



Star Stuff

Ford Amateur Astronomy Club Newsletter

Volume 26, Number 6

July 2016

Venus and Jupiter prepare for their close-up this August

By Ethan Siegel

As Earth speeds along in its annual journey around the Sun, it consistently overtakes the slower-orbiting outer planets, while the inner worlds catch up to and pass Earth periodically. Sometime after an outer world—particularly a slow-moving gas giant—gets passed by Earth, it appears to migrate closer and closer to the Sun, eventually appearing to slip behind it from our perspective. If you've been watching Jupiter this year, it's been doing exactly that, moving consistently from east to west and closer to the Sun ever since May 9th.

On the other hand, the inner worlds pass by Earth. They speed away from us, then slip behind the Sun from west to east, re-emerging in Earth's evening skies to the east of the Sun. Of all the planets visible from Earth, the two brightest are Venus and Jupiter, which experience a conjunction from our perspective only about once per year. Normally, Venus and Jupiter will appear separated by approximately 0.5° to 3° at closest approach. This is due to the fact that the Solar System's planets don't all orbit in the same perfect, two-dimensional plane.

But this summer, as Venus emerges from behind the Sun and begins catching up to Earth, Jupiter falls back toward the Sun, from Earth's perspective, at the same time. On August 27th, all three planets—Earth, Venus and Jupiter—will make nearly a perfectly straight line.

Presidents Article

By Timothy Campbell

Picnic & Perseids

The August club “Beginner’s Night” event also doubles as the Ford Amateur Astronomy Club’s annual summer picnic. The picnic officially gets underway at 4pm and will be located at our normal Beginner’s Night location at Island Lake Recreation Area in the Spring Mill Pond picnic and beach area.

While the event “officially” begins at 4pm, we like to use the pavilion and here’s the rub... the park does not allow reservations for the pavilion — it’s a first-come basis. So if you’d like to arrive a little early and grab a table in the pavilion, that will help us have enough tables to lay out food.

As per usual, the club provides burgers, hot dogs, and beverages. Everything else is “pot luck” - so please bring a favorite picnic dish to share.

Ordinarily it would just be the Picnic & Beginner’s night... but this year the club picnic happens to be on the Saturday nearest to the peak of the Perseid Meteor Showers. The State Parks have, in recent years, started a tradition of hosting an event titled “Meteors & S’mores” at select State Parks. Island Lake State Recreation is one such park. The park officials have asked if we would be willing to setup telescopes and help show off the skies to members of the public.

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As a result, Venus and Jupiter, at 9:48 PM Universal time, will appear separated by only 4 arc-minutes, the closest conjunction of naked eye planets since the Venus/Saturn conjunction in 2006. Seen right next to one another, it's startling how much brighter Venus appears than Jupiter; at magnitude -3.80, Venus appears some *eight times brighter than* Jupiter, which is at magnitude -1.53.

Look to the western skies immediately after sunset on August 27th, and the two brightest planets of all—brighter than all the stars—will make a dazzling duo in the twilight sky. As soon as the sun is below the horizon, the pair will be about two fists (at arm's length) to the left of the sun's disappearance and about one fist above a flat horizon. You may need binoculars to find them initially and to separate them. Through a telescope, a large, gibbous Venus will appear no more distant from Jupiter than Callisto, its farthest Galilean satellite.

As a bonus, Mercury is nearby as well. At just 5° below and left of the Venus/Jupiter pair, Mercury achieved a distant conjunction with Venus less than 24 hours prior. In 2065, Venus will actually occult Jupiter, passing in front of the planet's disk. Until then, the only comparably close conjunctions between these two worlds occur in 2039 and 2056, meaning this one is worth some special effort—including traveling to get clear skies and a good horizon—to see!

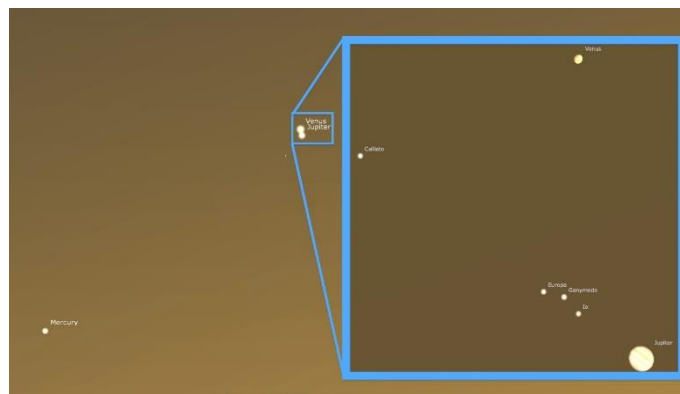


Image credit: E. Siegel, created with Stellarium, of a small section of the western skies as they will appear this August 27th just after sunset from the United States, with Venus and Jupiter separated by less than 6 arc-minutes as shown. Inset shows Venus and Jupiter as they'll appear through a very good amateur telescope, in the same field of view.

FAAC Speaker Schedule

| | | | |
|-----------|--------------|---------------------|--|
| | | | |
| July 28 | Presentation | Doug Bauer | South Carolina Star Parties |
| | Tech Talk | Tim Campbell | Starry Night 7 |
| August 25 | Presentation | Dr. Nicolle Zellner | Impacts in the Earth-Moon System - What, When, and Why |
| | Tech Talk | TBD | TBD |

Treasurers Report

July 2016

By Gordon Hansen

11:25 AM
07/12/16
Accrual Basis

Ford Amateur Astronomy Club Balance Sheet As of July 12, 2016

Jul 12, 16

ASSETS

Current Assets

Checking/Savings

10000 - Checking 255.29

11000 - FAAC Savings

11100 - FAAC Club Savings 2,211.55

11200 - Equipment 2,197.48

11300 - Scholarship 140.26

Total 11000 - FAAC Savings 4,549.29

12000 - Petty Cash Account 104.49

13000 - CD's

13100 - CD 200599272 1,084.26

13200 - CD 205196033 1,008.83

13300 - CD 89265268 1,113.18

Total 13000 - CD's 3,186.27

Total Checking/Savings 8,095.34

Total Current Assets 8,095.34

TOTAL ASSETS 8,095.34

LIABILITIES & EQUITY

Equity

30000 - Opening Balance Equity 8,890.38

32000 - Retained Earnings 5,573.02

Net Income -8,368.06

Total Equity 8,095.34

TOTAL LIABILITIES & EQUITY 8,095.34

Presidents Article

By Timothy Campbell

Continued from page 1

We have offered to do this again this year — as we did last year. The park will light campfires and provides the S'mores. Based on feedback from the event last year, the campfires will be staged a bit farther away from the telescopes. We'll set up scopes near the circle at the end of the parking lot. This year I think they're planning to pass out red film to put over the flashlights to help keep the "white" light levels down (they noticed the public brought many "white" lights last year.)

Volunteerism and Club Meeting Times

There is one other issue that I'd like to discuss. The club relies on volunteers to fulfill many roles throughout the year. These includes officer positions (two officers are term-limited and will not be able to run for office next year) as well as other volunteer positions such as help with the GLAAC committee. We currently need a table captain for astronomy at the beach (this does not have to be the role of one person... essentially this is a person to make sure that we are organized to have our table in the pavilion with the hand-outs and that we'll organize volunteers to take turns staffing the table. Dale Partin's teaching schedule will prevent him from being our speaker coordinator — that means we are also looking for a speaker coordinator.

I do, of course, recognize that we have the same people who tend to do the same volunteer activities each year and we do owe a debt of gratitude to these people who continually volunteer. But we would like to encourage (strongly encourage) others to step up and accept a role.

You may be wondering... what does all this have to do with club meeting times? Our club meeting times at 5:30pm each 4th Thursday of the month are a bit early for those who are not retired and can't make it to a meeting from their workday. The Warren Club and the Lowrows Club begin their meetings at 7:30pm. The Seven Ponds Club begins

their meetings at 7pm. This makes it a bit easier for people to make the meeting times.

This is the point where I should mention that I have no hound in this hunt. I live very close to the college (less than ten minutes away) and generally never have any difficulty making a meeting. I have received what was initially just a small amount of feedback... but enough to make me curious to the point that I asked other potential members and also members of other clubs and the general trend seems to be that it would be better if the meetings start at least a little later (but not too late).

There is nothing "officially" on the board agenda to take up this issue and if the club were to seriously consider shifting the meeting time back slightly, I think it would be something that should be discussed among the broader club membership. I am equally concerned that scheduling meetings to make it easier for one person may make the schedule more difficult for another person.

If, however, a later start time would be favorable and also if this eliminates a barrier for perspective members who work during the daytime, this could increase both membership and volunteerism in the club. (Getting more volunteers is my not-so-hidden agenda.)

I am interested in all feedback on this topic. Whether you believe shifting the meetings to a later start time would be helpful -OR- whether it would make it more difficult for you to attend, I would like to hear your thoughts. Write me... or write any board member. You can reach any club officer via email using the name of their office... president@FordAstronomyClub.com, vp@FordAstronomyClub.com, secretary@FordAstronomyClub.com, or treasurer@FordAstronomyClub.com.

Secretary Report

By Jessica Edwards

Main Talk – An Immigrants Journey Into the Cosmos – Dr. Misconi

Growing up in Baghdad limited opportunities for education early on in Dr. Misconi's life. He took advantage of the libraries available and was fascinated when he came across a book on stars. After attending college in Istanbul, he returned home to Baghdad and set up a planetarium. Unrest in the region forced him to move and he ended up in New York to finish his PhD in zodiacal light.

Zodiacal light is formed from the reflections of sunlight off interplanetary dust. This dust ranges in size from less than one micron (mostly interstellar dust that the sun attracts) to about 100 microns (comet and asteroid dust). These irregular dust grains gain angular momentum from photons from the sun and can spin at up to 10 million revolutions per second.

Tech Talk – Meade Lightswitch – Tim Dey

The Meade Lightswitch owned by the club is an interesting piece of hardware. The optics of the telescope are excellent on their own. Meade decided to make telescopes easier to set up and align using an onboard camera. While an amazing idea in theory, getting the telescope to set up on its own has been a challenge. After much struggle, the telescope now seems to work well. It is good for visual imaging, but due to field rotation, it is not an option for imaging.

For the Young Astronomers

What is Venus like?

Even though Venus isn't the closest planet to the sun, it is still the hottest. It has a thick atmosphere

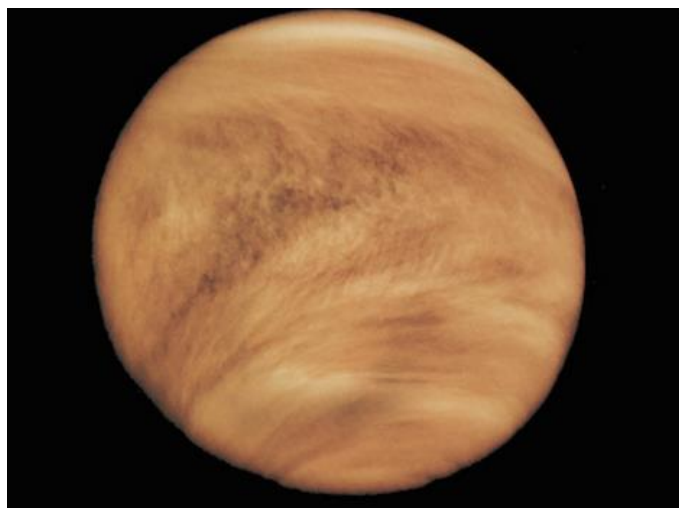
full of the greenhouse gas carbon dioxide and clouds made of sulfuric acid. The gas traps heat and keeps Venus toasty warm. In fact, it's so hot on Venus, metals like lead would be puddles of melted liquid.

Venus looks like a very active planet. It has mountains and volcanoes. Venus is similar in size to Earth. Earth is just a little bit bigger.

Venus is unusual because it spins the opposite direction as Earth and most other planets. And its rotation is very slow. It takes about 243 Earth days to spin around just once. Because it's so close to the sun, a year goes by fast. It takes 225 Earth days for Venus to go all the way around the sun. That means that a day on Venus is a little longer than a year on Venus.

Since the day and year lengths are similar, one day on Venus is not like a day on Earth. Here, the sun rises and sets once each day. But on Venus, the sun rises every 177 Earth days. That means the sun rises two times during each year on Venus, even though it is still the same day on Venus! And because Venus rotates backwards, the sun rises in the west and sets in the east.

Just like Mercury, Venus doesn't have any moons.



| FAAC Schedule of Events 2016 | | | | |
|------------------------------|----------------------------------|---------------------------|------------|--------------------------|
| Month | Event | Date | Start Time | Location |
| August | Club Picnic Meteors & S'mores | Saturday 13th | 4pm 8pm | Island Lake |
| September | Astronomy At The Beach | Friday 9th, Saturday 10th | 5pm | Kensington Metro park |
| October | Beginner Night | Saturday 8th | 8pm | Lake Eire Metro park |

Astro Imaging SIG Events

By Gordon Hansen

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 **August 11th**. The meeting room location – HFC Admin. Services and Conference Center (same building), Berry Amphitheater Auditorium.

Topics invited. Pizza served

FAAC Equipment Holders Report

By Dennis Salliotte

FAAC Equipment Report 7/21/16

| <u>Item</u> | <u>Currently Held By:</u> | <u>Date Last Verified</u> |
|-----------------------------------|---------------------------|---------------------------|
| <u>Telescopes</u> | | |
| 4" Dobsonian (Harold's donation) | George Korody | 1/7/16 |
| <u>Presentation Tools</u> | | |
| Projector (older) | Jim Frisbie | 3/22/16 |
| Projection Screen 8' | Bob MacFarland | 6/15/16 |
| Speaker System w/wireless mic | Bob MacFarland | 6/15/16 |
| Bullhorn | George Korody | 1/7/16 |
| DVD Player | Jim Frisbie | 3/22/16 |
| Projection Screen 6' | Mike Dolsen | 3/19/16 |
| Projector, ViewSonic | Gordon Hansen | 7/21/16 |
| <u>Demonstration Tools</u> | | |
| Weight On Planets Scale | George Korody | 1/7/16 |
| Lunar Phase Kit | Bob MacFarland | 6/15/16 |

| | | |
|---|--|---------|
| 100 ft Scale Model Solar System Kit | Bob MacFarland | 6/15/16 |
| | | |
| <u>Display Items</u> | | |
| Astronomy Event Sign (3' X 6') | Gordon Hansen | 7/21/16 |
| PVC Display Board - Folding | Sandra Macika | 1/8/16 |
| Banner – Small (24" X 32") | George Korody | 1/7/16 |
| Banner – Medium (24" X 72") | Sandra Macika | 1/8/16 |
| Banner – Large (32" X 16') | George Korody | 1/8/16 |
| Tri-Fold Presentation Boards | Don Klaser | 1/8/16 |
| Tri-Fold Poster Board (Early Club Photos) | George Korody | 1/7/16 |
| | | |
| <u>Other</u> | | |
| Canopy (10' X 10') | Tim Campbell | 7/21/16 |
| Equipment Etching Tool | Greg Ozimek | 1/10/16 |
| Pop Cooler | Michael Dolsen | 6/22/16 |
| | | |
| <u>EQUIPMENT KITS</u> | <u>CARETAKER</u> | |
| <u>Telescopes</u> | | |
| TK3 Celstrn 130 Newt Goto mount | Liam Finn | 7/20/16 |
| TK4 Clstrn 90 Refrctr w/man mount | Liam Finn | 7/20/16 |
| TK5 4 ½ " Reflector, on Fitz GEM mount | Bob MacFarland | 6/15/16 |
| TK6 8" Orion 8XTi Dobsonian | Jennifer Monske CARETAKERSHIP IS AVAILABLE | 4/17/16 |
| TK1 Coronado PST solar scope w/double stack, Meade Autostar Goto mount & tripod and accessories | John McGill | 1/9/16 |
| | | |
| <u>Binoculars</u> | | |
| BK3 15x70 binocs, monopod mount | Bob MacFarland | 6/15/16 |
| BK4 20x80 binocs, altaz goto mount | Sandra Macika | 1/8/16 |
| BK5 25x70 binocs w/tripod adaptor | Tim Dey | 6/15/16 |
| | | |
| | | |
| <u>Eye-piece Kit</u> | | |
| EPK1 Eyepieces, filters & accessories | Liam Finn | 7/20/16 |
| | | |
| <u>Other</u> | | |
| TA Sky Quality Meter | Syed Saifullah | 4/26/16 |

| | | |
|---|---------------|----------|
| TA Sky Atlas 2000.0 | Tim Dey | 6/15/16 |
| TA Orion telescope binoviewer | Liam Finn | 7/20/16 |
| | | |
| <u>Lincoln Park Observatory</u> | | |
| LPO Celestron binoviewer #93691 | Tim Dey | 6/15/16 |
| LPO Celestron 2X 1.25" Barlow | Tim Dey | 6/15/16 |
| | | |
| <u>Imaging SIG</u> | | |
| C1 Celestron NexImage Solar System Imager model #93712 | Gordon Hansen | 7/21/16 |
| C2 Meade Deep Sky Imager PRO III w/AutoStar Suite | Gordon Hansen | 7/21/16 |
| C3 Orion StarShoot Deep Space Video Camera NTSC #52185 w/video capture device #52178 | Gordon Hansen | 7/21/16 |
| C4 Meade Electronic Eyepiece w/cable to a video monitor, VCR or TV. Pairw#43 AND Meade 3.5" LCD Color Monitor Kit #07700 Complete (unused). Pair w#34 | Gordon Hansen | 6/16/16 |
| C5 Orion StarShoot Deep Space Video Camera II #52195 AND Orion StarShoot iPhone Control for Deep Space Video Camera II #52195 | Gordon Hansen | 7/21/16 |
| C6 Canon 60 DA and accessories | Tim Dey | 7/8/2016 |
| CA2 Celestron 1.25" to T-Adapter(male thread) Model #93625 | Gordon Hansen | 7/21/16 |
| CA3 Canon EOS deluxe astrophoto kit FOR Canon bayonet T-thread adapter and variable 1.25" extender | Gordon Hansen | 7/21/16 |
| CA4 Orion StarShoot LCD-DVR #58125 2.5" LCD screen | Gordon Hansen | 7/21/16 |
| CA5 Celestron Canon EOS T-ring adapter #93419 | Gordon Hansen | 7/21/16 |
| | | |
| | | |
| <u>Special Event Use Only- Not Available For Loan Out</u> | | |
| | | |

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|---|---------------|---------|
| TK2 Meade 8" ETX-LS-ACF w/tripod, voice assist, computerized GPS plus MANY (35+) accessories | Tim Dey | 6/15/16 |
| BK1 Orion BT-100 binocular telescope w/hard case, Orion VersaGo h.d. man altaz mount w/Vixen dovetail head and Vixen style binocular holder bracket | Ken Anderson | 7/21/16 |
| BK2 Zhumell 25x100 binoculars, hard case & Zhumell TRH-16 tripod w/soft fabric bag | Sandra Macika | 1/8/16 |
| TAK1 Night Vision Intensification binocular unit | George Korody | 1/7/16 |
| | | |
| Dennis Salliotte equipment@fordastronomyclub.com | | |
| | | |

STAR STUFF

This Newsletter is published eleven times each year by:

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

PRESIDENT: Tim Campbell

VICE PRESIDENT: Tim Dey

SECRETARY: Jessica Edwards

TREASURER: Gordon Hansen

WEBMASTER: Greg Ozimek

NEWSLETTER EDITOR: Liam Finn

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 College Administration Services and Conference Center in Dearborn. Refer to our website for a map and directions. www.fordastronomyclub.com.

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: 313-757-2582. You may also send email

inquiries to info@fordastronomyclub.com.

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: StarStuff@fordastronomyclub.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 month's issue.

* FAAC Members are welcome to join our Ford Astronomy Club Yahoo! Group. Messages photos, files, online discussions.

Editors Notes

Any members who wish to provide input on the layout and design of the Newsletter please contact me.