FORD AMATEUR ASTRONOMY CLUB
FAAC
Established 1992

STAR STUFF

The Newsletter of the Ford Amateur Astronomy Club

Volume 15, Number 21

February 2006

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NASA Space Place

Micro-sats, Macro Potential

Patrick L. Barry

Future space telescopes might not consist of a single satellite such as Hubble, but a constellation of dozens or even hundreds of small satellites, or "micro-sats," operating in unison.

Such a swarm of little satellites could act as one enormous telescope with a mirror as large as the entire constellation, just as arrays of Earth-bound radio telescopes do. It could also last for a long time, because damage to one micro-sat wouldn't ruin the whole space telescope; the rest of the swarm could continue as if nothing had happened

And that's just one example of the cool things that micro-sats could do. Plus, micro-sats are simply smaller and lighter than normal satellites, so they're much cheaper to launch into space.

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"Are We There yet?"

President's Corner

Don Klaser, President, FAAC

How many of us have heard those words from our kids while on vacation or going to Grandpa and Grandma's house? Or, better yet, how many remember saying that to our parents on a long ride in the days before Game Boys, Playstations and on-board DVD players?

This past January, NASA launched New Horizon, its latest entry in the race to understand how our solar system formed. After a gravity-assisted pedal to the metal boost by Jupiter in 2007, it will coast along at 40,000 mph and with only annual self diagnostic tests, in a cyber sleep until 2015. About six months before closest approach, it will wake up and let us know we're almost there.

But how will we know when we are there?

...continued on page 2

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TREASURER:	Gordon Hansen
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CLUB INFORMATION

The Ford Amateur Astronomy Club (FAAC) holds regular general meetings on the fourth Thursday of each month, except for the combined November/December meeting held on the first Thursday of December. Meetings are held in the Administrative Services and Conference Center building at Henry Ford Community College in Dearborn. Refer to our website for a map and directions (www.boonhill.net/faac).

The FAAC observes at Spring Mill Pond within the Island Lake State Recreation Area near Brighton, Michigan. The club maintains an after-hours permit, and observes on Friday and Saturday nights, and nights before holidays, weather permitting.

Observing schedules and additional information are available by calling the FAAC Observing Hotline at 313-390-5456, and on the our website.

Membership in the FAAC is open to anyone with an interest in amateur astronomy. The FAAC is an affiliate of the Ford Employees Recreation Association (F.E.R.A.).

Membership fees are as follows:

Annual – New Member:	$30	($15 after July 1)
Annual – Renewal:	$25	($30 after January 31)
Life Membership:	$150	

Membership includes the *STAR STUFF* newsletter, discounts on ASTRONOMY and SKY & TELESCOPE magazines, discounts at selected area equipment retailers, and after-hours access to the Island Lake observing site.

ASTRONOMY or SKY & TELESCOPE MAGAZINE DISCOUNTS

Obtain the required form from the FAAC club treasurer for a $10 discount. Send the completed form directly to the respective publisher with your subscription request and payment. Do not send any money directly to the FAAC for this.

***STAR STUFF* NEWSLETTER SUBMISSIONS**

Your submissions to *STAR STUFF* are more than welcome! Send your story and/or images to the editor at ***dake00k@yahoo.com***. Email text or MS Word is fine. *STAR STUFF* will usually go to press the weekend prior to each general meeting. Submissions received prior to that weekend will be included in that issue.

President's Corner *(continued from page 1)*

When we see photos taken at closest approach that will show surface detail as small as 30 yards across, that's when. After that, it's off to the Kuiper Belt.

Another intrepid explorer, Voyager One, is still on the job. After parting ways with Voyager Two in 1980, Voyager One followed a path that carried it out of the plane of the solar system and toward interstellar space. In 2004, it entered the edge of the heliopause, the end of our sun's domain and the beginning of infinity. After that, Voyager will sail on, and in about 40,000 years pass a neighboring star. Forty thousand years! That's almost seven times longer than all of recorded human history.

It makes you wonder, after all that time, will anyone remember to ask - Are We There Yet?

Micro-sats... *(continued from page 1)*

In February, NASA plans to launch its first experimental micro-sat mission, called Space Technology 5. As part of the New Millennium Program, ST5 will test out the crucial technologies needed for micro-sats—such as miniature thrust and guidance systems—so that future missions can use those technologies dependably.

Measuring only 53 centimeters (20 inches) across and weighing a mere 25 kilograms (55 pounds), each of the three micro-sats for ST5 resembles a small television in size and weight. Normal satellites can be as large and heavy as a school bus.

"ST5 will also gather scientific data, helping scientists explore Earth's magnetic field and space weather," says James Slavin, Project Scientist for ST5.

Slavin suggests some other potential uses for micro-sats:

A cluster of micro-sats between the Earth and the Sun—spread out in space like little sensor buoys floating in the ocean—could sample incoming waves of high-speed particles from an erupting solar flare, thus giving scientists hours of warning of the threat posed to city power grids and communications satellites.

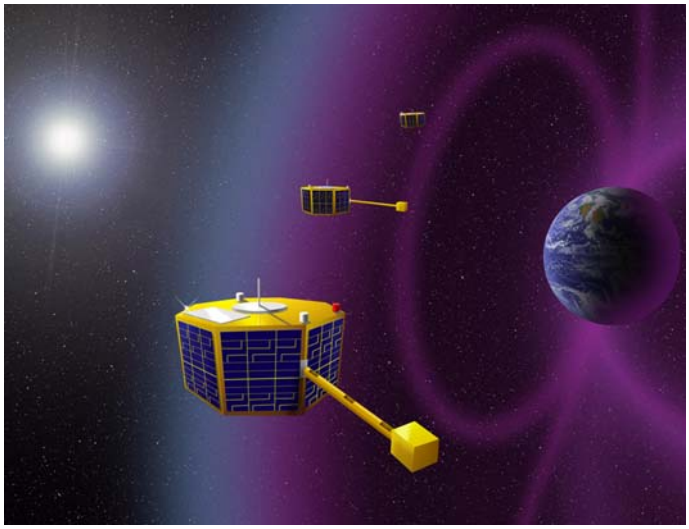
Micro-sats... *(continued from page 2)*

Or perhaps a string of micro-sats, flying single file in low-Earth orbit, could take a series of snapshots of violent thunderstorms as each micro-sat in the "train" passes over the storm.

This technology would combine the continuous large-scale storm monitoring of geosynchronous weather satellites—which orbit far from the Earth at about 36,000 kilometers' altitude—with the up-close, highly detailed view of satellites only 400 kilometers overhead.

If ST5 is successful, these little satellites could end up playing a big role in future exploration.

The ST5 Web site at nmp.jpl.nasa.gov/st5 has the details. Kids can have fun with ST5 at spaceplace.nasa.gov, by just typing ST5 in the site's Find It field.



The Space Technology 5 mission will test crucial micro-satellite technologies.

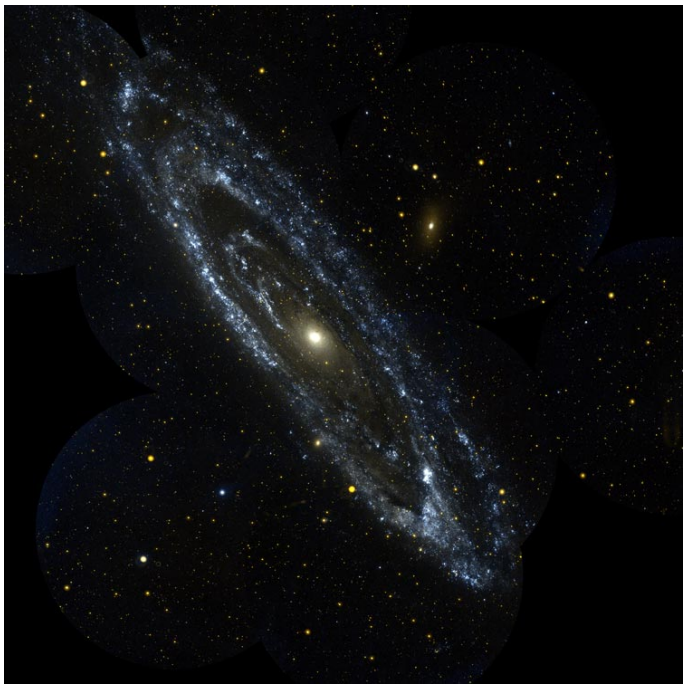
This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with NASA.

NASA Space Place

A New View of the Andromeda Galaxy

Dr. Tony Phillips and Patrick L. Barry

This is a good time of year to see the Andromeda galaxy. When the sun sets and the sky fades to black, Andromeda materializes high in the eastern sky. You can find it with your unaided eye. At first glance, it looks like a very dim, fuzzy comet, wider than the full moon. Upon closer inspection through a backyard telescope—wow! It's a beautiful spiral galaxy.



The GALEX telescope took this UV image of the Andromeda galaxy (M31), revealing a surprising shape not apparent in visible light.

At a distance of "only" 2 million light-years, Andromeda is the nearest big galaxy to the Milky Way, and astronomers know it better than any other. The swirling shape of Andromeda is utterly familiar.

Not anymore. A space telescope named GALEX has captured a new and different view of Andromeda. According to GALEX, Andromeda is not a spiral but a ring.

GALEX is the "Galaxy Evolution Explorer," an ultraviolet telescope launched by NASA in 2003. Its mission is to learn how galaxies are born and how they change with age. GALEX's ability to see ultraviolet (UV) light is crucial; UV radiation comes from newborn stars, so UV images of galaxies reveal star birth—the central process of galaxy evolution.

GALEX's sensitivity to UV is why Andromeda looks different. To the human eye (or to an ordinary visible-light telescope), Andromeda remains its usual self: a vast whirlpool of stars, all ages and

Andromeda… *(continued from page 3)*

all sizes. To GALEX, Andromeda is defined by its youngest, hottest stars. They are concentrated in the galaxy's core and scattered around a vast ring some 150,000 light years in diameter. It's utterly unfamiliar.

"Looking at familiar galaxies with a new wavelength, UV, allows us to get a better understanding of the processes affecting their evolution," says Samuel Boissier, a member of the GALEX team at the Observatories of the Carnegie Institution of Washington.

Beyond Andromeda lies a whole universe of galaxies—spirals, ellipticals and irregulars, giants and dwarfs, each with its own surprising patterns of star formation. To discover those patterns, GALEX has imaged hundreds of nearby galaxies. Only a few, such as Andromeda, have been analyzed in complete detail. "We still have a lot of work to do," says Boissier, enthusiastically.

GALEX has photographed an even greater number of distant galaxies—"some as far away as 10 billion light-years," Boissier adds—to measure how the rate of new star formation has changed over the universe's long history. Contained in those terabytes of data is our universe's "life story." Unraveling it will keep scientists busy for years to come.

See www.galex.caltech.edu for more on GALEX. Kids can see how to make a galactic art project at spaceplace.nasa.gov/en/kids/galex/art.shtml.

This article was originally provided in December, 2005, by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with NASA.

January 26 Meeting Minutes

Bob MacFarland

Don Klaser opened the meeting by asking for introductions at 5:35. Some 34 persons attended including Nick Ryan and Carole Karin who were visiting for the first time. Next, Don asked everyone to share their astronomy related experiences since the last General Membership meeting. Chuck Jones, George Korody, Gordon Hansen, Tony Licata, Nick Ryan and Preston Crofts responded accordingly.

Tech Talk

Gary Stromolo gave a very interesting talk entitled "Designing a Dual Scope Solar Rig *and Imaging Too". Gary reviewed the steps he took to mount his Orion Maksutov and Coronado PST Solar scopes and an eyepiece caddie onto a common photo tripod mount. He also showed some of the images he captured with both the white light and PST Hydrogen Alpha filters using his Webcam camera on this rig. He also detailed some of the trade offs between the detail in granularity and solar prominences which must be made. Gary has written an excellent article for Cloudy Nights Telescope Reviews.com on this subject. You may find it at:

http://www.cloudynights.com/item.php?item_id=1083

Main Presentation

John Schroer (JPL Solar System Ambassador) led the group through an excellent talk entitled "Exploring Your Universe w/Radio." In it, John gave the historical background behind radio communications leading up to the discovery and development of radio astronomy beginning with Marconi in1903. He then proceeded to play some very curious sounding samples of the radio signals from various solar system and galactic sources including the earth via his laptop and our sound system. Included in the recordings were: sounds from sources as the Sun, solar flares, Earth's auroras and lightning strikes around the globe, the auroras on Saturn, signals from Jupiter and even very distant pulsars.

General Business Discussion

No comments or corrections were made regarding the December 1st minutes and Gordon Hansen reviewed the state of the treasury (see report in this issue).

The annual elections were facilitated by Mike Bruno. As a result, the attending general membership elected Don Klaser, Ed Halash, Ken Anderson and Gordon Hansen to the offices of President, Vice President, Secretary and Treasurer respectively. The terms of the offices will last from February, 2006 to January, 2007.

The various supporters of the Lake Erie Ice Daze public awareness event reviewed how the outing progressed. Some 12 -15 non-club persons attended the classroom talk and some 20+ attended the evening observing. The food and camaraderie shared at the Three Hermanos

Minutes... *(continued from page 43)*

restaurant was enjoyed by some 16 members. Out of a stroke of fortune the evening skies were excellent with very limited wind and reasonable temperatures.

Jim Frisbie announced that the next Astro-Imaging SIG meeting will be February 9th. The main topic of discussion is to be announced. The annual club dinner party is scheduled for April 8th at the Station 85 restaurant in Plymouth, MI. At this time, tickets prices appear to below $30 per person again this year. More details will be announced at the February meeting by Diane Worth and Jim Frisbie who are organizing this event (see flyer in this issue).

Jim Frisbie reported that 14 tables were reserved so far to date for the January 28th Astronomy Swap Meet. Gary Stahl volunteered to take over the pop management for the next meeting. Thank you Gary!

Don Klaser asked for volunteers to help give an awareness event at the Forest Elementary School in Farmington Hills on Wednesday, February 1st.

The next FAAC General Membership meeting is February 23, 5:30 pm, back at the usual place – Rosenau Conference Rooms A/B at HFCC, in the Administrative Services and Conference Center.

Meeting Agenda - February 23

(5:30 pm)

Opening/Introductions/Member Observing

New Members & Guests – Diane Worth

Tech Talk - Splitting Double Stars – Jim Frisbie

Presentation – Selenography – Alan Rothenberg

Club Business / Secretary**/** Treasurer Report

Club Projects / Committees / Member support

- Forest Elementary Program Recap – Don Klaser
- Astronomy Mag. Outreach Award – Don Klaser
- Astro-Imaging SIG – Jim Frisbie
- Club Dinner Party – Diane Worth
- Swap meet - Recap – Jim Frisbie
- Astronomy Day – Don Klaser
- Walk-ins

FAAC Calendar of Events 2006

Bob MacFarland

January
21 - Lake Erie Ice Daze Public Outreach
28 - 3rd Annual FAAC Astro SWAP Meet

February
1 - Forest Middle School Public Outreach

April
1 - Lyon Oaks Twp. Park Star Gaze
8 - FAAC Annual Dinner Party

May
6 - Astronomy Day - The New Detroit Science Center / Beginner's Night - Island Lake Recreational Area

June
2 & 3 - Astronomy on the Beach - GLAAC (Observing Only)

July
1 - Beginner's Night - Island Lake Recreational Area

TBD - Summer FAAC / Sand Hill Soaring Club Combined Picnic

August
5 - Beginner's Night - Island Lake Recreational Area

September
22-24 - Great Lakes Star Gaze - Gladwin
29-30 - Astronomy on the Beach - GLAAC (w/Presentations)

October
28 - Beginner's Night - Island Lake (proposed)

Astro Imaging SIG

Jim Frisbie

The March Meeting of the Astro Imaging S.I.G. will be held, Thursday, March 9, 2006, 5:30 pm at Henry Ford Community College in Dearborn.

The topic for the meeting will be “Ask The Astrophotographer”. Please bring your questions, problems, and troubling issues. Maybe some has had the same concerns and will share how they worked them out. All Club members and their guests are invited.

We will meet in the Roseneau Conference Rooms at the Administrative Services and Conference Center. (Same room as the regular FAAC General Meeting). If you approach the Faculty parking lot gate with your car, it should open allowing you to park close to the building.

Swap Meet Says "Thanks"

Jim Frisbie

Thanks to all those who participated in The Third Annual FAAC Astronomy SWAP Meet. There seemed to be a “BUZZ” going on from start till finish. The presentations were well received. We raised over $700 for the Club Treasury. I am declaring a “Success”! Hopefully, next year will be even better.

Treasurer’s Report

Gordon Hansen

Bank Accounts		
Checking	$	780.36
Savings	$	2,990.53

TOTAL Bank Accounts	**$**	**3,770.89**
Cash Accounts		
Cash Account	$	70.46

TOTAL Cash Accounts	**$**	70.46
Asset Accounts		
GLAAC	$	626.45
Projector	$	543.97
Scholarship	$	354.60

TOTAL Asset Accounts	**$**	**1525.02**

OVERALL TOTAL	**$**	**5366.37**

Sky Calendar

Jim Frisbie

February

	20	Mo	Moon passes 5 degrees south of Jupiter-AM
◑	21	Tu	Last Quarter moon 2:17 AM
	23	Th	Mercury at Greatest Elongation east (18 degrees)
	24	Fr	Moon passes 10 degrees south of Venus-AM
●	27	Mo	New moon 7:31 PM

March

	6	Mo	Moon passes 3 d north of Mars-PM
◐	6	Mo	First Quarter moon 3:16 PM
	10	Fr	Moon passes 4 deg north of Saturn-PM
○	14	Tu	Full moon 6:35 PM Crust Moon
	19	Su	Moon passes 5 deg south of Jupiter-AM
	20	Mo	Spring Equinox 1:26 PM
◑	22	We	Last Quarter moon 2:11 PM
	25	Sa	Venus Greatest Elongation west (47 deg)
	25	Sa	Moon passes 6 deg south of Venus-AM
●	29	We	New moon 5:15 AM

All times in Eastern Daylight Time. From the Henry J. Buhl, Jr. Planetarium in Pittsburg, PA.

For Sale

Meade 10" LXD55 Schmidt Newtonian telescope Autostar guided, German Equatorial mount, "T"- adapter, Super Plossl 26-mm eyepiece, 1.25" and 2" eyepiece holders, battery pack for 8 "D" cell batteries, 25ft. 110v. power cord. Bought in 2002 for $1200, will sell for $1000, or possibly trade for another scope.

E-mail inquiries to: eddyelectro@talkamerica.net

Coulter 10" Dobsonian telescope. $400.

Contact Bob Stonik, 313-361-4954.

Meade ETX Spotting Scope, 5 inch, Paragon Plus tripod, 26mm Super Plössl, 9.5mm Orion Epic, 13mm Orion Superwide Lanthanum. Nearly new, must sell. Could sell individually.

Contact Jack Fournier, 248-219-6222

FAAC Annual Dinner Banquet 2006

Saturday, April 8, 2006
6:00 pm until …?

ASTRO SLIDE SHOW – PRIZES – ASTRO QUIZ

Station 885, 885 Starkweather, Plymouth, Michigan 48170 (see map). 734-459-0885.

Dinner Selections:

❖

10oz. Prime Rib of Beef au Jus

or

Broiled Whitefish with Michigan Sun Dried Cherry Cream Sauce

or

Chicken Picata with Mushrooms and Artichokes Sautéed in White Wine Beurreblanc

❖

Dinner entrees include fresh vegetable medley, Chef's roasted herb potatoes, and a mixed green salad

❖

Dessert: Delectable of Chocolate Sunday

❖

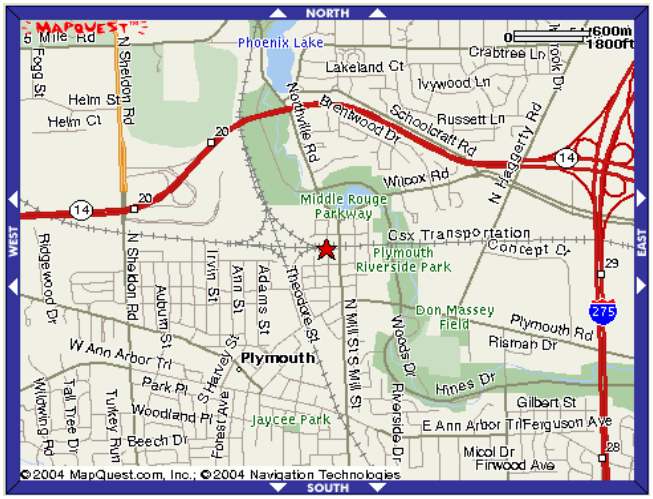
Coffee, tea, iced tea, and soft drinks will be available throughout the evening.
A Cash Bar is available. Ask your server for beer, wine, and mixed drinks.

ADMISSION: $29.95 per person.

Cocktails 6:00 pm (cash bar), Dinner 7 pm.

Make Checks Payable: Please pay Gordon Hansen at the General Meeting, call Diane Worth or Send payment to Ford Amateur Astronomy Club, P.O. Box 7527, Dearborn, MI 48121-7527.

"Thank you for another great year. We hope to see you there. Please let us know if you are coming!"
- - **FAAC Board**.



Location: Station 885 is 3 blocks north of Plymouth Road, just east of downtown Plymouth.
* **See STAR on map***

For More Information, contact : Diane Worth: dianesails@sbcglobal.net (248) 737-5131 - *or* -
Jim Frisbie: w8tu@comcast.net (734) 453-1422

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