# New Braunfels Astronomy Club BECAUSE IT'S QUIT THERE

June 16<sup>th</sup>, 2022 Meeting 273

Agenda

- > Open meeting and introduce new members (get names, email)
- Club Business
- > Interesting observations, experiences
- Show and tell
- > Current news and what's in our sky this month: Member input + Newsletter
- > Events, outreach
  - Report on the 05/21/22-Sun Party at TPML
  - JBSA/NBAC opportunities
    - Report on the 06/04/22-Star Gazing event at Joint Base San Antonio-Canyon Lake
    - Next JBSA Star Gazing event 06/25/22
- Main feature(s)
  - Bob Keyser on Newsweek's article about other potential civilizations in the Milky Way

Notes:

Coming up: OUR 274th ASTRONOMY CLUB MEETING

July 21st, 2022, from 6 - 8 pm

**Bosses Pizza on Loop 337** 

astronomynbtx.org Email: info@astronomynbtx.org

facebook.com/groups/354953995432792/
fcomal County Friends of the Night Sky..... facebook.com/groups/166098014710276/

comaldarksky.org/ Email: info@comaldarksky.org

# Larry's Celestial Calendar & Newsletter

New
Braunfels
Astronomy
Club

299th Edition

Volume 25, Number 6

June 16th to July 21st, 2022

\*NBAC's 25th Year!\*

**NBAC Observing Calendar** 

**Solar System Happenings** 

Watch the ISS

**My Celestial Pick** 

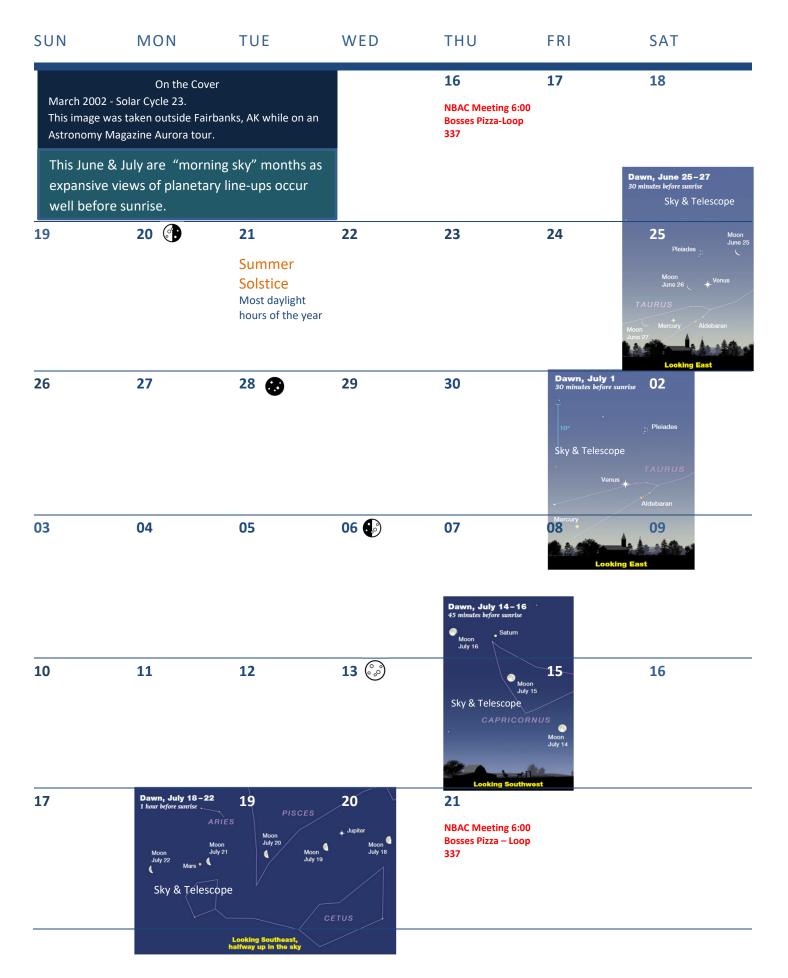
**Astrophotography** 

Lagniappe

Cover Story> Aurorae

©Eric Erickson

## **JUNE/JULY 2022**



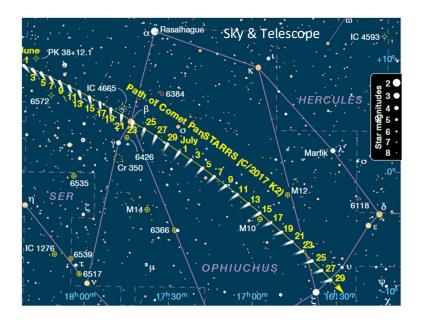
#### **Solar System Happenings**

- ♣ Mercury is a morning planet, joining the other planets in a line-up as the eastern anchor.
  It rises later and later in the morning as July progresses and gets lost in the Sun's glare.
- Venus is bright in the eastern morning sky, posing with the other planets.
- ♣ Earth still spins, and we are still here to marvel at it all.

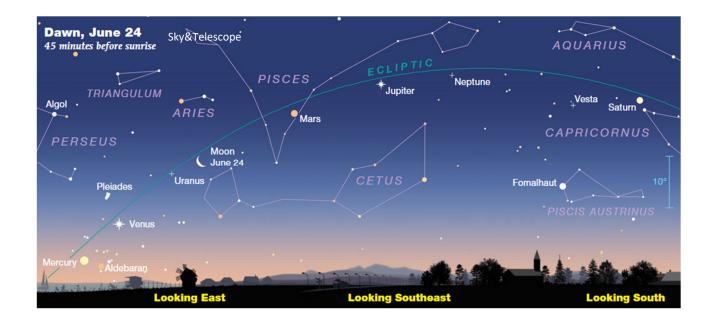
  Best ISS viewing for New Braunfels (works for Canyon Lake too) -From Heavens Above

Date	Start Time	Start Loc	Max Alt °	End Loc	Note
06/21	05:36	S	25	ENE	VERY CLOSE TO VENUS!
07/11	05:36	NNW	15	Е	VERY CLOSE TO VENUS!
07/11	22:15	SW	70	NE	
07/12	21:26	SSW	52	NE	Close to Albireo in Cygnus
07/13	05:36	NW	42	ESE	Between Venus and Mars, close to the Pleiades
07/13	22:15	W	21	NNE	
07/14	21:25	WSW	38	NE	Through the Big Dipper pointers and close to Polaris
07/15	05:35	NW	47	SSE	5 degrees from Saturn

- ♣ The Moon dances with planets and stars.
- Mars is a morning planet in the east-southeast, joining the other planets.
- ♣ Jupiter is a east-southeastern morning planet, teaming up with other planets.
- Saturn is in the pre-dawn sky anchoring the south-southeastern end of this planetary line-up.
- Uranus is a morning planet, positioned between Venus and Mars use binoculars or telescope.
- ♣ Neptune is a morning planet in the south, between Jupiter and Saturn use binoculars or telescope.
- Comet(s)
  - O PanSTARRS (C/2017 K2) is from the Oort Cloud. Mag 8+



#### Special Event! Planets in a Line-up



Starting in June, six planets (four are naked eye) line up! You will need binoculars or a telescope to see Uranus and Neptune. After June 24 Mercury starts rising later and gets lost in the Sun's glare around July 8

# Cover Story Aurorae – Light Show in the Sky

Have you experienced an aurora? If you have, you know they can be better than the best laser lightshow ever! Let me give a brief description from one March 2002 experience in Alaska.

It's around 2 am in a parking lot just outside Fairbanks. Our group has been hanging out there for about an hour. A little spot of light appears near the horizon. Nothing else going on, sky is clear, and oh, it's cold. I turn away to chat with another aurora hopeful and she exclaims, oh look! I turn back and see the spot has morphed into a short, thick rope. It is moving slowly but moving, and soon the rope becomes a greenish S-shaped nebula, now extending about a quarter of the sky. The nebula expands into a fat, glowing, meandering greenish river in the sky, with a curtain of waterfall coming off one side. I hear exclamations of amazement...coming from me!

Our Sun has an activity cycle that spans approximately 11 years from maximum to minimum and back to maximum. Some of the attributes of a solar maximum are frequent sunspots, flares, and coronal mass ejections (CME). When our Sun is in an active mode, especially during solar maximum, the likelihood of witnessing a spectacular aurora is very good (for folks living way north of Texas). A strong solar outburst (flare or CME) in Earth's direction can result in visible aurorae farther south. 2002 was a good year, being near the peak of solar cycle 23. Solar cycle 24 was a bit of a flop. In fact, cycle 24 had the fewest sunspots since cycles 12 to 15 (1878-1923).

There was concern that the Sun might be headed toward an extended solar minimum. If this happened, there would still be aurorae, but with lower intensity. Another affect might be on Earth's climate. Two previous long-term solar minimums, Maunder (1645-1715) and Dalton (1790-1820) coincided with lower planetary temperatures and crop failures in northern latitudes, but there is no conclusive evidence they caused it.

Aurorae are caused by the interaction of solar wind (free electrons and protons) and magnetospheric plasma with high altitude atmospheric oxygen and nitrogen, 60-180 miles up. The interactions cause excitation of atomic oxygen (O) and molecular nitrogen ( $N_2$ ). Then, as they return to their ground state a photon (light) is emitted. The prevalent color is green (our eyes are conveniently most sensitive to green), with red, blue, pink, purple, even yellow colors occurring. Complex factors determine which atmospheric component produces a given color.

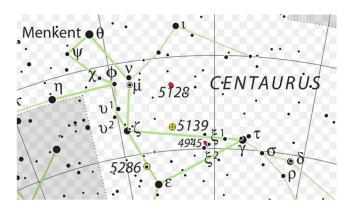
This activity is focused along Earth's magnetic field lines and is most intense in a ring between 10 and 20 degrees from each magnetic pole. In the north, it's called Aurora Borealis, in the south it is called Aurora Australis.

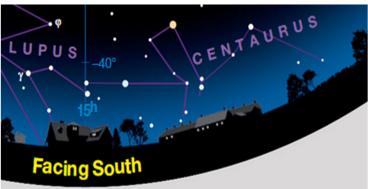
For a long time, it was thought that northern and southern aurorae were mirror images of each other. NASA took simultaneous videos of both in 2005, showing they are quite different.

-Eric Erickson

## My Celestial Pick: NGC 5139/Omega (ω) Centauri

OK, this is also a Celestial Challenge! We are just far enough south to catch Omega Centauri above the horizon in our south-southwestern sky. A clear view of the southern horizon is crucial, and getting to one will pay off with a view of arguably the most impressive globular cluster in our sky. After 9pm use binoculars to scan from south to south-southwest above the horizon. Catch it soon, it's getting lower and lower.





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

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March 2002, Solar Cycle 23, Fairbanks, AK

This is the original image of my cover photo, cropped for the cover. I was in my later years with analog photography. Moved to digital three years later.

Tripod mounted Minolta SRT 101, Tokina ATX 24-40mm f2.8 @24mm/ f2.8, Fuji color 800, 30 seconds. I used this fully manual camera instead of my automated Minolta X-700 due to the very cold temperature that would have quickly frozen the X-700 batteries and possibly the electro-magnetic shutter motor, making the automatic camera essentially useless.

Negatives scanned with Plustek Opticfilm 7600i scanner/Hamrick Vuescan software. Saved as JPEG for small file size use.

Sharpness/contrast/vibrance/RBG curves adjustments in Photoshop

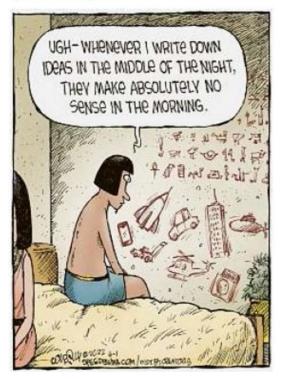


#### Lagniappe

#### **CARPE DIEM**



#### **SPEED BUMP**



#### THE BRILLIANT MIND OF EDISON LEE



Gramps just mistakenly received a credit card with a \$2 billion limit!