

New Braunfels Astronomy Club

February 18th, 2021

258th Meeting (Zoom 11)
(Agenda Below)

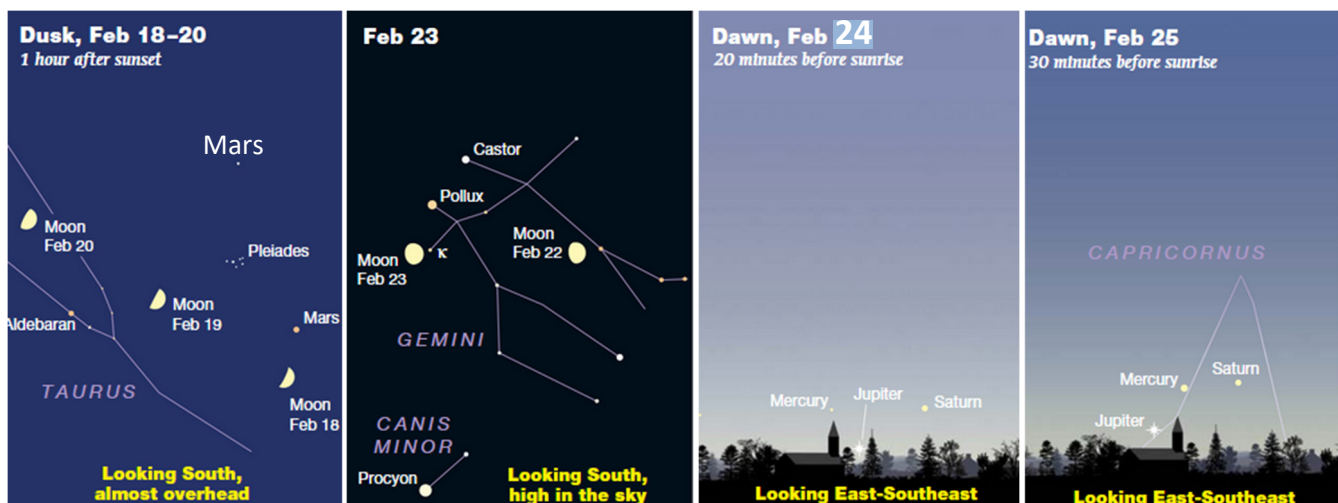
Larry's Celestial Calendar & Newsletter by Eric Erickson

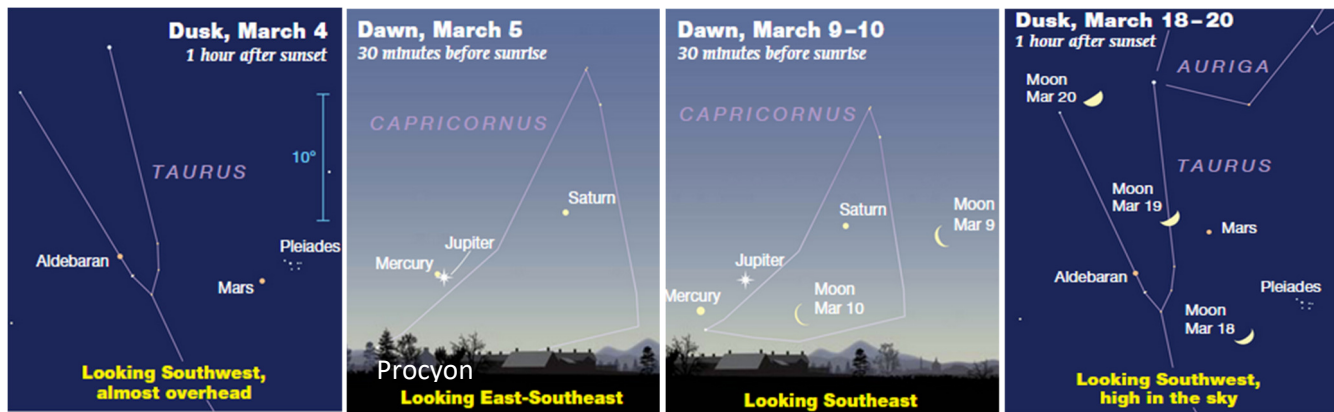
283rd Edition

The Moon Dances with...
The Moon Occults M35 on 02/22
Mars and the Pleiades
Pre-Dawn Planetary Mingles
Zodiacal Light
Heavenly Questions, Hope, and Perseverance

Highlight Calendar for Clear Skies

-From Sky and Telescope Magazine

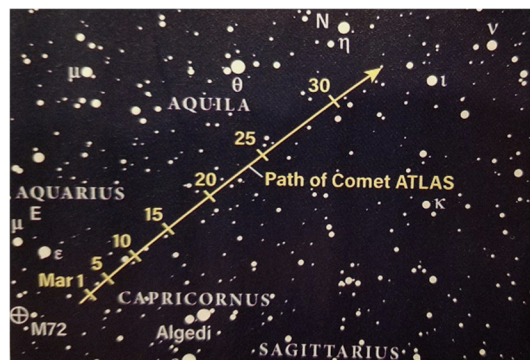




Solar System Observing

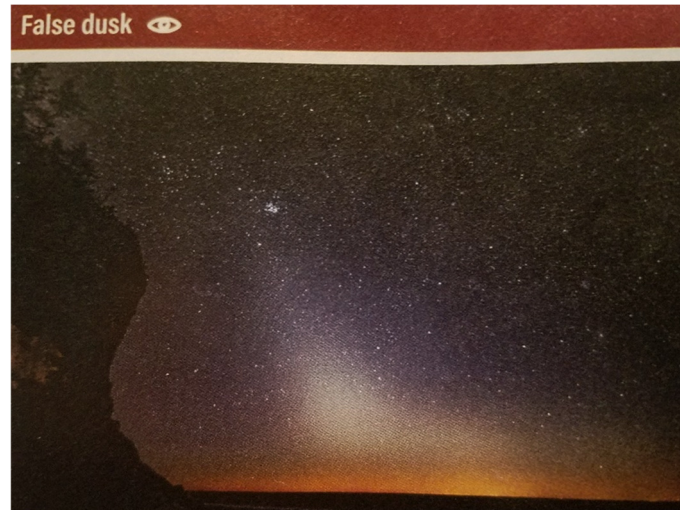
- ✚ **Mercury** is low in the southeast before dawn, teaming up with Jupiter and Saturn, and on March 9-10th, a crescent Moon joins the party.
- ✚ **Venus** is out of the picture for a while as it is heading for superior conjunction with the Sun and returns as an “evening star” in mid-April.
- ✚ **Earth** still spins, and we are still here to marvel at the wonders of our universe.
- ✚ **The Moon** occults open cluster M35 in Gemini at 3am CST on February 22nd.
- ✚ **Mars** is still visible high in the southern sky an hour after sunset. It lies between a crescent Moon and the Pleiades on our meeting evening, February 18th, and just west of them on the 19th.
- ✚ **Jupiter** rises just before the Sun, along with Saturn and Mercury, making some nice patterns with them.
- ✚ **Saturn** rises just before the Sun, along with Jupiter and Mercury.
- ✚ **Uranus** is in Aries.
- ✚ **Neptune** is in eastern Aquarius, very low in the sky heading for conjunction with the Sun on March 26th.
- ✚ **Comet(s)** Kuiper belt object comet C/2020 R4 (ATLAS) is in our pre-dawn skies. At magnitude 9 it is visible in small scopes as a little fuzzball, like nearby globular cluster M72.

-From Astronomy Magazine



✚ **Zodiacal Light** is back for February, March, and April showing a “false dusk” after sunset’s glow dims. We’re looking at backlit remnant dust and particles from comets and meteors in Earth’s orbital plane. Look west-southwest for a dim cone shaped light appearing from the horizon.

-From Astronomy Magazine



✚ **ISS viewing for New Braunfels (works for Canyon Lake too).**

-From Heavens Above

Date	Start Time	Start Loc	Max Alt °	End Loc	Note
02/18	06:11	SW	68	NE	
03/11	05:47	NW	28	ESE	Slips between Jupiter and Mercury near the ESE horizon
03/13	05:49	NW	72	SE	Skims the Sagittarius “teapot” top
03/16	21:03	SW	58	-	Passes a few degrees W of Mars, between Mars and the Pleiades
03/17	20:15	SW	67	NE	
03/18	21:05	W	10	NNE	Low along the horizon

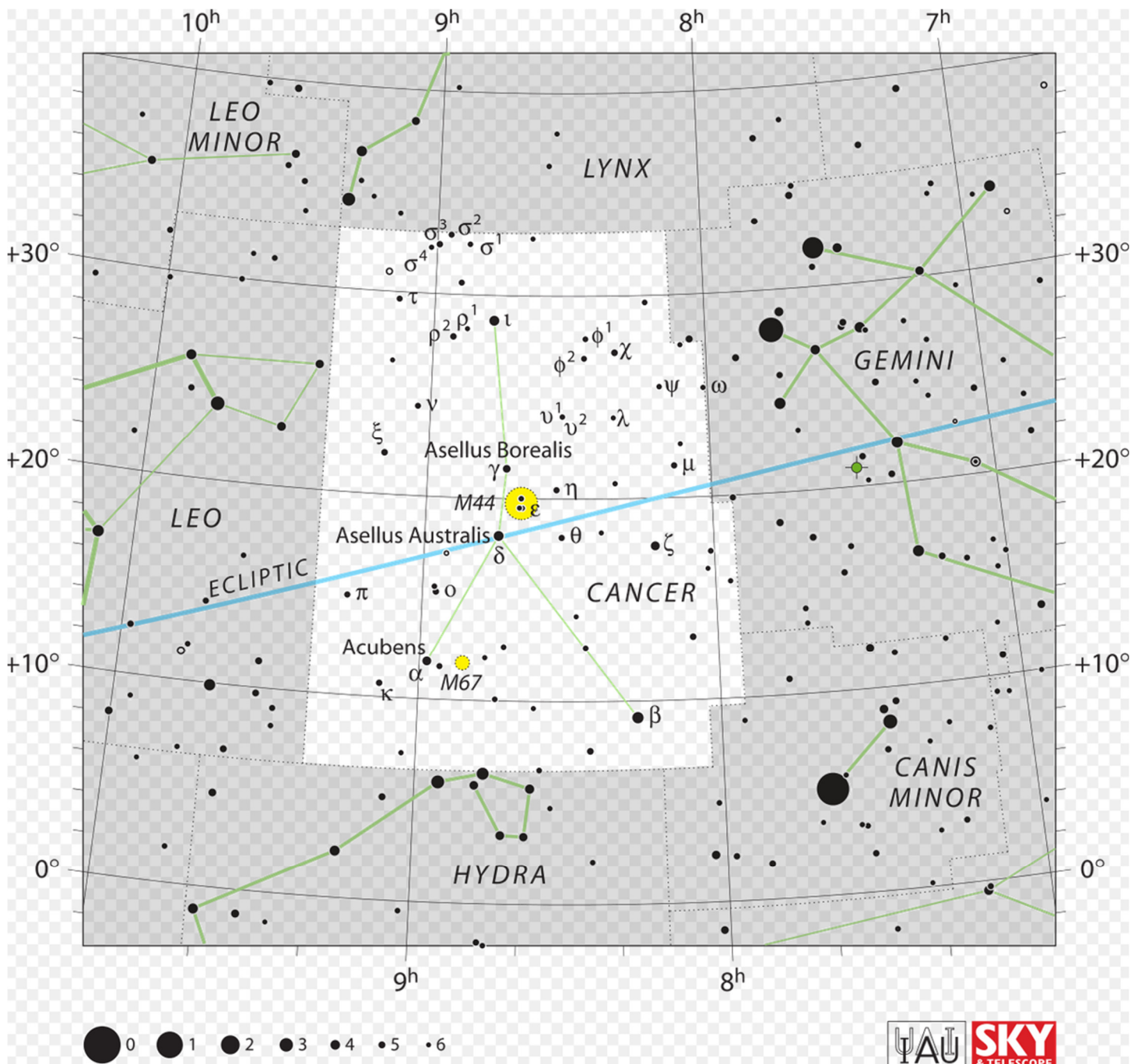
✚ Mars is getting more crowded...the UAE has its mission, called Hope, China has its mission, called Tianwen-1 (Heavenly Questions), and the US has its mission, called Perseverance – all planned for February arrivals.

- Hope will study Mars’ weather from orbit
- Tianwen-1 has a lander and rover to study Mars
- Perseverance is a rover that will look for signs of life on Mars

My Observing Pick: M44

AKA Praesepe (Latin for the Manger), NGC 2632 and Cr 189, M44 is the Beehive, a very nice open cluster of stars. The originator of the name Beehive is not known, but Roman astronomers called it Praesepe (hive, crib, fenced in area, or manger). One astronomer, Pliny used its visibility at night to predict the weather, not visible in a clear sky meant bad weather coming. M44 is about 600 light years distant and visible with the naked eye in dark skies. It contains at least 1000 stars, two have been found to harbor a planet.

Go out and observe M44 with binoculars, then see if you can see it without optical aid. Does it look like a swarm of bees, a box, a crib, a manger? While you're in Cancer, check out M67 too.



When will life, or signs of life be found somewhere other than Earth? I use the word when because I believe the word is out of the question. Life is out there. Maybe I will be lucky, and signs of extraterrestrial life will be verified in my lifetime.

NASA launched the Mars 2020 mission with rover Perseverance on July 30, 2020, hopefully landing on February 18th 2021. This current Mars exploration rover is equipped to detect signs of life as were previous missions. Even so, it's a tricky business. Our experience has been from the start one of inconclusive data. Viking landers collected and ran experiments on samples in the 1970s. Results...inconclusive...but maybe. Every lander since that has collected data built a case for life but...inconclusive. It boils down to technology. Even with the best NASA can do in miniaturizing sophisticated analyzers, there is always a missing factor, or two. Samples really need to be brought to Earth for the full treatment.

NASA and the European Union's European Space Agency (ESA) have teamed up and have a tentative plan to get some Mars dirt and rocks to Earthly labs for testing. NASA's Mars 2020 mission is the first leg of a multiple-year mission to "get-er-done". While Perseverance will be examining Mars' geology, it will also have its own set of analytical instruments to run tests on dirt and rocks. Then it will collect, package and store Mars stuff from the most promising sites. Sometime in 2026 NASA might send a mission to retrieve the samples and get them into Mars orbit. Ideally in the same year the ESA will send a mission to put a rendezvous orbiter in place to pick up the NASA samples, returning them to Earth in 2031. Once on Earth the samples will be analyzed for signs of life.

That's exciting stuff but there's more!

Humans are going to Mars. They will need to be self-reliant because supply ships will be 6-8 months away at best. Even with the supplies that will likely be sent prior to human missions, people will need more breathable air than can be carried or stored. That means deriving oxygen from Mars' predominantly CO₂ atmosphere. Perseverance will test such a device, one that can be scaled up to provide the mission team enough oxygen for the long-term.

Drones have become an unbelievable phenomenon, from getting unique vantage point photos to search and rescue operations. Perseverance will test a drone to assess possible utility for Mars exploration and even as a delivery vehicle for samples, tools, whatever. Imagine that, a drone on Mars!

After over half a century of political highs and lows NASA continues its mission. NASA has perseverance.

Eric Erickson

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

New Braunfels Astronomy Club Meeting

- Open meeting and introduce new members
- Interesting observations, experiences

- Show and tell

- What's in our sky this month?
 - Newsletter – Eric Erickson
- What's going on – events, outreach

- Main feature(s)

- Open for discussion

- Feedback and close meeting

Coming up: OUR 259th ASTRONOMY CLUB MEETING

March 18th 2021, from 7 – 9:00 p.m.

ZOOM meeting

New Braunfels Astronomy Club

astronomynbtx.org



Astronomy Friends New Braunfels

facebook.com/groups/354953995432792/



Comal County Friends of the Night Sky

facebook.com/groups/166098014710276/

Website comalcountyfriendsofthenightsky.org/

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