

Antares



The Newsletter of the Kansas Astronomical Observers

Meeting time: **April 21, 2018** **3:00 pm**

Location: **Great Plains Nature Center**

Speaker: **Fred Gassert** -Lake Afton Public Observatory

Topic: **LAPO Status/LAPO Activities**

KAO Website: <http://www.kaowichita.com>

The Night Sky Network: <http://www.nightsky.jpl.nasa.gov>

The Astronomical League: <http://www.astroleague.org>

If you have comments or suggestions for an article in the newsletter, e-mail them to:

kevin.l.kight@gmail.com *Please begin the subject line with "Antares"

Current Club Officials

President: **Jerelyn Ramirez** jerelyn.ramirez@gmail.com

Vice-President: **Tony Haidai** thaidai@cox.net

Treasurer: **Paul Ramirez** ramirezpm2@gmail.com

Newsletter/Media: **Kevin Kight** kevin.l.kight@gmail.com

Next Month's Meeting: May 19 at Lake Afton Public Observatory

Club Updates:

Meeting Speakers:

For those members that wish to create and present during a club meeting, or that have a suggestion for a guest speaker, contact Club Vice-President: Tony Haida (thaidai@cox.net)

Newsletter Items for Publication:

Please submit items for publication prior to the 10th of each month to be included in that month's newsletter.

March Club Meeting:

See addendum for a short summary about the February club meeting.

Eyepieces for Sale:

See addendum for a collection of TeleVue Eyepieces club member David Stanislaw is wishing to sell.

Solar and Planetary Items:

Moon Phases:

Last Quarter: April 8
New Moon: April 15
First Quarter: April 22
Full Moon: April 29

Planets:

Mercury – Visible in the East before sunrise. Passing Inferior conjunction toward Greatest Western elongation on 29th
Venus – Visible in the West After Sunset; Sets approximately 9:50 pm
Mars – Visible in the morning rises approximately 2:20am; in Sagittarius next to Saturn
Jupiter – Rising at 10:00 pm in Libra, transiting approximately 3:00am
Saturn – Visible in the morning, rising approximately 1:45 am in Sagittarius
Uranus – Hidden in Solar Glare
Neptune – Visible in the morning, rising approximately 5:20 am in Aquarius

The Lyrid Meteor Shower peak is the eventing of the 21st - 22nd of April

Comets:

Listed below are comets possibly visible in telescopes (cutoff at magnitude 11). Magnitudes shown are approximate predictions for mid-month. Links are provided for additional information: <http://cometchasing.skyhound.com/>

No Comets are Visible This Month

Event Reports:

If you've participated in a club event, please submit an event report to be included here by the 7th of each month. It doesn't have to be anything formal, just a brief description about the event and how it went. Credit will be given unless you request to be kept anonymous.

Upcoming Regional Events:

Symphony in the Flint Hills - Saturday, June 9
Rosalia Ranch, Northeast Ivanpah Road, El Dorado, KS 67042
Setup Time: 10:00 AM

This is an all day event. Telescopes are set up for solar viewing while educational outreach presentations are held inside the educational tent before the concert begins. This is a collaboration with the Salina Astronomy Club. At the conclusion of the concert patrons come by for some evening viewing. Jupiter will be high in the sky at sunset. It is possible to view the GRS (Great Red Spot) after 11:00 p.m. This will be a Moon free event. Saturn will be rising on the eastern horizon after the sun sets with Venus in the west.

Contact Jerelyn about this if you are interested in volunteering.

Fall River Star Party – Friday, August 10- Saturday, August 11
Fall River State Park & Campgrounds, Fall River, KS 67047
(7:30 PM - 11:59 PM)

Come join us at the annual Fall River event. Join us for an evening of dark skies and deep space viewing. Mars and Saturn will be featured this night with Jupiter and Venus setting in the west just after sunset.

Upcoming KAO Public Events:

Full Moon Walk – April 29

Great Plains Nature Center, 6232 E. 29th Street North, Wichita, KS 67220-2200
(8:30 pm – 10:30 pm)

Setup Time: 8:00 PM; See below about registration

When the moon is full, join us for stargazing at Great Plains Nature Center under a rising full moon. Enjoy an evening under the stars and planets.

If you are planning to go on the walk, you must make a reservation (like the public). If you are **ONLY** there to assist with stargazing, please e-mail Rachel Roth at GPNC to confirm. rachel@gpnc.org. See NSN Calender for details.

Full Moon Walk – May 29

Great Plains Nature Center, 6232 E. 29th Street North, Wichita, KS 67220-2200
(9:00 pm – 11:00 pm)

Setup Time: 8:30 PM; See below about registration

When the moon is full, join us for stargazing at Great Plains Nature Center under a rising full moon. Enjoy an evening under the stars and planets.

If you are planning to go on the walk, you must make a reservation (like the public). If you are **ONLY** there to assist with stargazing, please e-mail Rachel Roth at GPNC to confirm. rachel@gpnc.org. See NSN Calender for details.

Featured Article:

This article is provided by NASA Space Place.

With articles, activities, crafts, games, and lesson plans, NASA Space Place encourages everyone to get excited about science and technology.

Visit spaceplace.nasa.gov to explore space and Earth science!



Measuring the Movement of Water on Earth

By Teagan Wall

As far as we know, water is essential for every form of life. It's a simple molecule, and we know a lot about it. Water has two hydrogen atoms and one oxygen atom. It boils at 212° Fahrenheit (100° Celsius) and freezes at 32° Fahrenheit (0° Celsius). The Earth's surface is more than 70 percent covered in water.

On our planet, we find water at every stage: liquid, solid (ice), and gas (steam and vapor). Our bodies are mostly water. We use it to drink, bathe, clean, grow crops, make energy, and more. With everything it does, measuring where the water on Earth is, and how it moves, is no easy task.

The world's oceans, lakes, rivers and streams are water. However, there's also water frozen in the ice caps, glaciers, and icebergs. There's water held in the tiny spaces between rocks and soils deep underground. With so much water all over the planet—including some of it hidden where we can't see—NASA scientists have to get creative to study it all. One way that NASA will measure where all that water is and how it moves, is by launching a set of spacecraft this spring called GRACE-FO.

GRACE-FO stands for the "Gravity Recovery and Climate Experiment Follow-on." "Follow-on" means it's the second satellite mission like this—a follow-up to the original GRACE mission. GRACE-FO will use two satellites. One satellite will be about 137 miles (220 km) behind the other as they orbit the Earth. As the satellites move, the gravity of the Earth will pull on them.

Gravity isn't the same everywhere on Earth. Areas with more mass—like big mountains—have a stronger gravitational pull than areas with less mass. When the GRACE-FO satellites fly towards an area with stronger gravitational pull, the first satellite will be pulled a little faster. When the second GRACE-FO satellite reaches the stronger gravity area, it will be pulled faster, and catch

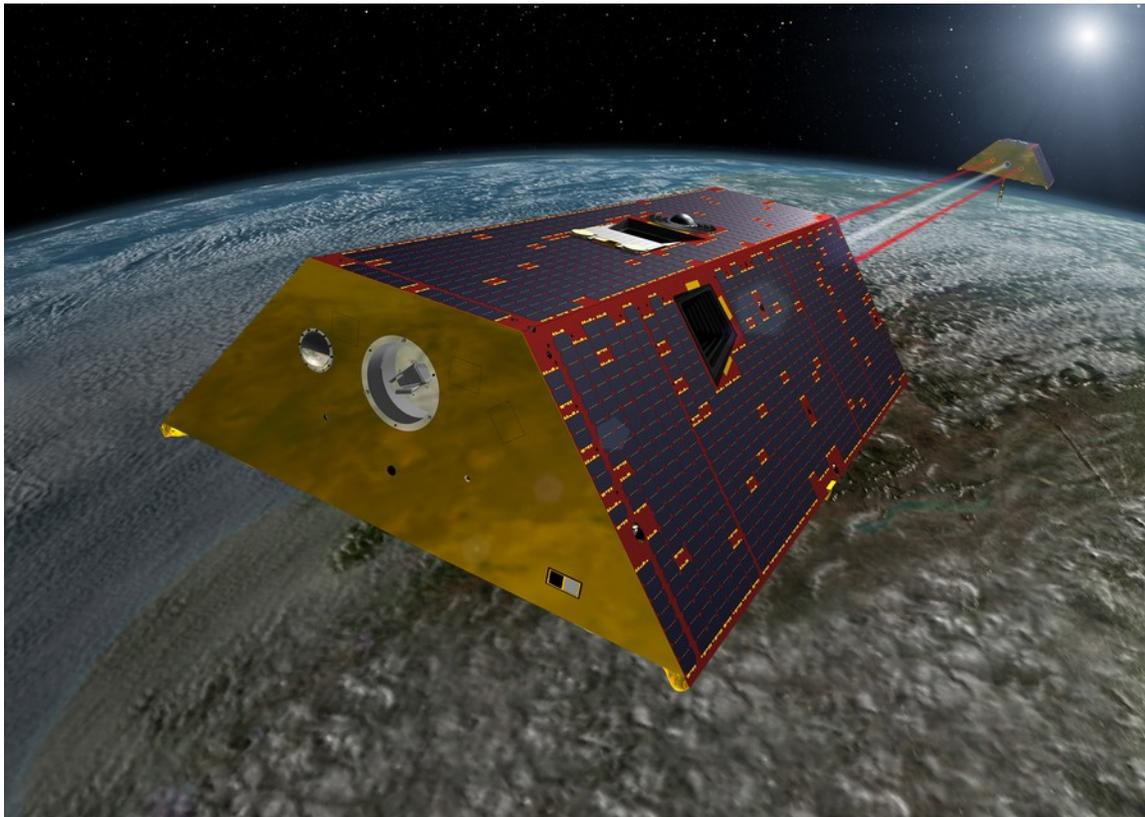
up.

Scientists combine this distance between the two satellites with lots of other information to create a map of Earth's gravity field each month. The changes in that map will tell them how land and water move on our planet. For example, a melting glacier will have less water, and so less mass, as it melts. Less mass means less gravitational pull, so the GRACE-FO satellites will have less distance between them. That data can be used to help scientists figure out if the glacier is melting.

GRACE-FO will also be able to look at how Earth's overall weather changes from year to year. For example, the satellite can monitor certain regions to help us figure out how severe a drought is. These satellites will help us keep track of one of the most important things to all life on this planet: water.

You can learn more about our planet's most important molecule here:

<https://spaceplace.nasa.gov/water>



An artist's rendering of the twin GRACE-FO spacecraft in orbit around Earth. Credit: NASA