

New Braunfels Astronomy Club

BECAUSE IT'S OUT THERE

May 19th, 2022
Meeting 272

Agenda

- Open meeting and introduce new members (get names, email)
- Old Club Business:
- New Club Business (events, outreach): **Report from U-bar-U Ranch, Sun Party 05/21**
- Interesting observations, experiences: **05/15 Lunar Eclipse**
- Show and tell: **Images of the 05/15 eclipse? DIY Illuminator for Polar Finder-Charlie Kahn**
- Current news and what's in our sky this month? Member input + Newsletter
- Main feature(s): **Solar Weather** (Larry Wells), **Star-Hopping** (Dennis Coyne)
- Discussion, feedback and close the meeting

Notes:

Coming up: **OUR 273rd ASTRONOMY CLUB MEETING**
June 16th, 2022, from 6 - 8 pm **Bosses Pizza on Loop 337**

astronomynbt.org Email: info@astronomynbt.org

 [Astronomy Friends New Braunfels.....](https://www.facebook.com/groups/354953995432792/) [facebook.com/groups/354953995432792/](https://www.facebook.com/groups/354953995432792/)

 [Comal County Friends of the Night Sky.....](https://www.facebook.com/groups/166098014710276/) [facebook.com/groups/166098014710276/](https://www.facebook.com/groups/166098014710276/)
comaldarksky.org/ Email: info@comaldarksky.org

Larry's Celestial Calendar & Newsletter

by Eric Erickson

New

Braunfels

Astronomy

Club

BECAUSE IT'S OUT THERE

298th Edition

Volume 25, Number 5

May 19th to June 16th, 2022

NBAC's 25th Year!

NBAC Observing Calendar

Solar System Happenings

Watch the ISS

Cover Story

My Celestial Pick

Astrophotography

Lagniappe

Cover Story> Why do Stars Cluster?

MAY/JUNE 2022

SUNMONTUEWEDTHUFRI SAT

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On the Cover
Star clusters come in two flavors-open & globular

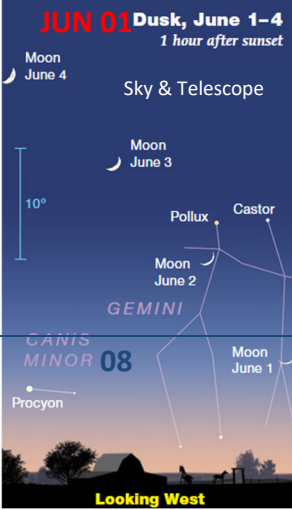
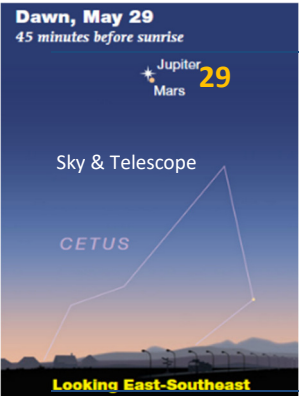
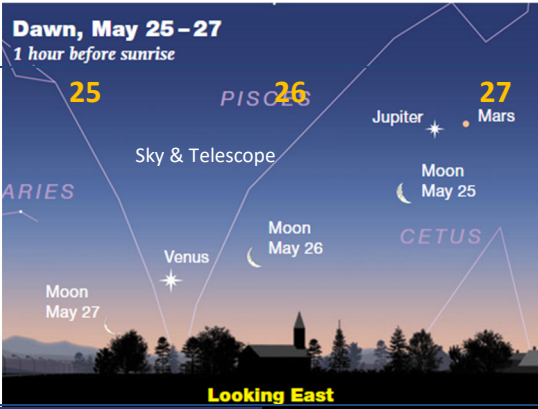
NGC 869 & 884 – Brent Newton
47 Tucane – Roberto Colombari
M45 – Jan B Timmermans

NBAC Meeting 6:00
Bosses Pizza-Loop
337

Mercury at inferior
conjunction

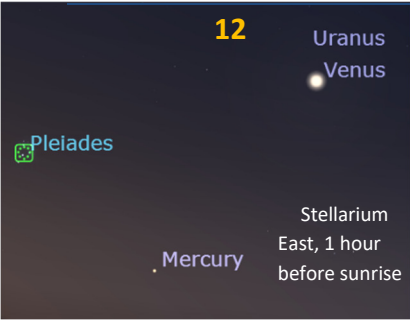
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Last quarter Moon is
5° below Saturn –
before sunrise



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NBAC Meeting 6:00
Bosses Pizza – Loop
337

Solar System Happenings

- ✚ **Mercury** enters inferior conjunction with the Sun on May 21st and out of reach until June 7th or so
- ✚ **Venus** is bright and getting low in the morning, posing with Jupiter, Mars, Saturn, Mercury, and the Moon
- ✚ **Earth** still spins, and we are still here to marvel at it all



Zodiacal Light: 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.

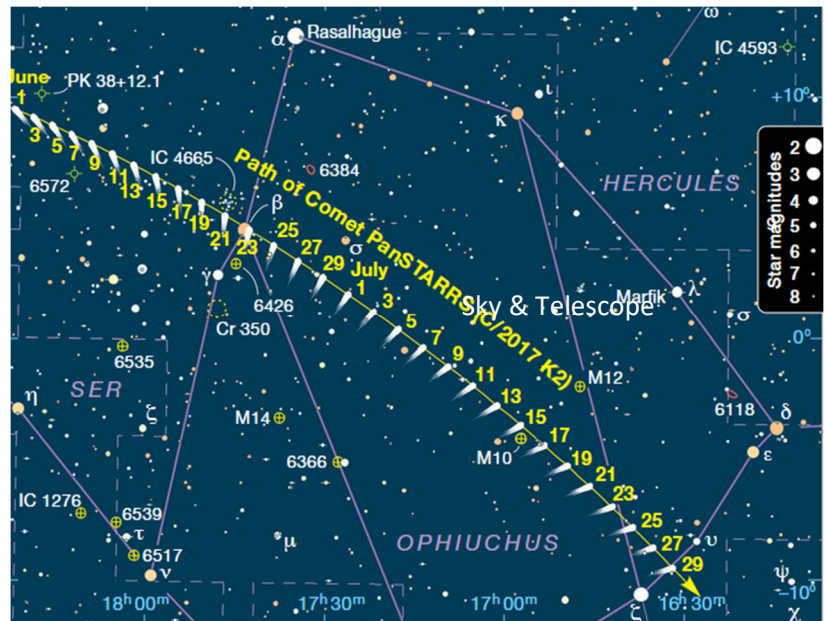
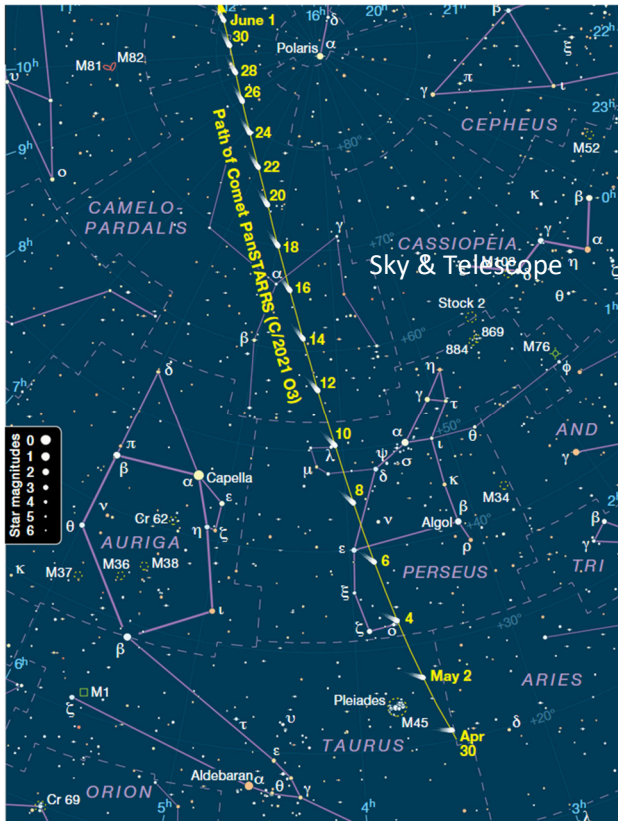
Best ISS viewing for New Braunfels (works for Canyon Lake too) -From [Heavens Above](#)

Date	Start Time	Start Loc	Max Alt °	End Loc	Note
05/30	21:41	NNW	10	ENE	Enters Earth's shadow at 21:45:24
06/01	21:39	NNW	26	ENE	Enters Earth's shadow at 21:44:56
06/02	22:27	NW	34	WSW	Very close to Castor. Enters Earth's shadow at 22:31:15
06/03	21:39	NW	83	SE	Enters Earth's shadow at 21:44:43
06/05	21:39	WNW	20	S	Appears on course to eclipse γ Centauri. Enters Earth's shadow at 21:44:45

- ✚ **The Moon** dances with planets and stars
- ✚ **Mars** is a morning planet in the east, joining with Venus, Mars, Saturn, Jupiter, Mercury, and the Moon at various times. Mars and Neptune are only 33" apart on May 18th.
- ✚ **Jupiter** is a morning planet, teaming up with Venus, Mars, Saturn, Mercury, even the Moon.
- ✚ **Saturn** is in the pre-dawn eastern sky variously with Venus, Mars, Jupiter, Mercury, and the Moon.
- ✚ **Uranus** is in solar conjunction. It pops back as a morning planet, and is in conjunction with Venus and Mercury in early-mid June
- ✚ **Neptune** is past conjunction with the Sun and a morning planet in the east.

Comet(s)

- C/2021 O3 (PanSTARRS) a visitor from the Oort Cloud, disintegrated during its perihelion with the Sun. If you want, you can look for its remnants. Good luck!
- C/2017 K2 is a different story. Sort-of. It too appears to be from the Oort Cloud but unlike O3 it isn't expected to disintegrate. It appears to be a very active comet, so we'll see if it puts on a show.



Special Event! All Nine Planets in a Line-up



Cover Story

Why do Stars Cluster?

Remember school dances? Or perhaps you go to school dances now. Either way, as I recall, when not dancing everyone would tend to gather into clusters. Each cluster seemed composed of similar kids, or at least kids with similar interests.

Stars don't go to dances but they do tend to be clustered with other stars having similar characteristics. Why?

Do I need to say it? Yes, it's about gravity, but why are the stars so similar?

Most stars are born in molecular clouds such as M42, the Orion nebula. This hydrogen rich environment is vast, and gravity condenses the hydrogen into a bunch of stars at one time, like a litter, a big litter! This litter can be composed of dozens to a few thousand stars. These litters are called open clusters. Think Pleiades. Many of the newly born stars are massive enough to have relatively short lives (tens of millions of years), but most clusters also contain lower mass stars that will live long, like our Sun. The more massive stars tend to be so hot that they disperse much of the hydrogen used in forming nearby proto stars, resulting in more lower mass stars.

The cluster's young hot stars eventually blow off the immediate hydrogen cloud and the cluster is ready for action and viewing by us. Open clusters are weakly bound gravitationally so they drift apart after only a few hundred million years. Long ago our Sun was a star cluster member, but no more. Astronomers are still trying to figure out who the other members were...if they still exist.

Open clusters aren't the only clusters in town however, what about globular clusters?

Globular clusters are spherical collections of hundreds of thousands, even millions of stars...old, decrepit stars...way older than our Sun. They typically look like a spherical, speckled fuzzball in telescopes and in photos. So, why are they so big, and spherical? Oh, and why so old? How they formed is not understood, but some think they formed around the same time as galaxies, about 13 billion years ago, old! Molecular clouds are thought to have been way more extensive then, so the clusters formed were much larger, and denser. With so many stars packed together, their total gravitational attraction was sufficient to arrange them in a spherical shape. Neat thing, most large galaxies have hundreds to thousands of globular clusters, and they revolve around the halo of their galaxy, themselves grouped in a gigantic spherical formation!

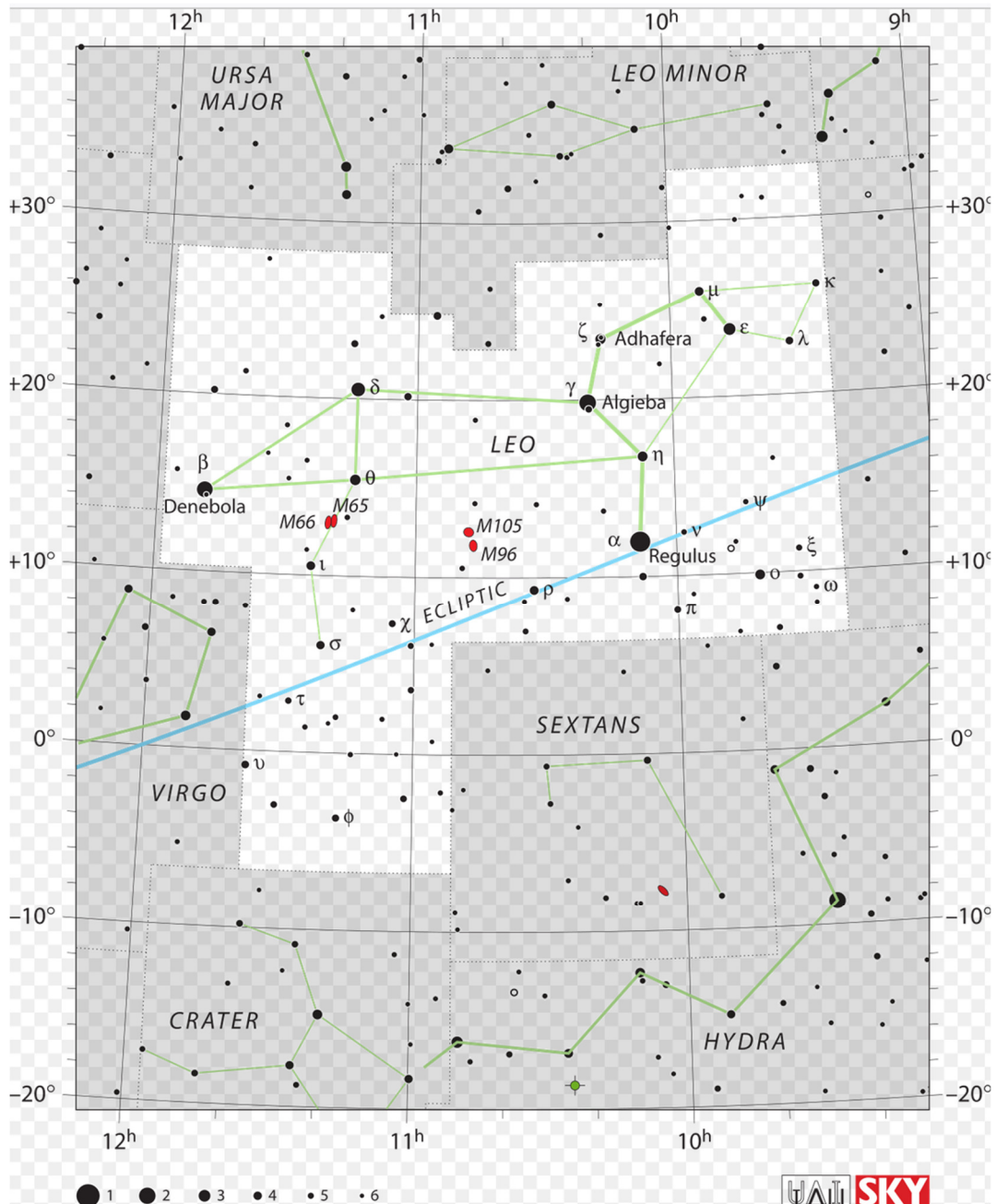
In 2005 astronomers discovered a variation on globular clusters they call Extended Globular Clusters. Bigger, but less dense.

Unlike kids at school dances (except for the rare quintuplets, sextuplets, etc.), stars are born in clusters. Some clusters evaporate – their members drift apart, some stay together. Kind of like people.

-Eric Erickson

My Celestial Pick: Leo

Astrologically speaking I'm a Leo. What to do with that? Nothing. Leo is Latin for lion and in Greek mythology Leo was the Nemean Lion, a vicious monster that terrorized everyone in Nemea. He was the offspring of Orthus, a two-headed guard dog and possibly the Chimera (an ambiguous female), Echidna (half woman, half snake), or Ceto (a primordial sea goddess). Jeeze, what a noble heritage! Anyway, Leo was killed by the demigod Heracles (Hercules) as his first of twelve "labors". The Greek and Roman writers sure liked to spice things up. Fortunately there are some good things to see in Leo, such as the Leo triplet, composed of M65, M66, and NGC 3628. M105 and M96 are also nice targets.



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



Total Lunar Eclipse 05/15/22; 10:42pm CDT

Meade 102ed f9, TS 2" field flattener, Losmandy G11, Gemini II, Moonlight focuser with HR Stepper Motor
Canon 6DII, Back Yard EOS, ISO 1600, 1.0 sec @f9

Processing: Photoshop 2022. Crop, highlight-shadow, contrast, sharpness

That's double star S672 just below the Moon and HD 138413 to the Moon's upper left. They both were occulted by the Moon later.

This is the only still I managed to find after hours of taking "exposures". Got some brief video clips but no other stills. Trying to figure that one out = lesson = practice before the big day!

Lagniappe

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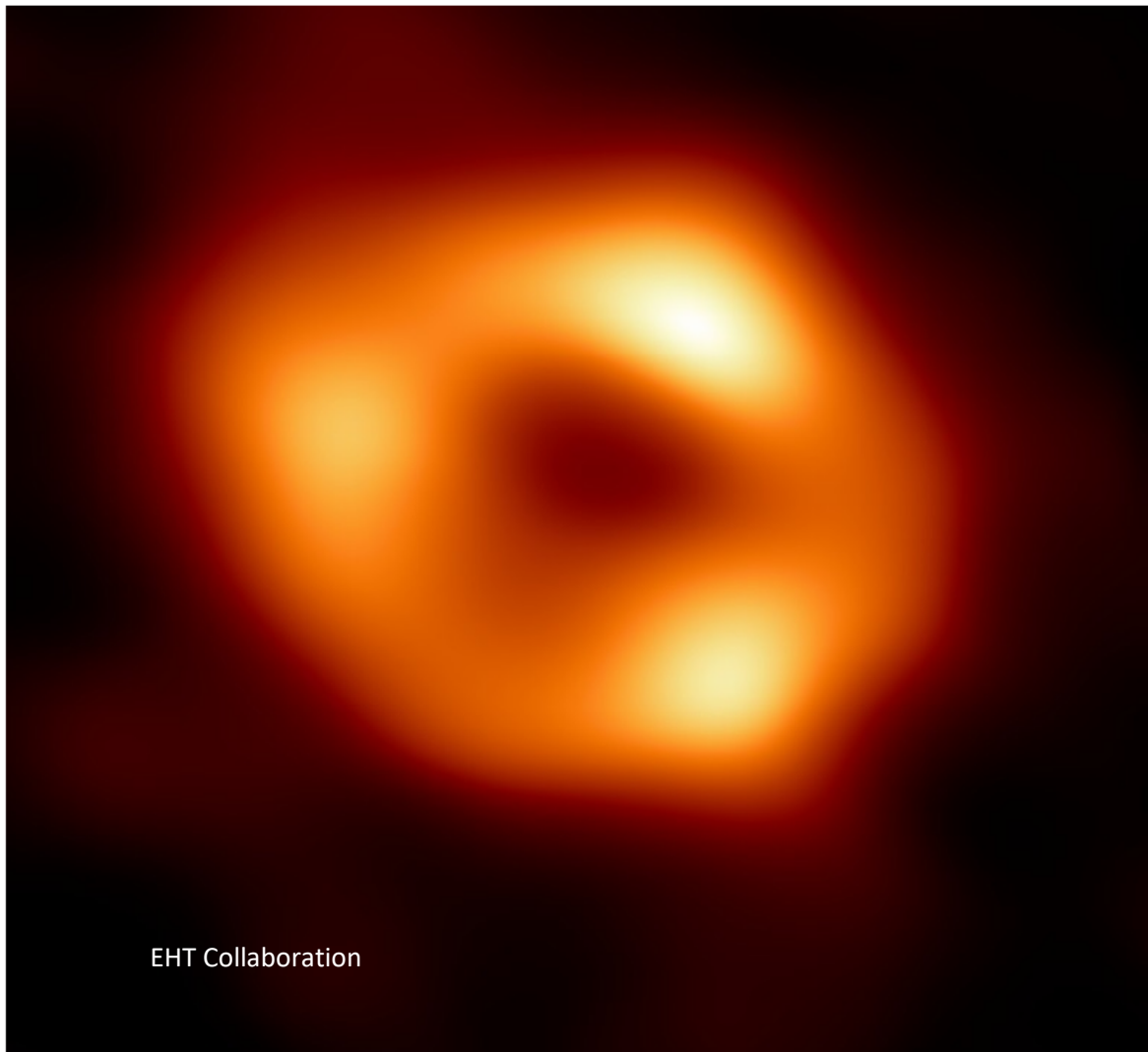


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Portrait of Sagittarius A* in radio frequencies. The Event Horizon Telescope Collaboration got the shot – of our Milky Way’s super-massive black hole, or the stuff, including stars, orbiting it and glowing. The EHT is a consortium of radio telescopes strategically picked for their own wide-base and great distance from each other. Carefully combining the signals each receives, they effectively create a radio telescope nearly the diameter of Earth. That’s big enough to image stuff like distant massive black holes.

Now, if this image had been put on social media as evidence of extraterrestrials visiting us, or of paranormal phenomena...well.