

Newsletter of
The Black River Astronomical Society

Guidescope

Lorain County, Ohio

August 2016

Website: blackriverastro.org

Newsletter submissions: [Editor](#)

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--Saturday, July 30, 3 p.m. - ?: CAA OTAA 3p-?, Letha House (note: Spencer Lake Road closed—take Garver Road to Richman Road south to Letha House)

--Wednesday, August 3, 7 p.m.: Regular Meeting, Carlisle Visitors Center.
Program: Lee Lumpkin on using Stellarium, the computer star atlas.

--Thursday, August 4, 7 p.m.: Board Meeting, Blue Sky Restaurant, Amherst

--Saturday, August 6, MVAS OTAA 5p-? (observatory OTAA map link [here](#))

--Friday, August 12, 10 p.m.-midnight: Public observing, Nielsen Observatory
(cloud backup date Saturday, August 13)

--Sunday, August 21, noon-4 p.m.: Solar observing, Wellington Reservation

--Friday, August 26, 10p-midnight: Public observing, Nielsen Observatory
(cloud backup date Saturday, August 27)

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Visit Our Website

Explore the informative BRAS [website](#) and all its interesting, timely [links](#), and join the interactive members-only [BRAS Forum](#) to better keep in touch.

BOARD SUMMARY July 14, 2016

The Board of Directors meeting was called to order at 7:02 p.m. with 10 Directors present. The minutes from the June meeting were accepted as read as was the Treasurer's report. Committee reports followed with editor Bill Ruth reporting that the *Guidescope* was status quo, although he would appreciate any submissions from any BRAS member who would care to do so. Lee Lumpkin reported that the website was going well with no broken links or other issues reported. Under Instrumentation, Steve Schauer discovered that the Telrad finder on the orange tube C-14 did not work. When fresh batteries failed to revive it, he replaced it with another Telrad that was stored in the equipment cabinet. Dave Lengyel and John Reising have borrowed the club video eyepiece and the flat screen monitor to try out at the Oberlin College observatory so the large telescope in the dome can be used remotely with visitors. The OTAA Committee head reported that the CAA OTAA is Saturday July 30th at Letha House Park, with talks starting at 3:00 p.m. and the pot luck dinner starting at 6:00 p.m. The MVAS OTAA is Saturday August 6th starting at 5:00 p.m. Club members are encouraged to attend both as we need to support other clubs and other amateur astronomers. The Metro Parks Liaison had no report.

Programming is as follows:

August	Lee Lumpkin	Using Stellarium, the computer star atlas
September	Dave Lengyel	Member photos of the Transit of Mercury
October	Lee Lumpkin	Using the club's online Forum, Gallery, Text Notification System, and website. This is also ELECTIONS and the Annual Meeting of the Members, required by our By-Laws.
November	OPEN	Anyone interested in giving a presentation?
December	Annual Christmas party and pot luck held at Amherst Beaver Creek Reservation	

Under Old Business, the President asked Dan Walker to report on the outreach he was doing with the Firelands Boy Scout Camp. Dan reported that he went to the camp on the requested night to join a Night Walk to point out constellations, use his reflector to do observing and to help out with the

Astronomy Merit Badge. Only a few Scouts reported to him, and the camp never responded when Dan asked about the second session (four were planned). Thus we are assuming that there is inadequate interest at this time. There was also some discussion about trying again to get the old BRAS moon map and wedge that are still at the camp from when we used to observe there many years ago.

Most of the time was spent on a debriefing of the World Wide Solstice Festival. In spite of our best efforts, attendance at the event was very poor. It was a hot day, but very few club members or members of the public attended. We discussed whether we should change the format to simply do solar observing and not make it a festival. Trying to arrange for food, live music and an art gallery may simply be too much to take on. We also discussed leaving Mill Hollow and moving the event back to Lakeview Park, perhaps piggybacking on another event where there would already be a crowd. The concern here is that the summer solstice is almost always at the same time as the Lorain International Festival and the volleyball tournaments at Lakeview. This would guarantee a crowd, but parking is a huge problem then, and they may not want any additional events. We will contact the people at Lakeview Park and ask. The solstice in 2017 is on Wednesday June 21st, so our solar viewing session could be the Sunday before which is June 18th or the Sunday after which would be the 25th.

The final item of Old Business was elections. As members know, a third of the Board of Directors are elected each year to a three year term. This year the terms expire for Dan Walker, currently serving as Treasurer; Steve Schauer, currently serving as President; Jeff Walsh, and Micky Hasbrook. All have agreed to stand for election again. The position of Director is open to any BRAS member who has the time and interest in serving, and we encourage anyone so interested to contact Lee Lumpkin or President Schauer. Once Directors are elected the Board will retreat to another room to select the Executive Officers. Lee Lumpkin has agreed to run the election.

Next came New Business, with solar observing as the first item to discuss. When John O'Neal originally made the solar observing schedule for 2016, he had us observing at Bur Oak in July. We later moved that session to Sandy Ridge as per a request from Tim Fairweather of the Metro Parks. When Tim, who is kind enough to list our events for us in the *Arrowhead*, listed solar observing for July, he used John's original list that had us at Bur Oak. Since we couldn't contact every citizen in Lorain County to change the event back to Sandy Ridge, we decided to send an all-club email announcing the change to Bur Oak and to do our observing there. For the same reason, our August solar session will be at Wellington and not Sandy Ridge as is posted on our calendar. The club calendar will be changed.

The second item is an exciting opportunity. BRAS member Ray Sajka works at the NASA Plum Brook facility in Sandusky. He has kindly offered to arrange a private tour of the facility just for BRAS members. Board members are going to select a couple of possible dates and we will clear these with Ray and announce them to the membership. The tours work best if they are given during the week, as the facility is quiet during the weekends. We are considering an afternoon tour, perhaps starting at 1:00 p.m. or so. More information will be forthcoming.

We next had the pleasant task of voting in a new member, and the club is delighted to welcome Charlee Farlow of Amherst to our ranks!

We also wish to remind BRAS members that the Richland Astronomical Society is having its Hidden Hollow Star Party the weekend of September 30-Oct. 2nd. Their facility is south of Mansfield, and BRAS members are encouraged to see the brochures that were handed out at the last meeting and to see their website for information as this is a great event.

Next Tim Kreja reported on his attendance at the RMSS star party which he attended. Sadly the weather was cloudy and rainy for the event.

It was also announced that the JUNO spacecraft currently orbiting Jupiter will start sending its high definition photos on August 27th and will continue until February of 2018.

Because the President will be out of town in mid August, the August Board of Directors meeting will be moved to one week earlier, to Thursday the 4th, the day after the General Meeting.

The next item of new business was a discussion of our participation in the LCMP Adventure Fest. This is an annual event, run by the Metro Parks bringing together groups who do outdoor, nature related activities. Many groups and activities are presented and we usually do solar observing at the event. There are great crowds and it is an opportunity for us to show off the club and hopefully gain some new members. This year the event is Saturday September 10th and the Board decided to participate again. Members are encouraged to join us, especially anyone who has a solar equipped telescope. It is a fun event.

Next we had the wonderful news that long time member Randy Beachler donated a TeleVue Delos 6mm eyepiece to the club. We have decided to make it a separate purchase door prize at our OTAA convention on September 3rd. To thank Randy, the Board voted to make Randy a Patron member for the next three years. Jim Cunningham was also voted in Patron status for his many years of contributions to the club. A Patron gets three years of free membership in the organization.

Next, John Reising reported that he was contacted by Diane Lucas recently. Diane is a renown amateur telescope maker and one of the founders of our club. She would like to donate one of the telescopes that she made, a 6-inch f23 Maksutov. This scope was built by Diane over 50 years ago and won an award at Stellafane. There is also a photo of Diane and this telescope in one of the editions of *Amateur Telescope Making*. John Reising has volunteered to go pick up the scope. She has also offered to do a program for us about the history of the club and will do so in either March or April of this upcoming year.

The last item of New Business was a request from the International Dark Sky Organization for donations. They have received a matching funds grant which will double the amount of any donation. The Board voted to send them a \$50.00 donation.

Dates were set, and meeting was adjourned at 8:59 p.m.

~Steve Schauer



GUIDESCOPE VS. TELRAD/RED DOT VS. LASER FINDERS

In this article, I'd like to compare the characteristics of three kinds of telescope guide finders. As the title implies, we'll examine the guidescope, a small telescope itself, the Telrad or "red dot" finder, and the telescope-mounted laser. All three devices need to be attached and aligned to the telescope they serve.

The Guidescope...

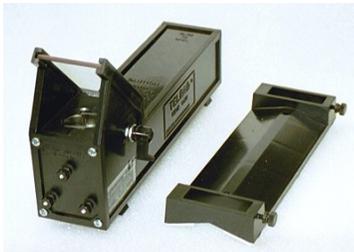


is a small telescope of weak magnification providing a broad image of the sky and displays cross-hairs at the eyepiece image. Some guidescopes come with a 90° prism or mirrored eyepiece to provide more comfortable viewing during observations.

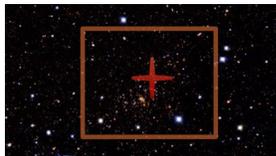
The advantage of the guidescope is that an electronic "guider" camera can be attached to the guidescope. The device then electrically operates the telescope mount, thereby accommodating high-precision tracking. Personally, I know of no amateur astronomer who does that with a mobile scope. This application is more likely to be installed on permanently pier-mounted instruments.

Because the image isolates the view from the sky through a magnified & relatively narrow field of view, this is my least favored apparatus. A 90° prism eyepiece exacerbates this problem. Looking through such a "peep hole" with magnification makes it difficult to see where, in the sky, the telescope is pointing in relationship to the whole or broader view. Unless the cross-hairs are illuminated, they're near useless in the dark.

The Telrad or Red Dot...



finder is a device that generates a reflection of an illuminated image on a partially silvered "window". The sky is observed through the display on which the red dot or target is overlaid.



Because this device provides no magnification and is always viewed from the rear, the relationship with an overall view of the sky is easily apparent. Telrad mounts are separate from the actual viewing device. (See illustration.) For this reason, additional mounts can be purchase to share the finder among multiple telescopes. Telrad & red-dot devices are economical priced compared to the cost of an optical guidescope and is most favored by both seasoned amateur and professional astronomers alike.

The 2 most notable disadvantages of this device are as follows...

1. Because the device relies on an electrically illuminated overlay, it is frequently left "on" when not in use, resulting in prematurely exhausting their batteries.
2. The finder must be viewed from the rear. This can make viewing through the display awkward, particularly if the target is located high in the sky.

The Laser...



is the newest of finder devices. It works by projecting a clearly visible light beam through the air while seemingly terminating on the celestial plane. Its best advantage is that the beam acts as a pointer and can be comfortably viewed from just about any angle near the telescope. A properly applied laser cannot be seen from a side view after about 50 feet. This provides some safety and security in operation. However, looking directly into the laser beam, even at considerable distance, can result in eye injury. This makes lasers a bit more hazardous than other finder types.

While various lasers produce light beams of various colors, green and red are the most common.

Small red lasers are most often used as red-dot "pointers". While cheap & convenient, their power specs generally don't produce a satisfactory tracking beam.

A "green" laser is generally considered the best match for astro application. The green color is most highly visible by the human eye. Also, the device itself, generates the highest intensity light with the least amount of electrical energy applied.

Disadvantages are as follows...

1. Because the light beam produced is seen by reflecting off airborne dust and humidity, its chief attribute is considerably diminished by operating in a clean/dry environment such as observing from a desert or high altitude location. Here in northern Ohio, that's generally not a problem.

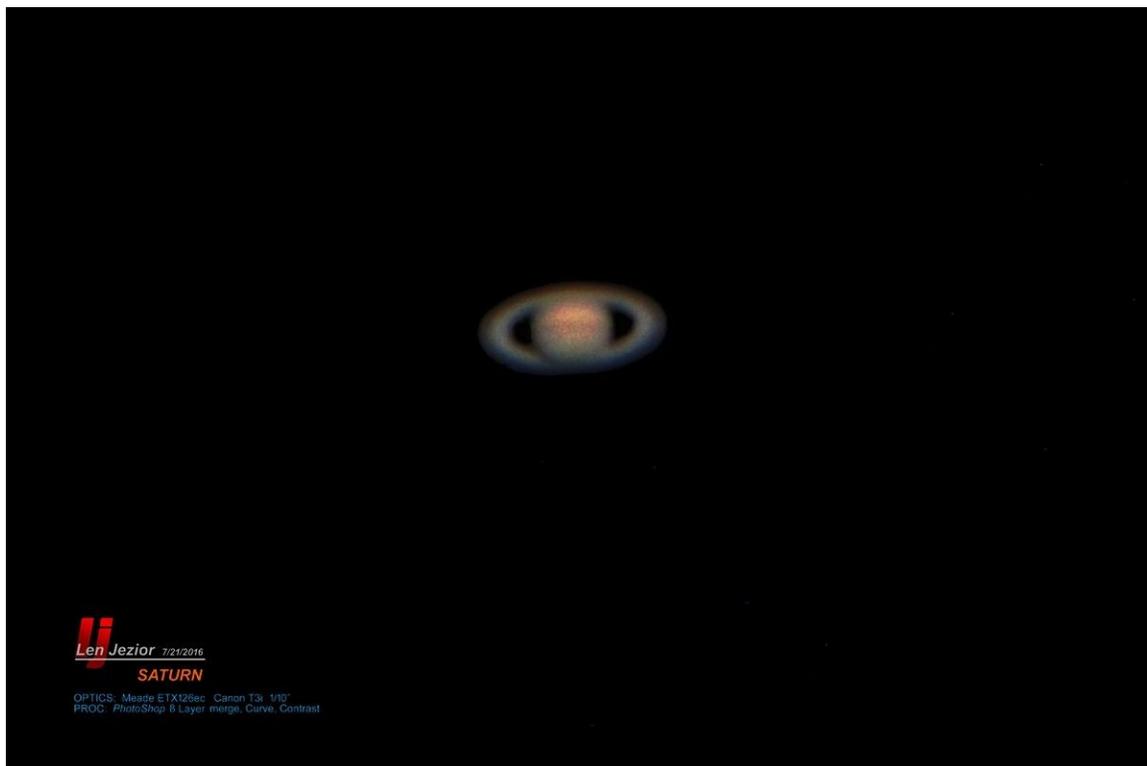
2. A recent history of reckless and abusive use of hand-held lasers has produced a backlash of restrictions on both sales and application. Portable battery powered lasers have had limits placed on their primary attribute, power, which translates to "illumination". This has caused some complications in finding, buying & using these devices. It has also resulted in broad variations in price & distribution.

The best green laser performance for amateur astronomical application is found in the power range of 50mW to 150mW (milliwatts). "Astronomical" lasers carry a 100% duty cycle, that is, once turned on and fired, they remain at maximum intensity regardless of time and temperature. Lesser duty cycles produce a steadily diminishing beam intensity after being turned on or operated in a cold weather environment (winter).

Of the three types of guide finders, I find the laser guide most convenient and accurate. I say "accurate" because the beam, if properly aligned to the telescope, can be observed through the eyepiece. There's no doubt then, that the beam is dead on target.

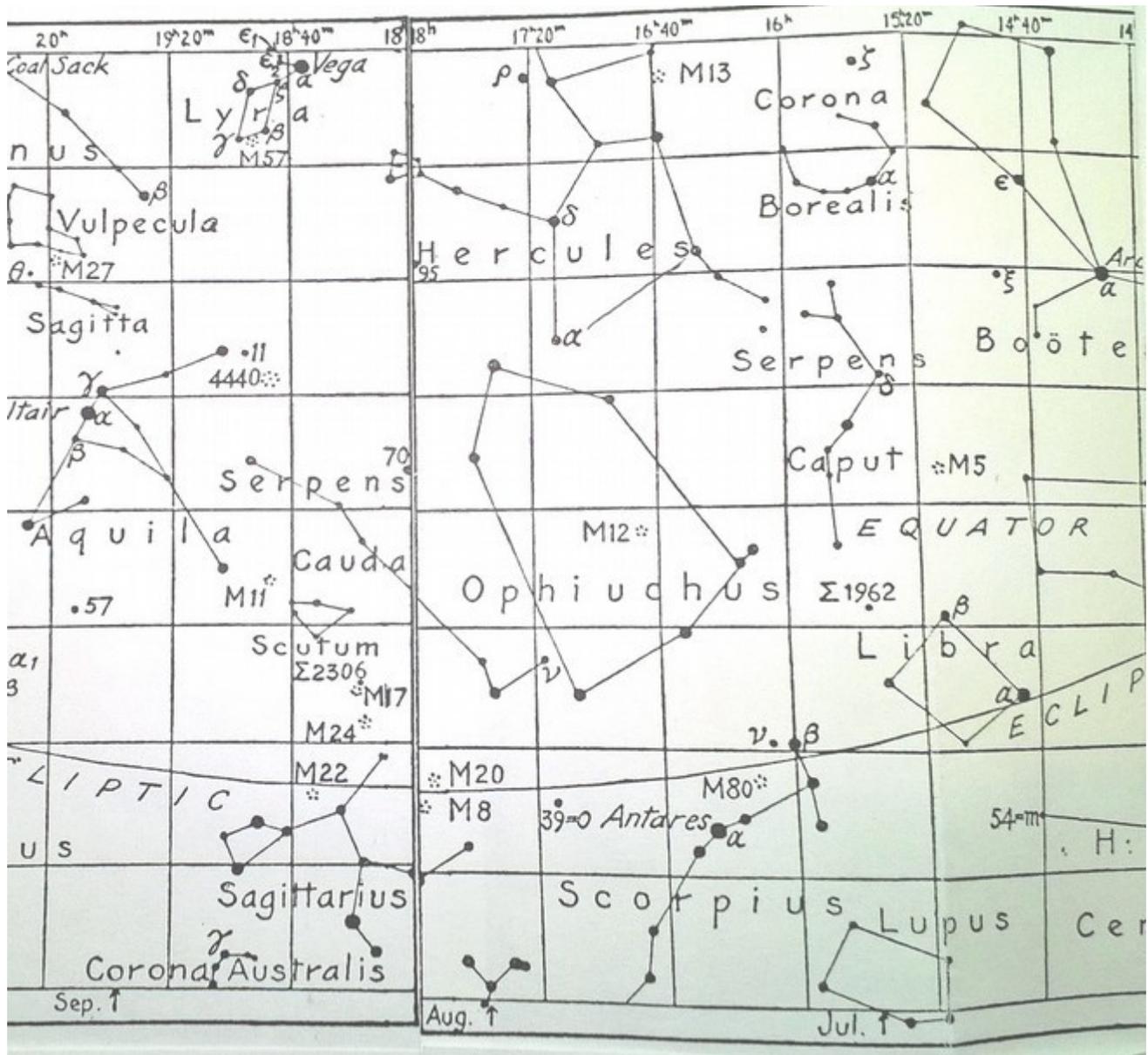
That's it. If you have any comment, questions or additional experience you'd like to add, please contact me at lmj@lakecareer.com .

~Len Jezior



Binary Beauties

Here is a star chart and a short table with the names, locations and specifications for some of the brightest and easiest binary stars visible in the summer evening sky.



The list includes the following:

ADS number: From the ADS double star catalog.

Name: Greek letters, (mostly), or numbers with constellation.

Star Magnitudes: Primary star first & companion star next.

Separation, (“ = arc seconds): Distance between the primary and the companion star.

Included on the list are the following, which I consider as some of the absolute finest binary stars in the heavens:

(epsilon), e Bootes: First 2nd magnitude star up from Arcturus; One of my all time favorite binaries. Mags: 2.5 & 4.9; with a relatively close separation of 2.8 arc seconds and a stunning color contrast: orange primary & a greenish-white companion!! A real challenge for smaller scopes because of the glare and magnitude difference between the two;

(delta), d Serpens: A rather inconspicuous binary just below the head of Serpens; 2 white stars Mags: 4.1 & 5.2; with a 3.9 arc second separation.

(Beta), β Scorpio: The top star of Scorpio’s claws; a blue-white / white pair of stars; Mags: 2.6 7 4.9 with an easy 13.7 arc second split;

(Nu), ν Scorpio: Just north east of Beta Scorp; a nifty double-double of white with the following mags & splits:

A-C	4.0 & 6.3	41.0 arc seconds
A-B	4.4 & 5.4	1.4 arc seconds
C-D	6.7 & 7.8	2.6 arc seconds

The A-B pair is especially challenging due to its low altitude.

(Alpha), α Scorpio:”Antares”! A magnificent pair of red and blue stars with considerable magnitude difference, (1.0 & 5.5), and a rather tight separation, (2.8 arc seconds); perhaps the ultimate challenge from Ohio due to its low position in the sky;

(Alpha), α Hercules: A magnificent pair of yellow and red stars with considerable magnitude difference, (1.0 & 5.5), and a somewhat tight separation, (4.4 arc seconds). A challenge in small telescopes;

(Rho), ρ Hercules: Two Jewels!! A blue-white / white pair of 5th magnitude stars. Again, a challenge in even the small telescopes!

(Epsilon), ε Lyra: “The Double Double”! A stunning pair with a golden yellow primary coupled with a fainter blue-blue companion. As above, good in any size scope, although a little more of a challenge compared to the two above.

(Beta), β Cygnus: “Albireo”: One of the most beautiful and easiest to locate double stars in the heavens. The bottom star of the “Northern Cross” part of Cygnus, Albireo sports a 3rd magnitude orange primary with a 5th magnitude blue companion at a large separation of 35 arc seconds.

(Gamma), γ Delphinus: The furthest left or tip star of the diamond shaped part of the small constellation of Delphinus above and left of bright Altair. A beautiful pair with a 4th magnitude yellow primary and a 5th magnitude white companion separated by 9 arc seconds.

~John Reising