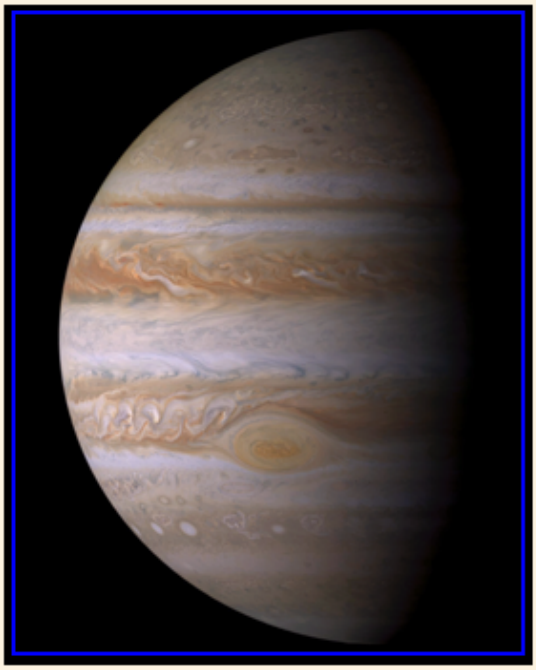
THE METEORITE

Jupiter !!!

Cassini Spacecraft Image, taken during gravity assist fly-by



Newsletter of the Mahoning Valley Astronomical Society, Inc.

IN THIS ISSUE:

NOVEMBER 2011

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

THE METEORITE

Newsletter of the Mahoning Valley Astronomical Society, Inc.

NOVEMBER 2011

MVAS CALENDAR

NOV 19	Business meeting at YSU. 8:00 PM
NOV 26	Binocular Observing at the MVCO 7:00 PM
DEC 10	Annual meeting and Christmas dinner. To be held in Boardman Park at the Larricia Center
DEC 25	New Moon- try out the new toys from Santa?

WARD BEECHER PLANETARIUM (YSU)

NOV 19	8:00PM	Black Holes: The Other Side of Infinity
NOV 25		*University Closed-Thanksgiving*
NOV 26	1:00PM	The Little Star That Could
	2:30PM	The Little Star That Could
	8:00PM	Black Holes: The Other Side of Infinity
DEC 2	8:00PM	Black Holes: The Other Side of Infinity
DEC 3	1:00PM	The Little Star That Could
	2:30PM	The Little Star That Could
	8:00PM	Black Holes: The Other Side of Infinity
DEC 9	8:00PM	Holiday Lights
DEC 10	1:00PM	Holiday Lights
	2:30PM	Holiday Lights
	8:00PM	Holiday Lights
DEC 16	8:00PM	Holiday Lights
DEC 17	1:00PM	Holiday Lights
	2:30PM	Holiday Lights
	8:00PM	Holiday Lights
DEC 23-24		*University Closed-Christmas*
DEC 31	6, 7, 8, 9PM	First Night Youngstown

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

MVAS Homepage- http://mvobservatory.com

NEWS NOTES

MARS MISSIONS, AN UPDATE:

Spirit: More than 1,300 commands were sent as part of the recovery effort. No communication has been received from Spirit since March 22, 2010. The project concluded the Spirit recovery efforts on May 25, 2011. Total odometry is unchanged at 7,730.50 meters (4.80 miles).

Opputunity: The seasonal plan is for Opportunity to winter-over on the north end of Cape York which is on the rim of Endeavour crater where northern tilts are favorable for solar energy production. As such, the project has been driving the rover in the direction of the north end of the cape with a route along the west side that creates opportunities for science along the way.

MRO: The Mars Reconnaissance Orbiter mission continues as a radio relay for landed missions. This capability is planned for at least the next four years. On September 8, 2011 the HiRES camera resumed operations after a precautionary shut-down. By late October, weather observations were underway.

Mars Express: The ESO's Martian orbiter continues to take high resolution images of the Martian surface. Newly released images in October 2011 show an unusual accumulation of young craters in the large outflow channel called Ares Vallis. Older craters have been reduced to ghostly outlines by the scouring effects of ancient water. In the distant past, probably over 3.8 billion years ago, large volumes of water must have rushed through the Ares Vallis with considerable force.

Curiosity: The Mars Science Laboratory mission is planned to launch on Nov. 25, 2011, 10:25 a.m. EST from Cape Canaveral, FL. The launch window is between Nov. 25 - Dec. 18, 2011. The Curiosity rover will arrive on Mars in August 2012.

Organic Dust. A mysterious set of infrared emissions detected in stars, interstellar space, and galaxies have spectral signatures which are known as "Unidentified Infrared Emission features". The current accepted theory for the origin of these signatures has been that they are from simple organic molecules made of carbon and hydrogen; called Polycyclic Aromatic Hydrocarbon molecules (PAH). However, infrared spectra taken by the Spitzer Space Telescope, have shown that these features cannot be explained by simple PAH molecules.

Instead, Prof. Sun Kwok and Dr. Yong Zhang of the University of Hong Kong propose that the substances generating these infrared emissions have chemical structures that are much more complex. Similar to compounds formed by life. By analyzing the spectra of star dust formed by novae, they show that stars make these complex organic compounds on extremely short time scales of weeks and also in the absence of life. Not only are stars producing this organic matter, they are ejecting it into interstellar space, the region between stars.

Most interestingly, this organic star dust is similar in structure to complex organic compounds found in meteorites. The findings raise the possibility that stars enriched the early Solar System with organic compounds. The early Earth was subjected to severe bombardments by comets and asteroids, which potentially could have carried organic star dust. Whether these delivered organic compounds played any role in the development of life on Earth remains an open question.

MINUTES OF THE OCTOBER MEETING

OCTOBER 22, 2011 at the MVCO

The meeting came to order at 8:00 PM. President DiRocco presided. Roll Call was taken, with great answers to the Password. Sixteen members and two guests were in attendance. Virginia and Stephen Bartos were the guest. A call was made to read the minutes. Rosemary Chomos moved to suspend the reading. Greg Higgins seconded the motion. With no further discussion or questions, a unanimous aye vote accepted the minutes as published.

TREASURER'S REPORT: The Report was read by Steve Bartos. Steve noted that the 50" mirror purchase deposit has been refunded ($3,500) and the transaction will be reflected in the next Treasurer's Report. Lou DiNardo moved to accept the report, which received a second from Larry Plante. With no further discussion the Report was accepted by voice vote.

General Fund	**9/1 thru 9/30 2011**
OPENING BALANCE:	$ 10,422.13
CLOSING BALANCE:	$ 10,432.20
AVAILABLE FUNDS (NON-RESERVED):	$ 2,768.08
ACCOUNT NET GAIN/LOSS FOR THIS PERIOD:	$ +10.07
INCOME:	
ASTRONOMY RENEWAL	$ 60.00
DUES (NEW, 2011 PRO-RATED)	10.00
ASTRONOMY CALENDARS	80.00
MVAS CLOTHING MERCHANDISE	25.00
INTEREST	0.92
TOTAL INCOME	$ 175.92
EXPENSES:	
CK# 2763 ASTRONOMY RENEWAL	$ 60.00
2764 BREAKER BOX FOR 16" BUILDING	105.85
TOTAL EXPENSES	$ 165.85

Reserved Funds (Unavailable for MVAS-MVCO operations)

KEY DEPOSITS (MVCO)	$ 250.00
YTD: 50" PROCEEDS RESERVED FOR OAD FUND	3,500.00
CASH FROM ORIGINAL OAD FUND (FOR LAND)	3,914.12
TOTAL AMOUNT IN OAD FUND	7,414.12
TOTAL RESERVED FUNDS	**$ 7,664.12**

CORRESPONDENCE: No mail was received or reported.

COMMITTEE/OFFICER REPORTS: *IMAGING COMMITTEE:* No reports. *VISUAL COMMITTEE:* No Reports, though some had forms filled out but not on hand. *RADIO SIG*: Sam reported that the internet had been down for nearly a month and no automatic SID observations had been made during this time. This could have been due to cutting the power off when installing the new breaker box. *LIBRARIAN:* No Report.

OBSERVATORY DIRECTOR'S REPORT: Larry Plante reported the he and Steve had installed the new breaker panel in the 16" building. The box came with six breakers, which are labeled. They traced all the wiring and checked the circuits. Everything is working. A week later, Larry installed a 4-way receptacle near the back door for when several crock pots are in use, etc. He also has the parts for a new outside receptacle (north wall) and a replacement for the outhouse. These will be done soon since his work schedule now allows the time.

The pump will be shut down for winter after the Halloween Party. He will loosen connections to avert possible cracking of pipe (like last year) due to winter freezing. Rosemary will also shut down the refrigerators after the Halloween Party. She noted that she may need some water for cleaning. Dennis Marko noted that he would bring some beer to the Halloween Party (that he wants to get rid of). It was noted that all beverages, condiments and food must be removed and taken home when the refrigerators are shut down.

OLD BUSINESS: There are some 2012 Astronomy Calendars left for sale ($10 each). Steve has ordered 16 *RASC Handbooks* with a shipping cost of $80. There is a discount on each book price but the club price will need to be raised to at least $22 each this year. The final price to be set. Some felt this may be the last year for this purchase. The 50" mirror sale had been terminated due to the death of the buyer. At first the family wanted to continue with the project, but expenses have forced them to ask for the payments returned. In light of their circumstances and time of grief, the $500 non-refundable deposit was also returned. The next step with the mirror was discussed. Ideas included having the Green Team haul it away, re-melting into mugs, trading it for a smaller finished mirror. A suggestion made by Bob Andress many years ago was brought up in that Roger Angel of the mirror lab in Arizona would take the Pyrex mirror. It was not known what we could get in return for the blank or the shipping logistics/expenses involed. This was considered a first line of action.

After some concerns, the Trustees have asked Bill Pearce to step down as a Trustee since a precedent was set some years ago regarding Trustee attendance. Bill was accommodating to this request, but still manage the MVAS website. He also wanted to complete the 50" sale negotiations. We thank him for this work. The Trustees have appointed Rosemary Chomos to serve the remainder of Bill's term which ends in December this year. Greg Higgins brought up the issue of the gutters. We had been given a quote of $650 for seamless gutter installation but fascia work was not stated in this price. This will need to be done and if not included (unlikely) the price tag will double. Larry was given the contact information to find out what is covered in the pricing quote. A motion was made to get this done if fascia is included, was made by Rosemary Chomos, seconded by Greg Higgins. All in favor. If the price doesn't include the fascia work, Larry will reinforce the gutters so they survive one more winter. Then it will be a spring time project (contractor).

NEW BUSINESS: There were several unclaimed gift certificates from the OTAA door prize raffle. With expirations next August, a raffle was conducted for members assembled. Greg won the $25 Scope City certificate. Sam and Robert each won a $25 Lumicon certificate. Greg gave his coupon to Dennis. A $60 off coupon for a Kitt Peak family membership was not offered. The secretary has this, if anyone is interested. Dennis mentioned the OPT Rewards program that offers potential savings. It was believed the MVAS had signed up in this program several years ago. There still seemed to some interest in a binocular star party the Saturday of Thanksgiving weekend, weather permitting. The November meeting is a week before so we can discuss this in greater detail at that time. The Leonids occur a few days before the November meeting and meteor radio counts were mentioned as a project for the radio SIG. All are reminded that it will soon be time to pay 2012 dues which are now set at $40 per year. There is no longer a Christmas raffle.

GOOD OF THE SOCIETY: MVAS clothing is available, see Steve. Replacing the well used grill was discussed. It seems there were no end of season close-out sales as Harry had been looking. There was a short discussion on the 75th MVAS Anniversary coming up in 2014. This tied into getting a new grill. Phil told a little of Chris Stephan's attendance at the AAVSO's

100th Anniversary meeting. A full report from Chris will be in the November 2011 Meteorite. Phil briefly described the changes underway in the AAVSO, trying to eliminate visual work. When asked, he described the process of reporting variable star estimates, via WebObs on the AAVSO website.

VISUAL REPORTS: Eric and Dick Klesch have been having great views of Jupiter lately. Rosemary sees Orion when going to work in the morning. Phil managed 20 vsos this month with the Moon up. Chris Stephan went one night and got 40 vsos and good views of Jupiter. Lou DiNardo has been busy imaging despite the lunar presence- and achieving spectacular results.

ADJOURNMENT: Adjournment came at 8:56 PM. We thank our hosts Sam DiRocco and Harry Harker for the great meatball sandwiches and chicken nuggets. Plenty of hot sauce around for those that dared. The next meeting will be at YSU on November 19, 2011. Meeting begins after the 8:00 PM show (Black Holes). Scheduled host is Phil Plante (& others?). PASSWORD: Name an astronaut. *-minutes by Phil Plante*

MVAS REMINDERS

November 17 to 18 will see the peak of the Leonid meteor shower. The expected peak is around 11PM on Thursday evening (which is at 4hrs UT Nov 18th). For us easterners, the radiant sits below the horizon at that time, but it rises with the moon just to its north. Visuals will be difficult, but radio observations are possible- regardless of clouds. Maybe the MVAS Radio SIG will consider this type of observation.

Saturday night November 26 is a New Moon weekend (over Thanksgiving). Holding a binocular observing session that night seems to have gained interest. We'll discuss this at the November meeting. Weather permitting; we'll give it a go. Bring some binocs and chow if you have any room left in your belly…

Time to make reservations for the Christmas Party. It's in Boardman Park. Provisional dinner price is set at $10 per person, the same as the last few years. The dinner is in the same building and room as for the last two years. Get reservations and payments to the Secretary before Dec. 5th. You may send checks via mail to Phil's return address as on the *Meteorite* cover. Or make payments at the November meeting. *RASC Hanbooks* should be available then. Dues will increase to $40 per year in 2012. Payments are now being accepted. As promised - no more Christmas raffle due to the rate increase.

MVAS ACTIVITIES

There was a nice turn-out for the September 24th impromptu star party. Several brought telescopes or binoculars. The 8", 12" and 25" were also used. In all about 8 members came by to observe. It was a fairly decent sky. The Milky Way even made a rare appearance. In the 8" building, Dan was dissecting double stars in Cygnus while Phil struggled with a few variables on the 25". He did manage to catch the Veil Nebula. By 10:30 PM everyone was dewed up. Secondary mirrors on the 12" and 25" were dripping. Not long after, all the people went home- with food left over. What? We are loosing our touch!

Bill Pearce has had an article published in *Practical Astronomy Magazine,* on imaging Comet Garradd. Bill explains his method of making a time-lapse image and describes the superb equipment he uses for astro-imaging. Nice to see an MVAS'er being published. Good job Bill! Here is the link to the Oct-Dec Issue: http://practicalastronomy.com

Observer's Notes.....

The AAVSO Centennial Meeting October 4-8, 2011

By Chris Stephan, MVAS
Robert Clyde Observatory, Sebring, Florida

I had the privilege to attend the 100th anniversary meeting of the American Association of Variable Star Observers, AAVSO, October 4-8, 2011. The meeting was held at the Hilton Hotel in Woburn, a suburb of Boston. We had lovely weather with temperatures in the 60's and 70's, a welcome relief for this Floridian. There were 137 people in attendance. We had most from the USA and Canada, but several from countries such as Britain, Belgium, Germany, Argentina, Australia, and Japan.

The first night was basically free to just socialize, as the Council met that day and then they held a special event for all current and past Council members. This event was not open to the general membership. I had a great time getting to know, Sebastian Otero from Argentina. He is a very well respected visual observer and has written several papers in astronomical journals. In fact, he and I struck up a great friendship that has lead to possibly working together on some issues in the near future. He and I co-published a paper on V353 Hydrae about five years ago. We spent a good evening visiting with Patrick Wils of Belgium and Dr. Doug Welch of McMasters University in Ontario. Doug is a world known professional astronomer and a vital member of AAVSO. Doug and I have also gotten to know each other through our co-involvement in Citizen Sky.

The actual meeting began on Wednesday October 5. It was a paper session on several historical topics of AAVSO. The talks and PowerPoint presentations were very enjoyable and informative. I learned so many historical things about AAVSO's past that I had never heard before in my 35 years as a member. Including the lunch break, this history session went to 6:00PM.

October 6th was the highlight of the trip for me. This was when we all met at the new AAVSO Headquarters, which happens to be the old offices of *Sky and Telescope*. AAVSO purchased the building a couple of years ago and has done a wonderful job of fixing up and updating the building. The photos in the Gallery section of the" Meteorite" show some of the inside and outside of the building. We began the dedication and birthday party by unveiling the plaque that was moved from the old building just a block away, and mounting it on the outside wall at the entrance to HQ. We then went in, and went into the newly dedicated Dorrit Hoffleit conference room. We heard a talk about Dorrit by Dr. Vladimir Strelnitski, the current director of Maria Mitchell Observatory on Nantucket Island. Our beloved former director, Janet Mattei was one of Dorrit's "girls" and it was through this direct connection with Dorrit that Janet came into contact with Margaret Mayall and the AAVSO.

We then had a birthday party where Aaron Price's wife made 2 wonderful birthday cakes and we celebrated to our hearts content. What I enjoyed most was the tour Sebastian Otero and I took of the building. It is so orderly, and so much history and millions of variable star observations are on record both on computer and in old paper form. I love the library. It is chock full of astronomy literature from around the world. I even found the book "The Florida Night Sky" that I sent to Janet years ago that features me and my son Andrew in it. That brought back many memories. Sebastian got a kick out of the book.

The Directors Wall in the entrance area brought tears to my eyes. Photos of all past directors were there. There was Janet. I felt like she was right there with us (I wish she was). Janet was such a special friend and even came to our home in Florida in

August of 2001 to hold a Hand- on Astrophysics workshop at my school for our county's science teachers. She really liked Andrew. The Gallery section will show you photos of me with Matt Templeton. Matt is a professional astronomer who works at HQ. You will also see a fun photo of me and Doc Kinne, the tech man at HQ. He's about 5 feet high. I am 6 foot 6 inches.

After our extended time at HQ, we were taken into downtown Boston and had a special treat of going on a Duck Boat ride. A Duck Boat is a WW2 amphibious landing craft. It drives on tires on the street, so we had an hour long tour of Boston. We got to see the "Cheers" bar used in the "Cheers" TV show of the 1980's. We went to Beacon Hill; we saw the cemeteries where people like John Hancock are buried. Downtown Boston is an amazing place. Old and new architecture combined makes it intriguing. The Duck Boat driver then took use right up to the Charles River and turned on the boat motor and we went on a beautiful sunset tour of Boston via the Charles River. You will see a few beautiful photos in the Gallery section. The city skyline was all lit up and the western horizon was orange with remaining sunlight.

Friday, October 7th was the official day of the morning Membership meeting and the Director's Report to the association. Arne Henden, Director, gave a long report on the past year's activities of the AAVSO. There has been a lot happening. One I am proud to be a part of was the Citizen Sky project, which has done a wonderful job or recruiting citizen scientists to observe the recently completed eclipse of Epsilon Aurigae. I actually had the blessing of heading up a team that trained people how to observe. We are in our last year on that project. Arne reported on several robotic telescopes that AAVSO is taking part in. There will be a large robotic "all sky" telescope going into action in the next 2 years. This is going to observe thousands of long period variable stars per night covering most of the sky. The accuracy of the observations will be very precise.

Arne opened up the floor for questions and comments from the members in attendance. I spent probably a good 10 minutes, maybe more, very passionately sharing my **deep concern** on how I feel visual observers are being "put out to pasture". Those that watched the video of this meeting on video feed over the Internet could probably tell that I was very respectful, but wasn't going to be ignored in this meeting. I received many compliments afterwards as to me having the guts to say what many have wanted to say but are afraid to. I let it be very clear that some visual people are so upset with the direction the AAVSO seems to be heading as far as visual observations that several didn't come to this special meeting because of that. I also made it clear that I had contacted 2 other world renowned variable star organizations in other countries and they cannot understand why AAVSO is heading in this direction. I also said that since AAVSO is not publishing visual observations of eclipsing binary stars anymore, that The VSOLJ, The Variable Star Observers League of Japan, has kindly invited me to send them my data and they will publish it in their yearly publication. I was starting to get some upset looks at this point, and heard a rood comment, so I thought I got my message across and sat down. I never thought I would speak up this way ever at an AAVSO meeting.

Friday afternoon had several scientific papers presented. It's great to see so much variable star work being done by professionals and amateurs together. Saturday had more papers presented. There was the group photo taken. Several very special photos were taken. They took a photo, which I have not seen yet, of all the members in attendance that have been in the AAVSO 25 years or longer. I was included in this photo. They then took a photo of all those who have received the distinguished "Director's Award". I was blessed to be included in this photo. **Then, to my amazement, the brand new book "Advancing Variable Star Astronomy- The Centennial History of the American Association of Variable Star Observers" by Tom Williams, and Michael Saladyga, has listed in the back appendix the "Top 100 Visual Observers: Totals as of 2007-2008". I was shock to see my name in the list. Surly this has to be current living members, not those deceased.** So, they called for those in attendance from this list and took a special photo. I cannot wait to see this one. These 3 photos will definitely be framed and hanging on the wall in my office. I will definitely make sure that the MVAS gets copies of these.

The 4 day event ended with a special banquet and a wonderful talk by Professor Owen Gingerich of Harvard College and the Smithsonian Center for Astrophysics. Owen is a world known historian on astronomical matters. He spoke about his own list of the 10 most important events in astronomy in the last 100 years, doing it 1 special event per decade.

The meeting is now history. I am back home now. I will hold fond memories of this special event. I wish some others in the MVAS would have attended this meeting. The MVAS had special importance to AAVSO, especially in the 1960's and 70's. I would like to close by encouraging MVAS members to get involved in doing true science with your hobby. Looking at the night sky is fun, but also using your "looking" to contribute to astronomical knowledge, whether it be variable stars, lunar occultations, meteor observing for the American Meteor Society, and lunar and planetary work for ALPO. I wish to commend Phil Plante for being an active variable star observer for AAVSO, and an active planetary observer for ALPO. He may be the only MVAS member currently doing true science. I also want to commend Allen Heasley for all his past work observing variables for AAVSO. He was active during the "Golden Age" of AAVSO and knew and hung around with some of the greatest.

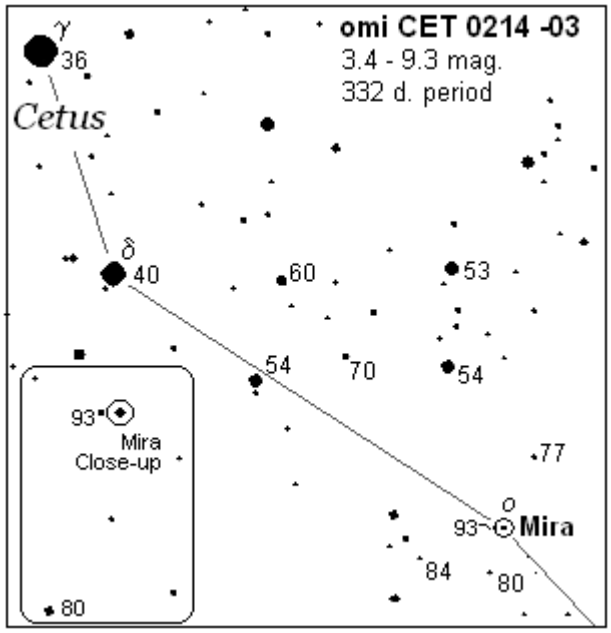
Group Photo: Chris is right of center, near top of group, white shirt.

MVAS HOMEWORK

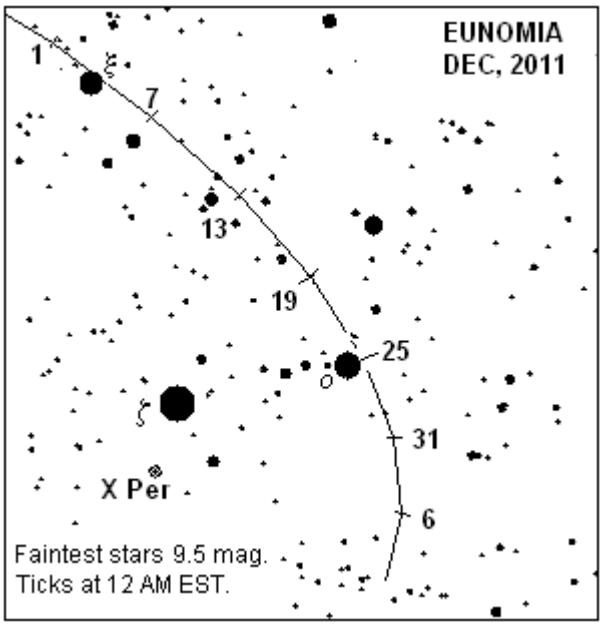
JUPITER: Read "Observer's Notes" in the September 2011 *Meteorite* to get some idea of what to look for on Jupiter. Try different color filters. Blue will darken the belts and lighten the icy white zones. Jupiter is at its best and biggest right now. Take advantage if you can stand the cold clear nights.

MVAS OBSERVER CHARTS

Variable of the month: **omicron Ceti** (common *name:* Mira). Mira is the prototype of the long period variable stars. These are red giants that rise and fall in brightness, typically with regular periods falling somewhere between 100 to 400 days. Each star has their own period. Some, like Betelgeuse, can take as long as 3 years. When at maximum, Mira can be estimated with the naked eye. For a good time before and after binoculars will suffice. As of mid October, Mira was around 2.5 magnitude. This was much brighter than normal. It is now fading but could still be at naked eye levels. What do you see? A worthy target for binocular sessions all this winter season.



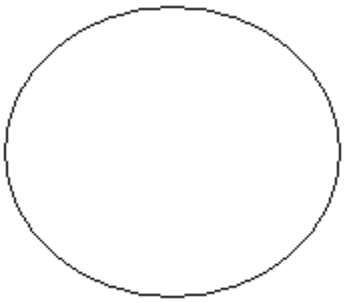
Asteroid of the month: (**15) Eunomia.** We follow Eunomia for one last month (Dec.) as it continues its tour through Perseus. It drops from 7.9 to 8.6 magnitude during December.



MVAS OBSERVATIONS - DUE JANUARY 2012

OBSERVER_____

Featured object: Jupiter . Please try a sketch. Fill in the details in this outline of Jupiter's oblate globe. If it looks like a squashed circle- it is. 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_____

Mira magnitude estimates:

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

(15) Eunomia Observations:

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

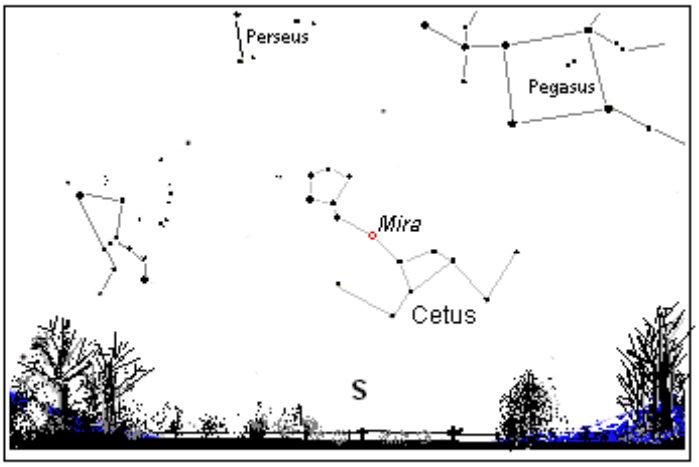
Objects in Cetus to observe

D. Sky	Date	Scope	**Dbl.**	Date	Scope	SEP	MAG	SPLIT?
M- 77	_____	_____	γ Cet	_____	____	2.3"	3.6 - 6.2	Y / N
N- 246	_____	_____	66 Cet	_____	____	16.4"	5.7 - 7.7	Y / N
N- 247	_____	_____	37 Cet	_____	____	48.0"	5.2 - 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 — Cetus

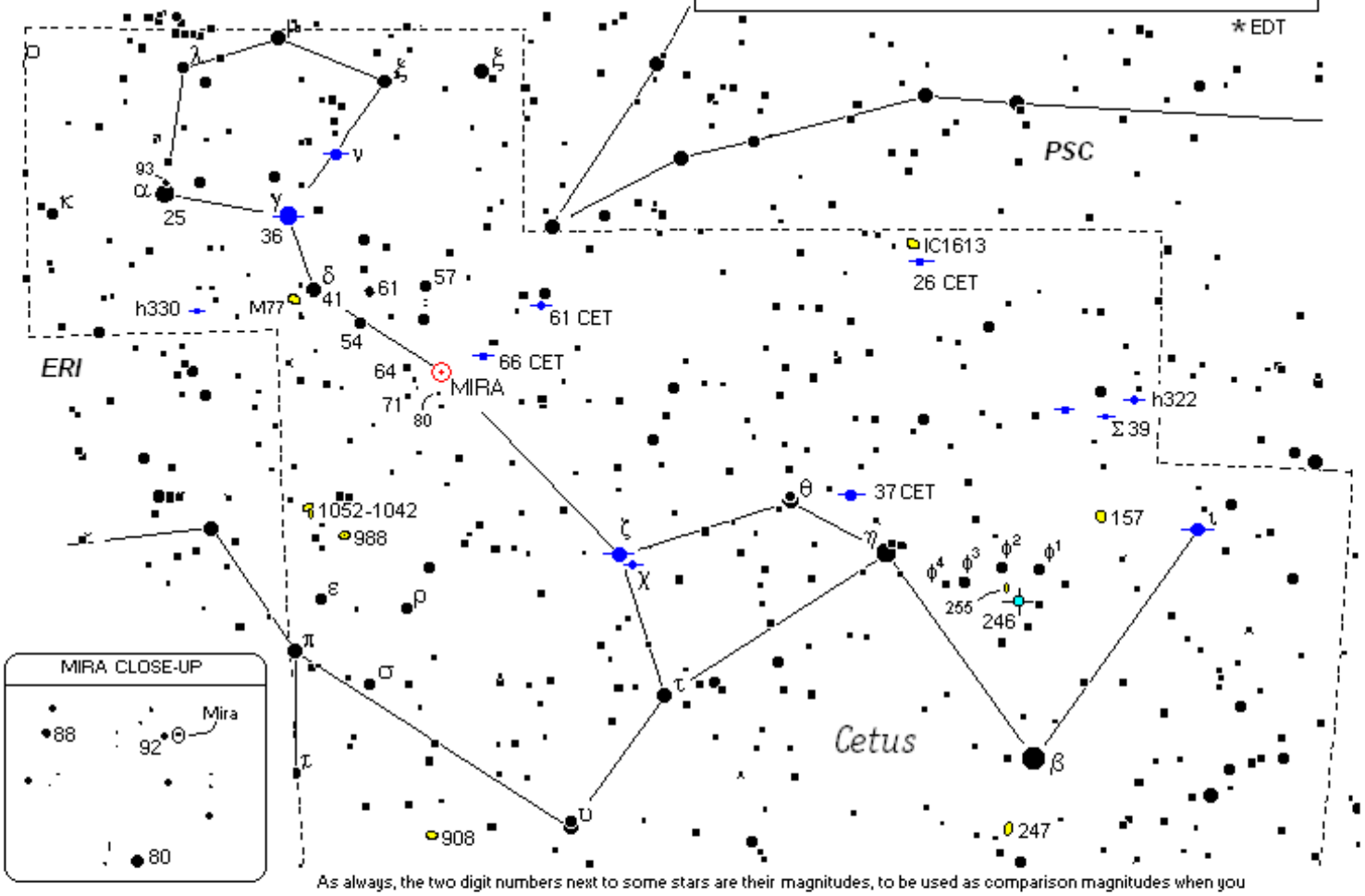


Cetus hides in the sky preceeding Orion. Between Pisces and Eridanus. Not many bright stars hang out in this part of the sky. You'll need to be away from city lights to trace out the whole constellation. With Binoculars, there are a few nice star pairings to enjoy. α and 93 Cet are a pretty yellow and blue pair. Check out the η Cet grouping and the ζ and χ pair. With a telescope you can start on χ and try for the other double stars in the list below. Most of the primay stars are yellowish; Their companions usually in various shades of blue. Can you tell the subtle differences from pair to pair? Are all the yellows the same? Which has the most vivid blue companion? Springtime galaxy hunting is months away but a few found here might warm you up. Start with M77 right next to δ Cet. NGC 247 may be an impressive sight but low in the sky. Planetary nebula NGC 246 is supposed to display ring-like structure. It has been called the "Skull Nebula". Do you see any of this? Mira is the most famous variable star, being a prototype of long period variables. When its at its brightest it can be seen with the naked eye. Check it out when it's near maximum.

Transit Times:

Nov. 1	1:00 AM*	Dec. 1	10:00 PM	Jan 1	8:00 PM
Nov 15	11:00 PM	Dec 15	9:00 PM	Jan 15	7:00 PM

*EDT



As always, the two digit numbers next to some stars are their magnitudes, to be used as comparison magnitudes when you make a magnitude estimate of the variable star. Be careful, numbers followed by"CET" are the star's number, not their magnitudes.

DEEP SKY

M77	10.6 mag.	5' x 4'	galaxy
N157	11.0	3' x 2'	galaxy
N246	8.0	4.1'	pl. neb.
N247	9.1	14' x 4'	galaxy
N908	10.8	10' x 2'	galaxy
N988	10.9	3' x 1'	galaxy
N1052	10.4	2' x2'	galaxy
IC1613	9.9	11' x 9'	galaxy

Mira 2.0 mag to 10.1 mag., 331 days

DOUBLE STARS:

Σ 39	7.1 - 8.6	20"	yellow, blue
Σ322	6.0 - 10.8	11.6"	topaz, blue
26 CET	6.1 - 9.5	15.9"	topaz, lilac
37 CET	5.2 - 7.8	48"	yellow, lilac
61 CET	6.0 - 10.8	43"	lemon, white
66 CET	5.7 - 7.7	16.4"	yellow, grey
χ CET	4.9 - 6.9	183"	yellow, blue
γ CET	3.6 - 6.2	2.3"	banana, opal
ν CET	5.0 - 9.1	7.9"	yellow, blue
h330	7.2 - 9.1	8.9"	gold, yellow

Check list

- ___ M77
- ___ N157
- ___ N246
- ___ N247
- ___ N908
- ___ N988
- ___ N1052
- ___ IC1613
- ___ Σ 39
- ___ Σ322
- ___ 26 CET
- ___ 37 CET
- ___ 61 CET
- ___ 66 CET
- ___ χ CET
- ___ γ CET
- ___ ν CET
- ___ h330

Instruments used:

_____ on _____

_____ on _____

_____ on _____

Mira was

_____ mag. on ___/___/____

_____ mag. on ___/___/____

2011 DECEMBER SKY ALMANAC

Solar and Lunar (EST).

Date	Sunset	Moonrise	Moonset
1	4 : 56	x : xx	11 : 55p
5	4 : 55	x : xx	2 : 52a
9	4 : 55	x : xx	6 : 44a
13	4 : 55	x : xx	9 : 50a
17	4 : 56	11 : 31p	x : xx
21	4 : 58	4 : 17a	x : xx
25	5 : 00	8 : 24a	x : xx
29	5 : 03	x : xx	10 : 42p

PLANET WATCH

	Mars	Jupiter	Saturn
	Rises	*Sets*	*Rises*
	11:52 PM	4:24 AM	3:48 AM
	11:44 PM	4:07 AM	3:34 AM
	11:37 PM	3:50 AM	3:20 AM
	11:29 PM	3:34 AM	3:06 AM
	11:20 PM	3:17 AM	2:52 AM
	11:11 PM	3:01 AM	2:38 AM
	11:01 PM	2:45 AM	2:24 AM
	10:51 PM	2:30 AM	2:10 AM

December 2011

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 December 2011 (15) Eunomia

Date	TRANSITS	RA hr. min	Dec. deg.	Alt.	Azm	Magnitude
		topocentric				
1	11 : 42 pm	4 : 02.1	+36.3	84°	208°	7.9
7	11 : 13 pm	3 : 56.1	+35.4	80	238	8.0
13	10 : 44 pm	3 : 51.0	+34.4	74	250	8.1
19	10 : 17 pm	3 : 47.0	+33.4	69	256	8.3
25	9 : 51 pm	3 : 44.1	+32.4	64	261	8.4
31	9 : 26 pm	3 : 42.6	+31.4	58	264	8.6
		(at midnight)		*(at midnight)*		

Variable Star of the Month: **Mira** 3.4 - 9.3mag 332 day period

Celestial Highlights

Date	UT hr	
2	10	**FIRST QUARTER MOON**
10	15	**FULL MOON**
11	01	Algol at minimum
14	18	Geminid meteor shower
18	01	**LAST QUARTER MOON**
23	03	Mercury greatest 22° W.
24	18	**NEW MOON**
27	01	Venus 6° N of Moon
28	04	Jupiter dbl shadw. trans.
31	03	Algol at minimum

LUNAR OCCULTATIONS FOR DECEMBER 2011

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.
0	20	02	20	***1***	01	02	20	**D**	36+	27°	227°	ZC 3154	7.4	000°	0.100"
1	22	55	27	***2***	03	55	27	**D**	47+	10	255	51 AQR	5.8	096°	0.45"
2	21	52	16	***3***	02	52	16	**D**	56+	31	238	ZC 3397	7.1	075°	NA
5	1	01	29	***5***	06	01	29	**D**	75+	19	266	ZC 89	6.5	020°	0.10"
5	20	53	48	***6***	01	53	48	**D**	82+	61	183	ZC 197	7.0	071°	0.10"
6	19	59	59	***7***	00	59	59	**D**	89+	58	135	ZC 313	7.1	121°	0.10"
9	1	54	56	***9***	06	54	56	**D**	98+	50	253	ZC 586	6.8	077°	NA
13	6	31	46	***13***	11	31	46	**R**	35+	35	263	74 GEM	5.0	353°	0.03"
14	4	50	19	***14***	09	50	19	**R**	86-	57	222	29 CNC	5.9	278°	0.05"
17	3	22	47	***17***	08	22	47	**R**	57-	38	133	SAO 118620	7.3	281°	22.0"
17	4	33	16	***17***	09	33	16	**R**	57-	46	154	62 LEO	6.0	348°	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…..

IMAGES FROM THE AAVSO 100TH ANNIVERSARY MEETING.

Wobern, MA from Oct. 4-8, 2011. All photos were submitted by Chris Stephan.

A FEW SPECIAL PHOTOS

The photo at right is of those that were in attendance, that had been members of the AAVSO for 25 years or longer. Chris is in the back row behind the fellow in the orange shirt (Barry Beaman). A few of us MVAS folk met Barry on an eclipse cruise in 1998 and at the ALCON -ALPO meeting in 1996 (Rockford, IL).

The next photo at right is of the Top 100 Visual Observers in attendance:
L to R: Mike Simonsen, John Toone, Gerry Samolyk, Gerald Dyke, Barry Beam an, Chris Stephan, Marvin Baldwin, and Charles Scovil sitting.
Anyone that has ever used an AAVSO chart from past years might recognize the name Scovil as producer of the chart. He also produced the AAVSO Variable Star Atlas (circa 1980).

This photo at left has all those in attendance that had received the special "Directors Award" for outstanding accomplishments and efforts within the AAVSO. Your editor was there in July 2004 when Chris received the award. It was a spectacular evening onboard the retired USS Hornet- now a museum. This aircraft carrier had recovered many of the Apollo flights returning from the Moon. Some of the Apollo equipment was on board for display. Including the quarantine vehicle the astronauts stayed in once they returned. The AstroCon banquet and awards ceremonies were held on the hangar deck. Featured speaker was Apollo astronaut Alan Bean. It was a great moment for Chris, receiving this award. All MVAS'ers should be proud.
L to R: Patrick Wills, Ron Zissell, Mike Simonsen, Sebastian Otero, Chris Stephan, Charles Scovil, and Bill Dillon.

AAVSO photos continued….

Paula Szkody (L), is professional astronomer from the Univ. of Washington. Her sister lives in Sebring near Chris. He's giving his phone number to relay to Paula's sister. Marv Baldwin is on the right. This happened at the dedication of the new Head Quarters building. (The old *Sky and Telescope* office.)

The dedication of the new building with the AAVSO sign brought over from the previous building. The sign is at center of the photo.

Elizabeth O. Waagen gives a power point talk at the Hilton.

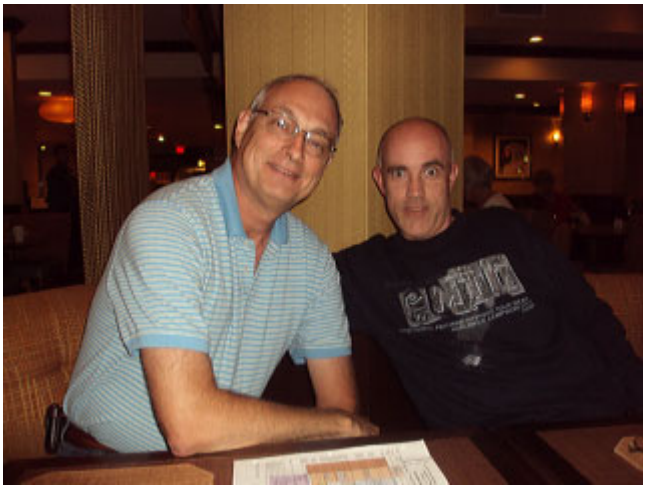
Dedication of the Dorrit Hoffleit Conference Center at HQ.

Former Directors Wall at HQ, from beginning to present. (L-R) Top: E. C. Pickering, William Tylor Olcott, Leon Campbell. Bottom: Margret Mayall, Janet Mattie. All deceased.

Chris with Matt Templeton. Matt is a professional astronomer that works at HQ.

AAVSO photos continued….

Doc Kline with Chris at the HQ Dedication. Doc runs the IT section at HQ. Chris leans on Doc for technical support.



Chris met with his long time collaborator Sebastion Otero from Argintina. They I co-published a paper on the eclipsing variable star V353 Hydrae about five years ago.

One wall of the Library at HQ. There are books from all over the world to be found here. Chris enjoyed this part of HQ. He even found the one that he once sent to Janet Mattei.

One field trip included an Duck Boat Ride on the Charles River, with a spectacular sunset view.

A gibbous Moon hung over Boston as clear skies prevailed during the event.

We thank Chris for bringing this report to the MVAS. Chris was the only representative from the MVAS to make it there. AAVSO and MVAS has had a rich history of working together on observations. We should srtive to maintain it. -editor