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Finding Planets among the Stars

By Dr. Tony Phillips

Strange but true: When it comes to finding new extra-solar planets, or exoplanets, stars can be an incredible nuisance.

It's a matter of luminosity. Stars are bright, but their planets are not. Indeed, when an astronomer peers across light years to find a distant Earth-like world, what he often finds instead is an annoying glare. The light of the star itself makes the star's dim planetary system nearly impossible to see.

Talk about frustration! How would you like to be an astronomer who's constantly vexed by stars?

Fortunately, there may be a solution. It comes from NASA's Galaxy Evolution Explorer, an ultraviolet space telescope orbiting Earth since 2003. In a new study, researchers say the Galaxy Evolution Explorer is able to pinpoint dim stars that might not badly outshine their own planets.

"We've discovered a new technique of using ultraviolet light to search for young, low-mass stars near the Earth," said David Rodriguez, a graduate

student of astronomy at UCLA, and the study's lead author. "These M-class stars, also known as red dwarfs, make excellent targets for future direct imaging of exoplanets."

Young red dwarfs produce a telltale glow in the ultraviolet part of the electromagnetic spectrum that Galaxy Evolution Explorer can sense. Because dwarf stars are so numerous—as a class, they account for more than two-thirds of the stars in the galaxy—astronomers could reap a rich bounty of targets.

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President's Corner

It's been a very quiet month. Once again the skies did not cooperate and the chances to do anything with a telescope were rare. We had our third Beginner's Night on June 11th, attended by about ten people. The conversations were good, but we all got home early.

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STAR STUFF

June 2011 - Vol. 20 No 6

STAR STUFF is published eleven times each year by:

FORD AMATEUR ASTRONOMY CLUB
P.O. Box 7527
Dearborn MI 48121-7527

PRESIDENT: Gordon Hansen
VICE PRESIDENT: Jon Blum
SECRETARY: Doug Bauer
TREASURER: Chuck Jones
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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 Administration 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 a private observing site near Gregory Michigan and lake Erie Metro Park. 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 Members: \$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 subscriptions request and payment. Do not send any money directly to the FAAC for this.

Star Stuff Newsletter Submissions

Your submissions to STAR STUFF are welcome! Send your story and/or images to the editor at jenzdanowski@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 the 15th can be included in that issue.

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

This months background photos of the moon Page 1 courtesy of John Kirchhoff. See more of John's photos at:

<http://www.flickr.com/photos/33926475@N06/with/4311533997/>

Presidents Corner

(continued from Page 1)

Speaking of Beginner's Nights, don't forget to mark your calendars on August 6th. That is the date of our annual Inter-club picnic. Doug Bauer agreed to once again coordinate the event - a good time WILL be had by all!!

As some of you may know, my passion these days is astrophotography. On a couple of those rare clear nights in May I managed to image M51. M51 was high in the sky then making it an ideal time for imaging. On May 31 a supernova appeared in the galaxy. Several people published before and after shots on the web, so, when the skies cleared on June 7th I couldn't let the opportunity go by. Below are my versions of the before and after shots.



Gordon Hansen
ghansen@comcast.net



Exoplanets are easier to see directly when their star is a dim, red dwarf.

Finding Planets among the Stars

(continued from Page 1)

In many ways, these stars represent a best-case scenario for planet hunting. They are close and in clear lines-of-sight, which generally makes viewing easier. Their low mass means they are dimmer than heavier stars, so their light is less likely to mask the feeble light of a planet. And because they are young, their planets are freshly formed, and thus warmer and brighter than older planetary bodies.

Astronomers know of more than five hundred distant planets, but very few have actually been seen. Many exoplanets are detected indirectly by means of their “wobbles”—the gravitational tugs they exert on their central stars. Some are found when they transit the parent star, momentarily dimming the glare, but not dimming it enough to reveal the planet itself.

The new Galaxy Evolution Explorer technique might eventually lead to planets that can be seen directly. That would be good because, as Rodriguez points out, “seeing is believing.”

And it just might make astronomers feel a little better about the stars.

The Galaxy Evolution Explorer Web site at <http://www.galex.caltech.edu> describes many of the other discoveries and accomplishments

of this mission. And for kids, how do astronomers know how far away a star or galaxy is? Play “How Old do I Look” on The Space Place at <http://spaceplace.nasa.gov/whats-older> and find out!

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

Jon Blum’s presentation June 23rd

At the June 23 FAAC meeting, the main presentation will be by Jon Blum, titled “Why I Belong to Seven Astronomy Clubs.” Jon will compare seven clubs, four in Michigan and three on Maui. He will discuss their meetings, observing events, members, lectures, sky conditions, officers, social activities, newsletters, logo clothing, and even their snacks. He will explain why he joined each club.

Jon joined our Ford club in 2002. His nine past talks to this club have included How I Bought an Orange Telescope, Astronomy on Maui, Astronomy in Scandinavia, Astronomy Gadgets Part 1, Astronomy Gadgets Part 2, Astronomy and Aerospace Tour of New Mexico, Astronomers Inn, Texas Star Party, and Tour of Celestron and Griffith Observatory. Jon is presently the club’s Vice President.

Treasurer's Report

May 31, 2011

By Chuck Jones

Ford Amateur Astronomy Club Balance Sheet As of May 31, 2011

	<u>May 31, 11</u>
ASSETS	
Current Assets	
Checking/Savings	
CD 200599272	1,053.14
CD 89265268	1,097.04
Checking	1,380.31
FAAC Savings	1,458.26
Petty Cash Account	59.09
Total Checking/Savings	<u>5,047.84</u>
Total Current Assets	5,047.84
Other Assets	
Equipment	1,472.97
GLAAC	2,854.58
Scholarship	206.80
Total Other Assets	<u>4,534.35</u>
TOTAL ASSETS	<u><u>9,582.19</u></u>
LIABILITIES & EQUITY	
Equity	
Opening Balance Equity	8,439.30
Retained Earnings	-276.33
Net Income	1,419.22
Total Equity	<u>9,582.19</u>
TOTAL LIABILITIES & EQUITY	<u><u>9,582.19</u></u>

Club Wear

To our "New and Current Members" Our club has "FAAC" Official Club Wear with our Logo Embroidered.

Anyone with an interest or need in FAAC Club Wear, I will be placing an order in the next few months, for more information please call me - Diane at 248 980-7832. The FILES section in the Yahoo group has a form noting each ITEM with PRICES. The listing name - "FAAC Club Wear" - please do not hesitate to call me.

Diane Worth

Meeting Agenda - June 23

HFCC – Berry Auditorium -Admin. Services & Conference Center <http://www.boonhill.net/faac>
5:30

Opening/Introduction/Member Observing

2010 Club Recognition

- Recognition Certificates

Main presentation:

Why I belong to Seven Astronomy Clubs Jon Blum

Tech Talk:

Selling Used Equipment Jim Frisbie

Club Projects/Committees/Member Support

- July 9th – Beginner's Night
- July 15th – Detroit Children's Museum
- August 6th – Multi-Club Picnic & Beginner's Night
- August 19th – Detroit Children's Museum

Club Business/Secretary/Treasurer/Equipment Reports

Items For Sale

Celestron 6x30 finder scope-\$25

Starter scope (similar to the Celestron power seeker) D=60mm F=700mm with tripod, and 3 lenses-\$50

For more information on these two items, please contact Lynn Spielman at: lynns cats@wowway.com

Orion 100 mm Achromat refractor, F6, with older CG4 equatorial mount. Diagonal and finder included. Asking \$250

Miscellaneous eyepieces and filters for beginners also available. Ask for \$\$

Call Tom Blaszak at 313.585.3351.

key_string_guy@yahoo.com

Meade Lightbridge Deluxe 12" – F/5, 1524mm focal length. Purchased new last year. Perfect condition mechanically, optically and cosmetically. Big, clear deep sky views. Built-in battery powered cooling fan, two-speed Crayford focuser (1.25 / 2-inch). Easy to transport, set up collimate and use - smooth as silk. Upgraded with Bob's knobs and heavier collimation springs. Includes shroud, cover, Telrad and secondary mirror heater. Over \$1000 invested, will sell for \$650.

Contact John Johnson at jjohnsonpub@yahoo.com
or (248) 515-0014.

Astro Imaging SIG

Gordon Hansen

The April meeting was held at HFCC in the Berry Amphitheater in Dearborn

All are invited to join us in the Astro Imaging SIG meetings, to share and discuss images, experiences, and techniques.

We always have a good time, with lively discussion, and sharing of valuable information.

Next meeting is July 12th. The meeting room location – HFCC Admin. Services and Conference Center (same building), Berry Amphitheater Auditorium.

Topics invited. Pizza served.

FAAC Events 2011

July 9th – Beginner's Night

July 15th – Detroit Children's Museum

August 6th – Multi-Club Picnic & Beginner's Night

August 19th – Detroit Children's Museum

Background Photo from Lunt Solar Scope Image taken at the Hector J Robinson Observatory, June 28, 2010

One FAAC members blog

<http://hjrobservatory.blogspot.com/>

A few updates on the observatory, quick articles and photos. I'll try to improve my writing on this blog. Also, I try to keep daily updates on this blog. - Greg Knekleian, HJRO volunteer.

Items For Sale

(continued from page 4)

MEADE Telescope and Tripod 6 years old - in excellent shape **LXD 75** - Series Schmidt - Cassegrain 8" f/10 SC-8AT (Super Coated, Autostar Guided) - Focal Length 2000 mm Telescope weight = 24 lbs - with MEADE EMC Super Multi-Coatings and with optional Ultra-High Transmission Coating Tripod weight = 45 lbs - Die cast Aluminum German-Type Equatorial Mount with Variable-Height Field Adjustments Autostar Controller guides to 30,223 objects

Includes a Sun Filter, Overnight Protective Cover, Transportation Containers. Contact phone no. 248-851-5053, e-mail robertboswell@comcast.net

Bill Beers Spring Star Party

by Jon Blum

Bill Beers is member of the Warren Astronomical Society who hosts a star party in Cadillac, Michigan, every spring and fall. He invites all members of the Ford Amateur Astronomy Club as well as Warren and other local club members. Each star party lasts a week, but most people attend on the 3-day weekend, and about 15 to 25 people usually come.

Benefits of going to this star party each May and October include dark skies far away from city light pollution, and wonderful socializing with friendly members of all of the local astronomy clubs. In addition to using your own telescope, you will enjoy marvelous views through the 22-inch Dob owned by the Warren club. For accommodations, you can camp out in the observing field or stay in a nearby motel. During the most recent event this May, FAAC members who attended were Bob MacFarland, Ellen Duncan, and Jon Blum.

If you'd like details of how you can attend future Bill Beers spring and fall star parties, email Jon Blum at vpfaac@hotmail.com.

FAAC General Meeting Minutes

May 26th, 2011

By Doug Bauer, Secretary

Opening:

The meeting was called to order in the Berry Auditorium at 5:30 pm by Gordon Hansen., FAAC President.

All attendees introduced themselves. There were 23 members present.

Members contributed their observing experiences.

Milton French has been observing the early morning planets

Several people have observed the sun between the rain storms.

Main Program:

Dr. Michael Foerster with NASA's Jet Propulsion Laboratory gave an overview of several NASA programs:

Endeavor Shuttle attached to International space Station – it has been 30 years since the first shuttle Columbia launch. There is one launch left before the shuttles are retired.

Messenger Mission is orbiting Mercury

Spirit and Opportunity Rovers on Mars – Spirit has not been operational for 1.5 years. Opportunity is still functional after 7 years – both were originally designed for a 90 day mission.

The Dawn mission to orbit Vesta and Ceres is scheduled for launch 2 months from now.

Cassini is still orbiting Saturn

Voyager, launched in 1979, is still going. It is now at the edge of the solar system.

Kepler mission will look for exoplanets - in 1995 the first exoplanet was discovered, today 540 exoplanets have been confirmed and 1500 exoplanet candidates have been identified.

Dr. Foerster then gave an informative presentation about the Sun.

The Big Bang created Hydrogen, Deuterium, Helium, and Lithium. All the other elements were created by stars.

Nebula is made up of mostly Hydrogen, Deuterium, Helium, Lithium and trace amounts of various other elements. When a

shock wave from a star exploding hits a nebula the compression of the nebula can cause the stars to ignite.

The Sun is 4.5 billion years old and contains 98.9 % of all of the mass of the solar system. Its volume is about one million Earths.

A cubic meter of the sun produces about 200 Watts of energy, but it has a lot of cubic meters of material.

Light from the Sun takes about 8 minutes to reach Earth. Charged particles from the Sun take about 4 days to reach the Earth.

The Sun's radiation works against the gravitation forces to keep it from collapsing.

There will be a Venus transit of the Sun visible from Michigan on June 6, 2012. Don't miss it as it will be the last one in our lifetime

Dr. Foerster has a radio show on WNMC 90.7 FM public broadcasting.

He can be reached at Michael@astronomy.FM

Tech Talk:

Jim Frisbie's Tech Talk was postponed to a future meeting.

Business Meeting:

Secretary's Report as published in the May StarStuff was presented by Doug Bauer and approved.

Treasurer's Report published in the May StarStuff was presented by Chuck J. via Balance and Profit & Loss.

Projects and Events:

June 4th – Allen Park Cub Scouts at the HJRO – Greg Knekleian.

Night is scheduled for Saturday, June 11th at Spring Mill Pond.

GLAAC Astronomy At The Beach, planned September 9 and 10.

The Club Scope is available for loan out to members. It is booked through July. Let Gordon Hansen know if you would like to reserve it.

The meeting was adjourned at 7:30pm.

Third Annual FAAC Multi-Club Picnic



Saturday August 6th, 2011

5pm-Midnight

Island Lake Recreation Area – Spring Mill Pond



Image above: Suat Eman / FreeDigitalPhotos.net

Members of the following Astronomy Clubs and their families:

Ford Amateur Astronomy Club

University Lowbrows

Oakland Astronomy Club

Seven Ponds Astronomy Club

Warren Astronomical Society

Henry Ford Community College Astronomy club

Bring your scope or binoculars



Image above: Jennifer Zdanowski

FAAC will provide hamburgers, hot dogs, veggie burgers, soft drinks, plates & utensils

Please bring a dish to pass

salads, snacks, fruit, desserts.....



Hector J Robinson Update

by Greg Knekleian

We didn't have many visitors at the observatory last month, mostly FAAC members. One of the few visitors we had was an old member of the LP middle school club. This local resident was in the astronomy club back in 1976, 1977. He was impressed with the new setup and still lives in Lincoln Park. I'm sure we will see him visit again.

O-SIG notes 6-13-11: Summary of some highlights of what we learned at HJRO.

This month's observatory O-SIG meeting had seven members present.

Tim Dey, George Korody, Greg Ozimek, Tim Campbell, Art Parent, Rick Arzadon, and Greg Knekleian. (We also had two visitors a guy and his young son, who looked through the binocular telescope and Big Bertha at the moon during the meeting. We didn't have them log in the visitor log as testing happened inside the observatory and they looked through telescopes outside.)

A few members looked at solar prominences through the Lunt Solar scope at the start of the meeting.

A loose mount ring that had mounted the Lunt scope was tightened up.

George Korody mentioned we can remove the forward double stack and possibly see more prominences in single stack mode for the Lunt Solar scope.

Tim Campbell donated a Macintosh router for the HJRO and went over setup possibilities. The plan is to have a pole setup with the router setup as we open the observatory. This will also make the security process easier for visiting astronomers and club members who may need internet access on their laptops while visiting.

We tested a different t mount configuration to mount an EOS camera to the Lunt Solar scope. The suggestion from Lunt didn't work out and we need to do more modifications before we can mount digital SLR cameras to the Lunt.

The C14 was optically aligned. This works best with two people working in tandem.

Saturn looked really nice in the aligned C14 despite marginal sky conditions.

From time to time we discuss a creaking noise that happens with the C14 and other telescope setup at HJRO. Art Parent came up with a theory that it may be the dew cover making noises. We will have to check that out in a future observing session.

The OPT focusing mount has one set screw to tighten it and allow rotation. This allows the tube that the focuser or diagonal is in to be out of alignment. The secret for now is to press the tube up firmly while tightening the set screw to allow alignment to be nearly perfect. This reduces the off center axis problems we might see with a camera attached.

I removed some of the winter items/heaters for now. I plan on removing some other items to cut down on clutter inside the observatory and increase shelf space for visiting FAAC members.

We didn't clean eyepieces this meeting, but we plan on doing that in another session.

We didn't replace the one defective electrical box. That will be done very shortly, I have the new part which will be installed.

More work will be done on imaging adjustments and drift alignment (polar adjustments to the mount). The mount is off on both axis by about 6 minutes, ideally it should be less than 2 minutes out of alignment. George will work on more adjustments at a later date.

Some test pictures were taken with George's camera. And lastly a floor isolation test while photographing was done. Jumping up and down while a photo was taken, first test passed.

Raising the bar - Moon Globe HD

By Greg Knekleian

The moon is easy to view and show others during my frequent "sidewalk astronomy" sessions. I enjoy using Moon Apps during these sessions. I already have Moon Globe (the free version) and Moon Atlas as well as another charting program (MoonMapPro). Although I have the free version, I decided to purchase the 99 cent app (for iphone/ipad), Moon Globe HD.

Moon Globe HD is a newer version and it has "4 times the resolution" of the free version.

The best feature about the Moon Globe products is the map of the moon is derived from an actual topographical model of the moon. The program actually renders a model of the moon and shows realistic shading of the craters. This gives an added realism which is very nice and also gives a slightly more organic feel when looking at the moon chart.

Is the HD version worth a buck? To me the answer is a resounding yes.

Moon Globe HD is much nicer than the earlier free version. It's shading is now dependent on real dates, not a generic slide control.

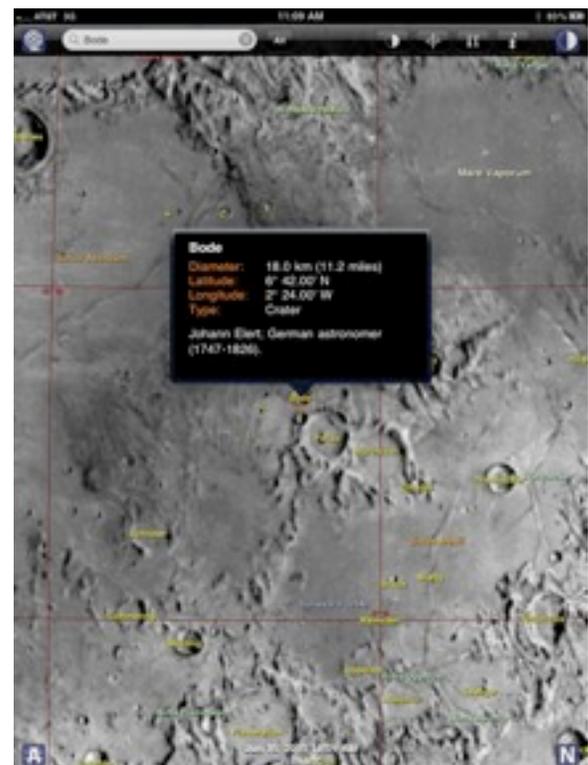
THE CRATER NAMES

Moon Globe HD still falls a little short of Moon Atlas (a \$6 app), with details regarding craters. There are more details and names of smaller craters and sub-craters in Moon Atlas. Moon Atlas appears like a generic surface map; one that is painted with one shadow perspective for each crater. (The shadows never change in Moon Atlas, because the moon is a painted map in that product.)

Moon Globe HD live shading and relief features make it another nice way to chart the moon.



(Above) The 99 cent version of **Moon Globe HD** has 4 times the detail found in the free version. It still lacks "mile information" and some finer definitions that are in the more expensive **Moon Atlas** app (\$6) shown below.



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