

THE METEORITE



NGC 457
THE OWL CLUSTER
In Cassiopeia



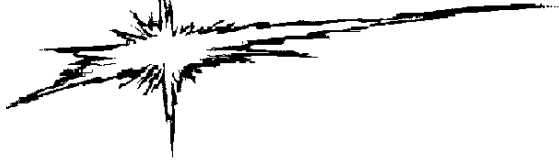
Newsletter of the Mahoning Valley Astronomical Society, Inc.

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SEPTEMBER 2014

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Meteorite Editor: Phil Plante
1982 Mathews Rd. #2
Youngstown OH 44514



ANNOUNCEMENTS

Newsletter of the Mahoning Valley Astronomical Society, Inc.

MVAS CALENDAR

- SEP 19** Public Night at YSU. 7:00 PM (Friday night)
- OCT 8** Lunar Eclipse. 4:14 AM.
- OCT 18** **MVAS 75th Anniversary Dinner. MVCO. 6PM**
- OCT 23** Partial solar eclipse begins at 5:42 PM.
- OCT 25** Business meeting at the MVCO. 8:00 PM

NATIONAL & REGIONAL EVENTS

- Sep 13** **ScopeOut Astronomy Fair 2014.** Held at the Cincinnati Observatory Center, in Cincinnati, OH. An Astronomy and education fair for amateur & professional astronomers, kids of all ages, families, teachers; anyone interested in the Universe. The Cincinnati Observatory is a fully restored 19th century observatory with two functional telescopes. The 16" Alvan Clark saw first light in 1904, our 11" Merz and Mahler was the world's 2nd largest telescope when installed in 1842. Join in for presentations, tours of the "Birthplace of American Astronomy". There will be a dinner, keynote speaker, then stargazing. <http://www.cincinnatiobservatory.org/>
- Sep 24-28** **Brothers Star Party for Oregon Observatory.** To be held at the Oroc Launch Site near Brothers, OR. This is a primitive dark site about 40 miles from Bend and Prineville, OR. Access for all vehicles is an easy two mile drive from US 20. Attendees have had nothing but rave reviews about the dark sky! <http://mbbsp.org/>

MVAS BOARD OF TRUSTEES

President	Lou DiNardo
Vice President	Rich Mattuissi
Treasurer	Steve Bartos
Secretary	Phil Plante
Appointed Trustee (2014 & 2015)	Rosemary Chomos
Appointed Trustee (2013 & 2014)	Bob Danko
Elected Trustee (2013)	Don Chery

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Assistant Director	Dave Ruck
Assistant Observatory Staff	Chuck Oiesen
Librarian	Rosemary Chomos

PUBLICATIONS STAFF

Meteorite Editor	Phil Plante
Production / Editor	Steve Bartos
MVAS Webmaster	Sam DiRocco

1076 SR 534, NEWTON FALLS, OH 44444-9998
MVAS Homepage- <http://mvobservatory.com>

ATTENTION MVAS. The public observing event scheduled for Saturday **September 6, 2014** at **Scenic Vista Park** has been **cancelled** due to the closing of Wayne-Bridge Road for the next three weeks. The small bridge is out of commission. No direct access to the park is available. No back-up date is planned.

Black River Astronomical Society OTAA Convention

Sep. 20, 1pm – Sun, Sept. 21, 12am

At: The Birmingham United Methodist Church,
15018 South Street,
Wakeman, Ohio 44889 (use this address for Google Maps)

There will be solar observing in the afternoon (weather permitting) Registration starts at 5:00 p.m. and is \$5.00. Dinner is planned for around 6:00 p.m. It is a pot luck dinner, so bring a dish to share. BRAS will provide hot dogs, table ware, coffee, tea and hot chocolate. There will be free tables provided for anyone with astronomy-related gear to sell or trade. Door prizes after dinner. There is a large open observing field with good horizons. It is quite dark. Please bring your telescopes and binoculars. If clear, we are allowed to observe/stay all night.

For driving directions use the address above in Google Maps. Driving directions below are from Google Maps. For a common starting point I used the familiar MVCO/Turnpike exit (209).

Take I-80 west to Exit 135.... Turn right onto Baumhart Rd... Turn right onto OH-113 West... Turn left onto Chapel. Take the 1st left onto Welcome Dr. Look for BRAS on the right. From the MVCO, travel time is ~1hr 20 min. and about 83 miles. Add travel from your home to your closest access to I-80.

MVAS 75th Anniversary T-Shirt. Black shirt. Last names of all past MVAS members over an image of the Rossette Nebula. Price is \$14 each. Get your order in by Sep. 27. Contact Jodi.



MINUTES OF THE AUGUST MEETING

AUGUST 30, 2014 at the MVCO

The meeting was held outdoors as usual. A warm night. President Lou DiNardo called the meeting to order. Six of the Executive Board were present. Roll Call was answered by 14 members; Miranda being the most favorite Shakespearian character or satellite of Uranus. Our guests included Dominic and Nicholas Mattuissi, Sue Alexander and Randy Cox. Randy and Sue had expressed interest in membership. It was voted on by unanimous vote to suspend the reading of the Minutes and accept them as published. Chris Stephan had made the motion which was seconded by Don Cherry.

TREASURER'S REPORT: The Report was read by Phil Plante in the absence of the Treasurer. With no further discussion or questions, Larry Plante moved to accept the report. Bob Danko made a second to the motion. All in favor by voice vote.

General Fund **7/1 thru 7/31 2014**

OPENING BALANCE:	\$	9,599.87
CLOSING BALANCE:	\$	9,435.73
AVAILABLE FUNDS (NON-RESERVED):	\$	5,206.61
ACCOUNT NET GAIN/LOSS FOR THIS PERIOD:	\$	-164.14

INCOME:

INTEREST	\$	0.17
TOTAL INCOME	\$	0.17

EXPENSES:

CK# 2809 NEW MAIL BOX (AT MVCO)	\$	34.41
2810 20 ASTRONOMY CALENDARS FOR 2015		129.90
TOTAL EXPENSES	\$	164.31

Reserved Funds

OBERVATORY ACQUISITION & DEVELOPMENT FUND	\$	3,914.12
MVCO KEY DEPOSITS		285.00
SUNSHINE FUND		30.00
TOTAL RESERVED FUNDS	\$	4,229.12

2014 Membership dues paid by: NONE

CORRESPONDENCE: A note was left under the door at the MVCO from Steve Simpson in Newton Falls. He was interested in the group. He had been contacted and invited to the OTAA. He was to locate the OD but this never happened.

COMMITTEE REPORTS: *75th Anniversary Committee:* Jodi McCullough had the anniversary T-shirt design on a laptop for members to evaluate. It received a favorable response. It's a black shirt with the last names of all MVAS members since 1939, superimposed on an image of the Rossette Nebula. With current orders, he price will be \$14 each. We will need to place an order by the September meeting in order to have them ready for the dinner Oct. 18th. It was suggested we send shirts to Allen and Bette and have one for our speaker. It was suggested we have several in stock for future sales. Rosemary reported that we will likely get side dishes from Mocha House along with cheese cakes. She is looking at ticket prices to be around \$10 each. Mike Sprague will have the smoker in action. He has offered to set-up a tent for the dinner near the MVCO buildings.

Rosemary has a list of past members that will be invited. She will need to receive the RSVP's at least a week before the dinner. Jodi had a sign-up sheet for both the T's and the dinner. Sharon sent word that our speaker- Jerry R. Ehman would only request compensation for fuel as he is coming from Columbus. On August 15, 1977, while he was working on a SETI project at The Ohio State University, he wrote "Wow!" on the strip chart

next to a strong narrowband radio signal that was detected. A possible ET signal. It has never been detected since. Jodi added that they have a small telescope to be raffled-off at the dinner. It is an Astronomy Without Borders 5.3" One Sky reflector. We will use regular raffle tickets handed to attendees.

IMAGING COMMITTEE: Lou DiNardo has been processing a few images from the imaging group. He has recently posted his work to the group. (image of M-101 and the Bubble nebula). Chris Stephan tells us that the AAVSO has just released a manual for doing variable star photometry using dsrls and that imagers might give it a try. The manual may be a pdf download from the AAVSO website. **VISUAL COMMITTEE:** No reports called for. Please make an effort to record observations. See Phil if you need a report form.

OFFICER REPORTS: **OBSERVATORY DIRECTOR:** Larry Plante reports that the MVCO survived the OTAA in good shape. Things are in good order and working well. He collected three months Homework from Phil Plante.

LIBRARIAN: Nothing to report.

OLD BUSINESS: Jodi has been in contact with Harry Harker and Robert Blevins about the website. She hopes that it will be fixed very soon. She is looking at various Google options. Randy suggested she look into a web design site called "Square Space". Jodi and Roy have been in touch with the Columbiana Library system, hoping to start a library loaner scope program. This program would only be for Columbiana libraries. The library was very enthusiastic about the idea and have applied for a \$2,000 grant from the Columbiana Community Foundation. They are seeking to buy 6 Orion 4.5" Star Blast Telescopes. MVAS would provide maintenance and would make "fool-proof" modifications. A possible star gazing event is planned. Regarding the Anniversary Dinner, former MVAS President Greg Klocek will provide Rita's Italian Ice at the event. Larry asked what flavors we wanted. The vote was for Mango, Peach, and Pumpkin. (sorry no lemon square flavor)

NEW BUSINESS: The McCulloughs report that Wayne-Bridge Road is closed down for three weeks due to the small bridge being knocked out. Wayne-Bridge is the primary access road to Scenic Vista. They explored the area and found a six mile detour that would go through gravel back roads and in the dark going home. They noted it would also be out of the way for Lisbon residents. The event is near full moon and rain was the forecast for the event. Many were uncomfortable with the detour. Phil Plante moved to cancel the event. Roy McCullough seconded the motion. A unanimous voice vote adopted the motion. Option were brought up to have it in Lisbon. Dick Klesch suggested Beaver Township Preserve. He and Eric go there often. Stay tuned if a back-up site is chosen. Jodi will contact Scenic Vista and inform them of the cancellation.

Next Randy and Sue introduced themselves. Randy moved here from Erie, PA about one and a half years ago. He was active in public outreach and now uses a 12" RCX for imaging and visual work. Sue is just learning. They were both at the OTAA and stated they were impressed with the event. Phil Plante nominated them for membership. Chris Stephan seconded the nomination. They were named members of the Society by a unanimous vote. Welcome Randy and Sue. We look forward to observing with you and your fellowship.

GOOD OF THE SOCIETY: Jodi received a map of the USA from a Michigan group that showed the average amount of cloud cover of the country. It looked dismal for NE Ohio. Larry

and Greg Klocek had to tell a Rita's customer that Mars wasn't and couldn't be as big as the Moon during a recent festival they were working. Amazing that internet whimsy is still out there. Phil noted that the AAVSO gave him an award for having made 1,000 variable star estimates by 2009. A little late but appreciated non-the-less.

VISUAL REPORTS: Bob Danko saw Comet Jacques and it was viewed during the OTAA. Don Cherry had been at the MVCO and got 22 M-objects and the comet. Jodi & Roy, Jim Haklar and Phil all got images of the great Jupiter-Venus conjunction the morning of August 18, 2014. Chris got 26 vso's and Phil had 22 vso's during August.

ADJOURNMENT: Adjournment came at 8:45 PM. We thank our hosts Jodi & Roy McCullough for the meatball sandwiches and desserts. The next meeting will be at the MVCO on SEP 27, 2014. Meeting begins at 8:00 PM. Scheduled hosts are Dan Schneider (snack) and Rich Mattussi (dessert and drinks). Phil Plante is to give a talk on how to make a telescope mirror. **PASSWORD:** name a "fall" constellation and it's brightest star. ("alpha" won't do, nor will "Miranda") *-minutes by Phil Plante*

After Social Hour: Rich Mattusii gave a talk on the old astronomers that battled over geocentric vs heliocentric paradigms of how the universe worked. Getting our mindset to how Copernicus, Brahe and Kepler thought, Rich then focused on Galileo's "battles" with the Church showing him as one of the most prolific scientist of all time. Thank Rich!

MVAS REMINDERS

SEP 19: WOW! Stargaze at YSU. Part of a 7-day Stem program around the community. The YSU Planetarium has asked for MVAS assistance in conducting sidewalk astronomy outside the planetarium. We've done this before. Start at sunset.

SEP 20: BLACK RIVER OTAA. Please remember to get out the Black-River OTAA on September 20th. They have a fine facility and great dark skies there. Their food is as good as it gets. Many great prizes too.

SEP 27. Anniversary RSVP. Contact Rosemary Chomos to make Anniversary Dinner Reservations. \$10 per person. Contact Jodi McCullough for T-shirt orders: \$14 each. Pleased do all of this before September 27. The dinner reservations need to be prepaid. Make checks payable to "MVAS". See the Gallery section for a bigger image of the T-shirt.

MVAS ACTIVITIES

Work Day. August 16th had the place looking great! Steve, Virginia, Steven, Rich, Nicolas, Bob, Larry, Rosemary, Phil and Dave tackled the jobs at hand. Cleaning, sweeping, garden, repairs. Larry repaired the out house corner, put paneling up top between the rest rooms and mounted a bulletin board in the 8" building. Thanks to all that helped. It was a pleasant day. Larry had the BBQ going before and after the work session.

MVAS- OTAA: It was a humid day with clearing skies. Set-up (and eating) began around 11:30 as the smoker was fire-up. The help slowly showed up and by 4PM things mostly set up. Registration had 76 sign in. By 6:00 PM Mike had the briskets sliced and ready to go. Very delicious. As we all ate, the skies got clearer-deeper blue. After dinner, raffles were held. Everyone got a door prize. Sharon Shanks then gave a talk on the History of Planetariums. A cool breeze came with darkening

skies. The Black River folks had control of the 8" refractor as usual. They seemed to have a blast using it. Heard many compliments about that scope from them. There were maybe ten personal scopes set up from 6" to 12" on Telescope Hill. Bob Danko had the 8" Dynamax going on the deck. No other MVAS scope was in use. About that 11:00 PM, clouds were moving in from the west. By 11:30 the Black river guys were clouded out.

Soon after we had the buildings closed up. Tables and chairs stowed away. Food table clean-up. Only seven were left after midnight. From 1:00 AM to 1:30AM folks sat in the yard across from the tool shed. All manner of topics made for interesting dialogue. Rosemary and Phil finished leaning up the place by 2:30AM. Larry and Phil slept in their cars overnight. Waking around 6:30 AM, they did some final cleaning, took garbage bags away and were out by 7:20 AM. MVAS extends it's humble thanks to Mike Sprague for taking the time to cook the briskets and to Larry Plante for covering the expenses. Special thanks to Tony Mehle for the many, many prizes he supplied (most of them!) and for the cheese cakes and food from Larricia's. Thanks to Sharon Shanks for a wonderful talk, to Bob Danko as emcee, to Virginia, Steven and Joanne for working registration (not even members!) and to all those that helped in many ways. Thanks to the 76 people that showed up. See you at Black River! Or at least next year on August 15th--The MVAS-OTAA.

Observer's Notes.....

WZ CAS. . . A Real Red Bugger

By Allen Heasley

I suppose most all observers have at least one star and probably the more prolific of our observers have a number of stars that "bug" them. I know in the case of the late AAVSO observer Curtis Anderson such a star was MS AQL. The mystery of the star has since been solved. I'm afraid the star that bugs me is not as glamorous or has a mystery comparable to MS AQL, but never the less, it's the star that bugs me. It is WZ CAS my first observations of WZ covered the period of J.D. 2438821 to 2439002. The first observation was made on 8821 with the 2-1/4" F/10 finder attached to my 6-1/4" F/15 Draper refractor. I called it at 6.7 magnitude. During this period I made 49 observations ranging from 6.6 to 6.8 with the mean being 6.7. You can see how perhaps, where I picked up the "bug"! The star is supposed to vary and according to the AAVSO "b" chart, it does so between 6.9 and 8.5 on a semi-regular basis.

WZ was one of the first stars I ever estimated, for obvious reasons. It is bright and in an easy field, and being circumpolar I had the opportunity to observe it frequently. I would not be surprised if half of the *Meteorite's* readers would scoff and make the mental reflection "it ain't that bright". I can now make the statement that "it is to" and support it with photoelectric observations from the Case Institute and from my own photoelectric observation. I would have to qualify that my observation was during the "breaking-in" period of the new MVAS photometer and observing group. We were using the V filter and according to my humble arithmetic, it came out to 6.6 on J.D. 2440125.6.

In the early years of MVAS, we had only two other members that made a habit of observing variables to any extent. One was my wife Bette and the other was the late John Hoynos. Bette's interest stems from the fact that she is married to a nut who loves astronomy. I found that in times where I was uncertain of an observation of WZ, her comparison was of value to me. Her

first observation of WZ was on J.D. 2438952 and she called it 6.7 magnitude. John Hoynos and I often observed together. It was I who encouraged this long time observer to take up variable stars, the seed having been sown by the late Mr. George Diedrich. John's estimates of WZ were usually in close agreement with mine. Amateur astronomer Ron Domen lived only a few miles from me had been referred to the MVAS by Curtis Anderson in Minnesota. Ron had written to Curtis advising he was grinding a 10" mirror and wanted to get into variable star work. Curtis passed his name on to me and I called Ron asking him to join MVAS. In April of 1965 new MVAS member Ron Domen made his first estimate of WZ. I helped him locate the field and showed him the rudiments of using the charts and estimating brightness. I was careful not to influence his estimate in any way. He called the star 6.6. I had estimated it also as 6.6 earlier in the evening.

After a few months of observing WZ it became apparent to me that the star wasn't doing much. I started to develop some interest when it did not appear the star was having anywhere near the 6.9 to 8.5 range the AAVSO literature put it at. After several inquiries with other AAVSO observers about their experience with WZ, their answers deepened my curiosity. I requested data from the AAVSO showing what they had on the light curve. I received this in November 1966. It confirmed what I had suspected; namely that there was a great difference of opinion amongst observers as to the brightness of this star. The Director at that time noted " the scatter of observations is horrible". It amounted to one magnitude or more. Although WZ CAS looks like the perfect star for the beginner, nothing could be further from the truth. In reality, WZ CAS is a real bugger.

The above is adapted from Allen's essay in the December 1983 issue of the Meteorite. Republished in September 2007.. -Editor

A Variable Legacy

Having a permanent home for the 16" Cass was the main reason for building the 16" building. But there were other reasons that would justify the tremendous effort involved. One of them was a useful research project that the MVAS could conduct. Public outreach and membership use were well underway since the building had been dedicated on September 11, 1962. After much discussion, in April 1964 it was decided that variable star observations would be a perfect research project. Bernie Cortese contacted the AAVSO- the lead American organization that collected observations of variable stars. This was to investigate its programs and how to get involved. Several members soon joined as a group membership (under MVAS); \$5 per member. By October of 1964 the first observation were being submitted. Eventually members would join the AAVSO as individual observers.

Soon Allen would become the lead observer and contact with the AAVSO. He would often be in contact with observing giants such as Leslie Peltier, Carolyn Hurless, Curtis Anderson, George Deidrich. And with AAVSO Headquarters. The MVAS was showing up on the "map" as it were. Along the way, many members participated and they were very active for at least 20 years. In all, 26 members have participated. Since 1990 only three new vso'ers have joined have the list. Nearly all in the previous group have stopped observations or have passed. During the early 70's a photoelectric photometry (PEP) project was tried with the 16" scope. The effort was led by Art Stokes. The main point to know is that he AAVSO still needs visual observers. There are also observing programs that use CCD's, photometers and dslr cameras for photometric (PEP) estimates.

In 2014, the MVAS continues with its 50 year long variable star project. On this 75th anniversary we pay homage to our vso observers. Below is a list of the MVAS visual observers. The list shows their name, their AAVSO observer code and their lifetime observations, as of March 14th, 2014. That end date is around the time the totals were compiled. Go over the list. How many names do you recognize? It would be great to see some new names on the list. Let's keep the legacy going! I would like to send thanks to **Sara Beck of the AAVSO** for taking the time and effort to dig up and assemble this list. *-P. Plante*

MVAS Variable Star Observers 1964 to 2014

	NAME	Observer Code	Total Estimates **
1	Christopher Stephen	SET	39844
2	Robert Andress	AJR	3790
3	Philip Plante	PPL	3133
4	Allen Heasley	HY	2614
5	Sheila Bishop	BSV	818
6	Ronald Domen	DMR	664
7	Roy Mimna	MMA	664
8	John Beaver	BEJ	373
9	Robert Clyde	CLB	366
10	Richard Andrews	AWR	302
11	John Hoynos	HYJ	299
12	Doug Fowler	FDU	209
13	Samuel DiRocco	DRL	168
14	Ed Bishop	BEV	161
15	Patricia Lawrence	LAW	122
16	Art Stokes	SAJ	100
17	Bette Heasley	HYB	43
18	Fred Boyer	BFI	23
19	Dan Galdun	GAD	22
20	Andy Jackson	JCK	9
21	George O. Pitcovich	PGM	8
22	Tom Heasley	HYT	6
23	Tom Willmitch	WTL	5
24	Bernie Cortese	CRB	3
25	George M. Pitcovich	PGO	3
26	Art Caruso	CUS	(1)
MVAS TOTAL VSO's			53,749

** From the AAVSO data base. As of March 14, 2014, by Sara Beck.

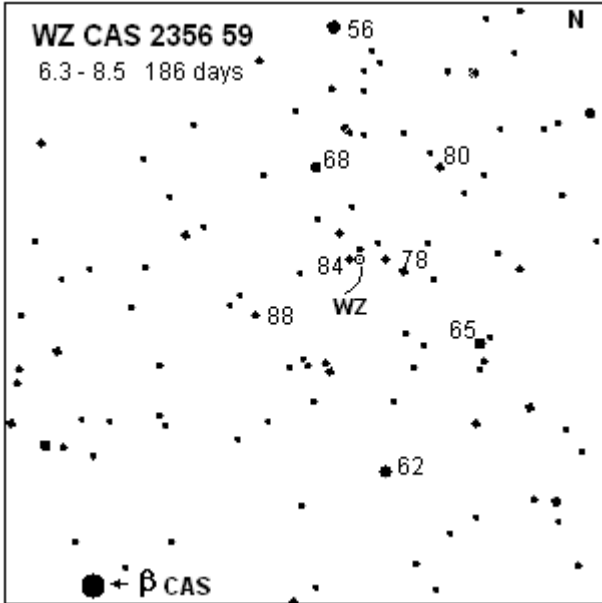
MVAS Homework: The Owl Cluster

NGC 457 (also known as **Caldwell 13**) is an open star cluster in Cassiopeia. It was discovered by William Herschel in 1787. It lies over 7,900 light years away from the Sun. It is estimated to be 21 million years old. The cluster features a rich field of about 150 stars, many of 11th to 15th magnitude. Traditionally, the cluster was referred to as the *Owl Cluster*, or *Kachina Doll Cluster*. The name *E.T. Cluster* (as it resembles the movie character) has become popular since the movie by the same name came out. The "Dragon Fly Cluster," "The Skiing Cluster" and even "The F-18A Fighter" have also been suggested. Those two bright stars, 5th mag. ϕ -1 Cas and 7th mag. ϕ -2 Cas can be imagined as eyes or jet after burners. A bit smaller in angular size than a full moon, it looks nice at about 40 to 80x. It is dazzling in a 6" under dark skies. What character do you see? What ever you call it, it's an appealing object worth the star hop. Maybe even worth a "phone home" to tell about it.

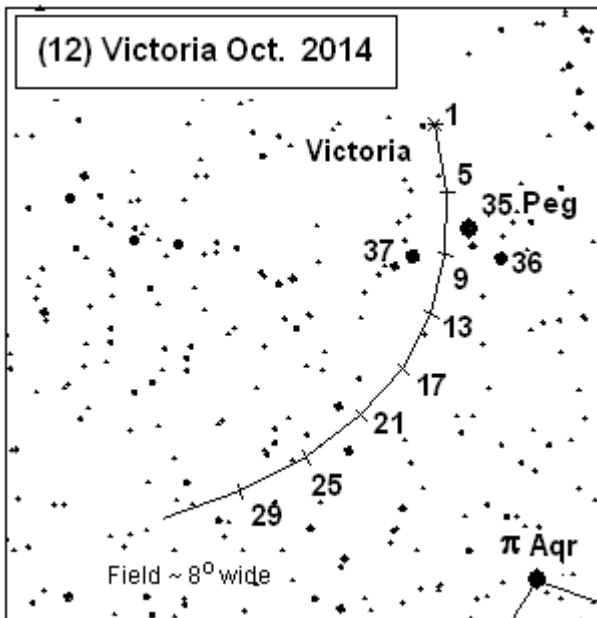
MVAS OBSERVER'S CHARTS

MVAS OBSERVATIONS - (Homework)

Variable of the month: WZ Cassiopeiae (*abbrev.*: WZ Cas). We check on an old nemesis WZ Cas (according to Allen). WZ never seems to change and always hovers around 6.8 magnitude. A check in late August put it at 7.0. Will it get brighter or dimmer this autumn? You'll have to check it! Anyway it's a really colorful double star (O Σ 254) and worth finding. The orange star is WZ, it's next to a cobalt blue star, 54" away.

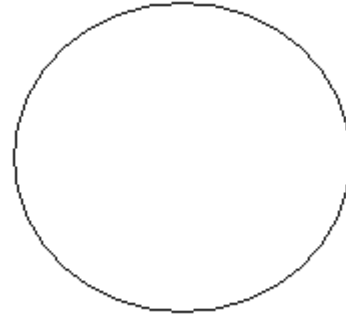


Asteroid of the month: (12) Victoria. We continue to watch Victoria. It leaves southern Pegasus passing thru 4.8 mag. 35 Peg and 5.5 mag. 37 Peg. 36 Peg is at magnitude 5.8. Victoria starts off at 9.5 mag and drops to 10.3 by Halloween. Stars are plotted to magnitude 10.5. A test for big binoculars, a 4" or bigger RFT should do nicely for (12). This is good practice. Next month we'll track 10.5 mag. (52) Europa which will be over in Cetus. Asteroid work is getting to be like deep sky observing for these last months of 2014. They will be a little brighter in 2015.



OBSERVER _____

Featured object: The Owl Cluster. Look for NGC457 south of δ Cas. It looks like a little hazy patch in binocs. You should be able to see the two big bright eyes! Can you see the out-stretched arms? S&T likes to call it the "ET" Cluster, after the movie character. What name do you like best? Chances are you'll enjoy this cluster. If you only observe it, just enter the date, time & instrument you used. If you dare to go all-out, try to sketch it in the circle below.



NGC 475 Observation:

Date: _____ Time(EDT) _____ Scope _____

WZ CAS magnitude estimates:

Date: _____ Time: _____ estimate: _____ Instrument: _____

_____	_____	_____	_____
_____	_____	_____	_____

(12) Victoria Observations:

Date: _____ Time: _____ Instrument: _____ magnification: _____

_____	_____	_____	_____
_____	_____	_____	_____

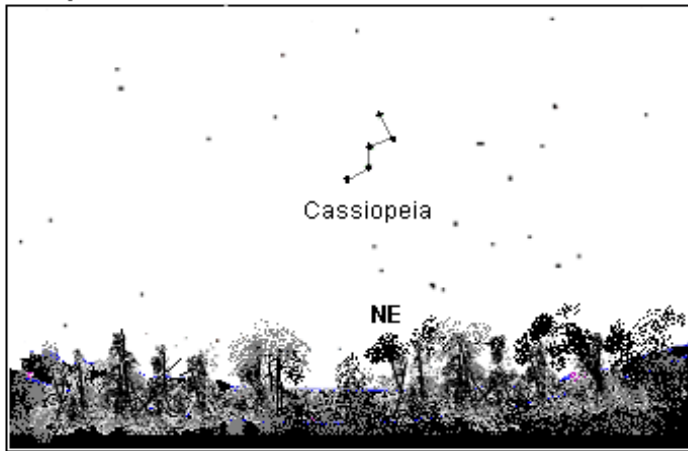
Other Objects in Cassiopeia to observe

D. Sky	Date	Scope	Dbi.	Date	Scope	SEP	MAG	SPLIT?
M- 52	_____	_____	η Cas	_____	_____	13.0"	3.5 - 7.4	Y / N
M- 103	_____	_____	Σ 131	_____	_____	13.8"	7.3 - 9.9	Y / N
N- 281	_____	_____	Σ 163	_____	_____	33.9"	6.8 - 9.1	Y / N

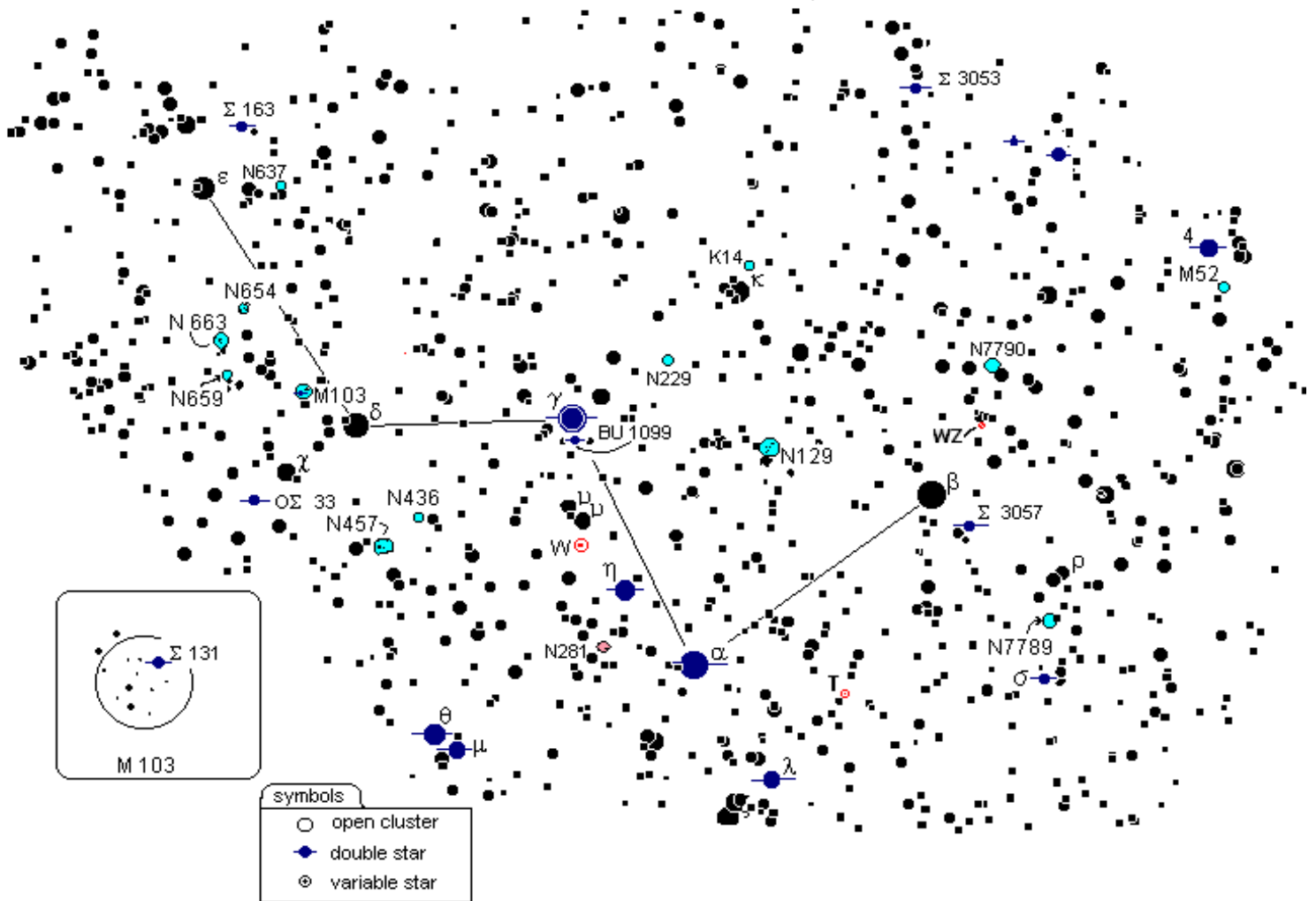
Lunar Occultations (see Sky Almanac):

Star	(UT) Date	Time	Scope	magx.	Event(circle)
_____	_____	_____	_____	_____x	R D
_____	_____	_____	_____	_____x	R D
_____	_____	_____	_____	_____x	R D

Constellation of the Month — Cassiopeia



If you go out around 10pm in mid-September, you can find the familiar "W" shaped constellation Cassiopeia. Look NE, about half way up. Even from town you should be able to trace the "W" pattern. Scanning with binoculars will show the area is rich in fainter stars. Look a little closer (use the chart) and you might even detect a few of the open clusters that are plotted. Cassiopeia has over 20 open clusters but only a few are observable in binoculars. Moving up to a telescope brings more of them into view. Most are small, delicate collections. M103 and NGC 457 stand out as two of the best. NGC is sometimes called "The Owl Cluster". Can you see its eyes? Don't forget to try the doubles listed below. They are the most colorful in CAS as listed in Webb's 1859 classic "Celestial Objects for Common Telescopes". It can still inspire the modern observer. Can you see the same colors? Try the homework variable WZ CAS.



DEEP SKY				DOUBLE STARS:				Check list		Instruments used: _____ on _____ _____ on _____ _____ on _____
NGC	mag.	dia.	stars	mag1	mag2	sep.	colors (Webb)	_____	_____	
NGC 637	8.2 mg.	3.5'	20 stars	γ	3.4, 7.5	12"	yellow - gamet	_____ N 637	_____ γ	
NGC 654	6.5 mg.	5.0'	60 stars	η	5.0, 7.1	3"	green - blue	_____ N 654	_____ σ	
NGC 659	7.9 mg.	5.0'	40 stars	σ	7.2, 9.9	14"	yellow - blue	_____ N 659	_____ Σ 131	
M 103	7.3 mg.	6.0'	25 stars	Σ 131	6.6, 9.2	36"	gold - blue	_____ M 103	_____ Σ 163	
NGC 436	8.8 mg.	5.0'	30 stars	Σ 163	5.9, 7.3	15"	yellow - blue	_____ N 436	_____ Σ 3053	
NGC 457	6.4 mg.	13'	80 stars	Σ 3053	6.0, 6.7	21"	orange - blue	_____ N 457	_____ BU 1099	
NGC 7789	6.7 mg.	15'	300 stars	BU 1099	6.6, 8.7	3.7"	yellow - ash	_____ N 7789	_____ Σ 3057	
NGC 129	6.5 mg.	7.1'	35 stars	Σ 3057	7.4, 8.5	26"	yellow - oran.	_____ N 129	_____ OΣ 33	
M 52	6.9 mg.	12'	100 stars	OΣ 33				_____ M 52	WZ Cas was at _____ mag. on ____/____/____	

Solar and Lunar (EDT).

Date	Sunset	Moonrise	Moonset
1	7 : 06	2 : 22p	— : —
5	6 : 59	— : —	3 : 58a
9	6 : 53	7 : 48p	— : —
13	6 : 56	10 : 54p	— : —
17	6 : 40	1 : 37a	— : —
21	6 : 34	5 : 24a	— : —
25	6 : 28	— : —	7 : 50p
29	6 : 23	— : —	11 : 30p

PLANET WATCH

Neptune Transits	Uranus Transits	Jupiter Rises
11:11 PM	1:40 AM	2:55 AM
10:55	1:24	2:43
10:38	1:07	2:20
10:23	12:51	2:18
10:07	12:35	2:05
9:51	12:18	1:52
9:35	12:02	1:39
9:19	11:42 PM	1:26

October 2014

S	M	T	W	T	F	S
			1 ☽	2	3	4
5	6	7	8 Uranus ○	9	10	11
12	13	14	15 ☾	16	17	18
19	20	21	22	23 ●	24	25
26	27	28	29	30 ☽	31	

Asteroid for October 2014 (12) Victoria

Date	Transits	RA		Dec. deg.	at 10:00PM EDT		
		hr.	min		Alt.	Azm	Magnitude
1	11 : 14 PM	22 : 29	+06	51°	150°	9.5	
5	10 : 58 PM	22 : 28	+05	51	156	9.6	
9	10 : 42 PM	22 : 28	+04	52	162	9.7	
13	10 : 27 PM	22 : 29	+04	52	169	9.8	
17	10 : 12 PM	22 : 30	+03	52	175	9.9	
21	9 : 58 PM	22 : 32	+03	52	181	10.1	
25	9 : 44 PM	22 : 34	+03	51	186	10.2	
29	9 : 31 PM	22 : 36	+02	51	191	10.3	

Celestial Highlights

1	19	FIRST QUARTER
7	20	Uranus at opposition
8	09	Uranus 1.2° S. of Moon
8	10	FULL MOON-Eclipse
12	10	Aldebaran 1.4° S. of Moon
8	14	Draconid meteors peak
15	19	LAST QUARTER
21	00	R Leo at maximum
21	17	Orionid meteors peak
23	09	Spica 2.5° S. of Moon
23	21	NEW MOON- partial ecl.
31	02	FIRST QUARTER
31	00	Algol at minimum

Variable Star of the Month: **WZ CAS** 6.3 - 8.5 mag 186 day period

LUNAR OCCULTATIONS FOR OCTOBER 2014

Civil	UT			Ph	Moon % illum.	Moon alt	Moon azimuth	Star name	Star Mg	event PA	dbl./ sep.	
date	hr	min	sec	date	hr	min	sec					
1	21	: 26	: 12	2	01	: 26	: 12	D	52+	25°	210°	XZ 2731 6.6 110° .042"
5	1	: 22	: 36	5	05	: 22	: 36	D	85+	25	231	XZ 3199 6.5 025° NA
8	6	: 00	: 20	8	10	: 00	: 20	R	eclipse	16	263	XZ 104 5.7 236° 2.70"
8	20	: 41	: 54	9	00	: 41	: 54	r	99-	16	94	XZ 214 6.2 253° 69.0"
8	22	: 52	: 51	9	02	: 52	: 51	r	99-	39	118	XZ 226 6.5 200° 4.00"
11	23	: 50	: 23	12	03	: 50	: 23	R	83-	27	91	63 Tau 5.6 204° .001"
13	4	: 16	: 15	13	08	: 16	: 15	d	73-	63	148	115 Tau 5.5 125° .022"
14	1	: 46	: 19	14	05	: 46	: 19	R	64-	30	92	XZ 944 5.9 288° .030"
15	0	: 06	: 29	15	04	: 06	: 29	r	55-	3	70	XZ 1073 5.9 243° NA
15	4	: 31	: 38	15	08	: 31	: 38	Gr*	54-	50	116	XZ 1091 6.5 005° .050"
28	19	: 11	: 54	28	23	: 11	: 54	D	26+	25	208	XZ 2680 5.1 050° .100"

*Graze: 21km away, at azm 174°

D= disappearance. Good occultation event.
d= disappearance, the star's magnitude approaches the observing limits of 200mm objective
R= reappearance. Good occultation event
r= reappearance, the star's magnitude approaches the observing limits of 200mm objective
 All disappearances (D) occur on the eastern limb (left side in the sky). Reappearances (R) always occur on the western limb.
 Position Angle (PA): tells where along the western limb to watch for a reappearance.
 PA is referenced to celestial north: North=0° East=90° South=180° West=270°
 Occultations computed using Occult v3.6 (I.O.T.A.)
 Variable star data from AAVSO. All other data computed with MICA 1800-2050 (Willman-Bell)

GALLERY.....

A Bigger View.

At right is a larger image of the new 75th Anniversary T-shirt. It was developed by Jodi McCullough. Jodi used only last names (no duplicates) of all the people that have belonged to the MVAS since it began in October 1939. In fact there were 489 names up to June of 2013. Your Secretary spent close to a month digging up the old rosters to get the list. There was a computer crash in the middle of the search that was "lot's of fun".

Jodi decided to use only the last name, as it made the job manageable. It was just not reasonable to put 489 names on a shirt, even if several with the same last name were not related. For example the many 'Jones' in the list. A lot of time went into this shirt so please consider getting one. At \$14 a piece, it seems like a good deal for any T-shirt. Meanwhile, we'll set up a committee to start on the 100th anniversary shirts.

Below are two images that Lou DiNardo processed. He received these from the Astro-imagers group. At left, M-101 was sent by Blair. The Bubble Nebula was shot by Geof Lewis on August 23, 2014. Lou is proving to be a master at processing digital images. These imagers below were sent from non-MVAS members.



M-101 by Blair



The Bubble Nebula by Geof Lewis

The Jupiter-Venus Conjunction: 08/18 2014.



By Jodi & Roy McCullough on 8/18.



By Phil Plante on 8/18



By Jim Haklar on 8/19 (from Maine)



By Phil Plante on 8/18. Same scale as conjunction..

The 2014 MVAS OTAA Convention.



Parking was up top this year. Lower level seemed too soggy to take a chance.



The smoker near blue tent (lower left) was hard at work by 10:30AM. See the smoke coming from it? Mike provided a good lunch for the early workers. Beer too!



Attendees begin to arrive. Time for registration!



Also time to consider the main raffle prizes.



Joanne ran the registration like a professional.....



..... her brother Steven was most helpful. Many thanks to both of you for the work you put in.



Several scopes were set up early. Eventually about ten made it to the field. They were in use until clouded out around 11PM.



The prize table was slowly assembled. Curious astronomers pondered over what "toy" they would hope to get.



Time to meet and talk shop before dinner.





The Door prize table above had enough for all! Meanwhile, the MVAS Treasurer monitors the prize table before dinner.



The food table is nearly set. Waiting for the smoked briskets.



76 attendees gathered under the tent for dinner. Then we had the raffles (below). Emcee Bob did an excellent job as usual.





Tom looks on as the raffles begin.



Steve seems to be a happy camper.



Karin and Lou check out their prize.



Telescopes and astronomers settle-in for the talk. Then an evening of fine observing. It went on until about 11PM when those nasty clouds arrived. At least they came late.

As the raffles wound down, everyone relaxed with their prize; waiting for Sharon Shanks to give her talk. "Is It Live or Memorex" was an engaging talk about the history of planetariums. Many thanks to Sharon and to all of those MVAS members that helped set up and run registration. It was successful event because of your assistance. Special thanks goes out to Mike Sprague (smoker), Tony Mehle (prizes & food) and Larry Plante (briskets). They provided that extra touch to put it over the top. The MVAS also wishes to thank all of the fine folks from the OTAA that came out and supported our convention.. We hope to do this again next August 15, 2015.

But first...it's the Black River OTAA Sep 20, 2014. Hope to see you there.

--- OTAA photos by Larry and Phil Plante