

June 2024

ALPO Comet News

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

A Halley-type Comet In the
Northern and Southern Sky



12P Pons-Brooks: 2024 May 1 at 09:00UT, C11 RASA f2.2 + Canon 8D, iso1600 15x30sec, FOV 3 deg, North up, M. Mattiazzo, Swain Hill, Victoria, Aus



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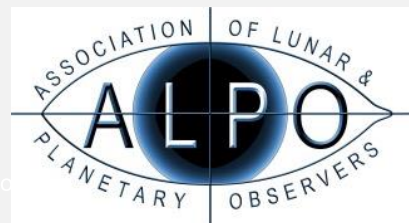


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On the Front Cover:

2024 has seen the return of two bright Halley-type comets in 12P/Pons-Brooks and 13P/Olbers. 12P is currently only visible from the southern hemisphere, while 13P is only visible from the northern hemisphere.

The upper left image shows 13P/Olbers as imaged on 2024 May 29 by Dan Bartlett from June Lake, California with Hyperstar-equipped C11 and ZWO ASI2600MC-Pro camera. The image is a composite of 20 45-sec exposures.

The lower right image was by Michael Mattiazzo of Swan Hill, Australia and shows 12P/Pons-Brooks as seen on 2024 May 1. The image was taken with a RASA11 and Canon 6D camera. It is a composite of 15 30-sec exposures.

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/924475-alpo-comet-news-for-june-2024/>). 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

This month, the theme will be anti-tails as the Earth passes through the orbital planes of our two returning Halley-type comets. Images are already showing 12P/Pons-Brooks' strong anti-tail, which will only get stronger as we approach the orbital plane crossing on June 7. 13P/Olbers will probably have a weaker anti-tail, but one should still be visible as we approach its orbital plane crossing on June 17.

At the start of June, Pons-Brooks will be the brightest comet in the sky, though it is only visible to southern observers. As the month progresses, it will fade to 8th magnitude and hand the title of brightest comet in the sky to Olbers which will brighten from 7th to 6th magnitude this month. Unlike Pons-Brooks, Olbers will be visible at northern latitudes but not at southern mid-latitudes.

The other big news comet is C/2023 A3 (Tsuchinshan-ATLAS). This comet has the potential to be a bright object this October but has recently undergone a fading over the past month or so. This doesn't mean the comet is breaking up, at least not yet, but it does suggest caution with any predictions about its brightness going forward. Like many long-period comets, we'll have to wait and see with Tsuchinshan-ATLAS. It will be visible to observers in both hemispheres in June and "should" brighten from 10th to 9th magnitude in the evening sky.

Three other comets are expected to be between magnitude 10 and 12. 479P/Elenin and C/2023 V4 (Camarasa-Duszanowicz) are in the evening sky, and C/2021 S3 (PANSTARRS) is in the morning sky, though Camarasa-Duszanowicz and PANSTARRS are only visible from the northern hemisphere.

Last month, the ALPO Comets Section received 128 images and 246 magnitude estimates of 25 comets: C/2024 F2 (PANSTARRS), C/2023 V4 (Camarasa-Duszanowicz), C/2023 C2 (ATLAS), C/2023 A3 (Tsuchinshan-ATLAS), C/2022 L2 (ATLAS), C/2022 E2 (ATLAS), C/2021 S3 (PANSTARRS), C/2021 G2 (ATLAS), C/2020 K1 (PANSTARRS), C/2019 U5 (PANSTARRS), C/2017 K2 (PANSTARRS), P/2020 WJ5 (Lemmon), 479P/Elenin, 362P/(457175) 2008 GO98, 349P/Lemmon, 251P/LINEAR, 217P/LINEAR, 209P/LINEAR, 144P/Kushida, 65P/Gunn, 62P/Tsuchinshan, 32P/Comas Sola, 29P/Schwassmann-Wachmann, 13P/Olbers, and 12P/Pons-Brooks.

A big thanks to our recent contributors: Salvador Aguirre, Dan Bartlett, Dan Crowson, José J. Chambó, Jose Guilherme de Souza Aguiar, J. J. Gonzalez Suarez, Christian Harder, Carl Hergenrother, Eliot Herman, Rik Hill, Michael Jäger, John Maikner, Gianluca Masi, Michael Mattiazzo, Mike Olason, Ludovic Perbet, Uwe Pilz, Michael Rosolina, Gregg Ruppel, Chris Schur, Greg T. Shanos, Willian Souza, Tenho Tuomi, and Chris Wyatt.

Request for Observations

As always, the Comet Section is happy to receive all comet observations, whether textual descriptions, images, drawings, magnitude estimates, or spectra. Please send your observations via email to the Comets Section < comets @ alpo-astronomy . org >, Comets Section Coordinator Carl Hergenrother < carl.hergenrother @ alpo-astronomy . org > and/or Comets Section Acting Assistant Coordinator Michel Deconinck < michel.deconinck @ 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 to digital observations. Though we try to keep these lightcurves up to date, observations submitted in the days 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 observations submitted directly to the ALPO and those submitted initially 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)

- Jun 06 - New Moon
- Jun 14 - First Quarter Moon
- Jun 22 - Full Moon
- Jun 28 - Last Quarter Moon

Comets at Perihelion

- Jun 02 - 475P/Spacewatch-LINEAR [q = 4.08 au, 19.8-yr period, V ~ 18, discovered in 2004, 2nd observed return]
- Jun 13 - 154P/Brewington [q = 1.55 au, 10.5-yr period, V ~ 11, visually discovered in 1992, not yet seen at current return, should be 4th observed return]
- Jun 24 - C/2023 Q2 (PANSTARRS) [q = 3.21 au, V ~ 17]
- Jun 30 - 13P/Olbers [q = 1.18 au, 69.5-yr period, V ~ 6-7, visually discovered in 1815, also seen at the 1887, 1956, and 2024 returns]

Photo Opportunities

- Jun 7 - 12P/Pons-Brooks orbit plane crossing
- Jun 7-8 - 479P/Elenin within 1 deg of 10th mag galaxy NGC 3585
- Jun 14-15 - 479P/Elenin within 1 deg of 11th mag galaxy NGC 3885
- Jun 10-16 - C/2021 S3 (PANSTARRS) within 1 deg of 9th mag galaxy NGC 6946
- Jun 12-20 - C/2021 S3 (PANSTARRS) within 1 deg of 7th mag open cluster NGC 6939
- Jun 17 - 13P/Olbers orbit plane crossing
- Jun 25-26 - C/2023 A3 (Tsuchinshan-ATLAS) passes within <10' of 10th mag galaxy NGC 3640

Recent Magnitudes Contributed to the ALPO Comets Section

Comet Des	YYYY MM DD.DD (UT)	Mag	SC	APER	FL	POW	COMA		TAIL		ICQ CODE	Observer Name		
							Dia	DC	LENG	PA				
C/2023 V4 (Camarasa-Duszanowicz)														
2023V4	2024 05 29.89	S	9.9	TK	20.3T	10	77	2.5	3/		ICQ XX GON05	Juan Jose Gonzalez Suarez		
2023V4	2024 05 12.14	Z	11.9	GG	5.0R	4A	020	1.4			ICQ XX OLAaa	Michael Olason		
C/2023 C2 (ATLAS)														
2023C2	2024 05 29.42	xM	14.0	AQ	40.0L	4	182	0.4	5		ICQ XX WYA	Christopher Wyatt		
2023C2	2024 05 07.52	xs	14.8	AQ	40.0L	4	261	0.3	3		ICQ XX WYA	Christopher Wyatt		
2023C2	2024 04 30.29	M	13.9	AQ	30.0L	5	121	1	6/		ICQ XX DES01	Jose Guilherme de Souza Aguiar		
C/2023 A3 (Tsuchinshan-ATLAS)														
2023A3	2024 05 30.15	S	10.2	TK	12.5B		30	1.5	5		ICQ XX HER02	Carl Hergenrother		
2023A3	2024 05 29.93	B	10.9	TK	20.3T	10	77	1	7	0.1	100	ICQ XX GON05	Juan Jose Gonzalez Suarez	
2023A3	2024 05 29.37	xM	10.7	AQ	40.0L	4	108	2	6	10	m100	ICQ XX WYA	Christopher Wyatt	
2023A3	2024 05 28.91	Z	10.5	GG	20.0L	4a	60	2.2	6	12	m100	ICQ XX CHA03	José Joaquín Chambó Bris	
2023A3	2024 05 28.40	xM	10.7	AQ	25.0L	5	40	1.3	6	5.3	m117	ICQ XX WYA	Christopher Wyatt	
2023A3	2024 05 27.40	S	10.0	TT	10.0B		25	2	6			ICQ XX MAT08	Michael Mattiazzo	
2023A3	2024 05 27.15	S	10.0	TK	12.5B		30	2	5			ICQ XX HER02	Carl Hergenrother	
2023A3	2024 05 26.35	xM	10.6	AQ	25.0L	5	40	1.2	6	8	m102	ICQ XX WYA	Christopher Wyatt	
2023A3	2024 05 26.19	S	10.2	TI	12.5B		30	2	5			ICQ XX HER02	Carl Hergenrother	
2023A3	2024 05 13.99	M	10.1	TK	30.0L	5	65	2	5/			ICQ XX DES01	Jose Guilherme de Souza Aguiar	
2023A3	2024 05 12.48	xM	10.5	AQ	25.0L	5	40	1.3	6	10	m	95	ICQ XX WYA	Christopher Wyatt
2023A3	2024 05 11.98	M	10.1	TK	30.0L	5	65	3	5/			ICQ XX DES01	Jose Guilherme de Souza Aguiar	
2023A3	2024 05 11.92	S	11.0	TI	53.1L		139	1.4	4/	3.5	m100	ICQ XX HAR11	Christian Harder	
2023A3	2024 05 11.85	E	10.1	S	61.0L	3	200	0.5	7	4.5	m		ICQ XX DEC	Michel Deconinck
2023A3	2024 05 11.24	S	10.0	TK	12.5B		30	1.8	5			ICQ XX HER02	Carl Hergenrother	
2023A3	2024 05 08.98	M	10.2	TK	30.0L	5	65	2	5			ICQ XX DES01	Jose Guilherme de Souza Aguiar	
2023A3	2024 05 08.93	S	10.2	TI	53.1L		139	1.5	4/	3.5	m103	ICQ XX HAR11	Christian Harder	
2023A3	2024 05 08.93	Z	10.5	GG	20.0L	4a	60	1.8	6	8.6	m	99	ICQ XX CHA03	José Joaquín Chambó Bris
2023A3	2024 05 08.88	S	10.0	TK	32.0L	5	80	2	7	0.1	70	ICQ XX PIL01	Uwe Pilz	
2023A3	2024 05 07.99	M	10.2	TK	30.0L	5	65	3	4/			ICQ XX DES01	Jose Guilherme de Souza Aguiar	
2023A3	2024 05 07.93	Z	10.4	GG	20.0L	4a	60	1.6	6	8	m	97	ICQ XX CHA03	José Joaquín Chambó Bris
2023A3	2024 05 07.48	xM	10.8	AQ	40.0L	4	59	1	6	5.4	m100	ICQ XX WYA	Christopher Wyatt	
2023A3	2024 05 07.27	Z	10.3	GG	5.0R	5a	120	3				ICQ XX OLAaa	Michael Olason	
2023A3	2024 05 06.98	M	10.2	TK	30.0L	5	65	2	4/			ICQ XX DES01	Jose Guilherme de Souza Aguiar	
2023A3	2024 05 06.95	B	10.9	TK	20.3T	10	77	1.1	7	0.05	100	ICQ XX GON05	Juan Jose Gonzalez Suarez	
2023A3	2024 05 06.90	Z	10.8	GG	20.0L	4a	60	1.5	7	6.6	m	96	ICQ XX CHA03	José Joaquín Chambó Bris
2023A3	2024 05 06.42	S	10.1	TT	10.0B		25	2	6			ICQ XX MAT08	Michael Mattiazzo	
2023A3	2024 05 05.99	M	10.2	TK	30.0L	5	65	3	4			ICQ XX DES01	Jose Guilherme de Souza Aguiar	
2023A3	2024 05 05.92	S	10.6	TI	29.8L	4	79	1.5	5	3.5	m100	ICQ XX HAR11	Christian Harder	
2023A3	2024 05 05.48	xM	10.5	AQ	25.0L	5	40	1.4	6	6	m103	ICQ XX WYA	Christopher Wyatt	
2023A3	2024 05 05.42	S	10.1	TT	10.0B		25	2	6			ICQ XX MAT08	Michael Mattiazzo	
2023A3	2024 05 04.99	M	10.3	TK	30.0L	5	65	3	4			ICQ XX DES01	Jose Guilherme de Souza Aguiar	
2023A3	2024 05 04.16	S	10.1	TK	12.5B		30	2	6			ICQ XX HER02	Carl Hergenrother	
2023A3	2024 05 03.99	M	10.3	TK	30.0L	5	65	3	4			ICQ XX DES01	Jose Guilherme de Souza Aguiar	
2023A3	2024 05 03.45	xM	10.5	AQ	25.0L	5	40	2.1	6	8	m115	ICQ XX WYA	Christopher Wyatt	
2023A3	2024 05 02.98	M	10.3	TK	30.0L	5	65	3	4/			ICQ XX DES01	Jose Guilherme de Souza Aguiar	
2023A3	2024 05 02.92	S	10.6	TI	29.8L	4	79	1.3	4/	2.5	m100	ICQ XX HAR11	Christian Harder	
2023A3	2024 05 02.89	Z	10.5	GG	20.0L	4a	60	1.7	7/	5	m	96	ICQ XX CHA03	José Joaquín Chambó Bris
2023A3	2024 05 02.16		10.2		35.0T	11	230	3	5/			ICQ XX ROSxx	Michael Rosolina	
2023A3	2024 05 01.98	M	10.3	TK	30.0L	5	65	2	3/			ICQ XX DES01	Jose Guilherme de Souza Aguiar	
2023A3	2024 05 01.52	xM	10.4	AQ	25.0L	5	40	1.7	6	4	m	97	ICQ XX WYA	Christopher Wyatt
2023A3	2024 04 30.99	M	10.3	TK	30.0L	5	65	2	3/			ICQ XX DES01	Jose Guilherme de Souza Aguiar	
2023A3	2024 04 30.44	S	10.2	TT	10.0B		25	2	7			ICQ XX MAT08	Michael Mattiazzo	
2023A3	2024 04 30.43	Z	10.7	U4	28.0D	2a	300	1.5	8	4	m	95	ICQ XX MAT08	Michael Mattiazzo
2023A3	2024 04 29.99	M	10.3	TK	30.0L	5	65	2	3/			ICQ XX DES01	Jose Guilherme de Souza Aguiar	
2023A3	2024 04 29.12		10.7		35.0T	11	163	2	5/			ICQ XX ROSxx	Michael Rosolina	
2023A3	2024 04 28.99	M	10.3	TK	30.0L	5	65	2	4			ICQ XX DES01	Jose Guilherme de Souza Aguiar	
2023A3	2024 04 28.42	Z	10.7	U4	28.0D	2a	300	1.5	8			ICQ XX MAT08	Michael Mattiazzo	
2023A3	2024 04 12.52	S	11.0	TT	20.0L	6	70	1	8			ICQ XX MAT08	Michael Mattiazzo	
2023A3	2024 04 12.52	Z	10.9	U4	28.0D	2a	300	1.2	7			ICQ XX MAT08	Michael Mattiazzo	
2023A3	2024 04 10.03	Z	10.5	GG	20.0L	4a	60	1.4	7	2.5	m	66	ICQ XX CHA03	José Joaquín Chambó Bris
2023A3	2024 04 04.57	Z	11.3	U4	7.0A	3a	300	1	8			ICQ XX MAT08	Michael Mattiazzo	
C/2022 L2 (ATLAS)														
2022L2	2024 05 07.51	xM	14.6	AQ	40.0L	4	182	0.5	5/			ICQ XX WYA	Christopher Wyatt	
2022L2	2024 05 04.98	M	13.7	AQ	30.0L	5	121	1	5/			ICQ XX DES01	Jose Guilherme de Souza Aguiar	
2022L2	2024 04 12.48	Z	14.1	U4	28.0D	2a	300	1	5			ICQ XX MAT08	Michael Mattiazzo	
C/2022 E2 (ATLAS)														
2022E2	2024 04 12.40	Z	13.9	U4	28.0D	2a	300	1	5			ICQ XX MAT08	Michael Mattiazzo	
C/2021 S3 (PANSTARRS)														

2021S3	2024 05 11.97	S	11.3	TI	53.1L	139	1.6	4						ICQ XX	HAR11	Christian Harder
2021S3	2024 05 08.98	S	11.9	TI	53.1L	139	1.4	4						ICQ XX	HAR11	Christian Harder
2021S3	2024 05 08.96	S	11.1	TK	32.0L	5 80	1								PIL01	Uwe Pilz
2021S3	2024 05 08.13	Z	11.0	GG	20.0L	4a 60	2.3	4	37	m266				ICQ XX	CHA03	José Joaquín Chambó Bris
2021S3	2024 05 07.36	Z	10.5	GG	5.0R	5A440	2								OLAaa	Michael Olason
2021S3	2024 05 06.96	S	10.9	TK	20.3T10	77	2.5	3						ICQ XX	GON05	Juan Jose Gonzalez Suarez
2021S3	2024 05 05.96	S	11.0	TI	29.8L	4 79	2.5	2/						ICQ XX	HAR11	Christian Harder
2021S3	2024 05 02.93	S	10.4	TI	29.8L	4 79	3	1/						ICQ XX	HAR11	Christian Harder
C/2021 G2 (ATLAS)																
2021G2	2024 05 29.42	xM	13.9	AQ	40.0L	4 182	0.7	6						ICQ XX	WYA	Christopher Wyatt
2021G2	2024 05 28.41	xM	13.8	AQ	25.0L	5 125	1	5/						ICQ XX	WYA	Christopher Wyatt
2021G2	2024 05 26.36	xM	13.9	AQ	25.0L	5 125	0.6	5/						ICQ XX	WYA	Christopher Wyatt
2021G2	2024 05 12.49	xM	13.9	AQ	25.0L	5 125	0.4	5/						ICQ XX	WYA	Christopher Wyatt
2021G2	2024 05 07.99	M	13.6	AQ	30.0L	5 121	1	6						ICQ XX	DES01	Jose Guilherme de Souza Aguiar
2021G2	2024 05 07.50	xM	13.5	AQ	40.0L	4 182	0.7	6						ICQ XX	WYA	Christopher Wyatt
2021G2	2024 05 06.99	M	13.5	AQ	30.0L	5 121	1	6						ICQ XX	DES01	Jose Guilherme de Souza Aguiar
2021G2	2024 05 05.99	M	13.5	AQ	30.0L	5 121	1	6/						ICQ XX	DES01	Jose Guilherme de Souza Aguiar
2021G2	2024 05 04.99	M	13.6	AQ	30.0L	5 121	1	6/						ICQ XX	DES01	Jose Guilherme de Souza Aguiar
2021G2	2024 04 12.49	Z	13.9	U4	28.0D	2a300	1	5						ICQ XX	MAT08	Michael Mattiazzo
C/2020 K1 (PANSTARRS)																
2020K1	2024 04 12.45	Z	15.2	U4	28.0D	2a300	1	4						ICQ XX	MAT08	Michael Mattiazzo
C/2019 U5 (PANSTARRS)																
2019U5	2024 04 12.47	Z	14.6	U4	28.0D	2a300	1	5						ICQ XX	MAT08	Michael Mattiazzo
C/2017 K2 (PANSTARRS)																
2017K2	2024 04 12.41	Z	14.4	U4	28.0D	2a300	1	6						ICQ XX	MAT08	Michael Mattiazzo
479P/Elenin																
479	2024 05 07.87	Z	12.0	GG	20.0L	4a480	2.5	1/						ICQ XX	CHA03	José Joaquín Chambó Bris
479	2024 05 07.49	xS	13.8	AQ	40.0L	4 182	0.9	3						ICQ XX	WYA	Christopher Wyatt
479	2024 05 06.92	S	10.8	TK	20.3T10	133	2	3						ICQ XX	GON05	Juan Jose Gonzalez Suarez
479	2024 05 01.94	M	11.8	AQ	30.0L	5 88	1	3						ICQ XX	DES01	Jose Guilherme de Souza Aguiar
479	2024 04 30.94	M	11.7	AQ	30.0L	5 88	1	3/						ICQ XX	DES01	Jose Guilherme de Souza Aguiar
479	2024 04 29.92	M	11.7	AQ	30.0L	5 88	1	4/						ICQ XX	DES01	Jose Guilherme de Souza Aguiar
349P/Lemmon																
349	2024 05 03.20	C	18.3	BG	30.5H	4B400								ICQ XX	MAI01	John Maikner
251P/LINEAR																
251	2024 05 03.32	C	21.1	BG	30.5H	4A680								ICQ XX	MAI01	John Maikner
217P/LINEAR																
217	2024 05 02.24	C	21.0	BG	30.5H	4E400								ICQ XX	MAI01	John Maikner
144P/Kushida																
144	2024 05 07.46	xM	13.7	AQ	40.0L	4 182	0.6	6						ICQ XX	WYA	Christopher Wyatt
144	2024 05 06.93	S	11.0	TK	20.3T10	77	4	1/						ICQ XX	GON05	Juan Jose Gonzalez Suarez
62P/Tsuchinshan																
62	2024 04 01.02	Z	11.9	GG	20.0L	4a 60	7	3/	27	m293				ICQ XX	CHA03	José Joaquín Chambó Bris
62	2024 05 03.07	C	17.8	BG	30.5H	4A320								ICQ XX	MAI01	John Maikner
62	2024 04 04.57	Z	12.2	U4	7.0A	3a300	5	2						ICQ XX	MAT08	Michael Mattiazzo
29P/Schwassmann-Wachmann																
29	2024 04 04.41	Z	13.3	U4	7.0A	3a300	2	4						ICQ XX	MAT08	Michael Mattiazzo
13P/Olbers																
13	2024 05 30.15	S	7.7	TK	12.5B	30	2	6						ICQ XX	HER02	Carl Hergenrother
13	2024 05 29.91	S	7.7	TK	7.0B	15	3	6						ICQ XX	GON05	Juan Jose Gonzalez Suarez
13	2024 05 29.90	S	8.2	TK	20.3T10	77	3	5						ICQ XX	GON05	Juan Jose Gonzalez Suarez
13	2024 05 27.15	S	7.7	TK	12.5B	30	3	6						ICQ XX	HER02	Carl Hergenrother
13	2024 05 09.88	S	7.9	TK	32.0L	5 80	1.5	4	0.04	52					PIL01	Uwe Pilz
13	2024 05 07.14	Z	8.5	GG	5.0R	5a720	5								OLAaa	Michael Olason
13	2024 05 06.89	S	8.5	TK	20.3T10	77	2.5	5						ICQ XX	GON05	Juan Jose Gonzalez Suarez
13	2024 05 04.14	S	8.6	TK	12.5B	30	1.5	4						ICQ XX	HER02	Carl Hergenrother
13	2024 04 12.38	Z	10.4	U4	28.0D	2a300	2	7						ICQ XX	MAT08	Michael Mattiazzo
13	2024 04 07.39	Z	10.1	U4	7.0A	3a300	4	5						ICQ XX	MAT08	Michael Mattiazzo
13	2024 04 04.40	Z	10.2	U4	7.0A	3a300	4	4						ICQ XX	MAT08	Michael Mattiazzo
13	2024 04 01.83	Z	10.4	GG	20.0L	4a 60	5	5	6	m 98				ICQ XX	CHA03	José Joaquín Chambó Bris
12P/Pons-Brooks																
12	2024 05 29.36	&M	6.2	TK	7.0B	15	9	5	46	m156				ICQ XX	WYA	Christopher Wyatt
12	2024 05 28.34	&M	6.0	TK	7.0B	15	6.3	5/	1.2	143				ICQ XX	WYA	Christopher Wyatt
12	2024 05 27.36	S	6.0	TT	4.0B	8	6	6						ICQ XX	MAT08	Michael Mattiazzo
12	2024 05 27.34	&M	5.9	TK	7.0B	15	8	5	45	m149				ICQ XX	WYA	Christopher Wyatt
12	2024 05 26.36	S	5.8	TT	4.0B	8	6	6						ICQ XX	MAT08	Michael Mattiazzo
12	2024 05 26.34	&M	5.8	TK	7.0B	15	8	5/	1	150				ICQ XX	WYA	Christopher Wyatt
12	2024 05 23.91	M	6.0	TK	8.0B	20	5	5						ICQ XX	SOU01	Willian Souza
12	2024 05 23.91	M	6.0	TK	5.0B	10	5	4						ICQ XX	SOU01	Willian Souza
12	2024 05 23.35	&M	5.7	TK	7.0B	15	6.7	5	37	m144				ICQ XX	WYA	Christopher Wyatt
12	2024 05 22.34	&M	5.6	TK	7.0B	15	5	5/	1	140				ICQ XX	WYA	Christopher Wyatt
12	2024 05 22.37	S	6.0	TT	5.0B	10	4	5						ICQ XX	MAT08	Michael Mattiazzo
12	2024 05 20.89	M	5.7	TK	10.0B	25	4	5/	0.60	140				ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 20.35	&M	5.6	TK	7.0B	15	7	6	1.9	140				ICQ XX	WYA	Christopher Wyatt
12	2024 05 19.91	M	5.8	TK	5.0B	10	5	6						ICQ XX	SOU01	Willian Souza
12	2024 05 19.35	&M	5.7	TK	7.0B	15	7.5	5/	1	138				ICQ XX	WYA	Christopher Wyatt

12	2024 05 18.90	M	5.6 TK	10.0B	25	4	5	1.00	140	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 18.38	S	5.6 TT	4.0B	8	4	5			ICQ XX	MAT08	Michael Mattiazzo
12	2024 05 17.91	M	5.5 TK	5.0B	10	5	6			ICQ XX	SOU01	Willian Souza
12	2024 05 17.90	M	5.5 TK	10.0B	25	4	5	1.00	140	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 17.38	S	5.5 TT	4.0B	8	5	6			ICQ XX	MAT08	Michael Mattiazzo
12	2024 05 17.36	&M	5.6 TK	7.0B	15	6.8	5	1.2	135	ICQ XX	WYA	Christopher Wyatt
12	2024 05 16.89	M	5.5 TK	8.0B	11	5	5/	1.00	140	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 16.36	S	5.5 TT	4.0B	8	4	6			ICQ XX	MAT08	Michael Mattiazzo
12	2024 05 14.35	&M	5.4 TK	7.0B	15	7.5	5	2.6	134	ICQ XX	WYA	Christopher Wyatt
12	2024 05 13.90	M	5.2 TK	8.0B	11	4	5	1.30	135	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 13.38	S	5.2 TT	4.0B	8	5	6	1.5	130	ICQ XX	MAT08	Michael Mattiazzo
12	2024 05 12.38	I	4.8 TT	E	1					ICQ XX	MAT08	Michael Mattiazzo
12	2024 05 12.38	S	5.2 TT	4.0B	8	5	6	1.5	130	ICQ XX	MAT08	Michael Mattiazzo
12	2024 05 12.35	&M	5.1 TK	7.0B	15	8	5	3	130	ICQ XX	WYA	Christopher Wyatt
12	2024 05 11.91	M	5.2 TK	5.0B	10	5	6	0.5	135	ICQ XX	SOU01	Willian Souza
12	2024 05 11.90	M	5.2 TK	8.0B	11	4	5/	1.50	130	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 10.91	M	5.1 TK	8.0B	11		5/			ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 09.90	M	5.1 TK	8.0B	11	3	6	1.10	125	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 08.90	M	5.1 TK	10.0B	25	5	5/	1.40	125	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 08.38	S	5.0 TT	4.0B	8	5	6	2	125	ICQ XX	MAT08	Michael Mattiazzo
12	2024 05 07.90	M	5.1 TK	10.9B	25	4	5	1.30	120	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 07.38	I	4.5 TT	E						ICQ XX	MAT08	Michael Mattiazzo
12	2024 05 07.38	S	4.9 TT	4.0B	8	5	6	2	125	ICQ XX	MAT08	Michael Mattiazzo
12	2024 05 11.90	&M	4.8 TK	7.0B	15	6.7	6	3.3	122	ICQ XX	WYA	Christopher Wyatt
12	2024 05 07.35	&S	4.3 TK	0.0E	15	3				ICQ XX	WYA	Christopher Wyatt
12	2024 05 06.90	M	5.0 TK	10.0B	25	4	5/	1.20	120	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 06.38	I	4.5 TT	E	1					ICQ XX	MAT08	Michael Mattiazzo
12	2024 05 06.38	S	4.9 TT	4.0B	8	5	6	2	125	ICQ XX	MAT08	Michael Mattiazzo
12	2024 05 06.35	&M	5.0 TK	7.0B	15	5.8	6	2.4	120	ICQ XX	WYA	Christopher Wyatt
12	2024 05 05.92	M	4.9 TK	5.0B	10	5	5			ICQ XX	SOU01	Willian Souza
12	2024 05 05.91	M	4.9 TK	8.0B	20	5	6	0.5	120	ICQ XX	SOU01	Willian Souza
12	2024 05 05.90	M	5.0 TK	10.0B	25	4	5	1.10	120	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 05.38	S	5.0 TT	4.0B	8	5	6	2	120	ICQ XX	MAT08	Michael Mattiazzo
12	2024 05 05.35	&M	4.9 TK	7.0B	15	6	6	3.4	120	ICQ XX	WYA	Christopher Wyatt
12	2024 05 04.90	M	4.9 TK	10.0B	25	5	4/	1.10	115	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 03.90	M	4.9 TK	10.0B	25	5	5	1.00	115	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 03.36	&M	4.8 TK	7.0B	15	10	6	3.7	111	ICQ XX	WYA	Christopher Wyatt
12	2024 05 02.91	M	4.8 TK	8.0B	20	5	6			ICQ XX	SOU01	Willian Souza
12	2024 05 02.90	M	4.9 TK	10.0B	25	5	5/	0.60	110	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 01.90	M	4.8 TK	10.0B	25	5	5/	0.60	110	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 01.38	M	4.9 TT	4.0B	8	5	6	1	110	ICQ XX	MAT08	Michael Mattiazzo
12	2024 04 30.90	M	4.8 TK	10.0B	25	6	5	0.45	105	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 04 30.38	M	4.8 TT	4.0B	8	5	6	1	105	ICQ XX	MAT08	Michael Mattiazzo
12	2024 04 29.90	M	4.8 TK	10.0B	25	5	5/	0.40	100	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 04 29.38	M	4.5 TT	4.0B	8	5	6			ICQ XX	MAT08	Michael Mattiazzo
12	2024 04 28.90	M	4.7 TK	10.0B	25	5	6	0.50	95	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 04 27.90	M	4.7 TK	10.0B	25	5	6	0.55	95	ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 04 26.90	&M	4.7 TK	10.0B	25	4	5			ICQ XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 04 26.38	M	4.9:TT	4.0B	8	3	7			ICQ XX	MAT08	Michael Mattiazzo
12	2024 04 22.37	M	4.3:TT	4.0B	8	3	7			ICQ XX	MAT08	Michael Mattiazzo
12	2024 04 21.37	M	4.3:TT	4.0B	8	3	7			ICQ XX	MAT08	Michael Mattiazzo
12	2024 04 20.37	M	4.5:TT	4.0B	8	3	7			ICQ XX	MAT08	Michael Mattiazzo
12	2024 04 01.82	Z	4.2 GG	20.0L	4a 60	13	6/>	1	41	ICQ XX	CHA03	José Joaquín Chambó Bris

Comets News

Looking Ahead to the Next 12 Months

The chart below shows those comets expected to become brighter than magnitude 10 in 2024. 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). The only exceptions are the dates **bolded in red** for C/2023 A3 (Tsuchinshan-ATLAS) and C/2024 G3 (ATLAS) when the comets will only be above the horizon in bright twilight but may still be bright enough to be observed.

All brightness predictions are just that—predictions, and they may be off by many magnitudes. Additionally, C/2023 A3 may be 1 or more magnitudes brighter than shown in early October due to forward scattering by dust OR 1 or more magnitudes fainter due to several reasons (slower rate of brightening, disintegration).

	05/30/24	06/09/24	06/19/24	06/29/24	07/09/24	07/19/24	07/29/24	08/08/24	08/18/24	08/28/24	09/07/24	09/17/24	09/27/24	10/07/24	10/17/24	10/27/24	11/06/24	11/16/24	11/26/24	12/06/24	12/16/24	12/26/24	01/10/25	01/20/25	01/30/25	02/09/25	02/19/25	03/01/25	03/11/25	03/21/25	03/31/25	04/10/25	04/20/25	04/30/25	05/10/25	05/20/25	05/30/25		
Northern Hemisphere																																							
12P/Pons-Brooks																																							
13P/Olbers	7	6	6	6	6	6	6	6	6	7	7	8	8	9	9																								
C/2023 A3 (Tsuchinshan-ATLAS)	9	9	9	9	9	9	8	8	7	7	6	4	3	2	3	5	6	7	8	9	9																		
333P/LINEAR																				9																			
C/2024 G3 (ATLAS)																																							
Southern Hemisphere																																							
12P/Pons-Brooks	6	6	7	8	8	9	9																																
13P/Olbers								6	6	7	7	8	8																										
C/2023 A3 (Tsuchinshan-ATLAS)	9	9	9	9	9	9	8	8	7	7	6	4	3	2	3	5	6	7	8	9	9																		
333P/LINEAR																				9																			
C/2024 G3 (ATLAS)																						9	7	2	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, #7)

483P/2016 J1 = P/2010 M9 = P/2020 Y6 = P/2021 K5 (PANSTARRS)	MPC 171409
482P/2014 VF40 (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 NO1 = P/2023 WM26 (Elenin)	MPC 169139
478P/2023 Y3 = P/2017 BQ100 (ATLAS)	MPC 169139
477P/2018 P3 = P/2023 V8 (PANSTARRS)	MPC 169139
476P/2015 HG16 = P/2023 W2 (PANSTARRS)	MPC 169139
475P/2004 DO29 = P/2023 V7 (Spacewatch-LINEAR)	MPC 169139
474P/2023 X5 = P/2017 O4 (Hogan)	MPC 169139

New Discoveries

C/2024 J4 (Lemmon) - Kacper Wierzchos (University of Arizona) discovered C/2024 J4 at 20th magnitude on 2024 May 11 with the Mt. Lemmon Survey 1.5-m reflector. It arrives at perihelion on 2025 April 27, at 5.69 au, when it should peak at 19th magnitude. C/2024 J4 is the 80th comet to be named after the Mount Lemmon program, though other Mount Lemmon Survey discoveries are named after the observer rather than the survey. [CBET 5399, MPEC 2024-K128]

C/2024 J3 (ATLAS) - The "Asteroid Terrestrial-Impact Last Alert System" (ATLAS) search program found this 17-18th magnitude comet on 2024 May 6 with a 0.5-m f/2 Schmidt reflector at Rio Hurtado, Chile. Currently at 8 au, the comet will get a bit closer with a perihelion on 2026 November 24 at 3.86 au. Around that time, it should reach a peak brightness of 13th magnitude. C/2024 J3 is the 87th comet to be named after the ATLAS program. [CBET 5398, MPEC 2024-K118]

C/2024 J2 (Wierzchos) – C/2024 J4 wasn't the only comet that Kacper Wierzchos (University of Arizona) discovered on 2024 May 11 with the Mt. Lemmon Survey 1.5-m reflector. C/2024 J2 arrives at perihelion on 2025 March 19 at 1.81 au. J2 is expected to reach 16th magnitude at its brightest in early 2025. C/2024 J2 is the 7th comet to be named Kacper Wierzchos. [CBET 5394, MPEC 2024-K31]

P/2024 J1 (PANSTARRS) – The only new short-period comet to report here was discovered with the Pan-STARRS1 1.8-m Ritchey-Chretien reflector at Haleakala on 2024 May 1 at 21st magnitude. C/2024 J1 is the 322nd comet to be named after the PANSTARRS program. The comet was at perihelion on 2023 November 11 at 2.64 au. It was discovered near opposition and was at its brightest during this return. [CBET 5393, MPEC 2024-J133]

C/2024 G7 (ATLAS) – The "Asteroid Terrestrial-Impact Last Alert System" (ATLAS) search program found this new 19th magnitude comet on 2024 April 3 with a 0.5-m f/2 Schmidt reflector at Rio Hurtado, Chile. The comet arrives at perihelion on 2025 February 9, at a large perihelion distance of 6.03 au. Peak brightness should be around 18-19th magnitude, so only a little brighter than now. C/2024 G7 is the 86th comet to be named after the ATLAS program. [CBET 5397, MPEC 2024-K41]

C/2024 G6 (ATLAS) – ATLAS also found C/2024 G6 with their 0.5-m f/2 Schmidt reflector at Rio Hurtado, Chile. The comet was 18-19th magnitude when first seen on 2024 April 10. Like C/2024 G7, G6 is a high perihelion distance object with perihelion on 2026 February 20 at 6.43 au. It should get a little brighter than G7 with a peak around 17th magnitude. [CBET 5392, MPEC 2024-J134]

C/2024 G5 (Leonard) – The Mt. Lemmon Survey 1.5-m reflector was also used to find C/2024 G5. Greg Leonard discovered the comet on 2024 April 5, at 19-20th magnitude. The comet is already near its peak in brightness since it will be behind the Sun at perihelion on 2024 September 7 at 2.95 au and will be at a similar brightness as now when it reappears in the morning sky in November. C/2024 G5 is the 21st comet to be named after Greg Leonard. [CBET 5391, MPEC 2024-J126]

C/2024 G4 (PANSTARRS) – The Pan-STARRS2 1.8-m Ritchey-Chretien reflector at Haleakala was used to find this 21st magnitude comet on 2024 April 10. C/2024 G2 is currently out at 7 au and nearly two years out from its 2026 March 21 perihelion at 4.90 au. Pre-discovery observations have been found back to January 2021 when the comet at magnitude 23.8 and 13.6 au from the Sun. A peak brightness around magnitude 18 should be reached in mid-2026. [CBET 5390, MPEC 2024-J123]

P/2024 FG9 (Nanshan-Hahn) – This object was first seen at the Mt. Nanshan station of the Xinjiang Astronomical Observatory in China by Xio Liao (reported to the MPC and CBAT by Xing Gao) on images taken during the Xingming Sky Survey 2024 March 8 and 9 with a 1.0-m f/2.2 reflector. The Mount Lemmon Survey also detected the object on March 21, though it was not recognized as the same as the Nanshan object. The linkage was realized after an independent discovery by Robson Henrique dos Santos Hahn (Moeckmuehl, Germany) on April 10 and 12 with his Hyperstar-equipped C14 reflector operated remotely near Valdin, Spain. The comet was reported between 18th and 20th magnitude at discovery.

The object was originally announced as an asteroid and designated 2024 FG9. Several observers have reported cometary activity. Sam Deen found pre-discovery observations from the object's previous apparition in 2018.

Perihelion was on 2024 May 20 at 1.60 au, with the comet currently around 17th magnitude. A series of close approaches to Jupiter has steadily decreased the perihelion distance from 2.09 au in 2005, 1.71 au in 2012 and 2018, and 1.60 au in 2024 and 2030. Another close approach in 2033 will increase the perihelion distance to 1.82 au. [CBET 5401, MPEC 2024-L4]

New Recoveries

P/2024 H1 = P/2018 L5 (Leonard) - Erwin Schwab (Egelsbach, Germany) reports the recovery of P/2018 L5 on images that were taken by Schwab and F. Ocana, L. Conversi, R. Kresken, and M. Micheli on 2024 April 18 and 21, with the 0.8-m f/3 Schmidt telescope at Calar Alto in Andalusia, Spain. The comet was between magnitude 20.6 and 21.3. P/Leonard was discovered by Greg Leonard of the Catalina Sky Survey with the Mount Lemmon 1.5-m in June 2018. The comet peaked at 17th magnitude in 2018. This time around, the comet arrives at perihelion on 2025 April 3 at 2.31 au, and should peak at 17-18th magnitude. Leonard passed 0.37 AU from Jupiter on 2014 September 25. Prior to that encounter, it had a much larger perihelion distance of 3.50 au. [CBET 5400, MPEC 2024-K145]

Comets Between Magnitude 6 and 10

12P/Pons-Brooks

Discovered visually on 1812 July 12 by Jean-Louis Pons and rediscovered visually on 1883 September 2 by William R. Brooks
Halley-type comet

Orbit (from Minor Planet Center, MPEC 2024-J304)

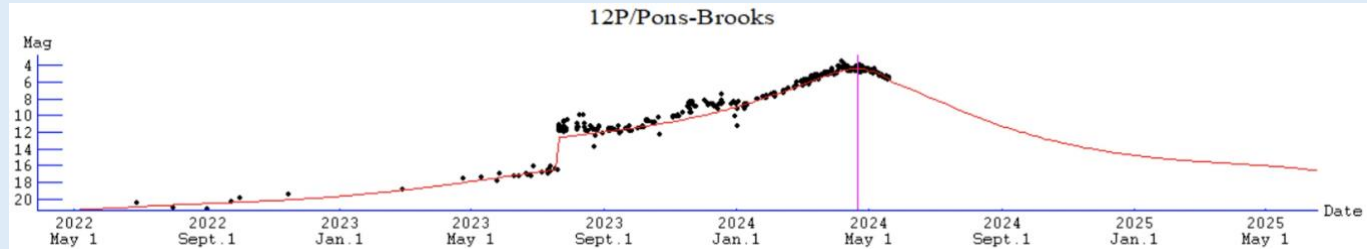
12P/Pons-Brooks
 Epoch 2024 Mar. 31.0 TT = JDT 2460400.5
 T 2024 Apr. 21.12394 TT
 q 0.7807799 (2000.0) P Q
 n 0.01381034 Peri. 198.98909 +0.14510771 -0.32930066
 a 17.2054650 Node 255.85590 +0.98566270 +0.13016964
 e 0.9546202 Incl. 74.19152 +0.08609760 -0.93520957
 P 71.4
 From 7480 observations 2023 June 1-2024 May 1, mean residual 0".6.

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

Date	R.A.	Decl.	r	d	Elong	Const	Mag	Max El (deg)	
								40N	40S
2024-Jun-01	05 47	-18 37	1.083	1.547	44E	Lep	6.4	0	21
2024-Jun-06	06 06	-21 52	1.145	1.549	47E	Lep	6.7	0	23
2024-Jun-11	06 26	-25 01	1.208	1.555	50E	CMa	7.0	0	25
2024-Jun-16	06 47	-28 02	1.272	1.568	54E	CMa	7.3	0	27
2024-Jun-21	07 08	-30 53	1.337	1.588	56E	CMa	7.5	0	29
2024-Jun-26	07 31	-33 32	1.403	1.615	59E	Pup	7.8	0	30
2024-Jul-01	07 54	-35 57	1.470	1.650	61E	Pup	8.1	0	32
2024-Jul-06	08 18	-38 07	1.536	1.692	63E	Pup	8.4	0	33

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

$m_1 = 6.8 + 5 \log d + 11.6 \log r$ [between T-684 and T-275 days]
 $m_1 = 4.4 + 5 \log d + 9.3 \log r$ [between T-275 days and perihelion]
 $m_1 = 4.9 + 5 \log d + 13.7 \log r$ [between perihelion and T+30 days]
 $m_1 = 5.1 + 5 \log d + 11.4 \log r$ [after T+30 days, assumed]
 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 (UT)	Mag	SC	APER	FL	POW	COMA Dia	DC	TAIL LENG	PA	ICQ CODE	Observer Name
12	2024 05 29.36	&M 6.2	TK	7.0B	15	9	5	46	m156		ICQ XX WYA	Christopher Wyatt
12	2024 05 28.34	&M 6.0	TK	7.0B	15	6.3	5/	1.2	143		ICQ XX WYA	Christopher Wyatt
12	2024 05 27.36	S 6.0	TT	4.0B	8	6	6				ICQ XX MAT08	Michael Mattiazzo
12	2024 05 27.34	&M 5.9	TK	7.0B	15	8	5	45	m149		ICQ XX WYA	Christopher Wyatt
12	2024 05 26.36	S 5.8	TT	4.0B	8	6	6				ICQ XX MAT08	Michael Mattiazzo
12	2024 05 26.34	&M 5.8	TK	7.0B	15	8	5/	1	150		ICQ XX WYA	Christopher Wyatt
12	2024 05 23.91	M 6.0	TK	8.0B	20	5	5				ICQ XX SOU01	Willian Souza
12	2024 05 23.91	M 6.0	TK	5.0B	10	5	4				ICQ XX SOU01	Willian Souza
12	2024 05 23.35	&M 5.7	TK	7.0B	15	6.7	5	37	m144		ICQ XX WYA	Christopher Wyatt
12	2024 05 22.34	&M 5.6	TK	7.0B	15	5	5/	1	140		ICQ XX WYA	Christopher Wyatt
12	2024 05 22.37	S 6.0	TT	5.0B	10	4	5				ICQ XX MAT08	Michael Mattiazzo
12	2024 05 20.89	M 5.7	TK	10.0B	25	4	5/	0.60	140		ICQ XX DES01	Jose Guilherme de Souza Aguiar
12	2024 05 20.35	&M 5.6	TK	7.0B	15	7	6	1.9	140		ICQ XX WYA	Christopher Wyatt
12	2024 05 19.91	M 5.8	TK	5.0B	10	5	6				ICQ XX SOU01	Willian Souza
12	2024 05 19.35	&M 5.7	TK	7.0B	15	7.5	5/	1	138		ICQ XX WYA	Christopher Wyatt
12	2024 05 18.90	M 5.6	TK	10.0B	25	4	5	1.00	140		ICQ XX DES01	Jose Guilherme de Souza Aguiar

12	2024 05 18.38	S	5.6	TT	4.0B	8	4	5				ICQ	XX	MAT08	Michael Mattiazzo
12	2024 05 17.91	M	5.5	TK	5.0B	10	5	6				ICQ	XX	SOU01	Willian Souza
12	2024 05 17.90	M	5.5	TK	10.0B	25	4	5	1.00	140		ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 17.38	S	5.5	TT	4.0B	8	5	6				ICQ	XX	MAT08	Michael Mattiazzo
12	2024 05 17.36	&M	5.6	TK	7.0B	15	6.8	5	1.2	135		ICQ	XX	WYA	Christopher Wyatt
12	2024 05 16.89	M	5.5	TK	8.0B	11	5	5/	1.00	140		ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 16.36	S	5.5	TT	4.0B	8	4	6				ICQ	XX	MAT08	Michael Mattiazzo
12	2024 05 14.35	&M	5.4	TK	7.0B	15	7.5	5	2.6	134		ICQ	XX	WYA	Christopher Wyatt
12	2024 05 13.90	M	5.2	TK	8.0B	11	4	5	1.30	135		ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 13.38	S	5.2	TT	4.0B	8	5	6	1.5	130		ICQ	XX	MAT08	Michael Mattiazzo
12	2024 05 12.38	I	4.8	TT	E	1						ICQ	XX	MAT08	Michael Mattiazzo
12	2024 05 12.38	S	5.2	TT	4.0B	8	5	6	1.5	130		ICQ	XX	MAT08	Michael Mattiazzo
12	2024 05 12.35	&M	5.1	TK	7.0B	15	8	5	3	130		ICQ	XX	WYA	Christopher Wyatt
12	2024 05 11.91	M	5.2	TK	5.0B	10	5	6	0.5	135		ICQ	XX	SOU01	Willian Souza
12	2024 05 11.90	M	5.2	TK	8.0B	11	4	5/	1.50	130		ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 10.91	M	5.1	TK	8.0B	11		5/				ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 09.90	M	5.1	TK	8.0B	11	3	6	1.10	125		ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 08.90	M	5.1	TK	10.0B	25	5	5/	1.40	125		ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 08.38	S	5.0	TT	4.0B	8	5	6	2	125		ICQ	XX	MAT08	Michael Mattiazzo
12	2024 05 07.90	M	5.1	TK	10.9B	25	4	5	1.30	120		ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 07.38	I	4.5	TT	E							ICQ	XX	MAT08	Michael Mattiazzo
12	2024 05 07.38	S	4.9	TT	4.0B	8	5	6	2	125		ICQ	XX	MAT08	Michael Mattiazzo
12	2024 05 07.36	&M	4.8	TK	7.0B	15	6.7	6	3.3	122		ICQ	XX	WYA	Christopher Wyatt
12	2024 05 07.35	&S	4.3	TK	0.0E		15	3				ICQ	XX	WYA	Christopher Wyatt
12	2024 05 06.90	M	5.0	TK	10.0B	25	4	5/	1.20	120		ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 06.38	I	4.5	TT	E	1						ICQ	XX	MAT08	Michael Mattiazzo
12	2024 05 06.38	S	4.9	TT	4.0B	8	5	6	2	125		ICQ	XX	MAT08	Michael Mattiazzo
12	2024 05 06.35	&M	5.0	TK	7.0B	15	5.8	6	2.4	120		ICQ	XX	WYA	Christopher Wyatt
12	2024 05 05.92	M	4.9	TK	5.0B	10	5	5				ICQ	XX	SOU01	Willian Souza
12	2024 05 05.91	M	4.9	TK	8.0B	20	5	6	0.5	120		ICQ	XX	SOU01	Willian Souza
12	2024 05 05.90	M	5.0	TK	10.0B	25	4	5	1.10	120		ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 05.38	S	5.0	TT	4.0B	8	5	6	2	120		ICQ	XX	MAT08	Michael Mattiazzo
12	2024 05 05.35	&M	4.9	TK	7.0B	15	6	6	3.4	120		ICQ	XX	WYA	Christopher Wyatt
12	2024 05 04.90	M	4.9	TK	10.0B	25	5	4/	1.10	115		ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 03.90	M	4.9	TK	10.0B	25	5	5	1.00	115		ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 03.36	&M	4.8	TK	7.0B	15	10	6	3.7	111		ICQ	XX	WYA	Christopher Wyatt
12	2024 05 02.91	M	4.8	TK	8.0B	20	5	6				ICQ	XX	SOU01	Willian Souza
12	2024 05 02.90	M	4.9	TK	10.0B	25	5	5/	0.60	110		ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 01.90	M	4.8	TK	10.0B	25	5	5/	0.60	110		ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 05 01.38	M	4.9	TT	4.0B	8	5	6	1	110		ICQ	XX	MAT08	Michael Mattiazzo
12	2024 04 30.90	M	4.8	TK	10.0B	25	6	5	0.45	105		ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 04 30.38	M	4.8	TT	4.0B	8	5	6	1	105		ICQ	XX	MAT08	Michael Mattiazzo
12	2024 04 29.90	M	4.8	TK	10.0B	25	5	5/	0.40	100		ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 04 29.38	M	4.5	TT	4.0B	8	5	6				ICQ	XX	MAT08	Michael Mattiazzo
12	2024 04 28.90	M	4.7	TK	10.0B	25	5	6	0.50	95		ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 04 27.90	M	4.7	TK	10.0B	25	5	6	0.55	95		ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 04 26.90	&M	4.7	TK	10.0B	25	4	5				ICQ	XX	DES01	Jose Guilherme de Souza Aguiar
12	2024 04 26.38	M	4.9	:TT	4.0B	8	3	7				ICQ	XX	MAT08	Michael Mattiazzo
12	2024 04 22.37	M	4.3	:TT	4.0B	8	3	7				ICQ	XX	MAT08	Michael Mattiazzo
12	2024 04 21.37	M	4.3	:TT	4.0B	8	3	7				ICQ	XX	MAT08	Michael Mattiazzo
12	2024 04 20.37	M	4.5	:TT	4.0B	8	3	7				ICQ	XX	MAT08	Michael Mattiazzo

The 2024 return of 12P/Pons-Brooks has been one of the better apparitions of recent years. While Pons-Brooks “only” reached 4th magnitude, it is an intrinsically bright comet, resulting in a long span of observations, even when far from the Sun, not to mention its propensity for multi-magnitude outbursts, near-nucleus morphology, and dynamic dust and gas tails. It is too bad that this was a relatively poor apparition, with the comet coming no closer to the Earth than 1.55 au (on June 2).

Still, Pons-Brooks continues to put on a show, at least for southern hemisphere observers, as it is long gone from northern skies. While the comet is fading from magnitude 6.4 to 8.1 this month, the big event of June will be an orbital plane crossing on June 7. Already, observers are seeing a strong anti-tail produced by dust released from the comet weeks to months ago. This feature should only get narrower and stronger as we approach the 7th.

Pons-Brooks is an evening object this month as it moves southward through Lepus (Jun 1-7), Canis Major (7-24), and Puppis (24-30).

Photo Opportunities

Jun 7 - 12P/Pons-Brooks orbital plane crossing

The path of 12P/Pons-Brooks from 2024 June 1

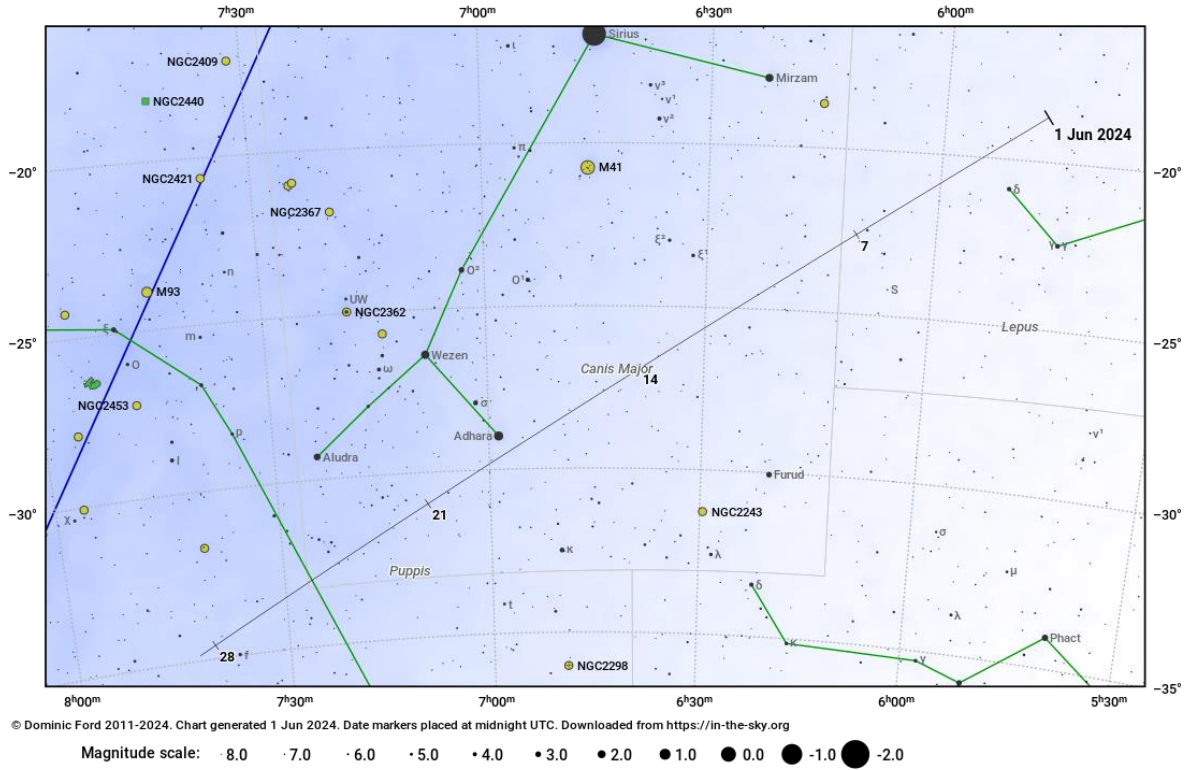


Figure 2 - Finder chart for 12P in June 2024 from in-the-sky.org.



Figure 3 - 12P/Pons-Brooks and its developing anti-tail in an image taken by Michael Mattiazzo (Swan Hill, Australia) with a RASA11 f/2.2 and Canon 6D DSLR.

13P/Olbers

Discovered visually on 1815 March 6 by Heinrich Olbers in Bremen, Germany
Halley-type comet

Orbit (from Minor Planet Center, MPEC 2024-K130)

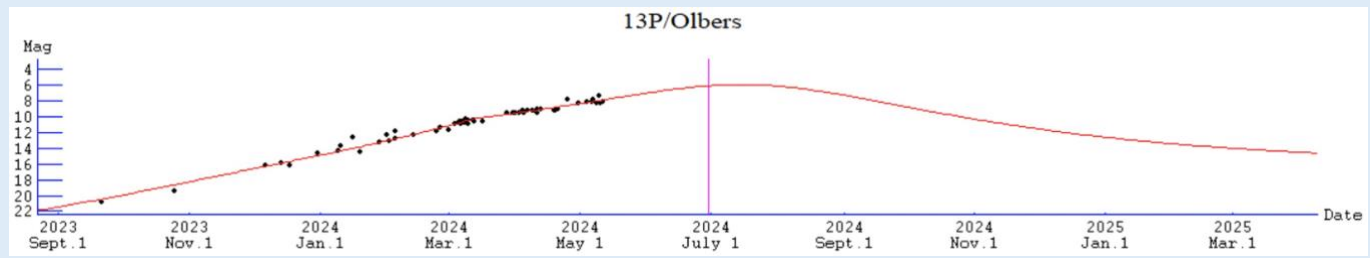
13P/Olbers
Epoch 2024 Mar. 31.0 TT = JDT 2460400.5
T 2024 June 30.04575 TT Rudenko
q 1.1754750 (2000.0) P Q
n 0.01420955 Peri. 64.41577 -0.60854097 -0.37164150
a 16.8816889 Node 85.84748 +0.18557713 -0.92569769
e 0.9303698 Incl. 44.66490 +0.77151735 -0.07047250
P 69.4
From 1338 observations 2023 Oct. 8-2024 May 27, mean residual 0".4.
Nongravitational parameters A1 = +0.50, A2 = -0.7224.

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

Date	R.A.	Decl.	r	d	Elong	Const	Mag	Max El (deg)	
								40N	40S
2024-Jun-01	06 13	+37 16	1.256	2.088	25E	Aur	7.0	7	0
2024-Jun-06	06 33	+38 41	1.231	2.059	26E	Aur	6.8	7	0
2024-Jun-11	06 54	+39 56	1.211	2.031	26E	Aur	6.6	8	0
2024-Jun-16	07 17	+40 59	1.195	2.004	27E	Aur	6.5	8	0
2024-Jun-21	07 41	+41 46	1.183	1.978	28E	Lyn	6.3	9	0
2024-Jun-26	08 07	+42 14	1.177	1.955	29E	Lyn	6.2	10	0
2024-Jul-01	08 33	+42 23	1.175	1.934	30E	Lyn	6.1	12	0
2024-Jul-06	09 01	+42 08	1.179	1.917	31E	Lyn	6.0	13	0

Comet Magnitude Formula (from 1956 ICQ and 2023 ALPO data)

$m_1 = -1.4 + 5 \log d + 33.6 \log r$ [Up through T-110 days]
 $m_1 = 3.5 + 5 \log d + 15.1 \log r (T - 14)$ [After T-110 days]
 where "T" is date of perihelion, "d" is Comet-Earth distance in au, and "r" is Comet-Sun distance in au



Recent Magnitude Estimates submitted to the ALPO Comets Section

Recent Magnitude Measurements in ICQ format:

Comet Des	YYYY MM DD.DD (UT)	Mag	SC	APER	FL	POW	COMA Dia DC	TAIL LENG PA	ICQ CODE	Observer Name
13	2024 05 30.15	S 7.7	TK	12.5B	30	2	6		ICQ XX HER02	Carl Hergenrother
13	2024 05 29.91	S 7.7	TK	7.0B	15	3	6		ICQ XX GON05	Juan Jose Gonzalez Suarez
13	2024 05 29.90	S 8.2	TK	20.3T10	77	3	5		ICQ XX GON05	Juan Jose Gonzalez Suarez
13	2024 05 27.15	S 7.7	TK	12.5B	30	3	6		ICQ XX HER02	Carl Hergenrother
13	2024 05 09.88	S 7.9	TK	32.0L 5	80	1.5	4	0.04 52	ICQ XX PIL01	Uwe Pilz
13	2024 05 07.14	Z 8.5	GG	5.0R 5a720		5			ICQ XX OLAaa	Michael Olason
13	2024 05 06.89	S 8.5	TK	20.3T10	77	2.5	5		ICQ XX GON05	Juan Jose Gonzalez Suarez
13	2024 05 04.14	S 8.6	TK	12.5B	30	1.5	4		ICQ XX HER02	Carl Hergenrother
13	2024 04 12.38	Z 10.4	U4	28.0D 2a300		2	7		ICQ XX MAT08	Michael Mattiazzo
13	2024 04 07.39	Z 10.1	U4	7.0A 3a300		4	5		ICQ XX MAT08	Michael Mattiazzo
13	2024 04 04.40	Z 10.2	U4	7.0A 3a300		4	4		ICQ XX MAT08	Michael Mattiazzo
13	2024 04 01.83	Z 10.4	GG	20.0L 4a 60		5	5	6 m 98	ICQ XX CHA03	José Joaquín Chambó Bris

In addition to 12P/Pons-Brooks, we have another bright returning Halley-type comet in 13P/Olbers. Olbers won't put on quite as good a show as Pons-Brooks as it will pass farther from the Sun (1.18 au vs 0.78 au for 12P) and Earth (1.90 au vs 1.55 au). Luckily for us, Olbers is also a relatively intrinsically bright comet, so despite the distant return, it should still peak at around 6th magnitude. However, it will be a horizon hugger in

the northwestern sky for northern observers. While not ideal, at least it's above the horizon, which isn't the case for observers in the southern hemisphere this month.

Olbers continues to run brighter than expected based on its lightcurve from its last return in 1956. If it continues to follow this trend, it should start the month at magnitude 7.0 and end the month close to a magnitude brighter at magnitude 6.1. In May, visual observers reported a small 1.5' to 3' coma of moderate condensation (DC = 4-6).

Like Pons-Brooks, we will also experience an orbital plane crossing for 13P (on June 17). Unlike Pons-Brooks, Olbers's orbital plane crossing occurs before perihelion (on June 30), and since Olbers didn't have any large outbursts, there isn't as much dust. Still, recent images suggest that an anti-tail will be visible during the plane crossing, though it will likely not be as substantial as that of Pons-Brooks.

As mentioned before, Olbers is an evening object at low elevations for northern observers as it moves through Auriga (Jun 1-18) and Lynx (Jun 18-30). It continues to be inaccessible to Southern Hemisphere observers.

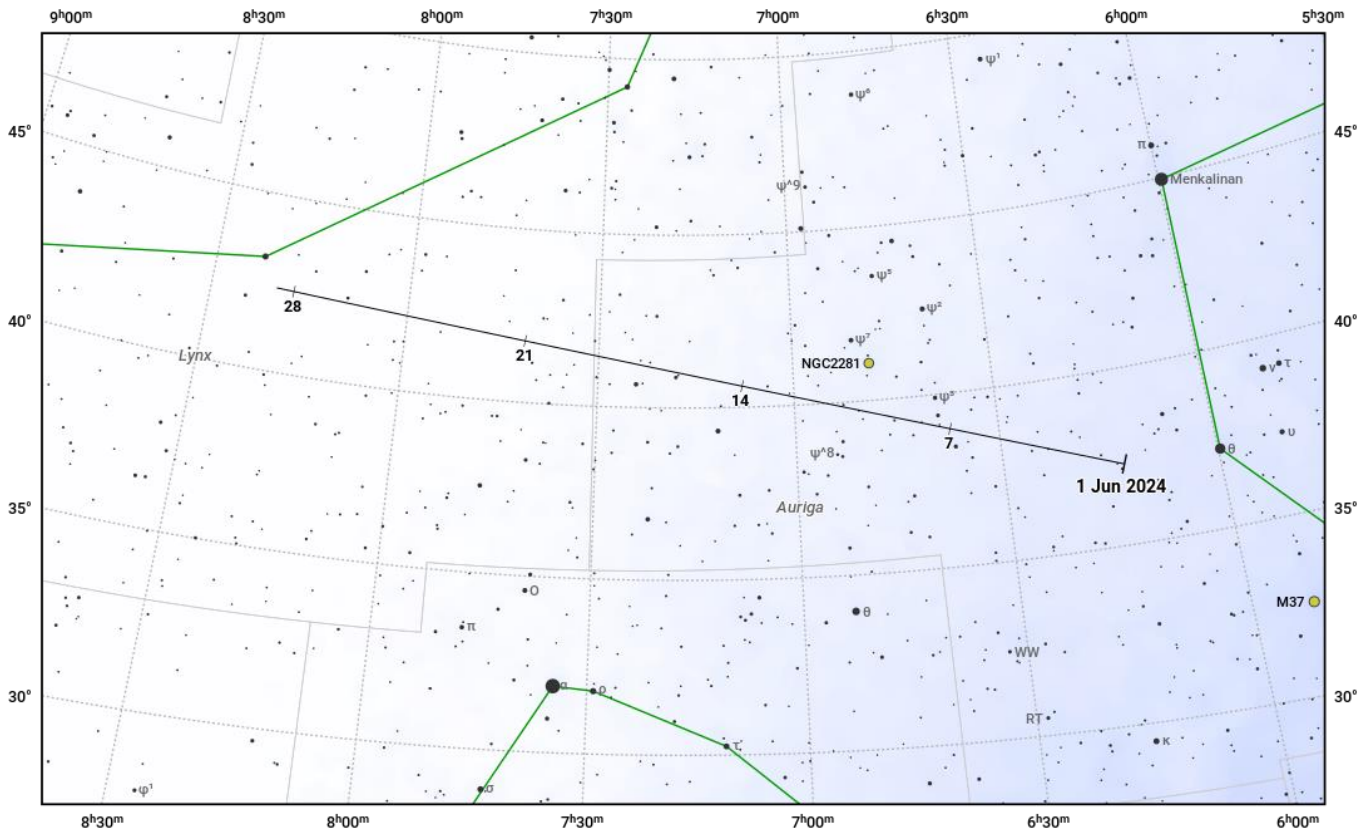
Photo Opportunities

Jun 17 - 13P/Olbers orbital plane crossing



Figure 4 – 13P/Olbers shows an active gas tail and a shorter dust tail and fan in this image taken by Dan Bartlett (June Lake, CA, USA) on 2024 May 31. The image is a composite of 37 30-sec exposures taken with a Hyperstar-equipped C14.

The path of 13P/Olbers from 2024 June 1



© Dominic Ford 2011-2024. Chart generated 1 Jun 2024. Date markers placed at midnight UTC. Downloaded from <https://in-the-sky.org>

Magnitude scale: · 8.0 · 7.0 · 6.0 · 5.0 · 4.0 · 3.0 · 2.0 ● 1.0

- The Equator — Ecliptic Plane — Galactic Plane
- Galaxy ■ Bright nebula ● Open cluster ● Globular cluster

Figure 5 - Finder chart for 13P in June 2024 from in-the-sky.org.

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 2024-K130)

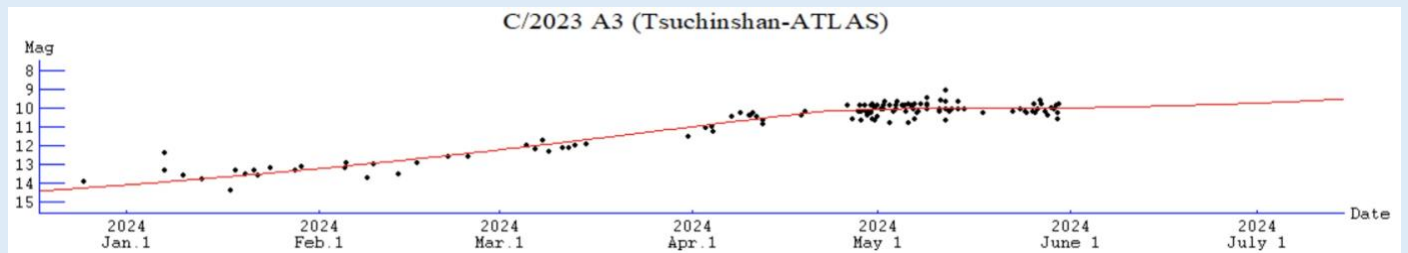
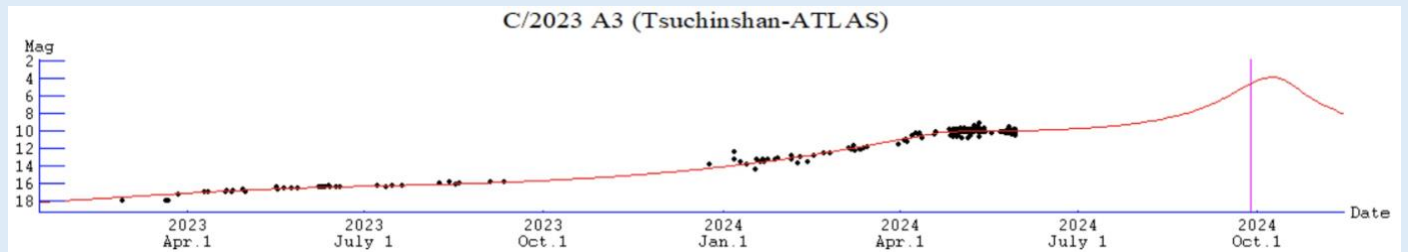
C/2023 A3 (Tsuchinshan-ATLAS)
Epoch 2024 Mar. 31.0 TT = JDT 2460400.5
T 2024 Sept. 27.73824 TT Rudenko
q 0.3914499 (2000.0) P Q
z -0.0002919 Peri. 308.48913 +0.36137947 +0.90086071
+/-0.0000045 Node 21.55931 +0.91855625 -0.29964053
e 1.0001143 Incl. 139.11308 -0.16018519 +0.31411071
From 4196 observations 2022 Apr. 9-2024 May 29, mean residual 0".5.
1/a(orig) = -0.000234 AU**⁻¹, 1/a(fut) = -0.000206 AU**⁻¹.

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

Date	R.A.	Decl.	r	d	Elong	Const	Mag	Max El	
								40N	40S
2024-Jun-01	12 02	+02 35	2.330	1.795	108E	Vir	10.0	43	48
2024-Jun-06	11 52	+02 49	2.257	1.820	101E	Vir	10.0	39	47
2024-Jun-11	11 43	+02 58	2.182	1.850	94E	Vir	9.9	33	47
2024-Jun-16	11 35	+03 02	2.107	1.881	88E	Leo	9.9	28	47
2024-Jun-21	11 27	+03 01	2.031	1.912	81E	Leo	9.8	23	46
2024-Jun-26	11 21	+02 55	1.954	1.943	75E	Leo	9.8	18	44
2024-Jul-01	11 16	+02 46	1.875	1.971	69E	Leo	9.7	13	41
2024-Jul-06	11 11	+02 32	1.796	1.996	63E	Leo	9.7	9	38

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

$m_1 = -16.6 + 5 \log d + 35.0 \log r$ [Through T-650 days]
 $m_1 = 3.6 + 5 \log d + 11.3 \log r$ [Between T-650 and T-160 days]
 $m_1 = 8.7 + 5 \log d + 0.2 \log r$ [Between T-160 and T-120 days]
 $m_1 = 6.2 + 5 \log d + 7.0 \log r$ [After T-120 days, assumed]
 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	2024 05 30.15	S 10.2	TK	12.5B		30	1.5 5		ICQ XX	HER02	Carl Hergenrother
2023A3	2024 05 29.93	B 10.9	TK	20.3T10		77	1 7	0.1 100	ICQ XX	GON05	Juan Jose Gonzalez Suarez
2023A3	2024 05 29.37	xM 10.7	AQ	40.0L 4	108		2 6	10 m100	ICQ XX	WYA	Christopher Wyatt
2023A3	2024 05 28.91	Z 10.5	GG	20.0L 4a	60		2.2 6	12 m100	ICQ XX	CHA03	José Joaquín Chambó Bris
2023A3	2024 05 28.40	xM 10.7	AQ	25.0L 5	40		1.3 6	5.3 m117	ICQ XX	WYA	Christopher Wyatt
2023A3	2024 05 27.40	S 10.0	TT	10.0B		25	2 6		ICQ XX	MAT08	Michael Mattiazzo
2023A3	2024 05 27.15	S 10.0	TK	12.5B		30	2 5		ICQ XX	HER02	Carl Hergenrother

2023A3	2024 05 26.35	xM	10.6	AQ	25.0L	5	40	1.2	6	8	m102	ICQ XX WYA	Christopher Wyatt
2023A3	2024 05 26.19	S	10.2	TK	12.5B	30	2	2	5			ICQ XX HER02	Carl Hergenrother
2023A3	2024 05 13.99	M	10.1	TK	30.0L	5	65	2	5/			ICQ XX DES01	Jose Guilherme de Souza Aguiar
2023A3	2024 05 12.48	xM	10.5	AQ	25.0L	5	40	1.3	6	10	m 95	ICQ XX WYA	Christopher Wyatt
2023A3	2024 05 11.98	M	10.1	TK	30.0L	5	65	3	5/			ICQ XX DES01	Jose Guilherme de Souza Aguiar
2023A3	2024 05 11.92	S	11.0	TI	53.1L	139	1.4	4/	3.5	m100		ICQ XX HAR11	Christian Harder
2023A3	2024 05 11.85	E	10.1	S	61.0L	3	200	0.5	7	4.5	m	ICQ XX DEC	Michel Deconinck
2023A3	2024 05 11.24	S	10.0	TK	12.5B	30	1.8	5				ICQ XX HER02	Carl Hergenrother
2023A3	2024 05 08.98	M	10.2	TK	30.0L	5	65	2	5			ICQ XX DES01	Jose Guilherme de Souza Aguiar
2023A3	2024 05 08.93	S	10.2	TI	53.1L	139	1.5	4/	3.5	m103		ICQ XX HAR11	Christian Harder
2023A3	2024 05 08.93	Z	10.5	GG	20.0L	4a	60	1.8	6	8.6	m 99	ICQ XX CHA03	José Joaquín Chambó Bris
2023A3	2024 05 08.88	S	10.0	TK	32.0L	5	80	2	7	0.1	70	ICQ XX PIL01	Uwe Pilz
2023A3	2024 05 07.99	M	10.2	TK	30.0L	5	65	3	4/			ICQ XX DES01	Jose Guilherme de Souza Aguiar
2023A3	2024 05 07.93	Z	10.4	GG	20.0L	4a	60	1.6	6	8	m 97	ICQ XX CHA03	José Joaquín Chambó Bris
2023A3	2024 05 07.48	xM	10.8	AQ	40.0L	4	59	1	6	5.4	m100	ICQ XX WYA	Christopher Wyatt
2023A3	2024 05 07.27	Z	10.3	GG	5.0R	5a120	3					ICQ XX OLAAA	Michael Olason
2023A3	2024 05 06.98	M	10.2	TK	30.0L	5	65	2	4/			ICQ XX DES01	Jose Guilherme de Souza Aguiar
2023A3	2024 05 06.95	B	10.9	TK	20.3T10	77	1.1	7	0.05	100		ICQ XX GON05	Juan Jose Gonzalez Suarez
2023A3	2024 05 06.90	Z	10.8	GG	20.0L	4a	60	1.5	7	6.6	m 96	ICQ XX CHA03	José Joaquín Chambó Bris
2023A3	2024 05 06.42	S	10.1	TT	10.0B	25	2	6				ICQ XX MAT08	Michael Mattiazzo
2023A3	2024 05 05.99	M	10.2	TK	30.0L	5	65	3	4			ICQ XX DES01	Jose Guilherme de Souza Aguiar
2023A3	2024 05 05.92	S	10.6	TI	29.8L	4	79	1.5	5	3.5	m100	ICQ XX HAR11	Christian Harder
2023A3	2024 05 05.48	xM	10.5	AQ	25.0L	5	40	1.4	6	6	m103	ICQ XX WYA	Christopher Wyatt
2023A3	2024 05 05.42	S	10.1	TT	10.0B	25	2	6				ICQ XX MAT08	Michael Mattiazzo
2023A3	2024 05 04.99	M	10.3	TK	30.0L	5	65	3	4			ICQ XX DES01	Jose Guilherme de Souza Aguiar
2023A3	2024 05 04.16	S	10.1	TK	12.5B	30	2	6				ICQ XX HER02	Carl Hergenrother
2023A3	2024 05 03.99	M	10.3	TK	30.0L	5	65	3	4			ICQ XX DES01	Jose Guilherme de Souza Aguiar
2023A3	2024 05 03.45	xM	10.5	AQ	25.0L	5	40	2.1	6	8	m115	ICQ XX WYA	Christopher Wyatt
2023A3	2024 05 02.98	M	10.3	TK	30.0L	5	65	3	4			ICQ XX DES01	Jose Guilherme de Souza Aguiar
2023A3	2024 05 02.92	S	10.6	TI	29.8L	4	79	1.3	4/	2.5	m100	ICQ XX HAR11	Christian Harder
2023A3	2024 05 02.89	Z	10.5	GG	20.0L	4a	60	1.7	7/	5	m 96	ICQ XX CHA03	José Joaquín Chambó Bris
2023A3	2024 05 02.16		10.2		35.0T11	230	3	5/				ICQ XX ROSxx	Michael Rosolina
2023A3	2024 05 01.98	M	10.3	TK	30.0L	5	65	2	3/			ICQ XX DES01	Jose Guilherme de Souza Aguiar
2023A3	2024 05 01.52	xM	10.4	AQ	25.0L	5	40	1.7	6	4	m 97	ICQ XX WYA	Christopher Wyatt
2023A3	2024 04 30.99	M	10.3	TK	30.0L	5	65	2	3/			ICQ XX DES01	Jose Guilherme de Souza Aguiar
2023A3	2024 04 30.44	S	10.2	TT	10.0B	25	2	7				ICQ XX MAT08	Michael Mattiazzo
2023A3	2024 04 30.43	Z	10.7	U4	28.0D	2a300	1.5	8	4	m 95		ICQ XX MAT08	Michael Mattiazzo
2023A3	2024 04 29.99	M	10.3	TK	30.0L	5	65	2	3/			ICQ XX DES01	Jose Guilherme de Souza Aguiar
2023A3	2024 04 29.12		10.7		35.0T11	163	2	5/				ICQ XX ROSxx	Michael Rosolina
2023A3	2024 04 28.99	M	10.3	TK	30.0L	5	65	2	4			ICQ XX DES01	Jose Guilherme de Souza Aguiar
2023A3	2024 04 28.42	Z	10.7	U4	28.0D	2a300	1.5	8				ICQ XX MAT08	Michael Mattiazzo
2023A3	2024 04 12.52	S	11.0	TT	20.0L	6	70	1	8			ICQ XX MAT08	Michael Mattiazzo
2023A3	2024 04 12.52	Z	10.9	U4	28.0D	2a300	1.2	7				ICQ XX MAT08	Michael Mattiazzo
2023A3	2024 04 10.03	Z	10.5	GG	20.0L	4a	60	1.4	7	2.5	m 66	ICQ XX CHA03	José Joaquín Chambó Bris
2023A3	2024 04 04.57	Z	11.3	U4	7.0A	3a300	1	8				ICQ XX MAT08	Michael Mattiazzo

“Comets are like cats: they have tails, and they do precisely what they want.” – David Levy.
 “If you must bet, bet on a horse, not a comet!” – Fred Whipple.

The hardest part about these write-ups is making a reasonable brightness forecast. For some comets, this is easy, but there are comets like C/2023 A3 (Tsuchinshan-ATLAS). Originally forecasted to have a good probability of becoming a spectacular object in October, Tsuchinshan-ATLAS’ recent behavior has introduced much doubt into our predictions. In fact, it reminds me of two other quotes usually found in the financial world.

“Past performance does not guarantee future results.” – Pretty much part of every financial disclaimer.
 “If you have to forecast, forecast often.” - Edgar R. Fiedler.

For most of the time since its discovery in early 2023, the total magnitude of Tsuchinshan-ATLAS brightened at a relatively rapid rate. That all came to a screeching halt in mid-April when the comet’s brightening trend slowed and even started to fade intrinsically (meaning that after normalizing for changes in the comet’s distance from the Sun and Earth, the comet is fading). Qicheng Zhang has written several informative posts discussing possible explanations for Tsuchinshan-ATLAS’ recent behavior. You can find some of them on the comets-ml list ([here](#) and [here](#)) and even in the ALPO Comet News CloudyNights forums (see [here](#)).

During May, the ALPO Comets Section received 41 magnitude measurements, 35 visual and 6 digital (CCD/CMOS). The visual observers found the comet to be between magnitude 10.0 and 11.0 (average of 10.3) during May with a small (1’-3’, average of ~2’) fairly condensed (DC = 3.5 to 7 with an average of 5.5).

Several visual observations also mentioned detecting a tail up to 10' in length, closely matching the tail lengths reported by imagers.

This month, Tsuchinshan-ATLAS remains in the evening sky, observable after nightfall in Virgo (Jun 1-14) and Leo (14-30), though the comet will become a progressively more difficult observation by the end of the month for northern hemisphere observers. As for how bright it will be this month, I assumed a 5-log-r brightening trend. This is usually a very low number for an inbound comet but is, in fact, an improvement over the comet's behavior since mid-April (when it "brightened" as a ~0-log-r rate). A 5-log-r trend sees a very slight brightening in June from around magnitude 10.0 to 9.7. This prediction is very uncertain and could be off in either direction. As usual, we'll just have to wait and see.

Photo Opportunities

Jun 25-26 - C/2023 A3 (Tsuchinshan-ATLAS) passes within <10' of 10th mag galaxy NGC 3640

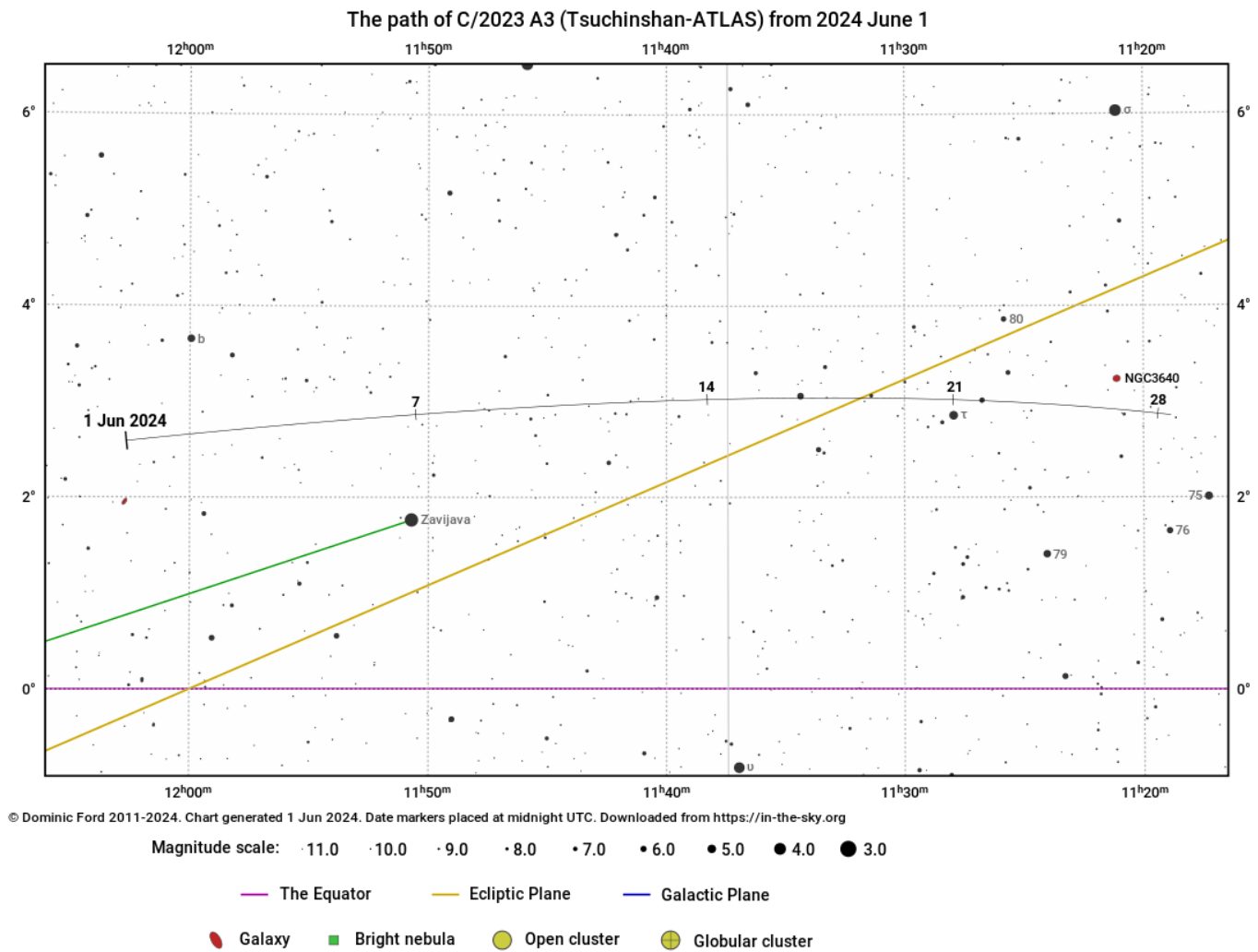


Figure 6 - Star chart for C/2023 A3 in June 2024. Chart produced at in-the-sky.org.



Figure 7 – Rik Hill caught C/2023 A3 (Tsuchinshan-ATLAS) on 2024 May 28 UT with an eVscope eQuinox1 smart telescope from Tucson, AZ. The image is a 16-min exposure.

Comets Between Magnitude 10 and 12

479P/Elenin

Discovered digitally on 2011 July 7 by Leonid Elenin and I. Molotov with a remote telescope in Mayhill, NM, USA
Short-period comet

Orbit (from Minor Planet Center, MPEC 2022-K130)

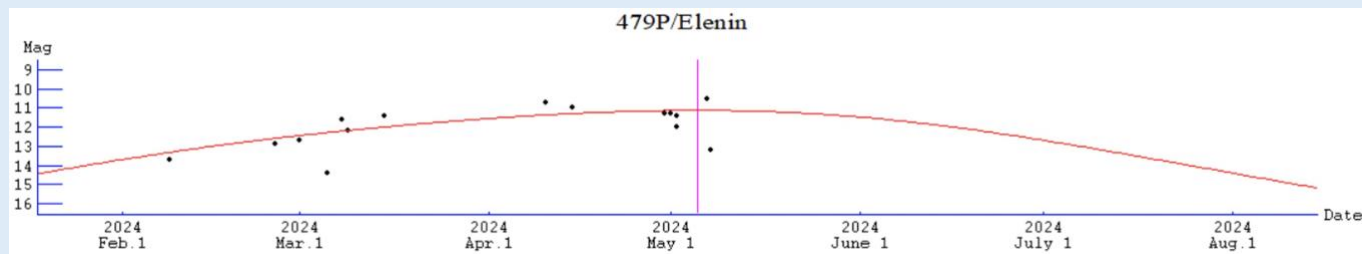
479P/Elenin
Epoch 2024 Mar. 31.0 TT = JDT 2460400.5
T 2024 May 5.24435 TT Rudenko
q 1.2437127 (2000.0) P Q
n 0.07392499 Peri. 263.52457 -0.91136069 +0.33512287
a 5.6226604 Node 295.83401 -0.18492176 -0.85208007
e 0.7788035 Incl. 15.39799 -0.36773038 -0.40205997
P 13.3
From 928 observations 2011 June 12-2024 May 27, mean residual 0".5.

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

Date	R.A.	Decl.	r	d	Elong	Const	Mag	Max El (deg)	
								40N	40S
2024-Jun-01	10 41	-24 32	1.295	0.649	99E	Hya	11.5	10	74
2024-Jun-06	11 03	-25 45	1.316	0.665	101E	Hya	11.6	9	76
2024-Jun-11	11 27	-26 48	1.339	0.684	102E	Hya	11.8	8	77
2024-Jun-16	11 50	-27 39	1.365	0.709	103E	Hya	12.0	8	78
2024-Jun-21	12 14	-28 19	1.393	0.738	104E	Hya	12.2	7	79
2024-Jun-26	12 37	-28 47	1.424	0.772	104E	Hya	12.4	8	79
2024-Jul-01	13 00	-29 05	1.457	0.812	105E	Hya	12.7	8	79
2024-Jul-06	13 22	-29 13	1.491	0.856	105E	Hya	12.9	8	79

Comet Magnitude Formula (from 2024 data)

$m_1 = 10.8 + 5 \log d + 14.3 \log r$
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:

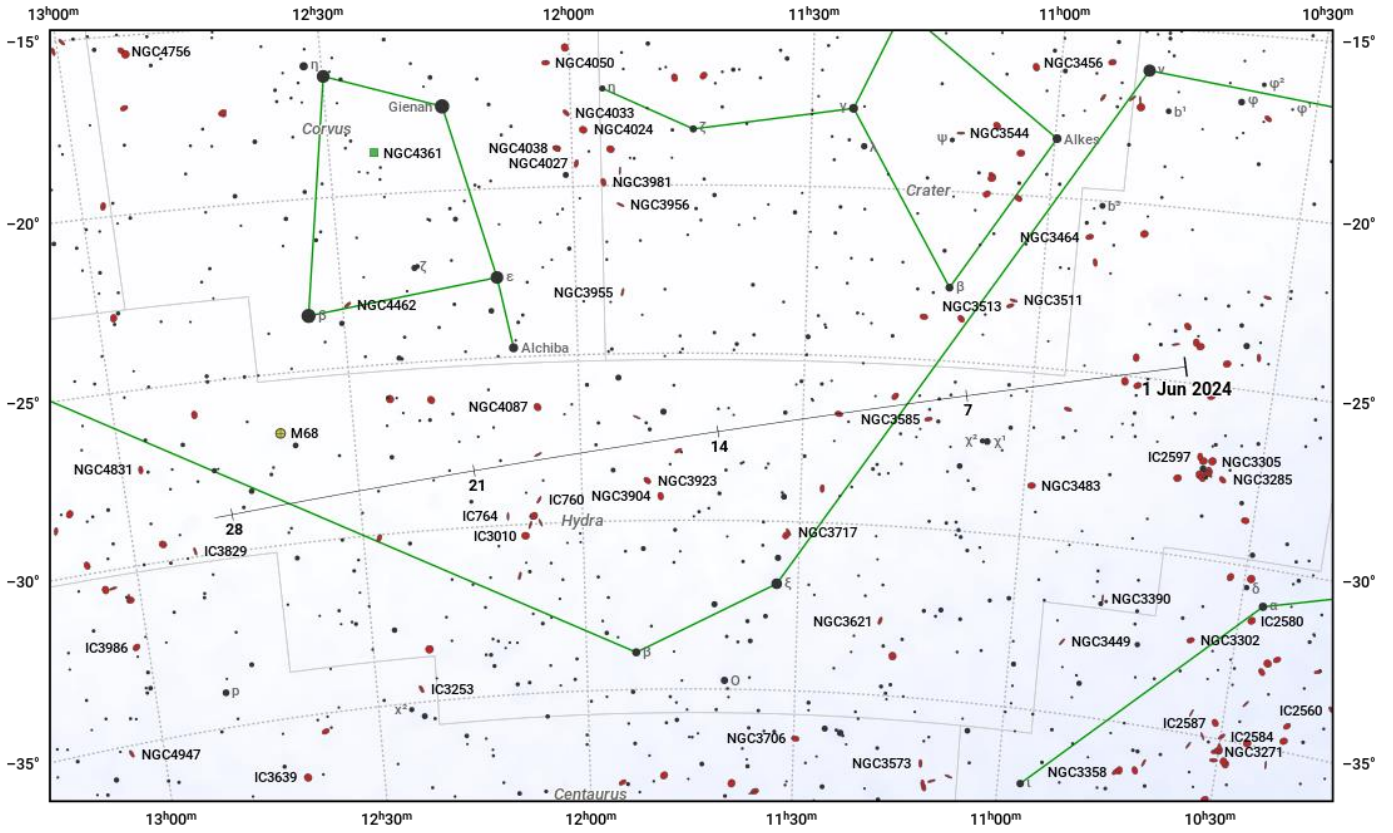
Comet Des	YYYY MM DD.DD (UT)	Mag	SC	APER	FL	POW	COMA Dia	TAIL DC	ICQ CODE	Observer Name
479	2024 05 07.87	Z 12.0	GG	20.0L	4a480	2.5	1/		ICQ XX CHA03	José Joaquín Chambó Bris
479	2024 05 07.49	xS 13.8	AQ	40.0L	4 182	0.9	3		ICQ XX WYA	Christopher Wyatt
479	2024 05 06.92	S 10.8	TK	20.3T10	133	2	3		ICQ XX GON05	Juan Jose Gonzalez Suarez
479	2024 05 01.94	M 11.8	AQ	30.0L	5 88	1	3		ICQ XX DES01	Jose Guilherme de Souza Aguiar
479	2024 04 30.94	M 11.7	AQ	30.0L	5 88	1	3/		ICQ XX DES01	Jose Guilherme de Souza Aguiar
479	2024 04 29.92	M 11.7	AQ	30.0L	5 88	1	4/		ICQ XX DES01	Jose Guilherme de Souza Aguiar

Short-period comet 479P/Elenin hasn't been as well observed as some of the other comets in the evening sky. Visual observations suggest an 11th-magnitude comet with a small, slight to moderately condensed 1'-2' coma. Not after its May 5 perihelion at 1.24 au and closest approach to Earth on May 4 at 0.62 au, 479P will fade this month from around magnitude 11.5 to 12.7 as it moves along the length of the constellation of Hydra.

Photo Opportunities

- Jun 7-8 - 479P/Elenin within 1 deg of 10th mag galaxy NGC 3585
- Jun 14-15 - 479P/Elenin within 1 deg of 11th mag galaxy NGC 3885

The path of 479P/Elenin from 2024 June 1



© Dominic Ford 2011-2024. Chart generated 2 Jun 2024. Date markers placed at midnight UTC. Downloaded from <https://in-the-sky.org>

Magnitude scale: • 8.0 • 7.0 • 6.0 • 5.0 • 4.0 • 3.0 • 2.0

— The Equator — Ecliptic Plane — Galactic Plane

● Galaxy ■ Bright nebula ● Open cluster ● Globular cluster

Figure 8 - Finder chart for 479P in June 2024 from in-the-sky.org.

C/2021 S3 (PANSTARRS)

Discovered 2021 September 24 by PANSTARRS with the Pan-STARRS2 1.8-m Ritchey-Chretien reflector at Haleakala Long-period comet

Orbit (from Minor Planet Center, MPEC 2024-K130)

C/2021 S3 (PANSTARRS)
 Epoch 2024 Mar. 31.0 TT = JDT 2460400.5
 T 2024 Feb. 14.71094 TT
 Rudenko
 q 1.3202170 (2000.0) P Q
 z -0.0002189 Peri. 6.85447 -0.77078903 +0.39887272
 +/-0.0000003 Node 215.62129 -0.61750163 -0.65961381
 e 1.0002890 Incl. 58.53305 -0.15676737 +0.63703231
 From 1995 observations 2020 Dec. 6-2024 May 28, mean residual 0".6.
 1/a(orig) = +0.000141 AU**⁻¹, 1/a(fut) = +0.000056 AU**⁻¹.

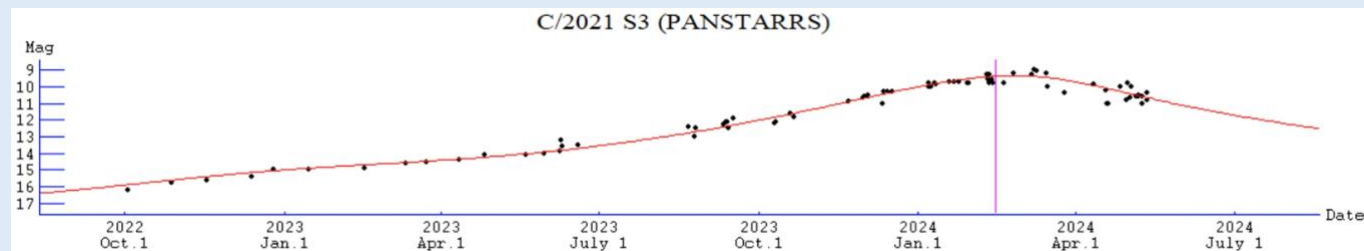
Ephemerides (produced with Seiichi Yoshida's Comets for Windows program)

Date	R.A.	Decl.	r	d	Elong	Const	Mag	Max El	
								40N	40S
2024-Jun-01	20 36	+56 34	2.024	1.812	86M	Cyg	11.1	69	0
2024-Jun-06	20 35	+58 02	2.075	1.855	87M	Cyg	11.2	69	0
2024-Jun-11	20 32	+59 19	2.126	1.897	88M	Cyg	11.3	69	0
2024-Jun-16	20 29	+60 24	2.178	1.939	89M	Cep	11.4	69	0
2024-Jun-21	20 24	+61 18	2.230	1.979	90M	Cep	11.5	68	0
2024-Jun-26	20 19	+61 59	2.282	2.019	91M	Dra	11.6	68	0
2024-Jul-01	20 13	+62 28	2.334	2.058	92M	Dra	11.7	67	0
2024-Jul-06	20 06	+62 45	2.387	2.097	93M	Dra	11.8	67	0

Comet Magnitude Formula (from ALPO and COBS data)

$$m_1 = 7.9 + 5 \log d + 5.5 \log r (T + 21) [\text{pre-T}]$$

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 (UT)	Mag	SC	APER	FL	POW	COMA Dia	DC	TAIL LENG	ICQ	CODE	Observer Name
2021S3	2024 05 11.97	S 11.3	TI	53.1L	139	1.6	4			ICQ XX	HAR11	Christian Harder
2021S3	2024 05 08.98	S 11.9	TI	53.1L	139	1.4	4			ICQ XX	HAR11	Christian Harder
2021S3	2024 05 08.96	S 11.1	TK	32.0L	5 80	1					PIL01	Uwe Pilz
2021S3	2024 05 08.13	Z 11.0	GG	20.0L	4a 60	2.3	4	37	m266	ICQ XX	CHA03	José Joaquín Chambó Bris
2021S3	2024 05 07.36	Z 10.5	GG	5.0R	5A440	2					OLAaa	Michael Olason
2021S3	2024 05 06.96	S 10.9	TK	20.3T	10 77	2.5	3			ICQ XX	GON05	Juan Jose Gonzalez Suarez
2021S3	2024 05 05.96	S 11.0	TI	29.8L	4 79	2.5	2/			ICQ XX	HAR11	Christian Harder
2021S3	2024 05 02.93	S 10.4	TI	29.8L	4 79	3	1/			ICQ XX	HAR11	Christian Harder

Our sole reasonably bright comet in the morning sky continues to be C/2021 S3 (PANSTARRS). C/2021 S3 was slow to brighten in the year or so leading up to perihelion, and now it is also very slow to fade. A few months past its February perihelion at 1.32 au, the comet should fade from around magnitude 11.1 to 11.7. It continues to be a morning object in the northern sky as it moves through Cygnus (Jun 1-13), Cepheus (13-25), and Draco (25-30).

Photo Opportunities

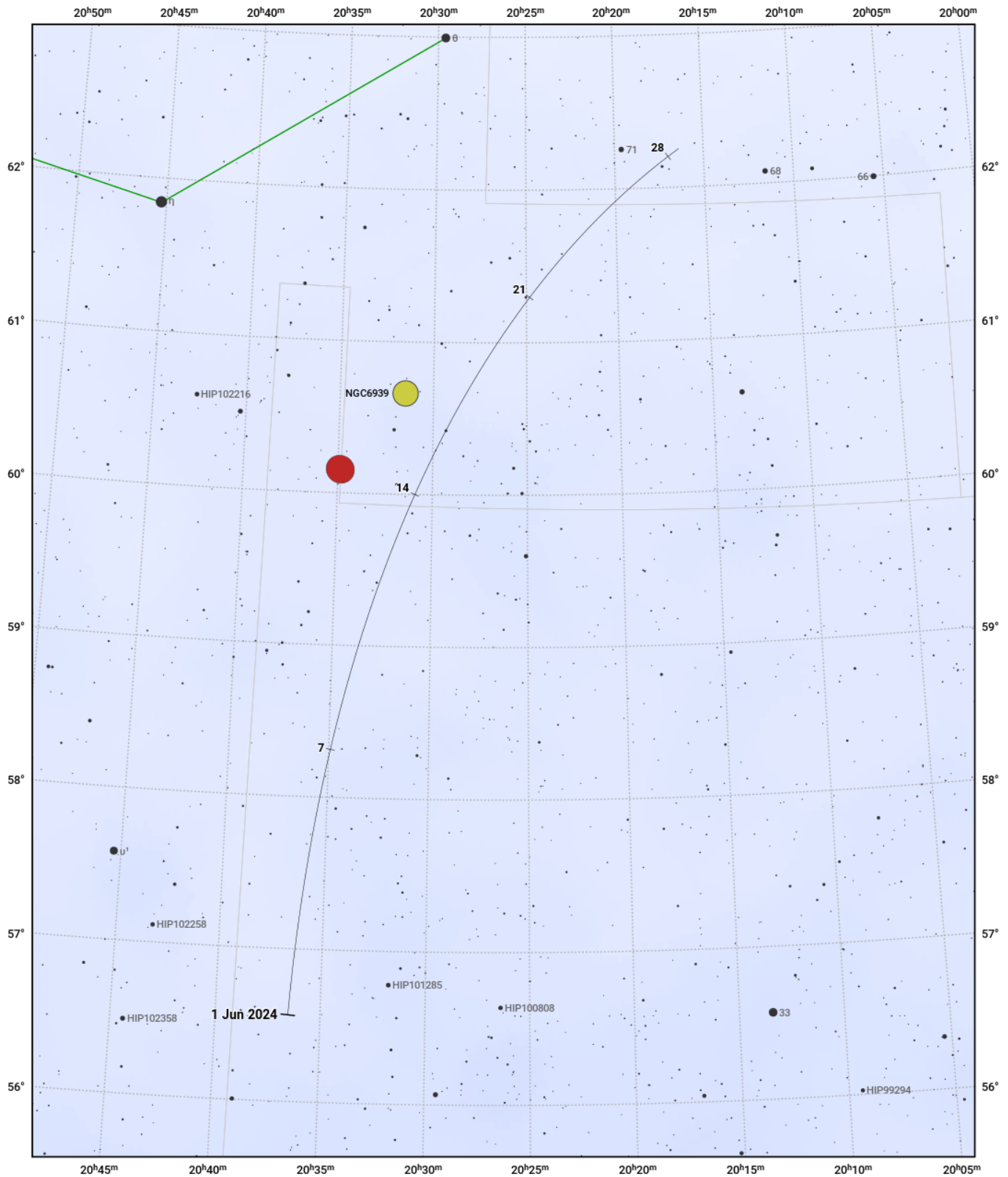
Jun 10-16 - C/2021 S3 (PANSTARRS) within 1 deg of 9th mag galaxy NGC 6946

Jun 12-20 - C/2021 S3 (PANSTARRS) within 1 deg of 7th mag open cluster NGC 6939



Figure 9 - José J. Chambó (Valencia, Spain) imaged C/2021 S3 (PANSTARRS) on 2024 May 8 at 03:08 UT with a TS-Photon 8" f/3.6 and Atik 383L+ camera. The image is a co-add of 45 1-min exposures.

The path of C/2021 S3 (PANSTARRS) from 2024 June 1



© Dominic Ford 2011-2024. Chart generated 2 Jun 2024. Date markers placed at midnight UTC. Downloaded from <https://in-the-sky.org>

Magnitude scale: 11.0 10.0 9.0 8.0 7.0 6.0 5.0 4.0 3.0

- The Equator
- Ecliptic Plane
- Galactic Plane
- Galaxy
- Bright nebula
- Open cluster
- Globular cluster

Figure 10 - Star chart for C/2021 S3 (PANSTARRS) for June 2024. Chart made at in-the-sky.org.

C/2023 V4 (Camarasa-Duszanowicz)

Discovered 2023 November 5 by Jordi Camarasa (Barcelona, Spain) and Grzegorz Duszanowicz (Akersberga, Sweden) from "Moonbase South Observatory" at the Hakos "Astro Farm" in Namibia
Dynamically new long-period comet

Orbit (from Minor Planet Center, MPEC 2024-J304)

C/2023 V4 (Camarasa-Duszanowicz)
Epoch 2024 Mar. 31.0 TT = JDT 2460400.5
T 2024 May 30.36400 TT Rudenko
q 1.1217460 (2000.0) P Q
z -0.0009394 Peri. 50.85194 -0.02253460 -0.53611181
+/-0.0000077 Node 66.32569 +0.35728881 -0.79263670
e 1.0010537 Incl. 67.12980 +0.93372207 +0.29036388
From 471 observations 2023 Nov. 5-2024 Apr. 27, mean residual 0".6.
1/a(orig) = -0.000101 AU**-1, 1/a(fut) = -0.001002 AU**-1.

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

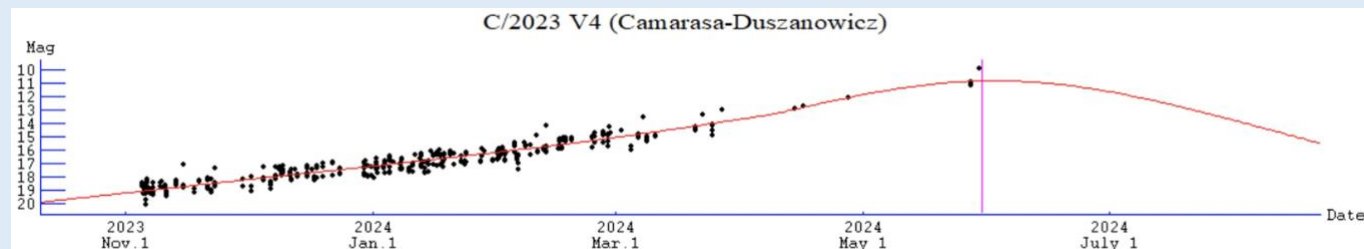
Date	R.A.	Decl.	r	d	Elong	Const	Mag	Max El	
								40N	40S
2024-Jun-01	05 07	+48 17	1.122	1.927	26E	Aur	10.8	8	0
2024-Jun-06	05 31	+51 10	1.127	1.896	29E	Aur	10.8	10	0
2024-Jun-11	05 59	+53 49	1.138	1.868	31E	Aur	10.9	13	0
2024-Jun-16	06 31	+56 07	1.154	1.843	34E	Lyn	11.0	15	0
2024-Jun-21	07 07	+57 53	1.175	1.822	36E	Lyn	11.2	18	0
2024-Jun-26	07 48	+59 00	1.201	1.808	38E	Lyn	11.4	21	0
2024-Jul-01	08 31	+59 19	1.232	1.800	41E	Lyn	11.6	23	0
2024-Jul-06	09 15	+58 46	1.267	1.799	43E	UMa	11.9	25	0

Comet Magnitude Formula (from MPC and COBS data)

$m_1 = 9.4 + 5 \log d + 15.4 \log r$ [up till T-50 days]

$m_1 = 8.2 + 5 \log d + 23.8 \log r$ [after T-50 days]

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

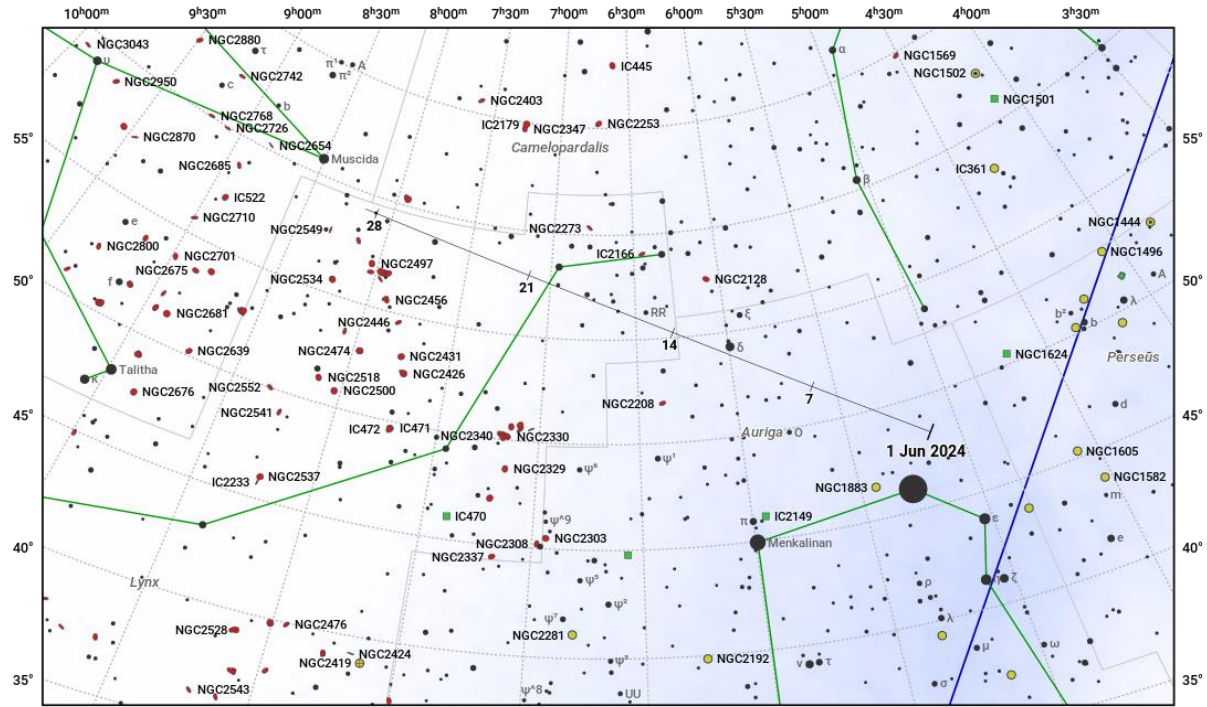
Recent Magnitude Measurements in ICQ format:

Comet Des	YYYY MM DD.DD (UT)	Mag	SC	APER	FL	POW	COMA Dia DC	TAIL LENG PA	ICQ CODE	Observer Name
2023V4	2024 05 29.89	S 9.9	TK	20.3	T10	77	2.5 3/		ICQ XX GON05	Juan Jose Gonzalez Suarez
2023V4	2024 05 12.14	Z 11.9	GG	5.0R	4A020		1.4		ICQ XX OLAaa	Michael Olason

If you're out observing 13P/Olbers, consider taking a peek at another comet located only a few degrees away. Jordi Camarasa (Barcelona, Spain) and Grzegorz Duszanowicz (Akersberga, Sweden) discovered C/2023 V4 (Camarasa-Duszanowicz) on images taken on 2023 November 5 with two Celestron C11 Hyperstar-equipped telescopes at Duszanowicz's "Moonbase South Observatory" at the Hakos "Astro Farm" in Namibia.

C/2023 V4 was at perihelion on 2024 May 30, at 1.12 au. Though a dynamically new long-period comet, it has brightened rapidly since its discovery. The ALPO has received a small number of observations, so the lightcurve above is based on a combination of photometry submitted to the MPC and COBS. Camarasa-Duszanowicz should be around magnitude 11 this month, though it will fade as it moves away from the Sun. I may sound like a broken record, but this is another comet only visible from the northern hemisphere.

The path of C/2023 V4 (Camarasa-Duszanowicz) from 2024 June 1

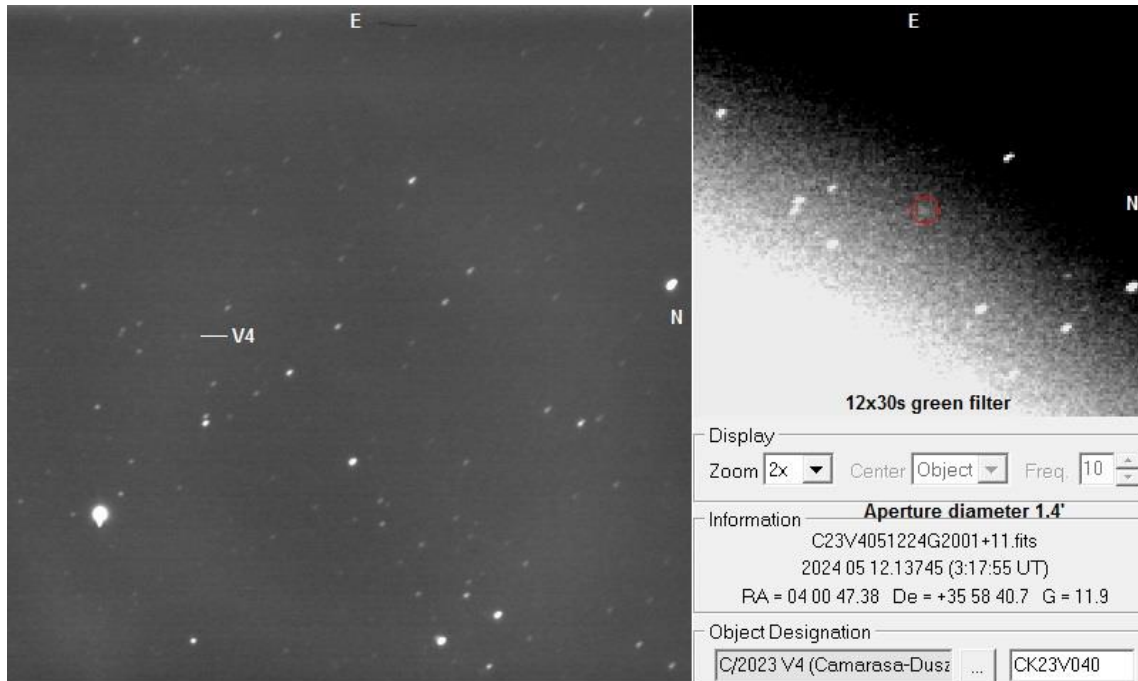


© Dominic Ford 2011-2024. Chart generated 1 Jun 2024. Date markers placed at midnight UTC. Downloaded from <https://in-the-sky.org>

Magnitude scale: 7.0 6.0 5.0 4.0 3.0 2.0 1.0 0.0

- The Equator — Ecliptic Plane — Galactic Plane
- Galaxy ■ Bright nebula ● Open cluster ● Globular cluster

Figure 11 - Star chart for C/2023 V4 (Camarasa-Duszanowicz) for June 2024. Chart made at in-the-sky.org.



RGBL mix 1020s 0300-0321UT FOV 1.4x1.4 degrees Altitude < 8 degrees 50mm f/3.5 Refractor ST-402ME 10.6"/pix
 C/2023 V4 (Camarasa-Duszanowicz) G=11.9 2024 May 12 California Nebula? Mike Olason, Tucson Arizona

Figure 12 - A low (< 8 deg elevation) C/2023 V4 was imaged by Mike Olason from Tucson, AZ, on 2024 May 12, with a 50mm f/3.5 refractor and ST-402ME camera.