March 2025

ALPO Comet News

A Publication of the Comets Section of the Association of Lunar and Planetary Observers

An Outbursting and Occulting
29P/Schwassmann-Wachmann

alpo-astronomy.org
comets@alpo-astronomy.org

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On the Front Cover:

29P/Schwassmann-Wachmann was observed by Eliot Herman, of Tucson, Arizona, on four nights (Feb 2-5, 2025) as it approached the 12th magnitude star it occulted on February 5 at 23:08:55 UT. The images were taken with the iTelescopes T11 0.5-m f/4.5 reflector and FLI ProLine PL11002M camera at the Utah Desert Remote Observatory.

The monthly ALPO Comet News PDF can be found on the ALPO Comets Section website (in the Comets Section Image Gallery). A shorter version of this report is posted on a dedicated Cloudy Nights forum (https://www.cloudynights.com/topic/956463-alpo-comet-news-for-march-2025/). All are encouraged to join the discussion over at Cloudy Nights. The ALPO Comets Section welcomes all comet-related articles, observations, images, drawings, magnitude estimates, or spectra. One does not have to be a member of ALPO to submit material, though membership is appreciated.

Please send your observations to the Comets Section at < comets@alpo-astronomy.org >, Coordinator Carl Hergenrother < carl.hergenrother@alpo-astronomy.org >, and/or Acting Assistant Coordinator Michel Deconinck < michel.deconinck@alpo-astronomy.org >.

To learn more about the ALPO, please visit us @ http://www.alpo-astronomy.org.

Summary

The last months of 2024 and the first month of 2025 saw a flurry of bright comet activity. Unfortunately, the middle months of 2025 are expected to experience a bright comet drought with no comets expected to become brighter than 10th magnitude until late in the year.

Currently, the best comets are outbursting 29P/Schwassmann-Wachmann in the evening sky at 10-11th magnitude, departing C/2023 A3 (Tsuchinshan-ATLAS) in the morning sky, also at 10-11th magnitude, and the diffuse remains of C/2024 G3 (ATLAS) for southern hemisphere observers.

The next reasonably bright comet may be newly announced C/2025 A6 (Lemmon), which will be a northern hemisphere-only object, peaking at 9th magnitude or perhaps a few magnitudes brighter in October and November.

In February, the ALPO Comets Section received 45 magnitude estimates and 30 images of 35 comets: C/2025 D1 (Groeller), P/2025 C1 (ATLAS), C/2025 B2 (Borisov), C/2025 A6 (Lemmon), P/2025 A5 = P/2019 Y3 (Catalina), P/2024 X3 (PANSTARRS), C/2024 M1 (ATLAS), C/2024 A1 (ATLAS), C/2023 T3 (Fuls), P/2023 S1, C/2023 Q1 (PANSTARRS), C/2023 F3 (ATLAS), C/2023 A3 (Tsuchinshan-ATLAS), C/2022 R6 (PANSTARRS), C/2022 QE78 (ATLAS), C/2022 N2 (PANSTARRS), C/2022 L2 (ATLAS), C/2022 E2 (ATLAS), C/2021 G2 (ATLAS), C/2019 U5 (PANSTARRS), C/2017 K2 (PANSTARRS), C/2014 UN271 (Bernardinelli-Bernstein), 496P/Hill, 472P/NEAT-LINEAR, 350P/McNaught, 333P/LINEAR, 276P/Vorobjov, 268P/Bernardi, 253P/PANSTARRS, 195P/Hill, 88P/Howell, 49P/Arend-Rigaux, 29P/Schwassmann-Wachmann, 13P/Olbers, and 12P/Pons-Brooks.

A big thanks to our recent contributors: Sam Badcock, José J. Chambó, Juan Jose Gonzalez Suarez, Christian Harder, Eliot Herman, Rik Hill, Michael Jäger, John Maikner, Mike Olason, and Andrew Pearce.

Request for Observations

We welcome all comet observations, whether textual descriptions, images, drawings, magnitude estimates, or spectra. We'd love to hear from you! Please share your observations via email with the Comets Section Coordinator Carl Hergenrother and Assistant Coordinator Michel Deconinck at comets@alpo-astronomy.org.

Photometric Corrections to Magnitude Measurements

We include lightcurves for the comets discussed in these reports and apply aperture and personal corrections to the visual observations and only personal corrections are applied to digital observations. Though we try to keep these lightcurves up to date, observations submitted just before publication may not be included in the lightcurves until next month's News. All magnitude estimates are affected by many factors, including instrumental (aperture, focal length, magnification, type of optics), environmental (sky brightness due to moonlight, light pollution, twilight, aurora activity, zodiacal light, etc.), cometary (degree of condensation, coma color, strength and type of gas emission lines, coma-tail interface) and personal (sensitivity to different wavelengths, personal technique, observational biases). The first correction used here corrects for differences in aperture [Charles S. Morris, On Aperture Corrections for Comet Magnitude Estimates. Publ Astron Soc Pac 85, 470, 1973]. Visual observations are corrected to a standard aperture of 6.78 cm by 0.019 magnitudes per centimeter for reflectors and 0.066 magnitudes per centimeter for refractors. After applying the aperture correction and if a sufficient number of visual observations are submitted for a particular comet, we also determine personal corrections for each observer for each comet; for digital observations, only a personal correction is applied. A single observer submitting both visual and digital magnitude measurements may also have separate corrections for each observing method. If the magnitudes shown in the text don't match those plotted in the lightcurves, it is because of the application of these corrections.

Acknowledgments

In addition to observations submitted directly to the ALPO, we occasionally use data from other sources to augment our analysis. Therefore, we acknowledge with thanks the observations submitted directly to the ALPO and those initially submitted to the International Comet Quarterly, Minor Planet Center, and COBS Comet Observation Database. In particular, we have been using observations submitted to the COBS site by Thomas Lehmann for our analysis and would like to thank Thomas for his COBS observations. We would also like to thank the Jet Propulsion Laboratory for making their Small-Body Browser and Orbit Visualizer available and Seiichi Yoshida for his Comets for Windows programs that produced the lightcurves and orbit diagrams in these pages. Last but not least, we'd like to thank Syuichi Nakano and the Minor Planet Center for their comet orbit elements, the asteroid surveys and dedicated comet hunters for their discoveries, and all of the observers who volunteer their time to add to our knowledge of these fantastic objects.

Thank you to everyone who contributed to the ALPO Comets Section!

Clear skies!
- Carl Hergenrother

Comets Calendar

Lunar Phases (UTC)

Mar 06 - First Quarter Moon
Mar 14 - Full Moon (Total Lunar Eclipse)
Mar 22 - Last Quarter Moon
Mar 29 - New Moon

Comets at Perihelion

Mar 02 - 48P/Johnson [q = 2.01 au, 6.6-year period, V ~ 14, discovered in 1949, has been observed at all 11 predicted returns since 1949, very low elongation of 11 deg at perihelion]
Mar 03 - P/2019 Y3 = P/2025 A5 (Catalina) [q = 0.93 au, 5.2-year period, V ~ 16, seen at returns in 2019 and 2025]
Mar 05 - 229P/Gibbs [q = 2.44 au, 7.8-year period, V ~ 18-19, discovered in 2009, pre-discovery observations from 2001 return, also seen at returns in 2017 and now 2025, low elongation of 27 deg at perihelion]
Mar 05 - C/2024 Q3 (PANSTARRS) [q = 2.09 au, V ~ 19]
Mar 09 - 302P/Lemmon-PANSTARRS [q = 3.29 au, 8.8-year period, V ~ 16-17, discovered in 2014, pre-discovery observations from 2007, 2025 is third observed return, very low elongation of 14 deg at perihelion]
Mar 10 - 496P/Hill [q = 1.62 au, 15.1-year period, V ~ 15, 2025 is 2nd observed return after discovery in 2010]
Mar 10 - C/2024 L5 (ATLAS) [q = 3.43 au, V ~ 15]
Mar 12 - C/2024 C2 (PANSTARRS) [q = 8.99 au, 65-year period, Centaur object, V ~ ??, only observed between December 2023 and April 2024, may have been in outburst at the time]
Mar 14 - 323P/SOHO [q = 0.04 au, 3.8-year period, discovered in 2008, seen at 7 returns including 1999, 2004, 2008, 2012, 2016, 2021, and 2025, HST observed two fragments in 2021, may have been observed in 254 AD, questions remain as to whether this object is a comet or an asteroid with a very small perihelion experiencing mass loss due to a rapid 0.52-hr rotation period and thermal stresses, very low elongation of 2 deg at perihelion, may be visible in SOHO images]
Mar 16 - C/2024 T3 (PANSTARRS) [q = 3.71 au, V ~ 19]
Mar 19 - C/2024 J2 (Wierzchos) [q = 1.81 au, V ~ 14, low elongation of 23 deg at perihelion]
Mar 19 - C/2024 W1 (PANSTARRS) [q = 2.56 au, V ~ 17-18]
Mar 25 - (196256) 2003 EH1 [q = 1.19 au, 5.5-year period, V ~ 19, currently an inactive object, 2003 EH1 is the parent body of the Quadrantid meteor shower and may have been observed as a naked-eye comet in 1490 AD]
Mar 25 - 21P/Giacobini-Zinner [q = 1.01 au, 6.5-year period, V ~ 10, discovered in 1900 and re-discovered in 1913, seen at 17 returns including the current one, reached V = 6-7 at last return in 2018, 2025 is a poor return with a very low elongation of 5 deg at perihelion]
Mar 26 - 351P/Wiegert-PANSTARRS [q = 3.13 au, 9.4-year period, V ~ 19, discovered in 2016, also seen in pre-discovery returns in 1997 and 2006, yet to be seen at current return]

Recent Magnitudes Contributed to the ALPO Comets Section

Comet Des	YYYY MM DD.DD (UT)	Mag	SC	APER	FL	POW	COMA Dia	COMA DC	TAIL LENG	TAIL PA	ICQ CODE	Observer Name
C/2025 A6 (Lemmon)												
2025A6	2025 02 26.04	C 20.8	BG	30.5H	4A920						ICQ XX MAI01	John Maikner
C/2024 A1 (ATLAS)												
2024A1	2025 02 04.64	C 16.6	AQ	35.0T	5A440		0.5				ICQ XX PEA	Andrew Pearce
2024A1	2025 02 01.72	C 16.3	AV	35.0T	5A440		0.5				ICQ XX PEA	Andrew Pearce
C/2023 T3 (Fuls)												
2023T3	2025 02 28.66	C 15.7	AV	35.0T	6A080		0.6				ICQ XX PEA	Andrew Pearce
2023T3	2025 02 04.71	C 16.5	AQ	35.0T	5A080		0.5				ICQ XX PEA	Andrew Pearce
2023T3	2025 02 01.81	C 16.7	AV	35.0T	5a720		0.5		1.4m	281	ICQ XX PEA	Andrew Pearce
C/2023 F3 (ATLAS)												
2023F3	2025 02 28.69	C 16.7	AV	35.0T	6A080		0.6				ICQ XX PEA	Andrew Pearce
C/2023 A3 (Tsuchinshan-ATLAS)												
2023A3	2025 02 24.51	V 10.7	GG	5.0R	5a600		2		2	m332	ICQ XX OLAaa	Mike Olason
C/2022 R6 (PANSTARRS)												
2022R6	2025 02 04.61	C 16.1	AQ	35.0T	5A080		0.5				ICQ XX PEA	Andrew Pearce
2022R6	2025 02 01.74	C 15.9	AV	35.0T	6A080		0.46				ICQ XX PEA	Andrew Pearce
C/2022 QE78 (ATLAS)												
2022QE78	2025 02 04.62	C 14.8	AV	35.0T	6A080		0.7		0.6m	247	ICQ XX PEA	Andrew Pearce
C/2022 L2 (ATLAS)												
2022L2	2025 02 04.65	C 17.5	AV	35.0T	6A080		0.3				ICQ XX PEA	Andrew Pearce
2022L2	2025 02 01.77	C 16.8	AV	35.0T	5A080		0.5				ICQ XX PEA	Andrew Pearce
C/2022 E2 (ATLAS)												
2022E2	2025 02 17.78	S 12.6	TI	53.1L	162		1.2	3			ICQ XX HAR11	Christian Harder
C/2021 G2 (ATLAS)												
2021G2	2025 02 28.71	C 13.7	AV	35.0T	6a900		0.8		1.9m	249	ICQ XX PEA	Andrew Pearce
2021G2	2025 02 04.76	C 14.0	AV	35.0T	6a720		1.2		3.1m	243	ICQ XX PEA	Andrew Pearce
C/2020 K1 (PANSTARRS)												
2020K1	2025 02 22.36	V 18.3	AV	25.0L	4A750				3	m350	ICQ XX BADaa	Sam Badcock
2020K1	2025 02 04.58	C 17.2	AQ	35.0T	5A440		0.5				ICQ XX PEA	Andrew Pearce
2020K1	2025 02 01.67	C 17.1	AV	35.0T	5A440		0.5				ICQ XX PEA	Andrew Pearce
C/2019 U5 (PANSTARRS)												
2019U5	2025 02 04.60	C 16.4	AQ	35.0T	5A080		0.6		2.9m	96	ICQ XX PEA	Andrew Pearce
2019U5	2025 02 01.75	C 16.4	AV	35.0T	5A080		0.5				ICQ XX PEA	Andrew Pearce
C/2017 K2 (PANSTARRS)												
2017K2	2025 02 01.58	C 16.4	AV	35.0T	5A080		0.5				ICQ XX PEA	Andrew Pearce
C/2014 UN271 (Bernardinelli-Bernstein)												
2014UNR12	025 02 22.37	V 16.6	AV	25.0L	4A750				5.2s	19	ICQ XX BADaa	Sam Badcock
2014UNR12	025 02 14.55	C 15.6	AV	35.0T	6A080		0.5				ICQ XX PEA	Andrew Pearce
2014UNR12	025 02 04.56	C 15.5	AQ	35.0T	5A080		0.5				ICQ XX PEA	Andrew Pearce
2014UNR12	025 02 01.65	C 15.8	AV	35.0T	5A080		0.8				ICQ XX PEA	Andrew Pearce
P/2025 C1 (ATLAS)												
P2025C1	2025 02 28.67	C 17.2	AV	35.0T	6A440		0.6		0.5m	309	ICQ XX PEA	Andrew Pearce
P/2023 S1												
P2023S1	2025 02 04.67	C 14.8	AV	35.0T	6a900		0.7		1.2m	285	ICQ XX PEA	Andrew Pearce
P2023S1	2025 02 01.61	C 15.1	AV	35.0T	5A080		0.9		2	m295	ICQ XX PEA	Andrew Pearce
472P/NEAT-LINEAR												
472	2025 02 22.63	C 16.0	AV	35.0T	6A080		0.8				ICQ XX PEA	Andrew Pearce
350P/McNaught												
350	2025 02 26.14	C 21.2	BG	30.5H	4G200						ICQ XX MAI01	John Maikner
276P/Vorobjov												
276	2025 02 01.55	C 17.5	AV	35.0T	5a540		0.4				ICQ XX PEA	Andrew Pearce
268P/Bernardi												
268	2025 02 26.08	C 19.8	BG	30.5H	4B400						ICQ XX MAI01	John Maikner
253P/PANSTARRS												
253	2024 12 22.60	C 18.0	AV	35.0T	5A260		0.4				ICQ XX PEA	Andrew Pearce
88P/Howell												
88	2025 02 28.64	C 17.9	AV	35.0T	6A080		0.4				ICQ XX PEA	Andrew Pearce
29P/Schwassmann-Wachmann												
29	2025 02 28.64	C 12.2	AV	35.0T	6a300		1.9				ICQ XX PEA	Andrew Pearce
29	2025 02 25.82	S 10.4	TK	20.3T	10	77	6	2/			ICQ XX GON05	Juan Jose Gonzalez Suarez
29	2025 02 18.80	S 11.7:	TI	25.2L		92	2.7	2			ICQ XX HAR11	Christian Harder
29	2025 02 17.81	S -	TI	53.1L		139	2.5	2/			ICQ XX HAR11	Christian Harder
29	2025 02 07.70	C 10.6	AV	35.0T	6a720		4				ICQ XX PEA	Andrew Pearce
29	2025 02 05.68	C 11.0	AV	35.0T	6a720		3				ICQ XX PEA	Andrew Pearce
29	2025 02 04.67	C 11.1	AV	35.0T	6a720		2.9				ICQ XX PEA	Andrew Pearce
29	2025 02 03.61	C 11.2	AV	35.0T	6a720		2				ICQ XX PEA	Andrew Pearce
29	2025 02 01.62	C 11.7	AV	35.0T	6a720		3				ICQ XX PEA	Andrew Pearce

13P/Olbers
 13   2025 02 24.48 V 15.1 GG 5.0R 5a600   0.4   ICQ XX OLAaa Mike Olason

Comets News

Looking Ahead to the Next 12 Months

The chart below shows those comets expected to become brighter than magnitude 10 over the next 12 months. The number in each date bin is the expected brightness for that date. Magnitudes are only shown for dates when the comet is above the horizon during the dark of night (between the end of astronomical twilight in the evening and the start of astronomical twilight in the morning). All brightness predictions are just that—predictions and may be off by many magnitudes.

Northern Hemisphere	03/06/25	03/16/25	03/26/25	04/05/25	04/15/25	04/25/25	05/05/25	05/15/25	05/25/25	06/04/25	06/14/25	06/24/25	07/04/25	07/14/25	07/24/25	08/03/25	08/13/25	08/23/25	09/02/25	09/12/25	09/22/25	10/02/25	10/12/25	10/22/25	11/01/25	11/11/25	11/21/25	12/01/25	12/11/25	12/21/25	12/31/25	01/10/26	01/20/26	01/30/26	02/09/26	02/19/26	03/01/26
C/2024 G3 (ATLAS)																																				
C/2025 A6 (Lemmon)																						9	9	9												
210P/Christensen																											9									
24P/Schaumasse																												9	8	8	8	8	8	9	9	
C/2024 E1 (Wierzchos)																																			8	8
Southern Hemisphere																																				
C/2024 G3 (ATLAS)	9																																			
C/2025 A6 (Lemmon)																																				
210P/Christensen																								9												
24P/Schaumasse																												9	8	8	8	8	8	9	9	
C/2024 E1 (Wierzchos)																																7	7	7	8	8

Figure 1 - Observability and brightness of comets expected to become brighter than magnitude 10 over the next 12 months.

Last 10 Periodic Comet Numberings (from WGSBN Bull. 4, #17)

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497P/2011 UA134 = P/2024 T4                  (Spacewatch-PANSTARRS)
496P/2010 A3    = P/2024 S3                  (Hill)
495P/2016 A2    = P/2024 RU145               (Christensen)
494P/2024 N2    = P/2010 T8    = P/2017 R2   (PANSTARRS)
493P/2005 SB216 = P/2004 Q2                  (LONEOS)
492P/2010 WK    = P/2010 PB57  = P/2024 O3   (LINEAR)
491P/2014 MG4   = P/2024 K2                  (Spacewatch-PANSTARRS)
490P/2019 M2    = P/2024 C6                  (ATLAS)
489P/1894 F1    = P/2007 HE4                 (Denning)
488P/2024 N6    = P/2002 QU151               (NEAT-PANSTARRS)
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New Recoveries & Discoveries

P/2025 D4 (ATLAS)

Discovered 2025 February 23 at 18-19th magnitude with a 0.5-m f/2 Schmidt reflector at Rio Hurtado, Chile
Pre-discovery observations back to December 2023
Short-period object with a 2024 February 14 perihelion of 3.25 au and 26.5-year orbital period
Peak brightness at 18th magnitude in April when at opposition
Ref. CBET 5514, MPEC 2025-D235

P/2025 D3 (PANSTARRS)

Discovered 2025 February 22 at 21st magnitude with the Pan-STARRS2 1.8-m reflector at Haleakala
Pre-discovery observations back to December 2024

Short-period object with a 2024 July 26 perihelion of 2.97 au and 7.9-year orbital period
Already past peak brightness
Ref. CBET 5513, MPEC 2025-D211

P/2025 D2 (PANSTARRS)

Discovered 2025 February 22 at 21st magnitude with the Pan-STARRS2 1.8-m reflector at Haleakala
Centaur object with perihelion of 7.23 au on 2028 January 13 and 29.6-year orbital period (give or take a year on the orbital period)
Already near peak brightness
Ref. CBET 5510, MPEC 2025-D149

C/2025 D1 (Groeller)

Discovered on 2025 February 20 at 20th magnitude with the 2.25-m Bok reflector at Kitt Peak
Numerous pre-discovery observations found back to June 2018 when the comet was 21.3 au from the Sun!
Comet is currently at 15.1 au from the Sun, so between the distance of Saturn and Uranus
Perihelion on 2028 May 19 at 14.1 au
Peak brightness of 18-19th magnitude
C/2025 D1 (Groeller) is currently the holder of "known comet with the largest perihelion distance", the previous record holder was C/2003 A2 (Gleason) at 11.4 au, though the Centaur (248835) 2006 SX368 (q = 12.0 au) was reported as possibly active in a 2009 paper by David Jewitt
Ref. 5509, MPEC 2025-D83

P/2025 C1 (ATLAS)

Discovered on 2025 February 2 at 18th magnitude with an ATLAS 0.5-m f/2 Schmidt reflector at Haleakala, Hawaii
Short-period comet with an orbital period of 8.9 years
Perihelion on 2025 February 3 at 2.75 au
May be in outburst with follow-up observations finding the comet at 16th magnitude
Could brighten by another few tenths of a magnitude when at opposition in April (delta = 1.8 au), though may fade if the current brightness is only due to an outburst
Ref. CBET 5503, MPEC 2025-C158

2025 BU10

Discovered on 2025 January 27 at 21st magnitude with the Mt. Lemmon survey's 1.5-m reflector
Apparently asteroidal object
Perihelion on 2024 September 30 at 7.28 au
Orbital period of ~720 years with an aphelion of ~150 au
Ref. JPL Small-Body Database Lookup

2025 BD4

Discovered on 2025 January 19 at 21st magnitude with the Pan-STARRS1 1.8-m reflector at Haleakala
Pre-discovery observations back to December 2014
Apparently asteroidal object
Perihelion on 2027 July 28 at 11.67 au
Orbital period of ~620 years with an aphelion of ~134 au
Ref. JPL Small-Body Database Lookup

2025 BY2

Discovered on 2025 January 19 at 22nd magnitude with the Pan-STARRS1 1.8-m reflector at Haleakala
Pre-discovery observations back to December 2024

Apparently asteroidal object
Perihelion on 2024 December 26 at 4.95 au
Orbital period of ~137 years with an aphelion of ~48 +/- 27 au
Ref. JPL Small-Body Database Lookup

P/2025 B3 = P/2019 A8 (PANSTARRS)

Recovered at 21st magnitude by T. Kobayashi in publicly available astrometry from the Minor Planet Center taken with the Mt. Lemmon 1.5-m reflector on Jan. 24 and on Feb. 2 and 5, and with the Pan-STARRS2 1.8-m reflector at Haleakala on Feb. 5.33-5.37 UT

Short-period object with a 2025 March 31 perihelion of 2.13 au and 6.3-year orbital period
Discovered in January 2019, reached a peak brightness of 19-20th magnitude during discovery apparition
2025 is the comet's 2nd observed apparition
Already past peak brightness in 2025
Ref. CBET 5516, MPEC 2025-D234

C/2025 B2 (Borisov)

Discovered on 2025 January 20 at 20th magnitude with a 0.5-m f/1.9 reflector at MARGO Observatory, Nauchnyi, Crimea

Perihelion on 2026 September 10 at 8.25 au
Single pre-discovery observation from 2025 January 8 by Pan-STARRS
Peak brightness of 19th magnitude around the time of perihelion

A/2025 A7

Discovered on 2025 January 6 at 20th magnitude with the Mt. Lemmon survey's 1.5-m reflector
Has yet to show cometary activity
Perihelion on 2025 March 28 at 2.88 au with a long-period-like eccentricity of 0.99942
Pre-discovery observations from 2024 December 2
Close to its peak brightness
Ref. MPEC 2025-D151

C/2025 A6 (Lemmon)

Discovered on 2025 January 3 at 21st magnitude with the Mt. Lemmon survey's 1.5-m reflector
Perihelion on 2025 November 8 at 0.53 au and closest approach to Earth on October 21 at 0.60 au
Pre-discovery observation found back to November 2024

Peak brightness of 9th magnitude around the time of perihelion, being dynamically old with an orbital period of 1300 years, C/2025 A6 may brighten more rapidly than predicted and become brighter than 9th mag

The comet will be observable from the northern hemisphere until mid-late-November when it will be too close to the Sun for observation
Ref. CBET 5508, MPEC 2025-D55

C/2025 A6 (Lemmon)

Date	R.A.	Decl.	r	d	Elong	Const	Mag	Max El (deg) 40N	40S
2025-Oct-11	11 20	+42 20	0.831	0.743	54M	UMa	10.7	30	0
2025-Oct-16	12 46	+39 29	0.753	0.637	49M	CVn	9.9	18	0
2025-Oct-21	14 18	+30 24	0.680	0.596	41E	Boo	9.3	16	0
2025-Oct-26	15 30	+17 10	0.616	0.638	36E	Ser	9.0	18	0
2025-Oct-31	16 17	+04 53	0.566	0.750	34E	Her	9.0	17	0
2025-Nov-05	16 44	-04 30	0.536	0.905	32E	Oph	9.2	13	0
2025-Nov-10	16 59	-11 25	0.531	1.076	29E	Oph	9.5	8	0
2025-Nov-15	17 07	-16 39	0.551	1.244	25E	Oph	10.0	3	0
2025-Nov-20	17 11	-20 46	0.594	1.398	21E	Oph	10.6	0	0

P/2025 A5 = P/2019 Y3 (Catalina)

Recovered on 2025 January 7 at 19th magnitude with the Pan-STARRS1 1.8-m Ritchey-Chretien reflector at Haleakala

Short-period comet with an orbital period of 5.2 years

Perihelion on 2025 March 4 at 0.93 au

Discovered in December 2019 at 18th magnitude with the Catalina 0.68-m Schmidt

Reached 17-18th magnitude during discovery apparition and should reach 16-17th magnitude this year at perihelion

Ref. CBET 5504, MPEC 2025-C161

Comets Between Magnitude 6 and 10

C/2024 G3 (ATLAS)

Discovered visually on 2024 April 5 by by the "Asteroid Terrestrial-Impact Last Alert System" (ATLAS) search program with their 0.5-m f/2 Schmidt reflector stationed at Rio Hurtado, Chile
Dynamically old long-period comet

Orbit (from Minor Planet Center, MPEC 2025-A40)

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    C/2024 G3 (ATLAS)
Epoch 2024 Oct. 17.0 TT = JDT 2460600.5
T 2025 Jan. 13.42771 TT                                  Pike
q   0.0935311            (2000.0)            P              Q
z  -0.0001271      Peri.  108.12320     -0.04071401     +0.81537095
 +/-0.0000029      Node   220.33654     +0.14761042     +0.57655103
e   1.0000119      Incl.  116.84785     +0.98820723     -0.05252736
From 318 observations 2024 Apr. 5-Dec. 28, mean residual 0".7.
1/a(orig) = +0.000334 AU**-1, 1/a(fut) = +0.000162 AU**-1.
```

Ephemerides (produced with Seiichi Yoshida's Comets for Windows program)

```
C/2024 G3 (ATLAS)                                                    Max El
                                                                      (deg)
    Date      R.A.   Decl.     r       d    Elong  Const  Mag  40N  40S
2025-Mar-01  23 48  -40 19   1.337   2.017    35    Phe   ?.?    0   15
2025-Mar-06  23 59  -40 49   1.437   2.099    36    Phe   ?.?    0   16
2025-Mar-11  00 10  -41 18   1.533   2.175    38    Phe   ?.?    0   16
2025-Mar-16  00 20  -41 46   1.627   2.245    40    Phe   ?.?    0   16
2025-Mar-21  00 31  -42 15   1.718   2.309    42    Phe   ?.?    0   16
2025-Mar-26  00 41  -42 44   1.808   2.368    45    Phe   ?.?    0   17
2025-Mar-31  00 50  -43 16   1.895   2.423    47    Phe   ?.?    0   17
2025-Apr-05  01 00  -43 49   1.980   2.473    49    Phe   ?.?    0   17
```

Comet Magnitude Formula (from ALPO and COBS data for the 1954 and 2023 returns)

```
m1 =  4.7 + 5 log d + 18.3 log r [until T-70 days]
m1 =  6.9 + 5 log d + 10.6 log r [between T-70 and T-12 days]
m1 =  3.7 + 5 log d +  6.1 log r [between T-10 and perihelion]
m1 =  5.0 + 5 log d +  7.9 log r [post-perihelion]
where "t" is date of perihelion, "d" is Comet-Earth distance in au, and "r" is Comet-Sun distance in au
```

Recent Magnitude Measurements Contributed to the ALPO Comets Section

```
Recent Magnitude Measurements in ICQ format:
Comet Des  YYYY MM DD.DD     Mag SC APER FL POW    COMA     TAIL    ICQ CODE Observer Name
               (UT)                    T         Dia  DC  LENG  PA
None.
```

We've probably already had our "Brightest Comet of 2025" with C/2024 G3 (ATLAS). Back in January, ATLAS was a negative-magnitude object, though at the time, it was only visible during the day or in bright twilight. About a week after its January 13 perihelion at 0.09 au from the Sun, the comet's nucleus disintegrated. A few images in February show the ghostly remains of the comet's coma and dust tails. An image by Mike Mattiazzo from February 19 showed the "tail" to still be 2.5 degrees in length in 10x50 binoculars and ~6 degrees long in images.

For those who still want to attempt to observe G3, the comet is an evening object but only observable from the southern hemisphere in the constellation Phoenix.

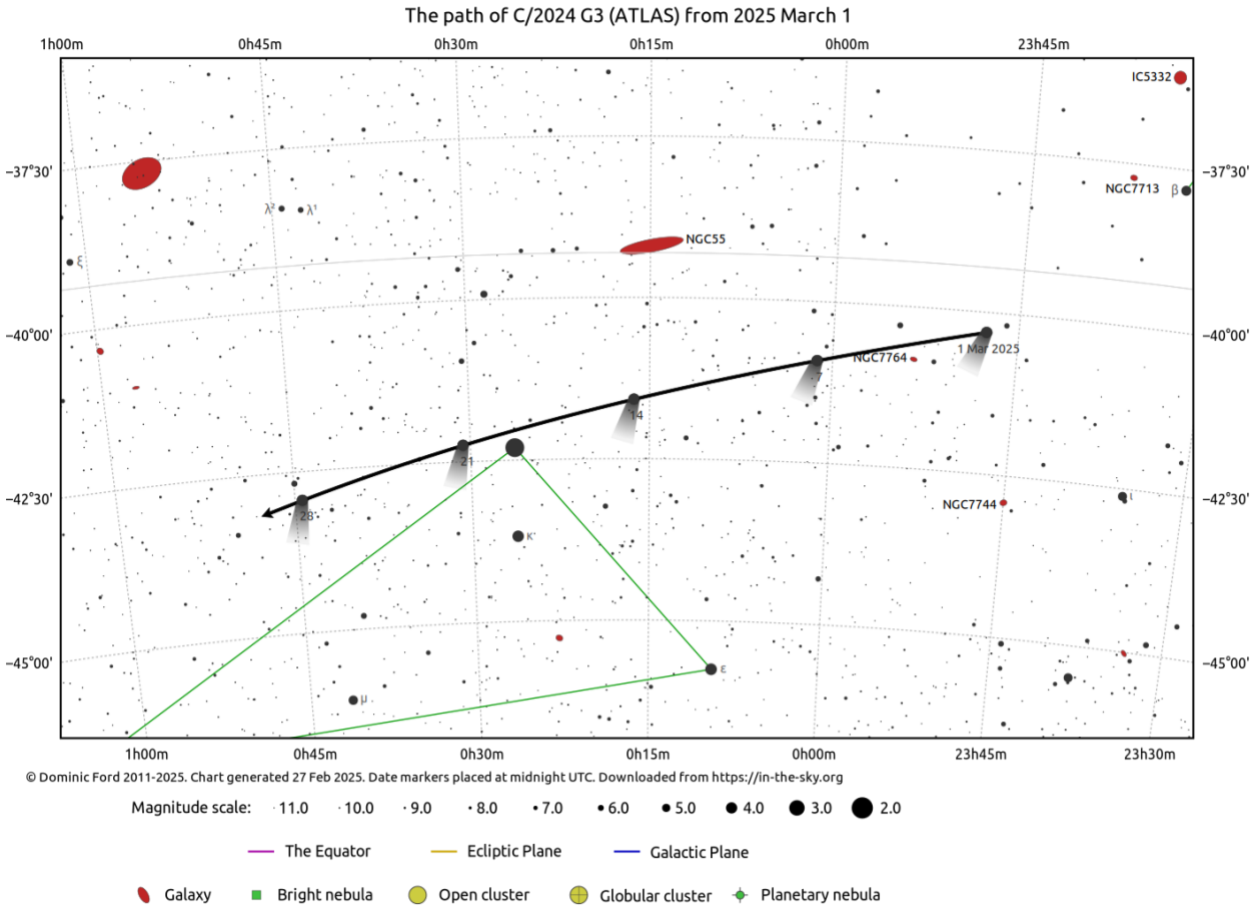


Figure 2 - Finder chart for C/2024 G3 (ATLAS) in March 2025 from in-the-sky.org.

Figure 3 – The ghost tails of Comet C/2024 G3 (ATLAS) seen on 2025 February 09 at 11:00UT by Michael Mattiazzo (Swan Hill, Victoria, Australia). The image was taken with a Canon 6D + Sigma 200mm f/2.8 lens and is a composite of 50x10sec at iso1600.

Comets Between Magnitude 10 and 12

C/2023 A3 (Tsuchinshan-ATLAS)

Discovered on 2023 January 9 at the Purple Mountain Observatory's XuYi Station and on February 22 by ATLAS
Dynamically new long-period comet

Orbit (from Minor Planet Center, MPEC 2025-D44)

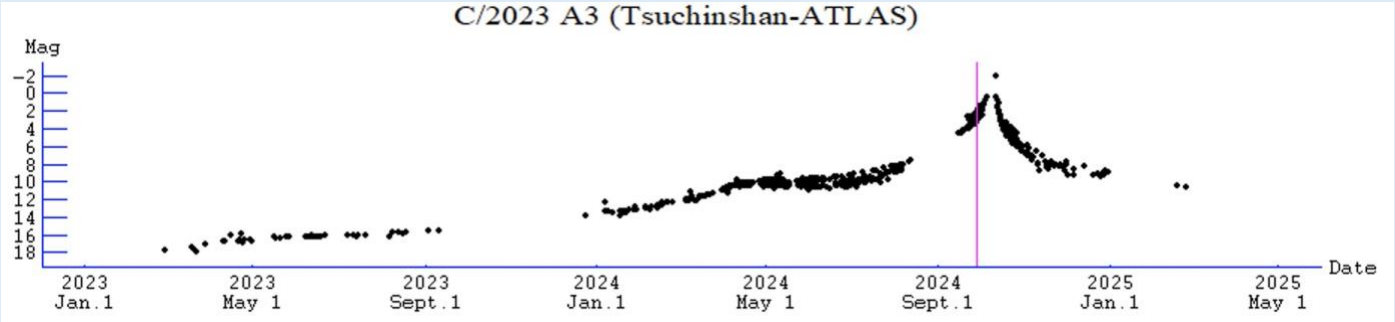
```
    C/2023 A3 (Tsuchinshan-ATLAS)
Epoch 2025 May 5.0 TT = JDT 2460800.5
T 2024 Sept. 27.74297 TT                                Pike
q   0.3914903           (2000.0)            P              Q
z  -0.0002933      Peri.  308.50433     +0.36147639     +0.90078874
 +/-0.0000003      Node    21.57018     +0.91853354     -0.29972260
e   1.0001148      Incl.  139.11135     -0.16009672     +0.31423878
From 7860 observations 2022 Apr. 9-2025 Feb. 17, mean residual 1".1.
1/a(orig) = -0.000257 AU**-1, 1/a(fut) = -0.000229 AU**-1.
```

Ephemerides (produced with Seiichi Yoshida's Comets for Windows program)

```
C/2023 A3 (Tsuchinshan-ATLAS)                                          Max El
                                                                        (deg)
    Date      R.A.    Decl.     r       d    Elong  Const  Mag  40N  40S
2025-Mar-01  20 21  +13 25   2.825   3.482    42M   Del  10.7   24    0
2025-Mar-06  20 23  +14 12   2.892   3.505    45M   Del  10.8   26    0
2025-Mar-11  20 24  +15 00   2.958   3.522    48M   Del  10.9   29    4
2025-Mar-16  20 25  +15 50   3.024   3.534    51M   Del  11.0   31    7
2025-Mar-21  20 26  +16 41   3.089   3.541    55M   Del  11.1   34   11
2025-Mar-26  20 26  +17 33   3.153   3.545    59M   Del  11.1   36   14
2025-Mar-31  20 26  +18 26   3.217   3.545    63M   Del  11.2   39   17
2025-Apr-05  20 25  +19 20   3.280   3.541    66M   Del  11.3   41   20
```

Comet Magnitude Formula (from ALPO, COBS, and MPC data)

```
m1 = -16.6 + 5 log d + 35.0 log r + dust phase_function [Through T-650 days]
m1 =   0.2 + 5 log d + 15.7 log r + dust phase_function [Between T-650 and T-309 days]
m1 =   5.3 + 5 log d +  8.4 log r + dust phase_function [Between T-309 and T-70 days]
m1 =   5.7 + 5 log d +  6.7 log r + dust phase_function [Between T-70 days and perihelion]
m1 =   6.4 + 5 log d +  8.4 log r + dust phase_function [After perihelion till late February]
m1 =   4.4 + 5 log d +  8.0 log r [Assumed for the future]
where "t" is the date of perihelion, "d" is Comet-Earth distance in au, and "r" is Comet-Sun distance in au
```



Recent Magnitude Measurements Contributed to the ALPO Comets Section

```
Recent Magnitude Measurements in ICQ format:
Comet Des  YYYY MM DD.DD     Mag SC APER FL POW    COMA     TAIL    ICQ    CODE  Observer Name
              (UT)                    T         Dia  DC  LENG  PA
   2023A3  2025 02 24.51  V 10.7 GG  5.0R 5a600   2         2  m332 ICQ XX OLAaa Mike Olason
```

C/2023 A3 (Tsuchinshan-ATLAS) is now a morning object in Delphinus. Though it has only been visible to northern hemisphere observers over the past few months, the comet will again be visible to southern hemisphere observers by mid-March.

While several observations were submitted to the COBS website (finding the comet between magnitude 10.5 and 12.8), only one observation was submitted to the ALPO. Mike Olason found the comet at magnitude 10.7 on February 24 with a 2’ coma and 2’ tail. Mike’s observation closely matches a COBS submission by Thomas Lehmann, who measured the comet at magnitude 11.1 on February 18 with a 3’ coma and 5’ tail.

The comet has been fading very slowly over the past month or two. The prediction above assumes an 8-log r fading rate, but if it continues to fade slowly, it may be a few tenths of a magnitude brighter than our prediction.
\

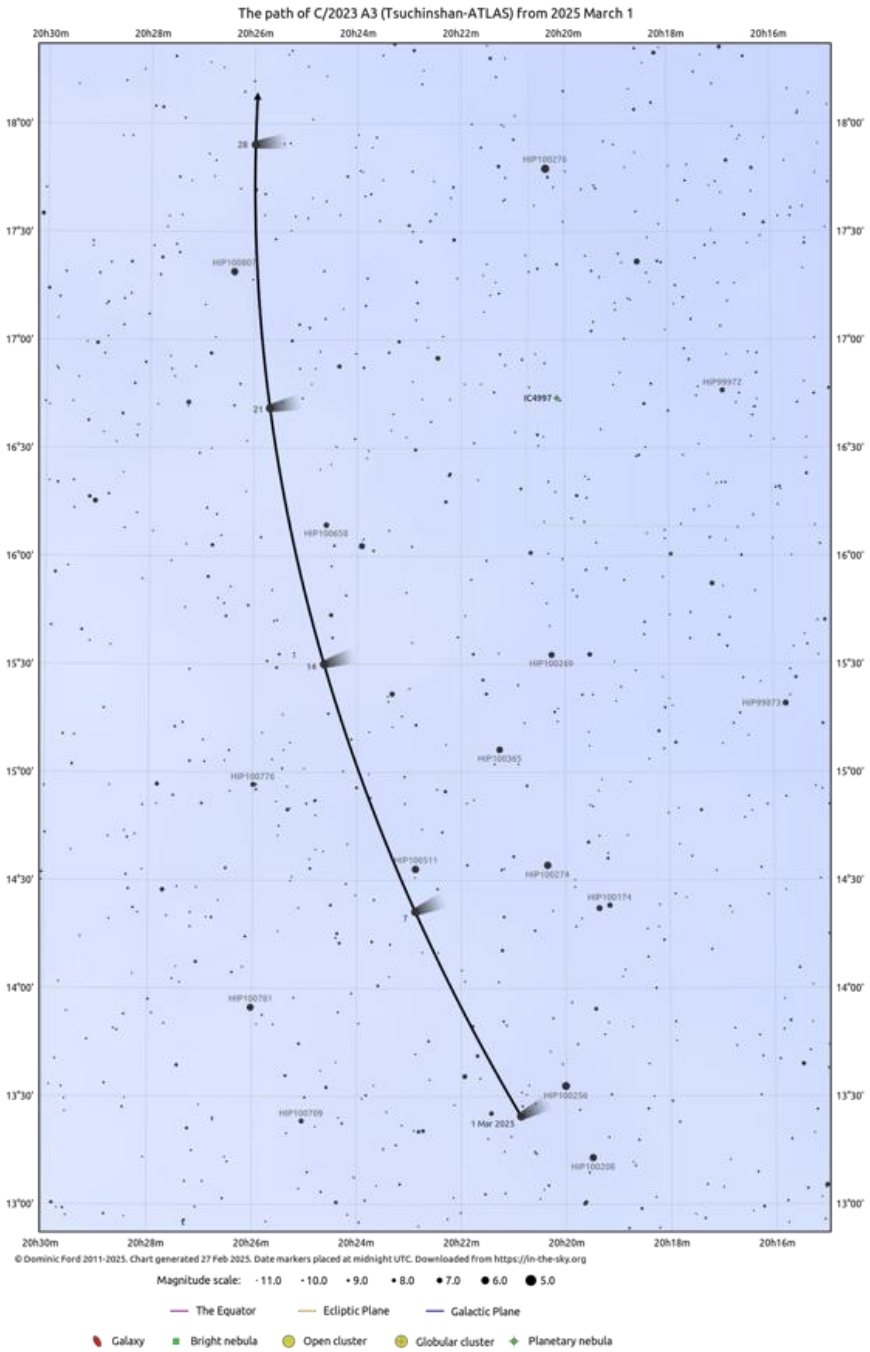


Figure 4 - Star chart for C/2023 A3 (Tsuchinshan-ATLAS) in March 2025. Chart produced at in-the-sky.org.

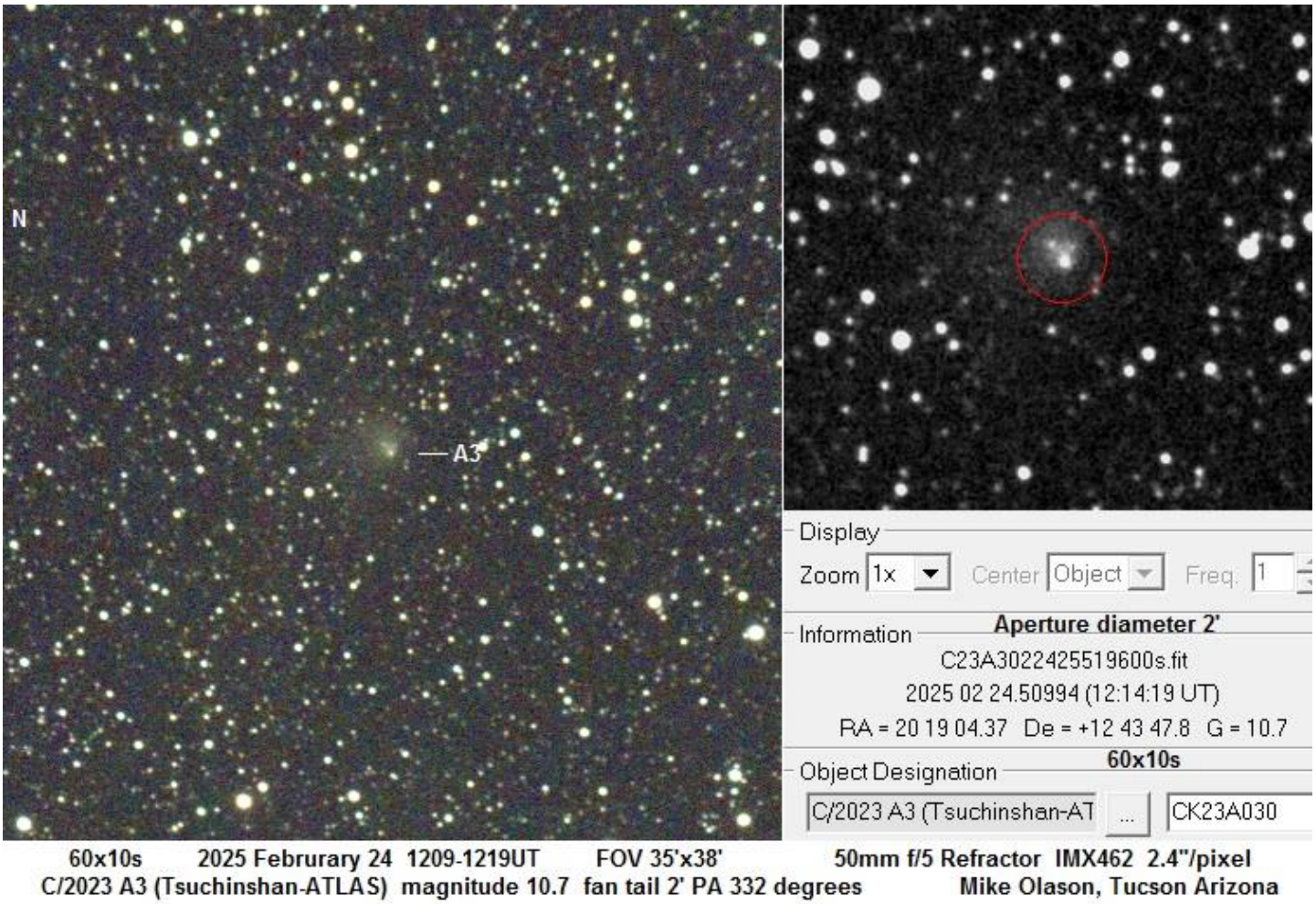


Figure 5 - Mike Olason (Tucson, AZ) imaged C/2023 A3 on February 24 with a small 50mm f/5 refractor.

29P/Schwassmann-Wachmann

Discovered 1927 Nov. 15 by Arnold Schwassmann and Arno Arthur Wachmann at Hamburg Observatory in Bergedorf, Germany
Centaur comet with an orbital period of ~14.9 years

Orbit (from Minor Planet Center, MPEC 2025-D44)

```
  29P/Schwassmann-Wachmann
Epoch 2025 May 5.0 TT = JDT 2460800.5
T 2019 May 2.67316 TT                                   Pike
q   5.7941953           (2000.0)            P              Q
n   0.06612305     Peri.   52.12697     +0.98912071     -0.08503138
a   6.0566733      Node   312.40418     +0.01493966     +0.86986245
e   0.0433370      Incl.    9.35598     +0.14634559     +0.48591046
P  14.9
From 14989 observations 2020 Jan. 1-2025 Feb. 20, mean residual 0".6.
     Nongravitational parameters A1 = -1.49, A2 = +2.6734.
```

Ephemerides (produced with Seiichi Yoshida's Comets for Windows program)

```
29P/Schwassmann-Wachmann                                                Max El
                                                                         (deg)
    Date       R.A.    Decl.      r        d     Elong  Const  Mag  40N  40S
2025-Mar-01  09 48  +10 03    6.264    5.301    165E   Leo  10-12  60    40
2025-Mar-06  09 46  +10 11    6.265    5.325    159E   Leo  10-12  60    40
2025-Mar-11  09 44  +10 19    6.266    5.356    154E   Leo  10-12  60    40
2025-Mar-16  09 42  +10 26    6.267    5.394    148E   Leo  10-12  60    40
2025-Mar-21  09 41  +10 33    6.268    5.439    143E   Leo  10-12  60    40
2025-Mar-26  09 39  +10 38    6.269    5.489    138E   Leo  10-12  61    39
2025-Mar-31  09 38  +10 43    6.270    5.546    133E   Leo  10-12  61    39
2025-Apr-05  09 37  +10 47    6.271    5.607    127E   Leo  10-12  61    39
```

Recent Magnitude Measurements Contributed to the ALPO Comets Section

```
Recent Magnitude Measurements in ICQ format:
Comet Des  YYYY MM DD.DD     Mag SC APER FL POW    COMA     TAIL    ICQ CODE Observer Name
               (UT)                    T         Dia  DC  LENG  PA
 29        2025 02 25.82  S 10.4 TK 20.3T10  77   6    2/           ICQ XX GON05 Juan Jose Gonzalez Suarez
 29        2025 02 18.80  S 11.7:TI 25.2L    92   2.7  2            ICQ XX HAR11 Christian Harder
 29        2025 02 17.81  S  -   TI 53.1L   139   2.5  2/           ICQ XX HAR11 Christian Harder
 29        2025 02 07.70  C 10.6 AV 35.0T 6a720   4                 ICQ XX PEA   Andrew Pearce
 29        2025 02 05.68  C 11.0 AV 35.0T 6a720   3                 ICQ XX PEA   Andrew Pearce
 29        2025 02 04.67  C 11.1 AV 35.0T 6a720   2.9               ICQ XX PEA   Andrew Pearce
 29        2025 02 03.61  C 11.2 AV 35.0T 6a720   2                 ICQ XX PEA   Andrew Pearce
 29        2025 02 01.62  C 11.7 AV 35.0T 6a720   3                 ICQ XX PEA   Andrew Pearce
```

29P/Schwassmann-Wachmann, formerly Schwassmann-Wachmann 1, was discovered photographically on 1927 November 15 by German astronomers Arnold Schwassmann and Arno Arthur Wachmann. The team of Schwassmann and Wachmann also discovered short-period comets 31P/Schwassmann–Wachmann (2) and 73P/Schwassmann–Wachmann (3) and long-period comet C/1930 D1 (Peltier–Schwassmann–Wachmann).

29P is just past opposition this month in Leo in the evening sky. As has been the case over the last few months, the comet was brighter than usual in February at 10-11th magnitude. The reason for the comet's brightness is a series of outbursts occurring every few days to weeks. Since the start of the year, the BAA Mission 29P program has reported outbursts on January 2, 6,16,18, 21, and February 1, 2, and 10.

In addition to the 3 outbursts reported in February, the other big 29P event was a successful observation of an occultation by the comet's nucleus on February 5, as reported on the BAA Mission 29P at https://britastro.org/section_information_/comet-section-overview/mission-29p-2/mission-29p-centaur-comet-observing-campaign.

If you image 29P, please consider contributing to two pro-am programs spearheading the effort to understand this amazing object better: the British Astronomical Society's (BAA) Mission 29P monitoring program coordinated by Richard Miles. (https://britastro.org/node/18562 & https://britastro.org/node/25120).

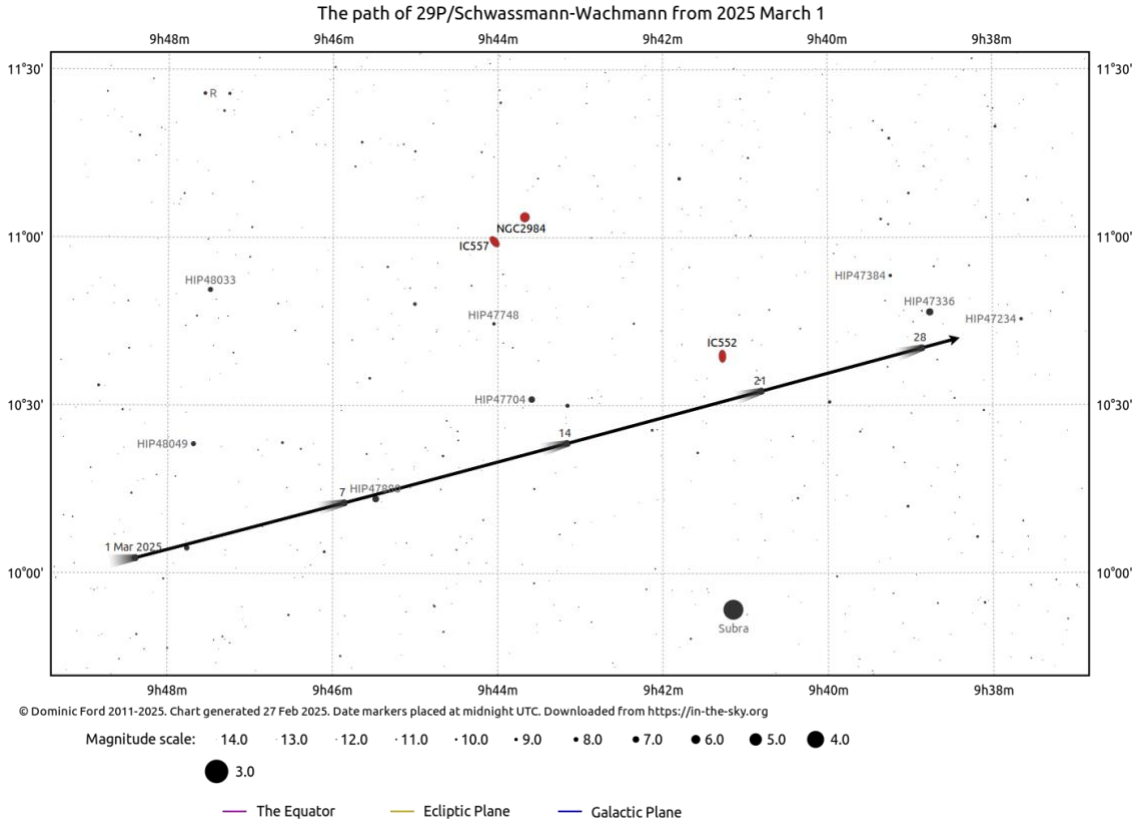


Figure 6 - Finder chart for 29P/Schwassmann-Wachmann in March 2025 from in-the-sky.org.

Figure 7 - 29P/Schwassmann-Wachmann was imaged by Rik Hill (Tucson, AZ) on 2025 February 16 in a 16-min exposure taken with an eVscope eQuinox 1 smart telescope..