



AU AstroNews

The Newsletter of the Astronomical Unit

February 2022

Sponsored by the Santa Barbara Museum of Natural History



Outreach essentials at the Ritz-Carlton Bacara Resort. Photo credit: Tom Totton.

OUTREACH SUMMARY

Happy Chinese New Year! There was no outreach in January, thanks to the omicron variant. Please get vaccinated and boosted, then stay safe and healthy by wearing N95 or KN95 masks when necessary, washing your hands frequently, and practicing physical distancing.

OUTREACH EVENTS

For February, there will be no indoor, in-person SBAU meetings. The restart of second Saturday Public Star Parties at SBMNH has been postponed at least into March - stay tuned.

We will resume our monthly second Saturday SBAU planning meetings as virtual events on Zoom, starting at 4:30 PM. Watch your email or sbau.org for the link.

On Friday, February 4, at 7:30 PM, we will start our first Friday monthly club meetings on Zoom, starting with a Members' Night. If you are willing to give a 15-minute presentation via Zoom, please contact Baron Ron Herron at vicepresident@sbau.org and give him a summary. Four presenters are needed.

The SBAU radio hour has been replaced by a weekly Zoom/YouTube Live event every Monday at 11 AM. If you watch, the Live video should be able to take comments and questions in its Chat area: <https://tinyurl.com/2vss2yam>

Don't forget the weekly Telescope Workshop Zoom, every Tuesday from 7:30 PM to 9 PM. Check sbau.org for the link.

THE SKY FOR FEBRUARY

The International Space Station will be making some nice visible evening passes during the first week of February. Its orbit may change from time to time, especially now that they have to dodge more space debris, so to get the latest and most complete predictions, visit Heavens Above <https://tinyurl.com/y5yt22ch>

February 2 is Groundhog Day, and is a cross-quarter day marking the middle of Winter. Whether Punxsutawney Phil sees his shadow, or not, we still have about six weeks left. We've mostly lost our planets to the predawn sky, but you should still be able to catch sight of Jupiter with a very thin crescent Moon to the left of it at sunset tonight.

On February 8, look for the Lunar X along the terminator from moonrise at 11:13 AM PST until a little past Noon. This figure is formed by the illuminated intersecting mountainous rims of craters as dawn breaks at their location.

On the morning of February 12, Venus will be at its maximum illuminated extent in the predawn sky.

From February 18 through March 3, the Moon will be absent from the western sky at dusk, and the angle of the ecliptic with the horizon will make it an ideal period to look for the large pyramid of Zodiacal Light in the west about an hour after

sunset. This is light scattered by dust particles in orbit between the Earth and Jupiter. The dust comes from comets and asteroid collisions, and a lot of it may have originated on Mars, or maybe its two small dusty moons, although the exact mechanism hasn't been figured out yet.

The Winter Circle of stars centered on Betelgeuse is prominent on February evenings. This is the biggest assemblage of bright stars you'll see all year long. The perimeter of circle is marked by Rigel, Aldebaran, Capella, Castor, Pollux, Procyon, and Sirius. It's also the start of open cluster season, with beauties like the Pleiades, the Fleades (M41, in Canis Major), the Double Cluster, M35, and NGC 457 moving into prime viewing position.

FROM THE PRESIDENT

Jerry Wilson

Why L2? The long delayed JWST is now fully unfolded and is now a telescope. Well, almost. It is currently aligning the mirror segments to form a single high performance optical surface and it is slowly cooling its detector package to the low temperatures needed for far-IR operation. These will be completed by the time it reaches its station at Earth's L2 Lagrange point.

But why is L2 the desired operational station? Well, the idea is to have the Earth permanently between JWST and the Sun. Not so much to put it in the Earth's shadow (the Earth's umbra doesn't reach that far), but to keep all the nearby sources of IR radiation always in one place and blocked by the heat shield. To do this the telescope must fly in formation with the Earth in its orbit around the sun.

Putting a satellite in a nearly circular orbit at a given distance from the sun means there is a very small envelope of sideways speeds that define the desired orbit. A second satellite in a higher orbit will take longer to traverse its orbit so that the two cannot fly in formation. The lower orbiting satellite will move more quickly around its orbit and pull ahead. They will not stay together.

To get them to fly in formation means they need to have the same orbital period. In other words, the upper satellite needs to feel a higher gravitational field than if it were only orbiting the Sun. L2 experiences that extra gravitational pull to define a faster orbit so even though it's on station a million miles farther from the Sun than the Earth, it will have the same orbital period as the Earth and therefore flies in formation. At L2 the gravitational pull of the Earth

and the Sun are equal and add to the stronger field needed.

There are five Lagrange points around Earth. Only L2 allows JWST to hide all the local hot objects behind its heat shield.



“Eat your heart out, Colin. Only one ticket left to sing in the Karaoke Kontest after tonight’s meeting.” Photo credit: Tom Totton.

ARTS CORNER

The Artist in the Sky
Suzanne Spillman

The artist in the sky
has canvases of many
colors to choose from

Azure and cobalt blue
pewter and steel gray
vermilion, magenta, and crimson red

She has mastered her techniques
showing a flair for
wispy strokes
and backlighting

Sometimes her mood is whimsical
often foreboding
changing the dispositions
of all who exist beneath
her daily masterpieces

If we are lucky
we may happen upon
a view of her drop cloth
a shimmering reflection
on a placid lake

Or a meadow
covered with splashes
from her palette
of poppies and lupine
and petals of every color

At days end
she sprinkles the sky
with glitter
and nightly adds
a highlight of moonglow

When she's feeling devilish
she sprays her canvas with
a meteor shower
or a concert of lightning and thunder

Caring not what the critics have to say



"Jeez. Where did all these ants come from?" Photo credit: Tom Totton.



"Boy. I hope no one's looking." Photo credit: Tom Totton.

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VACANT

AU **AstroNews**, the monthly publication of the **Astronomical Unit (AU)**, is mailed to the AU membership. For publishing consideration for the next month, submit astronomical items by the 20th of the current month!

AU annual membership rates:
Single = \$20 Family = \$25

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February 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2 GROUNDHOG DAY	3	4 SBAU ZOOM MEETING	5
6	7	8 FQ MOON	9	10	11	12 SBAU ZOOM PLANNING MEETING
13	14	15	16 FULL MOON	17	18	19
20	21	22	23 LQ MOON	24	25	26
27	28					