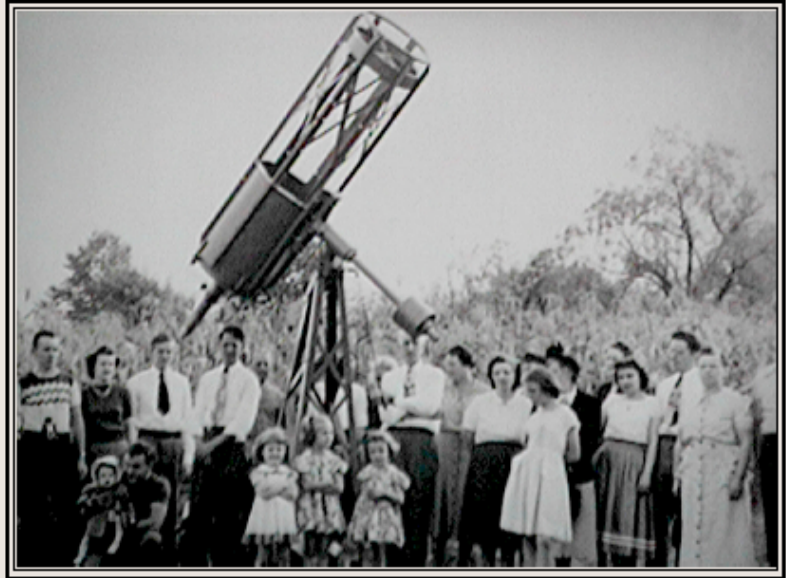


# THE METEORITE



## MVAS DEDICATION

Dedication of the Draper-Prather  
16" Cassegrain telescope on  
"Telescope Hill".  
September 11, 1949



Newsletter of the Mahoning Valley Astronomical Society, Inc.

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**OCTOBER 2014**

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



OCTOER 2014

NEWS NOTES

Newsletter of the Mahoning Valley Astronomical Society, Inc.

**MVAS CALENDAR**

- OCT 8** Total lunar eclipse begins 4:14 AM.
- OCT 18** **Anniversary Dinner** at the MVCO. 5:00 PM for meet & greet. Dinner at 6:00 PM. Talk at 7:00 PM.
- OCT 23** Sunset partial solar eclipse. Starts at 5:42 PM
- OCT 25** Business meeting at the MVCO. 8:00 PM
- NOV 8** "How To Buy a Telescope" at YSU. MVAS helps.

**NATIONAL & REGIONAL EVENTS**

**Oct 17-31** **The Great World Wide Star Count.** Your backyard or observing site will do. This is an international citizen-science event that encourages astronomers and non-astronomers alike, to measure their local light pollution and report their observations online. The Great World Wide Star Count, is designed to raise awareness about light pollution and astronomy. No prior experience is necessary--all the information needed to participate is on the Star Count Web site. An activity guide is available as a download.

[http://www.windows2universe.org/citizen\\_science/starcount/](http://www.windows2universe.org/citizen_science/starcount/)

**Oct 23-26** **Nightfall.** Held at Palm Canyon Resort , Borrego Springs, CA. The best star party in the desert of Southern California! Come join them for fun in the sun and stars at night in Borrego Springs- a Dark Sky City. <http://nightfallstarparty.com/>

**MVAS BOARD OF TRUSTEES**

President	Lou DiNardo
Vice President	Rich Mattuissi
Treasurer	Steve Bartos
Secretary	Phil Plante
Appointed Trustee (2014 & 2015)	Rosemary Chomos
Appointed Trustee (2013 & 2014)	Bob Danko
Elected Trustee (2014)	Don Cherry

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Assistant Director	Dave Ruck
Assistant Observatory Staff	Chuck Oiesen
Librarian	Rosemary Chomos

**PUBLICATIONS STAFF**

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Production / Editor	Steve Bartos
MVAS Webmaster	Sam DiRocco

1076 SR 534, NEWTON FALLS, OH 44444-9998  
 MVAS Homepage- <http://mvobservatory.com>

**Rough Rider.** On November 12, 2014- a month after achieving orbit around comet 7P/Churyumov-Gerasimenko, the Rosetta spacecraft will launch the lander Philae. Rosetta has since mapped the comets surface well enough to allow mission controllers to choose a landing location for Philae, the first-ever comet lander. Detailed maps show that the surface has deep slants and large boulders. Philae will be dropped from a distance of 1 km above the comet. No active steering will take place during descent. The expected time of touchdown is seven hours later at 10:35 AM EST. During the descent, Philae's ROLIS camera will take a continuous series of photos. The comet will complete more than 1/2 rotation during the descent; P67's rotation rate is 12.4 hours.

Philae has 12 different instruments on board. One is called CONSERT which will bounce low-frequency waves through its center, creating the first-ever image of a comet nucleus. Another instrument is APXS. This instrument is nearly the same as the instrument on Curiosity. It can detect what sort of minerals are embedded in soils and rocks. The Philae mission is only about three days. After the drop, that's when the Rosetta orbiter's prime mission truly begins. A year long study will begin. It will be a chance to study how it warms up, and how it responds to the Sun's radiation as it goes around the Sun. Scientist hope to study seasonal changes of the comet, as well as the dustier dynamics of the post-perihelion outbound journey. The mission officially ends on Jan 1, 2016.

**A Sea Change.** NASA's Cassini spacecraft is monitoring the evolution of a mysterious feature in a large hydrocarbon sea on Saturn's moon Titan. The feature covers an area of about 100 square miles in Ligeia Mare, one of the largest seas on Titan. It has been observed twice by Cassini's radar experiment, but its appearance changed between the two flybys. It was first spotted during the July 2013 Titan flyby. Previous observations showed no sign of a bright feature in that part of Ligeia Mare. Then the feature vanished when they looked again, over the next several months. During Cassini's flyby on August 21, 2014, the feature was again visible, and its appearance had changed during the 11 intervening months. The team has suggested the feature could be surface waves, rising bubbles, floating solids, solids suspended just below the surface, or perhaps something more exotic. Cassini researchers suspect that the changed appearance could be related to the changing seasons on Titan. Currently, northern summer is beginning on Titan. Monitoring such changes is a major goal for Cassini's extended mission.

**Planet Pluto?** In mid-September, the Harvard-Smithsonian Center for Astrophysics debated Pluto's planetary status, then put it to a vote. Dr. Owen Gingerich, argued that the term "planet" is a culturally defined term not a strictly scientific one. History had spoken -- Pluto is a planet. Dr. Gareth Williams, associate director of the Minor Planet Center, defended the IAU definition. Dr. Dimitar Sasselov, of the Harvard Origins of Life Initiative, also argued for planetary status, based on the exoplanet viewpoint.; a planet is "the smallest spherical lump of matter that formed around stars or stellar remnants." A public vote was then taken. Audience members decided that Pluto is indeed a planet. It's not known if the IAU will take the unofficial opinions of everyday science fans into consideration

## MINUTES OF THE SEPTEMBER MEETING

SEPTEMBER 27, 2014 at the MVCO

The meeting came to order at 7:55 PM with President Lou DiNardo presiding. Six of seven officers were present along with two trustees. Roll call had the meeting room packed with 31 members. The guests on hand included Virginia and Steven Bartos, Kaden and Natalie Ostheimer, and Diesel the Cat. Bob Danko moved to suspend the Reading of the Minutes and accept them as published. Dan Schneider made a second to the motion. By voice vote the motion carried.

**TREASURER'S REPORT:** The Report was read by Steve Bartos. Chris Stephan moved to accept the Report as read. Larry Plante seconded. The motion carried by a voice vote.

### General Fund 8/1 thru 8/31 2014

OPENING BALANCE:	\$	9,435.73
CLOSING BALANCE:	\$	9,390.90
AVAILABLE FUNDS (NON-RESERVED):	\$	5,162.78
ACCOUNT NET GAIN/LOSS FOR THIS PERIOD:	\$	-44.83

#### INCOME:

OTAA RAFFLE	\$	453.00
OTAA REGISTRATION		375.00
DUES (2015)		40.00
CALENDARS		20.00
MVAS MERCHANDISE		10.00
INTEREST		0.17
<b>TOTAL INCOME</b>	\$	<b>898.17</b>

#### EXPENSES:

CK# 2811 PUMP OUTHOUSE (A-1 SEPTIC)	\$	170.00
2812 2014-2015 MVCO RENT		500.00
2813 ASTRONOMY RENEWAL		60.00
2814 OTAA TENT, TABLES, CHAIRS		213.00
<b>TOTAL EXPENSES</b>	\$	<b>943.00</b>

#### Reserved Funds

OBSERVATORY ACQUISITION & DEVELOPMENT FUND	\$	3,914.12
MVCO KEY DEPOSITS		285.00
SUNSHINE FUND		30.00
<b>TOTAL RESERVED FUNDS</b>	\$	<b>4,229.12</b>

Membership dues paid by: R. J. Pandian (for 2015)

**CORRESPONDENCE:** We received another confirmation request from the Post Office on the mail box address. The name was still misspelled as when the previous correction was sent. We also received a letter from Scenic Vista properly spelled to "MVAS", but was dated for June 14th. It concerned a bike trail event-for fund raising. So much for the Post Office.

Jodi McCullough had a web mail correspondence with Bristol High School requesting that MVAS conduct a star party for them. Either at Mosquito Lake or at the High School. A show of hands had about a half dozen interested in this event. Jodi went over the few available dates before bad weather sets in. They were Oct. 10/10 & 24 or Nov. 14/15. These dates didn't conflict with MVAS events already scheduled. Randy Cox moved to conduct the stargaze, Don Cherry seconded. There were only several ayes and no objections. With the motion unresolved, the president asked Jodi to set-up a date and location that worked with the school. Bob Danko noted that Mosquito Lake was not an ideal location and there are no "facilities" on site.

Chris Stephan brought up the point of liability insurance for such events. He was concerned about not only injury at a remote site but of accusations of harassment or other perceived inappropriate behavior by club members. As a teacher in Florida he has seen this happen. In this day and age it could happen to

any astronomy club. There was discussion that pointed out no insurance policy would cover litigation over such matters. There may be concerns with injuries due to the nature of people moving around equipment in dark conditions. It was noted that the school or park would be responsible for liability, not invited "hosts" of the event. Randy Cox noted that the Lake Erie club carried a \$200/year rider for \$1 million for such insurance. It will be looked into.

**COMMITTEE REPORTS:** **IMAGING COMMITTEE:** Jodi McCullough gave a short power point that featured recent astro-images obtained during September. Very breathtaking. It included images from the McCullough's, Mike Hiem, Jim Haklar Don Cherry and Phil Plante. Lou DiNardo continues to process image data sent in to him from various imagers. He noted that Boardman light pollution is so bad that even digital techniques can't be used effectively. **VISUAL COMMITTEE:** No reports. **75th AANNIVERSARY:** Rosemary Chomos reports that we have 33 people signed up for the Anniversary dinner. She is still perusing telephone contact with past members. She asked if anyone had contact with family members from those that built the MVO. (names on the plaque). We will need to confirm that Mike Sprague will cook the briskets and set up a tent. We will order chairs. There was a move to buy a new 60 cup coffee urn. Tony Mehle has donated the urn he has used at past Christmas parties. Many thanks Tony. We will still use this at Christmas dinners.

We will have a half sheet cake, cheese cakes and Rita's Italian Ice- only two flavors; Mango and Pumpkin. Pat Durrell has volunteered to be the emcee. Sharon Shanks will produce a program. Jodi is looking into having punch; needs a good recipe. Other drinks will likely be a last minute call for help. Parking attendant needed. We'll probably park up top like at the OTAA. Don Cherry will be the event photographer but other cameras are welcome. Chris Stephan will bring 4 extra tables and a 12'x12' tent. Likewise Randy Cox will bring a 12'x12' tent. Allen and Bette Heasley will be using Skype to join us. We will need to take a group photo early while there is still daylight. The tentative schedule is: 5PM meet & greet; 6PM dinner; 7PM lecture by Dr. Jerry Ehmen of Ohio State (radio astronomy). Raffle and other business to follow. Observing if clear.

**OFFICER REPORTS:** **OBSERVATORY DIRECTOR:** Larry Plante hasn't been up since the OTAA but reports that the gate lock is stuck closed. He has a new lock and it will be installed once the old lock is removed. It will have the same combination number. The chain for the shutters had broken again. This is a new "heavy duty" chain he just installed. Purchased at Lowe's, it seems neither Lowes nor Home Depot have what we need. He will order a welded steel chain from McMaster-Carr via internet. It has a 500lb rating. The chain was repaired before the meeting with some spare chain left over from the most recent replacement. Phil had Homework but it was not collected (yet) **LIBRARIAN:** Nothing to report.

**OLD BUSINESS:** Randy Cox and Phil Plante were inspecting the roof to see what could be done regarding an intermittent but perennial leak under the dome. Randy has some ideas and will formulate a plan once he obtains roof measurements. He has been training on MVCO equipment and hopes to qualify for a key. Larry hopes to make a few spare copies of the 8" building door knob key- it's only useful for those that already have an MVCO dead bolt security key. One needs to qualify on the equipment to obtain the security key. You can only get into the buildings if you have a security dead bolt key (it also requires a

deposit payment for the key). It will be investigated (by Jodi?) to see if Pandian can join us via Skype for the Anniversary Dinner. Phil reminded us that we have a "How to Buy a Telescope" seminar at YSU on November 8th. Details of how this will go is still in the works. We'll likely need a few telescopes for demonstrating to the public; Just in time for the Christmas shopping season! It was pointed out that we have no host scheduled for the October meeting. It was thought there might be enough left-over's from the dinner. As such, everyone seemed to agree that we make it a cook-out, pot luck deal. The usual party time menu. Halloween costumes optional.

**NEW BUSINESS:** Steve Bartos had the new Astronomy 2015 Calendars on hand as well as the usual MVAS merchandise. No other new business brought up.

**GOOD OF THE SOCIETY:** Jodi & Roy, Sharon, and Phil were on hand for the September 7 Days of Stem at the planetarium, September 19th. There was a good crowd of 30+ folks that attended the planetarium show then came out to observe star clusters and double stars outside the planetarium. Skies were clear and temps pleasant. Possibly a repeat next year?

**VISUAL REPORTS:** Jodi reported on the Iridium flare spotted at the aforementioned YSU-Stem event. With the super clear nights of late, Bob Danko was able to see the Milky Way from his front yard despite all the light pollution. He also spent time observing at the MVCO with his cousin. Dan Schneider spotted the Ring from his backyard in Boardman, Sue Alexander and Randy Cox observed from the MVCO. Phil Plante and Randy used the 25" for a few variable stars and a bunch of deep sky. Fantastic views of the Veil nebula (both). M-17 was amazing. Don Cherry saw green Aurora Borealis from the Lake Superior area- while backpacking. Jodi & Roy's neighbor with outside lights has moved out (yea!) The new neighbor will banish out door lights. They watched a Jupiter moon reappearance. Chris Stephan had 140 variables in September. Phil had 42.

**ADJOURNMENT:** Adjournment came at 8:47 PM. We thank our hosts Dan Schneider for the sandwich tray, Rosemary Chomos for the cakes and Larry Plante for the drinks. The next meeting will be at the MVCO on October 25, 2014. Meeting begins at 8:00 PM. No scheduled hosts. Please bring something for the cook-out. **PASSWORD:** Give the name of a past MVAS member. -- *minutes by Phil Plante*

**After Social Hour:** Phil Plante gave a presentation on how to make a telescope mirror. He covered general principles, general grinding and polishing techniques and a review of Foucault testing and plotting knife-edge readings. It was a clear night and several personal scopes were in use until 1AM. Dewed up.

### MVAS REMINDERS

**Total Lunar Eclipse.** This eclipse begins partial phase at 5:14AM EDT on Oct. 8, 2014 (Wed. morning). The Moon will be 24 high in the SW. Maximum eclipse will be at 5:54AM. The Moon will set 15 minutes after it leave totality. We will miss the last half of the eclipse in Ohio and eastward. The MVCO will not be a good place to watch The hill and trees west of the observatory blocks the view. You'll need a clear western horizon. If you're lucky this might be from your yard.

**Partial Solar Eclipse.** The one starts at 5:43PM on Oct. 23, 2014 (Thur. afternoon). Sunset is at 6:34pm. We'll have 51 minutes of it to watch. The sun will set about 15 south of due

west. That's about the width of out stretched index to pinky finger held at arms length (255 azimuth for the data hounds). **You need to use proper solar filters to observe or image this event.** If you feel "artsy" - find a spot a day or two before hand that has a nice foreground silhouette against the setting Sun for an interesting shot. As for the lunar eclipse you'll need a clear western horizon. Good luck. Let's see those shots!

**Anniversary Dinner.** You should have made reservations by now and have placed T-shirt orders. Check emails for last minute requests: help or supplies. Remember also that what ever is left over (food) will be consumed at the meeting the next weekend. It is a cook-out as well so remember to bring bbq and/or sides and desserts. What ever is left that you brought should be taken home by you. The MVCO will soon be "closed" for winter. The refrigerators will be shut down. Perishable items will be tossed.

**Siding-Spring and Mars.** Watch for comet Siding-Spring to be very near Mars on Oct. 19th. It will be around 9th magnitude. Mars will be very low in the south western sky that evening. The comet will be passing about 80,000 mi. from Mars at that time.

### MVAS ACTIVITIES

**7 Days of STEM.** The seven day celebration of Science, Technology, Engineering and Mathematics was conducted in Youngstown, September 15th to 21st. One goal was to provide a variety of hands-on, interactive learning opportunities rooted in STEM. The Ward Beecher Planetarium was a logical site to participate in the program. Hence the MVAS was asked for volunteers. Five members participated. Of course, Sharon Shanks of ran the planetarium shows having at least 100 people on Thursday evening. On Friday, Jodi and Roy McCullough, Phil Plante, later Rosemary Chomos set up telescopes for sidewalk astronomy outside the planetarium. About 30 people attended the show- then stepped out to observe star clusters and double stars thru the McCullough's 12" GoTo Dob and Plante's 4.7" Refractor. Lights were turned off and one covered with a tarp. Dark enough considering the downtown location. It was a clear and pleasant evening. Observing was over by 9:40 PM. Not sure what is in store for next year, but in talking with one of the organizers, she mentioned events that were going on at the Mill Creek Experimental Farm. A more suitable location for sidewalk astronomy. Maybe we'll be there? Stay tuned.

**Black River OTAA.** It was another great Black River meeting. Held Sep. 20th at the Birmingham Methodist Church. Nice blue skies greeted everyone arriving for 5PM registration. Plenty of time to visit with friends from ACA, BRAS, CAA and CVAS. About fifty-two people came out to congratulate and help celebrate Black River's 65th anniversary! They had a huge home-made sundial set up next to the pavilion. biggest in country?) Good food as usual. Pasta, chili, beans and kielbasa. Desserts galore. A special 65th anniversary cake on top of it all. Door prizes for all. The three MVAS members each got a nice prize. Larry, Steve and Phil made it. Former member John Napp was there as well. He has moved from Warren to Wooster. Observing was not possible. A storm was moving in from the west about 10mi. away at 8:30 PM. Some were leaving not too soon after that time (MVAS too). This closes out the OTAA convention season. Poor weather seemed to afflict everyone this year. But the camaraderie trumps all clouds. I'm looking forward to the 2015 OTAA meetings.

## 75 Years of MVAS Telescopes

On October 17, 1939, 16 charter members met at Warren Public Library for the first business meeting. Officers were elected and the name Mahoning Valley Astronomical Society (MVAS) was adopted. Meetings were held on a monthly basis, with members hosting the meetings in their homes. In May of 1941, the city of Warren, OH offered the use of park land for an observatory, grateful of the offer, the MVAS was not ready for this and declined. Public star gazing events were conducted over the years at various parks in Warren. Members used personal telescopes, for these events. Jack Draper likely made a few of them. In May of 1944, Jack Draper and Charles Prather began working on a 16" telescope mirror for use in a Cassegrain.

In November of 1947, the Draper/Prather 16" Cassegrain telescope was offered to and accepted by the MVAS. John and Martha Hoynos then offered the use of their farm in Braceville as a site for the new telescope. The 16" Cassegrain telescope was soon installed on "Telescope Hill" just SE of the house. It was an open air telescope, covered by a tarp for storage. On September 11, 1949 the telescope was dedicated. The telescope would battle the elements over the years, and the idea of an observatory building slowly become a goal. But it would be 11 years before this goal was realized. Meanwhile, scouting, social and church groups would visit the farm and observe through this 16" telescope.

By May of 1961, construction of an observatory began; under the leadership of Bernie Cortese and Allen Heasley. On September 29, 1962 Ohio Governor Michael DiSalle dedicated the building in a special ceremony. By 1964, members of the MVAS began observing variable stars for the *American Association of Variable Star Observers*. Over the decades, other observers have used this telescope for lunar crater timings, photometry, lunar occultations, and detecting the Martian atmosphere during the □ Gem occultation by Mars in April 1976.

It would seem that one telescope is never enough. In 1964, Jack Draper completed an 8" achromatic lens using the lens blanks owned by John Hoynos. The "Annex B" building was built to house the 8" Draper/Hoynos refractor. It was dedicated on August 26, 1965. This building featured a roll-off roof. The 8" is a favorite telescope for our casual observers. Aperture fever struck again; a desire for an even larger telescope surfaced. The search was on for an even bigger mirror blank, perhaps 24" in diameter.

A 25" fused quartz blank was obtained in January 1966 from General Electric. This may have a connection to G.E.'s attempt to cast a fused quartz mirror blank for the 200" Hale Telescope. Our 25" may be a test blank for the 200" project. Ultimately Corning Glass would make the 200" out of Pyrex. The 50" mirror blank was obtained in 1971 from Corning and long standing MVAS lore had it that this glass is connected to the 200" mirror and Corning's testing of Pyrex. Eventually the 50" would be ground to an F/4 curve by Merle Cook. After Cook's death in 1975, it was moved to Walter Mackey's garage for follow-up work. But with dwindling support, work stopped. It was moved to the MVCO in September 2009.

Meanwhile, the 25" mirror was finished by September, 1973. Bill Thompson, Bob Clyde and Bob Aley all worked on the mirror. A huge steel fork mount design was found- John Montsanti constructed it over the next few years. The project

slowed to a halt by the late 70's. The mirror was moved to a room at the YSU Physics department. The mount was stored under a tarp on Bernie's property. It would eventually be lost to rust and estate squabbles in 2000. In the early 1990's interest in the 25" re-kindled. After members Foucault tested the mirror at YSU, a testing mount was constructed. After passing the test, it was aluminized, seeing "first light" on July 29, 1996. It was cumbersome to use and was used only during OTAA events. Eventually the test mount was tossed onto a burn pile in 2001 when the new 8" building went up. The mirror sat covered, on a pallet, in the 8" building.

In June 2000, Bernie Cortese, passed away. The Mahoning Valley Observatory was soon re-named to *The Mahoning Valley Cortese Observatory* (MVCO), in tribute to Bernie. Meanwhile other projects occupied the MVAS work force. In 2001, a new wooden building was constructed to replace the old steel building housing the 8" refractor. Time had taken its toll on the structure. By 2002, preparations to host the annual meeting of the *Association of Lunar and Planetary Observers* was the focus of activity. Held in Boardman, OH, 63 people attended the successful event.

In early 2004, four members began to work as a closed team, on a new mount for the 25". It would be a Dobsonian style mount- which could be constructed from wood,, aluminum and stainless steel. Over the course of several weekends in June and July, the scope came together at the MVCO. On August 6, 2005, the scope was dedicated to all those that had worked on the project, past and present. It was named Titan. In June of 2006, the MVAS purchased a 10" Meade SCT and Losmandy GE11 mount from the CVAS. Its purpose was for digital imaging. In late 2005, Richard Smelko arranged to have Lakeview High School donated an unused 12" Research Grade reflector to the MVAS. This initiated the construction of a building to house it in April 2006. It also has a roll-off roof and adjoining deck with a pier for the Meade 10" SCT.

Soon after, Lou DiNardo donated a 10" Meade reflector, now sitting in the 8" building. In March 2008, Ron Doman donated an 8" Dynamax SCT and a 4" Draper refractor. The Draper is attached to the 16" Cass while the 8" SCT stores in the 12" building. Telescopes define our hobby. Telescopes have defined the MVAS. The MVCO has been blessed with many fine instruments. And it has been our home since 1949. Over the decades, thousands have peered thru the 16" and 8". Our newer telescopes are ready to continue the legacy. In this 75th Anniversary year, we should all have a look- in tribute to those past MVAS telescope makers that had a vision. -P. Plante

### OBSERVER'S CHALLENGE: 1C1396

To be sure, Cepheus is not a "glamorous" constellation. But it has a few gems. Start with 3rd mag.  $\mu$  Cep; Hershel's Garnet Star, just to the south. Some observers see it as deep red while others see it as an orange colored star. It is a variable star as well. South of it lies the large 3° wide reflection nebula IC 1396. You need very transparent and dark skies to spot it (a wide field too). Perhaps large binoculars will grab this nebulosity? Buried deep within its center is open cluster Trumpler 37. Imagers might be interested in knowing that the Elephant's Trunk Nebula (IC 1396A) lies south of the central nebula. Visually it is a nice challenge as it is a dark nebula silhouetted against the reflection nebula. The IC1396 complex is about 3,000 ly away. When done with this, hop over to  $\delta$  Cep. The prototype Cepheid Variable and a nice double star to boot. Alberio-like in appearance.

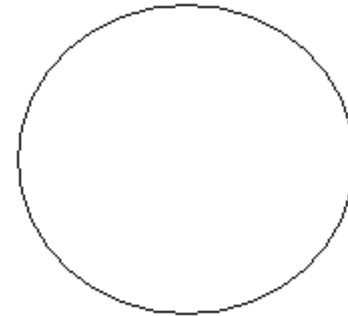
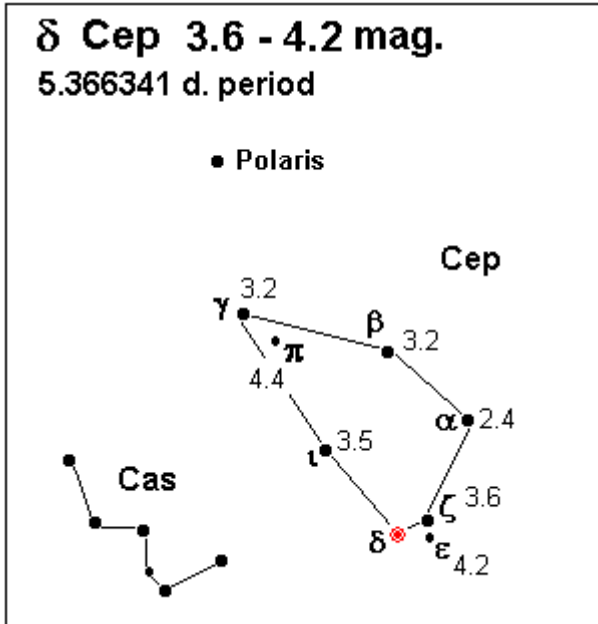
**MVAS OBSERVER'S CHARTS**

**MVAS OBSERVATIONS - (Homework)**

**Variable star of the month:  $\delta$  CEP** (abbrev:  $\delta$  Cephei). It varies from magnitude 3.48 to 4.37, and its stellar classification varies from about spectral type F5 to G3. The sun is a G5 star, thus hotter to cooler. The pulsation period is 5.366341 days, with a rise to maximum occurring quicker than the subsequent decline to minimum. Visually it is a nice color contrasting binary in a scope. But record your estimates with binoculars every clear night. Use  $\epsilon$  and  $\zeta$  as comp stars. Then trace out the light curve.

OBSERVER \_\_\_\_\_

**Featured object: IC 1396** . The nebulosity will be difficult to see visually but you can plot all the stars you see. If you detect a persistent background glow, put down some light graphite that mimics the shapes. Later check a photo of 1396 to see if any of it matches what you saw. Try using a deep sky filter. A wide field RFT type scope is likely your best bet.



**IC 1396 Observation:**

Date: \_\_\_\_\_ Time(EDT) \_\_\_\_\_ Scope \_\_\_\_\_

**$\delta$  Cep magnitude estimates:**

Date: \_\_\_\_\_ Time: \_\_\_\_\_ estimate: \_\_\_\_\_ Instrument: \_\_\_\_\_

_____	_____	_____	_____
_____	_____	_____	_____

**(52) Europa Observations:**

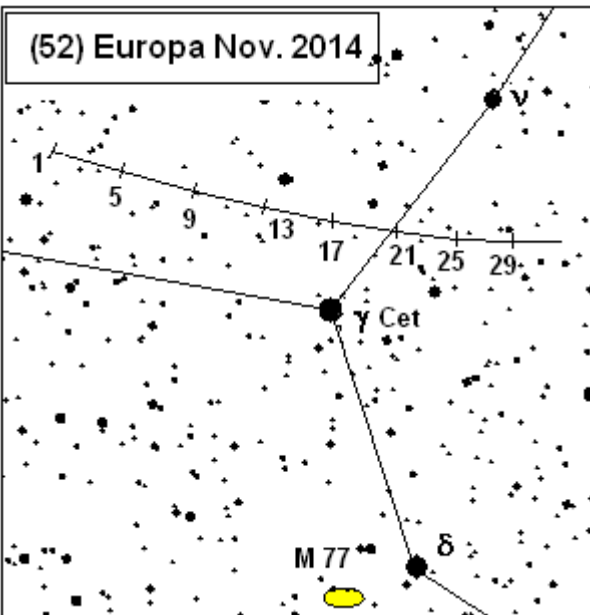
Date: \_\_\_\_\_ Time: \_\_\_\_\_ Instrument: \_\_\_\_\_ magnification: \_\_\_\_\_

_____	_____	_____	_____
_____	_____	_____	_____

**Asteroid of the month: (52) Europa.** This month we'll follow our asteroid with a scope. It is faint at 10.5 to start, dropping to 10.8 by months end. It will be in the SE 30 to 48 high by months end at 9:00 PM EST. It will be traveling east to west just north of  $\gamma$  Cetus. Check-out M-77 near  $\delta$  Cetus while you're in the area. Chart limit is 10.5mag. M-77 is at 9.4mag. Good luck!

**Other Objects in Cepheus to observe**

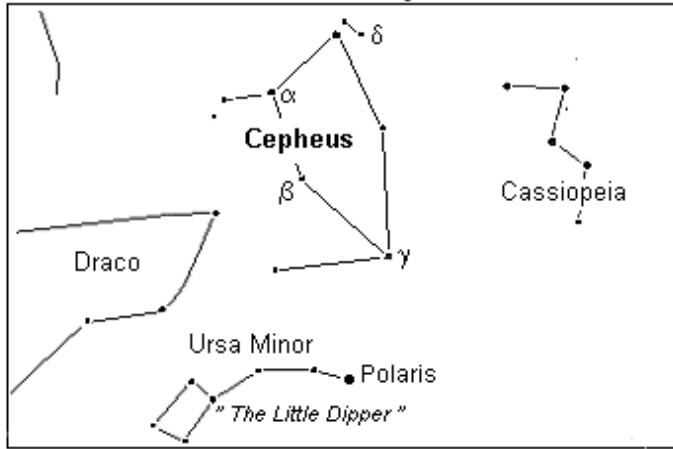
D. Sky	Date	Scope	DbI.	Date	Scope	SEP	MAG	SPLIT?
N- 40	_____	_____	$\beta$ Cep	_____	_____	13.4"	3.2 - 7.8	Y / N
N- 7822	_____	_____	$\Sigma$ 2816	_____	_____	11.8"	5.7 - 8.1	Y / N
N- 7380	_____	_____	$\xi$ Cep	_____	_____	7.9"	4.4 - 6.4	Y / N



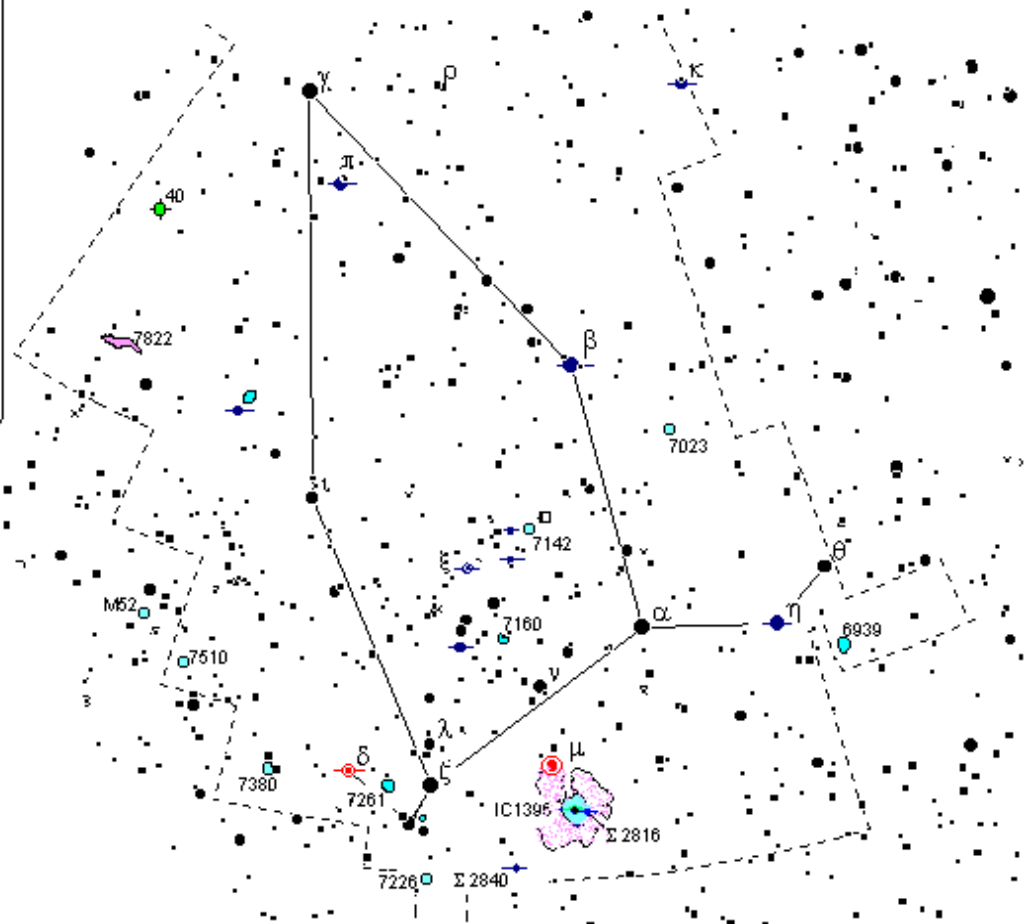
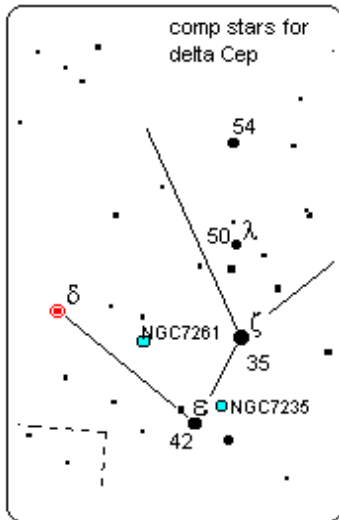
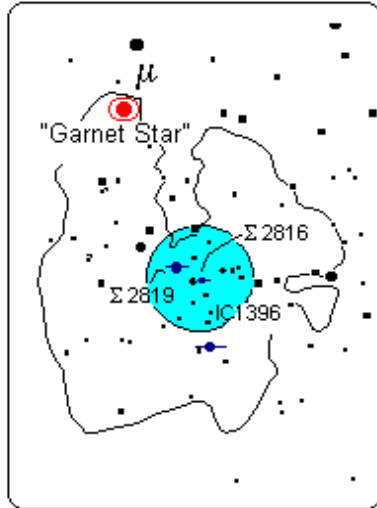
**Lunar Occultations (see Sky Almanac):**

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

# Constellation of the Month — Cepheus



Cepheus the "King" is not easily seen from city environs. But in darker skies it can be seen rising in the NE as late summer nights progress. When over the Pole, it will appear upside down compared to the chart below. There is a faint band of Milky Way running across the bottom. Sweep the area with binoculars. Can you find Herschel's "Garnet Star"? A deep orange color, it may be spotted with naked eye. Also known as mu Cep, it is variable and is a nice star to follow for a few years! The other famous variable star is delta Cephei. It has a shorter period of just over 5 days. Stars of this type were the first "yardsticks" used to measure galactic distances. Something you could read about on those cloudy nights. Delta is also a fine Alberio styled double star so be sure to take a look. Struve 2816 is a fine double and UV light from it illuminates a faint nebulosity around IC1396. Can you detect it? Planetary nebula NGC40 is considered by some to be a fine, elongated planetary; with a bright center star. NGC7822 has a few bright streamers. Can you spot them? Notice the abundance of open clusters? They seem very similar on paper but how about in the eyepiece? Same thing with our selection of doubles. Cepheus serves up a fine offering to telescope users. Certainly, sights fit for a King.



DEEP SKY			STARS - DOUBLES:			Check list		Instruments used: _____ on _____ _____ on _____ _____ on _____
N40	PN	10.7 48" 11.5 mag cen. str.	$\kappa$	4.4 - 8.4	7.3" white, blue	_____ N40	_____ IC1396	
N7822	BN	-- 72"x26"	$\beta$	3.2 - 8.6	13.4" gmsh., blue	_____ N7822	_____ $\kappa$	
N7023	OC	7.1 5'	$\xi$	4.4 - 6.4	7.9" lemon- blue	_____ N7023	_____ $\beta$	
N7142	OC	9.3 4.3' 100 stars	$\Sigma$ 2816	5.7 - 8.1	11.8" yell., blue	_____ N7142	_____ $\xi$	
N7160	OC	6.1 7.0' 12 stars	$\pi$	4.6 - 6.8	1.1" yell., purple	_____ N7160	_____ $\Sigma$ 2816	
N6939	OC	7.8 7.0' 80 stars	$\omicron$	5.0 - 7.3	3.2" yell., blue	_____ N6939	_____ $\pi$	
N7510	OC	7.9 4.0' 60 stars	$\delta$	4.2v- 6.1	40.6" yell., blue	_____ N7510	_____ $\omicron$	
N7261	OC	8.4 5.0' 30 stars	$\mu$ Cep	3.4 to 5.1 mag.	730 day period	_____ N7261	_____ $\delta$	
N7380	OC	7.2 12' 40 stars				_____ N7380		
IC1396	OC	3.5 49' 50 stars & neb.						
						the "Garnet Star" $\mu$ Cep was _____ mag. on ____/____/____		

**Solar and Lunar (EST).**

Date	Sunset	Moonrise	Moonset
1	6 : 19	— : —	1 : 45a
5	5 : 15 <b>EST</b>	— : — <b>EST</b>	5 : 23a
9	5 : 10	7 : 42p	— : —
13	5 : 06	11 : 22p	— : —
17	5 : 03	2 : 12a	— : —
21	5 : 00	6 : 12a	— : —
25	4 : 58	10 : 07a	8 : 22p
29	4 : 56	12 : 54p	— : —

**PLANET WATCH**

Venus Sets	Uranus Transits	Jupiter Rises
6:27 PM	11:29 PM	1:16 AM
5:25	10:13	12:02
5:23	9:57	11:45 PM
5:22	9:41	11:31
5:22	9:25	11:17
5:22	9:09	11:02
5:24	8:53	10:47
5:26	8:37	10:32

**November 2014**

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

**Asteroid for November 2014 (52) Europa**

Date	Rises	RA		Dec.		at 9:00PM EST		
		hr.	min	deg.	Alt.	Azm	Magnitude	
1	1 : 38 AM	02 : 56	+ 05	29°	111°	10.5		
5	12 : 19 AM <b>EST</b>	02 : 52	+ 05	32	115	10.5		
9	12 : 00 AM	02 : 49	+04	35	120	10.5		
13	11 : 41 PM	02 : 46	+04	38	124	10.5		
17	11 : 23 PM	02 : 43	+04	41	129	10.6		
21	11 : 04 PM	02 : 41	+04	43	134	10.7		
25	10 : 45 PM	02 : 37	+04	46	140	10.8		
29	10 : 27 PM	02 : 35	+04	48	146	10.8		

**Date UT hr Celestial Highlights**

1	19	Mercury 19° W. Elong.
5	17	S Taurids peak
6	22	<b>FULL MOON</b>
12	16	N Taurids peak
13	01	Venus 1.5° S. of Saturn
14	14	Jupiter 5.0° N. of Moon
14	15	<b>LAST QUARTER</b>
15	07	Regulus 4.4° N. of Moon
17	23	Leonid meteors peak
22	12	<b>NEW MOON</b>
29	10	<b>FIRST QUARTER</b>

Variable Star of the Month: **delta CEP** 3.5 - 4.4 mag 5.366341 day period

**LUNAR OCCULTATIONS FOR NOVEMBER 2014**

Civil date	hr	min	sec	UT date	hr	min	sec	Ph	Moon % illum.	Moon alt	Moon azimuth	Star name	Star Mg	event PA	dbl./ sep.
10	22	05	38	11	03	05	38	<b>R</b>	81-	15°	80°	26 Gem	5.2	343°	.008"
11	22	25	03	12	03	25	03	<b>R</b>	72-	9	77	68 Gem	4.3	250°	.190"
13	5	07	50	13	10	07	50	<b>R</b>	61-	62	169	XZ 1281	6.3	285°	.100"
28	20	42	33	29	01	42	33	<b>D</b>	45+	29	227	36 Aqr	6.5	122°	.100"

**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.....

## *A History of MVAS Telescopes:*

In the 1940's, members used personal telescopes for star parties and family gatherings. Many were Jack Draper scopes.



Above: family picnic- summer 1942. Draper at center, black suit.



Picnic in 1951



Mars watch Sep. 1956.

Installation of 16" on Telescope Hill (Hoynos Farm) June 1949. Summer picnics were held on site, members used the 16" along with personal telescopes. First OTAA meeting in 1956 was conducted in MVAS picnic fashion- same as today.



Construction of 16" building begins in June 1961. Jack Draper stands at left while Bernie Cortese is on the right. Bernie's crew laid the block. Many beer bottles were entombed in the blocks.



Allen Heasley stands with rings for the dome in the shipping dock at Van Huffle Steel. Allen arranged for their production and transport to the farm. It was quite an adventure involving the Highway Patrol controlling traffic along the route.



Dome ribs on site, it was time to construct the dome. It was built on the ground at the north side of the building- ribs installed and aluminum sheeting riveted in place. It would be lifted by crane onto the roof. Left is John Hoynos, center is Allen Heasley, at right is Bernie Cortese



The dome is lifted into place by crane.



Installation of shutters and completion of dome installation is next. Final touches to the building and stage takes place. Finally- MVAS has a someplace to call home.



The name "Mahoning Valley Observatory" was adopted in January 1962. An aerial shot of the observatory in 1963 shows that more work was needed. With room to grow!



On September 29, 1962, Ohio Governor Michael DiSalle attends a dedication ceremony at the MVO. Many local dignitaries attended the auspicious occasion. It was a proud moment for MVAS members.



Above: The steel framework for the 8" building takes shape.



In early 1964, Jack Draper begins work on an 8.25" refractor lens. The lens blanks for the achromatic belonged to John Hoynos. Allen would obtain the tube from Alcoa Aluminum.



Work on building a roll-off roof begins. Draper at left, John Hoynos to the right of Draper. Bernie Cortese is kneeling (white shirt). The concrete pad was poured in early June 1965.



A crane was needed to lift the roof onto the frame-work. Later the steel panels would be attached. Originally used for school bus siding, it fit the job and came a good price. Free.



By summer 1964, a pier was installed for the 8" refractor in time for that summer's OTAA meeting. A building was a year away.

Then AAVSO President George Diedrich was on hand for the dedication and ceremonies at the August 28, 1965 OTAA meeting. He cut the ribbon on the door of the new 8" building. They originally called it Annex B. This era also saw the MVAS become heavily involved in observing variable stars for the AAVSO.





In the early 1970's, astro-photography was performed using the 16". Left is the March 1970 partial solar eclipse, as taken by Delbert Ferry (L) and

Ron Parise (R). Photoelectric photometry was in practice using the 16" as well (below). All promoted by PEP expert Art Stokes.



April 1971, Bob Clyde takes up work on the 25" mirror.



April 1971, Merle Cook also begins work on the 50" mirror.



Above: In 1976 a steel truss tube for the 25" arrived at the MVO. Built by John Monsanti, it would be lost to estate matters when Bernie passed away in 2000. In 1996, 20 years later, Greg Klocek and Jim Svasta built a test mount for the 25" mirror (lower right). First light was on Jul 30, 1996. Larry Plante had the honors (Vega). Also present were Greg Klocek, Bob Danko and Phil Plante. The test mount would be abandoned due to its cumbersome deployment. A new mount was on the way in 2005.



In 2001, the venerable 8" steel building was replaced with a wooden structure. The original steel roof frame was kept. Rick Pirko came to the rescue when construction went astray. His framing crew set things right. Some that helped: J. Augustine, M. Baker, S. Bartos, M. Boyer, C. Davis, B. Danko, S. DiRocco, E. Eaken, H. Harker, G. Higgins, J. Jackson, K. Lowther, L. Minnium, R. Pirko, P. Plante, E. Small, B. White.



In July 2005, the *Fab Four* took the nearly completed 25" Dob mount out for "1st Light". (L-R) M Boyer, P. Plante, G. Higgins, S. DiRocco. It was dedicated at the OTAA - being named Titan.



In April 2006, construction of a new building begins. It is to house the newly acquired 12" Meade reflector from Lakeview High School. It was a donation late in 2005.



A pier on the deck was for the 10" Meade SCT purchased from the CVAS. It was to be dedicated to astro-imaging.



In September of 2009, the 50" mirror and grinding machine are removed from Walter Mackey's garage. It is stored on the front porch of the 16" building. It is not known what will become of this mirror. There was an attempt to sell it in 2011 but those plans fell through as the buyer had passed away. There has been recent interest in the mirror from two individuals but this seems to have faded. The 50" is the last legacy project of the MVAS. The debate continues....



In March 2008, former member Ron Domen donates his Criterion Dynamax 8" SCT and a 4" Draper telescope. The 8" is stored in the 12" building and gets occasional use at OTAA events. The 4" is mounted on the 16" and is used nearly every month as weather permits.

The MVAS has had a long history and connection to big telescope projects and observatories. With luck, this can continue into the next 75 years. All we need are today's versions of Draper, Shallenberger, Prather, Hoynos, Cortese, Heasley and Cooke. We have come close in recent projects. But those guys are the giants we should aspire to become. If we have that, there would be no doubt. -P. Plante

*Photos courtesy the MVAS Archives: By Bob Andress, Ron Domen, Allen Heasley, Phil Plante.*

Black River OTAA - Sep. 20th, 2014  
 Congratulations on your 65th Anniversary!



A Super Sundial greeting was nearly outdone by the lure of those grilled hot dogs. A Black River specialty and tradition.



Door prizes galore.  
 Enough for all!



The Food table- watch for that hot chili! yum! Meat balls were the best.



There is always room for Anniversary cake!



Then we caught a group photo before sunset.



MVAS waits for the chow line to form.



Hey-- they had some cool stuff at the swap table. A few W-O refractors at reasonable rates.