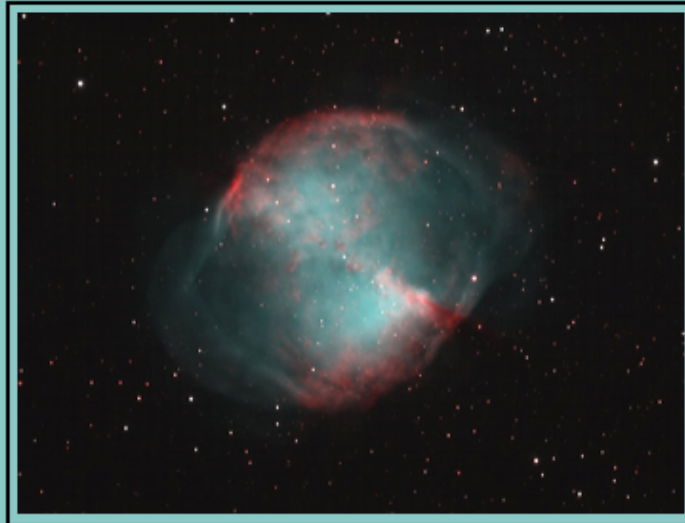


# THE METEORITE



M-27  
NGC 6853  
The Dumbbell Nebula  
*In Vulpecula*



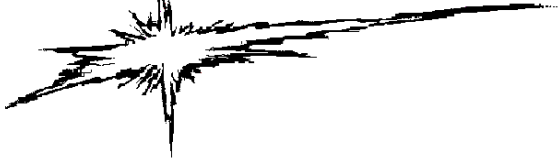
Newsletter of the Mahoning Valley Astronomical Society, Inc.

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



Newsletter of the Mahoning Valley Astronomical Society, Inc.

#### MVAS CALENDAR

- AUG 14** MVAS OTAA. 5:00 PM registration opens.  
**AUG 28** MVAS meeting at MVCO. 8:00 PM.  
**SEP 25** MVAS meeting at MVCO. 8:00 PM.  
**OCT 2** Scenic Vista Public Star Party. 7:00 PM- sunset.

#### NATIONAL & REGIONAL EVENTS

- SEP 2-9** 2010 Heart Of America Star Party-- Butler, MO  
By the Astronomical Society of Kansas City at a  
40 acre Dark Sky Site, 75 mi. south of Kansas  
City. Has 6.7 mag. skies. \$40 registration  
(adult) for 2+ days. Meals extra.  
See website: <http://www.hoasp.org>
- SEP 9 - 12** 20th Annual Connecticut Star Party-- Ashford,  
CT. Adult on-line registration: \$20, \$30 at gate,  
space available. Food/meals: \$45. Speakers:  
Carolyn Shoemaker and David Levy.  
<http://asnh.org>
- SEP 11** Celebration of the Night and Star Party  
Carlsbad Caverns National Park, Carlsbad,  
NM. Free. Visitor Center and Cave will be  
closed at night. Watch the Bat Flight as 100k's  
of bats leave the cave earlier in the evening.  
<http://www.nps.gov/cave/playourvisit/events.htm>

#### OTAA MEETINGS 2010

- AUG 14** MVAS OTAA at Braceville - MVCO  
**SEP 4** Black River OTAA, Birmingham, OH

#### MVAS BOARD OF TRUSTEES

President	Sam DiRocco
Vice President	Harry Harker
Treasurer	Steve Bartos
Secretary	Phil Plante
Trustee (Appointed)	Bill Pearce
Trustee (Appointed)	Roy McCullough
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Assistant Editor	Steve Bartos
MVAS Webmaster	Harry Harker

#### MVAS REPRESENTATIVES

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

**The Sands of Time.** In 2005, the Cassini spacecraft found sand dunes on Saturn's moon Titan. The sands that make up the dunes appear to be made of organic, hydrocarbon particles. The ridges of these dunes generally run west to east. Similar to wind produced dunes found on Earth. However, basic principals of the rotation of planetary atmospheres and data from the ESA's Huygen spacecraft produced models that would have Titan's wind blowing east to west. Opposite to what was found by Cassini. A new paper by Tetsuya Tokano shows that it is seasonal changes in wind direction that is the cause of this mystery. By using new radar data on Titan's topography, shape, gravity data and by looking at variations over time rather than averages, a new wind model was developed. Examination showed that at the Titan equinox, the Sun lies over the equator, causing upwelling in the atmosphere. The turbulent mixing causes the winds to reverse and accelerate to 2 to 4 mph. The normal east to west winds rarely reach these speeds. The threshold for sand movement appears to about 2mph. So it appears that twice during a 29 year "Saturn/Titan year", the equinox winds sculpt the sand dunes. This is important for planning future missions to Titan in which wind will affect delivery accuracy of landers or balloon born instrumentation.

**Close Brown Dwarf.** A rare find, using the Near-Infrared Coronagraphic Imager (NICI) on the international 8-meter Gemini-South Telescope in Chile, was made by an international team. It was led by University of Hawaii astronomers Beth Biller and Michael Liu; with help from University of Arizona astronomer Laird Close and UA graduate students Eric Nielsen, Jared Males and Andy Skemer. They imaged a very young brown dwarf, or failed star, in a tight orbit around a young nearby sun-like star. This discovery is special because the closeness of the 36 Jupiter-mass brown dwarf, dubbed PZ Tel B, and its parent star, PZ Tel A. They are separated by only 18 AU's, similar to the distance between Uranus and the Sun. PZ Tel B appears separated by 0.33 arcseconds from PZ Tel A. This is equivalent to a dime seen at a distance of 7 miles. They applied specialized analysis techniques to the images to detect PZ Tel B and measure its orbital motion. NICI is the most powerful high-contrast instrument designed for imaging brown dwarfs and extrasolar planets around other stars. NICI can detect companions 1 million times fainter than the host star at just 1 arcsecond separations. An international team of researchers is now carrying out a 300-star survey with NICI, the largest high-contrast imaging survey conducted to date.

**One More.** A Senate panel approved a 2011 budget proposal for NASA that would extend the space shuttle program. Republican and Democratic members of the Senate Commerce, Science and Transportation Committee unanimously approved the legislation, after months of debate and criticism. The Senate Budget Committee must still approve the bill before sending it to the full chamber for a vote. The plan maintains the White House's 19-billion-dollar request for NASA funding, beginning on October 1st. It adds another shuttle mission in 2011 to the two remaining missions (in Nov & Feb). NASA is also ordered to begin work on a new heavy lift vehicle immediately rather than the original Obama plan of 2015. The US space shuttle fleet is set to be retired next year. Russia and eventually private industry spacecraft will carry US astronauts to the ISS.

## MINUTES OF THE JULY MEETING

JULY 31, 2010 at the MVCO

The meeting was held outdoors as usual during nice weather. President Sam DiRocco presided calling order at 8:00 PM. Roll Call was taken with 21 members giving the password. Four guests were on hand. A call for the reading of the minutes was made. Bill Pearce moved to suspend the reading, Bob Danko seconded the motion. With no discussion, the minutes were accepted by a voice vote.

**TREASURER'S REPORT:** The Report was read by Steve Bartos. He noted that the insurance was only \$250.00 and that a refund of \$25 was returned and this will be reported in the next report. The expenses for the 10" mount were for new electronics (PC) cables and not parts for the mount itself. Bob Danko moved to accept the report, Greg Higgins seconded the motion. By a voice vote the report was accepted.

### General Fund 6/1 thru 6/30 2010

OPENING BALANCE:	\$ 6,883.11
CLOSING BALANCE:	\$ 6,626.97
AVAILABLE FUNDS:	\$ 6,376.97

#### INCOME:

DUES	\$ 60.00
MVAS CLOTHING MERCHANDISE	20.00
DONATION (BILL PEARCE)	10.00
INTEREST	<u>0.59</u>
TOTAL INCOME	\$ 90.59

#### EXPENSES:

CK# 2731 INSURANCE (HOLLOWAY)	\$ 275.00
2732 PARTS FOR 10" MOUNT	<u>71.73</u>
TOTAL EXPENSES	\$ 346.73

#### Reserved Funds

KEY DEPOSITS	\$ 250.00
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**CORRESPONDENCE:** Another envelope arrived with material from JPL/NASA's Night Sky program. No other mail noted.

**COMMITTEE/OFFICER REPORTS:** No active committees.

**OBSERVATORY DIRECTOR'S REPORT:** Larry Plante reports everything is in good shape. For the OTAA, the outhouse needs cleaned up. Roy and Jodi have been painting the outside of the 16" building while Dan Schneider was painting the doors- even as the meeting was underway. Larry told of how the motor for the 16" stage had apparently died. It had seized up and assuming it was dead, he purchased a new (in the box) motor for \$20 from a former work associate. A new one from Grainger's would run around \$360. In the process of taking the old motor out, the shaft freed-up. The old motor is working again. He re-installed it. The stage is moving freely, so there is no problem there. You can turn the gearbox shaft by hand to raise/lower the stage albeit very slowly. So we now have a back-up motor for when the old motor finally quits. He needs to get a proper coupling to mate the gearbox to motor shaft, which have different diameters. A homemade bushing has been used all these years to make the shafts match. Sam noted that he has found a 110 volt motor that will be used to motorize the dome. A project on the books for nearly 10 years.

**OLD BUSINESS:** Bill Pearce has been in contact with the buyer of the 50" mirror. He has been side-tracked and needs a few more weeks to pick it up. The sale is still on. It was suggested

he not do this during the OTAA, but others thought he might be invited to attend that Saturday, stay overnight then remove the mirror on Sunday. There will be help available on Sunday. Apparently he will be bringing a fork lift and having such a project occur during the OTAA event could be a problem. Bill will see if he would like to do this.

Rich Mattuissi asked about door prizes for the OTAA. All were reminded to bring an item for the prize table. They should be in-expensive astronomy accessories or related items. Normal items that could be used during observing are also good. Things like small flashlights, water bottles, thermos, small tool boxes, blank media (DVD's, Cd's, USB jump drive's), note books, etc.

Don Durbin has heard reports that some of the people that ordered collimators from Burgess have been getting them. After contacting Burgess, he has apparently paid for the ones that members had ordered. He doesn't recall this, but the collimators were to be shipped that week. If they arrive he will hand them to the McCullough's to hold on to since he will be working out of town until September. They will be marked as to what item is for whom. Payments to Don will be taken later. [Addendum: Christmas Raffle tickets are being prepared for distribution at the August meeting. Same as last year: \$5 tickets with 3 prizes.]

**NEW BUSINESS:** The Trustees held a meeting prior to this one to discuss some OTAA matters. Work chores will be done mainly by the usual characters. Fred Boyer was volunteered to do electric lines. Rosemary Chomos will be traffic control and manage the utensil and cup supply. Phil Plante will make the coffee (supply the water). The Trustees decided to order 6 tables, 100 chairs and a 20' x 30' canopy (\$140) since the status of the damaged tents is unknown. The vendor will set-up the canopy and remove it. Less work for the OTAA crew.

Scope attendants: 25" (Phil), 16" (closed due to building use, unless someone gives it try), 12.5" (Rich), 10" SCT (Bill Pearce), 8" (Dan). Anyone that knows the scopes should be available to give breaks to the above. Night watch (so far) are Sam, Harry, Larry and Phil. Master of Ceremonies will be Harry Harker. No speaker has been obtained thus far. Pat Durrell will be contacted to see if he would be willing to give a talk. Otherwise a DVD would be played such as the 72" Group video (B. Prewitt), the McCullough's PowerPoint on MVAS imaging, or the MVAS 70th anniversary slide show. Larry Plante asked about the midnight hot dogs we used to do. He used to supply the Coney sauce. The trustees already decided to try the hot dog thing, but would wait to see how the weather and attendance would play-out, before getting a supply of wieners. Bill Pearce will also see about getting buns donated.

**GOOD OF THE SOCIETY:** The main raffle prizes this year will be: one black tube AstroTech 72mm ED refractor (Plante donation), a set of Orion Edge-on Planetary eyepieces-- 5mm, 9mm, and 14mm (Mehle donation) and one S&T DVD Magazine, pre-publication (S&T donation). If the S&T DVD arrives too late, Tony will donate an autographed book by Apollo astronaut Allan Bean in its place. Otherwise the book will be kept for next year's raffle. Dick Klesch offered a homemade EQ mount to go with the 72mm scope but this was not feasible. He will have two such mounts available for sale at the OTAA. \$275 and another for \$250. They are nice, all wood mounts, suitable for small scopes. There was a general review of door prizes on hand. These include several binoculars, books and a long list of items donated by Tony Mehle. Maryanne Hoffman will donate custom greeting cards. Bob Danko will be arriving late so Steve will play his raffle tickets for him.

**VISUAL REPORTS:** Bob Danko has been watching Mercury. Sam noted that we had some good observing at Scenic Vista. Phil managed 11 variable stars in July plus some MVAS Homework. Hot and hazy nights have been terrible for observing.

**ADJOURNMENT:** Adjournment came at 8:36 PM. We thank our host Greg Higgins for the tasty southern BBQ (sloppy Bob's) and iced tea. Very tasty pulled pork, backed beans and cole slaw. Thanks to Rosemary for the assorted pies. The next business meeting will be at the MVCO on Aug 28, 2010. Meeting begins at 8:00 PM. Scheduled hosts are Jodi and Roy McCullough. **PASSWORD:** name a constellation and its brightest star.  
*-minutes by Phil Plante*

### MVAS ACTIVITIES

**Chris Stephan.** Honorary Member Chris Stephan (Florida) made a visit to the MVCO on Saturday July 10th. A casual discussion was held outside as the Sun set. We had glorious clear blue skies and temps were comfortably cooler than usual. Around 8:00 PM we went in to watch his program. He had a fantastic DVD titled "Mystery in the Sky". It was about the eclipsing variable star eps Aurigae and the group called Citizen Scientist. It shows how citizen astronomers (us) can make valuable contributions to our understanding of the universe and also highlighted the joy of amateur astronomy. Chris was featured as one of the commentators. It's of a PBS quality documentary. The producer it is looking into means of distribution- possibly on TV. This was a beta copy which needs more editing work and additional graphics. We were the first to see this beta version. MVAS will get a copy of the finalized edition. After the show, a short discussion followed while the food (bbq) slowly took over the festivities. Chris seemed to enjoy the rib eye steak prepared by grill master Larry. With a clear night at hand, several scopes were in action.

Amazing! The Milky Way made an appearance at the MVCO. Chris joined Bob Danko on the 8". The 12" and 16" were opened and used. After some urging, this tired scribe opened Titan for a few looks at M13 and M51. Chris liked the views thru it as well. To sum up; it was a typical MVAS occasion with plenty of food, astronomy talk and some reminiscing of MVAS history. A good dose of observing rounded things out. We had a good turnout with 11 folks. A most pleasant evening indeed.

**Scenic Vista:** The usual rocket crew showed up by 1:00 PM. Rockets were grounded as it was too windy. It was hot and humid so the breeze was welcome. The rest of the members began to arrive after 7 PM. We all set up scopes with threatening clouds passing overhead. Cell phone screens showed a rain storm traveling east on Rt. 30, but all we got were a few drops. This was around sunset and the clouds in the east were spectacular. The higher cumulus were lit a brilliant white while those below had a dark grey or deep blue hue. The three-D effect overhead was thrilling as the different cloud levels were all quickly moving and swirling in different directions. Clouds cleared out for about 2 hours around 9:30 PM. The breeze kicked up again to cool it down a bit and keep the "skeeter attack" at bay. About 8-9 scopes were set up with a handful of public showing up. The usual summer objects were enjoyed by the visitors. We all left by 12 AM as the clouds rolled back in. There was not much in the way of chow- some cookies and coffee (thanks Rosemary). It was an enjoyable night regardless of shortened observing time or weather.

### MVAS OTAA MEETING

#### You are cordially invited to the MVAS-OTAA Meeting.

Location: At the MVCO on Saturday, August 14, 2010.

Be part of the festivities: join other area astronomers as they share shop-talk, food and renew and make new friendships. Maybe you will win one of the grand prizes! Your telescopes and binoculars are most welcome on Telescope Hill. AC electric lines will be available for your use, along the hill. With luck we will observe till dawn. Please consider sleeping (nap) in your vehicle before the drive home. MVAS people will be there all night. Sometime after 2 AM, we will likely start watching for any left-over Presides. The basic schedule (so far) follows:

- 5:00 PM **Registration:** opens at 5:00 PM as in past years. Registration fee is still \$5.00 for any person over 12 years old. Children 12 and younger may attend free. Any paid registration (adult or for children) automatically enters one into the door prize drawings.
- 6:00 PM **Picnic Dinner:** begins. Bring a covered dish or dessert to share. Soft drinks and MVAS rocket fuel (coffee) will be provided.
- 7:00 PM **Program:** begins with OTAA announcements and news. The door prize raffle begins next. The main raffle prize winners are drawn next. This year three prizes are planned to be offered. A can will be provided for each raffle prize. This way one may purchase a few tickets and split them between prizes if you wish. Tickets will be \$1.00 each with no limits.

#### RAFFLE PRIZES 2010:

- One AstroTech 72mm ED refractor.  
One set of three, Orion Edge-On Eyepieces  
One copy of S&T DVD: 1941-2009 S&T Magazines
- 8:30 PM **Entertainment** this year will likely be viewing of a DVD of some sort. Sunset is around 8:30 PM and watching such a program is an option for those already set up. A nearly 4 day old moon will be up for those that would like to do lunar observing or photography until the sky darkens.
- 9:30 PM **The star party:** Please be considerate and use care with bright lights. Minimize use of laser pointers. The MVAS scopes will be available for attendees to look through. Something should be playing on the monitor inside the main building to watch during breaks and snacks.
- 12:00 AM **Midnight buffet:** Time to clear out the left overs. If enough interest is heard, hot dogs will hit the grill. Providing needed energy for the rest of the morning.
- 2:30 AM **Meteors?** Grab a chair and relax on the deck as you watch for any last stragglers of the Perseid Meteor shower. A good time to swap "war stories" about those glorious observing adventures you've had.

Again, be mindful of laser pointer use, bright lights and younger children that may need supervision. Park (lower level) facing east, away from the buildings. You may drive onto the Hill to unload big scopes before it gets dark (please ask). No vehicles are to remain parked on the Hill, in the the observing area. Thanks in advance. Hope to see you all there!

## Observer's Notes.....

### REVIEW: OTAA prize- AstroTech 72mm ED Refractor

After lengthy research on the internet, it was decided to offer an AstroTech 72mm scope as an OTAA raffle prize. A nice grab and go size and the price was right (\$378) for an ED objective. A month after placing the order, the black the telescope arrived, having been on back order. It came in what seemed like a light walled cardboard box. Inside this was another box surrounded by Styrofoam peanuts. Inside this second box was a silver aluminum case, wrapped in bubble wrap. In the case was the telescope. No diagonal or eyepiece. Just a key for the case, instructions, silica gel packet and warranty card. I was disappointed the fitted insert was made of Styrofoam and not the usual soft foam rubber. Not a big issue since I don't see the case as being used that much, but others may use it. My concern is that Styrofoam may begin to crumble after many storage cycles. It was a very tight fit. The scope was also inside in a plastic bag with the silica pack. This shipping arrangement seemed satisfactory as there was no damage seen. The finish was a perfect glossy black. Unfortunately, two weeks before the OTAA event, some hair-line scratches appeared on the focuser body while attempting to fit the scope to a homemade EQ mount. This won't effect performance, but leads me to wonder about the durability of the "anodize" finish. As time permitted, several tests were made to see how this model performed in the field. Other than three tests, one visual test (~ 1 hour) and two photographic tests (~ 90 minutes total), it has been stored in its case. So it is new with cosmetic defects.

Overall specs: With the dew shield retracted and the focuser racked, in the overall length was about 12.25"; focuser tube cap to objective cap. Compact enough for a carry-on bag. With dew cap extended and focuser fully racked out, the length becomes 17.5". The main tube diameter is 3.38" and 6.25" long. The 180°, smoothly rotating focuser tailpiece is 3" long. A compression ring is used in the 2" focus tube. The Crayford focuser had a smooth action and the 11:1 micro knob was handy in photography focusing. I didn't care for the tubular focuser knobs that stick out: like in some other brands.....it's just asking for a bump. Disk shaped knobs look neater and makes it an easier/safer fit in an airline carry-on bag.

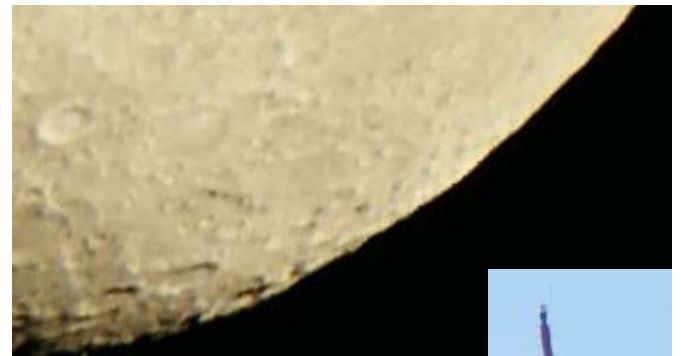
The dovetail mounting shoe is at the back edge of the main tube. Even reversing the shoe from "normal" position left the scope back-end heavy. The balance point was behind the foot, almost at the focus knobs. This condition held true regardless of accessory configuration; 2" diagonal or a 1-1/4" diagonal. With a 32mm Televue Plossl the focuser needed to be racked out nearly all the way. A heavy dslr camera was more out of balance. I had to slide the 2"-T-ring adaptor out about 1/3" to achieve focus. I had no trouble with in-travel distance of the focuser. The instructions say to use a photo tripod, but using the mounting foot (as it is implied) on a Vixen style mount may not work so well- from a balancing point of view. I could not safely mount it on an iOptron Cube and have it balanced. I was able to achieve balance using a Universal Astronomics Microstar mount with its sliding saddle plate. But the mount interfered with full rotation of the focuser. Never tried it on a photo tripod configuration. The balance would likely be off as well. A work-around will be needed, but the optics makes it worth the fuss!

With 72mm of ED glass, this doublet is fantastic. It is F/6 with a 430mm focal length. It is a very sharp lens with no color fringing. There was no color seen along the limb of a full moon, around Venus or Vega. Photographs of the Moon bear this out.

No blue fringes, as they are seen in the photo taken with my trusty 75mm F/6.7 University Optics refractor. The AT showed diffraction patterns identical either side of focus. Airy disk and rings were perfect at an astounding 224x (4.8mm Nagler with TV 2.5x Powermate). Saturn was sharp at 224x but dim for lack of aperture. Epsilon Lyra was easy and Izar had the companion on the first ring. Photos of a TV tower 10,700 ft away (2 mi.) easily showed the ladder rungs for the scramble to the top beacon light. The resolution (1.6 arcsec) should reveal detail 1 inch wide at that distance. I was able to detect 11th magnitude stars according to AAVSO charts. This lens should be a great telephoto for eclipses, RFT viewing, etc. It could be an excellent guide scope or main scope in CCD imaging. But being a high-end grab-n-go is likely its best use; keep it mounted on a tripod ready to take out on a whim. Despite the workable balancing issues, and a few scratches, the winner should be pleased. For the price of a few tickets, it's a keeper! -P. Plante



Above: Moon limb with 1987 vintage, 75mm "ED" (taken 6/09). Note the blue fringe. Below: Moon with the AT72mm (6/10). No chromatic aberration. Both images are cropped close-ups to reveal any color.



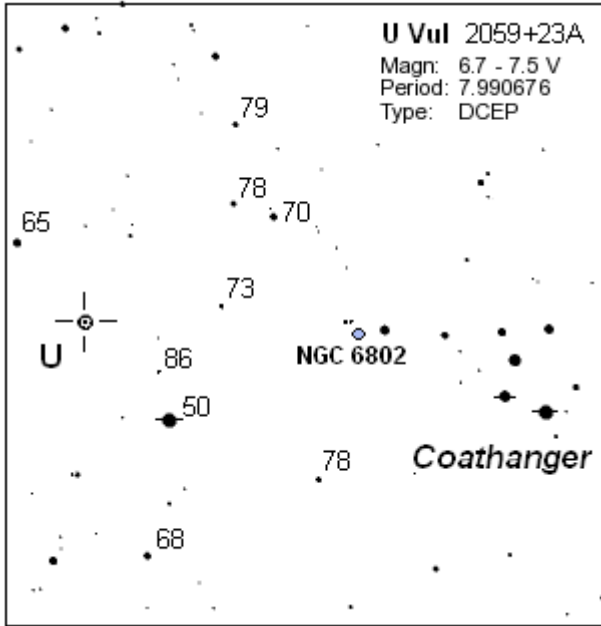
Tower 2 miles away: Left is full frame, right is cropped close-up. Note the ladder rungs on the pole. Should be able to resolve 1 inch details at this distance. All photos above (AT and UO) were made using a Kenko Pro 2x Teleconverter- a \$219 optic. (I was also evaluating the AT for eclipse duty.) Even with extra optics in the path, the AT provided a super sharp image. The same Sony dslr was used for all shots above.

## FOR SALE . . .

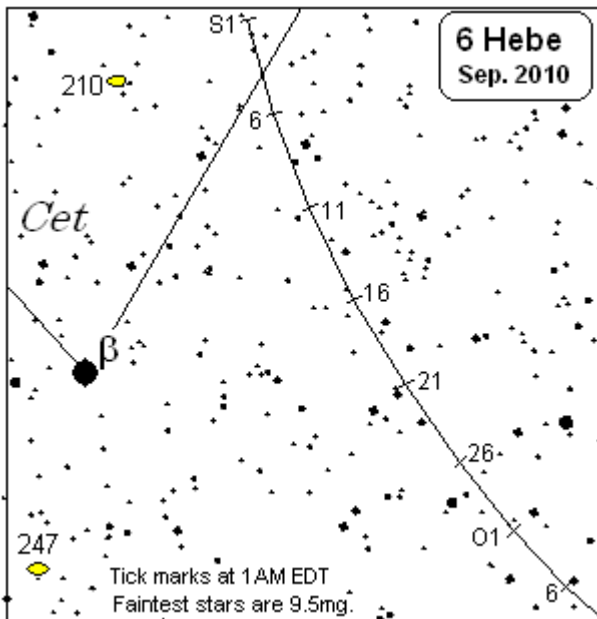
Two equatorial mounts made of wood. The German style mounts include counterweights. Asking \$275 for one of the mounts and \$250 for the other. They will be available at the OTAA for sale. See Dick Klesch, mount producer.

**MVAS OBSERVER CHARTS**

Variable star of the month: **U Vulpeculae** (abbrev: U Vul). This is a different type of variable than what we usually feature. It is a delta Cepheid. A type important to our knowledge of cosmic distances. But it can be useful in training the eye in detecting subtle changes. Its 1 magnitude swing can be followed in binoculars over an 8 day period. Easy to find, east of the Coathanger asterism. Numbers marked are comparison star magnitudes. Use these for your estimates.



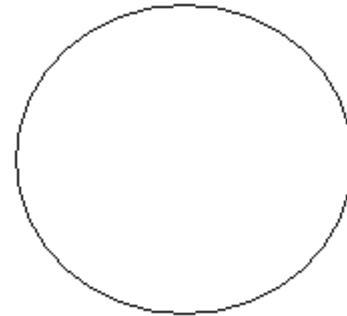
Asteroid of the month: **(6) Hebe**. In September 2010, Hebe will hover around 7.9 magnitude, getting brightest around mid-month at 7.7 magnitude. It travels a southward track west of beta Cetus. It is bright enough to follow in binoculars. Hebe is up in the SE around 1 AM. Plan accordingly. Galaxies: NGC 210 is at mag. 11.6 while NGC 247 is at 9.6. Beta is a 2nd. mag. star. And farther east is Mira; a binocular variable on the rise. There is much to see here, but please try for the asteroid.



**MVAS OBSERVATIONS - SEPTEMBER 2010**

OBSERVER \_\_\_\_\_

**Featured object: M-27**. Please try a sketch of the Dumbbell. As always, the circle is the eyepiece field of view. Use different magnifications and blend in details you see using high and with the overall image you see at low power. Also with and without a nebula filter. Tricks that CCD imagers use!



**M-27 Observation:**

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

**U Vul magnitude estimates:**

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

_____	_____	_____	_____
_____	_____	_____	_____

**(6) Hebe Observations:**

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

_____	_____	_____	_____
_____	_____	_____	_____

**Other Objects in Vulpecula to observe**

Object	Date	Scope	Object	Date	Scope	Split?
Cr- 399	_____	_____	6,8 Vul	_____	424"	SEP. Y / N
N- 6802	_____	_____	Σ 2521	_____	27.9"	Y / N
N- 6830	_____	_____	16 Vul*	_____	0.8"	Y / N

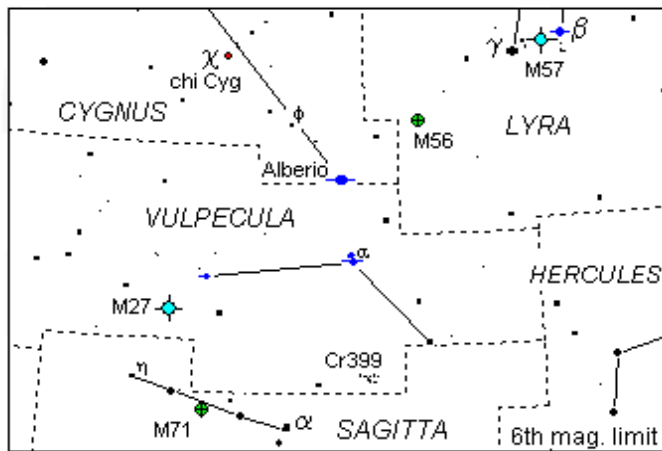
\* NEE DS AN 6" OR LARGER.

**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 — Vulpecula



Like its namesake, Vulpecula the Fox is elusive. No bright stars to guide you! From mid to late summer it lingers near the meridian for a few hours before and after midnight. Look south of the famous double star Alberio. Easiest thing to spot with binoculars is Brocchi's Cluster, often called the Coat Hanger- for obvious reasons. Close inspection with a scope should get you a few doubles in the group. Off the eastern end is open cluster NGC6802. A tough one in the the MVAS 8" but it is visible. Try some of the other doubles and clusters that are plotted. Alpha (6-8) should be nice in binoculars. We can't corner the Fox without checking out a standard stop on the Messier list. That would be M-27, the Dumb-bell Nebula. Mostly it looks like an hour-glass but in bigger scopes it turns more elliptical. What shape do you see? Can you see a central star? You can follow a delta Cepheid by watching U Vul with binoculars. Several comparison star magnitudes are labeled near it on this chart. Sh2-8 and NGC6820 are bright nebula. Imagers might do better on these.

more Vulpecula this way! **Vulpecula**

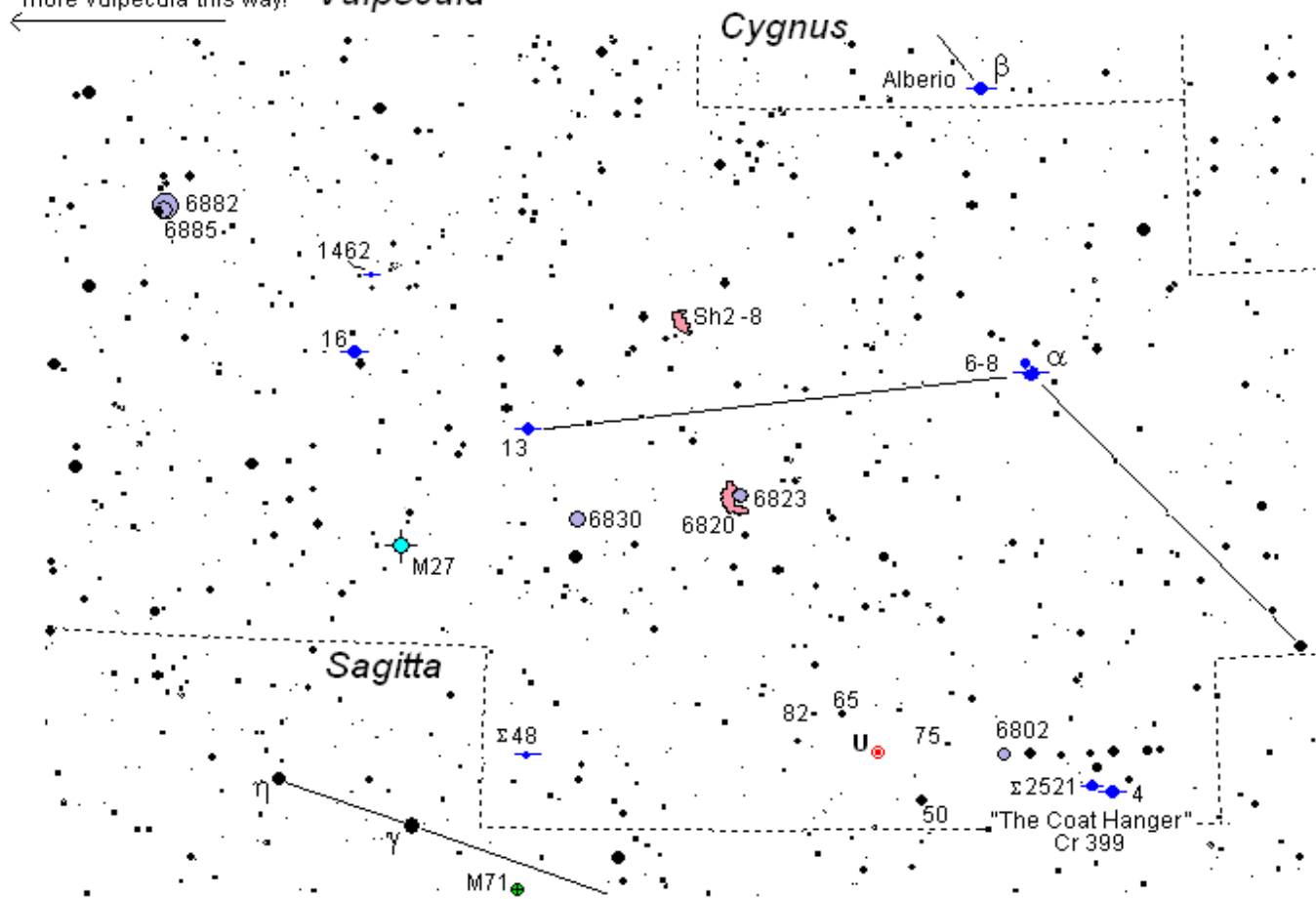


chart mag. limit 8.5 magnitude

DEEP SKY		DOUBLES		INSTRUMENTS USED:	
6882	8.1 18'	4 Vul	5.2, 10.0, 11.7	18.9"-51.6"	triple star
6885	8.1 7'	6-8 Vul	4.6, 5.9	424.5"	deep yellow, pale yellow
M27	7.6 6.7'	13 Vul	4.6, 9.6	0.8"	
Sh2-88	17.5' x 9'	16 Vul	5.8, 6.2	0.8"	both deep yellow
6830	7.9 12'	Σ48	7.1, 7.3	42.5"	both bluish white
6820		Σ2521	5.8, 10.5	27.9"	topaz yellow, blue
6823	7.1 12'	h1462	7.6, 9.9	37.0"	tangerine-orange, white
6802	8.8 3.2'	VARIABLE: U VUL 6.7 -7.5mg. 7.99 days type: DCEP			
				mag. on / /	
				mag. on / /	
				mag. on / /	

**Solar and Lunar (EDT).**

Date	Sunset	Moonrise	Moonset
1	7 : 57	11 : 58P	x : xx
5	7 : 50	3 : 19A	x : xx
9	7 : 43	x : xx	8 : 04P
13	7 : 37	x : xx	10 : 40P
17	7 : 30	x : xx	1 : 31A
21	7 : 23	x : xx	5 : 32A
25	7 : 16	7 : 58P	x : xx
29	7 : 09	10 : 49P	x : xx

**PLANET WATCH**

VENUS	JUPITER	URANUS
Sets	Transits	Transits
9:25P	2:49A	2:42A
9:14P	2:31A	2:25A
9:04P	2:14A	2:09A
8:53P	1:56A	1:53A
8:41P	1:38A	1:37A
8:29P	1:21A	1:20A
8:15P	1:03A	1:04A
8:01P	12:45A	12:48A

**September 2010**

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

**Asteroid for September 2010 (6) Hebe**

Date	Rises	RA		Alt.	Azm	Magnitude
		hr.	min			
		Dec. deg.				
		topocentric				
1	9 : 57 PM	00 : 33.6	-13.0	27°	142°	7.9
7	9 : 38 PM	00 : 32.0	-14.6	28	149	7.8
13	9 : 18 PM	00 : 29.4	-16.2	29	156	7.7
19	8 : 57 PM	00 : 26.1	-17.8	29	164	7.7
25	8 : 35 PM	00 : 22.4	-19.2	29	172	7.7
1	8 : 13 PM	00 : 18.5	-20.5	28	179	7.8
	EDT	(at 1:00 am)		(at 1:00 am)		

**Date UT hr Celestial Highlights**

1	17.6	LAST QUARTER MOON
3	7.0	Moon 1.3° W. of M35
8	10.5	NEW MOON
8	5.5	Titania 10" N. of Uranus
15	5.8	FIRST QUARTER MOON
19	6.0	Mercury elong. W. 18°
21	12.0	Jupiter at opposition
21	17.0	Uranus at opposition
22	4.0	Uranus 50" N. of Jupiter
23	9.3	FULL MOON
28	6.0	Moon 1.5° S. of Pleiades

Variable Star of the Month: **U VUL** 7.6 - 8.5 mag 7.99 day period

**LUNAR OCCULTATIONS FOR: SEPTEMBER 2010**

Civil (24hr) EDT			UT			Moon	Moon	Moon	Star	Star	event	dbl./			
date	hr	min	sec	date	hr	min	sec	Ph	% illum.	alt	azimuth	name	Mag.	PA	sep.
1	1 : 15	: 03		1	05 : 15	: 03		R	55-	21°	77°	ZC 594	6.9	278°	8.00"
1	5 : 07	: 31		1	09 : 07	: 31		R	53-	62	120	ZC 611	7.0	332°	NA
2	1 : 00	: 51		2	05 : 00	: 51		R	44-	9	66	99 TAU	5.8	228°	6.00"
2	5 : 48	: 09		2	09 : 48	: 09		R	42-	60	115	103 TAU	5.5	216°	0.40"
3	5 : 10	: 40		3	09 : 10	: 40		R	32-	43	95	ZC 923	6.7	233°	0.100"
16	21 : 29	: 54		17	01 : 29	: 54		D	68+	25	191	ZC 2777	6.9	84°	8.00"
21	21 : 51	: 54		22	01 : 51	: 54		D	98+	35	133	ZC 3370	6.2	65°	0.30"
24	23 : 32	: 56		25	03 : 32	: 56		R	97-	43	116	ZC 177	6.9	256°	NA
26	5 : 40	: 59		26	09 : 40	: 59		R	92-	50	244	ZC 317	6.4	199°	NA
27	4 : 24	: 38		27	08 : 24	: 38		R	86-	69	197	47 ARI	5.8	281°	NA
29	1 : 11	: 49		29	05 : 11	: 49		R	70-	66	129	SAO 714	6.2	316°	NA

at MSCO

**D=** disappearance. Good occultation event.  
**d=** disappearance, the star's magnitude approaches the observing limits of 200mm objective  
**R=** reappearance. Good occultation event  
**r=** reappearance, the star's magnitude approaches the observing limits of 200mm objective  
 All disappearances (D) occur on the eastern limb (left side in the sky). Reappearances (R) always occur on the western limb.  
 Position Angle (PA): tells where along the west limb to watch for a reappearance.  
 PA is referenced to celestial north: North=0° East=90° South=180° West=270°  
 Occultations computed using Occult v3.6 (I.O.T.A.)



# GALLERY.....

## CHRIS STEPHAN VISITS MVAS...

On July 10th, Honorary member Chris Stephan came up from Florida to visit his old stomping grounds at the MVCO. An informal chat about this and that went on for about half an hour. Around 8 PM, we all went inside to watch the DVD called "Mystery in the Sky". It was a nice cool evening with deep blue skies above. We would observe later.

The gleaming white of new paint on the 16" building enhanced the clear blue sky above. Even a butterfly knew it was a special night. It waited on the 12" scope for the observers. But a great DVD would come first. Can't wait to see the finalized version. We were the first to see this "beta" version.



Below: Chris talks about things in Florida and about the MVAS in the 1970's; and about variable stars and the DVD.



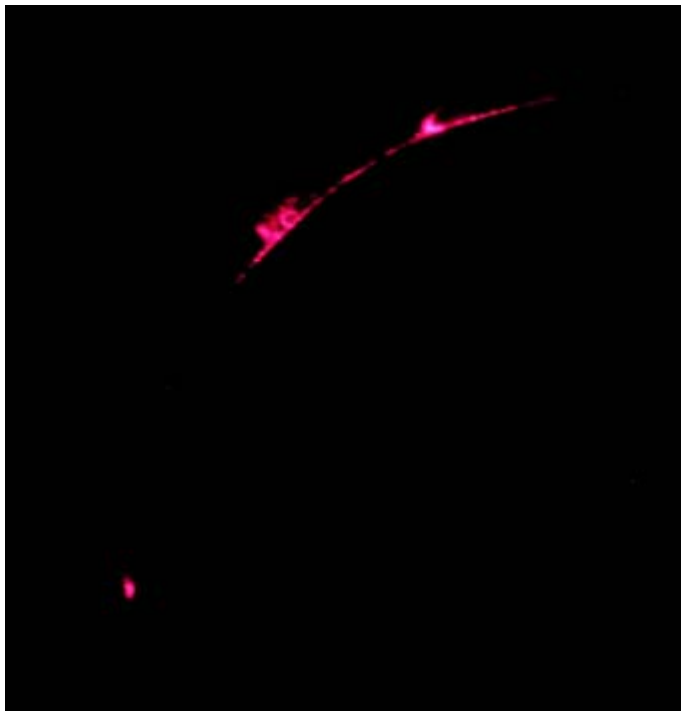
No MVAS event would be complete without some chow. The grill was fired-up for some brauts and steaks. Virginia had sloppy Joe's too. With full bellies, the 12", 8" and 25" were opened and started collecting starlight. This was one of the nicest, relaxing evenings in a long while. It rivals this past April's Galaxy Quest.

# TOTALITY PACIFIC

Having skipped this July's solar eclipse, the editor received several images from this Pacific eclipse from fellow eclipse chasers. So it is time to share some with you. There were several tour companies and destinations. Isaac and Heidi (met them in Zambia 2001) went to Easter Island. I didn't like the Pacific weather prospects for Tahiti or Easter Island, especially after the near miss last year (near Marakai/Tarawa). Anyway, been there, done that as they say ('05). Looks like I missed a good one tho. I am glad all they got to see it. Next chance is November 2012. If these whet your apatite, there are already tours available to sign up on. Destinations: Australia or Paupa New Guinea (by cruise). Start getting your deep pockets!



Isaac sent this great corona shot made by Denny Morse. I don't recall ever meeting him, but this is the type of image to dream of. Curious; the streamers and polar brushes of the corona are evident. These are prominent during solar minimum. At maximum, the corona becomes rounder- flower petal-like.



Guess we are still working out of minimum. Maximum is a few years away. Below that is an H-alpha image around second contact. Isaac Kikawada took this one. Prominences and Bailey's Beads are quite visible. Fantastic shot! The composite below is a wide view of the eclipse (Isaac's). Dim Mercury is 1/3 of the way to the right, on the way to bright Venus. This is pretty much like a naked eye view of an eclipse. Heidi Gerster stands next to the Moai of Easter Island. This gives you a sense of scale. You can walk right up to them but you are not to touch them. It's a matter of of preservation: body acids eat up the rock. Along with bird droppings and weather. This is all a major concern and they haven't yet figured how to protect the Moai and leave them free to the people.



My usual companion, Juan, went to Tatakoto Island near Tahiti. He depends on my eclipse photos so all I got was a photo of the veiwing site. Nice beach. Clear skies! -P. Plante