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Cover image: “Moonrise over Dinkinesh”: (152830) Dinkinesh and its satellite (152830) Dinkinesh I (Selam) imaged by the Lucy spacecraft's L'LORRI camera on November 1, 2023, at a range of ~430 km. (NASA/Goddard/SwRI/Johns Hopkins APL/NOIRLab)

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Errata

The following section corrects errors that have appeared in this publication (indicated as *Bull.*, with volume, issue and page number) or in names or citations published in the *Minor Planet Circulars*. Negative line numbers count from the bottom of the page (in the *Bulletin*) or from the bottom of the page or the bottom of the (second) column (in the *MPC*s).

Reference	Line(s)	
MPC 16247	– 2	*For* 'Imagine' *read* "Imagine" [(4147) citation]
MPC 16248	6	*For* 'Yesterday' and 'Michelle' *read* "Yesterday" and "Michelle" [(4148) citation]
MPC 16248	18 to 19	*For* 'While My Guitar Gently Weeps' and 'Something' *read* "While My Guitar Gently Weeps" and "Something" [(4149) citation]
MPC 17031	15	*For* 'Lara's Theme' *read* "Lara's Theme" [(4422) citation]
MPC 25230	–11	*For Kabuki read* kabuki [(5829) citation]
MPC 25976	–12 to –11	*For* "Grateful Dead" *read* Grateful Dead [(4442) citation]
MPC 27734	16	*For Ueber das farbige Licht der Doppelsterne read Über das farbige Licht der Doppelsterne und einiger anderer Gestirne des Himmels* [(3905) citation]
MPC 29149	13	*For* brillant *read* brilliant [(7127) citation]
MPC 33794	–10 to – 9	*For* Detecteurs Electroniques *read* Détecteurs Électroniques [(9117) citation]
MPC 36950	36	*For* Detecteurs Electroniques *read* Détecteurs Électroniques [(10927) citation]
MPC 41031	–03	*For* Electroniques *read* Électroniques [(11147) citation]
MPC 41034	37	*For* Electroniques *read* Électroniques [(14141) citation]
MPC 41940	6	*For* Electroniques *read* Électroniques [(13705) citation]

MPC 43192	– 3	*For* Electroniques *read* Électroniques [(16892) citation]
MPC 44186	13	*For avant-garde read* avant-garde [(11905) citation]
MPC 44186	14	*For* "Observing Head" *read Observing Head* [(11905) citation]
MPC 44186	15	*For* "The Palace at 4 a.m." and "1 + 1 = 3" *read The Palace at 4 a.m.* and *1 + 1 = 3* [(11905) citation]
MPC 51188	39	*For Tasso read* "Tasso" [(12295) citation]
MPC 52327	10	*For* Detecteurs Electroniques *read* Détecteurs Électroniques [(73883) citation]
MPC 52771	47	*For* archipelagoes *read* archipelagos [(81203) citation]
MPC 55719	– 3	*For A Night in Tunisia read* "A Night in Tunisia" [(5831) citation]
MPC 66725	–34	*For* Electroniques *read* Électroniques [(19353) citation]
MPC 66726	–37	*For* Electroniques *read* Électroniques [(33027) citation]
MPC 66727	–44	*For* Electroniques *read* Électroniques [(85512) citation]
MPC 66727	–39	*For* Electroniques *read* Électroniques [(90918) citation]
MPC 66727	–34 to –33	*For* Electroniques *read* Électroniques [(90944) citation]
MPC 69492	–30	*For* Ecole *read* École [(13178) citation]
MPC 69492	–25	*For* arithmetric *read* arithmetic [(13213) citation]
MPC 70408	6	*For* commited *read* committed [(12159) citation]
MPC 83583	22 to 23	*For* Watch Mr. Wizard and Mr. Wizard's World *read Watch Mr. Wizard* and *Mr. Wizard's World* [(25858) citation]
MPC 103025	–30	*For* Tokugara Mitsukuni *read* Mitsukuni Tokugawa [(34996) citation]
Bull. **1**, #1, 24	– 6	*For* Pakstiene *read* Pakštienė [(270903) name]
Bull. **1**, #1, 24	– 4	*For* Pakstiene *read* Pakštienė [(270903) citation]

Corrected Discovery Information

The following section lists corrected discovery information for numbered minor planets. The NS column contains an asterisk if the numbering was subject to the current numbering rules, the POC column contains the observatory code of the discovery observation of the principal provisional designation and the DOC column contains the observatory code of the discovery observation.

Number	NS	POC	Disc. Date	DOC	Discovery Site	Discoverer(s)
(33163)		910	1998-03-02	910	Caussols	ODAS
(33165)		910	1998-03-02	910	Caussols	ODAS
(35394)		910	1997-12-07	910	Caussols	ODAS
(558168)	*	F51	2012-01-25	F51	Haleakala	Pan-STARRS 1
(560563)	*	W84	2015-04-18	W84	Cerro Tololo	DECam
(564160)	*	W84	2016-03-29	W84	Cerro Tololo	DECam
(567329)	*	691	2009-09-24	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(573731)	*	114	2009-09-23	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(573759)	*	114	2009-09-17	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(577883)	*	G96	2009-08-30	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(585349)	*	F51	2012-10-25	461	Piszkéstető	K. Sárneczky
(589253)	*	114	2009-09-17	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(589255)	*	114	2009-09-17	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(599019)	*	114	2009-08-29	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(599083)	*	114	2009-09-24	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(599084)	*	114	2009-09-23	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(633326)	*	114	2009-09-11	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(633348)	*	114	2009-09-17	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(634100)	*	G96	2009-09-24	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(635121)	*	G96	2012-12-12	G96	Mount Lemmon	Mount Lemmon Survey
(640042)	*	691	2011-10-20	G96	Mount Lemmon	Mount Lemmon Survey
(640088)	*	327	1997-10-07	327	Xinglong	Beijing Schmidt CCD Asteroid Program
(640105)	*	645	2016-10-16	F51	Haleakala	Pan-STARRS 1
(640109)	*	645	2013-10-26	G96	Mount Lemmon	Mount Lemmon Survey
(640110)	*	645	2014-02-09	691	Kitt Peak	Spacewatch
(640112)	*	645	2003-10-20	691	Kitt Peak	Spacewatch
(640141)	*	645	2012-03-14	691	Kitt Peak	Spacewatch
(640144)	*	645	2014-02-27	F51	Haleakala	Pan-STARRS 1
(640146)	*	691	2007-03-11	691	Kitt Peak	Spacewatch
(640172)	*	645	1999-10-30	691	Kitt Peak	Spacewatch
(640174)	*	645	2013-02-14	F51	Haleakala	Pan-STARRS 1
(640175)	*	645	2014-07-30	F51	Haleakala	Pan-STARRS 1
(640176)	*	645	2013-10-09	691	Kitt Peak	Spacewatch
(640181)	*	645	1999-10-31	691	Kitt Peak	Spacewatch
(640193)	*	645	2015-03-26	G96	Mount Lemmon	Mount Lemmon Survey
(640249)	*	807	2000-03-05	807	Cerro Tololo	D. Wittman
(640252)	*	645	2006-09-26	G96	Mount Lemmon	Mount Lemmon Survey
(640266)	*	645	2012-03-01	G96	Mount Lemmon	Mount Lemmon Survey
(640351)	*	645	2009-09-17	703	Catalina	CSS
(640387)	*	645	2011-03-02	G96	Mount Lemmon	Mount Lemmon Survey
(640395)	*	645	2011-02-07	G96	Mount Lemmon	Mount Lemmon Survey
(640418)	*	691	2015-05-20	W84	Cerro Tololo	DECam
(640447)	*	644	2001-05-31	644	Palomar	NEAT

(640552)	*	644	2001-09-19	644	Palomar	NEAT
(640558)	*	645	2014-01-25	F51	Haleakala	Pan-STARRS 1
(640586)	*	644	2001-11-11	291	Kitt Peak	Spacewatch
(640587)	*	644	2001-10-15	644	Palomar	NEAT
(640619)	*	644	2001-09-25	644	Palomar	NEAT
(640620)	*	644	2001-09-21	644	Palomar	NEAT
(640718)	*	645	2013-01-16	F51	Haleakala	Pan-STARRS 1
(640733)	*	291	2013-08-04	F51	Haleakala	Pan-STARRS 1
(640760)	*	645	2011-09-28	G96	Mount Lemmon	Mount Lemmon Survey
(640765)	*	645	2008-12-21	G96	Mount Lemmon	Mount Lemmon Survey
(640769)	*	645	2015-05-20	W84	Cerro Tololo	DECam
(640797)	*	644	2002-03-11	644	Palomar	NEAT
(640835)	*	644	2002-04-03	644	Palomar	NEAT
(640836)	*	644	2002-04-14	644	Palomar	NEAT
(640837)	*	644	2002-03-11	644	Palomar	NEAT
(640838)	*	644	2002-04-02	644	Palomar	NEAT
(640839)	*	644	2002-04-08	644	Palomar	NEAT
(640845)	*	807	2013-03-05	F51	Haleakala	Pan-STARRS 1
(640858)	*	644	2002-06-02	644	Palomar	NEAT
(640876)	*	644	2002-07-12	644	Palomar	NEAT
(640878)	*	644	2002-07-12	644	Palomar	NEAT
(640883)	*	644	2002-08-05	644	Palomar	NEAT
(640889)	*	644	2002-07-05	644	Palomar	NEAT
(640902)	*	644	2002-08-11	644	Palomar	NEAT
(640907)	*	644	2002-08-08	644	Palomar	NEAT
(640908)	*	644	2002-07-04	644	Palomar	NEAT
(640909)	*	644	2002-08-13	699	Anderson Mesa	LONEOS
(640917)	*	644	2013-04-16	W84	Cerro Tololo	DECam
(640939)	*	644	2002-08-19	644	Palomar	NEAT
(640944)	*	644	2002-07-22	644	Palomar	NEAT
(640945)	*	644	2002-07-29	644	Palomar	NEAT
(640946)	*	644	2002-08-29	644	Palomar	NEAT
(640949)	*	644	2002-08-16	644	Palomar	NEAT
(640950)	*	644	2002-08-30	644	Palomar	NEAT
(640951)	*	644	2002-07-29	644	Palomar	NEAT
(640952)	*	644	2002-08-29	644	Palomar	NEAT
(640956)	*	644	2002-08-17	644	Palomar	NEAT
(640963)	*	644	2002-09-05	699	Anderson Mesa	LONEOS
(640965)	*	644	2002-08-16	644	Palomar	NEAT
(640966)	*	644	2002-08-16	644	Palomar	NEAT
(640968)	*	644	2002-08-16	644	Palomar	NEAT
(640991)	*	644	2002-08-28	644	Palomar	NEAT
(640996)	*	644	2002-09-01	644	Palomar	NEAT
(641006)	*	644	2002-09-10	644	Palomar	NEAT
(641025)	*	644	2002-09-13	699	Anderson Mesa	LONEOS
(641026)	*	644	2002-09-14	644	Palomar	NEAT
(641078)	*	644	2002-10-31	644	Palomar	NEAT
(641100)	*	644	2002-11-13	644	Palomar	NEAT
(641119)	*	644	2002-11-24	644	Palomar	NEAT
(641120)	*	644	2002-11-13	644	Palomar	NEAT
(641121)	*	644	2002-11-13	644	Palomar	NEAT
(641122)	*	644	2002-11-13	644	Palomar	NEAT
(641123)	*	644	2002-11-16	644	Palomar	NEAT
(641196)	*	691	2003-03-31	691	Kitt Peak	Spacewatch
(641269)	*	807	2003-05-30	807	Cerro Tololo	M. W. Buie, K. J. Meech

(641310)	*	G96	2009-03-03	G96	Mount Lemmon	Mount Lemmon Survey
(641364)	*	691	2009-09-16	291	Kitt Peak	Spacewatch
(641419)	*	645	2003-09-22	691	Kitt Peak	Spacewatch
(641582)	*	291	2004-03-15	291	Kitt Peak	Spacewatch
(641651)	*	291	2015-05-21	W84	Cerro Tololo	DECam
(641654)	*	691	2015-05-20	W84	Cerro Tololo	DECam
(641696)	*	G96	2010-11-30	G96	Mount Lemmon	Mount Lemmon Survey
(641706)	*	691	2014-03-12	G96	Mount Lemmon	Mount Lemmon Survey
(641735)	*	568	2004-08-20	691	Kitt Peak	Spacewatch
(641839)	*	291	2012-04-28	G96	Mount Lemmon	Mount Lemmon Survey
(642032)	*	G96	2008-12-21	691	Kitt Peak	Spacewatch
(642121)	*	G96	2015-04-18	W84	Cerro Tololo	DECam
(642190)	*	G96	2006-11-24	G96	Mount Lemmon	Mount Lemmon Survey
(642193)	*	F51	2017-09-22	F51	Haleakala	Pan-STARRS 1
(642214)	*	691	2005-07-04	691	Kitt Peak	Spacewatch
(642426)	*	705	2005-09-15	705	Apache Point	SDSS Collaboration
(642527)	*	G96	2005-09-30	G96	Mount Lemmon	Mount Lemmon Survey
(642554)	*	705	2005-10-01	705	Apache Point	SDSS Collaboration
(642670)	*	A84	2005-10-20	A84	Bakırtepe	D. Denisenko, M. Parmaksizoğlu
(642822)	*	G96	2005-10-31	G96	Mount Lemmon	Mount Lemmon Survey
(642844)	*	691	2005-10-30	691	Kitt Peak	Spacewatch
(642863)	*	705	2005-10-30	705	Apache Point	SDSS Collaboration
(642880)	*	G96	2014-04-23	W84	Cerro Tololo	DECam
(642918)	*	691	2005-10-22	691	Kitt Peak	Spacewatch
(643063)	*	705	2015-09-23	F51	Haleakala	Pan-STARRS 1
(643279)	*	G96	2006-01-02	G96	Mount Lemmon	Mount Lemmon Survey
(643439)	*	691	2006-02-02	691	Kitt Peak	Spacewatch
(643493)	*	691	2006-02-24	691	Kitt Peak	Spacewatch
(643569)	*	691	1999-11-01	691	Kitt Peak	Spacewatch
(643653)	*	G96	2006-05-31	G96	Mount Lemmon	Mount Lemmon Survey
(643671)	*	428	2015-09-24	G96	Mount Lemmon	Mount Lemmon Survey
(644325)	*	G96	2006-10-31	G96	Mount Lemmon	Mount Lemmon Survey
(644519)	*	G96	2014-04-28	W84	Cerro Tololo	DECam
(644575)	*	691	2006-11-16	691	Kitt Peak	Spacewatch
(644701)	*	G96	2015-05-21	W84	Cerro Tololo	DECam
(644722)	*	G96	2006-11-24	G96	Mount Lemmon	Mount Lemmon Survey
(644803)	*	G96	2014-03-30	W84	Cerro Tololo	DECam
(644883)	*	G96	2017-08-04	F51	Haleakala	Pan-STARRS 1
(645106)	*	691	2005-10-27	691	Kitt Peak	Spacewatch
(645527)	*	G96	2007-10-07	G96	Mount Lemmon	Mount Lemmon Survey
(645564)	*	G96	2015-04-19	G96	Mount Lemmon	Mount Lemmon Survey
(645585)	*	691	2003-09-22	699	Anderson Mesa	LONEOS
(645644)	*	G96	2016-05-01	W84	Cerro Tololo	DECam
(645693)	*	691	1999-11-01	691	Kitt Peak	Spacewatch
(645907)	*	G96	2007-11-15	G96	Mount Lemmon	Mount Lemmon Survey
(646055)	*	G96	2007-12-31	G96	Mount Lemmon	Mount Lemmon Survey
(646058)	*	G96	2007-12-31	G96	Mount Lemmon	Mount Lemmon Survey
(646100)	*	691	2015-05-19	W84	Cerro Tololo	DECam
(646104)	*	G96	2015-05-20	W84	Cerro Tololo	DECam
(646136)	*	691	2008-01-10	691	Kitt Peak	Spacewatch
(646246)	*	691	2008-01-14	691	Kitt Peak	Spacewatch
(646277)	*	G96	2015-05-25	F51	Haleakala	Pan-STARRS 1
(646804)	*	691	2008-03-27	691	Kitt Peak	Spacewatch
(647001)	*	G96	2014-04-23	W84	Cerro Tololo	DECam
(647024)	*	G96	2008-05-29	G96	Mount Lemmon	Mount Lemmon Survey

(647073)	*	F84	2008-08-05	F84	Hibiscus	N. Teamo, S. F. Hönig
(647321)	*	G96	2008-09-23	G96	Mount Lemmon	Mount Lemmon Survey
(647548)	*	691	1998-09-19	645	Apache Point	Sloan Digital Sky Survey
(647561)	*	G96	2008-10-26	G96	Mount Lemmon	Mount Lemmon Survey
(647569)	*	691	2008-10-27	691	Kitt Peak	Spacewatch
(647655)	*	691	2008-11-01	691	Kitt Peak	Spacewatch
(647728)	*	691	2008-11-20	691	Kitt Peak	Spacewatch
(647739)	*	691	2008-11-21	691	Kitt Peak	Spacewatch
(647743)	*	691	2005-12-03	568	Maunakea	Maunakea
(647779)	*	114	2008-11-29	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(647986)	*	691	1999-03-21	645	Apache Point	Sloan Digital Sky Survey
(648013)	*	G96	2002-09-15	644	Palomar	NEAT
(648071)	*	691	2009-03-03	691	Kitt Peak	Spacewatch
(648130)	*	691	2009-05-17	691	Kitt Peak	Spacewatch
(648269)	*	691	2009-09-18	691	Kitt Peak	Spacewatch
(648377)	*	G96	2009-09-27	G96	Mount Lemmon	Mount Lemmon Survey
(648427)	*	G96	2009-10-18	G96	Mount Lemmon	Mount Lemmon Survey
(648629)	*	691	2009-11-20	691	Kitt Peak	Spacewatch
(648710)	*	C51	2010-01-26	C51	WISE	WISE
(648724)	*	G96	2008-09-29	G96	Mount Lemmon	Mount Lemmon Survey
(648792)	*	C51	2010-03-19	C51	WISE	WISE
(648806)	*	C51	2010-04-15	C51	WISE	WISE
(648808)	*	C51	2022-07-25	F52	Haleakala	Pan-STARRS 2
(648820)	*	C51	2015-04-23	F51	Haleakala	Pan-STARRS 1
(648835)	*	G96	2015-05-20	W84	Cerro Tololo	DECam
(648865)	*	C51	2010-10-14	G96	Mount Lemmon	Mount Lemmon Survey
(648909)	*	691	2010-09-12	691	Kitt Peak	Spacewatch
(648912)	*	691	2003-09-18	644	Palomar	NEAT
(649018)	*	G96	2010-10-13	G96	Mount Lemmon	Mount Lemmon Survey
(649070)	*	G96	2001-11-15	691	Kitt Peak	Spacewatch
(649106)	*	I41	2010-10-31	G96	Mount Lemmon	Mount Lemmon Survey
(649129)	*	G96	2010-11-08	G96	Mount Lemmon	Mount Lemmon Survey
(649164)	*	G96	2005-10-01	G96	Mount Lemmon	Mount Lemmon Survey
(649189)	*	G96	2006-12-27	G96	Mount Lemmon	Mount Lemmon Survey
(649344)	*	G96	2005-12-29	691	Kitt Peak	Spacewatch
(649418)	*	G96	2011-03-30	G96	Mount Lemmon	Mount Lemmon Survey
(649421)	*	691	2011-02-25	691	Kitt Peak	Spacewatch
(649440)	*	F51	2002-08-26	644	Palomar	NEAT
(649444)	*	F51	2011-04-01	G96	Mount Lemmon	Mount Lemmon Survey
(649446)	*	F51	2011-04-01	291	Kitt Peak	Spacewatch
(649449)	*	G96	2002-04-07	807	Cerro Tololo	M. W. Buie, D. E. Trilling
(649550)	*	G96	2011-05-21	G96	Mount Lemmon	Mount Lemmon Survey
(649595)	*	F51	2011-08-01	F51	Haleakala	Pan-STARRS 1
(649600)	*	F51	2000-02-12	645	Apache Point	Sloan Digital Sky Survey
(649612)	*	I41	2011-08-06	I41	Palomar	Palomar Transient Factory
(649754)	*	G96	2001-10-17	644	Palomar	NEAT
(649817)	*	691	2009-03-01	691	Kitt Peak	Spacewatch
(649826)	*	I41	2003-03-23	691	Kitt Peak	Spacewatch
(649882)	*	G96	2007-10-11	G96	Mount Lemmon	Mount Lemmon Survey
(649909)	*	G96	2006-11-22	691	Kitt Peak	Spacewatch
(665506)	*	114	2009-08-29	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(665583)	*	114	2009-09-17	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(665717)	*	114	2009-09-24	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(675193)	*	F51	2009-09-25	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(675232)	*	F51	2009-09-11	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski

(690042)	*	G96	2013-11-10	G96	Mount Lemmon	Mount Lemmon Survey
(690110)	*	691	2007-09-11	G96	Mount Lemmon	Mount Lemmon Survey
(690123)	*	G96	2015-04-18	W84	Cerro Tololo	DECam
(690138)	*	691	2012-06-15	691	Kitt Peak	Spacewatch
(690158)	*	G96	2014-01-09	G96	Mount Lemmon	Mount Lemmon Survey
(690208)	*	F51	2014-01-24	F51	Haleakala	Pan-STARRS 1
(690244)	*	F51	2003-09-26	645	Apache Point	Sloan Digital Sky Survey
(690321)	*	F51	2014-02-28	F51	Haleakala	Pan-STARRS 1
(690338)	*	G96	2001-10-15	644	Palomar	NEAT
(690348)	*	W84	2014-03-02	W84	Cerro Tololo	DECam
(690353)	*	W84	2014-03-02	W84	Cerro Tololo	DECam
(690360)	*	W84	2003-12-01	691	Kitt Peak	Spacewatch
(690368)	*	W84	2015-05-20	W84	Cerro Tololo	DECam
(690370)	*	W84	2014-02-28	F51	Haleakala	Pan-STARRS 1
(690387)	*	W84	2007-09-20	691	Kitt Peak	Spacewatch
(690389)	*	W84	2012-09-21	691	Kitt Peak	Spacewatch
(690420)	*	F51	2013-03-19	F51	Haleakala	Pan-STARRS 1
(690482)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(690492)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(690507)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(690509)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(690511)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(690517)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(690524)	*	G96	2014-03-28	G96	Mount Lemmon	Mount Lemmon Survey
(690528)	*	F51	2002-10-05	644	Palomar	NEAT
(690549)	*	F51	2013-01-04	W84	Cerro Tololo	DECam
(690560)	*	W84	2014-04-21	G96	Mount Lemmon	Mount Lemmon Survey
(690561)	*	W84	2014-04-28	W84	Cerro Tololo	DECam
(690564)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(690566)	*	W84	2014-06-02	F51	Haleakala	Pan-STARRS 1
(690567)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(690568)	*	W84	2014-05-03	G96	Mount Lemmon	Mount Lemmon Survey
(690569)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(690570)	*	W84	2014-04-28	W84	Cerro Tololo	DECam
(690573)	*	W84	2014-04-28	W84	Cerro Tololo	DECam
(690587)	*	G96	2003-09-30	645	Apache Point	Sloan Digital Sky Survey
(690616)	*	G96	2014-05-01	G96	Mount Lemmon	Mount Lemmon Survey
(690637)	*	F51	2014-05-06	F51	Haleakala	Pan-STARRS 1
(690663)	*	F51	1998-09-19	645	Apache Point	Sloan Digital Sky Survey
(690703)	*	F51	2012-03-29	F51	Haleakala	Pan-STARRS 1
(690746)	*	F51	2014-05-23	F51	Haleakala	Pan-STARRS 1
(690754)	*	F51	2014-05-23	F51	Haleakala	Pan-STARRS 1
(690902)	*	F51	2013-04-16	W84	Cerro Tololo	DECam
(690914)	*	F51	2014-07-07	F51	Haleakala	Pan-STARRS 1
(690992)	*	F51	2012-01-17	621	Bergisch Gladbach	W. Bickel
(710045)	*	D00	2013-07-12	D00	Kislovodsk	V. Nevski
(710073)	*	F51	2013-07-12	F51	Haleakala	Pan-STARRS 1
(710257)	*	G96	2003-09-18	691	Kitt Peak	Spacewatch
(710347)	*	H15	2013-09-12	D00	Kislovodsk	V. Nevski
(710389)	*	691	2002-06-18	644	Palomar	NEAT
(710612)	*	F51	2012-10-18	F51	Haleakala	Pan-STARRS 1
(710689)	*	G96	2001-02-17	608	Haleakala	NEAT
(710781)	*	F51	2009-01-31	G96	Mount Lemmon	Mount Lemmon Survey
(710791)	*	G96	2000-10-19	691	Kitt Peak	Spacewatch
(710808)	*	W84	2014-03-02	W84	Cerro Tololo	DECam

(710811)	*	W84	2015-06-02	W84	Cerro Tololo	DECam
(710813)	*	W84	2014-03-02	W84	Cerro Tololo	DECam
(710818)	*	W84	2014-02-28	F51	Haleakala	Pan-STARRS 1
(710823)	*	W84	2014-02-28	F51	Haleakala	Pan-STARRS 1
(710837)	*	W84	2014-03-04	W84	Cerro Tololo	DECam
(710845)	*	W84	2014-03-02	W84	Cerro Tololo	DECam
(710923)	*	F51	2004-11-11	695	Kitt Peak	M. W. Buie
(710961)	*	G96	2012-12-17	D00	Kislovodsk	V. Nevski, E. Romas
(710965)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(710979)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(710982)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(710985)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(710986)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(710990)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(711001)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(711002)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(711004)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(711006)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(711011)	*	F51	2001-05-21	807	Cerro Tololo	M. W. Buie
(711016)	*	W84	2001-03-21	691	Kitt Peak	Spacewatch
(711018)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(711044)	*	F51	2013-01-04	W84	Cerro Tololo	DECam
(711070)	*	W84	2014-05-27	F51	Haleakala	Pan-STARRS 1
(711071)	*	W84	2014-04-28	W84	Cerro Tololo	DECam
(711072)	*	W84	2014-04-25	W84	Cerro Tololo	DECam
(711073)	*	W84	2014-04-30	F51	Haleakala	Pan-STARRS 1
(711076)	*	W84	2014-04-23	W84	Cerro Tololo	DECam
(711151)	*	F51	2010-03-16	G96	Mount Lemmon	Mount Lemmon Survey
(711194)	*	G96	2013-01-04	W84	Cerro Tololo	DECam
(711347)	*	F51	2008-10-31	G96	Mount Lemmon	Mount Lemmon Survey
(711356)	*	F51	2013-04-16	W84	Cerro Tololo	DECam
(711363)	*	F51	2011-10-30	114	Zelenchukskaya Station	T. V. Kryachko. B. Satovski
(711443)	*	F51	2010-10-17	G96	Mount Lemmon	Mount Lemmon Survey
(711454)	*	F51	2007-02-15	688	Anderson Mesa	L. H. Wasserman
(711614)	*	F51	2009-09-27	691	Kitt Peak	Spacewatch
(711616)	*	F51	2009-10-11	G96	Mount Lemmon	Mount Lemmon Survey
(711631)	*	F51	2009-10-11	G96	Mount Lemmon	Mount Lemmon Survey
(711793)	*	F51	2014-08-22	F51	Haleakala	Pan-STARRS 1
(711821)	*	F51	2013-03-15	691	Kitt Peak	Spacewatch
(711824)	*	F51	2003-08-29	568	Maunakea	D. D. Balam
(711853)	*	F51	2012-02-26	691	Kitt Peak	Spacewatch
(711881)	*	F51	2002-02-08	695	Kitt Peak	M. W. Buie
(712029)	*	F51	2014-08-27	F51	Haleakala	Pan-STARRS 1
(712214)	*	F51	2003-09-18	691	Kitt Peak	Spacewatch
(712216)	*	F51	2014-08-25	F51	Haleakala	Pan-STARRS 1
(712268)	*	F51	2014-07-31	F51	Haleakala	Pan-STARRS 1
(712302)	*	G96	2013-04-16	W84	Cerro Tololo	DECam
(712307)	*	691	2001-03-22	695	Kitt Peak	B. Gladman
(712347)	*	F51	2011-01-28	G96	Mount Lemmon	Mount Lemmon Survey
(712765)	*	F51	2014-08-31	F51	Haleakala	Pan-STARRS 1
(712974)	*	691	2008-09-27	G96	Mount Lemmon	Mount Lemmon Survey
(712985)	*	F51	2014-11-27	F51	Haleakala	Pan-STARRS 1
(713005)	*	691	2010-02-09	G96	Mount Lemmon	Mount Lemmon Survey
(713016)	*	F51	2014-11-21	F51	Haleakala	Pan-STARRS 1
(713058)	*	F51	2008-02-08	G96	Mount Lemmon	Mount Lemmon Survey

(713067)	*	G96	2014-11-29	G96	Mount Lemmon	Mount Lemmon Survey
(713069)	*	F51	2014-12-12	F51	Haleakala	Pan-STARRS 1
(713167)	*	F51	2013-10-27	691	Kitt Peak	Spacewatch
(713271)	*	F51	2015-01-17	F51	Haleakala	Pan-STARRS 1
(713288)	*	F51	2015-01-17	F51	Haleakala	Pan-STARRS 1
(713336)	*	G96	2002-09-11	644	Palomar	NEAT
(713370)	*	F51	2015-01-17	F51	Haleakala	Pan-STARRS 1
(713605)	*	F51	2009-01-29	691	Kitt Peak	Spacewatch
(713698)	*	F51	2015-03-17	F51	Haleakala	Pan-STARRS 1
(713720)	*	F51	2011-02-11	G96	Mount Lemmon	Mount Lemmon Survey
(713745)	*	F51	2015-03-21	F51	Haleakala	Pan-STARRS 1
(713903)	*	G96	1998-09-19	645	Apache Point	Sloan Digital Sky Survey
(713906)	*	F51	2015-01-25	F51	Haleakala	Pan-STARRS 1
(713930)	*	F51	2000-04-03	691	Kitt Peak	Spacewatch
(713933)	*	F51	2011-03-04	G96	Mount Lemmon	Mount Lemmon Survey
(714073)	*	W84	2015-04-25	W84	Cerro Tololo	DECam
(714075)	*	F51	2015-04-25	F51	Haleakala	Pan-STARRS 1
(714076)	*	W84	2015-04-18	W84	Cerro Tololo	DECam
(714077)	*	W84	2015-04-19	W84	Cerro Tololo	DECam
(714078)	*	W84	2015-04-18	W84	Cerro Tololo	DECam
(714080)	*	W84	2015-04-19	W84	Cerro Tololo	DECam
(714099)	*	G96	2015-05-07	G96	Mount Lemmon	Mount Lemmon Survey
(714137)	*	F51	2000-09-03	645	Apache Point	Sloan Digital Sky Survey
(714144)	*	F51	2006-09-25	691	Kitt Peak	Spacewatch
(714235)	*	W84	2001-03-21	695	Kitt Peak	B. Gladman
(714237)	*	W84	2015-06-18	F51	Haleakala	Pan-STARRS 1
(714240)	*	W84	2015-05-20	W84	Cerro Tololo	DECam
(714246)	*	W84	2015-05-21	W84	Cerro Tololo	DECam
(714247)	*	W84	2015-05-23	W84	Cerro Tololo	DECam
(714273)	*	W84	2015-06-02	W84	Cerro Tololo	DECam
(714276)	*	W84	2015-06-02	W84	Cerro Tololo	DECam
(714282)	*	F51	2013-01-04	W84	Cerro Tololo	DECam
(714344)	*	F51	2002-09-13	644	Palomar	NEAT
(714365)	*	F51	2002-09-03	644	Palomar	NEAT
(714373)	*	F51	1998-09-17	691	Kitt Peak	Spacewatch
(714472)	*	F51	2015-06-29	F51	Haleakala	Pan-STARRS 1
(714491)	*	F51	2015-06-27	F51	Haleakala	Pan-STARRS 1
(714516)	*	F51	2002-08-05	644	Palomar	NEAT
(714569)	*	F51	2015-07-19	F51	Haleakala	Pan-STARRS 1
(714621)	*	F51	2011-10-30	J04	ESA OGS	ESA OGS
(714639)	*	F51	2011-08-29	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(714664)	*	F51	2011-09-29	G96	Mount Lemmon	Mount Lemmon Survey
(714795)	*	F51	2011-10-21	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(714855)	*	F51	2010-11-06	I41	Palomar	Palomar Transient Factory
(715061)	*	F51	2015-08-21	F51	Haleakala	Pan-STARRS 1
(715073)	*	F51	2002-10-09	644	Palomar	NEAT
(715178)	*	G45	2015-10-10	G45	Atom Site	Space Surveillance Telescope
(715187)	*	G45	2015-10-11	G45	Atom Site	Space Surveillance Telescope
(715231)	*	G96	2003-05-31	807	Cerro Tololo	M. W. Buie
(715235)	*	F51	2010-10-29	G96	Mount Lemmon	Mount Lemmon Survey
(715391)	*	F51	2015-09-25	G96	Mount Lemmon	Mount Lemmon Survey
(715489)	*	F51	2015-08-12	F51	Haleakala	Pan-STARRS 1
(715667)	*	F51	2003-05-31	807	Cerro Tololo	M. W. Buie
(715876)	*	F51	2015-12-08	F51	Haleakala	Pan-STARRS 1
(715961)	*	F51	2003-09-26	645	Apache Point	Sloan Digital Sky Survey

(715980)	*	F51	2013-04-17	W84	Cerro Tololo	DECam
(715994)	*	F51	2016-01-04	F51	Haleakala	Pan-STARRS 1
(716098)	*	F51	2013-04-17	W84	Cerro Tololo	DECam
(716148)	*	F51	2016-01-03	F51	Haleakala	Pan-STARRS 1
(716287)	*	F51	2013-08-13	691	Kitt Peak	Spacewatch
(716309)	*	F51	2016-01-17	F51	Haleakala	Pan-STARRS 1
(716319)	*	F51	2002-08-29	644	Palomar	NEAT
(716334)	*	F51	2002-02-13	645	Apache Point	Sloan Digital Sky Survey
(716340)	*	F51	2016-01-09	F51	Haleakala	Pan-STARRS 1
(716367)	*	F51	2011-03-26	G96	Mount Lemmon	Mount Lemmon Survey
(716424)	*	F51	2008-10-31	G96	Mount Lemmon	Mount Lemmon Survey
(716472)	*	F51	2015-12-18	G96	Mount Lemmon	Mount Lemmon Survey
(716494)	*	F51	2014-10-03	G96	Mount Lemmon	Mount Lemmon Survey
(716509)	*	F51	2009-01-17	691	Kitt Peak	Spacewatch
(716655)	*	F51	2015-12-08	F51	Haleakala	Pan-STARRS 1
(716660)	*	G96	2002-08-18	644	Palomar	NEAT
(716670)	*	F51	2008-09-24	G96	Mount Lemmon	Mount Lemmon Survey
(716687)	*	F51	2016-03-07	F51	Haleakala	Pan-STARRS 1
(716691)	*	G96	2009-01-20	691	Kitt Peak	Spacewatch
(716698)	*	F51	2013-09-01	G96	Mount Lemmon	Mount Lemmon Survey
(716704)	*	F51	2007-09-13	G96	Mount Lemmon	Mount Lemmon Survey
(716791)	*	G96	2010-09-03	G96	Mount Lemmon	Mount Lemmon Survey
(716823)	*	W84	2016-03-28	W84	Cerro Tololo	DECam
(716874)	*	F51	2016-04-01	F51	Haleakala	Pan-STARRS 1
(716883)	*	F51	2003-10-23	645	Apache Point	Sloan Digital Sky Survey
(716985)	*	F51	2012-08-06	F51	Haleakala	Pan-STARRS 1
(717021)	*	T05	2014-05-05	W84	Cerro Tololo	DECam
(717087)	*	F51	2016-07-17	F51	Haleakala	Pan-STARRS 1
(717200)	*	D29	2014-01-25	F51	Haleakala	Pan-STARRS 1
(717362)	*	G96	2016-09-25	G96	Mount Lemmon	Mount Lemmon Survey
(717410)	*	G96	2013-01-10	F51	Haleakala	Pan-STARRS 1
(717450)	*	G96	2016-10-04	G96	Mount Lemmon	Mount Lemmon Survey
(717499)	*	F51	2002-10-29	644	Palomar	NEAT
(717535)	*	F51	2008-12-30	621	Bergisch Gladbach	W. Bickel
(717588)	*	F51	2016-10-27	G96	Mount Lemmon	Mount Lemmon Survey
(717590)	*	G96	2016-10-29	G96	Mount Lemmon	Mount Lemmon Survey
(717593)	*	F51	2016-10-25	F51	Haleakala	Pan-STARRS 1
(717724)	*	691	2014-04-23	W84	Cerro Tololo	DECam
(717746)	*	F51	2006-11-15	G96	Mount Lemmon	Mount Lemmon Survey
(717976)	*	T09	2017-02-27	F51	Haleakala	Pan-STARRS 1
(718048)	*	F51	2008-02-10	G96	Mount Lemmon	Mount Lemmon Survey
(718110)	*	F51	2014-07-28	F51	Haleakala	Pan-STARRS 1
(718223)	*	G96	2017-02-24	G96	Mount Lemmon	Mount Lemmon Survey
(718333)	*	G96	2011-02-25	114	Zelenchukskaya Station	T. V. Kryachko, B. Satovski
(718398)	*	F51	2003-10-22	691	Kitt Peak	Spacewatch
(718400)	*	J43	2006-05-31	691	Kitt Peak	Spacewatch
(718549)	*	G96	2016-01-31	F51	Haleakala	Pan-STARRS 1
(718614)	*	F51	2016-03-28	W84	Cerro Tololo	DECam
(718692)	*	F51	2016-05-01	W84	Cerro Tololo	DECam
(718728)	*	F51	2016-03-28	W84	Cerro Tololo	DECam
(718730)	*	F51	2017-09-14	F51	Haleakala	Pan-STARRS 1
(718768)	*	F51	2015-04-14	G96	Mount Lemmon	Mount Lemmon Survey
(718803)	*	F51	2015-04-18	W84	Cerro Tololo	DECam
(718815)	*	F51	2002-03-05	645	Apache Point	Sloan Digital Sky Survey
(718818)	*	G96	2015-04-19	W84	Cerro Tololo	DECam

(718820)	*	G96	2015-04-18	W84	Cerro Tololo	DECam
(718835)	*	F51	2015-05-22	W84	Cerro Tololo	DECam
(718843)	*	F51	2008-02-10	G96	Mount Lemmon	Mount Lemmon Survey
(718844)	*	F51	2015-04-18	W84	Cerro Tololo	DECam
(718847)	*	F51	2017-10-28	F51	Haleakala	Pan-STARRS 1
(718850)	*	G96	2015-04-18	W84	Cerro Tololo	DECam
(718851)	*	G96	2015-04-18	W84	Cerro Tololo	DECam
(718873)	*	J43	2002-11-04	644	Palomar	NEAT
(718896)	*	F51	2015-04-19	W84	Cerro Tololo	DECam
(718902)	*	F51	2015-04-21	W84	Cerro Tololo	DECam
(718904)	*	F51	2015-05-20	W84	Cerro Tololo	DECam
(718920)	*	F51	2017-11-17	F51	Haleakala	Pan-STARRS 1
(718929)	*	F51	2015-05-20	W84	Cerro Tololo	DECam
(718957)	*	F51	2014-05-23	F51	Haleakala	Pan-STARRS 1
(718968)	*	F51	2014-05-21	F51	Haleakala	Pan-STARRS 1
(718975)	*	J43	2006-01-26	G96	Mount Lemmon	Mount Lemmon Survey
(718987)	*	F51	2015-04-18	W84	Cerro Tololo	DECam
(718988)	*	F51	2015-05-23	W84	Cerro Tololo	DECam
(718990)	*	F51	2014-02-10	F51	Haleakala	Pan-STARRS 1
(719040)	*	F51	2014-04-10	F51	Haleakala	Pan-STARRS 1
(719043)	*	F51	2018-02-11	F51	Haleakala	Pan-STARRS 1
(719044)	*	F51	2018-02-12	F51	Haleakala	Pan-STARRS 1
(719069)	*	F51	2003-10-15	699	Anderson Mesa	LONEOS
(719079)	*	703	2000-12-19	695	Kitt Peak	D. Wittman
(719178)	*	F51	2018-07-09	F51	Haleakala	Pan-STARRS 1
(719202)	*	F51	2014-05-23	F51	Haleakala	Pan-STARRS 1
(719204)	*	F51	2010-01-27	C51	WISE	WISE
(719207)	*	F51	2018-08-14	F51	Haleakala	Pan-STARRS 1
(719235)	*	D29	2007-08-23	691	Kitt Peak	Spacewatch
(719266)	*	G96	2012-10-16	G96	Mount Lemmon	Mount Lemmon Survey
(719269)	*	G96	2015-04-21	W84	Cerro Tololo	DECam
(719296)	*	F51	2015-05-21	W84	Cerro Tololo	DECam
(719302)	*	F51	2019-01-03	F51	Haleakala	Pan-STARRS 1
(719326)	*	G96	2015-05-20	W84	Cerro Tololo	DECam
(719328)	*	G96	2014-04-29	W84	Cerro Tololo	DECam
(719331)	*	G96	2009-12-15	568	Maunakea	P. Wiegert
(719336)	*	G96	2015-04-18	W84	Cerro Tololo	DECam
(719350)	*	F51	2014-04-28	W84	Cerro Tololo	DECam
(719359)	*	G96	2010-05-26	C51	WISE	WISE
(719366)	*	F51	2015-05-20	W84	Cerro Tololo	DECam
(719369)	*	F51	2015-03-21	F51	Haleakala	Pan-STARRS 1
(719376)	*	F51	2015-05-20	W84	Cerro Tololo	DECam
(719377)	*	F51	2014-04-28	W84	Cerro Tololo	DECam
(719379)	*	F51	2014-04-29	W84	Cerro Tololo	DECam
(719390)	*	F51	2015-04-17	G96	Mount Lemmon	Mount Lemmon Survey
(719425)	*	F51	2014-04-24	W84	Cerro Tololo	DECam
(719429)	*	F51	2014-04-24	W84	Cerro Tololo	DECam
(719434)	*	F51	2019-05-01	F51	Haleakala	Pan-STARRS 1
(719436)	*	F51	2015-05-20	W84	Cerro Tololo	DECam
(719439)	*	F51	2015-05-21	W84	Cerro Tololo	DECam
(719445)	*	F51	2019-05-27	F51	Haleakala	Pan-STARRS 1
(719459)	*	F52	2009-01-31	G96	Mount Lemmon	Mount Lemmon Survey
(719486)	*	F51	2010-10-13	G96	Mount Lemmon	Mount Lemmon Survey
(719487)	*	F52	2014-05-05	W84	Cerro Tololo	DECam
(719531)	*	G96	2015-04-18	W84	Cerro Tololo	DECam

(719547)	*	G96	2019-09-05	G96	Mount Lemmon	Mount Lemmon Survey
(719558)	*	W84	2019-09-01	W84	Cerro Tololo	DECam
(719570)	*	G96	2013-01-04	W84	Cerro Tololo	DECam
(719616)	*	F51	2014-04-28	W84	Cerro Tololo	DECam
(719671)	*	F51	2015-05-21	W84	Cerro Tololo	DECam
(719674)	*	G96	2020-04-23	G96	Mount Lemmon	Mount Lemmon Survey
(719684)	*	F51	2017-11-17	F51	Haleakala	Pan-STARRS 1
(719694)	*	F51	2009-04-19	568	Maunakea	P. Wiegert
(719702)	*	F51	2013-05-11	W84	Cerro Tololo	DECam
(719709)	*	I41	2020-07-14	I41	Palomar	Zwicky Transient Factory
(719713)	*	G96	2014-04-23	W84	Cerro Tololo	DECam
(719720)	*	F51	2014-04-23	W84	Cerro Tololo	DECam
(719724)	*	F51	2015-05-20	W84	Cerro Tololo	DECam
(719732)	*	F51	2016-05-01	W84	Cerro Tololo	DECam
(719733)	*	F51	2014-07-28	F51	Haleakala	Pan-STARRS 1
(719752)	*	F51	2020-08-23	F51	Haleakala	Pan-STARRS 1
(719764)	*	G96	2014-04-23	W84	Cerro Tololo	DECam
(719770)	*	F51	2015-05-20	W84	Cerro Tololo	DECam
(719778)	*	F52	2014-04-29	F51	Haleakala	Pan-STARRS 1
(719779)	*	F52	2014-05-30	695	Kitt Peak	M. W. Buie
(719784)	*	F51	2014-04-05	F51	Haleakala	Pan-STARRS 1
(719786)	*	F51	2014-04-23	W84	Cerro Tololo	DECam
(719798)	*	G96	2014-10-24	W84	Cerro Tololo	DECam
(719805)	*	F51	2010-01-31	C51	WISE	WISE
(719808)	*	F51	2014-03-03	W84	Cerro Tololo	DECam
(719814)	*	F52	2020-10-24	F52	Haleakala	Pan-STARRS 2
(719818)	*	G96	2014-05-20	F51	Haleakala	Pan-STARRS 1
(719854)	*	G96	2015-02-20	F51	Haleakala	Pan-STARRS 1
(719875)	*	W84	2021-05-11	W84	Cerro Tololo	DECam
(719884)	*	F51	2015-04-18	W84	Cerro Tololo	DECam
(719887)	*	F51	2016-03-28	W84	Cerro Tololo	DECam
(719890)	*	F51	2021-08-05	F51	Haleakala	Pan-STARRS 1
(719891)	*	F51	2015-05-20	W84	Cerro Tololo	DECam
(719892)	*	F51	2021-08-11	F51	Haleakala	Pan-STARRS 1
(719893)	*	F51	2018-01-12	F51	Haleakala	Pan-STARRS 1
(719902)	*	F51	2021-08-16	F51	Haleakala	Pan-STARRS 1
(719903)	*	F51	2015-05-20	W84	Cerro Tololo	DECam
(719917)	*	F51	2015-04-19	W84	Cerro Tololo	DECam
(719920)	*	F51	2015-04-10	G96	Mount Lemmon	Mount Lemmon Survey
(719925)	*	F52	2019-09-04	G96	Mount Lemmon	Mount Lemmon Survey
(719941)	*	V00	2010-11-11	G96	Mount Lemmon	Mount Lemmon Survey
(719943)	*	F51	2013-05-11	W84	Cerro Tololo	DECam
(719959)	*	F52	2015-05-20	W84	Cerro Tololo	DECam
(719968)	*	F52	2022-04-10	F52	Haleakala	Pan-STARRS 2
(719981)	*	G96	2015-05-20	W84	Cerro Tololo	DECam
(719983)	*	F51	2015-05-20	W84	Cerro Tololo	DECam
(719990)	*	W84	2022-12-24	W84	Cerro Tololo	DECam

New Names of Minor Planets

The following new names of minor planets have been approved by the WGSBN. Discovery details, for information only, are given in the following order: date of discovery; discoverer(s) name(s); discovery site; discovery site observatory code. The discoverer(s) names(s) is/are followed by an asterisk if this is a change from what was published when the object was numbered.

(91212) Virgiliogonano = 1998 YQ_7

Discovery: 1998-12-24 / CSS / Catalina / 703

Virgilio Gonano (b. 1978) is an Italian amateur astronomer and geologist. He is a prolific contributor to many citizen science projects and is a co-discoverer of activity observed on many active asteroids. He has also co-authored many articles on minor planets.

(127658) Gapers = 2003 DV_{10}

*Discovery: 2003-02-26 / F. Bernardi * / Campo Imperatore / 599*

The Gruppo Astrofili Persicetani (GAPers) is an Italian cultural association near Bologna. For more than 40 years it has promoted astronomy and natural sciences. Together with the local administration, it created the Museo del Cielo e della Terra, and the Planetarium and Astronomical Observatory of San Giovanni Persiceto (BO).

(128242) Šmahel = 2003 SF_{171}

*Discovery: 2003-09-22 / KLENOT * / Kleť / 246*

František Šmahel (b. 1934) is a Czech historian. His main research interest has been the late Middle Ages, especially Renaissance humanism and reformation in Central Europe including hussitism. He co-initiated the Centre for Medieval Studies foundation in Prague and served as its first director (1998–2004).

(299792) Celeritas = 2006 SY_{93}

Discovery: 2006-09-18 / Spacewatch / Kitt Peak / 691

The speed of light in a vacuum, commonly denoted *c*, is a universal physical constant that is equal to 299,792,458 meters per second. The word “celeritas” means “speed” in Latin.

(361712) Liuhui = 2007 VX_{295}

Discovery: 2007-11-05 / PMO NEO Survey Program / XuYi / D29

Liu Hui (*c.* 225–295) was one of the most important mathematicians of the ancient world. He authored significant works such as a commentary on the *Nine Chapters on the Mathematical Art* and *Haidao Suanjing*, in which he proposed mathematical theories such as “the method of exhaustion”, Liu Hui's principle, and “the repeated differences method”.

(589718) Csopak = 2010 RY_{173}

*Discovery: 2010-09-06 / K. Sárneczky, Z. Kuli * / Piszkéstető / 461*

Csopak is a Hungarian village on the northern shore of Lake Balaton, famous for its excellent beaches and fine wines. The first written record of the village was in 1277, but its history dates back to Roman times.

(603380) Dorisbrougham = 2015 CO_{17}

*Discovery: 2008-02-26 / C.-S. Lin, Q.-z. Ye * / Lulin / D35*

Doris Marie Brougham (1926–2024) was an American and Taiwanese educator. In 1962 she founded the Studio Classroom, the English teaching program that has benefited generations of students in Taiwan and in Asia.

(673014) Kosakissattila = 2015 AM_{49}

*Discovery: 2014-09-01 / EURONEAR * / La Palma / 950*

Attila Kósa-Kiss (b. 1954 in Salonta, Romania) is a graduate environmentalist, member of the Hungarian Astronomical Association and Hungarian Meteorological Society. He has made more than 100 000 visual measurements of 670 variable stars, has observed 100 comets, and held stargazing sessions to over 10 000 people.

(690780) Constantinescu = 2014 LJ_{38}

*Discovery: 2014-06-03 / EURONEAR * / La Palma / 950*

Radu Dan Constantinescu (b. 1955) is a Professor of Physics at the University of Craiova, Romania. He has worked in nonlinear dynamical systems, constrained dynamics, gauge field theory, mathematical models, and astrophysics, serving as Secretary General of the Romanian Physical Society and current President of the Balkan Physical Union.

(690923) Predatu = 2014 NB_{73}

*Discovery: 2014-07-10 / EURONEAR * / La Palma / 950*

Marian Predatu (b. 1967) is a Romanian astrophysicist working at the University of Craiova, Romania, where he has built and manages the AstroED Observatory and has conducted lots of educational and public outreach activities. As a EURONEAR team member, he has contributed to light-curve and spectral studies of NEAs, validating and discovering many asteroids.

(697402) Ao = 2017 BX_{232}

*Discovery: 2017-01-23 / COIAS * / Maunakea / T09*

Ao Manaka is a character in the comic/animation *Asteroid in Love* created by Japanese manga artist Quro. Ao and her friends enjoy Earth Science Club activities in their high school with a dream of naming an asteroid "Ao." The work encouraged many readers to study Earth and planetary sciences with its accurate depiction of celestial objects and geology.

Recent Comet Namings & Numberings

Recently-assigned comet names and numbering of periodic comets are listed below. The recently-assigned names list indicates, using an asterisk, any comet whose discovery is eligible for the Edgar Wilson Award, as well as the reference where the name first appears (this may not be the circular announcing the discovery, or the first appearance of a name if the name was modified subsequently). If a date appears as the reference, it refers to the date that a News note of a name change appeared on the WGSBN website. If a name contains accented characters, the approved ASCII-only version of the name is included between [...]: note that any print, PDF or web usage must use the proper accented form. Newly-numbered objects that are being accorded dual status are flagged as such.

Recent Namings (in reverse chronological order)

P/2024 Q1 (PANSTARRS)		*MPEC* 2024-Q87
P/2023 JN_{16} (Lemmon)		*MPEC* 2024-Q4
C/2023 TD_{22} (Lemmon)		*MPEC* 2024-P107
P/2024 O2 (PANSTARRS)		*MPEC* 2024-P90
P/2024 N6 = P/2002 QU_{151} (NEAT-PANSTARRS)		*MPEC* 2024-P41
C/2024 O1 (PANSTARRS)		*MPEC* 2024-P21
C/2024 N4 (Sárneczky) [Sarneczky]		*MPEC* 2024-O41
C/2024 M1 (ATLAS)		*MPEC* 2024-O20
C/2024 L5 (ATLAS)		*MPEC* 2024-O19
C/2024 N3 (Sárneczky) [Sarneczky]		*MPEC* 2024-O11
P/2024 N2 = P/2010 T8 = P/2017 R2 (PANSTARRS)		*MPEC* 2024-N123
C/2024 N1 (PANSTARRS)		*MPEC* 2024-N107
P/2024 L4 (Rankin)		*MPEC* 2024-N106
C/2024 L3 (PANSTARRS)		*MPEC* 2024-N105
C/2024 L2 (PANSTARRS)		*MPEC* 2024-M24
P/2024 K1 (PANSTARRS)		*MPEC* 2024-L114
C/2024 L1 (PANSTARRS)		*MPEC* 2024-L59
P/2024 FG_9 (Nanshan-Hahn)	*	*MPEC* 2024-L4
C/2024 J4 (Lemmon)		*MPEC* 2024-K128
C/2024 J3 (ATLAS)		*MPEC* 2024-K118
C/2024 G7 (ATLAS)		*MPEC* 2024-K41
C/2024 J2 (Wierzchoś) [Wierzchos]		*MPEC* 2024-K31
C/2024 G6 (ATLAS)		*MPEC* 2024-J134
P/2024 J1 (PANSTARRS)		*MPEC* 2024-J133
C/2024 G5 (Leonard)		*MPEC* 2024-J126
C/2024 G4 (PANSTARRS)		*MPEC* 2024-J123
485P/2022 U6 = P/2006 AH_2 (Sheppard-Tholen)		*MPEC* 2024-H65

C/2024 G3 (ATLAS)	*MPEC* 2024-H22
C/2024 G2 (ATLAS)	*MPEC* 2024-H20
C/2024 G1 (Wierzchoś) [Wierzchos]	*MPEC* 2024-H10
C/2024 F2 (PANSTARRS)	*MPEC* 2024-G103
P/2024 F1 (PANSTARRS)	*MPEC* 2024-G102
C/2024 E2 (Bok)	*MPEC* 2024-F91
C/2024 E1 (Wierzchoś) [Wierzchos]	*MPEC* 2024-E102
C/2021 X2 (Bok)	*MPEC* 2024-E8
C/2019 O2 (PANSTARRS)	*MPEC* 2024-E7
C/2019 G2 (PANSTARRS)	*MPEC* 2024-G1
484P/2005 XR_{132} (Spacewatch)	*MPEC* 2024-D135
482P/2014 VF_{40} (PANSTARRS)	*MPEC* 2024-D133
C/2023 X7 (PANSTARRS)	*MPEC* 2024-D102
C/2024 C4 (ATLAS)	*MPEC* 2024-D98
C/2024 C3 (PANSTARRS)	*MPEC* 2024-D97
C/2024 A2 (ATLAS)	*MPEC* 2024-C180
C/2024 C2 (PANSTARRS)	*MPEC* 2024-C178
C/2024 C1 (PANSTARRS)	*MPEC* 2024-C177
C/2024 B2 (Lemmon)	*MPEC* 2024-C87
C/2024 B1 (Lemmon)	*MPEC* 2024-C86

Recent Numberings

486P/2018 L5 = P/2024 H1 (Leonard)	*MPC* 174198
485P/2022 U6 = P/2006 AH_2 (Sheppard-Tholen)	*MPC* 172941
484P/2005 XR_{132} (Spacewatch)	*MPC* 172941
483P/2016 J1 = P/2010 M9 = P/2020 Y6 = P/2021 K5 (PANSTARRS)	*MPC* 171409
482P/2014 VF_{40} (PANSTARRS)	*MPC* 171409
481P/2012 WA_{34} = P/2024 C5 (Lemmon-PANSTARRS)	*MPC* 171409
480P/2014 A3 = P/2023 X6 (PANSTARRS)	*MPC* 169139
479P/2011 NO_1 = P/2023 WM_{26} (Elenin)	*MPC* 169139
478P/2023 Y3 = P/2017 BQ_{100} (ATLAS)	*MPC* 169139
477P/2018 P3 = P/2023 V8 (PANSTARRS)	*MPC* 169139
476P/2015 HG_{16} = P/2023 W2 (PANSTARRS)	*MPC* 169139
475P/2004 DO_{29} = P/2023 V7 (Spacewatch-LINEAR)	*MPC* 169139
474P/2023 S4 = P/2017 O4 (Hogan)	*MPC* 169139
473P/2001 Q6 = P/2023 W1 (NEAT)	*MPC* 169139
472P/2002 T6 = P/2023 RL_{75} (NEAT-LINEAR)	*MPC* 167069
471P/2023 KF_3 = P/2010 YK_3	*MPC* 164694
470P/2014 W1 = P/2023 O2 (PANSTARRS)	*MPC*164694
469P/2015 XG_{422} (PANSTARRS)	*MPC* 164694
468P/2004 V3 = P/2023 O1 (Siding Spring)	*MPC* 164694
467P/2010 TO_{20} = P/2023 H6 (LINEAR-Grauer)	*MPC* 164694

Standard Acronyms & Abbreviations

The standard acronyms that may be used in citations without needing to be expanded are listed at:

https://www.wgsbn-iau.org/documentation/AcronymsAndAbbreviations.html.

Statistics & Links

There are currently 24893 named minor planets.

Discoverers of minor planets may submit name proposals via the WGSBN voting website at:

https://www.wgsbn-iau.org/cgi-bin/submission.py

Registration is required to access this site. Requests for access should be made to `contact@wgsbn-iau.org`.

The form for IAU members to express interest in being a Rotating Member of the WGSBN in future years is available at:

https://www.wgsbn-iau.org/rotating_members.html

Archival copies of the *Bulletin*, as well as machine-readable datafiles of new names, citations and corrigenda from each issue, are available on the WGSBN website:

https://www.wgsbn-iau.org/

The *Bulletin* is also available from the Publications section of the IAU website:

https://www.iau.org/publications/iau/wgsbn-bulletins/

The email address for the WGSBN is `contact@wgsbn-iau.org`

WGSBN Members

There are 15 members of the WGSBN, 11 of whom are voting members. The other four members, who are *ex-officio*, are the President and General Secretary of the IAU, and representatives for the IAU WG Planetary System Nomenclature and the IAU Minor Planet Center.

The current members of the WGSBN are listed below:

- Jana Tichá, Chair
- Keith Noll, Vice-Chair
- Gareth Williams, Secretary
- Yuliya Chernetenko
- Julio Fernández
- Daniel Green
- Pam Kilmartin
- Syuichi Nakano
- Ryan S. Park. (Rotating Member)
- Driss Takir (Rotating Member)
- Jin Zhu
- Willy Benz, *ex-officio* (IAU President)
- Diana Mary Worrall, *ex-officio* (IAU General Secretary)
- Rita Schulz, *ex-officio* (WGPSN)
- Peter Vereš, *ex-officio* (MPC)

The WGSBN is a functional Working Group of the IAU, under the Executive Committee.