July 2024

ALPO Comet News

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

13P/Olbers at its best

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On the Front Cover:

13P/Olbers should be at its brightest in July, with a peak around magnitude 6.6. During June, the comet displayed an unusually contorted ion tail. This image by Dan Bartlett from 2024 June 26 was taken from June Lake, California, with a Hyperstar-equipped C14 and is a composite of 72 x 30-sec exposures.

The image in the lower left is a medal minted by the city of Bremen in 1830 to commemorate the 50th anniversary of the doctorate of the discoverer of 13P/Olbers, Heinrich Wilhelm Matthias Olbers. Image credit: Leipziger Münzhandlung und Auktion Heidrun Höhn e.K.

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/927863-alpo-comet-news-for-july-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's ALPO Comet News will be shorter than usual. This is partly due to other commitments vying for my time and the fact that only four comets are expected to be brighter than magnitude 12 this month.

Halley-type comet 13P/Olbers will be the brightest comet of the month. Early July should see Olbers peak at around magnitude 6.6, and it will only be a few tenths of a magnitude fainter at the end of the month. It is only visible from the northern hemisphere low in the western evening sky. Joining Olbers in the evening sky for northern observers is C/2023 V4 (Camarasa-Duszanowicz), which should fade from 11th to 13th magnitude.

Southern observers will be able to observe the other returning Halley-type comet, 12P/Pons-Brooks. Now over two months past perihelion, Pons-Brooks is still experiencing outbursts, though fading from magnitude 8.0 to almost 10 in July.

C/2023 A3 (Tsuchinshan-ATLAS) will be the main comet story for the remainder of 2024. Unfortunately, the comet continues its intrinsic fading that started around May 1st. Northern hemisphere observers will only be able to observe the comet through mid-July. Southern hemisphere observers will be able to follow the comet into August.

Last month, the ALPO Comets Section received 110 images and 95 magnitude estimates of 25 comets: C/2024 J1 (Wierzchos), C/2024 G3 (ATLAS), C/2024 G1 (Wierzchos), C/2024 F2 (PANSTARRS), C/2024 C4 (ATLAS), C/2024 A2 (ATLAS), C/2023 X1 (Leonard), 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/2019 U5 (PANSTARRS), C/2017 K2 (PANSTARRS), 227P/Catalina-LINEAR, 154P/Brewington, 144P/Kushida, 62P/Tsuchinshan, 32P/Comas Sola, 29P/Schwassmann-Wachmann, 144P/Kushida, 13P/Olbers, and 12P/Pons-Brooks.

A big thanks to our recent contributors: 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, Martin Mobberley, Mike Olason, Uwe Pilz, Gregg Ruppel, Chris Schur, Willian Souza, 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 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)

Jul 05 - New Moon
Jul 13 - First Quarter Moon
Jul 21 - Full Moon
Jul 28 - Last Quarter Moon

Comets at Perihelion

Jul 03 - P/2013 T12 = P/2012 A3 (SOHO) [q = 0.60 au, 4.2-yr period, V ~ 15, discovered in 2013, also seen at returns in 2012 and 2016, missed at 2007 and 2020 returns]
Jul 14 - 209P/LINEAR [q = 0.96 au, 5.1-yr period, V ~ 18, discovered in 2004, passed 0.055 au from Earth in 2014, very low activity comet, only reached 12th magnitude in 2014, this is its 5th observed]
Jul 15 - 472P/NEAT-LINEAR [q = 3.39 au, 21.2-yr period, V ~ 17, may peak at V ~ 15 at end of year, discovered in 2002, this is its 2nd observed return]
Jul 18 - C/2022 S4 (Lemmon) [q = 2.76 au, V ~ 14-15]
Jul 21 - P/2010 WK (LINEAR) [q = 1.78 au, 13.7-yr period, V ~ 17?, discovered in 2010, yet to be observed at current return due to low solar elongation, reached V ~ 15 in 2010]
Jul 27 - 328P/LONEOS-Tucker [q = 1.87 au, 8.6-yr period, V ~ 17, professional/amateur discovery from 1998, missed in 2007, but seen in 2015, yet to be observed at current return]
Jul 28 - C/2024 F2 (PANSTARRS) [q = 3.97 au, 31-yr period, V ~ 17-18]
Jul 28 - C/2022 U3 (Bok) [q = 4.83 au, V ~ 16]

Photo Opportunities

Jul 4 - 12P/Pons-Brooks passes through the 6th mag open cluster NGC 2546
Jul 8 - 13P/Olbers passes ~10' from 12-13th mag interacting galaxies NGC 2798 and 2799 (Arp 238)
Jul 9-13 - 12P/Pons-Brooks passes through a large region of nebulosity on Vela
Jul 17 - 12P/Pons-Brooks passes about 20' from 11th mag planetary nebula NGC 2792
Jul 26 - 13P/Olbers passes ~20' from 11th mag galaxy NGC 3432 (Knitting Needle Galaxy)
Jul 31 - 12P/Pons-Brooks passes just over 1 deg from 8th mag globular cluster NGC 3201

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/2023 V4 (Camarasa-Duszanowicz)												
2023V4	2024 06 24.92	S 10.7	TK	20.3T10		77	2	3/			ICQ XX	GON05 Juan Jose Gonzalez Suarez
2023V4	2024 06 10.90	S 10.2	TK	20.3T10		100	2	3			ICQ XX	GON05 Juan Jose Gonzalez Suarez
2023V4	2024 06 09.91	S 11.0	TI	25.2L	4	145	1	3/			ICQ XX	HAR11 Christian Harder
2023V4	2024 06 04.91	S 10.9	TK	32.0L	5	144					ICQ XX	PIL01 Uwe Pilz
2023V4	2024 06 01.89	S 9.3	TK	20.3T10		77	4	3			ICQ XX	GON05 Juan Jose Gonzalez Suarez
C/2023 C2 (ATLAS)												
2023C2	2024 06 24.37	xM 14.0	AQ	25.0L	5	179	0.3	5/			ICQ XX	WYA Christopher Wyatt
C/2023 A3 (Tsuchinshan-ATLAS)												
2023A3	2024 06 28.37	xM 9.9	TK	7.0B		15	2.6	5/	11	m 99	ICQ XX	WYA Christopher Wyatt
2023A3	2024 06 27.37	xM 9.9	TK	7.0B		15	2.1	6	10	m 99	ICQ XX	WYA Christopher Wyatt
2023A3	2024 06 26.36	xM 10.0	AQ	25.0L	5	40	1.7	6	11.5	m100	ICQ XX	WYA Christopher Wyatt
2023A3	2024 06 26.37	xM 9.8	AQ	7.0B		15	1.8	6			ICQ XX	WYA Christopher Wyatt
2023A3	2024 06 24.91	S 10.3	TK	20.3T10		77	1.5	6/	0.15	110	ICQ XX	GON05 Juan Jose Gonzalez Suarez
2023A3	2024 06 24.38	S 9.6	TT	10.0B		25	3	5			ICQ XX	MAT08 Michael Mattiazzo
2023A3	2024 06 24.36	xM 10.3	AQ	25.0L	5	40	2.3	6	14.5	m 98	ICQ XX	WYA Christopher Wyatt
2023A3	2024 06 23.91	M 10.1	TK	27 L	5	55	3	4/			ICQ XX	DES01 Jose Guilherme de Souza Aguiar
2023A3	2024 06 21.34	xM 10.6	AQ	25.0L	5	40	1.6	6			ICQ XX	WYA Christopher Wyatt
2023A3	2024 06 20.90	M 10.4	TK	27 L	5	55	3	5			ICQ XX	DES01 Jose Guilherme de Souza Aguiar
2023A3	2024 06 19.90	M 10.3	TK	27 L	5	55	2	5/			ICQ XX	DES01 Jose Guilherme de Souza Aguiar
2023A3	2024 06 11.36	xM 10.3	AQ	25.0L	5	40	1.4	6	10	m106	ICQ XX	WYA Christopher Wyatt
2023A3	2024 06 10.98	M 10.2	TK	27.0L	5	55	4	5			ICQ XX	DES01 Jose Guilherme de Souza Aguiar
2023A3	2024 06 10.94	B 10.8	TK	20.3T10		77	1	7	0.15	110	ICQ XX	GON05 Juan Jose Gonzalez Suarez
2023A3	2024 06 09.99	M 10.2	TK	27.0L	5	55	4	5/			ICQ XX	DES01 Jose Guilherme de Souza Aguiar
2023A3	2024 06 09.92	S 10.3	TI	25.2L	4	84	1.4	4			ICQ XX	HAR11 Christian Harder
2023A3	2024 06 08.98	M 10.2	TK	27.0L	5	55	4	5			ICQ XX	DES01 Jose Guilherme de Souza Aguiar
2023A3	2024 06 06.98	M 10.3	TK	27.0L	5	55	4	5/			ICQ XX	DES01 Jose Guilherme de Souza Aguiar
2023A3	2024 06 06.16	S 10.2	TK	12.5B		30	1.5	5			ICQ XX	HER02 Carl Hergenrother
2023A3	2024 06 05.99	M 10.4	TK	27.0L	5	55	4	5/			ICQ XX	DES01 Jose Guilherme de Souza Aguiar
2023A3	2024 06 04.99	M 10.4	TK	27.0L	5	55	4	5			ICQ XX	DES01 Jose Guilherme de Souza Aguiar
2023A3	2024 06 04.91	S 10.3	TK	32.0L	5	80	1.5	4	0.08	190		PIL01 Uwe Pilz
2023A3	2024 06 03.99	M 10.5	TK	27 L	5	55	4	5/			ICQ XX	DES01 Jose Guilherme de Souza Aguiar
2023A3	2024 06 03.35	xM 10.6	AQ	25.0L	5	40	1	6	10	m110	ICQ XX	WYA Christopher Wyatt
2023A3	2024 06 02.98	M 10.5	TK	27 L	5	55	3	5/			ICQ XX	DES01 Jose Guilherme de Souza Aguiar
2023A3	2024 06 01.99	M 10.4	TK	27 L	5	55	3	5			ICQ XX	DES01 Jose Guilherme de Souza Aguiar
2023A3	2024 06 01.94	B 11.0	TK	20.3T10		77	1	7	0.15	110	ICQ XX	GON05 Juan Jose Gonzalez Suarez
2023A3	2024 05 31.98	M 10.3	TK	27 L	5	55	3	4/			ICQ XX	DES01 Jose Guilherme de Souza Aguiar
2023A3	2024 05 31.95	M 10.2	TK	15.0L	5	37	1	7			ICQ XX	SOU01 Willian Souza
2023A3	2024 05 31.94	M 10.1	TK	8.0B		20	1	7			ICQ XX	SOU01 Willian Souza
2023A3	2024 05 30.99	M 10.3	TK	27 L	5	55	3	4/			ICQ XX	DES01 Jose Guilherme de Souza Aguiar
2023A3	2024 05 30.99	M 10.1	TK	15.0L	5	37	1	7			ICQ XX	SOU01 Willian Souza
2023A3	2024 05 30.98	M 10.1	TK	8.0B		20	1	7			ICQ XX	SOU01 Willian Souza
2023A3	2024 05 29.98	M 10.4	TK	27 L	5	55	3	5			ICQ XX	DES01 Jose Guilherme de Souza Aguiar
2023A3	2024 05 29.97	M 10.2	TK	15.0L	5	37	1	7			ICQ XX	SOU01 Willian Souza
2023A3	2024 05 29.96	M 10.2	TK	8.0B		20	1	7			ICQ XX	SOU01 Willian Souza
C/2021 S3 (PANSTARRS)												
2021S3	2024 06 09.95	S 12.4	TI	25.2L	4	113	1.4	2/			ICQ XX	HAR11 Christian Harder
C/2021 G2 (ATLAS)												
2021G2	2024 06 01.92	S 12.7	AQ	20.3T10		133	1.5	4			ICQ XX	GON05 Juan Jose Gonzalez Suarez
154P/Brewington												
154	2024 06 13.35	M 11.6	AQ	30 L	5	100	1	3/			ICQ XX	DES01 Jose Guilherme de Souza Aguiar
154	2024 06 12.36	M 11.9	AQ	30 L	5	100	1	3			ICQ XX	DES01 Jose Guilherme de Souza Aguiar
154	2024 06 11.12	S 9.7	TK	20.3T10		100	3	2/			ICQ XX	GON05 Juan Jose Gonzalez Suarez
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
13P/Olbers												
13	2024 06 24.90	S 6.2	TK	5.0B		10	4	5/	0.4	50	ICQ XX	GON05 Juan Jose Gonzalez Suarez
13	2024 06 10.92	S 6.6	TK	5.0B		10	5	5/			ICQ XX	GON05 Juan Jose Gonzalez Suarez
13	2024 06 10.91	S 6.7	TK	7.0B		15	5	5			ICQ XX	GON05 Juan Jose Gonzalez Suarez
13	2024 06 09.90	S 8.0	TI	25.2L	4	68	3	5			ICQ XX	HAR11 Christian Harder
13	2024 06 06.15	M 7.7	TK	12.5B		30	3	6			ICQ XX	HER02 Carl Hergenrother
13	2024 06 04.89	S 8.0	TK	32.0L	5	80	1	5				PIL01 Uwe Pilz
13	2024 06 04.89	S 8.0	TK	32.0L	5	80	1	5			ICQ XX	PIL01 Uwe Pilz
13	2024 06 01.91	S 7.2	TK	7.0B		15	4	5/			ICQ XX	GON05 Juan Jose Gonzalez Suarez
12P/Pons-Brooks												
12	2024 06 30.36	S 7.6	TT	7.0B		15	5	5			ICQ XX	MAT08 Michael Mattiazzo

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12        2024 06 28.36 xM  7.5 TK  7.0B    15   7.5  3/  9.5 m163 ICQ XX WYA   Christopher Wyatt
12        2024 06 27.36 xM  7.4 TK  7.0B    15   7.3  3/           ICQ XX WYA   Christopher Wyatt
12        2024 06 26.35 xM  7.4 TK  7.0B    15   6.5  3/           ICQ XX WYA   Christopher Wyatt
12        2024 06 24.37  S  7.3 TT  7.0B    15   6    5            ICQ XX MAT08 Michael Mattiazzo
12        2024 06 24.35 xM  7.0 TK  7.0B    15   9    6            ICQ XX WYA   Christopher Wyatt
12        2024 06 23.89  M  7.4 TK  10 B    25   3    5            ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 23.36  S  7.3 TT  7.0B    15   6    5            ICQ XX MAT08 Michael Mattiazzo
12        2024 06 20.89  M  7.3 TK  10 B    25   3    5/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 19.89  M  7.2 TK  10 B    25   3    5/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 18.89  M  7.2 TK  10 B    25   3    5            ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 17.89  M  7.1 TK  10 B    25   3    5            ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 15.89  M  6.9 TK  10 B    25   4    4/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 14.89  M  6.8 TK  10 B    25   4    4            ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 13.89  M  6.6 TK  10 B    25   4    4/  0.25 160 ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 12.89  M  6.4 TK  10 B    25   5    4   0.30 160 ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 11.89  M  6.4 TK  10 B    25   5    3/  0.30 160 ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 11.35 &M  6.2 TK  7.0B    15   7.5  6  39   m160 ICQ XX WYA   Christopher Wyatt
12        2024 06 10.89  M  6.3 TK 10.0B    25   4    3/  0.3      ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 09.89  M  6.9 TK 10.0B    25   3    5   0.3      ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 08.89  M  6.8 TK 10.0B    25   3    5/  0.4      ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 06.89  M  6.6 TK 10.0B    25   3    5/  0.4      ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 05.89  M  6.5 TK 10.0B    25   3    5   0.5      ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 03.89  M  6.5 TK  10 B    25   2    5/  0.50     ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 03.34 &M  6.2 TK  7.0B    15   6    6   1.2  162 ICQ XX WYA   Christopher Wyatt
12        2024 06 02.89  M  6.4 TK  10 B    25   2    5/  0.50 150 ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 02.36  S  6.5 TT  4.0B     8   6    5            ICQ XX MAT08 Michael Mattiazzo
12        2024 06 01.89  M  6.4 TK  10 B    25   3    5   0.50 150 ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 05 31.92  M  6.5 TK  5.0B    10   5    5            ICQ XX SOU01 Willian Souza
12        2024 05 31.91  M  6.5 TK  8.0B    20   8    5            ICQ XX SOU01 Willian Souza
12        2024 05 31.89  M  6.2 TK  10 B    25   3    5   0.50 140 ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 05 30.92  M  6.5 TK  5.0B    10   5    5            ICQ XX SOU01 Willian Souza
12        2024 05 30.91  M  6.4 TK  8.0B    20   8    5            ICQ XX SOU01 Willian Souza
12        2024 05 30.89  M  6.2 TK  10 B    25   4    4/  0.60 140 ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 05 29.92  M  6.2 TK  5.0B    10   5    5            ICQ XX SOU01 Willian Souza
12        2024 05 29.91  M  6.2 TK  8.0B    20   8    5            ICQ XX SOU01 Willian Souza
12        2024 05 29.89  M  6.1 TK  10 B    25   4    4   0.60 140 ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 05 23.90  M  5.9 TK  10 B    25   3    4/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 05 22.89  M  5.8 TK  10 B    25   3    4/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 05 21.89  M  5.8 TK  10 B    25   4    5            ICQ XX DES01 Jose Guilherme de Souza Aguiar
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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).

Northern Hemisphere	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
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	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	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, #9)

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485P/2022 U6 = P/2006 AH2 (Sheppard-Tholen)                    MPC 172941
484P/2005 XR132 (Spacewatch)                                   MPC 172941
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
```

New Discoveries

C/2024 L2 (PANSTARRS) - The Pans-STARRS survey used their Pan-STARRS1 1.8-m Ritchey-Chretien reflector at Haleakala to find this 19-20th magnitude comet on 2024 June 13. C/2024 G2 is a distant object with a distant perihelion at 8.33 au on 2025 June 14. It is expected to peak at around 18th magnitude at opposition and perihelion in June 2025 [CBET 5405, MPEC 2024-M24]

C/2024 L1 (PANSTARRS) - The Pans-STARRS survey used their other telescope, the Pan-STARRS2 1.8-m Ritchey-Chretien reflector at Haleakala, to discover C/2024 L1 at 21st magnitude on 2024 June 1. This almost Centaur has a perihelion at 5.35 au and an aphelion at 17.6 au with an orbital period of 38 years. With perihelion next year on April 23, it isn't expected to get much brighter than 20th magnitude. [CBET 5402, MPEC 2024-L59]

P/2024 K1 (PANSTARRS) – Pan-STARRS also found P/2024 K1 with the Pan-STARRS1 1.8-m. The comet was 21st magnitude when discovered on 2024 May 30, and just past its May 9 perihelion at 3.45 au. With an orbital period of 17.9 years, its orbit extends out to 10.2 au. It has likely reached its peak brightness. [CBET 5403, MPEC 2024-L114]

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-M118)

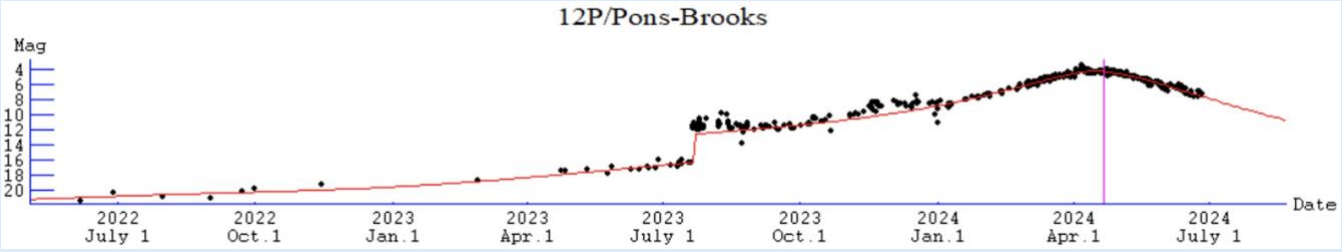
```
  12P/Pons-Brooks
Epoch 2024 Mar. 31.0 TT = JDT 2460400.5
T 2024 Apr. 21.12346 TT                                  Rudenko
q   0.7807963           (2000.0)            P               Q
n   0.01380143     Peri.  198.98744     +0.14512293     -0.32929896
a  17.2128676      Node   255.85552     +0.98565814     +0.13019992
e   0.9546388      Incl.   74.19146     +0.08612411     -0.93520595
P  71.4
From 1740 observations 2024 Jan. 1-June 26, mean residual 0".6.
```

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

```
12P/Pons-Brooks                                                    Max El
                                                                    (deg)
    Date       R.A.    Decl.      r        d     Elong  Const  Mag  40N  40S
2024-Jul-01  07 54  -35 57    1.470    1.650     61E    Pup    8.0    0   32
2024-Jul-06  08 18  -38 07    1.536    1.692     63E    Pup    8.3    0   34
2024-Jul-11  08 42  -40 00    1.602    1.743     64E    Vel    8.5    0   35
2024-Jul-16  09 06  -41 38    1.669    1.801     65E    Vel    8.8    0   36
2024-Jul-21  09 29  -43 00    1.735    1.866     66E    Vel    9.1    0   36
2024-Jul-26  09 53  -44 07    1.801    1.937     66E    Vel    9.4    0   37
2024-Jul-31  10 15  -45 01    1.866    2.015     66E    Vel    9.7    0   37
2024-Aug-05  10 37  -45 43    1.931    2.097     66E    Vel   10.0    0   37
```

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

```
m1 =  6.8 + 5 log d + 11.6 log r [between T-684 and T-275 days]
m1 =  4.4 + 5 log d +  9.3 log r [between T-275 days and perihelion]
m1 =  4.8 + 5 log d + 12.4 log r [after 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
 12        2024 06 30.36  S  7.6 TT  7.0B    15   5    5           ICQ XX MAT08 Michael Mattiazzo
 12        2024 06 28.36 xM  7.5 TK  7.0B    15   7.5  3/  9.5 m163 ICQ XX WYA   Christopher Wyatt
 12        2024 06 27.36 xM  7.4 TK  7.0B    15   7.3  3/          ICQ XX WYA   Christopher Wyatt
 12        2024 06 26.35 xM  7.4 TK  7.0B    15   6.5  3/          ICQ XX WYA   Christopher Wyatt
 12        2024 06 24.37  S  7.3 TT  7.0B    15   6    5           ICQ XX MAT08 Michael Mattiazzo
 12        2024 06 24.35 xM  7.0 TK  7.0B    15   9    6           ICQ XX WYA   Christopher Wyatt
 12        2024 06 23.89  M  7.4 TK  10 B    25   3    5           ICQ XX DES01 Jose Guilherme de Souza Aguiar
 12        2024 06 23.36  S  7.3 TT  7.0B    15   6    5           ICQ XX MAT08 Michael Mattiazzo
 12        2024 06 20.89  M  7.3 TK  10 B    25   3    5/          ICQ XX DES01 Jose Guilherme de Souza Aguiar
 12        2024 06 19.89  M  7.2 TK  10 B    25   3    5/          ICQ XX DES01 Jose Guilherme de Souza Aguiar
 12        2024 06 18.89  M  7.2 TK  10 B    25   3    5           ICQ XX DES01 Jose Guilherme de Souza Aguiar
 12        2024 06 17.89  M  7.1 TK  10 B    25   3    5           ICQ XX DES01 Jose Guilherme de Souza Aguiar
 12        2024 06 15.89  M  6.9 TK  10 B    25   4    4/          ICQ XX DES01 Jose Guilherme de Souza Aguiar
 12        2024 06 14.89  M  6.8 TK  10 B    25   4    4           ICQ XX DES01 Jose Guilherme de Souza Aguiar
 12        2024 06 13.89  M  6.6 TK  10 B    25   4    4/  0.25 160 ICQ XX DES01 Jose Guilherme de Souza Aguiar
 12        2024 06 12.89  M  6.4 TK  10 B    25   5    4   0.30 160 ICQ XX DES01 Jose Guilherme de Souza Aguiar
 12        2024 06 11.89  M  6.4 TK  10 B    25   5    3/  0.30 160 ICQ XX DES01 Jose Guilherme de Souza Aguiar
 12        2024 06 11.35 &M  6.2 TK  7.0B    15   7.5  6  39   m160 ICQ XX WYA   Christopher Wyatt
 12        2024 06 10.89  M  6.3 TK 10.0B    25   4    3/  0.3       ICQ XX DES01 Jose Guilherme de Souza Aguiar
```

```
12        2024 06 09.89  M  6.9 TK 10.0B    25   3    5   0.3       ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 08.89  M  6.8 TK 10.0B    25   3    5/  0.4       ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 06.89  M  6.6 TK 10.0B    25   3    5/  0.4       ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 05.89  M  6.5 TK 10.0B    25   3    5   0.5       ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 03.89  M  6.5 TK  10 B    25   2    5/  0.50      ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 03.34 &M  6.2 TK  7.0B    15   6    6   1.2  162  ICQ XX WYA   Christopher Wyatt
12        2024 06 02.89  M  6.4 TK  10 B    25   2    5/  0.50 150  ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 06 02.36  S  6.5 TT  4.0B     8   6    5             ICQ XX MAT08 Michael Mattiazzo
12        2024 06 01.89  M  6.4 TK  10 B    25   3    5   0.50 150  ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 05 31.92  M  6.5 TK  5.0B    10   5    5             ICQ XX SOU01 Willian Souza
12        2024 05 31.91  M  6.5 TK  8.0B    20   8    5             ICQ XX SOU01 Willian Souza
12        2024 05 31.89  M  6.2 TK  10 B    25   3    5   0.50 140  ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 05 30.92  M  6.5 TK  5.0B    10   5    5             ICQ XX SOU01 Willian Souza
12        2024 05 30.91  M  6.4 TK  8.0B    20   8    5             ICQ XX SOU01 Willian Souza
12        2024 05 30.89  M  6.2 TK  10 B    25   4    4/  0.60 140  ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 05 29.92  M  6.2 TK  5.0B    10   5    5             ICQ XX SOU01 Willian Souza
12        2024 05 29.91  M  6.2 TK  8.0B    20   8    5             ICQ XX SOU01 Willian Souza
12        2024 05 29.89  M  6.1 TK  10 B    25   4    4   0.60 140  ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 05 23.90  M  5.9 TK  10 B    25   3    4/            ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 05 22.89  M  5.8 TK  10 B    25   3    4/            ICQ XX DES01 Jose Guilherme de Souza Aguiar
12        2024 05 21.89  M  5.8 TK  10 B    25   4    5             ICQ XX DES01 Jose Guilherme de Souza Aguiar
```

Now, two months from its April perihelion when it peaked at 4th magnitude, Pons-Brooks' return is on the downslope, with the comet fading from magnitude 8.0 on July 1 to almost 10th magnitude by the end of the month. As has been the case since around the time of perihelion, the comet is only visible from southern latitudes. This month, it is an evening object as it moves through Puppis (Jul 1-7) and Vela (7-31).

Though Pons-Brooks is fading, observers are encouraged to watch the comet for post-perihelion outbursts. The first post-perihelion outburst was detected on April 11, though it likely occurred a day or two earlier.

Photo Opportunities

Jul 4 - 12P/Pons-Brooks passes through the 6th mag open cluster NGC 2546
Jul 9-13 - 12P/Pons-Brooks passes through a large region of nebulosity on Vela
Jul 17 - 12P/Pons-Brooks passes about 20' from 11th mag planetary nebula NGC 2792
Jul 31 - 12P/Pons-Brooks passes just over 1 deg from 8th mag globular cluster NGC 3201

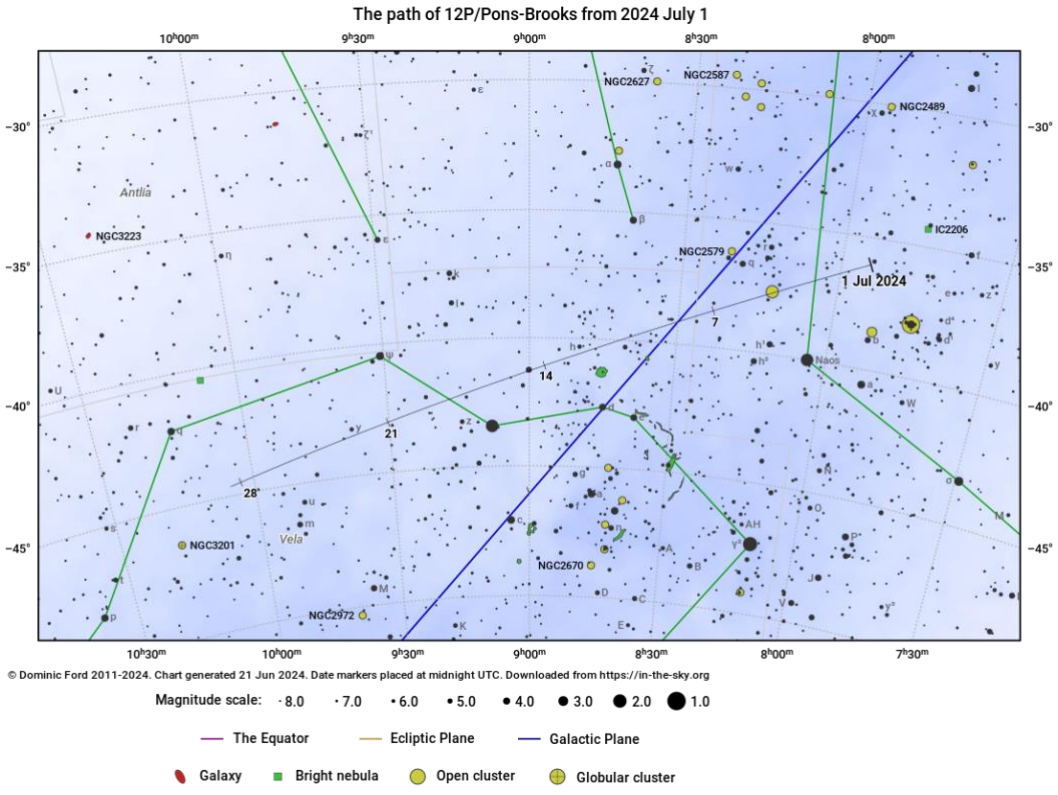


Figure 2 - Finder chart for 12P/Pons-Brooks in July 2024 from in-the-sky.org.

13P/Olbers

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

Orbit (from Minor Planet Center, MPEC 2024-M118)

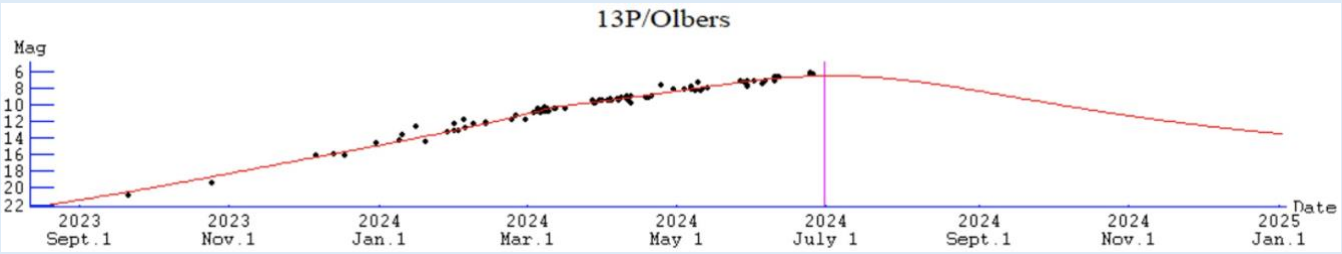
```
  13P/Olbers
Epoch 2024 Mar. 31.0 TT = JDT 2460400.5
T 2024 June 30.04588 TT                                  Rudenko
q   1.1754766            (2000.0)            P              Q
n   0.01421028     Peri.   64.41574     -0.60854077     -0.37164179
a  16.8811053      Node    85.84748     +0.18557757     -0.92569761
e   0.9303673      Incl.   44.66490     +0.77151740     -0.07047213
P  69.4
From 1440 observations 2023 Oct. 8-2024 June 27, mean residual 0".4.
     Nongravitational parameters A1 = +0.69, A2 = -0.7211.
```

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

```
13P/Olbers                                                          Max El
                                                                     (deg)
    Date       R.A.    Decl.      r       d     Elong  Const  Mag  40N  40S
2024-Jul-01  08 33  +42 23    1.175   1.934     30E    Lyn    6.6   12    0
2024-Jul-06  09 01  +42 08    1.179   1.917     31E    Lyn    6.6   13    0
2024-Jul-11  09 28  +41 30    1.187   1.905     32E    UMa    6.6   14    0
2024-Jul-16  09 55  +40 28    1.200   1.897     34E    LMi    6.7   15    0
2024-Jul-21  10 22  +39 03    1.218   1.895     35E    LMi    6.8   16    0
2024-Jul-26  10 48  +37 18    1.240   1.900     36E    LMi    6.9   17    0
2024-Jul-31  11 12  +35 15    1.266   1.911     37E    UMa    7.0   18    0
2024-Aug-05  11 35  +32 57    1.296   1.929     38E    UMa    7.2   18    0
```

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

```
m1 = -1.4 + 5 log d + 33.6 log r [Up through T-110 days]
m1 =  4.1 + 5 log d + 14.9 log r [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     Mag SC APER FL POW    COMA     TAIL    ICQ CODE Observer Name
                (UT)                    T         Dia  DC  LENG  PA
 13        2024 06 24.90  S  6.2 TK  5.0B    10   4    5/  0.4   50 ICQ XX GON05 Juan Jose Gonzalez Suarez
 13        2024 06 10.92  S  6.6 TK  5.0B    10   5    5/           ICQ XX GON05 Juan Jose Gonzalez Suarez
 13        2024 06 10.91  S  6.7 TK  7.0B    15   5    5            ICQ XX GON05 Juan Jose Gonzalez Suarez
 13        2024 06 09.90  S  8.0 TI 25.2L 4  68   3    5            ICQ XX HAR11 Christian Harder
 13        2024 06 06.15  M  7.7 TK 12.5B    30   3    6            ICQ XX HER02 Carl Hergenrother
 13        2024 06 04.89  S  8.0 TK 32.0L 5  80   1    5                   PIL01 Uwe Pilz
 13        2024 06 04.89  S  8.0 TK 32.0L 5  80   1    5            ICQ XX PIL01 Uwe Pilz
 13        2024 06 01.91  S  7.2 TK  7.0B    15   4    5/           ICQ XX GON05 Juan Jose Gonzalez Suarez
```

The other bright Halley-type comet to return in 2024 is 13P/Olbers. While 12P is limited to observers at southern latitudes, Olbers is only visible from northern latitudes. Olbers is an evening object at low but improving elevations for northern observers as it moves through Lynx (Jul 1-9), Ursa Major (9-11), back into Lynx (11-13), Leo Minor (13-27), and again into Ursa Major (27-31).

Photo Opportunities

Jul 8 - 13P/Olbers passes ~10' from 12-13th mag interacting galaxies NGC 2798 and 2799 (Arp 238)

Jul 26 - 13P/Olbers passes ~20' from 11th mag galaxy NGC 3432 (Knitting Needle Galaxy)

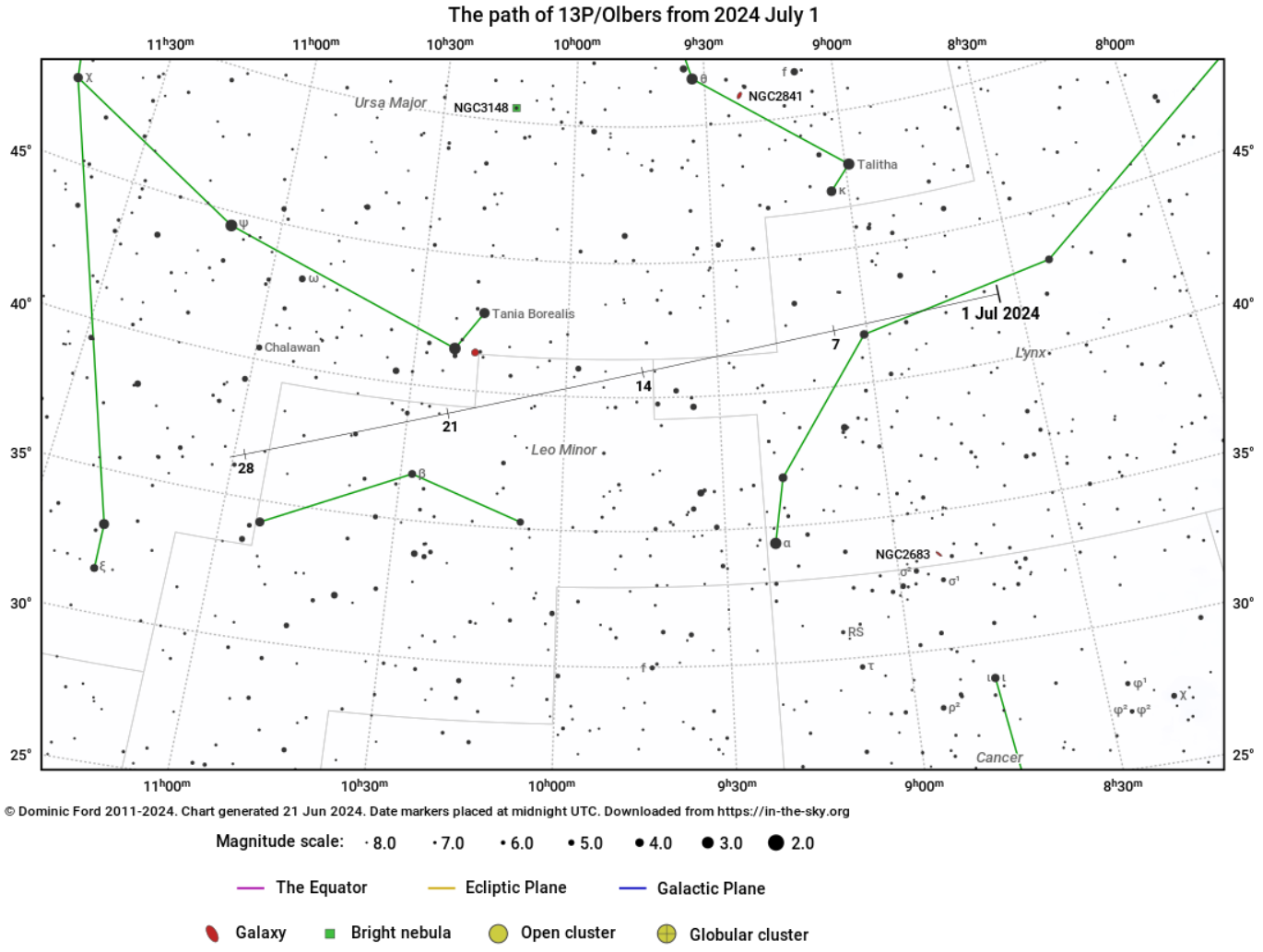


Figure 3 - Finder chart for 13P/Olbers in July 2024 from in-the-sky.org.

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-M118)

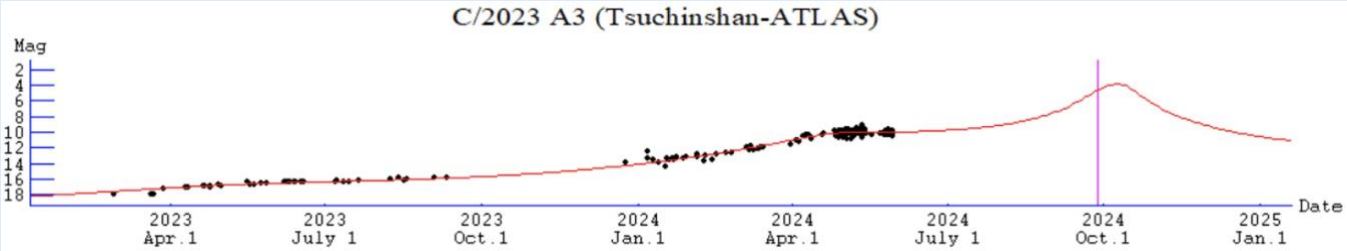
```
    C/2023 A3 (Tsuchinshan-ATLAS)
Epoch 2024 Mar. 31.0 TT = JDT 2460400.5
T 2024 Sept. 27.73859 TT                                  Rudenko
q   0.3914492           (2000.0)            P               Q
z  -0.0002887      Peri.  308.48925     +0.36138161     +0.90086004
 +/-0.0000026      Node    21.55928     +0.91855566     -0.29964318
e   1.0001130      Incl.  139.11315     -0.16018371     +0.31411009
From 4849 observations 2022 Apr. 9-2024 June 29, mean residual 0".5.
1/a(orig) = -0.000012 AU**-1, 1/a(fut) = -0.000053 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
2024-Jul-01  11 16  +02 46   1.875   1.971    69E    Leo    9.7   15    42
2024-Jul-06  11 11  +02 32   1.796   1.996    63E    Leo    9.7   10    39
2024-Jul-11  11 07  +02 16   1.715   2.017    58E    Leo    9.6    6    35
2024-Jul-16  11 03  +01 56   1.633   2.032    52E    Leo    9.5    3    32
2024-Jul-21  11 00  +01 33   1.549   2.041    47E    Leo    9.4    0    28
2024-Jul-26  10 58  +01 07   1.464   2.043    42E    Leo    9.3    0    24
2024-Jul-31  10 56  +00 39   1.377   2.037    37E    Leo    9.1    0    19
2024-Aug-05  10 53  +00 08   1.288   2.022    32E    Leo    9.0    0    15
```

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

```
m1 = -16.6 + 5 log d + 35.0 log r [Through T-650 days]
m1 =   3.6 + 5 log d + 11.3 log r [Between T-650 and T-160 days]
m1 =   8.7 + 5 log d +  0.2 log r [Between T-160 and T-120 days]
m1 =   6.9 + 5 log d +  5.0 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 06 28.37 xM  9.9 TK  7.0B    15   2.6  5/ 11   m 99 ICQ XX WYA   Christopher Wyatt
   2023A3  2024 06 27.37 xM  9.9 TK  7.0B    15   2.1  6   10  m 99 ICQ XX WYA   Christopher Wyatt
   2023A3  2024 06 26.36 xM 10.0 AQ 25.0L 5  40   1.7  6   11.5m100 ICQ XX WYA   Christopher Wyatt
   2023A3  2024 06 26.37 xM  9.8 AQ  7.0B    15   1.8  6            ICQ XX WYA   Christopher Wyatt
   2023A3  2024 06 24.91  S 10.3 TK 20.3T10  77   1.5  6/  0.15 110 ICQ XX GON05 Juan Jose Gonzalez Suarez
   2023A3  2024 06 24.38  S  9.6 TT 10.0B    25   3    5            ICQ XX MAT08 Michael Mattiazzo
   2023A3  2024 06 24.36 xM 10.3 AQ 25.0L 5  40   2.3  6  14.5 m 98 ICQ XX WYA   Christopher Wyatt
   2023A3  2024 06 23.91  M 10.1 TK  27 L 5  55   3    4/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2023A3  2024 06 21.34 xM 10.6 AQ 25.0L 5  40   1.6  6            ICQ XX WYA   Christopher Wyatt
   2023A3  2024 06 20.90  M 10.4 TK  27 L 5  55   3    5            ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2023A3  2024 06 19.90  M 10.3 TK  27 L 5  55   2    5/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2023A3  2024 06 11.36 xM 10.3 AQ 25.0L 5  40   1.4  6   10  m106 ICQ XX WYA   Christopher Wyatt
   2023A3  2024 06 10.98  M 10.2 TK 27.0L 5  55   4    5            ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2023A3  2024 06 10.94  B 10.8 TK 20.3T10  77   1    7   0.15 110 ICQ XX GON05 Juan Jose Gonzalez Suarez
   2023A3  2024 06 09.99  M 10.2 TK 27.0L 5  55   4    5/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2023A3  2024 06 09.92  S 10.3 TI 25.2L 4  84   1.4  4            ICQ XX HAR11 Christian Harder
   2023A3  2024 06 08.98  M 10.2 TK 27.0L 5  55   4    5            ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2023A3  2024 06 06.98  M 10.3 TK 27.0L 5  55   4    5/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2023A3  2024 06 06.16  S 10.2 TK 12.5B    30   1.5  5            ICQ XX HER02 Carl Hergenrother
```

```
2023A3  2024 06 05.99  M 10.4 TK 27.0L 5  55   4    5/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
2023A3  2024 06 04.99  M 10.4 TK 27.0L 5  55   4    5            ICQ XX DES01 Jose Guilherme de Souza Aguiar
2023A3  2024 06 04.91  S 10.3 TK 32.0L 5  80   1.5  4   0.08 190        PIL01 Uwe Pilz
2023A3  2024 06 03.99  M 10.5 TK  27 L 5  55   4    5/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
2023A3  2024 06 03.35 xM 10.6 AQ 25.0L 5  40   1    6   10  m110 ICQ XX WYA   Christopher Wyatt
2023A3  2024 06 02.98  M 10.5 TK  27 L 5  55   3    5/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
2023A3  2024 06 01.99  M 10.4 TK  27 L 5  55   3    5            ICQ XX DES01 Jose Guilherme de Souza Aguiar
2023A3  2024 06 01.94  B 11.0 TK 20.3T10  77   1    7   0.15 110 ICQ XX GON05 Juan Jose Gonzalez Suarez
2023A3  2024 05 31.98  M 10.3 TK  27 L 5  55   3    4/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
2023A3  2024 05 31.95  M 10.2 TK 15.0L 5  37   1    7            ICQ XX SOU01 Willian Souza
2023A3  2024 05 31.94  M 10.1 TK  8.0B    20   1    7            ICQ XX SOU01 Willian Souza
2023A3  2024 05 30.99  M 10.3 TK  27 L 5  55   3    4/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
2023A3  2024 05 30.99  M 10.1 TK 15.0L 5  37   1    7            ICQ XX SOU01 Willian Souza
2023A3  2024 05 30.98  M 10.1 TK  8.0B    20   1    7            ICQ XX SOU01 Willian Souza
2023A3  2024 05 29.98  M 10.4 TK  27 L 5  55   3    5            ICQ XX DES01 Jose Guilherme de Souza Aguiar
2023A3  2024 05 29.97  M 10.2 TK 15.0L 5  37   1    7            ICQ XX SOU01 Willian Souza
2023A3  2024 05 29.96  M 10.2 TK  8.0B    20   1    7            ICQ XX SOU01 Willian Souza
```

June saw C/2023 A3 (Tsuchinshan-ATLAS) remain stuck at around 10th magnitude. While its apparent brightness is at a standstill, the comet continues moving closer to the Sun and slightly away from the Earth. As a result, no change in apparent brightness means the comet is actually fading in an absolute sense. We still don't know what this means for Tsuchinshan-ATLAS in October. Unfortunately, our window of observation is closing. Observers at northern mid-latitudes will lose sight of the comet by the middle of this month. Observers at southern mid-latitudes will be able to follow it till mid-August. Hopefully, by then, a new brightening trend will have re-established itself. As always, time will tell.

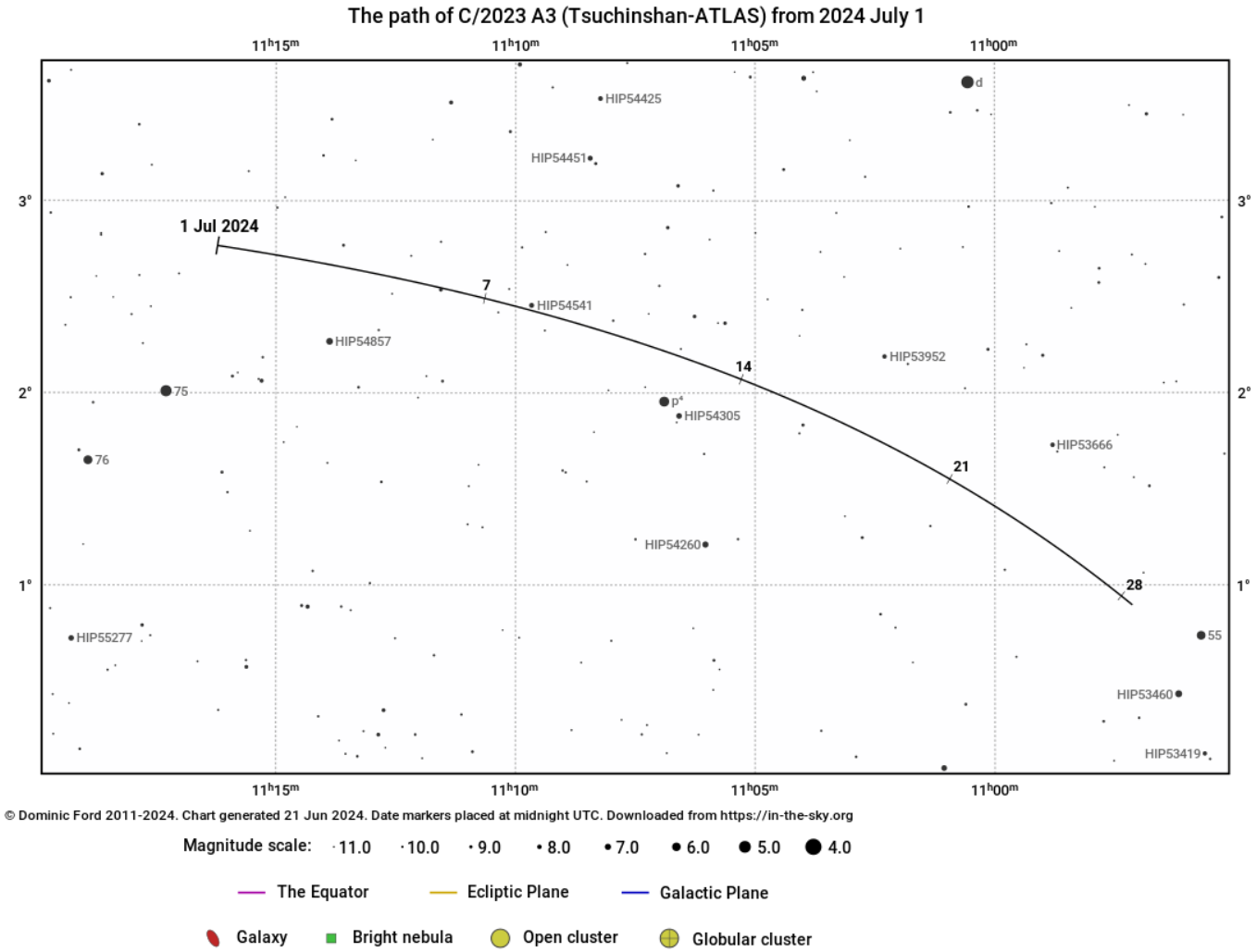


Figure 4 - Star chart for C/2023 A3 in July 2024. Chart produced at in-the-sky.org.

Comets Between Magnitude 10 and 12

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-M118)

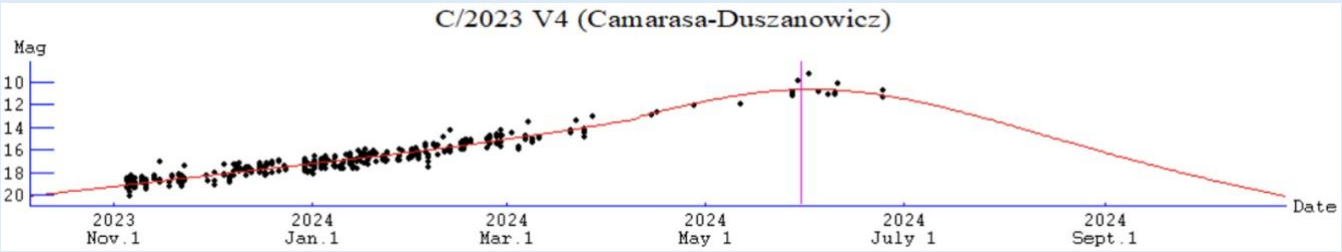
```
    C/2023 V4 (Camarasa-Duszanowicz)
Epoch 2024 Mar. 31.0 TT = JDT 2460400.5
T 2024 May 30.36269 TT                                  Rudenko
q   1.1217179            (2000.0)            P              Q
z  -0.0009395      Peri.    50.85290     -0.02255078     -0.53610967
 +/-0.0000023      Node     66.32606     +0.35727700     -0.79264457
e   1.0010538      Incl.    67.12956     +0.93372619     +0.29034634
From 559 observations 2023 Nov. 5-2024 June 28, 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)

```
C/2023 V4 (Camarasa-Duszanowicz)                                      Max El
                                                                       (deg)
    Date      R.A.    Decl.     r       d     Elong  Const  Mag   40N   40S
2024-Jul-01  08 31  +59 19   1.232   1.800    41E    Lyn   11.5    23     0
2024-Jul-06  09 15  +58 46   1.267   1.799    43E    UMa   11.8    26     0
2024-Jul-11  09 56  +57 23   1.305   1.807    45E    UMa   12.1    28     0
2024-Jul-16  10 34  +55 19   1.347   1.824    46E    UMa   12.4    29     0
2024-Jul-21  11 07  +52 42   1.391   1.849    47E    UMa   12.8    30     0
2024-Jul-26  11 36  +49 42   1.437   1.884    48E    UMa   13.2    31     0
2024-Jul-31  12 01  +46 29   1.486   1.927    49E    UMa   13.6    32     0
2024-Aug-05  12 22  +43 10   1.536   1.978    49E    CVn   14.0    32     0
```

Comet Magnitude Formula (from MPC and COBS data)

```
m1 =  9.4 + 5 log d + 15.4 log r [up till T-50 days]
m1 =  8.0 + 5 log d + 24.2 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     Mag SC APER FL POW    COMA     TAIL    ICQ    CODE  Observer Name
              (UT)                      T         Dia  DC  LENG  PA
   2023V4  2024 06 24.92  S 10.7 TK 20.3T10  77   2    3/           ICQ XX GON05 Juan Jose Gonzalez Suarez
   2023V4  2024 06 10.90  S 10.2 TK 20.3T10 100   2    3            ICQ XX GON05 Juan Jose Gonzalez Suarez
   2023V4  2024 06 09.91  S 11.0 TI 25.2L 4 145   1    3/           ICQ XX HAR11 Christian Harder
   2023V4  2024 06 04.91  S 10.9 TK 32.0L 5 144                     ICQ XX PIL01 Uwe Pilz
   2023V4  2024 06 01.89  S  9.3 TK 20.3T10  77   4    3            ICQ XX GON05 Juan Jose Gonzalez Suarez
```

C/2023 V4 (Camarasa-Duszanowicz) 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. After peaking at around 10-11th magnitude in June, Camarasa-Duszanowicz is now fading and should become fainter than 12th magnitude by mid-month and 13th by the end of the month. Like 13P/Olbers, Camarasa-Duszanowicz is a northern evening object. It'll be seen moving through Lynx (Jul 1) and Ursa Major (1-31).

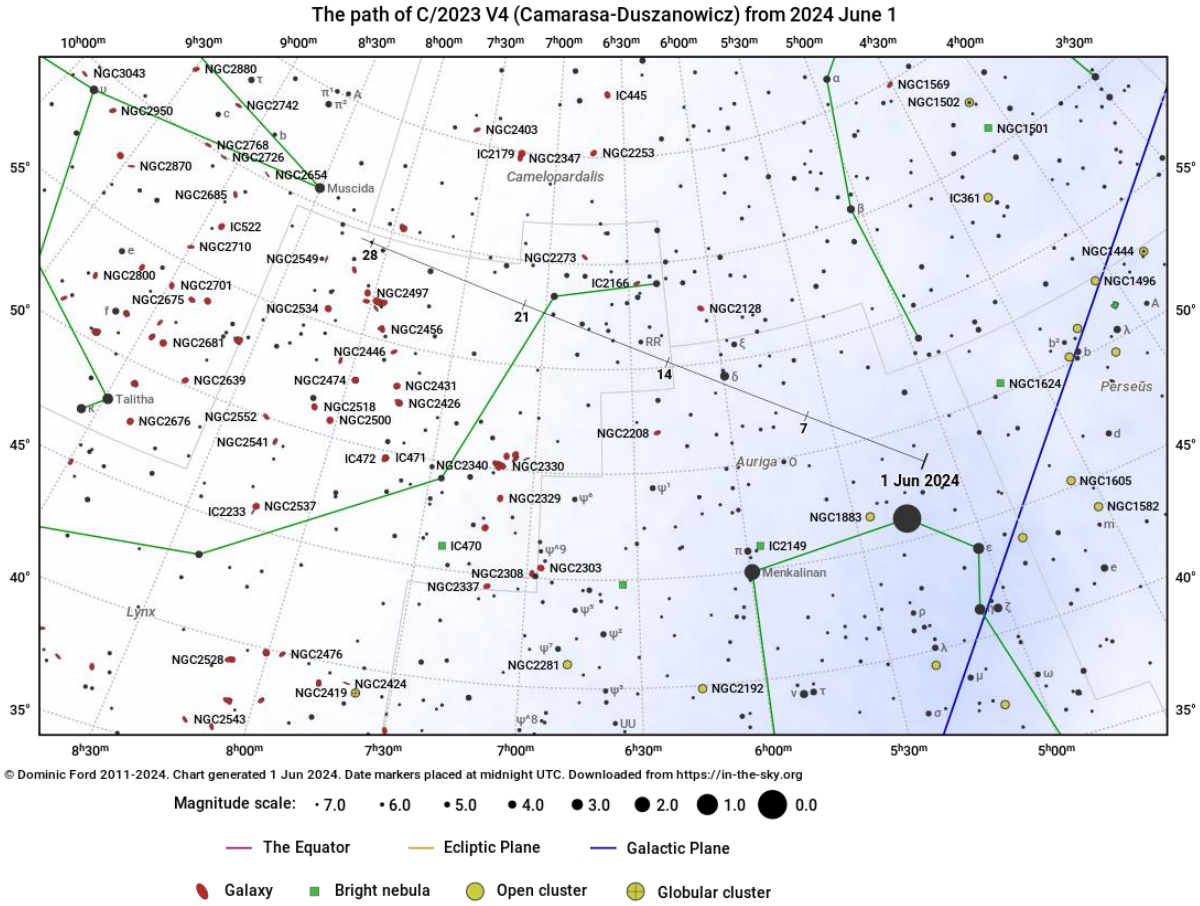


Figure 5 - Star chart for C/2023 V4 (Camarasa-Duszanowicz) for July 2024. Chart made at in-the-sky.org.