NC Astronomers

Bringing Astronomy to the Public

Newsletter – June, 2025

All are welcome! Bring a friend!

President's Rant – June 1, 2025

This month's Rant topic was prompted by our recent trip to Greece. In the southernmost country in Europe, you'd think there would be a different view of the sky than we have in Grass Valley. After all, the bright southern star Canopus can be seen in SoCal and the Southern Cross in Hawaii. But Athens is at 38 degrees N latitude, only 1 degree south of Grass Valley. The Greeks see the same star/planet canopy that we do, but only 10 hours earlier. So, can nothing be gained by stargazing there?

It got me thinking about how **longitude** affects one's view of astronomical events. For example, the ability to see a Lunar Eclipse is strongly determined by one's longitude. The earth casts a large shadow on the moon, encompassing it completely for an hour on average, but you need to be on the night side of earth facing the full moon or you're out of luck. Everyone sees the same phenomenon at the same moment in time.

Lunar occultations of planets/stars are also very longitude dependent. The moon moves quickly along the ecliptic – about 12 degrees/day, 360 degrees over about a "moonth", moving about one moon diameter every hour. So, if you read in the British press that the moon will occult Mars from 9pm to 10pm London time, eight hours later in our evening sky we would see the moon about 4 degrees east of Mars – only a mediocre conjunction. But if the occultation occurs between 4am and 5am in London near the western horizon, we'd see it simultaneously with them between 8pm and 9pm the prior evening near the eastern horizon. Longitudinal location, location, location.

Any close encounter that we see the moon having with more distant objects is affected by its velocity. Solar eclipses are of course special cases in which both one's longitude and latitude are important, as the moon casts a narrow shadow of totality, carving out a thin path indeed across the earth's surface.

The binoculars we brought were never turned upwards. Our focus was of course on the natural beauty and the ancient history of the region. But the pantheon of gods and the epic stories of old are often recapitulated in the nomenclature and lore of Astronomy.

Don't forget, our club's **Annual Picnic** will take place this coming **Saturday evening**, **June 7**, at the home of **Rod Brown** in Nevada City. Sign up online (see the message thread on Groups.io) so we know how many of you are coming. See you there,

Greg Ouligian

June Gathering: Annual Club Picnic!

As is our tradition, our Annual Picnic will take place in June in lieu of our monthly meeting. The Gathering will be held for club members and family guests. Invitations have been sent to the Membership via the club's Groups.io forum. If you are a member and not received the invitation, please let one of the club officers know.

For the summer break, we are hoping to hold a meeting in August via Zoom. In-person (plus Zoom) meetings will resume in September, as usual.

NC Astronomers Meets at 7pm on the first Wednesday of the month
Madelyn Helling Library Gene Albaugh Community Room
980 Helling Way
Nevada City, CA 95959
(September – May)

** Note **

For the "Summer Season" (July and August) the NC Astronomers will be meeting on-line via Zoom.
Club members will receive the keys to the Zoom conference in their email via Groups.io.

** NC Astronomers "YouTube" channel **

Many of the presentations are recorded and posted to the club's YouTube channel.

Please see https://www.youtube.com/@ncastronomers9981/videos

Club News – Rod Brown

Club Picnic this month

As is our tradition, our Annual Picnic will take place on Saturday, June 7th at 5 PM at Rod Brown's home in Nevada City. This is in lieu of our monthly meeting. The Gathering will be held for club members and family guests. Invitations have been sent to the Membership via the club's Groups.io forum. If you are a member and not received the invitation, please let one of the club officers know.

Don't miss the dark skies, friend and fun at our Plumas Eureka Star Party on the nights of July 24-26

A thunderstorm and smoke stopped us last year, but we are planning to be back this year for our annual star party for three nights at Plumas Eureka State Park. We observe in the parking lot of the old Johnsonville Ski Bowl at Plumas Peak (https://maps.app.goo.gl/YEJ7WmkxA9hke3nC7). The nights of July 24th and 25th will be club observing nights, and the public will be invited to join us on the night of the 26th.

Three lodging options are available:

1. Share one of our four free campsites in the park campground, where restrooms and showers are available
2. Camp at the observing site, and you provide your own facilities (no water, restrooms, or showers are available there)
3. Find your own lodging in nearby Graeagle; one option is the River Pines Resort (https://www.riverpines.com/)

If you plan to attend, please contact Rod Brown at rodney dot et dot brown at gmail dot com or via the club contact page (https://ncastronomers.org/contact/) and let him know your lodging option. Paul and Linda Bacon will be parking their trailer at the observing site (option 2) and we are looking for some more folks to camp there with them to help mind the site, so especially let us know if you can join them.

Get started observing by borrowing a telescope for a year for free!

Are you excited to try everything you learn from this month's presentation about beginning observing? Then borrow a telescope for a year for free! Club loaner telescopes like this are a great way to get started observing.

We have one available now. It's a Meade ETX-90EC, a three-inch Maksutov-Cassegrain. The whole setup is light and easy to transport. All parts except the tripod fit into the included case. Also included with the telescope are four eyepieces, electronic hand controller, and a Wi-Fi module. The Wi-Fi module allows you to connect your phone or tablet and use a visual application like SkySafari to find objects.

If you would like to borrow this telescope, please contact Rod Brown at rodney dot et dot brown at gmail dot com or via the club contact page (https://ncastronomers.org/contact/).

Rod Brown
Secretary/Treasurer

Outreach – Ania Brandysiewicz

Community Outreach Highlights – A Month of Excitement

This past month was filled with exciting and successful community outreach efforts. We had the pleasure of participating in two events, one of which took place on May 12 at the STAR Barbecue, hosted by Core Charter School in Marysville.

We kicked off the event by setting up, together with the couple of students, a scaled-down model of the Solar System. With Earth represented as smaller than a sweet pea, children and adults alike were able to truly grasp the vast distances between the planets. The model sparked curiosity and wonder among attendees of all ages.

Alan Stahler followed with a fascinating and well-received talk that captivated everyone—from first graders to high school seniors and their parents. His ability to connect with such a diverse audience was truly impressive.

Later, Greg D. and Rod Brown drew a crowd of eager children, all lining up for a chance to look through the telescope. Their enthusiasm and willingness to share their knowledge made them instant favorites at the event.

We received a heartfelt thank-you note from the organizers, Robb and Christine Gibbs, who wrote:
"Your participation raised the event to a whole other level. The enrichment and positive energy—not to mention your knowledge and enthusiasm—made a huge impact on our school community."

On a personal note, I'd like to share how meaningful it was to be part of this experience. I was particularly impressed by the strong sense of camaraderie among students and parents, and the incredible support they showed for one another. It was truly a joy to witness.

The other event took place on May 27th at Grass Valley Charter School. This time, the audience was 6th graders. Based on our prior experience, we wanted to dedicate more time to Alan Stahler to provide an introduction to the solar system and the cosmos in general. Alan met with the children that afternoon in their classroom. He was scheduled for 45 minutes, but due to the number of questions from the students, his talk was extended to 75 minutes. The teacher was amazed at how well Alan was able to hold her students' attention — even the most challenging ones.

As we gathered in the evening at sunset, we were greeted by the International Space Station as it passed overhead. Though it was dark on the ground, the Station — still bathed in sunlight in orbit — appeared as a very clear and bright star moving quickly across the sky. On board the Station is a ham radio cross-band repeater, which allows ham radio operators on the ground to communicate with one another. Greg D. used a homemade antenna called a "tape measure

Yagi" and a small handheld radio to listen in. This caught everyone’s attention — it was almost hard to believe!

Shortly after the Space Station passed, a group of recently launched Starlink satellites followed. SpaceX launches these in batches of around 60 satellites, which gradually spread out into their assigned orbits. Early in that process, they look like a string of glowing pearls in the sky. It was quite a sight.

As it got darker, the children's attention turned to the telescopes. This time, we had four telescopes provided by Bill Thomas, Paul Bacon, Rod Brown, and Greg Dolkas. Special attention was given to the 18" homemade telescope built by Bill Thomas, but interest soon spread to the other scopes as well. Children lined up for a chance to look through them. Observations began with a sliver of the Moon, followed by Mars, and then a variety of other celestial objects. Greg D. captured great photos of the M101 and M81/M82 galaxies.

Altogether, both events were a great success and a lot of fun. Many thanks to everyone who participated!

NC Astronomer members continue to enjoy the beer and blather, which will now be held at the 1849 Brewing Company. The beer selection at the brewery is quite comprehensive and they also have an on-premises cafe for your culinary delight. The environment allows for in-depth conversations on deeply philosophical questions.

Each month we discuss current topics in Astronomy and share our collective ignorance.

Meeting location:

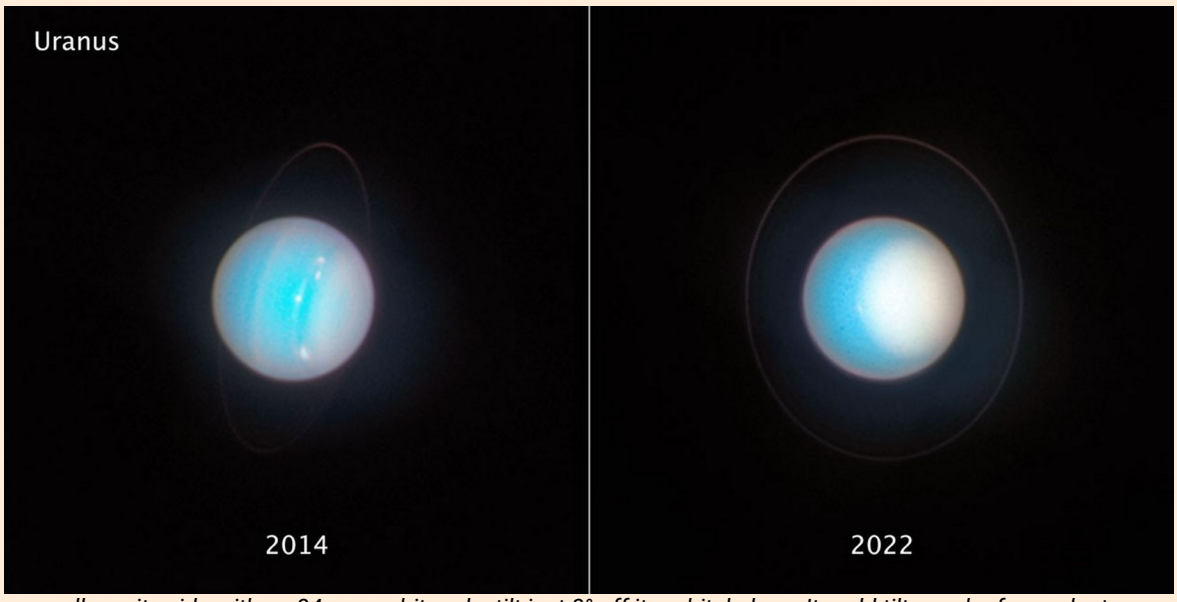
<u>Astronomy on Tap</u> meets on
The third <u>Wednesday</u> of the month at 5pm

Come and join the conversation at
1849 Brewing Company - 468 Sutton Way in Grass Valley

This article is distributed by NASA's Night Sky Network (NSN).
The NSN program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

June's Night Sky Notes: Seasons of the Solar System

By: Kat Troche

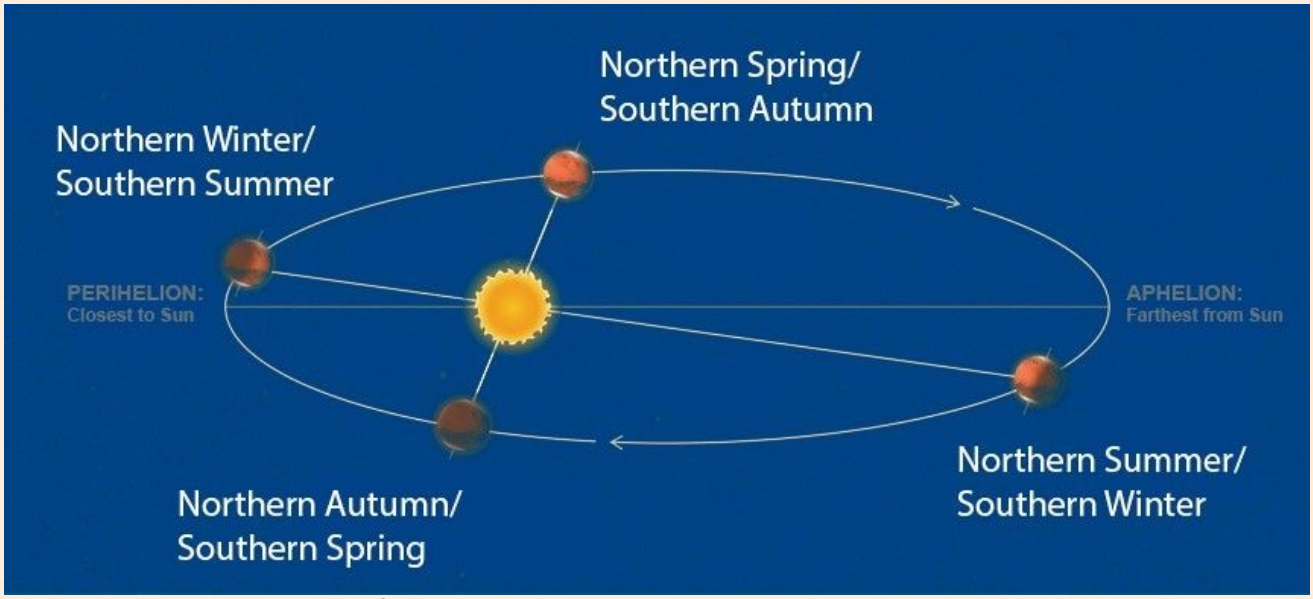


Uranus rolls on its side with an 84-year orbit and a tilt just 8° off its orbital plane. Its odd tilt may be from a lost moon or giant impacts. Each pole gets 42 years of sunlight or darkness. Voyager 2 saw the south pole lit; now Hubble sees the north pole facing the Sun. Credit: NASA, ESA, STScI, Amy Simon (NASA-GSFC), Michael Wong (UC Berkeley); Image Processing: Joseph DePasquale (STScI)

Here on Earth, we undergo a changing of seasons every three months. But what about the rest of the Solar System? What does a sunny day on Mars look like? How long would a winter on Neptune be? Let's take a tour of some other planets and ask ourselves what seasons might look like there.

Martian Autumn

Although Mars and Earth have nearly identical axial tilts, a year on Mars lasts 687 Earth days (nearly 2 Earth years) due to its average distance of 142 million miles from the Sun, making it late autumn on the red planet. This distance and a thin atmosphere make it less than perfect sweater weather. A recent weather report from Gale Crater boasted a high of -18 degrees Fahrenheit for the week of May 20, 2025.

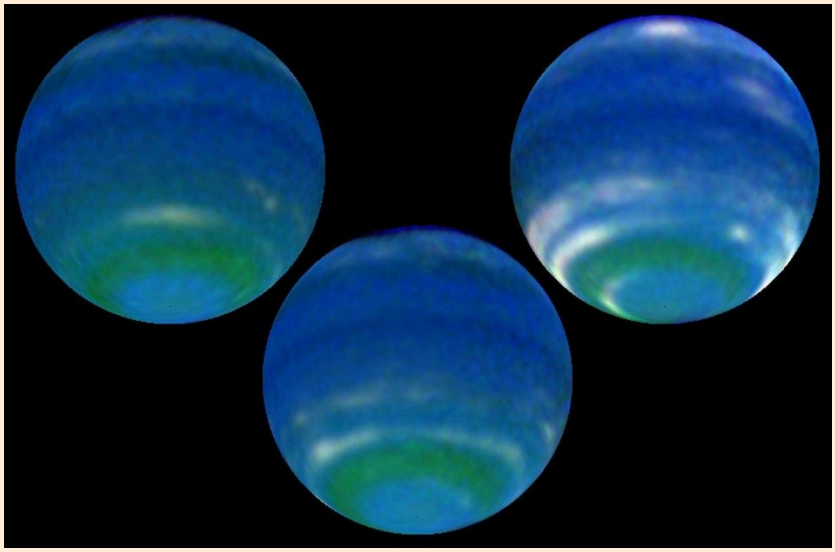


An artist's rendition of Mars' orbit around the Sun, and its seasons. Credit: NASA/JPL-Caltech

Seven Years of Summer

Saturn has a 27-degree tilt, very similar to the 25-degree tilt of Mars and the 23-degree tilt of Earth. But that is where the similarities end. With a 29-year orbit, a single season on the ringed planet lasts seven years. While we can't experience a Saturnian season, we can observe a ring plane crossing here on Earth instead. The most recent plane crossing took place in March 2025, allowing us to see Saturn's rings 'disappear' from view.

A Lifetime of Spring



NASA Hubble Space Telescope observations in August 2002 show that Neptune's brightness has increased significantly since 1996. The rise is due to an increase in the amount of clouds observed in the planet's southern hemisphere. Credit: NASA, L. Sromovsky, and P. Fry (University of Wisconsin-Madison)

Even further away from the Sun, each season on Neptune lasts over 40 years. Although changes are slower and less dramatic than on Earth, scientists have observed seasonal activity in Neptune's atmosphere. These images were taken between 1996 and 2002 with the Hubble Space Telescope, with brightness in the southern hemisphere indicating seasonal change.

As we welcome summer here on Earth, you can build a Suntrack model that helps demonstrate the path the Sun takes through the sky during the seasons. You can find even more fun activities and resources like this model on NASA's Wavelength and Energy activity.

Officers	
President	Greg Ouligian
Vice President	John Griffin
Secretary / Treasurer	Rod Brown
Communications Coordinator	Greg Dolkas
Outreach Coordinator	Ania Brandysiewicz

NC ASTRONOMERS
Meets
First Wednesday Of The Month
Madelyn Helling Library
Community Room
980 Helling Way
Nevada City 95959

NC ASTRONOMERS
302 Gethsemane St.
Nevada City, CA 95959
http://ncastronomers.org

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