



STAR STUFF

The Newsletter of the Ford Amateur Astronomy Club

Volume 16, Number 10

October 2007

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The Red (Hot?) Planet

Patrick L. Barry

Don't let the cold, quiet demeanor fool you. For much of its history, the Red Planet has been a fiery world.

Dozens of volcanoes that dot the planet's surface stand as monuments to the eruptions that once reddened its skies with plumes of glowing lava. But Mars has settled down in its old age, and these volcanoes have been dormant for hundreds of millions of years.

Or have they? Some evidence indicates that lava may have flowed on Mars much more recently. Images of the Martian surface taken by orbiting probes show regions of solidified lava with surprisingly few impact craters, suggesting that the volcanic rock is perhaps only a million years old.

If so, could molten lava still occasionally flow on the surface of Mars today?

With the help of some artificial intelligence software, a heat-sensing instrument currently orbiting Mars aboard NASA's Mars Odyssey spacecraft could be just the tool for finding active lava flows.

"Discovering such flows would be a phenomenally exciting scientific finding," says Steve Chien, supervisor of the Artificial Intelligence Group at JPL.

...continued on page 3

Fade to Gray...

President's Corner

Don Klaser, FAAC President

When we've been out observing, either with fellow amateurs or the general public at a star party, how many times have you said, or heard it said, "Yes, it's that gray smudge over there!"

With the exception of the planets and stars such as Betelgeuse, Antares and Albireo, there isn't much to see in living color. All of those glorious color images are reduced to various shades of gray by the limitation of our eyes.

...continued on page 2

STAR STUFF

OCTOBER 2007 - VOL. 16 - No. 10

STAR STUFF is published eleven times each year by the

FORD AMATEUR ASTRONOMY CLUB
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Dearborn MI 48121-7527

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SECRETARY:	Ken Anderson
TREASURER:	Gordon Hansen
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CLUB INFORMATION

The Ford Amateur Astronomy Club (FAAC) meets on the fourth Thursday each month, except for the combined November/December meeting on the first Thursday of December – at Henry Ford Community College, Administrative Services and Conference Center 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. The FAAC also has use of the dark skies at Richmond Airport, Unadilla, given prior permission. See the FAAC Yahoo Group* for more information.

Observing schedules and additional info are available on our website, or via the FAAC Yahoo Group.* Or call the **FAAC Hotline**, for info, and leave a message, or ask questions: **248-207-2075**. Or send email inquiries to fordastronomy@comcast.net.

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:

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

Membership includes the *STAR STUFF* newsletter, discounts on 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 can be included in that issue.

* FAAC Members are welcome to join our **FordAstronomyClub** Yahoo! Group. Messages, photos, files, online discussions, and more! URL: groups.yahoo.com/group/FordAstronomyClub.

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

And, according to a recent article in the Baltimore Sun, the same graying effect can be seen in the individuals who are involved in the hobby.

It's something I'm sure we've all noticed at one time or another. Why is this? The "Sun" article states that today's kids would rather look at stuff on computers then go outside. But how much of what we do is done on the computer?

I believe the best way to create the next generation of amateur astronomers is through public outreach, on a number of levels. We can do this at public star parties such as "Astronomy at the Beach," at school science fairs and in the classroom as a partner with the teacher utilizing the ASP's "Project Astro" program, with scout groups, at meetings or camp-outs.

In your neighborhood, set up your scope in the driveway and invite your neighbors and their children to take a look.

Whatever the venue, do your best to instill in them your love for the science and hobby of amateur astronomy! When I do a program in the planetarium at the DSC, I ask questions of the audience to get them involved and excited about the topic, and I'm always amazed by the number of children who respond - some rather quietly - but responding nonetheless.

I was at the Livonia Rider's Hobby Shop the other day, picking up an order, and while John Kirchoff and I were talking, a lady came up to the counter and said she and her husband were interested in buying a telescope for their seven year old son. John answered her questions and demonstrated an Orion Alt/Az refractor. And, while price was a factor, the most important point for her was that the scope wouldn't end up in the closet in 6 months.

I retell this story to illustrate the point that the interest is there but it's up to us to help that interest grow and to be the helping hand along the way - a mentor if you will - to the next generation of astronomers.

As a club we do quite a bit of outreach every year, but let's not overlook the opportunities that are right beside each of us!

Don Klaser

Red (Hot?) Planet... (from page 1)

For example, volcanic activity could provide a source of heat, thus making it more likely that Martian microbes might be living in the frosty soil.

The instrument, called THEMIS (for Thermal Emission Imaging System), can "see" the heat emissions of the Martian surface in high resolution—each pixel in a THEMIS image represents only 100 meters on the ground. But THEMIS produces about five times more data than it can transmit back to Earth.

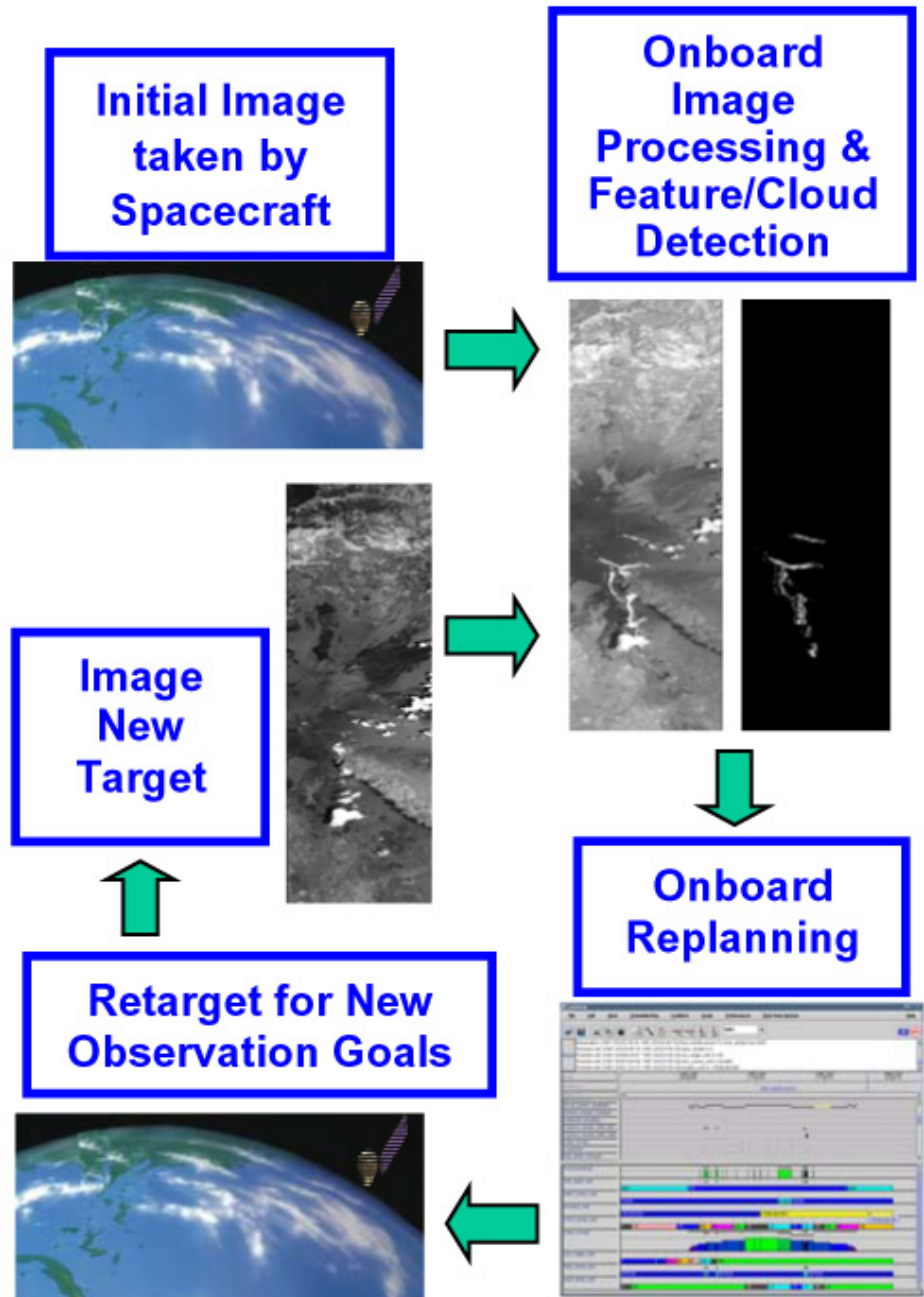
Scientists usually know ahead of time which THEMIS data they want to keep, but they can't plan ahead for unexpected events like lava flows. So Chien and his colleagues are customizing artificial intelligence software called ScienceCraft to empower THEMIS to identify important data on its own.

This decision-making ability of the ScienceCraft software was first tested in Earth orbit aboard a satellite called Earth Observing-1 by NASA's New Millennium Program. Earth Observing-1 had already completed its primary mission, and the ScienceCraft experiment was part of the New Millennium Program's Space Technology 6 mission.

On Odyssey, ScienceCraft will look for anomalous hotspots on the cold, night side of Mars and flag that data as important.

"Then the satellite can look at it more closely on the next orbit," Chien explains.

Finding lava is considered a long shot, but since THEMIS is on all the time, "it makes sense to look," Chien says. Or better yet, have ScienceCraft look for you—it's the intelligent thing to do.



Just as changing cloud patterns on Earth were identified using Earth Observing-1's Advanced Land Imager along with ScienceCraft software, the THEMIS instrument with ScienceCraft on the Mars Odyssey spacecraft can avoid transmitting useless images.

To learn more about the Autonomous ScienceCraft software and see an animation of how it works, visit <http://ase.jpl.nasa.gov>.

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

The Moon as a Ping-Pong Ball...

Dale Ochalek

A sphere, about an inch in diameter, say, for fun...

What then, if the moon is a ping-pong ball? Then the earth, four times the moon's size, is about like a grapefruit in size – four inches across.

So – how far away, by this scale, is the moon?

The moon is 2000 miles across, and 240,000 miles away. So divide 240,000 by 2000, and you get 120:1 ratio. So if the moon is an inch, the proportional distance is 120 inches, or ten feet.

Imagine - the earth as a grapefruit, with a ping-pong ball for a satellite, ten feet away.

Hmmm – so how big is the sun? It's 862,400 miles across. Divide by the Earth's 8,000, and you get a ratio of 107.8. Multiply by 4 inches for our scale, to get 431 inches, and divide by 12 for feet, and you get a sun-ball about 36 feet tall.

How far away then, the sun?

It's 93,000,000 miles away... so, if the earth's 8000-mile diameter is 4 inches on our scale, let's first divide 93,000,000 by 8,000, which is about 11,625. This is the proportion. Now multiply by 4 inches, to get 46,500 inches, and next, divide by 12, to get a sun 3,875 feet away.

So, start with a white ping-pong ball for the moon, and you get a grapefruit earth, ten feet away. The sun, by proportion, is a blazing ball, 36 feet high, like a tall two-story house, about .74 miles (about 3/4 mile) away from "earth."

If you have someone hold the ping-pong ball ten feet away, it would just blot out that bright, 36-ft. ball, 3/4 of a mile away. Or the actual sun, for that matter... an eclipse!

The planets?

Mercury is .39 AU from the sun - thus $.39 \times 3875$ feet - a mere marble, 1511 feet from the 36-ft. sun-ball. Using this method, Venus (0.723 AU) is another grapefruit, 2,800 feet out.

Mars (1.524 AU) is at 5,905 feet. Jupiter (5.2 AU), a 44-inch ball, is at about 20,100 feet, or 3.82 miles. Saturn (9.5 AU) is about 36 inches across, and seven miles away from the sun. And so on goes the neighborhood...

Imagine trying to view a ringed 36-inch ball, over six miles away – this at its closest! No wonder we like a telescope on a good tripod; think how marvelous our gadgets turn out to be!

Wait... how far, I wonder, is our nearest star neighbor, Alpha Centauri (other than Proxima Centauri, the red dwarf, at 4.2 light years)? Well, it's about 4.4 ly away.

So, let's see. According to Burnham, the AU is to a light-year, as an inch is to a mile! At this proportion, AC is 4.4 miles away. But our AU is not one inch, it's 3875 feet. So we multiply 4.4 by (12 x 3875), and we get (ta daaa): 204,600 miles away, on our ping-pong proportional map, Alpha Centauri (which is close to our sun in size) ...

That's a pretty bright ball that we can easily spot naked-eye, from that far (ok, it's Alpha, Beta, and Proxima Centauri, but still)!

Yep. If the sun is 3/4 of a mile away on our map, the **nearest** star neighbors are almost to the moon (5/6 the distance)! A proportion of 275,000 to 1 (AUs)! And that's as close as stars get.

I leave it to others, to fathom further the almost unimaginable distances and brightness of stars (Sirius is 8.4 ly, for example, Rigel, ~800 ly), or ranges of the galaxies nearby, and beyond. And the amazing job 'scopes and eyepieces really do.

Maybe playing with a ping-pong ball at times, helps put things in a certain perspective...

For some cool information on other star distances see <http://www.atlasoftheuniverse.com/>.

Photo by Jon Blum



100 ly is a long way – as discussed above – even as this caution warned drivers, at the 2007 Great Lakes Star Gaze.

FAAC Astro Photos



Jim Frisbie
Double Cluster

*Taken at the Dark Sky
Workshop, Gladwin Michigan
11:17 pm, September 7, 2007.
Canon 10D
William Optics Megrez 90, f/6.9
Vixen Great Polaris Mount
ST5C Auto Guider
4 x 3 minute exposures stacked.*

John Kirchhoff
Crater Gassendi

*Taken October 5, 2007 6:18
am (from my backyard) in
Hudson, MI. Celestron 9.25
SCT at f/23 1/15, sec exposure
at 15 frames/second.
Stack of 250 of 850 images
taken with the
DMK 41AF04.AS Firewire
camera.*



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Meeting Agenda - October 25

5:30 pm

Opening/Introduction/Member Observing

Tech Talk: Remote Observatory - John Schroer

Presentation: Astronomy Inn Adventure - Jon Blum

Club Business/Secretary/Treasurer reports

Club Projects/Committees/Member support

- Astro-Imaging SIG - Tony Licata
- 5th Annual Astronomy Expo & Swap - Sat, 2/16/08 - Tom Blaszak
- IDA Committee - Frank/Greg/John
- International Year of Astronomy - 2009 - Don Klaser
- Pleiades Occultation - Sat., Oct. 27 - Dennis Salliotte
- Open – All
- Close

Calendars 2008

Gordon Hansen

The Astronomy Magazine calendar normally sells for \$12.95. Club members can purchase them for \$7.00 - a 45% discount!

Calendars will be available at club meetings. If you will not be attending, but, would still like to purchase one (or more!), send an email to: fordastronomy@comcast.net.

Charge of \$3 will be added for mailing. Get one while still available!



Treasurer's Report

Gordon Hansen

Account	9/26/2007 Balance
Bank Accounts	
Checking	\$ 631.42
Savings	1,853.17
TOTAL Bank Accounts	2,484.59
Cash Accounts	
Cash Account	685.22
TOTAL Cash Accounts	685.22
Asset Accounts	
FERA Ticket Sales	0.00
GLAAC	2,198.68
Projector	381.95
Scholarship	413.05
Swap Meet	0.00
TOTAL Asset Accounts	2,993.68
Investment Accounts	
Certificates of Deposit	1,014.29
TOTAL Investment Accounts	1,014.29
OVERALL TOTAL	\$ 7,177.78

SIG - Astro Imaging

The next meeting of the Astro Imaging SIG is Thursday, November 9, HFCC in Dearborn, in the Administrative Services and Conference Bldg. (same as the FAAC General Meeting).

If you drive up to the Faculty parking lot gate, it should open allowing you to park close to the building. Topic is TBD.

New Members

Gordon Hansen

The FAAC acknowledges and welcomes these new members. Let us know how we can help you enjoy amateur astronomy:

- Jim Cameron
- Scott Manko
- Robert Peterson

Items for Sale

Coulter 10" Dobsonian telescope. \$400.
Contact Bob Stonik, 313-361-4954.

Celestron Orange Tube 8" (mid-1970s) Very good condition, no scratches, w/camera mount, tripod. RA bearings, slo-mo Dec fine. Corrector plate needs cleaning; needs visual back, diagonal.

Contact Dr. Nicolle Zellner, Albion College
nzellner@albion.edu

Photon 127 5" f9 achromatic refractor for sale. \$300 OBO.

Contact Clay Kessler, ckessler@gatecom.com.

Schmidt-Newtonian 10" – F5.35, 1360 mm focal length with 2" focuser. Includes 60 mm guide scope, Full aperture solar filter by Thousand Oaks (Mylar). Also includes cooling fan, extra set of "O" rings. Corrector plate made by Optron systems (division of Nazca Corp. of Callifornia). Also available is the Crestliner mount (on wheels). Scope made by Nelson Lewis of Detroit Astronomical Society in 1962. Purchased 1981.

Selling telescope for \$325. Mount for \$200.

Contact: Harold Thomason 313-584-7465

AstroSystems 12.5" F5.26 TeleKit Dobsonian, 2" thick 1/15 peak to valley wave front Pegasus primary, new Sky Commander XP4 DSC, AstroSystems Phase IV focuser, 9 x 70 finder, internal filter slide, secondary heater, base mirror fan with 2 boundary layer fans, light shroud, full nylon cover, truss bag, wheelbarrow handles, other extras. \$4400 new, asking \$2150.

Contact Bob, stargzr@wowway.com

Televue Pronto 70mm refractor. Includes the carry case/bag and the Televue diagonal to go with it. Excellent condition. Now asking \$525 for the telescope and accessories.

Please contact me through e-mail.
Tom Blaszak: key_string_guy@yahoo.com

Meeting Minutes on Yahoo

Ken Anderson

The meeting minutes from September are not available at the time of publication; however, minutes are to be posted when ready at the FAAC's Yahoo group website, under Files. See:

<http://tech.groups.yahoo.com/group/FordAstronomyClub/files/FAAC%20Meeting%20Minutes/>

Raffle Winner

Dale Ochalek

You can't win if you don't play, and Bob Boswell got into contention at the latest "Astronomy at the Beach," Kensington Park, September 21 and 22.

Bob Boswell won the big prize – a Meade ETX-80 – donated by Meade Instruments, in a cooperative sponsorship via the Meade 4m Community (www.meade4m.com). There were other fine prizes donated by other sponsors, as well.

Says Bob: "Here is a photo of the telescope that I won in last month's 'Astronomy at the Beach' raffle. It works great! My wife and I have both tried it out. We think it works better than my 15x60 binoculars.

"Thank you again to both FAAC and Meade."



Bob Boswell with his first prize, the ETX-80.

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