



Monthly Notices of the Everglades Astronomical Society



Naples, FL
February 2020

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President's Message

I will not be able to attend the February meeting. This is a very sad thing because Ted Wolfe will be giving a talk on his photography. The information Ted presents is so enlightening. Besides, he shows the incredible examples of his work. Ted will show a video of his trip down to Chile where his telescope is located. He operates it remotely from here in Naples. He will also show a few of his latest images.

Our speaker for the January meeting, Joel Banow, gave a most fascinating presentation on how his news channel outlet provided the simulations and animations for the early days of space exploration, right up to and including Apollo 11. It surely gives you something to think about when you see the next launch.

Coming up in the next couple of months are two interesting and easy to observe phenomenon. Both of them are visible with binoculars. The first is the occultation of Mars by the moon on February 18th. The second on the morning of March 18th is the waning crescent moon joining Mars, Jupiter, and Saturn. I'm guessing that there are going to be some great photographic opportunities for these events.

PRESIDENT'S MESSAGE CONTINUED ON PAGE 2

Dates for Observing

Usually the best times to observe are moonless nights. Below is a list of upcoming Saturday nights that you will likely find fellow club members out there enjoying the skies with you (weather permitting). We will let you know the new location.

Date	Moonrise	Moonset
Feb. 15	12:18 a.m.	11:43 a.m.
Feb. 22	6:33 a.m.	5:43 p.m.

Sky Events

Feb. 1 - First Quarter
 Feb. 9 - Full Moon
 Feb. 15 - Last Quarter
 Feb. 23 - New Moon

Next Meeting

February 11, 2010: Time 7:00 – 9:00 pm
Norris Center, Naples

FABULOUS PHOTOS BY EAS MEMBERS



Photo of Northern Lights taken by Andy and Dorie Gustafson in Alta, Norway, from a ship.



Image of M78 by Vic Farris on 1/25/20 from Big Cypress. 100 mm refractor; f/5.5; 75 mins. integration; processed in Pixinsight.



Thor's Helmet by Chuck Pavlick



Image of NGC 2467 By Chuck Pavlick.



Image of Crescent Nebula by Chuck Pavlick.

PRESIDENT'S MESSAGE CONTINUED FROM PAGE 1

Except for May (I'm still working on that), our programs for the monthly meetings are as follows: February is Ted Wolfe (as stated above); March is the Messier Marathon preparation; April is Vic Farris speaking about his photographic successes; and June is Mike Usher speaking on "Why Stars Explode". Please mark your calendars.

Also, remember that our July and August meetings don't meet at the Norris Center. We meet informally at a "coffee" shop to chat with each other about whatever we want. This year we will be meeting at Zoes Kitchen at the Mercado on N. Tamiami Trail. This little "coffee" shop is right next door to where The Second Cup USED to be. I put coffee in quotation marks because they don't serve coffee, just soft drinks.

See you at the March meeting.

Denise

Dennis Albright

Dennis Albright passed away in his home over the holidays. Dennis was a very active member of our society. He was very knowledgeable and loved to share his knowledge with us. His presentations were very informative. Wikipedia was his favorite source for information.

He loved to write science fiction. His stories always had an ironic twist. He also put together lists of movies and references to anyone who wanted them.

As there will be no services for him, I am asking you to keep him in your prayers.

Denise

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NASA Night Sky Notes

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.org to find local clubs, events, and more!

Betelgeuse and the Crab Nebula: Stellar Death and Rebirth David Prosper

What happens when a star dies? Stargazers are paying close attention to the red giant star **Betelgeuse** since it recently dimmed in brightness, causing speculation that it may soon end in a brilliant supernova. While it likely won't explode quite yet, we can preview its fate by observing the nearby **Crab Nebula**.

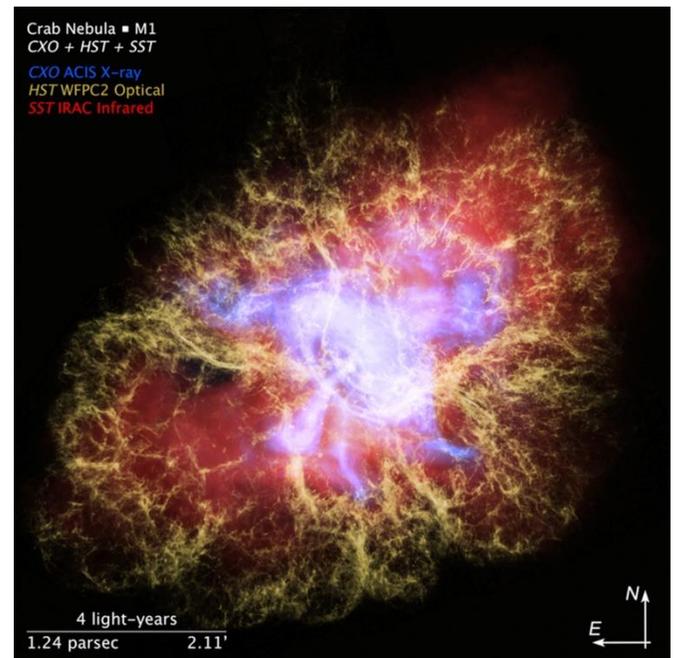
Betelgeuse, despite its recent dimming, is still easy to find as the red-hued shoulder star of Orion. A known variable star, Betelgeuse usually competes for the position of the brightest star in Orion with brilliant blue-white Rigel, but recently its brightness has faded to below that of nearby Aldebaran, in Taurus. Betelgeuse is a young star, estimated to be a few million years old, but due to its giant size it leads a fast and furious life. This massive star, known as a supergiant, exhausted the hydrogen fuel in its core and began to fuse helium instead, which caused the outer layers of the star to cool and swell dramatically in size. Betelgeuse is one of the only stars for which we have any kind of detailed surface observations due to its huge size – somewhere between the diameter of the orbits of Mars and Jupiter - and relatively close distance of about 642 light-years. Betelgeuse is also a “runaway star,” with its remarkable speed possibly triggered by merging with a smaller companion star. If that is the case, Betelgeuse may actually have millions of years left! So, Betelgeuse may not explode soon after all; or it might explode tomorrow! We have much more to learn about this intriguing star.

The **Crab Nebula** (M1) is relatively close to Betelgeuse in the sky, in the nearby constellation of Taurus. Its ghostly, spidery gas clouds result from a massive explosion; a supernova observed by astronomers in 1054! A backyard telescope allows you to see some details, but only advanced telescopes reveal the rapidly spinning neutron star found in its center: the last stellar remnant from that cataclysmic event. These gas clouds were

created during the giant star's violent demise and expand ever outward to enrich the universe with heavy elements like silicon, iron, and nickel. These element-rich clouds are like a cosmic fertilizer, making rocky planets like our own Earth possible. Supernova also send out powerful shock waves that help trigger star formation. In fact, if it wasn't for a long-ago supernova, our solar system - along with all of us - wouldn't exist! You can learn much more about the Crab Nebula and its neutron star in a new video from NASA's Universe of Learning, created from observations by the Great Observatories of Hubble, Chandra, and Spitzer: bit.ly/CrabNebulaVisual

Our last three articles covered the life cycle of stars from observing two neighboring constellations: Orion and Taurus! Our stargazing took us to the “baby stars” found in the stellar nursery of the Orion Nebula, onwards to the teenage stars of the Pleiades and young adult stars of the Hyades, and ended with dying Betelgeuse and the stellar corpse of the Crab Nebula. Want to know more about the life cycle of stars? Explore stellar evolution with “The Lives of Stars” activity and handout: bit.ly/starlifeanddeath .

Check out NASA's most up to date observations of supernova and their remains at nasa.gov



This image of the Crab Nebula combines X-ray observations from Chandra, optical observations from Hubble, and infrared observations from Spitzer to reveal intricate detail. Notice how the violent energy radiates out from the rapidly spinning neutron star in the center of the nebula (also known as a pulsar) and heats up the surrounding gas. More about this incredible “pulsar wind nebula” can be found at bit.ly/Crab3D Credit: NASA, ESA, F. Summers, J. Olmsted, L. Hustak, J. DePasquale and G. Bacon (STScI), N. Wolk (CfA), and R. Hurt (Caltech/IPAC)

EAS 2020 DUES

For the bargain price of only \$20.00 per family, all this can be yours this year:

- Meet with your fellow astronomy enthusiasts at least 10 times a year;
- Learn about astronomy and telescopes. Check out our club scope;
- Many opportunities to view planets, nebulae and other celestial objects (even if you don't have your own telescope); and
- Enjoy the many astronomy programs at our regular monthly meetings.

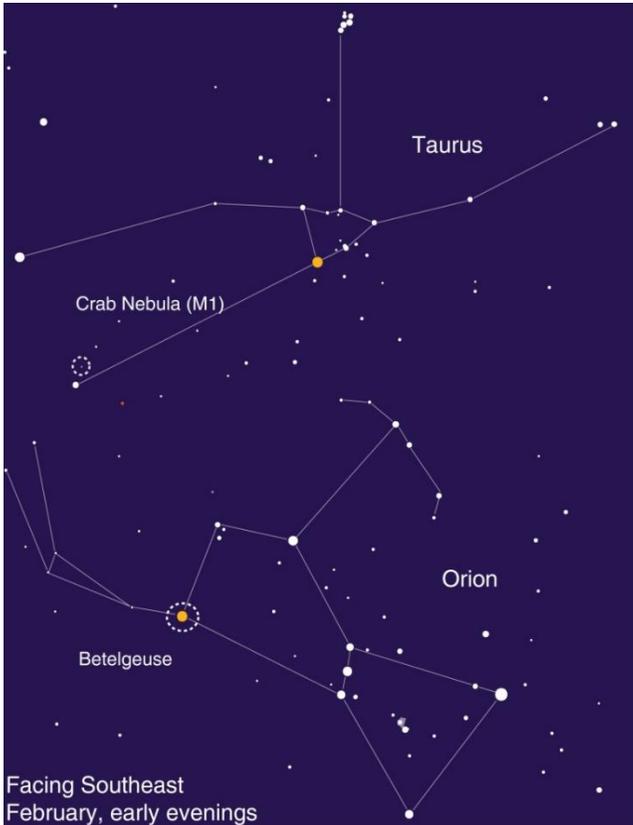
Don't miss out! Fill out this form (please print clearly) and send it with your \$20 check to the Everglades Astronomical Society, P. O. Box 1451, Marco Island, Florida, 34146.

Name: _____

Address: _____

Phone: _____

Email: _____



Spot Betelgeuse and the Crab Nebula after sunset! A telescope is needed to spot the ghostly Crab.

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