



# THE OBSERVER

## East Valley Astronomy Club



[Jupiter at Opposition - APOD October 22, 2011](#)

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### UPCOMING EVENTS:

*Public Party - April 14*

*EVAC Monthly Meeting - April 21*

*Local Star Party - April 22*

*Deep Sky Party - April 29*

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

### INSIDE THIS ISSUE:

## EVAC This Month

*by Don Wrigley*

Here in Arizona March doesn't exactly come in like a lion, nor does it really go out like a lamb; it just sort of comes and goes, and the only thing you have to show for its coming and going is that you didn't have to move your clock ahead by an hour. Back when you had only one wall clock in the house it was no big deal, but now everything seems to have a built in clock, and the process of changing all of them could take hours. I wouldn't know for sure how long it really takes: I moved to Arizona before the powers that be decided that an appliance was not worth having unless it had a built in digital clock, even if the sole purpose of that device

was to brew coffee. If you are an amateur astronomer, there is one other reason to celebrate March: The Messier Marathon. This year's event, sponsored by SAC, was well attended by EVAC and we may get to see the preliminary results at this month's meeting.

If you are looking for a reason to appreciate April, come to our April meeting and celebrate the history of the venerable Clarke telescope at Lowell Observatory, and hear about the restoration of the Pluto astrograph from Kevin Schindler, this month's featured speaker.

Don Wrigley

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# If It's Clear...

by *Fulton Wright, Jr. Prescott Astronomy Club*

April 2017

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.

For the comet hunters among you, check out the website: [is.gd/4pcometcampaign](https://is.gd/4pcometcampaign).

On Monday, April 3, the Moon is at first quarter phase and sets at 2:05 AM (Tuesday).

On Thursday, April 6, at about 3:37 AM (ugh), Europa and its shadow move onto Jupiter. Because Jupiter is at opposition, the satellite and its shadow are near each other. At 6:02 AM they both move off Jupiter. Sunrise is 8 minutes later.

On Thursday, April 6, about 8:20 PM, Callisto is north of Jupiter. Usually the satellites are lined up east and west of the planet, so it is unusual to see one passing north of the planet. About 9:00 PM, the Moon is about 1 degree from Regulus.

On Friday, April 7, at 10:32 PM, Europa disappears in Jupiter's shadow very close to the planet. At 1:08 AM (Saturday) Europa reappears also very close to the planet but on the other side. At 3:56 AM, Io and its shadow move onto Jupiter. They are so close that Io actually covers part of its shadow. They leave Jupiter at 6:07 AM, simultaneously with sunrise. I am sorry that I wasn't able to arrange a more convenient time for these events.

On the night of Sunday, April 9, about 1:35 AM (Monday) the nearly full Moon passes very close to Gamma Virginis, a close double star. By moving south, you can see a grazing occultation. The northern limit of the graze zone passes approximately through Interstate 17 and the

101 freeway. From central Phoenix the star disappears at 1:33 AM and reappears at 1:43 AM.

On Monday, April 10, at 6:40 PM the full Moon rises spoiling any chance of hunting for faint fuzzies for the night.

On Sunday, April 16, from 7:05 PM to 9:55 PM, Europa or its shadow is on Jupiter.

On Tuesday, April 18, the Moon is at third quarter phase and rises at 1:32 AM (Wednesday).

On Sunday, April 23, from 9:20 PM to 12:31 AM (Monday), Europa or its shadow is on Jupiter.

On Tuesday, April 25, from 8:16 PM to 10:51 PM, Io or its shadow is on Jupiter.

On Wednesday, April 26, it is new Moon and you have all night to hunt for faint fuzzies.

Are you ready to observe a daytime occultation of a bright star? On Friday, April 28, at 9:02 AM, the Moon occults Aldebaran. The star reappears at 9:50 AM. The Moon is only 30 degrees from the Sun so be sure you don't point your telescope toward the Sun as you hunt for the Moon. The Moon is down and to the left from the Sun.

On Sunday, April 30, between about 7:45 PM and about 10:00 PM, it is a good time to look at the craters Atlas and Hercules on the northern part of the Moon. Not only is the terminator well placed but libration tips that part of the Moon toward us. You might also want to look at the smooth floor, dark crater, Endymion, located between the pair of craters and the limb. (The area is almost as well presented on April 1, no fooling.)

# The Search for Unnamed Craters

by Don Wrigley

The moon is not unfamiliar territory. Decades of research, combined with data from Apollo moon missions, Lunar Orbiter photos and several hundred years of Earth-based telescopic observations have provided us with maps and charts showing the entire surface in great detail. Craters as small as several meters across have been recorded and thousands have been officially designated. One would expect that all lunar features visible with amateur sized telescopes would have received some sort of designation by now. There are, however, several large craters and a large number of small craters, all visible in amateur telescopes, which remain un-named.

Unnamed craters can be put into two categories: ghost craters and partially degraded craters. Ghost craters are craters which have been filled to the very top with lava, so that only a circular ring or depression is all that remains visible. They can usually be found any place where lava has flowed extensively: in the maria or in large lava filled craters. Look for them in the large crater Ptolemaeus, where they can be observed in multitudes. Most are not named. They can be observed virtually anywhere on the moon if you look hard enough and catch the lighting just right. Most of them are named, but not all. With a good lunar atlas (or smart phone app) you can determine whether an object has been named. As with many lunar features, lighting is the key. A few hours can sometimes make the difference whether or not a particular feature can be seen. A classic example of this is the crater Hipparchus, which lies very near to the center of the moon (as seen from Earth). When it is near the terminator (the line that separates night from day on the moon), its ancient walls are clear and distinct. Two days later they are all but invisible.

Partially degraded craters are craters whose walls have been partly (or nearly completely) obliterated by subsequent impacts. They are generally much older than the craters that have been superimposed upon them and they may show signs of considerable wear on the portions of the walls that remain visible. A good example of a named crater that has some of these characteristics is the crater Jansen, whose battered rim is barely visible. However, most of the wear and tear on Jansen is due to the impact of micro meteors occurring over eons and

only a couple of large impacts affect its main structure. A comparably sized unnamed crater can be observed southwest of the Mare Nectaris. It lies in ruins beneath several named craters just southwest of the Mare Nectaris, near the crater Rabbi Levi. The craters Rothmann and Lindenau just break along the inside wall while Riccius, Rabbi Levi, and Zagut lie just along the southwest outside wall of the crater. All of the above named craters contribute to the breakdown of the crater wall to the extent that it is normally invisible, but when the lighting conditions are right its appearance is unmistakable. It has been observed and photographed numerous times and has even been written about in *Sky and Telescope* magazine, and yet it remains without a name.

Other partially degraded craters may share some of the characteristics of ghost craters, in that some portions of their walls may be missing due to flowing lava. A good example of such a crater is Deslandres, which appears about two days after first quarter and is only visible for a short period of time. It contains several well defined craters within its walls but the crater itself is quite flat and easy to miss. Just north of Deslandres is the famous straight wall, a lunar fault line that runs some 70 miles in a north-south direction along the far eastern border of the Mare Nubium. The straight wall lies smack dab in the center of a crater that is somewhat smaller than the crater Deslandres and is very nearly as well defined. Only a small portion of its wall cannot be discerned. It is widely photographed and its wall is indicated by a dotted circular line on official NASA maps, yet it remains unnamed.

How do you know if you have stumbled upon an unnamed crater? The only way you can be sure is if you have a fairly detailed Lunar Atlas. It doesn't have to include every kilometer-sized "tiny" crater with a letter designation. It just has to include all of the nearside named craters, of which there are several hundred. Doubtless, there are numerous tiny craters that will go un-designated in most atlases, but the un-named craters I am referring to are fairly large structures which have been rendered nearly (but not quite) invisible by subsequent impacts.

## 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.

***Looking for that perfect weekend activity?***

***Why not resolve to getting involved?***

***Contact Claude Haynes to join the staff at GRCO***

***Email: [grco@evaconline.org](mailto:grco@evaconline.org)***

## Classified Ads

### AstroTrac TP3065 Pier for Sale

The pier is about 2 years old and I am the original owner. The pier is in like new condition. The pier has been modified to allow more vertical adjustment in the 3 feet. Detailed pictures available on request. I will drive up to 3 hours to deliver the pier. Buyer pays half the shipping costs. I will cover additional insurance costs. Bank check or cash only. CONUS

Asking \$250 OBO. My cost new was - \$495.00

#### Included Items:

Mounting Plate

Adjustable Feet

Carry Bag for Legs

Stainless Steel Tensioners

Soft Carry Bag

19 pound cylindrical weight to provide additional stability (Will not ship the weight)

Jim [jimwaters@cox.net](mailto:jimwaters@cox.net)



**FIRST QUARTER MOON ON APRIL 3 AT 14:39**

**FULL MOON ON APRIL 11 AT 02:08**

**LAST QUARTER MOON ON APRIL 19 AT 05:57**

**NEW MOON ON APRIL 26 AT 08:16**

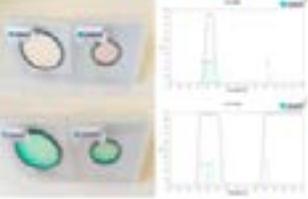


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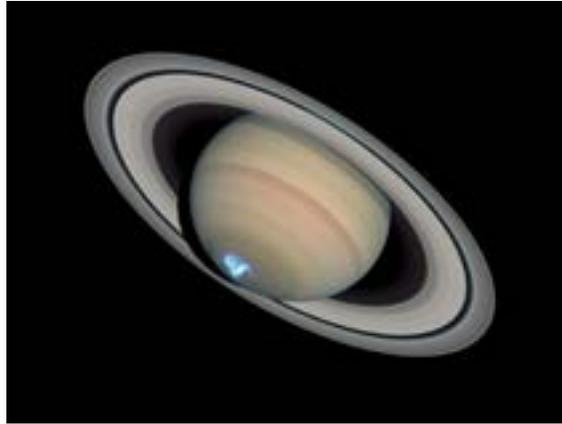
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| Bortle 1 Sky - 21.85 SQM<br>Contact Us For Details  | No Hassle Flat Field<br>2" to 20" Aperture   | No Hassle Focus<br>2" to 13" Aperture   | Experience of a lifetime!<br>Look For Us On AirBnB   |

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# Upcoming Meetings

April 21

May 19

June 16

July 21

September 15

October 27

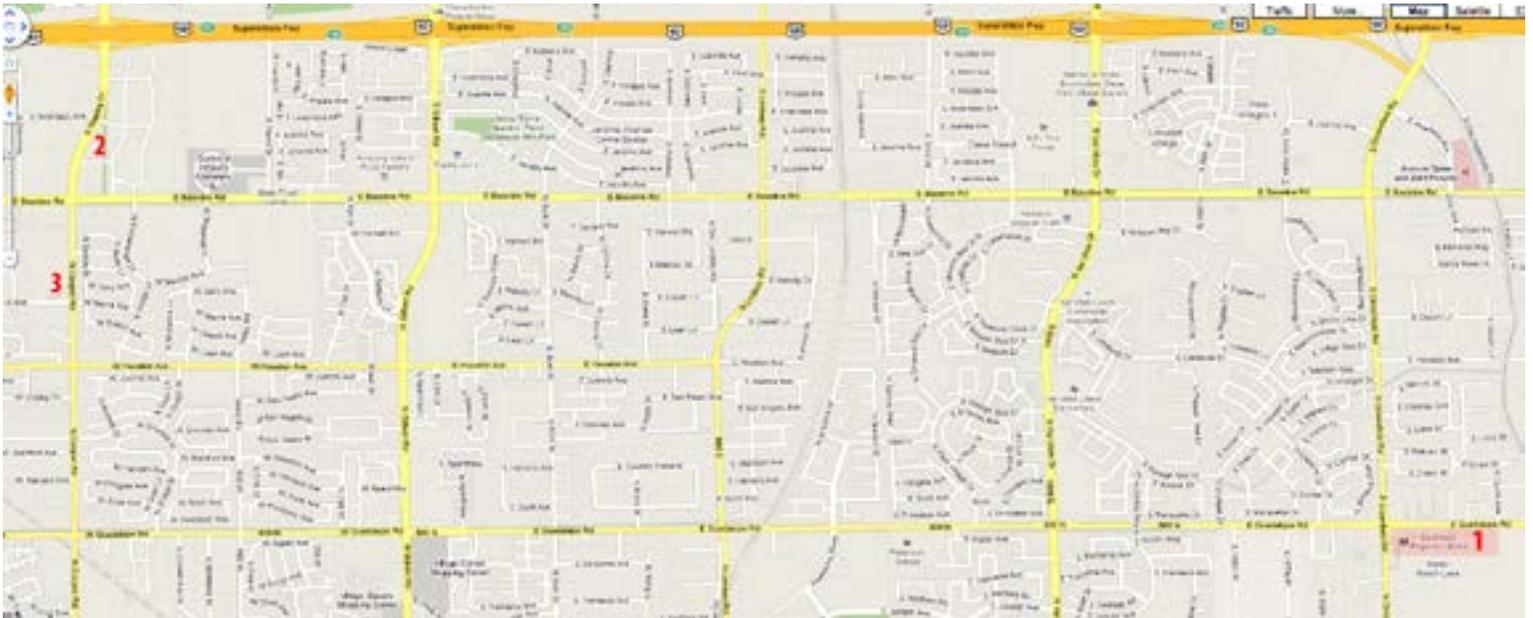
November 17

December 15

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



# APRIL 2017

| Sunday | Monday | Tuesday   | Wednesday | Thursday | Friday    | Saturday  |
|--------|--------|-----------|-----------|----------|-----------|-----------|
|        |        |           |           |          |           | 1         |
| 2      | 3      | 4         | 5         | 6        | 7         | 8         |
| 9      | 10     | <b>11</b> | 12        | 13       | <b>14</b> | 15        |
| 16     | 17     | 18        | 19        | 20       | <b>21</b> | <b>22</b> |
| 23     | 24     | 25        | 26        | 27       | 28        | <b>29</b> |

**Apr 11** - East Valley Academy

**Apr 22** - Local Star Party

**Apr 14** - Public Star Party

**Apr 29** - Deep Sky Party

**Apr 21** - EVAC Monthly Meeting

# MAY 2017

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday    | Saturday  |
|--------|--------|---------|-----------|----------|-----------|-----------|
|        | 1      | 2       | 3         | 4        | 5         | 6         |
| 7      | 8      | 9       | 10        | 11       | <b>12</b> | 13        |
| 14     | 15     | 16      | 17        | 18       | <b>19</b> | <b>20</b> |
| 21     | 22     | 23      | 24        | 25       | 26        | <b>27</b> |
| 28     | 29     | 30      | 31        |          |           |           |

**May 12** - Public Star Party

**May 20** - Local Star Party

**May 19** - EVAC Monthly Meeting

**May 27** - Deep Sky Star Party

## East Valley Astronomy Club -- 2017 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:

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](http://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.

*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. Please send your contributions, tips, suggestions and comments to the Editor at: [news@evaonline.org](mailto:news@evaonline.org). Contributions may be edited. The views and opinions expressed in this newsletter do not necessarily represent those of the East Valley Astronomy Club, the publisher or editor.*

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[www.evaonline.org](http://www.evaonline.org)

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

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*SkyWatch Coordinator: Claude Haynes*

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