

ALPO COMET NEWS FOR MAY 2021

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Association of Lunar and Planetary Observers

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Gregg Ruppel caught two comets passing on the night of April 30. C/2020 R4 (ATLAS) [upper left] was around 8-9th magnitude and C/2020 T2 (Palomar) [lower right] was around 11-12th magnitude. Gregg used a ASA 10N f/3.7 reflector equipped with a STL11000M CCD located in at Dark Sky New Mexico in Animas, New Mexico.

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/769906-alpo-comet-news-for-may-2021/>). All are encouraged to join the discussion over at Cloudy Nights. The ALPO Comet 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 encouraged. To learn more about the ALPO, please visit us @ <http://www.alpo-astronomy.org>.

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Summary

C/2020 R4 (ATLAS) finished April a little brighter than expected due to a small outburst. This month should see the comet fade from 8-9th magnitude to 11-12th magnitude. While no other comets are expected to be brighter than 10th magnitude this month, there are several slightly fainter objects at 11-12th magnitude.

Bright Comets (magnitude < 10.0)

C/2020 R4 (ATLAS) – C/2020 R4 (ATLAS) reached perihelion back on March 1 at 1.03 au but continued to brighten due to a close approach to Earth on April 23 at 0.46 au. The comet even threw us a little surprise at the end of April as it experienced an outburst of a half magnitude or so. A team using the 0.4-m Cassegrain at the Sozzago Astronomical Station and 1.22-m Galileo telescope at the Asiago Astrophysical Observatory-University of Padua reported in ATel #14585 (<https://www.astronomersteleggram.org/?read=14585>) a doubling in CN and OI flux in spectra taken on April 23.95 and 24.95 UT.

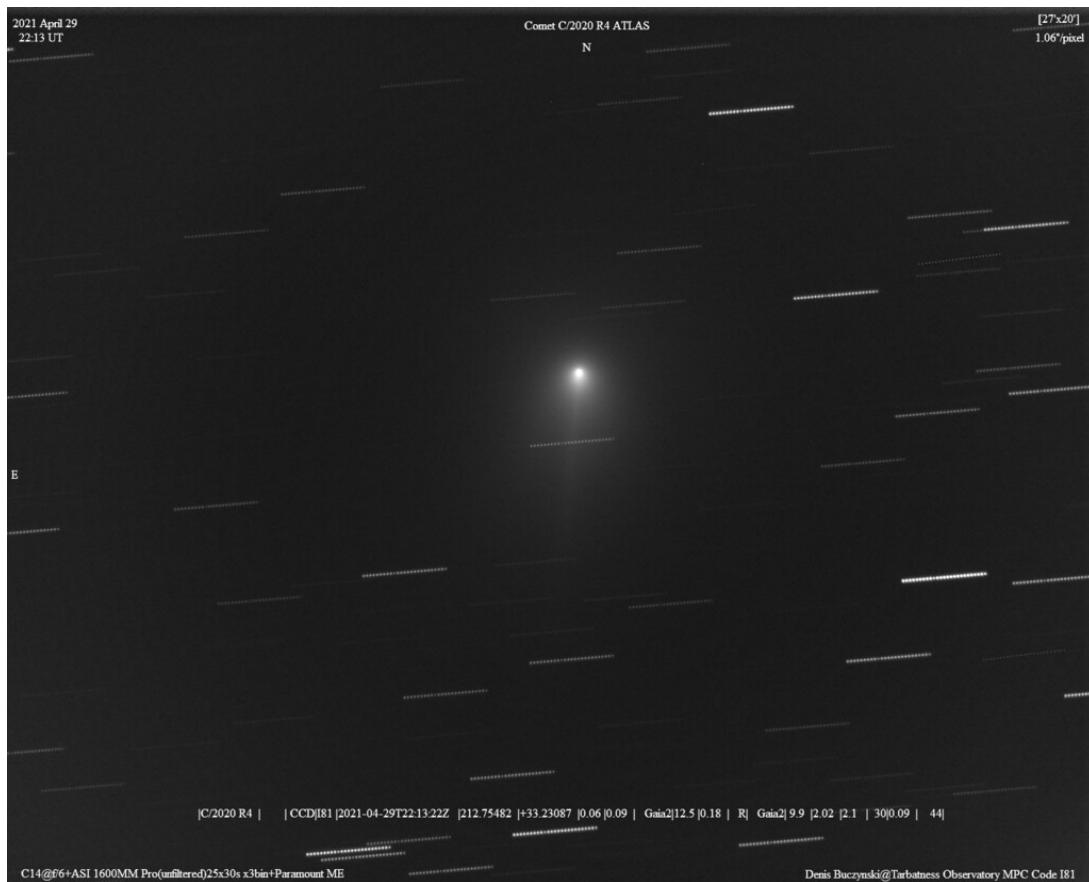


Figure 1 – Only days after its minor outburst, Denis Buczynski observed a narrow dust tail that may have been released during the outburst.

Outbursts notwithstanding, reported visual magnitudes for C/2020 R4 have been scattered. When I observed R4 with 30x125 binoculars there was a hint of a large faint outer coma at the limit of detection. On April 6, J. J. Gonzalez placed ATLAS at magnitude 8.5 with a 0.2-m SCT at 77x and magnitude 8.1 with 25x100 binoculars. On May 3, he repeated the experiment and estimated a brightness of 9.4 for the 0.2-m SCT at 77x and magnitude 8.3 with the 25x100s. I made a similar observation 2 nights apart and estimated ATLAS to be magnitude 8.3 in 10x50s (Apr. 18)

and 8.9 in 30x125s (Apr. 20). If there is a large low surface brightness outer coma, its observability would be very sensitive to aperture, magnification, and sky brightness.

ATLAS has a highly retrograde orbit (164 deg) that is not only carrying it away from the Sun this month (1.42 to 1.77 au) but also rapidly away from the Earth (0.54 to 1.48 au). As a result, and barring additional outbursts, C/2020 R4 should quickly fade from around magnitude 9 to 12 by month's end. It is observable from both hemispheres as an evening object moving through Canes Venatici (May 1-6), Coma Berenices (6-11), Ursa Major (11-13), and Leo (13-31).

C/2020 R4 (ATLAS)

T = 2021-Mar-01 q = 1.03 au									Max El	
Long-period comet – ~957-year orbital period									(deg)	
Date	R.A.	Decl.	r	d	Elong	Const	Mag	40N	40S	
2021-May-01	13 53	+33 15	1.421	0.540	130E	CVn	9.1	83	17	
2021-May-06	12 48	+31 40	1.475	0.655	123E	CVn	9.7	81	19	
2021-May-11	12 07	+29 16	1.530	0.796	115E	Com	10.3	79	21	
2021-May-16	11 41	+27 00	1.587	0.952	107E	Leo	10.8	73	23	
2021-May-21	11 25	+25 04	1.644	1.115	101E	Leo	11.3	65	25	
2021-May-26	11 13	+23 27	1.702	1.282	94E	Leo	11.7	58	27	
2021-May-31	11 06	+22 05	1.760	1.450	89E	Leo	12.2	51	28	
2021-Jun-05	11 01	+20 55	1.819	1.618	84E	Leo	12.5	44	29	

Comet Magnitude Parameters --- H = 8.9, 2.5n = 10.0

Fainter Comets of Interest (generally between magnitude 10.0 and 13.0)

7P/Pons-Winnecke – Comet Pons-Winnecke was discovered on 1819 June 12 by Jean-Luis Pons and rediscovered 39 years later on 1858 March 9 by Friedrich August Theodor Winnecke. The comet often reached ~6th magnitude throughout the 19th and early 20th century even brightening to magnitude 3.5 in 1927 during an especially close approach to Earth (0.04 au). Unfortunately, it hasn't had a bright return since 1939 (6th magnitude) as nowadays it usually gets no brighter than ~11th magnitude. The recent drought of bright 7P apparitions is due to a perihelion distance that increased from 0.76 au in 1841 to a maximum of 1.26 au in 1989. The current return is only marginally better than in 1989 with a perihelion distance of 1.23 au on 2021 May 27.

Observations submitted to the COBS site in April found 7P between magnitude 12.6 and 14.2. Pons-Winnecke should brighten to magnitude 11.6 by the end of the month. Due to a late May perihelion, close approach to Earth on June 12 at 0.44 au, and an asymmetric lightcurve that sees maximum activity a few weeks after perihelion, peak brightness should occur in late June at around magnitude 11.2. Both hemispheres will have a nice view as the comet moves through the morning constellations Aquila (May 1-18), Aquarius (18-30), and Capricornus (30-31).

7P/Pons-Winnecke

T = 2021-May-27 q = 1.23 au									Max El	
Jupiter-family comet – 6.31-yr orbital period									(deg)	
Date	R.A.	Decl.	r	d	Elong	Const	Mag	40N	40S	
2021-May-01	19 31	+04 00	1.276	0.580	103M	Aql	12.8	47	46	
2021-May-06	19 50	+02 18	1.261	0.551	104M	Aql	12.6	45	48	
2021-May-11	20 09	+00 18	1.250	0.524	104M	Aql	12.4	42	50	
2021-May-16	20 28	-02 00	1.242	0.501	105M	Aql	12.2	40	52	
2021-May-21	20 48	-04 38	1.237	0.481	106M	Aqr	12.0	36	55	
2021-May-26	21 08	-07 34	1.234	0.466	107M	Aqr	11.8	33	58	
2021-May-31	21 28	-10 45	1.235	0.454	108M	Cap	11.6	30	61	
2021-Jun-05	21 48	-14 07	1.239	0.446	109M	Cap	11.5	26	64	

Comet Magnitude Parameters --- H = 11.7, 2.5n = 12.5, offset = +50 days

10P/Tempel - Jupiter-family comet 10P/Tempel is now over a month past a March 24 perihelion at 1.41 au. The current apparition is a poor one with the comet being located over 2 au from Earth and not even visible from the northern hemisphere. While the comet is visible from the southern hemisphere it will be located at a low elevation. Chris Wyatt visually observed 10P on 4 nights in April. From April 10 and 19, he observed it between magnitude 10.8 and 11.2 with a coma from 1.5' to 3.1' in diameter.

Now post perihelion, 10P should slowly fade in May from magnitude 11.2 to 11.5 as it moves through Pisces (May 1-2), Cetus (2-31), and back to Pisces (31) in the morning sky. Its next return in 2026 should be its best since 1967 with a close approach within 0.41 au of Earth and peak brightness of 7.5.

10P/Tempel
 T = 2021-Mar-24 q = 1.41 au Max El
 Jupiter-family comet - 5.4-yr orbital period (deg)

Date	R.A.	Decl.	r	d	Elong	Const	Mag	40N	40S
2021-May-01	00 23	-03 31	1.467	2.141	37M	Psc	11.2	0	19
2021-May-06	00 37	-02 24	1.482	2.139	38M	Cet	11.2	0	20
2021-May-11	00 51	-01 19	1.499	2.138	39M	Cet	11.3	0	21
2021-May-16	01 05	-00 16	1.517	2.136	40M	Cet	11.3	0	22
2021-May-21	01 19	+00 44	1.536	2.135	41M	Cet	11.4	0	23
2021-May-26	01 32	+01 41	1.557	2.134	43M	Cet	11.4	0	24
2021-May-31	01 45	+02 35	1.579	2.132	44M	Cet	11.5	0	25
2021-Jun-05	01 58	+03 26	1.602	2.129	46M	Psc	11.5	0	26

Comet Magnitude Parameters --- H = 7.7, 2.5n = 8.1

C/2019 L3 (ATLAS) – C/2019 L3 will be a difficult object to observe in May as it approaches solar conjunction. The comet is located in the northern constellation of Perseus, so it is not visible from the southern hemisphere. Even northern observers will have difficulty as its elongation drops from 36 to 28 degrees. C/2019 L3 doesn't arrive at perihelion till January when it will be 3.57 au from the Sun. The large distance means C/2019 L3 could remain a visual object well into 2022 and possibly even 2023. J. J. Gonzalez visually observed L3 at magnitude 11.3 on April 5. If the comet continues to brighten even at a conservative 2.5n = 8 rate, it could be around magnitude 10.0 at the end of this year.

C/2019 L3 (ATLAS)
 T = 2022-Jan-09 q = 3.55 au Max El
 Long-period comet - Dynamically new (deg)

Date	R.A.	Decl.	r	d	Elong	Const	Mag	40N	40S
2021-May-01	03 16	+50 44	4.223	4.986	36E	Per	11.8	16	0
2021-May-06	03 26	+50 41	4.199	4.987	34E	Per	11.8	14	0
2021-May-11	03 36	+50 37	4.176	4.985	33E	Per	11.8	12	0
2021-May-16	03 46	+50 32	4.153	4.980	31E	Per	11.7	10	0
2021-May-21	03 55	+50 28	4.131	4.972	30E	Per	11.7	9	0
2021-May-26	04 05	+50 22	4.109	4.962	29E	Per	11.7	8	0
2021-May-31	04 15	+50 16	4.087	4.948	28E	Per	11.7	8	0
2021-Jun-05	04 25	+50 09	4.065	4.931	28M	Per	11.6	8	0

Comet Magnitude Parameters --- H = 3.3, 2.5n = 8.0

C/2020 J1 (SONEAR) – C/2020 J1 (SONEAR) is another example of a large perihelion distance comet. C/SONEAR was discovered on 2020 May 1 by the The Southern Observatory for Near Earth Research (SONEAR) survey uses two telescopes, a Celestron 11" RASA and 0.45-m f/2.9,

located in Oliveira, Brazil. The survey has found 9 comets though only two are named SONEAR, the rest being named after individual observers (Barros, Jacques, and Pimental).

Chris Wyatt visually observed C/2020 J1 on 4 nights in April. Between April 10 and 19, he found it at magnitude 12.9 to 13.2 with a small moderately condensed coma between 0.6' and 1.0'. Though now past perihelion (April 18 at 3.36 au), it should remain near its maximum brightness of 12.8 as it moves through Scorpius (May 1), Lupus (1-14), Libra (14-25), Hydra (25-28), and Libra (28-31) near opposition.

C/2020 J1 (SONEAR)
T = 2021-Apr-18 q = 3.36 au Max El
Long-period comet – Dynamically new (deg)

Date	R.A.	Decl.	r	d	Elong	Const	Mag	40N	40S
2021-May-01	16 08	-34 09	3.357	2.439	151M	Sco	12.8	16	84
2021-May-06	15 54	-32 47	3.359	2.401	158M	Lup	12.8	17	83
2021-May-11	15 40	-31 15	3.362	2.376	165M	Lup	12.8	19	81
2021-May-16	15 26	-29 33	3.365	2.366	169E	Lib	12.8	20	80
2021-May-21	15 13	-27 44	3.369	2.371	168E	Lib	12.8	22	78
2021-May-26	15 00	-25 51	3.374	2.392	163E	Hya	12.8	24	76
2021-May-31	14 48	-23 55	3.379	2.426	156E	Lib	12.9	26	74
2021-Jun-05	14 37	-22 00	3.385	2.475	148E	Lib	12.9	28	72

Comet Magnitude Parameters --- H = 6.7, 2.5n = 8.0

C/2020 T2 (Palomar) – C/2020 T2 is a long-period comet with an orbital period of ~5720 years and perihelion on 2021 July 11 at 2.05 au. The comet brightened rapidly with visual observers placing it between magnitude 10.4 and 12.7 in April. The bright observation was made by J. J. Gonzalez on April 5. Michel Deconinck found T2 to be magnitude 11.5 on April 14 and Chris Wyatt observed it between 12.2 and 12.7 on April 10, 12, 13, and 19. CCD photometry submitted to the COBS site suggest a brightness between 10.5 and 11.5. The prediction below tries to split the difference between the various measurements and finds the comet slowly brightening around magnitude 11. This month, C/2020 T2 (Palomar) is an evening object moving through Canes Venatici (May 1-18), and Boötes (18-31).

C/2020 T2 (Palomar)
T = 2021-Jul-11 q = 2.05 au Max El
Long-period comet – ~5720-year orbital period (deg)

Date	R.A.	Decl.	r	d	Elong	Const	Mag	40N	40S
2021-May-01	13 46	+32 23	2.222	1.424	131E	CVn	11.2	82	18
2021-May-06	13 43	+31 22	2.200	1.417	129E	CVn	11.2	81	19
2021-May-11	13 40	+30 09	2.180	1.414	127E	CVn	11.2	80	20
2021-May-16	13 38	+28 45	2.161	1.415	125E	CVn	11.1	79	21
2021-May-21	13 37	+27 10	2.143	1.420	122E	Boo	11.1	77	23
2021-May-26	13 36	+25 25	2.127	1.429	120E	Boo	11.1	75	25
2021-May-31	13 36	+23 33	2.113	1.441	117E	Boo	11.1	73	27
2021-Jun-05	13 37	+21 33	2.100	1.456	115E	Boo	11.1	70	29

Comet Magnitude Parameters --- H = 7.7, 2.5n = 8.0

C/2021 A1 (Leonard) – This comet is much fainter than the ones I usually highlight in the Comet News. While not a hard and fast rule, the limiting magnitude for comets described in these pages is around 12-13th magnitude. C/2021 A1 is currently around magnitude 17.5 to 18.0, but has the potential to be a nice binocular, or brighter, object in December.

When found on 2021 January 3 by Greg Leonard with the Mount Lemmon 1.5-m reflector, it was around 19th magnitude and located 5.1 au from the Sun. According to the most recent

published orbit by Syuichi Nakano (Nakano Note 4441, <http://www.oaa.gr.jp/~oaacs/nk/nk4441.htm>), Leonard has an “original” orbital period of ~87,000 years defining it as a dynamically old long-period comet.

Comet Leonard has the potential to become a nice object at the end of 2021 as it nears perihelion on 2022 January 3 at 0.62 au. While such a smallish perihelion distance helps, its observing geometry is what could make it a bright object. Prior to perihelion, the comet makes a close approach to Earth on December 12 at 0.233 au (34.9 million km or 21.7 million miles). Around that time, its phase angle will reach a maximum of 160 degrees possibly resulting in a few magnitudes of enhanced brightness due to forward scattering of light by cometary dust. The downside is the comet will be a difficult object to observe as it will be located at low solar elongations (down to a minimum of 15 degrees).

I’ve continued to follow the comet with a few of the larger telescopes at iTelescopes (T11 0.51-m and T24 0.61-m). The following photometry was conducted on unfiltered image data calibrated with V-band reference stars:

Jan. 17.47,	V = 19.1,
Feb. 07.39,	V = 18.7,
Feb. 22.46,	V = 18.5,
Mar. 07.34,	V = 18.0,
Mar. 19.43,	V = 17.8,
Apr. 05.36,	V = 18.0,
Apr. 10.15,	V = 18.0,
May 02.26,	V = 17.9.

If you look at these numbers, Leonard appeared brighten at a healthy clip from mid-January to about mid-March. CCD photometry submitted to the Minor Planet Center between April 2020 and March 2021 showed the comet brightening at a rapid 2.5n rate of ~17 going back to April 2020, so that brightening trend seemed to continue into March. But after that, the comet has stagnated with little increase in apparent brightness. Not only that, but after accounting for a decreasing Sun-comet and Sun-Earth distance the comet has faded intrinsically since mid-March.

We are still 8 months from perihelion so there is plenty of time for Leonard to restart its brightening trend. Like last month, the comet is an evening object near 17-18th magnitude and located in the northern constellation of Ursa Major. May sees its distance from the Sun drop from 3.8 to 3.4 au. Imagers are strongly encouraged to watch Leonard’s development over the coming months.

C/2021 A1 (Leonard)

T = 2022-Jan-03 $q = 0.61$ au

Long-period comet – Dynamically old

Date	R.A.	Decl.	r	d	Elong	Const	Mag	Max El	
								40N	40S
2021-May-01	11 32	+61 25	3.815	3.582	95E	UMa	17.9	69	0
2021-May-06	11 21	+60 59	3.758	3.586	91E	UMa	17.9	69	0
2021-May-11	11 11	+60 25	3.701	3.592	88E	UMa	17.8	68	0
2021-May-16	11 02	+59 45	3.643	3.599	84E	UMa	17.8	66	0
2021-May-21	10 54	+59 01	3.584	3.607	80E	UMa	17.7	63	0
2021-May-26	10 48	+58 12	3.526	3.615	76E	UMa	17.6	59	0
2021-May-31	10 42	+57 21	3.467	3.621	73E	UMa	17.6	55	0
2021-Jun-05	10 38	+56 27	3.407	3.627	69E	UMa	17.5	51	0

Comet Magnitude Parameters --- H = 10.5, 2.5n = 8.0

New Discoveries, Recoveries and Other Comets in the News

Newly Numbered Periodic Comets (published in CBET 4958)

419P/PANSTARRS = P/2015 F1 = P/2021 A11

420P/Hill = P/2009 Q1 = P/2021 E1

A/2021 F1 – This apparently asteroidal object on a cometary orbit was discovered by Pan-STARRS on March 19 at 21st magnitude. This one is still nearly a year from its 2022 April 6 perihelion at 1.00 au. Unfortunately, when at perihelion it will be located at an extremely small solar elongation of 18 degrees. If it remains inactive, it should peak at around 16th magnitude in March 2022. If it becomes active, it should be even brighter.

A/2021 E2 – This apparently asteroidal object on a cometary orbit was found with the Mount Lemmon 1.5-m telescope on March 7 at 21st magnitude. The object has a ~1250-year orbital period and was at perihelion on 2020 December 9 at 2.29 au. It is now fading as it recedes from the Sun and Earth.

C/2019 U5 (PANSTARRS) – Like the last two objects above, this one was originally announced as an apparently asteroidal object. Pan-STARRS discovered C/2019 U5 on 2019 October 22 at 21st magnitude. At discovery, C/2019 U5 was located at 10.4 au, roughly the distance of Saturn. Since then, multiple observers have reported cometary activity in images going back to late 2020. Recent observations place it around 17th magnitude. With perihelion not till 2023 March 29, though at a relatively distant 3.62 au, this comet may brighten within reach of large aperture visual observers (10-13th 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 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 >.

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

Stay safe and enjoy the sky!

- Carl Hergenrother

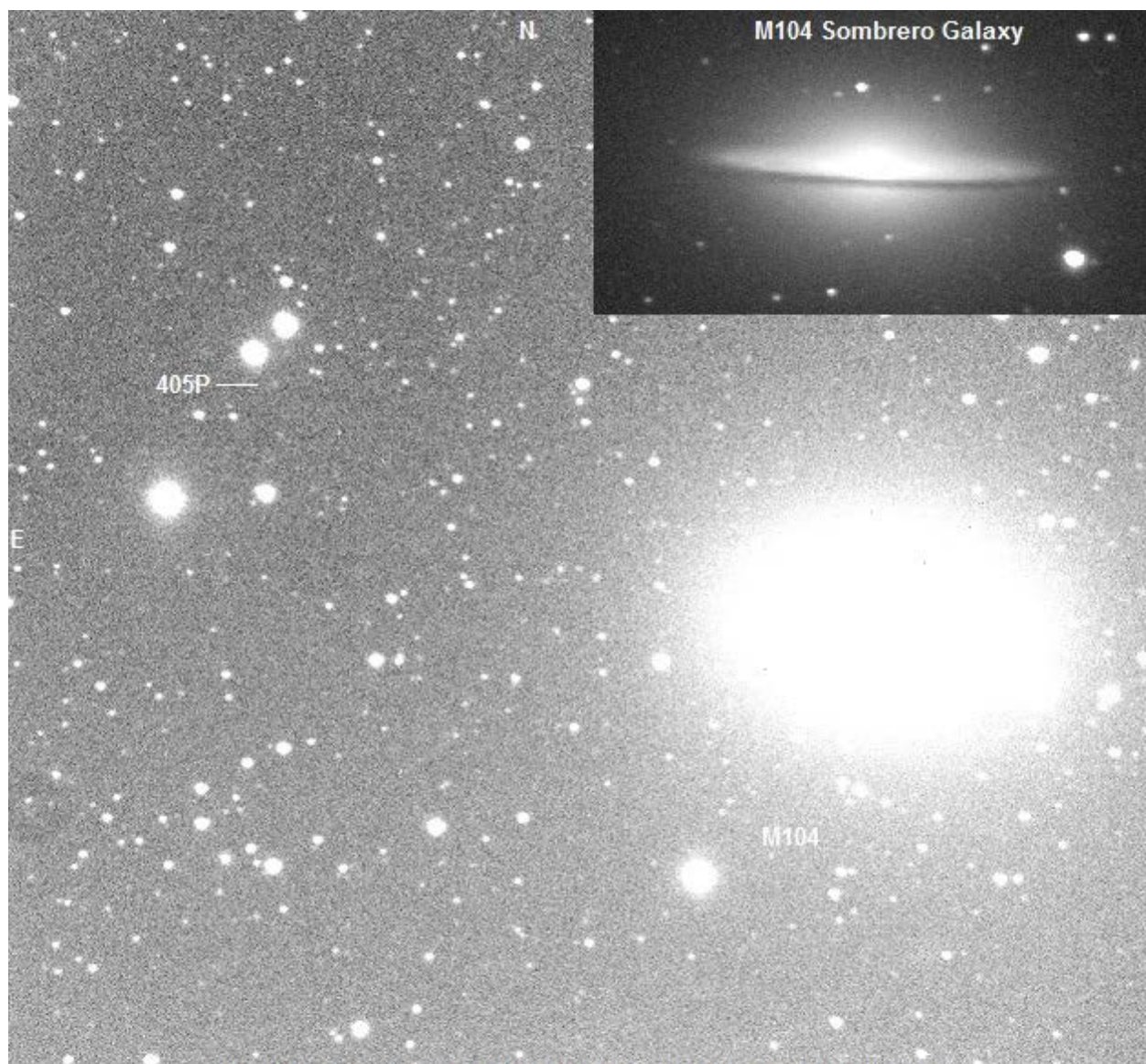
Recent Magnitude Measurements Contributed to the ALPO Comets Section

Comet Des	YYYY MM DD.DD (UT)	Mag	SC	APER	FL	POW	COMA Dia DC	TAIL LENG PA	ICQ CODE	Observer Name
C/2021 D1 (SWAN)										
2021D1	2021 04 05.85	S	9.7	TK	20.3T10	77	8 2		ICQ XX GON05	J J Gonzalez Suarez
C/2020 A7 (NEOWISE)										
2021A7	2021 04 12.45	xM	15.6	AQ	40.0L 4	261	0.3 5/		ICQ XX WYA	Christopher Wyatt
2021A7	2021 04 10.44	xM	15.4	AQ	40.0L 4	261	0.4 2/		ICQ XX WYA	Christopher Wyatt
C/2021 A4 (NEOWISE)										
2021A4	2021 04 12.40	xM	14.9	AQ	40.0L 4	182	0.5 4		ICQ XX WYA	Christopher Wyatt
2021A4	2021 04 10.40	xM	14.6	AQ	40.0L 4	182	0.9 2/		ICQ XX WYA	Christopher Wyatt
2021A4	2021 04 12.40	xM	14.9	AQ	40.0L 4	182	0.5 4		ICQ XX WYA	Christopher Wyatt
2021A4	2021 04 10.40	xM	14.6	AQ	40.0L 4	182	0.9 2/		ICQ XX WYA	Christopher Wyatt
C/2021 A1 (Leonard)										
2021A1	2021 05 02.26	C	17.9	U4	50.7Y 7A320		0.4	0.8 m125	ICQ xx HER02	Carl Hergenrother
2021A1	2021 04 10.15	C	18.0	U4	50.7Y 7b400		0.4	0.3 m245	ICQ xx HER02	Carl Hergenrother
2021A1	2021 04 05.36	V	17.8	U4	50.7Y 7a720		0.4		ICQ xx HER02	Carl Hergenrother
2021A1	2021 04 05.36	C	18.0	U4	50.7Y 7a720		0.4		ICQ xx HER02	Carl Hergenrother
C/2020 T2 (Palomar)										
2020T2	2021 05 03.90	S	9.8	TK	20.3T10	77	7 2/		ICQ XX GON05	J J Gonzalez Suarez
2020T2	2021 04 19.67	xM	12.3	AQ	40.0L 4	59	2.8 6		ICQ XX WYA	Christopher Wyatt
2020T2	2021 04 14.13	I	11.5	TK	25.0C10	62	2.5 4		ICQ XX DECa	Michel Deconinck
2020T2	2021 04 13.68	xM	12.5	AQ	40.0L 4	59	2.6 5		ICQ XX WYA	Christopher Wyatt
2020T2	2021 04 12.67	xM	12.2	AQ	40.0L 4	59	2.7 5/		ICQ XX WYA	Christopher Wyatt
2020T2	2021 04 10.67	xM	12.7	AQ	40.0L 4	59	4.3 6		ICQ XX WYA	Christopher Wyatt
2020T2	2021 04 05.90	S	10.4	TK	20.3T10	77	7 2/		ICQ XX GON05	J J Gonzalez Suarez
C/2020 R4 (ATLAS)										
2020R4	2021 05 05.26	V	9.3	U4	10.6R 5a300	21.0			ICQ xx HER02	Carl Hergenrother
2020R4	2021 05 03.92	S	8.3	TK	10.0B	25 10	3/		ICQ XX GON05	J J Gonzalez Suarez
2020R4	2021 05 03.89	S	9.4	TK	20.3T10	77 7	3/		ICQ XX GON05	J J Gonzalez Suarez
2020R4	2021 05 01.15	S	8.4	TK	12.5B	30 7	4/		ICQ xx HER02	Carl Hergenrother
2020R4	2021 04 20.38	S	8.9	TK	12.5B	30 5	3/		ICQ xx HER02	Carl Hergenrother
2020R4	2021 04 18.30	S	8.3	TK	5.0B	10 5	3/		ICQ xx HER02	Carl Hergenrother
2020R4	2021 04 19.71	xM	9.9	TK	40.0L 4	59 4.4	4		ICQ XX WYA	Christopher Wyatt
2020R4	2021 04 17.04	S	7.8	TK	10.0B	25 15	3		ICQ XX GON05	J J Gonzalez Suarez
2020R4	2021 04 17.03	S	7.7	TK	5.0B	10 15	3		ICQ XX GON05	J J Gonzalez Suarez
2020R4	2021 04 13.70	xM	10.4	TK	40.0L 4	59 3.9	3/		ICQ XX WYA	Christopher Wyatt
2020R4	2021 04 14.13	E	10.0	TK	25.0C10	62 & 2.5	2 &	3.5m150	ICQ XX DECa	Michel Deconinck
2020R4	2021 04 12.69	xM	10.3	TK	40.0L 4	59 5.5	3/		ICQ XX WYA	Christopher Wyatt
2020R4	2021 04 12.12	S	7.9	TK	10.0B	25 12	3		ICQ XX GON05	J J Gonzalez Suarez
2020R4	2021 04 10.72	xM	9.6	TK	40.0L 4	59 2	4		ICQ XX WYA	Christopher Wyatt
2020R4	2021 04 08.14	I	9.1	TK	25.0C15	94 3	2	5.0m 90	ICQ XX DECa	Michel Deconinck
2020R4	2021 04 06.15	S	8.1	TK	10.0B	25 10	3/		ICQ XX GON05	J J Gonzalez Suarez
2020R4	2021 04 06.14	S	8.5	TK	20.3T10	77 7	3		ICQ XX GON05	J J Gonzalez Suarez
C/2020 J1 (SONEAR)										
2020J1	2021 04 19.68	xM	12.9	AQ	40.0L 4	108	0.7 4		ICQ XX WYA	Christopher Wyatt
2020J1	2021 04 13.69	xM	13.3	AQ	40.0L 4	182	0.9 5/		ICQ XX WYA	Christopher Wyatt
2020J1	2021 04 12.67	xM	13.2	AQ	40.0L 4	108	0.6 6		ICQ XX WYA	Christopher Wyatt
2020J1	2021 04 10.68	xM	13.2	AQ	40.0L 4	182	1 4/		ICQ XX WYA	Christopher Wyatt
C/2020 F5 (MASTER)										
2020F5	2021 04 19.73	xM	15.3	AQ	40.0L 4	182	0.5 3/		ICQ XX WYA	Christopher Wyatt
2020F5	2021 04 13.73	xM	15.2	AQ	40.0L 4	261	0.6 4		ICQ XX WYA	Christopher Wyatt
2020F5	2021 04 12.75	xM	15.3	AQ	40.0L 4	261	0.3 5/		ICQ XX WYA	Christopher Wyatt
C/2019 T4 (ATLAS)										
2019T4	2021 04 30.38	xM	14.5	AQ	40.0L 4	261	0.3 5/		ICQ XX WYA	Christopher Wyatt
2019T4	2021 04 12.44	xM	14.1	AQ	40.0L 4	261	0.3 5/		ICQ XX WYA	Christopher Wyatt
2019T4	2021 04 10.42	xM	14.3	AQ	40.0L 4	182	0.4 5/		ICQ XX WYA	Christopher Wyatt
C/2019 N1 (ATLAS)										
2019N1	2021 04 30.36	xS	14.3	AQ	40.0L 4	182	0.9 4		ICQ XX WYA	Christopher Wyatt
2019N1	2021 04 12.42	xM	14.2	AQ	40.0L 4	182	0.8 5/		ICQ XX WYA	Christopher Wyatt
2019N1	2021 04 10.41	xM	14.5	AQ	40.0L 4	182	0.7 4/		ICQ XX WYA	Christopher Wyatt
C/2019 L3 (ATLAS)										
2019L3	2021 04 05.88	S	11.3	TK	20.3T10	100	2.3 4/		ICQ XX GON05	J J Gonzalez Suarez
C/2019 F1 (ATLAS-Africano)										
2019F1	2021 04 19.77	xM	14.9	AQ	40.0L 4	182	0.4 6		ICQ XX WYA	Christopher Wyatt
2019F1	2021 04 13.69	xM	14.7	AQ	40.0L 4	182	0.6 5/		ICQ XX WYA	Christopher Wyatt
2019F1	2021 04 12.68	xM	14.8	AQ	40.0L 4	182	0.5 6		ICQ XX WYA	Christopher Wyatt

2019F1	2021 04 10.71	xM 14.8	AQ 40.0L	4 182	0.3	5/	ICQ XX WYA	Christopher Wyatt
C/2017 K2 (PANSTARRS)								
2017K2	2021 04 19.75	xS 14.1	AQ 40.0L	4 182	0.5	3	ICQ XX WYA	Christopher Wyatt
2017K2	2021 04 12.74	xM 13.9	AQ 40.0L	4 182	0.3	4	ICQ XX WYA	Christopher Wyatt
2017K2	2021 04 10.73	xM 13.8	AQ 40.0L	4 182	0.6	4	ICQ XX WYA	Christopher Wyatt
246P/NEAT								
246	2021 04 19.70	xM 14.4	AQ 40.0L	4 182	0.5	5/	ICQ XX WYA	Christopher Wyatt
246	2021 04 12.73	xM 15.1	AQ 40.0L	4 182	0.4	4	ICQ XX WYA	Christopher Wyatt
10P/Tempel								
10	2021 04 19.78	xM 11.2	AQ 40.0L	4 59	3.1	4	ICQ XX WYA	Christopher Wyatt
10	2021 04 13.76	xM 11.4	AQ 40.0L	4 59	3.1	3/	ICQ XX WYA	Christopher Wyatt
10	2021 04 12.76	xM 11.4	AQ 40.0L	4 108	1.5	4	ICQ XX WYA	Christopher Wyatt
10	2021 04 10.76	xM 10.8	AQ 40.0L	4 59	3.1	3/	ICQ XX WYA	Christopher Wyatt

Recent Select Images Contributed to the ALPO Comet Section

405P/Lemmon + M104



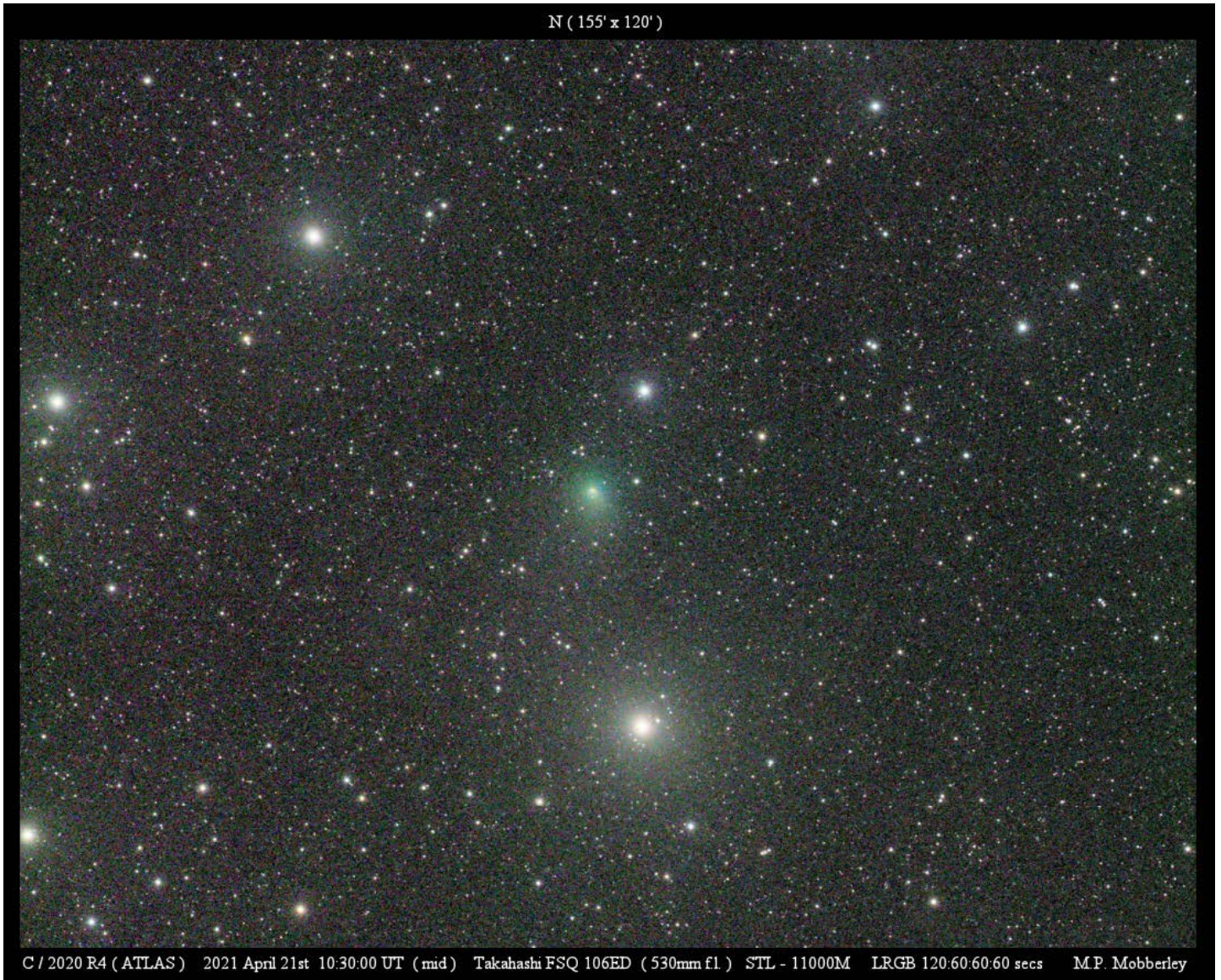
405P/Lemmon, m=18.8, 2021/04/18 0820UT, 1x600s, FOV 26'x24'
11" SCT f/6.4 STF-8300M Mike Olason, Tucson Arizona

C/2017 K2 (PANSTARRS)

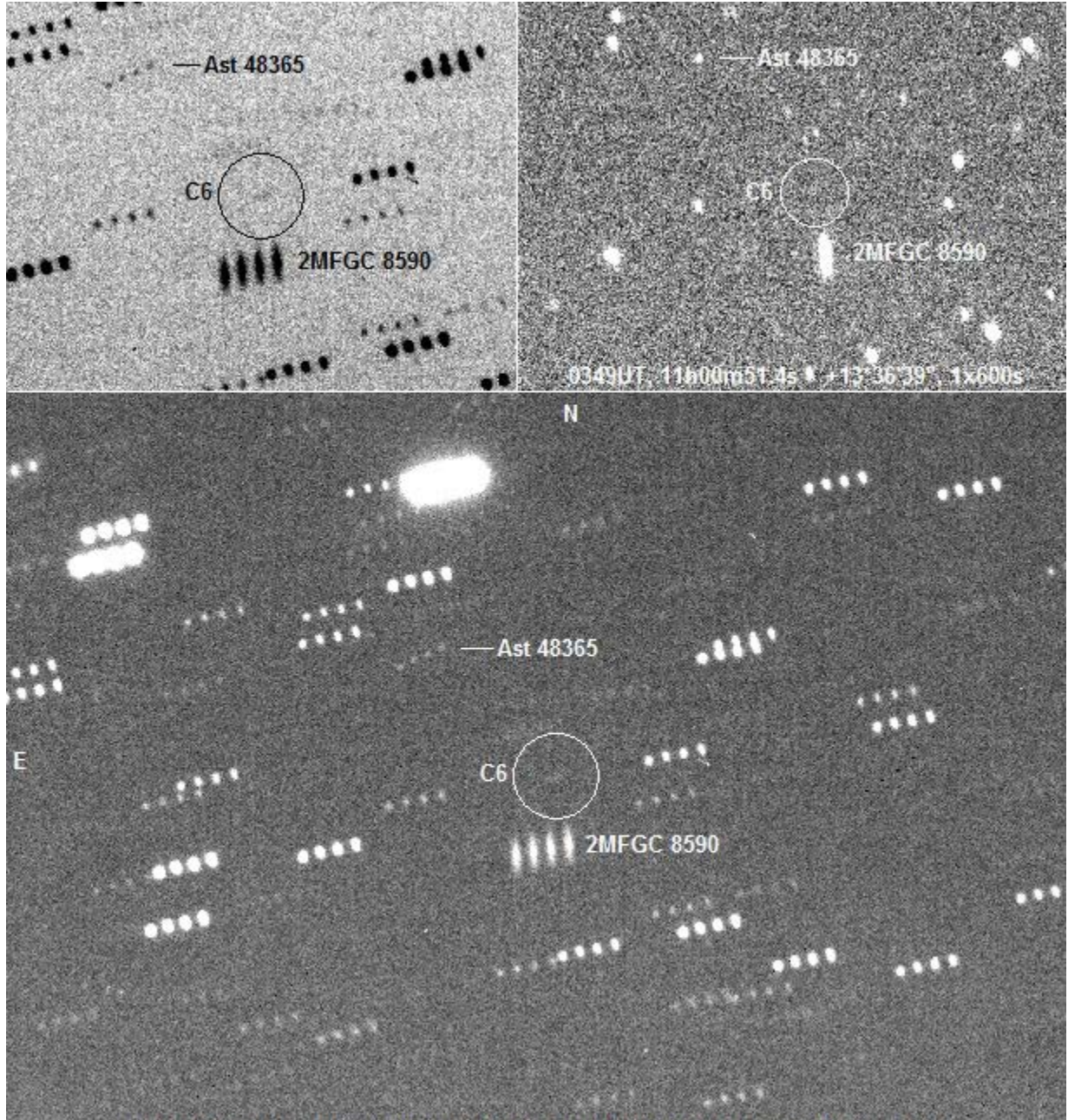


2021-April-08 by Tenho Tuomi

C/2020 R4 (ATLAS)



C/2021 C6 (Lemmon)



C/2021 C6 (Lemmon), m=20.1, 2021/04/18 0349-0429UT, 4x600s, FOV 12.6'x8.9'
11" SCT f/6.4 STF-8300M 1.24"/pixel Mike Olason, Tucson Arizona