# Monthly Notices of the Everglades Astronomical Society

Naples, FL
July 2016

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## President's Message

With summer half over, I can tell you that I am looking forward to returning to Florida after enjoying my stay in Canada. From year to year, I forget just how long the days are up here around the summer solstice. I'm finding that I have to go to bed just after dusk, about 10:30 PM. That's because the loons are calling and waking me as soon as dawn arrives, 4:30 AM. That's celestial mechanics for you.

As I am sequestered from most technology up here, I have been listening to the radio. This is not live streaming on my computer, it is actual radio. I do have a point. The weekend of June 17th and 18th, 2016, I heard two separate but equally fabulous program segments. Both segments were broadcast one day apart on the CBC radio. The programs discussed light pollution head on. The interviews were with esteemed scientists, amateur astronomers, and Canadian astronomer, Roberta Bondar. I particularly liked these interviews because they emphasized a comprehensive approach to this problem. Both programs started off by pointing out that most people, because they live in urban areas, have never seen the Milky Way. The interviewees then talked about the ramifications to human health, the effects on animals, the cost, and other considerations. They also proposed solutions to the problem. I recommend you trying to find these interviews on line. (The Saturday, June 18th interview was on the Quirks and Quarks radio show.)

Enjoy the July gathering at Second Cup on July 12, 2016.

Clear skies, Denise Sabatini

## Dates for the "Fak"

Usually the best times to go out to the Fakahatchee Strand viewing site are moonless nights. Below is a list of upcoming Saturday nights that you will often find fellow club members out there enjoying the skies with you (weather permitting).

| Date | Moonrise | Moonset |
|---|---|---|
| July 23 | 10:06 p.m. | 9:22 a.m. |
| July 30 | 2:45 a.m. | 5:29 p.m. |

## Sky Events

July 11 - First Quarter
July 19 - Full Moon
July 23 - Jupiter transit (Io)
July - Comet Panstarrs (C/2013 X1) – 6th mag. (in Centaurus late July)
July 26 - Last Quarter
July 26 - Jupiter transit (Europa)
July 28/29 - Delta Aquarids Meteor Shower
July 30 - Jupiter transit (Io)
August 2 - New Moon

## Next Meeting

**July 12, 2016: Time 7:00 – 9:00 pm**
Second Cup, (@ Mercado)
9115 Strada Place
Naples, FL

## More Amazing Photos by EAS Member, Chuck Pavlick

Photo of Saturn by Chuck Pavlick on 7/1/16. Celestron Edge 9.25 w/2x Barlow; DMX21AU618 w/Orion color filters; stacked 400 frames per each color channel; processed w/Registax & Photoshop.

Photo of Mars by Chuck Pavlick on 7/1/16. Celestron Edge 9.25 w/2x Barlow; DMX21AU618 w/Orion color filters; stacked 550 frames per each color channel; processed w/Registax & Photoshop.

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## Perseids Meteor Shower Next Month
By Jackie Richards

SAVE THE DATE (August 12 – 13). The peak of the Perseids Meteor Shower takes place next month on Friday, August 12th into Saturday morning, August 13th, when Earth passes through the densest, dustiest area of the long trail left by Comet Swift-Tuttle. Meteors can be seen from July 17th to 24th but much less than during the peak. The best time to view the meteor shower is from after midnight until just before sunrise during the peak (August 12th through 13th). The waxing gibbous moon will set shortly after midnight, so viewing will be ideal after midnight. For those of you that plan to brave the summer weather on the peak night, it should be spectacular, with up to as many as 150-200 meteors expected per hour as reported by Space.com. For those who are planning an all-nighter, rest up the day/night before. Just keep saying to yourselves: "We are not too old to still do this. We can do it!" We'll I'm planning to do it again. Hope you plan to, too.

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## Published Articles by EAS Members

Ted Wolfe's article in the Naples News/Collier Citizen on June 30, 2016, Looking Up: The nearest star: Journey to the Center of our very existence .

http://www.naplesnews.com/community/collier-citizen/looking-up-the-nearest-star-journey-to-the-center-of-our-very-existence-366d69e2-1ea0-0b08-e053-0100-385035461.html

TO VIEW THE ABOVE ARTICLE, PRESS "CTRL" AND LEFT CLICK BUTTON.

The below link provides previous articles in the Collier Citizen by Ted Wolfe that appeared over past years.
http://search.naplesnews.com/jmg.aspx?k=looking+up+ted+wolfe

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## Hubble's bubble lights up the interstellar rubble
By Ethan Siegel

When isolated stars like our Sun reach the end of their lives, they're expected to blow off their outer layers in a roughly spherical configuration: a planetary nebula. But the most spectacular bubbles don't come from gas-and-plasma getting expelled into otherwise empty space, but from young, hot stars whose radiation pushes against the gaseous nebulae in which they were born. While most of our Sun's energy is found in the visible part of the spectrum, more massive stars burn at hotter temperatures, producing more ionizing, ultraviolet light, and also at higher luminosities. A star some 40-45 times the mass of the Sun, for example, might emits energy at a rate hundreds of thousands of times as great as our own star.

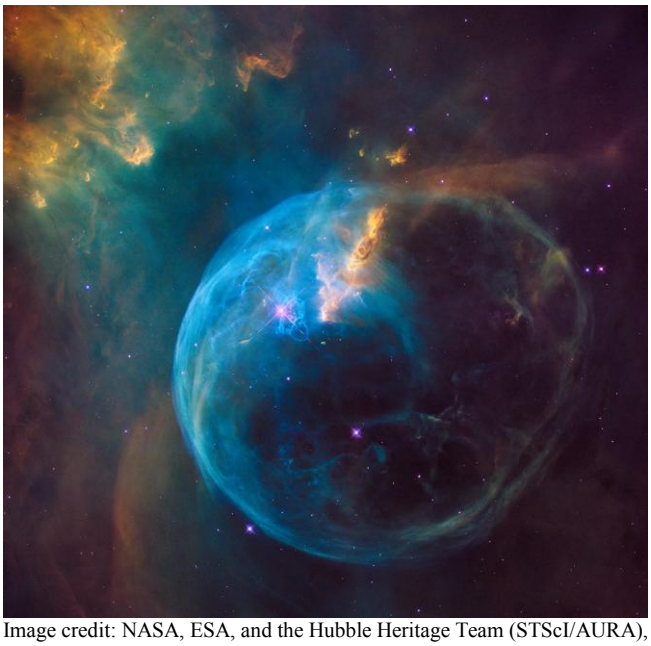

Image credit: NASA, ESA, and the Hubble Heritage Team (STScI/AURA), of the Bubble Nebula as imaged 229 years after its discovery by William Herschel.

The Bubble Nebula, discovered in 1787 by William Herschel, is perhaps the classic example of this phenomenon. At a distance of 7,100 light years away in the constellation of Cassiopeia, a molecular gas cloud is actively forming stars, including the massive O-class star BD+60 2522, which itself is a magnitude +8.7 star despite its great distance and its presence in a dusty region of space. Shining with a temperature of 37,500 K and a luminosity nearly 400,000 times that of our Sun, it ionizes and evaporates off all the molecular material within a sphere 7 light years in diameter. The bubble structure itself, when viewed from a dark sky location, can be seen through an amateur telescope with an aperture as small as 8" (20 cm).

As viewed by Hubble, the thickness of the bubble wall is both apparent and spectacular. A star as massive as the one creating this bubble emits stellar winds at approximately 1700 km/s, or 0.6% the speed of light. As those winds slam into the material in the interstellar medium, they push it outwards. The bubble itself appears off-center from the star due to the asymmetry of the surrounding interstellar medium with a greater density of cold gas on the "short" side than on the longer one. The blue color is due to the emission from partially ionized oxygen atoms, while the cooler yellow color highlights the dual presence of hydrogen (red) and nitrogen (green).

The star itself at the core of the nebula is currently fusing helium at its center. It is expected to live only another 10 million years or so before dying in a spectacular Type II supernova explosion.

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**Items For Sale or Trade or Wanted:**
http://www.naples.net/clubs/eas/equipment_sales.html

**Useful links (software, telescope making, telescope and equipment suppliers, astronomical data sources, iPhone and iPad Apps and more):**
http://www.naples.net/clubs/eas/links.html

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## EAS 2016 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 1868, Marco Island, Florida, 34146.

Name: _____

Address: _____

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Phone: _____

Email: _____