



Monthly Notices of the Everglades Astronomical Society



Naples, FL
July 2017

Officers: President: Denise Sabatini (dsabatini2@embarqmail.com); **VP/Secretary:**

Treasurer: Victor Farris (vfarris01@gmail.com); **Newsletter Editor:** Jackie Richards (jmrichards2005@yahoo.com)

Mailing Address: P. O. Box 1451, Marco Island, FL 34146

Fak Coordinator & information on viewing: Mike Usher (usher34105@earthlink.net)

Home Page: <http://naples.net/~nfn19284/eas/> **Webmaster:** Mike Usher (usher34105@earthlink.net)

President's Message

Although I am sad that this year's meetings have come to an end, I look forward to next year's agenda (which I am working on). Again, I am imploring members to let me know what topics you would like to have as presentations for the 2017 – 2018 year. I would be happy to know that at least one member is pleased with my choices of speakers and topics.

Charlie Paul gave the presentation for our June meeting. He showed us the program which he gives when talking to the public. The presentation was a mixture of gorgeous pictures taken by several of our members and information that mesmerized us all. Charlie also offered to share this presentation with anyone who would like a copy. If you belong to another organization, it would make a great program for you to give. Thank you, Charlie, for a great program, your generosity, and all you do.

For those of you who may not have noticed, our member, Brian McGaffney, had the honor of having his picture of M1 grace the cover of the June issue of *Reflector*. Brian took this picture from his Nutwood Observatory in L'Amable, Ontario, Canada. Congratulations, Brian!

The July and August coffee meetings will be held at the Second Cup in the Mercato. As always, they will be the second Tuesday of the month at 7:00 PM. These meetings give us a chance to talk to each other about whatever we want. Most of us have other interests, so although there is a lot of conversation about astronomy, no doubt other topics will come up.

CONTINUED ON PAGE 2

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 15	11:52 p.m.	11:32 a.m.
July 22	4:55 a.m.	6:45 p.m.

Sky Events

- July 9 - Full Moon
- July 12 - Jupiter Transit (Io)
- July 16 - Last Quarter
- July 19 - Jupiter Transit (Io)
- July 23 - New Moon
- July 23 - Jupiter Transit (Ganymede)
- July 28 - Jupiter Transit (Europa)
- July 30 - First Quarter
- July 28-29 - Peak of Delta Aquariid Meteor Shower
- July Comet Info on Page 3

Next Meeting

July 11, 2017: Time 7:00 – 9:00 pm
Second Cup at The Mercato

* * *



M7 (Ptolemy Cluster) by Ted Wolfe. Photo taken in Chile.

ECLIPSE 2017 CHECKLIST (Contributed by Denise Sabatini)

If you will be viewing the *total* eclipse, here are some things to watch for:

First contact
Sharp shadows (pinhole crescents)
Venus
Approaching shadow
Bailey's Beads
1st Diamond Ring
Chromosphere & prominences (east)
Corona details
Bright stars and planets
360 degree sunset glow
Chromosphere & prominences (west)
2nd Diamond ring and Bailey's Beads
Fourth contact – End

Sky News (July/August 2017) "How to view the total eclipse"

* * *

Interactive Site for
best solar eclipse locations
Contributed by Bart Thomas

http://xjubier.free.fr/en/site_pages/solar_eclipses/TSE_2017_GoogleMapFull.html?Lat=33.6647&Lng=-80.7789&Zoom=9&Map='ROADMAP'&OMap=0

* * *



Photo of Crater Posidonius (top left) on the Moon taken by Chuck Pavlick on 6/2/17.



Saturn taken by Chuck Pavlick – June 2017

* * *

Published Articles by EAS Members

Ted Wolfe's article in the Naples News/Collier Citizen on June 19, 2017: Looking Up: The whirling dervish of the southern skies.



Photo of NGC 1097 by Ted Wolfe taken in Chile.

<http://www.naplesnews.com/story/news/local/communities/collier-citizen/2017/06/19/looking-up-whirling-dervish-southern-skies/409358001/>

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://www.naplesnews.com/search/Ted%20Wolfe/>

To view all of Ted Wolfe's photos, visit his website @ www.tedwolfe.com.

PRESIDENT'S MESSAGE (Continued from Page 1)

Whether or not you are going to center line for the eclipse, I want to wish everyone clear skies. Our January, 2018, meeting will not have a formal presentation. Instead, the meeting will be dedicated to a "show and tell" accounting of eclipse experiences by anyone who wishes to share. Bring your pictures, observations, drawings, stories, and FEELINGS. As there will be no formal meetings before the eclipse, if you have anything you'd like to inquire about, please feel free to contact me. As a reminder, if you stay in Naples, you will have about 80% - 85% coverage. Please observe safely.

Enjoy your summer, no matter where you are.

Clear skies, Denise Sabatini

* * *

Viewing of Comets During July 2017

Comet C/2015 V2 (Johnson) - visible all night; in Virgo July 1; in Hydra July 15; in Centaurus July 31; 8th mag. (fading)



The Shape of the Solar System

By Marcus Woo

When Stamatiios (Tom)Krimigis was selected for the Voyager mission in 1971, he became the team's youngest principal investigator of an instrument, responsible for the Low Energy Charged Particles (LECP) instrument. It would measure the ions coursing around and between the planets, as well as those beyond. Little did he know, though, that more than 40 years later, both Voyager 1 and 2 still would be speeding through space, continuing to literally reshape our view of the solar system.

The solar system is enclosed in a vast bubble, carved out by the solar wind blowing against the gas of the interstellar medium. For more than half a century, scientists thought that as the sun moved through the galaxy, the interstellar medium would push back on the heliosphere, elongating the bubble and giving it a pointy, comet-like tail similar to the magnetospheres—bubbles formed by magnetic fields—surrounding Earth and most of the other planets.

"We in the heliophysics community have lived with this picture for 55 years," said Krimigis, of The Johns Hopkins University Applied Physics Laboratory in Laurel, Maryland. "And we did that because we didn't have any data. It was all theory."

But now, he and his colleagues have the data. New measurements from Voyager and the Cassini spacecraft suggest that the bubble isn't pointy after all. It's spherical.

Their analysis relies on measuring high-speed particles from the heliosphere boundary. There, the heated ions from the solar wind can strike neutral atoms coming from the interstellar medium and snatch away an electron. Those ions become neutral atoms, and ricochet back toward the sun and the planets, uninhibited by the interplanetary magnetic field.

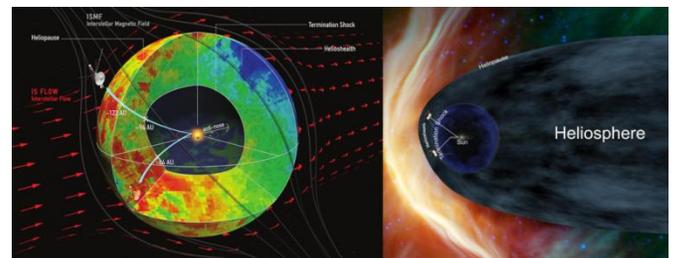
Voyager is now at the edge of the heliosphere, where its LECP instrument can detect those solar-wind ions. The researchers found that the number of measured ions rise and fall with increased and decreased solar activity, matching the 11-year solar cycle, showing that the particles are indeed originating from the sun.

Meanwhile, Cassini, which launched 20 years after Voyager in 1997, has been measuring those neutral atoms bouncing back, using another instrument led by Krimigis, the Magnetosphere Imaging Instrument (MIMI). Between 2003 and 2014, the number of measured atoms soared and dropped in the same way as the ions, revealing that the latter begat the former. The neutral atoms must therefore come from the edge of the heliosphere.

If the heliosphere were comet-shaped, atoms from the tail would take longer to arrive at MIMI than those from the head. But the measurements from MIMI, which can detect incoming atoms from all directions, were the same everywhere. This suggests the distance to the heliosphere is the same every which way. The heliosphere, then, must be round, upending most scientists' prior assumptions.

It's a discovery more than four decades in the making. As Cassini ends its mission this year, the Voyager spacecraft will continue blazing through interstellar space, their remarkable longevity having been essential for revealing the heliosphere's shape.

"Without them," Krimigis says, "we wouldn't be able to do any of this."



Caption: New data from NASA's Cassini and Voyager show that the heliosphere — the bubble of the sun's magnetic influence that surrounds the solar system — may be much more compact and rounded than previously thought. The image on the left shows a compact model of the heliosphere, supported by this latest data, while the image on the right shows an alternate model with an extended tail. The main difference is the new model's lack of a trailing, comet-like tail on one side of the heliosphere. This tail is shown in the old model in light blue.

Image credits: Dialynas, et al. (left); NASA (right)

* * *

EAS 2017 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: _____