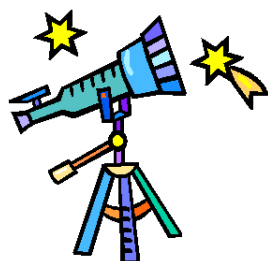




Astro Notes



From the President



How to get involved in GAM2017 as...

A Parent

1. Encourage your child to explore the night sky through words by writing a poem for the AstroPoetry Contest and AstroArt Contest. They could even win a great prize!
2. Is your local astronomy club holding a Global Star Party event? Great for the whole family!
3. Check out our Observing Challenges. There are plenty of activities that children can do without any special equipment. Ask questions and discuss them on our Facebook page and in our forum. There are plenty of astronomers there to help you out!

A Teacher

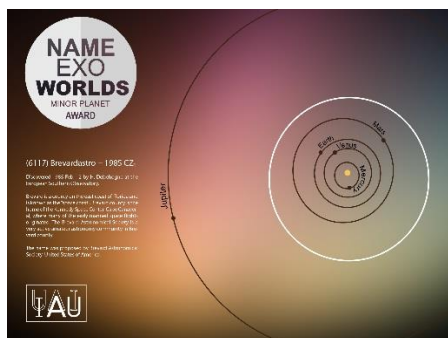
1. Get your class writing and creating! There are two fun contests about the night sky – AstroPoems and AstroArt.
2. Take part in the Asteroid Search Campaign. Apply by March 15 and your class might be selected to help discover new objects in the solar system!
3. Raise awareness of the importance of dark skies and the threat of light pollution. Get your class involved in International Dark Sky Week 2017.



Image courtesy of NASA

In This Issue

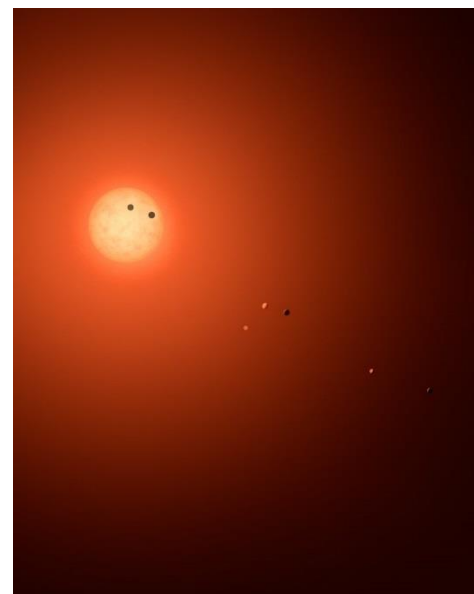
-  *From the President*
-  *This Month's Sky*
-  *Global Astronomy Month*
-  *Trappist-1*
-  *2017 Solar Eclipse (safety)*



New Minor Planet Named

International Astronomical Union gives minor planet 1985 CZ₁ the name Brevardastro to honor the Brevard Astronomical Society.

In a recent meeting the Minor Planets and Comets Division (Division F Working Group Small Bodies Nomenclature (SBN)) of the International Astronomical Union voted to give the minor planet 1985 CZ₁ the name Brevardastro. 1985 CZ₁ was discovered on February 12, 1985 by H. Debehogne at the European Southern Observatory.



Cont on page 2

An Astronomy Club

1. The Global Star Party is the big kickoff event! Plan a club event or hold one yourself. Star parties are the ultimate in community outreach. No fancy equipment needed –a small telescope or binoculars will show things people have never seen. Don't forget to register your event!
2. Are you holding an event for the Global Star Party? Do you have a Facebook page? Register to do a Facebook Live video, along with other clubs around the world. Share outreach in your country and be part of a truly global star party!
3. The Observing Challenges are a great way to bring in new people and help them get a start in astronomy. Plan an event to help newcomers with the Challenges and show them how much fun astronomy is. It's a great way to help others, share the fun, and recruit new members!
4. Include people with disabilities in your events using these resources. One will be featured on our Facebook page every day throughout GAM. Astronomy is for everyone!

A Novice

1. Tune in to the Online Messier Marathon, a crash course in observing the wonders of the Universe. With the Virtual Telescope, Dr. Gianluca Masi is your guide as you explore the Universe. You only need an internet connection to take part.
2. Attend a Global Star Party event. Ask local astronomy clubs or observatories if they're holding an event and check out the event list. If not, suggest that they do! Star parties are a great way to get started in astronomy. Look through telescopes and chat with those in the hobby. Astronomers love to share the fun!
3. Be a citizen scientist by taking part in Globe at Night. You'll measure night sky brightness in your area to help determine the spread and impact of light pollution. It's a great way to get involved in scientific research and get familiar with the night sky while you're at it!

An Art Lover

1. Watch the Cosmic Concert, a live performance of an original production each year. The Cosmic Concert combines new music by composer/performer Giovanni Renzo with images and time-lapses of the night sky for a unique and awe-inspiring experience. Send your own astronomy artwork or images to info@giovannirenzo.it and your work may even be featured!
2. Express your feelings about astronomy by entering the AstroPoetry and AstroArt contests. You might even win one of the great prizes!

For Everyone

1. Plan an astronomy event during GAM 2017. Then, be sure to register it. Share what you're doing with the rest of the world and be a part of the global celebration of astronomy!
2. Check out our Observing Resources and People with Disabilities Astronomy Resources to see how you might do something special for GAM 2017.
3. Share your experience with the world on Facebook and Tweet using #GAM2017 hashtag (@gam_awb).

Reprinted from the Astronomer's Without Borders website. <http://astronomerswithoutborders.org/gam2017-resources/how-to-get-involved.html>



Trappist-1

TRAPPIST-1 is a planetary system, located 12 parsecs away from the Solar system (39 light years), near the ecliptic, within the constellation of Aquarius. Around a star which is 12 times less massive than the Sun and only slightly larger than Jupiter, there are at least seven planets in orbit. The initial discovery was made by TRAPPIST, the TRAnsiting Planets and Planetesimals Small Telescope. Additional planets were subsequently identified using TRAPPIST and the Spitzer space telescope, the Very Large Telescope, UKIRT, the Liverpool Telescope and the William Herschel Telescope.

All the planets in the TRAPPIST-1 system transit their star, meaning that they pass in front of it. The planets were discovered from the regular and repeated shadows that are cast during transit. Thanks to the transit signals we could measure the orbital periods of the planets and could calculate the sizes of the planets. The exact time at which the planets transit also provide us with a means to measure their masses, which leads to knowing their densities and therefore their bulk properties. The planets are consistent with a rocky composition.

We found that the planets have sizes and masses comparable to the Earth and Venus. Because we know the distance of the planets to their star, and the temperature of the star, we can deduce that they receive an amount of light that is similar to many of the planets in the Solar system, from Mercury to beyond Mars.

During transit, some of the starlight goes through the atmosphere of the planets, getting transformed by the chemical composition of the atmosphere and by its vertical structure. This means that we can remotely study the climates of terrestrial worlds beyond our Solar system! The TRAPPIST-1 worlds are the most optimal currently at our disposal. They are providing humanity with its first opportunities at discovering evidence of biology beyond the Solar system.

This website is edited by members of the discovery team of TRAPPIST-1 and contains scientific information about the system as well as artistic and educational material. Our aim is to collect our best and most up-to-date knowledge of this system, while communicating our fascination and awe for the remote worlds of TRAPPIST-1.

PRINCIPAL PUBLICATIONS ON THE SYSTEM

Gillon, M. et al. 2017, Nature 542, p456. html
de Wit, J. et al. 2016, Nature 537, p69. html, pdf, bib
Gillon, M. et al. 2016, Nature 533, p221. html, pdf, bib

VARIOUS PRESS ANNOUNCEMENTS

NASA - 2016-Feb-23: At least seven planets orbit TRAPPIST-1.
ESO - 2017-Feb-23: At least seven planets orbit TRAPPIST-1.
NASA - 2016-July-20: First atmospheric study on TRAPPIST-1b & 1c.
ESO - 2016-May-02: The first planets are identified in TRAPPIST-1.

2017 Solar Eclipse Safety

Looking directly at the sun is unsafe except during the brief total phase of a solar eclipse (“totality”), when the moon entirely blocks the sun’s bright face, which will happen only within the narrow path of totality.

The only safe way to look directly at the uneclipsed or partially eclipsed sun is through special-purpose solar filters, such as “eclipse glasses” (example shown at left) or handheld solar viewers.

Homemade filters or ordinary sunglasses, even very dark ones, are not safe for looking at the sun. To date three manufacturers have certified that their eclipse glasses and hand-held solar viewers meet the ISO 12312-2 international standard for such products: Rainbow Symphony, American Paper Optics, and Thousand Oaks Optical.

Always inspect your solar filter before use; if scratched or damaged, discard it. Read and follow any instructions printed on or packaged with the filter. Always supervise children using solar filters. Stand still and cover your eyes with your eclipse glasses or solar viewer before looking up at the bright sun. After glancing 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 hand-held solar viewer — the concentrated solar rays will 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, a telescope, binoculars, or any other optical device.

If you are within 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 glance at the remaining partial phases.

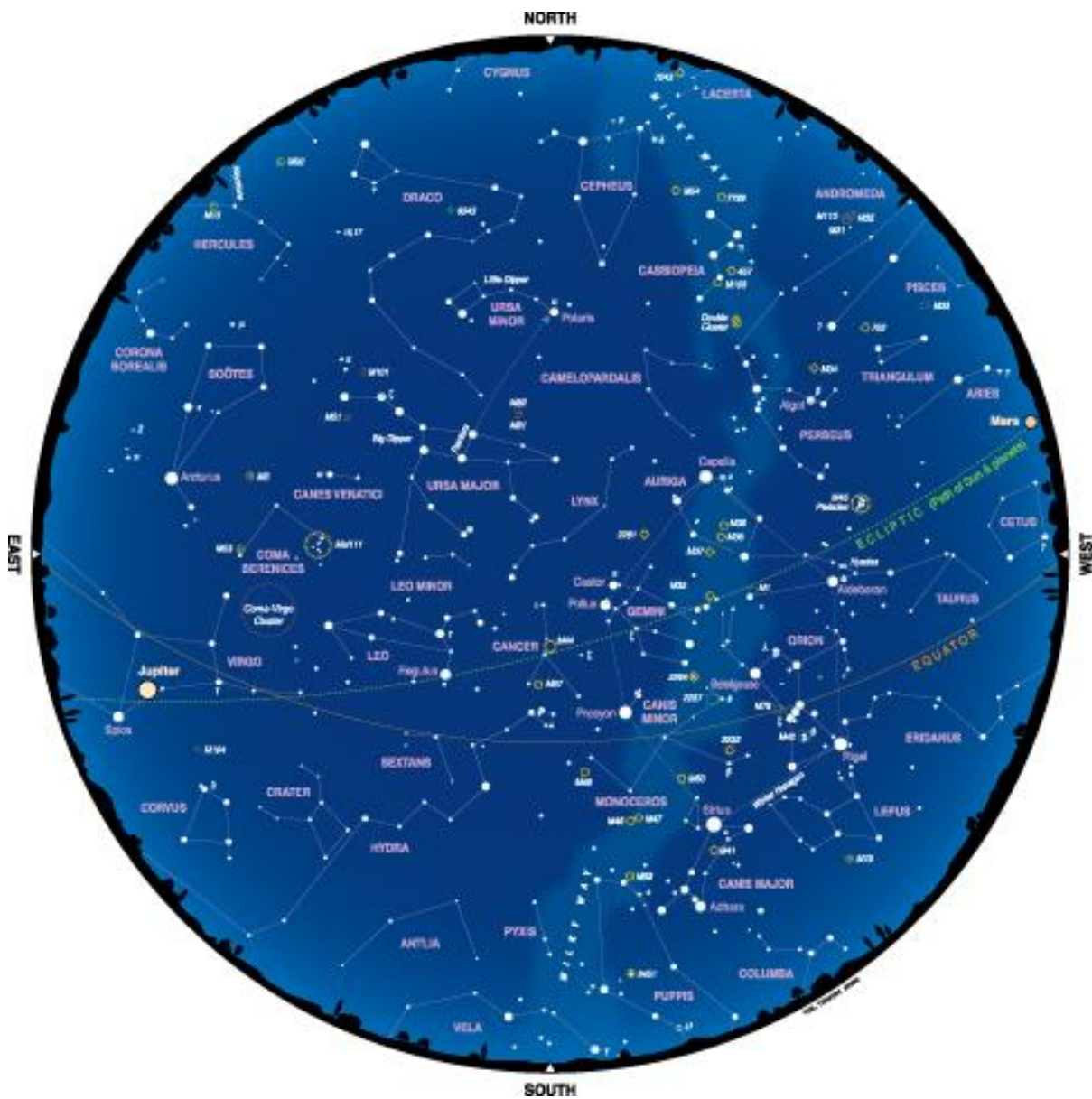
An alternative method for safe viewing of the partially eclipsed sun is pinhole projection. For example, cross the outstretched, slightly open fingers of one hand over the outstretched, slightly open fingers of the other. With your back to the sun, look at your hands’ shadow on the ground. The little 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.

A solar eclipse is one of nature’s grandest spectacles. By following these simple rules, you can safely enjoy the view and be rewarded with memories to last a lifetime. For more information visit www.aas.org and eclipse2017.nasa.gov.

BAS Calendar

(check www.brevardastro.org for more info)

Date	Event	More Info
4/11	Full Moon	
4/19	BAS Monthly Meeting	1519 Clearlake Rd. Cocoa, FL 32922 (EFSC Planetarium)
4/22-23	Lyrids Meteor Shower	
4/26	New Moon	
4/29	Astronomy Day at the Eastern Florida State College Planetarium - Cocoa.	Setup 5pm or earlier if you want to do some solar observing.



- 1 The moon passes 0.3° north of Aldebaran, 5 A.M. EDT
Mercury is at greatest eastern elongation (19°), 6 A.M. EDT
- 3 First Quarter Moon occurs at 2:39 P.M. EDT
- 6 Saturn is stationary, 1 A.M. EDT
- 7 The Moon passes 0.7° south of Regulus, 1 A.M. EDT
Jupiter is at opposition, 6 P.M. EDT
- 7 Jupiter reaches its 2017 peak today, shining at magnitude -2.5 and appearing 44.3" across through a telescope.
- 9 Mercury is stationary, 9 P.M. EDT
- 10 Moon passes 2° north of Jupiter, 5 P.M. EDT

- 11 Full Moon occurs at 2:08 A.M. EDT
- 12 Venus is stationary, 8 P.M. EDT
- 14 Uranus is in conjunction with the Sun, 2 A.M. EDT
- 15 The Moon is at apogee (251,950 miles from Earth), 6:05 A.M. EDT
- 16 The Moon passes 3° north of Saturn, 2 P.M. EDT
- 19 Last Quarter Moon, 5:57 A.M. EDT
- 20 Mercury is in inferior conjunction, 2 A.M. EDT
- Pluto is stationary, 5 P.M. EDT

- 22 Lyrid meteor shower peaks
- The Moon passes 0.8° south of Neptune, 4 P.M. EDT
- 23 The Moon passes 5° south of Venus, 2 P.M. EDT
- 24 The Moon passes 0.8° north of asteroid Pallas, noon EDT
- 26 New Moon occurs at 8:16 A.M. EDT
- 27 The Moon is at perigee (223,275 miles from Earth) 12:15 P.M. EDT
- 28 The Moon passes 6° south of Mars, 4 A.M. EDT
- The Moon passes 0.5° north of Aldebaran, 2 P.M. EDT
- 29 Venus is at greatest brilliancy (magnitude -4.7), 5 P.M. EDT

Events from Astronomy April 2017 edition.