Longmont Astronomical Society

August 2020

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Comet C/2020 F3 (NEOWISE)
by Martin Butley

LAS Virtual Meeting August 20 from 7 to 9 pm
"Dark Skies Matter" by Deborah Price and Rebecca Dickson

Light pollution is the nemesis of all visible light astronomers, preventing us from seeing the night sky that our ancestors enjoyed. But there are other negative effects; humans need darkness balanced with daylight, and more than 50% of wildlife species depend on darkness to survive. Our presenters for the August 20th virtual meeting of LAS, Deborah Price and Rebecca Dickson, will address the critical importance of dark skies.

Deborah is a Natural History Program Specialist with Boulder County Parks & Open Space; Rebecca, is chair of the Sierra Club-Indian Peaks. In their presentation they will share why dark skies matter, what Boulder County is doing to monitor dark skies in open space and in urban areas, and what we can all do to help preserve darkness now and in the future.

Deborah has coordinated a dark sky monitoring project for Boulder County Parks & Open Space for the past five years. The project is carried out in conjunction with other open space agencies along the Front Range. She is passionate about preserving dark skies, and likes the reminder it provides us that we are part of something much larger. Deborah also coordinates astronomy programs for Boulder County, and has been a great partner with LAS for star parties.

Rebecca Dickson is the chair of the Sierra Club-Indian Peaks Group in Boulder County. She works to understand light pollution's damaging effects on animals, insects, and humans and helps share that information with others. She has put on joint presentations with CU Boulder's Fiske Planetarium and the International Dark-Sky Association on the dangers of light pollution and the wonders of a starry night sky.

by Stephen Garretson, LAS Vice President

Events in August

- All LAS public events this month have been canceled due to the Covid-19 flu pandemic.

LAS Officers and Board Members in 2020

- Bill Tschumy, President
- Stephen Garretson, Vice President
- Michelle Blom, Secretary
- Bruce Lamoreaux, Treasurer

Board Members:
Mike Hotka, Gary Garzone,
Brian Kimball, Vern Raben

Contents

About LAS

The Longmont Astronomial Society Newsletter ISSN 2641-8886 (web) and ISSN 2641-8908 (print) is published monthly by the Longmont Astronomical Society, P. O. Box 806, Longmont, Colorado. Newsletter Editor is Vern Raben. Our website URL is https://www.longmontastro.org The Longmont Astronomical Society is a 501 c(3), non-profit corporation which was established in 1987. Our main goal is to promote local amateur astronomy. This is accomplished through regular monthly meetings, star parties and public observing sessions. Regular meetings are held every month (except December) on the third Thursday.

A broad spectrum of topics are covered at the meetings and include such things as deep sky observing, planetary imaging, narrow band imaging, equipment discussions and demonstrations just to name a few. These subjects are presented by both club members as well as special guests who are professional astronomers or experts in a particular field.

The Longmont Astronomical Society is affiliated with the Astronomical League (https://www.astroleague.org). The Astronomical League is an umbrella organization of amateur astronomy societies in the United States.

Solar System Highlights for August 2020

Image Credit: Brian Kimball

Full Moon: Aug 3 at 10:00 am

Third Quarter: Aug 10 at 10:46 am

New Moon: Aug 18 8:43 pm

First Quarter: Aug 25 at 11:59 am

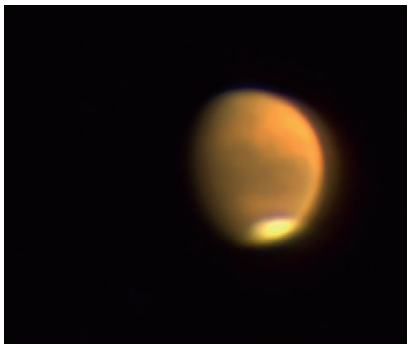
Mercury

Mercury is not visible this month.

Venus

Venus is in morning sky in constellation Taurus; it moves to Orion on Aug 4; and then to Gemini on Aug 12. Its brightness decreases from -4.4 on Aug 1st to -4.2 on the 30th. It decreases in apparent size from 27 arc sec to 20 arc sec.

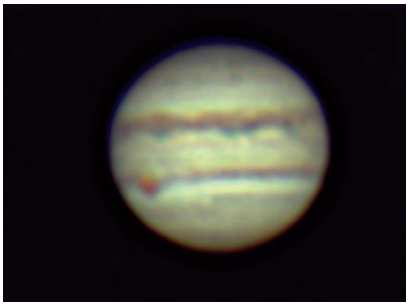
Mars



Mars on July 19 by Gary Garzone

Best time to view Mars is shortly after 4 am. It is in constellation Pisces. It increases in brightness this month from -1.1 to -1.8 magnitude. It increases in apparent size from 15 arc sec across to 19 arc sec.

Jupiter



Jupiter on July 6 by Gary Garzone

Jupiter is in constellation Sagittarius. It is -2.7 magnitude in brightness and the disk is 46 arc sec across.

The Great Red Spot mid transit times this month are:
Aug 2 at 10:10 pm altitude is 26°
Aug 4 at 11:48 pm altitude is 29°
Aug 7 at 1:27 am altitude is 22°
Aug 7 at 9:18 pm altitude is 23°
Aug 10 at 10:56 pm altitude is 29°
Aug 12 at 12:35 am altitude is 25°
Aug 12 at 8:56 pm altitude is 20°
Aug 14 at 10:04 pm altitude is 28°
Aug 16 at 11:43 pm altitude is 27°
Aug 19 at 9:13 pm altitude is 27°
Aug 21 at 10:51 pm altitude is 28°
Aug 24 at 12:30 am altitude is 21°
Aug 24 at 8:21 pm altitude is 24°
Aug 26 at 9:59 pm altitude is 29°
Aug 28 at 11:38 pm altitude is 24°
Aug 29 at 7:29 pm altitude is 22°

Saturn

Saturn on July 4 by Gary Garzone

Saturn is visible in the morning sky in constellation Sagittarius. Brightness decreases from magnitude 0.1 to 0.3 and apparent size of the disk is 18 arc sec across.

Uranus

Uranus is visible in the morning sky in constellation Aries. It is magnitude +5.8 in brightness and its disk is 3.6 arc sec across.

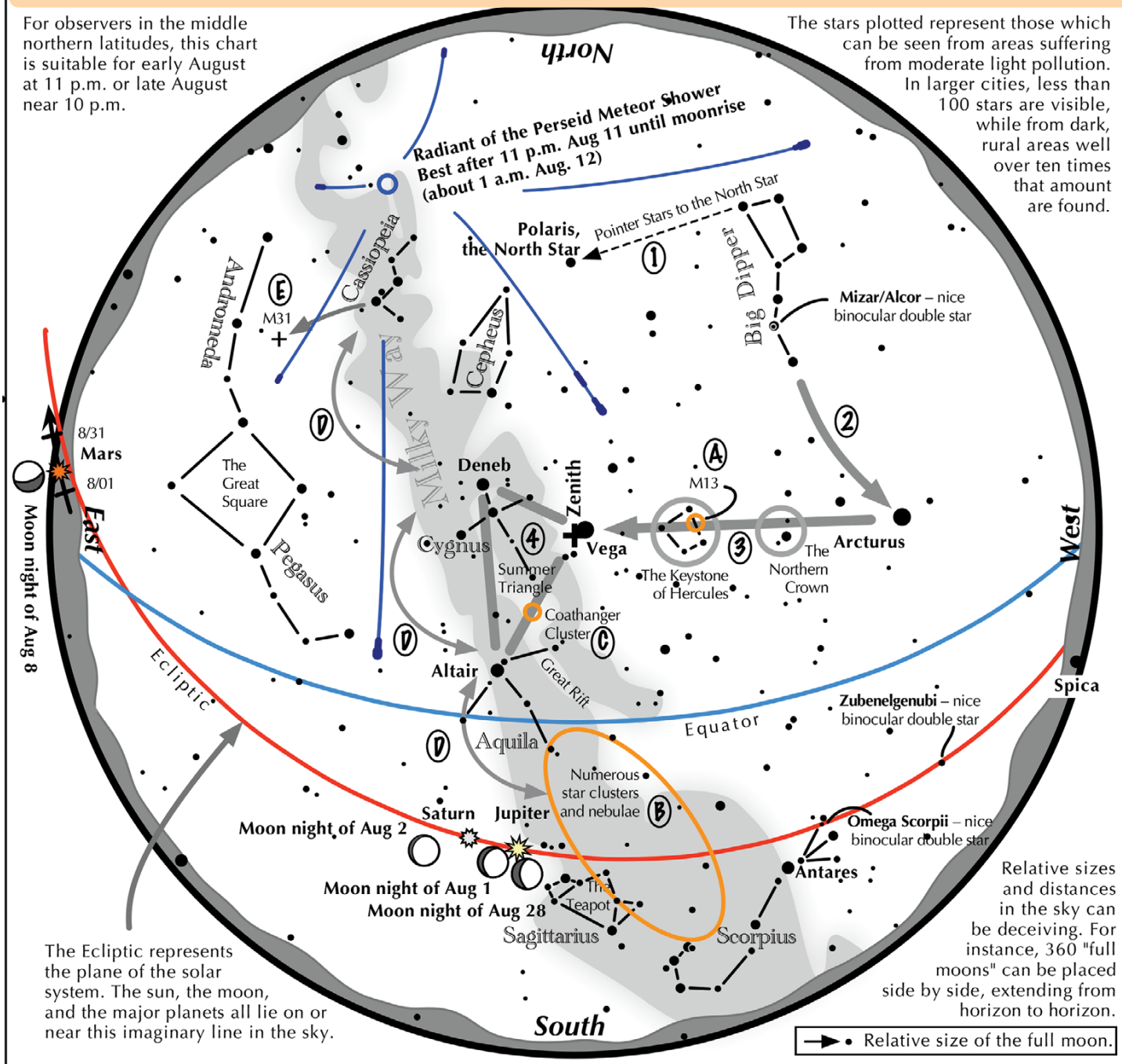
Neptune

Neptune is visible in the morning sky in constellation Aquarius. It is magnitude 7.9 in brightness and the disk is 2.3 arc sec across.

Perseid Meteor Shower

Perseids peak on night og Aug 11-12. Expect about 60 per hr from dark site. The Moon rise is 12:16 am on the 12th.

Navigating the mid August Night Sky by John Goss



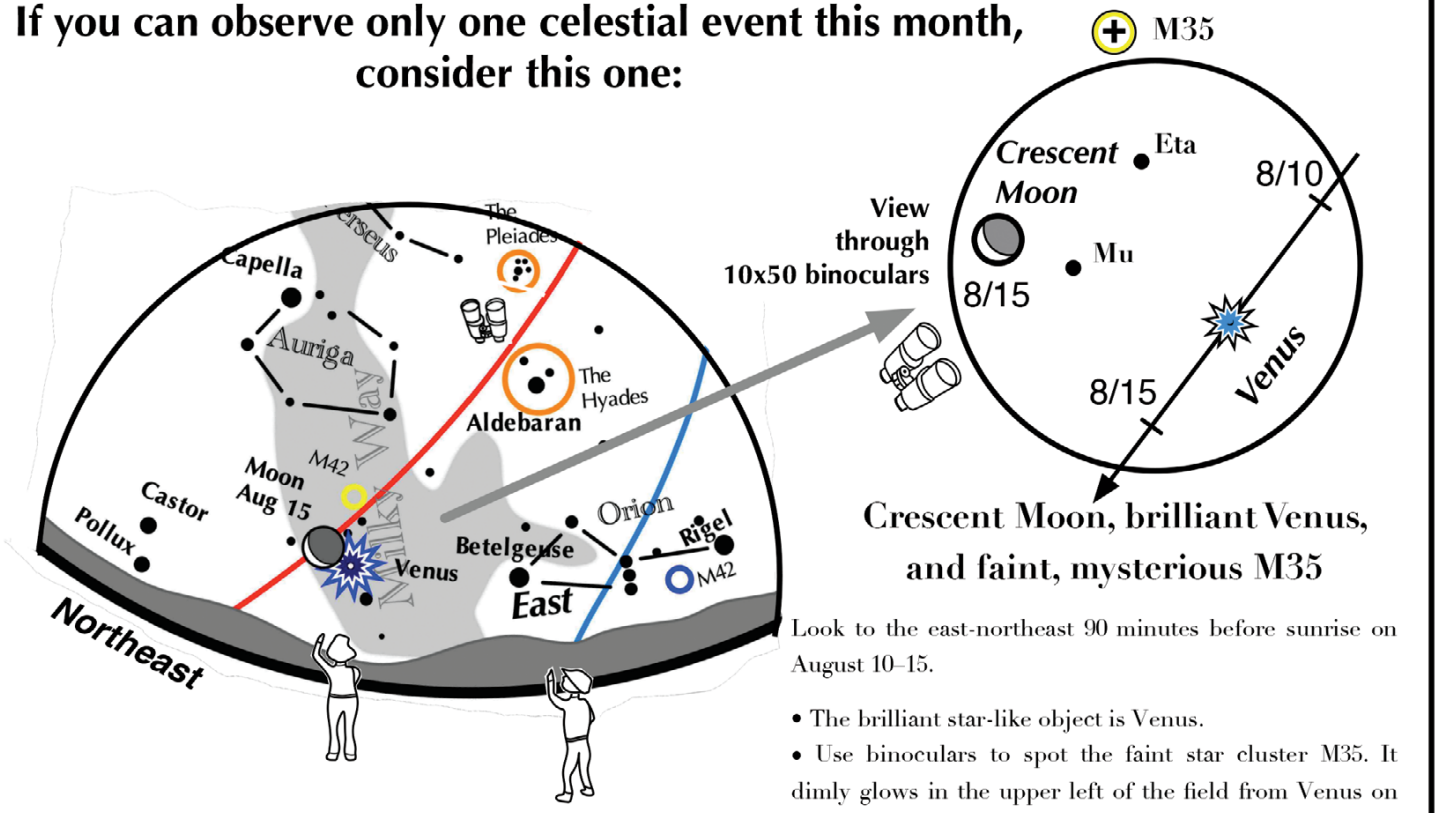
Navigating the mid August night sky: Simply start with what you know or with what you can easily find.

1. Extend a line north from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
2. Follow the arc of the Dipper's handle. It intersects Arcturus, the brightest star in the June evening sky.
3. To the northeast of Arcturus shines another star of the same brightness, Vega. Draw a line from Arcturus to Vega. It first meets "The Northern Crown," then the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.
4. High in the East lies the summer triangle stars of Vega, Altair, and Deneb.

Binocular Highlights

A: On the western side of the Keystone glows the Great Hercules Cluster.
B: Between the bright stars Antares and Altair, hides an area containing many star clusters and nebulae.
C: 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger.
D: Sweep along the Milky Way for an astounding number of faint glows and dark bays, including the Great Rift.
E: The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.

If you can observe only one celestial event this month, consider this one:



Crescent Moon, brilliant Venus, and faint, mysterious M35

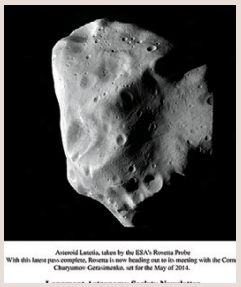
Look to the east-northeast 90 minutes before sunrise on August 10–15.

- The brilliant star-like object is Venus.
- Use binoculars to spot the faint star cluster M35. It dimly glows in the upper left of the field from Venus on Aug. 10.
- On Aug. 15, the crescent Moon, seemingly full of Earthshine, hangs low above the e-ne horizon.
- Use binoculars to better spot M35 lying to the upper right of the Moon on August 15.
- For a better view, aim binoculars at each member of the celestial at the trio.

East-northeast 90 minutes before sunrise August 15

Newsletter Archives

10 Years Ago - August 2010



The speaker at our next meeting at IHop on the 19th will be Dr. Alan Kiplinger. He will talk about the Dutch solar telescope on the Island of LaPalma.

Mike Hotka will give a short presentation on the Astronomical League's Dark Sky Advocate award program.

Following the program will be a business meeting with treasurer report by Michael Felllows and update on the All Sky Camera Project.

20 Years Ago - August 2000


Longmont Astronomical Society
Journal
ASTRONOMICAL LEAGUE MEDIA RELATIONS OFFICER NEEDED

Congratulations Vincent Garzone for 1st Place in model rocketry at the Boulder Country Fair!

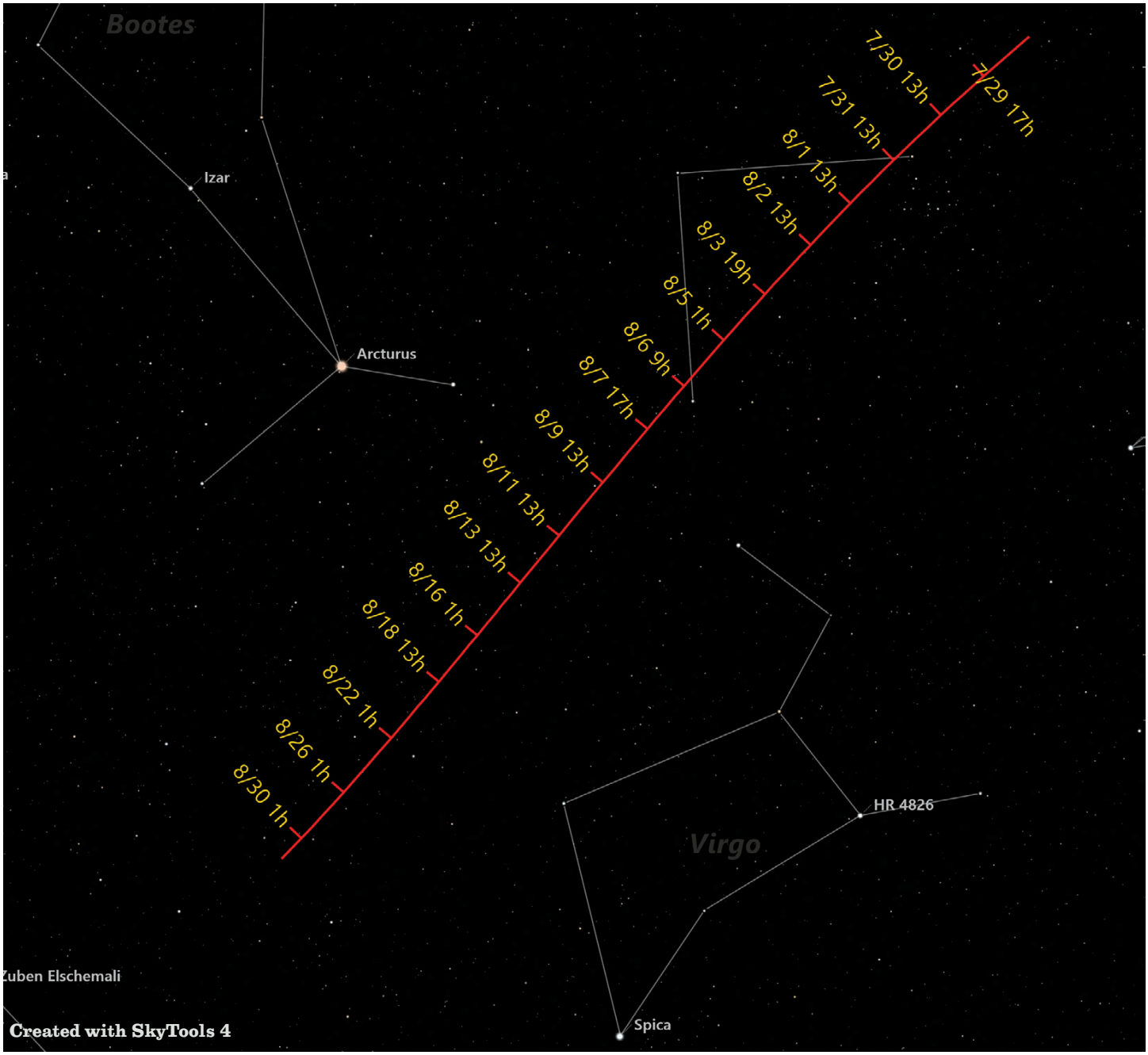
The Wyoming Weekend Under the Stars (WUTS) was disappointing this year due to very hazy skies from forest fires. Both speakers scheduled were unable to attend. It was fun observing comet Linear which broke up and had no head! About 60 of us went up to 92 inch WIRO telescope on Mt. Jelm.

30 Years Ago - August 1990

Newsletter not available for August 1990

Comets in August

Comet C/2020 F3 (NEOWISE)

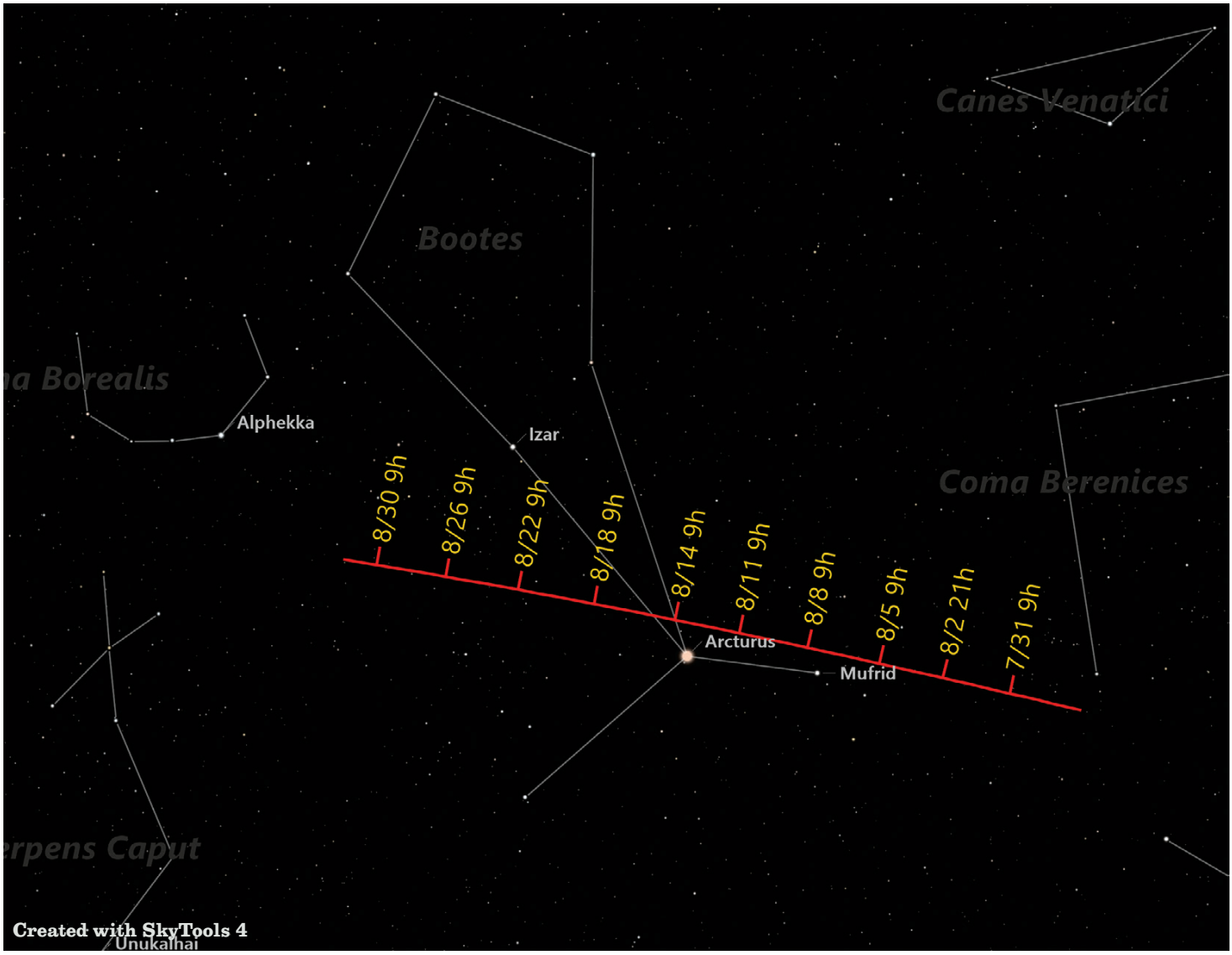


As can be seen from the marvelous images taken by our members this month comet NEOWISE was amazing this July. It has been the best comet for us to view for the past couple decades. It is dimming now but it is still a great object in a wide field scope.

Date	Optimal time	RA	Dec	Brightness	Size (arc sec)	Constellation
Aug 1	9:36 pm	12h42m53.6s	+25°31'50"	4.6	60	Coma Berenices
Aug 8	9:27pm	13h25m02.4s	+14°39'29"	6.0	49	Coma Berenices
Aug 15	9:17 pm	13h50m42.7s	+07°05'24"	7.1	40	Virgo
Aug 22	9:06 pm	14h08m35.1s	+01°44'09"	8.0	34	Virgo
Aug 30	8:51 pm	14h24m06.6s	-02°42'22"	8.9	29	Virgo

Comets in August

Comet C/2019 U6 (LEMMON)

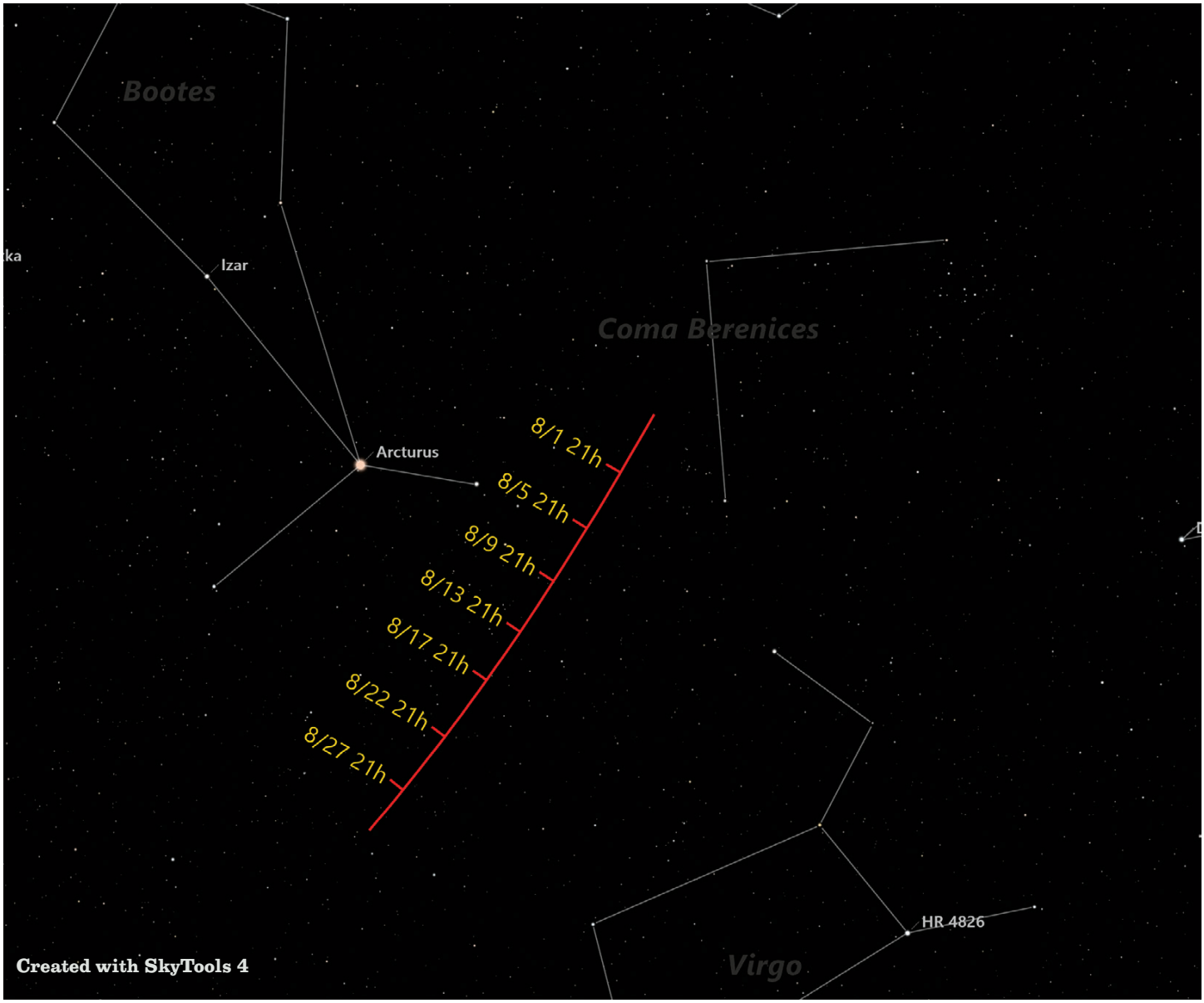


Comet C/2019 U6 (LEMMON) was discovered by the Mount Lemmon Sky Survey on Oct. 31, 2019. It was at perihelion in mid-June; it is now about magnitude 9 in constellation Coma Berenices.

Date	Optimal time	RA	Dec	Brightness	Size (arc min)	Constellation
Aug 1	9:49 pm	13h27m17.1s	+17°11'25"	8.8	6.2	Coma Berenices
Aug 8	9:40 pm	13h58m59.7s	+19°23'43"	9.4	5.5	Bootes
Aug 15	9:29 pm	14h23m30.4s	+20°42'44"	9.9	5.1	Bootes
Aug 22	9:18 pm	14h45m44.1s	+21°36'39"	10.3	4.7	Bootes
Aug 30	9:03 pm	15h09m00.6s	+22°16'17"	10.8	4.3	Bootes

Comets in August

Comet C/2017 T2 (PANSTARRS)

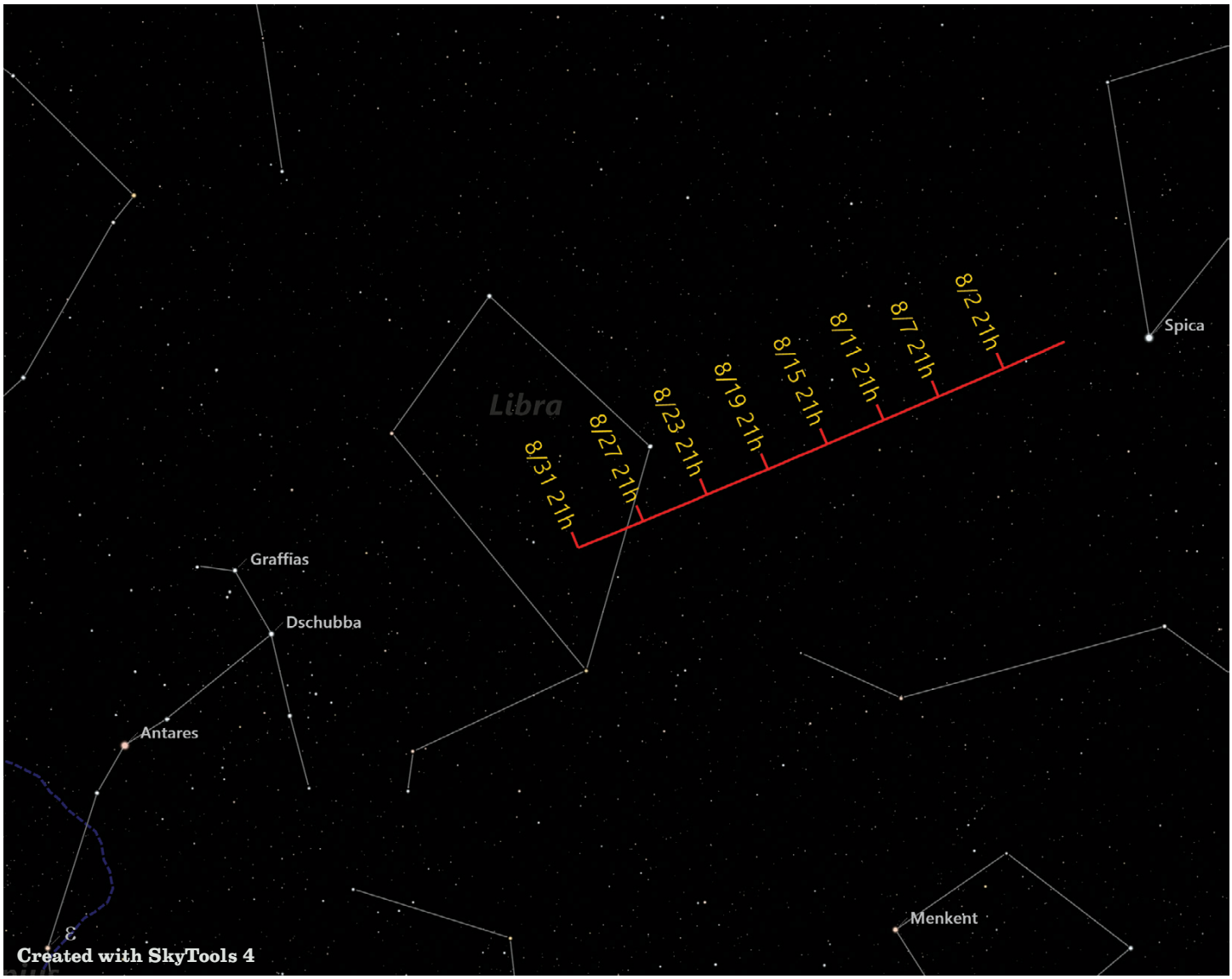


Comet C/2017 T2 (PANSTARRS) is currently moving through constellation Coma Berenices. It is magnitude 10.7 in brightness. It was discovered by the two 1.8 meter PANSTARRS telescopes located at the Haleakaia Observatory in Hawaii.

Date	Optimal time	RA	Dec	Brightness	Size (arc min)	Constellation
Aug 1	9:50 pm	13h29m41.0s	+18°45'08"	10.7	2.6	Coma Berenices
Aug 8	9:39 pm	13h40m25.1s	+14°39'44"	10.9	2.4	Bootes
Aug 15	9:27 pm	13h50m49.5s	+10°53'14"	11.1	2.3	Bootes
Aug 22	9:13 pm	14h00m59.5s	+07°24'35"	11.3	2.2	Bootes
Aug 30	8:57 pm	14h12m23.2s	+03°46'24"	11.6	2.1	Virgo

Comets in August

Comet 88P (Howell)



Comet 88P (Howell) was discovered on August 29, 1981 by Ellen Howell using photographic plates obtained by .46 meter Schmidt telescope at Palomar Observatory

Date	Optimal time	RA	Dec	Brightness	Size (arc min)	Constellation
Aug 1	9:41 pm	13h48m46.6s	-12°37'15"	10.0	3.7	Virgo
Aug 8	9:30 pm	14h04m14.6s	-14°22'38"	9.9	3.6	Virgo
Aug 15	9:18 pm	14h21m10.5s	-16°09'55"	9.8	3.6	Virgo
Aug 22	9:06 pm	14h39m35.4s	-17°57'18"	9.7	3.6	Libra
Aug 30	8:51 pm	15h02m26.8s	-19°57'18"	9.6	3.5	Libra

LAS Member Images in July 2020

Comet Neowise by Bob Connor

Comet C/20220F3 (NEOWISE) on July 6 by Brian Kimball

Comet C/20220F3 (NEOWISE) on July 19 by Brian Kimball

Comet C/2020 F3 (NEOWISE) on July 10 by David Elmore

Comet C/20202 F3 (NEOWISE) on July 20 by Martin Butley

Comet C/2020 F3 (NEOWISE) on July 21 by David Elmore

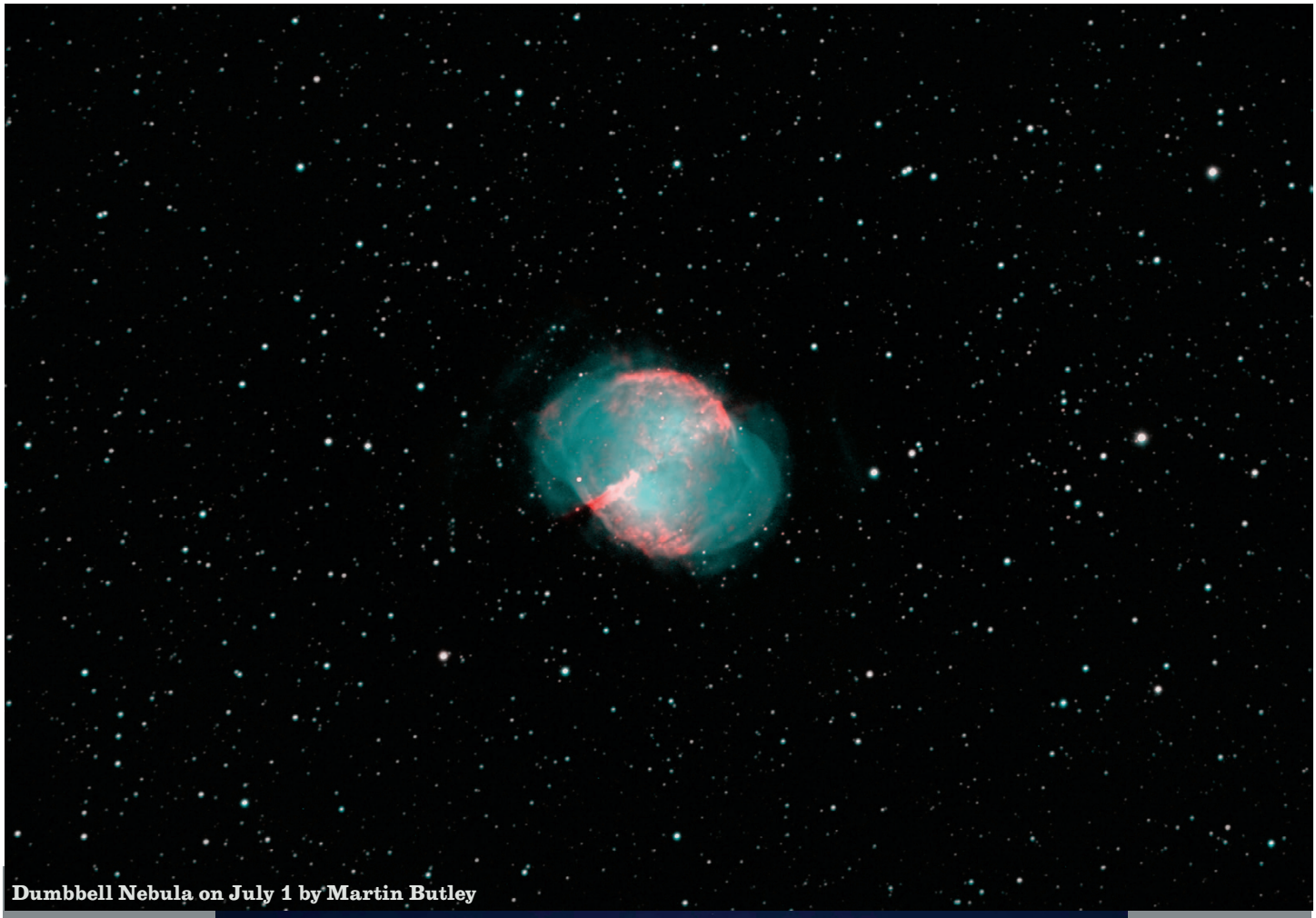
Comet C/2020 F3 (NEOWISE) on July 10 by Eddie Hunnell

Bubble Nebula on July 11 by Eddie Hunnell

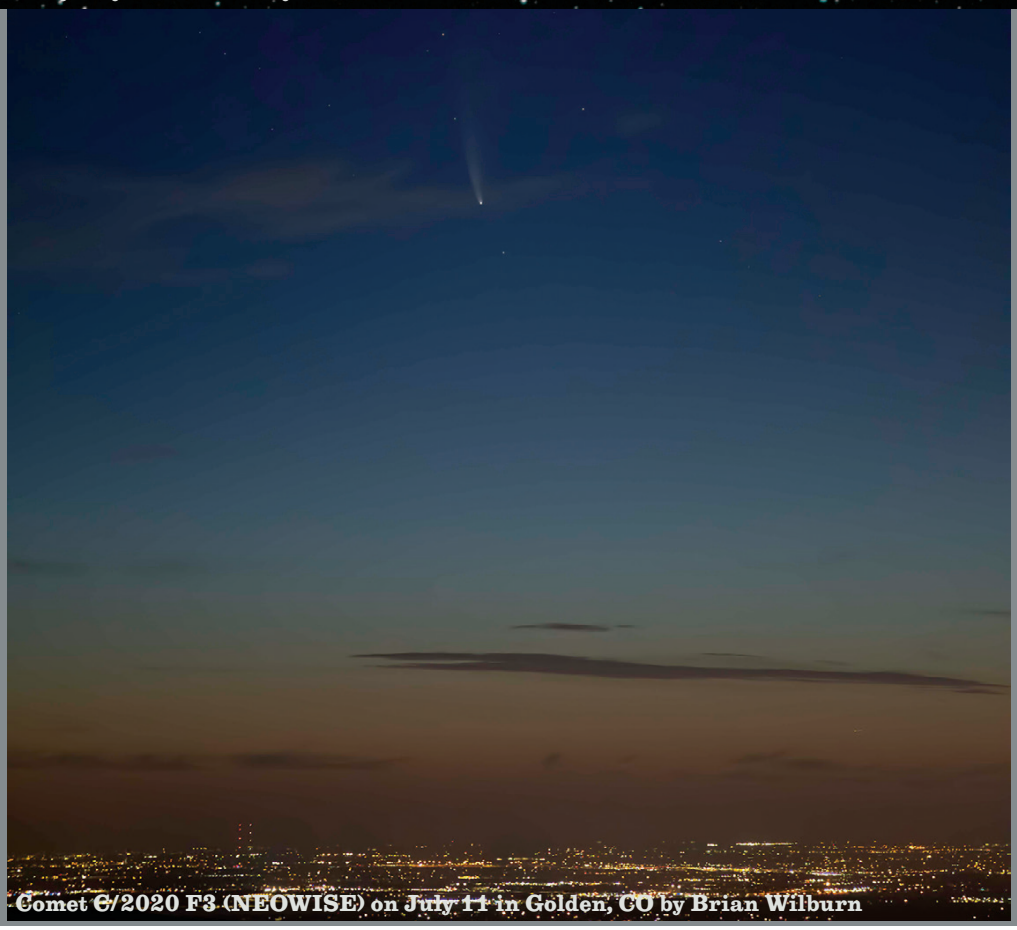
Comet C/2020 F3 (NEOWISE) on July 27 by Gary Garzone

Comet C/2020 F3 (NEOWISE) on July 8 by Jim Pollock

Comet C/2020 F3 (NEOWISE) on July 8 by Jim Pollock



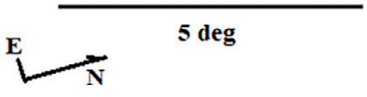
Dumbbell Nebula on July 1 by Martin Butley

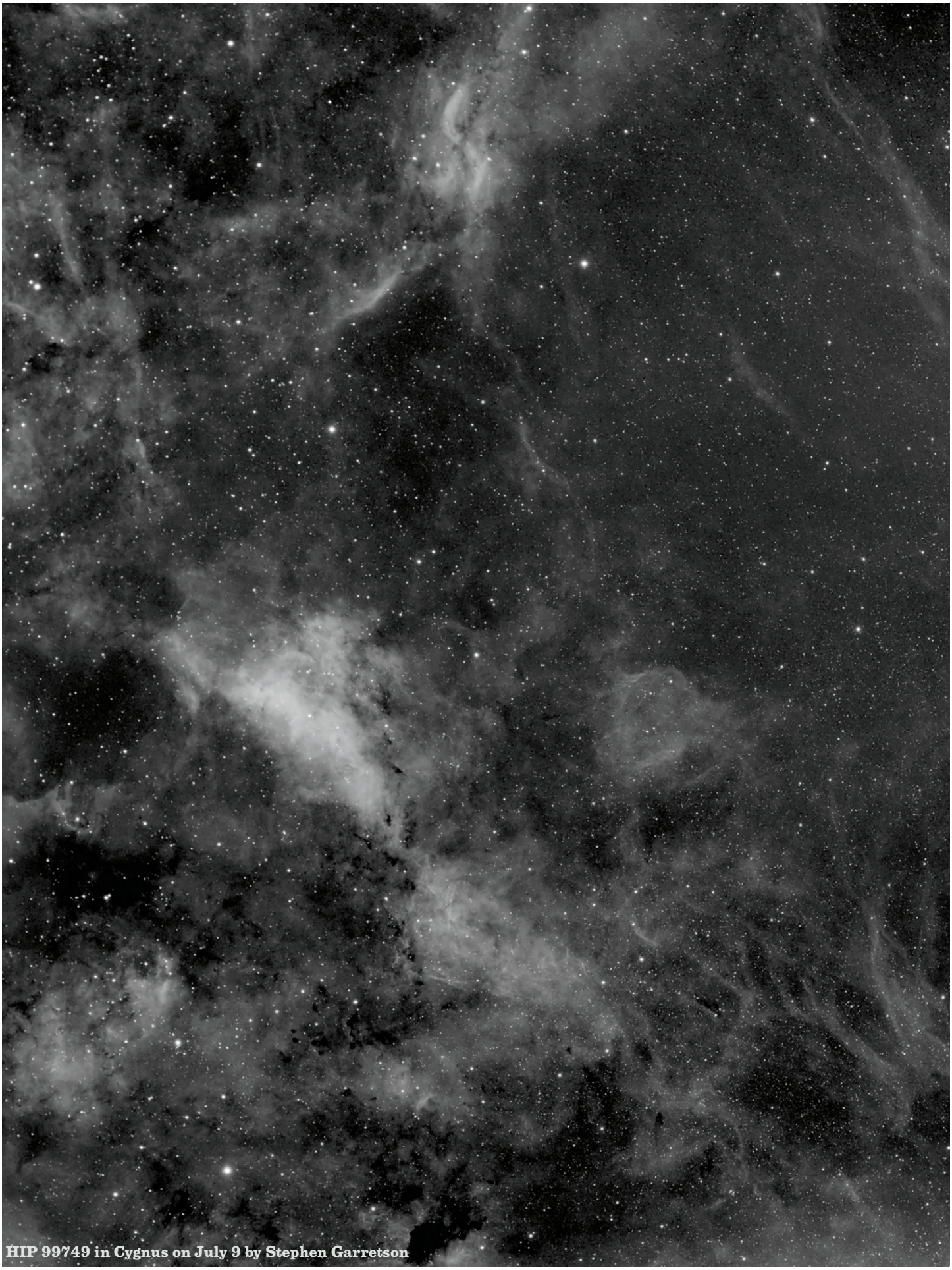


Comet C/2020 F3 (NEOWISE) on July 11 in Golden, CO by Brian Wilburn

Comet C/2018 W3 (NEOWISE) on July 18 by Paul Robinson

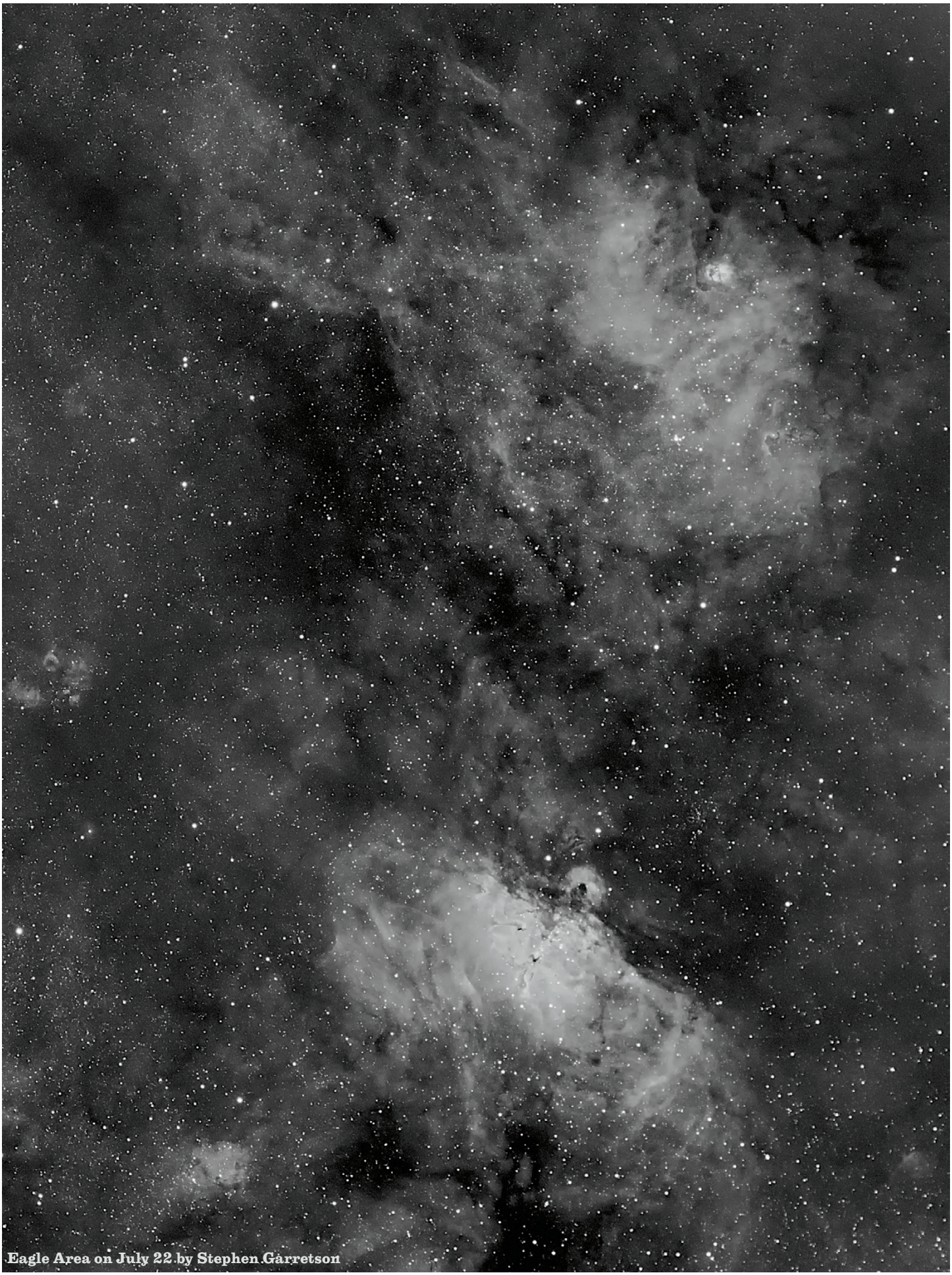
Comet NEOWISE 2020-F3 July 18, 2020 10:45 pm MDT from 7 mi NW of Rawlins, WY by Paul Robinson. Nikon D750 at ISO 3200. 85mm f/2 lens. 10x30s. Stacked and stretched in CCDStack2. No background flattening.





HIP 99749 in Cygnus on July 9 by Stephen Garretson

IC 1396 the "Elephant's Trunk" Nebula on July 18 by Rolando Garcia



Eagle Area on July 22 by Stephen Garretson

M8 on July 2 by Tally O'Donnell

Comet C/2020 F3 (NEOWISE) on July 8 by Tally O'Donnell

Summary of July 18, 2020 Meeting by Vern Raben

Bill Tschumy opened the meeting with 26 people attending. He welcomed new member Chuck Havernick. Current events - big news is comet Neowise. Thanks Paul Robinson for his timely presentation last month.

Presentation: Pluto's Planetary Status by Hal Levison

Dr. Hal Levison said he would try to make an argument as to why Pluto doesn't fit into our idea of what a planet should be.

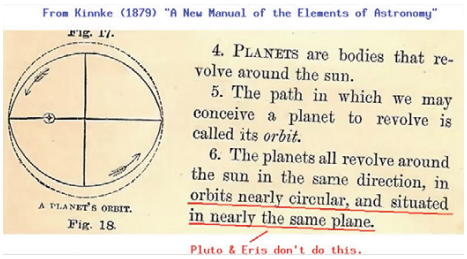

From Kinnke (1879) "A New Manual of the Elements of Astronomy"

Fig. 17.

A PLANET'S ORBIT.

Fig. 18.

4. PLANETS are bodies that revolve around the sun.

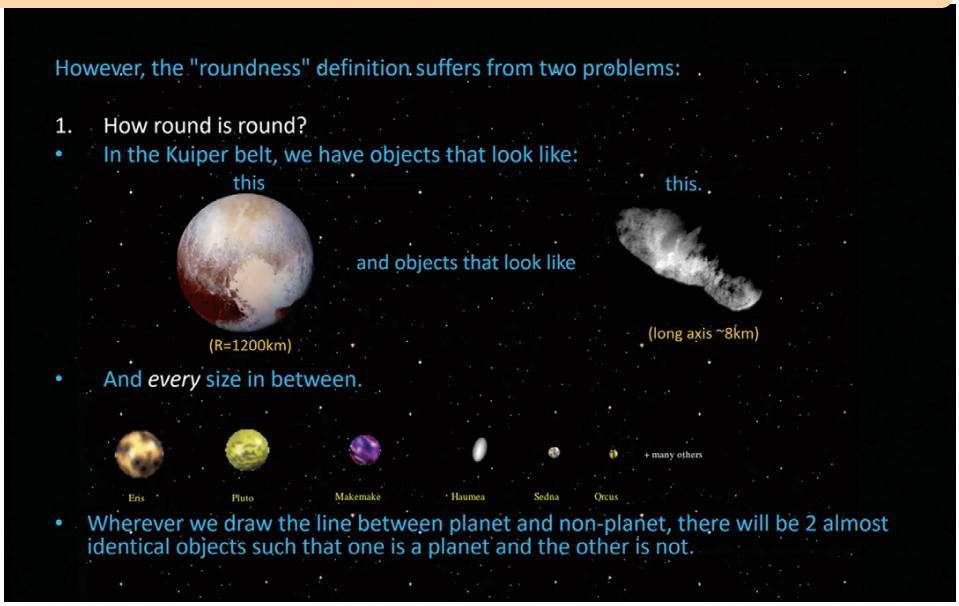
5. The path in which we may conceive a planet to revolve is called its *orbit*.

6. The planets all revolve around the sun in the same direction, in orbits nearly circular, and situated in nearly the same plane.

Pluto & Eris don't do this.

In the latter part of the 19th century astronomers started looking for a 9th planets because of perceived perturbations in Neptune's orbit. It turned out these perturbations didn't exist; the perturbations were artifacts of errors in the data. At the time of Pluto's discovery in 1930 by Clyde Tombaugh it was thought that its brightness meant it was quite large (twice the mass of Earth) because it was assumed to have a low albedo like our moon. It actually has a high albedo and is small. As more and more of the predicted occultation of stars by Pluto didn't occur astronomers began to realize it must be much smaller. In 1977 Pluto's satellite Charon was discovered which enabled Pluto's mass to be computed accurately; it's mass is only 0.002 that of Earth.

In 1992 the first trans Neptunian object was discovered which was 10% the mass of Pluto. As equipment was getting better and better more and more objects were found; some of them were quite large -- almost the size of Pluto. The debate as to what should be considered a planet began.



What should be considered a planet is a semantic issue; not a scientific one. Having a meaningful definition helps discussion.

What is a planet?
Some people say that we should use inherent characteristics of the object to classify it. If we use the definition that it is round or consider its size we find there will be identical objects such that one is a planet and the other is not.

The "official" IAU definition of a classical (major) planets is that they dominate the space around them, clearing out small bodies that cross their orbit. Dwarf planets are too small to have a major dynamical effect. Interestingly, by this definition Earth would not be a planet if it were at 1000 AU. Levison prefers the definition that if an object is part of a smooth size distribution it cannot be a planet as it is in a population that has not stopped growing yet.

In the QA following his talk Hal was asked about the process used to decide that Pluto no longer be considered a major planet. Dr. Levison said that he was not present at the IAU vote. He introduced Keith Knoll (LUCY mission project scientist) who was present at the vote. Keith noted that the vote although imperfect, it was not even close.

Business Meeting

Bill Tschumy showed a short video "Why is the Solar System is Flat" by Minute Physics see https://youtu.be/tmNXKqeUtJM

Treasurer Report by Bruce Lamoreaux

There was $10 deposit for a merchant service (unknown what this is) and expenses of $ 43 for website and bank charges. Total assets remains ~$16.5K.

Old Business.

Last month we talked about printed newsletters and what to do about them. Consensus was to sell them in batches of 3 on the website. Vern had no update as to availability.

New Business - none

Meeting adjourned.

Cave Nebula on July 15 by M. J. Post