THE METEORITE

Peace On Earth
and
Happy Holidays

Earthrise, from Apollo 8 Dec. 24, 1968

Newsletter of the Mahoning Valley Astronomical Society, Inc.

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DECEMBER 2011

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THE METEORITE

Newsletter of the Mahoning Valley Astronomical Society, Inc.

DECEMBER 2011

MVAS CALENDAR

DEC 10 Annual meeting and Christmas Dinner. 6:00 PM. Boardman Park in the Larrica Center building.

JAN 14 "So You Got a Telescope". at YSU 1-3pm. Help tyros learn how to use their new scope. Maybe even fix'em. Bring tools.

JAN 28 Business Meeting at YSU after the 8:00 PM show.

NATIONAL & REGIONAL EVENTS 2012

FEB 22-26 Orange Blossom Special Star Party. Withlacoochee River County Park, Dade City. It's 35 miles NE of Tampa, FL. Registration fees: 2 or more days- Adult $50, Spouse $30, Youth(7-17) $10, 1- 6 Free. Single Days - Adult $30, w/spouse $40, Youth $5. Registration fees are all inclusive except for meals and T-shirts which are extra. Late fees apply after 1/25/2012 and all registrations must be postmarked by February 10, 2012 . http://www.stpeteastronomyclub.org/

MAR 22-25 MIdAtlantic Mirror Making #12 (Seminar). Held at the Mallard Lodge, 4876 Haypoint Landing Road, Smyrna, DE 19977. The purpose of the Seminar is to introduce proven successful mirror making techniques to those wishing to make their own mirrors. Special emphasis will be placed on successfully figuring the mirror. Mirror-making materials will be furnished (at costs). Expert mirror makers will be available to guide each person's activities. http://delmarvastargazers.org/

MVAS, P.O. BOX 564 NEWTON FALLS, OH 44444-9998

MVAS Homepage- http://mvobservatory.com

NEWS NOTES

Storm tracker. New images and animated movies from NASA's Cassini spacecraft show the birth and evolution of the huge storm that traced the northern face of Saturn for almost a year. We see the storm emergence from a tiny spot in a single image almost one year ago, on Dec. 5, 2010. Then we see it grow into a storm so large that it completely encircled the planet by late January 2011. When Cassini's high-resolution cameras captured the first images of the storm, Cassini's radio and plasma wave instrument also detected the storm's electrical activity, revealing it to be a convective thunderstorm. The storm's active convecting phase ended in late June, but the turbulent clouds it created linger in the atmosphere today.

This northern disturbance is a single thunderstorm that raged continuously for more than 200 days and impacted almost one-fifth of the entire northern hemisphere. It is a completely different kind of beast compared to anything that has been previously seen on Saturn with Cassini. These types of outbursts are episodic, occurring on Saturn every 20 to 30 years. They are telling us something about deep inside the planet, but what exactly- is still a mystery. Current plans to continue the mission through 2017 will give Cassini a chance to observe further changes in the planet's atmosphere as the seasons progress to northern summer. Saturn is now up just before dawn and may be worth a look to see what is left of the storm.

Galactic gas. Astronomers believe that the color and shape of a galaxy is largely controlled by the gas flowing through its extended halo. Three studies investigated different aspects of this gas-recycling phenomenon. A series of Hubble Space Telescope observations used its Cosmic Origins Spectrograph (COS) to detect the gas halo of our Milky Way and in more than 40 other galaxies. Data from large telescopes in Hawaii, Arizona and Chile also contributed to the studies by measuring the properties of the galaxies. The COS observations show that a large mass of clouds is falling through the giant halo of our Milky Way, fueling its ongoing star formation. These clouds of hot hydrogen reside within 20,000 light-years of the Milky Way disk and contain enough material to make 100 million suns. Some of this gas is recycled material- continually being replenished by star formation and by novae and supernovae, which kicks chemically enriched gas back into the halo.

The COS observations show halos of hot gas surrounding vigorous star-forming galaxies. These halos, rich in heavy elements, extend as much as 450,000 light-years beyond the visible portions of their galactic disks. The amount of heavy-element mass discovered that far outside a galaxy came as a surprise. COS measured 10 million solar masses of oxygen in a galaxy's halo, which corresponds to about one billion solar masses of total gas. Researchers also found that this halo gas is nearly absent from galaxies that have stopped forming stars. In these galaxies, the "recycling" process ignites a rapid firestorm of star birth which can blow away the remaining fuel, essentially turning off further star-birth activity.

Some of the hot gas is moving more slowly and could eventually be recycled. The observations also show how gas-rich star-forming spiral galaxies can evolve to elliptical galaxies that no longer have star formation.

- Above notes adapted from SpaceDaily News

MINUTES OF THE NOVEMBER MEETING

NOVEMBER 19, 2011 at YSU

After watching the planetarium show "Black Holes: The Other Side of Infinity" and a sky tour given by Sharon Shanks, members settled-in for the meeting. The meeting came to order at 9:33 PM, with President Sam DiRocco presiding. During the password session (name an astronaut), Dennis Marko paid tribute to the Challenger astronauts that perished in the shuttle explosion in 1986. Likewise, Greg Higgins recalled the three Apollo astronauts lost in the launch pad fire in 1967. Pandian recalled Kalpana Chawla, she was an Indian-American astronaut lost with six others in the Columbia disaster in 2003. In all, 21 members answered Roll Call. There were 4 guests.

A call for the Reading of the Minutes was made. Greg Higgins moved to suspend the reading. Bill Pearce seconded the motion. With no further discussion, the Minutes as published, were accepted by a unanimous voice vote.

TREASURER'S REPORT: The Report was read by Steve Bartos. Greg Higgins moved to accept the Report. Larry Plante seconded the motion. With no further questions or discussion brought forth, the Report was accepted as read, by a unanimous voice vote.

General Fund	**10/1 thru 10/31 2011**
OPENING BALANCE:	$ 10,432.20
CLOSING BALANCE:	$ 6,889.83
AVAILABLE FUNDS (NON-RESERVED):	$ 2,725.71
ACCOUNT NET GAIN/LOSS FOR THIS PERIOD:	$ -3,542.37
INCOME:	
INTEREST	$ 0.63
TOTAL INCOME	$ 0.63
EXPENSES:	
CK# 2765 BREAKER BOX (16" BUILDING)	$ 43.00
2766 50" MIRROR BLANK REFUND	$ 3,500.00
TOTAL EXPENSES	$ 3,543.00

Reserved Funds (Unavailable for MVAS-MVCO operations)

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

CORRESPONDENCE: No mail reported.

COMMITTEE/OFFICER REPORTS: *IMAGING COMMITTEE: VISUAL COMMITTEE: LIBRARIAN: (*No reports from any.)

OBSERVATORY DIRECTOR'S REPORT: Larry Plante has only made one trip to the MVCO this month. He has shut down the well for winter. All unions have been loosened to prevent cracked plumbing from winter freeze conditions. He has not followed up on the pricing for the gutter work since it is too late in the season now. He will brace the current gutter for winter survival. The propane tanks will be filled in short order, before the Binocular Stargaze.

Rosemary Chomos noted that she has brought the Saturn garden ornament inside for winter storage. What ever 2 liter sodas are left from the Binocular Stargaze, she will bring to the Christmas Party. The refrigerators are not yet shut down but will be soon after Thanksgiving. She also told of a problem she had with the new gate lock, getting it to work right. It was pointed out that it didn't seem to be an outdoor lock to begin with. Sam suggested we start looking for a more robust lock (to Greg or Larry?). Larry reports that Mike Sprague is finished with house work now and we need to return to closing and locking the gate when leaving. The ladder for Titan is now back in the 8" building. Mike thanked the MVAS for letting him used it. There was no information as to why we don't have internet connection at the MVCO.

OLD BUSINESS: The Christmas party was briefly discussed. Times and menu will be identical to last year's. Tony reminded members to bring their own beverage - all need to be non-alcoholic as required by Boardman Park. He will provide ice and cups. Larry asked if anyone wanted shrimp cocktail; Might happen. The dinner fee is $10 per person. Reservations are required. Payments and reservations should be made to Steve Bartos or Phil Plante, before December 5th. Phil will send Tony the final "head count" at that time. This will give Tony an idea of how much food to order from Larricia's. (see map and menu in this issue -editor) Some sort of prize will be raffled off at the Dinner- to those present. Phil will see about getting a pair of binoculars. Using left over OTAA door prizes was mentioned.

Your 2012 dues can be paid to the Treasurer as of now. You may pay at the Christmas Party. By regulation, they should be paid at/by the January meeting. Membership rates increase to $40 per year, for a regular member. Junior (less than 16) and family rates remain at $10 per person. The 2012 Astronomy Calendars are $10 each. 2012 RASC Handbooks are set at $25.00 each. Limited copies left- pick up yours at the Christmas party. This increase is due to the insane shipping charges (~$7) now imposed on each handbook. An alternative handbook will be looked into for 2013. Stay tuned to emails for the tentative Binocular Stargaze the Saturday of Thanksgiving weekend. Start time around 7:00 PM. Left-overs are welcome.

NEW BUSINESS: The MVAS calendar for 2012 was discussed. Since all observational event planning is centered on the lunar phase, it works out that our business meetings can return to the normal last Saturday of the month in 2012. In March we will do a Binocular Messier Marathon on March 24th. In April we will combine the Chili Cook-off and Galaxy Quest on one night which will be April 21st. (by popular demand). Scenic Vista dates will be May 19 (OTAA Stargaze), June 23 (new- "Astro-Ham" event) scope observing and HAM radio instead of rockets. Last Scenic Vista event is slated for September 8th. Our most important event is the MVAS-OTAA Convention. It will be held on August 18th (new moon). A full calendar will be published in the January 2012 issue of the Meteorite. It will be interesting to see how the other OTAA event dates pan out.

In addition to the usual YSU-MVAS collaborations (Scope seminar, Festival) Sharon suggested we investigate a public observing event for the June 6 Venus Transit. From the Youngtown area we'd need a clear view of the western horizon. We'll see the first 2+ hours of the Transit before the Sun sets. Locations at YSU's Stambaugh Stadium and Austintown Park were suggestions first mentioned as having good "west views". Sharon also said that the MVAS was invited to visit Telescope Park. Some have already been there at the 2011 CVAS-OTAA meeting. A great facility, there was talk of holding a super OTAA event there sometime in the future, with all clubs participating.

GOOD OF THE SOCIETY: Phil never got around to contacting Bob Andress about the possibility of sending the 50" blank to the Mirror Lab in exchange for a smaller finished mirror. Steve asked about a possible trip to Flying W Ranch in PA next year. April was usually the month we went there. There was no consensus on doing this next year but this is open to discussion for anyone that wants to organize a trip there. Lodge rates went

up, Steve reported. Sam thought we could wait a while to decide on any trip. Phil had a great time with tons of kids and many adults at Robinwood School November 8th. He used a 4.7" refractor to show them the Moon and nearby Jupiter.

VISUAL REPORTS: Phil got 26 vsos so far in November. He did some homework (Helix from Boardman!) and got a quick look at Mars early one morning. Small orange fuzz ball. Lou DiNardo has been observing Venus and Mercury around 3:00 PM. Venus was nearly full phase while Mercury was at quarter phase. Using a red filter helped. No imaging yet. Jodi and Roy have tried to image the storm on Uranus but with no luck. Bill Pearce did an animation of Comet Garradd and he wrote an article on his techniques for *Practical Astronomy Magazine.*

ADJOURNMENT: Adjournment came at 10:11 PM. We thank all our hosts. Bill Pearce made a delicious veggie casserole and Phil Plante brought a sandwich tray. Rosemary once again supplied the dessert pies. The next meeting will be after the Christmas Dinner on December 10, 2011. This annual meeting and dinner will be in Boardman Park, Boardman OH. Doors open at 6:00 PM. Dinner around 7:00 PM. Scheduled host is Tony Mehle. PASSWORD: Your best ho-ho-ho or "bah, humbug" (too many cloudy nights eh?). *-minutes by Phil Plante*

IN MEMORIAM

The MVAS extends it deepest condolences to Rich Mattuissi and his family, on the passing of his farther Armando Mattiussi. Armando passed away peacefully on Thursday, November 10 at 1:05 PM after hearing the end Mass on TV. A donation of $50 will be made to Hospice of the Valley in lieu of flowers.

MVAS ACTIVITIES

About a dozen people showed up for the Halloween Party. There was good food to help ward off the chill in the air. Huluski (Greg's), a rice dish (Larry's) and turmeric chicken (Pandian's) were the homemade goodies. Plenty of pizza and desserts (Rosemary). By the end of the night the 16" building was cozy as the propane heaters did their magic. TV viewing involved several episodes of *From the Earth to the Moon* (HBO series), then a football game. The 8" scope was used during a brief spell of clear skies. Jupiter, and a few of summer deep sky objects scared up memories of warmer nights with bugs. Not much in the way of costumes. Maryanne Hoffman came as a witch- the most note worthy and "traditional" costume. Most came as hungry astronomers, but there was food left over. Are we loosing our touch? It was a nice evening in any case.

The *Sebring Sun News* newspaper featured an article on MVAS Honorary member Chris Stephan on Nov. 21, 2011. Chris is a science teacher and he arranged a donation of a Meade telescope for one of his students that is autistic. Student Eddie Collier had shown interest in telescopes and science. Earlier, Eddie and his father used a loaner scope to begin a study of Jupiter. The full article and photos are online at:

http://www.newssun.com/news/112011-ct-telescope

Good job Chris. You do make a difference.

Chris was out observing in November: He saw 6 or 7 Taurids, plus a 0 mag meteor that came from Cepheus, ending a few degrees from Jupiter. So far, he had 136 variable star estimates for November, and hoped to get more.

MVAS REMINDERS

Please make reservations for the Christmas Party before December 5th. 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 Phil at 330-757-4037 or Steve at 330-750-9862 to make reservations - arrange payments. It's in the same building as it has been in the last two years. (see map) Dinner price is $10 per person. *RASC Handbooks* ($25 ea.) and *Astronomy* Calendars ($10 ea.) will be available but in limited supply. Dues will increase to $40 per year in 2012. Payments will be accepted at the Christmas dinner. As promised - no Christmas raffle. A pair of Nikon binoculars will be raffled-off as a door prize (Only for paid attendees- no absentee tickets).

MVAS CHRISTMAS DINNER

At Boardman Park, off Rt. 224. In the Larricia Community Center- southern end of the park, past the Park Offices. Look for directional signs. Meal $10/person.

6:00 PM-- Doors open. Social hour and business.

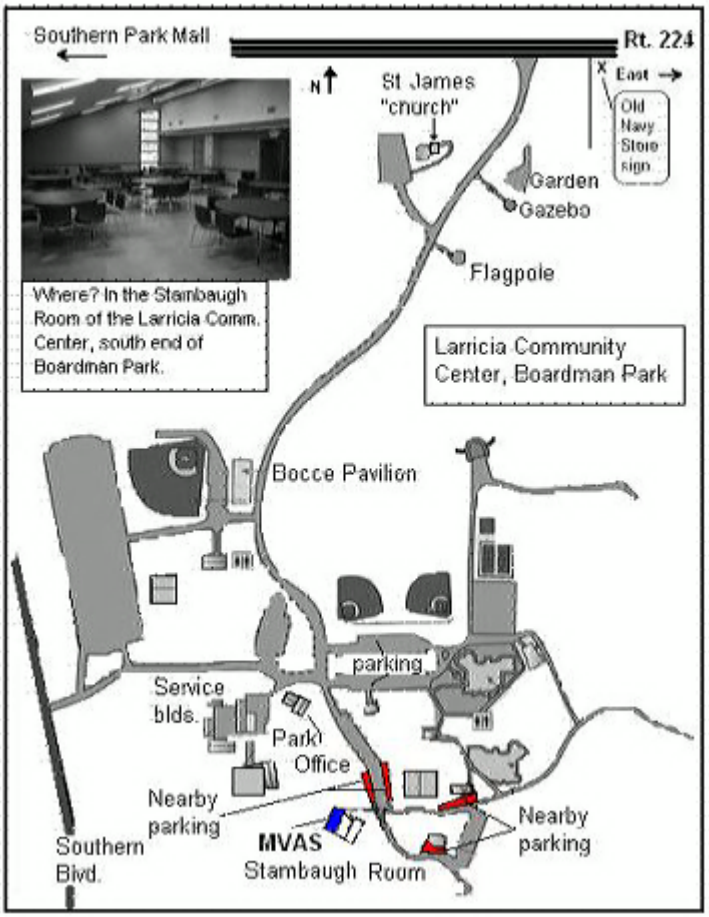
6:15 PM -- Hors d'oeuvres served.

7:00 PM -- Dinner time, till 8:00 PM.

8:00 PM -- Break for last minute transactions, etc.

8:30 PM -- Annual meeting and door prize drawing.

10:00 PM -- Clean-up and vacate room by 10:00 PM.



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.
Mike's Salad:	Salad with bleu cheese crumbles, walnuts, raspberry balsamic dressing on the side.
Chicken Galore:	Marinated, grilled skinless boneless chicken breast with peppers & onions & mozzarella cheese in a light Marsala sauce.
Beef Tenderloin:	Sliced filet of beef in mushroom wine sauce.
Sausage:	With peppers, and Onions. Very mildly hot.

Cavatelli and Meatballs with Sauce.

Sides:	Parsley Potatoes & Green Bean casserole.
Dessert:	Mocha House Cheesecakes.

Ice, cups, plates and utensils will be provided. Bring your favorite beverage (all non alcoholic). We will need a person to make the coffee (this should be in the works)

Please try to be on time. Dress is casual, as per family restaurant. You are free to go formal if you like.

Sign in when you get there. There will be a host list for the 2012 meetings to fill up. Please consider this duty as the list is passed around. We thank you in advance.

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 a bigger one across from the park office. We held a Mars watch event there in 2005.

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. Hope to see you there.

Observer's Notes.....

Book Review A Passion For Mars: Intrepid Explorers of the Red Planet. ISBN: 978-0-8109-7274-2 Abrams Books. $35 US ($21 Amazon, plus shipping). *Reviewed by Phil Plante*

Considering that this hardcover book was published in 2008, it might seem a little late for a review. But several factors bring it to attention now. First, it is a new addition to the Terry Biltz Library at the MVCO. Second there is mention and photo of one of our MVAS members in it. Third it is an excellent review of humanities quest for all things Martian: canals, life, water, and an ultimate destination. With the upcoming apparition of Mars in 2012, it will serve well as inspiration to brave the winter temperatures to observe Mars. Or it can be a substitute exploration for those cold, cloudy nights. Lastly, the Mars Science Laboratory mission with the lander Curiosity onboard is planned to launch on Nov. 25, 2011. This book brings one up to date on Mars exploration- in preparation to follow *Curiosity*. Its landing is set for sometime in August 2012. The book takes us up to 2006 with the status of the rovers *Spirit* and *Opportunity* and *Mars Reconnaissance Orbiter*.

The book's author Andrew Chaikin is a renowned writer on space exploration. His book *A Man on The Moon: The Voyages Of the Apollo Astronauts* is considered to be the definitive treatment of these missions. Chaikin is a journalist that has covered all Mars missions since the Viking landers; even participating in that mission. The real surprise of the book is that it's not about what we've found on Mars. It's about the people that had the drive to find out what's there. The *Passion* begins with early observations by Galileo (sorry Andrew, Galileo did not invent the telescope, pg. 14). Astronomers Schiaparelli, Antoniadi, and Lowell brought us visions of Mars which fueled the debate about life on Mars- pro and con. Science fiction writers Edgar Rice Burroughs, H. G. Wells and Ray Bradbury fed the public's appetite for Martian neighbors. Chesley Bonestell's space art gave us the visual support.

It turns out that the real Mars explorers were not your typical stellar or solar system astronomer. Cosmologist? Forget it. Indeed they were computer and electronics experts, geologist, biologist, climatologist and of course rocket scientist. Wernher Von Braun came up with visionary mission plans in the 1950's. Anyone of age during the Mariner 4 flyby on July 14, 1964 will remember the paradigm change from hoping for Martian life to "Mars is a dead world". Then Viking gave inconclusive results in 1976 for life on Mars. Exploration of Mars quickly fell from NASA's radar. During the early 80's push for a Shuttle and Space station, funding to maintain the Viking mission turned to private donations (this scribe kicked in a few bucks too). A "Mars Underground" formed, keeping the dream alive. Students, engineers and others held conferences and kept Mars missions in NASA's face. This was true passion.

Many familiar names are recalled in the book such as Sagan, Murray, Mutch and Paine (NASA administrator back in the day). The cast of characters spans decades and Chaikin interviewed or had first hand experience with many of them. He gives a sketch of their personalities, and sometimes life stories. Some of them dedicated their life to Mars. This is the heart of the book and brings exploration of Mars literally to life. It's real people you get to know. Those that have that passion for Mars. The need to know if and when life ever existed on Mars. In many cases, this quest and detective story started during their youth.

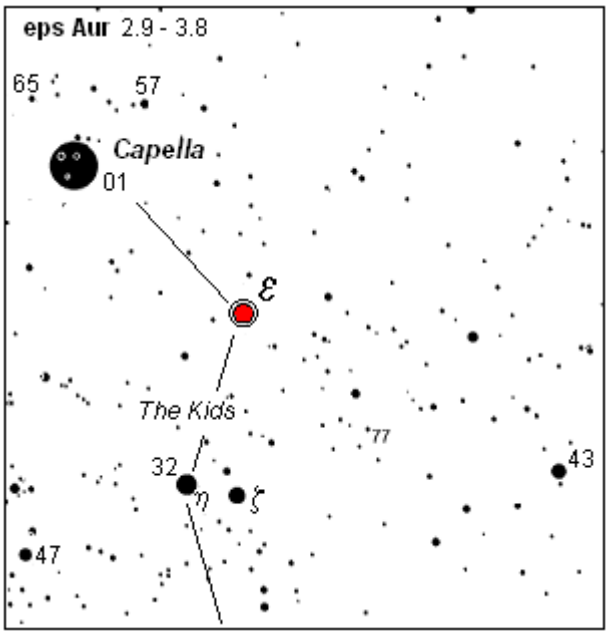
The book is lavishly illustrated with many color photos and has a Mars map on the inside covers. Sometimes Chaikin runs a long sentence, with the main thought getting lost in anecdotal mid-stream references. That can be easy to do unwittingly. Other than that, it is an engaging read. Honestly, it's one of the few books I've been able to finish in short order, these last few years. Daily tasks, commotion, and energy drains usually kill my book reading time. This book was an escape from all the above.

A true delight occurs in Chapter 9 where Chaikin describes his trip to Florida for the July 17, 2003 lunar occultation of Mars. An expedition was arranged by MVAS member Chris Stephan (with photos). I highly recommend this book for your Mars reading pleasure. With such an inside scoop on what it takes and what it's like to explore Mars, you'll find yourself wondering "Do I have the Passion?".

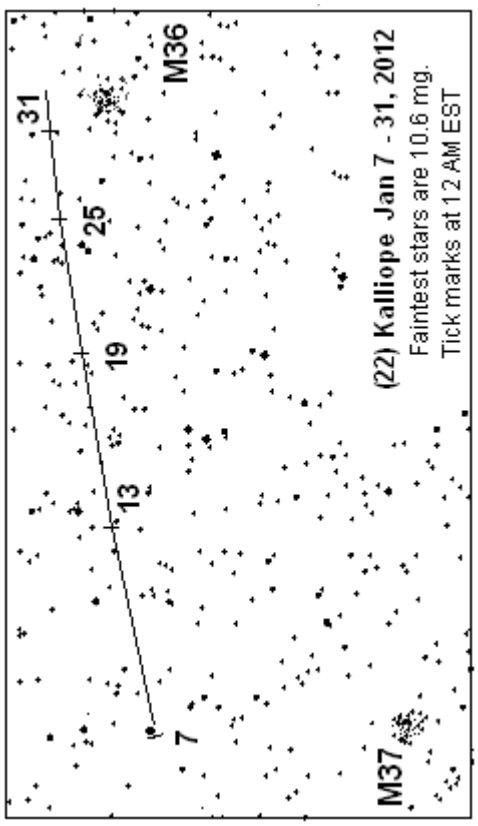
MVAS OBSERVER CHARTS

Variable star of the month: **epsilon Aurigae** (*abbrev:* eps Aur).

The eclipse of this star started in Aug. of 2009 and ended in July 2011. We need a good post-eclipse curve to help define the real endpoint and to determine the normal fluctuations in brightness. Eps is still a nice variable to track during winter months. Grab those binoculars. An eclipsing variable, you'll have to wait 27 years for the next eclipse!



Asteroid of the month: (**22) Kalliope.**

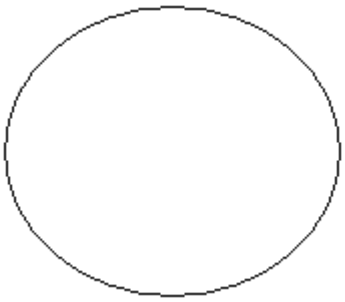


Watch Kalliope pass north of M37 and M36 during January 2012. It will be fading from magnitude 10.1 to 10.8 so a small scope will be needed. North is to the right as presented here. You'll have to turn the chart to match your view. Sorry but this was the only way to fit this chart in, and still be somewhat useful. Good luck!

MVAS OBSERVATIONS - DUE JANUARY 2012

OBSERVER_____

Featured object: Jupiter (again). For the second month in a row- try a sketch! Fill in the details in this template of Jupiter's oblate globe. Pencil-in the SEB and NEB first to give you a reference. Try to place the belts as accurate as you can. Shade with the side of the pencil and smudge to blend with your finger. Have some fun at it! Work fast too- Jupiter really rotates fast! Features will shift quickly.



Jupiter Observation:

Date:_____ Time(EDT)_____ Scope_____

Epsilon Aurigae magnitude estimates:

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

(22) Kalliope Observations:

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

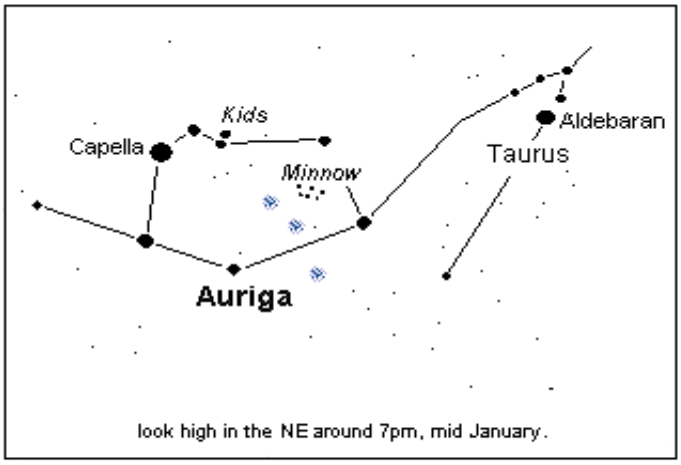
Objects in Auriga to observe

D. Sky	Date	Scope	**Dbl.**	Date	Scope	SEP	MAG	SPLIT?
M- 36	_____	_____	56 Aur	_____	____	31"	5.2 - 8.6	Y / N
M- 37	_____	_____	41 Aur	_____	____	8.0"	6.2 - 6.9	Y / N
M- 38	_____	_____	14 Aur	_____	____	14.1"	5.0 - 7.3	Y / N

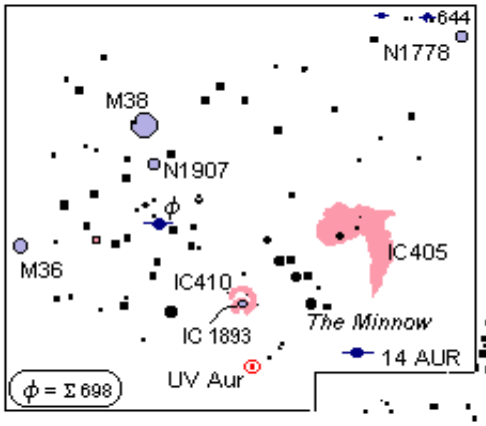
Lunar Occultations (see Sky Almanac):

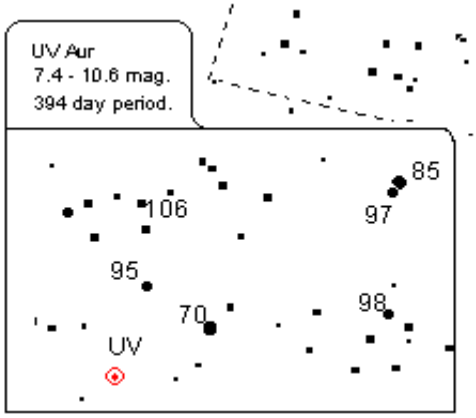
Star	(UT) Date	Time	Scope	magx.	Event(circle)
_____	_____	_____	_____	____x	R D
_____	_____	_____	_____	____x	R D
_____	_____	_____	_____	____x	R D

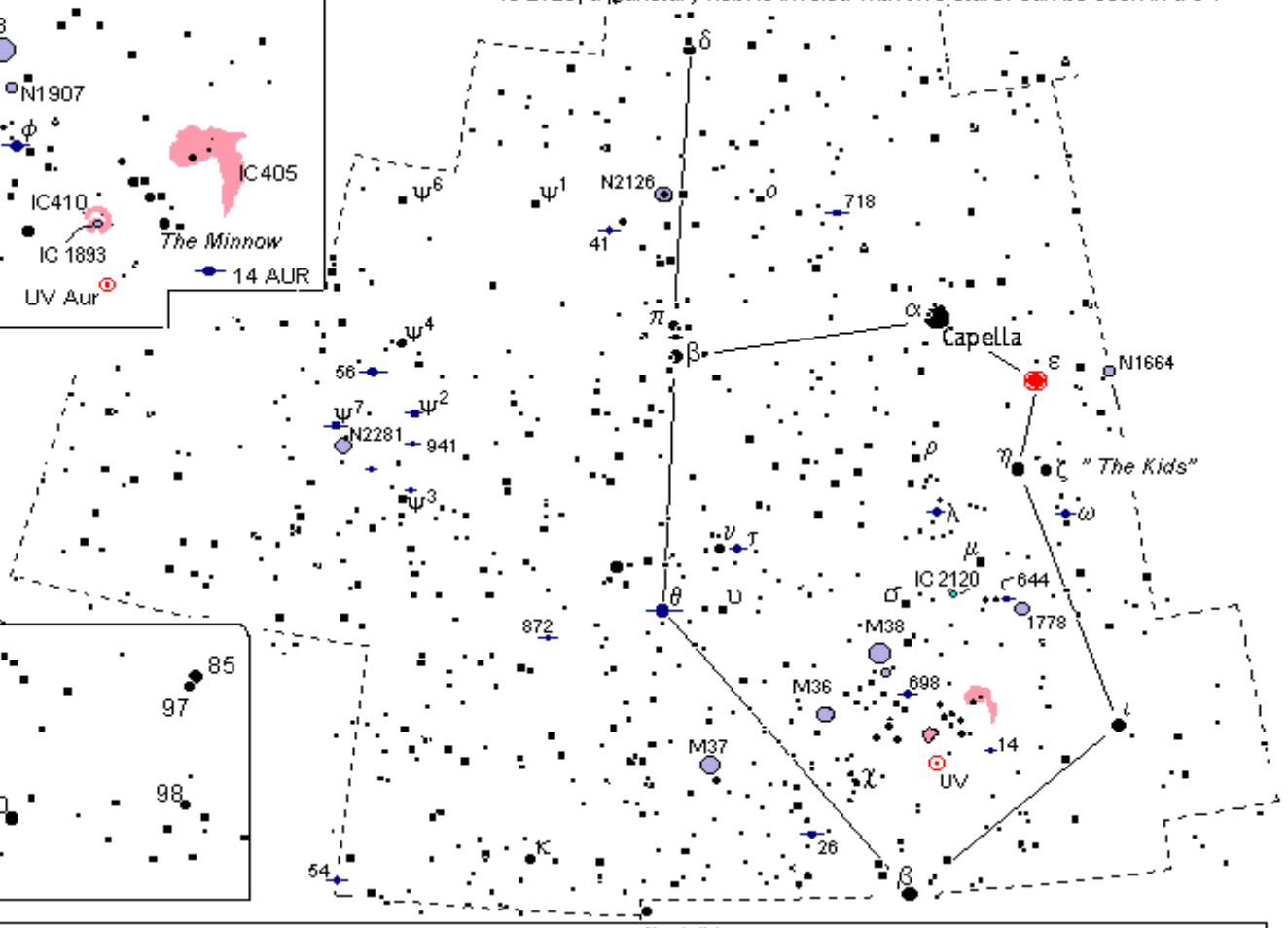
Constellation of the Month — Auriga



Auriga, the Charioteer, is found high in the eastern sky by mid January around 7pm. Look for its brightest star Capella. It has a golden yellow tint and makes a nice color contrast with blue-white β Aur. Look south of Capella and find an ancient asterism called "The Kids", comprised of ε, ζ, and η Aur. If the night is very clear and dark, you might detect the three main clusters M36, M37, M38, with the unaided eye. Scanning with binoculars makes them an easy find. These open clusters are all about 4,000 light years away. Central Auriga is a busy place with open clusters, double stars, a few emission nebula and another asterism -- sometimes refered to as "The Minnow". This double row of stars just north of 14 Aur is a nice find in your binoculars. The dusting of stars of the Northern Milky Way passes thru Auriga and makes for pleasant binocular sweeps. With a scope, you'll inspect the clusters up close. NGC 1664 is a faint one in a 6". Depending on the seeing, it fades in and out of view as a ghostly sprinkle of diamond dust. Many fine double stars await the telescope. The colors given below were reported in Webbs "Celestial Objects" first published in 1859. How do your "modern" eyes see them? The emission nebula are visual challenges and probably best used as targets for deep sky imagers. IC 2120, a planetary neb. is involed with two stars. Can be seen in a 6".







DEEP SKY				
M 36	OC	6.0	12'	60 stars
M 37	OC	5.6	23'	150 stars
M 38	OC	6.4	21'	100 stars
N 1664	OC	7.6	18'	- - -
N 1778	OC	7.7	6'	25 stars
N 1893	OC	7.5	11'	60 stars
N 1907	OC	8.2	6'	30 stars
N 2126	OC	10.2	6'	40 stars
N 2281	OC	5.4	14'	30 stars
IC 405	Neb.	- -	84' x 60'	v. Faint
IC 410	Neb.	- -	25' x 20'	v. Faint
IC 2120	PN	- -	42'	very faint

DOUBLE STARS:				
ω	5.1 - 8.1	4.6"	green & blue
14 AUR	5.1 - 8.1	14"	yell. & blue
26 AUR	5.4 - 8.6	12"	yell. & blue
41 AUR	6.0 - 6.8	7.7"	white & lilac
54 AUR	6.4 - 10.4	56"	yell. & green
56 AUR	5.2 - 8.6	31"	yell. & lilac
Σ 644	6.7 - 6.9	1.6"	gold & red
Σ 698	6.6 - 8.4	31"	yell. & blue
Σ 718	7.5 - 7.5	7.7"	- - - -
Σ 872	6.9 - 7.9	11.3"	yell. & lilac
Σ 941	7.3 - 8.3	2"	blue & purple

Check list

M 36 ____ M 37 ____ M 38 ____ N 1664 ____ N 1778 ____ N 1893 ____ N 1907 ____ N 2126 ____ N 2281 ____ IC 405 ____ IC 410 ____ IC 2120 ____

ω ____ 14 AUR ____ 26 AUR ____ 41 AUR ____ 54 AUR ____ 56 AUR ____ Σ 644 ____ Σ 698 ____ Σ 718 ____ Σ 872 ____ Σ 941 ____

Instruments used:

_____ on _____

_____ on _____

_____ on _____

_____ on _____

UV AUR was _____ mag. on ___/___/___

UV AUR was _____ mag. on ___/___/___

2012 JANUARY SKY ALMANAC

Solar and Lunar (EST).

Date	Sunset	Moonrise	Moonset
1	5 : 05	x : xx	12 : 41a
5	5 : 09	x : xx	4 : 33a
9	5 : 13	5 : 59p	x : xx
13	5 : 17	10 : 32p	x : xx
17	5 : 21	2 : 04a	x : xx
21	5 : 26	6 : 15a	x : xx
25	5 : 31	x : xx	8 : 25p
29	5 : 36	x : xx	2 : 21a

PLANET WATCH

	Venus	Mars	Jupiter
	Sets	*Rises*	*Sets*
	7:49 PM	10:42 PM	2:18 AM
	7:59 PM	10:31 PM	2:03 AM
	8:09 PM	10:19 PM	1:48 AM
	8:18 PM	10:05 PM	1:34 AM
	8:28 PM	9:51 PM	1:19 AM
	8:37 PM	9:36 PM	1:05 AM
	8:46 PM	9:21 PM	12:51 AM
	8:55 PM	9:04 PM	12:38 AM

January 2012

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 2012 (22) Kalliope

Date	TRANSITS	RA hr. min	Dec. deg.	Alt.	Azm	Magnitude
		topocentric				
1	11 : 42 PM	5 : 59.7	+33.3	81°	205°	10.1
7	11 : 12 PM	5 : 53.6	+33.9	78	235	10.2
13	10 : 43 PM	5 : 48.2	+34.1	73	251	10.4
19	10 : 15 PM	5 : 43.0	+18.0	68	260	10.5
25	9 : 48 PM	5 : 40.2	+24.3	63	266	10.6
31	9 : 22 PM	5 : 37.9	+27.5	59	271	10.8
		(at midnight)		*(at midnight)*		

Variable Star of the Month: **BU Tau** 5.0 - 5.3mag irregular

Celestial Highlights

Date	UT hr	
1	06	**FIRST QUARTER MOON**
3	00	Jupiter 4.8° S. of Moon
3	05	Quadrantids Meteors
5	2.9	Io transit of Jupiter
5	4.1	Io shadow transit begins
9	07	**FULL MOON**
16	09	**LAST QUARTER MOON**
22	02	Algol at minimum
23	07	**NEW MOON**
29	06	Mars: Syrtis Major on CM

LUNAR OCCULTATIONS FOR JANUARY 2012

Civil (24hr) 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	21	57	26	2	02	57	26	D	58+	39°	249°	ZC 163	7.3	036°	8.5"
4	1	42	39	4	06	42	39	D	76+	19	278	40 ARI	5.8	121°	0.20"
5	18	10	27	5	23	10	27	D	89+	41	096	56 TAU	5.3	053°	NA
6	19	21	36	7	00	21	36	D	95+	45	099	ZC 784	6.3	054°	1.9"
6	21	39	21	7	02	39	21	D	95+	67	142	109 TAU	5.0	113°	NA
7	2	50	54	7	07	50	54	D	96+	36	269	114 TAU	4.9	049°	59.0"
9	19	59	20	10	00	59	20	R	99-	20	86	ZC 1198	6.1	274°	0.20"
9	21	29	43	10	02	29	43	R	99-	37	101	5 CNC	6.0	293°	0.05"
13	5	47	24	13	10	47	24	R	81-	42	222	ZC 1582	6.4	336°	39.0"
15	3	40	25	15	08	40	25	R	61-	34	149	21 VIR	5.5	246°	NA
30	20	19	15	31	01	19	15	D	48+	53	239	ZC 348	6.8	069°	NA

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.....

Gobblin' ghouls?

About a dozen folks showed up for the Halloween Party this year. Fairly nice weather and some clearing skies spooked everyone inside. The 8" scope was used by a few, until the clouds rolled in around 9:30 PM. It was the usual feast and TV time. Maybe next year we can schedule some sort of game. Here are some photos of the Party.

A fat crescent moon hung over the MVCO as things got underway. Looked like the opening scene of a horror film, considering the event. But there were no teenagers looking for a monster in the basement. (We'd have to dig a basement first)

First things first, we needed some heat to scare the chill away. Larry gets the propane heater working. By the end of the night it was cozy in the 16" building.

Trick or Treat? Well at least the Treat part was well represented. Good hot chow was the main course: pizza, Pandian's famous chicken, Greg's huluski, Larry's chicken-rice.

Some of the costumes that made an appearance. Names have been omitted to protect the innocent.

Chow time and TV. Just like being home. After the Apollo moon landing DVDs, a football game was tuned in (USC vs. Stanford) which went into overtime. Most were following the scrolling scores at the bottom of the picture for Ohio State results. We had a scare as OSU was behind with less than two minutes left. We thought they were done for. They rose from the dead and came back to win. We all left before the overtime game was finished. It was a nice way to spend a chilly October night. Ok…it wasn't so spooky for being a Halloween Party. It was a good time for all.