Newsletter of
The Black River Astronomical Society

Guidescope

Lorain County, Ohio **November 2017**

Website: blackriverastro.org **Newsletter submissions: Editor**

--Wednesday, November 1, 7 p.m.: Regular meeting, Carlisle Reservation Visitors Center. Video of the Cassini mission

--Thursday, November 9, 7 p.m.: Board meeting, Blue Sky Restaurant, Amherst

--Friday, November 10, 7-9 p.m.: Public observing, Nielsen Observatory (cloud backup date 11/11)

--Friday, November 17, 7-9 p.m.: Public observing, Nielsen Observatory (cloud backup date 11/18)

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.

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Guidescope Contributions Wanted

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

~Bill Ruth

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BOARD SUMMARY October 12, 2017

The meeting was called to order at 7:08 p.m. with nine Directors present. The Minutes of the September meeting were read and approved as was the Treasurer's Report. Under Committee Reports, the *Guidescope* editor Bill Ruth reported that all was status quo and that he has had some submissions for the newsletter. Dan Walker reported that the website was also status quo. (UPDATE: David Griffiths, our web guru, has updated our Gallery software and is working on the migration from OwnCloud to NextCloud and will look at some glitches in the Forum when he is done, so our webpage is being updated as needed. Thanks David!). John Reising has not been to the

observatory lately, but is assured by those who have, that Instrumentation is also status quo. The OTAA Committee reports that we now have dates for three other clubs for their 2018 conventions:

CVAS: June 9

MVAS: Aug. 11

CAA: Sept. 8

BRAS: Sept. 8

Schauer found out at the CAA convention that they have moved their 2018 convention to September from July and chose the same date we have had since August. The Board discussed this briefly and decided that since September is the month we have had for many years, and since we moved our date last year to help CAA and not conflict with them, that we would not move our date again this year. The MetroParks Liaison had no report.

Programming is as follows:

November: PBS video on the end of the Cassini mission

December: Holiday Pot Luck at the MetroParks Amherst Beaver Creek Reservation

January: open

February: open

March: open

April: Rob Owen (tentatively)

May: John Reising on Mars

June: Mickey Hasbrook on her trip to Lowell Observatory

July-Sept.: open

October: Board elections and Annual Meeting of the Members

Old Business came next with the first order of business being a prospective Board Candidate. Since no-one was elected to fill Lee Lumpkin's vacant seat, it is the responsibility of the Board to appoint someone. There was a brief discussion and the Board will table this until a later date. The second item to discuss was who would be the computer operator at our General Meetings, now that Lee will no longer be doing so. Dan Walker and Mickey Hasbrook have volunteered to do this duty jointly. Also, since we will no longer be using Lee's laptop for meetings, the club is investigating the purchase of a club-owned laptop we can configure with Linux and Open Document software. Lee is investigating what Computer Systems Unlimited may have available, and will report back. (UPDATE: Lee found a little used HP business laptop with a new solid-state hard drive and a DVD player/burner that is ruggedized for business and has adequate speed and memory for $419.00 and carries a one year guarantee. The Board did an email vote and unanimously decided to buy it. Lee has picked it up and is installing Linus and the ODF software and will have it ready for the November meeting. Thanks, Lee!). Next came the report that Dan Walker and Jeff Walsh will meet and Dan will turn over the liaison duties between the club and the Night Sky Network to Jeff.

New Business came next with the bulk of the meeting spent selecting dates for our 2018 Public Observing star parties. The selected dates are as follows:

Jan.	Fri./Sat.	19/20	8:00-10:00 p.m.	
Feb.	Fri./Sat.	16/17	8:00-10:00 p.m.	
Mar.	Fri./Sat.	16/17	8:00-10:00 p.m.	
	Fri./Sat.	23/24	8:00-10:00 p.m.	
Apr.	Fri./Sat.	13/14	9:00-11:00 p.m.	
	Fri./Sat.	20/21	9:00-11:00 p.m.	
May	Fri./Sat.	4/5	9:00-11:00 p.m.	Eta Aquarid Meteors
	Fri./Sat.	18/19	9:00-11:00 p.m.	
June	Fri./Sat.	01/02	10:00-12:00 midnight	

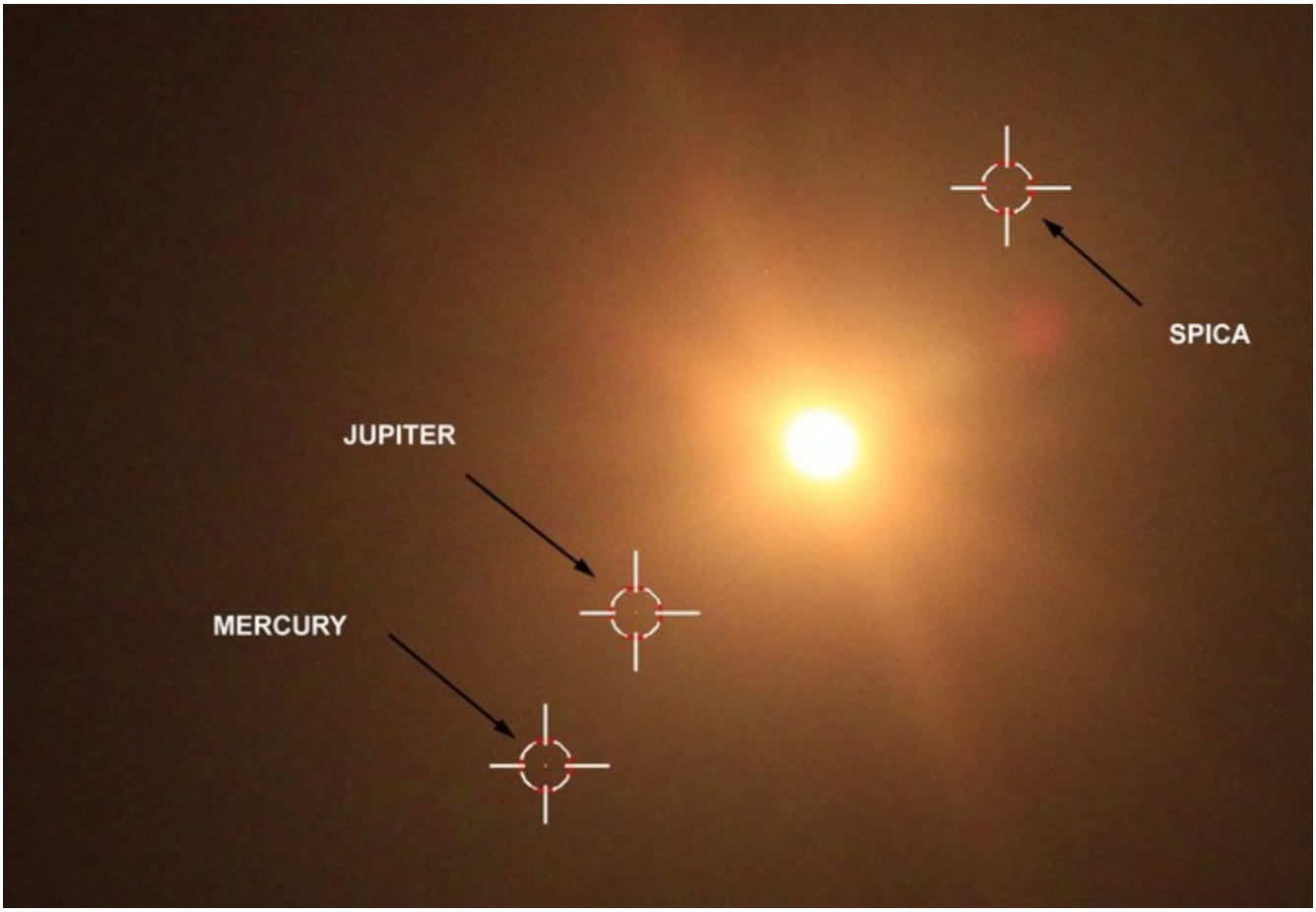
	Fri. Only 15th	10:00-12:00	
July	Fri./Sat. 13/14	10:00-12:00	
	Fri./Sat. 20/21	10:00-12:00	Perseids
Aug.	Fri./Sat. 03/04	10:00-12:00	
	Fri./Sat. 17/18	10:00-12:00	
Sept.	Fri./Sat. 14/15	9:00-11:00 p.m.	Only one observing session due to OTAAs
Oct.	Fri./Sat. 05/06	8:00-10:00 p.m.	
	Fri,/Sat. 12/13	8:00-10:00 p.m.	
Nov.	Fri./Sat. 02/03	8:00-10:00 p.m.	
	Fri./Sat. 9/10	8:00-10:00 p.m.	
Dec.	Fri./Sat. 14/15	8:00-10:00 p.m.	Geminid Meteors

NOTE: we have done away with 7:00 p.m. start times to give our members who work more time to arrive.

The final item of New Business was the unanimous vote to accept the membership application of Ed Burcl of Amherst. Welcome Ed!

November dates were set, and the meeting was adjourned at 8:45 p.m.

~Steve Schauer



I was testing new lens configurations, sites and filters and noticed a couple spots on the print. Looking at the electronic sky atlas and much to my amazement, Jupiter is revealed closest to the Sun and Mercury just to its left. Spica also makes a faint appearance. I was surprised by the daytime revelation, especially so close to the Sun. Frankly I was surprised by the entire photo. I swear it looks like the corona emanates from the solar disk. No sun spots detected.

The photo series was taken 10/20/17 about 13:30 with my Canon T3i, ISO 100 @ 1/60", Vivitar 33mm f-4.5, Mylar solar filter. Color is artificial orange due to filter.

~Len Jezior

E3 _____ Equator, Ecliptic _____ Winter Constellations

NEBULA	Position	v-Mag.	Size	Shape	Type	Vis.	Dist.	R.A.	Dec.
M45	Tau	1½	11/□′ 100′	O r n	OC		400 ly	3h47.0	24.12
Hyades ...	Tau	1	11	300	O m	OC	150	4 28	16.5
1647	Tau	6½	14	40	O m	OC	1800	4 46.0	19.07
1952 M1	Tau	8	11	6	0 Fi	DN	6000	5 34.5	22.02

M45 **Pleiades, Seven Sisters**, marvelous with unaided eye or binoculars, Merope's reflection nebula NGC1435 visible under darkest sky.

Hyades ... Only impressive with unaided eye or opera glasses, scattered stars, the closest and brightest star cluster, Aldebaran is a foreground star.

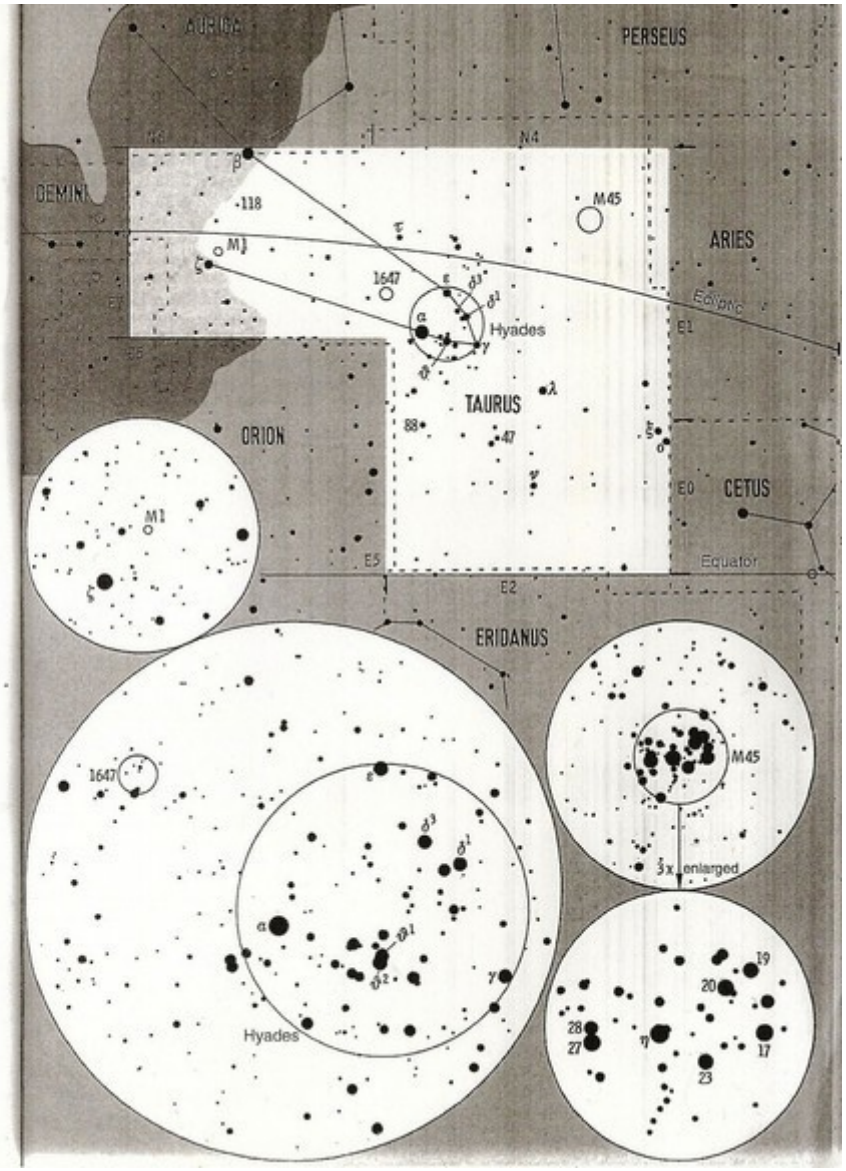
1647 ..... Large open cluster; it is resolved into many stars in binoculars.

1952 M1 **Crab Nebula**, difficult in binoculars, elongated, irregular in a telescope, a nebula filter helps, the remnant of the supernova in 1054.

STAR	Position	V-Mag.	B−V	Te.	Sp.	Abs.	Name	Dist.	R.A.	Dec.
1 o	Tau	3.6	0.9		G8	−1M	Sep. 55′	220 ly	3h24.8	9.03
2 ξ	Tau	3.7	−.1		B9	0		220	3 27.2	9.73
17	Tau	3.7	−.1		B6	−2	Electra	400	3 44.9	24.11
19	Tau	4.3	−.1		B6	−1	Taygeta	400	3 45.2	24.47
20	Tau	3.8	−.1		B8	−2	Maia	400	3 45.8	24.37
23	Tau	4.1	−.1		B6	−1	Merope	400	3 46.3	23.95
25 η	Tau	2.8	−.1		B7	−3	Alcyone	400	3 47.5	24.11
27	Tau	3.6	−.1		B8	−2	Atlas	400	3 49.2	24.06
28 BU	Tau	4.9–5.2	−.1		B7	−1	Pleione	400	3 49.2	24.14
35 λ	Tau	3.4–3.9	−.1		B3	−2		360	4 00.7	12.49
38 ν	Tau	3.9	0.0		A1	1		132	4 03.2	5.99
47	Tau	4.8	0.8		G5	0		350	4 13.9	9.26
54 γ	Tau	3.6	1.0		G8	0		155	4 19.8	15.63
61 δ^1	Tau	3.8	1.0		G8	0		155	4 22.9	17.54
68 δ^3	Tau	4.3	0.0		A2	1	in Hyades	150	4 25.5	17.93
74 ε	Tau	3.5	1.0		K0	0		155	4 28.6	19.18
77 ϑ^1	Tau	3.8	1.0		K0	0		155	4 28.6	15.96
78 ϑ^2	Tau	3.4	0.2		A7	0	Sep. 5′.7 ;	155	4 28.7	15.87
88	Tau	4.2	0.2		A5	1		150	4 35.7	10.16
87 α	Tau	0.9	1.5		K5	−1	Aldebaran	66	4 35.9	16.51
94 τ	Tau	4.2	−.1		B3	−1		400	4 42.2	22.96
112 β	Tau	1.7	−.1		B7	−1	Elnath, Nath	130	5 26.3	28.61
118	Tau	5.5	0.0		B9	−1		500	5 29.3	25.15
123 ζ	Tau	3.0	−.2		B4	−3		400	5 37.6	21.14

BINARY	Position	V-Mag.		B−V		Te.	Sep.	PA	Vis.
47	Tau	4.9	7.3	0.8	0.8		1.3		
68 δ^3	Tau	4.4	7.6	0.0	0.6		1.5		
88	Tau	4.3	7.8	0.2	0.5		69.6		
94 τ	Tau	4.3	7.1	−.1	0.1		62.9		
118	Tau	5.9	6.7	−.1	0.1		4.7		

VARIABLE STAR	
28 BU Tau	irregular
35 λ Tau	
Period	3.95295 d
Min.	2454000.1
2nd min.	mag. 3.6



(Constellation of the Month—Taurus--courtesy of John Reising)

Deep-Sky Objects for November

Objects for Binoculars

RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
$03^h\ 47.0^m$	+24° 07'	M45	1.2v	110'		Tau	Open Cl 100• "Pleiades"
$04^h\ 27.0^m$	+16° 0'	Mel 25	0.5v	330'		Tau	Open Cluster 40• "Hyades"
$04^h\ 46.0^m$	+19° 04'	NGC 1647	6.4v	45'		Tau	Open Cluster 200•
$05^h\ 28.7^m$	'+35° 50'	M38	6.4v	21'		Aur	Open Cluster 100•
$05^h\ 36.1^m$	+34° 08'	M36	6.0v	12'		Aur	Open Cluster 60•
$05^h\ 52.4^m$	'+32° 33'	M37	5.6v	20'		Aur	Open Cluster 150•

Objects for Small Telescopes (2-6 inch)

RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
$04^h\ 09.2^m$	+30° 47'	NGC 1514	10.9v	>114"		Tau	Planetary Nebula
$04^h\ 51.1^m$	+43° 42'	NGC 1664	7.6v	18'		Aur	Open Cluster 50•
$05^h\ 03.6^m$	+23° 49'	NGC 1746	6.1v	42'		Tau	Open Cluster 20•
$05^h\ 10.7^m$	+16° 32'	NGC 1807	7.0v	17'		Tau	Open Cluster 20•
$05^h\ 12.1^m$	+16° 42'	NGC 1817	7.7v	15'		Tau	Open Cluster 60•
$06^h\ 11.6^m$	+48° 43'	41 Aur	6.3, 7.0	7.7"	356°	Aur	Double Star

Objects for Medium Telescopes (8-14 inch)

RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
$03^h\ 19.7^m$	-19° 25'	NGC 1300	10.4v	5.5'x2.9'		Eri	Galaxy
$04^h\ 14.2^m$	-12° 44'	NGC 1535	9.6p	">18"		Eri	Planetary Nebula
$05^h\ 08.1^m$	+37° 03'	NGC 1778	7.7v	6'		Aur	Open Cluster 25•
$05^h\ 20.2^m$	+39° 21'	NGC 1857	7.0v	5'		Aur	Open Cluster 40•
$05^h\ 28.0^m$	+35° 19'	NGC 1907	8.2v	6'		Aur	Open Cluster 30•
$05^h\ 59.7^m$	+37° 13'	37-Upsilon	2.6, 7.1	AB: 3.6"	313°	Aur	DS (AC: 10.6; 50"; 297°)

Objects for Larger Telescopes (16-inch & larger) Challenge Objects

RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
$03^h\ 09.8^m$	-20° 35'	NGC 1232	10.0v	6.8'x5.6'		Eri	Galaxy
$03^h\ 38.5^m$	-23° 02'	NGC 1395	9.7v	5.4'x4.6'		Eri	Galaxy
$03^h\ 40.2^m$	-18° 35'	NGC 1407	9.7v	6.0'x5.8'		Eri	Galaxy
$04^h\ 21.8^m$	+19° 32'	NGC 1554-55	-	1.7'		Tau	R+E Neb. "Hind's Var Neb"
$05^h\ 16.3^m$	+34° 16'	IC 405	-	30'x20'		Aur	R+E Neb "Flaming Star Neb"
$05^h\ 34.5^m$	+22° 01'	M1	-	6'x4'		Tau	SNR "Crab Nebula"

Print and use the Deep-Sky Interest Group - Observation Form to record your observations.

(Deep Sky Objects charts courtesy of Len Jezior)

Flying Around the Sun

It's kind of a thought experiment asking how long it would take a modern jet airliner traveling at 600 miles per hour to fly around the circumference of the Sun. Tim Kreja and I were "shooting the bull" at last Sunday's solar observing and this question popped up. Subsequently, he did the math and emailed me the results:

“If you take the diameter of the sun at 864,948 miles and a speed of 600 ground miles per hour then you get a circumference of 2,717,314 miles plus a little altitude for the passengers, so call it 2,717,348.8 miles in the flight path. So time to fly is 4,528.9 hours **OR** 188 Days, 16 Hours, 55 minutes, and 13.09 seconds.”

The results, in my opinion, are amazing--just over six months to fly around the Sun while it would take roughly 1.8 days to fly around the Earth. Kind of puts another perspective on the Earth/Sun size relationship. This is obviously disregarding refueling and lack of air traffic control around the Sun! :)

~Jeff Walsh