

# *THE METEORITE*



## M-15 In Pegasus



Newsletter of the Mahoning Valley Astronomical Society, Inc.

### *IN THIS ISSUE:*

**SEPTEMBER 2013**

- ★ **Event Calendar, In Memoriam, A Nova**
- ★ **Minutes of the August Meeting**
- ★ **MVAS Reminders: Scenic Vista, October**
- ★ **MVAS Activities: OTAA, Scope Sales, 2014**
- ★ **Observer's Notes: Exoplanet "Memories"**
- ★ **MVAS Homework: M-15, Globular Cluster**  
Homework Charts: R Peg, asteroid (324) Bamberga
- ★ **Constellation of the Month: Pegasus**
- ★ **October 2013 Sky Almanac**
- ★ **Gallery: The 2013 MVAS-OTAA**

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

# THE METEORITE



SEPTEMBER 2013

Newsletter of the Mahoning Valley Astronomical Society, Inc.

## In Memoriam

### MVAS CALENDAR

- SEP 14** Astro-Ham at Scenic Vista. 12 Noon till..?  
**SEP 28** Business meeting at the MVCO 8:00 PM  
**OCT 5** New Moon weekend. Observing at the MVCO.  
**OCT 12** "Observe the Moon" at the MVCO. 8:00 PM  
**OCT 19** Business meeting at the MVCO 8:00 PM

### NATIONAL & REGIONAL EVENTS

- SEP 28** **Oki-Tex Star Party**, Ends October 6th. Held at Camp Billy Joe. Near the border of Oklahoma, Colorado and New Mexico. Adults \$50 each. An 8 day star party under some of the darkest skies in the US. Has 2 swap meets, daily and evening talks, seminars and workshops. Catered meals, camping and bunkhouses available. Vendors on site. Dark and clear skies. <http://www.okie-tex.com>
- OCT 1-6** **Staunton River Star Party Fall 2013**. Held at the Staunton River State Park, Scottsburg, VA. This offers some of the last remaining dark skies on the east coast. Food and hot showers are available. Admission fees: Fees: \$60 for full event, \$35 for weekend. <http://www.stauntonriver-starparty.org>
- OCT 3-6** **South Jersey Star Party**. Belleplain State Forest, Woodbine, NJ, Registration: \$10 pre-register, \$20 at door. Sponsored by the South Jersey Astronomy Club. <http://www.sjac.us>

Long time MVAS member Agnes M. Bufwack, passed away Thursday, Aug. 8, 2013, at her residence. She was 94 years old. Agnes was born Aug. 15, 1918, in Johnstown, Pa., to George and Mary Sabo. Agnes was a graduate of Newton Falls High School. She had worked for five years at Livi Fabric Shop in downtown Warren. She was a member of Blessed John Paul II Parish (Christ our King Church), and Delta County Museum Society. She enjoyed hunting, fishing and especially the outdoors. Agnes was a prominent member of the MVAS in those early years. She joined the MVAS in 1955 and would go on to serve as secretary in 1957, 1960 and 1964. She dropped from active membership in 1979. In 2010 she was given Honorary membership status after regaining contact with the club. It had been her desire to visit the MVCO since reuniting in 2010, but sadly this never materialized. Health considerations and poor weather usually held back such plans.



She was preceded in death by her parents and Matthew, her husband of 54 years. Matthew also served as MVAS president from 1956 to 1957. Agnes is survived by her three children, Matthew J. Bufwack of Mantua, Mary (Robert Oermann) Bufwack and Mark C. Bufwack of Leavittsburg. She leaves her daughter-in-law, Robin Reed of Leavittsburg. She had four grandchildren, and six great-grandchildren. A Memorial Mass was held at 10 a.m. on August 13th at Blessed John Paul II Parish (St. Joseph Church).

**A Nova.** By now everyone has heard of the naked-eye nova; Nova Delphi 2013. The nova was discovered by Koichi Itagaki of Yamagata, Japan, in an image taken at 14hr UT (2 p.m. EDT) on August 14th. It was not present in a photo that he took the previous day. The star was apparently 17th magnitude before erupting, so it brightened roughly 100,000-fold to its peak around August 16th. Many MVAS members have had a look. It appears to have peaked at around 4.4 magnitude. So far it appears Nova Del 2013 is a "slow nova" - a type NB as listed in the Variable Star Index (VSX). By definition, it takes 150 days or more for a slow nova to fade by 3 magnitudes. This means it could remain in binocular sights for a while. So get a copy of the field chart from *S&T* or the AAVSO. Keep track of it. Such bright novae are rare and worth the look. You can watch the star fade out as the remaining white dwarf is left behind. In a sentimental take, it is curious that Nova Del reached peak brightness around the time of Agnes Bufwack's birthday of August 15th. And a week after her passing. Could it be? A new star shines to honor the life and spirit of a great MVAS member.

### MVAS BOARD OF TRUSTEES

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

### OBSERVATORY STAFF

Observatory Director	(Officer)	Larry Plante
Assistant Director		Dave Ruck
Observatory Staff		Chuck Olesen
Librarian	(Officer)	Rosemary Chomos

### PUBLICATIONS STAFF

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

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

## MINUTES OF THE AUGUST MEETING

AUGUST 31, 2013 at the MVCO

This August meeting was held outside where it was more comfortable than in the 16" building. The meeting came to order at 8:00 PM with President Lou DiNardo presiding. Five of the seven trustees were present. All current officers were present. Roll call was answered by 17 members. Three guests included Virginia Bartos, and Dominic and Nicholas Mattuissi. A Call for the Reading of the Minutes was made. Karin DiNardo moved to suspend the reading and adopt the Minutes as published. A second was made by Don Durbin. With no objection or further discussion, the motion passed by a unanimous voice vote.

**TREASURER'S REPORT:** The Report was read by Steve Bartos. Steve noted that this months \$640 loss will be recouped by OTAA proceeds, which will be reported in the next report. With no further discussion, a motion was made by Chris Stephan to accept the report. Larry Plante seconded the motion. The motion was adopted by a unanimous voice vote.

### General Fund 7/1 thru 7/31 2013

OPENING BALANCE:	\$	8,660.40
CLOSING BALANCE:	\$	8,019.07
AVAILABLE FUNDS (NON-RESERVED):	\$	3,804.95
ACCOUNT NET GAIN/LOSS FOR THIS PERIOD:	\$	-640.43

#### INCOME:

SUNSHINE FUND (STEPHAN, SHANKS, BARTOS)	\$	30.00
INTEREST		0.15
<i>TOTAL INCOME</i>	\$	30.15

#### EXPENSES:

CK# 2794 CEILING TITLES FOR 16" BLD.	\$	43.78
2795 PAINT SUPPLIES FOR 16" BLD.		187.25
2796 20 ASTRONOMY CALENDARS (2014)		129.50
2798 STAIN FOR 12" DECK		91.97
2799 PUMP OUT THE OUT HOUSE	\$	170.00
<i>TOTAL EXPENSES</i>	\$	671.48

### Reserved Funds

SUNSHINE FUND*	\$	30.00
KEY DEPOSITS (MVCO)		270.00
CASH FROM ORIGINAL OAD FUND (FOR LAND)		3,914.12
<b>TOTAL RESERVED FUNDS</b>	<b>\$</b>	<b>4,214.12</b>

[ The Sunshine Fund is a new Reserved Fund which members may make contributions to. This is to cover costs of get well/sympathy cards and/or memorial gifts when needed ]

**CORRESPONDENCE:** No mail received at the post office box. Chris Stephan reported that Allen Heasley sent him an e-mail about a congratulatory message from the AAVSO. It was in respect to his (Allen's) 49 years of observing efforts with the AAVSO. Chris noted that it was great that the AAVSO kept track of such things. Phil also received Allen's email and most considered this recognition as something that should be announced in the Meteorite. So it shall be.

**COMMITTEE/OFFICER REPORTS: IMAGING COMMITTEE:** Jodi McCullough posted small magnetic-backed photos of images taken by MVAS astro-imagers. These are posted on the chalk board, which can be moved out of the way to make use of the board when needed. Looks good. Thanks Jodi. **VISUAL COMMITTEE:** No Visual Committee Reports or Homework Reports were turned in. It was suggested we begin to study cloud patterns due to the persistent cloudy weather this year..

**LIBRARIAN:** Rosemary Chomos will wait until the roof repair is done before moving new books into the Library.

**OBSERVATORY DIRECTOR'S REPORT:** Larry Plante reported that the MVCO seems to be in good shape since the OTAA meeting. He thanked everyone that helped get the place ready for the OTAA meeting. That following Monday, several members went to the MVCO to meet with a flooring expert to investigate repair and beautification of the 16" floor. The proposed repair would be upwards of \$3,000; but this project is on hold. Meanwhile, Larry got a price quote on roof repair from the Amish contractor doing work on Mike Sprague's roof and house. This would be around \$3,300. The Amish contractor had stated the job would take two days, with no entry into the building or penetration of the existing roof. Larry thinks that this just might be the best price we could expect. Other contractors usually charge much more. We still have the option of doing it ourselves for around \$1,200.

Chris Stephan asked if we had voted to get this done at the last meeting. We voted to get quotes. Chris then moved that we get this done while the Amish crew was still working at the house. Karin DiNardo seconded the motion. Discussion followed: Phil wanted to be sure we avoid shingle roofing. Others agreed due to maintenance concerns. Phil was concerned about the extra load that this roof would place on the old block walls. There are cracks in the wall that have been there forever. It was agreed we should opt for steel panels as previously planned. Dan Schneider reminded us that we'd need a contract to specify materials and other design parameters, along with pricing. Chris then amended his motion to include obtaining a contract with pricing, design and materials specified. And that this project be completed before winter (November). Karin re-stated her second to the motion. A vote was taken by hand count. Fifteen for, 2 abstained. The motion carried.

**OLD BUSINESS:** Phil Plante reminded the group of our last Scenic Vista event on September 14th. It is the Astro-Ham event. Our Ham operators will be there at noon with their radio's tuned-in. Rich Mattuissi will have Scouts there around 6:00 PM. Check emails for last minute details on food, weather, etc. No other Old Business was brought up.

**NEW BUSINESS:** Chris Stephan asked permission to give a presentation about the Criterion Manufacturing Company at the next meeting. He will bring along the Dynamax-8 he had just purchased. It is a vintage model dating back to the 60's and is in mint condition. All agreed that this talk is a good idea. Since he has several eyepiece on the way, he asked if he could borrow the case of 1-1/4" eyepieces to try out on the new scope. He also asked if he could swap-out some of the eyepieces with some that he has ordered. All agreed that this would be okay.

Phil pointed out that Oct. 5th is a New Moon Saturday and that we have nothing planned. He suggested that we plan an observing session (star-party) at the MVCO. Jodi wondered if we should include Friday night as an option. It was decided to plan for both nights with email contact for go/no-go decisions. He also noted that there is an national event called "Observe The Moon" the following weekend. It is a 1st quarter Moon and would be an ideal time for members to learn some craters and other features, swap lunar notes or even try their hand at lunar imaging. Lunar observing is often neglected but it is the easiest thing to observe/image for the novice or veteran observer. It was decided to schedule both events and we'll see what happens - weather wise. When clear, October skies are usually the best we get around these here parts.

Chris brought up the prospect of selling the 50" on Astromart to raise funds for roof and floor repairs. He knew this is a touchy

subject. The ad would have to state that the buyer would be responsible for packing and pick-up. Don Durbin noted that the last time we tried to sell it, the proceeds were designated by vote, to go land acquisition funds (OAD) That ruled out funding other projects. Do suggested we table this discussion until an indoor meeting as the mosquitoes were on the attack. Of course, Phil was opposed to selling the mirror.

**GOOD OF THE SOCIETY:** Jodi will post the latest images of Nova Delphini 2013 and hopes to catch it as it fades.

**VISUAL REPORTS:** Lou has been hampered with clouds, Phil managed 1 vso's, Chris did 78 vso's of eclipsers using the MVCO 8". Larry saw two Perseid meteors.

**ADJOURNMENT:** With a mosquito motivation, Jodi moved to adjourn. All were in favor. Adjournment came at 8:30 PM. We thank our hosts Jodi and Roy McCullough for the most delicious sloppy Joe's and bean salad. Chips galore. The best was the ice cream sundae's - to build as you like. Your secretary was a happy camper. Thanks to Rich Mattuissi for the supply of sodas. The next meeting will be at the MVCO on September 28, 2013. Meeting begins at 8:00 PM. Scheduled hosts: Dan Schneider (meal), Paul and Jan Baker (dessert), Phil Plante (drinks). Chris Stephan will give a talk on the Criterion Manufacturing Co.

**PASSWORD:** Name a globular cluster. *-minutes by Phil Plante*

After the meeting, many sat around to discuss the 75th Anniversary plans. During this, TV newscaster Len Rome and friend dropped in to say hi and to check us out. Larry gave him a tour of the MVCO. This was a cool surprise.

### MVAS REMINDERS

**SEP 14: Astro-Ham.** This is a reminder that we have our last public event at Scenic Vista on Saturday September 14th. It begins at noon, rain or shine. The MVAS Ham Radio section will be doing their thing with their short wave radio's set up in the pavilion. This is a great chance to learn about this long popular activity and its connections with radio astronomy. Later that evening, as weather permits, a regular public star party will commence once the Sun dips below the horizon- around 7:35 PM. Check the e-mail group for last minute plans on food, etc. So what ever type of photons your receiving equipment collects, visible light or radio wavelengths, we welcome you to bring it along. Don't forget solar observing is a viable activity to complement the radio work in the afternoon

**OCT 4/5: MVCO Star Party.** This is an impromptu MVAS only stargaze to be held at the MVCO. It is a New Moon weekend and there are no more public events scheduled for this year. As a group, let's take advantage of a clear night if we are so lucky to have one. An MVAS star party is always fun. Keep in touch via e-mail to see if we'll have one Friday night or Saturday night. Maybe both! It depends on the sky situation. Food options would likely be to bring your own. We have a new grill ready to go. If you want to share, let us know.

**OCT 12: International Observe the Moon Night.** The International Observe the Moon Night (InOMN) is an annual event that is dedicated to encouraging people to 'look up' and take notice of our nearest neighbor, the Moon. From looking at the Moon with a naked eye to using the most sensitive telescope, every year on the same day, people from around the world hold events and activities that celebrate our Moon. Since this is a new event for us, we should give it a try with MVAS

members only. Learn lunar observing and imaging. Some might find it a way to practice aiming a telescope. It will be a 1st quarter moon. Once it sets the sky should be set for deep sky stuff. Same food plan as the star party the week before. Get set to be at the MVCO with your scope, binoculars and enthusiasm. Friends and others are welcome. If you have a big group 8 or more let us know. Visit the website for info about the international event. <http://observethemoonnight.org/>

### MVAS ACTIVITIES

**2013 MVAS-OTAA.** The weather forecaster people conspired to present false data concerning the observing conditions for this night of August 10, 2013. All forecast - local and national-predicted mostly clear skies and cool temps. Ideal for late night observing. But all day, thick clouds hid the Sun, and then the night sky. So many observers were disappointed. But as astronomers, we've learned to accept what the sky has to offer. With good friends to talk shop with and plenty of food around, we had a splendid time. In all 66 people came out to the MVCO for the OTAA meeting. Gary Smith of BRAS had his fantastic 3-D meteor display set-up. Chris Stephan had his "Mystery in the Sky" DVD sales table set-up next the door prize table.

After a sumptuous dinner, emcee Rich Mattuissi began the program with OTAA announcements and raffles. Once again everyone got a door prize. Rich Mattuissi of MVAS won the binoculars (really- was not a fix) Ray from CVAS won the eyepiece. We do hope they enjoy the views. Next up, Jodi McCullough gave a test of the group's passion for astronomy. Using remote "clickers", members in the audience chose an answer from a multiple choice list. Answers to questions on how you view various aspects of astronomy and related activities. The answers were tallied by computer in real time and results displayed instantly. It was an entertain if not enlightening exercise. There were a few obsessed astronomers in the bunch. Really? Only a few? Most attendees had left by 9:30 PM as the sky showed no sign of clearing. A few passing holes revealed the Big Dipper or Vega around midnight.

A big thank you goes out to all the MVAS members that helped with prep work, set-up, donation of prizes, food and drink. You make it work! We also send a heart felt thanks to all the OTAA folks that attended. Many loyal to the event over many years. Maybe we will have better skies next year?

**New Fridge:** We thank Chris Stephan for donating a new refrigerator to the MVCO. It has been stocked with soda and water. It replaces the silver colored fridge that stopped working just before the OTAA meeting.

### SCOPES FOR SALE:

**(One)** 10" LX200 Meade Telescope with accessories. Asking \$2,500 or best offer. Call Chris at 330-808-0023 or Ray at 216-269-4613. This is from the Chagrin Valley Astronomical Society. This was advertised at the MVAS-OTAA.

**(One)** 1 year old Orion SkyQuest XT-8 in like new condition. Included with the scope is a collimation tool, 2x Celestron Barlow, Telrad finder a eyepiece case and 25mm eyepiece. Also included are all manuals and tools that came with the scope. Asking \$350 for everything. MVAS has first crack before putting it on Craigslist. If interested or want to know the status of the sale, call Don Cherry (MVAS) at 330-647-3635.



## A Quick Look Ahead: MVAS 2014

Jan	11	Sat	YSU Telescope Workshop
Jan	25	Sat	MVAS Business Meeting at YSU
Feb	22	Sat	MVAS Business Meeting at YSU
Mar	22	Sat	Bino-Blast at MVCO. Sunset 7:38 PM EDT
Mar	29	Sat	MVAS Business Meeting at YSU
Apr	12	Sat	Chili-Fest 2014 at the MVCO. 7:00 PM
Apr	15	Tue	Total Lunar Eclipse. U1 at 1:58 AM EDT
Apr	20	Sun	Easter Sunday
Apr	26	Sat	MVAS Business Meeting at the MVCO
May	3	Sat	MVAS-OTAA Scenic Vista Stargaze. 8:23 PM
May	31	Sat	MVAS Business Meeting at the MVCO
Jun	21	Sat	Scenic Vista Public Night. Sunset 9:00 PM
Jun	28	Sat	MVAS Business Meeting at the MVCO
Jul	26	Sat	MVAS Business Meeting at the MVCO
Aug	23	Sat	MVAS OTAA meeting at the MVCO. 8:12 PM
Aug	30	Sat	MVAS Business Meeting at the MVCO
Sep	6	Sat	Astro-Ham at Scenic Vista. Sunset 7:48 PM
Sep	27	Sat	MVAS Business Meeting at the MVCO
Oct	8	Wed	Total Lunar Eclipse. U1 at 4:14 AM EDT
Oct	18	Sat	MVAS 75th Anniversary Celebration. 6:39 PM
Oct	25	Sat	MVAS Business Meeting at the MVCO
Nov	22	Sat	MVAS Business Meeting at YSU
Dec	6	Sat	MVAS Annual Meeting and Christmas Dinner

Here is a tentative schedule for 2014. Times are sunset for various observing events. All star parties are based on favorable lunar phases. Business meetings begin at 8:00 PM. We have 2 total lunar eclipses this year plus the 75th Celebration in Oct.

## Observer's Notes:

### Exoplanet "Memories"

With Pegasus as the constellation of the month, it might be a good time to visit an important star in this constellation. It is 51 Pegasi (abbreviated 51 Peg). It is a 5.49 magnitude Sun-like star 50.9 light years away from Earth. It has a stellar classification of G5V making it a main sequence star and a very close match to our Sun's physical properties. The effective temperature of its chromosphere is around 5571° K, giving 51 Peg the characteristic yellow hue of a G-type star. It is estimated to be 6.1–8.1 billion years old, somewhat older than the Sun, with a radius 24% larger and 11% more massive. It has a rotational axis inclination of 79° (+11°–30°) relative to Earth.

Although the star was suspected of being variable during a 1981 study, subsequent observation showed there was almost no chromospheric activity between 1977 and 1989. Further observation between 1994 and 2007 showed a similar low or flat level of activity. This suggests that the star may be experiencing a Maunder Minimum type period. Like the Sun, this is a time in which a star produces a reduced number of star spots.

On October 6, 1995, Swiss astronomers Michel Mayor and Didier Queloz announced the discovery of an exoplanet orbiting 51 Pegasi. The discovery was made with the radial velocity method, using a telescope at Observatoire de Haute-Provence in France. They used the FLODIE spectrograph to measure its radial velocity and detect small velocity changes due to an unseen orbiting body. On October 12, 1995, confirmation came from Dr. Geoffrey Marcy of San Francisco State University and Dr. Paul Butler from the University of California, Berkeley. They used the Hamilton Spectrograph at Lick Observatory near San Jose, California

51 Peg was the first star discovered to have a planetary-mass companion. The planet has been informally named **Bellerophon**. After its discovery, many teams made more observations which confirmed its existence and also obtained more details of its properties. These include that the planet orbits very close to the star. It endures estimated temperatures of around 1200°C. It has a minimum mass about half that of Jupiter. The close orbital distance was not compatible with theories of planet formation and resulted in theories of planetary migration to explain the closeness. It has been assumed that the planet shares the star's inclination of 79°. However several other "hot Jupiter's" are known to have oblique orbits relative to the stellar axis. As of 2012, no additional planets have been found orbiting this star.

We can use binoculars and the constellation chart of Pegasus in this issue of the *Meteorite* to spy upon this system. It looks like any other star, so we'll need to use our imagination to make it seem special. When viewing galaxies, we often marvel at the thought of seeing so far back in time and space as we ponder that faint fuzzy in the eyepiece. Likewise we can think back to when the light left the 51 Peg system. Those photons have traveled for 50+ years; and they bring a memory of decades past. Perhaps you might remember those times.

As of this September (2013) the light we see left 51 Peg in September 1962. It was around that time that a few astronomers in the Mahoning Valley built an observatory. A place to collect stellar photons. But the 1960's would go on to be a pivotal era for the world. One year later the nation's political innocence was shattered with the JFK assassination. Later, the so-called "British invasion" would forever change popular music, social views and culture. A contentious war increasingly tore at our Nation's soul. Americans (vs. Russians) embarked on an epic race to place human boot prints on the lunar surface. Civil unrest and protests forged new thinking. By most accounts it was a turbulent decade. But we survived the 60's and points beyond. Like those photons, we have persisted during our travel through time and space. The light from 51 Peg reaches us now to remind us and inspire us. Wow... all that from a star with a planet? Take a peek at 51 Peg. Maybe you'll travel down memory lane for while. But it's Okay if you just shrug your shoulders and call it a night. -P. Plante

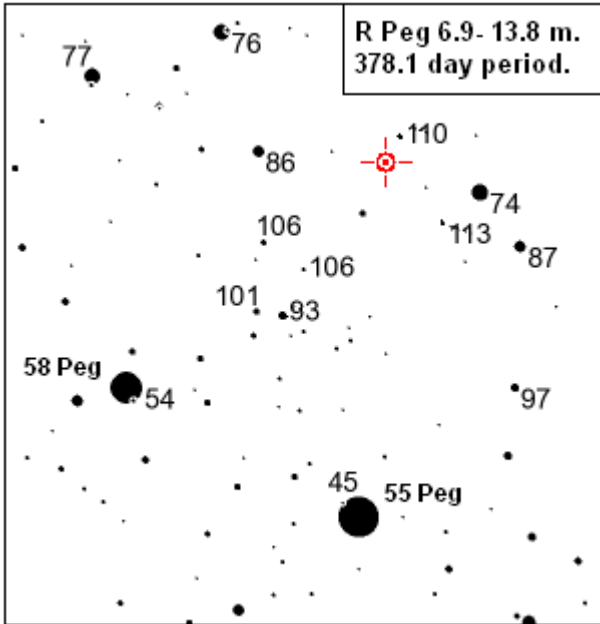
## MVAS Homework: M-15

M-15 (aka NGC 7078) is a globular cluster in Pegasus. It was discovered by Jean-Dominique Maraldi on September 7, 1746. Messier put it in his catalog on June 3, 1764. It is estimated to be 12.0 billion years old, making it one of the oldest known globular clusters. It's about 33,600 light years from Earth, and is 175 light years in diameter (18'). But it appears a bit smaller in scopes at around 7 arcminutes in diameter. M-15 is one of the most densely packed known globulars in the Milky Way. The cluster is notable for containing 112 variable stars, 8 pulsars, including one double neutron star. It contains Pease 1, the first planetary nebula discovered within a globular cluster.

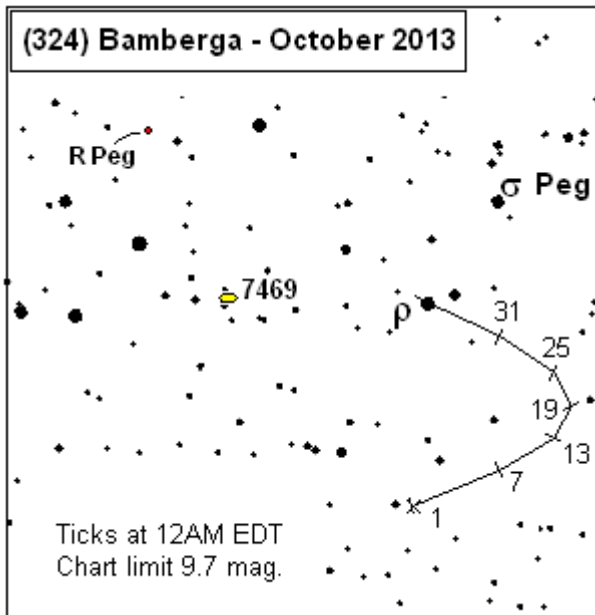
At magnitude 6.2, M-15 is about at the limit of visibility for the naked eye under very good conditions. Any type of optical aid shows a fuzzy star. A six inch or larger scope will start to resolve some of the stars outer perimeter giving a granular appearance. The core remains unresolved even in large apertures. Such a sight should have a common name, but none are to be found. Can you think of one? Try a sketch while your at it. Digital imagers should find this a suitable target.

**MVAS OBSERVER CHARTS**

Variable star of the month: **R Pegasi** (abbrev: R Peg). Well we have a real challenge this month. R Peg will be at its minimum light around 13th magnitude at mid-September. It will slowly rise to about 11th magnitude early next year. You'll probably need the 16" or Titan to spot it right now. But use whatever scope you have. How soon can you detect it?



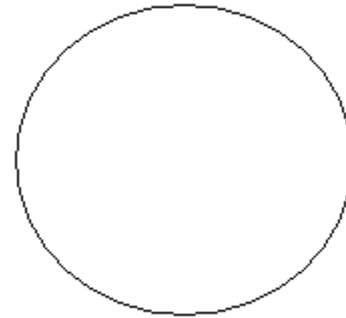
Asteroid of the month: **(324) Bamberga**. This asteroid will be traveling about 3.5 degrees SW of R Peg so there is another reason to visit the area of our variable star in October. Bamberga drops from magnitude 8.5 to 9.3 this month. So use that big scope for R peg and Bamberga. If you like, galaxy NGC 7469 lies about half way between the two homework objects. This galaxy glows at a whopping 12.7 magnitude. No fear of losing night vision with this one! Are you up to the these challenges? Please let us know your results. Thanks!



**MVAS OBSERVATIONS - DUE OCTOBER 2013**

OBSERVER \_\_\_\_\_

**Featured object: M-15** . Please try a sketch. Fill in any bright field stars with accurate placement in the field outline below. The draw a faint circle that represents the outline of the globular. Pin point individual stars with a pencil point. Shade and smudge graphite to match the glow. Remember this is a negative image you are drawing. Darker graphite equals brighter areas of the eyepiece image. Good luck.



**M-15 Observation:**

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

**R Peg magnitude estimates:**

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

_____	_____	_____	_____
_____	_____	_____	_____

**(324) Bamberga Observations:**

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

_____	_____	_____	_____
_____	_____	_____	_____

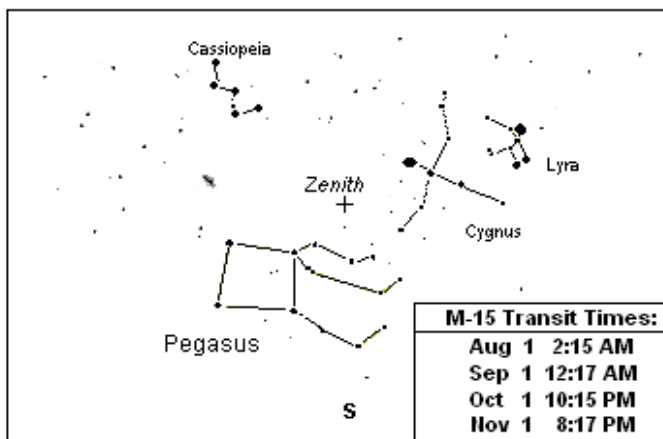
**Other Objects in Pegasus to observe**

D. Sky	Date	Scope	Dbl.	Date	Scope	SEP	MAG	SPLIT?
N- 7331	_____	_____	ε Peg	_____	_____	144"	2.5 - 8.7	Y / N
N- 7217	_____	_____	ι Peg	_____	_____	35.9"	4.2 - 7.6	Y / N
N- 7619	_____	_____	Σ 2799	_____	_____	1.9"	7.4 - 7.4	Y / N

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

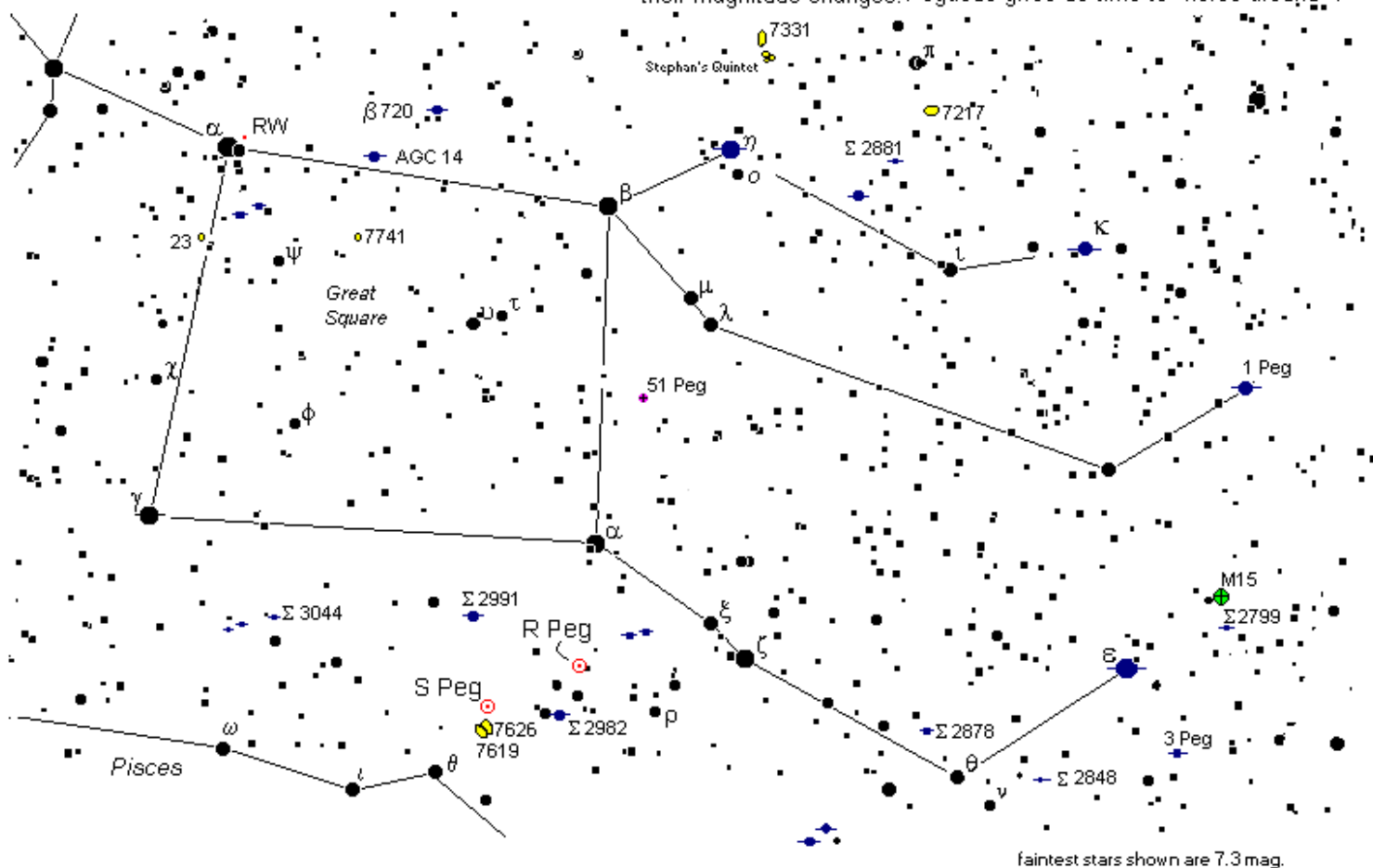
Star	(UT) Date	Time	Scope	magx.	Event(circle)
_____	_____	_____	_____	_____x	R D
_____	_____	_____	_____	_____x	R D
_____	_____	_____	_____	_____x	R D

# Constellation of the Month — Pegasus



By mid-November, Pegasus straddles the meridian at 8 PM. Just south of the zenith for mid latitudes. Prime time for catching some of the telescopic sights the "Winged Horse" carries across the sky. Use the Great Square as a starting point. How many naked eye stars can you see in it? If you can see at least 6 stars you have a great dark sky above.

With Binoculars check  $\alpha$  &  $\eta$  Peg for a pair of nice false double stars. Look west of Enif ( $\epsilon$ ) to spot the faint cotton ball glow of M-15. A telescope is well suited for the double stars listed below. Take your time and watch for the color contrasts. Do you see any? If you like galaxies there are a few available for 8 inch or bigger scopes. The best is NGC7331, a nearly edge-on galaxy. To the south and nearby is Stephan's Quintet. A small cluster of galaxies. How many of the 5 can you see? If you so dare, swing over to 51 Peg and ponder the fact there is a planet around this star. Variable stars R and S Peg should be watched to follow their magnitude changes. Pegasus gives us time to "horse around"!



faintest stars shown are 7.3 mag.

DEEP SKY			STARS			Check list		Instruments used:	
	magnitude	size	mag1, 2	sep.	colors	_____	_____	_____	_____
M 15	6.3	12'				_____	_____	_____	_____
N 7217	11.0	2.5' x 2.1'				_____	_____	_____	_____
N 7331	9.4	9.4' x 2.4'				_____	_____	_____	_____
N 7619	11.0	1.6' x 1.5'				_____	_____	_____	_____
N 7626	11.1	1.4' x 1.3'				_____	_____	_____	_____
Variable Stars			DOUBLES:			S Peg _____ mag. on ____/____/____		_____ on _____	
S Peg	6.9 to 13.8 mag.	378 days	K	4.1, 10.8	14"	_____	_____	_____	_____
R Peg	6.8 to 13.8 mag.	316 days	1 Peg	4.5, 8.6	36"	_____	_____	_____	_____
			3 Peg	6.7, 7.4	39"	_____	_____	_____	_____
			$\Sigma$ 2799	6.6, 6.6	1.4"	_____	_____	_____	_____
			$\Sigma$ 2848	7.2, 7.5	10"	_____	_____	_____	_____
			$\Sigma$ 2881	7.7, 8.2	1.8"	_____	_____	_____	_____
			$\Sigma$ 3044	6.9, 7.3	18"	_____	_____	_____	_____

**Solar and Lunar (EDT).**

Date	Sunset	Moonrise	Moonset
1	7 : 06	03 : 53a	— : —
5	7 : 00	— : —	07 : 16p
9	6 : 53	— : —	10 : 23p
13	6 : 47	— : —	01 : 39a
17	6 : 41	— : —	06 : 09a
21	6 : 35	08 : 24p	— : —
25	6 : 29	11 : 46p	— : —
29	5 : 24	02 : 38p	— : —

**PLANET WATCH**

Jupiter	Uranus	Mars
Rises	Transits	Rises
12:36a	1:24a	3:20a
12:22a	1:07a	3:17a
12:09a	12:51a	3:14a
11:51p	12:35a	3:11a
11:37p	12:18a	3:07a
11:22p	12:02a	3:04a
11:07p	11:42p	3:00a
10:52p	11:26p	2:56a

**October 2013**

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 October 2013 (324) Bamberga**

Date	Transits	RA		Dec.	Alt.	Azm	Magnitude
		hr.	min				
		<i>topocentric</i>					
1	11 : 40 pm	22	55.9	+06.0	55°	186°	8.5
7	11 : 13 pm	22	52.3	+07.1	54	200	8.7
13	10 : 47 pm	22	50.1	+07.5	53	211	8.8
19	10 : 23 pm	22	49.4	+07.8	50	220	9.0
25	10 : 00 pm	22	50.1	+08.1	48	227	9.2
31	9 : 38 pm	22	52.3	+08.5	45	234	9.3
		<i>(at midnight)</i>			<i>(at midnight)</i>		

**Date UT hr Celestial Highlights**

3	14	Uranus at opposition
5	00	<b>NEW MOON</b>
9	10	Mercury 25° E elongation
11	23	<b>FIRST QUARTER MOON</b>
12	04	Triple shadows on Jupiter
18	23	<b>FULL MOON</b>
18	23	Penumbral moonrise ecl.
19	06	Double shadow on Jupiter
21	11	Orionids, moon -93%
26	08	<b>LAST QUARTER MOON</b>
26	08	Double shadow on Jupiter

**Variable Star of the Month: R Peg 6.9- 13.8 378 days**

**LUNAR OCCULTATIONS FOR: OCTOBER 2013**

Civil (24hr)			UT			Moon Ph	Moon % illum.	Moon alt	Moon azimuth	Star name	Star Mag.	event PA	dbl./ sep.		
date	hr	min	sec	date	hr									min	sec
9	21	26	42	10	01	26	42	D	28+	08°	234°	ZC 2503	7.8	079°	NA
11	20	37	08	12	00	37	08	D	50=	29	200	RHO SGR	3.9	079°	0.36"
12	21	24	57	13	01	24	57	D	62+	32	199	BETA CAP	3.1	061°	205"
12	22	39	42	13	02	39	42	R	63+	25	218	BETA CAP	3.1	255°	205"
17	20	45	09	18	00	45	09	D	99+	30	109	60 PSC	6.0	048°	NA
22	1	33	10	22	05	33	10	R	89-	54	119	ZC 643	6.9	253°	NA
24	6	15	02	24	10	15	02	d	73-	65	209	ZC 943	6.6	092°	NA
25	2	14	20	25	06	14	20	R	66-	36	97	ZC 1057	6.8	317°	NA
28	6	00	45	28	10	00	45	D	36-	45	125	OMEGA LEO	5.5	121°	0.80"
30	4	04	38	30	08	04	38	R	19-	4	91	ZC 1594	7.4	314°	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 western limb to watch for a reappearance.  
 PA is referenced to celestial north: North=0° East=90° South=180° West=270°  
 Occultations computed using Occult v3.6 (I.O.T.A.)  
 Variable star data from AAVSO. All other data computed with MICA 1800-2050 (Willman-Bell)



# GALLERY.....

## THE 2013 MVAS-OTAA MEETING AUGUST 10, 2013

The day began cloudy and stayed that way all night. But things begin with registration (top right photo). We set up in the 16" building just in case rain was in the mix. The bottom level was a bit wet so most parked at the top of the hill. Seemed to work out just fine. Gary Smith from BRAS set up his 3D Meteor display (center right) which was pretty cool. Steven watches over the door prize table (bottom left) while a few brave souls set up their scopes (bottom middle). By 6:00 PM the chow line forms (right).







Everyone enjoyed the meal. The cheese cakes went first!



The boys dig in. Not time to go light on the chow.



It is tradition to have cheese cake. Mocha House serves us well.



Margie seems to enjoy dinner as well!



Two venerable MVCO scopes wait for clear skies. Above is the Draper-Hoynos 8" refractor. To its right is the secondary cage of Titan, the MVAS 25" Dobsonian. It is waiting for a third OTAA night since its debut in 2005.



The second veteran scope (and first MVO scope) is the Draper-Prather 16" Cassegrain. It sat in its newly painted building. This was the "big scope" for many years. Always proving that bright images at high magnification is the way to go.





Rich served as our emcee and asks "Why me?" You did a great job Rich!



The crowd waits eagerly for the raffles to begin!



Bob came up to help with the Main raffle.



Jodi and Roy prepare for the quiz program, given by Jodi. It was entertaining and enlightening.



....and Sam thought..." I could still be President of all this... wow!"

- All photos in Gallery are by the editor.



One late arriver said "That ain't no cheese cake, mate. Not even lemon squares!".