

Southwest Florida Astronomical Society SWFAS



The Eyepiece August 2017

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A MESSAGE FROM THE PRESIDENT

It's finally here! The eclipse is happening this month! Monday Aug 21st is the date!

The program this month is on observing the eclipse safely. With so much hype going on (and it being a rare event) it is necessary to make sure people understand how to observe it safely.

Some members are also doing eclipse programs to local groups as well. Thank you all for getting the word out on this event.

The Mars Meteorite is coming to the Planetarium on Saturday Aug 12th! We will be setup for solar observing (weather permitting) and have eclipse material to give out. (That night is also the Perseid meteor shower night!)

We have 2 events scheduled for the eclipse, one will be at the Calusa Nature Center Planetarium, the other is at the Moore Observatory at FSW in Punta Gorda.

Many of us will be traveling to be in the path of totality for the eclipse. We hope for safe travels and clear skies to all those embarking on this great expedition.

Brian

Program this Month

With the upcoming eclipse, we will be doing a program about safe observing of the eclipse, both here and on the path of totality. Many people think it is more dangerous to observe during the eclipse than other times, but that is not true. What is true is that more people will attempt to look at the sun directly during the eclipse. Proper knowledge about observing is key to helping the public observe the eclipse. The program is being put on by Brian Risley, who first imaged the partial eclipse of Feb 26, 1979 from here in Fort Myers. Brian also was on the centerline of the May 30th 1984 Annular eclipse in South Carolina. He has also viewed/imaged several other partial eclipses over the last 38 years.

August 21st Solar Eclipse

If you are not traveling to see the eclipse and would be able to help with observing that afternoon from SW Florida, please let Brian Risley know. We have had several people ask about observing events in the area for it and I need to find people to help coordinate these events. The CPC 800 and Celestar 8 will be available for white light solar observing and possibly the Nexstar 6se. We also have a solar filter for the 8" dobsonian as well. We can supply handouts on the eclipse and how to safely observe it. School will have just started, so I don't know if we will be able to do anything with the schools in advance of it. I have been in contact with the News-Press for an article about it to appear before the eclipse, and I would like to be able to direct people to an event.

CNCP is seeking volunteers able to run a planetarium show for times in the summer/ whenever Heather will be gone etc. If anyone is interested in more info (no obligation!) please let Heather know or the CNCP office manager, Ginger Allen at 239 275 3435; (you can leave a voice message if she is out). It's a fun way to expand your knowledge of Astronomy, as well as interact with others interested in learning more.

Photos from Chuck Pavlick



Chuck Pavlick M20



Chuck Pavlick Saturn

In the Sky this Month

Moon:

July – 30; First Quarter – August 7; Full – 14; Last Quarter – 16; New – 21.

The Planets:

Mercury Fades from magnitude +0.2 to +0.6 this week and is also sinking lower in the afterglow of sunset. Look for it just above the due-west horizon 30 minutes after sundown.

Venus (magnitude –4.0) shines low in the east as dawn brightens.

Mars is hidden behind the glow of the sun.

Jupiter (magnitude –1.9, in Virgo) shines brightly in the southwest during evening. Spica (magnitude +1.0) glitters 7° left of it. In a telescope, Jupiter has shrunk to 34 arcseconds wide.

Saturn (magnitude +0.2, in the legs of Ophiuchus) glows steadily in the south at nightfall. Fiery Antares, less bright, twinkles 13° to Saturn's lower right. Delta Scorpii, the third-brightest object in the area, catches the eye less far to the right or upper right of Antares. [Saturn's Moons tracker](#).

Uranus (magnitude 5.8, in Pisces) and **Neptune** (magnitude 7.9, in Aquarius) are in the east and southeast, respectively, before the beginning of dawn. Sky and Telescope's [Finder charts](#).

International Space Station: The ISS is visible in the evening skies over Ft Myers

18-Aug	-1.6	19:42:45	10°	NNW
19-Aug	-2.4	18:50:55	10°	N
20-Aug	-2.1	19:34:22	10°	WNW
21-Aug	-3.9	18:41:27	10°	NW
23-Aug	-1.1	5:23:34	10°	S
23-Aug	-1.3	18:33:22	10°	WNW
25-Aug	-3.7	5:13:48	10°	SSW

The **Hubble Space Telescope** appears in the Evening from August 02-11.

See this link for specific times and routes for both: <http://www.heavens-above.com/>

Southwest Florida Astronomical Society, Inc. Event Schedule 2017

Date	Event	Location	Time/Note
August 1 st , 2017	Eclipse Program	Fort Myers Beach Library	1:30pm – Alice Mack
August 3 rd , 2017	Monthly Meeting	Calusa Nature Center & Planetarium	7:30pm
Aug 19 th , 2017	Monthly Star Party	Seahawk Park Cape Coral	Dusk
Aug 21 st , 2017	Solar Eclipse	Across America	
Sept 7 th , 2017	Monthly Meeting	Calusa Nature Center & Planetarium	7:30pm
Sept 9th, 2017	Solar Observing	Bayshore Live Oak Park Port Charlotte	9am-12noon
Sept 15 th , 2017	Public Observing	Moore Observatory FSW, Punta Gorda	Dusk
Sept 23 rd , 2017	Monthly Star Party	Seahawk Park Cape Coral	Dusk
Oct 5 th , 2017	Monthly Meeting	Calusa Nature Center & Planetarium	7:30pm
Oct 14th, 2017	Solar Observing	Ponce de Leon Park Punta Gorda	9am-12noon
Oct 15 th , 2017	Ding Darling Days	Ding Darling National Wildlife Refuge - Sanibel	Solar Observing/Displays
Oct 20 th , 2017	Public Observing	Moore Observatory FSW, Punta Gorda	Dusk
Oct 21 st , 2017	Monthly Star Party	Caloosahatchee Regional Park	Dusk (Arrive before gate closes, park fee)
Nov 2 nd , 2017	Monthly Meeting	Calusa Nature Center & Planetarium	7:30pm
Nov 17 th , 2017	Public Observing	Moore Observatory FSW, Punta Gorda	Dusk
Nov 18th, 2017	Solar Observing	Sports Park – Harbor Fest Port Charlotte	9am-3pm
Nov 18 th , 2017	Monthly Star Party	Seahawk Park Cape Coral	Dusk
Dec 7 th , 2017	Monthly Meeting	Calusa Nature Center & Planetarium	7:30pm
Dec 9th, 2017	Solar Observing	Harbour Heights Park Port Charlotte	9am-12noon
Dec 15th, 2017	Public Observing	Moore Observatory FSW, Punta Gorda	Dusk
Dec 16 th , 2017	Monthly Star Party	Caloosahatchee Regional Park	Dusk (Arrive before gate closes, park fee)

All events are Weather Permitting. If it is cloudy, we may not setup at all. There may be no way to provide advance notice of cancellation.

Monthly Star Parties: These are held at either Caloosahatchee Regional Park (CRP) off SR78 7 miles east of SR31 or at Seahawk Park in Cape Coral. Other than park fees noted, these are free and open to the public.

CRP has a gate that closes at dusk, you can check the county's website for current gate closing times and the status of the park's Northside entrance as that is where we observe from. (They may close the area if there are issues with the trails.) There is a parking fee of \$1/hr or \$5/day at CRP. Park in the main Northside parking lot. We sometimes setup down the dirt road that goes to the east. That area is grassy and may not be level, so one should walk on the dirt road as much as possible and watch their step.

Seahawk Park is in North Cape Coral off Wilmington Blvd. (Nelson Rd or Chiquita Blvd are the nearest cross streets.) There is a brown sign in the center median at the entrance to the park. (GPS may not get you to the park, as some of the local roads have been closed.) You will make a big J hook before getting to the parking area. Seahawk Park is utilized by the Radio Controlled Planes and they have priority. They are usually done by sunset but may be there before sunrise. Park in the lot and transport your equipment to the concrete staging area before the runway. This park is handicap capable as there is level concrete leading from parking to the staging area.

Big Cypress: The Big Cypress Visitor Center is located off US41 5 miles east of SR29 about 25 miles east of Naples. Big Cypress has earned a Dark Sky Park designation. They hold observing events down the road that extends south of the Visitor Center during the winter months. This is a real dark sky site. One of their events this year is timed to a full moon with a penumbral eclipse, so that night will not be dark. Their observing events are free. After the fires of March, it has been decided the site will be closed till next season.

Solar Events: We have daytime solar events where one can safely look at the Sun. Things such as sunspots and prominences may be visible. These are free unless tied to another event that may have an entrance fee.

Rotary Park Star Party: This is a free public star party held at Rotary Park at the south end of Pelican Blvd in South Cape Coral. Park to the west of the main building and walk to where we are setup to the east of the main building. If the weather is bad, we will try again the next night.

Moore Observatory, FSW Punta Gorda Campus: The campus is located off Airport Rd just east of I-75. Go to the right around the lake and park. The observatory is located down the path along the lake. Besides the telescope in the observatory, additional scopes may be setup around the observatory. This is a free event.

Star Party Etiquette: Bright white flashlights are not welcome. We use red flashlights to preserve our night vision. At the parks, please use just your parking lights if possible. As there may be cords and tripod legs that are hard to see in the dark, we ask that all children be well behaved and cautious around the telescopes. If you need help in moving around in the dark, just ask. Someone will be happy to guide you with a red light. If you have a telescope and need help with it, just ask. Someone will be glad to show you how to use it.

Golden Rules to Telescope Observing: Move your eye to the telescope, don't try to move the telescope to your eye! Ladders/chairs are there for your support, the telescopes do not provide support and should not be touched.

Minutes of the Southwest Florida Astronomical Society – July 6, 2017

The regular monthly business meeting of the Southwest Florida Astronomical Society was called to order at 7:32 pm by president Brian Risley in the Calusa Nature Center Planetarium.

Thirty-five people were present, including four visitors.

The Mars meteorite exhibit at the Planetarium will open Saturday August 12.

The Nature Center is seeking volunteers to help out with the Planetarium on a continuing basis, and especially for the August 21 solar eclipse.

Also, anyone who can help out with eclipse-related events for outside groups who have contacted the club, please let Brian Risley know. Maximum eclipse for the Fort Myers area will be at 2:53 pm.

Heather Preston announced a Planetarium screening of "The Farthest" celebrating the 45th anniversary of the Voyager space probe mission launch. It will be July 22 from 6-8pm.

The past events listed in the printed agenda were reviewed.

Upcoming events listed on the printed agenda were discussed.

Brian stated he will buy a mylar solar filter for the 6 inch SE telescope and evaluate it, rather than the glass filter previously decided on.

Newsletter Editor Chris Rasmussen reminded members to send pictures to him for inclusion in the Newsletter.

A correction was made to the June 1 minutes published in the Newsletter. The screening of "The Farthest" will be July 22, not June 22 as indicated in the minutes. Jean Pilon made a motion, seconded by Tony Heiner, to approve the minutes of the June 1 meeting as published in the July newsletter, with the aforementioned correction. The motion carried on a voice vote.

In Tim Barrier's absence, Brian Risley read the treasurer's report with a June ending balance of \$2245.57. Elizabeth Chong made a motion, seconded by Tom Klein, to approve the report. The motion passed on a voice vote. Brian indicated it has been decided that we will keep our bank account with Wells Fargo, as the authorized signature problems we were having with them have been resolved.

Equipment coordinator Brian Risley reminded members that telescopes are available for checkout.

Astronomical League Coordinator John MacLean reported that membership records have been updated. Eclipse viewing glasses are available online. The business meeting was adjourned at 8:09 pm.

Heather Preston presented a planetarium program "Phantom of the Universe: The Hunt for Dark Matter."

submitted by Don Palmer, secretary

AAS Offers Updated Advice for Safely Viewing the August 21st Solar Eclipse Across America

By: [American Astronomical Society](#) | August 1, 2017

[37](#)

In response to alarming reports of potentially unsafe eclipse viewers flooding the market as the coast-to-coast solar eclipse of August 21st draws near, the American Astronomical Society (AAS) has revised some of its [safety advice](#) to the public.

How can you tell if your “eclipse glasses” or handheld solar viewers are safe? It is no longer sufficient to look for the logo of the International Organization for Standardization (ISO) and a label indicating that the product meets the ISO 12312-2 international safety standard for filters for direct viewing of the Sun’s bright face. Why not? Because it now appears that some companies are printing the ISO logo and certification label on fake eclipse glasses and handheld solar viewers made with materials that do not block enough of the Sun’s ultraviolet, visible, and infrared radiation to make them truly safe. Some sellers are even displaying fake test results on their websites to support their bogus claim of compliance with the ISO safety standard.



Evan Zucker (left); Paul Deans / TravelQuest International (right)

Given this unfortunate situation, the only way you can be sure your solar viewer is safe is to verify that it comes from a reputable manufacturer or one of their authorized dealers. The AAS Solar Eclipse Task Force has been working diligently to compile a list of such vendors, now posted on its [Reputable Vendors of Solar Filters & Viewers page](#). Task-force members have checked manufacturers’ ISO paperwork to make sure it is complete and that it comes from an accredited testing facility, and they’ve asked manufacturers to identify their authorized resellers and dealers to identify the source of the products they’re selling. Only when everything checks out does the AAS add a vendor to its listing.

“If we don’t list a supplier, that doesn’t mean their products are unsafe,” says AAS Press Officer and task-force representative Rick Fienberg. “It just means that we have no knowledge of them or that we haven’t convinced ourselves they’re safe.”

How can you tell if your solar viewer is NOT safe? The only thing you can see through a safe solar filter from a reputable vendor is the Sun itself. If you can see ordinary household lights through your eclipse glasses or handheld viewer, it’s no good. Safe solar filters produce a view of the Sun that is comfortably bright (like the full Moon), in focus, and surrounded by black sky. If you glance at the Sun through your solar filter and find it uncomfortably bright, out of focus, and surrounded by a murky haze, it’s no good. You should contact the seller and demand a refund or credit for return of the product, then obtain a replacement from one of the sources listed on the AAS’s reputable-vendors page.

What if you received eclipse glasses or a handheld solar viewer from a relative, friend, neighbor, or acquaintance? If that person is an amateur or professional astronomer -- and astronomers have been handing out eclipse viewers like Halloween candy lately -- they’re almost certainly ISO-compliant, because astronomers get their solar filters from sources they know and trust (in other words, from the ones listed on the AAS’s reputable-vendors page). Ditto for professional astronomical organizations, including college and university physics and astronomy departments, and amateur-astronomy clubs.

If you bought or were given eclipse viewers at a science museum or planetarium, or at an astronomy trade show, again you’re almost certainly in possession of ISO-compliant filters. As long as you can trace your filters to a reputable vendor or other reliable source, and as long as they have the ISO logo and a statement attesting to their ISO 12312-2 compliance, you should have nothing to worry about. What you absolutely should NOT do is search for eclipse glasses on the internet and buy whatever pops up in the ads or search results. Check the AAS list of reputable vendors and buy from one of them.



Rick Fienberg / TravelQuest International / Wilderness Travel

The AAS continues to emphasize that it is perfectly safe to look directly at the Sun during the brief total phase of the solar eclipse (“totality”), when the Moon entirely blocks the Sun’s bright face. On August 21st this will occur only within a roughly 70-mile-wide path spanning the country from Oregon to South Carolina, and only for up to 2 minutes 40 seconds. Before and after totality, or throughout the entire eclipse if you’re outside the path (in which case you’ll see only a partial eclipse, which is nowhere near

as exciting or magnificent as a total one), the only safe way to look directly at the Sun is through special-purpose solar filters. These are commonly sold as paper- or plastic-framed eclipse glasses or cardboard solar viewers that you hold in your hand. Ordinary sunglasses, even very dark ones, are not safe for looking directly at the Sun; they transmit many thousands of times too much sunlight.

Here are the AAS's [instructions for the safe use of eclipse glasses and handheld solar viewers](#):

- * Always inspect your solar filter before use; if scratched, punctured, torn, or otherwise damaged, discard it. Read and follow any instructions printed on or packaged with the filter.
- * Always supervise children using solar filters.
- * If you normally wear eyeglasses, keep them on. Put your eclipse glasses on over them, or hold your handheld viewer in front of them.
- * Stand still and cover your eyes with your eclipse glasses or solar viewer before looking up at the bright Sun. After looking at the Sun, turn away and remove your filter -- do not remove it while looking at the Sun.
- * Do not look at the uneclipsed or partially eclipsed Sun through an unfiltered camera, telescope, binoculars, or other optical device.
- * Similarly, do not look at the Sun through a camera, a telescope, binoculars, or any other optical device while using your eclipse glasses or handheld solar viewer -- the concentrated solar rays could damage the filter and enter your eye(s), causing serious injury.
- * Seek expert advice from an astronomer before using a solar filter with a camera, telescope, binoculars, or any other optical device; note that solar filters must be attached to the front of any telescope, binoculars, camera lens, or other optics.
- * If you are inside the path of totality, remove your solar filter only when the Moon completely covers the Sun's bright face and it suddenly gets quite dark. Experience totality, then, as soon as the bright Sun begins to reappear, replace your solar viewer to look at the remaining partial phases.
- * Outside the path of totality, you must always use a safe solar filter to view the Sun directly.

Some eclipse glasses and solar viewers are printed with warnings stating that you shouldn't look through them for more than 3 minutes at a time and that you should discard them if they are more than 3 years old. Such warnings are outdated and do not apply to eclipse viewers compliant with the ISO 12312-2 international safety standard, which was adopted in 2015. If your eclipse glasses or viewers are relatively new and are

ISO 12312-2 compliant, you may look at the uneclipsed or partially eclipsed Sun through them for as long as you wish. Furthermore, if the filters aren't scratched, punctured, or torn, you may reuse them indefinitely.

What about welding filters? The only ones that are safe for direct viewing of the Sun with your eyes are those of Shade 12, 13, or 14. These are much darker than the filters used for most kinds of welding. If you have an old welder's helmet around the house and are thinking of using it to view the Sun, make sure you know the filter's shade number. If it's less than 12 (and it probably is), don't even think about using it to look at the Sun. Many people find the Sun too bright even in a Shade 12 filter, and some find the Sun too dim in a Shade 14 filter -- but Shade 13 filters are uncommon and can be hard to find. The AAS's Reputable Vendors of Solar Filters & Viewers page doesn't list any suppliers of welder's filters, only suppliers of special-purpose filters made for viewing the Sun.

An alternative method for safe viewing of the partially eclipsed Sun is indirectly via pinhole projection. For example, cross the outstretched, slightly open fingers of one hand over the outstretched, slightly open fingers of the other, creating a waffle pattern. With your back to the Sun, look at your hands' shadow on the ground. The little spaces between your fingers will project a grid of small images on the ground, showing the Sun as a crescent during the partial phases of the eclipse. Or just look at the shadow of a leafy tree during the partial eclipse; you'll see the ground dappled with crescent Suns projected by the tiny spaces between the leaves.

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Twenty Years Ago on Mars...

By Linda Hermans-Killiam

On July 4, 1997, NASA's Mars Pathfinder landed on the surface of Mars. It landed in an ancient flood plain that is now dry and covered with rocks. Pathfinder's mission was to study the Martian climate, atmosphere and geology. At the same time, the mission was also testing lots of new technologies.

For example, the Pathfinder mission tried a brand-new way of landing on Mars. After speeding into the Martian atmosphere, Pathfinder used a parachute to slow down and drift toward the surface of the Red Planet. Before landing, Pathfinder inflated huge airbags around itself. The spacecraft released its parachute and dropped to the ground, bouncing on its airbags about 15 times. After Pathfinder came to a stop, the airbags deflated.

Before Pathfinder, spacecraft had to use lots of fuel to slow down for a safe landing on another planet. Pathfinder's airbags allowed engineers to use and store less fuel for the landing. This made the mission less expensive. After seeing the successful Pathfinder landing, future missions used this airbag technique, too!

Pathfinder had two parts: a lander that stayed in one place, and a wheeled rover that could move around. The Pathfinder lander had special instruments to study Martian weather. These instruments measured air temperature, pressure and winds. The measurements helped us better understand the climate of Mars.

The lander also had a camera for taking images of the Martian landscape. The lander sent back more than 16,000 pictures of Mars. Its last signal was sent to Earth on Sept. 27, 1997. The Pathfinder lander was renamed the Carl Sagan Memorial Station. Carl Sagan was a well-known astronomer and science educator.

Pathfinder also carried the very first rover to Mars. This remotely-controlled rover was about the size of a microwave oven and was called Sojourner. It was named to honor Sojourner Truth, who fought for African-American and women's rights. Two days after Pathfinder landed, Sojourner rolled onto the surface of Mars. Sojourner gathered data on Martian rocks and soil. The rover also carried cameras. In the three months that Sojourner operated on Mars, the rover took more than 550 photos!

Pathfinder helped us learn how to better design missions to Mars. It gave us valuable new information on the Martian climate and surface. Together, these things helped lay the groundwork for future missions to Mars.

Learn more about the Sojourner rover at the NASA Space Place:
<https://spaceplace.nasa.gov/mars-sojourner>



Caption: The Mars Pathfinder lander took this photo of its small rover, called Sojourner. Here, Sojourner is investigating a rock on Mars. Image credit: NASA/JPL-Caltech

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