

New Braunfels Astronomy Club

December 17th, 2020

256th Meeting (Zoom 9)
(Agenda Below)

Larry's Celestial Calendar & Newsletter by Eric Erickson

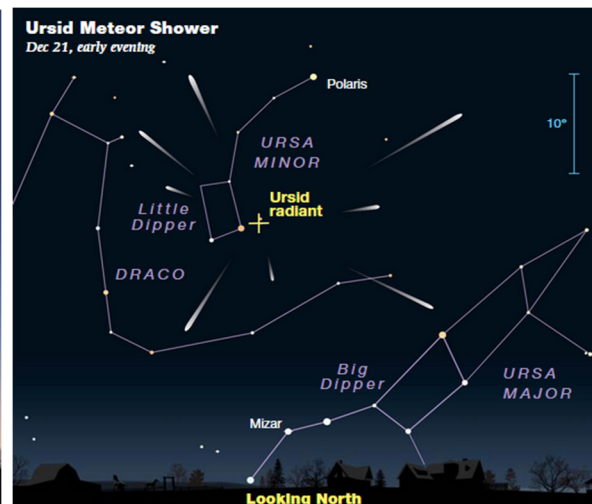
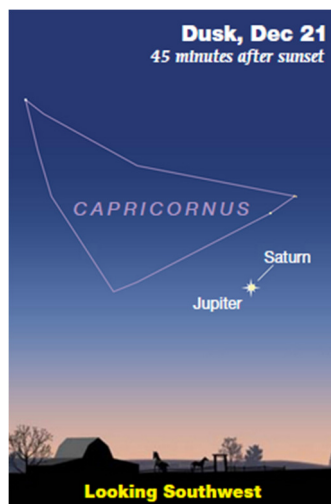
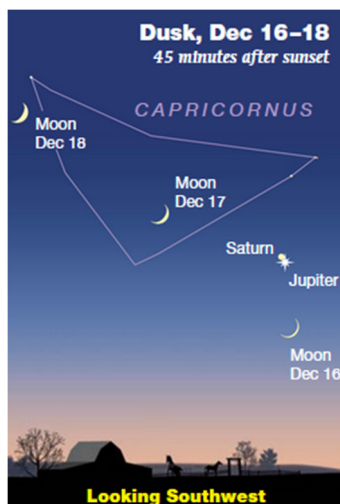
281st Edition

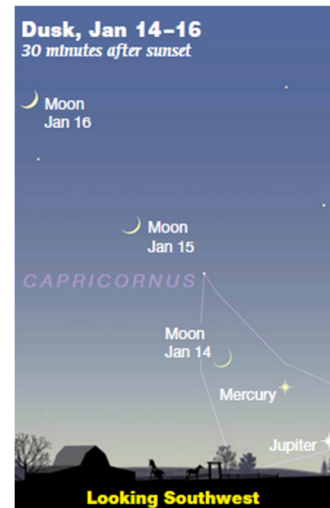
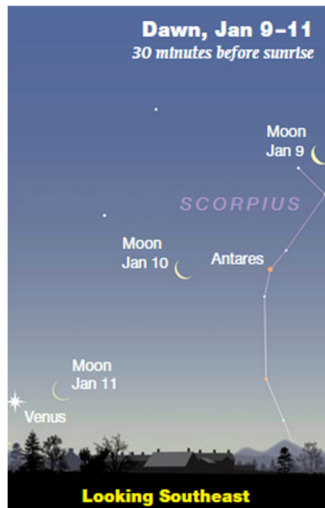
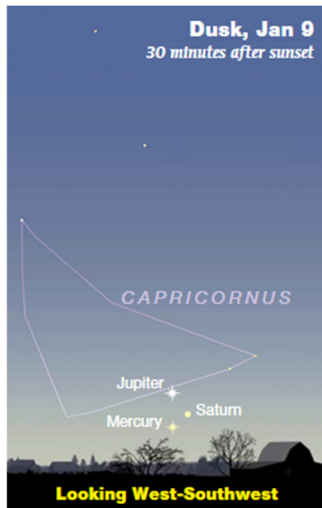
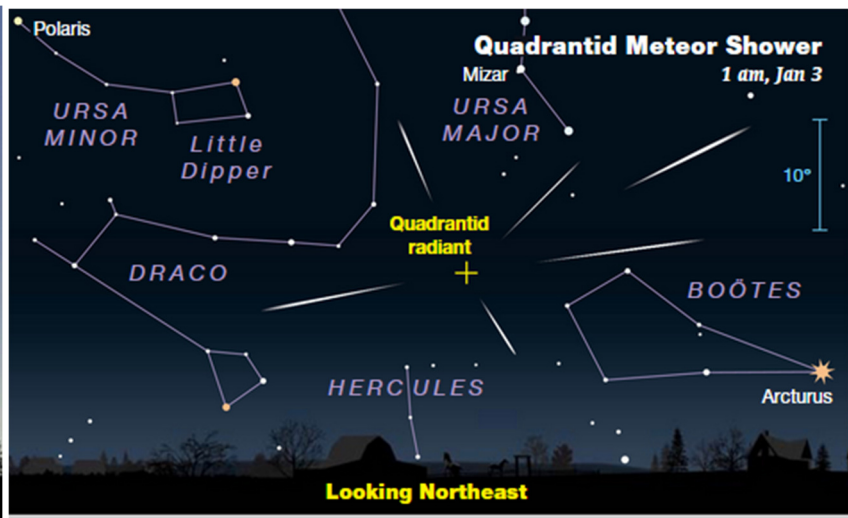
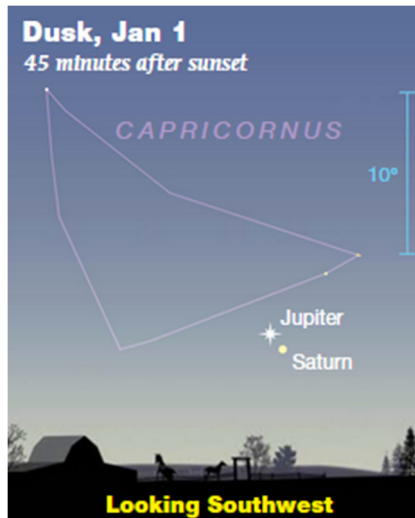
Merry Christmas & Happy New Year!

The Moon and Planets Dance
Comet 88P/Howell
The Great Conjunction Peaks 12/21
Winter Solstice 12/21
Ursid Meteors 12/21
Quadrantid Meteors 01/03

Highlight Calendar for Clear Skies

-From Sky and Telescope Magazine

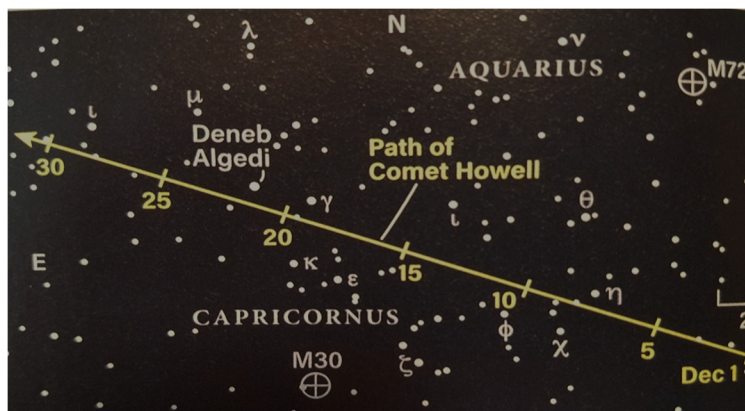




Solar System Observing

- ✚ **Mercury** is headed for superior conjunction on December 20th and not visible until January 9th, as an evening planet close to the west-southwest horizon at dusk. On January 9th Mercury joins Jupiter and Saturn and on the 14th with a crescent Moon
- ✚ **Venus** is brilliant, a morning planet. It partners with the Moon on January 11th
- ✚ **Earth** still spins, and we are still here to marvel at the wonders of our universe
- ✚ **The Moon** dances with Jupiter, Saturn, Venus, and Mercury
- ✚ **Mars** is getting smaller and smaller, heading for early evening retirement
- ✚ **Jupiter** is getting closer to Saturn, heading for their “Great Conjunction” on December 21st. It’s been nearly 800 years since the last one (both viewable in the eyepiece).
- ✚ **Saturn** rises after Jupiter, but the timing is getting closer and closer. See Jupiter.
- ✚ **Uranus** is in Aries.
- ✚ **Neptune** is in Aquarius
- ✚ **Comet(s)**
 - ✚ 88P/Howell is still with us. At magnitude 11/12 you will need a 6” aperture or greater to get a decent view. Maybe giant binoculars will work.

-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
12/18	06:17	SSW	32	NE	Swings above Venus
12/20	06:19	SW	57	NE	
01/07	06:37	NNW	26	ESE	Passes east of Venus
01/09	06:39	NW	82	SE	Passes close to the Moon, and through Scorpius
01/17	18:30	SW	54	NE	Passes very close to Aldebaran in Taurus
01/19	18:31	WSW	35	NNE	Passes very close to Mercury on its rise

My Observing Pick: Easy Peasy Pleiades

Last month I picked the very large open cluster the Hyades in Taurus. This month I pick the more compact yet large open cluster, the Pleiades or Seven Sisters. I say easy peasy (is that a word?) because it is difficult not to see it. It is a wonderful object to view with naked eyes, binoculars, spotting scopes, and telescopes.

The Pleiades, or M45 is a middle-aged open star cluster in Taurus, about 444 light years from us and rich with *B*-type stars. In other words, it has a lot of very hot, luminous stars that would be ridiculously bright in our sky if we were in the cluster. The total number of stars might be around 3,000 and 25% are brown dwarfs, not stars and not planets. Only the brightest members are visible with our naked eyes and there are seven. In binoculars hundreds can be seen and more in larger instruments. The cluster's stars are gravitationally bound so the cluster travels through space as a unit. It is also surrounded by dust that shows in larger instrument's views and photographs.

While the Pleiades is an ancient Greek term, this cluster has been recorded by many cultures in writings and illustrations. The earliest known depiction of the cluster is from a 1600 BC Bronze Age artifact found in Germany. In Greek mythology it is named it after the daughters of Atlas and Pleione, possibly created after the cluster was named. *Plein* is Greek for "to sail" so it might have been named after the importance of the sailing season in the Mediterranean. In Japan the cluster is named "Subaru", like the auto company, and telescope on Mona Kea in Hawaii.



Friends, family, neighbors, everyone is asking if I know about the Christmas star event coming on December 21st. Then they say “of course you know, you study that stuff”.

By the way, December 21st is Winter Solstice. The long night.

If you are not up to speed, this event is the culmination of a Great Conjunction between Jupiter and Saturn. They have appeared in the same part of the sky for quite a while, getting closer each day. On December 21st after sunset these two bright and beautiful planets will appear to be nearly on top of each other in the southwestern sky. Their combined brightness should be visually stunning. They should appear close enough to see together in a low/medium power telescope eyepiece or binoculars.

If it's not cloudy this will be a treat.

So, what about the Christmas star?

For Christians the Christmas star, aka star of Bethlehem account comes from the gospel of Matthew. But the narrative runs deeper. The star of Bethlehem also has connection with messianic Jewish prophecy from the Book of Numbers, *The Star Prophecy*. A star was to appear above the place where the new messiah (liberator, savior) would be born. Matthew's gospel describes such an occurrence, where a bright star appears in the east, inspiring and guiding three Magi who travelled to witness. But they end up in Jerusalem, where king Herod's scribes suggest going to Bethlehem based on verse from the Book of Micah.

So, even in Matthew's account the star isn't a great signpost, as the Magi end up north of Bethlehem. Nevertheless, it is accounted in Matthew, and the star's nature has been a source of conjecture for centuries. What was the star of Bethlehem?

A number of celestial events occurred around the time of Christ's birth (6-2 BC) that might have been a source of inspiration for the Magi.

Comet: Chinese and Korean astronomers documented a comet's appearance around 5 BC. Halley's comet would have been visible around 12 BC. Did Jewish prophets consider comets bad omens or good omens?

Supernova or Nova: Chinese and Korean records indicate the observation of a nova or supernova in 4 BC.

Heliacal Rising: The Magi saw a star in the east. They might have meant they saw a star rising in the east, before sunrise.

Occultation of Jupiter by the Moon: Two happened in 6 BC and might have been regarded as predicting the birth of a king.

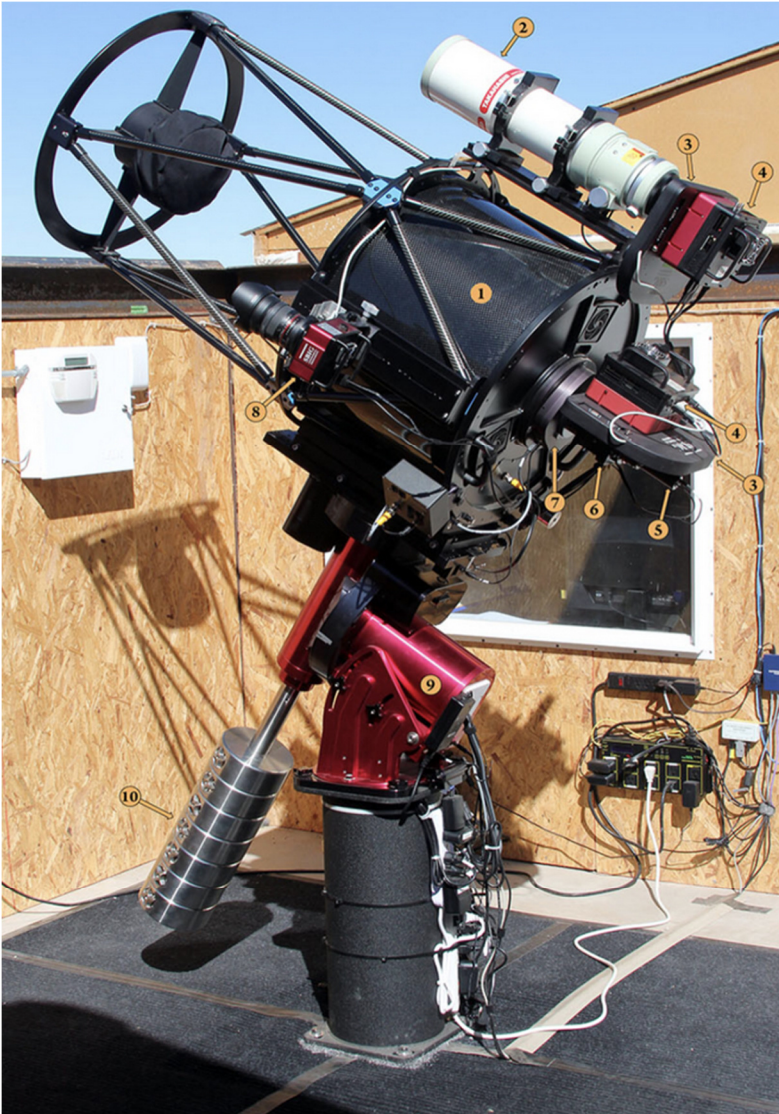
Conjunctions: Several conjunctions occurred between 7 BC and 2 BC, any of which might be construed as a new star or prophetic event. Jupiter and Saturn, Jupiter and Regulus, Jupiter and Venus.

There is no consensus regarding what the star of Bethlehem was. What we do know is it occurred in the one sky we all on Earth share, no matter our beliefs. Merry Christmas.

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

Eric Erickson

Kalamazoo Astronomy Club
Remote Observatory



PlaneWave 20-inch f/6.8 CDK Telescope
Takahashi FSQ-106EDX3 Apochromatic Refractor
SBIG FW7-STX Filter Wheels (2)
SBIG STX-16803 Monochrome CCD Cameras (2)
Starlight Xpress Lodestar X2 Autoguider
Innovations Foresight On-Axis Guider XM
Finger Lakes Instruments Atlas Digital Focuser
SBIG STF-8300C CCD Camera w/ Rokinon 16mm Lens
Paramount ME II German Equatorial Mount
Stainless Steel Counterweights (5)
SBIG AIISky-340C Camera

Coming up: **OUR 257th** ASTRONOMY CLUB MEETING

January 21st 2021, from 7 – 9:00 p.m.

ZOOM meeting

New Braunfels Astronomy Club

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

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

Mick Homer-First Contact

astronomynbt.org

<https://www.facebook.com/groups/354953995432792/>

<https://www.facebook.com/groups/166098014710276/>

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New Braunfels Astronomy Club Meeting

Date: 12/17/2020

Agenda

- Open meeting and introduce new members
- Interesting observations, experiences
- Show and tell
 - From Stewart Wirebaugh
 - Stewart attended an online meeting of the Kalamazoo Astronomy Club on December 5th. It included a viewing session using the club's remote observatory in southeastern Arizona.
 - The club's site also has an all-sky live camera, available for viewing
 - Photo of the club's remote observatory – see above
 - Links to the site
 - All-sky Cam: <https://www.kasonline.org/all-sky.html>
 - Webcam: <https://www.kasonline.org/piishiicam.html>
- 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 the meeting