

Lorain County, Ohio

March 2021

Website: blackriverastro.org

Newsletter submissions: Editor



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- Wednesday, March 3, 7 p.m.: Regular meeting via Zoom.
Program: Understanding and viewing planetary nebulae, by John Reising

- Thursday, March 11, 7 p.m.: Board meeting via Zoom.

- No public observing sessions in March due to the pandemic.
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Visit Our Website

Explore if you will the informative BRAS website and all its interesting, timely links, and join the interactive members-only BRAS Forum to better keep in touch.

***Guidescope* Contributions Wanted**

If you have any astronomy-related wanted/for sale announcements, photos you've taken, interesting article links, equipment reviews, observing reports, essays, or anything to which that you think the local amateur astronomy community could relate, please send it to your humble *Guidescope* editor for inclusion in forthcoming issues.

BOARD SUMMARY February 11, 2021

The February Board of Directors meeting was called to order at 7:06 p.m. via Zoom with eight Directors present. The minutes had been emailed previously by Secretary Bill Ruth, and were unanimously approved. Next, Dan Walker, our Treasurer, gave his report with a balance brought forward of \$6,318.94, no income for January, and one expense which was payment of our annual liability insurance policy billed at \$300.00. Thus, the closing balance was \$6,018.04.

Committee reports followed with *Guidescope* Editor Bill Ruth reporting that the newsletter was status quo. The Website committee reported that the monthly newsletter and the Observers Calendar had not been updating to the website. Our Webmaster, David Griffiths, made some changes to the "Publications" section of the site so that the *Guidescope* and Observers Calendar are now up to date and are accessed by drop down menus. John Reising, our Instrumentation chairman, has been at the observatory recently, and reports that all the instruments looked good in spite of being unused. The new storage building stays especially clean with little dust. The OTAA Chairman had no report. Steve Schauer, the Metro Parks Liaison, reported that the Lorain County Metro Parks have cancelled all public use of meeting rooms until at least June 14th, so our General Meetings will remain on Zoom for the time being.

Programs for our monthly General Meetings are as follows:

March	John Reising	Understanding and viewing Planetary Nebulae
April	Dave Lengyel	Understanding and viewing Globular Clusters
May	Dan Walker	Binocular and naked eye Asterisms
June	Mike Garrett	The Galilean Moons of Jupiter
July	Tim Kreja	A History of the Reflecting Telescope
August	Steve Schauer	OTAA's Past and Present or Types of Telescopes
September	Dave Lengyel	Understanding and Viewing Open Clusters
October	Elections/ Annual Meeting of the Members/short video	
November	Open	
December	Annual Holiday Party	

Old Business followed with the first item being a discussion of the 16" Newtonian reflector we are finishing. One thing we need is a Meade power cord and an appropriate power supply. Alternately, the scope can be powered by batteries. John Reising will check the manual and see what voltage the power supply needs to be. It is possible the power supply for the Celestron CG-5 mount will be compatible, and if not, John may have one at home that will work.

Secondly, we need mounting rings to connect the 16" to its mount. Parallax makes a set of rings that are custom designed for this telescope for \$549.00. We were hoping that Greg Cox could fabricate rotating rings for us, but Greg does not have access to the proper materials. However, Greg believes he can modify the Parallax rings to allow for efficient tube rotation, so a motion was made and passed to purchase the Parallax rings. The intent is to have everything we need so that when we can start meeting and working face to face again, the 16" can be finished quickly. In addition to the mounting rings, we still need to install the encoders and motors so the telescope can be a computerized "push to" drive system.

The third item of Old Business was a continued discussion about covers for the new 16” telescope and for the 9” Lucas scope. We had planned to have the nice folks at TeleGizmos make covers for us, as their standard covers will not fit a scope as large as the 16” on a GEM. However, the new storage building is so clean, that we may only cover the center of the scope where the electronics are located, as both ends of the tube are completely enclosed. A large leaf size trash bag may cover the Lucas scope.

The final item of Old Business was a discussion of our TNS system. “TNS” stands for text notification system, and is a service the club offers whereby members who sign up for the service get a text or email when we have a public event. We have decided to create two TNS lists. One is for anyone who signs up for the service and will be for public events. The second list will be for impromptu star parties. Impromptu star parties are for paid-up members only and are one of the perks of being a member. Since these are members only and not open to the public, a second list is needed. Dan Walker will create this list and keep it updated as members pay their dues.

New Business followed, with the first item being a discussion of the Forum and Gallery on our website. The Gallery is a place where members who sign up can post their astrophotos to share with the club. This has been little used in the last few years. One reason may be the general move to using social media like the club Facebook page or Instagram for posting photos, but we wanted to remind members that the Gallery is there, and signing up to use it is easy. The Forum is a place for discussion among members and a place to make announcements. For example, the President usually announces public events like star parties there as a reminder to members who can, if they wish, get these announcements texted to them. There is also an “Equipment” thread where people can post questions or comments about buying or using telescopes and other equipment. This also is open only to paid-up members to keep outsiders from posting conspiracy theories or political comments. We actually closed membership before the recent election because so many Russian bots were trying to gain membership...sometimes dozens a day. We are going to contact our sister astronomy clubs to see how they handle forums (if they have them) to see if we wish to make changes. This is also an underused perk for our members.

The second item of new business was a discussion of how we may better serve our new club members. One way is to tailor some of our monthly meeting programs to people just beginning in astronomy, while still offering info for more advanced members. Please go back to the first page and look at the programs being offered. The programs on planetary nebulas, globular clusters, open clusters, asterisms, and the moons of Jupiter are all intended to explain what these objects are, and how to observe them. Also, if anyone would like to do a program on how to observe the planets, we have an opening in November. If interested, please contact the President at BRASPres@gmail.com or contact any Board member. We would also love to have someone do a program on observing the moon.

A second way we are going to try to serve our less experienced members is by doing a brief (5-8 minute) presentation at each (or most) general meetings on very basic, but necessary things to know about astronomy. Topics may include using binoculars for astronomy, the nomenclature of double star observing, aperture vs. power, etc. Each Director was asked to bring topic suggestions to the next Board meeting and any member with a suggestion is encouraged to contact the President.

Dates for March were set, and the meeting was adjourned at 8:10 p.m. NOTE: THE APRIL GENERAL MEETING WILL BE THE SECOND WEDNESDAY IN APRIL, APRIL 14TH, rather than our usual first Wednesday of the month date. ~Steve Schauer

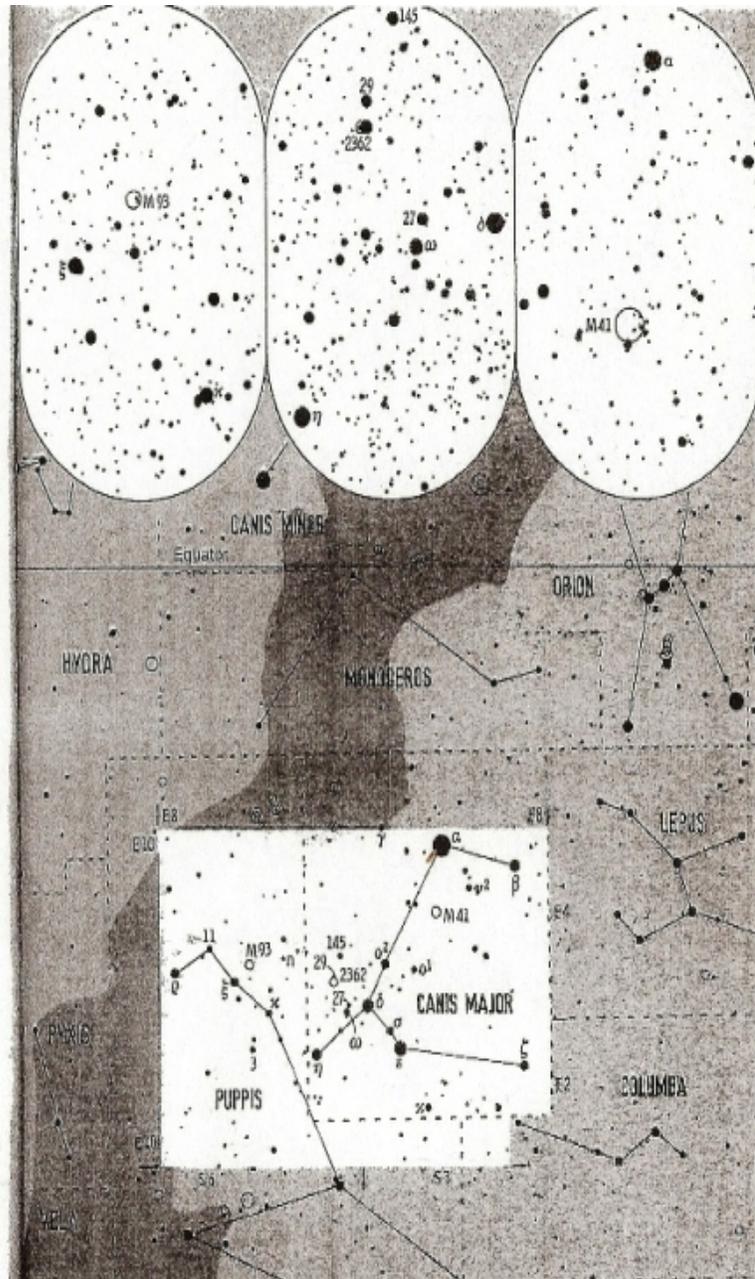
E6 Equator, Ecliptic Winter Constellations

NEBULA	Position	v-Mag.	Size	Shape	Type	Vis.	Dist.	R.A.	Dec.
2287 M41	CMa	5	12/30'	o m	OC	☞	2500ly	6 ^h 46 ^m .2	-20 ^o 73'
2362	CMa	4	7	o p	OC	☞	5000	7 18.7	-24.93
2447 M93	Pup	6†	12	o m	OC	☞	4000	7 44.6	-23.86

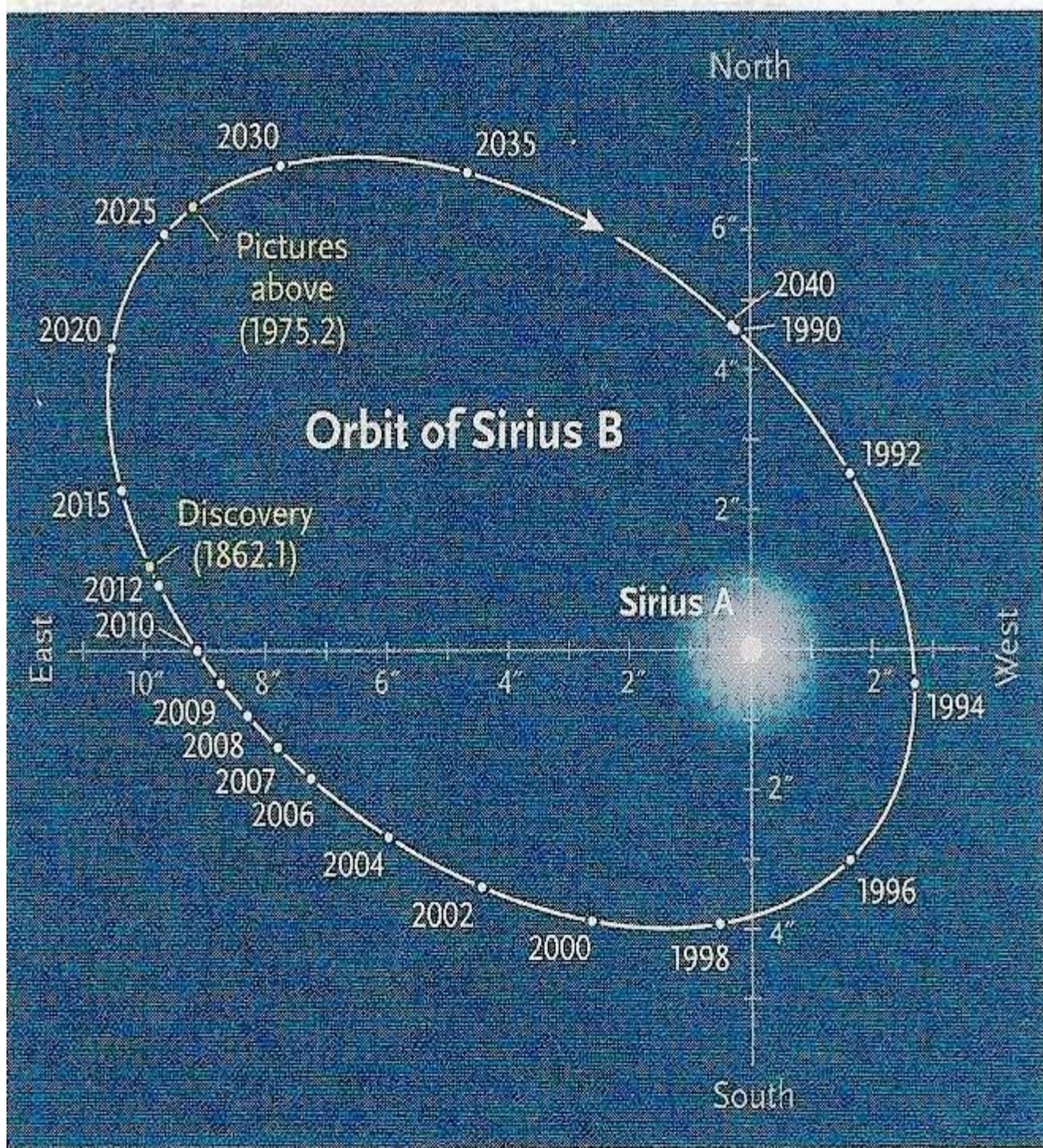
- 2287 M41 Nicely resolved in binoculars, an excellent object for small scopes, even visible with the unaided eye as a glow, not too impressive in a telescope, contains few faint stars, a binary is on the northwest side.
- 2362 In binoculars, the mag. 4.4 star τ CMa almost outshines faint background glow of mag. 6 (9^{th}); well resolved in a telescope, triangular.
- 2447 M93 Binoculars resolve a few bright stars within a nebulous background; a telescope resolves fainter stars well; three parallel chains of stars.

STAR	Position	V-Mag.	B-V	Te. Sp.	Abs.	Name	Dist.	R.A.	Dec.
1 ζ CMa	☞	3.0	☞ -2	B3-2 ^{III}	Phurud	350,800ly	6 ^h 20 ^m .3	-30 ^o 06'	
2 β CMa	•	2.0	-2	B1-4	Mirzam	500	6 22.7	-17.96	
7 ν^2 CMa	•	4.0	1.0	K1 2		65	6 36.7	-19.26	
9 α CMa	•	-1.5	0.0	A0 1	Sirius	8.6	6 45.1	-16.72	
13 κ CMa	•	3.5-4.0 \ddagger	-1	B2-4		800	6 49.8	-32.51	
16 σ^1 CMa	•	3.8-4.0	1.7	K3-5		2000	6 54.1	-24.18	
21 ϵ CMa	•	1.5	☞ -2	B2-4	Adhara	430	6 58.6	-28.97	
22 σ CMa	•	3.5	1.7	K7-4		1200	7 01.7	-27.93	
24 σ^2 CMa	•	3.0	-1	B3-7		2500	7 03.0	-23.83	
23 γ CMa	•	4.1	-1	B8-1		400	7 03.8	-15.63	
25 δ CMa	•	1.8	0.7	F8-7	Wezen	2000	7 08.4	-26.39	
27 CMa	☞	4.4-4.7	-2	B3-4	EW CMa	1500	7 14.3	-26.35	
28 ω CMa	☞	3.8-4.0	-1	B2-4		1000	7 14.8	-26.77	
145 CMa	☞	4.5	1.1	K1-4		2000,250	7 16.6	-23.31	
29 CMa	☞	4.8-5.3	-1	O7-7	UW CMa	5000	7 18.7	-24.56	
31 η CMa	☞	2.4	☞ -1	B5-7	Aludra	2500,600	7 24.1	-29.30	
μ Pup	•	5.1	☞ 0.4	F6 3		95	7 34.3	-23.47	
κ Pup	☞	3.8	☞ -2	B5-2		450	7 38.8	-26.80	
3 Pup	•	3.9	0.2	A2-7		5000	7 43.8	-28.96	
7 ξ Pup	☞	3.2	☞ 1.1	G5-5	Aspidiske	1200,350	7 49.3	-24.86	
11 Pup	•	4.2	0.7	F7-2		500	7 56.9	-22.88	
15 ρ Pup	☞	2.8	0.5	F5 1		63	8 07.5	-24.30	

BINARY	Position	V-Mag.	B-V	Te. Sp.	Sep.	PA	Vis.	VARIABLE STAR		
1 ζ CMa	☞	3.0	7.7	-2 1.1	175 ^o	☞	☞	13 κ CMa	☞	irregular
13 κ CMa	☞	4	6.8	-2 -1	265.4	•	☞	16 σ^1 CMa	☞	irregular
21 ϵ CMa	☞	1.5	7.5	-2 0.1	7.5	•	☞	27 EW CMa	☞	irregular
145 CMa	☞	4.8	6.0	1.7 0.3	27	•	☞	28 ω CMa	☞	irregular
31 η CMa	☞	2.4	6.9	-1 0.0	179	•	☞	Extrema	☞	3.6-4.2
μ Pup	•	5.8	5.9	0.4 0.4	9.8	•	☞	29 UW CMa	☞	Period 4.3934 d
κ Pup	☞	4.5	4.6	-2 -1	9.9	•	☞	Min.	☞	2454000.6
7 ξ Pup	☞	3.3	5.3	1.2 0.8	288	•	☞			



Thanks to John Reising for the Constellation of the Month



This is the apparent orbit, projected on the sky, of Sirius B with respect to Sirius itself. The true orbit is inclined 43° to the plane of the sky. (Dates are for the beginning of each year.)

~John Reising

Deep-Sky Objects for March

Objects for Binoculars							
RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
08 ^h 13.1 ^m	-05°48'	M48	m5.8v	54'		Hya	Open Cluster, 80 stars
08 ^h 40.1 ^m	+19°57'	M44	m3.1v	95'		Cnc	Open Cluster 50 stars, "Beehive or Praesepe"
08 ^h 50.4 ^m	+11°49'	M67	m6.9v	29'		Cnc	Open cluster 200 stars
08 ^h 46.7 ^m	-28°46'	48 (Iota-1)	4.2, 6.6	30.5"	307°	Cnc	Double Star
13 ^h 23.9 ^m	+54°56'	79+80 (Zeta)	2.3, 4.0	14.4"	150°	Cnc	Double Star
Objects for Small Telescopes (2-6 inch)							
RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
06 ^h 26.8 ^m	+58°25'	5 Lyn	5.3, 9.8	31.4"	139°	Lyn	Triple Star (3 rd star 7.9, 96°, 272°)
08 ^h 52.7 ^m	+33°25'	NGC 2683	9.8v	8.4'x2.4'		Lyn	Galaxy, type SA(rs)b II-III
09 ^h 55.6 ^m	+69°04'	M81	m6.9v	24.0'x13.0'		UMa	Galaxy, type SA(s)ab I-II
09 ^h 55.8 ^m	+69°41'	M82	m8.4v	12.0'x5.6'		UM	Galaxy, IO
10 ^h 24.8 ^m	-18°38'	NGC 3242	m7.8v	>16"		Hya	Plan. Neb. "Ghost of Jupiter"
Objects for Medium-Size Telescopes (8-14 inch)							
RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
08 ^h 26.8 ^m	+26°56'	23 Cnc (Phi-2)	6.3, 6.3	5.1"	218°	Cnc	Double Star
08 ^h 33.4 ^m	-16°09'	NGC 2610	m12.8v	37"		Hya	Planetary Nebula
08 ^h 48.3 ^m	+00°33'	OE194	7.3, 10.8	12.6"	56°	Hya	Double Star
08 ^h 49.2 ^m	+60°13'	NGC 2654	m11.8v	3.8'x0.7'		UMa	Galaxy, type SBab: sp II-III
09 ^h 10.3 ^m	+07°02'	NGC 2775	m10.1v	4.6'x3.7'		Cnc	Galaxy, type SA(r)ab
09 ^h 31.5 ^m	+63°04'	23 UMa	3.7, 8.9	22.7"	270°	UMa	Double Star
09 ^h 32.2 ^m	+21°30'	NGC 2903	m9.0v	12.0'x5.6'		Leo	Galaxy, type SAB(rs)bc I-II
Objects for Larger Telescopes (16-inch & larger) Challenge Objects							
RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
07 ^h 38.1 ^m	+38°53'	NGC 2419	m10.3v	4.1'		Lyn	Glob. Cl. "Intergalactic Wanderer"
08 ^h 14.7 ^m	+49°04'	NGC 2541	m11.8v	7.4'x3.3'		Lyn	Galaxy, type SA(s)cd
08 ^h 54.2 ^m	+08°55'	PK219-31.1	m12.0v	>980"		Cnc	Planetary Nebula (use O-III filter)
08 ^h 54.2 ^m	+30°35'	57 Cnc (Iota-2)	6.0, 6.5	1.4"	316°	Cnc	Double Star
09 ^h 19.8 ^m	+33°44'	NGC 2832	m11.9v	3.0'x2.1'		Lyn	Galaxy, type E+2: (In Abell 779 galaxy group)
09 ^h 45.7 ^m	-14°20'	NGC 2992	m12.2v	4.0'x1.2'		Hya	Galaxy, type SO pec sp
09 ^h 45.8 ^m	-14°22'	NGC 2993	m12.6v	3.3'x1.8'		Hya	Galaxy, type IO? Pec

Print and use the [Deep-Sky Interest Group - Observation Form](#) to record your observations.

Deep sky objects list courtesy of Len Jezior

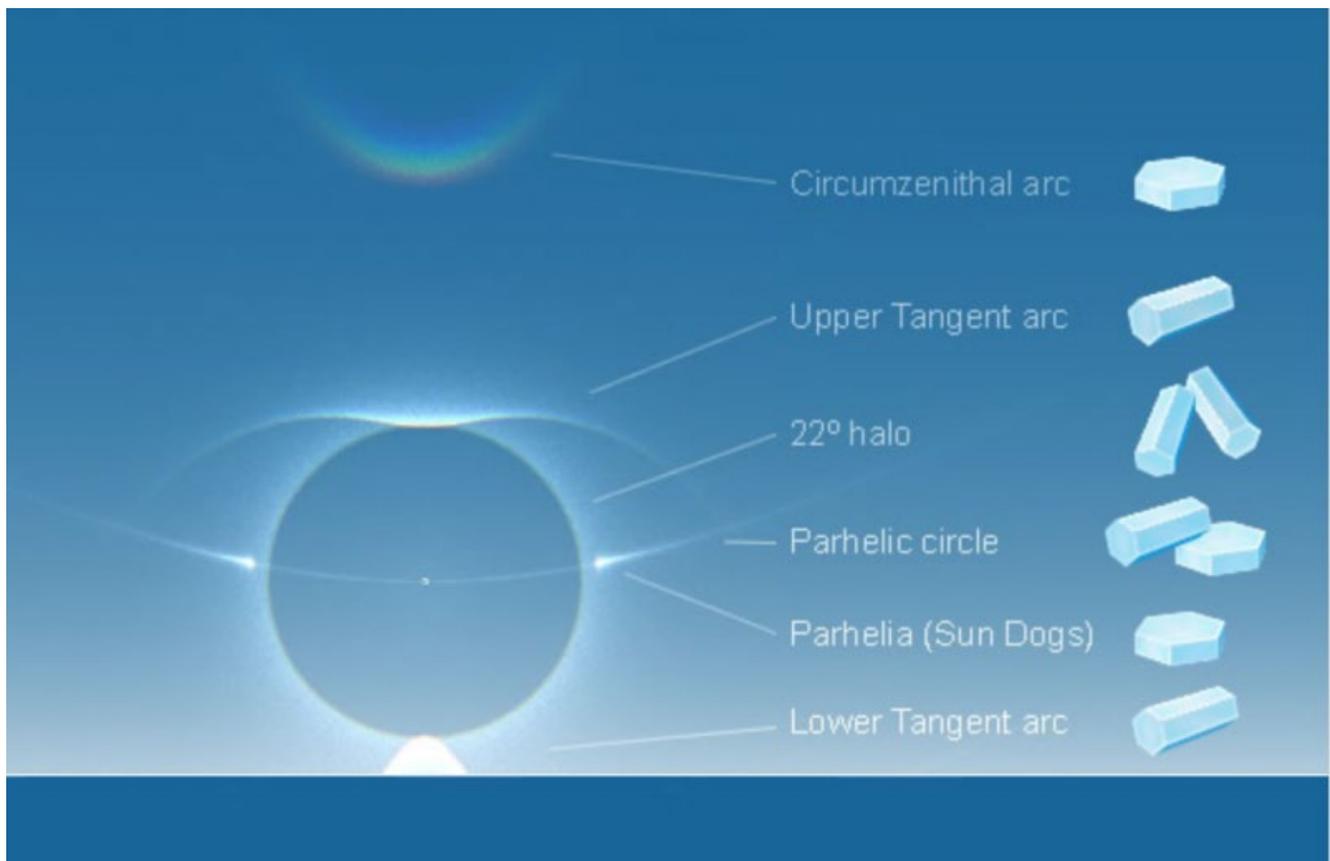
The first image below shows two sundogs, a 22° halo, and an upper tangent arc. The second, taken by my friend Theresa, who works at Oberlin, shows a lower tangent arc (as well as the observatory). The third is Les Cowley's diagram.

These were taken around noon on 2/17/21.

~Dave Lengyel







How to Spot a Young/Old Moon

While the Full Moon is often considered natural light pollution, the same astronomers who hate the Full version may plan, days in advance, the perfect spot to sight a Young or Old Moon within 24 hours of New. So why the change in attitude?

Young/Old Moons are, besides quite aesthetic, rare, very rare. To sight a Moon within 24 hours of New requires all the conditions to line up just right. If everything goes perfectly, on the day after/before New Moon (or even on the same day depending on the time of New), just past sunset/before sunrise, a wire-thin crescent will pop out low on the horizon. Needless to say, when dealing with a Moon less than 2% illuminated, binoculars are a must.

So here is why the Young/Old Moon is so difficult to spot:

1. Timing. If New Moon is timed too close to sunset/sunrise, it will be lost in the Sun's glare on the day of New Moon and will be way past the 24 hour window at its first/last visibility for the cycle. While pretty, a 36 hour Moon is no challenge, pure and simple. Look up and find it.
2. Clouds. If it's cloudy, there's no seeing the Moon. In Northeast Ohio, spring and fall are 50/50 odds for a clear sky, at best.

3. Light. Young/Old Moon hunters are forced to fight the Sun. With the Moon under 2% lit, just the act of spotting the Moon low on the horizon in such light conditions is a challenge because that is where the Sun is. A saving grace can be a nearby planet or bright star. If you can use a bright star or planet as a marker, it is a lot easier to estimate where the Moon will appear once the sky gets dark enough.

4. Haze. Even more so than during the day, haze makes its presence known at dusk, looking similar to wispy clouds on the horizon. While the biggest problem during the summer, haze can even appear in winter, too. Even a crystal-clear day can produce haze on the horizon at dusk. While the haze will quickly dissipate come dark, that's too late for the Young Moon. As a way to estimate haze before dark, look at the daytime sky. The deeper the blue, the lower chance of haze ruining the show. The good news, come fall and Old Moon season, the haze will be long gone as dawn approaches.

5. Horizon Obstructions. Buildings and trees can play havoc with the horizon as Young/Old Moons will be within 10 degrees of it. What does that look like? Hold a fist vertical at arm's length to simulate 10 degrees, then go outside and see how your surroundings do. Chances are, you'll have to scout a good observation sight in advance if you live in a built-up area.

Now for the good news: spring is Young Moon season. Because of the near vertical ecliptic at sunset, the waxing Moon will hang higher in the sky now than any other time of year, which is good. For Young Moon Hunters, March through May (add February and/or June depending on time of month New Moon falls) is an ideal time to look.

On the other end of the scale, fall is Old Moon season as the ecliptic is nearly vertical from September through November at sunrise (add August and/or December depending on New Moon's time of month), making this the ideal time to spot an Old Moon, one within 24 hours of becoming New again. Whichever end of day(hopefully both!) you plan to hunt a thin Moon, give it a try if its clear. As for this spring, the Young Moon dates are as follows:

March 14
April 12
May 12
June 11

Of the four, April is special as it will feature a true Young Moon, which will be about 23 hours old as it sets, so mark your calendars now!

~Denny Bodzash

Astronomy Fun Facts

--Due to precession of the Earth's axis, Polaris will cease to be the North Star in 13,000 years.

--Enceladus, one of Saturn's moons reflects 90% of the Sun's light due to its icy surface.

--There are believed to be more than 1,600 major volcanoes on the surface of Venus, giving it more than any other planet in the solar system.

--Pluto's largest moon Charon is one half the size of Pluto.

--A photo of astronaut Charlie Duke's family has been on the surface of the Moon for the last 43 years. Duke left it there in a large Ziploc bag.

~Steve Schauer