



Lorain County, Ohio

November 2019

Website: blackriverastro.org

Newsletter submissions: [Editor](#)

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--Friday, November 1, 8-10 p.m.: Public Observing Nielsen Observatory (cloud backup Saturday, November 2)

--Wednesday, November 6, 7 p.m.: Regular meeting at Oberlin College Observatory and Planetarium. **NOTE: MEET AT OBERLIN COLLEGE PETERS HALL (map and directions immediately following)**

--Thursday, November 15, 7 p.m.: Board meeting, Blue Sky Restaurant, Amherst, OH

--Friday, November 22, 8-10 p.m.: Public Observing Nielsen Observatory (cloud backup Saturday, November 23)

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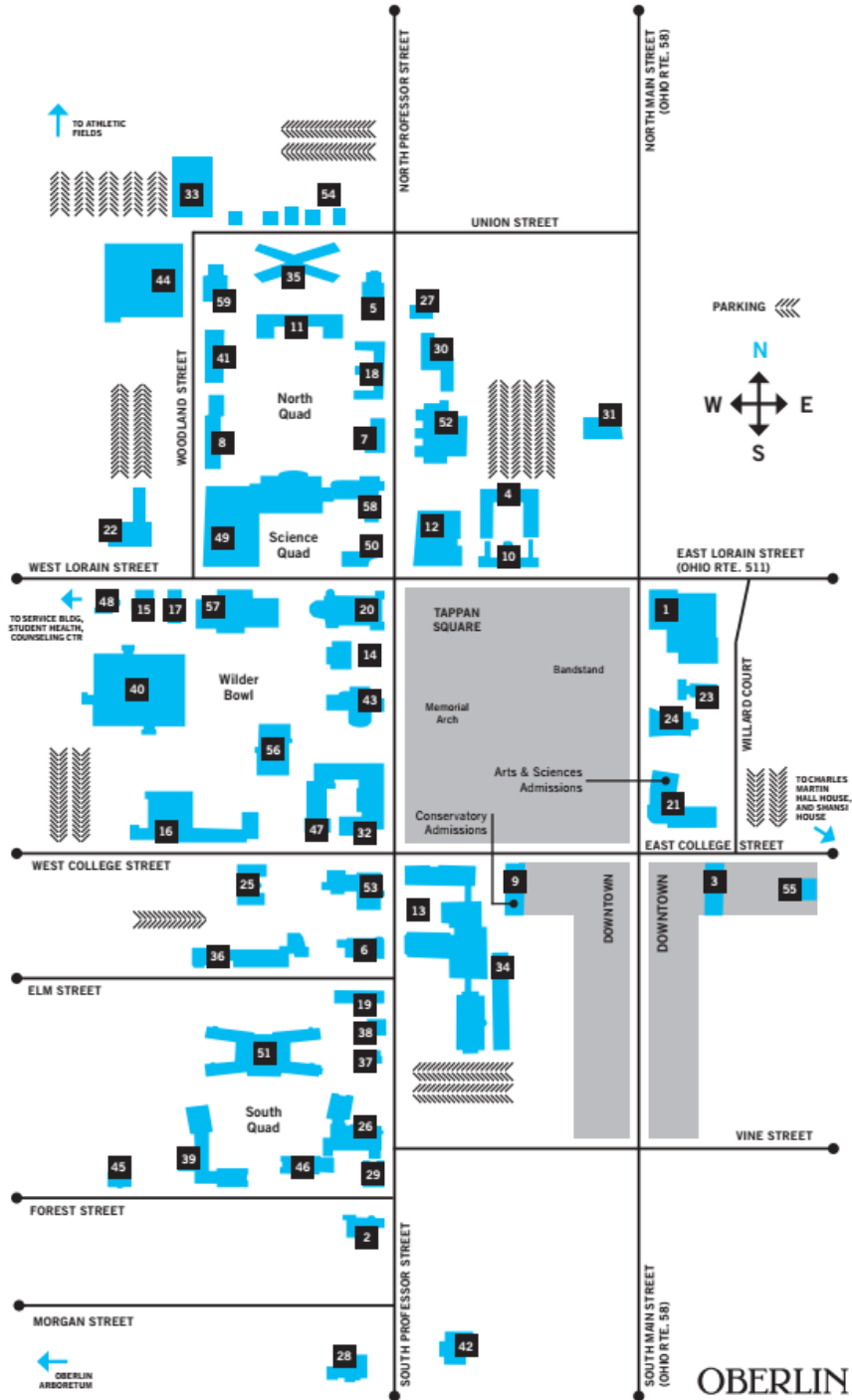
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Explore if you will the informative BRAS [website](#) and all its interesting, timely [links](#), and join the interactive members-only [BRAS Forum](#) to better keep in touch.

If you have any astronomical wanted/for sale announcements, astronomical photos you've taken, astronomy article links, equipment reviews, observing reports, essays, or anything that you think to which the local amateur astronomy community could relate, please send them to your [humble Guidescope editor](#) for inclusion in forthcoming issues.

OBERLIN COLLEGE CAMPUS

- 1 Allen Memorial Art Museum and Art Building
- 2 Allencroft (Russian House)
- 3 Apollo Theatre
- 4 Asia House (Quadrangle)
- 5 Bailey (French House)
- 6 Baldwin Cottage
- 7 Barnard House
- 8 Barrows Hall
- 9 Bookstore and Con Admissions
- 10 Bosworth Hall (& Fairchild Chapel)
- 11 Burton Hall
- 12 Carnegie Building
- 13 Conservatory of Music
- 14 Cox Admin. Building
- 15 Creative Writing
- 16 Dascomb Hall
- 17 Daub House (Bonner Center)
- 18 East Hall
- 19 Fairchild House
- 20 Finney Chapel
- 21 Gateway Center, Hotel at Oberlin, Arts & Sciences Admissions
- 22 Hales (College Lanes, Cat in the Cream)
- 23 Hall Annex
- 24 Hall Auditorium
- 25 Harkness House
- 26 Harvey (Spanish House)
- 27 International House
- 28 Johnson House (Hebrew Heritage House)
- 29 Kade (German House)
- 30 Robert L. Kahn Hall
- 31 Keep Cottage
- 32 King Building
- 33 Knowlton Athletics Complex
- 34 Bertram & Judith Kohl Building
- 35 Langston Hall (North)
- 36 AJ Lewis Center & Annex (Environmental Studies)
- 37 Lewis Center (for Women and Transgender People)
- 38 Lewis House (Ombuds & Multifaith Resource Center)
- 39 Lord-Saunders (Afrikan Heritage House)
- 40 Mudd Center (Main Library)
- 41 Noah Hall
- 42 Old Barrows
- 43 Peters Hall
- 44 Phillips Phys. Ed. Center
- 45 President's House
- 46 Price (Third World House)
- 47 Rice Hall
- 48 Safety & Security
- 49 Science Center
- 50 Severance Hall
- 51 South Hall
- 52 Stevenson Hall
- 53 Talcott Hall
- 54 Union Street Housing
- 55 Ward Alumni Center
- 56 Warner Center
- 57 Wilder Hall (Student Union)
- 58 Wright Lab of Physics
- 59 Zechiel House



Directions: Peters Hall, 50 N. Professor St., Oberlin 44074 is #43. Nearby parking is available in the Rice lot next to (west of) Rice Hall, #47, with entrance off West College Street—it's the lot closest to the southwest entrance of Peters. Once inside, take the stairs or elevator up half-a-flight to the 1st floor and meet in the spacious, oak-paneled elegance of Klutznick Commons, "The Great Room."

BOARD SUMMARY

October 10, 2019

The October Board of Directors meeting was called to order at 7:08 p.m. with seven Directors and one guest, Ed Burcl, present. The minutes from the September meeting were read and approved as was the Treasurer's report. The full report will be presented at the November General meeting, but it was noted that there was \$290 in the Larry Janowicz memorial fund and \$50 in the Greg Honis memorial fund.

Committee reports followed with the *Guidescope* report coming first. Secretary and newsletter editor Bill Ruth reported that all was well and that he had some submissions from members which are always appreciated. There was no-one to report on the website, but Ed Burcl reported that some people are having trouble reaching the website unless they use "www." first. We have also had problems with the website hyperlink not working when the address is put in a Facebook post. For a while the hyperlink did not work when we put it in a post with the usual capital letters (BlackRiverAstro.org), but it would work when the address was given as all lower case letters. Currently, that doesn't work either. We will try it with the "www." first to see if that helps. Under Instrumentation, John Reising reported that he has the Wheely Bars from Oberlin College and has given them to Greg Cox. Greg will modify them so that they will fit the mount for our 16" Newtonian. In exchange for the loan of the Wheely Bars, we will loan Oberlin an 8" Dobsonian. John has done preliminary work on the 16" so that we can put it into use as soon as the Wheely Bars are ready. He has fabricated straps to hold the tube on the mount, while allowing the tube to rotate to keep the eyepiece in a convenient position. He has also put the spider mount in place and is modifying a mount for the finder. The OTAA committee chairman reported that we have dates for two OTAA Conventions for 2020: MVAS will be August 15th and BRAS will be September 19th. The MetroParks Liaison reported that the storage building is finished except for a fixture for a red light that will be installed the week of Oct.21st.

Programming is as follows:

November	Meet at Peters Hall, Oberlin College for a planetarium show.	
December	Holiday Pot luck dinner at LCMP Beaver Creek Reservation in Amherst.	
January	Open	
February	Open	
March	Dave Lengyel	Measuring Distance in Astronomy
April	Ed Burcl	Asteroid Mining
May	John Reising	Life of William Herschel
June	Denny Bodzash	Weirdest Ideas in Astronomy
July	Open	
August	John Reising	Mars Opposition
September	Steve Schauer	Members Forum
October	Annual Meeting of the Members and Board Elections	

Old Business followed with only a few items to discuss. First was a question if everyone who spent their own money for OTAA items was reimbursed. Secondly, we briefly discussed a work session at the observatory to move telescopes and items into the new building. We will wait until the Wheely Bars are ready and then we will set a date. We will also start work assembling the 16” at this time. The final item was a quick debriefing on the OTAA Convention. The general consensus was that it went well with the cake and the pulled pork both a hit. There was some discussion about having extra ticket door prizes. We did not sell any extra tickets this year, as we didn't think we had items that were worth extra price tickets. A few people disagreed, but we decided to sell extra cost tickets when we have door prizes that are appropriate.

The Old Business discussions were kept brief, because our main task was the selection of Public Observing dates for 2020. Schauer passed out moon phase handouts for 2020, and the Board went month by month selecting observing dates based on the moon, and other factors such as when Daylight Savings begins and ends. This took the majority of the meeting, thus we will select Solar Observing dates next month. For a list of the Public Observing sessions for 2020, please see the separate article in this newsletter.

November dates were set, and the meeting was adjourned at 8:48 p.m.

~Steve Schauer

B.R.A.S. PUBLIC OBSERVING 2020

January	Friday/Sat. 24/25	7:00-9:00 p.m.	
February	Friday/Sat. 21/22	7:00-9:00 p.m.	
March	Friday/Sat. 13/14	8:00-10:00 p.m.	(Daylight Savings starts 3/8/20)
	Friday/Sat. 20/21	8:00-10:00 p.m.	
April	Friday/Sat. 17/18	9:00-11:00 p.m.	
	Friday/Sat. 24/25	9:00-11:00 p.m.	
May	Friday/Sat. 15/16	10:00-12:00	Midnight
	Friday/Sat. 22/23	10:00-12:00	(Memorial Day weekend)
June	Friday/Sat. 19/20	10:00-12:00	(may need to cancel a Sat.
	Friday/Sat. 26/27	10:00-12:00	date due to CVAS OTAA)
July	Friday/Sat. 17/18	10:00-12:00	
	Friday/Sat. 24/25	10:00-12:00	
August	Friday 14 only	10:00-12:00	(Sat. 15th-MVAS OTAA)
	Friday/Sat. 21/22	10:00-12:00	
September	Friday 11 only	9:00-11:00 p.m.	(Sat. 12 likely CAA OTAA)
	Friday 25 only	9:00-11:00 p.m.	(Sat. 26-BRAS OTAA)
October	Friday/Sat. 9/10	8:00-10:00 p.m.	
	Friday/Sat. 16/17	8:00-10:00 p.m.	
November	Friday/Sat. 13/14	8:00-10:00 p.m.	(Daylight Savings ends 11/1)
	Friday/Sat. 20/21	8:00-10:00 p.m.	
December	Friday/Sat. 11/12	7:00-9:00 p.m.	

Notes: Saturday dates are back-ups in case Friday is cloudy or rainy. Otherwise, observing is on Friday nights

When another club has their OTAA Convention, we will not observe on Saturday so as not to conflict. We observe Friday only. If Friday has to be canceled, we don't observe until the next scheduled session.

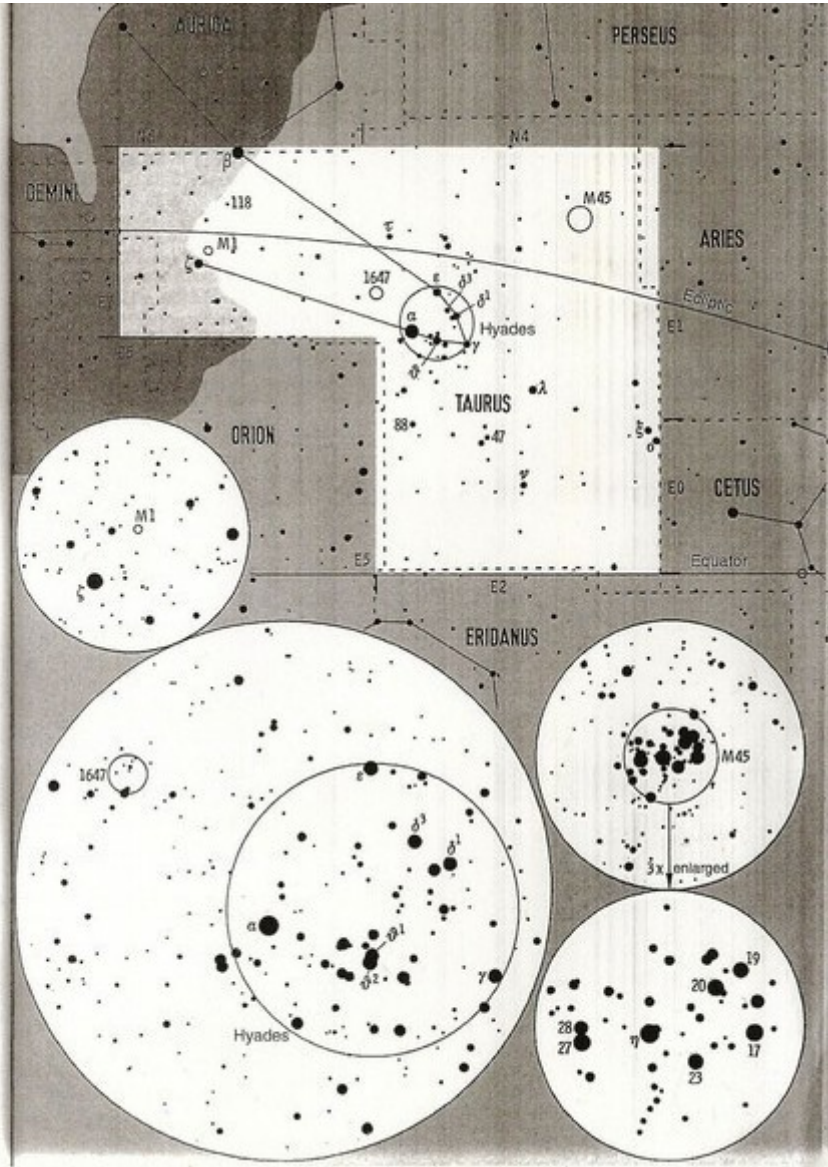
E3 Equator, Ecliptic Winter Constellations

NEBULA	Position	v-Mag.	Size	Shape	Type	Vis.	Dist.	R.A.	Dec.
M45	Tau β	1 1/2	11/c'	100'	O r n OC	☼	400ly	3 ^h 47.0	24 ^o 12'
Hyades ...	Tau δ	1	11	300	O m OC	☼	150	4 28	16.5
1647	Tau δ	6 1/2	14	40	O m OC	☼	1800	4 46.0	19.07
1952 M1	Tau δ	8	11	6	O 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 σ	Tau δ	3.6	0.9	1	G8 -1 st	220ly	} Sep. 55'	220	3 ^h 24.8	9 ^o 03'
2 ξ	Tau δ	3.7	-1	1	B9 0	220		3 27.2	9.73	
17	Tau δ	3.7	-1	1	B6 -2	400	Electra	400	3 44.9	24.11
19	Tau δ	4.3	-1	1	B6 -1	400	Taygeta	400	3 45.2	24.47
20	Tau δ	3.8	-1	1	B8 -2	400	Maia	400	3 45.8	24.37
23	Tau δ	4.1	-1	1	B6 -1	400	Merope	400	3 46.3	23.95
25 η	Tau δ	2.8	-1	1	B7 -3	400	Alcyone	400	3 47.5	24.11
27	Tau δ	3.6	-1	1	B8 -2	400	Atlas	400	3 49.2	24.06
28 BU	Tau δ	4.9-5.2	-1	1	B7 -1	400	Pleione	400	3 49.2	24.14
35 λ	Tau δ	3.4-3.9	-1	1	B3 -2	360		360	4 00.7	12.49
38 ν	Tau δ	3.9	0.0	1	A1 1	132		132	4 03.2	5.99
47	Tau δ	4.8	0.8	1	G5 0	350		350	4 13.9	9.26
54 γ	Tau δ	3.6	1.0	1	G8 0	155		155	4 19.8	15.63
61 δ^1	Tau δ	3.8	1.0	1	G8 0	155		155	4 22.9	17.54
68 δ^3	Tau δ	4.3	0.0	1	A2 1	150	} in Hyades	150	4 25.5	17.93
74 ϵ	Tau δ	3.5	1.0	1	K0 0	155		4 28.6	19.18	
77 δ^1	Tau δ	3.8	1.0	1	K0 0	155	} Sep. 5.7'	155	4 28.6	15.96
78 δ^2	Tau δ	3.4	0.2	1	A7 0	155		4 28.7	15.87	
88	Tau δ	4.2	0.2	1	A5 1	150		150	4 35.7	10.16
87 α	Tau δ	0.9	1.5	1	K5 -1	66	Aldebaran	66	4 35.9	16.51
94 τ	Tau δ	4.2	-1	1	B3 -1	400		400	4 42.2	22.96
112 β	Tau δ	1.7	-1	1	B7 -1	130	Elnath, Nath	130	5 26.3	28.61
118	Tau δ	5.5	0.0	1	B9 -1	500		500	5 29.3	25.15
123 ζ	Tau δ	3.0	-2	1	B4 -3	400		400	5 37.6	21.14

BINARY	Position	V-Mag.	B-V	Te.	Sep.	PA	Vis.	VARIABLE STAR
47	Tau δ	4.9	7.3	0.8	0.8	11	1.3	28 BU Tau δ irregular
68 δ^3	Tau δ	4.4	7.6	0.0	0.6	11	1.5	35 λ Tau δ irregular
88	Tau δ	4.3	7.8	0.2	0.5	11	69.6	Period 3.95295 d
94 τ	Tau δ	4.3	7.1	-1	0.1	11	62.9	Min. 2454000.1
118	Tau δ	5.9	6.7	-1	0.1	11	4.7	2nd min. mag. 3.6



Constellation of the Month 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.

Thanks to Len Jezior for deep sky objects chart.

Time to Take Advantage of Clear Skies

For those of us living in northeast Ohio, November is a month of transition wherein the mild fall weather pattern starts giving way to the cold winter one. Also, November is the start of cloud season, which runs through March. This means that, for the next five months, it is important to take advantage of clear nights when they come.

The reason the sky is so cloudy in November is Lake Erie. As cold air comes across the lake from Canada, the moving air masses will pull moisture out of the still relatively warm Lake Erie. The moisture condenses, thus forming clouds. These lake effect clouds are the reason why cloud forecasts need to be taken with a grain of salt in the late fall/early winter months. Basically, with a simple shift of the wind, clouds can start coming out of the north as if from another dimension, blotting out the stars in a few minutes time.

In October, we got a hint of these lake effect clouds as the first cold fronts started pushing through the area. In November, though, such occurrences become a regularity. Result: a lot of frustrated observing nights, which means that, come November, we should all make an effort to get out on a night that's clear as cloudless nights are now coming far less often.

While the cold fronts from Canada are on the increase, the warm fronts from down south have not gone away. Every now and then, an extremely warm weather package will rush up from the south, displacing the normally chilly air with weather more reminiscent of September. Along with warm temperatures, these warm fronts often bring a lot of wind. Obviously, wind is not an astronomer/astrophotographer's friend, unless you have an observatory, in which situation the wind won't send your scope bouncing all over the place. If this does not describe you, try and find a shielded place from which to observe on a windy night.

In conclusion, November is neither astronomer nor sailor's friend, so be sure to treasure the good weather whenever it comes.

On a trivial note, we will often hear of "Indian Summer" this month, but often in the wrong context. What is technically correct? Indian Summer is defined as an extended warm period occurring *after* the first frost but many people will erroneously refer to Indian Summer as any long stretch of unusually warm days. Where did the term "Indian Summer" come from? No one knows as, ironically, no American Indian tribe ever recognized such a thing.

~Denny Bodzash

FOR SALE

--As a bundle: Skywatcher 6" f8 achromat doublet, **massive** EQ-6 mount (black, motor drive, not GOTO), DC power adapter, stainless steel tubular tripod, 2 counterweights, Astrozap dew shield, straight through 8x50 finder, Telrad, 2" mirror diagonal, 1.25" mirror diagonal. Cosmetically good, optically not tried, motor drive not tried. Needs hand controller. Can be seen at Nielsen Observatory as it awaits further inspection, adjustments, and star-testing.

--As a bundle or separately: Orion tabletop EQ mount, motorized single axis drive for tabletop EQ mount including hand controller, 2x and 8x, and Ganymede 80mm short-tube achromat doublet with 6x30 straight-through finderscope, Amici prism 45 deg. diagonal.

--University Optics Konig MK-70 40mm multicoated 2" eyepiece

--25mm generic Plossl 1.25" eyepiece

--20mm generic RK 1.25" eyepiece

--10mm generic Plossl 1.25" eyepiece

--9mm generic Kellner 1.25" eyepiece

--2x Barlow, generic, 1.25" eyepiece

Prices are TBD and negotiable—items are from an individual who must downsize and move to Florida in November, and are being sold on his behalf. All items other than the Skymaster doublet will be brought to regular meetings at Carlisle. If interested please contact Bill Ruth through the *Guidescope* editor email link.



A woolly bear. I'm willing to suspend disbelief in superstition for this one as, if folklore is true, we're in for a mild winter because this caterpillar has a huge orange stripe and the more orange, the milder the winter.

~Denny Bodzash