

THE METEORITE



The Pleiades M-45

also known as:

The Seven Sisters
Subaru



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Newsletter of the Mahoning Valley Astronomical Society, Inc.

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FEBRUARY 2010

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FEBRUARY 2010

Newsletter of the Mahoning Valley Astronomical Society, Inc.

MVAS CALENDAR

- FEB 27** MVAS meeting at YSU. 8:00 PM.
- MAR12-13** Messier Marathon at MVCO. Sunset 6:27 PM EST
- MAR 27** MVAS meeting at YSU. 8:00 PM.
- APR 9-10** Galaxy Quest at MVCO or S. Vista, Sunset 8PM

NATIONAL & REGIONAL EVENTS

- APR 14-17** Mid-south Star Gaze & Astronomy Conference. French Camp, MS. <http://rainwaterobservatory.org/>
- MAY 5-16** Texas Star Party. Prude Ranch, Fort Davis, TX <http://www.texasstarparty.org/>

OTAA MEETINGS 2010 (so far)

- MAY 15** OTAA Scenic Vista Stargaze
- AUG 14** MVAS OTAA at the MVCO.

YSU WARD BEECHER PLANETARIUM

- FEB all Fri/Sat.** 8:00 PM *Stars. Powerhouses of the Universe.*
- MAR 4** 7:00 PM A special lecture will be given by **Brother Guy Consolmagno**. An author (*Turn Left at Orion*) and researcher in asteroids and meteorites at the Vatican Observatory since 1993. He will explore the misconception that modern science and religion are in conflict and that they have much in common.

MVAS BOARD OF TRUSTEES

President	Sam DiRocco
Vice President	Harry Harker
Treasurer	Steve Bartos
Secretary	Phil Plante
Trustee (Appointed)	Greg Higgins
Trustee (Appointed)	Bill Pearce
Trustee (Membership)	Dan Schneider

OBSERVATORY STAFF

Observatory Director	To Be Announced
Librarian	Rosemary Chomos

PUBLICATIONS STAFF

Meteorite Editor	Phil Plante
Assistant Editor	Steve Bartos
MVAS Webmaster	Harry Harker

MVAS REPRESENTATIVES

OTAA Representative	Harry Harker
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 MVAS Homepage- <http://mvobservatory.com>

NEWS NOTES

A Swell Red Giant. A well know variable star in the neck of Cygnus is giving us a preview of what's in store for our sun. This star is Chi Cygni, which lies about 550 light-years away from Earth. As it nears the end of its life, it has begun to pulse in and out like a beating heart, though not that fast! This indicates that the star is running out of fuel. New close-up photos of this star were taken with the Smithsonian Astrophysical Observatory's Infrared Optical Telescope Array (IOTA) at Mt. Hopkins Arizona. They offer a preview of our Sun's fate, 5 billion years from now. Chi Cygni is now in the red giant stage of its life. It has bloated out so much that if it replaced the Sun it would engulf every planet out to Mars. And of course our own Sun will do just that in due time, when it too enters its red giant stage.

A feature captured by the new data is Chi Cygni's pulsations, which occur once every 408 days. As the star begins to run out of hydrogen to fuse in its core, it cycles through stages of contracting and expanding, causing it to brighten and dim in the sky. These pulsations cause it to jettison its outer gaseous layers, which will eventually become a planetary nebula. You can learn more about stars and red giants in the YSU Planetarium program "Stars". Check it out if you haven't seen this yet. When Cygnus comes around again in late spring, start looking for Chi Cygni. It is usually visible with binoculars and with the naked eye when at peak brightness. It will be the variable star of the month in the August 2010 *Meteorite*. It should be rising up from below 9th magnitude at that time. You can follow it the rest of the year with your binoculars.

Spotting a Red Giant. Using interferometry with the IOTA telescope array, unprecedented images of the surface of red supergiant Betelgeuse have been obtained. These images reveal the presence of two giant bright spots whose size is equivalent to the Earth-Sun distance. It is a first direct indication of convection occurring in a star other than the Sun. Convection is a process that transports heat by moving matter. This finding will give astronomers a better understanding of the structure and evolution of supergiants. Analysis of the brightness of the spots shows a variation of 500° compared to the average temperature of the star which is 5841° F. The larger of the two structures has a dimension equivalent to the quarter of the star diameter. This marks a clear difference with the Sun where the convection cells are much finer and reach hardly 1/20th of the solar radius. These characteristics are compatible with the idea of luminous spots produced by convection.

The IOTA image of the surface was constructed using two different algorithms. Each one came up with the same image, which show two spots near the center of the star. On the surface of the Sun, such spots are rather well-known and visible. However, it is not at all the case for other stars and, in particular, supergiants. The size, physical characteristics, and lifetime of these dynamical structures in supergiants remain unknown.

Meteorite Downloads. The new website is up with basic features as of this writing. You will have to contact Sam DiRocco to set up a new account with passwords, etc. in order to download Meteorites as before. Our apologies to all.

A strong showing of the public joined the MVAS at the Ward Beecher Planetarium at YSU for the show. New planetarium engineer Curt Spivey began things with a lively sky tour. It was his first show with MVAS in the audience. Beginning under Youngstown skies and its light pollution, he took us to darker rural skies giving a brief tour of constellations and star lives/types- using sample stars we can see in the sky. This led to the main program called "Stars: The Powerhouses of the Universe". It may be the best or at least one of the best shows (the list is growing) we've enjoyed at YSU. Catch it if you missed this show. We look forward to future shows conducted by Curt.

MINUTES OF THE JANUARY MEETING

JANUARY 30, 2010 at YSU

Sharon introduced the new engineer Curt Spivey. Curt is a graduate of THE Ohio State University and is from Columbus, OH. He spent time at CoSci in Columbus and also spent 15 years giving planetarium shows (West Virginia). Curt is a welcome addition to the YSU staff and we all look forward to his first visit to the MVCO.

The meeting was called to order at 9:38 PM by Sam DiRocco, presiding. ROLL CALL was answered by 24 members. Perhaps 14 visitors were present; The Bartos family, Curt, and former MVAS member Dennis Czazerski were some of the guests. Also along was Maryanne Hoffman, a frequent guest; she was interested in becoming a member. A call to read the minutes was made. A motion to suspend the reading was made by Greg Higgins with a second by Bob Danko. The motion was accepted by a unanimous voice vote. Minutes accepted as published.

TREASURER'S REPORT: The Report was read by Steve Bartos. On a motion by Bob Danko and a second by Brian Hoffman, the report was accepted as read. The Report follows:

General Fund 12/1 thru 12/31 2009

OPENING BALANCE:	\$ 7,724.84	
CLOSING BALANCE:	\$ 8,108.83	
AVAILABLE FUNDS:	\$ 7,858.83	
<u>INCOME:</u>		
RAFFLE TICKETS (CHRISTMAS)	\$	1,975.00
DUES		280.00
CHRISTMAS DINNER		230.00
DONATION (WARREN YOUNG)		160.00
RASC HANDBOOKS		120.00
SKY & TELESCOPE RENEWAL		32.95
ASTRONOMY CALENDARS		30.00
MVAS CLOTHING MERCHANDISE		20.00
INTEREST		0.88
TOTAL INCOME	\$	2,848.83
<u>EXPENSES:</u>		
CK# 2706 GREEN LASER POINTERS (BURGESS)	\$	98.00
2707 1ST PLACE RAFFLE WINNER		1,000.00
2708 2ND PLACE RAFFLE WINNER		500.00
2709 3RD PLACE RAFFLE WINNER		250.00
2710 TOP SELLER RAFFLE WINNER		250.00
2711 2009 METEORITE POSTAGE/COPIES		366.84
TOTAL EXPENSES	\$	2,464.84

Reserved Funds

KEY DEPOSITS	\$ 250.00
2009 DUES PAID: L. DiNARDO	
2010 DUES PAID: S. BARTOS, M. DIMOFF, L. DiNARDO, S. DiROCCO, K. JANEKO, R. MATTIUSSI, J. McCULLOUGH, R. McCULLOUGH, L. MYASHITA . AS OF DEC. 2009, 11 MEMBERS HAVE PAID DUES.	

CORRESPONDENCE: Only an ad for an astronomy centered cruise to Alaska was received (cruise date early Sep. 2010).

COMMITTEE/OFFICER REPORTS: OAD FUND: Tony Mehle reported that the Wells Fargo Money Market Fund closed on January 29 with a balance of \$3,914.12. No change since the last report. He has investigated several local bank CD rates, complimenting a similar list compiled by Phil Plante. He found that Home Savings had the highest rates at 1.5% (1yr) and 2.0% (2yr.). Our current Wells Fargo investment would yield \$60/yr if put in the Home savings 12 month CD. That is much better than yielding next to zero with W. Fargo. Tony agreed that it is time to move to a new investment and is ready to comply with the trustee's decision. Harry and Sam will look over some other options (no-load funds, etc.). The trustees should settle on a plan soon. Harry thanked Tony for all of the work he's done over the years, supervising the OAD Fund.

OBSERVATORY DIRECTOR'S REPORT: Greg Higgins noted that it was cold out (12°F according to Curt). Such temps and the snow have left the MVCO in good shape so far this winter. One of the first things needed is to mount the 42" monitor on the back wall. This is also part of a plan to lose the wall exhaust fan and seal off the opening. A roof fan (solar powered?) will be utilized in place of the old wall fan. Don Durbin has ordered a rotating antenna for the big flat screen. This monitor will also be ideal for lap top computer presentations in addition to regular TV service. Rosemary said to keep an eye open for bargains when schools close down. Curtains for the stage and file cabinets were noted items to watch for. Phil Plante noted that Allen and Bette Heasley have donated a micro wave to the MVCO. It is much bigger than our current oven. We thank them. Larry has already delivered it to the 16" building.

OLD BUSINESS: Candidates for the Membership Trustee were announced: Roy McCullough, Don Durbin, Dan Schneider. No others came forth. A vote by ballot would be held at the end of the meeting. Harry and Sam have been working on the MVAS website to fix ongoing problems. It was currently down as of this meeting. Moving to a new server was proving difficult but a basic page would be up in a few days with the email exchange and *Meteorite* download feature running. Sam has been emailing the last few issues to those on the email list while this web-page feature has been broken. If you should have received a PDF attachment. Check your email. All will need send in an email addresses and set up the password again with the fixed webpage. The trustees have appointed Bill Pearce as the next Appointed Trustee (a 2 year term).

NEW BUSINESS: Don Durbin was taking deposits for the new Burgess observing tents. It was a \$50 deposit and a final \$49 payment upon shipping. They are silver outside, black inside. Weigh about 22lbs and fold up into a small bundle. Two can be ajoined to make a sleeping section attached to an observatory side. Don also had some nifty roof binoculars from Burgess. 8 x 42mm for \$49 (one sample pair on hand) and a 9.5x 63mm model going for \$69. Plus shipping. These are nitrogen purged and fog proof. He distributed Burgess headlamps and pointers to those that had ordered them. The laser collimators have not shipped yet and he was taking orders, \$9.95 each.

Bob Danko renewed the P.O. Box in Newton Falls. Rental fee was \$22 for six months. He paid for this out of pocket. He turned in \$8 to the Treasurer, to let his Box payment (+ the \$8) to cover his 2010 dues (\$30 total). Tony Mehle has reserved the same room at Boardman Park for our Christmas Party, on

December 11. Same time slot as 2009. He will host this event as well. Bob Danko moved to accept this, Bill Pearce seconded it. All in favor. We thank Tony for this most generous offering. MVAS will need to send a room rental fee of \$100 to the Park as soon as possible. This is up from the \$96 fee last year. [Late word after the meeting was that Wrangler's has closed. This had been our December site for at least 10 years. Good place while it was open. -Sec.]

GOOD OF THE SOCIETY: Rahendran J. Pandian turned in a curious full disk lunar map given to him by his friend David Law. It was an old map and appeared to be hand drawn. Most members didn't know the names on it, but they were early members of the MVAS and also key figures in the long defunct Youngstown Astronomy Club. The printed names on the document were (T.G.) Beede and Leo Grandmontagne. These men were active in the 1930's thru the 1950's, joining MVAS in the early 1940's. This could merely be a valuable MVAS item, or perhaps a significant historical item. Not many amateurs make lunar maps. Sharon Shanks will have it framed.

The membership trustee ballots were cast. Greg Higgins protested in that Trustees do not vote. He resigned his O.D. and Trustee position. Ballots were tallied by the President and Vice President. Results recorded by the Secretary were: Don Durbin (4), Dan Schneider (7), Roy McCullough (6). Winner is Dan, and he should serve well being a past MVAS president. Congratulations to all three members. The membership would be well represented by any of you.

Maryanne Hoffman was voted into membership on a nomination from Phil Plante and a second from Don Durbin. Maryanne has enjoyed our previous chili cook-off and OTAA events in the past as well as the 100 Hours of Astronomy at YSU last year. Welcome to the membership. You know the rule, come hungry!

VISUAL REPORTS: None given, it was getting late.

ADJOURNMENT: Adjournment came at 10:32 PM. The Bartos family and Plante brothers were hosts tonight and everyone seemed to enjoy the sausage sandwiches and pizza. There was cheesecake left; MVAS loosing its touch? The next meeting will be at YSU on Feb 27, 2010. Meeting begins after the 8:00 PM show. Scheduled hosts are Ed and Sheila Bishop. **PASSWORD:** name a famous telescope or observatory.

-minutes by Phil Plante

Addendum: It should be reported that Allen and Bette made a successful drive to Aurora, Colorado in late January. They have moved in with their son there. Allen reported a nasty stretch of freezing rain they drove through for four hours. They saw many cars in ditches and jack-knifed semi-trailers along the roadside. We are glad they arrived safely. No chance yet to evaluate observing conditions, but there is the usual dreaded light pollution around. They will stay in contact via the email-group. Before they left, they gave Phil a card for all members to sign. It will be sent to the last surviving charter member Agnes Bufwack along with an issue of the *Meteorite*. She was Secretary for many years in the 1940's. She has returned to live with her son in Leavitsgurg. In her 90's now, Allen thought she would appreciate knowing how far the MVAS has come.

MVAS ACTIVITIES

On January 16, Sharon Shanks and Pat Durrell hosted a Telescope class at the YSU Planetarium. Sam DiRocco, Greg Higgins and Phil Plante lent a hand. It turned out to a fun time.

The idea was to help parents and kids get their new telescopes working. Either by a scope tune-up or instruction (usually both). There was a good turn-out with maybe 6 or 8 telescopes that needed fixed or assembled. Several potential members were given old MVAS fliers. It is planned to do this again next year. Next year we will be better prepared with tools, new MVAS fliers and a book and website list that will be helpful to tyros.

ASTEROID OCCULTATIONS: During the year, hundreds of asteroids will pass in front of a star as they move along in their orbits. If an observer is in the line of sight of these events (in the asteroid's shadow), they will see the star "blink-out" as the occulting body blocks the star. In a few seconds the star "blinks-on" as the body moves away. Timing these events is an important way to measure the size of an asteroid. A report form (Excell) is filled out with the needed data and then emailed to the International Occultation Timing Association (IOTA). They then combine your observation with others to analyze the size and shape of the asteroid. An observer should gain some experience (practice) in this type of observation if they want to participate in this research. You can start with the list below.

In past decades, occultation observers could be counted in the dozens (worldwide). These days it is becoming more popular and I'd expect this number is now in the hundreds. This list is of all events calculated by IOTA, that are within 100km of Youngstown, OH. Check dates and times and mark your calendars for those events you'd like to try. The asterisk marked dates (PDF in blue) are the best ones with stars brighter than 10th magnitude, and within 50km of Youngstown. This puts the MVCO (north events) and Scenic Vista (south events) as possible, familiar observing sites. With cloudy winter nights still around, it's a good time to plan for those better nights ahead.

2010 OCCULTATION & APPULSES FOR YOUNGSTOWN

(UT) Date	Object	(UT) Time	Star Mag.	Mag. Drop	Dur. (sec.)	Dist. from Y'town
Mar 2	Thisbe	00:39	9.3	3.6	4	75 km S.
Mar 9*	Octavia	01:08	9.1	5.2	2	42 km N.
Mar 9	Juliana	10:49	11.0	3.4	5	22 km S.
Apr 4*	Pallas	04:28	9.3	---	---	3152k N.
Apr 15*	Auravictri	07:30	9.4	5.5	2	25 km S.
Apr 17	Erda	04:22	11.5	3.9	4	74 km S.
Apr 23	Crescentia	09:28	11.4	1.8	6	25 km S.
May 31	Dudu	05:08	12.0	0.9	5	84 km S.
Jun 2*	Dorothea	04:02	9.7	5.5	3	20 km N.
Jun 8	Bohemia	05:26	10.5	2.3	10	90 km S.
Jun 30	Bredichina	04:10	12.6	1.4	6	19 km N.
Sep 11	Diana	05:54	11.4	1.7	7	25 km N.
Nov 8	Happelia	05:34	11.4	2.4	5	87 km S.
Dec 3	Jujo	00:38	10.4	5.0	1	87 km S.
Dec 4*	Christine	07:01	9.0	5.6	2	23 km N.
Dec 13	Bellona	05:32	12.0	0.3	31	34 km S.
Dec 25	Nocturna	03:05	11.3	3.7	3	41 km S.
Dec 31	Marbachia	03:01	11.7	2.3	3	90 km N.

* highlight events.

NOTES: Times and dates are in Universal Time and one should be careful that the UT time doesn't occur the previous evening (civil calendar date). Usually when the UT time is at 05 hrs or less. Star magnitudes less than 11 magnitude will be challenging. The June 30 Bredichina event with a 12.6 magnitude star, might be a practical limit for an 8" scope in the Youngstown - Warren area (due to light pollution). One need not

see the asteroid but needs to see the star. The asteroid magnitudes are not given here, but they are given in the updates made a month or two before the event (Steve Preston). Magnitude drops during the occultation of 1.5 or less might be difficult to detect visually. Durations less than 2 seconds may also be tough to catch. Video recording, using low light B&W CCD surveillance cameras is a preferred method for these events. This also allows WWV time signals to be recorded.

The April 4th Pallas appulse (miss) is included because Pallas will be near the same magnitude as the star. Pallas will be April's asteroid of the month as well. It should be easy to see both visually. A time-lapse sequence of images could reveal the motion of Pallas, passing by the star. This event has the added benefit that it occurs early Easter Sunday morning at 12:30 AM. Work schedules shouldn't interfere for most folks. The other asterisk marked dates are for the brighter stars expected to be occulted over the Youngstown/warren area. You might be able to stay home for these. Check the Steve Preston website to print out maps of the path and the needed star charts. There will be corrected predictions based on recent astrometric data obtained for the asteroid. Sometimes the path will shift out of the area so check on this. <http://www.asteroidoccultation.com/> Good luck. Let's hear some good results!

MVAS REMINDERS

Members are urged to submit MVAS Dues for 2010 as soon as possible. If you have an email, phone number or address change in recent months, please give these changes to the secretary. The roster will be updated soon and we need the correct data. The August OTAA is a long way off still, but now is a time to start thinking about an item or two you could donate for a door prize. Keep an eye out for deals or jot down an idea for a prize to acquire later. Items don't have to be astronomical in nature and could be of a practical use (flashlights, blank media disks, thermos, etc.) Two RASC Handbooks are left (\$20 each).

The host lost for 2010 has been filled and is given below. Remember, you can help out anytime you want. Just get with the host you'd like to help out and work out the shared duties. The "buddy" system works great and everyone benefits- from shared costs for the hosts to more chow for the meeting.

JAN	<i>Phil & Larry Plante & Steve Bartos (done)</i>
FEB	Ed & Sheila Bishop
MAR	Joe and Shirley Capella
APR	Mike and Lisa Boyer
MAY	Rich and Lisa Mattuissi
JUN	Keith Janeco & Bill Patch
JUL	Greg Higgins (?)
AUG	Jodi and Roy McCullough
SEP	Rosemary Chomos
OCT	Harry Harker & Sam DiRocco
NOV	Bill Pearce
DEC	Tony Mehle- Christmas Dinner

Observer's Notes.....

Footsteps In The Snow

Having just participated in the first "new telescope" clinic at YSU, memories of my own first telescope were revived. First, we all were amazed at the poor quality of beginner scopes. Yes, the infamous department store telescope lives on. The optics I looked through were of adequate quality but the mountings were

abysmal. We speculated how often a child, eager to begin astronomy, will be turned off by a shaky, unusable mount. Vendors such as Burgess, Celestron, and Orion are offering stable, table-top Dobs for under \$100. They must realize finally that it pays to build-up a future customer base.

This brings me to my first scope. It is a familiar plot; many of us have experienced this. It was Christmas 1968 and my brother and I received an equatorial mounted, 60mm refractor made by Tasco. A department store scope. But don't let the name throw you. This had a high quality mount, cast aluminum I think. It was sturdy with proper wooden tripod legs. It had real metal worm gears on both axels. The setting circles and excellent 60mm- F/16.7 coated achromat, made it a fine instrument. Notice I said "instrument". The beginner scopes I saw at the YSU event had the feel of "toy" to it. My scope, to me anyway, seemed like a scientific tool. Larry and I took great care of it, keeping it clean and stowed properly. The quality and impression of this scope kept my interest. It put my mind-set to what astronomy was supposed to be about; it was a fun thing but with more significant purposes. Well...we *were* going to the Moon back then!

I remember those first cold nights in January. Carrying it out into the snow covered back yard. I can still hear the crunch of the ice crusted snow as I walked to my observing spot to set up. The Moon, M-42, Pleiades, M-41, Saturn, were all cool to see. I was disappointed I couldn't see any galaxies. It was the beginning stages of aperture fever. Over the next few years, I read every book I could find at the library. Nearly all of them advised to keep an observing log. So in January 1970, I made my first entry. It was January 14th, 1970. From 6:30 to 7:45 PM, I observed with my sisters Mary Jo and Jackie. I made my first sketch of Saturn that night and another on the 18th and 21st. They simply plotted Saturn's motion against a background star. I identified Titan for the first time. Yes, there was snow on the ground and standing in it always shortened the sessions.

My journey in astronomy has taken me places I had never dreamed of going to. I've met a few moonwalkers and a few solar system discoverers. Saturn became a central study, having had my sketches published in the *JALPO* and in a book. My log book had recorded those first steps. Perhaps more importantly, they recorded those observations made with my sisters. These can never happen again. Jackie passed away on January 14, 2005- just as the Huygens spacecraft was landing on Titan. (January 14 was also that first log entry date.) Then, Mary Jo went blind in 2007. She can no longer share a view. For whatever reason, I can't put a finger on it, those early observations seem to matter more as the years pass. Perhaps more so than any journey they launched. Those library books were right. If you don't already, you should keep a log. Especially for a young astronomer. Those early steps you record are more important than you might think. *-P. Plante*

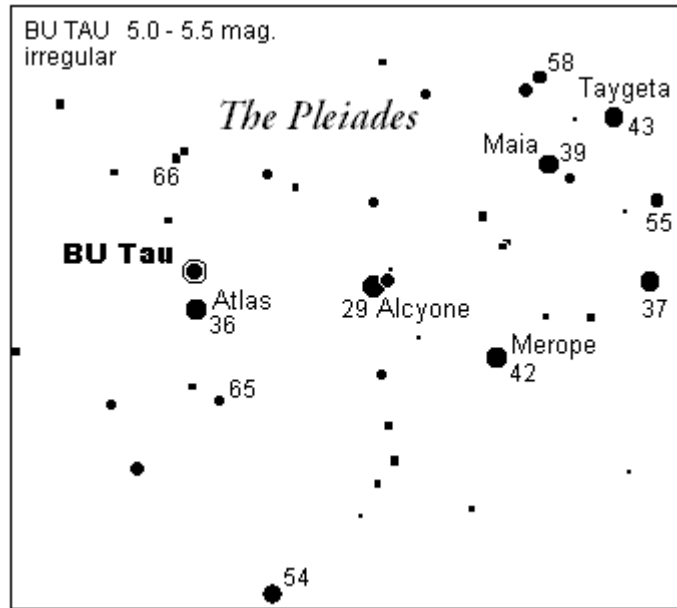
MVAS Homework: The Pleiades, M-45

Latest estimates put M-45 at 440 light years distance. It is composed of about 1,000 stars, mostly young, hot blue stars. About 14 are bright enough to be seen naked eye, but most folk can see only 5 to 7- hence the nickname "Seven Sisters". The distance between Alcyone and BU Tau is just over 3 light years as measured on the plane of the sky. The core radius of the cluster is about 8 light years. Try to imagine being in the cluster. Using the above distances and for comparison: Earth is 4.36 light years from alpha Centauri and 8.58 light years from Sirius.

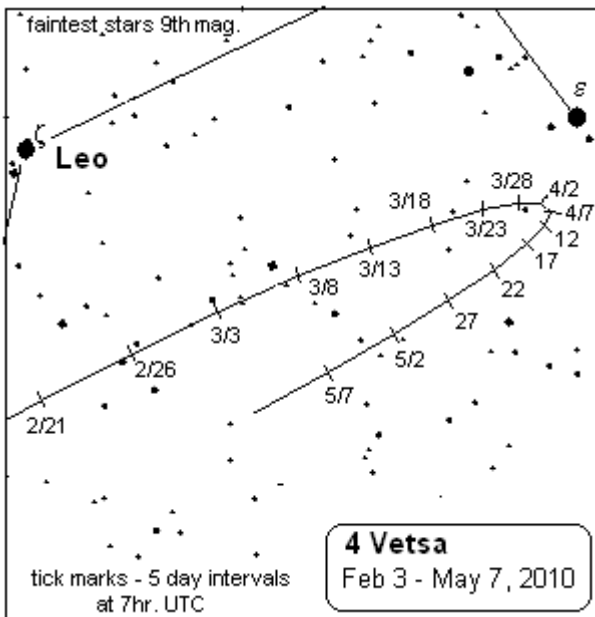
MVAS OBSERVER CHARTS

MVAS OBSERVATIONS - DUE MARCH 2010

Variable star of the month: **BU Tauri** (*abbrev:* BU Tau). Also known as Pleione, it is a shell star. That is, a bright B type star that is associated with the formation and dissipation of a disk of gas around it. Since Pickering's 1889 discovery of its variability, it has gone into shell mode twice. The last episode ended In 1980. We see it as an irregular variable ranging from 5.0 to 5.5 magnitude. It has a long history of photometric and spectroscopic study. But it is a fun variable to track with binoculars. Check it every time you look at the Pleiades.

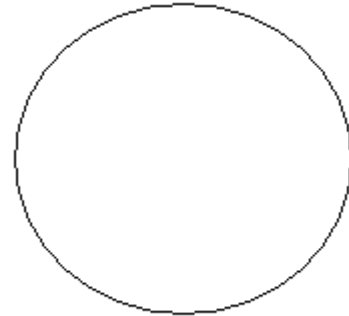


Asteroid of the month: **(4) Vesta**. This is the second largest asteroid at 578km x 458km and is potato shaped. It was discovered by Heinrich Wilhelm Oblers on March 29, 1807. This March it will be near its brightest at around 6.3 magnitude. It can be as bright as 5.1 magnitude. Easy to watch with binoculars as it loops under the "Sickle" of Leo.



OBSERVER _____

Featured object: M-45 Please try a sketch. Simple pencil dots are stars. Brighter stars are drawn as bigger dots. Digital cameras are great at making a "Snapshot" of M45. Prime focus on a telescope or use a telephoto. A tripod is needed, but give it a try. ISO around 1600 and F/5 or faster might give results. Try some exposures. You can always delete the bad ones.



M-45 Observation:

Date: _____ Time(EDT) _____ Scope _____

BU TAU magnitude estimates:

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

_____	_____	_____	_____
_____	_____	_____	_____

(4) Vesta Observations:

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

_____	_____	_____	_____
_____	_____	_____	_____

Other Objects in Taurus

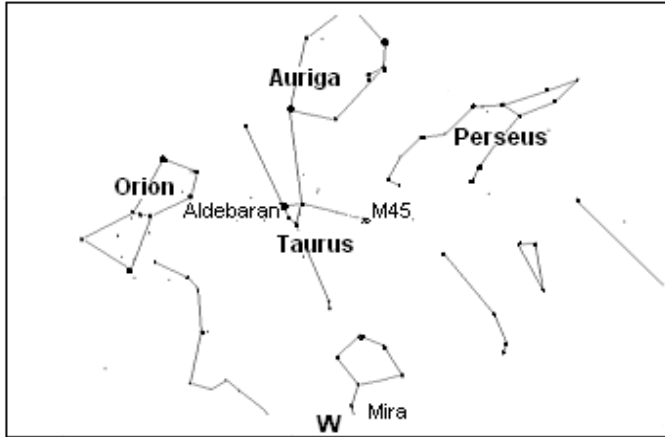
Object	Date	Scope	Object	Date	Scope	Split?
M- 1	_____	_____	30 Tau	_____	_____	Y / N
N- 1647	_____	_____	111 Tau	_____	_____	Y / N
N- 1746	_____	_____	118 Tau	_____	_____	Y / N

Lunar Occultations (see Sky Almanac):

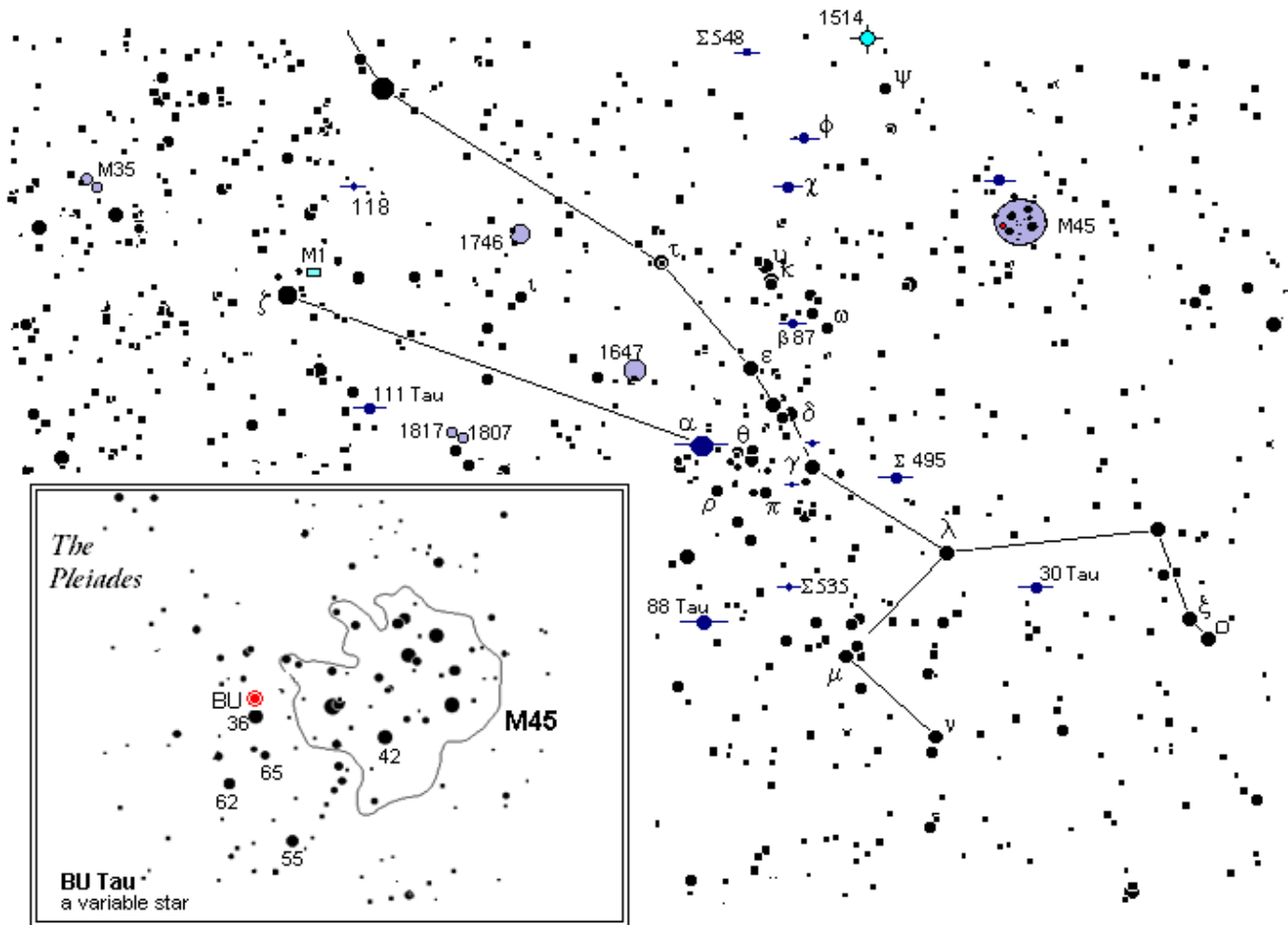
Date (UT): _____ Time(UT): _____ Scope/magx Phenom (circle)

_____	_____	_____	_____x	R	D
_____	_____	_____	_____x	R	D
_____	_____	_____	_____x	R	D

Constellation of the Month — Taurus



By Mid-March, Taurus is about 20° up in the west as darkness falls (9PM EDT). A last chance to explore with nights moderating towards spring-like temps. Taurus sets around 1:00 AM. With the naked eye you can see the Hyades. Bright red Aldebaran rides within the cluster. This is an illusion 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 many fine double stars to choose from. Some have nice colors. Which ones are they? Look for yourself? Don't forget to keep a watch on variable star BU Tau during the coming months. Have fun.



DEEP SKY				DOUBLES:			Check list		Instruments used: _____ on _____ _____ on _____ _____ on _____
N 1514	10.0	1.9'	P.Neb.	χ Tau	4.8, 8.5	19"	white, blue	___ N 1514	
N 1746	6.1	41'	O.C. 20 str.	30 Tau	5.1, 9.8	9"	blue, orange	___ N 1746	___ 88 Tau
N 1647	6.4	45'	O.C. 200 str.	88 Tau	4.3, 7.8	69"	yellow, pale lilac	___ N 1647	___ 111 Tau
N 1817	7.7	15'	O.C. 60 str.	111 Tau	5.0, 8.0	86"	yellow, lilac	___ N 1817	___ β 87
N 1807	7.0	17'	O.C. 20 str.	118 Tau	5.8, 6.7	5"	orange, orange	___ N 1807	___ Σ 535
M 1	8.4	6'x4'	SNR "Crab Neb."	β 87	6.2, 8.6	1.9"	red, blue	___ M 1	___ Σ 548
M 45	1.2	110'	O.C. 100 str.	Σ 535	7.0, 8.3	1.1"	yellow, bluish	___ M 45	___ Σ 495
Variable star: BU Tau	5.0 - 5.7 mag.	lrr.		Σ 548	6.4, 8.0	15"	yellow, bluish	___ χ Tau	
				Σ 495	6.1, 8.8	3.7"	yellow, yellow	___ BU Tau	___ mag. on ___/___/___

Solar and Lunar (ET).

Date	Sunset	Moonrise	Moonset
1	6 : 15 EST	7 : 55P EST	x : xx
5	6 : 19	11 : 36P	x : xx
9	6 : 24	3 : 23A	x : xx
13	6 : 28	6 : 25A	x : xx
17	7 : 33 EDT	x : xx EDT	9 : 44P
21	7 : 37	x : xx	1 : 00A
25	7 : 42	x : xx	4 : 29A
29	7 : 46	7 : 43P	x : xx

PLANET WATCH

Venus Sets	Mars Transits	Saturn Rises
7:11P	10:00P	7:52P
7:21P	9:43P	7:35P
7:30P	9:27P	7:18P
7:40P	9:11P	7:00P
8:50P	9:56P	7:43P
8:59P	9:42P	7:26P
9:09P	9:29P	7:08P
9:19P	9:16P	6:51P

March 2010

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 March 2010 (4) Vesta

Date	Rises	RA hr. min	Dec. deg.	Alt.	Azm	Magnitude
1	4 : 31 PM	10 : 08.6	+21.1	25°	83°	6.2
7	3 : 59 PM	10 : 03.1	+21.7	31	87	6.4
13	4 : 29 PM EDT	09 : 58.2	+22.1	37	92	6.5
19	4 : 00 PM	09 : 54.1	+22.5	42	96	6.6
25	3 : 33 PM	09 : 51.0	+22.6	47	101	6.7
31	3 : 07 PM	09 : 49.0	+22.7	52	107	6.8

Date hr. Celestial Highlights

Date	hr.	Event
8	3.6	LAST QUARTER MOON
14	6.0	Daylight Saving Time
15	21.0	NEW MOON
21	0.0	Moon 0.3° S. of Pleiades
22	1.0	Saturn at opposition
23	12.0	FIRST QUARTER MOON
23	10	Moon 0.5° N. of M35
23	2.2	Algol at minimum light
24	0.0	Mars: Syrtis Major @ CM
25	0.0	Mars: Syrtis Major @ CM
30	2.5	FULL MOON

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

LUNAR OCCULTATIONS FOR: MARCH 2010

Civil (24hr) EDT	UT	Ph	Moon % illum.	Moon alt	Moon azimuth	Star name	Star Mag.	event PA	dbl./sep.
20	22 : 52 : 12	EDT G*	25+	20°	284°	ZC #	6.2	359°	NA"
22	22 : 12 : 55	D	45+	49	261	ZC 880	6.8	114°	93.0"
22	22 : 15 : 14	D	45+	48	261	SAO 7757	7.6	119°	93.0"
22	22 : 50 : 13	D	46+	42	268	132 TAU	5.0	129°	3.80"
23	2 : 07 : 40	D	47+	7	296	ZC 898	6.0	112°	NA"
23	20 : 35 : 09	D	56+	71	202	ZC 1036	6.5	090°	NA"
23	21 : 49 : 12	D	57+	62	238	SAO 78758	7.5	090°	15.4"
23	22 : 18 : 14	D	57+	57	247	SAO 78771	6.8	080°	NA"
24	22 : 26 : 12	D	68+	62	226	SAO 97275	7.7	138°	NA"
25	0 : 18 : 58	D	69+	44	257	ZC 1186	6.0	173°	NA"
28	2 : 11 : 22	D	95+	40	230	ZC 1566	6.3	156°	.030"

at MVCO

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)

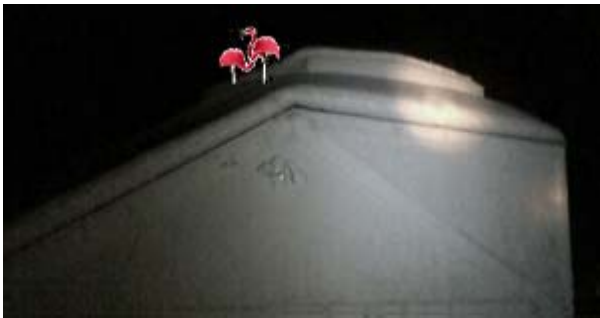
GALLERY.....

The Lonely Observatory....

Several members posted images of their snow-bound and lonely observatories this past January. February 2010 began with a monster snow storm, leaving observatories lonely once again. But the snow gives us a chance to dream of summers past and the hope of warmer climes just around the corner. If you look closely, those observatories were not so lonely after all.



Bill started off the "Lonely Observatory" bit, so his place got the most attention from the pink visitors. (Not a favorite if his).



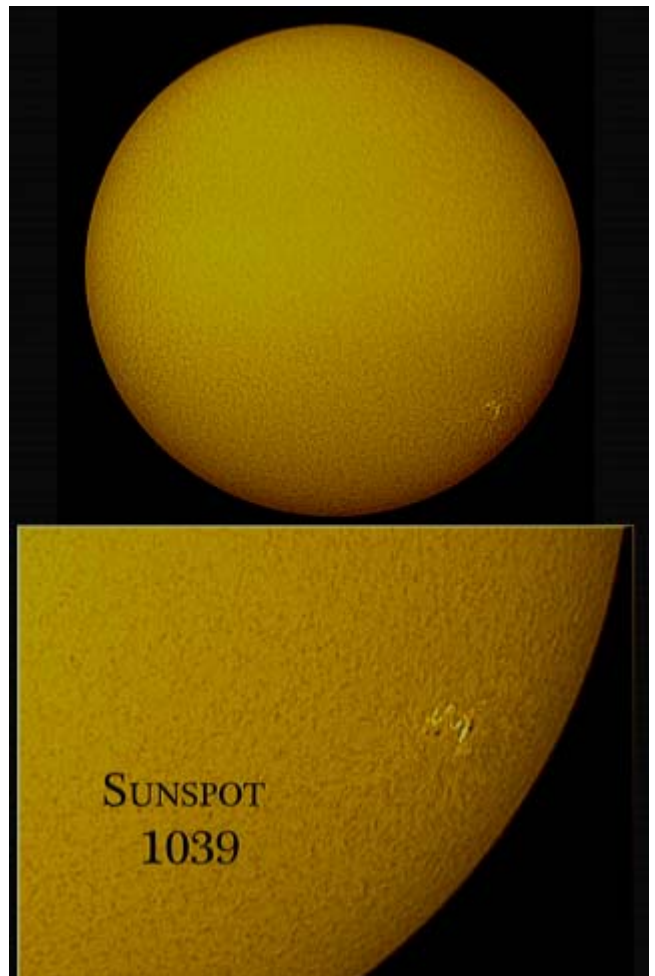
Mike's visitors stayed on the roof. Hopefully they will come in handy retrieving wayward rockets at Scenic Vista.



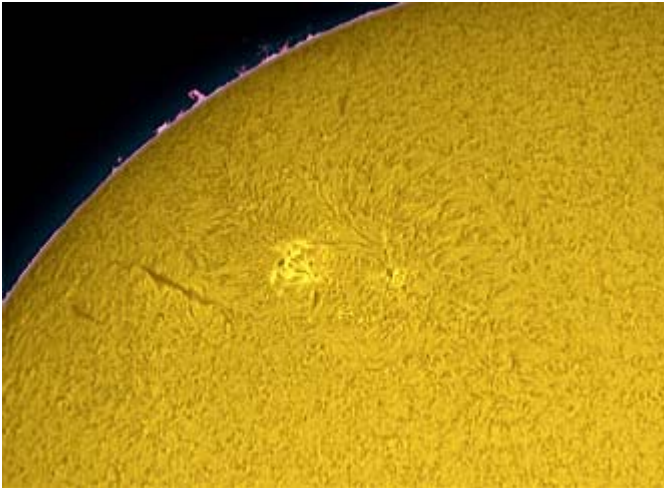
They waited so long to get into Sam's observatory, they turned blue from the cold.



Perhaps the flamingo's cleared the path to the observatory. In any case, Jodi and Roy took advantage of a few clear, daytime skies for some solar work. (see below)



Roy sent this January 4, 2010

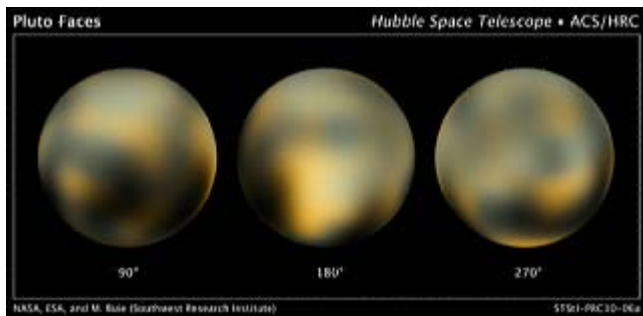
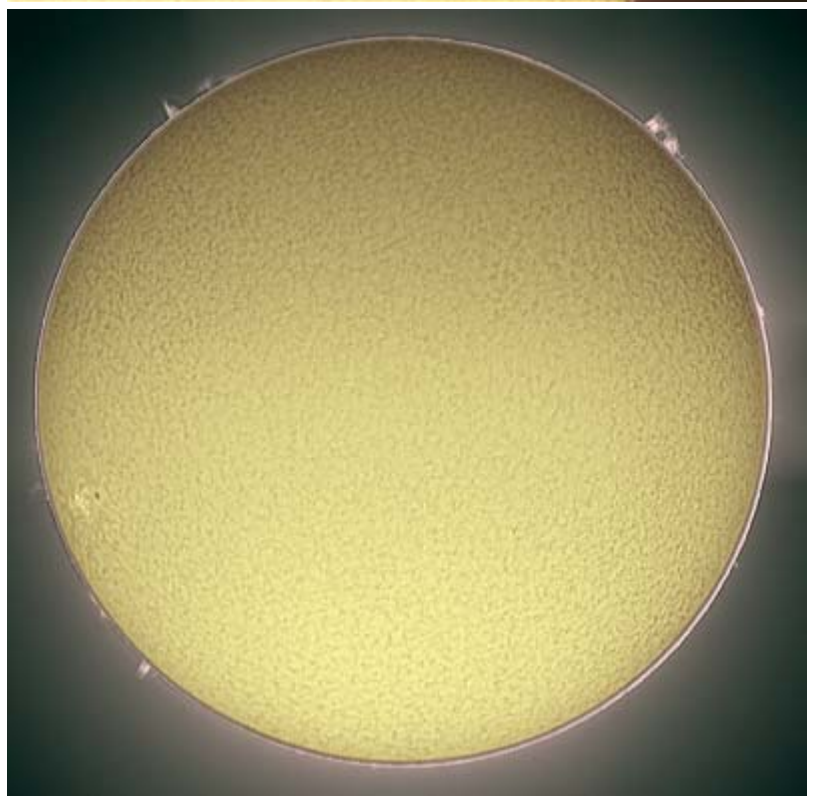
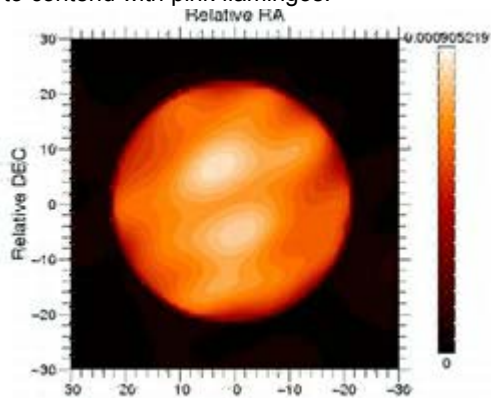


ABOVE: Roy McCullough's work January 9, 2010.
 RIGHT: Roy got the prominences and a full solar disk Jan. 21, 2010. All of Roy's image's are in H-alpha light.



A Close View.

Below is the image of Betelgeuse constructed with the IOTA interferometer. See the *News Notes* of this issue for more information on this remarkable image. At least they didn't have to contend with pink flamingos.



Credit: NASA, ESA, and M. Buie (Southwest Research Institute)

ABOVE: The most detailed view of the surface of the dwarf planet Pluto, was constructed from multiple Hubble Space Telescope photographs taken from 2002 to 2003. The center disk shows a bright spot that is unusually rich in carbon monoxide frost. These new photos reveal Pluto in near true-life color, close to what it would look like to an observer traveling toward it. The surface appears reddish, yellowish, and grayish

in places. The mysterious bright spot is particularly puzzling to scientists. Some of the colors revealed in the new pictures of Pluto are thought to result from ultraviolet radiation from the sun interacting with methane in the tenuous atmosphere of the dwarf planet. The bright spot apparent near the equator has been found in other observations to be unusually rich in carbon monoxide frost.