

ALPO COMET NEWS FOR NOVEMBER 2020

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

By Carl Hergenrother – 2020-November-1

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/737692-alpo-comet-news-for-november-2020/>). All are encouraged to join the discussion over at Cloudy Nights. The ALPO Comet Section welcomes all comet related observations, whether textual descriptions, images, drawings, magnitude estimates, or spectra. You do not have to be a member of ALPO to submit material, though membership is encouraged. To learn more about the ALPO, please visit us @ <http://www.alpo-astronomy.org>.

Three comets are expected to be brighter than 10th magnitude this month, 88P in the evening sky and C/2020 M3 (ATLAS) and C/2020 S3 (Erasmus) in the morning. 88P/Howell should fade from 9th to 10th magnitude this month. Long-period comet C/2020 M3 (ATLAS) will spend most of the month around 7-8th magnitude. Recent discovery, C/2020 S3 (Erasmus) starts the month around 9th magnitude and could be between 6th and 7th magnitude before moving too close to the Sun for most observers towards the latter half of the month. A couple of other comets may be observable that are between 10th and 12th magnitude, including 156P/Russell-LINEAR and C/2020 P1 (NEOWISE).

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Bright Comets (magnitude < 10.0)

C/2020 M3 (ATLAS) – *C/2020 M3 (ATLAS)* should be at its best this month. It was discovered on 2020 June 27 at 19th magnitude with the ATLAS (Asteroid Terrestrial-Impact Last Alert System) 0.5-m f/2 astrograph on Mauna Loa, Hawaii. *C/2020 M3* is a Halley-type comet with an orbital period of 139 years. Although it is now past its October 27 perihelion ($q = 1.27$ au), its Earth-comet range will decrease to 0.36 au on November 14. As a result, the comet should remain at its brightest for most of the month.

During October visual observers placed the comet between magnitude 7.6 and 8.9 with a coma diameter between 6' and 18'. CCD images taken on October 16 with an iTelescopes 0.11-m refractor showed a large 29' coma in a Green filter. All visual observers placed the comet's degree of condensation (DC) at 2-3. This means visually the comet's coma is diffuse and only slightly condensed. My own visual observations from October 16 and 29 showed a large low surface brightness coma that could have been easily missed under brighter skies or with too much magnification. The most recent visual magnitude estimates submitted to the ALPO place the comet at magnitude 8.3 (Oct. 24.12, J. J. Gonzalez) and 7.6 (Oct. 29.50, C. Hergenrother).

This month *C/2020 M3* is well placed for observation from both hemispheres in the morning sky in Lepus (Nov 1), Orion (1-23), and Taurus (23-30). The comet should still be around magnitude 7.5 to 8.0 as the month starts. Depending on how quickly it fades after perihelion, M3 should be around magnitude 8.4 and 9.0 at the end of the month.

This sketch by Michel Deconinck on October 17 with a Takahashi Mewlon 250CRS at 62x gives a good impression of *C/2020 M3*'s visual appearance.



C/2020 - M3 (ATLAS)
Mewlon 250 CRS - EP : 62x

2020/10/17 - 2h10 UTC
F.O.S.: 48'

Magn.: + 8.9 - Tail : N/A - Coma : 8' - DC: 3?

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C/2020 M3 (ATLAS)

T = 2020-Oct-25 $q = 1.27$ au

Max El

Halley-type comet – 139-year period

(deg)

Date	Mag	R.A.	Decl.	r	d	Elong	Const	40N	40S
2020 11 01	8.0	05 17	-11 47	1.272	0.381	130	Lep	39	61
2020 11 06	7.9	05 21	-06 09	1.279	0.368	135	Ori	44	56
2020 11 11	7.9	05 24	+00 02	1.291	0.360	141	Ori	51	49
2020 11 16	7.9	05 26	+06 34	1.307	0.359	148	Ori	57	43
2020 11 21	8.0	05 27	+13 12	1.327	0.365	155	Ori	64	36
2020 11 26	8.2	05 26	+19 34	1.351	0.378	161	Tau	70	30
2020 12 01	8.4	05 24	+25 24	1.378	0.399	166	Tau	76	24
2020 12 06	8.6	05 22	+30 32	1.408	0.428	169	Aur	81	19

Comet Magnitude Parameters --- H = 9.0, 2.5n = 10.0

C/2020 S3 (Erasmus) – Not all ATLAS discoveries are named ATLAS, some discoveries are named after the individual discoverer. This was the case for recent comets named Denneau, Flewelling, Fitzsimmons, Heinze, Robinson, Smith, Weiland, and Young. *C/2020 S3* was first seen by Nicolas Erasmus (South African Astronomical Observatory) on September 17 with the ATLAS 0.5-m f/2 Schmidt at Mauna Loa, Hawaii when the comet was 17th magnitude. Recent orbits from the MPC and JPL find *C/2020 S3* to be a dynamically old long-period comet with an orbital period of ~1800 +/- 300 years. This suggests that the comet has passed close to the Sun before and is a good sign that the comet has a low probability of disintegrating.

In last month's ALPO Comet News we were hoping *C/2020 S3* would brighten to around magnitude 12 by the end of October. Instead, the comet was even brighter with visual reports placing it between magnitude 9.5 and 10.0 by the end of October with a poorly condensed 4-6' coma. Over the past few weeks, its brightening rate (2.5n) has been around 10.0. If it continues this rate, Erasmus could be between 6th and 7th magnitude before it is lost in the glare of dawn towards the end of the month. Though it will be invisible from the ground, spacecraft such as SOHO may observe the comet starting a few days after its December 12 perihelion at 0.40 au with the comet as bright as 5th magnitude at that time. Unfortunately, ground-based observers will be out of luck till April 2021 when Erasmus should be too faint for visual observation.

November sees the comet observable from both hemispheres in the morning sky as it moves through Sextans (Nov 1-4), Crater (4-13), Corvus (13-20), Virgo (20-27), Hydra (27-29), and Libra (29-30).

C/2020 S3 (Erasmus)

T = 2020-Dec-12 $q = 0.40$ au

Max El

Long-Period comet – dynamically old

(deg)

Date	Mag	R.A.	Decl.	r	d	Elong	Const	40N	40S
2020 11 01	9.3	10 29	-08 03	1.060	1.167	58	Sext	28	20
2020 11 06	8.8	11 01	-11 15	0.966	1.106	54	Crt	24	18
2020 11 11	8.2	11 36	-14 32	0.870	1.062	50	Crt	20	16
2020 11 16	7.7	12 16	-17 39	0.773	1.039	44	Crv	15	12
2020 11 21	7.1	13 00	-20 20	0.676	1.040	38	Vir	10	9
2020 11 26	6.5	13 46	-22 19	0.583	1.065	32	Vir	5	4
2020 12 01	5.9	14 34	-23 24	0.497	1.114	26	Lib	1	0
2020 12 06	5.4	15 22	-23 35	0.430	1.183	20	Lib	0	0

Comet Magnitude Parameters --- H = 8.7, 2.5n = 10.0



C/2020 S3 (Erasmus)
Refractor 102/1000 - EP 38x

2020/10/25 - 4h15 UTC
F.O.S.: 1°

Magn.: +10.0 - Tail : N/A - Coma : 3.50' - DC: 2/

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A sketch by Michel Deconinck of C/2020 S3 (Erasmus) on October 25.

88P/Howell – Jupiter-family comet 88P/Howell is now outbound after its most recent perihelion on September 28 at 1.35 au. Visual observations by Michel Deconinck, J. J. Gonzalez, and Chris Wyatt found 88P between magnitude 8.2 and 9.5 in October. November should see 88P fading from around magnitude 9.1 to 10.2. Still, it is the brightest comet in the evening sky as it moves through Sagittarius (Nov 1-21) and Capricornus (21-30). Comet Howell is next at perihelion in March 2026 when it may peak at ~9.5.

88P/Howell

T = 2020-Sep-28 q = 1.35 au

Jupiter-family comet

Date	Mag	R.A.	Decl.	r	d	Elong	Const	Max El	
								40N	40S
2020 11 01	9.1	18 48	-26 53	1.408	1.564	62	Sgr	16	37
2020 11 06	9.3	19 08	-26 26	1.424	1.598	61	Sgr	17	35
2020 11 11	9.4	19 27	-25 49	1.442	1.634	60	Sgr	18	33
2020 11 16	9.6	19 46	-25 04	1.462	1.674	60	Sgr	19	31
2020 11 21	9.8	20 04	-24 11	1.483	1.716	59	Sgr	19	29
2020 11 26	10.0	20 22	-23 12	1.505	1.761	58	Cap	20	26
2020 12 01	10.2	20 39	-22 06	1.529	1.809	57	Cap	21	24
2020 12 06	10.4	20 56	-20 56	1.554	1.859	56	Cap	22	21

Comet Magnitude Parameters --- H = 5.2, 2.5n = 20.0 [ref. Seiichi Yoshida]

Fainter Comets of Interest (fainter than magnitude 10.0)

C/2020 P1 (NEOWISE) – Not to be confused with this summer’s bright *C/2020 F3 (NEOWISE)*, *C/2020 P1* is an intrinsically faint, dynamically new long-period comet first seen by the NEOWISE spacecraft on August 2. Though a faint 19th magnitude at discovery, it brightened to around magnitude 10 before being lost in the Sun’s glare.

Dynamically new comets are usually making their first passage close to the Sun and have a high probability of disintegration, especially if intrinsically faint. Surprisingly, *C/2020 P1* appears to have survived its October 20 perihelion at 0.34 au. But is it still in one piece? Michael Jaeger posted an image of P1 to the comets-ml which showed it around magnitude 12.5 with a tail but no obvious central condensation. As P1 becomes better placed for northern observers, it will be interesting to see if the comet is a healthy, but faint object, or is disintegrating.

C/2020 P1 (NEOWISE)

T = 2020-Oct-20		q = 0.34 au						Max El	
Long-Period comet – dynamically new									
Date	Mag	R.A.	Decl.	r	d	Elong	Const	40N	40S
2020 11 01	???	13 35	+09 21	0.480	1.058	26	Vir	7	0
2020 11 06	???	13 53	+09 53	0.578	1.192	28	Boo	9	0
2020 11 11	???	14 08	+09 42	0.682	1.313	30	Boo	10	0
2020 11 16	???	14 22	+09 12	0.785	1.423	32	Boo	12	0
2020 11 21	???	14 34	+08 37	0.888	1.521	33	Boo	14	0
2020 11 26	???	14 44	+08 02	0.988	1.609	35	Boo	16	0
2020 12 01	???	14 54	+07 30	1.085	1.689	37	Boo	19	0
2020 12 06	???	15 02	+07 01	1.181	1.759	39	Boo	21	0

Comet Magnitude Parameters --- H = ?., 2.5n = ?.

156P/Russell-LINEAR - Comet 156P/Russell-LINEAR is usually a very faint, low activity, short-period comet. In fact, its lightcurve was best modeled assuming that only the nucleus was being observed with little contribution from any coma. Recent visual and CCD observations place the comet around magnitude 11 suggesting an outburst.

156P was first observed by Kenneth Russell on a single 90-min photographic plate taken by F. G. Watson with the U.K. Schmidt Telescope at Siding Spring Observatory on 1986 September 3. Further attempts to image the comet in 1986 were unsuccessful at that time. Fast forwarding to 2000, Tim Spahr linked up asteroidal LINEAR discovery 2000 QD181 with LINEAR discovery 2000 XV43 and a photographic Shoemaker discovery 1993 WU. With the updated orbit, an additional photographic image from one of the 1986 follow-up plates was identified. In addition to being seen in 1986, 1993, and 2000, 156P was also seen in 2007 and 2014. Though observed as cometary in the 1986 discovery image, most observations reported no cometary activity.

This year 156P comes to perihelion on 2020 November 17 at 1.33 au. During its previous observed returns perihelion was out at 1.58-1.60 au. An approach to within 0.36 au of Jupiter in 2018 caused the decrease in perihelion. Perhaps the smaller perihelion distance is the cause of its more active state, or the comet is currently in outburst. This year marks a very good apparition

for 156P with a close approach within 0.48 au of Earth this month. It is an evening object in November as it moves through Aquarius (Nov 1-15) and Pisces (15-30).

156P/Russell-LINEAR

T = 2020-Nov-17 $q = 1.33$ au

Long-Period comet – dynamically TBD

										Max El (deg)	
Date	Mag	R.A.	Decl.	r	d	Elong	Const	40N	40S		
2020 11 01	11.0	23 32	-14 49	1.348	0.485	128	Aqr	35	65		
2020 11 06	11.0	23 34	-10 50	1.340	0.493	125	Aqr	39	61		
2020 11 11	11.1	23 37	-06 48	1.336	0.504	123	Aqr	43	56		
2020 11 16	11.1	23 42	-02 48	1.333	0.519	121	Psc	47	51		
2020 11 21	11.2	23 48	+01 07	1.334	0.538	118	Psc	51	46		
2020 11 26	11.3	23 55	+04 55	1.337	0.559	116	Psc	55	41		
2020 12 01	11.4	00 03	+08 33	1.342	0.584	115	Psc	59	36		
2020 12 06	11.5	00 12	+12 00	1.350	0.612	113	Psc	62	31		

Comet Magnitude Parameters --- H = 11.3, 2.5n = 10.0

New Discoveries, Recoveries and Other Comets in the News

Newly Numbered Periodic Comets

397P/2012 SB6 = 2020 M2 (Lemmon)

398P/2009 Q4 = 2020 P2 (Boattini)

399P/2013 O2 = 2020 O4 (PANSTARRS)

400P/2013 PA104 = 2020 R1 (PANSTARRS)

401P/2006 H1 = 2020 R3 (McNaught)

402P/2002 T5 = 2020 Q3 (LINEAR)

New Discoveries and Recoveries

C/2020 U5 (PANSTARRS) – On the night of October 22, the Pan-STARRS survey used the Pan-STARRS1 1.8-m telescope on Haleakala on Maui discovered this 20th magnitude comet. *C/2020 U5* is a long-period object with a perihelion on 2022 April 27 at 3.75 au. It is predicted to reach 16th magnitude during the early months of 2022.

C/2020 U4 (PANSTARRS) – The Pan-STARRS survey also discovered another 20th magnitude long-period comet on the night of October 22. Pre-discovery observations of *C/2020 U4* were found back to November 2019. Perihelion will be on 2022 April 7 at 5.35 au and it is predicted to peak at 17th magnitude in late 2021.

C/2020 U3 (Rankin) – David Rankin of the Catalina Sky Survey used the Mount Lemmon 1.5-m reflector to discover this 20th magnitude comet on October 22. *C/2020 U3* is the 4th comet to bear David's name. All were discovered this year [the other three being *C/2020 B3*, *C/2020 K6*, *C/2020 R6*]. Perihelion occurs early next year on February 5 at 2.28 au. It has a long-period orbit with a period of ~500 years and is unlikely to get brighter than ~19th magnitude.

P/2020 U2 (PANSTARRS) – The Pan-STARRS survey discovered 21st magnitude *P/2020 U2* with the Pan-STARRS1 1.8-m reflector on October 20. Numerous pre-discovery images in Pan-STARRS and Mount Lemmon data going back to 2020 September 17 were also found. *P/2020 U2* is a short-period comet with an orbital period of 7.3 years. This time around perihelion occurs on

Christmas Day 2020 at 1.85 au. Like the previous comet, P/2020 U2 is unlikely to get brighter than 19th magnitude.

P/2020 U1 = P/2013 TL117 (Lemmon) – Returning short-period comet P/2013 TL117 (Lemmon) was recovered by two separate teams. E. Schwab, D. Koschny, M. Micheli, and R. Jehn used a 0.8-m f/3 schmidt at Calar Alto, Spain to recover the comet on 2020 October 17 and 18. D. Balam and C. Spratt saw the comet on 2020 October 18 with the Plaskett 1.8-m reflector at Victoria, Canada. Both teams reported the comet at 18th magnitude. P/2013 TL117 was first discovered by J. Johnson with the Mount Lemmon 1.5-m on 2013 October 14. During that return, it peaked at ~17th magnitude. This year's return is better with perihelion on Christmas Eve at 1.12 au and a close approach within 0.47 au of Earth on 2020 December 15. Even with the close approach, the comet should only reach 15th magnitude. It will next be at perihelion in October 2027.

C/2020 T5 (Lemmon) – The Mount Lemmon Survey reported this 20th magnitude object as an asteroidal object in images taken on 2020 October 5. Pre-discovery images were found back to 2020 April 19. The comet was discovered within a few days of its October 9 perihelion at 1.89 au. It has likely already peaked in brightness.

C/2020 T4 (PANSTARRS) – C/2020 T4 was first reported as a comet on images taken on 2020 October 15 with the Pan-STARRS1 telescope. Pre-discovery observations were found back to 2020 September 26. The comet comes to perihelion on 2021 July 5 at 2.19 au. It is expected to peak at 18th magnitude.

P/2020 T3 (PANSTARRS) – This Pan-STARRS1 discovery was imaged as far back as 2020 September 9 but first recognized as a new comet in images taken on 2020 October 10. The comet is currently on an orbit with a 6.6-year period. Perihelion will be on 2021 January 20 at 1.44 au. Intrinsically faint, P/2020 T3 will only brighten to 19th magnitude.

C/2020 T2 (Palomar) – Dmitry Duev of the California Institute of Technology found this 19th magnitude comet during the course of the Zwicky Transient Facility survey with the Palomar 1.2-m Schmidt telescope on 2020 October 7. Pre-discovery observations from Pan-STARRS and the Mount Lemmon Survey were found as far back as 2019 December 11. C/2020 T2 is a long-period comet with a perihelion on 2021 July 11 at 2.05 au when it should have brightened to 14th magnitude.

P/2020 T1 = P/2007 VQ11 (Catalina) – Greg Leonard found a 19th magnitude comet in images taken with the Mount Lemmon 1.5-m on 2020 October 15. After being posted on the NEOCP, H. Sato identified the new comet as a return of P/2007 VQ11 (Catalina). Sato had been attempting to recover this comet and based on the Leonard positions was able to go back and find it in images taken on 2020 August 18. Two nights of Pan-STARRS observations were also found in September and October 2019. P/2007 VQ11's current perihelion was on 2020 September 16 at 2.70 au. The comet will reach a peak brightness of ~19th magnitude when nearing opposition this December. With a 12.6-year orbit, it will next return in May 2033.

C/2020 S8 (Lemmon) – The Mount Lemmon 1.5-m was used to find this 20th-21st magnitude comet on September 18. Pre-discovery observations were identified back to 2020 July 29. Perihelion is predicted for 2021 April 10 at 2.36 au when the comet will peak at 17th magnitude.

P/2020 S7 (PANSTARRS) – A new short-period comet with an orbital period of 11.3-years was found on September 16 with the Pan-STARRS1 telescope. Pre-discovery observations back to August 22 were found as well. P/2020 S7 comes to perihelion on 2020 November 18 at 2.96 au. It has likely already peaked in brightness. The comet is next expected at perihelion in March 2032.

P/2020 R8 = P/2007 R2 (Gibbs) – Alex Gibbs discovered P/2007 R2 back in September 2007. With a perihelion at 1.47 au, it peaked at 18th magnitude. The comet was missed at its next perihelion in January 2014. Y. JeongAhn of the Korea Astronomy and Space Science Institute recovered P/Gibbs on September 11, 13, and 15 at 21st to 22nd magnitude with the Korea Microlensing Telescope Network 1.6-m f/3.2 reflector at Siding Spring Observatory in Australia. This year, P/Gibbs passed perihelion on September 15 though that distance had increased since 2007 from 1.47 to 1.64 au. The comet has likely already peaked in brightness.

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 < carl.hergenrother @ alpo-astronomy.org >.

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

Stay safe and enjoy the sky!

- Carl Hergenrother (ALPO Comets Section Coordinator)

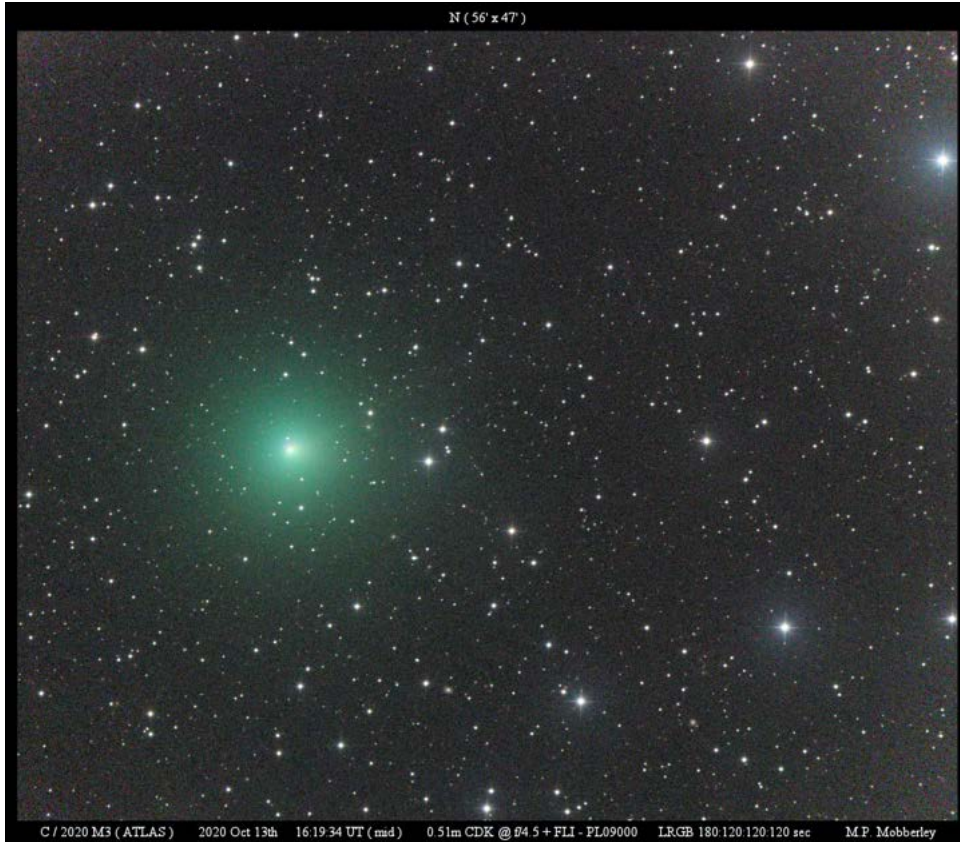
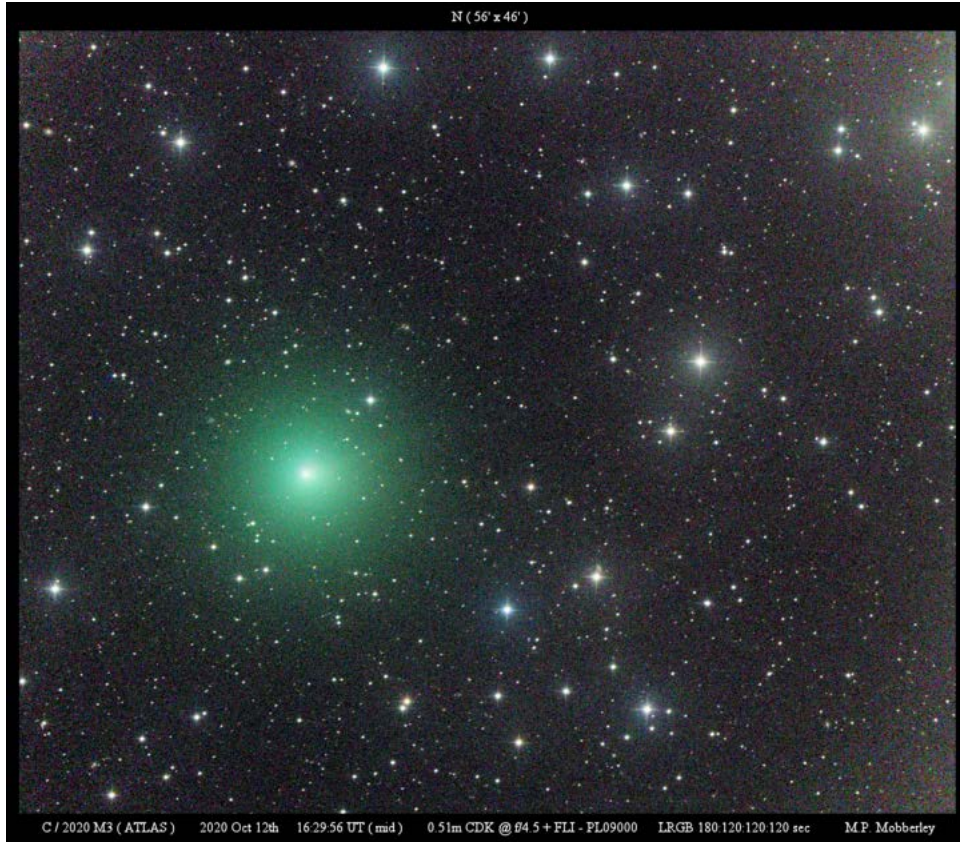
Recent Magnitude Measurements Contributed to the ALPO Comet Section

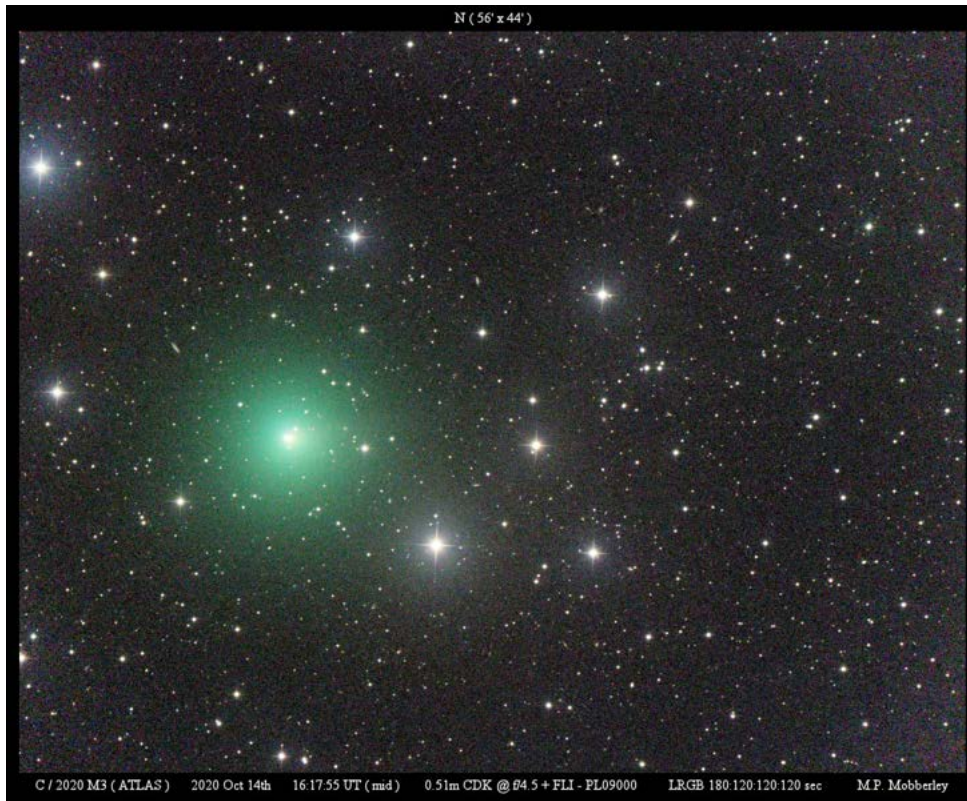
Comet Des	YYYY	MM	DD.DD	Mag	SC	APER	FL	POW	COMA		TAIL		ICQ CODE	Observer Name
									Dia	DC	LENG	PA		
2020S3	2020	10	29.50	S	9.5	TK	12.5B	30	4	3			ICQ xx HER02	Carl Hergenrother
2020S3	2020	10	25.18	I	10.0	TK	10.2R10	25					ICQ XX DECa	Michel Deconinck
2020S3	2020	10	24.14	S	9.5	TK	20.3T10	77	6		2/		ICQ XX GON05	J. J. Gonzalez Suarez
2020S3	2020	10	18.49	Z	11.1	U4	10.6R	5a300	7				ICQ xx HER02	Carl Hergenrother
2020S3	2020	10	18.49	k	13.8	U4	10.6R	5a300		1.8			ICQ xx HER02	Carl Hergenrother
2020S3	2020	10	16.21	S	10.1	TK	20.3T10	77	6		1		ICQ XX GON05	J. J. Gonzalez Suarez
2020M3	2020	10	29.50	S	7.6	TK	12.5B	30	6		2		ICQ xx HER02	Carl Hergenrother
2020M3	2020	10	24.12	S	8.3	TK	20.3T10	77	12		2/		ICQ XX GON05	J. J. Gonzalez Suarez
2020M3	2020	10	17.09	!B	8.9	TK	25.0C10	62	8		3		ICQ XX DECa	Michel Deconinck
2020M3	2020	10	16.66	Z	8.0	U4	10.6R	5a300	29.2				ICQ xx HER02	Carl Hergenrother
2020M3	2020	10	16.66	k	10.2	U4	10.6R	5a300	10.5				ICQ xx HER02	Carl Hergenrother
2020M3	2020	10	16.46	S	8.3	TK	12.5B	30	7		2		ICQ xx HER02	Carl Hergenrother
2020M3	2020	10	16.14	S	8.3	TK	20.3T10	77	9		2/		ICQ XX GON05	J. J. Gonzalez Suarez
2020M3	2020	10	13.53	xM	8.2	TK	5.0B	7	15		3/		ICQ XX WYA	Christopher Wyatt
2020M3	2020	10	11.08	S	8.9	TK	20.3T10	77	6		2		ICQ XX GON05	J. J. Gonzalez Suarez
2020M3	2020	10	10.47	xS	7.6	TK	5.0B	7	18		2/		ICQ XX WYA	Christopher Wyatt
2020M3	2020	10	09.52	xM	8.8	TK	25.0L	5 40	8.5		4		ICQ XX WYA	Christopher Wyatt
2020J1	2020	10	10.40	xS	14.9	AQ	40.0L	4 261	0.3		3		ICQ XX WYA	Christopher Wyatt
2020F5	2020	10	13.48	xM	14.9	AQ	40.0L	4 261	0.4		4		ICQ XX WYA	Christopher Wyatt
2020F5	2020	10	10.39	xM	14.8	AQ	40.0L	4 182	0.4		5/		ICQ XX WYA	Christopher Wyatt
2017B3	2020	10	13.47	xM	15.3	AQ	40.0L	4 182	0.8		3/		ICQ XX WYA	Christopher Wyatt
2019U6	2020	10	15.81	S	11.4	AQ	20.3T10	100	4		2		ICQ XX GON05	J. J. Gonzalez Suarez
156	2020	10	24.00	S	9.7	TK	20.3T10	77	8		2		ICQ XX GON05	J. J. Gonzalez Suarez
156	2020	10	16.47	Z	11.2	U4	10.6R	5a300	10.5				ICQ xx HER02	Carl Hergenrother
156	2020	10	16.47	k	12.5	U4	10.6R	5a300	4.7				ICQ xx HER02	Carl Hergenrother
156	2020	10	16.00	S	10.7	TK	20.3T10	77	5		3		ICQ XX GON05	J. J. Gonzalez Suarez
156	2020	10	13.44	xM	12.3	AQ	40.0L	4 108	2.5		6		ICQ XX WYA	Christopher Wyatt
156	2020	10	10.42	xM	12.2	AQ	40.0L	4 59	2.5		6		ICQ XX WYA	Christopher Wyatt
156	2020	10	10.98	S	11.8	TK	20.3T10	100	3		4		ICQ XX GON05	J. J. Gonzalez Suarez
156	2020	10	09.43	xS	12.9	AQ	25.0L	5 74	1.5		6		ICQ XX WYA	Christopher Wyatt
88	2020	10	17.77	I	9.5	TK	10.2R10	25	3		4		ICQ XX DECa	Michel Deconinck
88	2020	10	15.79	S	8.8	TK	20.3T10	77	6		2/		ICQ XX GON05	J. J. Gonzalez Suarez
88	2020	10	13.42	xM	8.2	TK	7.0B	15	8		5/		ICQ XX WYA	Christopher Wyatt
88	2020	10	10.80	S	8.8	TK	20.3T10	77	6		2/		ICQ XX GON05	J. J. Gonzalez Suarez
88	2020	10	10.39	xM	9.0	TK	7.0B	15	6		4/		ICQ XX WYA	Christopher Wyatt
88	2020	10	09.41	xM	8.6	TK	25.0L	5 40	4		6	20.0m 94	ICQ XX WYA	Christopher Wyatt

Images Contributed to the ALPO Comet Section from the Previous Month

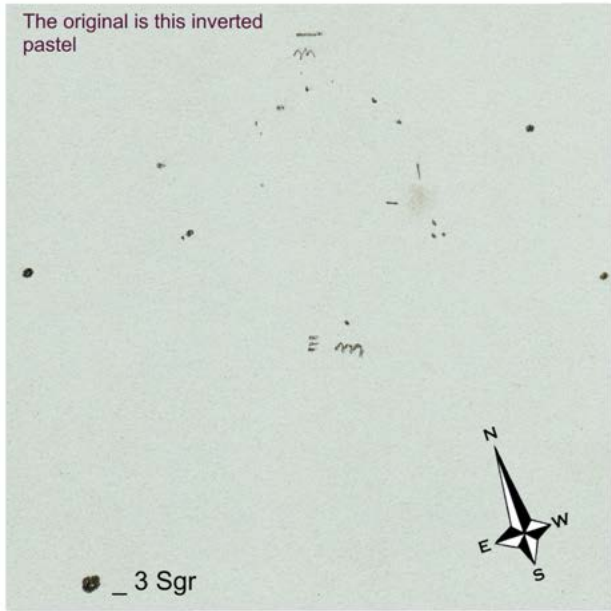
C/2020 M3 (ATLAS)







CCD image of C/2020 M3 (ATLAS) on 2020 October 29 by Gregg Ruppel.



88P (Howell)
Refractor 102/1000 - EP 38x

2020/10/17 18:28 UTC
F.O.S.: 1.7°

Magn.: +9.5 - Tail : N/A - Coma : 3' - DC: 4?

Aquarellia.com

Sketch of 88P/Howell by Michel Deconinck on 2020 October 17.