



Monthly Notices of the Everglades Astronomical Society



Naples, FL
May 2011

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President's Message

This is the time of year the heat and humidity of the approaching rainy season make observing difficult. Many of our members like me stay home during the summer and read astronomy books, but a few hearty souls still venture out to the Fakahatchee where the wonders of the summer night sky await them. Surprisingly, the mosquitoes are not as horrible as you might think as our observing site is well away from the brush that gives them cover. The clouds are the real enemy here as the sky does not often clear much before midnight, but if it does visitors find the summer Milky Way magnificent.

Our event at the Ritz went off surprisingly well, considering the band took our spot and we were stuck with too many lights. The clouds mostly cleared off right after sunset and many of the 500 guests took the opportunity to look at Saturn and other Spring objects. The Ritz is contributing \$400 to our club. I'd like to take the opportunity to thank Charlie Paul, Rick Piper, Todd Strackbein, Mary Ann Wallace and Dorette Clive for their efforts. Also our former club president Deni Melko Elliott was visiting from West Virginia and came by to help. Clear Skies,

Mike Usher

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
May 21	8:11 pm	11:30 pm	10:32 am
May 28	8:13 pm	3:33 am	4:42 pm
June 18	8:22 pm	10:47 pm	10:13 am

Next Meeting (Bring a friend!)

May 10th, 2011
Time 7:00 – 9 pm
At the Norris Center, 755 8th Avenue South, Naples, FL

Sky Events

May 3 -- New Moon
May 10 -- First Quarter Moon
May 17 -- Full Moon
May 24 -- Last Quarter Moon

Eclipse Dates

June 1: Partial eclipse of the Sun This eclipse will be visible in North America only from northern Alaska and parts of northern Canada. In Deadhorse, Alaska, for example, the partial eclipse lasts from 12:31 P.M. until 1:52 P.M. AKDT.

June 15: Total lunar eclipse This eclipse will not be visible from North America. The eclipse will be visible from South America, Europe, Africa, Asia, and parts of Australia.

July 1: Partial eclipse of the Sun This eclipse will not be visible from North America. The eclipse will be visible only from a small area of the southern Indian Ocean.

Meteor Shower:

Name: **Eta Lyrids (ELY)**
Radiant and Direction: **Lyra (E)**
Morning of Maximum: **May 06-13**
Hourly Rate: **15**
Parent Body: **Comet C/1983 H1 (IRAS-Araki-Alcock).**

Astronomical Trivia Question of the Month

How long is one Galactic Year?

- a. ~2.5 million years
- b. ~20 billion years
- c. ~225-250 million years
- d. ~10.2-10.8 million years

**Answer on next page.*



Cosmic Recount

by Dr. Tony Phillips

News flash: The Census Bureau has found a way to save time and money. Just count the biggest people. For every NBA star like Shaquille O'Neal or Yao Ming, there are about a million ordinary citizens far below the rim. So count the Shaqs, multiply by a million, and the census is done.

Could the Bureau really get away with a scheme like that? Not likely. Yet this is just what astronomers have been doing for decades.

Astronomers are census-takers, too. They often have to estimate the number and type of stars in a distant galaxy. The problem is, when you look into the distant reaches of the cosmos, the only stars you can see are the biggest and brightest. There's no alternative. To figure out the total population, you count the supermassive Shaqs and multiply by some correction factor to estimate the number of little guys.

The correction factor astronomers use comes from a function called the "IMF"—short for "initial mass function." The initial mass function tells us the relative number of stars of different masses. For example, for every 20-solar-mass giant born in an interstellar cloud, there ought to be about 100 ordinary sun-like stars. This kind of ratio allows astronomers to conduct a census of all stars even when they can see only the behemoths.

Now for the real news flash: The initial mass function astronomers have been using for years might be wrong.

NASA's Galaxy Evolution Explorer, an ultraviolet space telescope dedicated to the study of galaxies, has found proof that small stars are more numerous than previously believed.

"Some of the standard assumptions that we've had—that the brightest stars tell you about the whole population—don't seem to work, at least not in a constant way," says Gerhardt R. Meurer who led the study as a research

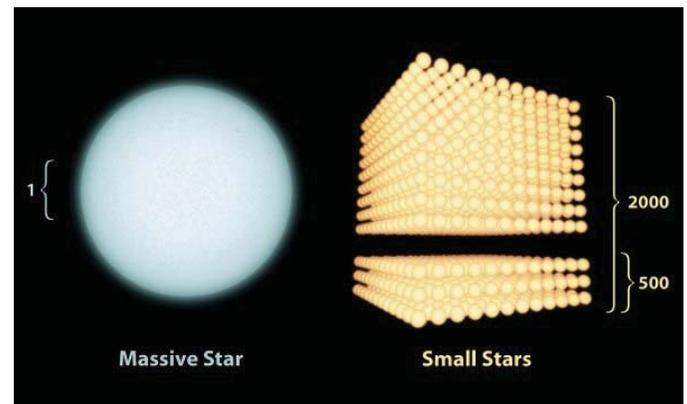
scientist at Johns Hopkins University, Baltimore, Md. (Meurer is now at the University of Western Australia.) Meurer says that the discrepancy could be as high as a factor of four. In other words, the total mass of small stars in some galaxies could be four times greater than astronomers thought. Take that, Shaq!

The study relied on data from Galaxy Evolution Explorer to sense UV radiation from the smaller stars in distant galaxies, and data from telescopes at the Cerro Tololo Inter-American Observatory to sense the "H-alpha" (red light) signature of larger stars. Results apply mainly to galaxies where stars are newly forming, cautions Meurer.

"I think this is one of the more important results to come out of the Galaxy Evolution Explorer mission," he says. Indeed, astronomers might never count stars the same way again.

Find out about some of the other important discoveries of the Galaxy Evolution Explorer at <http://www.galex.caltech.edu/>. For an easy-to-understand answer for kids to "How many solar systems are in our galaxy?" go to The Space Place at: <http://tiny.cc/l2KMa>.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



Caption:

Astronomers have recently found that some galaxies have as many as 2000 small stars for every 1 massive star. They used to think all galaxies had only about 500 small stars for every 1 massive star.

Set For Launch:

<http://www.nasa.gov/missions/highlights/schedule.html>

(Keep in mind that with a two billion dollar payload on board, they will not take any chances with the launch date. Many reschedules are likely to happen.)

Date: May 16

Mission: STS-134

Launch Vehicle: Space Shuttle Endeavour

Launch Site: Kennedy Space Center - Launch Pad 39A

Launch Time: 8:56 a.m. EDT

Answer to the trivia question:

The answer is **C**. The best evidence places a Galactic Year at approximately 225 million to 250 million years for the sun to rotate around the center of the Milkyway.

Below is the beginning of a new branch of Archaeoastronomy where Archaeoastronomers are trying to place events of the past into context of Galactic Years. This list is crude, but may in time explain past extinctions, climate changes, or other wonders of the past. Just as we try to map out the hazards and opportunities of the Earth making its annual trek around the sun, so too does this new branch of astronomy. It tries to map out the hazards and opportunities of our trek around the Milkyway.

In this list, 1 galactic year (GY) = 225 million years

- **about –40 GY:** [Big Bang](#)
- **about –39 GY:** Birth of the [Milky Way](#)
- **0 GY:** Birth of the [Sun](#)
- **4 GY:** Oceans appear on Earth
- **5 GY:** Life begins
- **6 GY:** [Prokaryotes](#) appear
- **7 GY:** [Bacteria](#) appear
- **10 GY:** Stable continents appear
- **13 GY:** [Eukaryotes](#) appear
- **16 GY:** [Multicellular](#) organisms appear
- **17.8 GY:** [Cambrian explosion](#)
- **19 GY:** [Great Dying](#)
- **19.6 GY:** [K–T extinction event](#)
- **19.999 GY:** Appearance of [modern humans](#)
- **20 GY:** Present day

http://en.wikipedia.org/wiki/Galactic_year

News From our web site:

Mike has published a wonderful how to guide for buying a first telescope.

http://www.naples.net/clubs/eas/tutorials/Buying_Your_First_Telescope.pdf

Observing Chairs

Build your own chair

(Complete plans, thanks to EAS member Dave Cushing)

http://www.naples.net/clubs/eas/documents/Observer_chair_plans.pdf

Build your own Denver chair

(Complete plans)

<http://www.tulsawalk.com/projects/denverobserverchair/denverastro/seat.html>

See also:

<http://www.tulsawalk.com/projects/denverobserverchair/index.html>.

Catsperch Observing Chairs

(Commercial version by Wood Wonders; similar to Mike Usher's chair)

<http://www.wood-wonders.com/Catsperch%20Chairs.htm>

See also: <http://www.catseyecollimation.com/chairprods.html> and

http://www.cloudynights.com/item.php?item_id=2337 .

Items for Sale

<http://naples.net/clubs/eas/sales.html>

Aluminum ramps that telescope to 5-10' long. Perfect to roll your big dob into a van, SUV or pickup truck. New condition. \$150. See mfg. website. David Eimers, 239-353-4828, fishflash1@gmail.com, Club Affiliation: EAS; date posted: 27 November 2010.

Handbook of Space Astronomy and Astrophysics - New; 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 click here.

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

I have a 20" Dobsonian reflector that I am willing to part with at a very low price. It has an objective mirror with a figure few reflectors have regardless of aperture (1/18 wave peak to peak wave front error). This telescope is a great value for anyone or group who is considering a large aperture telescope. Email me at jedw.1@netzero.net for a complete description, photos and price.

Jim Edwards, date posted: 15 November 2010.

2011 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: _____