New Braunfels Astronomy Club

Texas, USA

September 17th, 2020

253rd Meeting (Zoom 6)
(Agenda Below)

Larry's Celestial Calendar & Newsletter

278th Edition

-by Eric Erickson

Venus Brilliant in the Morning

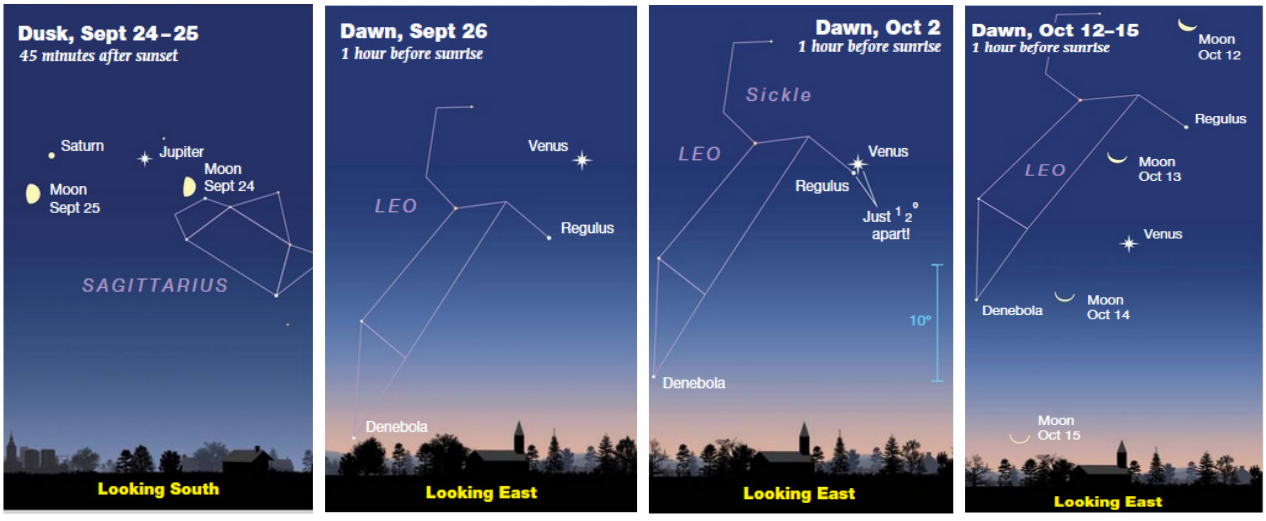
The Moon and Planets Dance

Comet 88P/Howell

MARS! Will it be Special?

Highlight Calendar for Clear Skies

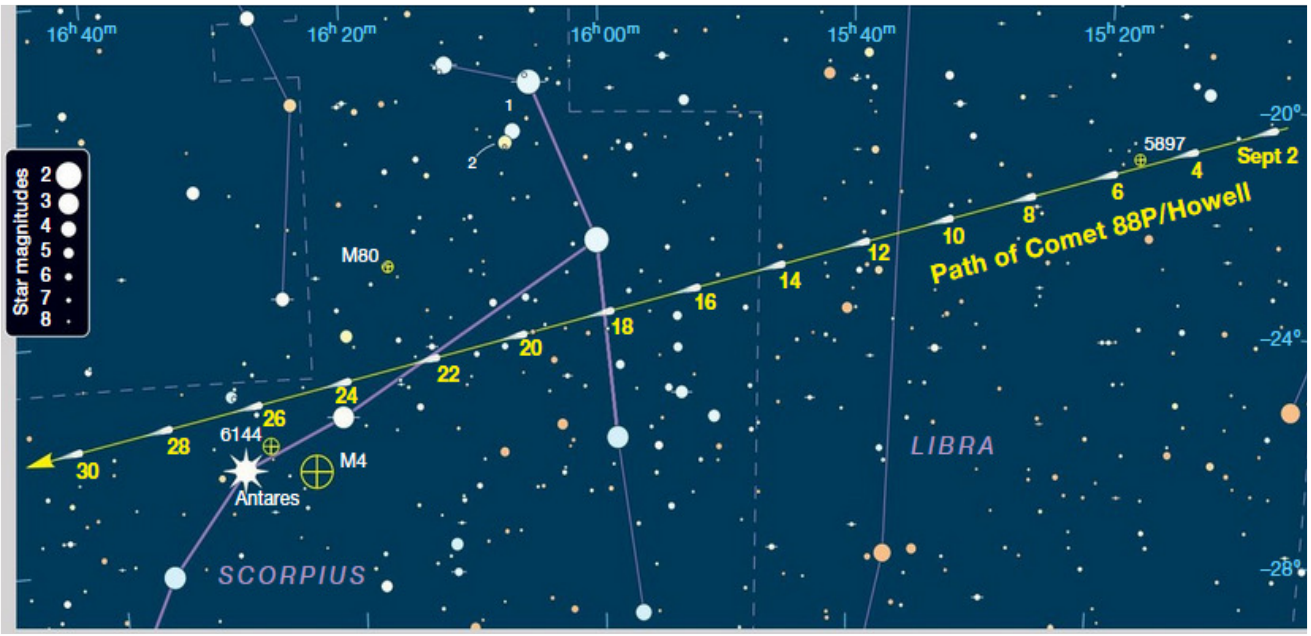
-From Sky and Telescope Magazine



Solar System Observing

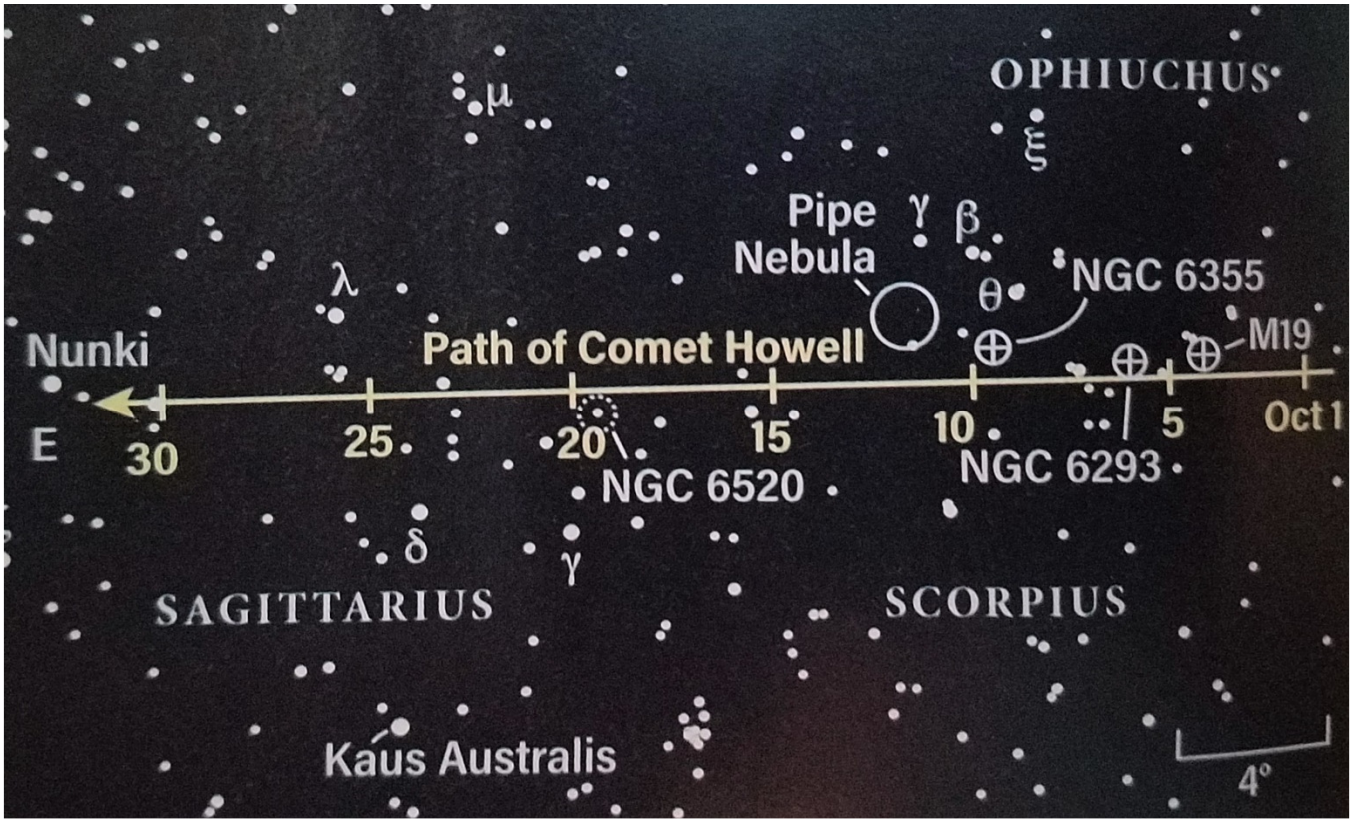
- Mercury is an evening planet but low and dim in the Sun's glare and is at greatest eastern elongation on October 1. Not a good time for observing Mercury.
- Venus is a morning planet, rising about 3 hours before the Sun. It partners with the Moon and Regulus
- Earth still spins, and we are still here to marvel at the wonders of our universe
- The Moon dances with Jupiter, Saturn, Venus
- Mars rises around 2 hours after sunset and its disk getting bigger as it approaches opposition on October 13th. But wait! Mars is closest on October 6th so start watching now.
- Jupiter rises in early evening and looks great
- Saturn rises an hour after Jupiter and is in conjunction with Jupiter – a great conjunction. Saturn and Jupiter are separating throughout September
- Uranus is in Aries and heading for opposition on October 31st. October will be a good month to observe Uranus.
- Neptune is in Aquarius, transiting the meridian as Venus is rising
- Comet(s)
    - 88P/Howell will reach perihelion September 26th, and magnitude 9. It's a short period (5.5year) comet, getting photo close to Antares, M4, and NGC 6144 on September 26-27. In October it skirts southern Ophiuchus, coming close to globular clusters M19 on the 4th, NGC6293 on the 6th, and NGC6355 on the 9th. It then slides south of the Pipe Nebula around the 11th or 12th, heading east.

-From Sky and Telescope



-From Astronomy Magazine

Comet 88P/Howell in October



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

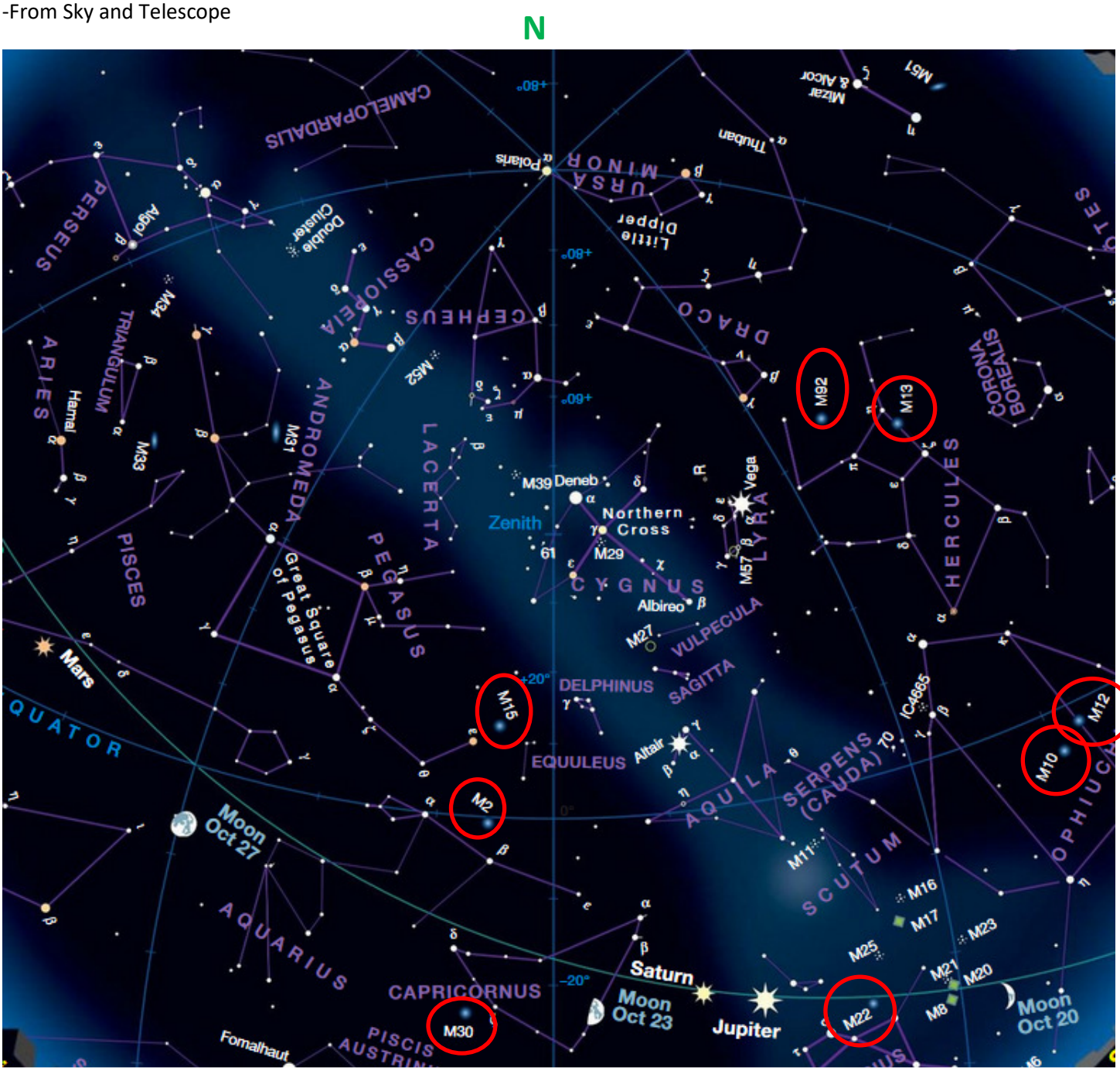
Date	Start Time	Start Loc	Max Alt °	End Loc	Note
09/17	19:55	SW	76	NE	
09/19	19:58	WSW	27	NE	Along the horizon
10/08	19:32	NW	31	ESE	Along the horizon
10/09	20:22	NW	30	S	Along the horizon
10?10	19:3	NW	63	SE	

My Observing Pick: Summer Globulars

Summertime is ending so grab a few globulars before they pack it in. Not that winter doesn't have globulars, it's just that summer has a bounty!

See some of the better ones below.

-From Sky and Telescope



Imagining Imaging

- Platform for club imagers

Planet 9 Where Are You!?

We're still looking for the elusive body, we think it's out there, lurking in the Kuiper Belt.

Refresher: The Kuiper Belt is far-far away, at the edge of our solar system, composed of asteroids and some Dwarf Planets. Remember Pluto? Pluto is a Dwarf Planet at the beginning edge of the Kuiper Belt! Think of the asteroid belt only 20 times as wide.

Astronomers have been on the hunt for a mysterious body, one that appears to be influencing the orbits of many Kuiper Belt objects. A couple of years ago one group of investigators predicted its future position and waited until it might be detectable. Nothing! Now you might say if it's so far away maybe we just cannot see it. Well, we can see the objects it affects and how it affects them. It is predicted to be massive, maybe more massive than Earth. I think a body as big or bigger than Earth should easily be seen with today's telescopes. Where is this planet nine?

The question might be then, what is planet nine? Let me see, we can see the objects it's gravity affects and how it affects them, but we can't see it. By analogy we can see the stars and how the supermassive black hole at our Milky Way's center affects their orbits. Yet, we do not see the black hole.

Could planet nine be a black hole? Well, it appears to be massive, but if it's a black hole, would be quite small. How small? A black hole of Earth's mass would be a sphere about the size of a marble, with gravitational influence equal to Earth's. If extrapolated to Uranus's mass the black hole would be a biggie marble. Still too small to find with today's technology. Sounds plausible in theory, but how does one make a mini black hole?

Turns out, the old-fashioned way, with immense gravity (mass/density) and temperature. Turns out, that's also the rub. To achieve the pressure and temperature necessary for black hole formation, a mass at least 8-10 times that of our Sun is required. In our known universe only very massive stars end up as black holes. Those stars produce what we call stellar mass black holes. While they are small, about 60 kilometers in diameter, their enormous gravity would influence the entire outer solar system and Kuiper Belt. Easy to find.

A plausible concept comes from our early universe, not long after the big bang. Density, pressure, and temperature were right. Just needed a little perturbing to mix up a collection of little black holes. Current thinking is this is what happened but most of them have evaporated by now. Could a lonely little black hole still exist out there?

Maybe, but keep looking. Eric Erickson

Coming up: OUR 254th ASTRONOMY CLUB MEETING

September 15th 2020, from 7 – 9:00 p.m. ZOOM meeting

New Braunfels Astronomy Club	astronomynbtx.org
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	mhomer2012@yahoo.com

New Braunfels Astronomy Club Meeting

Date: _____

Agenda

- 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 the meeting