



THE OBSERVER

East Valley Astronomy Club



NGC 6240 Merging Galaxies
 APOD May 21, 2015 - NASA Hubble Heritage

EVAC This Month *by Claude Haynes*

What was your "WOW!" moment? Your earliest remembrance of something in the sky that knocked your socks off. For many it is Saturn and her lovely rings. For others it is Jupiter and the dance of the Galilean moons. Perhaps it was just a beautiful star cluster, or the first time you were in a dark place and saw the Milky Way. Our hobby has an abundance of "WOW!", and that isn't limited to just observing. The concept of time, the vastness of space, or how small our sun is in comparison to other stars. These moments stretch into everyday news as even more incredible discoveries are announced. We

hear something new and amazing about astronomy, and we just have to say "WOW!". One of our greatest strengths as a club is to share those "WOW!" moments through our public outreach. We have several opportunities in May. The Transit of Mercury is Monday May 9. It has already started at dawn and continues till about 11:30 AM. The observatory will be open, and we will also celebrate Astronomy Day on May 14 with solar viewing from 9 till 3. Our "Explore the Night Sky" program aimed at school children begins on Monday May 16 at 7:00pm. A lecture, followed by viewing is sure to elicit "WOW!"

UPCOMING EVENTS:

- Deep Sky Party - May 7*
 - Transit of Mercury - May 9*
 - Public Star Party - May 13*
 - Astronomy Day - May 14*
 - Explore the Night Sky - May 16*
 - EVAC Monthly Meeting - May 20*
 - Local Star Party - May 28*
- Check out all of the upcoming club events in the Calendars on page 10*

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EVAC This Month

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from young and old alike. This is our third year, and we have almost 200 people at each monthly session.

One of the most remarkable "WOW!" events is a solar eclipse. Our own Brooks Scofield traveled to southeast Asia for the last eclipse, and will be our speaker at the

If It's Clear...

by Fulton Wright, Jr. Prescott Astronomy Club

May 2016

Celestial events (from Sky & Telescope magazine, Astronomy magazine, and anywhere else I can find information) customized for Prescott, Arizona. All times are Mountain Standard Time.

On Friday, May 6, it is new Moon and you have all night to hunt for faint fuzzies.

Also on the night of Friday, May 6, you can see some events with Jupiter's moons. Here is the schedule:

08:10 PM Callisto's shadow falls on the north-west (IAU, terrestrial) part of Jupiter. (1 shadow)

08:31 PM Io moves in front of Jupiter.

09:39 PM Io's shadow falls on Jupiter. (2 shadows)

10:33 PM Callisto's shadow leaves Jupiter. (1 shadow)

10:46 PM Io moves from in front of Jupiter.

11:51 PM Io's shadow leaves Jupiter. (no shadows)

12:04 AM (Saturday) Europa moves in front of Jupiter.

02:23 AM Europa's shadow falls on Jupiter. (1 shadow)

02:52 AM Europa moves from in front of Jupiter and Jupiter sets.

On Monday, May 9, in the morning, you can observe a transit of Mercury. Here is the schedule:

04:14 AM Transit starts (We can't see it yet.)

05:32 AM Sunrise

05:34 AM Mercury rises (theoretically first chance to observe the transit)

06:30 AM (Approx) Sun 10 degrees above the horizon. (You have some chance of actually seeing the transit.)

11:39 AM Third contact, Mercury starts to leave the Sun's face.

next monthly meeting.

Celebrate the "WOW!". Don't forget the passion that drove you to love the sky.

Claude Haynes

11:42 AM Fourth contact, the transit is over. Because Mercury is only 12 arc-seconds in diameter, you will have a tough time seeing this with binoculars (WITH A PROPER SUN FILTER). You will have more luck with a small (2 or 3 inch) telescope (WITH A PROPER SUN FILTER) at 20

power or more. Don't even think about trying to see this without a solar filter on the front of your telescope that is as dark as a number 14 welder's glass.

On Thursday, May 12, the Moon is at first quarter phase and sets at 1:00 AM (Friday). Ganymede's shadow will be on Jupiter from 8:38 PM to 11:45 PM.

On Tuesday, May 17, at 11:46 PM, the Moon occults the magnitude 4.4 star, Theta Virginis. The star reappears on the bright limb of the Moon at 1:10 AM (Wednesday).

On Saturday, May 21, the Moon is full and rises at 7:27 PM spoiling any chance of seeing faint fuzzies for the night.

Also on the night of Saturday, May 21, Mars is at opposition. This means it will be up all night. It also means that it will be closer than any other time for the next two years. It will be about 18 arc-seconds in your telescope for a couple of weeks around this date, which isn't great, but it is as good as it gets. In a couple of years it will be somewhat closer but lower in the sky.

On Saturday, May 28, the Moon is at last quarter phase and rises at 12:54 AM (Sunday).

Low Hanging Fruit of May

In spring the Milky Way is missing or too low to the horizon to block our view into deep space. Why not take advantage of this window to harvest the fruitful field?

Galaxies: Ursa Major is well placed above Polaris to observe M-51 (technically in Canes Venatici), M-81, and M-82. In a dark sky M-51, the Whirlpool Galaxy, and its companion NGC 5195 are fairly bright for face-on galaxies. I was astounded by the detail I saw in M-51 with an 8" SCT one year at the Grand Canyon. M-81 and M-82 are close enough to each other that they can be viewed in the same low power field of view. In my opinion, the latter is the more interesting of the two - it's elongated with a hint of a distressed morphology. M-104, the Sombrero Galaxy in Virgo, is not to be missed. It's slightly tilted to our line of sight with a conspicuous dark lane running its length. The "Leo Trio," M-65/66 and NGC 3628 is a tasty morsel worth a bite. M-65 and M-66 are only about 1/3 a degree apart and also easily fit in your low power field. NGC 3628 is just north about 1/2 degree and considerably fainter. Long exposure images of it show it to be interestingly warped, perhaps by a past interaction with M-65/66.

Double stars: While in the area of M-104, visit two interesting multiple star systems nearby. Farley's Triangle, aka Stargate, can be found about one degree southwest of M-104. Six stars form a triangle within a triangle, an unusual stellar formation to say the least (Struve 1659, SAO 157379). Seven degrees west of M-104, but just inside Corvus' northern border is Struve 1604 (SAO 157111), a neat triple star making a tiny perfect triangle. Though it might not be easy pickings, Izar in Bootes is always worth a look. The AB stars are magnitude 2.6 and 4.7 but only separated by 2.9 arc seconds. The primary's brightness makes splitting Izar a challenge (Struve 1877, SAO 83500).

Planetary Nebulae: NGC 3242 in Hydra, the largest constellation in terms of square degrees (1,302.84) is home to the "Ghost of Jupiter," so called because of its similar size and roundness to the planet. This is one of the more impressive planetary nebulae in the sky. It's bright at magnitude 7.8 and easily found two degrees south of Mu Hydrae.

Globular Star Clusters: M-3 in Canes Venatici is a fine globular cluster. Your finder can sweep it up by following a line from Gamma and Beta Comae Berenices east an equal distance. M-5 in Serpens Caput is another excellent globular. Like M-3, two stars, Tau and 109 Virginis, point east to M-5. Southeast and very close to M-5 is the double star 5 Sepentis (SAO 120946). Serpens is the only constellation that is split into two parts. Serpens Caput [head] and Serpens Cauda [tail] emanate from the west and east sides of Ophiuchus, respectively. M-13 in Hercules is the most impressive globular cluster in the northern skies with the possible exception of M-22 in Scorpius. But it's spring so M-13 is king of the mountain these evenings. It never disappoints.

Our last item is not exactly low hanging fruit. The brightest quasar seen from Earth, 3C273, is an interesting challenge to bag. It resides in Virgo's "Wineglass" asterism, basically western Virgo bounded by the stars Spica, Vindemiatrix (Epsilon), and Zavijava (Beta). Don't you just love those last two star names? The Wineglass contains the Virgo Super Cluster of 2,000 galaxies formally known as the Realm of the Nebulae in star charts (and a speed bump to Messier Marathon participants). Even after it was known these objects were galaxies and not nebulae, the two terms were used interchangeably for a time likely due to the influence of Edwin Hubble (of all people!) who preferred the term nebulae to describe galaxies. My 1967 copy of The Telescope Handbook and Star Atlas by Neale Howard still showed "Realm of the Nebulae" in Virgo's Wineglass. Modern atlases use the term "Realm of the Galaxies" (if they use the term at all). The magnitude 12.8 quasar is about two billion light years away. I first found it in 1989 with a C-14 using a helpful star hopping chart from S&T (March 1988, page 294). The quasar was the dimmest blue star I could pick out in the field. RA 12h 29m DEC +02° 03' will get you there but you'll still need some kind of reference to identify which faint "star" is the quasar. As I drove home that morning after an all-nighter at a dark sky site, I thought of the people I saw going to work and thinking, "You folks have no idea that while you slept, I was looking at a quasar two billion light years away."

Explore the Night Sky
 with East Valley Astronomy Club

Free Class!

Participate in learning about the universe through an educational session and observatory viewing time
 For beginning astronomers, ages 7 to 80!

3rd Monday of each month, 7:00-8:30 pm
 at Southeast Regional Library

May through August with new topics and viewings each month

May 16th: Jupiter, Galileo, Sombrero Galaxy,
 Salt and Pepper Cluster, and the constellation Leo



Adam Block, our most recent speaker, is director of outreach for the SkyCenter on Mt. Lemmon, just north of Tucson. They offer several programs using the 32" Schulman Telescope. Programs include:

SkyNights Star Gazing - 5 hour program with a cost of \$65 per adult

Astronomy with Adam Block – 5 hour program with a cost of \$75 per adult

Making Every Pixel Count – 3 day onsite (lodging included) seminar at a cost of \$925 per person

More information is available on their website – click the Tickets icon for a schedule and to reserve. <http://skycenter.arizona.edu/programs/public/skynights>

Find Out What's Happening – Join EVAC-Announce List

If you would like to receive email announcements about EVAC meetings and activities please join the EVAC–Announce mailing list. Click on the link below to subscribe. Enter your full email address in the box titled User Options and press OK. You will receive a confirmation email. Your privacy is respected by EVAC and we will never sell your email address, or use it for non-club relevant solicitations. This mailing list is designed for communication from EVAC, and does not enable users to respond to the message. If you wish to contact club officers, please use the list on the Contact-Us tab.

To subscribe to the EVAC – Announce mail group click:

<http://www.freelists.org/list/evac-announce>

To unsubscribe use the same link, enter your email address and select Unsubscribe from the “Choose An Action” list.

NEW MOON ON MAY 6 AT 15:30

FIRST QUARTER MOON ON MAY 13 AT 13:02

***FULL MOON ON MAY 21 AT 17:14**

LAST QUARTER MOON ON MAY 29 AT 08:12



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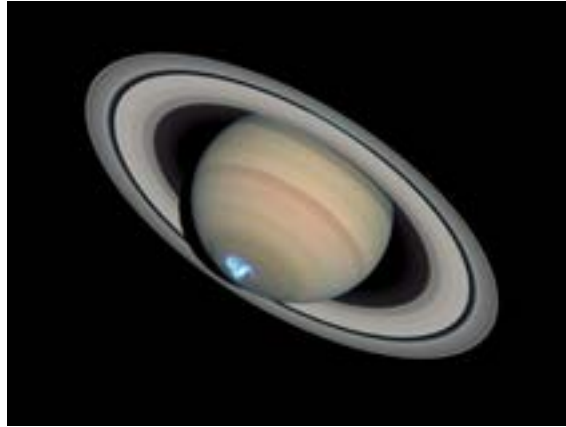
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Upcoming Meetings

May 20

June 17

July 15

August 19

September 16

October 21

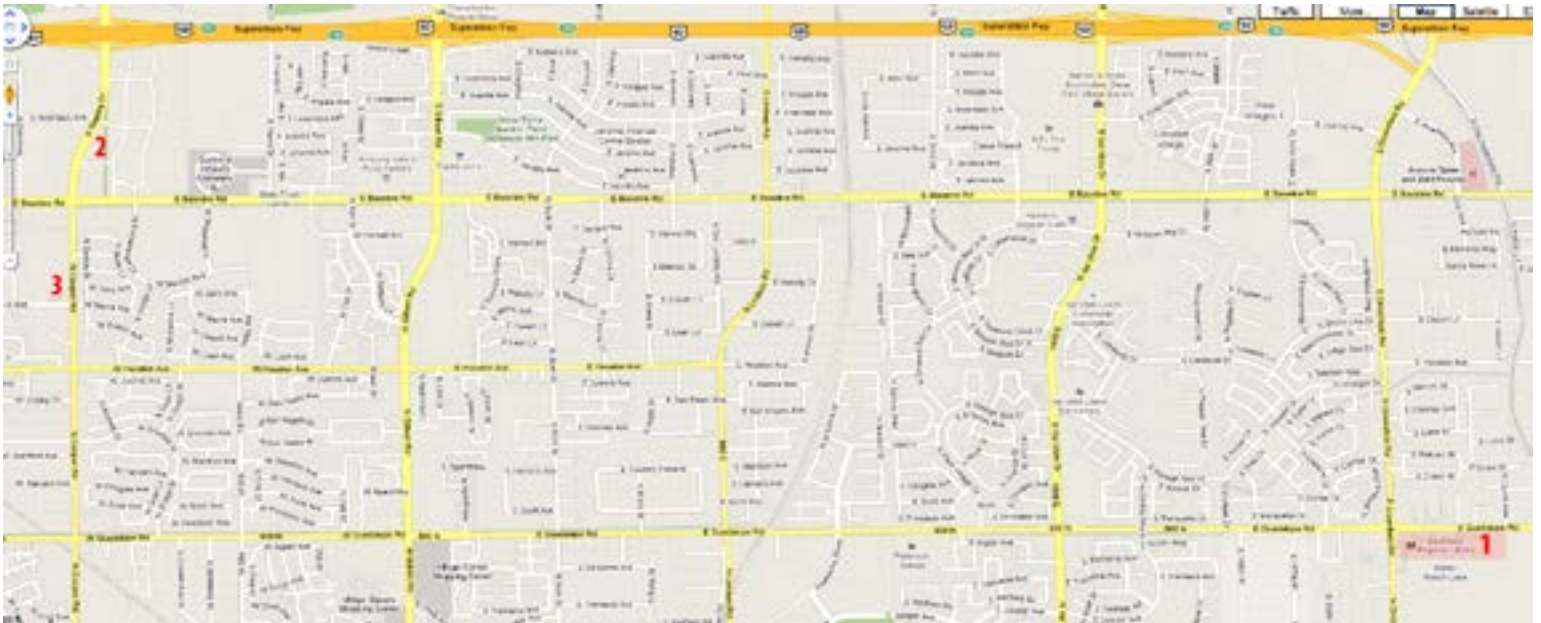
November 18

December 16

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.

Visitors are always welcome!



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



MAY 2016

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				

May 7 - Deep Sky Party

May 9 - Transit of Mercury

May 13 - Public Star Party

May 16 - Explore the Night Sky

May 14 - Astronomy Day

May 20 - EVAC Monthly Meeting

May 28 - Local Star Party

JUNE 2016

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		

June 4 - Deep Sky Party

June 10 - Public Star Party

June 17 - EVAC Monthly Meeting

June 20 - Explore the Night Sky

June 25 - Local Star Party

East Valley Astronomy Club -- 2016 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"/> \$30.00 Individual January through March | <input type="checkbox"/> \$22.50 Individual April through June |
| <input type="checkbox"/> \$35.00 Family January through March | <input type="checkbox"/> \$26.25 Family April through June |
| <input type="checkbox"/> \$15.00 Individual July through September | <input type="checkbox"/> \$37.50 Individual October through December |
| <input type="checkbox"/> \$17.50 Family July through September | <input type="checkbox"/> \$43.75 Family 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:

The Observer is the official publication of the East Valley Astronomy Club. It is published monthly and made available electronically as an Adobe PDF document the first week of the month.

- | | |
|--|---|
| <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 |

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.

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www.evaonline.org

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