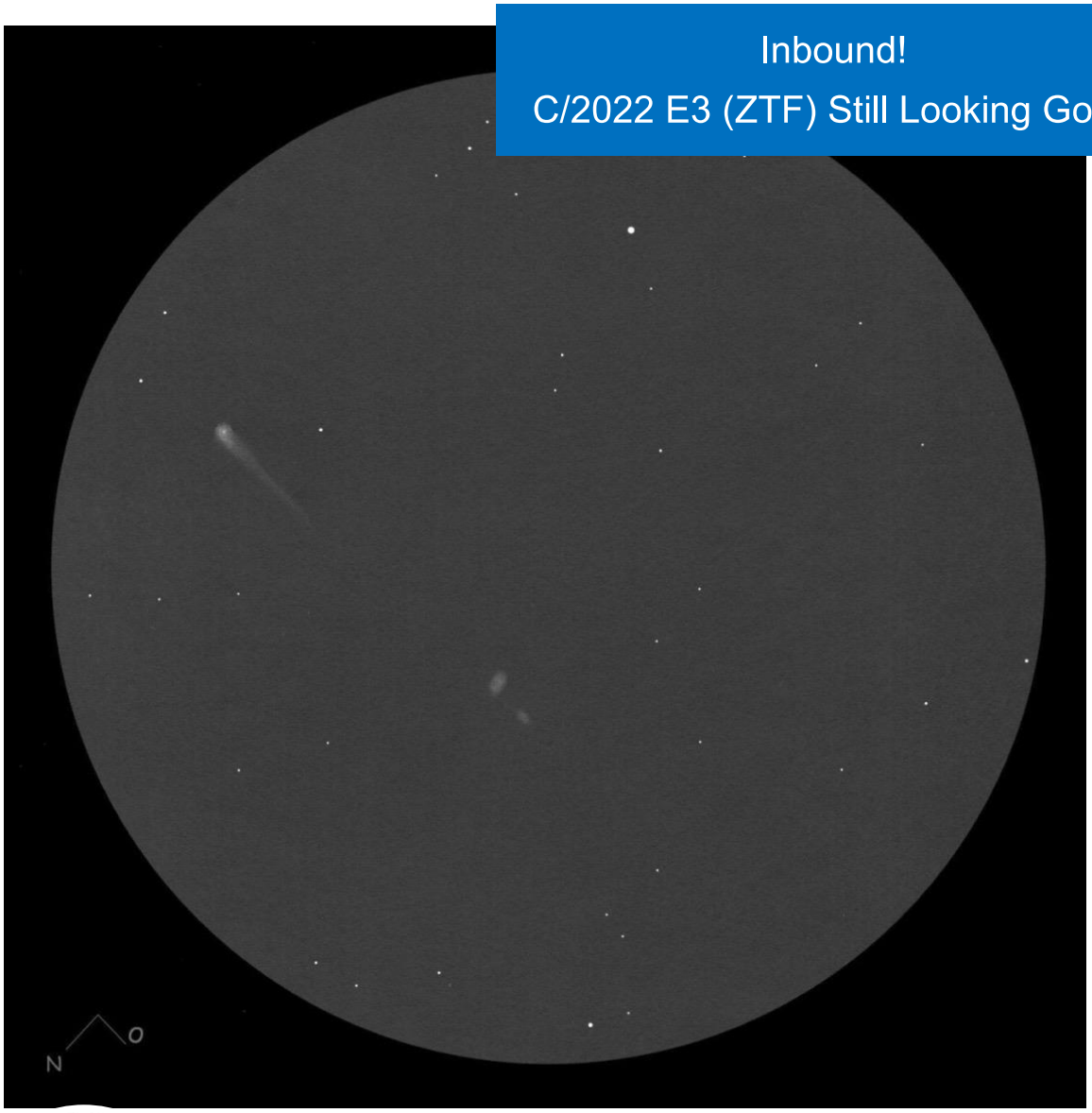
October 2022

# ALPO Comet News

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

Inbound!

C/2022 E3 (ZTF) Still Looking Good

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## On the Front Cover:

Christian Harder sketched this view of C/2022 E3 (ZTF)'s long dust tail through his 14" f/4.5 dobsonian reflector with a magnification of 176x on 2022 August 30. The two faint fuzzies near the center of the drawing are the galaxies NGC 6162 (mag 13.6) and 6163 (mag 14.4).

The monthly ALPO Comet News PDF can be found on the ALPO Comets Section website (http://www.alpo-astronomy.org/cometblog/). A shorter version of this report is posted on a dedicated Cloudy Nights forum (https://www.cloudynights.com/topic/844260-alpo-comet-news-for-october-2022/) 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

Much of this month's comet action is shifting to the south. The brightest comet in the sky remains C/2017 K2 (PANSTARRS) at 8th magnitude though it is already lost to observers at northern mid-latitudes by early in the month. C/2022 P1 (NEOWISE) should peak around 9th magnitude early in the month. Though visible from both hemispheres it is a much easier site the further south one is. Looking ahead, C/2022 E3 (ZTF) is rapidly brightening from 11th to 10th magnitude and the prospects of it becoming a bright 5th magnitude object early next year still looks good.

Last month the ALPO Comets Section received 81 magnitude estimates and 20 images/sketches of comets C/2022 P1 (NEOWISE), C/2022 E3 (ZTF), C/2020 V2 (ZTF), C/2020 K1 (PANSTARRS), C/2017 K2 (PANSTARRS), 422P/Christensen, 395P/Catalina-NEAT, 378P/McNaught, 327P/Van Ness, 286P/Christensen, 285P/LINEAR, 276P/Vorobjov, 259P/Garradd, 238P/Read, 196P/Tichy, 157P/Tritton, 127P/Holt-Olmstead, 117P/Helin-Roman-Alu, 95P/Chiron, 73P/Schwassmann-Wachmann, 61P/Shajn-Schaldach, 57P/du Toit-Neujmin-Delporte, 51P-D/Harrington, 44P/Reinmuth, 39P/Oterma, 29P/Schwassmann-Wachmann, 22P/Kopff, 12P/Pons-Brooks and 2P/Encke. A big thanks to our recent contributors: Dan Bartlett, J. J. Gonzalez, Jose Guilherme de Souza Aguiar, Christian Harder, Carl Hergenrother, Eliot Herman, Michael Jäger, John Maikner, Martin Mobberley, Uwe Pilz, 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 try to include up-to-date lightcurves for the comets discussed in these reports as well as applying aperture and personal corrections to the visual observations and personal just corrections to digital observations. 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 refractors and 0.066 magnitudes per centimeter for reflectors. 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 individual 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.

## Acknowledgements

In addition to observations submitted directly to the ALPO, we occasionally use data from other sources to augment our analysis. We would like to acknowledge with thanks observations submitted directly to the ALPO as well as those originally 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 analyzes so we would like to thank Thomas for his COBS observations. We would also like to thank the Jet Propulsion Laboratory for making available their Small-Body Browser and Orbit Visualizer and Seiichi Yoshida for his Comets for Windows programs that are used to produce the lightcurves and orbit diagrams in these pages. And 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 adding to our knowledge of these amazing objects.

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

Clear skies!
- Carl Hergenrother

# Comets Calendar

Lunar Phases

Oct 02 - First Quarter Moon
Oct 09 - Full Moon
Oct 17 - Last Quarter Moon
Oct 25 - New Moon

Comets at Perihelion

Oct 01 - 51P/Harrington at perihelion (q = 1.69 au, 7.1-yr period, V ~ 18, discovered in 1953, observed at 9 returns, experienced two 2-3 magnitude outbursts in 2001, secondary components seen in 1994 (components B & C) and 2001, 2008 & 2015 (component D), interestingly all observations reported in 2022 appear to be of component D and not of the presumed primary component A)

Oct 04 - 211P/Hill at perihelion (q = 2.33 au, 6.7-yr period, V ~ 17-18, discovered on in 2009 by ALPO Solar Section Coordinator Rik Hill, pre-discovery observations from 2003, observed at 4 returns)

Oct 05 - 408P/Novichonok-Gerke at perihelion (q = 3.47 au, 10.3-yr period, V ~ 16, discovered in 2011, 2022 is its recovery return)

Oct 06 - P/2007 S1 (Zhao) at perihelion (q = 2.52 au, 6.7-yr period, V ~ ???, discovered in 2007 when it reahed 18$^{th}$ magnitude, not seen at 2015 return, yet to be seen at current return though should be around mag 18)

Oct 10 - 443P/PANSTARRS-Christensen at perihelion (q = 2.96 au, V ~ 18, 8.4-yr period, discovered on 2022 March 2, pre-discovery observations from 2005/2006 and 2014/2015)

Oct 23 - 61P/Shajn-Schaldach at perihelion (q = 2.12 au, 7.1-yr period, V ~ 15, discovery in 1949, 9$^{th}$ observed return)

Oct 27 - C/2022 J2 (Bok) at perihelion (q = 1.83 au, brightness uncertain since not observed since June due to faintness and proximity to Sun, still close to Sun in September, should be brightest in December)

Oct 29 - 196P/Tichy at perihelion (q = 2.18 au, 7.4-yr period, V ~ 19, discovered in 2000, 2022 is 4$^{th}$ observed return)

Oct 29 - P/2022 L3 (ATLAS) at perihelion (q = 2.42 au, V ~ 15, 2022 is discovery apparition)

Photo Opportunities

Oct 04 - C/2022 P1 (NEOWISE) passes very close to 11$^{th}$ mag galaxy NGC 7421 (at 04hr UT)
Oct 06 - C/2017 K2 (PANSTARRS) passes ~10' from 12$^{th}$ mag PN NGC 6026
Oct 21 - C/2020 V2 (ZTF) passes close to the galaxy trio of NGC 3398, IC 644, & IC 646
Oct 30 - C/2017 K2 (PANSTARRS) passes very close to 12$^{th}$ mag PN IC 4599

# 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/2022 P1 (NEOWISE) | | | | | | | | | | | | |
| 2022P1 | 2022 09 27.84 | Z 9.3 | U4 | 20.0L | 3a | 840 | 20.0 | | | | ICQ xx | HER02 Carl Hergenrother |
| 2022P1 | 2022 09 26.78 | Z 9.3 | U4 | 20.0L | 3a | 300 | 17.4 | | | | ICQ xx | HER02 Carl Hergenrother |
| 2022P1 | 2022 09 25.46 | xS 10.2 | AQ | 40.0L | 4 | 59 | 6.5 | 3/ | | | ICQ XX | WYA Christopher Wyatt |
| 2022P1 | 2022 09 24.42 | xM 10.5 | AQ | 40.0L | 4 | 59 | 5.3 | 4 | | | ICQ XX | WYA Christopher Wyatt |
| 2022P1 | 2022 09 20.02 | S 10.4 | TK | 20.3T | 10 | 77 | 6 | 1/ | | | ICQ XX | GON05 Juan Jose Gonzalez Suarez |
| 2022P1 | 2022 09 19.44 | xS 10.6 | TK | 40.0L | 4 | 59 | 6 | 3/ | | | ICQ XX | WYA Christopher Wyatt |
| 2022P1 | 2022 09 19.15 | M 11.0 | AQ | 30.0L | 5 | 101 | 2 | 3 | | | ICQ XX | DES01 Jose Guilherme de Souza Aguiar |
| 2022P1 | 2022 09 18.11 | M 11.3 | AQ | 30.0L | 5 | 101 | 2 | 3/ | | | ICQ XX | DES01 Jose Guilherme de Souza Aguiar |
| 2022P1 | 2022 09 17.42 | xS 10.9 | TK | 40.0L | 4 | 59 | 4.8 | 3 | | | ICQ XX | WYA Christopher Wyatt |
| 2022P1 | 2022 09 17.10 | M 11.5 | AQ | 30.0L | 5 | 101 | 2 | 4 | | | ICQ XX | DES01 Jose Guilherme de Souza Aguiar |
| 2022P1 | 2022 09 03.15 | M 12.5 | AQ | 30 L | 5 | 101 | 1 | 4 | | | ICQ XX | DES01 José Guilherme de S. Aguiar |
| 2022P1 | 2022 09 02.15 | M 12.6 | AQ | 30 L | 5 | 89 | 1 | 4/ | | | ICQ XX | DES01 José Guilherme de S. Aguiar |
| 2022P1 | 2022 09 01.16 | M 12.9 | AQ | 30 L | 5 | 89 | 1 | 4/ | | | ICQ XX | DES01 José Guilherme de S. Aguiar |
| P/2022 M1 (LONEOS-PANSTARRS) | | | | | | | | | | | | |
| 2022M1 | 2022 09 02.12 | C 18.3 | BG | 30.5H | 4A | 800 | | | | | ICQ XX | MAIab John Maikner |
| C/2022 E3 (ZTF) | | | | | | | | | | | | |
| 2022E3 | 2022 09 30.79 | S 11.2 | TI | 35.3L | | 122 | 1.1 | 5 | 1.5 | m 90 | ICQ XX | HAR11 Christian Harder |
| 2022E3 | 2022 09 25.80 | S 11.6 | TI | 35.3L | | 122 | 0.9 | 5 | 3 | m 90 | ICQ XX | HAR11 Christian Harder |
| 2022E3 | 2022 09 20.82 | S 11.9 | TI | 53.1L | | 139 | 0.8 | s5 | 3 | m 90 | ICQ XX | HAR11 Christian Harder |
| 2022E3 | 2022 09 19.83 | S 11.4 | AQ | 20.3T | 10 | 77 | 2.2 | 5 | | | ICQ XX | GON05 Juan Jose Gonzalez Suarez |
| 2022E3 | 2022 09 19.80 | S 12.0 | TI | 35.3L | | 122 | 0.7 | s5 | 2.2 | m 90 | ICQ XX | HAR11 Christian Harder |
| 2022E3 | 2022 09 19.38 | xM 12.2 | AQ | 40.0L | 4 | 108 | 1.5 | 6 | 2.4 | m110 | ICQ XX | WYA Christopher Wyatt |
| 2022E3 | 2022 09 17.98 | M 12.2 | AQ | 27.0L | 5 | 109 | 1 | 4/ | | | ICQ XX | DES01 Jose Guilherme de Souza Aguiar |
| 2022E3 | 2022 09 17.38 | xM 11.9 | AQ | 40.0L | 4 | 108 | 1.3 | 6 | 2.5 | m104 | ICQ XX | WYA Christopher Wyatt |
| 2022E3 | 2022 09 03.98 | S 11.9 | AQ | 20.3T | 10 | 100 | 2.2 | 5 | | | ICQ XX | GON05 Juan Jose Gonzalez Suarez |
| 2022E3 | 2022 09 01.99 | M 12.6 | AQ | 27.0L | 5 | 109 | 2 | 4 | | | ICQ XX | DES01 José Guilherme de S. Aguiar |
| 2022E3 | 2022 09 01.87 | S 12.6 | TI | 35.3L | | 144 | 0.8 | 5 | 2.8 | m100 | ICQ XX | HAR11 Christian Harder |
| C/2020 V2 (ZTF) | | | | | | | | | | | | |
| 2020V2 | 2022 09 30.79 | S 12.0 | TI | 35.3L | | 122 | 1 | 4 | | | ICQ XX | HAR11 Christian Harder |
| 2020V2 | 2022 09 25.81 | S 11.8 | TI | 35.3L | | 144 | 1.3 | 4 | | | ICQ XX | HAR11 Christian Harder |
| 2020V2 | 2022 09 20.83 | S 11.8 | TI | 53.1L | | 155 | 1 | 5 | | | ICQ XX | HAR11 Christian Harder |
| 2020V2 | 2022 09 19.86 | S 11.6 | AQ | 20.3T | 10 | 100 | 3 | 4 | | | ICQ XX | GON05 Juan Jose Gonzalez Suarez |
| 2020V2 | 2022 09 01.86 | S 12.6 | TI | 35.3L | | 144 | 0.9 | 4 | | | ICQ XX | HAR11 Christian Harder |
| C/2020 K1 (PANSTARRS) | | | | | | | | | | | | |
| 2020K1 | 2022 09 25.80 | S 12.0 | TI | 35.3L | | 176 | 1 | 2/ | | | ICQ XX | HAR11 Christian Harder |
| 2020K1 | 2022 09 25.45 | xM 13.1 | AQ | 40.0L | 4 | 108 | 1.2 | 6 | | | ICQ XX | WYA Christopher Wyatt |
| 2020K1 | 2022 09 24.42 | xM 13.4 | AQ | 40.0L | 4 | 108 | 0.8 | 5/ | | | ICQ XX | WYA Christopher Wyatt |
| 2020K1 | 2022 09 20.81 | S 13.3 | TI | 53.1L | | 215 | 0.6 | 3 | | | ICQ XX | HAR11 Christian Harder |
| 2020K1 | 2022 09 19.84 | S 12.0 | AQ | 20.3T | 10 | 77 | 2.5 | 2/ | | | ICQ XX | GON05 Juan Jose Gonzalez Suarez |
| 2020K1 | 2022 09 19.41 | xM 13.6 | AQ | 40.0L | 4 | 108 | 0.8 | 5 | | | ICQ XX | WYA Christopher Wyatt |
| 2020K1 | 2022 09 18.94 | M 12.5 | AQ | 27.0L | 5 | 109 | 1 | 4 | | | ICQ XX | DES01 Jose Guilherme de Souza Aguiar |
| 2020K1 | 2022 09 17.99 | M 12.5 | AQ | 27.0L | 5 | 109 | 1 | 3/ | | | ICQ XX | DES01 Jose Guilherme de Souza Aguiar |
| 2020K1 | 2022 09 17.40 | xM 13.6 | AQ | 40.0L | 4 | 108 | 0.9 | 6 | | | ICQ XX | WYA Christopher Wyatt |
| 2020K1 | 2022 09 16.98 | M 12.6 | AQ | 27.0L | 5 | 109 | 1 | 3 | | | ICQ XX | DES01 Jose Guilherme de Souza Aguiar |
| 2020K1 | 2022 09 03.95 | S 12.1 | AQ | 20.3T | 10 | 133 | 2.5 | 3 | | | ICQ XX | GON05 Juan Jose Gonzalez Suarez |
| 2020K1 | 2022 09 01.85 | S 12.7 | TI | 35.3L | | 144 | 0.8 | 3 | | | ICQ XX | HAR11 Christian Harder |
| C/2017 K2 (PANSTARRS) | | | | | | | | | | | | |
| 2017K2 | 2022 09 25.45 | xM 8.8 | TK | 40.0L | 4 | 59 | 5.2 | 6 | 13 | m 31 | ICQ XX | WYA Christopher Wyatt |
| 2017K2 | 2022 09 24.41 | xM 9.2 | TK | 40.0L | 4 | 59 | 3.6 | 6 | 15.5 | m 32 | ICQ XX | WYA Christopher Wyatt |
| 2017K2 | 2022 09 19.89 | M 8.9 | TK | 10.0B | | 25 | 2 | 3/ | | | ICQ XX | DES01 Jose Guilherme de Souza Aguiar |
| 2017K2 | 2022 09 19.82 | S 8.6 | TK | 20.3T | 10 | 77 | 4 | 4 | | | ICQ XX | GON05 Juan Jose Gonzalez Suarez |
| 2017K2 | 2022 09 19.41 | xM 9.4 | TK | 40.0L | 4 | 59 | 2.3 | 6 | 4.3 | m 61 | ICQ XX | WYA Christopher Wyatt |
| 2017K2 | 2022 09 18.90 | M 8.9 | TK | 10.0B | | 25 | 2 | 4 | | | ICQ XX | DES01 Jose Guilherme de Souza Aguiar |
| 2017K2 | 2022 09 17.95 | M 8.9 | TK | 27.0L | 5 | 55 | 3 | 3 | | | ICQ XX | DES01 Jose Guilherme de Souza Aguiar |
| 2017K2 | 2022 09 17.40 | xM 8.6 | TK | 40.0L | 4 | 59 | 3.7 | 6 | 14 | m 47 | ICQ XX | WYA Christopher Wyatt |
| 2017K2 | 2022 09 16.93 | M 9.0 | TK | 27.0L | 5 | 55 | 3 | 3/ | | | ICQ XX | DES01 Jose Guilherme de Souza Aguiar |
| 422P/Christensen | | | | | | | | | | | | |
| 422 | 2022 09 02.28 | C 20.7 | BG | 30.5H | 4D | 800 | | | | | ICQ XX | MAIab John Maikner |
| 395P/Catalina-NEAT | | | | | | | | | | | | |
| 395 | 2022 09 01.22 | C 18.0 | BG | 30.5H | 4A | 800 | | | | | ICQ XX | MAIab John Maikner |
| 378P/McNaught | | | | | | | | | | | | |
| 378 | 2022 09 21.21 | C 18.0 | BG | 30.5H | 4C | 600 | | | | | ICQ XX | MAIab John Maikner |
| 327P/Van Ness | | | | | | | | | | | | |
| 327 | 2022 09 25.47 | xM 14.2 | AQ | 40.0L | 4 | 261 | 0.6 | 4/ | | | ICQ XX | WYA Christopher Wyatt |
| 286P/Christensen | | | | | | | | | | | | |
| 286 | 2022 09 17.07 | C 18.9 | BG | 30.5H | 4B | 400 | | | | | ICQ XX | MAIab John Maikner |

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286        2022 09 01.19  C 18.1 BG 30.5H 4A800                    ICQ XX MAIab John Maikner
285P/LINEAR
285        2022 09 01.15  C 18.0 BG 30.5H 4A800                    ICQ XX MAIab John Maikner
276P/Vorobjov
276        2022 09 02.08  C 20.9 BG 30.5H 4D680                    ICQ XX MAIab John Maikner
259P/Garradd
259        2022 09 21.27  C 21.4 BG 30.5H 4C480                    ICQ XX MAIab John Maikner
238P/Read
238        2022 09 02.34  C 20.7 BG 30.5H 4D800                    ICQ XX MAIab John Maikner
196P/Tichy
196        2022 09 01.30  C 20.6 BG 30.5H 4D920                    ICQ XX MAIab John Maikner
127P/Holt-Olmstead
127        2022 09 09.26  C 19.3 BG 30.5H 4C600                    ICQ XX MAIab John Maikner
117P/Helin-Roman-Alu
117        2022 09 19.43 xM 14.5 AQ 40.0L 4 261   0.5  4          ICQ XX WYA   Christopher Wyatt
95P/Chiron
 95        2022 09 09.20  C 17.6 BG 30.5H 4A800                    ICQ XX MAIab John Maikner
73P/Schwassmann-Wachmann
 73        2022 09 24.41 xM 13.8 AQ 40.0L 4 182   1.2  4          ICQ XX WYA   Christopher Wyatt
 73        2022 09 19.40 xM 12.6 AQ 40.0L 4 108   1    4          ICQ XX WYA   Christopher Wyatt
 73        2022 09 18.98  M 12.9 AQ 27.0L 5 109   1    5/         ICQ XX DES01 Jose Guilherme de Souza Aguiar
 73        2022 09 17.96  M 12.8 AQ 27.0L 5 109   1    5          ICQ XX DES01 Jose Guilherme de Souza Aguiar
 73        2022 09 17.39 xM 12.7 AQ 40.0L 4 108   1.3  4          ICQ XX WYA   Christopher Wyatt
61P/Shajn-Schaldach
 61        2022 09 09.22  C 16.8 BG 30.5H 4A800                    ICQ XX MAIab John Maikner
57P/du Toit-Neujmin-Delporte
 57        2022 09 02.32  C 17.8 BG 30.5H 4A800                    ICQ XX MAIab John Maikner
51P-D/Harrington
 51       d2022 08 03.26  C 19.1 BG 30.5H 4A740                    ICQ XX MAIab John Maikner
44P/Reinmuth
 44        2022 09 01.33  C 17.9 BG 30.5H 4A800                    ICQ XX MAIab John Maikner
22P/Kopff
 22        2022 09 25.47 xM 14.2 AQ 40.0L 4 261   0.9  5/         ICQ XX WYA   Christopher Wyatt
 22        2022 09 24.42 xS 13.9 AQ 40.0L 4 182   1.4  3/         ICQ XX WYA   Christopher Wyatt
 22        2022 09 19.45 xS 14.3 AQ 40.0L 4 108   0.9  3/         ICQ XX WYA   Christopher Wyatt
 22        2022 09 04.00  S 11.7 AQ 20.3T10 100   5    2          ICQ XX GON05 Juan Jose Gonzalez Suarez
 22        2022 09 02.30  C 16.0 BG 30.5H 4A800                    ICQ XX MAIab John Maikner
12P/Pons-Brooks
 12        2022 09 01.19  C 21.1 BG 30.5H 4C600                    ICQ XX MAIab John Maikner
2P/Encke
  2        2022 09 16.12  C 19.4 BG 30.5H 4C000                    ICQ XX MAIab John Maikner
  2        2022 09 14.19  C 19.6 BG 30.5H 4A800                    ICQ XX MAIab John Maikner
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## New Discoveries, Recoveries and Other Comets News

*C/1995 O1 (Hale-Bopp)* – The Great Comet of 1997, C/1995 O1 (Hale-Bopp), was observed by the James Webb Telescope on 2022 July 9. Four astrometric observations were published by the Minor Planet Center on MPEC 2022-S20. No information on Hale-Bopp's brightness was given. Hopefully the results of these observations will be published soon. At the time of observations, Hale-Bopp was located at 46 au from the Sun and it's been over 25 years since its perihelion.

*157P/Tritton* – MPEC 2022-T23 reports the discovery of a secondary component of short-period comet 157P/Tritton by Michael Jäger on images taken on September 18 and 23 UT with a 0.28-m f/2.2 reflector + CCD. Other observers identified pre-discovery observations going back to August 21 UT.

157P/Tritton was discovered by Keith Tritton on a photographic plate taken on 1978 February 11. That plate taken with the 1.22-, UK Schmidt at Siding Spring Observatory in Australia also contained images of comets 4P/Faye and C/1977 D1 (Lovas). 157P was estimated to be at 20th magnitude at the time of discovery. Missed at its returns in 1984, 1990, and 1996, 157P was rediscovered by the Brazilian-Arizonan team of P. Holvorcem and C. W. Juels in 2003 at 12th magnitude after an apparent outburst in brightness. Another significant outburst was observed in 2017.

This year, 157P/Tritton arrived at perihelion on September 9 at 1.57 au. It is currently fading at around 18th magnitude.

*Recent Periodic Comet Numberings*

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From WGSBN Bulletin 2, #11 & 13
448P/2015 X1  = P/2022 Q1   = P/2008 T13 (PANSTARRS)
447P/2021 R9  = P/2008 T14 (Sheppard-Tholen)
446P/2012 O3  = P/2022 G2 (McNaught)
445P/2014 R5  = P/1998 W9   = P/2006 S14 = P/2022 L5 (Lemmon-PANSTARRS)
444P/2016 PM1 = P/2010 LK36 = P/2016 MD  = P/2022 C4 (WISE-PANSTARRS)
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*New Discoveries and Recoveries*

*C/2022 R3 (Leonard)* – Greg Leonard of the University of Arizona's Catalina Sky Survey discovered a new 18-19th magnitude comet on 2022 September 15 with the Mount Lemmon 1.5-m. C/2022 R3 (Leonard) is a long-period comet with perihelion on 2023 February 16 at a distant 5.16 au. C/Leonard in unlikely to get brighter than 18th magnitude. [CBET 5172, MPEC 2022-S250]

*C/2022 R2 (ATLAS)* – The "Asteroid Terrestrial-Impact Last Alert System" (ATLAS) search program discovered C/2022 R2 (ATLAS) at 16th magnitude on images taken on September 1 with their 0.5-m f/2 Schmidt reflector at Mauna Loa, Hawaii. Perihelion occurs on 2022 October 25 at a small 0.63 au. Indications are that R2 is an intrinsically faint comet. It will be interesting to see if it is actually brighter than reported by the imagers or whether the comet will even survive its approach to perihelion. Unfortunately, by the time of perihelion, R2 will be far from Earth and rapidly dropping into the glare of the Sun. [MPEC 2022-S87, CBET 5171]

*P/2022 R1 (PANSTARRS)* – The Panoramic Survey Telescope and Rapid Response System (Pan-STARRS) found a new 20th magnitude short-period comet on September 1 with their Pan-STARRS2 1.8-m Ritchey-Chretien reflector at Haleakala, Hawaii. P/2022 R1 has a 19.2-year period with a perihelion next year on 2023 October 13 at 3.57 au. [MPEC 2022-R124, CBET 5168]

*C/2022 Q2 (ATLAS)* – ATLAS used their 0.5-m f/2 Schmidt reflector at Mauna Loa, Hawaii to find this 19th magnitude long-period comet on 2022 August 27. It appears to be a Halley-like comet with an orbital period of ~160 years and perihelion on 2023 January 28 at 1.66 au. Unfortunately, C/2022 Q2 will be poorly placed near the Sun at perihelion and may not get any brighter than 16th magnitude at its best while inbound later this year and outbound in mid-2023. [MPEC 2022-R13, CBET 5167]

*C/2022 P3 (ZTF)* – The Zwicky Transient Facility (ZTF) used the 1.2-m Schmidt telescope on Mount Palomar to find C/2022 P3 (ZTF) at 19th magnitude on August 2. Perihelion was back on 2022 July 27 at 2.57 au. It should peak at 18th magnitude this month. [MPEC 2022-R132, CBET 5169]

*P/2022 M1 = P/2000 OZ21 (LONEOS-PANSTARRS)* – This comet was discovered on 2020 June 29 at 21st magnitude. At the time, it was designated P/2022 M1 (PANSTARRS). Syuichi Nakano has linked it with asteroid 2000 OZ21, a LONEOS (Lowell Observatory Near-Earth-Object Search) discovery observed over 5 nights in July 2000 at 18th magnitude. The object has now been renamed LONEOS-PANSTARRS. Recent observations place P/2022 M1 at 19th magnitude. Perihelion was back on 2022 August 2 at 2.06 au. [CBET 5166]

# Comets Brighter Than Magnitude 10

## *C/2017 K2 (PANSTARRS)*

Discovered 2017 May 21 by the Pan-STARRS survey with the Pan-STARRS1 1.8-m on Haleakala
Dynamically ??? long-period comet

Orbit (from Minor Planet Center, MPEC 2022-S297)

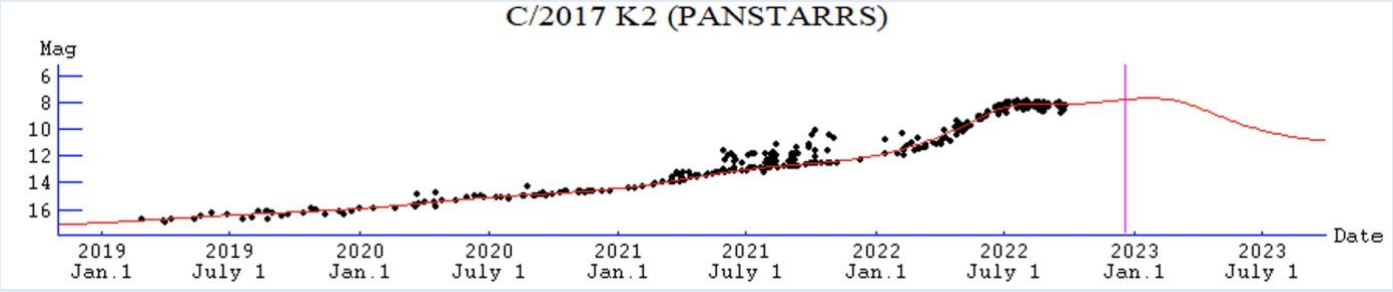
```
    C/2017 K2 (PANSTARRS)
Epoch 2022 Aug. 9.0 TT = JDT 2459800.5
T 2022 Dec. 19.68350 TT                                  Rudenko
q   1.7969113           (2000.0)            P               Q
z  -0.0004417      Peri.  236.19771     +0.01819618     +0.04924661
 +/-0.0000001      Node    88.23507     -0.18093975     +0.98245715
e   1.0007937      Incl.   87.56203     -0.98332584     -0.17986861
From 10966 observations 2015 Nov. 23-2022 Sept. 27, mean residual 0".5.
1/a(orig) = +0.000059 AU**-1, 1/a(fut) = +0.001150 AU**-1.
```

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

```
C/2017 K2 (PANSTARRS)                                                  Max El
                                                                        (deg)
    Date       R.A.    Decl.      r        d     Elong  Const  Mag    40N  40S
2022-Oct-01  15 57  -32 48    2.062    2.420     57E    Lup    8.1      0   40
2022-Oct-06  16 00  -34 23    2.032    2.457     53E    Lup    8.1      0   36
2022-Oct-11  16 03  -35 59    2.004    2.490     50E    Lup    8.1      0   33
2022-Oct-16  16 06  -37 34    1.977    2.519     46E    Lup    8.1      0   29
2022-Oct-21  16 10  -39 11    1.951    2.544     43E    Sco    8.1      0   26
2022-Oct-26  16 15  -40 47    1.928    2.564     41E    Sco    8.1      0   24
2022-Oct-31  16 20  -42 25    1.906    2.579     38E    Nor    8.0      0   21
2022-Nov-05  16 25  -44 05    1.886    2.589     36E    Nor    8.0      0   19
```

Comet Magnitude Formula (from ALPO and COBS data)

```
m1 =  4.1 + 5 log d + 6.7 log r [to T-425 days, where T = date of perihelion]
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
   2017K2  2022 08 30.12  S  8.1 TK  5.0B    10   7    3            ICQ xx HER02 Carl Hergenrother
   2017K2  2022 08 24.90  M  9.3 TK 27.0L 5  80   3    5            ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2017K2  2022 08 22.89  M  9.1 TK 27.0L 5  80   3    4            ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2017K2  2022 08 20.44 xM  9.2 TK 40.0L 4  59   4.0  6    4.5m110 ICQ XX WYA   Chris  Wyatt
   2017K2  2022 08 19.88  S  8.2 TK  5.0B    10   8    5            ICQ XX GON05 Juan Jose Gonzalez Suarez
   2017K2  2022 08 17.89  S  8.2 TK  5.0B    10   8    5            ICQ XX GON05 Juan Jose Gonzalez Suarez
   2017K2  2022 08 15.89  M  8.9 TK 27.0L 5  80   4    5            ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2017K2  2022 08 14.89  M  9.0 TK 27.0L 5  80   4    4/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2017K2  2022 08 13.90  M  9.0 TK 27.0L 5  55   4    4/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2017K2  2022 08 12.89  M  8.9 TK 27.0L 5  55   4    5            ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2017K2  2022 08 04.99  M  8.8 TK 27.0L 5  55   4    5            ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2017K2  2022 08 03.90  M  8.7 TK 27.0L 5  55   4    4/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2017K2  2022 08 03.88  S  9.5:TK 32.0L 5  80   1.7  5/               PIL01 Uwe Pilz
   2017K2  2022 08 02.97  M  8.6 TK 27.0L 5  55   4    4            ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2017K2  2022 08 01.99  M  8.8 TK 27.0L 5  80        3/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2017K2  2022 08 01.91  S  8.5:TI 25.2L 4  68   4    3/           ICQ XX HAR11 Christian Harder
```

Moving south and closer to the Sun in the evening sky, C/2017 K2 (PANSTARRS) is no longer visible to many observers in the northern hemisphere. For observers at 40 deg north, the comet has already set on October 1 by the end of astronomical twilight. Observers at 32N can still make observations, albeit at low elevations, during the first week of October. PANSTARRS won't be visible from the mid-northern latitudes again until August of 2023 when it may be a much fainter object (likely magnitude 10.5 or fainter). Southern hemisphere observers will have a much better view this month as the comet moves through Lupus (Oct 1-18), Scorpius (17-30) and Norma (30-31).

Probably the most difficult part of producing these reports is determining exactly how bright these comets really are. As mentioned in the "Photometric Corrections to Magnitude Measurements" above, all magnitude estimates are affected by many instrumental, environmental and personal factors. Not to mention these factors are heavily dependent on the properties of the comet (gas-rich vs dust-rich, diffuse vs concentrated, the shape of the coma, etc.) For some comets, determining observer's personal biases is relatively straightforward, for other comets, not so much.

C/2017 K2 was predicted to hold a constant brightness in September and October. While some observers found that to be the case in September, others detected a fading of up to ~0.5 magnitudes. For now, we'll stick with the long-term brightness trend for our prediction above, but note that K2 may be a few tenths of a magnitude fainter.

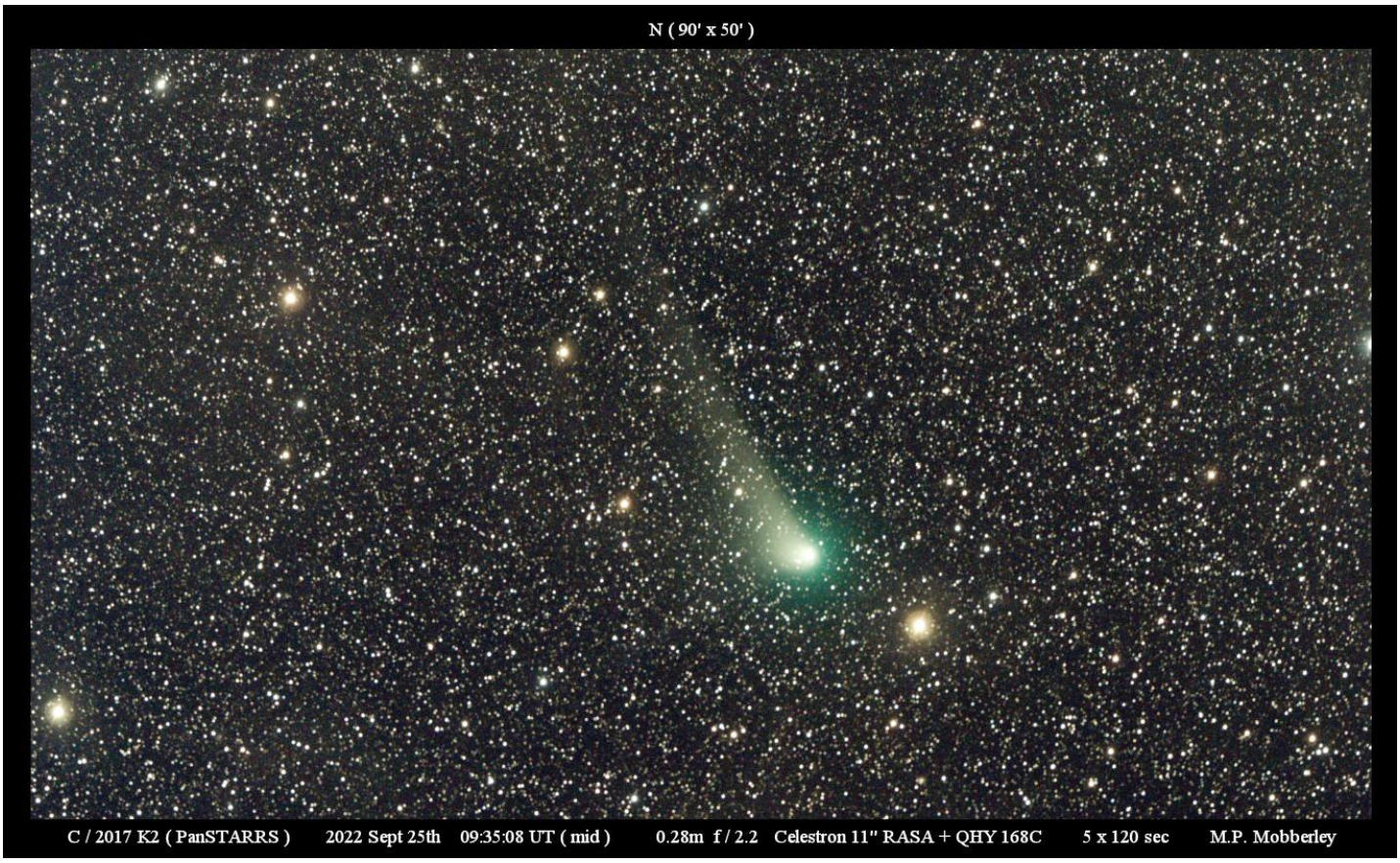



*Figure 1 – Martin Mobberley imaged C/2017 K2 (PANSTARRS) with an iTelescopes Celestron RASA11 and QHY 168C color camera on 2022 September 25. The image is a co-add of 5 120-s exposures.*

## *C/2022 P1 (NEOWISE)*

Discovered 2022 August 8 by the NEOWISE spacecraft
Halley-family comet

Orbit (from Minor Planet Center, MPEC 2022-S297)

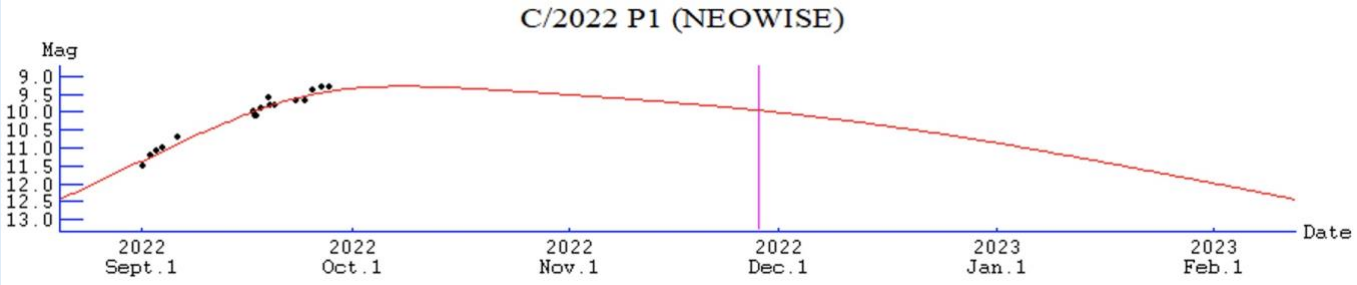
```
    C/2022 P1 (NEOWISE)
Epoch 2022 Aug. 9.0 TT = JDT 2459800.5
T 2022 Nov. 28.45153 TT                                  Rudenko
q   1.5952462           (2000.0)            P              Q
n   0.01231680     Peri.  249.92617     +0.67057091     -0.71922515
a  18.5696649      Node   205.08314     -0.41135425     -0.56442870
e   0.9140940      Incl.  154.60652     -0.61735107     -0.40513629
P  80.0
From 402 observations 2022 Aug. 8-Sept. 26, mean residual 0".5.
```

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

```
C/2022 P1 (NEOWISE)
    Date       R.A.    Decl.      r       d     Elong  Const  Mag   40N  40S
2022-Oct-01  23 27  -34 18    1.765   0.876    140E   Scl    9.3    16   84
2022-Oct-06  22 43  -38 25    1.739   0.932    128E   Gru    9.3    12   88
2022-Oct-11  22 03  -40 52    1.715   1.014    116E   Gru    9.3     9   89
2022-Oct-16  21 28  -42 03    1.692   1.115    106E   Gru    9.3     8   88
2022-Oct-21  21 00  -42 24    1.672   1.227     97E   Mic    9.4     8   79
2022-Oct-26  20 38  -42 19    1.654   1.345     88E   Mic    9.4     8   70
2022-Oct-31  20 21  -41 59    1.638   1.467     81E   Sgr    9.5     8   62
2022-Nov-05  20 08  -41 33    1.625   1.589     74E   Sgr    9.6     7   54
```

Comet Magnitude Formula

```
m1 =  2.3 + 5 log d + 29.7 log r
```




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
   2022P1  2022 09 27.84  Z  9.3 U4 20.0L 3a840  20.0                ICQ xx HER02 Carl Hergenrother
   2022P1  2022 09 26.78  Z  9.3 U4 20.0L 3a300  17.4                ICQ xx HER02 Carl Hergenrother
   2022P1  2022 09 25.46 xS 10.2 AQ 40.0L 4  59   6.5  3/            ICQ XX WYA   Christopher Wyatt
   2022P1  2022 09 24.42 xM 10.5 AQ 40.0L 4  59   5.3  4             ICQ XX WYA   Christopher Wyatt
   2022P1  2022 09 20.02  S 10.4 TK 20.3T10  77   6    1/            ICQ XX GON05 Juan Jose Gonzalez Suarez
   2022P1  2022 09 19.44 xS 10.6 TK 40.0L 4  59   6    3/            ICQ XX WYA   Christopher Wyatt
   2022P1  2022 09 19.15  M 11.0 AQ 30.0L 5 101   2    3             ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2022P1  2022 09 18.11  M 11.3 AQ 30.0L 5 101   2    3/            ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2022P1  2022 09 17.42 xS 10.9 TK 40.0L 4  59   4.8  3             ICQ XX WYA   Christopher Wyatt
   2022P1  2022 09 17.10  M 11.5 AQ 30.0L 5 101   2    4             ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2022P1  2022 09 04.07  S 11.6 AQ 20.3T10 100   7    1/            ICQ XX GON05 Juan Jose Gonzalez Suarez
   2022P1  2022 09 03.15  M 12.5 AQ 30.0L 5 101   1    4             ICQ XX DES01 José Guilherme de S. Aguiar
   2022P1  2022 09 02.15  M 12.6 AQ 30.0L 5  89   1    4/            ICQ XX DES01 José Guilherme de S. Aguiar
   2022P1  2022 09 01.16  M 12.9 AQ 30.0L 5  89   1    4/            ICQ XX DES01 José Guilherme de S. Aguiar
```

Jana P. Chesley of the Jet Propulsion Laboratory reported the discovery of C/2022 P1 (NEOWISE) in images taken on 2022 August 8 by the NEOWISE (formerly WISE – Wide-field Infrared Survey Explorer) spacecraft. In the days after discovery, ground-based observations found the new comet at around 16-17$^{th}$ magnitude. With an orbital period of 80 years, C/2022 P1 is dynamically a Halley type comet. Being a Halley family type comet

does not mean P1 and Halley are related, other than both probably share a similar source region and dynamical path to their present orbits.

Images show a large circular coma with little evidence of a tail. A large coma with fainter outer regions may explain why imagers are detecting a significantly larger coma (up to 20' in diameter) than visual observers (1'-7'). The wide range in coma diameters may also explains why imagers are finding the comet to be 1-2 magnitudes brighter than visual observers.

So like C/2017 K2 , we have to reconcile the scatter in brightness to determine P1's true brightness. The prediction above showing the comet fade from around magnitude 9.3 to 9.5 in October is heavily biased towards the brightness reported by imagers (including observations submitted to the COBS site by Thomas Lehmann). But unless you're using a small(ish) aperture under perfectly dark skies, P1 may not appear as bright as predicted for visual observers.

C/2022 P1 is still a little under two months from its November 28 perihelion at 1.60 au. Unfortunately, it passed closest to Earth on September 25 at 0.85 au. As a result, it will peak in brightness in early October and then should fade as it moves away from the Earth faster than its moving closer to Earth. Due to its nearly retrograde orbit (inclination of 154 deg), P1 is rapidly moving from the opposition sky into the evening sky as it moves through Sculptor (Oct 1-3), Grus (Oct 3-16), Microscopium (Oct 16-28), and Sagittarius (Oct 28-31). It remains a much easier object to observe the further south you are.

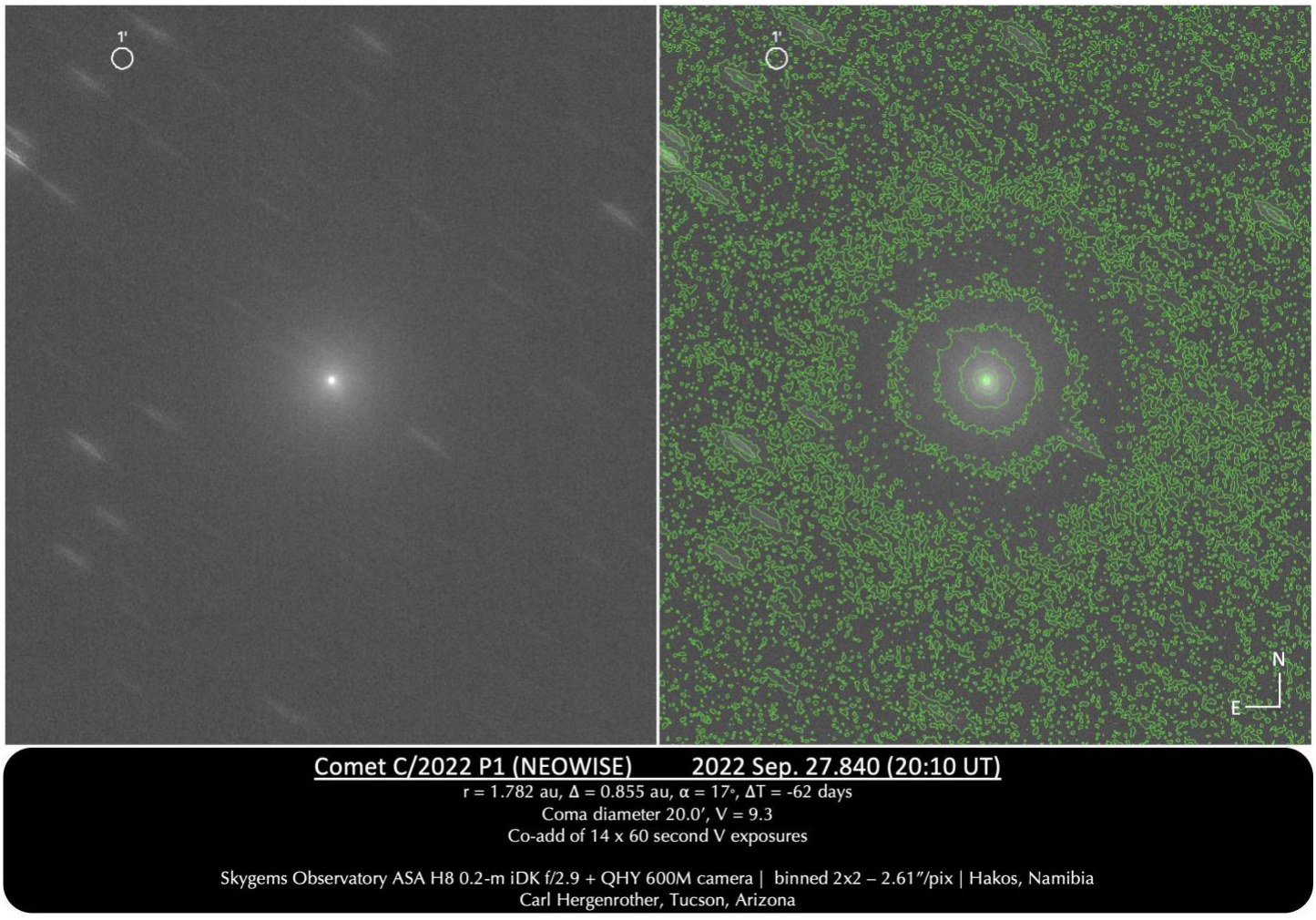



*Figure 2 - C/2022 P1 (NEOWISE) as imaged by Carl Hergenrother on 2022 Sep. 27 with the Skygems Observatory 0.2-m f/3 at Hakos, Namibia. The image on the right is the same as the one on the left except for the inclusion of isophotes to show changes in brightness.*

# Comets Between Magnitude 10 and 12

## *C/2020 V2 (ZTF)*

Discovered 2020 November 2 by the ZTF survey
Dynamically new long-period comet

Orbit (from Minor Planet Center, MPEC 2022-S297)

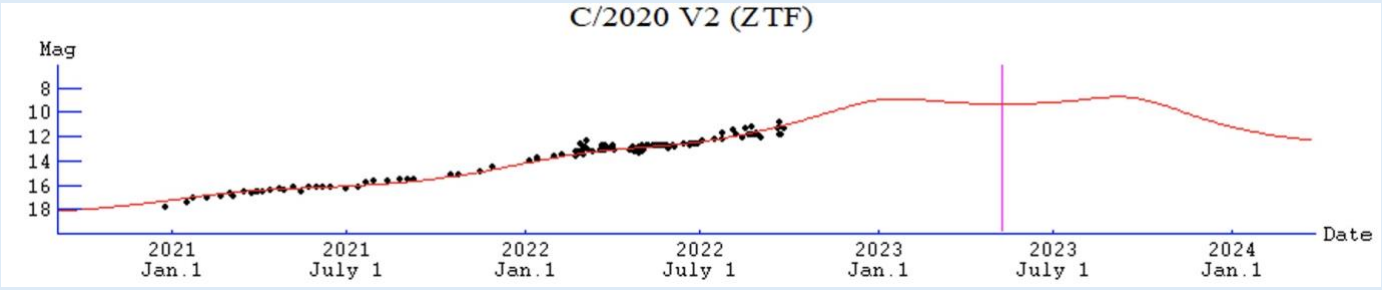
```
    C/2020 V2 (ZTF)
Epoch 2022 Aug. 9.0 TT = JDT 2459800.5
T 2023 May 8.53848 TT                                  Rudenko
q   2.2280134           (2000.0)            P              Q
z  -0.0004442      Peri.  162.41933     +0.69776868     +0.59404057
 +/-0.0000005      Node   212.37018     +0.53386689     -0.05867640
e   1.0009897      Incl.  131.61102     +0.47760340     -0.80229227
From 2806 observations 2020 Apr. 18-2022 Sept. 24, mean residual 0".4.
1/a(orig) = -0.000145 AU**-1, 1/a(fut) = -0.000383 AU**-1.
```

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

```
C/2020 V2 (ZTF)                                                        Max El
                                                                        (deg)
    Date       R.A.    Decl.      r       d     Elong  Const  Mag    40N  40S
2022-Oct-01  10 45  +54 26    3.297   3.661     61M    UMa  11.1     34    0
2022-Oct-06  10 49  +55 04    3.259   3.559     64M    UMa  11.0     37    0
2022-Oct-11  10 52  +55 49    3.221   3.455     68M    UMa  10.9     40    0
2022-Oct-16  10 56  +56 42    3.184   3.348     71M    UMa  10.7     43    0
2022-Oct-21  10 59  +57 44    3.146   3.240     75M    UMa  10.6     46    0
2022-Oct-26  11 03  +58 55    3.110   3.130     79M    UMa  10.5     49    0
2022-Oct-31  11 06  +60 18    3.073   3.020     83M    UMa  10.4     52    0
2022-Nov-05  11 08  +61 52    3.037   2.910     87M    UMa  10.3     54    0
```

Comet Magnitude Formula (from ALPO and COBS data)

```
m1 =  2.2 + 5 log d + 11.4 log r [through T-230 days]
m1 =  4.0 + 5 log d +  8.0 log r [T-230 days and onward, assumed]
```




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
   2020V2  2022 09 30.79  S 12.0 TI 35.3L   122   1    4           ICQ XX HAR11 Christian Harder
   2020V2  2022 09 25.81  S 11.8 TI 35.3L   144   1.3  4           ICQ XX HAR11 Christian Harder
   2020V2  2022 09 20.83  S 11.8 TI 53.1L   155   1    5           ICQ XX HAR11 Christian Harder
   2020V2  2022 09 19.86  S 11.6 AQ 20.3T10 100   3    4           ICQ XX GON05 Juan Jose Gonzalez Suarez
   2020V2  2022 09 01.86  S 12.6 TI 35.3L   144   0.9  4           ICQ XX HAR11 Christian Harder
```

C/2020 V2 (ZTF) will never get closer than 2.23 au to the Sun (perihelion on 2023 May 8) but due to its intrinsic brightness, it may be brighter than magnitude 10.0 from late this year through late 2023 with a peak brightness around magnitude 9.0 in January and September 2023. C/2020 V2 has been brightening at a rather rapid rate of 2.5n ~ 11.5 going back to early 2021. Visual observations in September by J .J. Gonzalez and Christian Harder show that trend continuing. This month, C/2020 V2 remains a far northern morning object in Ursa Major. It is well placed for northern observers as it brightens slowly from around magnitude 11.1 to 10.4. Southern observers will have to wait till next June for the comet to have moved far enough south for observation.

## *C/2022 E3 (ZTF)*

Discovered 2022 March 2 by the Zwicky Transient Facility (ZTF)
Dynamically old long-period comet

Orbit (from Minor Planet Center, MPEC 2022-S297)

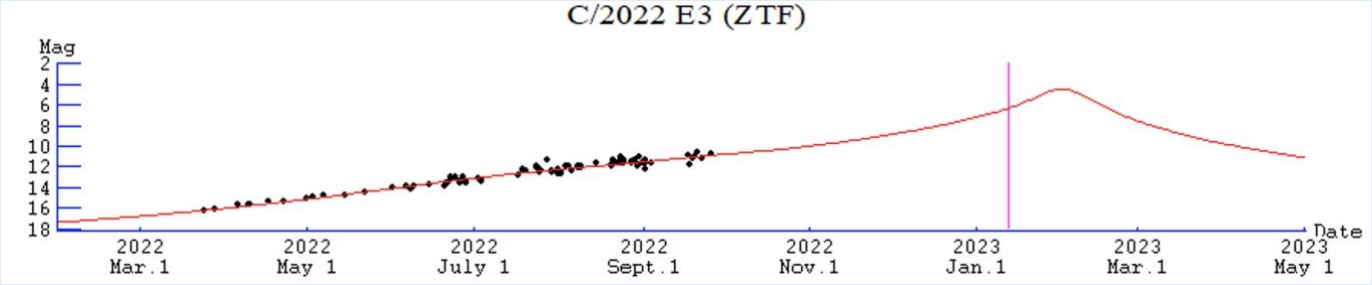
```
    C/2022 E3 (ZTF)
Epoch 2022 Aug. 9.0 TT = JDT 2459800.5
T 2023 Jan. 12.78724 TT                                  Rudenko
q   1.1122526           (2000.0)            P               Q
z  -0.0002435      Peri.  145.81489     -0.60062672     -0.07339344
 +/-0.0000014      Node   302.55384     +0.33753467     +0.87941467
e   1.0002708      Incl.  109.16855     +0.72478817     -0.47036501
From 3657 observations 2021 Oct. 25-2022 Sept. 26, mean residual 0".5.
1/a(orig) = +0.000757 AU**-1, 1/a(fut) = -0.000033 AU**-1.
```

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

```
C/2022 E3 (ZTF)                                                    Max El
                                                                    (deg)
    Date       R.A.    Decl.      r       d    Elong  Const  Mag   40N  40S
2022-Oct-01  15 56  +27 56   1.940   2.257    58E    CrB  11.1    41    0
2022-Oct-06  15 54  +27 15   1.883   2.255    55E    CrB  11.0    38    0
2022-Oct-11  15 52  +26 39   1.826   2.248    52E    CrB  10.9    35    0
2022-Oct-16  15 51  +26 06   1.770   2.235    50E    CrB  10.7    33    0
2022-Oct-21  15 50  +25 37   1.715   2.216    47E    CrB  10.6    30    0
2022-Oct-26  15 49  +25 12   1.660   2.189    46E    Ser  10.5    27    0
2022-Oct-31  15 49  +24 52   1.607   2.155    44E    Ser  10.3    24    0
2022-Nov-05  15 49  +24 37   1.554   2.112    43E    Ser  10.2    21    0
```

Comet Magnitude Formula (from ALPO and COBS data)

```
m1 =  5.6 + 5 log d + 12.8 log r [Through 110 days before perihelion]
m1 =  7.0 + 5 log d +  8.0 log r [After 110 days after perihelion, assumed]
```




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
   2022E3  2022 09 30.79  S 11.2 TI 35.3L   122   1.1   5   1.5 m 90 ICQ XX HAR11 Christian Harder
   2022E3  2022 09 25.80  S 11.6 TI 35.3L   122   0.9   5   3   m 90 ICQ XX HAR11 Christian Harder
   2022E3  2022 09 20.82  S 11.9 TI 53.1L   139   0.8 s5   3   m 90 ICQ XX HAR11 Christian Harder
   2022E3  2022 09 19.83  S 11.4 AQ 20.3T10  77   2.2   5            ICQ XX GON05 Juan Jose Gonzalez Suarez
   2022E3  2022 09 19.80  S 12.0 TI 35.3L   122   0.7 s5   2.2 m 90 ICQ XX HAR11 Christian Harder
   2022E3  2022 09 19.38 xM 12.2 AQ 40.0L 4 108   1.5   6   2.4 m110 ICQ XX WYA   Christopher Wyatt
   2022E3  2022 09 17.98  M 12.2 AQ 27.0L 5 109   1     4/           ICQ XX DES01 Jose Guilherme de Souza Aguiar
   2022E3  2022 09 17.38 xM 11.9 AQ 40.0L 4 108   1.3   6   2.5 m104 ICQ XX WYA   Christopher Wyatt
   2022E3  2022 09 03.98  S 11.9 AQ 20.3T10 100   2.2   5            ICQ XX GON05 Juan Jose Gonzalez Suarez
   2022E3  2022 09 01.99  M 12.6 AQ 27.0L 5 109   2     4            ICQ XX DES01 José Guilherme de S. Aguiar
   2022E3  2022 09 01.87  S 12.6 TI 35.3L   144   0.8   5   2.8 m100 ICQ XX HAR11 Christian Harder
```

C/2022 E3 (ZTF) is still on pace to be the next good comet. Since its discovery last March at 17th magnitude with the Zwicky Transient Facility 1.2-m f/2.4 Schmidt on Mount Palomar, ZTF has been brightening at a rapid rate of 2.5n = 12.5. With perihelion on 2023 January 13 at 1.11 au and a close approach to Earth of 0.29 au on February 1, even a slowdown in brightening to a more conservative 2.5n = 8 rate results in a magnitude 5 comet in late January/early February. At that time, C/2022 E3 will be a northern circumpolar object. Though it will spend the period between October 2022 and early February 2023 invisible from the southern hemisphere,

southern observers will be able to see the comet again a week or so after closest approach to Earth when it should still be within 0.5-1.0 magnitude of peak brightness.

Most visual observers have found ZTF to be moderately condensed with a Degree of Condensation (DC) between 4 and 6 and a tail up to 3’ in length. Imagers such as Dan Bartlett have detected a large low surface brightness blue-green gas coma as well as some curvature to the dust tail.

This month, observing C/2022 E3 is limited to northern observers as it moves through Corona Borealis (Oct 1-21) and Serpens (21-31) in the evening sky.

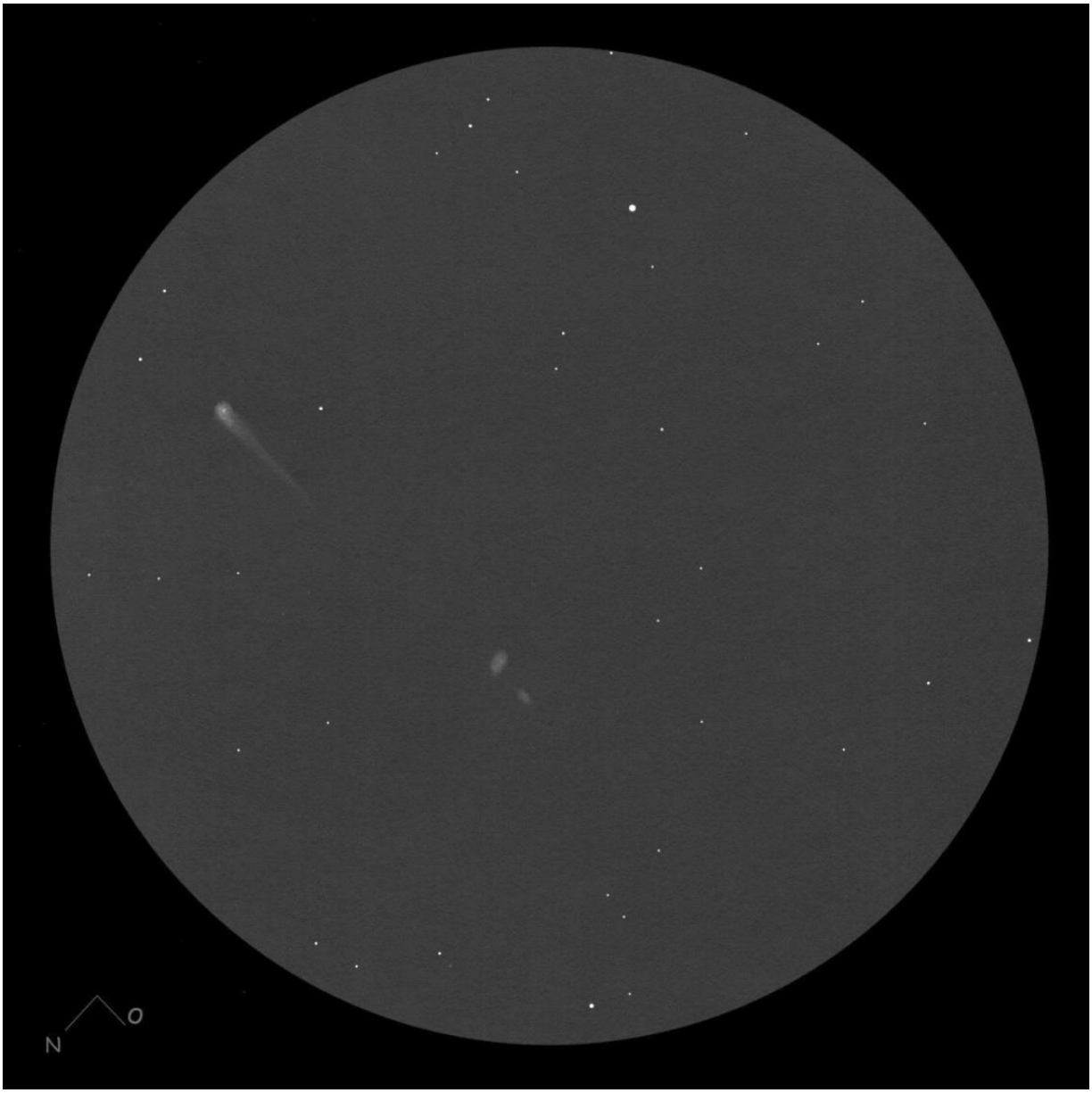



*Figure 3 – Christian Harder detected C/2022 E3 (ZTF)’s long dust tail in his 14” f/4.5 dobsonian at 176 power on 2022 August 30. The two faint fuzzies near the center of the drawing are the galaxies NGC 6162 (mag 13.6) and 6163 (mag 14.4).*