

# THE OBSERVER

## East Valley Astronomy Club

### From the Desk of the President by David Douglass

It seems with each passing week, there are new discoveries in the astronomy world. And these discoveries are being published in the general news media for all to read. We have new planets being discovered, asteroids being tracked, spacecraft going to far off planets, and continued reports from existing probes. Much attention seems to be focused back on our own moon, by the US, as well as other countries. There is still so much to learn.

Many of our own members are expanding their observing activities beyond the areas of visual and astro photography. Asteroid occultations, and planet discovery/verification by photometry are even being done by our membership and results published. How amazing is that?

EVAC, through GRACO, is starting a Citizen Scientist group. The focus will,

of course, be astronomy. At this writing, several special events are being scheduled for observation. I am anxious to see the results of their efforts.

Several of our members, myself included, have been involved in the construction of either backyard observatories, or remote observatories, and according to recent conversations, several more are being planned.

There certainly is a strong interest in astronomy, and this is good.

If you have been involved in some recent activity which you would like to share with the general membership, please consider volunteering to make a 5-7 minute presentation at the general membership meeting. We are going to try and allocate about 30 minutes each month to member stories. Please be sure and let me know ahead of time, so that I can put you in the schedule.

*Continued on page 5*

### The Backyard Astronomer Behold Orion by Bill Dellings

It can be argued that Orion the Hunter is the most impressive of the 88 constellations. It gets my vote. Why? Can you think of any other constellation that has so many bright stars arranged in such a distinctive pattern and placed midway between the zenith and horizon, making it viewer friendly as seen from mid latitudes in the U.S.?

It doesn't hurt Orion's case that it contains the best example of an emission nebula in the northern sky – M42, the Orion Nebula.

In Greek mythology, Orion was a great warrior hunter. So adroit, he boasted he could kill off all of Earth's creatures. This angered Earth Goddess

Gaia and she sent a scorpion to engage him in battle (it must have been a big one, for it killed Orion).

In February, Orion rides majestically on the meridian. The first thing that catches your eye is the three stars forming the hunter's belt. Betelgeuse and Bellatrix, two bright stars above the belt, mark the hunter's shoulders. Below the belt, Saiph and Rigel denote the hunter's knees. Betelgeuse and Rigel are zero magnitude stars, the others mentioned above are second magnitude stars. Three faint stars just below the belt represent the hunter's sword. The middle star hints at fuzziness - this is M42, the great Orion Nebula.

*Continued on page 2*

### UPCOMING EVENTS:

*Public Star Party - February 10*

*Local Star Party - February 11*

*General Meeting - February 17*

*Deep Sky Observing Night - February 18*

*Check out all of the upcoming club events in the Calendars on page 8*

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# The Backyard Astronomer

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Binoculars reveal the sword to be not single stars, but three separate complexes of stars and gas.

A great joy that many amateur astronomers miss out on is viewing this intriguing area with binoculars rendering at least a 5 degree field, ideally while seated and the binoculars mounted on a tripod. The sight is amazing. There is a lot of stuff going on here, from NGC 1981/1977 to the north, through M42, and NGC 1980 on the south end. Now throw your telescope on M42 and bask in the ethereal hydrogen gases of the Orion Nebula. In the brightest central region resides the Trapezium, four young stars easily split in any telescope and whose

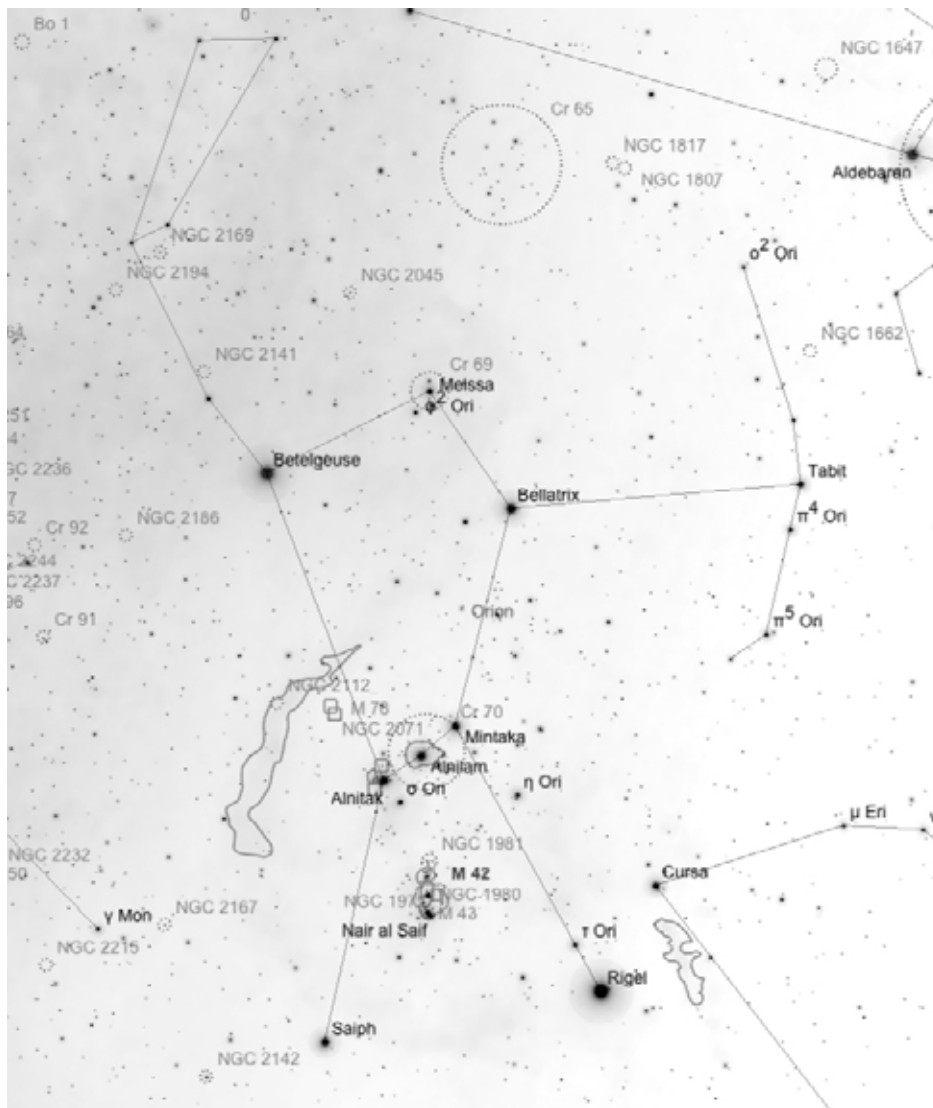
ultraviolet radiation is primarily responsible for exciting the hydrogen gases in the nebula to glow. Good seeing and high power (165x) may reveal the Trapezium's E and F components.

Before retiring your binoculars, put them on the belt for another surprise. It's not just a pretty three star alignment. The belt is enveloped by hundreds of fainter stars twisting and turning around Alnitak, Alnilam, and Mintaka and continuing out to the northwest. This large star cluster is known as Collinder 70.

Another splash of stars, Collinder 69, buzzes around the hunter's head, denoted by 3.5 magnitude Lambda Orionis (Meissa).

Before leaving the realm of star clusters, be sure to make a stop at NGC 2169 in Orion's upraised right arm (above Betelgeuse) between the stars 69 and 70 Orionis. Though modest in brightness and its numbers of stars, it's unique in that the stars form the number 37 to some observers and thus is sometimes known as the "37 Cluster." This "37" will be backwards as viewed in a reversed field such as SCTs and refractors with a diagonal.

It is interesting to note the top star in the belt, Mintaka, is only 20' (arc minutes) below the Celestial Equator and thus



makes it a handy marker for this important line on the celestial sphere. Mintaka can also be useful in finding M78, a decent emission nebula but relegated to second class citizenship because of mighty M42 nearby. If using a German Equatorial Mount, place Mintaka at the bottom of the low power field of your eyepiece and slew east 3.5 degrees.

Orion is loaded with interesting double stars. Try your luck splitting Beta (Rigel), Delta (Mintaka), Zeta (Alnitak), Iota, and Sigma Orionis. Rigel can be challenging due to its brightness, making the magnitude 6.8 companion difficult to see.

Exploring the mighty Hunter's glories may

very well take your mind off winter's low temperatures.



Orion as depicted in *Urania's Mirror*, a set of constellation cards published in London c.1825

# 2012 All Arizona Messier Marathon

by AJ Crayon

The marathon this year is at the same site as the event last year. Please go to the SAC or EVAC website for directions and a map.

The other announcement has to do with an imaging marathon. We will try this this year and see what happens.

Hovatter Road Airstrip GPS coordinates:

33° 34' 50" N

113° 35' 53" W

Elevation: 1,378 ft.

As in years past, there will be an extra night of observing prior to the marathon, on Friday. Remember, Friday is NOT the marathon. It has been set aside for more time to observe from your personal observing list. It will also provide more time for socializing on Saturday.

The moon is new on March 22 at 07:37.

On Friday (March 23) the sun will set at 19:14, the moon at 20:08, and astronomical twilight at 20:12

On Saturday (March 24) there will be the customary sunset meeting at 18:15 at the intersection of the two runways. Sunset is at 18:52, with astronomical twilight at 20:13. The moon sets at 21:03.

On Sunday morning (March 25) astronomical twilight is 05:07 with the sun rising at 06:27, followed by the moon at 07:56.

As for the imaging part of the marathon it will take place along with the observing. It will be a different marathon with similar awards and similar requirements. We need to inform imagers about stray light. Please humor me on this as it can be more subjective than objective. Some laptops splash more light than others and it is up to you to determine how best to minimize this. Using a red light mode, or taping the screen with a ruby red covering are two methods. There are other possibilities and it is up to the imager to determine what is best to stop light trespass so observers dark adaptation isn't impacted. If a fellow observer strolls over to you and says your laptop screen is affecting his night vision, please be a sport and minimize the laptop's light pollution by either repositioning your laptop or in some way shielding its glow.

Another alternative is to use the north part of the north runway. If so it shouldn't be necessary to go to the end of the runway. It is a long walk there and back. For more informa-

tion about light trespass and how to minimize see *She Blinded Me with Science* by Mike Wiles, <http://www.saguaroastro.org/content/SACNEWS/newsindex.htm> and select either PDF or ZIP version as you desire. It's good stuff.

Before continuing be sure you have read and signed the waiver for the 2012 event. It is located on the SAC website.

Basically SAC is not responsible for loss, theft, broken items, nor for any bodily injuries you may sustain. Sorry for the legalese but it is a sign of the times. Please turn in the signed waiver at the event, preferably at the sunset meeting.

The challenging evening objects this year:

M 74 is 7° above the horizon and 3.8° south of the 2.47 day old moon.

M 77 is 12° above the horizon.

M 33 is 14.5° above the horizon.

M 31 is 11.8° above the horizon.

Everything else is higher than 20° above horizon.

The Sunday morning challenges:

M 33 is well below the horizon.

M 30 is 1° above the horizon. It will be very difficult so be ready as soon as possible.

M 31 is 4.6° above the horizon.

M 55 is 14.6° above the horizon.

M 2 is 15.6° above the horizon.

M 73 is 15.3° above the horizon.

M 72 is 16.3° above the horizon.

M 15 is 23.5° above the horizon.

Your marathoning activities will not go unnoticed; there will be awards in recognition of effort.

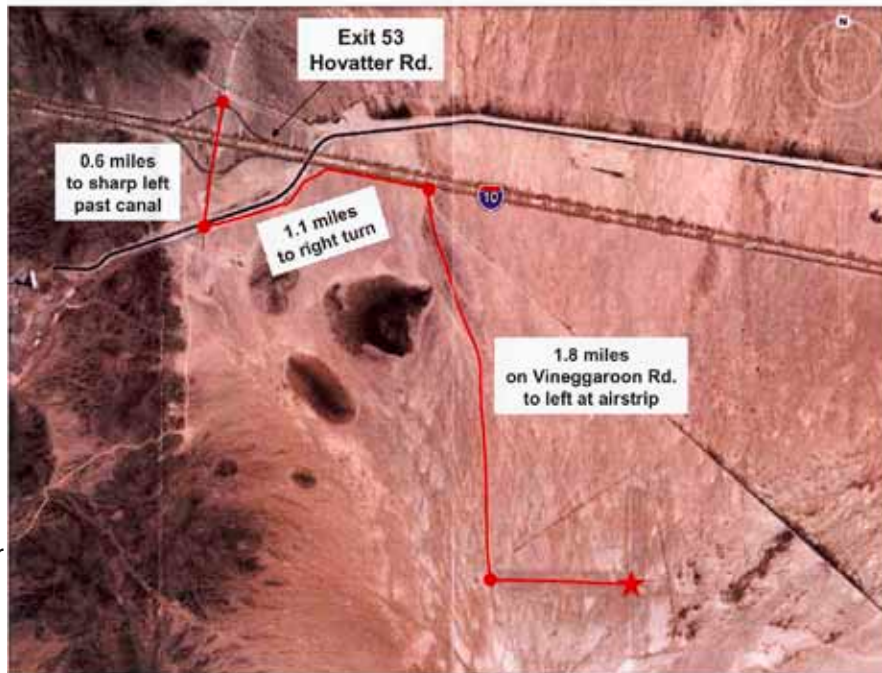
People observing or imaging 50 or more objects will receive an 8½ x 11 certificate. For first, second and third place there will be plaques suitable for mounting on a telescope. This means similar awards for both imaging and observing, i.e. first place for observing and first place for imaging. Duplicate awards will be made for ties; there will be no activities to determine tie-breakers.

Registration in advance is not required. The event is free and open to all, but we will need either your support (or your club's) to purchase the plaques, which in the past have cost around \$10 each. There is no charge for the certificates.

For previous participants see the Messier Marathon Observer's Results at:

*Continued on page 4*

Hovatter Road Airstrip Site



# 2012 All Arizona Messier Marathon

*Continued from page 3*

<http://www.seds.org/messier/xtra/marathon/results.html>

Feel intimidated? Don't think you can reach high counts?

DON'T WORRY! ENJOY!

Set your own goals and don't bother with those high counts.

The marathon is for having fun!

Set your goals in order for you to have fun!

The guidelines are pretty simple, please read them over if you plan on participating.

It's an honor system.

No one is going to be looking over your shoulder to verify your observations.

Have an observing list to keep track of observations or images.

Fill out the heading.

Find an object.

Observe it with your eye through the main eyepiece of your telescope.

Image it with your equipments and verify it is visible on laptop.

Mark off the entry.

Go to the next object.

Start observing or imaging when you are ready, presumably some time after sunset. It is up to you to decide when you are finished.

Here are some additional guidelines you should be aware of. These cover situations and conditions that have occurred in the past, but in no way do they cover the myriad of possibilities that may happen.

## **Locating Objects**

Participants may use a variety of means to locate objects. This includes memorizing positions; using binoculars, books or star charts for star hopping. The use of setting circles, either analog or digital is also permissible. Goto telescopes can also be used.

## **Multiple Observers**

In a small number cases there have been teams of two observers per telescope. This will still be allowed, subject to the same conditions as has been followed in the past. The condition is that each observer should find one-half the objects and both must observe all objects. For imaging the situation is similar. Two people per telescope and each should find and image one-half the objects, both must observe all objects.

There is an option in the case of an award. Either one award can be presented with both names or two awards can be presented - one with each name. Please let us know which you select by noting this on the observing list that is turned in at the conclusion of the event. In either case, if the award is for a plaque, you or your club will be expected to pay for one or both. It is recommended, that when paying by mail, to pay for the award by check or money order. Please do not send cash for payment.

Three or more observers per telescope can't qualify for an award. It is possible to do the marathon this way, but none

are eligible for awards.

## **Multiple Instruments**

Participants using two or more instruments are eligible for only one award. This is not to be construed as one award for each instrument, it is one award for the observer.

## **Non-Payment**

Individuals or clubs that haven't paid for prior awards are not eligible for awards until paid up. However, it is still possible to do the marathon.

The only form of registration is an observing list that is used to record your observations or images and a signed waiver. Be sure to get one, either from one of the local astronomy clubs, one of the coordinators or at the site. You can also print one from our web site, see Marathon Order above. If you plan on using this or your personal printed version at the marathon, please use both sides so only one sheet is used and turned in to the coordinators. This helps greatly with recording the event because multiple sheets from many observers or imagers can get mixed up, possibly causing errors in recording the event and determining awards.

Be sure to fill in the top portion so awards and reference can be accurately accomplished. The observing list will be returned with your award.

It is important to remember that your list must be turned in to one of the Coordinators before they leave the site. Either you or someone else you designate may turn in your list. One of us will stay - at least until sunrise - so be sure to get yours in before then. This procedure is followed in order to provide the awards in a timely fashion. Again, don't forget to fill out the top.

The results will be posted, after some verification, on the Messier Marathon Observer's Results web page referenced above as well as the SAC web site.

Now, getting back to marathon information...

A description of the object is not necessary, especially since it will take precious time needed to find the remaining objects.

Study the list sequences, or use your own. Be prepared for the extremely unlikely case it should become cloudy and the selected sequence cannot be followed.

Although it is possible to do the observing marathon with a 4-inch telescope, or smaller, or binoculars, it is not suggested; unless you are an experienced observer.

Plan on arriving at the site at least 30 minutes before sunset to provide time to setup your telescope and for it to reach thermal equilibrium. This will also give you time to meet old friends and make new ones.

If you are NOT going to stay all night:

Park near the entrance so you don't disturb others when you depart.

Please give a shout a few minutes before leaving and then again as you are about to depart.

This will give observers time to shield their eyes so the light doesn't interfere

*Continued on page 13*

## February Guest Speaker: Lynn Young

Lynn Young is the public events coordinator for the East Valley Astronomy Club and, needless to say, is very active in public astronomy outreach events. He schedules the various star parties for schools, scout troops, and other community groups in addition to the monthly public star party hosted by EVAC. Since starting to keep track in November 2010, he has attended over 70 EVAC star parties and has had over 6,500 people observe the wonders of the night (and day) sky through his telescope.

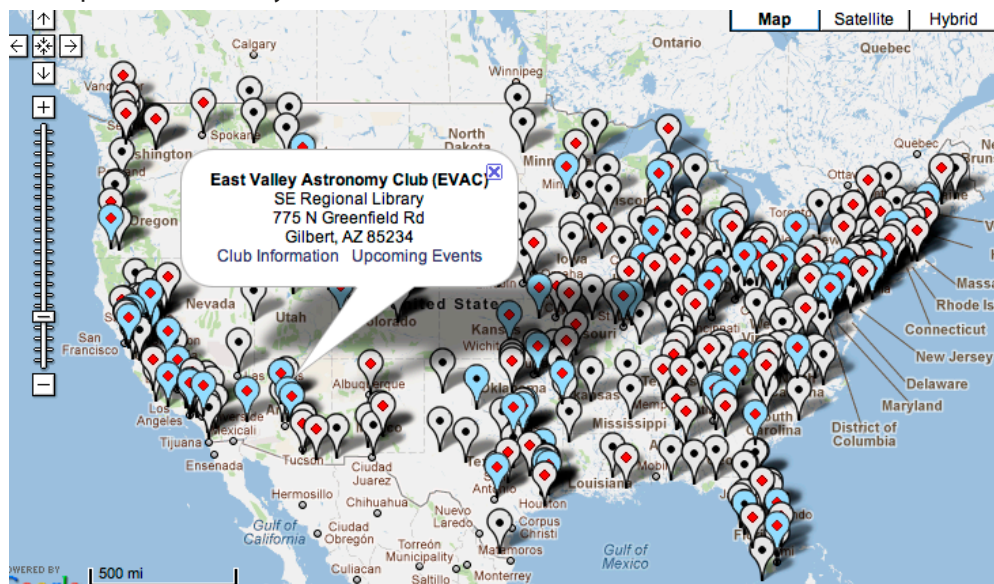
A relative newcomer to astronomy, about four years ago he asked a co-worker if a telescope would help bring out the details in photographs of the moon. With a resounding "definitely", he made the leap into astronomy with an 8"

SCT and absolutely no idea of how to use it or what he had gotten into.

Fortunately, he met the late Randy Peterson at an EVAC public star party, and thus his adventure into astronomy really began. Randy convinced him to help with the school star parties and the rest they say, is history.

Lynn worked for the City of Mesa Police Department for 24 years before retiring in June of 2010.

The presentation is entitled "Night Sky Network", a nationwide coalition of amateur astronomy clubs bringing the science, technology, and inspiration of NASA's missions to the general public.



## From the Desk of the President

*Continued from page 1* March is closing in on us. The Saguaro Astronomy Club (SAC) sponsored All Arizona Messier Marathon is coming along with it. The event is scheduled for March 23<sup>rd</sup> and 24<sup>th</sup>. The actual marathon is Saturday, March 24<sup>th</sup>. The location is again at the SAC Antenna Site (The landing strip). Details are on SAC's website, and linked on the EVAC website (evaonline.org).

Our Outreach programs (schools, communities, and the local star party) are very active this time of year. A special thanks to Lynn Young and his regulars, as well as all that volunteer for this very special activity. I look forward to seeing everyone again at the February meeting.

Until then... Keep Looking Up !!

☾ **FIRST QUARTER MOON ON JANUARY 30 AT 21:10**

● **FULL MOON ON FEBRUARY 7 AT 14:55**

☾ **LAST QUARTER MOON ON FEBRUARY 14 AT 10:05**

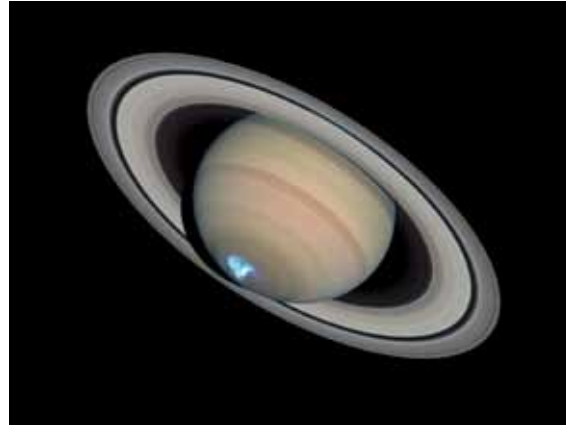
○ **NEW MOON ON FEBRUARY 21 AT 15:35**

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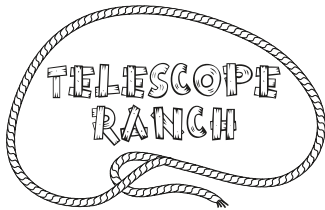


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# Upcoming Meetings

February 17

March 16

April 20

May 18

June 15

July 20

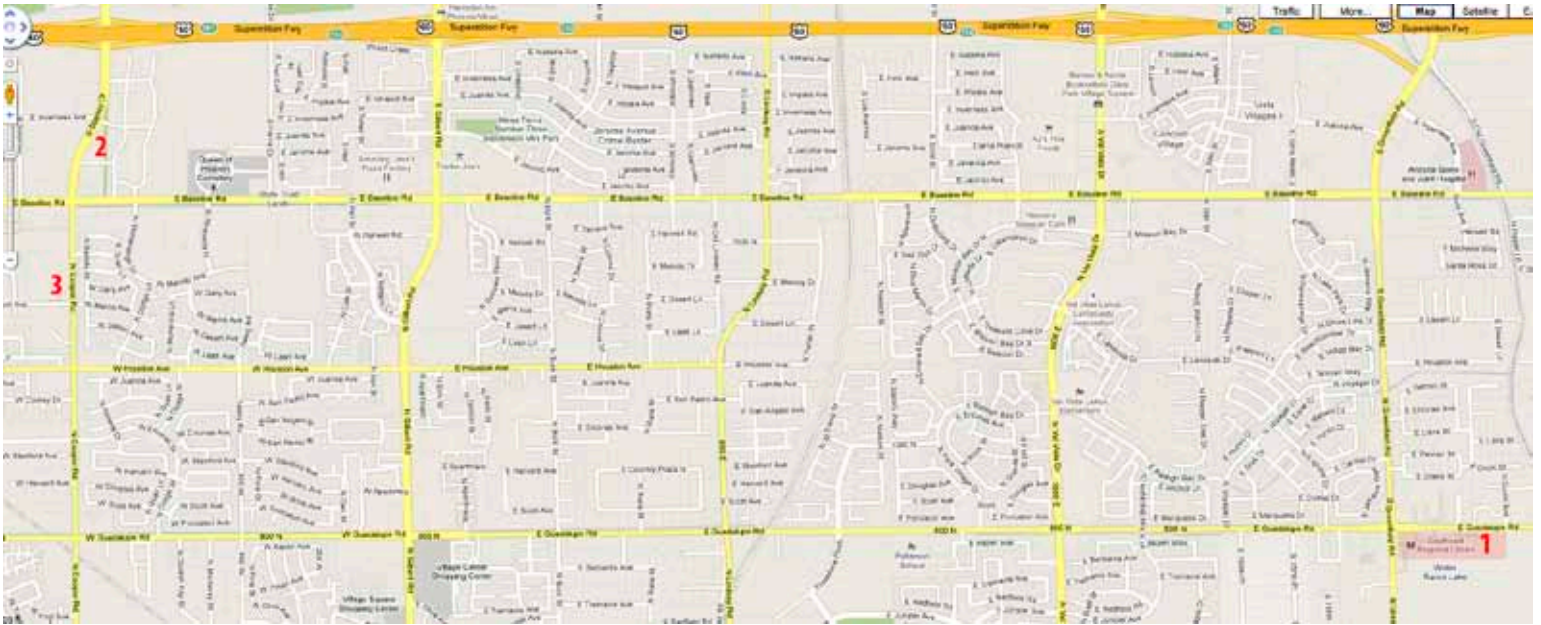
The monthly general meeting is your chance to find out what other club members are up to, learn about upcoming club events and listen to presentations by professional and well-known amateur astronomers.

Our meetings are held on the third Friday of each month at the Southeast Regional Library in Gilbert. The library is located at 775 N. Greenfield Road; on the southeast corner of Greenfield and Guadalupe Roads. Meetings begin at 7:30 pm.

All are welcome to attend the pre-meeting dinner at 5:30 pm. We meet at Old Country Buffet, located at 1855 S. Stapley Drive in Mesa. The restaurant is in the plaza on the northeast corner of Stapley and Baseline Roads, just south of US60.

Likewise, all are invited to meet for coffee and more astro talk after the meeting at Denny's on Cooper (Stapley), between Baseline and Guadalupe Roads.

***Visitors are always welcome!***



**2**

**Old Country Buffet**  
1855 S. Stapley Drive  
Mesa, Az. 85204

**1**

**Southeast Regional Library**  
775 N. Greenfield Road  
Gilbert, Az. 85234



**3**

**Denny's**  
1368 N. Cooper  
Gilbert, Az. 85233



## FEBRUARY 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			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			

**February 1** - Navarette Elementary School Star Party

**February 9** - Riggs Elementary School Star Party

**February 10** - Public Star Party & SkyWatch

**February 11** - Local Star Party at Boyce Thompson

**February 16** - Pomeroy Elementary School Star Party

**February 17** - General Meeting at SE Library

**February 18** - Deep Sky Observing Night

## MARCH 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				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

**March 1** - Sousa Elementary School Star Party

**March 9** - Public Star Party & SkyWatch at Riparian Preserve

**March 15** - School Solar Event at GRCO

**March 16** - General Meeting at SE Library

**March 17** - Local Star Party at Boyce Thompson

**March 24** - Deep Sky Observing Night

# East Valley Astronomy Club -- 2012 Membership Form

Please complete this form and return it to the club Treasurer at the next meeting or mail it to EVAC, PO Box 2202, Mesa, Az, 85214-2202. Please include a check or money order made payable to EVAC for the appropriate amount.

**IMPORTANT: All memberships expire on December 31 of each year.**

Select one of the following:

- New Member
  Renewal
  Change of Address

**New Member Dues** (dues are prorated, select according to the month you are joining the club):

- |   |   |
|---|---|
| <input type="checkbox"/> <b>\$30.00 Individual</b> January through March  | <input type="checkbox"/> <b>\$22.50 Individual</b> April through June       |
| <input type="checkbox"/> <b>\$35.00 Family</b> January through March      | <input type="checkbox"/> <b>\$26.25 Family</b> April through June           |
| <input type="checkbox"/> <b>\$15.00 Individual</b> July through September | <input type="checkbox"/> <b>\$37.50 Individual</b> October through December |
| <input type="checkbox"/> <b>\$17.50 Family</b> July through September     | <input type="checkbox"/> <b>\$43.75 Family</b> October through December     |
- Includes dues for the following year*

**Renewal** (current members only):

- \$30.00 Individual**
 **\$35.00 Family**

**Name Badges:**

- \$10.00** Each (including postage) Quantity: \_\_\_\_\_

Name to imprint: \_\_\_\_\_

**Total amount enclosed:**

*Please make check or money order payable to EVAC*

- Payment was remitted separately using PayPal
  Payment was remitted separately using my financial institution's online bill payment feature

Name:

Phone:

Address:

Email:

City, State, Zip:

- Publish email address on website

URL:

How would you like to receive your monthly newsletter? (choose one option):

- Electronic delivery (PDF) *Included with membership*
 US Mail **Please add \$10 to the total payment**

**Areas of Interest** (check all that apply):

- |  |   |
|--|---|
| <input type="checkbox"/> General Observing   | <input type="checkbox"/> Cosmology        |
| <input type="checkbox"/> Lunar Observing     | <input type="checkbox"/> Telescope Making |
| <input type="checkbox"/> Planetary Observing | <input type="checkbox"/> Astrophotography |
| <input type="checkbox"/> Deep Sky Observing  | <input type="checkbox"/> Other            |

Please describe your astronomy equipment:

Would you be interested in attending a beginner's workshop?  Yes  No

How did you discover East Valley Astronomy Club?

**PO Box 2202**  
**Mesa, AZ 85214-2202**  
**www.evaonline.org**

All members are required to have a liability release form (waiver) on file. Please complete one and forward to the Treasurer with your membership application or renewal.

# Liability Release Form

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**In consideration of attending any publicized Star Party hosted by the East Valley Astronomy Club (hereinafter referred to as “EVAC”) I hereby affirm that I and my family agree to hold EVAC harmless from any claims, liabilities, losses, demands, causes of action, suits and expenses (including attorney fees), which may directly or indirectly be connected to EVAC and/or my presence on the premises of any EVAC Star Party and related areas.**

**I further agree to indemnify any party indicated above should such party suffer any claims, liabilities, losses, demands, causes of action, suits and expenses (including attorney fees), caused directly or indirectly by my negligent or intentional acts, or failure to act, or if such acts or failures to act are directly or indirectly caused by any person in my family or associates while participating in an EVAC Star Party.**

**My signature upon this form also indicates agreement and acceptance on behalf of all minor children (under 18 years of age) under my care in attendance.**

**EVAC only recognizes those who are members or invitees and who also have a signed Liability Release Form on file as participants at an EVAC Star Party.**

---

*Please print name here*

---

*Date*

---

*Please sign name here*

**PO Box 2202  
Mesa, AZ 85214-2202  
[www.eastvalleyastronomy.org](http://www.eastvalleyastronomy.org)**

## The Nerdiest Video Game Ever

by Dr. Tony Phillips

NASA has a job opening. Wanted: People of all ages to sort, stack, and catalogue terabytes of simulated data from a satellite that launches in 2015. Agile thumbs required. Sorting terabytes of data? It's more fun than it sounds. In fact it's a game: Satellite Insight. The Space Place Team at the Jet Propulsion Laboratory created the entertaining app for iPhones to get the word out about GOES-R, an advanced Earth science satellite built by NOAA and NASA.

Described by the Los Angeles Times as possibly "the nerdiest game ever," Satellite Insight may be downloaded for free from Apple's app store. Be careful, though, once you start playing it's hard to stop. Some reviewers have likened it to Tetris, one of the most popular video games of all time.

GOES, short for "Geostationary Operational Environmental Satellite," is the workhorse spacecraft for weather forecasters. NOAA operates two (at a time) in geosynchronous orbit, one above the west coast of N. America and one above the east coast. They monitor clouds, wind, rain, hurricanes, tornadoes and even solar flares. The GOES program has been in action since 1975.

GOES-R is the next-generation satellite with advanced technologies far beyond those of the older GOES satellites. It has sensors for lightning detection, wildfire mapping, storm tracking, search and rescue, solar imaging, and more. Many of the sensors are trailblazers. For example, the Advanced Baseline Imager has 60 times the capability of the current imager—16 channels instead of 5. It has twice

the spatial resolution and five times the temporal refresh rate, including the 30-second imaging of weather systems over a region of 1000 km x 1000 km. Also, the Geostationary Lightning Mapper can count and pinpoint lightning bolts over the Americas 24/7. It's the first such detector to fly on a geosynchronous satellite, and it could lead to transformative advances in severe storm warning capability.

All in all, GOES-R represents a "huge technological leap

from the current GOES." We know this because Satellite Insight tells us so. The app has an informative "Learn More" feature where players can find out about the satellite and the data they have been sorting. Which brings us back to sorting data. It's a bit like eating Cheerios; just don't tell the kids it's nutritious, and they love it.

Helping GOES-R gather and stash data from all

those advanced sensors is just as satisfying, too—a dose of Earth science wrapped in thumb-flying fun.

More information about Satellite Insight may be found on the web at <http://itunes.apple.com/us/app/satellite-insight/id463588902?mt=8>. The game also available in web form (flying thumbs optional) at [spaceplace.nasa.gov/satellite-insight](http://spaceplace.nasa.gov/satellite-insight).

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*



*New iPhone game is first NOAA app and only the second NASA game app. Just as with the real GOES-R, the challenge with Satellite Insight is to keep up with the massive influx of weather and other environmental data.*

## If It's Clear...

by *Fulton Wright, Jr.*

### *Prescott Astronomy Club*

#### **FEBRUARY 2012**

*Celestial events (from Sky & Telescope magazine, Astronomy magazine, and anywhere else I can find information) customized for Prescott, Arizona. Remember, the Moon is ½ degree or 30 arcminutes in diameter. All times are Mountain Standard Time.*

On Tuesday, February 7, at 6:17 PM (12 minutes after sunset), the full Moon rises, spoiling any chance of seeing faint fuzzies for the night.

On Wednesday, February 8, from 7:18 PM to 9:02 PM, you can see Ganymede's shadow crossing the very southern part of Jupiter.

On Thursday, February 9, from 7:30 PM to 8:00 PM, you can see Venus and Uranus near each other. Venus is magnitude -4. Uranus is .3 degrees to the left and magnitude 6 (that is a factor of 10,000 dimmer).

On Sunday, February 12, from 7:44 PM to 9:52 PM, you can see Io's shadow on Jupiter. Io itself moves from in front of the planet at 8:39 PM.

On Monday, February 13, the Moon is at last quarter phase and rises at 1:01 AM (Tuesday).

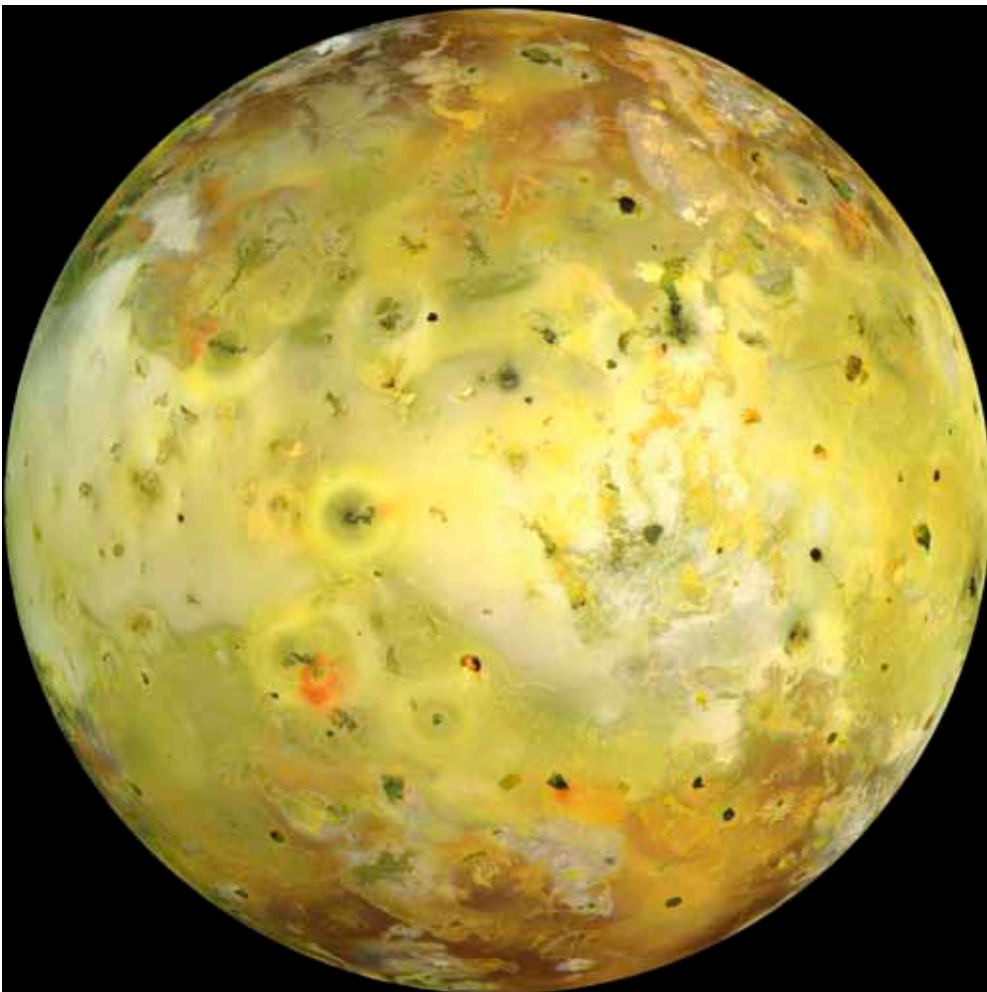
On Tuesday, February 21, it is new Moon and you have all night to hunt for faint fuzzies.

On Wednesday, February 22, near 6:30 PM, you might be able to see the Moon near Mercury. This will be an observing challenge. With binoculars look low in the West for Mercury (magnitude -1). 5 degrees to the right is the very, very thin crescent Moon (only 27 hours old [since new Moon]).

On Saturday, February 25, at dusk, you can see the Moon near Venus.

On Sunday, February 26, at dusk, you can see the Moon near Jupiter.

On Wednesday, February 29, the Moon is at first quarter phase and sets at 1:50 AM (Thursday). At 8:15 PM Europa's shadow falls on Jupiter. At 8:29 PM Europa moves from in front of Jupiter. The shadow remains on the planet until 10:36 PM.



*NASA's Galileo spacecraft acquired its highest resolution images of Jupiter's moon Io on 3 July 1999 during its closest pass to Io since orbit insertion in late 1995. This color mosaic uses the near-infrared, green and violet filters (slightly more than the visible range) of the spacecraft's camera and approximates what the human eye would see. Most of Io's surface has pastel colors, punctuated by black, brown, green, orange, and red units near the active volcanic centers.*

# 2012 All Arizona Messier Marathon

Continued from page 4 with night vision.

A port-a-jon will be on-site. Remember this is a primitive site and we strive to make your stay as comfortable as possible.

Signs will be posted at the entrance to remind drivers to keep the speed down because of the dust levels. We are on the Sonoran Desert!

Please ensure your red filtered flashlights are in good working order and PLEASE no white lights between sun set and sun rise. For more information on star party etiquette check out <http://www.saguaroastro.org/content/Star-Party-Etiquette.htm>

We will have a very short meeting just before sunset for final announcements and words of encouragement. The meeting will be held at the intersection of both runways.

If you plan on participating, then doing some homework ahead of time will pay dividends. If interested the observing list can be made available prior to the marathon for your reference.

Still not interested in the marathon? COME ANYWAY; enjoy a night of observing, astro-photography or just plain old socializing.

Last year Rick Tejera assisted with the marathon and will, again, be assisting. Thanks Rick, your help is appreciated.

Please keep in mind this observing site is not our property, it belongs to the BLM, is rather primitive; which means if you need something, bring it with you and be sure to take it back with you. Let's leave the site at least as clean as it was when we arrived.

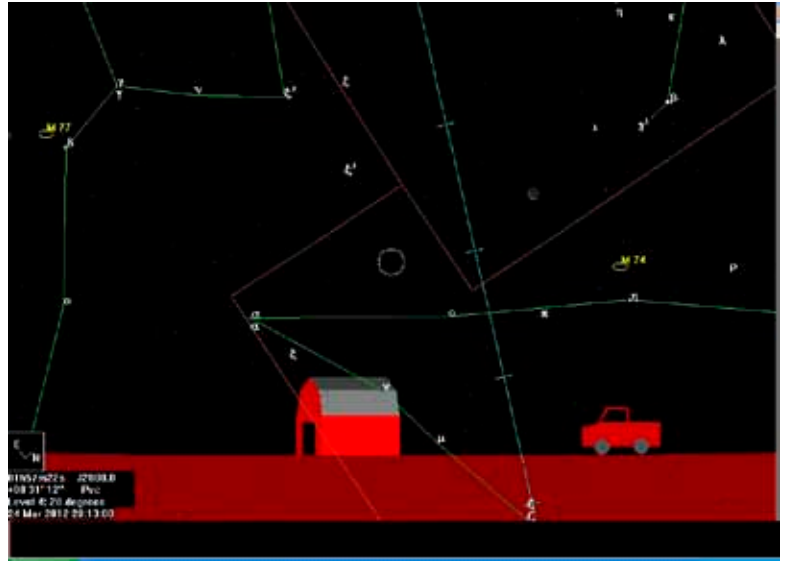
2012 All Arizona Messier Marathon Coordinators

AJ Crayon <[acrayon@cox.net](mailto:acrayon@cox.net)>

Rick Tejera <[saguaroastro@cox.net](mailto:saguaroastro@cox.net)>

Saguaro Astronomy Club

<http://www.saguaroastro.org/content/messier.htm>



*Evening twilight on Saturday*



*Morning twilight on Sunday*

***Looking for that perfect weekend activity?  
Why not resolve to getting involved?  
Contact Martin Thompson to join the staff at GRCO  
Email: [grco@evaonline.org](mailto:grco@evaonline.org)***

# THE DEEP SKY OBJECT OF THE MONTH

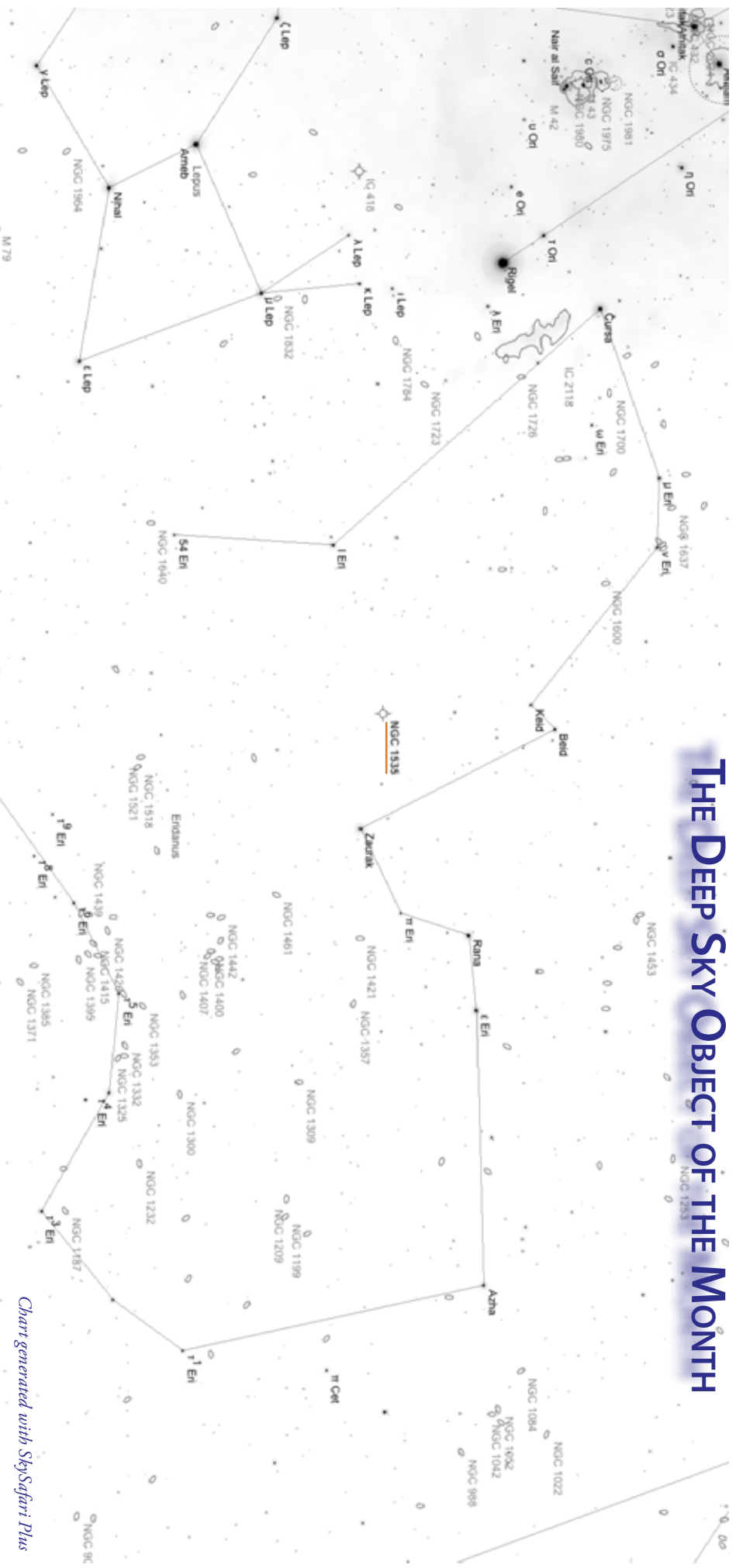


Chart generated with SkySafari Plus

NGC 1535 is a 9<sup>th</sup> magnitude planetary nebula in the constellation Eridanus. Located east of Zaurak, it is a nice diversion from all the galaxies in Eridanus. It has been nicknamed Cleopatra's Eye.

NGC 1535 has a bright blue disk with a diameter of about 30 arcseconds, and a well concentrated central area surrounded by a misty outer ring. This fine bright, bluish planetary displays two shells surrounding a bright central star. The 20" inner shell is bright with a dark ring immediately surrounding the central star. The outer shell is much fainter and uneven in brightness extending to 35". NGC 1353 is very similar Eskimo nebula in both color and structure. NGC 1535 is at least 1,500 light years away.

## NGC 1535 (Cleopatra's Eye) Planetary Nebula in Eridanus

RA: 04h 14m 52.19s Dec: -12° 42' 22.6" Size: 0.8' x 0.7' Magnitude: 9.39

Radial velocity: -3.2 km/sec Diameter: 0.4 pc, 1.3 ly



**As one of the many benefits to becoming an East Valley Astronomy Club member, we have the following telescopes available for monthly check-out to current EVAC members:**

**8 inch Orion manual Dobsonian  
8 inch Orion Intelliscope Dobsonian  
60mm Tasco Alt-Azimuth Refractor**

**For more information, or to check out one of these scopes, please talk to:**

**David Hatch  
EVAC Properties Director  
480.433.4217**



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East Valley Astronomy Club  
PO Box 2202  
Mesa, Az. 85214-2202

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