THE METEORITE

NGC 7000

The North American Nebula

(in Cygnus)

Newsletter of the Mahoning Valley Astronomical Society, Inc.

IN THIS ISSUE:

AUGUST 2012

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1982 Mathews Rd. #2
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THE METEORITE

Newsletter of the Mahoning Valley Astronomical Society, Inc.

MVAS CALENDAR

AUG 18	MVAS-OTAA meeting at the MVCO, Braceville.
AUG 25	Business meeting at the MVCO 8:00 PM
SEP 8	Astro-HAM & Public Night at Scenic Vista. HAM radio begins at noon. Runs till noon Sunday.
SEP 29	Business meeting at the MVCO. 8:00 PM. 60th Annversary of MVCO, BBQ is planned.

NATIONAL & REGIONAL EVENTS

SEP 8 **ScopeOut 2012**, to be held at the Cincinnati Observatory Center, 3489 Observatory Place Cincinnati,OH 45208. Times Noon to 11pm Admission Fees. $7 Adults, $5 Kids. Keynote Dinner and Lecture add $20 per person. http://www.cincinnatiobservatory.org/directions.html

SEP 15 **Black River OTAA Meeting.** Saturday 4:00 PM till 2:00 AM Sunday. At the Birmingham United Methodist Church, 15018 South Street, Birmingham, OH 44816 . http://www.blackriverastro.org/

SEP 13- 16 **Iowa Star Party.** To be held at the Whiterock Conservancy, Starfield, 1390 Highway 141, Coon Rapids, IA 50058. Times-Thursday noon through Sunday night. Fees: $40 per person ($10/night). Saturday evening banquet $15. http://www.iowastarparty.com

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

MVAS Homepage- http://mvobservatory.com

AUGUST 2012

NEWS NOTES

Testing Orion. On Wednesday July 18, NASA completed a successful test of the Orion crew vehicle's parachutes. A C-17 plane dropped a test version of Orion from an altitude of 25,000 feet above the U.S. Army Yuma Proving Ground in Arizona. This is in preparation for the spacecraft's orbital flight test in 2014. The Orion crew vehicle will carry astronauts deeper into space than ever before, provide emergency abort capability, sustain the crew during space travel and ensure a safe re-entry and landing. Orion parachutes have so-called reefing lines, which when cut by a pyrotechnic device, allow the parachute to open gradually, managing the initial amount of drag and force on the parachute. The main objective of the latest drop test was to determine how the entire system would respond if one of the reefing lines was cut prematurely, causing the three main parachutes to inflate too quickly.

In 2014, an uncrewed Orion spacecraft will launch from Cape Canaveral Air Force Station in Florida on Exploration Flight Test-1. The spacecraft will travel 3,600 miles above Earth's surface. This is 15 times farther than the orbit of the International Space Station and farther than any spacecraft designed to carry humans in more than 40 years. In 2017, Orion will be launched by NASA's Space Launch System (SLS), a heavy-lift rocket that will provide an entirely new capability for human exploration beyond low Earth orbit. Designed to be flexible for launching spacecraft for crew and cargo missions, SLS will enable new missions of exploration and expand human presence across the solar system. *- edited From Space Dailey*

Early Spiral. For the first time astronomers have found a spiral galaxy existing in the early universe, billions of years before most other spiral galaxies had formed. As reported in the journal *Nature*, the astronomers said they discovered the spiral galaxy BX422 in Hubble Space Telescope pictures that were taken of about 300 very distant galaxies in the early universe. “Current wisdom holds that such 'grand-design' spiral galaxies simply didn't exist at such an early time in the history of the universe….A 'grand design' galaxy has prominent, well-formed spiral arms.” said David Law, lead author of the study and a postdoctoral fellow at the University of Toronto's Dunlap Institute for Astronomy and Astrophysics.

Spectra from some 3,600 locations in and around BX442 have enabled researchers to determine that it is an actual rotating spiral galaxy - and not two galaxies that just happened to line up in the image. It was first thought to be an illusion and that the image was leading them astray. Spectral images taken with the Keck Telescope showed that the apparent spiral arms do indeed belong to BX422. It wasn't an illusion. They also see evidence of an enormous black hole at the center of the galaxy. This may play a role in the evolution of BX442. Studying BX422 will help astronomers understand how spiral galaxies like the Milky Way formed. BX442 represents a link between early galaxies that are typically much more turbulent than present day rotating spiral galaxies. *- edited From Space Dailey*

Missed Congrats. Former Junior Member Dom Mattussii has graduated from Cardinal Mooney. He will be attending the Mahoning County Career and Technical Center this fall. He will be studying Interactive Multimedia (visual and graphic art) and is enrolled in the on-the-job training program. Later on, he plans to attend Eastern Gateway College.

MINUTES OF THE JULY MEETING

JULY 28, 2012 at the MVCO

In typical summer fashion, the meeting was held outdoors. President Sam DiRocco called the meeting to order at 8:02 PM. Roll Call was answered by 28 members. Five guests sat in. They included regulars Virginia and Steven Bartos, Don Cherry, and Paul and Jan Baker. It was the second meeting attended by Jan, Paul and Don. All three wished to become members.

A Call for the Reading of the Minutes was made. Dennis Marko pointed out a correction to be made to the minutes. Under "NEW BUSINESS" it should be corrected that Dennis is donating three aluminum eyepiece cases - not three eyepieces, as OTAA Door Prize items. This correction is duly noted. With no further discussion or correction a motion to suspend the reading was made by Alan Avnet, with a second by Greg Higgins. All in favor by voice vote. The Minutes are accepted.

TREASURER'S REPORT: The Report was read by Steve Bartos. With no further questions or discussion, a motion to accept the *Report* was made by Lou DiNardo. Larry Plante seconded the motion. The motion was adopted by voice vote.

General Fund	**6/1 thru 6/30 2012**	
OPENING BALANCE:	$	8,395.15
CLOSING BALANCE:	$	8,341.51
AVAILABLE FUNDS (NON-RESERVED):	$	4,177.39
ACCOUNT NET GAIN/LOSS FOR THIS PERIOD:	$	-53.64
INCOME:		
INTEREST	$	0.36
TOTAL INCOME	$	0.36
EXPENSES:		
CK# 2776 TELRAD FINDER FOR 8" SCOPE	$	54.00
TOTAL EXPENSES	$	54.00
Reserved Funds		
KEY DEPOSITS (MVCO)	$	250.00
CASH FROM ORIGINAL OAD FUND (FOR LAND)		3,914.12
TOTAL RESERVED FUNDS	**$**	**4,164.12**

CORRESPONDENCE: Harry Harker reported another literature packet came from the NASA-Night Sky Network. Phil had received some nice photos from Allen Heasley. Pictures of Allen and Bette in front of the Palomar Observatory (1950s), one image of seven MVAS members at the first Astronomical League meeting in Chicago circa 1948.

COMMITTEE/OFFICER REPORTS: COMMITTEE/OFFICER REPORTS: *IMAGING COMMITTEE: VISUAL COMMITTEE: LIBRARIAN:* No reports from any Committee were given.

OBSERVATORY DIRECTOR'S REPORT: Larry Plante has not been able to get up to the observatory. Workdays and oppressive heat makes this next to impossible to attempt. Everything seems in working order. Sam and Harry cleaned up the 16" meeting room before this meeting started. Lot's of dust. With cooler temps forecast for the following week, Larry and Steve will be up to work on the 16" shutter cables. He will also trouble-shoot the OTAA electric line to be sure it functions correctly. An outdoor AC receptacle will be installed on the north wall of the 16" building as well.

An **OTAA work day** is set for **Saturday August 11**, start time around noon. Larry will have a work list prepared (posted on line?). A BBQ will be standard fare for such work sessions. If it is clear, the peak of the Perseid Meteor shower will be observed later in the night.

Sam added that during clean-up he didn't notice and water on the stage. It would seem that Greg Higgins' roofing crew has indeed fixed the problem. Phil had some Homework to turn in.

OLD BUSINESS: Harry has tried, but has had no contact replies from the NASA Glenn speaker bureau. It appears we will not have a speaker for this year's event. It was noted previously that we will do fine with-out one. We might enlist someone from YSU again but they may be busy prepping for the new school year. Sam noted that Mike Sprague (landlord) has leveled the bank and cut the grass on the lower parking level. Looking good. Bob Danko has renewed the P.O. Box and has paid the six month fee. He will be re-imbursed.

Next came a lengthy discussion on internet access, or lack there-of, at the MVCO. In the past year the internet connection has been broken. Harry explained what he found: the signal strength that is broadcast from Mike's house drops to zero bars halfway down the hill. We may need to spend money on a bridge which may also include the need of a dish. This may be about a $200-$300 one time expense. Harry proposed to run a test on the feasibility of this. Another option would be to trench-in an Ether-net line between the house and MVCO. Another option would be to purchase a WiFi Hot spot that would run about $500/ year. One last option was transmission over power lines. Alan Avnet said his power line attempt at home failed as did the city-wide try in Cincinnati. Bill Pearce made a motion we not depend on outside sources and obtain the WiFi service. Lou DiNardo seconded the motion. Various opinions were given- pro and con. Many seemed against it: most members already have smart phones; limited use doesn't justify the cost. Pricing always increases. A vote was taken. A hand count showed 8 out of 28 for the measure. Lacking the majority vote, the motion failed. Harry's investigation on signal boosting will proceed, and a course of action will then be decided upon.

Tony Mehle has donated a Televue Delos 17.3mm eyepiece for a main raffle prize ($370). Many, many thanks Tony! Phil has obtained the Orion Versago III Mount and 8" dovetail plate for an additional main raffle prize. The membership voted to purchase this mount at the June meeting, for such use. Steve read from a list of door prize items on hand. We need more. Tony has also order a large number of door prize items from *Sky & Tel*. Thanks again Tony. A list (to publication date) should be in the August *Meteorite*. There was a sale on grills at Sears but it had ended the day of the meeting. Others will soon be on sale so keep an eye on this.

NEW BUSINESS: There was a question as to how deep the well is. Rosemary has an old pump she would donate if the well depth works with this pump. Looking up old county records might have this information (circa 1950s?) when the site was just a farm. It was decided to have a BBQ at the MVCO to celebrate the dedication of the MVCO on September 29, 1962 by then governor Michael DiSalle. This also happens to be the meeting date for our September business meeting. Bring your BBQ meats for the pre-meeting cook-out.

GOOD OF THE SOCIETY: Harry nominated Don Cherry for membership. Greg Higgins seconded the nomination. A voice vote accepted Don as a member. Sam nominated Paul and Jan Baker for membership. Greg Higgins seconded this nomination. A voice vote granted membership to Paul and Jan. The MVAS welcomes all three of you into the Society. We look forward to having you as observing companions and hope you will enjoy

our public and members only events and meetings. Steve Bartos has the Astronomy 2013 Calendars in hand. $10 each. First come first served. See Steve to purchase. Jodi McCullough reminded us that the Mars probe Curiosity is due land on Mars August 5th. Various broadcast sites were mentioned. Jodi also reminded us that Astronaut Sally Ride had succumbed to cancer and passed away earlier in the week. She was the first US female astronaut to fly in space, flying aboard the Space Shuttle. She was 61 years old.

VISUAL REPORTS: Phil reported 8 variable star estimates in July. Many of the active scope usurers have been imaging. Larry noted Bob Danko has signed in at the MVCO quite often.

ADJOURNMENT: Adjournment came at 8:36 PM. We thank our hosts Greg Higgins and Rosemary Chomos for the pizza, cakes and chips. The next meeting will be at the MVCO on Aug 25, 2012. Meeting begins at 8:00 PM. Scheduled hosts are Jodi and Roy McCullough (switched with Bill Pearce). PASSWORD: name a constellation. *-minutes by Phil Plante*

After the social hour, Jodi McCullough gave a review of the various filters available for visual and photographic use at the telescope. Roy McCullough and Bill Pearce gave helpful hints along the way. Lou DiNardo and others took the Criterion 8" SCT into the yard and shot lunar images with the MVAS webcam. Meanwhile Jodi and Roy employed various filters on the 8" refractor to demonstrate visual performance differences with various filters. A great night for all.

MVAS REMINDERS

August 11, 2012: Work session at the MVCO in preparation for the OTAA event. Starts around noon and lasts till the jobs are done. A work list should be posted prior to the session. Exchange e-mails to see who is bringing what- brooms, rags, cleaning fluids, paint supplies (if any). A BBQ will be held around dinner time; bring what you want to grill or snack on.

August 11-12, Perseid Watch: The night of the work session, Saturday into Sunday morning, is the predicted peak of the Perseid meteor shower. If clear, we plan to sit under the stars, on the deck and watch for meteors. Bring your anti-gravity chair and maybe binoculars. We'll save a spot for you.

August 18, 2012, MVAS-OTAA meeting. We need members to start collecting items for use as door prizes. They don't have to be astronomy related. They can be everyday stuff like electronic storage media, coffee mugs, flash lights, stuff for kids, key chains, thermometers, timers. Or grab astronomy gadgets on-line: color filters, books, DVDs, charts, cases, bags, small tool boxes. Lens cleaning fluid- papers. Etc. Thanks in advance.

MVAS ACTIVITIES

The YSU Summer Festival of Arts went off well July 7-8. Several MVAS members were on hand to help with public solar views. It was a hot time with passing clouds on occasion. H-alpha scopes and white light views were available. There was a good turn-out of passer-by's that stopped for a look. We thank Bill, Jodi, Roy and Larry for helping YSU professor/MVAS member Pat Durrell. Sharon Shanks ran the hourly shows in the Planetarium. We also thank Greg Klocek for the MVAS discount on Rita's Italian Ice. Saved the day.

MVAS- OTAA MEETING AUGUST 18, 2012

AT THE MVCO IN BRACVEILLE, OH

1076 SR 534 NEWTON FALLS, OH 44444

The MVAS OTAA Schedule:

5:00 PM	Registration opens. $5 per person. Buy Main Raffle Tickets at $1.00 per ticket-no limit. ("Chinese" style)
6:15 PM	Pot luck picnic dinner. Bring a covered dish or dessert. Coffee and soft drinks will be provided.
7:15 PM	OTAA announcements, raffle drawings.
8:18 PM	Sunset. End of nautical twilight at 9:23 PM.
9:00 PM	It's dark. Observing time! MVAS scopes in use!

MAIN RAFFLE PRIZES

1- Televue Delos eyepiece: 17.3mm, 1-1/4 " barrel

1- Orion Versago III alt-az mount with 8" dovetail plate

Sample Door Prize list (as of July 29)

1- Deep Sky Hidden Treasures	1- Meteorite Iron, 6 grams
1- Binocular Highlights	1- Meteorite Iron, 10 grams
1- S&T Field Map of the Moon	1- Meteorite Chondrite, 1.6 gram
1- Double Stars for Small Telescopes	1- Jupiter Observer's Handbook
1- Star Trails	1- Univverse Sampler
1- Caldwell Objects Poster	1- The Heavens
1- Deep Sky Wonder	1- Seeing in the Dark
1- Lunar 100 Card-Plastic	1- Smithsonian Book of Mars
1- Proto-Star flocking paper	1- ASP Tour of Night Sky
1- S&T Video Astronomy	3- Astronomy subscriptions
1- Vixen 50mm starter scope	2- roll of glow in the dark TP
1- $25 Walmart gift certificate	1- 25 Years of NASA (VHS)
3- Orion eyepiece cases	2- sets of focuser wheels
3- clip-on LED lights	2- JMI $50 gift certificates
1- clipboard calculator	4- flashlights
1- multi-function tool with light	2- Ever Ready Glow sticks

Come one; come all to the MVAS-OTAA meeting. Meet with old friends and make new ones. Time to talk shop and break bread. The registration fee of $5.00 per person enters you in the Door Prize raffle. We'll also have a Main Raffle. Tickets are purchased separately at $1.00 each, for this Main Raffle. No limit on how many tickets you may buy. Separate "ticket canisters" will be used, one for each prize of the Main Raffle. No speaker is planned this year, so observing begins after the raffles. Your scopes and binoculars are heartily invited.

Standard procedure is that no vehicles enter or remain in the upper observing field after dark. Please try to arrive before sunset if you need to unload heavy and big scopes. Please park in the lower level with headlights facing away from the buildings. We all know about green lasers. Don't point one at anyone and limit usage. Please do stick around for the midnight buffet (dinner leftovers). Feel free to observe all night. Many have done this in years past. We hope this year is no exception.

Getting there: The MVCO is on Rt. 534 about 0.8 miles north of the Rt. 82 and Rt. 534 intersection. It is on the east side of Rt. 534. Look for a white MVCO sign at the driveway entrance. If possible use parking lights only, when arriving in the dark.

Observer's Notes.....

A Wild Swan Chase

Stars are classified by their spectral characteristics. That is, the spectrum of a star reveals the temperature of the star's photosphere (surface). The hotter the photosphere, the higher the ionization of the atoms that are present. A spectroscope is used to split the starlight into a spectrum. This spectrum exhibits a rainbow of colors, interspersed by dark absorption lines. Each absorption line (or emission line) indicates a certain chemical element is present and at a certain temperature and pressure. In short, a spectrum tells us the temperature of a star. This ties-in directly to the color of a star. Like white-hot steel (high temperature) to dull red glowing steel (cooler temperature), star temperatures predict what color should be seen. Studies have shown that single stars follow the spectral prediction quite closely. Remember, these colors are subtle hues or tints as observed by eyeball. Double star observers often see a wide range of color contrast. This has more to do with enhanced visual color contrast effects rather than intrinsic star colors.

Stars are now currently classified in the Morgan-Keenan system, using the letters **O, B, A, F, G, K,** and **M.** These letters are identical to the previous Harvard Classification system. This non-alphabetically ordered scheme was developed by Anne Jump Cannon from 1911-1915, using all letters from **A** to **O**. In this system, **O** stars are the hottest. The letter sequence then indicates successively cooler stars up to the coolest **M** class. A mnemonic devised by Canon for remembering the spectral types is: "**O**h **B**e **A** **F**ine **G**irl/Guy **K**iss **M**e"- using the first letter of each word. Thus, star classes are ordered according to temperature. The current system also employs numbers (0-9) to father subdivide the classes (i.e. A0 to A9).

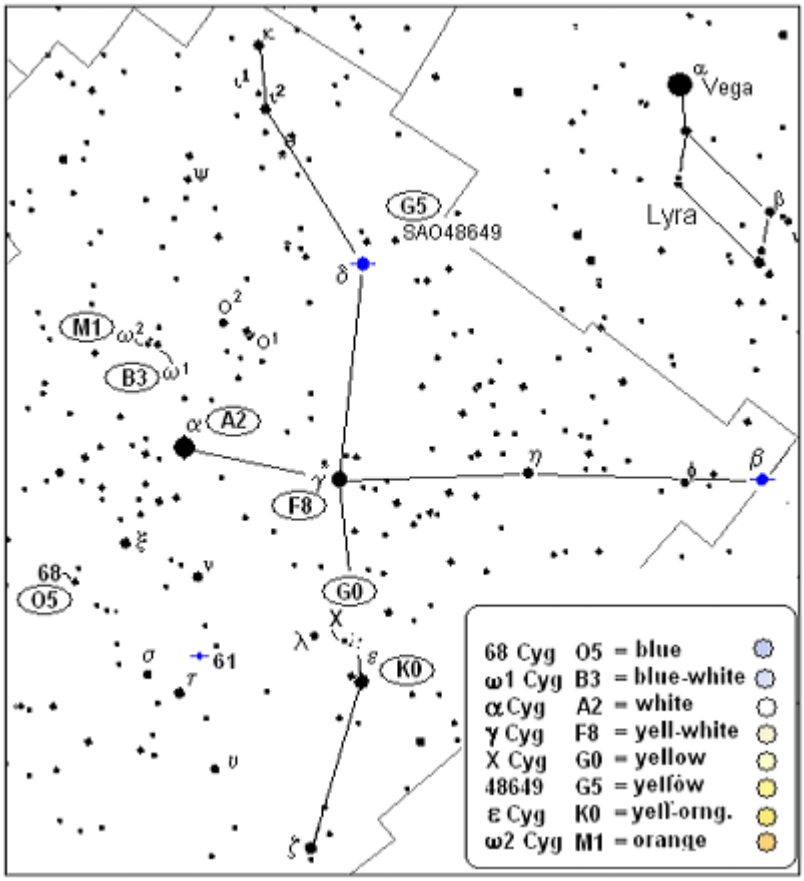
An analysis of an accurate stellar spectrum is needed to officially classify a star. Visual judgment of the color will not suffice. Here is a listing of spectral color characteristics that should appear to the eye.

Type	Apparent Tint	Surface Temp	% of stars*
O	blue	30,000K - 60,000K	0.000003 %
B	blue-white	10,000K - 30,000K	0.13 %
A	white	7,500K - 10,000K	0.60 %
F	yellow-white	6,000K - 7,500K	3.00 %
G	yellow (Sun)	5,000K - 6,000K	7.60 %
K	orange	3,500K - 5,000K	12.10 %
M	red	<3,500K	76.45 %

* population percentage of main sequence stars.

The actual star colors perceived by an observer may deviate a bit from these color tints. It depends on the current conditions of the eye and sky, as well as observer experience.

August and September nights have Cygnus the Swan flying high in the East as soon as it gets dark. These nights are often a welcome relief from the sticky and hazy nights of July. All you need is a chair and a pair of binoculars. Naked eye work is dicey at best since our eyes have poor color response at low light levels. Modest optical aid will increase the light level delivered to the retina and boost color perception. At first blush, most of the stars will look white- maybe you'll see an occasional yellow or orange tint. But with a more careful examination, one



might detect the delicate spectral colors of the stars.

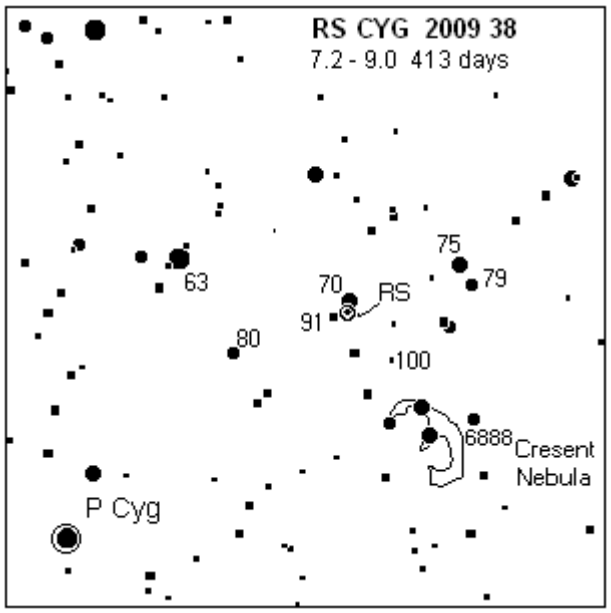
So here's the deal… sit back, relax and scan the Milky Way in Cygnus. Use binoculars of an RTF scope. Use the chart given here to hunt down the stars so noted- as to spectral type examples. (Use planetarium software to look-up the spectral type of other stars). Can you see the spectral color differences in the noted stars? Remember, results will differ depending on eye condition, instrument used and sky transparency. Note your results. This is good training for determining visual colors of double stars. Check out the three doubles indicated. 61 Cyg is two K-type stars. β Cyg is a B & K type, while δ Cyg is B and F. Also o^1 is a K, B, A combo. You might not see any colors at all. A few or maybe all of them. It's far from a "wild goose" chase… or should I say "wild Swan chase". You still get to enjoy scanning the Milky Way along Cygnus the Swan. *-P. Plante*

MVAS Homework: North American Nebula

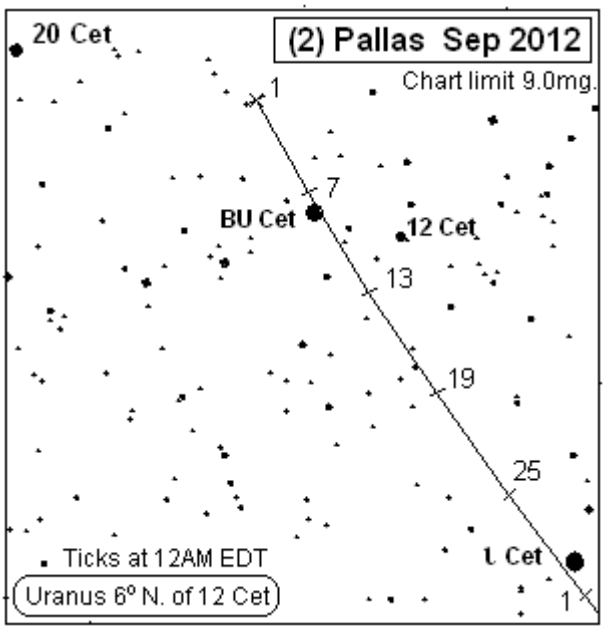
Okay… this is a tuff one to pull off. But you'll never know if you can see it- unless you try. You need a very dark and transparent sky. No haze or light pollution can be present. All without filters- I have seen it from the MVCO with a 6" F/5 Newtonian. From Scenic Vista with a 6" F/4 Newtonian, from Letha House (Cuyahoga) with 70mm binoculars, and naked eye from the high desert of New Mexico. You really need to know this area. The nebulosity is barely brighter than the background. I usually look for a tiny, backwards 'Orion' figure in the "Gulf of Mexico". This is my jump-off point to scan NE for the nebula. High magx scopes won't work. Binoculars are your best bet around here.

MVAS OBSERVER CHARTS

Variable star of the month: **RS Cygni** (*abbrev:* RS Cyg). RS Cyg is a nice variable to follow as soon as Cygnus rises in the spring sky- and all the way through late November. With experience, one could use 70mm binoculars to find it. It has a distinct reddish tint, and is next to a faint blue-white star (7th mag). It makes for a nice "double star" so it should be favorite stop on your scans of Cygnus.



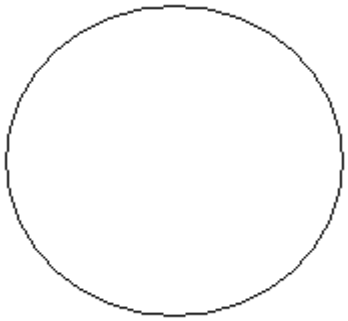
Asteroid of the month: (**2) PALLAS.** Look over to the eastern sky in the constellation of Cetus. There you'll find Pallas- the asteroid of the month this September. It brightens from 8.8 magnitude to 8.3 by month's end. It rises around 9:20 PM Sep. 1st and 7:30 PM by the 31st. It should be well placed in the SE sky a few hours after those times (check the Sky Almanac). Pallas travels SW towards iota Cet and should be in reach of larger binoculars. It will be just brighter than the faintest stars shown on the chart below. Do have a go at it!



MVAS OBSERVATIONS - DUE SEPTEMBER 2012

OBSERVER_____

Featured object: NGC 7000- also known as the North American Nebula, this faint nebula is for RFT's or big binos. Mount your binos on a tripod- if you can- when you try a sketch. This will make it easier to keep it in the field of view while looking at your sketch. Try to dot all the stars you can see before smudging-in any nebulosity. Heck! Sketch the stars even if you don't see any nebulosity. Good luck (you'll need really dark skies).



NGC 7000 Observation:

Date:_____ Time(EDT)_____ Scope_____

RS CYG magnitude estimates:

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

(2) Pallas Observations:

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

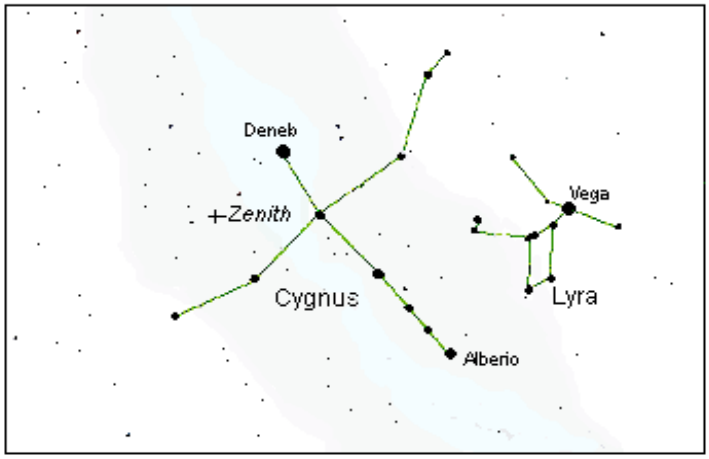
Other Objects in Cygnus to observe

D. Sky	Date	Scope	**Dbl.**	Date	Scope	SEP	MAG	SPLIT?
M- 29	_____	_____	β Cyg	_____	____	35.0"	3.4 - 4.7	Y / N
M- 39	_____	_____	ω^1 Cyg	_____	____	388"	3.8 - 4.8	Y / N
N- 6960	_____	_____	61 Cyg	_____	____	31.0"	5.3 - 6.1	Y / N

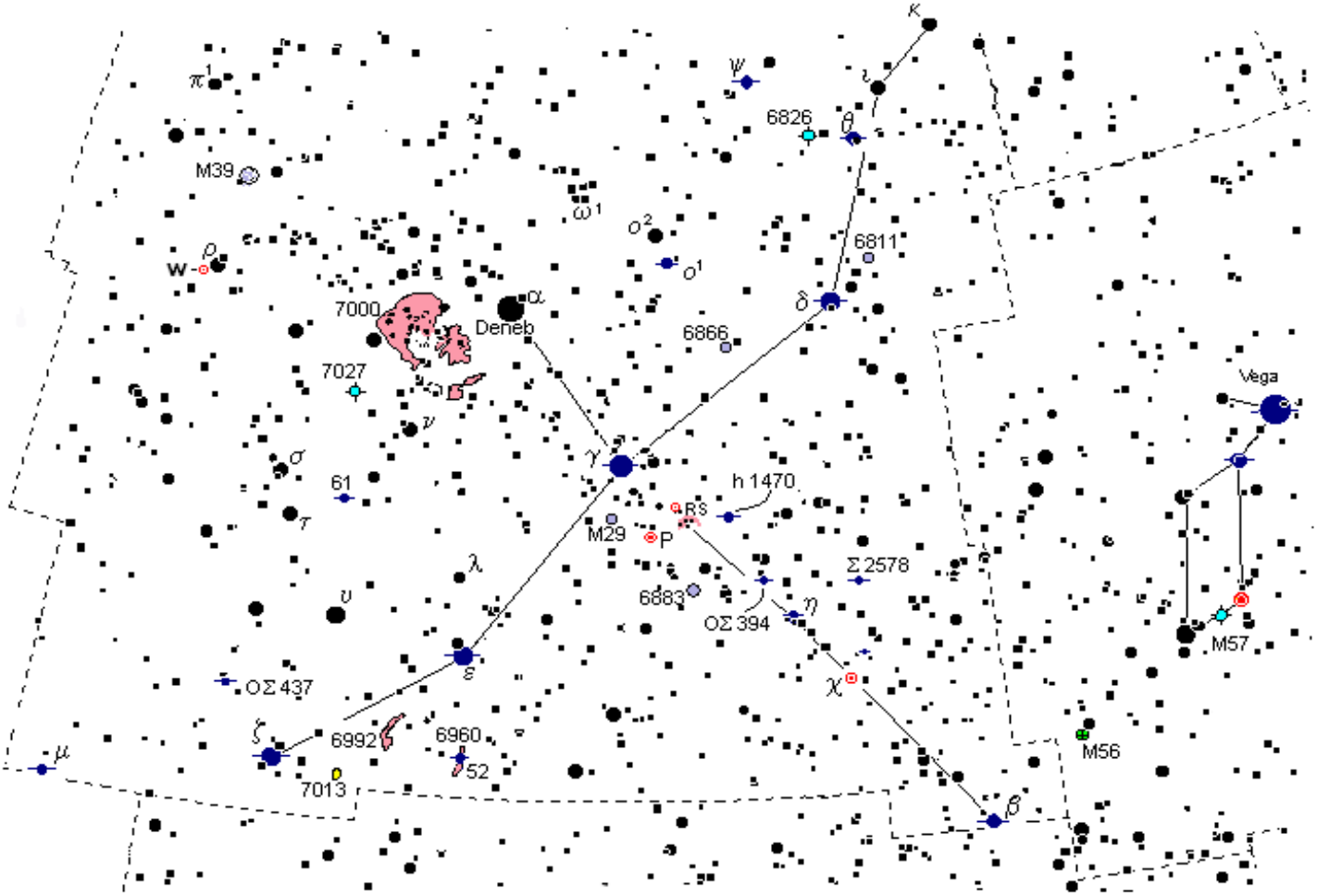
Lunar Occultations (see Sky Almanac):

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

Constellation of the Month — Cygnus



Cygnus transits at the times given below in Aug/Sep. Look for the bright, bluish-white star Deneb. This marks the tail of the Swan. In a dark sky location, you'll see the soft glow of the Milky Way run the length of this "Northern Cross". Scan with binoculars and you'll see the Mily Way's light turn into hundreds of stars. To the left of Deneb try to find the faint outline of the North American Nebula. To the right you'll see omicron 1&2, about 1 degree apart. Both are around 4th magnitude and have a distinct orange coloration. o^1 has a 5th mag. bluish companion close by. A pretty grouping. Open star clusters M29, and M39 should be visible in your binoculars too. Using a telescope, you can investigate the many double stars and clusters shown on the map below. Many consider Alberio as the most colorful double star of all. The "Blinking Planetary" NGC-6826 will play tricks on you. Look directly at it and all you'll see is the central star. Look off to the side and the nebula appears! Don't forget to keep an eye on chi Cyg. You can use binoculars when it's near maximum light. Remember. Relax, take your time. Enjoy all that Cygnus has to offer.



DEEP SKY			
___ M29	6.6 mag.	6' diam.	OC 50 stars
___ M39	4.6	31'	OC 30 stars
___ N6826	9.8	25"	PN "Blinking"
___ N6866	7.6	6'	OC 80 stars
___ N6960	- -	70' x 6'	W. Veil Neb.
___ N6992	- -	72' x 8'	E. Veil Neb.
___ N7000	- -	120' x 100'	N. Amer.
___ N7013	12.5	2.7' x 1'	Galaxy
___ N7027	8.5	15"	PN

Double Star	mag.	sep.	colors
___ β	3.1, 5.1	34"	gold, blue
___ δ	2.9, 6.3	2.9"	white, bluish
___ o^1	4.0, 5.0	338"	orange, blue
___ ψ	4.9, 7.4	3.2"	white, lilac
___ μ	4.5, 6.1	7.6"	yellow, lilac
___ 52	4.2, 9.4	6.0"	yellow, blue
___ 61	5.2, 6.0	30"	yellow, gold

Double Star	mag.	sep.	colors
___ h 1470	7.3, 9.4	29"	red, blue
___ OΣ 394	7.1, 9.9	11"	orange, blue
___ OΣ 437	6.2, 6.9	2.1"	yellow, greenish
___ Σ 2578	6.4, 7.2	15"	orange, blue
___ Σ 2580	5.0, 9.2	26"	gold, blue

Variable star
chi Cyg ____ mag. on ___/___/____
RS Cyg ____ mag. on ___/___/____

Deneb Transits	
Aug. 15	12:30 AM
Aug. 22	12:02 AM
Aug. 29	11:30 PM
Sep 05	11:03 PM
Sep 11	10: 36 PM
Sep 18	10:12 PM
Sep 25	9:45 PM

Solar and Lunar (EDT).

Date	Sunset	Moonrise	Moonset
1	7 : 56	8 : 10p	7 : 59a
5	7 : 49	10 : 14	12 : 02p
9	7 : 43	12 : 24a	3 : 30
13	7 : 36	4 : 21	5 : 58
17	7 : 29	8 : 57	8 : 08
21	7 : 22	1 : 35p	11 : 18
25	7 : 15	4 : 41	2 : 33a
29	7 : 08	6 : 40	6 : 50

PLANET WATCH

	Jupiter	Uranus	Venus
	Rises	*Transits*	*Rises*
	12:09a	3:10a	3:09a
	11:51p	2:53a	3:13a
	11:37p	2:37a	3:18a
	11:22p	2:21a	3:24a
	11:07p	2:05a	3:30a
	10:52p	1:48a	3:36a
	10:37p	1:32a	3:43a
	10:22p	1:16a	3:51a

September 2012

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 ○						

Asteroid for September 2012 (2) Pallas

Date	Rises	RA hr. min	Dec. deg.	Alt.	Azm	Magnitude
		topocentric				
1	9 : 21 pm	00 : 38	- 01.8	27°	120	8.8
7	8 : 59 pm	00 : 36	- 03.3	31	127	8.6
13	8 : 37 pm	00 : 32	- 04.8	33	135	8.5
19	8 : 14 pm	00 : 28	- 06.3	35	143	8.3
25	7 : 52 pm	00 : 24	- 07.8	37	152	8.3
31	7 : 29 pm	00 : 19	- 09.4	37	160	8.3
	EDT	*(at midnight)*		*(at midnight)*		

Variable Star of the Month: **RS CYG** 6.5 - 9.5mag 418 day period

Celestial Highlights

Date	UT hr	
3	10	Parthenope at opposition
8	13	**LAST QUARTER MOON**
10	00	RS Cyg maximum 6.5m
12	15	Venus 3.5° N. of Moon
14	00	X Oph maximum 6.8m
16	02	**NEW MOON**
21	04	Piscid meteor shower
22	19	**FIRST QUARTER MOON**
24	4.7	Pallas at opposition
29	07	Uranus at opposition
30	03	**FULL MOON**

LUNAR OCCULTATIONS FOR: SEPTEMBER 2012

Civil (24hr) date	hr	min	sec	***UT*** date	hr	min	sec	Ph	Moon % illum.	Moon alt	Moon azimuth	Star name	Star Mag.	event PA	dbl./ sep.
2	0	54	12	***2***	04	54	12	**R**	97-	46°	144°	22 PSC	5.6	190°	NA
6	2	52	26	***6***	06	52	26	**R**	71-	49	113	ZC 455	6.1	250°	0.03"
10	4	31	26	***10***	08	31	26	**R**	33-	33	093	ZC 1006	7.1	238°	0.05"
11	2	53	26	***11***	06	53	26	**R**	24-	6	072	ZC 1116	7.2	230°	NA
22	21	29	11	***23***	01	29	11	**D**	52+	22	210	mu SGR	3.8	050°	16.3"
22	22	34	09	***23***	02	34	09	**R**	53+	14	224	mu SGR	3.8	050°	16.3"
24	0	10	51	***24***	04	10	51	**D**	64+	11	233	43 SGR	4.9	100°	0.10"
26	2	15	14	***26***	06	15	14	**D**	84+	13	242	nu AQR	4.5	019°	NA

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 west limb to watch for a reappearance.

PA is referenced to celestial north: North=0° East=90° South=180° West=270°

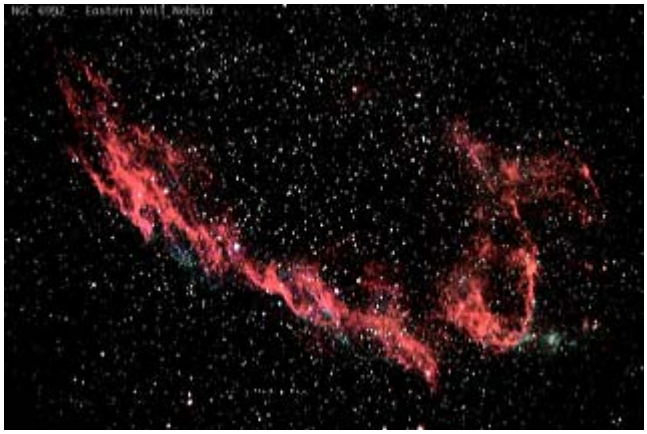
Occultations computed using Occult v3.6 (I.O.T.A.)

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

GALLERY…..

MVAS "Sleepless Nights" as Bill put it in an e-mail. Samples of our members' imaging work these past few months. Not too shabby I'd say. Enjoy this review.

North American Nebula: Jodi and Roy McCullough. (6-21 2012)



Eastern Veil Nebula: Bill Pearce (6-23 2012)

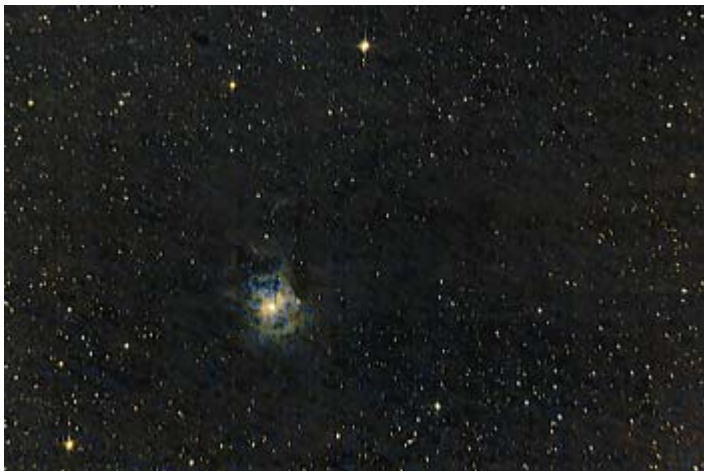
Alberio: Bill Pearce (7-13 2012)

With Cygnus as the showcase constellation for this issue and the North American Nebula as Homework, we have a few image samples of highlighted objects to use as guides. Finding the North American is made easier if you can spot the backwards "Orion" figure made of ~ ninth mag stars in the lower right quadrant of the image at left. It is directly to the right of "Mexico". Find this in your RFT scope first, then sweep towards the nebulosity. The Gulf coast region should be the most prominent part to pick-out from the background sky. Good luck!

Jupiter: Mike Heim snapped this image of Jupiter on July 29, 2012.

Luna: Dan Schneider took this image on June 25, 2012. Using his new 12" Dob.

The Eagle Nebula - M16: Mike Heim (7-27 2012)



The Iris Nebula: Mike Heim (7-24 2012)

The Whirlpool Galaxy, M51: Mike Heim (6-23 2012)

The Swan Nebula, M-17: Jodi and Roy McCullough (7-24)

M-13, Hercules Cluster: Bill Pearce (7-30 2012)

M101, Pinwheel Galaxy: Bill Pearce (7-08 2012)