24/14	--
Herschel	ESA	01/01/07	12/01/14	--
Planck	ESA	01/01/07	10/31/09	--
Venus Express	ESA	06/01/06	06/01/09	--
Solar Obiter	ESA	01/01/10	01/01/13	--
GAIA	ESA	01/01/12	01/01/17	01/01/22

DSN CONFIGURATION



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Antenna Dia (m)	Type	Location	DSS No.	Date On-Line	S-Band Uplink	S-Band Downlink	GAIN / G/T (Note 2) @ 45 deg (dB)	X-Band Uplink	X-Band Downlink	GAIN / G/T (Note 2) @ 45 deg (dB)	K-Band Uplink	K-Band Downlink	GAIN / G/T (Note 2) @ 45 deg (dB)	Rcvr Type
26	E.O.[1,4]	Goldstone, CA USA	16	Exist.	2025 - 2120[9]	2200 - 2300	52.5 / 31.7	-	8400 - 8500[19]	-	-	-	-	MFR
26	E.O.[1,4]	Canberra, Australia	46	Exist.	2025 - 2120[9]	2200 - 2300	52.5 / 31.9	-	8400 - 8500[19]	-	-	-	-	MFR
26	E.O.[1,4]	Madrid, Spain	66	Exist.	2025 - 2120[9]	2200 - 2300	52.5 / 31.8	-	-	-	-	-	-	MFR
34	BWG-1[1,3]	Goldstone, CA USA	24	Exist.	2025 - 2120[11]	2200 - 2300	56.7 / 41.2	7145 - 7190[9] 7190 - 7235[14,20]	8400 - 8500	68.1 / 54.5	-	10/1/05[5,7]	79.0/64.4[18]	Blk. V
34	BWG-1[1,3]	Canberra, Australia	34	Exist.	2025 - 2120[11]	2200 - 2300	56.7 / 40.8	7145 - 7190[14, 17] 7190 - 7235[14, 20]	8400 - 8500	68.3 / 53.8	-	1/1/05[5,7]	79.0/64.4[18]	Blk. V
34	BWG-1[1,3]	Madrid, Spain	54	Exist.	2025 - 2120[11]	2200 - 2300	56.7 / 41.0	7145 - 7190[14, 17] 7190 - 7235[14, 20]	8400 - 8500	68.3 / 55.0	-	8/1/06[5,7]	79.0/64.4[18]	Blk. V
34	BWG-2[1,3]	Goldstone, CA USA	25	Exist.	-	-	-	7145 - 7190[14]	8400 - 8500	68.4 / 53.6	34200 - 34700[15]	31800 - 32300	79.0 / 64.2	Blk. V
34	BWG-2[1,3]	Madrid, Spain	55	11/1/03[5]	-	-	-	11/1/03[5,6,914,20]	11/1/03[5]	68.4/55.8[18]	-	11/1/03[5]	79.0/64.4[18]	Blk. V
34	BWG-3[1,3]	Goldstone, CA USA	26	Exist.	-	-	-	7145 - 7190[9] 7190 - 7235[14,20]	8400 - 8500	68.3 / 54.1	-	4/2/03[5,7]	79.0/64.4[18]	Blk. V
34	HEF[1,3]	Goldstone, CA USA	15	Exist.	-	2200 - 2300	56.0 / 40.2	7145 - 7190[9]	8400 - 8500[16]	68.3 / 54.0	-	TBD[5,7]	-	Blk. V
34	HEF[1,3]	Canberra, Australia	45	Exist.	-	2200 - 2300	56.0 / 40.2	7145 - 7190[9]	8400 - 8500[16]	68.3 / 54.0	-	TBD[5,7]	-	Blk. V
34	HEF[1,3]	Madrid, Spain	65	Exist.	-	2200 - 2300	56.0 / 39.6	7145 - 7190[9]	8400 - 8500[16]	68.3 / 54.0	-	TBD[5,7]	-	Blk. V
34	HSB[1]	Goldstone, CA USA	27	Exist.	2025 - 2120[10]	2200 - 2300	55.1 / 34.5	-	-	-	-	-	-	MFR
70	D.S.[3]	Goldstone, CA USA	14	Exist.	2110 - 2120[11,12] 2090 - 2094[13]	2270 - 2300	63.5 / 51.0	7145 - 7190[9]	8400 - 8500	74.5 / 62.9	-	TBD[5,7]	-	Blk. V
70	D.S.[3]	Canberra, Australia	43	Exist.	2110 - 2120[11,12] 2090 - 2094[13]	2270 - 2300	63.5 / 50.9	7145 - 7190[9]	8400 - 8500	74.6 / 62.8	-	TBD[5,7]	-	Blk. V
70	D.S.[3]	Madrid, Spain	63	Exist.	2110 - 2120[11,12] 2090 - 2094[13]	2270 - 2300	63.5 / 50.9	7145 - 7190[9]	8400 - 8500	74.6 / 62.7	-	TBD[5,7]	-	Blk. V

EBL 6/20/03

NOTES:

1. These stations can be used for Earth Orbiting (Category A) missions.
2. Performance values based on 45 deg. elevation, vacuum conditions and Diplexed (if possible) single band mode.
3. These stations are used for Deep Space (Category B) missions.
4. These 26M stations may be closed in the future if a viable commercial substitute is available.
5. Planned Operational Date.
6. 7145-7235 MHz.
7. 31800-32300 MHz.
8. 34200-34700 MHZ.
9. Transmit power range: 200 W to 20 KW (23 to 43 dBW).
10. Transmit power range: 50 W to 200 W (17 to 23 dBW).
11. Transmit power range: 500 W to 20 KW (27 to 43 dBW).
12. Transmit power range: 5 KW to 400 KW (37 to 56 dBW).
13. Transmit power range: 5 KW to 150 KW (37 to 51.8 dBW).
14. Transmit power range: 200 W to 4 KW (23 to 36 dBW).
15. Transmit power range: 8 W to 800 W (9 to 29 dBW).
16. 8200 - 8600 MHz for VLBI Service.
17. 20 KW transmitter planned.
18. Estimated values.
19. Acquisition Aid
20. Near-Earth spectrum