

THE METEORITE



The Rosette Nebula

NGC 2237 / 2244



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Newsletter of the Mahoning Valley Astronomical Society, Inc.

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FEBRUARY 2013

SPECIAL ANNOUNCEMENT

It is likely that planetarium seating will be full before we get there. **The MVAS business meeting will be in the classroom across from the conference (food) room at 8:00 PM.** Those that wish to see the 8:00 PM Black Hole show may do so, skipping the meeting. There may also be opportunity for members to catch the 9:00 PM laser show. The planned talk on comets will be postponed until the March meeting.

The Ward Beecher Planetarium. Lasers shows are back in the Mahoning Valley! On Friday, Feb 22 and Saturday, Feb 23, the planetarium dome will light up with 5 different and stunning laser shows from Prismatic Magic and Radiant Laser Systems! The YSU Planetarium has been without a laser projection system for more than a decade. They are proud to bring this one-time treat to local audiences thanks to winning a drawing at a recent planetarium conference. While the Ward Beecher Planetarium always has been free and open to the public, a suggested donation of \$1.00 per person for this special event will allow them to continue bringing programs like this to the area. Seats: first come first served. Doors open 15 min. before Showtime.

Musical Favorites (Friday Program)

- FEB 22 6:00 pm Laser Beatles** - Take a mind-warping ride on a Yellow Submarine while you Twist and Shout after a Hard Day's Night!
- FEB 22 7:00 pm Laser Led Zeppelin** – Get the Led out with monolithic songs such as Rock 'n Roll, Stairway to Heaven, Dazed and Confused.
- FEB 22 8:00 pm Black Holes – The Other Side of Infinity** Liam Neeson narrates this immersive journey into the heart of the most fascinating objects in the Universe, a black hole.
- FEB 22 9:00 pm Laser Pink Floyd** – Be in awe of Pink Floyd's stunning career with songs from Dark Side of the Moon, The Wall and Wish You Were Here.

Education through Light (Saturday Program)

- FEB 23 4:00 pm Black History** – Celebrate the important contributions of many African American figures and artists during this musical narration through time.
- FEB 23 5:00 pm Lasers in Astronomy** – Discover how today's astronomers and planetary scientists are using lasers to unlock the mysteries of the Universe.
- FEB 23 7:00 pm Laser Led Zeppelin** – Repeat of Friday's show. See above.
- FEB 23 8:00 pm Black Holes – The Other Side of Infinity** Repeat of Friday's show. See above. **MVAS meeting in classroom 2030.**
- FEB 23 9:00 pm Laser Pink Floyd** – Repeat of Friday's show. See above.

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MVAS CALENDAR

- FEB 23 Meeting in classroom 2030 at YSU. 8:00 PM**
Hosts: Steve Bartos, Phil and Larry Plante
- MAR 9 Bino-Blast at MVCO. 7:00 PM. Eats too!**
- MAR 23 Business meeting at YSU. One week early due to Easter. Meeting is after the 8:00 PM show.**
Hosts: Ed & Sheila Bishop, Mark Baker (dessert), Maryanne Hoffman (drinks).

NATIONAL & REGIONAL EVENTS

- MAR 7-10 Staunton River Star Party Spring 2013.** Staunton River State Park, Scottsburg, VA. Runs 24 hours. Admission Fee \$35. A low key event, come on out and enjoy the dark skies.
<http://www.stauntonriver-starparty.org>
- MAR 13-17 5th Annual Hodges Gardens Star Party.** Hodges Gardens State Park, Florien, LA. Registration is \$10.00 for entire event. plus \$1.00 per day park entrance fee. Tent camping is free, RV camping is \$12.00 per day. Hosted by The Baton Rouge Astronomical Society.
<http://www.braastro.org/hgsp.html>
- JUN 6-9 Cherry Springs Star Party.** Cherry Springs State Park Coudersport, PA. Sun. Single-\$40, Family-\$55, Student-\$30. Availability for the star party is limited. Early registration recommended.
<http://www.astrobq.org/CSSP/Information.html>

MVAS BOARD OF TRUSTEES

President	Lou DiNardo
Vice President	Rich Mattuissi
Treasurer	Steve Bartos
Secretary	Phil Plante
Appointed Trustee (2013 & 2014)	Bob Danko
Appointed Trustee (2012 & 2013)	Rosemary Chomos
Elected Trustee (2013)	Dave Ruck

OBSERVATORY STAFF

Observatory Director	Bob Danko
Assistant Observatory Director	Larry Plante
Librarian	Rosemary Chomos

PUBLICATIONS STAFF

Meteorite Editor	Phil Plante
Assistant Editor	Steve Bartos
MVAS Webmaster	Harry Harker
MVAS Webmaster	Sam DiRocco

MVAS REPRESENTATIVES

OTAA Representative	Harry Harker
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MVAS Homepage- <http://mvsobservatory.com>

The first meeting of 2013 was held at the YSU Planetarium; usual practice for winter meetings. Members of the public and MVAS enjoyed the presentation "Footsteps" which traced humanities journey to the Moon. Sharon Shanks gave a nice introduction to the show as well as the sky tour afterwards.

MINUTES OF THE JANUARY MEETING
 JANUARY 26, 2013 at YSU

The meeting was called to order at 9:23 PM by President Sam DiRocco. Roll Call was taken. Twenty-nine members gave the password. A quorum of 10 was well met. Our two guests were Dominic and Nick Mattuissi. There was a Call for the Reading of the Minutes. Bob Danko moved to suspend the reading. Paul Baker seconded the motion. With no questions or corrections, the motion passed by a unanimous voice vote. Sam next spoke on the passing of president-elect Bill Pearce on Dec. 24th. 2012. On January 5th the Trustees held their first meeting of the year. A main goal was to resolve the open position. Sam had contacted several members in search of a replacement. Lou DiNardo had expressed interest.

The trustees agreed to appoint Lou to the position, as provided by Constitutional procedure. This move also needed ratification by the general membership. With no other member expressing interest or objection, the appointment was ratified by a simple up-down vote. With a unanimous voice vote, Lou was accepted as President of the MVAS. With that, presidential power was handed to Lou DiNardo. Lou presided over the remainder of the meeting. It was announced that Maryanne Hoffman had withdrawn from the Trustee election to be held during Old Business. Paul Baker expressed interest but it was pointed out that one had to be a member for at least one year before taking a position on the Executive Board. Paul had not met this requirement at this time.

TREASURER'S REPORT: The Report was read by Phil Plante as Steve Bartos was unable to attend this meeting. With no further discussion, Sam DiRocco moved to accept the report. A second to the motion was made by Mike Heim. A unanimous voice vote adopted the motion.

General Fund 12/1 thru 12/31 2012

OPENING BALANCE:	\$	9,103.64
CLOSING BALANCE:	\$	9,508.12
AVAILABLE FUNDS (NON-RESERVED):	\$	5,344.00
ACCOUNT NET GAIN/LOSS FOR THIS PERIOD:	\$	+ 404.48
INCOME:		
DUES	\$	540.00
CHRISTMAS PARTY		120.00
INTEREST		0.16
TOTAL INCOME	\$	660.16
EXPENSES:		
CK# 2782 METEORITE COPIES & POSTAGE	\$	255.68
TOTAL EXPENSES	\$	255.68

Reserved Funds

KEY DEPOSITS (MVCO)	\$	250.00
CASH FROM ORIGINAL OAD FUND (FOR LAND)		3,914.12
TOTAL RESERVED FUNDS	\$	4,164.12

2013 DUES PAID: (paid in Nov.) S. Bartos. (paid in Dec.) Avnet*, R. Chomos, B. Danko, H. Harker, G. Higgins, K. Janeco, McCullough*, T. Mehle, L. Miyashita, C. & C. Oiesen, R. J. Pandian, L. Plante, P. Plante. *\$10 Family rate still due. Thanks to all members above.

CORRESPONDENCE: Phil read a sympathy card that was received from the Black River Astronomical Society. This was a nice gesture in memory of Bill's passing. No other mail reported.

PRESIDENT'S REPORT: For Appointed Trustee, the four officers have selected Bob Danko to the two year term. New President Lou DiNardo had the duty to appoint several positions. He selected Bob Danko as the new Observatory Director. Larry Plante would take over as Assistant Observatory Director. Rosemary Chomos agreed to continue as Librarian. Phil Plante agreed to continue as Meteorite editor with Steve Bartos as assistant/production editor.

COMMITTEE/OFFICER REPORTS: **LIBRARIAN:** Rosemary had not had the opportunity to bring the new books to the Library. She noted though, that it seems to be getting "musty" in the 16" building. She recommends we think of some way to keep the air circulated in the building. Phil noted that this could part of the solution in keeping the 16" building closer to ambient air temperature, thus improving the seeing with the 16" scope. **IMAGING COMMITTEE:** Jodi, Roy and Lou have collaborated on an imaging project. Lou set up a box account on-line. Since the McCullough's have the darker skies and an observatory, they can collect excellent imaging data. Lou has the expertise and software needed to process images. As such, the McCullough's send raw images to the box account. Lou then processes this data and posts the final, often spectacular images on the box account. Members may then visit and view these images. Mike Hiem is beginning to participate. Lou invites imaging members to join in. Contact Lou for further information. **VISUAL COMMITTEE:** Phil has blank Visual Committee forms leftover from last year. We'll use these up for this year. He also thought that this portion of the meeting would be best utilized for collecting the Visual Committee Reports as well as Homework; relieving the O.D. of the task. He would be glad to accept all submissions and announce results-reports during this segment.

OBSERVATORY DIRECTOR'S REPORT: Larry had not been the MVCO in a while. Bob Danko has been there a few weeks ago. Things seem to be holding up. He has moved the 8" Dynamax into the 16" building. One could then take it outside if the 8" and 12" buildings are frozen-up and doors are unable to open. He also wants to get one of the 90mm refractors on a portable mount that can be used in such circumstances. In the end it might be wise not to go to the MVCO with snow on the ground and there is a possibility that ice impairs movement of the dome or blocks roof tracks. If something breaks, this is a bad season to fix things. Remember, don't force anything if you do go to the MVCO and bring binoculars as a back-up plan. Be wary of smoke from the wood burner. Keep optics covered.

OLD BUSINESS: With Maryanne bowing out of the Trustee race and with no other candidate available (thanks for the offer Paul), this left Dave Ruck unopposed. By unanimous consent, Dave was elected to the one year term. Larry spoke about the planned trip to Flying-W Ranch on April 10-11. It will be \$25 per person, per night. Cabins are \$100 per night. There are two bedrooms in each cabin. They have flush toilets and shower. Fully supplied kitchen (bring your own grub) and one couch. Possibly sleep five people. Larry would collect names after the meeting. It might be possible to rent the lodge there that has three bedrooms and a loft for several others to sleep. He will need money paid by or at the February meeting. Flying W wants payment up front, in full. No refunds due to bad weather. Larry said you need not go both nights.

It is time to start planning the gutter repair work. Bob Danko will investigate the phone number of a local company that is displayed on a sign at the Top of The Hill store near the MVCO. Rich Mattuissi asked about a contractor's estimate he had at the MVCO last year. It was believed the estimate was around \$600 but it was not stated if the fascia work would be included.

Lou reminded us of the March 9th Bino Blast at the MVCO. Start time should be around 7:00 PM. We had clouds last year to start but it cleared for an hour or so. About 20 people sat on the deck with binoculars. The food was a highlight as always. If snow permits, it will go on as planned. This is also the start of comet PanStarrs run in the western sky. It will be low on the western horizon and one will need a clear view of the horizon. It will not be visible from the MVCO due to the west hill. A report on what to expect will be in the February Meteorite.

Lou DiNardo reminded members to get their 2013 membership dues paid. Phil advised members to mail Steve Bartos a check, made out to "MVAS". (Write "dues payment" on the note line).

NEW BUSINESS: Phil had picked up a re-supply of MVAS apparel earlier that day. Partial costs was \$867.60. He is waiting on ball caps and patches. Cost for these are unknown. He has obtained sweat shirts ala the current hoodie design, as requested by a few members. It is possible to get polo shirts with a pocket- the logo would be above the pocket. He thought it would be best to sell most of the remaining polo shirt stock before we invest in a new "pocket" style.

Jodi would like to continue with the talks after the meetings. Instead of imaging, she proposed that talks be given on general astronomy since many new members might be interested in this rather than imaging. She thought having such talks during the YSU meetings would be best if they were held at 7:30 PM in a classroom. A possible subject at the February meeting would be on comets. She is also looking into "webinar" meetings as featured in the March 2013 S&T (pg. 33). Using the internet, speakers from around the world could give our group a talk. There would be a Q&A session afterwards.

Roy has been in contact with the creator of Images Plus software who would like to start an imaging group called North East Ohio Imagers. Contact Roy for more information. Jodi and Roy also suggested that the MVAS conduct a "Bill Pearce Stargaze" in his memory. First quarter moon weekends would be ideal. Austintown Park would be an ideal location. No consensus was reached at this time. Further investigation is needed, but it seems like a good idea.

Dennis Marko is interested in having a group trip to Cherry Springs sometime this year. Paul Baker noted that groups usually need to make a reservation and that spaces fill up fast. There are restrictions to parking but tents are allowed. This is something that needs advanced planning. Dennis plans to make the four hour drive to investigate the site, as soon as weather becomes favorable. He will report back to the group. Speaking of dark skies, Maryanne notes that Pymatuning State Park near where she lives has very dark skies. She could arrange something with the Park if the club wanted to have a star party there. She also recommends Conneaut State park for dark skies as a clear view of the western horizon (for PanStarrs). She viewed the Venus Transit from there. Food for thought on all the above.

GOOD OF THE SOCIETY: Sharon had contact with a grandmother looking for a good used astronomical telescope (not department store stuff) for around \$400. The lady wants it

for her grandsons. Bob Danko suggested she check Orion Telescopes. They have a 90mm for around that price point and it would be new. Rosemary told of a PBS documentary on the shuttle Columbia disaster slated for Jan. 31st. She also requested images of MVAS history to help with the 75th Anniversary planning. She has contacted Mocha House and they would be willing to do a custom cheesecake for the event. In jest, she said that there may need to be prolonged taste testing done by the Trustees (we can only hope -editor).

It was decided that the MVAS would send the standard \$50 memorial gift to the Bill Pearce family. Without question many want to add to that total. Thus sometime before or at the February meeting, you'll need to submit cash to the Treasurer specified for this donation. In person you may use cash or check. Check only by mail. Make checks out to "MVAS". Send this donation along with any dues payments to Steve Bartos at 107 Forest Creek Drive, Struthers, OH 44471. Steve will tally the donations and send that amount plus the \$50 to Elaine Pearce via a single MVAS check.

VISUAL REPORTS: Phil managed 8 variable stars in January. Dick Klesch has observed Jupiter on several occasions. Lou watched the Lunar/Jupiter conjunction earlier that week. Clouds, cold temps, and snow are the usual nemesis this time of year.

ADJOURNMENT: Adjournment came at 10:26 PM. We thank our hosts Phil for the pizza and wings, Paul and Jan for the delicious homemade pies (apple went fast) and for the sodas. The next meeting will be at YSU on February 23, 2013. Meeting begins after the 8:00 PM show. Scheduled hosts are Steve Bartos (meal), Phil Plante (dessert), and Larry Plante (drinks). **PASSWORD:** As a change of pace, this time tell us your favorite month you like to observe in. *-minutes by P. Plante*

MVAS REMINDERS

Member ship dues: Please pay dues as soon as you can. Send to Steve as advised in the January minutes (given above).

MVCO: Use common sense when thinking of a trip to the MVCO during snowy conditions. If you still see piles of snow along streets from the plow trucks, chances are the MVCO is also snowed in. Use care opening buildings or the dome.

75th Anniversary: Not too early to begin your t-shirt design work. Contact Karin, Maryanne, or Rosemary, for details.

MVAS ACTIVITIES

Eight MVAS members made it to YSU for the Telescope work shop. Just as many telescopes showed up in need of tweaking. Weather was pleasant and several scopes made it outside of the planetarium to check out the optics. Jodi had several telescope and "astronomy link" information sheets prepared for hand-outs. One or two scopes just needed collimation. It was great fun and we look forward to next year.

The AAVSO is recognizing those people that have been with the AAVSO as members for 25 years or longer. MVAS members on this list include Ed Bishop, Chris Stephan and Allen Heasley. As of the most recent annual AAVSO meeting in November, they began to keep track of the people who have been AAVSO members for 25 years or longer. They felt that this is a contribution to the organization that should be honored. They began to distribute special pins to all 25 year members who were present. Those not present can request their pins from the AAVSO. The full list of 25 year members is at:

<http://www.aavso.org/25-year-members>

Observer's Notes: PanStarrs

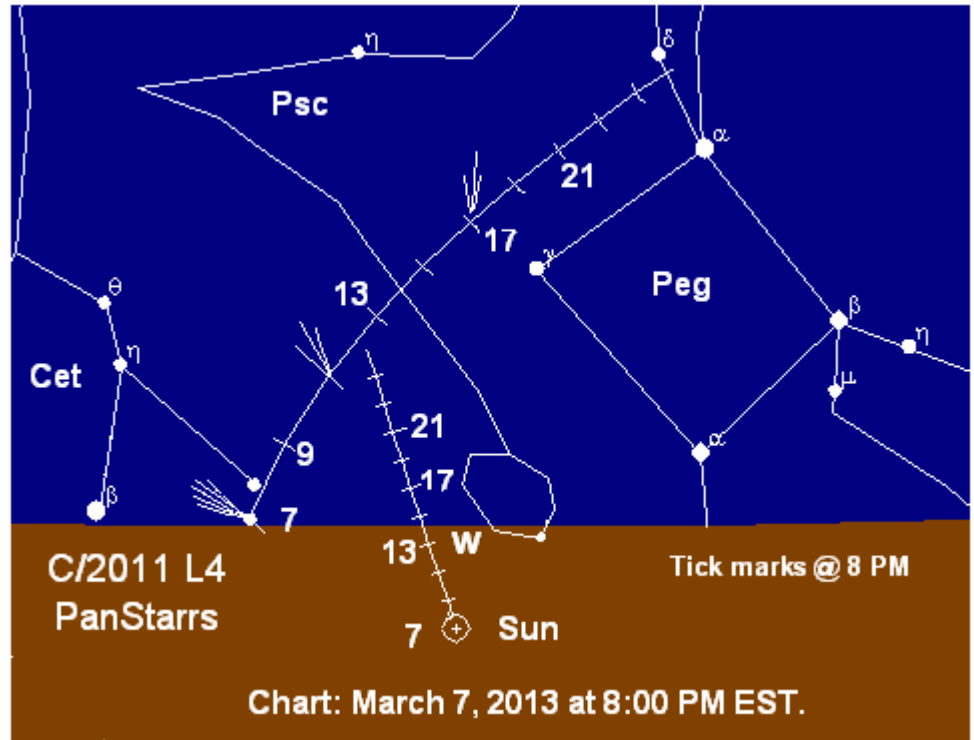
If all goes as hoped, we will have the first great comet of 2013 make a naked eye appearance in early March. Comet C/2011 L4 otherwise known as PanStarrs is predicted to put on quite a show. Updated astrometric observations have pushed perihelion back a few hours to 2013 March 10.1668 TT. Terrestrial Time (TT) generally runs a minute faster than UTC, but TT close enough for this discussion to state that perihelion will occur around 11PM March 9th EST. This is also the evening of the MVAS Bino-Blast 2. This will be the moment of truth. Having a parabolic orbit, PanStarrs is likely making its first trip in towards the Sun. Such fresh comets are covered in a layer of volatile ices. The solar heating during the inward trip usually vaporizes most of these gases. Often perihelion dooms a comet to destruction as solar heating breaks it up. But if PanStarrs dose not disintegrate, there may be enough lower layer volatiles left to produce a spectacular tail. Periodic comets that put on nice displays during returns have these reserves. Such as Halley's Comet. We'll just have to wait and see.

What to look for. PanStarrs might be spotted (carefully) with binoculars in the evening sky just after sunset- as early as March 7th. On this date, sunset is at 6:22 PM EST. The end of nautical twilight (start of dark sky) occurs around 7:21 PM EST. Panstarrs will be a few degrees above the horizon at that time. It will sit right on the horizon at 8:00 PM EST. The Sun will be 8° below the horizon at 8:00 PM. A clear view of the west is essential for viewing this comet. On successive days, PanStarrs will appear to move higher in the sky, heading towards Pegasus. But following sidereal time, the constellations set 4 minutes earlier each night. Thus the horizon appears closer to Pegasus at sunset each night. PanStarrs will maintain an angular distance of about 16° from the Sun during the period March 8 to March 14. The comet should be at its brightest during this time. On the chart, the horizon line basically rises upward following the Sun's path. The chart shows the Solar path as well as PanStarrs' path during most of March 2013.

It should be noted that New Moon occurs on March 11th. On the 12th a thin crescent Moon is 5° left of the comet. By the 13th a 2 day old, 5% illuminated crescent Moon will lie 9° directly above PanStarrs. The Moon will be tracking towards Taurus thereafter. It will be getting brighter but farther away from PanStarrs in the western sky. Comet tails (ion) usually trace directly away from the Sun due to solar wind forces. Around March 16 - 17, any tail should be pointing straight up in the sky. Dust trails follow or trace-out the comet's orbital path. Study the chart to get an idea of the relative motions of the horizon, comet and Sun. There should be ample opportunity to spot and image PanStarrs with binoculars, telescope or hopeful bare eyeball! If PanStarrs is bright enough even the ubiquitous point and shoot digital camera might work. Cell phone cameras?

As of January 14, PanStarrs was around magnitude 8.4 and on track for predicted behavior. At right is an ephemerides by the MPC. It shows date, position, solar distance in degrees on

the sky and the predicted magnitude. If one wants to go "old school" you could plot the path on your charts with a pencil, using the RA and Dec given here. A cloudy night project? - P.



Plante

Comet C/2011 L4 PanStarrs Ephemerides for March 2013

Date	R. A.	Dec.	Solar Elong.	Mag.
03 01	23 25 17.6	-27 18 34	21.6°	1.9
03 02	23 33 35.8	-25 15 59	20.6	1.6
03 03	23 41 30.0	-23 06 20	19.7	1.4
03 04	23 48 57.4	-20 49 57	18.8	1.2
03 05	23 55 55.1	-18 27 19	17.9	1.0
03 06	00 02 20.6	-15 59 09	17.1	0.9
03 07	00 08 11.1	-13 26 18	16.5	0.7
03 08	00 13 24.8	-10 49 54	15.9	0.6
03 09	00 18 00.2	-08 11 13	15.5	0.5
03 10**	00 21 56.9	-05 31 44	15.2	0.5
03 11	00 25 16.0	-02 52 56	15.1	0.5
03 12	00 27 59.3	-00 16 15	15.2	0.6
03 13	00 30 09.8	+02 17 07	15.5	0.7
03 14	00 31 51.4	+04 46 11	15.9	0.9
03 15	00 33 07.9	+07 10 18	16.4	1.1
03 16	00 34 03.4	+09 29 05	17.0	1.3
03 17	00 34 41.4	+11 42 24	17.7	1.5
03 18	00 35 05.2	+13 50 18	18.6	1.7
03 19	00 35 17.5	+15 52 56	19.4	1.9
03 20	00 35 20.7	+17 50 33	20.3	2.1
03 21	00 35 16.6	+19 43 27	21.3	2.3
03 22	00 35 06.9	+21 31 54	22.2	2.6
03 23	00 34 52.7	+23 16 14	23.2	2.8
03 24	00 34 35.0	+24 56 45	24.2	3.0
03 25	00 34 14.7	+26 33 44	25.2	3.2
03 26	00 33 52.3	+28 07 25	26.2	3.4

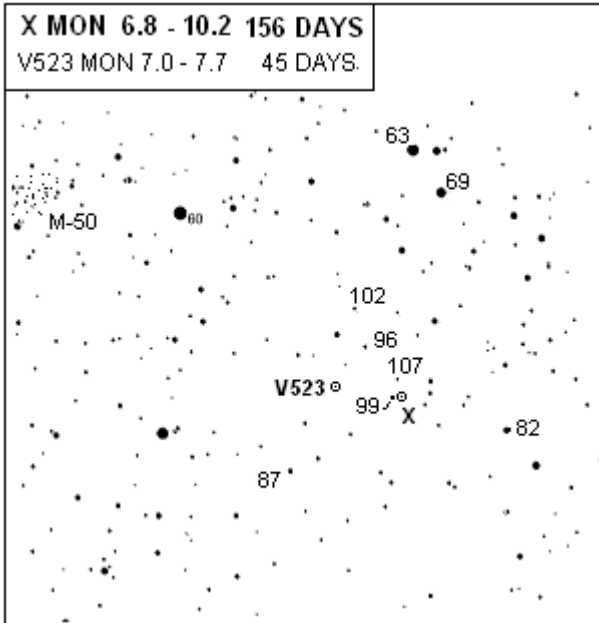
** Start of Daylight Saving Time

Source: Minor Planet Center

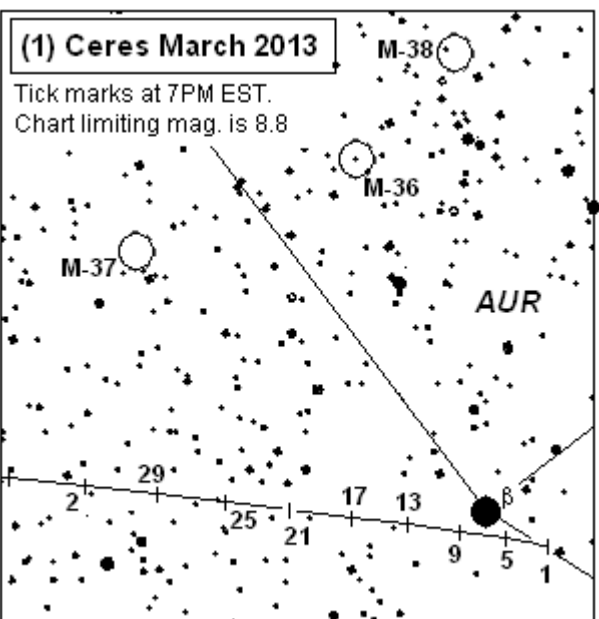
MVAS OBSERVER CHARTS

MVAS OBSERVATIONS - DUE MARCH 2013

Variable star of the month: **X Monocerotis** (abbrev: X Mon). This variable is fairly easy in binoculars when near maximum light. Bigger glass is needed when near minimum. A bonus is having M-50 to the east which is also seen in 70mm binocs from town. On a clear night, anyway. Try to watch V523 at the same time to see how its behavior differs from X Mon. In cold weather, binoculars are convenient instruments to use. You can do real science (variables) with them, even in freezing cold. Have at it!

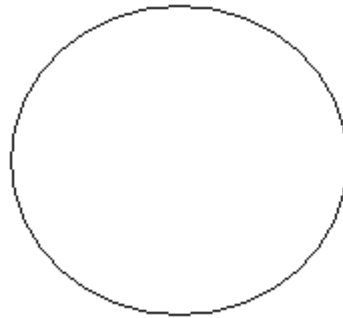


Asteroid of the month: **(1) Ceres**. This next installment of our Ceres watch occurs in March 2013. Ceres moves eastward away from β Aur. Dropping from mag. 8.3 to 8.6 puts it near the limit of binocular sightings. But on a clear dark night, you should be able to locate it. Then use the binoculars to scout out the three M-objects. Wow! Six binocular targets. Ceres, M-36, 37, 38, X Mon, V423 Mon. A good night's work ... hot cocoa for all!



OBSERVER _____

Featured object: Rosette-Cluster. The Rosette is a challenge to spot visually. Try a filter. RFT's are recommended. Large binoculars? Transparent skies are a must. If you can't see the nebulosity, then plot the stars in the open cluster NGC 2244. It is central to the Rosette nebula. Check again on another night. You might see the nebula then, so you can add it to the cluster sketch. It's just like stacking images!



Rosette Observation:

Date: _____ Time(EDT) _____ Scope _____

X Mon magnitude estimates:

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

_____	_____	_____	_____
_____	_____	_____	_____

(1) Ceres Observations:

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

_____	_____	_____	_____
_____	_____	_____	_____

Other Objects in Monoceros to observe

D. Sky Date Scope Dbl. Date Scope

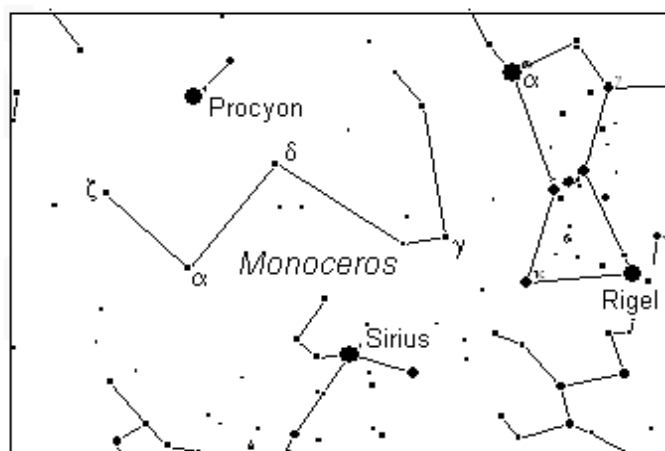
	Date	Scope	Dbl.	Date	Scope	SEP	MAG	SPLIT?
M- 50	_____	_____	_____	ζ Mon	_____	33"	4.4 - 10.1	Y / N
N- 2264	_____	_____	_____	8 Mon	_____	12.1"	4.4 - 6.6	Y / N
N- 2301	_____	_____	_____	15 Mon	_____	2.9"	4.6 - 7.8	Y / N

Lunar Occultations (see Sky Almanac):

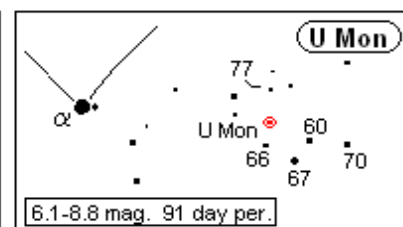
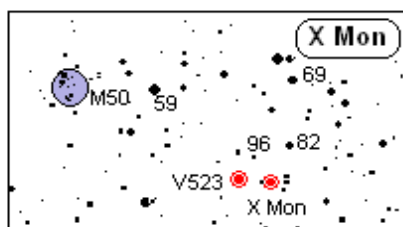
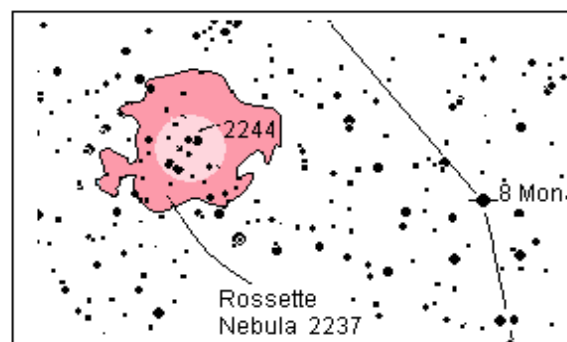
Star (UT) Date Time Scope magx. Event(circle)

_____	_____	_____	_____	_____x	R	D
_____	_____	_____	_____	_____x	R	D
_____	_____	_____	_____	_____x	R	D

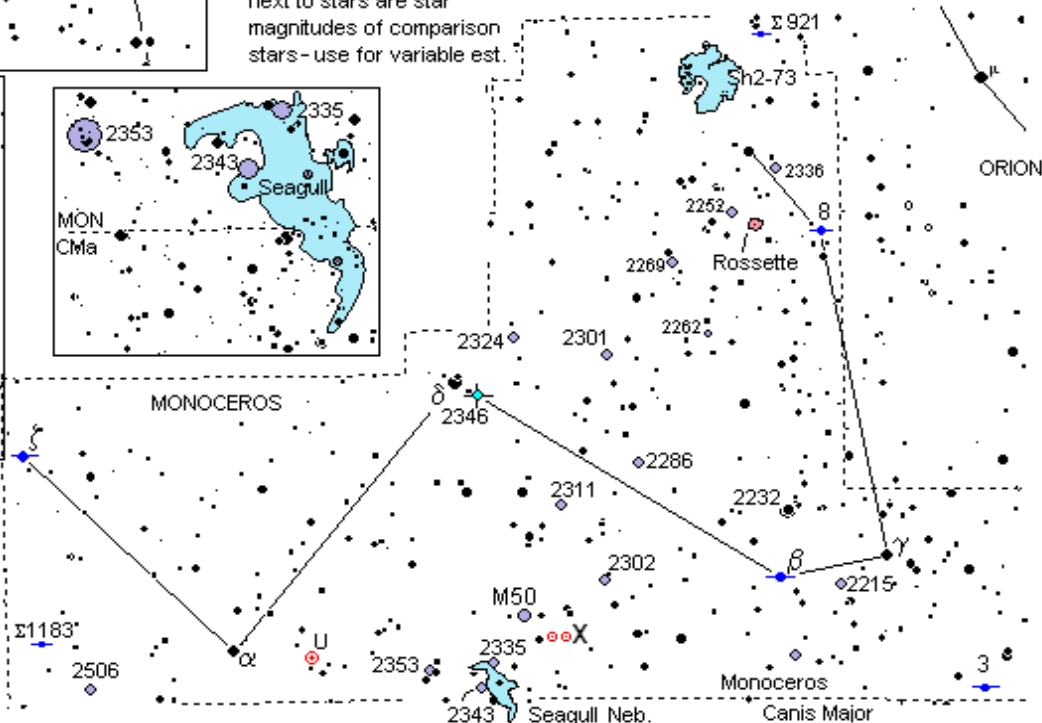
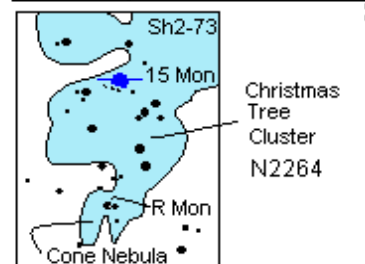
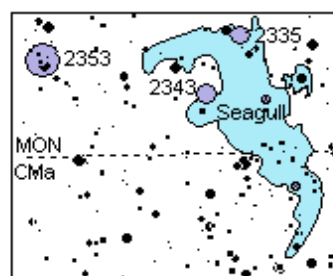
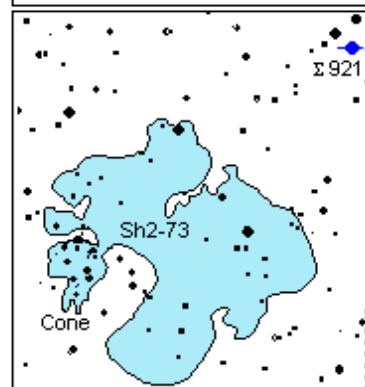
Constellation of the Month — Monoceros



Monoceros is just east of Orion. It is a wonderland of open clusters. Some are involved in nebulosity (e.g. Rossette) while the others are mystical apparitions. There one moment, then gone with a blink of the eye. Binoculars sweep the area well and may be the best bet for the Rossette. Explore the clusters with a telescope. The Seagull is a challenge in a 12" visually as is the Cone Nebula. All these nebula are spectacular objects in long exposure images. Several interesting doubles are available for splitting. Binoculars will follow the variable U Mon. Usually a scope is needed to track X Mon west of the best open cluster in Monoceros--M50. Monoceros is a mythical unicorn but its deep sky treats are real. Enjoy!



ABOVE & Right: Numbers next to stars are star magnitudes of comparison stars - use for variable est.



DEEP SKY				
Object	Type	Mag.	Size	# Stars
M 50	OC	5.9	16.0'	80
N2232	OC	4.2	29.0'	20
N2244	OC	4.4	23.0'	100
N2301	OC	6.0	12.0'	80
N2335	OC	7.2	12.0'	35
N2343	OC	6.7	6.0'	20
N2346	PN	11.8	52"	-
N2506	OC	7.6	6.0'	150
N2353	OC	7.1	20.0'	30

DOUBLE STARS			
	Mags.	Sep.	"Visual Colors"
8 MON	4.4 - 6.6	12.1"	yellow, lilac
β MON	4.6 - 5.0	7.1"	both white
ζ MON	4.4 - 10.1	33"	yellow, blue
15 MON	4.6 - 7.8	2.9"	lemon, silver
Σ 921	6.1 - 9.1	16.1"	white, yellow
Σ 1183	6.2 - 7.8	30.6"	lemon, green-white
Variable Star			
X Mon	6.8 - 10.2mag.	45 day period	

Check list		Instruments used:	
___	8 MON	___	on ___
___	β MON	___	on ___
___	N2232	___	on ___
___	N2244	___	on ___
___	15 MON	___	on ___
___	Σ 921	___	on ___
___	Σ 1183	___	on ___
___	X MON	___ mag. on ___ / ___ / ___	
___	X MON	___ mag. on ___ / ___ / ___	
___	N2346	___ mag. on ___ / ___ / ___	
___	N2506	___ mag. on ___ / ___ / ___	
___	N2353	___ mag. on ___ / ___ / ___	

Solar and Lunar (EDT).

PLANET WATCH

Date	Sunset	Moonrise	Moonset
1	6 : 14	10 : 50p	— : —
5	6 : 19	03 : 05a	— : —
9	6 : 24	06 : 10a	— : —
13	7 : 28	— : —	EDT 09 : 46p
17	7 : 33	— : —	EDT 12 : 43a
21	7 : 37	— : —	3 : 50a
25	7 : 41	06 : 11p	x : xx
29	7 : 46	10 : 46p	x : xx

Saturn	Jupiter	Mercury
Rises	Sets	Rises
11:06p	1:34a	6:56a
10:49p	1:20a	6:31a
10:23p	1:07a	6:09a
11:16p	1:54a	6:51a
11:00p	1:40a	6:38a
10:43p	1:27a	6:28a
10:26p	1:15a	6:21a
10:09p	1:02a	6:16a

March 2013

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

Look for Comet PanStarrs March 7 - 26. Western Horizon.

Asteroid for March 2013 (1) Ceres

Date	Transits	RA hr. min deg.	Dec. deg.	Alt.	Azm	Magnitude
1	7 : 08 pm	05 : 22.9	+28.1	31°	282°	8.3
7	6 : 49 pm	05 : 27.5	+28.3	27	285	8.4
13	7 : 31 pm	05 : 32.9	+28.5	35	279	8.4
19	7 : 13 pm	05 : 39.2	+28.5	32	282	8.5
25	6 : 57 pm	05 : 46.1	+28.7	29	284	8.6
31	6 : 41 pm	05 : 53.6	+28.8	26	286	8.6

Variable Star of the Month: **X Mon** 6.8- 10.2 156 days

Celestial Highlights

4	22	LAST QUARTER MOON
5	05	Algol at minimum
5	00	R Vir at max. 6.9 mag.
10	06	Daylight Saving Time
11	20	NEW MOON
12	00	Amphitrite opposit. 9.1mg.
17	00	Irene opposition- 8.9m
19	17	FIRST QUARTER MOON
22	00	U Ori at max. 6.3 mag.
27	09	FULL MOON
31	22	Mercury 28° W elong.
31	00	Harmonia opposit. 9.9m

LUNAR OCCULTATIONS FOR: MARCH 2013

Civil (24hr) EDT	UT	Moon Ph	Moon % illum.	Moon alt	Moon azimuth	Star name	Star Mag.	event PA	dbl./ sep.
5 3 : 29 : 21	5 08 : 29 : 21	R	44-	12°	132°	XI OPH	4.4	291°	3.90"
5 5 : 21 : 53	5 10 : 21 : 53	R	44-	24	156	ZC 2509	5.8	233°	4.40"
5 5 : 17 : 04	5 10 : 17 : 04	R	33-	19	242	21 SGR	4.9	242°	1.70"
5 5 : 05 : 29	5 10 : 05 : 29	R	22-	11	127	ZC 2833	7.0	208°	NA
13 21 : 00 : 00	14 01 : 00 : 00	D	5+	8	276	SAO109700	7.3	033°	NA
15 23 : 26 : 22	16 03 : 26 : 22	D	18+	3	290	ZC 423	6.3	022°	NA
18 19 : 47 : 02	18 23 : 47 : 02	D	43+	66	211	SAO 93998	6.2	055°	9.10"
19 22 : 57 : 33	20 02 : 57 : 33	D	53+	44	256	71 ORI	5.2	117°	76.0"
23 0 : 06 : 12	23 04 : 06 : 12	D	81+	51	230	50 CNC	5.9	095°	NA
25 21 : 39 : 02	26 01 : 39 : 02	D	98+	34	127	69 LEO	5.4	072°	NA
28 4 : 28 : 29	28 08 : 28 : 29	R	99-	29	22	49 VIR	5.2	281°	NA

at MVCO

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=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.....

TELESCOPE WORKSHOP AT YSU.

On January 12th eight MVAS members arrived at the planetarium for the 4th Annual "So You Got a Telescope" session at YSU. The purpose of this program is to have people bring their telescopes to YSU. There they will get instructions on how to use their new Christmas gift or even an old telescope. Adjustments, simple repairs and advice on what needs to be fixed is also available from the MVAS scope experts. Too often the department store scopes have little hope of doing much more than looking at the Moon. But this is a starting point and the telescope tyro's are encouraged to observe and are often told of the nice binocular option as a next move/scope.

All photos by Sharon Shanks --



Jodi helps two students get grade credits for attending.



Phil babbles about optical collimation to an already scope savvy mom and her son. The laser collimator worked wonders.

Last year we had 30 people on site with half as many scopes in hand. This year we had 8 telescopes. The weather was nice enough to bring some scopes outside to check alignment and optical quality. A selection of hand-out flyers were provided by Jodi. These included a list of internet links to sites with detailed scope information, scope dealers, and astronomical organizations; including the MVAS. The usual YSU handouts were also available. It was great fun and as always a trip to a local eatery (C. Staples) was a great way to close the day. We hope next year will be as succesull as this one.



Roy and Rich show a young astronomer how to set up and use her scope. Aim, focus, look.



These toddlers must feel like cool astronomers now that they have confidence in using their scope.



A cell phone image of Jupiter and Europa to the right. It was taken by one of Jodi's students later in that week. Wave of the future?

COLLABORATION! Lou DiNardo has set up an “box” account online. He will take raw images and process them. He the posts them on the box account and members may view and download them. So far he has collaborated with the McCulloughs. They take the images, send them to Lou and he then processes them. Some examples are below.



The Rosette Nebula (NGC 2237 with central cluster NGC 2244). J. & R. McCullough images. Stack & process L. DiNardo.



Eastern Veil Nebula. J. & R. McCullough images. Process by L. DiNardo.



IC 2118-3 J. & R. McCullough images. Stack & process L. DiNardo.



Western Veil Nebula. J. & R. McCullough images. Process by L. DiNardo.



M-45, The Pleiades.
Jodi & Roy McCullough images. Stack & process L. DiNardo.



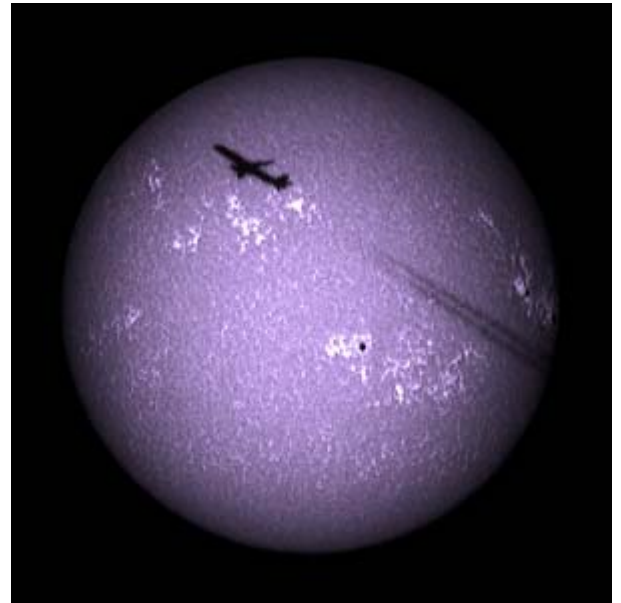
M-81 and M-82 (left galaxy). J. & R. McCullough images.
Process by L. DiNardo.



M-42 The Orion Nebula by Mike Heim.



Wide angle view of the Veil Nebula complex. J. & R. McCullough
images. Process by L. DiNardo.

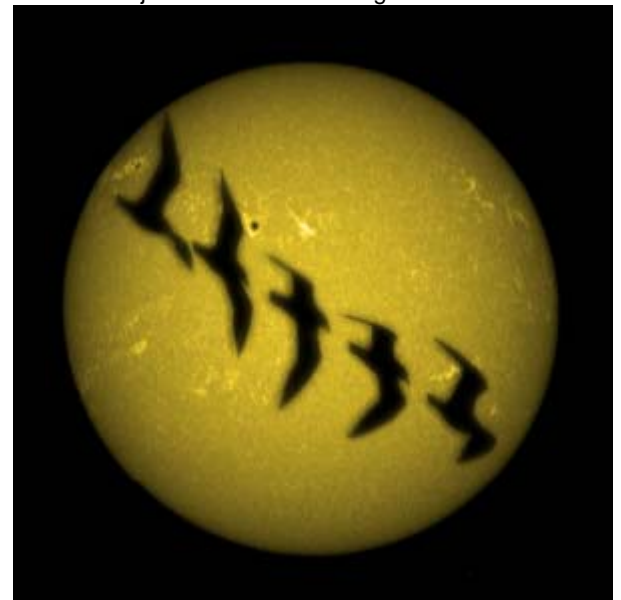


Solar jet transit in Calcium light . Jim Haklar.

MVAS SOLO SHOTS !



Double Cluster by Mike Heim.



Bird Transit, video sequence stacked. Jim Haklar