



ALPO COMET NEWS FOR JUNE 2020

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

By Carl Hergenrother – 2020-June-3

The monthly ALPO Comet News PDF can be found on the ALPO Comet 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/710865-alpo-comet-news-for-june-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>.

2020 has been an up and down year for comet watching. It has already seen two comets, touted as the next big thing, fall apart well before perihelion. While observations of the remains of C/2019 Y4 (ATLAS) and C/2020 F8 (SWAN) are possible this month, most of our attention turns to other brightening comets. C/2019 U6 (Lemmon) may peak around magnitude 6 at the end of June and C/2020 F3 (NEOWISE) should brighten to around magnitude 7 before it is lost in the Sun's glare. Both of those comets are visible only from the southern hemisphere. Northern observers still have fading C/2017 T2 (PANSTARRS) at around 8-9th magnitude.

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Bright Comets (magnitude < 10.0)

C/2019 U6 (Lemmon) – Let's start with one of the two likely contenders for brightest comet of the month. *C/2019 U6 (Lemmon)* was discovered by Rich Kowalski (University of Arizona) on October 31 with the Mount Lemmon Survey's 1.5-m reflector. Due to a lack of detectable cometary activity, the object was designated A/2019 U6. A number of observers since December 2019 noted cometary activity leading to the object being re-designated as comet *C/2019 U6 (Lemmon)* in late March.

Comet Lemmon is a dynamically old comet which last reached perihelion about 10,000 years ago. As is typical of dynamically old comets, Lemmon has rapidly brightened. From the beginning of the year through early May, it brightened at a $2.5n \sim 23$ rate. Since early May that rate has slowed down to a still healthy $2.5n \sim 9$ rate. Chris Wyatt and Willian Souza reported numerous visual magnitude estimates in May and early June. The comet was around magnitude 8.1 on May 10 and Chris placed it at around 6.5 on June 3. If Lemmon continues its current rate of brightening it should brighten to magnitude 5.9 at the end of June.

Lemmon reaches perihelion on June 18 at 0.91 au and comes closest to Earth at the end of the month (0.83 au). It spends the month visible only from the southern hemisphere though northern observers will be able to join the fun early next month. It is an evening object moving through Canis Major (June 1-5), Puppis (5-14), Hydra (14-25), and Sextans (25-30).

C/2019 U6 (Lemmon)

T = 2020-Jun-18 $q = 0.91$ au

Dynamically old long period comet

Date	Mag	R.A.	Decl.	r	d	Elong	Const	Max El	
								40N	40S
2020-06-01	6.7	07 05	-19 22	0.968	1.077	55	CMa	0	37
2020-06-06	6.4	07 32	-17 59	0.943	1.006	55	Pup	0	38
2020-06-11	6.2	08 03	-16 04	0.925	0.942	56	Pup	0	39
2020-06-16	6.1	08 36	-13 29	0.916	0.890	56	Hya	0	40
2020-06-21	6.0	09 12	-10 13	0.915	0.852	57	Hya	0	40
2020-06-26	5.9	09 49	-06 23	0.923	0.830	58	Sext	0	40
2020-07-01	6.0	10 25	-02 11	0.940	0.828	60	Sext	2	39
2020-07-06	6.1	11 01	+02 02	0.964	0.845	61	Leo	8	38

Comet Magnitude Parameters --- $H = 6.7$, $2.5n = 8.9$

C/2020 F3 (NEOWISE) – The other comet contending for brightest comet of the month is *C/2020 F3 (NEOWISE)*. Discovered by the Near-Earth Object Wide-field Infrared Survey Explorer (NEOWISE) spacecraft on March 27, *C/2020 F3* is also a dynamically old comet which was last at perihelion ~ 4500 years ago. Like *C/2019 U6*, NEOWISE experienced a bout of rapid brightening. Until late April, it brightened at a very rapid $2.5n \sim 45$ rate though over the past two weeks, its brightening has slowed down to a slow $2.5n \sim 6.2$ rate.

Last month Chris Wyatt (visual) and Carl Hergenrother (CCD) observed NEOWISE as it brightened from around magnitude 9.9 on May 10 to magnitude ~ 8.0 at the end of the month. In CCD images taken over the past two months, the comet appears to be gas rich with little dust production. The lack of dust does call into question how visual impressive NEOWISE will be when/if it gets brighter.

While perihelion isn't till July 3 at 0.29 au, NEOWISE will be too close to the Sun to be observed by mid-June. It may brighten to around magnitude 7.0 before it is lost to the Sun's glare. The next time we see the comet may be with the SOHO spacecraft's LASCO coronagraph during the last week of June. The comet reappears for ground-based observers after perihelion in early to mid-July for the NH and late July for the SH. If it survives perihelion intact AND continues to brighten at a 2.5n ~ 6.2 rate, it could be a 4th magnitude object when we regain sight of it from Earth. This month the comet is an evening object in Orion (June 1-28) and Taurus (28-30).

C/2020 F3 (NEOWISE)

T = 2020-Jul-03 q = 0.29 au Max El
Dynamically old long period comet (deg)

Date	Mag	R.A.	Decl.	r	d	Elong	Const	40N	40S
2020-06-01	7.8	06 04	-01 54	0.919	1.604	32	Ori	0	14
2020-06-06	7.4	06 03	+01 36	0.813	1.584	26	Ori	0	8
2020-06-11	7.0	06 02	+05 18	0.703	1.555	20	Ori	0	2
2020-06-16	6.5	06 00	+09 21	0.592	1.513	14	Ori	0	0
2020-06-21	5.8	05 58	+13 57	0.481	1.453	9	Ori	0	0
2020-06-26	5.1	05 56	+19 27	0.378	1.367	6	Ori	0	0
2020-07-01	4.3	05 56	+26 13	0.306	1.240	10	Tau	0	0
2020-07-06	3.9	06 07	+34 07	0.303	1.070	16	Aur	0	0

Comet Magnitude Parameters --- H = 7.0, 2.5n = 6.2

C/2017 T2 (PANSTARRS) – This comet continues its steady march across the northern sky. While upstaged by the two C/2019 Y (ATLAS) comets and C/2020 F8 (SWAN), PANSTARRS has outlasted all three as an easy visual object. In fact, it grabbed the spotlight at the end of May thanks to a fortuitously placed orbit plane crossing while the comet was passing near the M81/M82/NGC 3077 trio of galaxies.

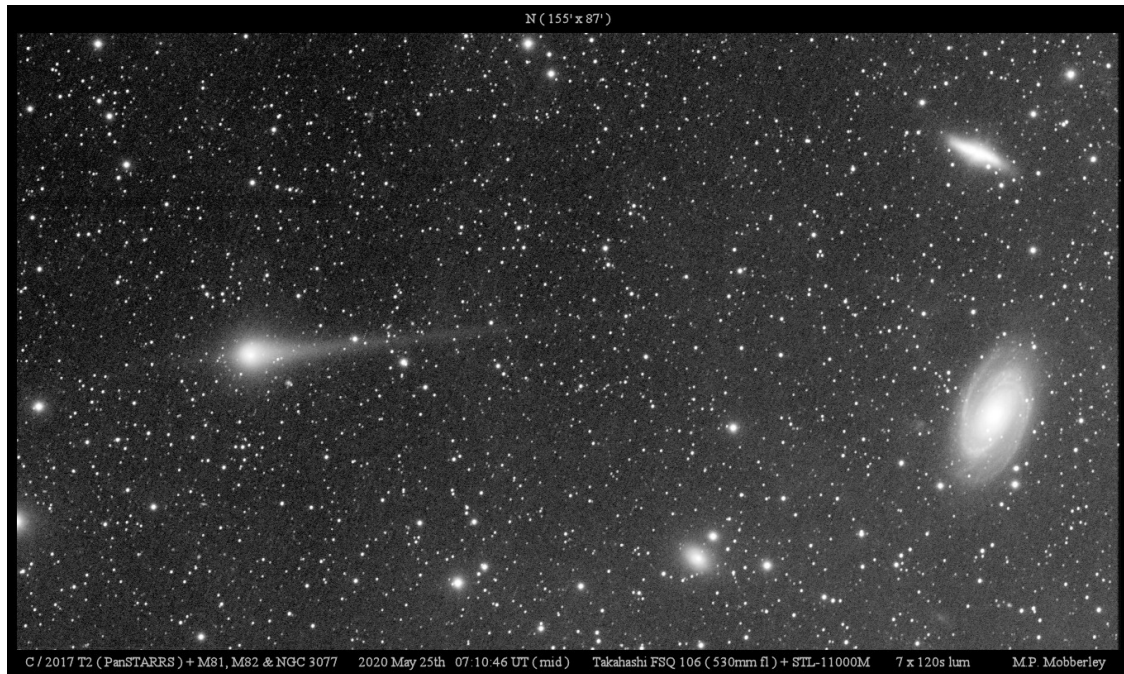
Comet PANSTARRS has been bright enough to be seen visually in small apertures since late last year. We are now a month passed its May 4th perihelion at 1.62 au. During May, visual observations by Michel Deconinck, J. J. Gonzalez, and Carl Hergenrother placed it mainly between magnitude 8.2 and 8.7. This month the comet starts moving south through Ursa Major (June 1-22) and Canes Venatici (22-30). As a result, southern hemisphere observers will be able to spot it towards the end of the month. Now passed perihelion, the comet should begin to fade to around magnitude 9.0 by month's end.

C/2017 T2 (PANSTARRS)

T = 2020-May-04 q = 1.62 au Max El
Long-Period comet - dynamically new (deg)

Date	Mag	R.A.	Decl.	r	d	Elong	Const	40N	40S
2020-06-01	8.4	10 54	+64 52	1.656	1.661	71	UMa	54	0
2020-06-06	8.4	11 17	+61 18	1.672	1.667	72	UMa	55	0
2020-06-11	8.5	11 36	+57 31	1.691	1.680	73	UMa	55	0
2020-06-16	8.6	11 52	+53 36	1.711	1.698	73	UMa	55	0
2020-06-21	8.7	12 06	+49 37	1.735	1.724	73	UMa	53	1
2020-06-26	8.8	12 19	+45 37	1.760	1.756	73	CVn	52	4
2020-07-01	8.9	12 31	+41 39	1.787	1.795	73	CVn	49	8
2020-07-06	9.0	12 41	+37 44	1.816	1.841	72	CVn	47	12

Comet Magnitude Parameters --- H = 5.1, 2.5n = 10.0



CCD image of C/2017 T2 (PANSTARRS) and galaxies M81, M82, and NGC 3077
by Martin Mobberley on 2020 May 25

C/2019 Y4 (ATLAS) – We probably all know the story about C/2019 Y4 (ATLAS). How over the course of a few weeks, Y4 went from just another faint NEO survey discovery, to the next ‘Comet of the Century’, to the latest cometary disappointment as it fell apart before our eyes.

After peaking around magnitude 8 in late March, the comet lost condensation and started a slow fade. By the middle of May visual reports by J. J. Gonzalez and Carl Hergenrother placed the comet between magnitude 8.2 and 8.8. In 30x125 binoculars the comet appeared as a diffuse elongated bar with dimensions of 3' x 8'.

Unfortunately, a small solar elongation has kept the comet invisible to Earth bound observers. This will continue to be the case till mid-June when southern hemisphere observers with a clear morning horizon may be able spot what’s left of Y4 as it moves through Taurus (June 1-14) and Orion (14-30). The comet will never get more than a few degrees above the eastern horizon before the start of astronomical twilight in June so it will remain a difficult observation.

The big question... is there anything left of Y4? The answer is yes as observations taken by H1 imager on the STEREO-A spacecraft show that the comet, or what remains of it, are still visible. The image below was taken on May 29 at 06:49 UTC shows the remains of Y4. The Sun is located a little below due left, so the elongation of the comet is along its orbit rather than away from the Sun. The total extent of the elongation is about 0.5 degrees. The comet’s appearance in the STEREO H11 data suggests that something may still be visible to Earth bound observers later this month.



C/2019 Y4 (ATLAS)

T = 2020-May-31 $q = 0.25$ au

Long-Period comet - dynamically old - disintegrating

Date	Mag	R.A.	Decl.	r	d	Elong	Const	Max El	
								40N	40S
2020-06-01	???	03 41	+17 59	0.255	0.895	13	Tau	0	0
2020-06-06	???	04 02	+10 34	0.322	1.054	17	Tau	0	0
2020-06-11	???	04 27	+07 07	0.434	1.212	20	Tau	0	2
2020-06-16	???	04 49	+05 25	0.554	1.355	21	Ori	0	3
2020-06-21	???	05 08	+04 27	0.673	1.485	22	Ori	0	4
2020-06-26	???	05 25	+03 49	0.787	1.605	23	Ori	0	5
2020-07-01	???	05 40	+03 21	0.898	1.715	24	Ori	0	6
2020-07-06	???	05 53	+02 57	1.004	1.817	25	Ori	0	8

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

C/2020 F8 (SWAN) – After C/2019 Y4 (ATLAS) was anointed the next Great Comet and then fell apart, C/2020 F8 (SWAN) proceeded to take the mantle of the “Best Comet in Years”. Unfortunately, SWAN was little better than ATLAS and also couldn’t make it to perihelion intact.

Comet SWAN peaked around magnitude 5 in early May after a ~1.5 magnitude outburst. By mid-May it settled back down to magnitude 5.5-6.0 and became visible from the northern hemisphere. Rather than brighten as it moved towards a May 27 perihelion at 0.43 au, the comet started a slow fade. By the end of the month, CCD images showed the telltale sign of a disintegrating comet. The last observations sent to the Minor Planet Center were made on May 22 and to COBS on May 29.

SWAN will be poorly placed for observing in June, invisible from the southern hemisphere and only visible at very low elevations in the evening sky for northern observers during the first week of June. After that it will be too faint and close to the Sun for all observers. It is possible that there will be no observations of C/2020 F8 (SWAN) made this month if its fading continues.

C/2020 F8 (SWAN)

T = 2020-May-27 $q = 0.43$ au

Max El

Long-Period comet

(deg)

Date	Mag	R.A.	Decl.	r	d	Elong	Const	40N	40S
2020-06-01	???	05 08	+45 31	0.446	1.080	24	Aur	6	0
2020-06-06	???	05 31	+43 12	0.495	1.264	21	Aur	4	0
2020-06-11	???	05 46	+40 31	0.566	1.430	18	Aur	0	0
2020-06-16	???	05 57	+37 54	0.650	1.575	15	Aur	0	0
2020-06-21	???	06 04	+35 29	0.740	1.702	12	Aur	0	0
2020-06-26	???	06 11	+33 17	0.832	1.813	10	Aur	0	0
2020-07-01	???	06 16	+31 17	0.924	1.910	9	Aur	0	0
2020-07-06	???	06 21	+29 26	1.016	1.994	11	Aur	0	0

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



C/2020 F8 (NEOWISE) near the height of its glory.
 CCD image taken by Martin Mobberley on 2020 May 5.

C/2019 Y1 (ATLAS) – The other *C/2019 Y* (ATLAS) comet peaked around magnitude 7.5 in mid-April after a 1 magnitude outburst. Now 2.5 months after its March 15 perihelion at 0.83 au, *C/2019 Y1* is rapidly fading. On May 27, J. J. Gonzalez made a visual magnitude estimate at 9.8 while Carl Hergenrother made a CCD measurement of magnitude 11.6 on the same date. Barring another outburst, *Y1* should fade to 13th magnitude this month as it moves through Ursa Major (1-23) and Coma Berenices (23-30).

C/2019 Y1 is the fourth observed member of a family of comets including *C/1988 A1* (Liller), *C/1996 Q1* (Tabur) and *C/2005 F3* (SWAN).

C/2019 Y1 (ATLAS)

T = 2020-Mar-15 $q = 0.83$ au

Max El

Long-Period comet - dynamically old

(deg)

Date	Mag	R.A.	Decl.	r	d	Elong	Const	40N	40S
2020-06-01	11.1	11 30	+48 10	1.585	1.364	82	UMa	63	2
2020-06-06	11.5	11 38	+42 52	1.652	1.453	81	UMa	60	7
2020-06-11	11.9	11 46	+38 06	1.718	1.550	81	UMa	55	12
2020-06-16	12.3	11 52	+33 49	1.784	1.655	79	UMa	51	16
2020-06-21	12.8	11 58	+29 59	1.850	1.766	78	UMa	46	20
2020-06-26	13.1	12 04	+26 31	1.916	1.881	76	Com	42	23
2020-07-01	13.5	12 09	+23 24	1.981	2.000	74	Com	37	26
2020-07-06	13.9	12 14	+20 34	2.047	2.122	71	Com	33	28

Comet Magnitude Parameters --- $H = 7.0$, $2.5n = 16.9$

Fainter Comets of Interest (fainter than magnitude 10.0)

58P/Jackson-Neujmin - 58P/Jackson-Neujmin was discovered at 12th magnitude in September 1936 by Cyril Jackson (Union Observatory, South Africa, 3 comet discoveries) and Grigory Neujmin (Simeis Observatory, Crimea, 6 comet discoveries). Both observers were conducting independent photographic asteroid surveys.

This year, 58P arrives at perihelion on 2020 May 27 at 1.38 au. 2020 marks 58P's 6th observed return (1936, 1970, 1978, 1987, 1995, and 2020). It was not seen at returns in 1945, 1953, and 1962 and at its most recent returns in 2004 and 2012. 1995 was its most recent good return when the comet passed within 0.43 au of Earth and peaked around magnitude 10.0. The comet was very poorly placed for observation in 2012. While not well placed in 2004, it is surprising that it was not seen at that return.

While no observations were submitted to the ALPO in May, submissions to the COBS site still show the comet between magnitude 10.0 to 10.5 as June starts. It remains mainly a southern object as it moves through Pisces (June 1-2), Cetus (2-14), Aries (14-26), and Taurus (26-30) in the morning sky.

58P/Jackson-Neujmin

T = 2020-May-27 $q = 1.38$ au

Max El

Jupiter-family comet

(deg)

Date	Mag	R.A.	Decl.	r	d	Elong	Const	40N	40S
2020-06-01	10.5	02 00	+08 19	1.379	1.991	40	Psc	0	19
2020-06-06	10.5	02 17	+09 12	1.382	1.984	40	Cet	0	19
2020-06-11	10.5	02 33	+09 59	1.388	1.979	41	Cet	0	20
2020-06-16	10.6	02 50	+10 42	1.397	1.975	42	Ari	0	20
2020-06-21	10.7	03 06	+11 20	1.408	1.972	42	Ari	0	20
2020-06-26	10.8	03 22	+11 52	1.421	1.971	43	Ari	1	20
2020-07-01	10.9	03 38	+12 19	1.437	1.971	44	Tau	3	21
2020-07-06	11.0	03 54	+12 41	1.455	1.971	45	Tau	5	21

Comet Magnitude Parameters --- $H = 5.5$, $2.5n = 25.0$

88P/Howell – Short-period comet 88P/Howell is making its 9th observed return. 88P was discovered on photographic plates taken with the 0.46-m Palomar Schmidt in August 1981 by then Caltech student, and currently my fellow University of Arizona OSIRIS-REx team member, Ellen Howell. In addition to being found in pre-discovery observations from 1955, 88P has been observed at every return since 1981. The comet’s perihelion distance has gradually fallen from 1.92 au in 1955, to 1.62 au in 1981, to 1.41 au in 1993 to its current 1.35 au. As a result, comet Howell now often peaks brighter than 10th magnitude. Its brightest return was in 2009 when it peaked at 8th magnitude. This year it comes to perihelion on September 28 and should again peak around 8-9th magnitude.

During May, Chris Wyatt spotted comet Howell at magnitude 13.6 on May 10. This month, 88P will brighten from around magnitude 12.0 to 10.4 bringing it within range of large aperture visual observers. Its location in Virgo near the celestial equator makes it a good target for both hemispheres in the evening sky.

88P/Howell
T = 2020-Sep-28 q = 1.35 au Max El
Jupiter-family comet (deg)

Date	Mag	R.A.	Decl.	r	d	Elong	Const	40N	40S
2020-06-01	12.0	12 39	-01 46	1.832	1.112	118	Vir	44	52
2020-06-06	11.8	12 39	-02 09	1.800	1.126	114	Vir	42	52
2020-06-11	11.6	12 41	-02 39	1.769	1.140	110	Vir	39	53
2020-06-16	11.3	12 43	-03 14	1.738	1.155	106	Vir	35	53
2020-06-21	11.1	12 46	-03 55	1.707	1.171	102	Vir	32	54
2020-06-26	10.9	12 51	-04 41	1.677	1.186	98	Vir	29	55
2020-07-01	10.7	12 56	-05 32	1.648	1.201	95	Vir	26	56
2020-07-06	10.4	13 02	-06 27	1.620	1.216	92	Vir	24	56

Comet Magnitude Parameters --- H = 3.1, 2.5n = 33

249P/LINEAR – 249P/LINEAR is making its 4th observed return after returns in 2006, 2011, and 2015. It was discovered October 2006 by the LINEAR (Lincoln Laboratory Near-Earth Asteroid Research) project with a 1-m telescope based outside of Socorro, New Mexico.

This comet is odd in a few different ways. For starters, its nucleus is slightly blue and resembles a B-type asteroid rather than the highly red, D-type, nuclei of most Jupiter-family comets. Its orbit and nucleus color suggest that it may more closely related to active asteroid in the Main belt rather than comets from the outer Solar System. For its second odd characteristic, 249P is only active when very close to the Sun. In fact, the comet didn’t show any sign of activity until late in May when it was already within 1 au of the Sun. As May ended, the comet finally started to brighten from a quiescent 18th magnitude to ~16th magnitude.

If 249P achieves the same level of activity seen in past returns, it may brighten to 9th magnitude around the time of its June 26 perihelion at 0.50 au. This month 249P is visible from both hemispheres at the beginning of the month before passing too close to the Sun for Earth based observing. The comet will become observable again early next month from the northern hemisphere. This month 249P will be moving through Gemini (1-18), Taurus (18-21), Auriga (21-30).

249P/LINEAR

T = 2020-Jun-26 $q = 0.50$ au

Max El

Jupiter-family comet? / Active Asteroid?

(deg)

Date	Mag	R.A.	Decl.	r	d	Elong	Const	40N	40S
2020-06-01	15.4	07 51	+17 44	0.774	0.440	45	Gem	10	18
2020-06-06	13.9	07 25	+21 02	0.703	0.430	34	Gem	3	9
2020-06-11	12.5	06 53	+24 17	0.636	0.431	21	Gem	0	0
2020-06-16	11.1	06 16	+26 57	0.577	0.449	9	Gem	0	0
2020-06-21	10.0	05 40	+28 31	0.531	0.492	6	Tau	0	0
2020-06-26	9.5	05 13	+28 58	0.503	0.560	16	Aur	0	0
2020-07-01	9.7	04 57	+28 47	0.498	0.649	23	Aur	1	0
2020-07-06	10.3	04 53	+28 22	0.517	0.749	29	Tau	5	0

Comet Magnitude Parameters --- Pre-perihelion: $H = 21.0$, $2.5n = 34.2$

Post-perihelion: $H = 15.5$, $2.5n = 16.0$

New Discoveries, Recoveries and Other Comets in the News

2020 KH7 – The Pan-STARRS1 telescope on Haleakala discovered this apparently inactive object on May 29 at 21st magnitude. Pre-discovery observations by the same telescope were found back to July 2019. *2020 KH7* comes to perihelion on 2021 March 30 at 3.95 au. It is a Jupiter and Saturn crossing object with an aphelion of 11.9 au and orbital period of 22.4 years. If it remains inactive, it won't get brighter than 21st magnitude.

2020 KD6 – Another asteroid found on a cometary orbit, *2020 KD6* was discovered by Pan-STARRS1 on May 17 at 22nd magnitude. Pre-discovery observations were made in April and early May. *2020 KD6* is on a 47-year period orbit and comes to perihelion on 2020 August 9 at 1.68 au. Unless there is significant cometary activity, this object may not get any brighter than 22nd magnitude.

C/2020 K7 (PANSTARRS) – Pan-STARRS1 found this comet on May 30 at 20th magnitude. While perihelion doesn't occur till 2021 October 2, it will be at a distant 5.68 au keeping *C/2020 K7* a faint object at 18th magnitude.

C/2020 K6 (Rankin) – David Rankin (University of Arizona) used the Mount Lemmon Survey's 1.5-m to discover this comet on May 26 at 20th magnitude. Perihelion occurs next year on 2021 August 24 at 6.00 au. The comet is not expected to get much brighter than 19th magnitude.

C/2020 K5 (PANSTARRS) – The Pan-STARRS team used their Pan-STARRS1 telescope on Haleakala to discover this 20th magnitude comet on May 18. Pre-discovery observations back to 2020 April 3 were found. The comet is currently at 4.3 au from the Sun. It will be much closer at 1.54 au when it reaches perihelion on 2021 June 5 when it may peak around 14-15th magnitude.

C/2020 K4 (PANSTARRS) – Another Pan-STARRS1 find, *C/2020 K4* is three months past its 2020 March 20 perihelion at 1.79 au. The comet is likely as bright as it will get at 20th magnitude.

C/2020 K3 (Leonard) – Gregory Leonard (University of Arizona) used the 0.68-m Catalina Schmidt to discover this comet on May 22 at 17th magnitude. The comet should brighten to ~16th magnitude as it approaches perihelion on 2020 June 2 at 1.58 au.

C/2020 K2 (PANSTARRS) – This high-*q* comet was at perihelion over a year ago on 2018 December 30 at 8.18 au. It has been located deep in the summer Milky Way which may explain why it was discovered so long after perihelion. The comet was first seen by the Pan-STARRS1 telescope on May 21 at 20th magnitude. Now well passed perihelion, it is unlikely to get brighter.

C/2020 K1 (PANSTARRS) – In contrast to *C/2020 K2*, *C/2020 K1* was discovered well before perihelion. The Pan-STARRS2 telescope found *K1* on May 17 at 20th magnitude roughly three years before its 2023 May 8 perihelion at 3.08 au. The comet is currently close to 10 au from the Sun and may brighten to 12-13th magnitude at perihelion.

C/2020 J1 (SONEAR) – The Southern Observatory for Near Earth Research (SONEAR) used a Celestron 11” RASA to discover their second comet of the year [after *P/2020 G1 (Pimental)*]. *C/2020 J1* was a southern object at -48 declination and 16th magnitude at discovery. It may brighten to 13-14th magnitude near its 2021 April 15 perihelion at 3.26 au.

A/2019 H9 – So far, no cometary activity has been recognized on *A/2019 H9*, which was found on April 28th by Pan-STARRS1. Its orbit is very cometary with a perihelion back on 2019 December 21 at 2.58 au, a large eccentricity of 0.995 and inclination of 138 degrees. The object is not likely to become brighter than its brightness of 21st magnitude.

C/2020 H8 (PANSTARRS) – This comet was discovered near its peak brightness (20th magnitude) on April 30 with the Pan-STARRS2 telescope. The comet passes perihelion on 2020 June 6 at 4.68 au.

C/2020 H7 (Lemmon) – Greg Leonard reported the discovery of an apparently asteroidal object on April 29 at 20th magnitude. Rapid follow-up observations found the object to be a comet. Perihelion occurs on 2020 June 2 at 4.42 au resulting in an object that is unlikely to get brighter.

C/2020 H6 (ATLAS) – James Robinson (Queens University, Belfast) reported the discovery of an 18th magnitude object in images taken with the Asteroid Terrestrial-Impact Last Alert System (ATLAS) 0.5-m telescope on Haleakala. *C/2020 H6* reaches perihelion on 2021 October 1 at 4.70 au when will be around 17th magnitude.

C/2020 H5 (Robinson) – James Robinson (Queens University, Belfast) also found this comet in ATLAS data taken on April 22 at 19th magnitude. The comet has a very large perihelion distance at 9.41 au (*T* = 2020 October 20). It is likely as bright as it’ll get.

C/2020 H4 (Leonard) – This is one of three comets Greg Leonard discovered in April and May of this year. *C/2020 H4* was a faint 19th magnitude object but should brighten to 14th magnitude at its 2020 August 29 perihelion at 0.93 au. Unfortunately, it will be 1.6 au from Earth at perihelion so it should remain a faint object for visual observers. But we should keep an eye on this one as it appears to be dynamically old and may become brighter than predicted. The comet is currently a bit of a mystery in that there have been no observations made of it since May 3.

C/2019 K6 (PANSTARRS) – Discovered by the Pan-STARRS2 telescope as an inactive object back on 2019 May 7 at 21st magnitude, C/2019 K6 (PANSTARRS) was recognized as a comet by multiple observers as a comet starting in March of this year. The comet reaches perihelion this month (May 20) at 3.93 au. It is a dynamically old long-period comet and is currently at its peak brightness (18th magnitude).

P/2019 LM4 (Palomar) – This 16th magnitude object was reported as a new object on May 11 by the Chinese Near Earth Object Survey in images taken with the 1.04-m f/1.8 Schmidt at Purple Mountain Observatory. The Minor Planet Center linked the comet with a previously designated asteroid, 2019 LM4, discovered on 2019 June 4 by the Palomar Zwicky Transient Facility which uses the Oschin 1.2-m Schmidt. P/2019 LM4 is a short period comet with an orbital period of 13.7 years and perihelion on 2019 June 18 at 2.37 au. In 2019 the comet was 18th magnitude. According to CBET 4775, the comet is currently about 2 magnitudes brighter than expected based on the 2019 brightness, so a recent outburst is suspected.

P/2019 LD2 (ATLAS) – This object was in the news over the past week or so. With an orbit resembling a Jupiter Trojan, astronomers thought they had discovered the first active asteroid among the Trojan population. Thanks to the work of amateur astronomer Sam Deen, the reality is the comet is a regular Jupiter family comet that recently experienced a close encounter with Jupiter which placed it on an orbit that superficially resembles a Jupiter Trojan asteroid.

P/2019 LD2 was discovered by the ATLAS survey on 2019 June 10 with pre-discovery observations going back to May 2018. Within months of discovery, cometary activity was detected leading to a rather extensive professional monitoring campaign including the Hubble and Spitzer space telescopes.

As reported on CBET 4780, P/2019 LD2 is currently on a 12.2-year period orbit with perihelion on 2020 April 10 at 4.58 au. Prior to a close approach of Jupiter on 2017 February 17 at 0.09 au, it was on a 25-year period orbit with perihelion at 5.55 au. The comet is currently near its maximum brightness of 18th magnitude.

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 Comet Section!

Stay safe and enjoy the sky!

- Carl Hergenrother (ALPO Comet Section Coordinator)

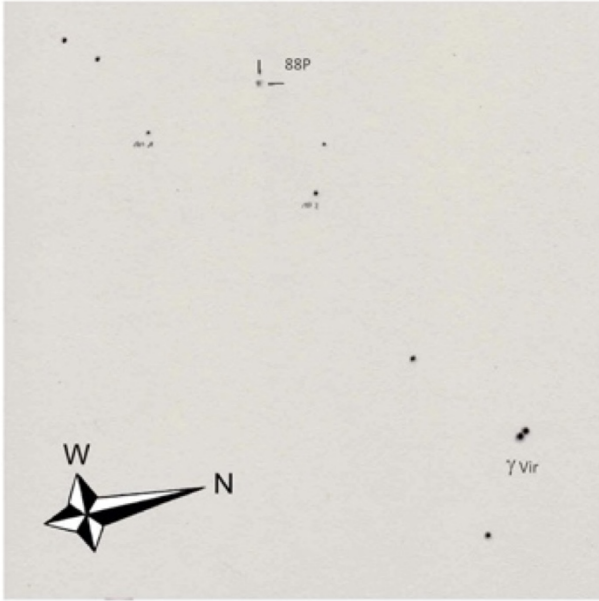
Recent Magnitude Measurements Contributed to the ALPO Comet Section

Comet Des	YYYY	MM	DD.DD	Mag	SC	APER	FL	POW	COMA		TAIL		ICQ	CODE	Observer Name
									Dia	DC	LENG	PA			
2020F8	2020	05	26.12	S	6.8	TK	20.3T10	77	4	3	0.2	350	ICQ XX	GON05	J. J. Gonzalez Suarez
2020F8	2020	05	22.08	B	7.0	TK	12.6B 5	25	> 6	1/			ICQ XX	DECa	Michel Deconinck
2020F8	2020	05	20.47	\$\$	6.2	TK	12.5B	30	5	2			ICQ xx	HER02	Carl Hergenrother
2020F8	2020	05	20.10	B	6.3	TK	12.6B 5	25	10	3			ICQ XX	DECa	Michel Deconinck
2020F8	2020	05	19.46	\$\$	6.0	TK	12.5B	30	5	3			ICQ xx	HER02	Carl Hergenrother
2020F8	2020	05	18.46	\$\$	5.9	TK	12.5B	30	4	3			ICQ xx	HER02	Carl Hergenrother
2020F8	2020	05	18.13	S	5.7	TK	10.0B	25	6	5	0.2	270	ICQ XX	GON05	J. J. Gonzalez Suarez
2020F8	2020	05	18.11	S	5.8	TK	20.3T10	77	5	5	0.2	270	ICQ XX	GON05	J. J. Gonzalez Suarez
2020F8	2020	05	17.46	\$\$	5.8	TK	12.5B	30	4	3			ICQ xx	HER02	Carl Hergenrother
2020F8	2020	05	14.46	\$M	5.6:TK	12.5B	30	5	6	7	m220		ICQ xx	HER02	Carl Hergenrother
2020F8	2020	05	13.46	\$M	5.7	TK	12.5B	30	4	6	6	m220	ICQ xx	HER02	Carl Hergenrother
2020F8	2020	05	12.47	\$\$	5.7	TK	5.0B	10	4	5			ICQ xx	HER02	Carl Hergenrother
2020F8	2020	05	12.47	\$M	5.7	TK	12.5B	30	3	6	4	m220	ICQ xx	HER02	Carl Hergenrother
2020F8	2020	05	12.36	S	5.8	TK	15.0L 5	42	8	6			ICQ XX	SOU01	Willian Souza
2020F8	2020	05	12.35	S	5.7	TK	7.0B	15	8	6			ICQ XX	SOU01	Willian Souza
2020F8	2020	05	11.79	&M	5.7	TK	5.0R	10	8.5	6			ICQ XX	WYA	Christopher Wyatt
2020F8	2020	05	11.36	S	5.8	TK	15.0L 5	42	8	6			ICQ XX	SOU01	Willian Souza
2020F8	2020	05	11.35	S	5.8	TK	7.0B	15	8	6			ICQ XX	SOU01	Willian Souza
2020F8	2020	05	10.36	S	5.8	TK	7.0B	15	8	6			ICQ XX	SOU01	Willian Souza
2020F8	2020	05	10.35	M	5.8	TK	5.0B	10	8	6			ICQ XX	SOU01	Willian Souza
2020F8	2020	05	09.35	M	5.6	TK	5.0B	7	8	6			ICQ XX	SOU01	Willian Souza
2020F8	2020	05	09.34	S	5.7	TK	7.0B	15	8	6			ICQ XX	SOU01	Willian Souza
2020F8	2020	05	06.79	xM	5.5	TK	5.0R	10	5	6	40.0m235		ICQ XX	WYA	Christopher Wyatt
2020F8	2020	05	05.48	\$\$	5.6:TK	12.5B	30	4	4				ICQ xx	HER02	Carl Hergenrother
2020F8	2020	05	05.35	M	5.2	TK	4.2B	8	10	6			ICQ XX	SOU01	Willian Souza
2020F8	2020	05	05.34	S	5.3	TK	7.0B	15	10	6			ICQ XX	SOU01	Willian Souza
2020F8	2020	05	04.79	xM	5.7	TK	5.0R	10	8.5	5/	1.0	233	ICQ XX	WYA	Christopher Wyatt
2020F8	2020	05	04.35	M	5.0	TK	4.2B	8	10	7			ICQ XX	SOU01	Willian Souza
2020F8	2020	05	04.34	S	5.1	TK	7.0B	15	10	7			ICQ XX	SOU01	Willian Souza
2020F8	2020	05	04.34	S	5.1	TK	15.0L 5	29	10	6			ICQ XX	SOU01	Willian Souza
2020F8	2020	05	03.75	xM	5.6	TK	5.0R	10	9.0	7	1.8	230	ICQ XX	WYA	Christopher Wyatt
2020F8	2020	05	02.33	S	5.1	TK	7.0B	15	10	7			ICQ XX	SOU01	Willian Souza
2020F8	2020	05	01.35	M	5.1	TK	4.2B	8	10	6			ICQ XX	SOU01	Willian Souza
2020F8	2020	05	01.34	S	5.2	TK	5.0B	10	10	7			ICQ XX	SOU01	Willian Souza
2020F8	2020	05	01.32	S	5.2	TK	7.0B	15	10	7			ICQ XX	SOU01	Willian Souza
2020F8	2020	05	01.31	S	5.2	TK	15.0L 5	32	10	6			ICQ XX	SOU01	Willian Souza
2020F3	2020	05	30.35	xM	8.1	TK	7.0B	15	5.0	5/			ICQ XX	WYA	Christopher Wyatt
2020F3	2020	05	28.35	xM	8.1	TK	7.0B	15	5.6	5			ICQ XX	WYA	Christopher Wyatt
2020F3	2020	05	27.35	xM	8.4	TK	7.0B	15	6.6	6			ICQ XX	WYA	Christopher Wyatt
2020F3	2020	05	17.37	xM	9.2	TK	25.0L 5	40	5.5	5/			ICQ XX	WYA	Christopher Wyatt
2020F3	2020	05	16.35	xM	9.1	TK	25.0L 5	40	4.2	5/			ICQ XX	WYA	Christopher Wyatt
2020F3	2020	05	14.37	Z	9.6	U4	12.7R 6a180	7.0					ICQ xx	HER02	Carl Hergenrother
2020F3	2020	05	14.37	k	12.1	U4	12.7R 6a240	2.3					ICQ xx	HER02	Carl Hergenrother
2020F3	2020	05	14.36	xM	9.7	TK	25.0L 5	40	5.0	3/			ICQ XX	WYA	Christopher Wyatt
2020F3	2020	05	11.38	xM	9.8	TK	25.0L 5	40	5.2	4			ICQ XX	WYA	Christopher Wyatt
2020F3	2020	05	10.37	xM	9.9	TK	25.0L 5	40	4.6	4			ICQ XX	WYA	Christopher Wyatt
2019Y4	2020	05	18.14	S	8.2	TK	20.3T10	77	4	1/			ICQ XX	GON05	J. J. Gonzalez Suarez
2019Y4	2020	05	13.15	S	8.8	TK	12.5B	30	3	1	5.5	m060	ICQ xx	HER02	Carl Hergenrother
2019Y4	2020	05	12.15	S	8.8	TK	12.5B	30	3	1	6.5	m060	ICQ xx	HER02	Carl Hergenrother
2019Y1	2020	05	27.94	S	9.8	TK	20.3T10	77	4	2/			ICQ XX	GON05	J. J. Gonzalez Suarez
2019Y1	2020	05	26.02	S	9.8	TK	20.3T10	77	5	2/			ICQ XX	GON05	J. J. Gonzalez Suarez
2019Y1	2020	05	18.09	S	9.5	TK	20.3T10	77	5	3			ICQ XX	GON05	J. J. Gonzalez Suarez
2019Y1	2020	05	12.15	S	9.2	TK	12.5B	30	3	3			ICQ xx	HER02	Carl Hergenrother
2019Y1	2020	05	03.12	!B	8.0	TK	12.6B 5	40	1.5	3	>	4.5m 45	ICQ XX	DECa	Michel Deconinck
2019U6	2020	05	30.35	xM	7.2	TK	7.0B	15	6.5	6			ICQ XX	WYA	Christopher Wyatt
2019U6	2020	05	28.35	xM	7.4	TK	7.0B	15	6.3	6			ICQ XX	WYA	Christopher Wyatt
2019U6	2020	05	27.35	xM	7.2	TK	7.0B	15	5.0	6			ICQ XX	WYA	Christopher Wyatt
2019U6	2020	05	27.93	S	6.8	TK	5.0B	10	5	5			ICQ XX	SOU01	Willian Souza
2019U6	2020	05	17.36	xM	7.8	TK	5.0R	10	8.6	6			ICQ XX	WYA	Christopher Wyatt
2019U6	2020	05	16.35	xM	7.9	TK	5.0R	10	5.2	6			ICQ XX	WYA	Christopher Wyatt
2019U6	2020	05	14.35	xM	8.0	TK	5.0R	10	6.4	6			ICQ XX	WYA	Christopher Wyatt
2019U6	2020	05	11.36	xM	8.2	TK	5.0R	10	6.0	6			ICQ XX	WYA	Christopher Wyatt
2019U6	2020	05	10.36	xM	8.1	TK	7.0B	11	7.3	6			ICQ XX	WYA	Christopher Wyatt
2017T2	2020	05	26.15	S	8.7	TK	12.5B	30	5	2			ICQ xx	HER02	Carl Hergenrother
2017T2	2020	05	26.00	S	8.6	TK	20.3T10	77	5	5	0.2	280	ICQ XX	GON05	J. J. Gonzalez Suarez
2017T2	2020	05	22.09	I	8.2	TK	12.6B 5	25	5	4	>	7.0m 75	ICQ XX	DECa	Michel Deconinck
2017T2	2020	05	18.46	S	8.4	TK	12.5B	30	4	3			ICQ xx	HER02	Carl Hergenrother
2017T2	2020	05	18.07	S	8.7	TK	20.3T10	77	5	4	0.2	250	ICQ XX	GON05	J. J. Gonzalez Suarez
2017T2	2020	05	17.45	S	8.6	TK	12.5B	30	5	4			ICQ xx	HER02	Carl Hergenrother
2017T2	2020	05	16.16	S	8.6	TK	12.5B	30	5	5			ICQ xx	HER02	Carl Hergenrother
2017T2	2020	05	13.16	M	8.3	TK	12.5B	30	5	5			ICQ xx	HER02	Carl Hergenrother
2017T2	2020	05	12.15	M	8.5	TK	12.5B	30	3	5			ICQ xx	HER02	Carl Hergenrother

2017T2	2020 05 03.14	!B 9.4: -	12.6B 5 40 > 5	2/		ICQ XX DECaa	Michel Deconinck
249	2020 05 16.36	V 18.3 U4	51.0Y 7a180		1.0m105	ICQ xx HER02	Carl Hergenrother
249	2020 05 16.35	k 18.2 U4	51.0Y 7a180			ICQ xx HER02	Carl Hergenrother
246	2020 05 17.39	xM 14.6 AQ	25.0L 5 179	0.5 5/		ICQ XX WYA	Christopher Wyatt
210	2020 05 17.35	&M 13.6 AQ	25.0L 5 125	0.9 2/		ICQ XX WYA	Christopher Wyatt
210	2020 05 15.87	B 12.6 TK	25.0C15 288 < 0.6			ICQ XX DECaa	Michel Deconinck
210	2020 05 10.35	xS 12.9 AQ	25.0L 5 125	1.1 3		ICQ XX WYA	Christopher Wyatt
88	2020 05 10.39	xS 13.6 AQ	25.0L 5 125	0.8 3		ICQ XX WYA	Christopher Wyatt

Recent Select Images and Sketches Contributed to the ALPO Comet Section

88P/Howell



88P (Howell)
Mewlon 250CRS f10 - EP 62 & 200x

2020/05/24 - 21:10 UTC
F.O.S.: 30'

88 2020 05 24.88 B 13.1 TK 25.0C10 127 > 1

ICQ XX DECaa

Aquarellia.com

210P/Christensen



Image of 210P/Christensen on 2020-Apr-22 by Tenho Tuomi



P210 (Christensen)
Mewlon 250CRS f15 - EP 288x

2020/05/15 - 20:47 UTC
F.O.S.: 20'

210 2020 05 15.87 B 12.6 TK 25.0C15 288 < 0.6 ICQ XX DECaa

Aquarellia.com

Sketch of 210P/Christensen on 2020-May-15 by Michel Deconinck

C/2017 T2 (PANSTARRS)



C / 2017 T2 (PanSTARRS) 2020 May 20th 04:39:09 UT (mid) 0.28m f/2.2 Celestron 11 RASA + ZWO ASI071MC pro 4 x 120s M.P. Mobblerley



Comet C/2017 T2 (PanSTARRS)
 Binocular Vixen 126mm EP : 25X

2020/05/22 - 2:10 UTC
 F.O.S.: 2.5°

Magn.: +8.2 - Tail : 7' - Coma : 5' - DC : 4
<https://astro.aquarellia.com>

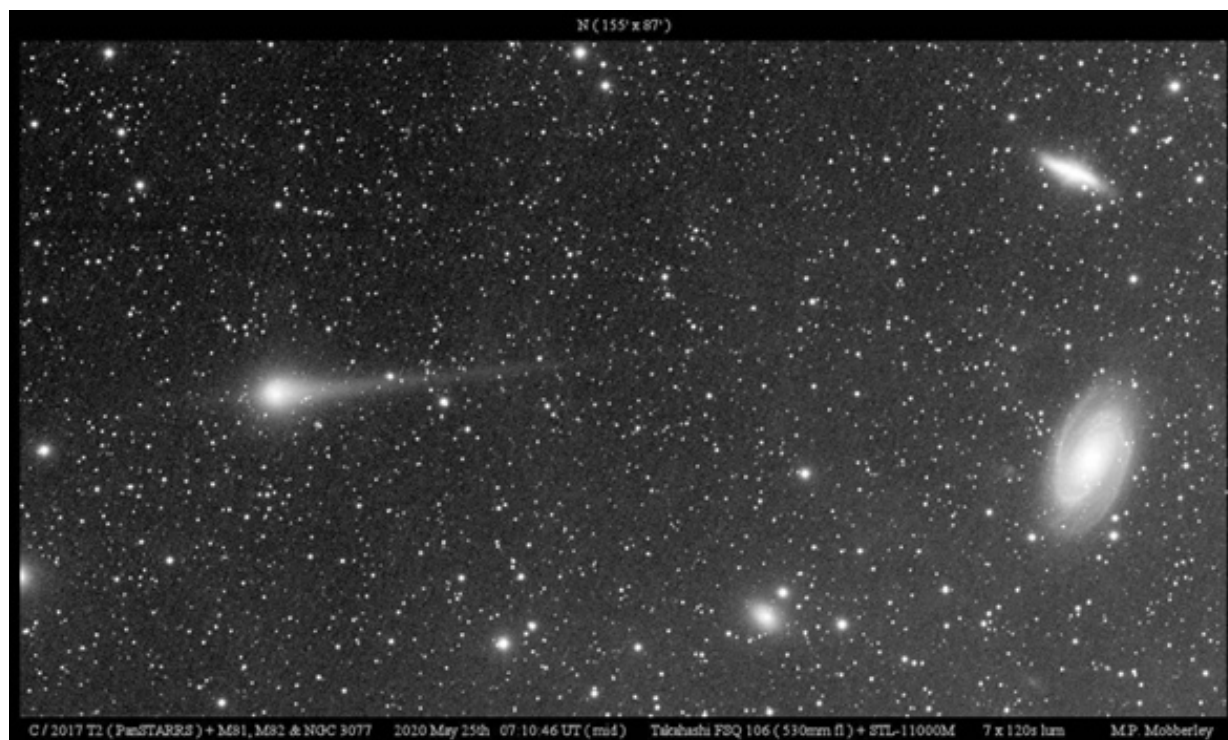
Sketch of C/2017 T2 (PANSTARRS) on 2020-May-22 by Michel Deconinck



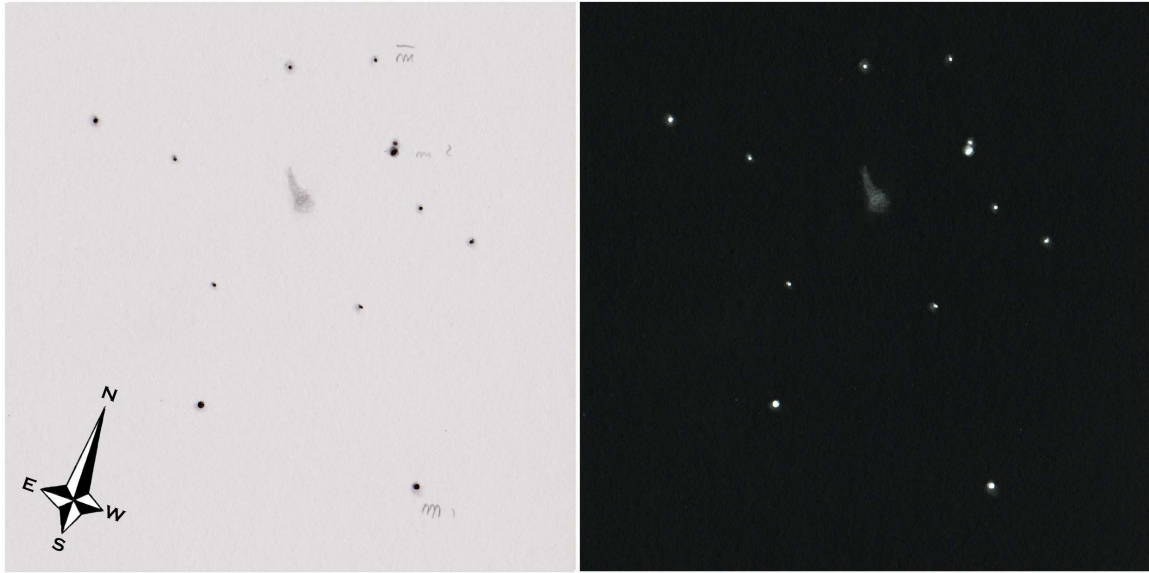
Image of C/2017 T2 (PANSTARRS) on 2020-May-24 by Chris Schur



Wide-field image of C/2017 T2 (PANSTARRS) on 2020-May-24 by Chris Schur



C/2019 Y1 (ATLAS)



Comet C/2019 Y1 (Atlas)
Binocular Vixen 2x126mm - 72x

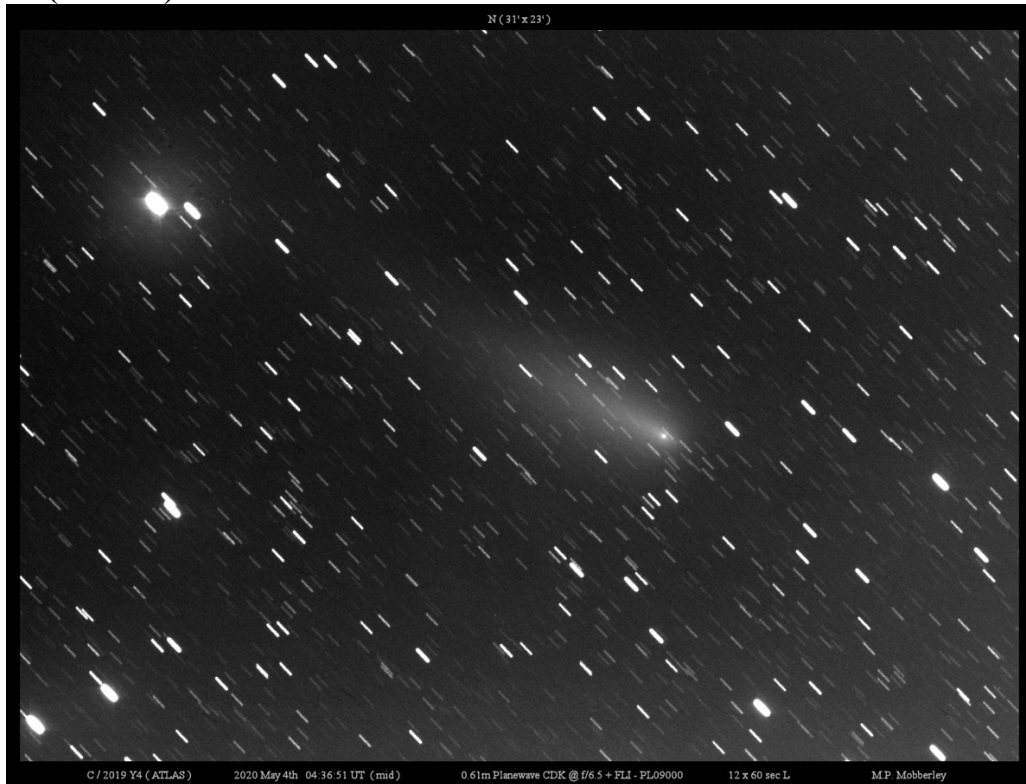
2020/05/03 - 3h00 UTC
F.O.S. : 30'

Magn.: +8.0 - Tail : 4'30" - Coma : 1'30" - DC : 3

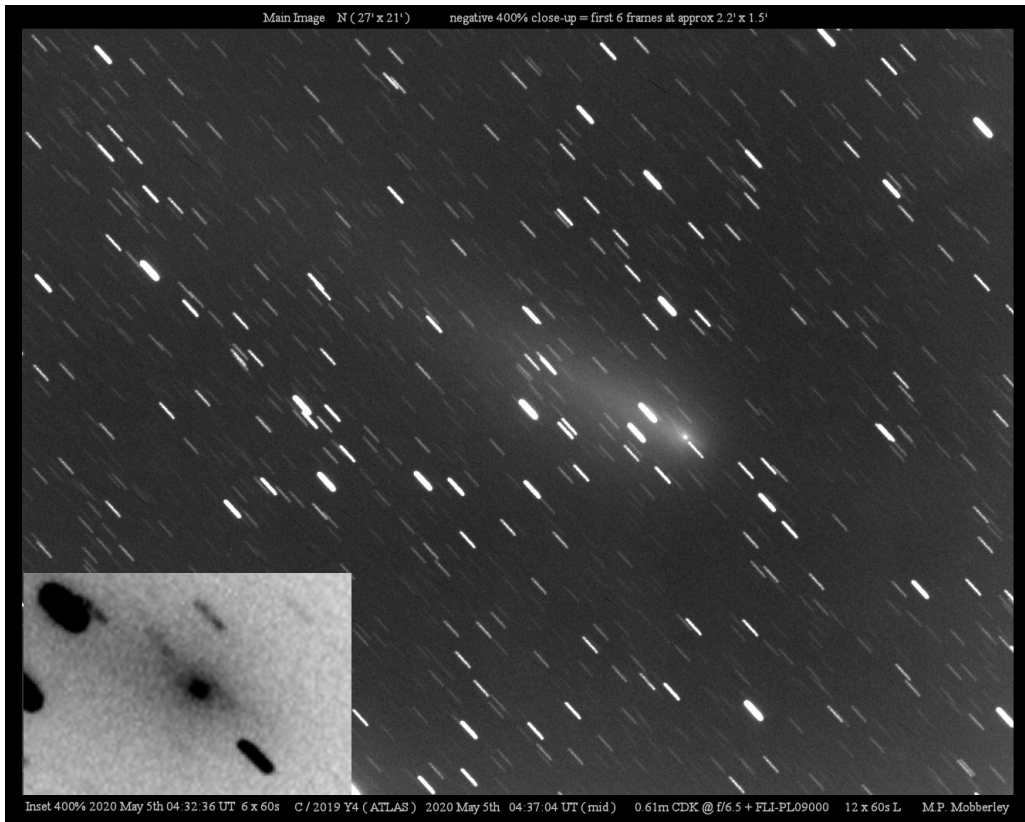
<https://astro.aquarellia.com>

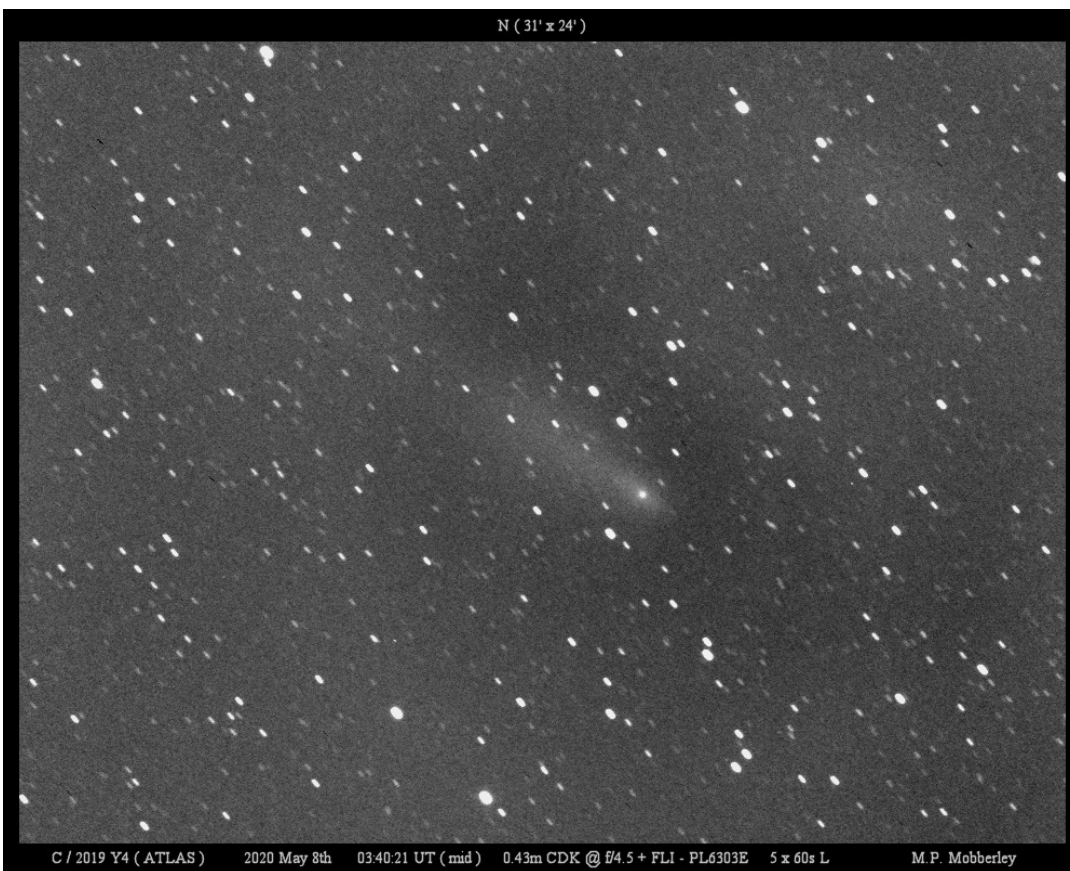
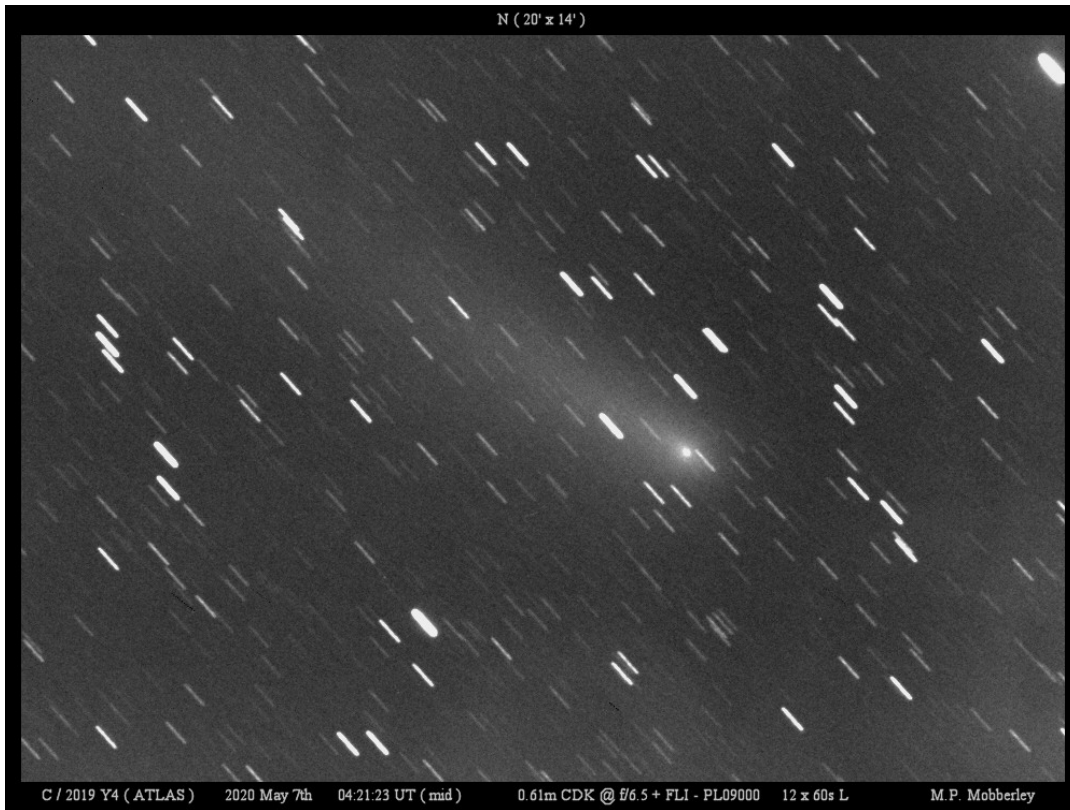
Sketch of C/2019 Y1 (ATLAS) on 2020-May-03 by Michel Deconinck

C/2019 Y4 (ATLAS)



C / 2019 Y4 (ATLAS) 2020 May 4th 04:36:51 UT (mid) 0.61m Planewave CDK @ f/6.5 + FLI - PL09000 12 x 60 sec L M.P. Moberley





C/2020 F8 (SWAN)



Cometa C/2020 F8 SWAN
Villa Serrana / Uruguay
Diego Etchevers
Sociedad Astronómica Octante (www.sao.org.uy)
Orion EQN-X2 85mm APO+Nikon D850+Ioptron CEM25EC
3 de mayo de 2020 9:02UT



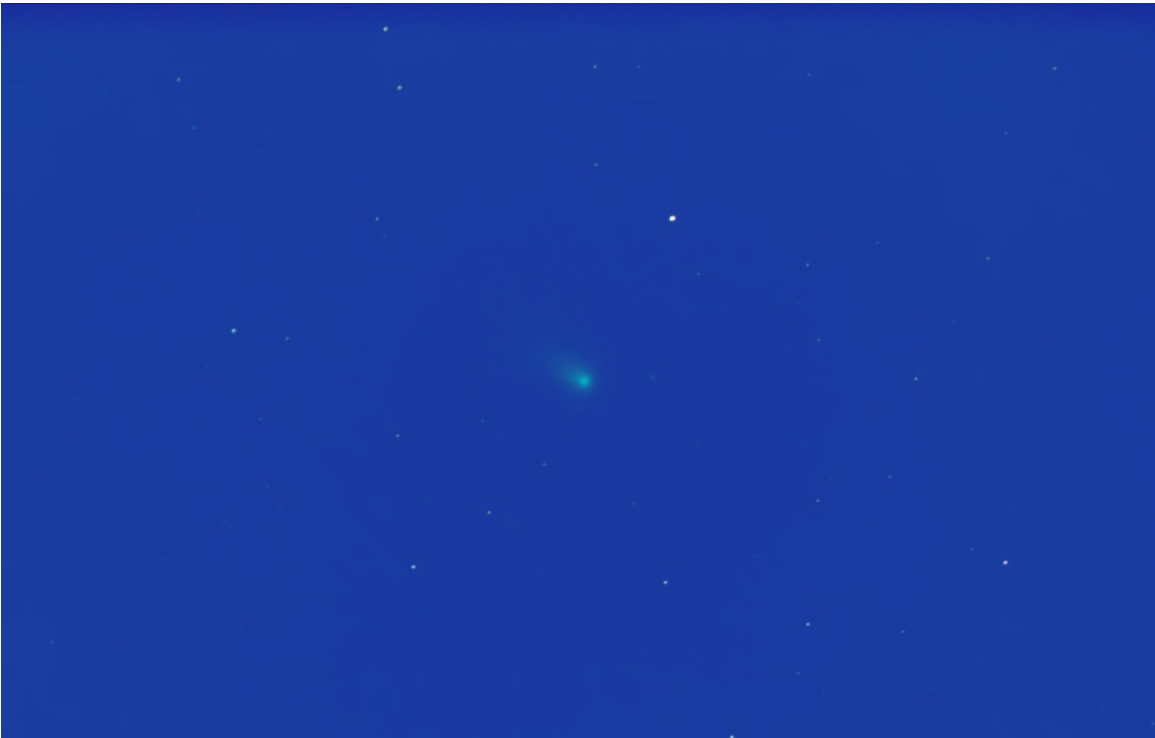
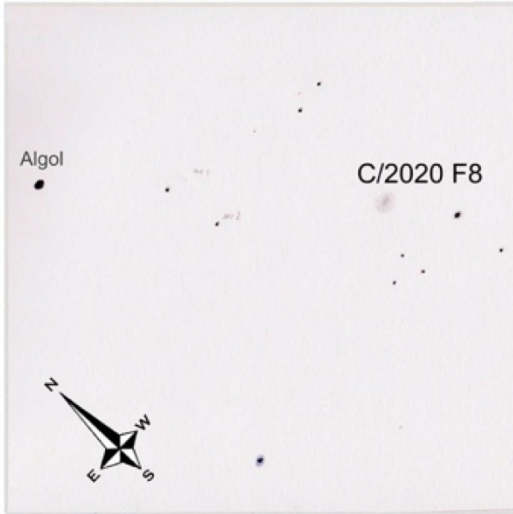


Image of C/2020 F8 (SWAN) on 2020-May-13 by Chris Schur



C/2020 F8 (SWAN)
Bino Vixen 126mm - EP's 25x

2020/05/20 2:28 UTC
F.O.S.: 2.5°

Magn.: +6.3 - Tail : N/A - Coma : 10' - DC: 3
Aquarellia.com

Sketch of C/2020 F8 (SWAN) on 2020-May-20 by Michel Deconinck



C/2020 F8 (SWAN)
Bino Vixen 126mm - EP's 25x

2020/05/22-1:56 UTC
F.O.S.: 1.5°

Magn.: +7.0 - Tail : N/A - Coma : 6' - DC: 1/
Aquarellia.com

Sketch of C/2020 F8 (SWAN) on 2020-May-22 by Michel Deconinck



Image of C/2020 F8 (SWAN) on 2020-May-23 by Tenho Tuomi



Image of C/2020 H2 (Pruyne) on 2020-May-11 by Tenho Tuomi