

New Braunfels Astronomy Club

BECAUSE IT'S OUT THERE

February 17th, 2022

Meeting 269

Agenda

-
- Open meeting and introduce new members (get names, email)
 - Interesting observations, experiences
 - Show and tell
 - What's in our sky this month? **Newsletter + member input**
 - What's going on – news, events, outreach.
 - Main feature(s)
 -
 - Open for discussion
 - Feedback and close the meeting

Coming up: **OUR 270th** ASTRONOMY CLUB MEETING

March 17th, 2022, from 6 - 8 pm

Bosses Pizza on Loop 337

astronomynbtx.org Email: info@astronomynbtx.org

 Astronomy Friends New Braunfels..... facebook.com/groups/354953995432792/
 Comal County Friends of the Night Sky..... facebook.com/groups/166098014710276/
comaldarksky.org/ Email: info@comaldarksky.org



New Braunfels Astronomy Club

BECAUSE IT'S OUT THERE

Larry's Celestial Calendar & Newsletter

by Eric Erickson

295th Edition

Volume 25, Number 2

February 17th to March 17th, 2022

NBAC's 25th Year!

NBAC Observing Calendar

My Celestial Pick:

Astrophotography

Watch the ISS

Solar System Happenings

Lagniappe

Going Back to Venus

SUN MON TUE WED THU FRI SAT

Feb 17 18 19

Cover Photo: Venus is a hot planet. Too hot for life at the surface, but, maybe in some cloud layers? Several missions are planned to take a closer look. ©earthsky.org

NBAC Meeting
6:00pm
Bosses Pizza on
Loop 337

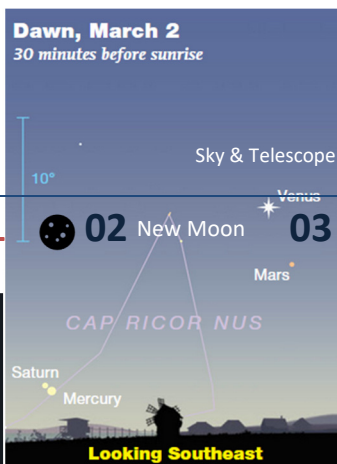
Dawn, Feb 26-27
45 minutes before sunrise

Sky & Telescope

20 21 22 Last Quarter 23 24 25 26



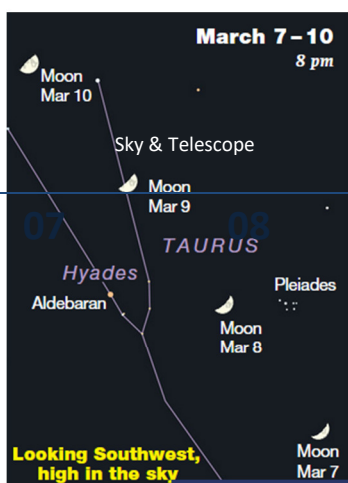
27 28 Mar 01 02 New Moon 03 04 05



06 Astronomy Magazine ARIES Uranus Moon 07 08 TAURUS Pleiades Aldebaran Moon Mar 8 Moon Mar 7 09 10 First Quarter 11 12



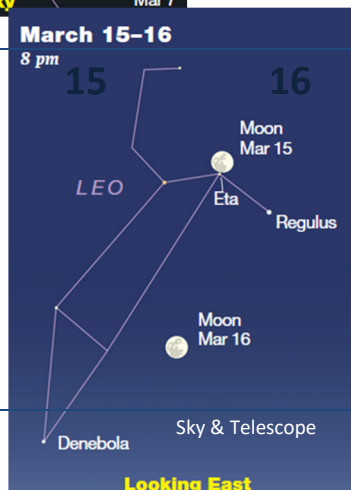
West 1 hour after
sunset



13 14 15 16 17

**Daylight
Savings
Time Starts
2:00 AM**

NBAC Meeting
6:00pm
Bosses Pizza on
Loop 337



Solar System Happenings

- ✚ **Mercury** is a morning planet. Catch it before sunrise as it joins with Venus, Mars, Saturn, and the Moon at various times.
- ✚ **Venus** is a morning planet, shining brilliantly in the east before sunrise. See Mercury.
- ✚ **Earth** still spins, and we are still here to marvel at it all.



Zodiacal Light: Toward the end of winter and into spring zodiacal light is visible in the western sky. Get away from outdoor lighting and tall trees. Look in the west after sunset for a triangle shaped glow coming from the horizon. Zodiacal light is sunlight reflected by interplanetary light along the ecliptic. In spring zodiacal light points into the Milky Way for a double pleasure and photo opp.

Best ISS viewing for New Braunfels (works for Canyon Lake too) -From [Heavens Above](#)

Date	Start Time	Start Loc	Max Alt °	End Loc	Note
02/17	06:10	SW	61	NE	Swings by Vega and Deneb
03/07	06:17	N	12	E	Very low, passes through Cassiopeia
03/09	06:15	NW	30	ESE	Passes between Mercury and Saturn
03/11	06:15	NW	68	SE	
03/12	05:28	NNW	54	SE	Exits Earth's shadow 05:28 and Passes very close to Venus and Mars
03/15	20:38	SW	61	ENE	Enters Earth's shadow 20:44:12
03/17	20:38	WSW	34	NNE	Enters Earth's shadow just before reaching the horizon.

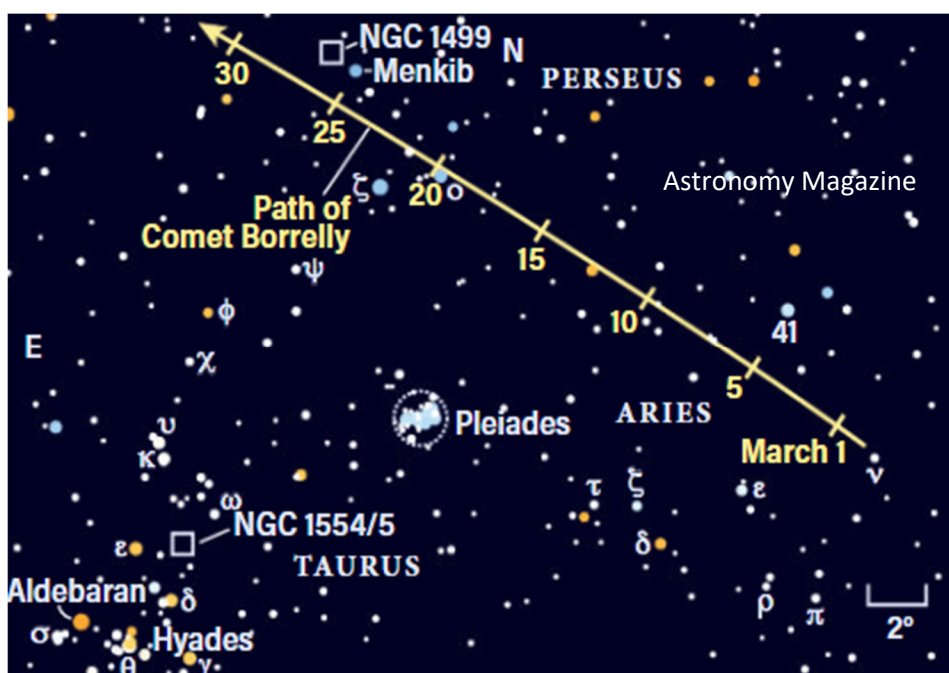
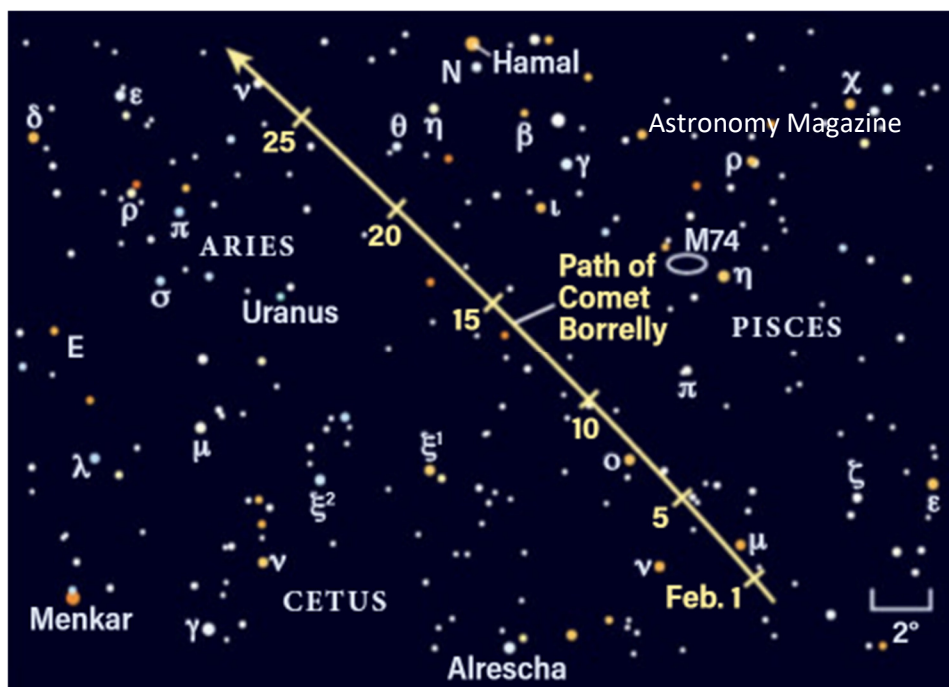
- ✚ **The Moon** dances with planets and stars
- ✚ **Mars** is a morning planet, joining with Venus, Mars, Mercury, Saturn, and the Moon at various times.
- ✚ **Jupiter** is heading for its March 5 conjunction with the Sun and not visible
- ✚ **Saturn** is in conjunction with the Sun until the end of February. It shows itself low in the sky on March 2 with Venus, Mars, and Mercury, about 30 minutes before sunrise.

✚ **Uranus** is in southern Aries. On March 6th it gets within 0.5° of the crescent Moon about an hour after sunset. At magnitude 5.8 it is catchable in binoculars. Look for a fairly bright greenish gray “star”.

✚ **Neptune** is in eastern Aquarius, magnitude 7.8 and visible in binoculars, a bright blue “star”. It sets about 3 hours after sunset and is heading for conjunction with the Sun on March 13.

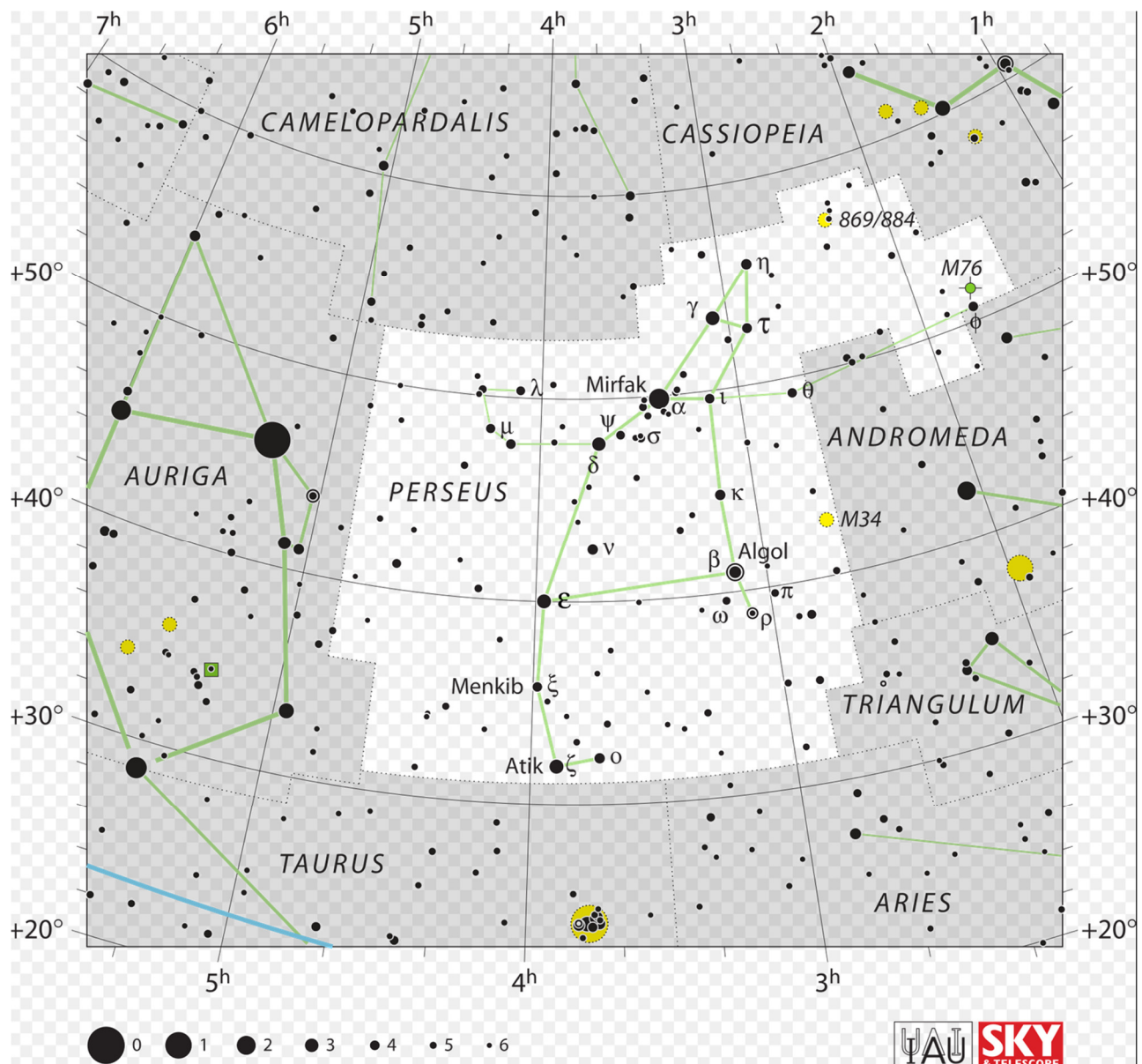
✚ **Comet(s)**

- Periodic comet 19P/Borrelly was discovered by French astronomer Alphonse Borrelly on December 28, 1904. Visually a challenge for 4” scopes, it should produce a nice image with stacked short exposures.



My Celestial Pick: Perseus

Tangled in a web of mythical intrigue, Perseus comes out a hero but still stuck between his love Andromeda and her vain mother, queen Cassiopeia. So the story goes, Perseus is sent to kill Medusa the Gorgon...yeah, the winged chick with venomous snakes for hair, who turned to stone all who gazed into her eyes. He uses the old trick of lulling her to sleep, then chopping off her head. In the meantime Cassiopeia has ticked off Poseidon for claiming she and her daughter Andromeda were more beautiful than sea god Nereus's daughters (Nereids), all fifty of them! What can the ruler of all sea gods do? Poseidon sends Cetus, his pet sea monster to destroy Cassiopeia's country, Ethiopia! Rather than have her queendom destroyed Cassiopeia enlists her husband (and king by the way) Cepheus to consult an oracle. The oracle says they have to chain Andromeda to rocks at the sea shore so Cetus can kill her. That's right folks, let's sacrifice the innocent Andromeda. Along comes Perseus, convenient. He kills Cetus, frees Andromeda, falls in love and marries her. Poseidon is miffed. He sends Cassiopeia into the heavens, where she constantly revolves around the north star Polaris. I guess his wrath results in collateral damage as Perseus, Andromeda, and Cepheus all end up in the heavens.



One of my favorite objects, the Double Cluster (open clusters NGC 869 & 884) is located in northwestern Perseus. Other fun objects include open cluster M34, planetary nebula M76 and famous variable star Algol (β Persei). Algol varies in apparent magnitude from 3.5 to 2.3 over 2.867 days and then back to 3.5.

Imagining Imaging: Platform for club imagers...images and imagers needed!

Lagniappe

Venus is hot, with surface temperatures nearing 900 degrees Fahrenheit, so it's not exactly a candidate for vacationing families. But, in recent years Venus has become of great interest among astrobiologists and astronomers because it might harbor life. Right, how is life going to make it in such a hostile environment? Its 97% CO₂ atmosphere produces pressures equivalent to over ½ mile deep in our ocean. Above its CO₂ atmosphere is a cloud deck composed of sulfuric acid and ferric chloride. Both very nasty and corrosive. The former Soviet Union's Venera landers experienced Venus's wrath, the longest lasting less than two hours before falling victim.

In recent years some attention was given to the apparent presence of phosphine gas in the upper atmosphere. Phosphine is a byproduct of anaerobic organism metabolism, and 97% CO₂ is anaerobic, so this discovery got everyone excited about the possibility of life in Venus's clouds. Additional research has shown that it is not phosphine. Nevertheless, conditions might exist in those CO₂ clouds, maybe even in the sulfuric acid clouds, that are friendly to extremophile lifeforms. While toxic, the clouds are much cooler than the surface.

Russia has announced plans to send a spacecraft to Venus in 2029, called Venera-D. It will combine an orbiter to map the surface and a lander to study surface atmospheric and geological conditions. They are designing the lander to perform for at least 24 hours. Good luck!

India is planning a launch of its Shukrayaan-1 orbiter to study Venus's atmosphere and map its surface.

The UAE plans to send a probe to Venus as early as 2028. It will study Venus's atmosphere and then get a gravity assist for its other mission, to the asteroid belt.

The ESA announced a collaboration with NASA on a mission to Venus called EnVision. It will be an orbiter to study atmospheric composition, the planet's interior, and radar map the surface.

The United States has announced plans to send two missions to Venus by 2030. VERITAS (Venus Emissivity, Radio Science, InSAR, Topography, and Spectroscopy) will map Venus's surface in 3D, look for recent volcanic activity and geologic processes, and measure its gravitational field. DAVINCI (Deep Atmosphere Venus Investigation of Noble gases, Chemistry, and Imaging) will combine an orbiter and a probe released into Venus's atmosphere, descending for an hour, sampling its chemistry and taking high resolution images.

We're going back to Venus baby!