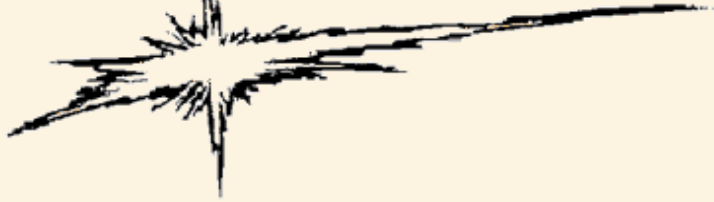


THE METEORITE



Jupiter !!!

Cassini Spacecraft Image, taken
during gravity assist fly-by



Newsletter of the Mahoning Valley Astronomical Society, Inc.

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DECEMBER 2013

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



DECEMBER 2013

NEWS NOTES

Newsletter of the Mahoning Valley Astronomical Society, Inc.

MVAS CALENDAR

- DEC 7** Christmas Dinner at Boardman Park. 6:00 PM
DEC 7 Annual Business meeting after dinner. ~7:45 PM
JAN 18 Telescope Workshop at YSU. 1:00 PM -3:00 PM
JAN 25 Business meeting at YSU after. 8:00 PM show.
 Trustee election (membership) at this meeting..

WARD BEECHER PLANETARIUM SHOWS

DATES	TIMES	SHOWS
Fri Dec 6	8:00 PM	Winter Skywatch
Fri Dec 7	8:00 PM	Winter Skywatch
Fri Dec 13	8:00 PM	Holiday Lights
Sat Dec 14	8:00 PM	Holiday Lights
Fri Dec 20	8:00 PM	Holiday Lights
Sat Dec 21	8:00 PM	Holiday Lights
Tue Dec 31	6:00, 6:30, 7:00, 7:30, 8:00, 8:30 and 9PM	First Night Programs (7 shows).
Fri Jan 17	8:00 PM	Winter Skywatch
Sat Jan 18	1:00-3:00 PM	"So You Got a Telescope"
	8:00 PM	Winter Skywatch
Fri Jan 24	8:00 PM	Footsteps
Sat Jan 25	8:00 PM	Footsteps (MVAS meeting)
Fri Jan 31	8:00 PM	Footsteps

- February** - Friday & Saturday evenings, until the 15th:
 8:00 PM Footsteps
Fri Feb 21 8:00 PM Cosmic Castaways
Sat Feb 22 8:00 PM Cosmic Castaways (MVAS)

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	Larry Plante
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
MVAS Webmaster	Harry Harker

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

ISON Action. Scientists from the Max Planck Institute for Solar System Research (MPS) in Germany and the Wendelstein Observatory of the Ludwig-Maximilians-University in Munich (Germany) discovered two wing-shaped features in the comet's coma, seen in processed images taken the weekend of November 16th. This suggests that one or more fragments may have detached from comet ISON around November 14th. The fragmentation may also offer an explanation for the comet's mid-November outburst of activity. On November 16th, the images showed two striking features within the comet's coma that protrude from the nucleus in a wing-like fashion. "Features like these typically occur after individual fragments break off the nucleus," said Dr. Hermann Bönhardt from the MPS. These fragments emit gas and dust like the nucleus. Where the emissions from the comet and its fragments meet, a kind of boundary layer forms that often takes on a wing-like form as seen from Earth.

By the morning of November 21 around 6:00 UT (1:00 AM EST), several imagers recorded a tail disconnection event — a blob of the ion (gas) tail being pinched off by a gust of the magnetic-field-bearing solar wind, and blowing downstream. The next morning, Nov. 22, the nucleus was estimated to be about 4th magnitude with a tail almost 1/2 degree long. Readers should get this issue of the Meteorite around perihelion passage on Thanksgiving Day. No one can say what will happen after ISON's close passage of the Sun that day. If the nucleus or fragments survive, there is still a chance of a decent show as the comet rises out of morning twilight. Sunday morning December 1st will be a good time to start looking even though it will be very low on the horizon. We should know by then what happened. Any comet remains are expected get fainter with each passing day, as ISON climbs higher into darker skies.

Short Curiosity? Science observations by NASA's Mars rover Curiosity had been suspended for a few days while engineers run tests to check out possible causes of a voltage change detected on Nov. 17. The vehicle is safe and in stable condition. It is fully capable of operating in its present condition. A precautionary investigation into what may be a "soft short" was initiated. A "soft" short is a leak through something that's partially eclectically conductive rather than a hard short : such as one electrical wire contacting another wire. The rover's electrical system has the flexibility to work properly throughout the voltage range of the short- a design feature called a "floating bus." Soft shorts reduce the ability to tolerate other shorts in the future. They can also indicate a possible problem in whichever component the short is in.

Mars Rocks. A meteorite found in the Sahara last year by Bedouin tribesmen is a rock from Mars. The rock (NWA 7533) may be the first recognized sample of ancient Martian crust from the cratered area of Mars' southern highlands. Using a powerful microprobe at Curtin University in Perth, Australia, scientist dated zircon crystals within the meteorite to be an astounding 4.4 billion years old. "This date is about 100 million years after the first dust condensed in the solar system," said lead investigator Munir Humayun "We now know that Mars had a crust within the first 100 million years of the start of planet building, and that Mars' crust formed concurrently with the oldest crusts on Earth and the Moon."

MINUTES OF THE NOVEMBER MEETING

NOVEMBER 23, 2013 at YSU

Prior to the meeting, members gathered in the classroom across the hall to hear Lou DiNardo's power point presentation on basic telescope optical design and function. Pros and Cons for the three main types were reviewed. Mounts too.

Moving into the Planetarium, members joined a sizable group from the public to enjoy the show called "Firefall" It was about comets, meteoroids and asteroids and the formation of the planets due to the accretion of these bodies. Past, present and future impacts from these, and consequences, was covered. It was a well produced program with two YSU/MVAS alumni contributing, Joe Tuccerone (artwork) and Troy McClellan (the music). Sharon Shanks then gave a great sky tour using the GOTO Star Projector.

Once the public cleared out, the meeting was called to order at 9:27 PM by President Lou DiNardo. The V.P. (Rich) and one Trustee (Bob) were absent. The Secretary took Roll Call which showed 15 members on hand. One guest, Mrs. Debbie Heim, sat in on the proceedings. A call for the reading of the minutes was made. Mike Heim moved to suspend the reading and accept the minutes as published. Karin DiNardo seconded the motion. All were in favor by voice vote.

TREASURER'S REPORT: The Report was read by Steve Bartos. Dan Schneider moved to accept the motion and Dave Ruck made a second to the motion. All were in favor by voice vote and the Report was accepted.

General Fund **10/1 thru 10/31 2013**

OPENING BALANCE:	\$	8,221.70
CLOSING BALANCE:	\$	8,406.84
AVAILABLE FUNDS (NON-RESERVED):	\$	4,177.72
ACCOUNT NET GAIN/LOSS FOR THIS PERIOD:	\$	+185.14

INCOME:

DUES *	\$	130.00
ASTRONOMY CALENDARS		40.00
KEY DEPOSIT (D. RUCK)		15.00
INTEREST		0.14
TOTAL INCOME	\$	185.14

EXPENSES:

CK# XXXX NONE	\$	0.00
CASH - NONE		0.00
TOTAL EXPENSES	\$	0.00

Reserved Funds

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

* DUES PAID: 2013- P & J BAKER. 2014 - A. KEELEY, J. R. PANDIAN.

CORRESPONDENCE: None reported.

COMMITTEE/OFFICER REPORTS: IMAGING COMMITTEE:

Jodi reported imaging comets ISON and Lovejoy when it wasn't cloudy. A short discussion on tracking comets followed. **VISUAL COMMITTEE:** No Homework of Visual reports turned in. **LIBRARIAN:** Rosemary will shut down and clean the refrigerators for winter storage; sometime before the Christmas Party. Any drinks still in them will be taken to the Christmas Dinner. She reported that the coffee pot has broken but she may have a replacement available.

OBSERVATORY DIRECTOR'S REPORT: Larry Plante reports that the well has been shut down for winter. The place is fairly winterized for winter- all buildings seemed in fine shape. The hose has been moved inside next to the 16" stage. He did not see any wet spots or leaks in the roof. That was good news.

OLD BUSINESS: Jodi had an order form for the MVAS 75th Anniversary Calendar. They would be around \$10 each; at cost, no profits from the sales. She also had on hand the laminated chart books, each devoted to a different type object. Members were to inspect these for possible purchase. She had a sign-up sheet for these as well. The prices varied. Jodi will have them at the Christmas Dinner for one last inspection. The order will be placed shortly after that. The topic of the dinner price was brought to the floor. With little hesitation it decided to maintain the \$10 per person meal cost. Jodi McCullough moved, Karin DiNardo seconded, to maintain the \$10 meal price. All in favor.

Redefining the host requirements was mentioned at the last meeting. Discussion resumed with the conclusion that we keep the new format of three levels of hosting. Regarding keeping individual costs down (to spur more participation), it was decided to just change the name "Main Meal" to "Snack". This would suggests to hosts that they need not bring an extravagant and expensive meal. Members are still free to bring what they want. Most preferred the social hour with a hearty meal. In decades past it used to be just donuts and coffee. But over the years we've become used to a more substantial repast.

NEW BUSINESS: Tony Mehle had sent an e-mail to the President that this would be the last year he will host the Christmas Party. After five years of doing this, he regretfully will no longer be able to do this for a variety of personal reasons. We are deeply indebted to Tony for putting on a first rate event all those years. With this news, we would need to figure out what to do in coming years. Phil Plante suggested the Holiday Inn as he had experience with them during the ALPO meeting in 2003. They could set everything up and provide a room (buffet or table service) but they are pricey. It was decided to get the same room in Boardman Park for next year. Sharon Shanks will make the reservation in January with a reimbursement of the reservation fee, if needed. From there we will figure out the dinner. Suggestions ranged from covered dish to catered foods from various vendors; such as Larricia or IGA. A sign-up sheet will be developed for those that want to supply an entree (homemade or commercial). Sides and desserts can be of the "pot luck" home cooked style. The date for the 2014 Christmas Dinner and meeting was set for December 6th.

Through Sharon and YSU, Phil Plante has been in e-mail contact the Programs and Events Coordinator for Mill Creek Metroparks. The Park has requested some sort of public astronomy event at the Experimental Farm in Canfield. This is where we held the Venus Transit event in 2012. The YSU staff was not up to the task so the MVAS was asked. After discussing several dates (January and February were ruled out- cold & snow), March 1st was the only viable date schedules and lunar phase would allow. It is a New Moon that night. Mars, Jupiter and Saturn will be up. Clusters and nebula, double stars and some spring galaxies should be available for show. There will be a warm building to gather. The park is looking for some sort of program to discuss what was observed or on general astronomy. These talks would be a back-up plan if clouded out. Jodi could do a talk, Phil could prepare something about the April lunar eclipse. All seemed to favor this event. Phil will send the thumbs up to the Park that MVAS will do the program.

Sharon had another event request, this one from the Western Reserve Elementary school in Berlin. It was desired to be a 9am to 3pm solar observing with evening observing as well. The date was set for May 17th. Jodi was prepared to participate. It seemed that this was a Full Moon night, but planetary viewing would be possible. So far it seems that this would be possible to do.

Jodi wants to continue with the speaker program at meetings. For January we will have Tom Fields speak via internet at the January meeting at YSU. Topic is spectroscopy. In February, Mike Heim will talk about narrow band imaging. In March Sharon Shanks will talk about the history of the Planetarium. April meeting at the MVCO, Phil Plante will have a video about John Dobson (Sidewalk Astronomers) and telescope making.

GOOD OF THE SOCIETY: Rosemary, Jodi and Karin had their first meeting for planning the 75th Anniversary. Rosemary warned that many will be enlisted to help (they will volunteer members). More will be revealed at the January meeting. Jodi was at a NASA website that said ISON was brighter than Lovejoy was at a similar location in their orbits before perihelion. This might signal something good to come, with ISON.

VISUAL REPORTS: The McCulloughs have been spotting Lovejoy naked eye. Phil Plante got three vsos in November which gave him 200 consecutive months of submitting observations. Larry looked for the launch of the Minotar rocket from west Virginia- clouds blocked the view. Mike Heim noted some in southern Ohio saw it.

ADJOURNMENT: Adjournment came at 10:18 PM. We thank our hosts Margie Dimoff for the wonderful sandwich tray and potato salad, and the DiNardos for the soft drinks. The next meeting will be at Boardman Park on Dec. 7, 00, 2013. Meeting begins at 8:00 PM after dinner. Scheduled hosts is Tony Mehle. **PASSWORD:** give your best Ho Ho Ho ...*minutes by Phil Plante*

MVAS ACTIVITIES

Early on November 16th, at 5:30 AM to be exact, a few MVAS members were at War Memorial Stadium, Lisbon High School. No... classes or testing were not on the agenda. Football? Not even close. Comet ISON was the main attraction. About 2 dozen students showed up for a view, most from Poland High School! They got extra credit for this. MVAS members Jodi and Roy McCullough spearheaded this observing session that kicked off a 5K run that started at 8:00 AM. Fortunately ISON was in outburst, quickly brightening by several magnitudes over the previous week. ISON was fairly easy in binoculars and the 72mm refractors that were on hand. It appeared with a small, greenish colored coma. I saw the lollipop tail fade in and out- about 1 degree long. Mercury was a bonus target below ISON. It was brighter than this editor had ever seen before. So much so I thought it was Saturn. It was a cold morning with clear skies. But folks seemed to disappear with the stars as dawn's twilight took over. It was a nice way to start a day. We thank Carol and Chuck Oiesen, Don Durbin, Rosemary Chomos, and Jodi and Roy for participating. (Oh- I suppose I was there too).

MVAS REMINDERS

THE HOST LIST for 2014 will be passed around at the Christmas meeting. Please consider helping out as the list is passed around. You'll have three ways to help: cover the main meal, the dessert, or the drinks. Sign up as many times as you like. This seemed to work well in 2013.

2014 MVAS Dues are payable starting now! Usually dues should be paid by the end of January 2014. It is \$40 for individual adult membership. We thank you in advance!

MVAS CHRISTMAS DINNER

To be held in Boardman Township Park (on Rt. 224). It's in the Larricia Community Center, Stambaugh Room. This building is located at the southern end of the park, past the Park Offices. Look for signs. **Meal \$10/person.**

- 6:00 PM -- Doors open. Social hour and business.
- 6:15 PM -- Snacks and appetizers.
- 7:00 PM -- Dinner time, till 8:00 PM.
- 8:15 PM -- Conclude last minute transactions, etc.
- 8:20 PM -- Annual meeting starts.
- 9:10 PM -- Clean-up and vacate room by 10:00 PM.

Please make reservations for the Christmas Party before December 1st. Contact the Secretary or the Treasurer as soon as possible to do this. We need a head count at least 5 days before the Party. Phone the secretary (Phil) at 330-757-4037 or the treasurer (Steve) at 330-750-9862 to make reservations and arrange payments (mail or in person). We prefer pre-payment but at the door is acceptable. It will be in the same building and room as it has been in the last three years. See map on pg. 4.

CHRISTMAS DINNER MENU

(Food will be catered by Larricia's, compliments of Tony Mehle)

Snack trays: Veggie & dip tray, cheese & pepperoni tray, will be available during the social hour.
(Shrimp cocktail by Larry Plante)

Chicken: Marinated, grilled skinless boneless chicken breast with peppers & onions & mozzarella cheese in a light Marsala sauce.

Beef: Sliced beef tenderloin in mushroom wine sauce.

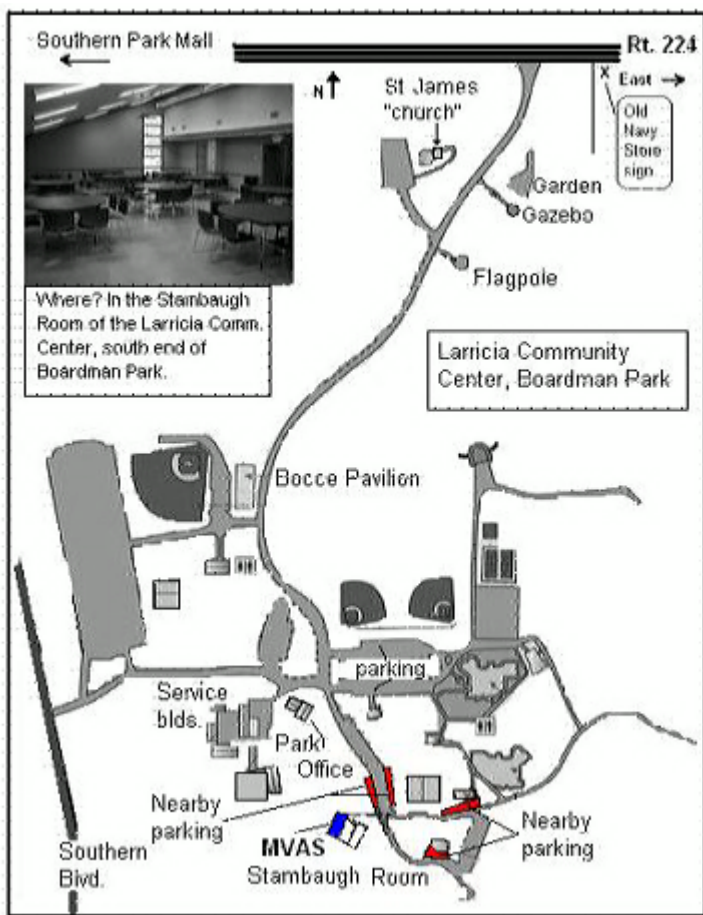
Sausage: With peppers, and onions. Very mildly hot.

Pasta: Penne Pasta in Vodka sauce.

Sides: Parsley Potatoes, Green Bean casserole, rice.

Dessert: Mocha House Cheesecakes.

Coffee, Iced, cups, plates and utensils will be provided. Bring your favorite soft drinks. No alcoholic drinks permitted on premises.



Please try to be on time. Dress is casual, as per family style restaurant. Please sign in when you get there (see Phil).

How to get there.....

There are limited parking spots right in front of the building with handi-cap spaces for anyone that requires one. Other spots are near by, and only a short walk away. Farther away are spots near the baseball fields and across from the park office. The best way in is from Southern Boulevard (to the west). There is a main entrance on Rt. 224 near an Old Navy store sign. You can see the old white church from Rt. 224 as you approach the entrance. The room is in the back end of the park. See the map above. Hope to see you there.

Observer's Notes: Sneak Peek 2014

We have some interesting celestial events in 2014. Here is a quick run-down so you can start to plan your observing or imaging projects. And schedule time off from work!

Feb to May: Mars puts on a fine show this year, at opposition on April 8th. It will be at a maximum of 15.1" in diameter. Look for brilliant Jupiter to dominate the sky as well.

April 14: Total lunar eclipse. First umbral contact is at 1:58 AM EDT. Greatest eclipse is at 3:45, umbral ending 4:24 AM.

June 25-30: Ceres and Vesta will be within 1 degree of each other near zeta Virgo. A rare appulse for two of the "big boys". They will race each other starting in April. They will be about 2 arcminutes apart on July 2nd, but low in the SW at sunset.

August 31: Moon occults Saturn. Drat- an afternoon event. Still- imagers might give this a shot with the right filter. It will be a challenge visually. Won't know until you try.

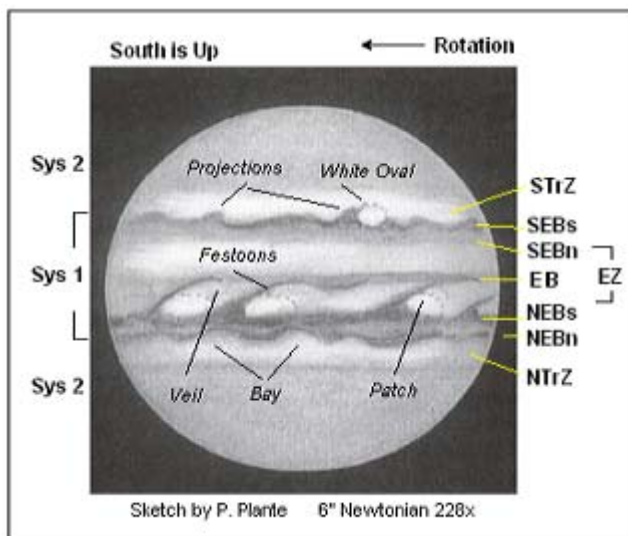
October 8: Total Lunar Eclipse. First umbral contact is at 5:14 AM EST. Mid eclipse is at 6:24 AM. Moon exits totality at 7:24 AM. Moonset is at 7:39 AM. Get a clear western horizon.

October 23: Partial Solar eclipse Begins at 5:42 PM. Maximum eclipse: 6:32 PM (~ 48%). Sunset at 6:33 EDT

MVAS Featured Object: Jupiter

Jupiter is approaching center stage in late December, becoming well placed in the late evening eastern sky. It rises at sunset when at opposition on January 5th, 2014. First time viewers will be delighted with the details that telescopic study reveals. Veteran observers will welcome the familiar dance of rotating features and orbiting moons. The same nomenclature is used for features on Jupiter and Saturn; so study-up. The ringed planet rises shortly after midnight in February.

There are two systems of rotation on both planets. Called System 1 and System 2. On both planets, the area around the middle (equator) and including the two nearby belts (north and south) are System 1 rotation. Rest of the planet rotates in System 2. This includes the remaining south and north hemispheres and polar regions. Use this sketch to study the nomenclature



RED SPOT TRANSIT TIMES (at disk center) IN DECEMBER

1st	5:55 AM EST	13,	2:47 AM	23,	8:52 PM
1,	10:46 PM	13,	10:38 PM	25,	2:38 AM
3,	4:33 AM	15,	4:25 AM	25,	10:30 PM
4,	12:24 AM	16,	12:16 AM	27,	4:16 AM
4,	8:15 PM	16,	8:07 PM	28,	12:08 AM
6,	2:02 AM	18,	1:54 AM	28,	7:50 PM
6,	9:53 PM	18,	9:45 PM	30,	1:45 AM
8,	3:40 AM	20,	3:32 AM	30,	9:37 PM
8,	11:31 PM	20,	11:23 PM	1,	3:25 AM
11,	1:09 AM	21,	7:14 PM	1,	11:16 PM
11,	9:00 PM	23,	1:01 AM	2,	7:07 PM

Look an hour before or after the times above for best views.

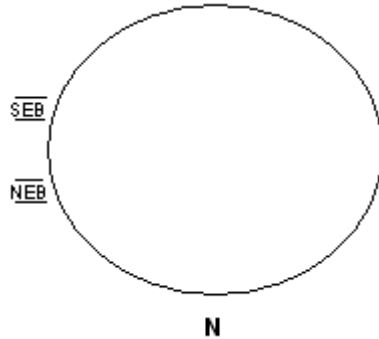
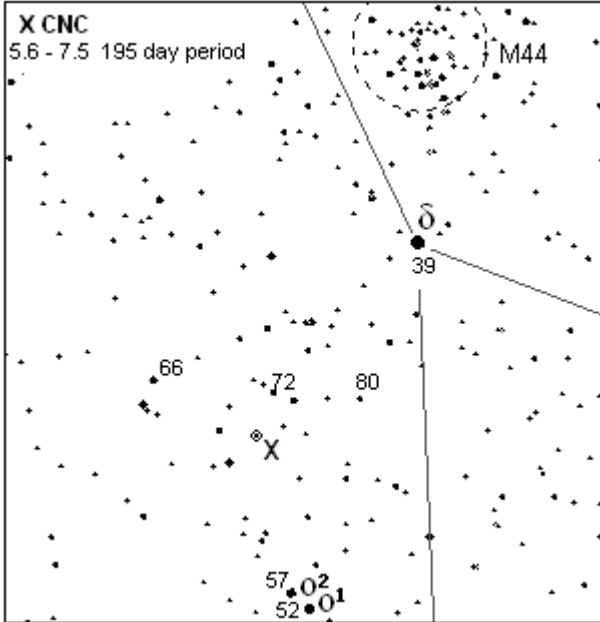
MVAS OBSERVER CHARTS

MVAS OBSERVATIONS - DUE JANUARY 2014

Variable star of the month: X Cancii (*abbrev: X Cnc*). This variable is a great binocular variable to follow. Easy to find just south east of the Beehive. Binoculars are an instrument of choice on colder nights and you probably stop at M-44 along the way. Why not find X Cnc and make an estimate. Once you get used to finding it, X Cnc should be part of your regular stop

OBSERVER _____

Featured object: Jupiter. Fill in this template of Jupiter's disk. It already has the polar flattening drawn-in so you don't have to draw that. Guides are to the left to help you place lines to mark the boundaries of the north and south equatorial belts. North is down in this template (Newtonian scope) but it should work if your scope has north up. Just mark the sketch accordingly.



Jupiter Observation:

Date: _____ Time(EDT) _____ Scope _____

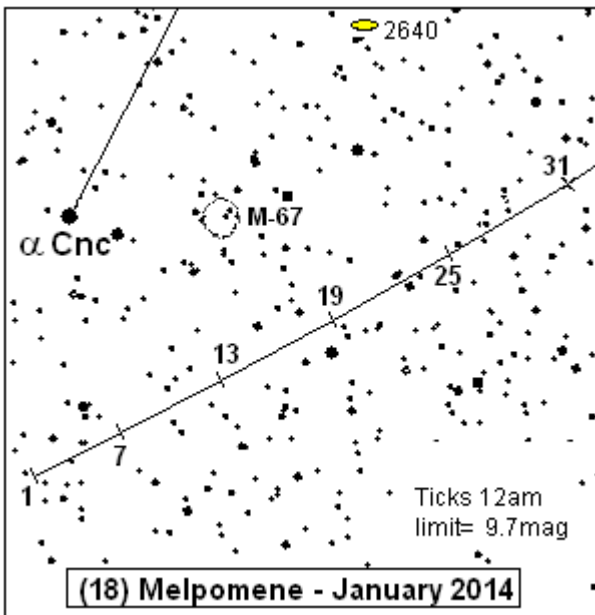
X Cnc magnitude estimates:

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

Asteroid of the month: (18) Melpomene. This asteroid travels westward beneath α Cnc and M-67 during January 2014. Since Cancer is Constellation of the Month, M-67 is on the check-down list. Melpomene will start off at magnitude 9.8 and tick upwards to 9.4 by month's end. That is around the faintest stars shown on the chart below. The Moon might hinder observations from Jan. 8-24 using binoculars. A scope allows you to boost the magnification and darken the sky background. NGC 2640 is a 12th mag. galaxy, while M-67 is a 6.9 mag. open cluster.

(18) Melpomene Observations:

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



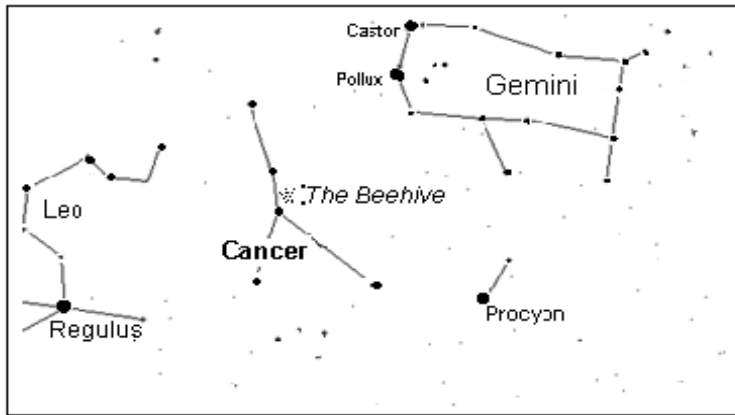
Other Objects in Cancer to observe

D. Sky	Date	Scope	Dbl.	Date	Scope	SEP	MAG	SPLIT?
M- 44	_____	_____	α Cnc	_____	_____	10.6"	4.3 - 11.8	Y / N
M- 67	_____	_____	ι Cnc	_____	_____	30.7"	4.1 - 6.0	Y / N
N- 2775	_____	_____	24 Cnc	_____	_____	5.7"	6.9 - 7.5	Y / N

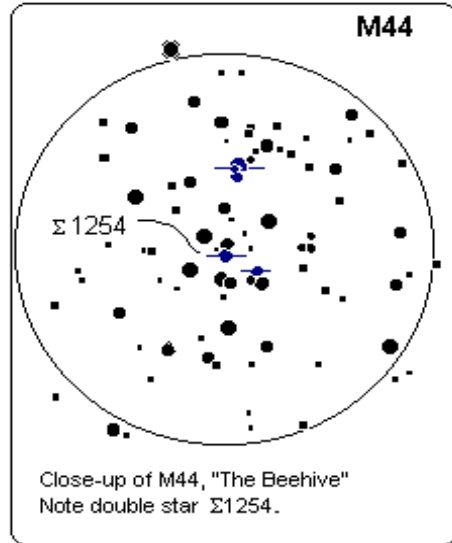
Lunar Occultations (see Sky Almanac):

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

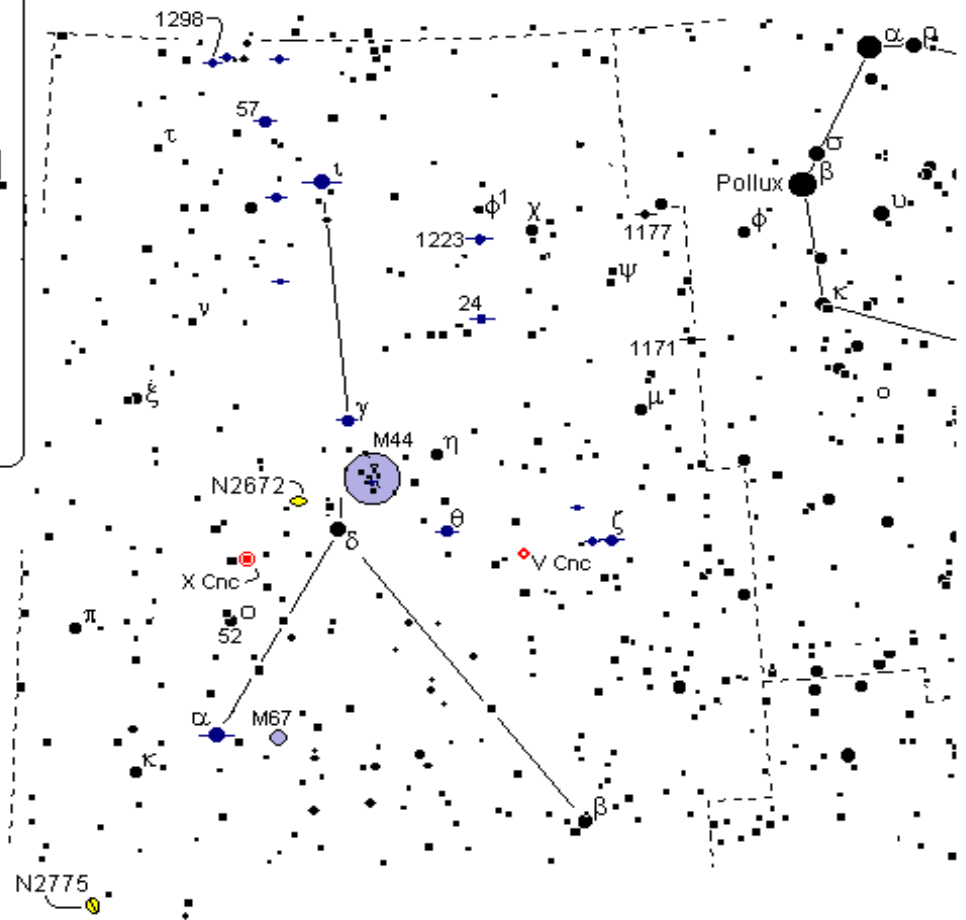
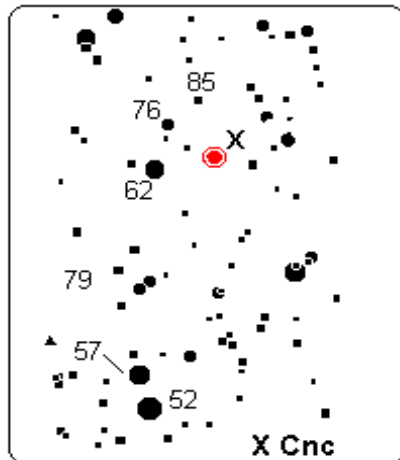
Constellation of the Month — Cancer



From January to February, you'll find Cancer the Crab about half-way up in the east around 9 PM. Between Leo and Gemini, it is a faint constellation for sure. Use binoculars to find M44- The Beehive. This might be easier to spot than the constellation is with the un-aided eye. Try a little lower to the left for the tiny haze of M67. These are the only bright deep sky object to be had. There are galaxies, but most are fainter than 12.8 mag. There are plenty of nice doubles to put your scope on. Give them a try. The variable X Cnc is an easy target for binoculars. Try to follow X CNC all thru spring and summer. It has very subtle changes.



Close-up of M44, "The Beehive"
Note double star Σ1254.



DEEP SKY					DOUBLE STARS				Check list		Instruments used:
	mag.	size	type								
M44	3.1	95'	OC	50 stars	α	4.2 - 11.8	11"	white, red	<input type="checkbox"/> α	<input type="checkbox"/> M44	<input type="checkbox"/> on <input type="checkbox"/>
M67	6.9	29'	OC	200 stars	ζ	5.1 - 6.2	5.7"	lemon, yellow	<input type="checkbox"/> ζ	<input type="checkbox"/> M67	<input type="checkbox"/> on <input type="checkbox"/>
N2775	11.0	4' x 3'	GALAXY		ι	4.0 - 6.6	31"	yellow, blue	<input type="checkbox"/> ι	<input type="checkbox"/> N2775	<input type="checkbox"/> on <input type="checkbox"/>
N2672	12.7	3' x 3'	GALAXY		24 CNC	6.9 - 7.5	5.7"	amber, silver	<input type="checkbox"/> 24 CNC	<input type="checkbox"/> N2672	<input type="checkbox"/> on <input type="checkbox"/>
VARIABLE STAR:					57 CNC	6.1 - 6.4	1.5"	both citrus-orgng.	<input type="checkbox"/> 57 CNC		<input type="checkbox"/> on <input type="checkbox"/>
X Cancri	5.6 to 7.5mag.				Σ 1171	6.4 - 10.9	2.8"	yellow, orgng.	<input type="checkbox"/> Σ 1171		<input type="checkbox"/> on <input type="checkbox"/>
	195 day period				Σ 1177	6.6 - 7.5	3.5"	green, yellow	<input type="checkbox"/> Σ 1177		<input type="checkbox"/> on <input type="checkbox"/>
					Σ 1223	6.3 - 6.3	5.1"	---	<input type="checkbox"/> Σ 1223	X Cnc	<input type="checkbox"/> mag. on <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>
					Σ 1254	6.4 - 10.4	21"	yellow, orgng.	<input type="checkbox"/> Σ 1254	X Cnc	<input type="checkbox"/> mag. on <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>
					Σ 1298	6.0 - 8.1	4.5"	white, blue	<input type="checkbox"/> Σ 1298		<input type="checkbox"/> on <input type="checkbox"/>

2014 JANUARY SKY ALMANAC

Solar and Lunar (EST).

Date	Sunset	Moonrise	Moonset
1	5 : 05	— : —	05 : 50p
5	5 : 09	— : —	10 : 39p
9	5 : 13	— : —	01 : 54a
13	5 : 17	— : —	05 : 35a
17	5 : 21	07 : 09p	— : —
21	5 : 26	11 : 02p	— : —
25	5 : 31	02 : 11a	— : —
29	5 : 36	06 : 13a	— : —

PLANET WATCH

Uranus Sets	Jupiter Transits	Mars Rises
2:29a	3:07a	1:19a
2:13a	2:50a	1:14a
1:57a	2:33a	1:09a
1:41a	2:15a	1:03a
1:25a	1:58a	12:57a
1:09a	1:40a	12:51a
12:54a	1:22a	12:45a
12:38a	1:04a	12:39a

January 2014

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 January 2014 (18) Melpomene

Date	Transits	RA		Alt.	Azm	Magnitude
		hr.	min deg.			
		<i>topocentric</i>				
1	2 : 41 am	09	: 00.2 +08.5	42°	121°	9.8
7	2 : 13 am	08	: 55.7 +09.1	46	128	9.7
13	1 : 44 am	08	: 50.5 +09.7	51	136	9.5
19	1 : 15 am	08	: 44.6 +10.5	55	146	9.4
25	12 : 45 am	08	: 38.4 +11.3	58	158	9.3
31	12 : 15 am	08	: 32.1 +12.2	61	172	9.4
		<i>(at midnight)</i>		<i>(at midnight)</i>		

Date UT hr **Celestial Highlights**

1	14	NEW MOON
3	13	Quadrantids moon +35%
5	21	Jupiter at opposition
8	04	FIRST QUARTER MOON
16	05	FULL MOON
21	05	Mars exceeds 8" diameter
24	05	LAST QUARTER MOON
28	00	Melpomene at opposition
30	21	<i>Full Moon, Blue Moon.</i>
31	07	Mercury 18° E elongation

Variable Star of the Month: **X Cnc** 5.6- 7.5 195 days

LUNAR OCCULTATIONS FOR JANUARY 2014

Civil (24hr)			UT						Star	Star	event	dbl./	
date	hr	min sec	date	hr	min sec	Ph	% illum.	alt	azimuth	name	Mag.	PA	sep.
5	21	: 51 : 35	6	02	: 51 : 35	D	28+	08°	261°	ZC 3420	6.9	113°	NA
7	23	: 43 : 51	8	04	: 43 : 51	D	50+	11	271	EPS PSC	4.3	079°	0.25"
10	20	: 01 : 41	11	01	: 01 : 41	D	78+	65	162	ZC 505	7.1	090°	NA
11	20	: 22 : 57	12	01	: 22 : 57	D	85+	64	147	ZC 643	6.8	083°	NA
14	2	: 59 : 31	14	07	: 59 : 31	D	97+	35	264	ZC 943	6.6	079°	NA
14	21	: 42 : 10	15	02	: 42 : 10	D	99+	55	123	ZC 1057	6.8	104°	NA
18	4	: 33 : 24	18	09	: 33 : 24	R	96-	44	237	OMEG LEO	5.5	227°	0.81"
19	0	: 12 : 50	19	05	: 12 : 50	R	92-	42	127	ZC 1489	6.6	256°	0.100"
24	6	: 23 : 19	24	11	: 23 : 19	R	47-	34	178	SAO 158495	7.4	254°	NA
29	6	: 43 : 02	29	11	: 43 : 02	R	03-	4	118	RHO SGR	3.9	299°	0.036"

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°

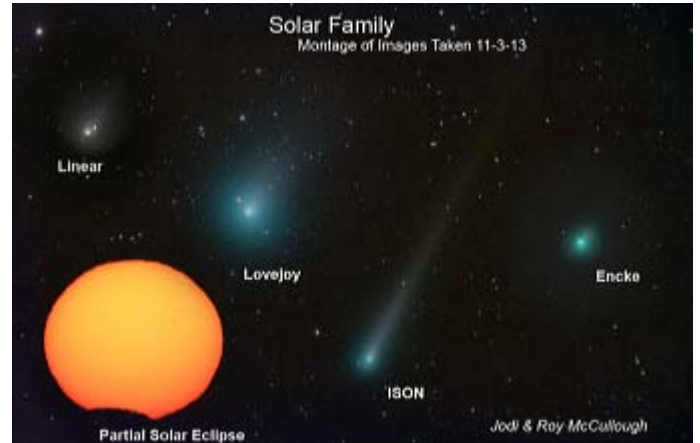
Occultations computed using Occult v3.6 (I.O.T.A.)

GALLERY.....

Latest MVAS Shots.



Jodi and Roy McCullough captured this double exposure of the partial solar eclipse on November 3, 2013 at sunrise. It was featured in the Youngstown Vindicator. Practice shot for the 2014 October 23rd. partial eclipse- at sunset this time



Jodi and Roy also imaged several comets the morning of the eclipse. And thus a montage of all these solar system "events" was produced. Another fantastic work.



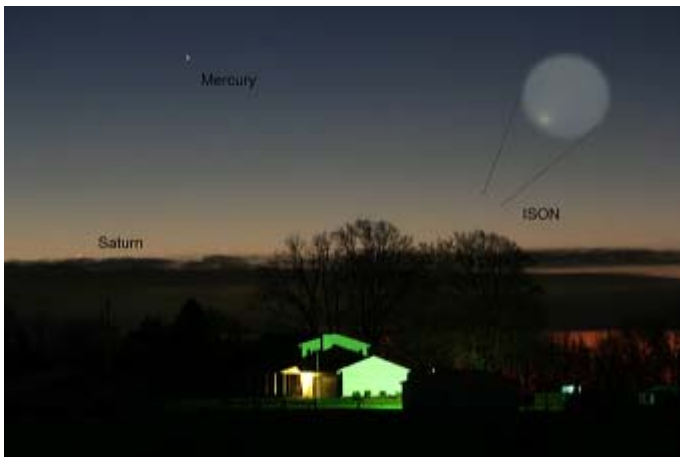
In November, Mike Heim captured NGC206 which is a star forming region in the Andromeda Galaxy (M-32). Most imagers are lucky to get a simple shot of the whole galaxy. Mike was able to grab some detail with only a six inch scope. This nebulous star burst region is to the left of center- hard to miss.



New Jersey MVAS member Jim Haklar captured a "minimalist" image of the "Beehive" in Cancer. It captures the essence of this cluster as seen in real time using large binoculars. Jim's approach is to use the simplest telephoto-dslr set up to catch quick images of the Messier objects. This could be a nice introduction for many budding imagers. A lot of great things can be done in post-production using imaging software and a stack of quick photos. Who will follow Jim's lead?. It's not too early to practice for those many events and eclipses in 2014.



Jodi and Roy got this fantastic image of comet Lovejoy. It was taken on the morning of November 23, 2013. Currently, Lovejoy was brighter than ISON and much higher in a darker sky. But ISON could be brightening as you read this around Thanksgiving.



Above: The McCulloughs shot a horizon view with ISON, Mercury and Saturn clinging to the eastern morning horizon. ISON is magnified in the circular inset.



At right: Jim Haklar caught Venus dancing with Nunki, as he called it, in a recent e-mail post.



At left: A close-up of Comet Ison taken by Jodi and Roy. The image was process by Lou DiNardo. If you have digital astrophotos and you would like Lou to process them or enhance them, please contact Lou about what you would like to do.

The editor would like to thank all the imagers in 2013 for sharing their wonderful work. They really make the newsletter sparkle!. For most readers, they probably go right to the Gallery section at first glance, just or this reason. The *Meteorite* is your newsletter and a place for MVAS imagers or sketchers to shine. Keep'em coming. We can't get enough.

Happy Holidays to all. - from your editor.