ALPO COMET NEWS FOR NOVEMBER 2019
By Carl Hergenrother – 2019-November-2

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 the Cloudy Nights forum at (https://www.cloudynights.com/topic/682477-alpo-comet-news-for-november-2019/). Everyone is invited to join the discussion at our Cloudy Nights forum.

November finds us in-between bright comets. C/2018 W2 (Africano) is now too faint for small aperture telescopes. C/2017 T2 (PANSTARRS) is at least a month away from becoming an easy object. Luckily it will continue to brighten over the next few months and should provide a nice target for much of the first half of 2020. CCD imagers are encouraged to keep a detector on interstellar comet 2I/Borisov which will be around 15-16th magnitude this month.

Bright Comets (magnitude < 10.0)
None.

Faint Comets (between magnitude 10.0 and 13.0)
29P/Schwassmann-Wachmann – 29P/Schwassmann-Wachmann was discovered photographically in 1927 by German astronomer Arnold Schwassmann and Arno Arthur Wachmann. The duo discovered 4 comets together, three of which were short-period comets (29P, 31P and 73P) and a long-period shared with Leslie Peltier (C/1930 D1). 29P is now an evening object two months past opposition. Chris Wyatt observed 29P on 5 nights in October between magnitude 13.7 and 14.8. Other reports to the COBS site found the comet between 12th and 14th magnitude which has been the case in recent months.

29P/Schwassmann-Wachmann
T = 2019-Mar-07 q = 5.77 au
Centaur comet - 14.8-yr orbital period

Date	Mag	R.A.	Decl.	r	d	Elong	Const	Max El (deg) 40N	40S
2019-11-01	12-14	00 31	+14 22	5.778	4.875	153	Psc	64	36
2019-11-06	12-14	00 29	+14 08	5.778	4.913	148	Psc	64	36
2019-11-11	12-14	00 28	+13 55	5.779	4.958	142	Psc	64	36
2019-11-16	12-14	00 27	+13 42	5.779	5.009	137	Psc	64	36
2019-11-21	12-14	00 26	+13 31	5.779	5.066	132	Psc	64	36
2019-11-26	12-14	00 25	+13 20	5.780	5.127	127	Psc	63	35
2019-12-01	12-14	00 25	+13 11	5.780	5.193	122	Psc	63	33
2019-12-06	12-14	00 24	+13 04	5.781	5.263	117	Psc	63	31

260P/McNaught - Robert McNaught discovered 260P on 2012 May 20 with the 0.5-m Uppsala Schmidt as part of the Siding Spring Survey in Australia. With an orbital period of ~7 years, the comet is making its 3rd observed return. During its last apparition in 2012 it peaked between magnitude 11 and 12. This year's return is similar with a slightly smaller minimum Earth-comet distance (0.56 vs 0.58 au) and smaller perihelion distance (1.42 vs 1.50 au).

The ALPO received 3 images and sketches of 260P from Martin Mobberley and Michel Deconinck and 4 magnitude estimates from J. J Gonzalez and Chris Wyatt. Magnitude estimates submitted to the COBS site have the comet between 10.7 and 12.3 during the last week of October. Most of the

estimates were around 12.0. The comet spends all of November in Andromeda at rather high northern declinations (> +47°). The comet is now fading as it moves away from the Sun and Earth.

260P/McNaught
T = 2019-Sep-09 q = 1.42 au
Short-Period comet - 6.9-year period

Date	Mag	R.A.	Decl.	r	d	Elong	Const	Max El (deg) 40N	40S
2019-11-01	12.4	02 38	+49 33	1.531	0.610	144	And	80	0
2019-11-06	12.6	02 34	+50 01	1.553	0.630	145	And	80	0
2019-11-11	12.7	02 30	+50 11	1.575	0.652	146	And	80	0
2019-11-16	12.9	02 27	+50 05	1.600	0.679	146	And	80	0
2019-11-21	13.2	02 24	+49 44	1.625	0.708	146	And	80	0
2019-11-26	13.4	02 23	+49 13	1.652	0.742	145	And	81	1
2019-12-01	13.6	02 23	+48 33	1.679	0.779	143	And	81	1
2019-12-06	13.9	02 24	+47 49	1.708	0.821	141	And	82	2

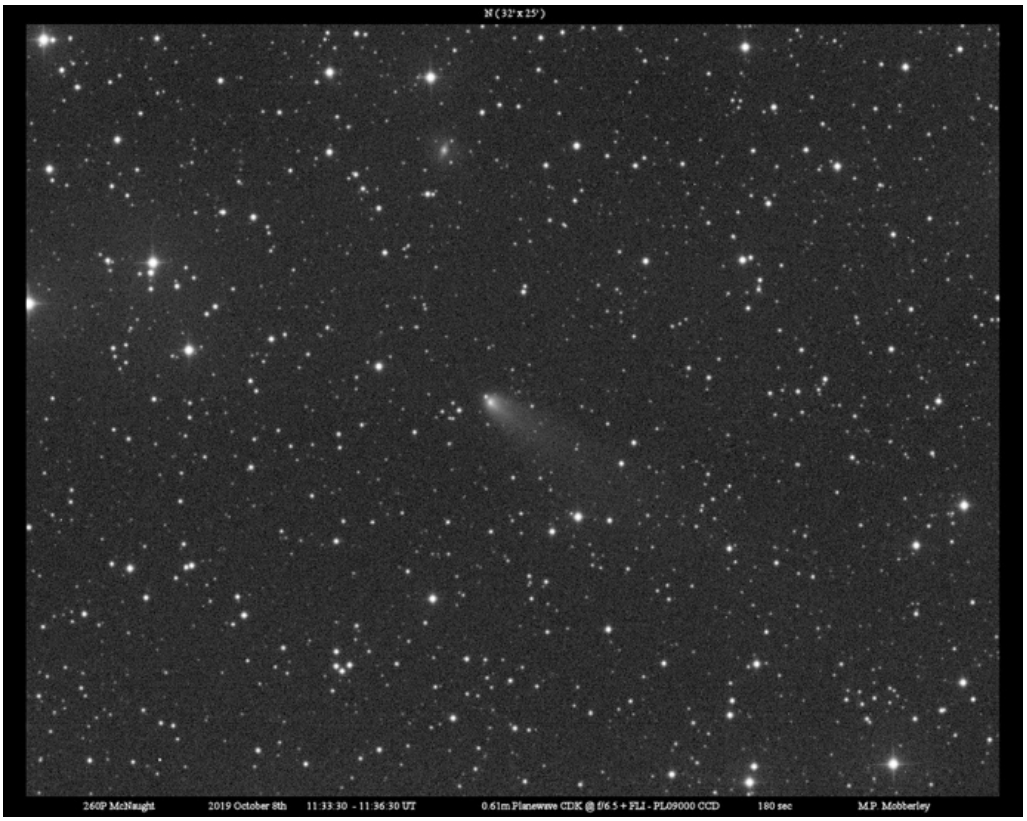


Image by Martin Mobberley

C/2017 T2 (PANSTARRS) – C/2017 T2 (PANSTARRS) is steadily increasing in brightness as its closes in on a 2020 May 4 perihelion at 1.62 au. While still fainter than 10th magnitude for much of November, PANSTARRS will be a nice small telescope target for much of 2020. The comet was discovered on 2017 October 7 with the Pan-STARRS1 telescope on Haleakala, Maui, Hawaii. At discovery the comet was 20th magnitude and close to the distance of Saturn at 9.3 au from the Sun.

The ALPO received 3 images/sketches from Michel Deconinck and Martin Mobberley and 5 magnitude estimates from J. J. Gonzalez and Chris Wyatt. A sketch by Michel Deconinck on October 26 with his Mewlon 250 showed a nice tail to the southwest.

Submissions to the COBS site during the last week of October showed a large scatter in reported magnitudes (9.4 to 12.3). The average brightness was around 11.5 so my prediction below may be a bit bright. C/2017 T2 should start November around magnitude 11.0 (or a little fainter) and brighten to 10.0 by December 1 as it moves through Auriga (Nov 1-30).

C/2017 T2 (PANSTARRS)
T = 2020-May-04 q = 1.62 au
Long-Period comet - dynamically new

Date	Mag	R.A.	Decl.	r	d	Elong	Const	Max El (deg) 40N	40S
2019-11-01	11.0	05 35	+35 21	2.857	2.098	131	Aur	85	15
2019-11-06	10.8	05 32	+37 00	2.810	2.004	136	Aur	87	13
2019-11-11	10.6	05 28	+38 44	2.763	1.917	141	Aur	89	11
2019-11-16	10.5	05 22	+40 34	2.716	1.838	146	Aur	89	9
2019-11-21	10.3	05 15	+42 28	2.669	1.766	150	Aur	87	7
2019-11-26	10.2	05 06	+44 24	2.622	1.704	153	Aur	86	6
2019-12-01	10.0	04 56	+46 19	2.576	1.650	154	Aur	84	4
2019-12-06	9.9	04 44	+48 10	2.530	1.606	154	Per	81	1

Comets C/2017 T2 (PanSTARRS)
Mewlon 250 CRS f10 - EP 13mm - 192x

2019/10/26 - 3h50 UTC
F.O.S.: 12'

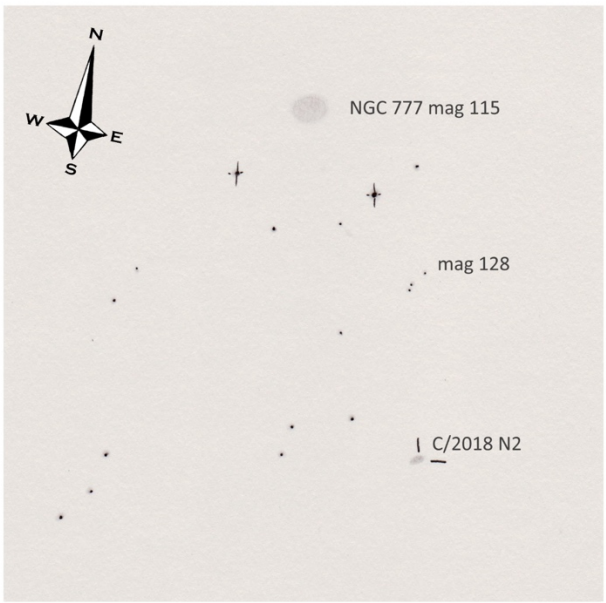
http://astro.aquarellia.com

Sketch by Michel Deconinck

C/2018 N2 (ASASSN) - Comet C/2018 N2 (ASASSN) was discovered 16 months ago on 2018 July 7 by the All-Sky Automated Survey for Supernovae (ASAS-SN) program. Since discovery, ASASSN has brightened slowly. ASASSN arrives at perihelion on the 11th at a distant 3.12 au. The section received 2 sketches of this comet from Michel Deconinck as well as 4 magnitude estimates from J. J. Gonzalez and Chris Wyatt. The most recent estimates were from J. J. Gonzalez on October 25 at magnitude 11.3 and Chris Wyatt on October 19 at 12.1. Submissions to the COBS site during the last week of October placed C/2018 N2 between magnitude 10.8 and 11.8. This month, C/2018 N2 is just past opposition in Andromeda (Nov 1-30) and even though it is at perihelion it should start to fade as its orbital motion carries it away from the Earth.

C/2018 N2 (ASASSN)
T = 2019-Nov-11 q = 3.12 au
Long-Period comet - dynamically old

Date	Mag	R.A.	Decl.	r	d	Elong	Const	Max El (deg) 40N	40S
2019-11-01	11.4	00 43	+38 05	3.126	2.243	147	And	88	12
2019-11-06	11.5	00 32	+38 30	3.125	2.272	143	And	89	11
2019-11-11	11.5	00 21	+38 47	3.125	2.310	138	And	89	11
2019-11-16	11.5	00 11	+38 58	3.125	2.355	134	And	89	11
2019-11-21	11.6	00 03	+39 05	3.126	2.407	129	And	89	10
2019-11-26	11.6	23 55	+39 08	3.128	2.465	124	And	89	8
2019-12-01	11.7	23 48	+39 10	3.131	2.528	119	And	89	6
2019-12-06	11.8	23 43	+39 11	3.134	2.595	114	And	89	3



C/2018 N2 (ASASSN)
Mewlon 250 CRS f10 - EP: 40mm

2019/09/27 - 3h30 UTC
F.O.S.: 40'

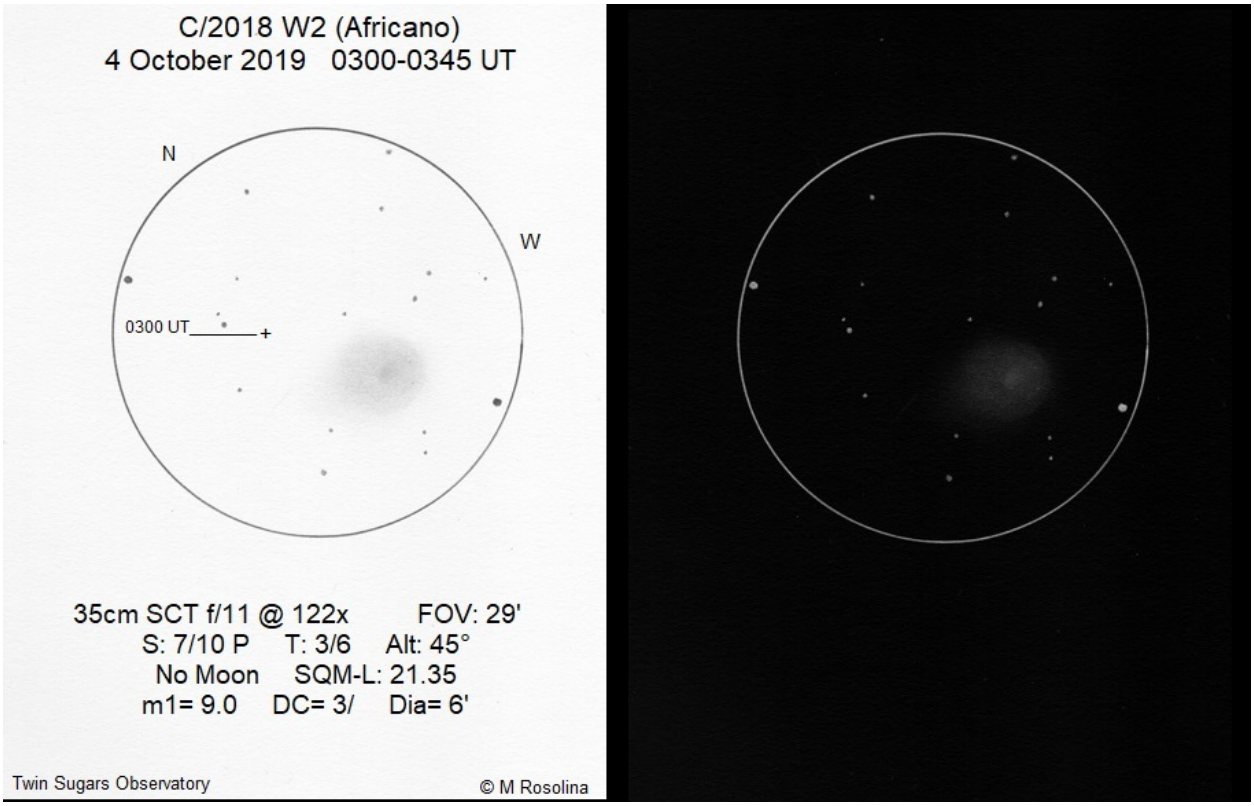
http://astro.aquarellia.com
Sketch by Michel Deconinck

C/2018 W2 (Africano) - C/2018 W2 (Africano) is now 2 months past perihelion and in full retreat from the Sun and Earth. Since October 1, the ALPO received 1 sketch of the comet from Michael Rosolina and 5 magnitude estimates from Willian Souza, J. J. Gonzalez Suarez, and Chris Wyatt. The most recent estimate was from Chris Wyatt on November 2 when he saw the comet at magnitude 11.1.

As November begins, the comet is now farther from the Sun (1.66 vs 1.45 au) and Earth (1.22 vs 0.49 au) compared to only 2 months ago. As a result, it is much fainter and should fade to 13th magnitude by the end of November. It spends all month in the evening sky among the stars of the southern constellation of Grus.

C/2018 W2 (Africano)
T = 2019-Sep-05 q = 1.45 au
Long-Period comet - dynamically old

Date	Mag	R.A.	Decl.	r	d	Elong	Const	Max El (deg) 40N	40S
2019-11-01	11.1	21 42.17	-38 15.2	1.657	1.224		Gru	12	74
2019-11-06	11.5	21 37.90	-39 57.2	1.691	1.367		Gru	10	68
2019-11-11	11.8	21 35.42	-41 14.8	1.727	1.508		Gru	9	63
2019-11-16	12.1	21 34.37	-42 15.1	1.765	1.648		Gru	8	58
2019-11-21	12.4	21 34.48	-43 2.9	1.804	1.784		Gru	6	53
2019-11-26	12.6	21 35.57	-43 41.3	1.844	1.917		Gru	5	48
2019-12-01	12.9	21 37.47	-44 12.9	1.886	2.046		Gru	4	44
2019-12-06	13.1	21 40.07	-44 39.3	1.929	2.170		Gru	3	40



Sketch by Michael Rosolina

Fainter Comets of Interest (probably fainter than magnitude 13.0)

2I/2019 Q4 (Borisov) – The first bona fide interstellar comet, 2I/2019 Q4 (Borisov), was discovered by Gennady Borisov on August 30 with a 0.65-m f/1.5 astrograph of his own making at MARGO observatory near Nauchnij, Crimea. Pre-discovery observations from the Zwicky Transient Facility on Mount Palomar have been found as far back as 2019 March 17.

A number of professional studies have been published on the arXiv e-print depository. For the most part, 2I/Borisov appears similar to long-period comets from our solar system in color and composition. Already a number of gaseous species have been observed including a definite detection of cyanide [CN] and tentative detections of diatomic carbon [C2] and daughter species produced by the photodissociation of water [O I & OH].

Two images were submitted to the ALPO from Gianluca Masi and Martin Mobberley. The Masi image from October 8 shows a short tail in a 2100 second co-added image taken with a 0.43-m telescope. Last month magnitude measurements submitted to COBS had the comet around 16th magnitude. The comet should continue to brighten as it nears a December 8 perihelion at 2.01 au.

2I/2019 Q4 (Borisov)
T = 2019-Dec-08 q = 2.01 au
Interstellar comet

Date	Mag	R.A.	Decl.	r	d	Elong	Const	Max El (deg) 40N	40S
2019-11-01	15.9	10 23	+07 51	2.176	2.432	63	Leo	41	11
2019-11-06	15.8	10 31	+04 49	2.136	2.353	65	Sex	41	13
2019-11-11	15.7	10 40	+01 37	2.101	2.279	67	Sex	41	16
2019-11-16	15.6	10 49	-01 43	2.071	2.211	68	Sex	40	19
2019-11-21	15.5	10 58	-05 12	2.047	2.151	70	Leo	39	22
2019-11-26	15.4	11 07	-08 49	2.029	2.098	72	Crt	37	25
2019-12-01	15.3	11 15	-12 32	2.017	2.052	74	Crt	35	29
2019-12-06	15.2	11 23	-16 19	2.011	2.014	75	Crt	32	33

289P/Blanpain – 289P/Blanpain will approach to within 0.09 au of Earth this December. It is not expected to get bright due to its usual low activity though has experienced a number of outbursts in the past. Jean-Jacques Blanpain discovered 289P in November 1819. Likely experiencing an outburst at the time of discovery, it went unobserved for the next 194 years until it was re-discovered by the Catalina Sky Survey as near-Earth asteroid 2003 WY25 in November 2003. Observations in 2005 found it to still be an active comet, albeit at low levels of activity. In July 2013 while far from perihelion (3.9 au vs 1.0 au), Blanpain experienced a major ~9 magnitude outburst that brightened it from 26th to 17th magnitude. The Phoencids meteor shower is associated with this object. Similar to its parent comet, this shower usually shows little activity except for two outbursts in 1956 and 2014.

Many sites using the Minor Planet Center's magnitude parameters currently have this comet at 10th magnitude. The only observation in October of this comet that I can find was submitted to the Minor Planet Center on October 3. MPC code A77 (Observatoire Chante-Perdrix, Dauban) reported 289P to be between magnitude 18.9 and 19.5. This is 1-2 magnitudes fainter than observations made at the end of September. We'll need to watch this outburst prone comet to see if its more active than usual this apparition. The predicted magnitudes below are for the nucleus and provide a faint limit.

289P/Blanpain
T = 2019-Dec-20 q = 0.96 au
Short-period comet — 5.3-yr orbital period

Date	Mag	R.A.	Decl.	r	d	Elong	Const	Max El (deg) 40N	40S
2019-11-01	20.8	22 25	-24 19	1.190	0.395	110	Aqr	26	72
2019-11-06	20.7	22 22	-23 36	1.152	0.379	105	Aqr	27	68
2019-11-11	20.7	22 21	-22 38	1.115	0.361	100	Aqr	28	63
2019-11-16	20.6	22 22	-21 25	1.082	0.342	96	Aqr	29	57
2019-11-21	20.6	22 23	-19 55	1.051	0.321	92	Aqr	30	52
2019-11-26	20.5	22 26	-18 07	1.024	0.299	88	Aqr	32	46
2019-12-01	20.5	22 30	-15 57	1.001	0.275	85	Aqr	34	40
2019-12-06	20.4	22 35	-13 19	0.983	0.249	82	Aqr	37	34

New Discoveries, Recoveries and Other Comets in the News

Periodic Comet Numberings – The following comets were numbered in the 2019 October 10 Minor Planet Circulars.

386P/2011 U1 (PANSTARRS)
387P/2008 Y1 = 2019 R1 (Boattini)
388P/2007 T4 = 2019 R2 (Gibbs)
389P/2006 R1 = 2019 S1 (Siding Spring)

C/2018 DO4 (Lemmon) – Greg Leonard used the Mount Lemmon 1.5-m telescope in southern Arizona to discover this comet back in February 2018. The object appeared asteroidal at the time and was designated 2018 DO4. Now near perihelion, a number of CCD observers have reported cometary activity. C/2018 DO4 (Lemmon) is a Halley-type comet with perihelion on 2019 August 18 at 2.41 au and an orbital period of 131 years. Peak brightness occurs this month at 15th magnitude as the comet reaches opposition. It is predicted to next reach perihelion in 2147.

P/2019 S2 (PANSTARRS) – The Pan-STARRS1 1.8-m telescope on Haleakala, Hawaii was used to discover this comet on September 28. The discovery images captured the comet at 21st magnitude with a 5" tail. Pan-STARRS pre-discovery images were also found from July 10 and August 7. Its reached perihelion back on 2019 February 20 at 3.75 au. As a result, it has peaked in brightness. This is a short-period comet with an orbital period of 10.3 years.

P/2019 S3 (PANSTARRS) – Pan-STARRS1 discovered this 20th magnitude comet on September 25. Pre-discovery images were found back to August 27, a day after its perihelion at 1.81 au. P/2019 S3 has an orbital period of 6.3 years and has likely already peaked in brightness.

A/2019 S4 – The Mount Lemmon Survey found this apparently asteroidal object on a long-period comet orbit (orbital period ~ 4200 years). Discovery happened on October 8 at 20th magnitude. Perihelion occurs next year on April 8 at 3.44 au. If it is truly inactive, the object has an absolute magnitude of 14.5 which corresponds to a diameter of 8 km for a typical cometary albedo of 0.04.

A/2019 T1 – Here is another apparently asteroidal object on a cometary orbit (orbital period ~240 years) discovered on October 8 at 20th magnitude. This one was found by Pan-STARRS2 and will reach perihelion on 2012 January 14 at 4.28 au. Its absolute magnitude of 13.0 corresponds to a diameter of 17 km.

A/2019 T2 – The Mount Lemmon Survey discovered this object on October 9. Pre-discovery observations by Mount Lemmon and Pan-STARRS1 were made as early as August 26. Currently 20th magnitude, it should peak at 17th magnitude around its 2021 April 22 perihelion at 2.64 au. Assuming it is inactive, this object has a diameter of ~21 km. Like the last two objects, A/2019 T2 is also on a long-period comet orbit with a period on the order of 38,000 years.

C/2019 T3 (ATLAS) – ATLAS discovered 3 comets over a span of 4 nights. Long-period comet C/2019 T3 (ATLAS) was found on October 6 at 18th magnitude. Perihelion occurs in early 2012 on March 2 at 5.94 au. It should peak at magnitude 17 which is marginally brighter than its discovery magnitude of 18.

C/2019 T4 (ATLAS) – This is another long-period ATLAS find. It was discovered on October 9 at 19th magnitude at 8.6 au from the Sun. Perihelion won't occur till 2022 June 9 at 4.25 au when it may brighten to 14th magnitude. While that may not be very bright, C/2019 T4 is likely to become the brightest comet announced last month.

P/2019 T5 (ATLAS) – P/2019 T5 is a short period comet with an orbital period of 22 years. It was discovered on October 8 at 18th magnitude. Perihelion was a week before discovery (October 1 at 1.53 au). It is unlikely to get any brighter than at discovery.

P/2019 T6 (PANSTARRS) – PanSTARRS2 found this comet on October 8 at 19th magnitude. It is a short-period comet on a 12.8-year orbit with perihelion this month (Nov 9) at 2.05 au. Not to sound like a broken record, but it also will remain a very faint object.

P/2019 U1 = P/2006 W1 (Gibbs) – The ATLAS survey picked up this comet as part of its survey for unknown potentially hazardous asteroids. First seen at 18th magnitude on October 21, the comet

is making its first return since its November 2006 discovery by Alex Gibbs with the 0.7-m Catalina Schmidt. Back in 2006, its wasn't seen till ~7 months after perihelion. This year it was recovered 5 months prior to its 2020 March 22 perihelion (q = 1.70 au). The comet may brighten to 16th magnitude around perihelion. Its next return will be in 2034.

P/2019 U2 = P/2006 F1 (Kowalski) – Kevin Hills used a 0.5-m f/2.9 astrograph at the Tacanade Observatory at La Palma on October 7, 22, and 24 to recover this comet at 20th magnitude. The comet was originally discovered by Richard Kowalski in March 2006 with the Mount Lemmon 1.5-m. The comet peaked at 17th magnitude during the summer of 2006 which was ~1.5 years before its perihelion at 4.12 au. The asymmetrical lightcurve with maximum brightness so far ahead of perihelion may be due to its recent injection into its current orbit. The comet was previously on a 40 year orbit with perihelion at 4.82 au before a very close approach to Jupiter (2003 January 4 @ 0.0096 au) (details can be found in the NK3909 Nakano Note).

The comet is once again displaying an asymmetric lightcurve though this time the comet is brighter after perihelion. Recovered in October 2019, its most recent perihelion was back in March 2018 (q = 4.11 au). A number of imagers attempted observations starting a few years prior to perihelion with no success till the October recovery. While predicting such a peak brightness for such an inconsistent object may not be the best idea, it is likely that P/Kowalski won't get much brighter than its current 20th magnitude. Its next perihelion will be in 2028.

P/2019 U3 = P/2004 WR9 (LINEAR) - Krisztián Sárneczky used the 0.60-m Schmidt telescope at the Piszkesteto Station of Konkoly Observatory to recover this comet on October 26 and 27. The comet was 19th magnitude at recovery. The LINEAR asteroid survey program made the original discovery in November 2004. During that apparition the comet peaked at 17th magnitude. This time the comet reaches perihelion on 2020 March 31 at 1.95 au. It is unlikely to get brighter than its recovery magnitude this return. It will next reach perihelion in 2035.

A/2019 U5 – PanSTARRS1 detected this asteroidal object on October 22 at 21st magnitude. At discovery it was a distant 10.3 au from the Sun. Perihelion isn't till 2023 March 29 when the object will be a much closer 3.62 au from the Sun. During the week of perihelion, the comet will also be at opposition and at a peak brightness of magnitude 15.4. If this comet stays inactive, it will make a nice target for physical characterization (rotational lightcurves, colors, spectra) by modest sized aperture telescopes. If it becomes active, it may be a few magnitudes brighter than 15th.

In addition to the above discoveries and recoveries, the following objects are designated as asteroids but have comet-like orbits. This doesn't mean these objects are cometary in origin, but it makes them a good group to watch. Unfortunately, all will remain faint. The brightest is 2019 SG9 as 18th magnitude though its peak brightness has already passed.

Object	Disc. Date	Peri. Dist.	Period (years)	H	Max Brightness	Discoverer
2019 TX7	Oct 07	6.80	128	13.4	21-in-Oct2019	PanSTARRS
2019 SG9	Oct 20	0.87	5.5	25.0	18-in-Sep2019	Catalina
2019 UP9	Oct 24	1.15 au	5.7	23.9	21-in-Sep2019	PanSTARRS
2019 UG10	Oct 25	1.36 au	5.7	18.8	21-in-Oct2019	PanSTARRS
2019 UJ10	Oct 25	1.28 au	5.7	19.7	21-in-Oct2019	PanSTARRS

2019 UQ10	Oct 25	1.35 au	5.6	18.8	22-in-Oct2019	PanSTARRS
2019 UH12	Oct 27	7.92 au	374	10.8	20-in-Oct2018	PanSTARRS
2019 UA14	Oct 31	1.27 au	7.1	18.9	21-in-Nov2018	Lemmon

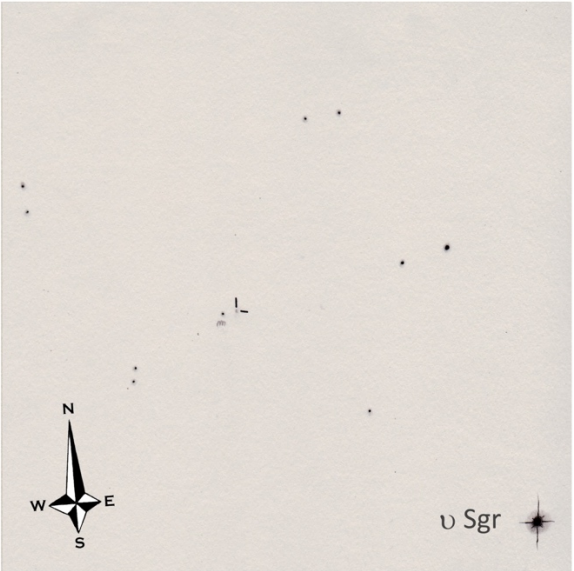
As always, the Comet Section is happy to receive all comet observations, whether textual descriptions, images, drawings, magnitude estimates, or spectra. Please send your observations via email to < carl.hergenrother @ alpo-astronomy.org >.

- Carl Hergenrother (ALPO Comet Section Coordinator)

Magnitude Measurements Contributed to the ALPO Comet Section since October 1

Comet Des	YYYY MM DD.DD (UT)	Mag	SC	APER	FL	POW	COMA Dia	DC	TAIL LENG	PA	ICQ CODE	Observer Name
2018W2	2019 11 02.61	xS 11.1	AQ	40.0L	4	59	3.0	3			ICQ XX WYA	Christopher Wyatt
2018W2	2019 10 19.51	xM 10.6	AQ	11.0L	8	28	3.7	4			ICQ XX WYA	Christopher Wyatt
2018W2	2019 10 04.93	S 9.2	TK	20.3T	10	77	6	3/			ICQ XX GON05	J. J. Gonzalez Suarez
2018W2	2019 10 02.95	S 8.7	TK	15.0L	5	30	3	2			ICQ XX SOU01	Willian Souza
2018W2	2019 10 01.43	xM 8.9	TK	7.0B		11	8.5	4			ICQ XX WYA	Christopher Wyatt
2018N2	2019 10 25.95	S 11.3	TK	20.3T	10	100	1.3	5			ICQ XX GON05	J. J. Gonzalez Suarez
2018N2	2019 10 19.53	xM 12.1	AQ	40.0L	4	108	1.1	6			ICQ XX WYA	Christopher Wyatt
2018N2	2019 10 03.70	xM 12.6	AQ	40.0L	4	108	1.3	6	2.3	m180	ICQ XX WYA	Christopher Wyatt
2018N2	2019 10 02.70	xM 12.5	AQ	40.0L	4	108	1.3	6	2.0	m165	ICQ XX WYA	Christopher Wyatt
2018A6	2019 11 02.63	xM 14.2	AQ	40.0L	4	108	0.7	3/			ICQ XX WYA	Christopher Wyatt
2018A6	2019 10 19.43	xS 14.0	AQ	40.0L	4	261	0.8	3			ICQ XX WYA	Christopher Wyatt
2018A6	2019 10 18.45	xS 14.3	AQ	40.0L	4	261	0.5	3			ICQ XX WYA	Christopher Wyatt
2018A6	2019 10 03.67	xM 13.6	AQ	40.0L	4	108	1.0	3/			ICQ XX WYA	Christopher Wyatt
2018A6	2019 10 02.68	xM 13.7	AQ	40.0L	4	108	1.0	3/			ICQ XX WYA	Christopher Wyatt
2018A6	2019 10 01.41	xS 14.1	AQ	40.0L	4	261	0.7	3			ICQ XX WYA	Christopher Wyatt
2017T2	2019 11 02.64	xM 12.3	AQ	40.0L	4	108	0.8	6			ICQ XX WYA	Christopher Wyatt
2017T2	2019 10 25.97	S 9.4:	TK	20.3T	10	133	6	2			ICQ XX GON05	J. J. Gonzalez Suarez
2017T2	2019 10 05.00	S 9.6	TK	20.3T	10	100	7	1/			ICQ XX GON05	J. J. Gonzalez Suarez
2017T2	2019 10 03.68	xM 13.0	AQ	40.0L	4	108	0.8	6			ICQ XX WYA	Christopher Wyatt
2017T2	2019 10 02.73	xM 12.9	AQ	40.0L	4	108	0.7	5/			ICQ XX WYA	Christopher Wyatt
2017B3	2019 10 19.50	xM 14.6	AQ	40.0L	4	108	0.5	6			ICQ XX WYA	Christopher Wyatt
2017B3	2019 10 18.42	xM 14.6	AQ	40.0L	4	108	0.9	5/			ICQ XX WYA	Christopher Wyatt
2017B3	2019 10 03.68	xM 14.5	AQ	40.0L	4	108	1.0	5/			ICQ XX WYA	Christopher Wyatt
2017B3	2019 10 02.69	xM 14.4	AQ	40.0L	4	108	1.0	5/			ICQ XX WYA	Christopher Wyatt
2017B3	2019 10 01.42	xM 14.5	AQ	40.0L	4	108	0.9	6			ICQ XX WYA	Christopher Wyatt
29	2019 11 02.62	xS 14.3	AQ	40.0L	4	108	1.3	2/			ICQ XX WYA	Christopher Wyatt
29	2019 10 25.87	S 11.0:	TK	20.3T	10	100	4	1/			ICQ XX GON05	J. J. Gonzalez Suarez
29	2019 10 19.48	xS 13.9	AQ	40.0L	4	108	0.8	3/			ICQ XX WYA	Christopher Wyatt
29	2019 10 18.41	xS 13.7	AQ	40.0L	4	108	1.2	2/			ICQ XX WYA	Christopher Wyatt
29	2019 10 03.69	xS 14.6	AQ	40.0L	4	108	0.9	2			ICQ XX WYA	Christopher Wyatt
29	2019 10 02.69	xS 14.7	AQ	40.0L	4	108	0.9	1/			ICQ XX WYA	Christopher Wyatt
29	2019 10 01.44	xS 14.8	AQ	40.0L	4	108	0.8	2			ICQ XX WYA	Christopher Wyatt
68	2019 10 25.81	S 10.4	TK	20.3T	10	100	2.5	3			ICQ XX GON05	J. J. Gonzalez Suarez
68	2019 10 18.40	xM 14.1	AQ	40.0L	4	261	0.5	3/			ICQ XX WYA	Christopher Wyatt
68	2019 10 01.42	xS 13.3	AQ	40.0L	4	108	1.3	2/			ICQ XX WYA	Christopher Wyatt
260	2019 10 25.84	S 10.7	TK	20.3T	10	133	2	4			ICQ XX GON05	J. J. Gonzalez Suarez
260	2019 10 04.97	S 11.0	TK	20.3T	10	77	2.5	4/			ICQ XX GON05	J. J. Gonzalez Suarez
260	2019 10 03.71	xM 12.8	AQ	40.0L	4	108	1.3	5/	2.0	m230	ICQ XX WYA	Christopher Wyatt
260	2019 10 02.71	xM 12.5	AQ	40.0L	4	108	1.2	5/	2.7	m230	ICQ XX WYA	Christopher Wyatt

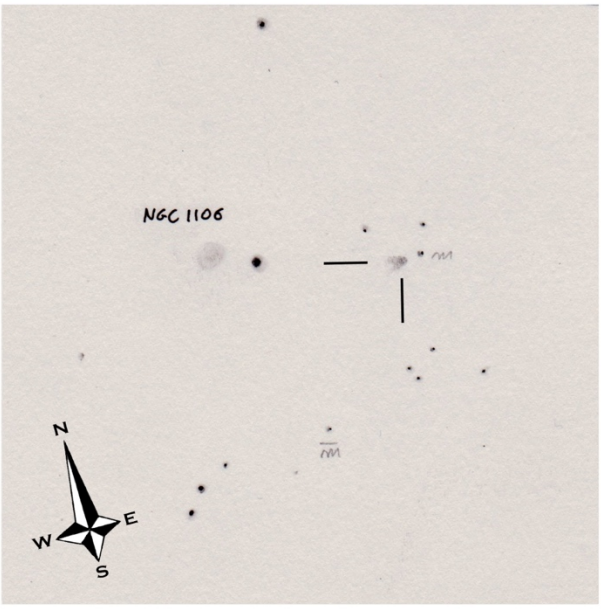
Select Images and Sketches Contributed to the ALPO Comet Section since October 1



Comet 68P (Klemola) 2019/10/29 - 18h37 UTC
Mewlon 250 CRS f10 - EP 192x F.O.S.: 15'

astro.aquarellia.com

Sketches by Michel Deconinck



Comets 260P (McNaught) 2019/10/06 - 2h50 UTC
Mewlon 250 CRS f10 - EP 13mm - 192x F.O.S. 20'

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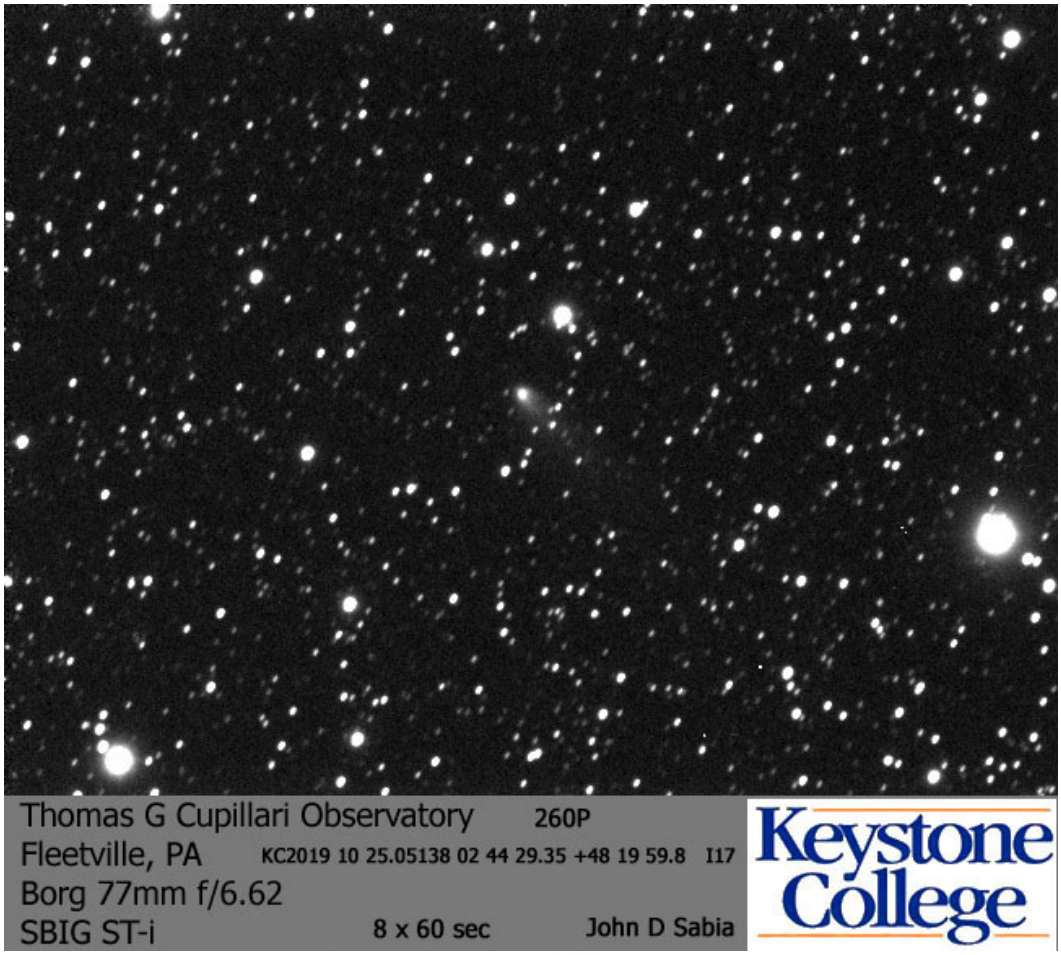
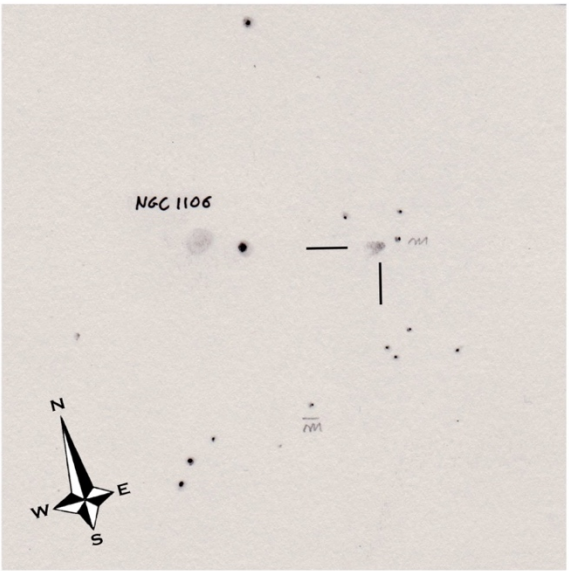
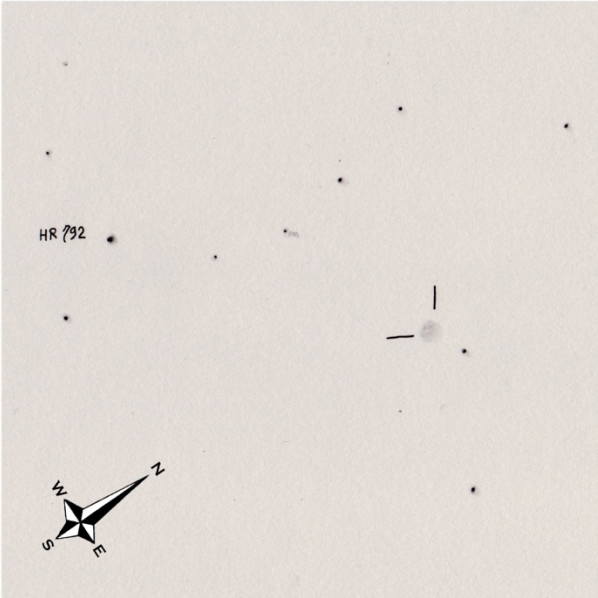




Comets 260P (McNaught)
Mewlon 250 CRS f10 - EP 13mm - 192x

2019/10/06 - 2h50 UTC
F.O.S. 20'

http://astro.aquarellia.com
Sketch by Michel Deconinck



Comets 260P (McNaught)
Mewlon 250 CRS f10 - EP 13mm - 192x

2019/ 10/26 - 4h07 UTC
F.O.S. 15'

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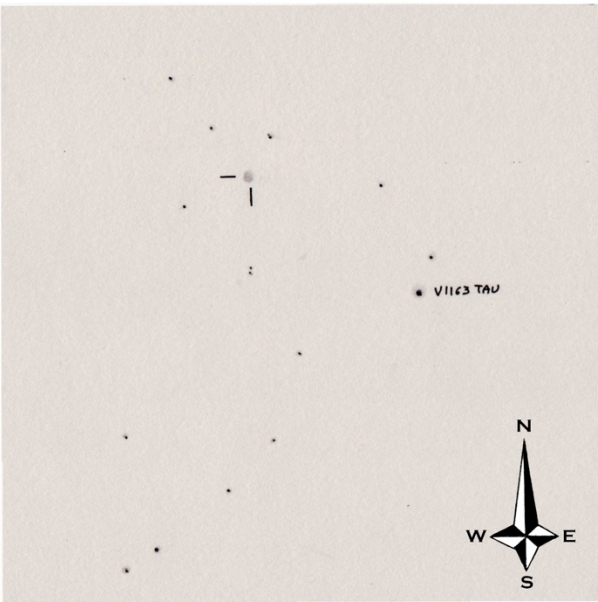

Comets C/2017 T2 (PanSTARRS)
Mewlon 250 CRS f10 - EP 26mm - 96x

2019/10/06 - 2h18 UTC
F.O.S.: 20'

http://astro.aquarellia.com

C/2018 N2 (ASASSN)
Mewlon 250 CRS f10 - EP: 13mm - 192x

2019/10/06 - 2h35 UTC
F.O.S.: 20'

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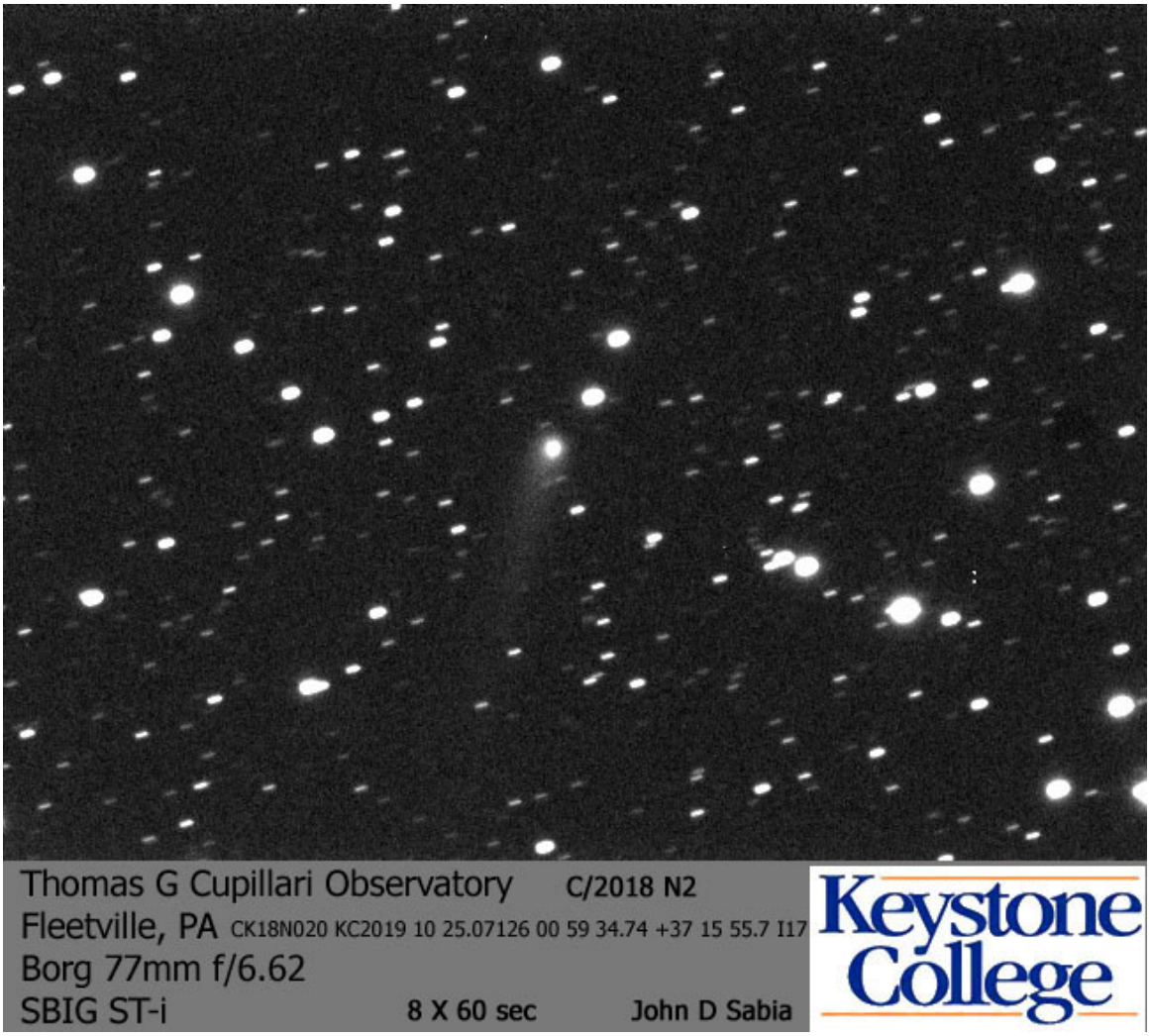
Sketch by Michel Deconinck


Thomas G Cupillari Observatory
C/2018 N2
Fleetville, PA
CK18N020 KC2019 10 25.07126 00 59 34.74 +37 15 55.7 I17
Borg 77mm f/6.62
SBIG ST-i
8 X 60 sec
John D Sabia
Keystone College

C/2018 N2 (ASASSN)

Mewlon 250 CRS f10 - EP: 13mm - 192x

2019/10/26 - 19h20 UTC

F.O.S.: 13'

http://astro.aquarellia.com

Sketch by Michel Deconinck