THE METEORITE

The Pleiades
M-45

also known as:
The Seven Sisters
Subaru

Newsletter of the Mahoning Valley Astronomical Society, Inc.

IN THIS ISSUE:

JANUARY 2014

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1982 Mathews Rd. #2
Youngstown OH 44514

THE METEORITE

Newsletter of the Mahoning Valley Astronomical Society, Inc.

JANUARY 2014

MVAS 75th Anniversary - 2014

MVAS CALENDAR

JAN	**18**	So You Have a Telescope. At YSU 1-3 PM
JAN	**25**	Business meeting at YSU. After 8:00 PM show. Talk at 7:00 PM in classroom. "Spectroscopy"
FEB	**22**	Business meeting at YSU. After 8:00 PM show.
MAR	**1**	MVAS Public Night at Mill Creek Experimental Farm, Canfield. 7:00 PM start.

NATIONAL & REGIONAL EVENTS

FEB ? **Wagemen Winterfest.** Held at Deer Lakes Park, Tarentum, PA, Allegheny County. Star party at Wageman Observatory. Date to be announced http://www.scas.org/winterstarparty.htm

Feb 23-Mar2 **Winter Star Party 2014.** Held at Camp Wesumkee Girl Scout Camp located on Scout Key between Marathon and Big Pine Key. We have an on-site caterer, Micki's providing delicious meals and snacks. The camp has both men and women's bathhouses, and an air-conditioned room where talks are held during the day. http://www.scas.org/winterstarparty.htm

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

MVAS Homepage- http://mvobservatory.com

NEWS NOTES

Gaia Map Quest. On Dec. 20, 2013, ESA's Gaia mission blasted off on a Soyuz rocket from Europe's Spaceport in Kourou, French Guiana. Its is mission is to study a billion suns. Gaia will create the most accurate map yet of the Milky Way, by making accurate measurements of the positions and motions of 1% of the total population of roughly 100 billion stars, it will answer questions about the origin and evolution of our home Galaxy. About 20 days after launch (mid- January), a second critical engine burn will take place which will insert Gaia it into its operational orbit around the Lagrangian point L2. A four-month commissioning phase had started while on the way to L2. During that period all of the systems and instruments will be turned on, checked and calibrated. Then Gaia will be ready to begin its five-year science mission. Gaia will observe each of the billion stars an average of 70 times each over the five years. It will measure the position and key physical properties of each star; brightness, temperature and chemical composition. As Gaia orbits the Sun, the yearly parallax seen from opposite sides of orbit will allow measurement the stars' distances and, by monitoring them over the whole mission, their motions across the sky (proper motion).

Gaia will also discover tens of thousands of supernovae. It should detect the slight periodic wobbles in the positions of some stars that could reveal the presence of exoplanets. Gaia will also uncover new asteroids in our Solar System and refine the orbits of those already known. It will make precise tests of Einstein's theory of General Relativity. After five years, the data archive will exceed 1 Petabyte or 1 million Gigabytes, equivalent to about 200 000 DVD's worth of data. Gaia will build on the legacy of ESA's first star-mapping mission, Hipparcos, launched in 1989. Hipparcos catalogued 120,000 stars. Gaia will study almost 10,000 times as many and at roughly 40 times higher precision. This vast data base will give us a new view of our cosmic neighborhood and its history.

WISE Turn-on. NEOWISE began as WISE. The primary mission was launched in December 2009. It was to scan the entire celestial sky in infrared light. WISE captured more than 2.7 million images in multiple infrared wavelengths and cataloged more than 747 million objects in space, ranging from galaxies faraway to asteroids and comets much closer to Earth. NASA turned off most of WISE's electronics when it completed its primary mission in February 2011. During this 1st mission, WISE discovered more than 34,000 asteroids and characterized 158,000 throughout the solar system. It was reactivated in September 2013 after 31 months in hibernation; in order to assist in NASA's efforts to identify the population of potentially hazardous near-Earth objects (NEOs). On Deccember 20th, the spacecraft, now renamed NEOWISE, sent back its first images since being turned on. It shows the Helix Nebula with several asteroid tracks nearby. The spacecraft is in excellent health, and the new images look as good as before hibernation. NEOWISE uses a 16-inch telescope and infrared cameras to seek out and discover unknown NEO's. Some could become targets for NASA's newly announce asteroid initiative. The imitative will be the first mission to identify, capture and develop ways to relocate a threatening asteroid.

MINUTES OF THE DECEMER MEETING

DECEMBER 7, 2013 at Boardman Park

By 6:00 PM most of the guests arrived. Payments, sign-in, and greetings accompanied the appetizers and shrimp cocktail. Around 7:00 PM the buffet table was opened. In all, 47 people attended this Christmas dinner. There was plenty of delicious food to indulge in. Special thanks is given to Tony Mehle for providing this sumptuous meal. Kudos' to Larry Plante for bringing the shrimp cocktail. Once again a tip of the hat goes to Larricia's Italian Foods for the delicious food they prepared and to Mocha House for their fantastic cheese cakes. The Annual Business Meeting was held after dinner.

At 8:10 PM the meeting was called to order by President Lou DiNardo. Roll Call was answered by a variety of "ho-ho-ho's". Thirty-two members made the count. We had fourteen guests in attendance. Alphabetically they were: Sandi Anderson, Lori Baker, Joanne Bartos, Stephen Bartos, Virginia Bartos, Gretchen DiRocco, Talia DiRocco, Greg Klocek, Jill Klocek, Rose Marko, Dominic Mattuissi, Monica Mattuissi, Nicholas Mattuissi, Lisa Mattuissi and Irene Mehle. Many thanks for your support of this event. There was a call for the reading of the Minutes. Don Durbin moved to suspend the reading. There was a second to the motion made by Paul Baker. By a unanimous voice vote, the reading was suspended, with the Minutes accepted as published in the Meteorite.

TREASURER'S REPORT: The Report was read by Steve Bartos. Mike Heim moved to accept the Report as read. A second to motion was made by Mark Baker. By voice vote, all were in favor and the motion was adopted.

General Fund	**11/1 thru 11/30 2013**	
OPENING BALANCE:	$	8,406.84
CLOSING BALANCE:	$	8,656.99
AVAILABLE FUNDS (NON-RESERVED):	$	4,427.87
ACCOUNT NET GAIN/LOSS FOR THIS PERIOD:	$	+250.15
INCOME:		
DUES	$	80.00
CHRISTMAS PARTY RESERVATIONS		90.00
COFFEE POT RETURN		80.00
INTEREST		0.15
TOTAL INCOME	$	250.15
EXPENSES:		
CK# XXXX NONE	$	0.00
CASH NONE		0.00
TOTAL EXPENSES	$	0.00
Reserved Funds		
OBERVATORY ACQUISITION & DEVELOPMENT FUND	$	3,914.12
MVCO KEY DEPOSITS		285.00
SUNSHINE FUND		30.00
TOTAL RESERVED FUNDS	**$**	**4,229.12**

2014 Membership dues paid by: R. Chomos, P. Plante

CORRESPONDENCE: None to report.

COMMITTEE REPORTS: *IMAGING COMMITTEE:* Jodi and Roy McCullough have been having a good time imaging comets and has been sending them to Lou DiNardo for processing. She reported that Comet Lovejoy was still visible and that there was nothing left of ISON. Even the big NASA scopes and those in space show nothing is left of the sun grazing comet. LINEAR is getting too close to the Sun. But clouds have been the rule lately so imaging is on hold. Phil noted in jest that ISON actually stood for "I See Only Nothing".
VISUAL COMMITTEE: No reports turned in. Phil will make-up new 2014 Visual Committee Report forms.

OFFICER REPORTS: *Observatory Director:* Larry Plante has not been to the MVCO since shutting down the well. Reports form others (Rosemary) have the observatory in good condition, with some water near the doors of the 16" building. As is customary, the Observer of the Year Award was announced. The Observatory Director is charged with this selection, therefore Larry has chosen Chris Stephan as Observer of the Year for 2014. Based on many decades of variable star work, Chris is long overdue for recognition from the MVAS for his observing efforts. A robust round of applause confirmed this selection. No Homework was turned in.
LIBRARIAN: Rosemary has not yet placed any new books in the Library, having concerns about potential roof leaks over winter. The refrigerators are now closed down for winter.

OLD BUSINESS: Don Durbin reminded us that it was a year ago that we elected the late Bill Pearce as our President and thought it would be fitting for a moment of silent remembrance. A brief interval of private reflection was held. Jodi had the MVAS 75th Anniversary Calendars on hand. They were $10 each and were sold at cost. The had the MVAS 2014 schedule and many celestial events depicted. Many photos of MVAS members, MVAS events and MVAS images are included. One problem was that the Bill Pearce Memorial Star Gaze on June 7th was omitted by accident. There is an empty box for that date in which one can write this down in. She had several extras for sale. She could order more if she has enough interest. See Jodi if you'd like one. She also had the laminated chart books for inspection. She will place an order in mid-December.

Jodi has been in contact with Tom Fields in regard to giving a "Webinar"- an interactive talk (Q&A) via the internet before our January meeting. The topic will be Spectroscopy. They have tested the system and it seems to work fine. Time is slated for 7:00 PM in a classroom in the planetarium hallway. Jodi then spoke about plans for the 75th Anniversary celebration. The idea is to have a prize awarded at the Grand Dinner on October 18th, 2014. She has been looking into an AstroTech 72mm semi-apo refractor. Don Durbin related some specifics about this excellent scope, no longer in production. It has maintained it's value the last 5 years. Originally sold for $360, they go for that to around $250 on Astro-mart. Jodi found one for $250 but could not get one without MVAS permission. That unit has since been sold. She wanted permission to purchase an AT72 or another item of the same value to use as the prize.

The idea for the prize drawing would be to award a ticket to a member for every participating activity such as turning in Homework or Visual Reports. Jodi plans to have crossword puzzles in the Meteorite. These would be based on the last issue. Members would need complete these and turn them in to the Anniversary Committee. Phil moved to allow Jodi to spend $250 for such a prize. Rosemary then spoke of how this raffle process would be open to members and encourage participation and observations. Jodi added that it would make people read the Meteorite. Jodi then moved to be allowed to spend $300 or less for the prize. Dan Schneider seconded the motion. By voice vote the motion carried. The motion by Phil was dropped since there was no second.

Phil has been in e-mail contact with Mill Creek Metroparks regarding the march 1st Public Night at the Experimental Farm

in Canfield, OH. Jodi has volunteered to give a talk and will be included in future emails with the Park. The specifics need to be worked out. A meeting between Phil (and others?) and Park management may be in the future. Stay tuned. Phil reminded members of the January 18th Telescope workshop at YSU. tart time is 1:00 PM. Runs till 3:00 PM.

Lou noted the e-mail he had received from Tony stating that this would be the last Christmas Party he would host. In light of this Lou expressed his thanks to Tony and Irene for all of the time, effort and expense they have devoted to this even the last 5 years. A round of thankful applause burst forth but could never fully relay the heartfelt appreciation of the MVAS membership.

NEW BUSINESS: Rich Mattuissi asked that the club discuss a trip to Observatory Park in 2014. It is an IDA dark sky site. Several members have been there. It has close ties with the Chagrin Valley Astronomical Society. Perhaps their OTAA meeting would be a good time for such a visit. Please consider host duties. There are several slots still open. Check the list in the January Meteorite. send word to the secretary of sign-up at the meeting. Your participation is appreciated by all.

GOOD OF THE SOCIETY: Steve had MVAS merchandise on hand for sale as well as several Astronomy 2014 calendars.

VISUAL REPORTS: Phil looked for ISON Sunday morning Dec. 1st. He was looking thru trees on the distant horizon (10x50s) and noticed a super thin crescent Moon. No ISON- clouds rolled in just before it would have risen. Clouds ruined most observing.

ADJOURNMENT: Adjournment came at 8:50 PM. We thank our hosts Tony and Irene Mehle as well as Larry Plante. The next meeting will be at YSU on January 25, 2014. There is an internet talk at 7:00 PM Meeting begins after the 8:00 PM show in the planetarium. Scheduled hosts- Snack: Phil Plante, Dessert: Larry Plante, Drinks: Mike Heim. PASSWORD: name a winter constellation… *-minutes by Phil Plante*

MVAS REMINDERS

A Special Thanks to:

Larricia's Italian Store, **7438 Southern Blvd. In Boardman.** Mike Allegretto did an outstanding job preparing the food for our Christmas Dinner. Please use Larricia's catering for your next social or business event. Call 330-729-0222.

Trustees Needed: Every January, two Trustee positions open up. The four elected Officers appoint one Trustee to the Board. This is a 2 year term. At the January meeting, the membership (the four officers are recused) vote-in the other Trustee to the Board. This is a 1 year term. **Please consider** being a candidate for one (or both) positions. Contact one of the current officers with your intention and preference as soon as possible. If needed, ballots will be prepared for the January vote. Thanks.

2014 Dues: Well, it's that time again. membership dues for 2014 are payable anytime. It has been customary to have dues paid by or at the January meeting. Regular adult membership is $40 per year, per person. The Family membership rate is $10 for each additional household member of a regular member. An individual Junior membership rate of $10 per year available for anyone 16 years old or younger, not covered in a Family Membership.

MVAS ACTIVITIES: 2014 Schedule and Hosts

2014 MVAS CALENDAR

Jan	18	Sat	YSU Telescope Workshop
Jan	25	Sat	MVAS Business Meeting at YSU
Feb	22	Sat	MVAS Business Meeting at YSU
Mar	1	Sat	Public Night Mill Creek Metropark. 7:00 PM
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	26	Sat	MVAS Business Meeting at the MVCO
May	3	Sat	MVAS-OTAA Scenic Vista Stargaze. 8:23 PM
May	17	Sat	Western Reserve Solar - Evening camp-out
May	31	Sat	MVAS Business Meeting at the MVCO
Jun	7	Sat	2nd Bill Pearce Memorial Stargaze
Jun	21	Sat	Scenic Vista Public Night. Sunset 9:00 PM
Jun	28	Sat	MVAS Business Meeting at the MVCO
Jul	12-13	SaSu	YSU Festival Of Arts. Planetarium 12-5 PM
Jul	19	Sat	MVAS Business Meeting at the MVCO
Aug	16	Sat	Work session: prep MVCO for OTAA meeting
Aug	23	Sat	MVAS OTAA meeting at the MVCO. 5:00 PM
Aug	30	Sat	MVAS Business Meeting at the MVCO
Sep	6	Sat	Scenic Vista Public Night. 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 Dinner
Oct	23	Fri	Sunset partial solar eclipse. 1st cont. 5:42pm
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

The name for the Mill Creek event hasn't been settled on yet as this is written. Maximum obscuration of the solar disk at sunset Oct. 23rd. will be 40.3% as seen from the MVCO. Obscuration will increase a few percent a bit north eastward and decrease south westward of the MVCO. We may consider special plans to observe the lunar eclipses from the MVCO. Note: The eclipsed moon will set behind the west hill at the MVCO while still in totality. With a flat horizon, totality ends 15 minutes before moonset. Due to the 75th Celebration Dinner there will be no Halloween Party this year.

HOST LIST FOR 2014

	SNACK	DESSERT	DRINKS
JAN	P. Plante	L. Plante	M. Heim
FEB	open	open	E. Eaken
MAR	open	M. Baker	open
APR	E & S Bishop	R. Chomos	P. Plante
MAY	Annual BBQ. Bring BBQ & sides: your own or to share.		
JUN	K. Janeco	L. Plante	P. Plante
JUL	open	P & J Baker	L & K DiNardo
AUG	J. McCullough	R. McCullough	D. Ruck
SEP	D. Schneider	R. Mattuissi	R. Mattuissi
OCT	open	S. Bartos	L & K DiNardo
NOV	open	M. Dimoff	open
DEC	bring covered dish, dessert or entrée. We'll make plans		

We have 8 openings. We could use more than the usual suspects to fill the list. Please let the secretary know what slot you wish to fill. There are 5 snack openings- team up with someone to share the efforts and expenses.

Observer's Notes: Prelude to a Society

On November 19, 1882, John W. Draper was born in Warren, OH- son of Emory and Eliza Rex Draper. This would prove to be a significant event for local astronomers. As if to celebrate this birth, seventeen days later, the solar system put on a rare Transit of Venus. The last one of the 1800's. The Transit also being a significant for all astronomers, it was visible in northeast Ohio from 9:06 AM until 3:30 PM. A "Prime time" show. Jack Draper resided in Warren his entire life. In his younger years he was a self-employed plumber and later worked for the Folsom Sporting Goods Store. He first became interested in astronomy when he was about ten years of age. His father had bought him an inexpensive refractor of 1" diameter. It was not a good scope but the views of the lunar craters left a lasting impression in young Jack.

Around 1908, John E. Mellish, a Wisconsin born amateur astronomer, had written a brief article in *Popular Mechanics* on grinding telescope mirrors. Mellish had three comet discoveries to his credit. This notoriety eventually lead to an invitation to spend the summer on the Yerkes Observatory staff in 1915. Jack read this article and was inspired to try the technique by grinding a curve into a piece of glass. To his surprise, Jack was able to duplicate the efforts of Mellish. The "bug" bit him. Jack wrote to Mellish for further information but didn't receive an answer for nearly five years. During this time, Jack was busy courting his wife Bessie. They were married in 1911. Soon Jack sent for a 6" glass and began grinding. Not sure of just how to proceed, he ended up grinding it too deep. He had to send for a second glass since he didn't know how to correct the first glass. He finally got his first mirror done in 1914. This included silvering the mirror, which any ATM had to learn how to do back then. The process involved an explosive solution of silver nitrate, ammonia and other goodies. There were no aluminum coatings back then. Nor electric lights for the knife-edge test.

As this first mirror neared completion, he received a letter from Mellish. Jack was surprised to find that Mellish had become the Observatory Director of the Harrold Observatory in Leetonia, OH. The 9" Mogey refractor in Leetonia had originated in a New York private observatory. Upon his death, the widow of Charles Ezra Hequembourg donated his telescope to Mt. Union College in Alliance, OH. It is interesting to note that in the late 1930's, then student and New Waterford, OH native Walter Haas would be the only one using that scope. Walter honed is lunar and planetary observing skills with this scope. In 1949 Walter Haas formed the Association of Lunar and Planetary Observers (A.L.P.O.) As you know ALPO is now an international organization of solar system observers.

While in Ohio, Mellish also established an optical shop and began making telescopes. Being less than 40 miles away, Jack wasted no time in getting there to get acquainted with Mellish. They become very good friends for several years while Mellish was in Leetonia. Jack said that Mr. Mellish was never very willing to part with his "trade secrets" as far as optical work went. It was too important to the professional opticians at the time. But Mellish was helpful in other ways. Draper ordered a 16" mirror blank from Mellish around 1918 or 1919. During cold pressing (during the polishing stage) the 16" mirror fell and broke. Jack ordered another blank and eventually made an F/8 Newtonian from the second blank.

This instrument gave bright views but after a while, Jack felt it didn't give enough magnification. So, in the late 20s or early 30's Jack decided to re-make the mirror into a Cassegrain type telescope. The mirror was only 1-3/4 inches thick- much too thin for a proper thickness Cassegrain mirror. To increase the mirror's thickness, Jack got a 1" thick disk of glass that matched the diameter of the mirror. He ground grooves into the glass to produce 1" square facets on the surface. Next he ground the facets so that they fit the back surface of the 16" mirror. He cemented the two together with a special cement called gyptalak. He then re-ground, polished, and figured the 16" mirror so that it had a 90" focal length. He then made the Cassegrain secondary mirror. He used the Hindle Test to figure the secondary mirror which involved making a 10-1/4" spherical mirror of 25" focal length with a central hole cut into it. All of this work eventually lead to the first MVAS 16" Cassegrain.

Over the years Draper made many telescopes which included five 10" Cassegrains, two 16" Cassegrains: the original 16-1/4" MVAS Cassegrain and it's replacement primary in 1968, many 4" to 6" refractors and several 8" refractors. One of the 8" scopes is the MVAS Draper-Hoynos 8" (there will be an article on how this came to be in the next Meteorite). In all he made 31 refractors. His last telescope was completed just before his death in 1967. It was made for legendary variable star observer Carolyn Hurless of Lima, OH. In the late 1930's he and his friend Charley Prather built a grinding machine and polishing machine; they considered going into the telescope business. In April 1939, they sent a sample 3" refractor to Leo Scanlon, director of The Valley View Observatory in Pittsburgh, PA. Scanlon was well acquainted with the work of professional lens makers of the day; Fecker, Clark, Brashear, Mogey. Scanlon sent a review letter stating that Draper and Prather had a telescope equal in performance to those master opticians.

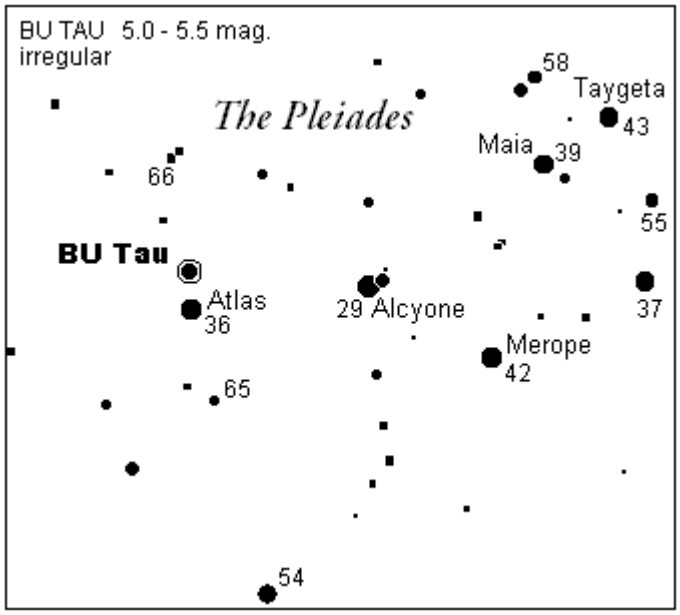
It is not recorded in any available documents why they didn't proceed in the telescope business. In August of 1939 it was decided, instead, to form an astronomy club. By October 1939, 16 people held a meeting at the Warren Library to formally elect officers and adopt a name (MVAS). This would impact many astronomers. The Society has been going strong ever since. Since that October day, 489 people have passed through the ranks of MVAS membership. Untold thousands have peered through Jack's telescopes at the MVCO. By the time the next round of Venus Transits started in June 2004, MVAS members gathered at the MVCO to watch the sunrise Transit. Jack's telescopes were still the heart of the Society. Now 100 years after Jack completed his first mirror, we celebrate the 75th Anniversary of the MVAS. It would fitting to peer through the 8" or 16" in 2014- as we celebrate the legacy of the MVAS and Jack Draper. When you look through the 8" or 16", remember the history. How the Society came to be. Remember the magic touch of a telescope makers hand. One that formed not only lenses but an enduring astronomical society. *-P. Plante*

MVAS Homework: M-45

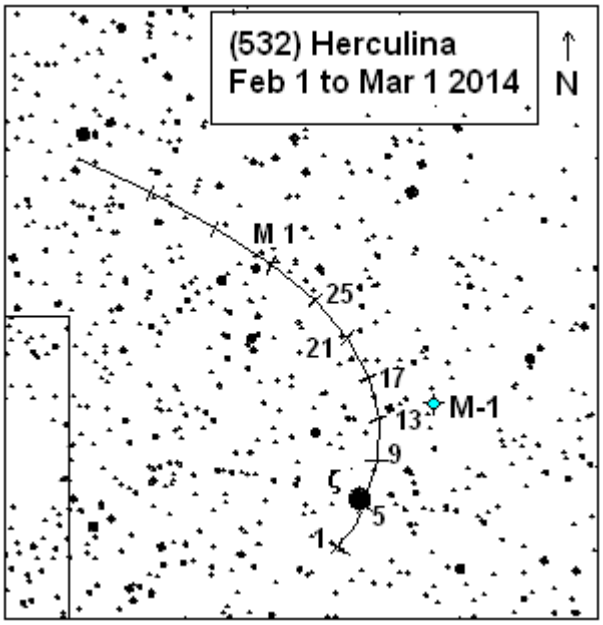
Well it's winter time again. "Homework" becomes next to impossible. Clouds and "too cold" are valid reasons that prevent observation. But lucky you, there is one binocular object that is easy to find and observe. It is the Pleiades cluster in Taurus. One of the skies' showcase objects. Visible in any size binocular or finderscope, it even has an easy to watch variable start in BU Tau. We had this object last January so if you missed it, here is a second chance. With patience, you can find it through passing holes in the clouds. Use a quick jaunt outside or a look through an early evening open window. While M-45 is low in the eastern sky. I have done this! It really works. Get some reports done!

MVAS OBSERVER'S CHARTS

Variable star of the month: **BU Tauri** (*abbrev:* BU Tau). BU Tau is also known as Pleione. It's a very easy binocular variable. The magnitude change is slight and it often it seems be the same brightness. But if you check it weekly and record magnitudes, you'll eventually see a change. The numbers next to stars are their magnitudes, the decimal point eliminated. These are your comp stars. Give it a try.



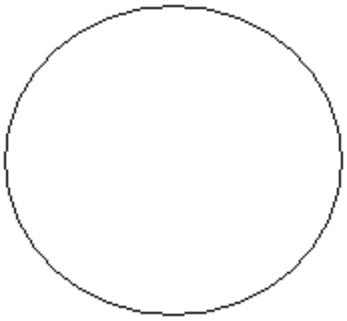
Asteroid of the month: (**532) Herculina.** This asteroid starts off at magnitude 10.0 and slowly drops to 10.4 mag. by the end of the month. A 5" or bigger telescope will be needed to observe it. Faintest stars shown are magnitude 10.5. Herculina was chosen this month because it passes through the Constellation of the Month. It passes about 3 arcminutes west of zeta (ζ) Tau around 11:30 PM EST on Feb 5th. It then passes 31 arcminutes east of The Crab Nebula the nights of Feb.13-14th. It's challenge given the cold nights. You up to it?



MVAS OBSERVATIONS - DUE FEBRUARY 2014

OBSERVER_____

Featured object: Pleiades . Please try a sketch. Use the chart at left to guide your placement of the main stars. Especially if you are using shaky binoculars. Fill in fainter stars and nebulosity if you are lucky enough to see any. You'll need clear, dark skies for nebulosity. No haze! Good luck.



Pleiades Observation:

Date:_____ Time(EDT)_____ Scope_____

BU Tau magnitude estimates:

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

(532) Herculina Observations:

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

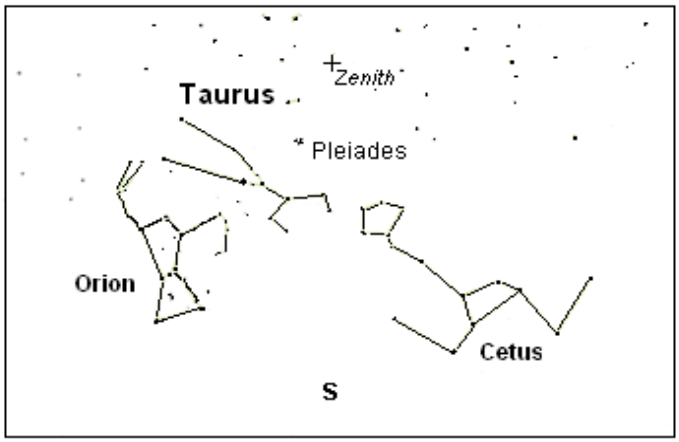
Other Objects in Taurus to observe

D. Sky	Date	Scope	**Dbl.**	Date	Scope	SEP	MAG	SPLIT?
M- 1	_____	_____	θ Tau	_____	____	337"	3.4 - 3.9	Y / N
N- 1746	_____	_____	88 Tau	_____	____	69.1"	4.3 - 7.8	Y / N
N- 1647	_____	_____	τ Tau	_____	____	63.0"	4.2 - 7.0	Y / N

Lunar Occultations (see Sky Almanac):

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

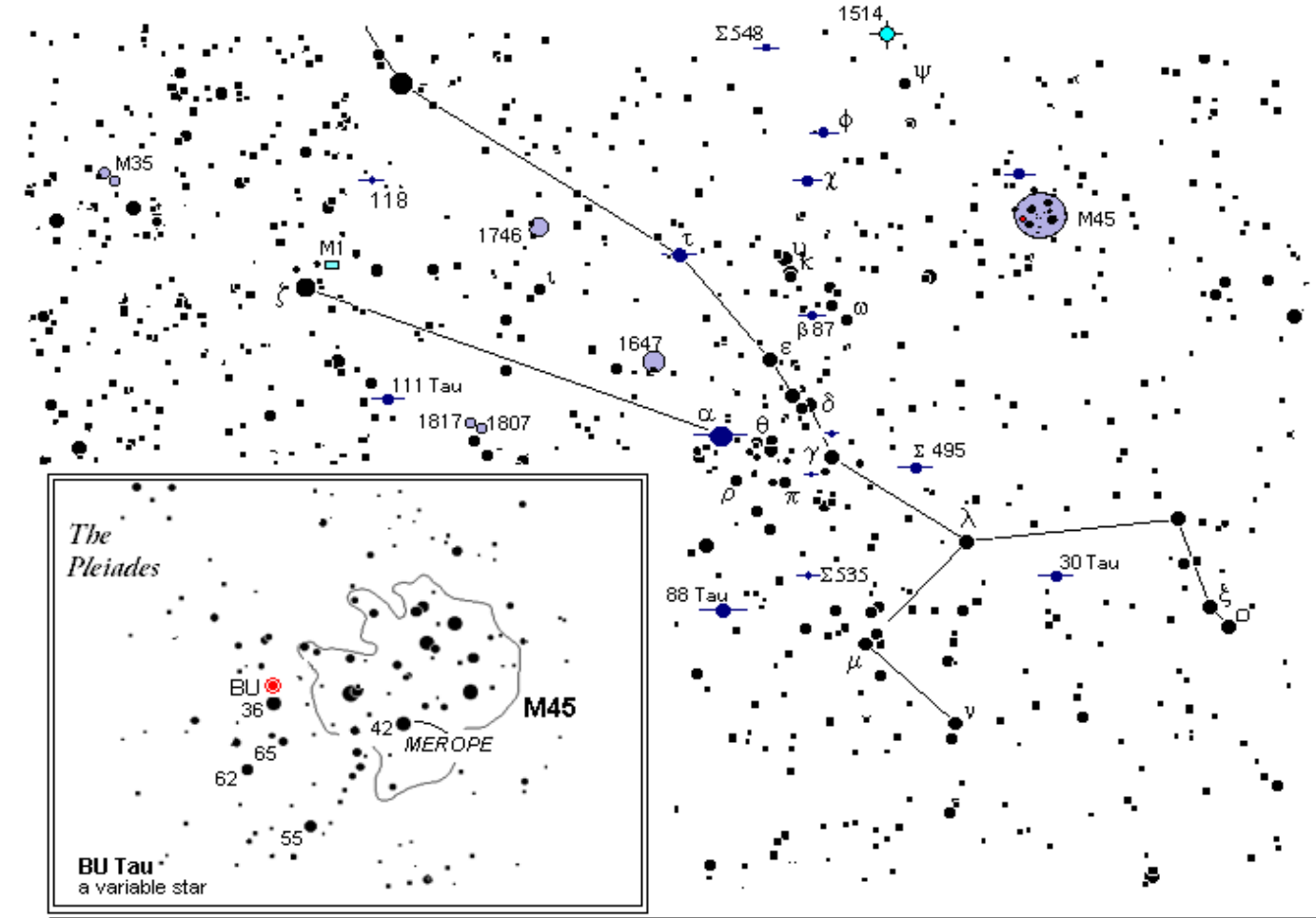
Constellation of the Month — Taurus



By mid-February, Taurus is 65° up in the west, in a dark sky-9PM. Tauris sets around 3:20 AM. February nights are still cold. March nights are moderating towards spring-like temps. With the naked eye you can see the Hyades. Bright red Aldebaran rides within the cluster. This is an illision as the Hyades' stars are about 150 light years away while Aldebaran is only 68. The small patch of light to the north of Aldebaran is the Pleiades cluster. Can you see the individual stars without optical aid? NGC 1647 and NGC 1746 are nice open clusters for the telescope. You'll need a scope to find the Crab Nebula, M1. It can be spotted as a tiny fuzzy spot with a 60mm scope. There are may fine double stars to choose from. Some have nice colors. Which ones are they? Look for yourself ! Don't forget to keep a watch of the variable star BU Tau.

Aldebaran Transit Times:

Dec 15	11:20 pm	Jan 1	10:21 pm	Jan 14	9:22 pm
Feb 1	8:22 pm	Feb 15	7:26 pm	Mar 1	6:24 pm



DEEP SKY

	Mag.	Size	Type	notes
N 1514	10.0	1.9'	P.Neb.	
N 1746	6.1	41'	O.C.	20 strs.
N 1647	6.4	45'	O.C.	200 strs.
N 1817	7.7	15'	O.C.	60 strs.
N 1807	7.0	17'	O.C.	20 strs.
M 1	8.4	6'x 4'	SNR	"Crab Neb."
M 45	1.2	110'	O.C.	100 strs.

Variable star: BU Tau 5.0 - 5.7mag. Irr.

DOUBLES:

χ Tau	4.8, 8.5	19"	white, blue
30 Tau	5.1, 9.8	9"	blue, orange
88 Tau	4.3, 7.8	69"	yellow, pale lilac
111 Tau	5.0, 8.0	86"	yellow, lilac
118 Tau	5.8, 6.7	5"	orange, orange
β 87	6.2, 8.6	1.9"	red, blue
Σ 535	7.0, 8.3	1.1"	yellow, bluish
Σ 548	6.4, 8.0	15"	yellow, bluish
Σ495	6.1, 8.8	3.7"	yellow, yellow

Check list

___N 1514
___N 1746
___N 1647
___N 1817
___N 1807
___M 1
___M 45
___χ Tau
___ 30 Tau
___ 88 Tau
___111 Tau
___118 Tau
___ β 87
___ Σ 535
___ Σ 548
___ Σ 495
____ BU Tau

Instruments used:

_____ on _____
_____ on _____
_____ on _____
_____ on _____

____ mag. on ___/___/____

2014 FEBRUARY SKY ALMANAC

Solar and Lunar (EST).

Date	Sunset	Moonrise	Moonset
1	6 : 15p	— : —	8 :17p
5	6 : 19	— : —	— : —
9	6 : 24	— : —	3 :31a
13	6 : 28	— : —	6 :14a
17	6 : 33	8 :56p	— : —
21	6 : 37	12 :01a	— : —
25	6 : 41	3 :59a	— : —
1	5 : 36	6 :51a	7 :02p

PLANET WATCH

	Jupiter	Mars	Venus
	Transits	*Rises*	*rises*
1	10:28 pm	11:26 pm	5:28 am
5	10:10	11:16	5:15
9	9:53	11:04	5:04
13	9:36	10:52	4:55
17	9:19	10:39	4:48
21	9:03	10:26	4:43
25	8:47	10:11	4:38
1	8:30	9:56	4:35

February 2014

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

Asteroid for February 2014 (532) Herculina

Date	Transits	RA hr.	RA min	Dec. deg.	At 7:00 PM EST Alt.	Azm	Magnitude
1	9 : 10 PM	5	39	+ 21	54º	114º	10.0
5	9 : 01 PM	5	37	+ 21	57	119	10.1
9	8 : 45 PM	5	37	+ 21	60	123	10.1
13	8 : 29 PM	5	37	+ 22	63	129	10.2
17	8 : 13 PM	5	37	+ 22	65	135	10.3
21	7 : 59 PM	5	38	+ 22	67	142	10.3
25	7 : 44 PM	5	39	+ 23	70	140	10.4
1	7 : 30 PM	5	41	+ 23	71	158	10.4

Variable Star of the Month: **BU TAU** 5.0 - 5.5 mag irregular period

Celestial Highlights

Date	UT hr	
4	00	Mars: Syrtis Major on CM
6	19	**FIRST QUARTER**
10	11	Moon at highest declination
11	05	Jupiter 4.9º N. of Moon
14	23	**FULL MOON**
15	07	Regulus 4.8º N. of Moon
15	03	Algol at minimum
18	00	Algol at minimum
19	00	Mars: Nix Olympica - CM
21	01	M-42 transits (imaging?)
22	17	**LAST QUARTER**
22	09	Pallas at opposition
25	00	Mars: Solis Lacus on CM

LUNAR OCCULTATIONS FOR FEBRUARY 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.
7	19	01	18	***8***	00	01	18	**D**	62+	66º	171º	xz	600	6.6	146º	.030"
9	1	50	58	***9***	06	50	58	**D**	73+	16	281	104	Tau	4.9	101º	.100"
14	23	06	05	***15***	04	06	05	**D**	100-	51	142	xz	###	6.8	352º	NA
15	23	44	49	***16***	04	44	49	**R**	98-	47	143	34	Sex	6.7	293º	.061"
19	0	54	10	***19***	05	54	10	**d**	83-	27	131	xz	###	5.6	135º	.100"
25	5	32	22	***25***	10	32	22	**R**	20-	14	131	xz	###	6.8	304º	16.1"

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=0º East=90º South=180º West=270º

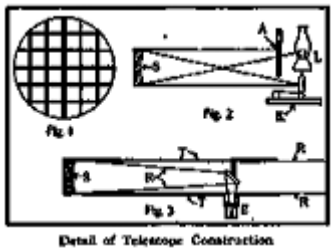
Occultations computed using Occult v3.6 (I.O.T.A.)

Variable star data from AAVSO. All other data computed with MICA 1800-2050 (Willman-Bell)

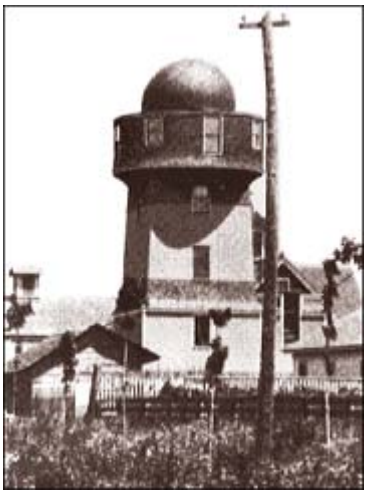
GALLERY…..

Prelude to MVAS:

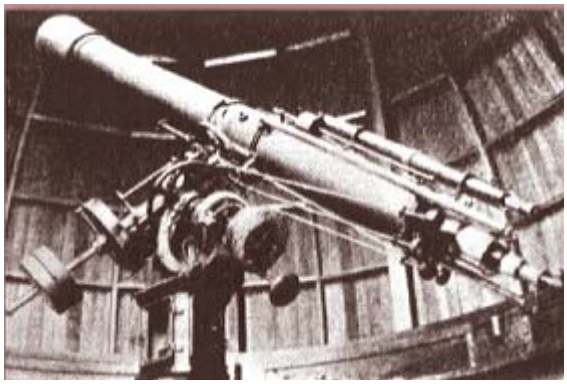
At right: John E. Mellish, circa 1910. Around this time, Mellish wrote an article in *The Boy Mechanic Vol.1*, on how to make a telescope. (precursor to Popular Mechanics magazine). Jack Draper read this article and began correspondence with Mellish on mirror making. Mellish was then working at Yerkes Observatory as an unpaid assistant. He would soon be moved to Leetonia, OH to become the Obs. Dir. of the Harrold Observatory. In short order, Mellish and Draper would meet. Draper would eventually order a 16" mirror blank (twice) from Mellish. The second blank would go on to be the first primary mirror of the MVAS 16" Cassegrain. After several years, the Harrold observatory would close. Mellish moved out west. Draper embarked on a productive career making telescopes. And he founded an astronomy club.


Detail of Telescope Construction

At right, an unknown telescope; likely a Draper production in the late 1930's. Jack stands next to the pier. The other gentleman's identity is lost to time. Likely the owner of the telescope. This photo is on display at the MVCO.



Industrialist Charles Ezra Hequembourgh had a private observatory on his estate in Dunkirk, New York, circa 1897. (Photo at right.) Upon his death, his widow sold the equipment to the Harrold Observatory. The telescope was a 9" Sagmueller refractor. Installed at Harrold (shown below). When Harrold closed down, the equipment was donated to Mt. Union College, becoming the Clark Observatory. Interestingly, ALPO founder Walter Haas used this telescope to hone is observing skills while mathematics at Mt. Union.



The Clark Observatory, first installment shown at right. The telescope has since been moved to a new location on campus, but the refractor is still there. There are tracking problems with the mount.

Above: A July 8, 1942 MVAS picnic shows Charlie Prather (far left) and Jack Draper (3rd from left) in front of a Draper refractor. Other gentlemen un identified.

Pittsburgh. Pa.
April 16 1939.

Draper & Prather
1363 Dremel Ave.N.W.
Warren Ohio.
Mr. Draper.

Dear friend Draper:

Congratulations to both yourself and Prather on your decision to let others share the benefit of your skill in optical surface finishing. I recall with much satisfaction the evening spent in using your 3" refractor at Schell's in BeaverFalls; it impressed me as being equal to the BEST professional refractors I have had the pleasure of using (Fecker, Brashear, Mogey, Clark, et al) and much superior to some of THEM . My impression of that evening was that your telescopes gave exquisite definition, leaving nothing to be desired. I shall not hesitate to make this statement to any inquiring prospects.

If you wish to do something to advance yourselves in this field, make up a 3" refractor and exhibit it at the New York Amateur convention and display this fall. Have some simple pamphlets and price lists printed (such as was made by Beede and Grandmontague for their Cassegrains) and if you wish, you may refer to me as your Pittsburgh representative. I'd like to see you fellows get some business, and shall certainly boost your wares.

Incidentally, the telescope you might exhibit in New York could be sent here for the opening of the Planetarium. when we shall require exhibition materials also. You had better get some good photographs of your instruments to send to inquirers along with your price list.

Keep me informed of your activities, and if you have an opportunity to run up with Grandmontague (when he arranges to bring a gang to Allegheny Observatory some time this summer) run over and see me,too.

Regards and best wishes

Leo J. Scanlon
Director of
Valley View Observatory.

Above is the letter send by Leo J. Scanlon of Pittsburgh. Here Mr. Scanlon gives a rave review of Draper's lens making skills. This appeared to be a crossroads in a decision to go into a telescope making business. The new business was forestalled and a new astronomy club would be formed.

Christmas Party 2013

Photo by Dennis Marko. Usual suspects.

Photo by Dennis Marko. Eric, Keith, Dick await dinner..

(L) Pandian and Rosemary, (R) Ed and Paul lead the way as the chow line advances. Pretty good eats, I'd say.

Photo by Dennis Marko. **The Imaging Committee**. L-R, Mike, Roy's back, Don, Karin, Lou. Jodi, where are you! (empty seat)

L-R. Ed, Sheila, Mark, Lori, Maryanne. Ed and Mark former officers, during the early 1990's. The MVAS Renaissance.

Who let the clowns in? L-R. Steve, Rich, Phil. They gave a monster pen to Phil for Christmas so that he won't lose it (due to old age). Amazing these guys run this group. President Lou avoided the lens it seems.....

Irene was an excellent hostess. Along with her husband Tony, they made sure everyone enjoyed the event. Many, many thanks to you both! It won't be the same next year, nor as good.

Dan, Rosemary and Margie enjoy the festivities.

It was a splendid night. The meeting was short and sweet after dinner. Thanks to all that made it (47 people in all). Let's hope 2014 is a great year with our 75th Anniversary Celebration. Photos by Tony Mehle unless otherwise noted. *-Phil Plante*

Christmas Eve Bonus.....

Mike Heim took this fantastic image of Jupiter on Christmas Eve 2013. Jupiter is near opposition and is in prime observing season. A bit cold outside tho.

Not quite sure, but if you squint your eyes a bit and fire up the imagination, that Red Spot might just be the blur of Santa leaving his stop at Jupiter on Christmas Eve. Even kids on Jupiter want telescopes for Christmas..... must be the egg nog talking.....