Monthly Notices of the Everglades Astronomical Society

Naples, FL

September 2011

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President's Message:

Greetings! It's going to be a big month! This month we kick off a new season at the Norris Center and, as promised last time, the Winter Star Party invitations have arrived. If you would like an invitation, e-mail a request to heinrich1@windstream.net (the preferred method of communication). If I remember I can photocopy a few and bring them to the meeting, but my memory is a little unreliable at times. Time is of the essence when sending in your invitation, although it's in February they sell out by about October.

Also this month we have Dennis Albright making a presentation on Meteors, I believe. Be there!

Clear Skies,
Mike Usher, President
(239) 643-6017

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).

Fak Dates	Sun Set	Moonrise	Moonset
Sept 17	7:29pm	10:35pm	12:32pm
Sept 24	7:22pm	4:08am	5:15pm
Oct 22	6:53pm	2:54am	3:47pm

Next Meeting: *(Bring a friend!)*

September 13th, 2011
Time 7:00 – 9 pm
At the Norris Center, 755 8th Avenue South, Naples, FL

Sky Events:

Sept 4 -- New Moon
Sept 12 -- First Quarter Moon
Sept 20 -- Full Moon
Sept 27 – Last Quarter Moon

Eclipse Dates:

November 25: Partial eclipse of the Sun This eclipse will not be visible from North America. The eclipse will be visible from Antarctica, southern Africa, southern India, and New Zealand.

December 10: Total lunar eclipse This eclipse will be fully visible from Alaska. The Moon will enter the penumbra at 2:32 A.M. AKST and will leave the penumbra at 8:32 A.M. AKST. The eclipse will be partially visible from parts of North America: Central and western areas will be able to observe both a penumbral and umbral eclipse. The Moon will enter the penumbra at 3:32 A.M. PST and the umbra at 4:45 A.M. PST. A penumbral eclipse will be visible from most of the East Coast, starting at 6:32 A.M. EST, just before the Moon sets.

Meteor Showers:

No major showers this month.

Astronomical Trivia Question of the Month:

Which is NOT a characteristic of a meteorite?

a. Smooth, pitted fusion crust
b. Slightly to strongly magnetic
c. Can contain high amounts of the element Osmium
d. Can contain high amounts of the element Tin

*Answer on next page.

Solar System Size Surprise
by Dr. Tony Phillips

News flash: You may be closer to interstellar space than you previously thought.

A team of researchers led by Tom Krimigis of the Johns Hopkins University Applied Physics Laboratory announced the finding in the June 2011 issue of Nature. The complicated title of their article, "Zero outward flow velocity for plasma in a heliosheath transition layer," belies a simple conclusion: The solar system appears to be a billion or more kilometers smaller than earlier estimates.

The recalculation is prompted by data from NASA's Voyager 1 probe, now 18 billion kilometers from Earth. Voyagers 1 and 2 were designed and built and are managed by NASA's Jet Propulsion Laboratory. Aging but active, the spacecraft have been traveling toward the stars since 1977 on a heroic mission to leave the solar system and find out what lies beyond.

To accomplish their task, the Voyagers must penetrate the outer walls of the heliosphere, a great bubble of plasma and magnetism blown in space by the solar wind. The heliosphere is so big, it contains all the planets, comets, and asteroids that orbit the sun. Indeed many astronomers hold that the heliosphere defines the boundaries of the solar system. Inside it is "home." Outside lies the Milky Way. For 30+ years, the spacecraft have been hurtling toward the transition zone. Voyager 1 is closing in.

Much of Voyager 1's long journey has been uneventful. Last year, however, things began to change. In June 2010, Voyager 1 beamed back a startling number: zero. That's the outward velocity of the solar wind where the probe is now.

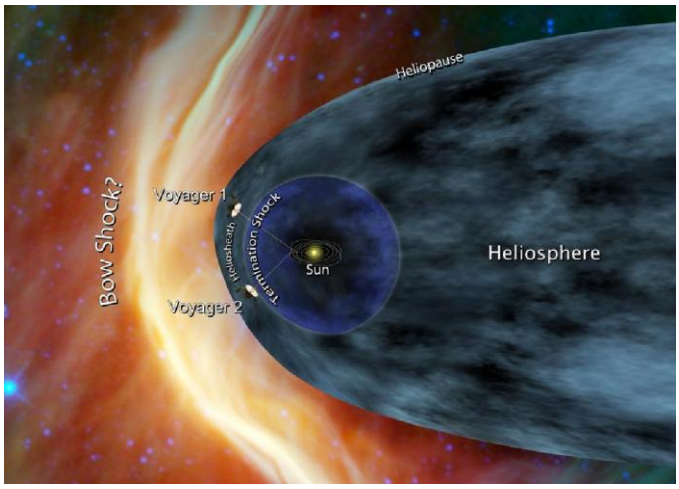
"This is the first sign that the frontier is upon us," says Krimigis.

Previously, researchers thought the crossing was still years and billions of kilometers away, but a new analysis gave them second thoughts. Krimigis and colleagues combined Voyager data with previously unpublished measurements from the Cassini spacecraft. Cassini, on a mission to study Saturn, is nowhere near the edge of the solar system, but one of its instruments can detect atoms streaming into our solar system from the outside. Comparing data from the two locations, the team concluded that the edge of the heliosphere lies somewhere between16 to 23 billion kilometers from the sun, with a best estimate of approximately 18 billion kilometers.
Because Voyager 1 is already nearly 18 billion kilometers out, it could cross into interstellar space at any time—maybe even as you are reading this article.

"How close are we?" wonders Ed Stone, Caltech professor and principal investigator of the Voyager project since the beginning. "We don't know, but Voyager 1 speeds outward a billion miles every three years, so we may not have long to wait."

Stay tuned for the crossing.

For more about the missions of Voyager 1 and 2, see http://voyager.jpl.nasa.gov/. Another Voyager project scientist, Merav Opher, is the guest on the newest Space Place Live cartoon interview show for kids at http://spaceplace.nasa.gov/space-place-live.



Caption:
This artist's concept shows NASA's two Voyager spacecraft exploring a turbulent region of space known as the heliosheath, the outer shell of the bubble of charged particles around our sun. Image credit: NASA/JPL-Caltech.

Answer to the trivia question:

The answer is **D.**

Almost all meteorites have very little if any of the element tin. There are a few examples that have surfaced that are the exception to this rule, so it is one way to help substantiate a meteorite find.

Links of the Month:

1. http://www.boulder.swri.edu/~benke/present/sims/impact_movies.html
2. http://www.nasa.gov/mission_pages/mer/multimedia/pia14750.html
3. http://youtu.be/j4ARakSH-AE

Items for Sale
http://naples.net/clubs/eas/sales.html

Handbook of Space Astronomy and Astrophysics - Paperback; 782 pages; 338 B&W illustrations; 247 tables. 40% off list price for astronomy club members. A comprehensive compilation of the facts and figures relevant to astronomy and astrophysics. This handbook contains the most frequently used information in modern astronomy and astrophysics, and will be an essential reference for advanced amateur astronomers, university students, graduate students, researchers and professionals working in astronomy and the space sciences. For more information and to purchase the handbook go to:

http://www.astrohandbook.com/astrohandbook_clubs.html

Martin Zombeck, mvz@alum.mit.ed, Club Affiliation: EAS; date posted: 23 November 2010.

2012 Membership Dues:

For the bargain price of only *$20.^{00} per family*, all this can be yours for the coming year!

- ✓ Meet with your fellow astronomy enthusiasts at least 10 times a year.
- ✓ Many opportunities to freeze/sweat/get bitten by mosquitoes in the Fakahatchee Strand.
- ✓ View planets, nebulae and many other celestial objects.

Don't miss out! Fill out this form (please print plainly) and send it with your $20 check, payable to:

Everglades Astronomical Society
P.O. Box 1868
Marco Island, Florida 34146

Name: _____
Address: _____
Phone: _____
Email: _____