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Planetary Satellite Discovery Circumstances

The tables below show the discovery circumstances of [planetary satellites](#) and satellites of Pluto *officially* recognized by the [International Astronomical Union \(IAU\)](#). A total of 177 planetary satellites (including those of Pluto but not Earth) are represented below. References are listed where known. These data were last updated 2015-Mar-09.

IAU number	IAU name	provisional designation	year discovered	discoverer(s)/spacecraft mission	references
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Satellites of Mars: 2

I	Phobos		1877	A. Hall	
II	Deimos		1877	A. Hall	

Satellites of Jupiter: 67

I	Io		1610	Galileo	
II	Europa		1610	Galileo	
III	Ganymede		1610	Galileo	
IV	Callisto		1610	Galileo	
V	Amalthea		1892	E.E. Barnard	
VI	Himalia		1904	C. Perrine	
VII	Elara		1905	C. Perrine	
VIII	Pasiphae		1908	P. Melotte	
IX	Sinope		1914	S.B. Nicholson	
X	Lysithea		1938	S.B. Nicholson	
XI	Carme		1938	S.B. Nicholson	
XII	Ananke		1951	S.B. Nicholson	
XIII	Leda		1974	C. Kowal	
XIV	Thebe	S/1979 J2	1980	Voyager Science Team	
XV	Adrastea	S/1979 J1	1979	Voyager Science Team	
XVI	Metis	S/1979 J3	1980	Voyager Science Team	
XVII	Callirrhoe	S/1999 J1	1999	J.V. Scotti, T.B. Spahr, R.S. McMillan, J.A. Larsen, J. Montani, A.E. Gleason, T. Gehrels	IAUC 7460
XVIII	Themisto	S/1975 J1 S/2000 J1	2000	S.S. Sheppard, D.C. Jewitt, Y. Fernandez, G. Magnier	IAUC 7525
XIX	Megaclite	S/2000 J8	2000	S.S. Sheppard, D.C. Jewitt, Y. Fernandez, G. Magnier	IAUC 7555
XX	Taygete	S/2000 J9	2000	S.S. Sheppard, D.C. Jewitt, Y. Fernandez, G. Magnier	IAUC 7555
XXI	Chaldene	S/2000 J10	2000	S.S. Sheppard, D.C. Jewitt, Y. Fernandez, G. Magnier	IAUC 7555

XXII Harpalyke	S/2000 J5	2000	S.S. Sheppard, D.C. Jewitt, Y. Fernandez, G. Magnier	IAUC 7555
XXIII Kalyke	S/2000 J2	2000	S.S. Sheppard, D.C. Jewitt, Y. Fernandez, G. Magnier	IAUC 7555
XXIV Iocaste	S/2000 J3	2000	S.S. Sheppard, D.C. Jewitt, Y. Fernandez, G. Magnier	IAUC 7555
XXV Erinome	S/2000 J4	2000	S.S. Sheppard, D.C. Jewitt, Y. Fernandez, G. Magnier	IAUC 7555
XXVI Isonoe	S/2000 J6	2000	S.S. Sheppard, D.C. Jewitt, Y. Fernandez, G. Magnier	IAUC 7555
XXVII Praxidike	S/2000 J7	2000	S.S. Sheppard, D.C. Jewitt, Y. Fernandez, G. Magnier	IAUC 7555
XXVIII Autonoe	S/2001 J1	2001	S.S. Sheppard, D.C. Jewitt, J. Kleyna	MPEC 2002-J54
XXIX Thyone	S/2001 J2	2001	S.S. Sheppard, D.C. Jewitt, J. Kleyna	MPEC 2002-J54
XXX Hermippe	S/2001 J3	2001	S.S. Sheppard, D.C. Jewitt, J. Kleyna	MPEC 2002-J54
XXXI Aitne	S/2001 J11	2001	S.S. Sheppard, D.C. Jewitt, J. Kleyna	MPEC 2002-J54
XXXII Eurydome	S/2001 J4	2001	S.S. Sheppard, D.C. Jewitt, J. Kleyna	MPEC 2002-J54
XXXIII Euanthe	S/2001 J7	2001	S.S. Sheppard, D.C. Jewitt, J. Kleyna	MPEC 2002-J54
XXXIV Euporie	S/2001 J10	2001	S.S. Sheppard, D.C. Jewitt, J. Kleyna	MPEC 2002-J54
XXXV Orthosie	S/2001 J9	2001	S.S. Sheppard, D.C. Jewitt, J. Kleyna	MPEC 2002-J54
XXXVI Sponde	S/2001 J5	2001	S.S. Sheppard, D.C. Jewitt, J. Kleyna	MPEC 2002-J54
XXXVII Kale	S/2001 J8	2001	S.S. Sheppard, D.C. Jewitt, J. Kleyna	MPEC 2002-J54
XXXVIII Pasithee	S/2001 J6	2001	S.S. Sheppard, D.C. Jewitt, J. Kleyna	MPEC 2002-J54
XXXIX Hegemone	S/2003 J8	2003	S.S. Sheppard	IAUC 8088
XL Mneme	S/2003 J21	2003	S.S. Sheppard, B. Gladman	IAUC 8138
XLI Aoede	S/2003 J7	2003	S.S. Sheppard	IAUC 8087
XLII Thelxinoe	S/2003 J22	2003	S.S. Sheppard, B. Gladman	IAUC 8276
XLIII Arche	S/2002 J1	2003	S.S. Sheppard	IAUC 8035
XLIV Kallichore	S/2003 J11	2003	S.S. Sheppard	IAUC 8089
XLV Helike	S/2003 J6	2003	S.S. Sheppard	IAUC 8087
XLVI Carpo	S/2003 J20	2003	S.S. Sheppard	IAUC 8125
XLVII Eukelade	S/2003 J1	2003	S.S. Sheppard	IAUC 8087
XLVIII Cyllene	S/2003 J13	2003	S.S. Sheppard	IAUC 8116
XLIX Kore	S/2003 J14	2003	S.S. Sheppard	IAUC 8116
L Herse	S/2003 J17	2003	B. Gladman	IAUC 8116
LI	S/2010 J1	2010	R. Jacobson, M. Brozovic, et al.	IAUC 9222
LII	S/2010 J2	2010	C. Veillet	IAUC 9222
LIII Dia	S/2000 J11	2000	S.S. Sheppard, D.C. Jewitt, Y. Fernandez, G. Magnier	IAUC 7555
	S/2003 J2	2003	S.S. Sheppard	IAUC 8087
	S/2003 J3	2003	S.S. Sheppard	IAUC 8087
	S/2003 J4	2003	S.S. Sheppard	IAUC 8087
	S/2003 J5	2003	S.S. Sheppard	IAUC 8087

S/2003 J9	2003	S.S. Sheppard	IAUC 8089
S/2003 J10	2003	S.S. Sheppard	IAUC 8089
S/2003 J12	2003	S.S. Sheppard	IAUC 8089
S/2003 J15	2003	S.S. Sheppard	IAUC 8116
S/2003 J16	2003	B. Gladman	IAUC 8116
S/2003 J18	2003	B. Gladman	IAUC 8116
S/2003 J19	2003	B. Gladman	IAUC 8125
S/2003 J23	2003	S.S. Sheppard	IAUC 8281
S/2011 J1	2011	S.S. Sheppard	CBET 3002/IAUC 9252
S/2011 J2	2011	S.S. Sheppard	CBET 3002/IAUC 9252

Satellites of Saturn: 62

I Mimas		1789	W. Herschel	
II Enceladus		1789	W. Herschel	
III Tethys		1684	G.D. Cassini	
IV Dione		1684	G.D. Cassini	
V Rhea		1672	G.D. Cassini	
VI Titan		1655	C. Huygens	
VII Hyperion		1848	W. Bond, W. Lassell	
VIII Iapetus		1671	G.D. Cassini	
IX Phoebe		1898	W. Pickering	
X Janus	S/1980 S1	1966	A. Dollfus	
XI Epimetheus	S/1980 S3	1980	J. Fountain, S. Larson, H. Reitsema, B. Smith/Voyager 1	
XII Helene	S/1980 S6	1980	P. Laques and J. Lecacheux	
XIII Telesto	S/1980 S13	1980	B. Smith, H. Reitsema, S. Larson, J. Fountain/Voyager 1	
XIV Calypso	S/1980 S25	1980	D. Pascu, K. Seidelmann, W. Baum, D. Currie	
XV Atlas	S/1980 S28	1980	Voyager Science Team	
XVI Prometheus	S/1980 S27	1980	Voyager Science Team	
XVII Pandora	S/1980 S26	1980	Voyager Science Team	
XVIII Pan	S/1981 S13	1990	M. Showalter/Voyager 2	
XIX Ymir	S/2000 S1	2000	B. Gladman	IAUC 7512
XX Paaliaq	S/2000 S2	2000	B. Gladman	IAUC 7512
XXI Tarvos	S/2000 S4	2000	J.J. Kavelaars, B. Gladman	IAUC 7513
XXII Ijiraq	S/2000 S6	2000	J.J. Kavelaars, B. Gladman	IAUC 7521
XXIII Suttungr	S/2000 S12	2000	B. Gladman, J.J. Kavelaars	IAUC 7548
XXIV Kiviuq	S/2000 S5	2000	B. Gladman	IAUC 7521
XXV Mundilfari	S/2000 S9	2000	B. Gladman, J.J. Kavelaars	IAUC 7538
XXVI Albiorix	S/2000 S11	2000	M. Holman, T.B. Spahr	IAUC 7545
XXVII Skathi	S/2000 S8	2000	J.J. Kavelaars, B. Gladman	IAUC 7538
XXVIII Erriapus	S/2000 S10	2000	J.J. Kavelaars, B. Gladman	IAUC 7539
XXIX Siarnaq	S/2000 S3	2000	B. Gladman, J.J. Kavelaars	IAUC 7513
XXX Thrymr	S/2000 S7	2000	B. Gladman, J.J. Kavelaars	IAUC 7538
XXXI Narvi	S/2003 S1	2003	S.S. Sheppard	IAUC 8116
XXXII Methone	S/2004 S1	2004	Cassini Imaging Science Team	IAUC 8389
XXXIII Pallene	S/2004 S2	2004	Cassini Imaging Science Team	IAUC 8389
XXXIV Polydeuces	S/2004 S5	2004	Cassini Imaging Science Team	IAUC 8432
XXXV Daphnis	S/2005 S1	2005	Cassini Imaging Science Team	IAUC 8524

XXXVI Aegir	S/2004 S10	2005	D. Jewitt, S. Sheppard, J. Kleyna	IAUC 8523
XXXVII Bebhionn	S/2004 S11	2005	D. Jewitt, S. Sheppard, J. Kleyna	IAUC 8523
XXXVIII Bergelmir	S/2004 S15	2005	D. Jewitt, S. Sheppard, J. Kleyna	IAUC 8523
XXXIX Bestla	S/2004 S18	2005	D. Jewitt, S. Sheppard, J. Kleyna	IAUC 8523
XL Farbauti	S/2004 S9	2005	D. Jewitt, S. Sheppard, J. Kleyna	IAUC 8523
XLI Fenrir	S/2004 S16	2005	D. Jewitt, S. Sheppard, J. Kleyna	IAUC 8523
XLII Fornjot	S/2004 S8	2005	D. Jewitt, S. Sheppard, J. Kleyna	IAUC 8523
XLIII Hati	S/2004 S14	2005	D. Jewitt, S. Sheppard, J. Kleyna	IAUC 8523
XLIV Hyrrokkin	S/2004 S19	2006	S. Sheppard, D. Jewitt, J. Kleyna	IAUC 8727
XLV Kari	S/2006 S2	2006	S. Sheppard, D. Jewitt, J. Kleyna	IAUC 8727
XLVI Loge	S/2006 S5	2006	S. Sheppard, D. Jewitt, J. Kleyna	IAUC 8727
XLVII Skoll	S/2006 S8	2006	S. Sheppard, D. Jewitt, J. Kleyna	IAUC 8727
XLVIII Surtur	S/2006 S7	2006	S. Sheppard, D. Jewitt, J. Kleyna	IAUC 8727
XLIX Anthe	S/2007 S4	2007	Cassini Imaging Science Team	IAUC 8857
L Jarnsaxa	S/2006 S6	2006	S. Sheppard, D. Jewitt, J. Kleyna	IAUC 8727
LI Greip	S/2006 S4	2006	S. Sheppard, D. Jewitt, J. Kleyna	IAUC 8727
LII Tarqeq	S/2007 S1	2007	S. Sheppard, D. Jewitt, J. Kleyna	IAUC 8836
LIII Aegaeon	S/2008 S1	2008	Cassini Imaging Science Team	IAUC 9023
	S/2004 S7	2005	D. Jewitt, S. Sheppard, J. Kleyna	IAUC 8523
	S/2004 S12	2005	D. Jewitt, S. Sheppard, J. Kleyna	IAUC 8523
	S/2004 S13	2005	D. Jewitt, S. Sheppard, J. Kleyna	IAUC 8523
	S/2004 S17	2005	D. Jewitt, S. Sheppard, J. Kleyna	IAUC 8523
	S/2006 S1	2006	S. Sheppard, D. Jewitt, J. Kleyna	IAUC 8727
	S/2006 S3	2006	S. Sheppard, D. Jewitt, J. Kleyna	IAUC 8727
	S/2007 S2	2007	S. Sheppard, D. Jewitt, J. Kleyna	IAUC 8836
	S/2007 S3	2007	S. Sheppard, D. Jewitt, J. Kleyna	IAUC 8836
	S/2009 S1	2009	Cassini Imaging Science Team	IAUC 9091

Satellites of Uranus: 27

I Ariel		1851	W. Lassell	
II Umbriel		1851	W. Lassell	
III Titania		1787	W. Herschel	
IV Oberon		1787	W. Herschel	
V Miranda		1948	G. Kuiper	
VI Cordelia	S/1986 U7	1986	Voyager Science Team	
VII Ophelia	S/1986 U8	1986	Voyager Science Team	
VIII Bianca	S/1986 U9	1986	Voyager Science Team	
IX Cressida	S/1986 U3	1986	Voyager Science Team	
X Desdemona	S/1986 U6	1986	Voyager Science Team	
XI Juliet	S/1986 U2	1986	Voyager Science Team	
XII Portia	S/1986 U1	1986	Voyager Science Team	
XIII Rosalind	S/1986 U4	1986	Voyager Science Team	
XIV Belinda	S/1986 U5	1986	Voyager Science Team	
XV Puck	S/1985 U1	1985	Voyager Science Team	
XVI Caliban	S/1997 U1	1997	B.J. Gladman, P.D. Nicholson, J.A. Burns, J.J. Kavelaars	
XVII Sycorax	S/1997 U2	1997	P.D. Nicholson, B.J. Gladman, J.A. Burns, J.J. Kavelaars	
XVIII Prospero	S/1999 U3	1999	M. Holman, J.J. Kavelaars, B. Gladman, J.-M. Petit, H. Scholl	IAUC 7248

XIX Setebos	S/1999 U1	1999	J.J. Kavelaars, B. Gladman, M. Holman, J.-M. Petit, H. Scholl	IAUC 7230
XX Stephano	S/1999 U2	1999	B. Gladman, M. Holman, J.J. Kavelaars, J.-M. Petit, H. Scholl	IAUC 7230
XXI Trinculo	S/2001 U1	2001	M. Holman, J.J. Kavelaars, D. Milisavljevic	IAUC 7980
XXII Francisco	S/2001 U3	2001	J.J. Kavelaars, M. Holman, D. Milisavljevic, T. Grav	IAUC 8216, IAUC 7980
XXIII Margaret	S/2003 U3	2003	D.C. Jewitt, S.S. Sheppard	IAUC 8217
XXIV Ferdinand	S/2001 U2	2001	D. Milisavljevic, M. Holman, J.J. Kavelaars, T. Grav	IAUC 8213
XXV Perdita	S/1986 U10	1999	E. Karkoschka/Voyager 2	IAUC 7171
XXVI Mab	S/2003 U1	2003	M. R. Showalter, J. J. Lissauer	IAUC 8209
XXVII Cupid	S/2003 U2	2003	M. R. Showalter, J. J. Lissauer	IAUC 8209

Satellites of Neptune: 14

I Triton		1846	W. Lassell	
II Nereid		1949	G. Kuiper	
III Naiad	S/1989 N6	1989	Voyager Science Team	
IV Thalassa	S/1989 N5	1989	Voyager Science Team	
V Despina	S/1989 N3	1989	Voyager Science Team	
VI Galatea	S/1989 N4	1989	Voyager Science Team	
VII Larissa	S/1989 N2	1989	Voyager Science Team	
VIII Proteus	S/1989 N1	1989	Voyager Science Team	
IX Halimede	S/2002 N1	2002	M. Holman, J.J. Kavelaars, T. Grav, W. Fraser, D. Milisavljevic	IAUC 8047
X Psamathe	S/2003 N1	2003	D.C. Jewitt, J. Kleyna, S.S. Sheppard	IAUC 8193
XI Sao	S/2002 N2	2002	M. Holman, J.J. Kavelaars, T. Grav, W. Fraser, D. Milisavljevic	IAUC 8047
XII Laomedeia	S/2002 N3	2002	M. Holman, J.J. Kavelaars, T. Grav, W. Fraser, D. Milisavljevic	IAUC 8047
XIII Neso	S/2002 N4	2002	M. Holman et al., B. Gladman et al.	IAUC 8213
	S/2004 N1	2013	M.R. Showalter, I. de Pater, J.J. Lissauer, R.S. French	CBET 3586

Satellites of Pluto: 5

I Charon	S/1978 P1	1978	J. Christy	
II Nix	S/2005 P2	2005	H.A. Weaver, S.A. Stern, et al.	IAUC 8625
III Hydra	S/2005 P1	2005	H.A. Weaver, S.A. Stern, et al.	IAUC 8625
IV Kerberos	S/2011 (134340) 1	2011	M.R. Showalter, D.P. Hamilton, et al.	IAUC 9221
V Styx	S/2012 (134340) 1	2012	M.R. Showalter, H.A. Weaver, et al.	IAUC 9253

Notes:

- A number of IAUCs listed individuals associated with discoveries from data obtained by missions such as Voyager and Cassini. It has come to our attention (2007-Apr-23) that the IAU working group on Planetary System Nomenclature (WGPSN, see the entry on [this IAU page](#)) has changed such cases to list only the project

team as the discoverer (e.g. "Cassini Imaging Science Team"). The reference for these revised discovery data is a web-page pointed to (indirectly) by the IAU WGPN at the USGS, <http://planetarynames.wr.usgs.gov/append7.html>.

- Earth's moon is not included since we were unable to contact the Neanderthal who first saw it.

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