

New Braunfels Astronomy Club

Texas, USA

September 20th, 2018

232nd Meeting

Larry's

Celestial Calendar & Newsletter

September 20th, 2018 to October 18th, 2018 255th Edition

Mars, Jupiter, Saturn in the Evening Sky
Goodbye Evening Venus
Comets and an Asteroid
Globular Clusters Galore

Observer's Highlight Calendar for Clear Skies

Month Date Time/Direction Event

Month	Date	Time/Direction	Event
Sep	22	8:54 pm CDT	Autumnal Equinox begins – Fall has fell
Sep	24	9:52 pm CDT	Full Moon
Oct	2	4:54 am CDT	Last Quarter Moon
Oct	4	Pre-dawn; east-northeast	A thin waning crescent Moon gets close to M44 (Beehive Cluster) in Cancer
Oct	8	10:47 pm CDT	New Moon
Oct	8/9	After 8:30 pm; northwest	Draconid meteor shower – we are smacking into the dust trail from previous solar visits by comet 21P/Giacobini-Zinner. See below
Oct	11	Dusk; southwest	A thin waxing crescent Moon is above bright Jupiter
Oct	14	Dusk; southwest	A growing crescent Moon is Just east of bright Saturn
Oct	16	1:02 pm CDT	First Quarter Moon
Oct	17-18	Dusk; south-southeast	A gibbous Moon slides past Mars in Capricornus

Solar System Roundup

- ✚ **Mercury** reaches superior conjunction with the Sun on September 20th and isn't visible until the end of October
- ✚ **Venus** is sinking into the west but still brilliant.
- ✚ **Earth** still spins, and we are still here to marvel at the wonders of our universe.
- ✚ **The Moon** slides through the southern/western constellations and makes a few nice parings with Saturn, Jupiter, and Mars
- ✚ **Mars** is still brilliant but fading as it heads away from Earth. The sand storm that obscured its surface for weeks has calmed and there is some surface visibility
- ✚ **Asteroid(s)** Vesta is in Sagittarius and on Sept 21st just south of M8, then between NGCs 6544 and 6553 on the 24th. In October it slips south of M28 on the 5th, then NGC 6638 on the 9th
- ✚ **Jupiter** is a beauty! It's in Libra, getting closer to the western horizon. Catch it while it's still a decent view.
- ✚ **Saturn** is above the Sagittarius Teapot and gorgeous in the eyepiece
- ✚ **Uranus** rises after midnight, magnitude 5.7, and is in Pisces. Look for a small, pale blue-greenish disk near Omicron (o)
- ✚ **Neptune** rises around 10pm, mag 7.8, in Aquarius between Lambda (λ) and Phi (φ)
- ✚ **Comet(s)**
 - 21P/Giacobini-Zinner is a short period (6.6 year) comet, magnitude 7, in Gemini heading into Monoceros, then Canis Major. On October 7/8 it shares the line of sight with M50. Good photo-op?
 - 38P/Stephan-Oterma is a periodic (37.96 years) comet currently in our early morning sky around the head of Orion. It is heading toward Gemini and will be below Gemini's feet by October 18th. It's expected to reach magnitude 9, dim but within reach of binoculars and telescopes.
- ✚ **Convenient ISS Viewing for New Braunfels (works for Canyon Lake too)**

Date	Start Time	Start Loc	Max Altitude °	Travel
09/20	21:12:07	WSW	15	NNE
09/21	20:19:57	SW	76	NE
09/23	20:12:45	SW	25	NNE
10/12	19:53:11	NW	59	ESE
10/13	20:37:30	WNW	24	S
10/14	19:45:03	NW	59	SE
10/16	19:37:14	WNW	19	SSE

My Observing Pick: Globular Clusters

At a currently estimated average of age of 12.7 billion years old, globular clusters appear to be among the oldest known visible objects in our universe. But wait, recent computer modeling research has lowered the age to 9 billion years, but this has not been verified yet. They are unique in their shape, and location in the galactic halo, orbiting the galactic core along with everything else. Globular clusters are common and appear to belong to all galaxy types. Our Milky Way has over 150 known globular clusters.

The name Globular comes from the Latin word *globulus* – a small sphere. How and where globular clusters formed is not understood but it appears they all formed around the same time. We know their stars composition well, low metal old stars. Globular clusters are classified by the concentration of stars in their cores, known as the Shapley-Sawyer Concentration Class. Clusters with the highest concentration of stars in their cores are termed Class I, the lowest concentration termed class XII. Distances between stars in a globular cluster range from 1 light year...to the distance between Neptune and the Sun. This concentration of stars makes planetary systems a short-lived proposition. Too much disruptive gravity. In any event, if you were on a planet orbiting a star in the core, your night sky would be nothing short of amazing. It would be a scintillating mass of very bright stars. No need for the International Dark Sky Association, there would be no dark sky...period!

I wonder, will all the stars in globular clusters start to develop into red giants at the same time? What will that look like?

There are a bunch of globular clusters to look at in the sky currently. Here are some...

Name	Object Type	Location	Description
M15		Pegasus, NW of ϵ	
M2		Aquarius, NW of β	
M30		Capricornus, SE of ζ	
M22		Sagittarius, NE of λ	
M28		Sagittarius, NW of λ	
M69		Sagittarius, NE of ϵ	
M70		Sagittarius, between ϵ and ζ	
M54		Sagittarius, SW of ϵ	
M13		Hercules, between ζ and η	
M92		Hercules E of η	
M10		Ophiuchus NE of ζ	
M12		Ophiuchus between ζ and κ	

The Night Sky, an Endangered Species

In Isaac Asimov's novel *Foundation*, there's this fictional planet Trantor, located near the galaxy's center in the 12th millennium. That planet was completely developed and lit up all the time. No night skies.

Having lived in Houston for 30 years or so I felt the lack of this precious resource. Even 30 miles from downtown our neighborhood was plagued by severe light pollution. That's because light tends to follow people. We like to, think we need to light up our outdoor spaces. It looks good, feels safe too. So, at 30 miles from the city we were bathed in suburban glow. Our night sky was a pale gray.

Fast forward and now we live in Canyon Lake, Hill Country skies are still reasonably dark. For now. Just like the thousands before us, we moved here because it's wonderful. Just like the thousands before us we brought the need for outdoor lighting. As our numbers grow so does the infrastructure to manage us, to support our needs. That infrastructure includes stuff like restaurants, pubs, service stations, entertainment venues, and the roadways that get us to them. It all needs light for the night, to look good, feel safe.

But we don't have to be Houston, and fortunately it seems there is a desire among many people in the Hill Country to preserve our night sky resource. We are in good company; so far three Hill Country communities have been designated 'Dark Sky Communities' by the International Dark Sky Association (IDA). They are: Wimberly/Woodcreek, Horseshoe Bay, and Dripping Springs. In 2008 Bulverde adopted an ordinance specifying acceptable outdoor lighting and it helps. Pedernales Electric Coop has a night sky resolution. This is encouraging.

Another encouraging development: At their recent board of directors meeting, New Braunfels Utilities (NBU) passed a resolution in support of maintaining dark skies in their service area. Members from the Hill Country Alliance and New Braunfels Astronomy Club were present in a show of support for this resolution. NBU already has dark sky friendly specifications in place and plans to review them to keep current.

Where do we go from here? Each step is a step toward preserving a valuable natural resource. Valuable not in how it can be exploited for material use, but valuable for its ability to excite, sooth, inspire, mystify...you name it! A good night sky Rocks! Each of us can help by reducing our own light pollution. Take inventory of your outdoor lighting and make sure it's not sending light where it is not needed. Make especially sure your lighting doesn't send light upward, unless that light is completely blocked by whatever it's lighting.

Encourage your local government to adopt dark sky resolutions.

Don't know where to start? Contact the Hill Country Alliance: hillcountryalliance.org 512.263.9147

Opportunities for NBAC Reach out

- New Braunfels and Guadalupe Master Naturalists

The New Braunfels and Guadalupe Master naturalists do not have any lectures on the night sky. Astronomy is in their curriculum, but they have no one to present. They are looking for someone to present a 45-minute talk + 15 minute Q&A at one of their monthly meetings.

New Braunfels: lindheimermn@gmail.com

Guadalupe: txmn.org/guadalupe/

Coming up: **OUR 233rd** ASTRONOMY CLUB MEETING

Thursday, **October 18th**, 2018, from 7 – 9:00 p.m., held in the conference room of TJ's restaurant on Loop Road (337). Have dinner, snack, dessert, and/or a beverage if you like.

The New Braunfels Astronomy Club can be reached at www.astronomyntx.org

Eric Erickson ewandnl@yahoo.com