THE METEORITE

NGC 457
THE OWL CLUSTER
In Cassiopeia

Newsletter of the Mahoning Valley Astronomical Society, Inc.

SEPTEMBER 2010

IN THIS ISSUE:

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THE METEORITE

Newsletter of the Mahoning Valley Astronomical Society, Inc.

SEPTEMBER 2010

MVAS CALENDAR

SEP 25	MVAS business meeting at MVCO. 8:00 PM.
OCT 2	Scenic Vista Public Star Party. Sunset 7:04 PM.
OCT 23	MVAS business meeting at MVCO. 8:00 PM.
OCT 30	Halloween Party at MVCO. 7:00 PM

NATIONAL & REGIONAL EVENTS

SEP 10 -1 2 20th Annual Connecticut Star Party. Ashford, CT. http://www.asnh.org/

SEP 11 ScopeOut Astronomy Fair at the Cincinnati Observatory Center, Cincinnati, OH
http://www.cincinnatiobservatory.org/scopeout2010.html

OCT 3-10 17th Annual Peach State Star Gaze 2010, Deerlick Astronomy Village, Sharon, GA
http://www.atlantaastronomy.org/PSSG/

OCT 8-10 Stella Della Valley Star Party, Ottsville, PA
http://www.bma2.org

OTAA MEETINGS 2010

OCT 8-10 **Hidden Hollow 2010 Weekend Star Party**. Speakers, food and astro-vendors. Held by the Richland Astronomical Society. $40 registration. Warren Rupp Observatory, Mansfield, OH
http://www.wro.org/hiddenhollowinfo.html

MVAS, P.O. BOX 564 NEWTON FALLS, OH 44444-9998
MVAS Homepage- http://mvobservatory.com

NEWS NOTES

Sounding off. By monitoring a star's sound waves, an international team of astronomers have observed a magnetic cycle similar to the sun's solar cycle. The scientists studied the 5.8 magnitude star HD49933. It is located 98 light years away, in Monoceros. It's also a double star (BU 897, 11.1 mag companion at 6.3" separation). They examined the star's acoustic fluctuations, using a technique called "stellar seismology." They detected the signature of "starspots," areas of intense magnetic activity on the surface that are similar to sunspots. Scientists have previously observed these magnetic cycles in other stars, but this was the first time they have discovered such a cycle using stellar seismology.

"Essentially, the star is ringing like a bell," says NCAR scientist Travis Metcalfe, a co-author of the paper which was published in the journal *Science* in lat August.

"As it moves through its starspot cycle, the tone and volume of the ringing changes in a very specific pattern, moving to higher tones with lower volume at the peak of its magnetic cycle." The technique could open the way to observing the magnetic activity of hundreds of stars, which could help evaluate new solar systems for the potential of supporting life. Studying many stars this way could help scientists better understand how magnetic activity cycles can differ from star to star, as well as the processes behind such cycles.

"Understanding the activity of stars harboring planets is necessary because magnetic conditions on the star's surface could influence the habitable zone where life could develop," says CEA-Saclay scientist Rafael Garcia, the study's lead author. The scientists examined 187 days of data captured by the international Convection Rotation and Planetary Transits (CoRoT) space mission. Launched on December 27, 2006, CoRoT was developed and is operated by the French National Center for Space Studies (CNES) with contributions from Austria, Belgium, Brazil, Germany, Spain, and the European Space Agency. CoRoT is equipped with a 27-centimeter (11-inch) diameter telescope and a 4-CCD camera sensitive to tiny variations in the light intensity from stars.

It was found that HD49933 is much bigger and hotter than the sun, and its magnetic cycle is much shorter. Past surveys of stars have found cycles similar to the 11-year solar cycle. This star has a cycle of less than a year. This is important because it may enable observations of an entire cycle more quickly, thereby gleaning more information about magnetic patterns than if they could only observe part of a longer cycle. The scientists plan to expand their observations by using other stars observed by CoRoT as well as data from NASA's Kepler mission, launched in March 2009. *-from Staff Writers Space Daily*

Time, Peace. On Aug. 26, 2010, YSU dedicated a sundial outside the entrance to the Ward Beecher Planetarium. It honors and remembers the late Rick Pirko. Rick was the Planetarium technician, a YSU educator and MVAS member. His widow, Victoria Pirko, unveiled the plaque recognizing him and his concept of building a "teaching sundial." He was developing the idea before he suffered a fatal heart attack at age 55, in October 2008. The sundial was built entirely from the $5,500 in private funds that was donated in Rick's memory. It was designed and built by art professor Tony Armeni, (YSU).

MINUTES OF THE AUGUST MEETING

AUGUST 28, 2010 at the MVCO

President Sam DiRocco called this outside meeting to order at 8:03 PM. Roll Call was taken and proper passwords were given by all 23 members present. Four guests of the Bartos contingency rounded out attendance. A family walked in during the meeting- later on. Bert Stovel (?) introduced himself (family). He had been here many years ago and was driving by when he saw the gate was open. So they stopped by to see what was going on. Contact information was to be exchanged for future visits. They were invited to stay but needed to continue on. A Call for the Reading of the Minutes was made. Bob Danko moved to suspend the reading, seconded by Larry Plante. With no discussion brought forth, the reading was suspended and the minutes were accepted as published, by a voice vote.

TREASURER'S REPORT: The Report was read by Steve Bartos. He noted the refund was for terrorist insurance that we did not want. Despite being difficult to hear at moments, over the random construction noise up at the house, Greg Higgins made a motion to accept the report. This was seconded by Bob Danko. With no discussions deemed necessary, the Report as read was accepted by a voice vote.

General Fund **7/1 thru 7/31 2010**

OPENING BALANCE:	$ 6,626.97	
CLOSING BALANCE:	$ 6,650.55	
AVAILABLE FUNDS:	$ 6,400.55	
INCOME:		
MVAS CLOTHING MERCHANDISE		$ 20.00
INSURANCE REFUND		25.00
INTEREST		0.58
TOTAL INCOME		$ 45.58
EXPENSES:		
CK# 2733 POST OFFICE BOX RENEWAL		$ 22.00
TOTAL EXPENSES		$ 22.00
Reserved Funds		
KEY DEPOSITS		$ 250.00

CORRESPONDENCE: None received.

COMMITTEE/OFFICER REPORTS: No active committees.

OBSERVATORY DIRECTOR'S REPORT: Larry reported there was not much to report. He noted that the OTAA event went well considering the weather and everything thing is in good shape. He has been looking at the old 16" motor and there is an extra wire coming from it. In all his years he has never seen a wire labeled with a "J" before. Usually they are numbered. He asked if there was schematic for the motor and several recalled there might be one in the file cabinet. It had been found during the time John Augustine was O.D. He also said he was instructed to make an inventory of our eyepieces.

For projects: we need to obtain a replacement skylight for the tool shed. Apparently kids at the OTAA managed to climb on top and bust out the window. A check online might locate a replacement part. The painting of the inside of the 16" building needs to be completed. Many seem to favor everything being white. Including the doors. Another issue that had been brought up by several others was the new 10" housing. There were concerns about its size, construction and functionality.

OLD BUSINESS: Sam agreed that the OTAA meeting went well despite the rain. He thanked everyone for helping and attending. He gave out a special thanks to Tony Mehle for above average donations of food and a main raffle prize (the eyepiece set). The Rita's Italian Ice seemed to be a hit and the sentiment was to try for this again next year. Larry said 96 cups were served, all a free treat donated by Phil and Larry. Phil gave a rundown of raffle income, by prize. The *Orion* eyepiece set drew 232 tickets; the *AstroTech* scope drew 250 tickets while the *S&T DVD* set drew 124. This was a quick count before leaving for the meeting. Some tickets may have stuck together and Phil noticed a few of the wrong stubs in the cans. Sam has placed thank-yours on our website, along with the logos for some of the vendors that donated door prizes. Check it out. Steve still has some Astronomy Calendars for 2011 ($10 each). Get'em while they last. We can order more but then you'd have to wait! Rosemary Chomos asked about the RASC Handbooks. Steve said they won't be available until October.

NEW BUSINESS: One of the door prizes was a $25 gift certificate from Lumicon. The trustees decided that this should be used towards a purchase of a 2" Ultra High Contrast (UHC) filter for the MVCO. This is a general purpose light pollution filter that could work well on all the scopes there. We needed the general membership to approve this expenditure of about $175. The filter usually goes for $199. Greg Higgins moved to buy it, Bob seconded the motion. A unanimous voice vote was for the purchase. Sam will order it, reimbursed by the MVAS for the balance over the $25 certificate. Bob Danko also won a Lumicon certificate (thru Scope City). He can't use it so he gave it back to the MVAS. It will be used somehow. Thanks Bob.

Phil Plante passed out Christmas Raffle Tickets to those on hand before the meeting. Remainders will get theirs in the mail. We have until the Christmas party to sell these. This is the last of this batch and we need to sell all to make a profit. We will revisit the raffle for next year, to see if we need to change anything. All were reminded that Black River was holding their OTAA the next weekend. Several were planning to attend as theirs is a good match to the MVAS OTAA regarding prizes and chow. Members are also reminded we have one last Scenic Vista public night on October 2nd and a Halloween party at the MVCO on October 30th.

GOOD OF THE SOCIETY: The sundial at the Ward Beecher Planetarium was dedicated to the late Rick Pirko this week. Several TV news broadcast had a report on this. It was also noted that Jack Horkheimer, aka "The Star Hustler" had passed away earlier in the month. Jodi McCullough had a champagne bottle cap her sister brought back from France. It had an IYA emblem with an image of the lunar landing and American flag. It even had Armstrong's "One small step.." quote on it. Cool. Jodi also told of a new Discovery Channel show done by Phil Platt, debunking various myths about astronomy.

VISUAL REPORTS: Phil Plante got 30 vso's this month bringing his 2009-10 AAVSO observing year count to 250. Sam told how he managed to get 2 vso's- the first time in a long while (it's great to have ya back at it! -editor) Bob Danko has had the usual Venus, Jupiter, double star and deep sky targets. One night using his 4" refractor, he was able to track the ISS as it passed. He was able to see the solar panels. Good job Bob! Larry told of the Monday night after the OTAA and of the spectacular Milky Way visible at the MVCO. He shared the views with Bob. The OTAA came a few days too early it seems.

ADJOURNMENT: Adjournment came at 8:35 PM. We thank our hosts Jodi and Roy McCullough. The hot ham sandwiches, bean salad and assorted chips/salsa where excellent. Thanks to rosemary for the cookies. The next meeting will be at the MVCO on September 25, 2010. Meeting begins at 8:00 PM. Scheduled host is Rosemary Chomos. PASSWORD: Name a solar system moon and its parent planet.

-minutes by Phil Plante

MVAS REMINDERS

Christmas Raffle tickets were passed out at the August meeting. The early distribution was done to allow time for members to sell the tickets. Proceeds can be turned in at any time prior to the Christmas Party. (See Phil). Each member has an envelope addressed to them- with 10 tickets in it. Those that did not pick tickets at the meeting will receive theirs in the mail. There is no escape- we know where you live! But seriously, we need to sell all of what is distributed in order to cover the cost of the prizes. We are working on the last of this batch of tickets, to use up. The trustees will re-evaluate how the raffle has been done the last few years. We might return to the traditional $1 ticket and prize schedule. Or, continue with the current form ($5 tickets). Trying something new is also on the table. If you have any ideas over the coming months, feel free to jot it down and give it to one of the trustees. They will take all ideas and suggestions under consideration. The Christmas Raffle has been an important source of funding for the MVAS since 1961. It has raised $31,243.50 since 1961 (the total as of the 2009 raffle). Good luck. Keep at it. Thanks in advance.

There are some *2011 Astronomy Calendars* left for $10 each. There is time to order more, if supplies run out and if there are enough interested. The *RASC 2011 Handbooks* should be coming out in October. We will be taking orders at the September meeting. Cost is expected to be the same as last year- around $20 for MVAS members.

We have one last public night at Scenic Vista on October 2nd. With a little luck, we might squeeze in a good night of observing. Please keep this event in mind when making plans.

MVAS ACTIVITIES

OTAA MEETING: It was mostly cloudy all day (a few breaks) and in the upper 80's with high humidity. A big storm that was coming (as seen by radar) seemed to swing around us. We did get on and off rain during registration and some during dinner. The chow line formed early- around 5:45pm in case the high winds with storm paid a visit. Neither did, so we lucked out. We had 54 people register. One couple from Black River arrived around 3:30pm and did some solar observing through breaks in the clouds. Rita's Italian ice was there with free treats for all. Mango, blue raspberry, Swedish Fish (cherry, cinnamon,) and green apple were the four flavors. Seemed to be a hit with every one and it is planned to do this again. Red Green DVDs were playing on the TV most of the time before dinner. The big canopy proved to be a good idea due to the rain. All events were held under there.

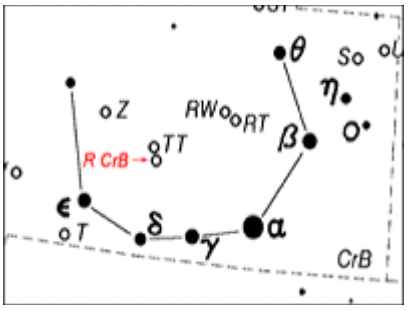
Registration and door prize table were moved into the 16" building. Food tables were moved into the 8" building. The desserts stayed out under the tent. Plenty to eat! From pizza's to Larricia's sausages, and rigatoni -meatballs. Cheesecakes were in abundance. Tasty tea biscuits were a hit (they made a great breakfast for the clean-up team). We thank all that brought food and drink; especially Tony Mehle for the Larricia's food and Mocha House cheesecakes, Allen Heasley for the Tea Biscuits (sent from Colorado), and Phil and Larry Plante who covered the expense for the Rita's Italian Ice (proprietor of Rita's: former MVAS President Greg Klocek and his wife Jill).

There were door prizes for everyone. Linda Myashita won the *S&T DVD*, Tony Mehle won the 3 *Orion eyepiece set* (he gave these away to a few others, since he donated them). Greg Higgins won the *AstroTech* telescope. With a rainbow over the MVCO, Jodi McCullough (with help from Roy) gave a delightful interactive talk about astronomy and how people learn about it. It was interactive in that audience members had a "clicker" in which they could answer a few survey questions and about the material given during the talk (a spot test). By 10:30 all but the die-hards remained, watching TV and talking shop in and around the buildings. Late evening binging on leftovers was standard behavior. Only Larry and Phil were left by 1 am for night watch. Around 4 am (outhouse break), Phil noticed Jupiter was on the meridian and a clearing overhead showed Cygnus, Lyra and Cassiopeia. (this was way better than a door prize). He grabbed the lawn chair out of his car, and with a cold drink watched for Perseids from the deck. He saw two as bright as Jupiter streak through Cassiopeia; about 2 minutes apart. That was all to be seen as the hole closed up by 4:30. At least one of us saw a couple Perseids at the OTAA. In the morning everything was cleaned up and stowed by 9:00 AM. A disappointing OTAA for observing and the weather kept attendance down. Still, it was a fun time for all.

Observer's Notes.....

R Coronae Borealis: A Favorite of MVAS Variable Star Observers Through The Years: *Something Strange Is Happening!* -- By Chris Stephan, MVAS Honorary Member
Robert Clyde Observatory, Sebring, FL

R Coronae Borealis (R CrB) has been a favorite with MVAS variable star observers for years. It was discovered in 1795 by the English amateur, Edward Pigott. Located inside the bright circlet of stars that form the Northern Crown, R CrB is usually easy to find with binoculars or even the unaided eye at 6th magnitude when it is at maximum brightness.



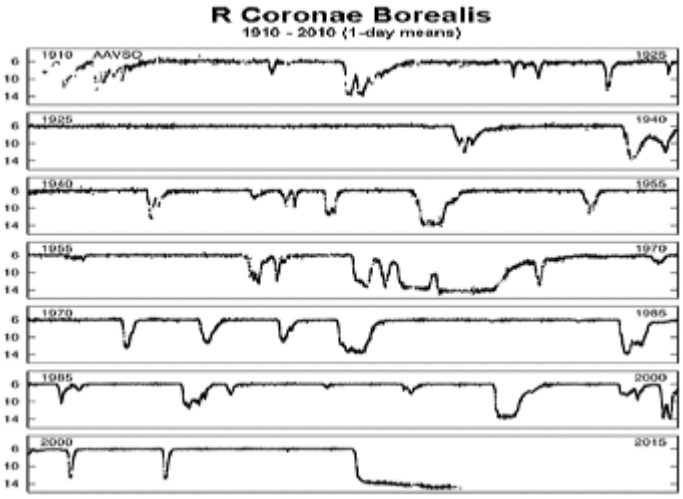
R CrB is currently stuck at minimum light at just under 14th magnitude. The star fades at irregular intervals. As seen by the historic light curve, the variation in brightness since 1910 has never been as long as it has been at the present. For the past three years it has been at minimum, with no sign of brightening. Something unusual must be happening. The question is: What?

A Look at the Light Curve

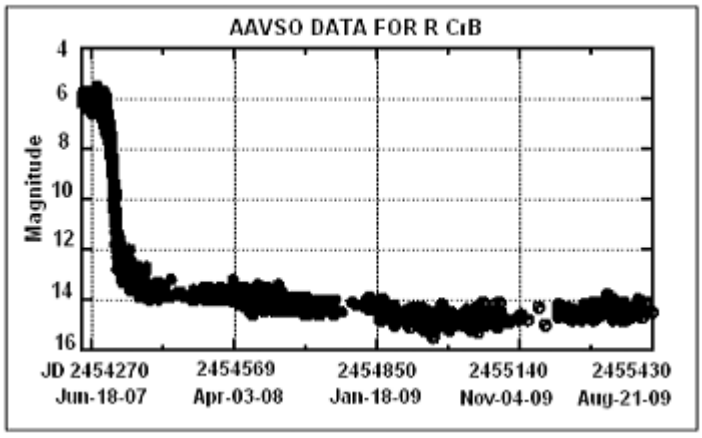
R Coronae Borealis is the prototype star of the R Coronae Borealis (RCrB) type variables. These hydrogen-deficient and carbon-rich F or G supergiants go into "outburst" not by brightening like other variables, but by fading! R CrB spends most of its time at maximum around magnitude 6, and at irregular intervals it experiences deep declines of up to 8 magnitudes. The decline is sharp. It may drop several

magnitudes in a few weeks. The star may remain faint for an extended period of time or have several recoveries and declines in succession. **Often the final rise back to maximum light is slow, taking several months to a year**. Yet, here we are at a minimum light lasting three years, with no sign of waking up.

This (below) is what the historic light curve of R Corona Borealis looks like. It is from January 1910 up to August 2010. Notice the irregular variations of the star. However, nothing looks like the minimum it is stuck in at the present.



Below is a zoom-in view on just the past three years, showing more detail of this minimum. Notice that the star did its normal quick drop in just a matter of weeks, starting around May 29, 2007. The star fades a good eight magnitudes. This is what makes it so exciting to watch from night to night in a telescope. Phil Plante has observed R CrB in the 25 inch at MVCO, and it is very dim even in that telescope. My own 14 ¼ in reflector at *Robert Clyde Observatory* in Sebring, Florida can see it in the low 14th magnitude range. I have good memories of observing this star with the 8 inch refractor at MVCO with Allen Heasley and Bob Clyde back in the 1970's.



(JD 2454250 = May 29, 2007 - when R CrB started to drop)

R CrB is a prototype for this class of R Corona Borealis type variable stars. These are carbon rich stars in the later stages of their life cycle. If placed where our earth is at in the solar system, they would easily swallow up Mars due to their giant diameter! The fading happens due to tremendous carbon dust (soot) forming episodes. The star's atmosphere has an overabundance of carbon. The current theory is that R CrB is a product of a final helium shell flash or coalescence of a binary white-dwarf system. In fact, I recently asked a professional variable star astronomer why he thought R CrB was acting so strangely. He said that his opinion is that we are seeing an eclipse, and within a few months, R CrB should start brightening.

R CrB stars are important to observe. They represent a rare stage in stellar evolution. Plus, these stars regularly produce immense amounts of carbon dust (soot). This dust helps us to directly study what is happening with the star. The carbon dust cloud eclipses the star's photosphere, preventing us from seeing the full brightness of the star. Fortunately, infrared wavelengths can penetrate the carbon soot. Space based infrared telescopes have been able to penetrate the cloud and observe what is happening on the photosphere.

Charts for observing R CrB can be downloaded from the AAVSO web site www.aavso.org Use the VSP Variable Star Plotter tool. "A" charts are for binoculars and go to about 8th magnitude. "B" charts and "D" charts are for Newtonian reflectors. The former go to 11th magnitude, and the latter to 14.5 magnitude. Those using refractors or Schmidt-Cass telescopes with diagonals should use "BR" and "DR" charts. "R" stands for "reversed" charts and has North up and East to the right.

The MVAS has had many members actively observing variable stars over the years for the AAVSO. Here is a list of past and present members who have observed R CrB and have contributed to the data base on this star. It is exciting to know that MVAS has been an important part of the knowledge we now have on this famous variable star.

Here's a roll call of MVAS observers:

John Hoynos, Ron Domen, Bob Andress, Art Stokes, Bob Clyde, Roy Mimna, Allen and Bette Heasley, Phil Plante, and Chris Stephan. I may have inadvertently left a few people out, my apologies to them.

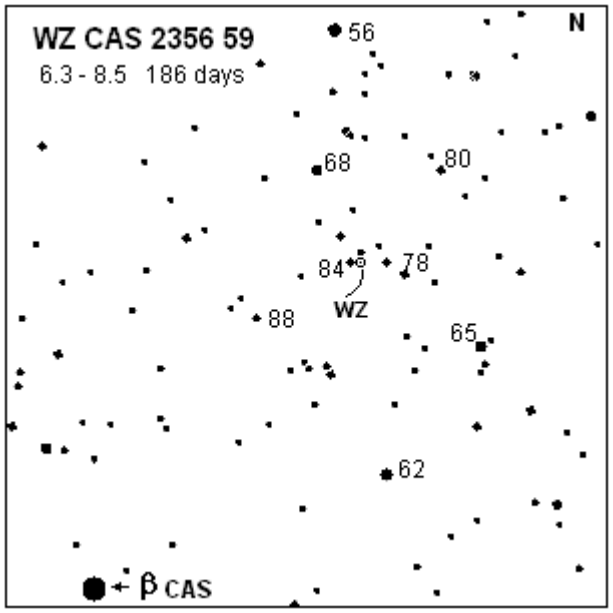
I would like for the current MVAS members to remember and appreciate what legacy has been passed on through the MVAS by these variable star observers. I can tell you factually, that when I have mentioned the MVAS and MVCO at the AAVSO Headquarters in Cambridge, Massachusetts, that ears and eyes perk up. Our club and observatory have made an impact on variable star astronomy.

I'd like to use this opportunity to express my desire to see the MVAS become a variable star observing club once again. There are several of us who can mentor the MVAS members. Right now, I am a part of the Citizen Sky program, www.citizensky.org which happens to be a part of AAVSO. I am actually a team leader of the 20/20 Vision Team. I have 47 people on the team, from all over the world. I am mentoring 2 from India, 2 from Ireland, 1 from Spain, 3 from Canada, and several in the USA. These people are learning to observe variable stars and are submitting data to the AAVSO. I'd sure like to see something of this type on a smaller scale at MVAS.

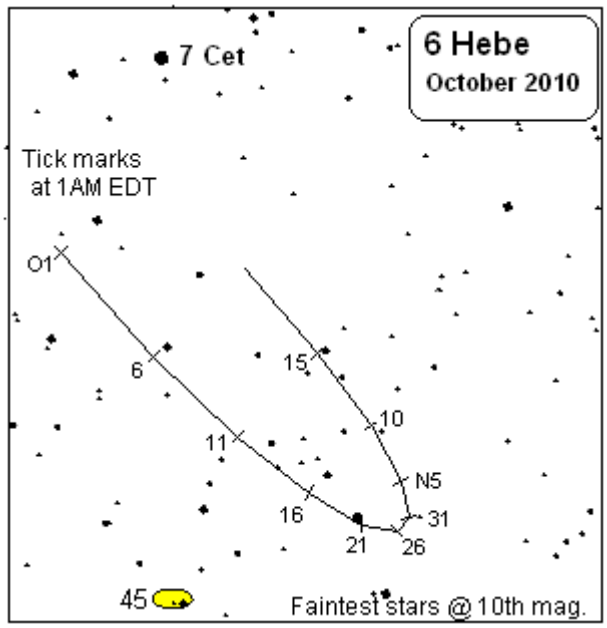
***** The light curves are courtesy of AAVSO.** Some of the above information that I have incorporated into this article is from the AAVSO web site www.aavso.org "Variable Star of the Season" January 2000. I'd like to extend my appreciation to **Arne Henden, AAVSO Director for his permission to use the light curves.** *- C. Stephan*

MVAS OBSERVER CHARTS

Variable star of the month: **WZ Cassiopeiae** (*abbrev:* WZ Cas). We revisit our old nemesis WZ Cas (according to Al Heasley). WZ never seems to change and always hovers around 6.8 magnitude. A check in late August put it at 6.9. Will it get brighter or dimmer this autumn? You'll have to check it! Anyway it's a really colorful double star (OΣΣ 254) and worth finding. The orange star is WZ, it's next to a cobalt blue star, 54" away.



Asteroid of the month: (**6) Hebe.** You'll have to use last month's chart to pick-up Hebe's path in late September. Then continue on through October with the chart below. Hebe makes a loop back in the right direction (out of retro-grade) near the end of the month. It drops in magnitude from 7.7 to 8.7 during this last observing window. In mid-October it is due south around 1 AM. The star 7 Cet is 4.3 mag. and is 4.2 north of the 11th mag. galaxy NGC 45. Scopes of least 70mm should work for Hebe.



MVAS OBSERVATIONS - DUE OCTOBER 2010

OBSERVER_____

Featured object: The Owl Cluster. Look for NGC457 south of delta 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 outstretched arms? *S&T* likes to call it the "ET" Cluster, after the movie character. What name do you like best? Either way, you'll likely end up liking this cluster. If you just observe it, note the time, instrument, etc. But please try a sketch.

Owl Cluster Observation:

Date:_____ Time(EDT)_____ Scope_____

WZ Cas magnitude estimates:

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

(6) Hebe Observations:

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

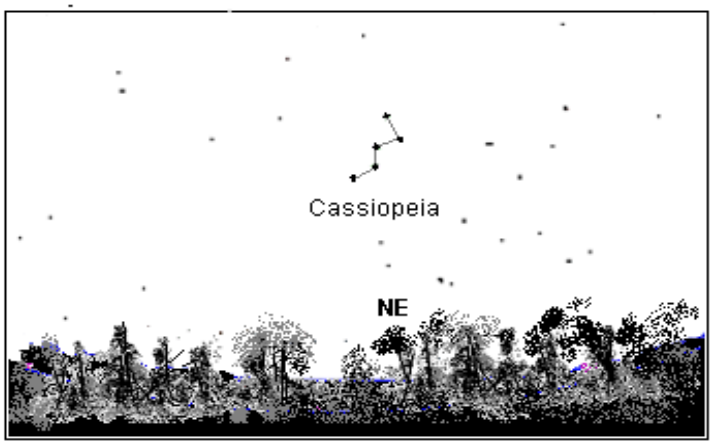
Other Objects in Cassiopeia to observe

Object	Date	Scope	Object	Date	Scope	SEP.	Split?
M- 52	_____	_____	η Cas	_____	____	13.0"	Y / N
M- 103	_____	_____	Σ 131	_____	____	13.8"	Y / N
N- 281	_____	_____	Σ 163	_____	____	33.9"	Y / N

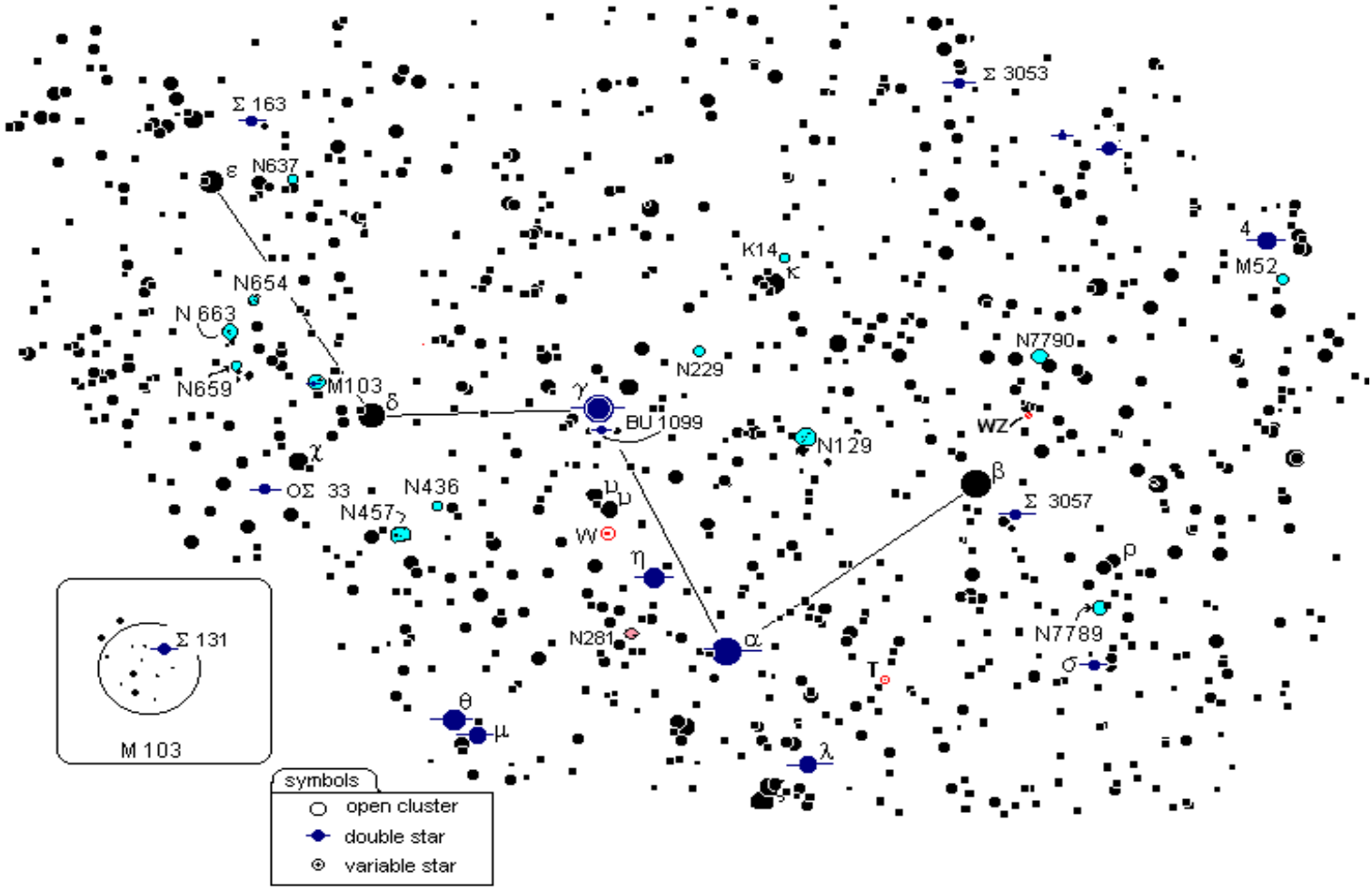
Lunar Occultations (see Sky Almanac):

Date (UT):	Time(UT):	Scope/magx	Phenom (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

NGC 637	8.2 mg.	3.5'	20 stars
NGC 654	6.5 mg.	5.0'	60 stars
NGC 659	7.9 mg.	5.0'	40 stars
M 103	7.3 mg	6.0'	25 stars
NGC 436	8.8 mg.	5.0'	30 stars
NGC 457	6.4 mg.	13'	80 stars
NGC7789	6.7mg.	15'	300 stars
NGC 129	6.5 mg.	7.1'	35 stars
M 52	6.9 mg.	12'	100 stars

DOUBLE STARS:

	mag1	mag2	sep.	colors (Webb)
η	3.4,	7.5	12"	yellow - garnet
σ	5.0,	7.1	3"	green - blue
Σ 131	7.2,	9.9	14"	yellow - blue
Σ 163	6.6,	9.2	35"	gold - blue
Σ 3053	5.9,	7.3	15"	yellow - blue
BU 1099	6.0,	6.7	21"	orange - blue
Σ 3057	6.6,	8.7	3.7"	yellow - ash
OΣ 33	7.4,	8.5	26"	yellow - oran.

Check list

- ____ N 637
- ____ N 654
- ____ N 659
- ____ M 103
- ____ N 436
- ____ N 457
- ____ N 7789
- ____ N 129
- ____ M 52
- ____ η
- ____ σ
- ____ Σ 131
- ____ Σ 163
- ____ Σ 3053
- ____ BU 1099
- ____ Σ 3057
- ____ OΣ 33

Instruments used:

____ on ____

____ on ____

____ on ____

____ on ____

W Cas was at ____ mag. on ___/___/____

2010 OCTOBER SKY ALMANAC

Solar and Lunar (EDT).

Date	Sunset		Moonrise	Moonset
1	7 : 06	*2nd*	1 : 01A	x : xx
5	6 : 59		4 : 45A	x : xx
9	6 : 53		x : xx	7 : 46P
13	6 : 46		x : xx	11 : 21P
17	6 : 40		x : xx	2 : 24A
21	6 : 34		x : xx	6 : 21A
25	6 : 29		7 : 54P	x : xx
29	5 : 24	*30th*	12 : 02A	x : xx

PLANET WATCH

	JUPITER	NEPTUNE	URANUS
	Transits	*Sets*	*Sets**
1	12:37A	3:55A	6:36A
5	12:19A	3:38A	6:20A
9	12:02A	3:22A	6:03A
13	11:40P	3:06A	5:47A
17	11:23P	2:50A	5:31A
21	11:05P	2:34A	5:14A
25	10:48P	2:19A	4:58A
29	10:32P	2:03A	4:41A

** near Jupiter*

October 2010

S	M	T	W	T	F	S
					1	2
3	4	5	6	7 ●	8	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 2010 (6) Hebe

Date	Rises	RA hr. min	Dec. deg.	Alt.	Azm	Magnitude
		topocentric				
1	8 : 13 PM	00 : 18.5	−20.4	28º	179º	7.8
7	7 : 49 PM	00 : 14.8	−21.3	27	186	7.9
13	7 : 25 PM	00 : 11.5	−22.1	26	193	8.0
19	7 : 01 PM	00 : 08.3	−22.6	24	200	8.1
25	6 : 36 PM	00 : 07.2	−22.6	22	206	8.3
31	6 : 11 PM	00 : 06.6	−22.5	20	211	8.4
	EDT	*(at 1:00 am)*		*(at 1:00 am)*		

Variable Star of the Month: **WZ CAS** 6.6 - 8.5mag 186 day period

Celestial Highlights

Date	UT hr	
1	3.5	**LAST QUARTER MOON**
4	4.0	Titania 7" N. of Uranus
7	18.7	**NEW MOON**
9	4.00	Draconid meteors
13	4.2	Titania 12" N. of Uranus
14	21.5	**FIRST QUARTER MOON**
21	4.0	Orionid meteors
23	1.6	**FULL MOON**
24	1.7	Jupiter Dbl. shad. transit
30	12.7	**LAST QUARTER MOON**
31	4.3	Jupiter Dbl. shad. transit

LUNAR OCCULTATIONS FOR: OCTOBER 2010

Civil (24hr) EDT date	hr	min	sec	*UT* date	hr	min	sec	Ph	Moon % illum.	Moon alt	Moon azimuth	Star name	Star Mag.	event PA	dbl./ sep.
1	5	06	43	***1***	09	06	43	**R**	47-	54º	111º	SAO 78742	7.0	240º	NA
4	5	10	17	***4***	09	10	17	**D**	16-	17	92	omi LEO	3.5	57º	94.0"
4	5	44	53	***4***	09	44	53	**R**	16-	24	98	omi LEO	3.5	57º	94.0"
16	21	59	09	***17***	01	59	09	**D**	70+	34	198	ZC 3109	6.6	119º	NA
19	20	49	29	***20***	00	49	29	**D**	91+	41	135	ZC 3455	6.3	55º	0.05"
19	21	00	01	***20***	01	00	01	**D**	92+	42	138	kappa PSC	5.0	17º	NA
27	6	12	53	***27***	10	12	53	**R**	82-	64	235	121 TAU	5.4	311º	NA
27	23	45	51	***28***	03	45	51	**M**	74-	19	76	MU GEM	2.9	180º	NA
27	23	47	01	***28***	03	47	01	**G**	74-	19	77	MU GEM	graze 87km N at 332º az.		
29	0	54	51	***29***	04	54	51	**R**	64-	20	80	56 GEM	5.1	294º	16.5"
29	3	24	46	***29***	07	24	46	**R**	63-	47	105	61 GEM	5.9	293º	0.048"

M= miss at MVCO G= graze, S. limb

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 west limb to watch for a reappearance.

PA is referenced to celestial north: North=0º East=90º South=180º West=270º

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…..

OTAA Photos: MVAS August 14, 2010.

Rain hampered the festivities, but it was a fun event in any case. Prizes for all, Italian Ice for all, food for all. MVAS thanks all that participated or helped to put on this event. Here are a few photos of what went on. (*All Gallery photos by the editor.*)

Rita's Italian Ice was there serving the tasty treats by 5PM. Seemed to be a hit and we'll try it again next year.

With the rain, the food was moved into the 8" building. Tony and Greg start the arrangements. When it was all said and done we had two fully packed tables of food.

Steve, Virginia and Joanne held registration (at left) while raffle players checked out the 3 main prizes (eyepiece set, scope, S&T DVD).

Prize tables went into the 16" bld. along with the registration table. Door pizes below.

Dan served as our master of ceremonies. Here he calls out door prize winners. Everyone was a winner. We even some left-so we have a head start on next year's prize table.

Jodi saved the day by giving a talk at the meeting. It was an engaging, interactive talk about how the public learns bad astronomy . Audience participants used a "clicker" to vote/answer survey questions given during the talk. Results were shown instantaneously. Roy provided the clickers.

During the talk a rainbow formed over the 16" building. I nice touch- wonder how Jodi arranged that! Legend has it, there is a pot of Naglers at the end of a rainbow. Next time we might go lookin'…..see ya all next year!

OTAA Photos: BRAS September 4, 2010.

The Black River OTAA's are one of the best going and usually close-out the convention season. Their prizes and food match the MVAS's. MVAS members Greg and Rosemary took home both of the main raffle prizes this year. The skies there are usually great- unless clouds show up. In 2010 it was a cool, breezy day with passing clouds. There were scopes were set up at BRAS because there was a chance at observing. Some was done through sucker holes, but the clouds won in the end. All in all, that annual September night in Birmingham - with our friends from Black River, is a good thing. It is a good time for all. Here below are some images of the event.

MVAS'ers Greg, Rosemary and Bob were one of the first on the field. Everyone seemed to set up along the parking lot this year.

The Big Red Building is always eye-catching in the late afternoon sunlight. Always looks great during registration.

Door prizes galore. (Above). A special astronomy quilt was raffled off in a special raffle. Other raffle prizes were an Edmund AstroScan and a Celestron FirstScope.

Early arrivals talked shop, checked out prizes and items for sale on the "swap" table.

Left: The food is always a main attraction and the pot luck dinner was superb. There was a healthy supply of famous Black River hot dogs complete with all the fixing's- including chili sauce. There was enough for seconds and for a late night snack.

This time exposure (lower left) shows the stars peeking thru the clouds, over the main meeting hall.

The photo below shows Scorpius and Sagittarius hugging the tree line. It may not show in this PDF version, but there is a hint of Milky Way just right of the "Teapot", behind a cloud.