



THE OBSERVER



All Arizona Star Party Location.

UPCOMING EVENTS:

- Public Party - October 13*
- Local Star Party - October 14*
- All Arizona Star Party - October 20-21*
- EVAC Monthly Meeting - October 27*
- Check out all of the upcoming club events in the Calendars on page 11.*

EVAC This Month by Don Wrigley

Now that fall is here and things have cooled off a bit, it's time to start thinking about dusting off the old Dob (or whatever you have) and head for some dark skies. There are so many things to see this time of the year; from galaxies to nebulas to globular clusters, and there is something for every range of aperture. Open clusters abound this time of the year and are a special treat in even the smallest telescopes. When and where would be the best time to see these things? One option (and the one I recommend) is to attend the All Arizona Star Party (AASP for short!) on the weekend of October 20- 21, which is held at the Salome

Emergency Airfield (south of I-10 at Exit #53). In addition to having outstanding viewing conditions, we offer a Saturday evening meal (for \$5.00), a late-night snack table (cocoa, coffee, and cookies), and a drawing before the Saturday evening meal with many excellent prizes! Really!

Many people will be spending both Friday and Saturday night there, so we have postponed our usual business meeting to the following Friday (October 28th). This is a very important meeting, because we will be taking nominations for the offices of president, vice-president,

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EVAC This Month

by Don Wrigley

treasurer and several board members. The term limit for these offices is two years and the current holders have served their two years and are ready to be paroled. I have one member who has offered to serve, but we still need others. Make sure you show up for this meeting or you might get nominated!

Our speaker for that meeting is Dean Ketelsen, from the U of A Mirror Lab. Everyone is welcome to join us for a pre-meeting dinner at the Golden Corral at 5:30 PM on meeting night. The restaurant is located at Cooper Rd in Gilbert, about 5 miles West-Northwest from the library.

Don Wrigley

If It's Clear...

by Fulton Wright, Jr. Prescott Astronomy Club

October 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.

On Thursday, October 5, about 5:30 AM, you can see 3 objects within half a degree of each other. Venus (magnitude -4) is in the middle. Mars (magnitude 2) is to the lower right. Sigma Leonis (magnitude 4) is to the upper left. Later that evening, the full Moon rises spoiling any chance of seeing faint fuzzies for the night.

On Wednesday, October 11, at 11:17 PM the last quarter moon rises.

On Sunday, October 15, at 3:14 AM, the star, Regulus, appears from behind the dark limb of the Moon. The star will be only 9 degrees above the horizon.

On Thursday, October 19, it is new Moon and you have all night to hunt for faint fuzzies.

On Friday, October 27, it is first quarter Moon, which sets at 11:58 PM.

FULL MOON ON OCTOBER 5 AT 14:40

LAST QUARTER MOON ON OCTOBER 12 AT 08:25

NEW MOON ON OCTOBER 19 AT 15:12

FIRST QUARTER MOON ON OCTOBER 27 AT 18:22

The Backyard Astronomer

by Bill Dellinges (September 2017)

"Whoa!", Sights Over the Decades

The Stargazers don't ask for much. Just give us a dark sky and a good telescope. Year after year we routinely gaze at the wonders of the universe. But along the way we sometimes stumble upon something special that stops us in our tracks – a "whoa!" moment.

The first one for me was the moon. It was the first object that I looked at with my first telescope, a Criterion 4" Newtonian reflector. The year was 1955 and I was 12 years old. I was as amazed as Galileo must have been in 1610 when I saw craters and mountains on the moon. For the first time I was looking at detail on the surface of another world. That's a big deal for anyone, let alone a 12 year old kid.

One night I was panning through the sky when a bright object whizzed by. I thought whoa, what was that? I backed up to see what I had passed by. OMG! It's Saturn! And I could see its rings! Back then I didn't subscribe to an astronomy magazine so I didn't know where or when a planet would be visible. Little did I know a couple years later I would see Saturn in Lick Observatory's 36" refractor! The late 1950's would also introduce me to other showcase objects that still blow my mind today – The Orion Nebula, Pleiades, Andromeda Galaxy, open clusters M-35 in Gemini and M-7 in Scorpius.

In 1971, after a short stint in the military, I upgraded to a Unitron 4" refractor and resumed roaming the night skies for heavenly delights. Now armed with star atlases, observing books and Sky and Telescope magazine, I found such treasures as M-11, the Wild Duck Cluster in Scutum and M-27, the Dumbbell Cluster in Vulpecula. Around that time, I had read that a local observatory was offering views of the Sun. One weekend I popped in and saw for the first time the Sun through a 6" refractor equipped with a hy-

drogen-alpha filter. Wow, that was really something to behold, another whoa! moment.

By the 1980's I had moved up in aperture to 8" and 14" Schmidt-Cassegrain reflectors. The latter, used on overnight runs at dark sky sites, would generate many more whoa! moments observing objects like globular clusters M-13 and M-22, NGC 253 (Silver Dollar Galaxy in Sculptor), and the granddaddy of all open clusters, the Double Cluster in Perseus (NGC 869 and 884). Halley's Comet, 1986? Sorry, nice to meet you but no cigar.

It could be argued the ultimate whoa! object is a total solar eclipse – hard to top that. I've been fortunate to see two, a 6 ½ minute eclipse in Baja in 1991 and a 4 minute eclipse in Aruba in 1998. In 1994, I couldn't believe my eyes when my 5" refractor revealed impact markings on Jupiter from Comet Shoemaker-Levy. Speaking of comets, Comet Hale-Bopp in 1997 was a doozy. I consider it the most impressive comet of the 37 comets I've observed. I called it the Breakfast Comet because it was so bright I could see it through my kitchen window rising in the east before dawn, even with the kitchen lights on.

The 2000's brought more splendid sighting, like the open cluster NGC 7789 in Cassiopeia, with its myriad faint stars practically filling the low power field of a C-14. In this high traffic area of the Milky Way, it was difficult to see where the cluster's stars ended and where the Milky Way stars began. A recent interest in double stars will no doubt keep me discovering more whoa! objects in the years to come. To see what I mean, try sampling the triple star Beta Monocerotis or quadruple star Rho Ophiuchi. They are thrilling! And it doesn't hurt to take another look at old favorites like Albireo and the "Double-Double, Epsilon Lyrae. Whoa!

Some Recent Herschel Objects Worthy of "Another Look"...

by David Douglass

Wm Herschel (etal) [Wm and son John and Wm's daughter Caroline] discovered "about" 2518 objects, during the late 1700's. The exact number is still the subject of many "lengthly" discussions. There were some "duplicates"... a few "non-exist" items (many hotly debated with stong arguments on both sides). The most famous of his discoveries, so to speak, are in the observing group known as the "Herschel 400". The next most famous group is the "Herschel 2", which is another collection of 400 objects. Through the years, via various observing programs, I have observed, under different ID's (most NGC) some 286 objects. All together before my latest effort to observe Herschel objects began anew, I had collected observations and images for about 1100 objects from his list. My latest effort, begun this summer, is to complete the list of 2500. I refer to this as the H1500 project.

Most of these remaining targets are small to very small objects, measuring 2-3 arc min in size, with many less than that. But they are all beautiful. You have to really wonder how he was able to see and identify them all. Then you realize that he did not know most were "Galaxy" objects. He identified most as "stars with nebulosity". But the observations have stood the test of time.

Every once in awhile, a truly fascinating image will come along. In the last week or so, two such images were added to the collection.

[NGC 7550](#)

On Sept 11th, one of the "targets" was NGC 7550. But it was a "multiple target view", as there were four other prominent galaxies surrounding it. But NGC 7550 (H181-3) was the only Herschel in the group. Amazing! Even Mark Bratton in his book "Herschel Objects" (my main book reference for the Herschels), says "... it is somewhat surprising that Herschel did not discover ...[the other objects]...". Herschel discovered NGC 7550 Sept 18, 1784.

Today, we know the group of NGC-7550,7547, and 7549 as ARP-99. Throw in the other two... NGC-7553 and 7558, and the collection of all five is known as Hickson 93.

[NGC-0536](#)

On Sept 16th, one of the targets was NGC-0536. This is really a "double target", as NGC-0536, which is a "single star" and one of the "non-exist" group, is just to the left of the main galaxy.

NGC-0542 is in the close FOV, as well as NGC-0531, and NGC-0529. But none of these are Herschel objects. I do not know of any other ID for this group.

[NGC-0704](#)

The BIG WOW of the evening of Sept 16th, was NGC-0704. It too was a multiple target, with three other Herschel objects in close proximity. These were NGC-0703, 0705, and 0708. But that was not all.

The primary grouping of the 4 Herschel objects form the nucleus of Abell 262.

But there were many other galaxies in the FOV. All together, I think we have 12 galaxies that are IDed.

Interestingly, Herschel again did not ID or "discover" all of these. Only the four. One might suggest that it was the "brightness" of the objects, but then NGC-0714 and NGC-0710 are there in the mix. Again.... Interesting.

At the beginning of this "project" (the H1500 project), there were 1361 targets. 120 done... 1241 to go !! Have a look at the images... Enjoy.

ASU Summer Class on Solar System Astronomy

by Tom Mozdzen ASU PHD Astrophysics Graduate Student

I would like to alert astronomy fans to a relatively recent on-line class offering from ASU that is completely free. ASU has partnered with EdX to offer a Massively On-line Open Class (MOOC) titled "Introduction to Solar Systems Astronomy." I have been a teaching assistant (TA) for this class for the last two semesters and have been impressed by the vast introductory material that this class has to offer. The class is offered 3 times a year (March, June, and October) and only lasts 7 weeks. However, once you sign up for the class, under current policies, you will have access to the material even when the class is over (except for quiz #2 and the final exam).

Sign up before the fall class starts October 8th:

[Course Signup](#)

Every semester, thousands of people from around the world sign up for the class, but most are from the US. Most audit the class, but some take it with the intention of getting 4 hours of university credit. To get credit, one must: 1) get their identity verified (\$49 fee); 2) take one quiz and one final exam at home using a web-cam and "on-line proctoring software"; 3) get a final grade of 70% or higher; and 4) pay \$600 anytime after receiving your grade and before one year after completing the class. If someone tried for the credit, but didn't get the 70% score, they would just be out the \$49 identity verification fee. If you only audit, you pay \$0.00 because you do not need to have your identity verified.

Class Organization:

The class material is released one week at a time to keep everyone focused on the same material. If you take the class for credit, you have to complete homework, lab exercises, and any quizzes by the close of the week. If you audit the class, you can wait to do any of the graded material later as your grade will not be recorded anyway. But even for the people auditing, they will see new material open up at a rate of once per week.

Each week there are two focus areas each of which consist of between three and five ~15-minute lectures (most by Professor Frank Timmes), one memory-fact/concept exercise (fancy flash cards) consisting of 25 questions, and a 12 question multiple choice homework section (3 chances to get the correct answer out of 4 choices). Each

week there is a 10 question exercise called a "lab" where they give you numerical information and you are to find the correct equation on the "All the math" one page document, plug the numbers into the equation, convert your answer to the correct units (e.g. if your answer is in days and the question asks for the answer in hours, multiply by 24), and submit your answer (again 3 tries for each question). Again, if you audit the class, you can choose to do everything available or to do nothing at all.

During the 7 weeks – other learning opportunities:

I. Currently there are three projects to complete, which come with instructions, – 1) make a pin hole camera and estimate the diameter of the sun; 2) observe the properties of the craters you make in a dish of flour when you throw/drop a doughball on it; and 3) make some observations of the night sky and describe what you noticed in one paragraph and post it on the discussion board. You get to give yourself a grade based upon some suggested guidelines – honor system.

II. Three quizzes and one final exam. This time you only get one chance to select the correct multiple choice answer.

III. Each week a discussion board is started for the topics of that week. The teaching staff will answer anyone's question(s) within 24 hrs usually within 1 hour.

IV. Twice a semester the teaching staff will host a 1 hour chat where people send in questions they would like to be answered. They may also post questions in real time for the discussion. If there are not too many questions submitted, the staff will usually give a short talk on an interesting subject.

If there are not too many questions submitted, the staff will usually give a short talk on an interesting subject. The current class syllabus (subject to change) can be found here with more precise details: [Course Syllabus](#)

Give it a go, you'll have fun! Sign up can be found here:

[Course Signup](#)

2017 All Arizona Star Party

October 20-21 Hovater Rd. Airfield

Friday - Potluck at 05:00 PM

(Bring something to share)

Saturday

Temperance Union Happy Hour at 4:00 PM

Raffle Drawing at 4:30 PM

Taco Dinner at 5:00 PM

Dinner is 5\$ and

the raffle tickets are 1\$ each or 6 for 5\$

Coffee and snacks at 11:00 PM each Night

Please observe dark sky etiquette. Minimize extra light, and if you will be leaving early, please park closer to the exit.

Check the EVAC website for details.

[2017 All Arizona Star Party](#)

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@evaonline.org

Classified Ads

At I have a Takahashi Q-106 System for sale. It includes all the extras:

- . F3.6 reducer, 2” visual back, extender
- . Canon DSLR hookups
- . 72mm Deep Sky filter
- . Custom rings with Losmandy plates
- . Finder
- . Large Pelican case

Much more. It is the best flat field astrograph and visual refractor combo available.

Please research the cost and make an offer. All considered.

[Takahashi Q-106 Pictures](#)

I'm very motivated to sell.

Thanks, Dan Gordon

az.dan.gordon@gmail.com



5757 N. Oracle Road Tucson, AZ 85704 520-292-5010
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Apache-Sitgreaves Observatory
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Apache-Sitgreaves.org

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Cost new, \$670. Asking \$375.

Derek Youngson

No eyepiece or finder. Tube comes in original packing box. Too many scopes forces sale!

derek.youngson@gmail.com

The camera was modified by Hap Griffin about 5 years ago and has ~8,150 shutter counts. It was purchased late 2011. Overall it's in good condition and has the latest Canon Firmware installed. A Custom White Balance and been set. Some example images can be seen at the URL below. If needed I can supply 100% cropped 'Dark Frames' images so you can examine the camera background noise.

Included items:

- . Canon TC-80N3 Intervalometer \$135.49
- . Canon CA-PS700 125VAC Power Adapter \$49.95
- . Orion 12VDC Power Adapter \$119.00
- . Canon RS-60E3 Remote Switch \$21.00
- . Extra Canon LP-E8 Battery – 2ea total \$47.95
- . SanDisk Extreme Plus 32Mbytes \$20.95
- . Journey34 DSLR Shoulder Bag \$49.95
- . Canon LP-E8 Charger
- . Canon T3i - S/N 072023005219

E-mail me for additional information –
jimwaters@cox.net

For current 2017 EVAC members I will include a 21 day warranty period.

Cost of included items is \$440.75

Asking \$350

[Canon Camera Pictures](#)

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Upcoming Meetings

October 27

November 17

December 15

January 19

February 16

March 16

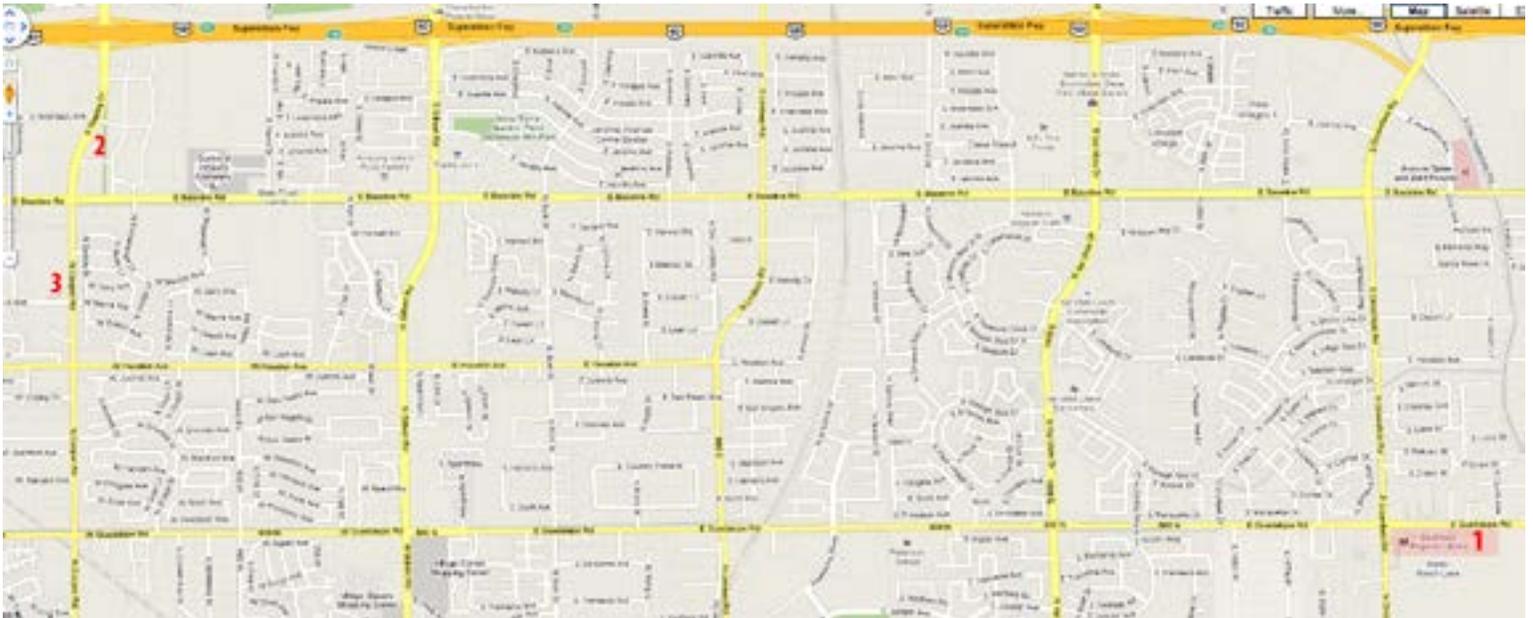
April 20

May 18

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



OCTOBER 2017

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				

October 13 - Public Star Party

October 14 - Local Star Party

October 17 - CGCC Star Party

October 20 - All Arizona Star Party

October 21 - All Arizona Star Party

October 26 - Shepard Junior High

October 27 - EVAC Monthly Meeting

NOVEMBER 2017

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		

November 2 - Patterson Elementary

November 10 - Public Star Party

November 11 - Local Star Party

November 15 - Cub Scout Pack 77

November 17 - EVAC Monthly Meeting

November 18 - Deep Sky Party

November 30 - Poston Junior High

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The East Valley Astronomy Club is a 501(c)(3) nonprofit charitable organization.

www.evaonline.org

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

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