SKYSCRAPERS INC.

the Skyscraper

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Amateur Astronomical Society of Rhode Island ★ 47 Peeptoad Road ★ North Scituate, Rhode Island 02857 ★ www.theSkyscrapers.org

Transit of Venus

Tuesday, June 5, 5:30pm

Volunteers Needed

The Brown University Physics Department is planning to offer a public viewing of the transit of Venus from the roof-top playing field of the OMAC Athletic Center, which is 1/2 a mile south of Ladd Observatory. Although we will be doing some observing from Ladd, the tree line at the observatory will be a limiting factor.

The OMAC offers a good view to within about 5 degrees of the horizon, allowing for a much longer viewing time when compared with Ladd. The roof top playing field of OMAC also offers a very large area, about the size of a football field, and can accommodate a lot of people.

Brown plans to heavily advertise this event on TV and the newspaper, so if we luck out with clear skies next Tuesday, we can expect record crowds showing up for this event.

We have about a dozen or more telescopes, some with solar filters, both white light and H-a, and some that will be used for solar projection. Additionally, we have about 800 eclipse glasses that we plan to sell.

Because Ladd Observatory has a fairly small staff, we would really appreciate any assistance from Skyscrapers in helping out with this event. Whether anyone is willing to operate one of Brown's telescopes, or bring their own properly filtered telescope to help out, please contact me ASAP at robert_horton@brown.edu. or call at 863-2769 and leave a message. I will provide more information such as set up time and directions to the athletic center.

Saturday Potluck & June Meeting with Savvas Koushiappas

Saturday, June 9, 5:30pm
Seagrave Observatory

From Astronomy to Astrophysics: Understanding Light

Light is the only piece of information we can detect from any astronomical object. Understanding what light is led to the evolution of traditional astronomy to the science of astrophysics. Professor Savvas Koushiappas will present the historical development of the nature of light, as well as the physics and nature of light. In addition, he will discuss how this knowledge is used in astronomical observations, from amateur spectroscopy to cutting edge research.

More details on page 3…

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Seagrave Memorial Observatory Open Nights

Saturday 9:00-11:00 pm - weather permitting

President's Message

Ed Haskell

This month I am going to depart from the usual format of this Letter and report on some of the ways we are organizing to better serve the membership.

The first of these is to focus the attention of management on areas that directly affect Members: the format and content of the regular meetings; the creation or augmentation of other group activities; improved access to the instruments; the creation of programs that appeal to younger people; and the creation or extension of initiatives to raise the level of understanding of astronomy of all members.

The second of these is to determine ways to secure the financial underpinnings of the Society. For several years the annual budget has been sized to just get by. When there is only enough money available to support current activities any new ideas that surface face a strong headwind. This is not a healthy situation and ways to improve it must be found and implemented.

The third is to develop succession planning. Most years the Nominating Committee has great difficulty finding even one candidate for each position. This leads to a situation where people are slotted into positions for which they may not be comfortably prepared. It is a tribute to the dedication of these people that they take on a job for which they are apprehensive and do their best for Skyscrapers.

The fourth is to find ways to grow the membership without diluting the focus on high quality programming and professional level instrumentation and observing. While there are those who boast that during their administration membership was much higher than it is now, an examination of the membership rolls reveals that membership has been essentially flat for more than a decade. Many organizations have lost members in that period but standing still is not good enough for a dynamic organization and we can do better.

Today I want to discuss one of the most visible changes that is resulting from the above, that is the regular meeting format. For as long as I have been a member of Skyscrapers there has been a tension between the objective of high quality professional level presentations and reports of members' observing and other activities. Some of us value highly the professional presentations, others find them over their head or otherwise undesirable and want the meeting devoted to members talking about their experiences. The approach thus far has been to have two kinds of meetings to allow for this duality of interests. In all cases there was also a business session that saw the departure of 60- to 70-percent of the attendees for lack of interest.

The new format addresses both sets of wishes: borrowing from the Figure Skating model each meeting will consist of a "Long Program" and one or two "Short Programs", and no business session unless absolutely necessary. The Long Program will be … well, longer. It will consist of a professional level presentation (this usually but not always means a professional scientist; we have members who give professional level presentations, Gerry Dyke comes immediately to mind here). The Short Program(s) will be about 10 to 20 minutes and will not be expected to be as polished as a Long Program but should be on a topic that is relevant and interesting. This should encourage those who are uncomfortable giving a formal talk to come forward and share what they are doing with the rest of us.

Observing after the meeting will be strongly encouraged. Since a business session will not have driven off two thirds of the attendees, one hopes that the observatory will be more used while members are right there anyway.

After we have been through a number of meetings with this new format we will review the experience and see if adjustments are desired.

In coming issues of The Skyscraper I will bring to your attention more details about how each of these focus areas is being approached and the officers and committee chairs will have reports of their individual areas of responsibility. Reducing the business meetings means we have to find new ways of effectively communicating with the membership. More reports in the newsletter is one way, the imminent unveiling of a new website which will make it easier to include topical information is another.

Thanks for all you do for Skyscrapers.

The Skyscraper is published monthly by Skyscrapers, Inc. Meetings are usually held on the first Friday of the month. Public observing is usually held every Saturday night at Seagrave Memorial Observatory, weather permitting.

Directions
Directions to Seagrave Memorial Observatory are located on the back page of this newsletter.

Submissions
Submissions to The Skyscraper are always welcome. Please submit items for the newsletter no later than **June 16** to Jim Hendrickson, 1 Sunflower Circle, North Providence, RI 02911 or e-mail to jim@distantgalaxy.com.

E-mail subscriptions
To receive The Skyscraper by e-mail, send e-mail with your name and address to jim@distantgalaxy.com. Note that you will no longer receive the newsletter by postal mail.

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Report of the 1st Vice President

Bob Horton

As First Vice President of Skyscrapers, I have accepted the responsibility to provide speakers for our monthly meetings, and to come up with some other activities as well.

Our summer meetings this year will be held on Saturdays, and as mentioned in the President's Note, our meeting format will be different as well. Our goal is to provide more opportunities for our membership to participate in Skyscrapers, as we explore a number of activities we hope everyone will enjoy.

For many years now, our July meetings have been held on Saturdays, and included a cookout in the late afternoon. These meetings have always been well attended, and the casual atmosphere allows more time to socialize, exchange ideas and learn from one another. In fact, because we feel that the July meetings ran so well, a number of us wondered, "why not try this out for all of our summer meetings?"

With that in mind, Skyscrapers will hold its first summer meeting on Saturday, June 9th, and we hope many of you will attend.

In an effort to keep things casual and relaxed, each of our summer meetings, including June , will begin with a "pot-luck" style dinner at 5:30pm. Kathy Siok is coordinating these dinners, and details concerning this can be found in her note in this issue of the Skyscraper.

Our guest speaker this month is one of our very own members, Prof. Savvas Koushiappas of the Physics Department of Brown University. He will be speaking on the topic of spectroscopy, and his talk in entitled: "From Astronomy to Astrophysics: Understanding light." His talk will begin at 7:30pm.

After the main talk, we will take a short refreshment break before reconvening to enjoy some short presentations from our membership. Gerry Dyck will be showing us some images of a recent trip he took to observe the annular solar eclipse from the desert southwest. We also welcome others interested in sharing any images they may take of the upcoming Transit of Venus.

Once the skies darken, weather permitting, Prof. Ian Dell' Antonio and I will be demonstrating a Sbig spectrograph on Skyscrapers' 16" telescope, examining stellar spectra from different classes of stars. This will be a nice compliment to Prof. Koushiappas' talk.

Lastly, I want to encourage all members to come out to Seagrave Observatory, both for our monthly meetings and our regular Saturday open house nights. Whether you plan to observe through any of our fine telescopes, or set up your own telescope to observe with the rest of us, Saturdays at Seagrave Observatory provides a great opportunity to enjoy our hobby with one another and to learn something new about the heavens.

I hope to see you soon.

Report of the 2st Vice President

Kathy Siok

Our Annual AstroAssembly will take place on September 28 and 29, 2012. Plans for the program include an introduction and examination of the ways in which each and every interested person can participate in astronomical projects. This is sometimes called 'Citizen Science' and requires only your interest and some of your time. A current example is a successful project called Galaxy Zoo. Thousands of people, many with no astronomical background, were able to help astronomers categorize galaxies on their home computers by examining photographs taken by the Sloan Digital Sky Survey. We hope to provide information and concrete projects that can involve us in exciting astronomical projects. There will also be other interesting presentations, our annual raffle and great food at our annual banquet. Watch for more information as plans are finalized. Also, if you would like to give an informal talk on the Friday night of AstroAssembly or you have an item to donate to our raffle, please contact me.

Summer Meetings will include a 'pot luck' dinner and I have volunteered to coordinate these. We have always had a great response to this type of event in the past and we hope that you will take this opportunity to spend some time at the Observatory to eat with us as well as to learn something new from each other and to observe the skies. Please consider what you will bring to share for our 5:30 dinner. We will provide cold drinks and coffee, paper goods and a some treats. You will be able to keep food warm in the meeting hall. If you plan to attend, please let me know what type of dish you will be bringing so that we can plan for a variety of items. The meeting is on Saturday, June 9th (rain or shine). Contact me before June 5th to identify what you plan to bring to share and also if you want to help out. Hope to see you there!!

Skyscrapers Skill Set Project

Thank you Bob Horton, Tom Thibault, Steve Hubbard and Dave & Tina Huestis for responding to the email request asking the membership to provide a list of any skill that could benefit Skyscrapers to further the mission of our organization.

For those of you who did not respond, President Ed Haskell asks you to take a few minutes to send me an email noting your expertise. This information could be very useful when Skyscrapers needs to discuss an upcoming project. We'd like to first tap our membership for consultation about a specific topic before venturing outside the organization for assistance.

Therefore, please help us create a member's skill set directory by sending your skills list to me at dhuestis@aol.com.

As I outlined in a previous email to the membership, these skills can include, but are not limited to: **telescope making, mirror making, experience with computer hardware and software, grant writing, organizing and running events, electrical or engineering skills, construction, or oral and written communication skills,** just to name a few.

This personal information will only be accessed by the Board of Directors and any President appointed individual.

Thank you in advance for your cooperation.
David A. Huestis, Personnel Chair

Saturn: the "Recruiter"

Dave Huestis

A writer always needs a good headline to entice the reader to sit up and take notice. And I'm sure several of you surely did so when you read the above title. Any one with even a little knowledge of mythology knows that Saturn was the Roman god of agriculture, while the Greek counterpart was Cronus. So why did I choose the word recruiter as a moniker for the sixth planet from the Sun?

"When Saturn is in view the owner of a telescope may become a recruiting officer for astronomy by simply inviting his friends to gaze at the wonderful planet. One returns to it again and again with unflagging interest, and the beauty of the spectacle quite matches its singularity."

So wrote astronomer Garrett P. Serviss in his 1901 book, *Pleasures of the Telescope*. Truer words have never been written. Anyone who has had the opportunity to observe this magnificent ringed-world through a telescope of any size can attest to the verity of the above statement. And despite detailed images of Saturn by visiting spacecraft, the Hubble Space Telescope, or even earth-based instruments using the latest technology, observing Saturn firsthand through a telescope can still inspire the amateur astronomer and casual stargazer alike.

Right now is a good time to be recruited by Saturn. While this article is primarily intended for individuals with telescopes, those of you who do not own these wonderful instruments can still learn about the Saturnian system and then visit one of the local observatories (see ending paragraph).

Some of my associates at Seagrave Memorial Observatory have been observing and imaging Saturn for months now. They arose in the wee hours of the morning to conduct their observations. As the months have passed, Saturn has risen earlier and earlier each evening. In fact, on April 15, Saturn was at opposition (opposite the Sun in the sky and at its nearest distance to the Earth—approximately 810,575,000 miles—until next year). That means it rose in the east at sunset. And each night since it has appeared higher and higher in the sky.

On June 1 at around 9:15 pm the sky will be sufficiently dark to locate Saturn. It will be about 41 degrees above the south-southeast horizon, nestled among the stars of the constellation Virgo. Though most of the stars of Virgo are not very prominent, especially in a light-polluted environment, the constellation's bright star Spica will be less than five degrees from Saturn. This distance is equal to ten full moon diameters.

Spica is very easy to find. There is an easily memorized phrase which uses the handle in the Big Dipper asterism of Ursa Major to find it: arc to Arcturus, speed on to Spica. Saturn will be just a little bit brighter, but will have a yellowish hue to it, looking a little paler than Spica's white appearance. Want another clue? On June 1 the waxing gibbous moon will be toward the lower left of Spica and Saturn. And if you can't wait until that night, on the evening before, May 31, the Moon will be just four full moon diameters (two degrees) to the lower right of Spica.

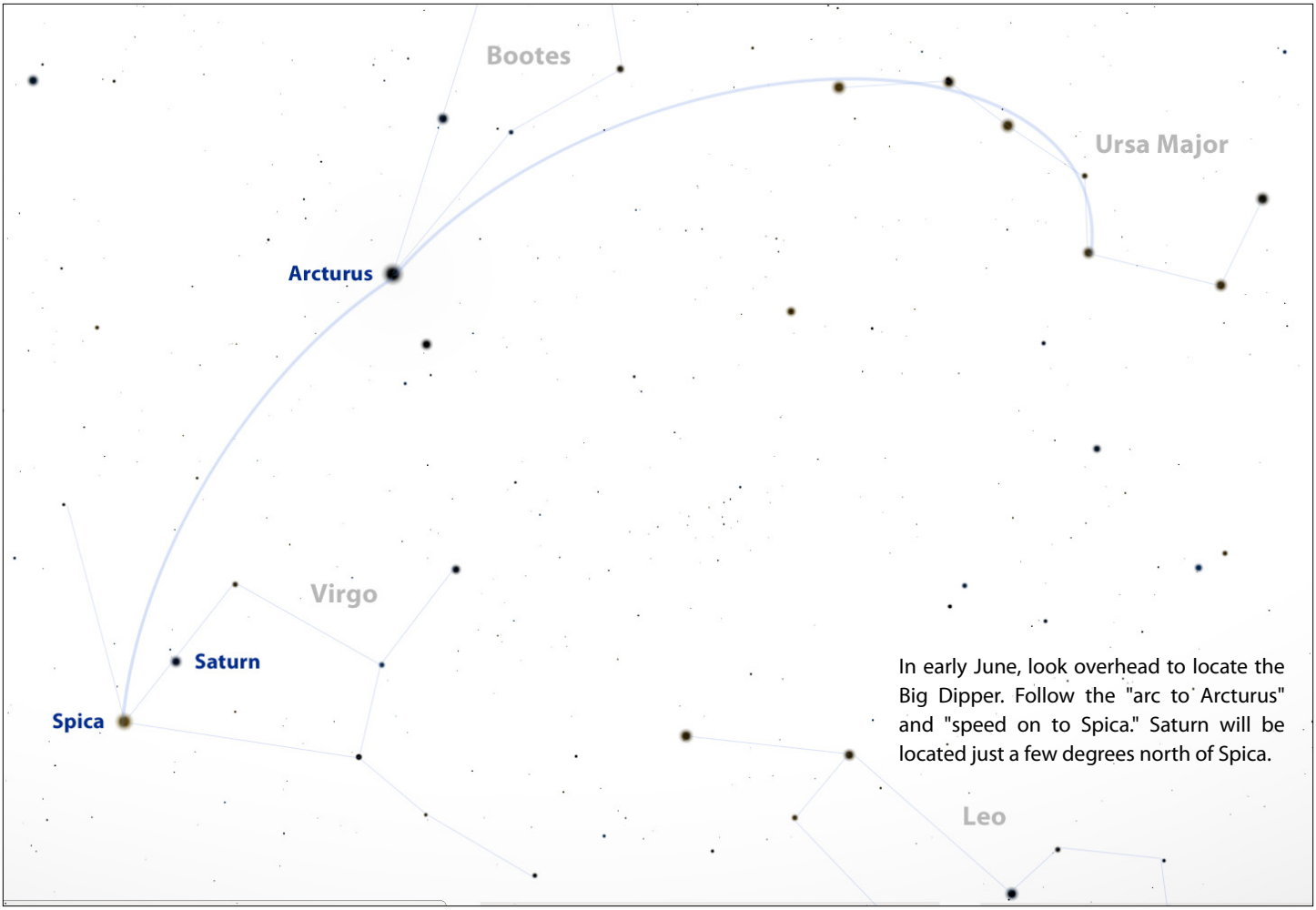
Saturn is indeed a pleasure to observe even if you own a small telescope, so make every effort to focus in on this wonderful planet. The very first feature that will catch your eye is the rings, the beautiful attribute for which Saturn is most noted. In Serviss' 1901 book, **Other Worlds**, he wrote, "Many telescopic views in the heavens disappoint the beginner, but that of Saturn does not. Even though the planet may not look as large as he expects to see it from what he has been told of the magnifying power employed, the untrained observer is sure to be greatly impressed by the wonderful rings, suspended around it … No previous inspection of pictures of these rings can rob them of their effect upon the eye and the mind. They are overwhelming in their inimitable singularity, and leave every spectator truly amazed."

During the period of Saturn's almost 29½ year orbit of the Sun, our Earthly perspective affords us a view of this magnificently ringed world from different angles above or below the ring plane. Since September 2009 we have been observing the north face of the rings, which are now tilted almost 14 degrees to the horizontal and will continue to open slightly more before we lose Saturn in brightening twilight by the end of September. This tilt will increase each year until 2017 when the rings will be open at their widest angle of 27 degrees.

Saturn rings are especially fascinating to observe as they open up and present a broader surface to view. It is amazing that Saturn's rings are visible at all, considering the planet's distance from the Earth and the fact that the ring plane is only about 328 feet thick (just larger than the length of a football field). Although there are hundreds of ringlets, you shouldn't have any difficulty seeing the separation between the primary "A" (outer) and "B" (inner) rings, called the Cassini Division. This gap is only 2,175 miles wide. In comparison, the width of the "A" ring is 9,321 miles and the "B" ring is around 16,032 miles across.

The rings are composed of irregularly shaped dirty snowballs, ranging in size from grains of dust to many particles the size of pebbles. There are also some "boulders" as large as a car or small house-sized bodies. They all orbit Saturn along the planet's equatorial plane.

While Saturn's rings are slowly de-



In early June, look overhead to locate the Big Dipper. Follow the "arc to Arcturus" and "speed on to Spica." Saturn will be located just a few degrees north of Spica.

orbiting and will eventually all "rain" down onto his cloud tops (in 50 to 100 million years or so) and cease to exist, there's no excuse, except for bad weather, not to catch a glimpse of Saturn with your own telescope or to visit one of the local observatories.

Once you tire of ring watching you can turn your attention to the disk of Saturn himself. The light-colored bands and zones in Saturn's cloud tops are much less prominent than those of Jupiter. (Very little cloud detail can be seen in small telescopes.) However, bright "spots" do develop from time to time. In 2011 a so called "Serpent Storm" (due to its serpentine shape) stretched completely around Saturn's North Temperate Zone. It has since dissipated.

In addition, both before and after opposition, one can observe the shadow of Saturn projected onto his rings. Also, as the observing angle of Sun/Earth/Saturn increases a keen-eyed observer should have no difficulty in detecting the shadow of the rings upon Saturn's cloud tops. These particular viewing circumstances provide a stunning 3-D effect of the Saturnian system.

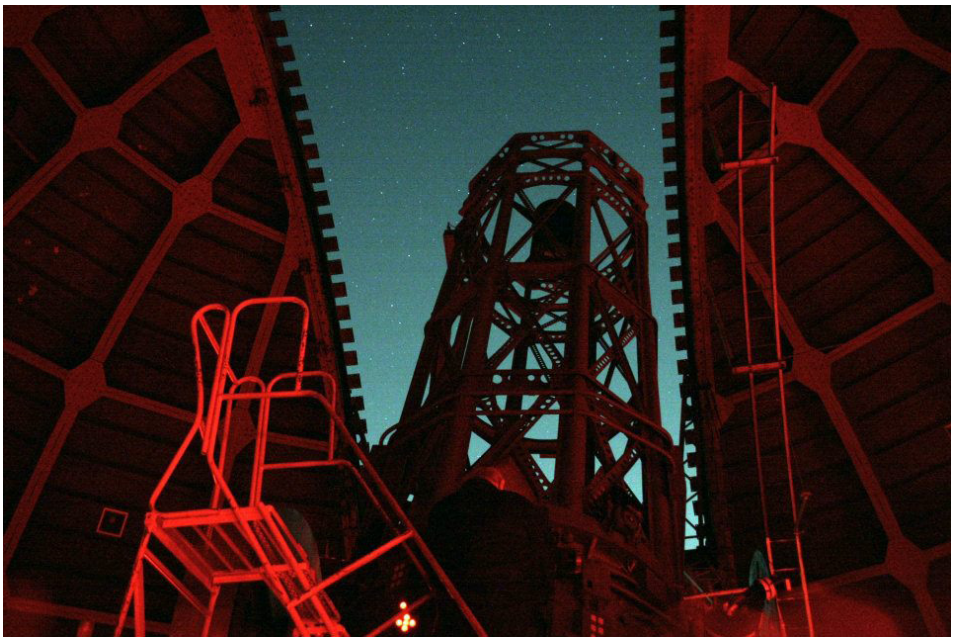
In conclusion, locally you can also see about 1/8th of Saturn's 62 known moons, depending upon which size telescope is used. In order of size and brightness they are Titan, Rhea, Iapetus, Dione, Tethys, Enceladus, Mimas and Hyperion. The first five or six of the above can be observed in a dark moon-less sky using the 12-inch Brashear refractor at Ladd Observatory.

I know that the weather has been absolutely horrible this spring. Hopefully as we move closer to June the weather patterns will change to afford us stargazers some better opportunities to point our telescopes skyward and observe one of the most beautiful objects in our solar system — the magnificent planet Saturn.

However, if you don't have a telescope or the one you do own does not provide a great view of Saturn, I encourage you to visit one of the local observatories. Seagrave Memorial Observatory in North Scituate (http://www.theskyscrapers.org) is open every clear Saturday night for observing. Ladd Observatory (http://www.brown.edu/Departments/Physics/Ladd/) in Providence will be only open in June for the transit of Venus on the 5$^{th.}$ It will be closed for the remainder of June and all of July for annual maintenance. Also consider visiting Frosty Drew Observatory (http://www.frostydrew.org/) in Charlestown on every clear Friday night. Please visit the respective websites for details.

All of the telescopes at these facilities can provide wonderful images of Saturn and his retinue of moons, as well as a wide variety of double stars, gaseous nebulae, globular and open clusters, and galaxies. The universe is at your eye for you to explore. Come share the wonders that only a telescope can provide.

As always, keep your eyes to the skies.



Trip to Mount Wilson: April 22-23

Observing Log from the Famous 60" Telescope

Steve Hubbard

First Night: After a tour of the grounds to include the outside of the Solar Telescopes, The Chara Array and the 100" scope, outside and inside, we re entered the 60" Dome with our tour guide Tim at around 8pm. Telescope operator Tim and Shelly, Tim's helper. Tim the scope operator also had a graduate student, Kristen helping him too. Still twilight out at the time. We were shown around the facility and learned more about the 60". 22 ton instrument, no welds, all riveted, built in a shipyard. The 60" mirror is made of glass by St. Gobain co in France and of the same material as wine bottles.

After going over instructions on safe and proper use of the telescope, the process of opening the slit on the dome was started. Most interesting was the warning to stay away from the metal parts of the dome along the outside edge. The original DC electronics are still in use with a possibility of electrical shock as a result. To open the dome, a panel with 3 original, dim orange Edison electric light bulbs was turned on with knife edge switches. The dome started to majestically rise up with a loud metal on metal squealing. Quite impressive actually. The stars were rock solid and the seeing appeared to be a 10 out of 10. We were very fortunate in that there was an inversion layer over Los Angeles that kept the clouds over the city and cut the light pollution way down. It also served to steady the air and we were told that we had one of the best seeing nights on the mountain in a long time. The temperature was very mild too allowing us to dress lightly and in comfort.

1: The star Sirius. Still a bit too light out to see any deep sky objects. Sirius was somewhat low in the sky for the scope to reach, but we were able to view it. Image was clear and tack sharp. The pup star companion to Sirius was EASILY visible! Sirius showed 4 distinct spikes from the spider holding the secondary and the pup was bright and clear in between the spikes on the right side of Sirius.

2: Approx. 8:30pm, "Eskimo" planetary nebula in Gemini. Fantastic! Bright, hint of blue to me, the inner part of the nebula was distinct with a rounded roughly triangular shape surrounding the core that forms the "face" of the nebula.

This was all surrounded by a large, diffuse, round glow forming the "fur edging" around the "face." This made it extremely easy to see why it is called the "Eskimo" nebula. Much brighter and more distinct with the 55mm eyepiece than with the 80mm.

3: NGC 2371, planetary nebula in Gemini, not far from the Eskimo. Interesting object, bright central star and 2 roundish glowing lobes to either side. I saw a greenish glow from the lobes. Tim gave us a 2" Oxygen 3 filter to put in front of the eyepiece. This helped immensely. I was able to see the lobes much better and to me, there was a hint of a spiral or pinwheel aspect to this now.

Dinner in the dome time. Approx: 9:35pm. Cold cuts, rolls, chips, cheese, drinks and fruit. What were we supposed to do with the fruit??

4: approx: 9:40pm, MARS !!! Even though it has moved away from closest approach to Earth, still fantastic! LOTS of detail, very steady seeing. Bright, white polar cap pops out on the top, lots of dark brownish, greenish detail along the bottom. I saw a distinct roundish feature consisting of a dark line near Mthe center of the planet. Best detail I've ever seen, the 55mm eyepiece made the details pop out. Tim brought a salmon colored filter that we used over the eyepiece. This made the details come thru even better than with the naked eye. All sorts of light detail seen.

5: Approx 10:20pm, on to "The Ghost of Jupiter." Planetary nebula in Hydra. Exceptional object! Bright blue green coloration, looks like a giant almond shaped eye. Distinct center area, soft outer area with a distinct edge. Bright central star, then the inner oval shaped eye and then the roundish outer layer.

6: Approx: 10:50pm, M 104, the "Sombrero" galaxy in Virgo. Long edge on with a dark band across the center. Lighter glow across the top and bottom. Not as distinct as the Ghost of Jupiter, galaxy all across the entire field of view in the eyepiece.

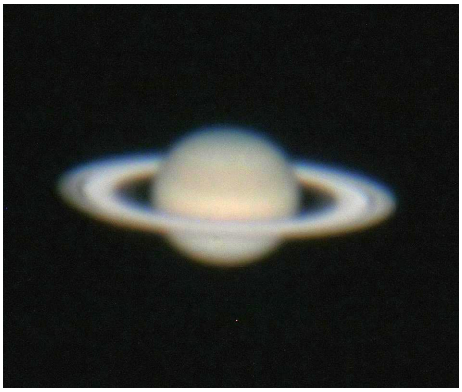
7: Approx: 11:00pm, NGC 4038, the "Antenae" galaxy in Virgo. A bit of a disappointment. Very dim, washed out. Definitely there, but barely visible.

8: Approx: 11:20pm, NGC 4361 in Corvus, small planetary nebula. Indistinct round fuzz ball.

9: Approx: 11:30pm, M 51, "Whirlpool" galaxy, Canes Venatici. Large, bright, good detail in the 80mm eyepiece. Both cores easy to see and some of the spiral arm detail seen too.

10: Approx: 11:50pm, SATURN !! 80mm, INCREDIBLE !!!

For me, the highlight of all of our observing time. Like a postcard, sharp, jet black background, easy details on the surface of the planet. Cassini division sharp and to me, seemed wider than I've seen it before. Thru the 55mm, Saturn was Mind Blowing! The



"Crepe" ring on the inner part of the ring system was easy to see. Wide, distinct, a bit ghostly and a light blue grey. The shading on the bands of the planet showed some detail. Got some nice JPEGS with my camera held up to the eyepiece, but no where near what I saw thru the eyepiece. Titan showed a disk and I was able to see 6 of Saturn's moons.

11: Approx: 1:30am, M 5 Globular cluster. Bright, resolved to the core, nice 3D effect so that it looked like a glowing ball of stars.

12: Approx: 2am, M 13 Globular. 3 dimensional feel to it, resolved to the core and it appeared to me that the dark lanes in the center were visible.

13: Approx: 2:50am. The Ring Nebula. Extremely bright, blue green color to me. The central star easily popped right out.

14: Approx: 3:40am, everyone tired and starting to fade. Viewed the "Catseye" Planetary nebula. Very bright, strong blue/green color. Almost a double ring, one on top of the other with an easily visible central star. Fuzzy all around the outside. A very nice object.

15: Approx: 3:50am. Albeirio. I was surprised at how nice this was. Very widely spaced in the eyepiece, the stars were bright and it was easy to see one as blue, the other as yellow.

16: Approx: 4:10am. NGC 6781, planetary in Aquila. Nice, round evenly illuminated though not too bright planetary. Greatly enhanced by the use of an Oxygen 3 filter. No central star seen.

17: Approx 4:20am, "Campbell's Hydrogen Star" in Cygnus. This was a surprise object and one I'd never seen before. Very unusual, looked to me like a small, strongly red planetary nebula with a bright orange star in the center. We were told that this was not actually a planetary, but a young star burning very hot.

18 (and last for the night): Approx: 4:40 am. The Dumbbell nebula. This filled the entire field of view and strongly benefited from the use of the Oxygen 3 filter. It was almost too large for even the 80mm eyepiece and while nice, was not nearly as impressive to me as some of the smaller, more condensed objects seen.

After this, we made our way back to Los Angeles thru extremely dense fog down a winding mountain road.

Night Two

There was still an inversion layer over Los Angeles with rain and clouds on the way back to the mountain. We drove up into extremely heavy fog and only right near the peak where the telescopes were did we encounter clear skies. A bit of fog and cloud was drifting up over the peak from time to time. We arrived at the scope about 7pm with a new operator, Tom Mason and Shelly was there too. We had a dinner of pizza, cookies, chips and other bad for you food. The slit was opened by 7:35pm and it was noticeably cooler with the stars twinkling some. The seeing was definitely not as good as the night before.

1: Approx: 7:40pm. Venus. Crescent shape easily seen, no detail noted other than that.

2: Approx: 7:50pm. Sirius again. Tried for the pup star, but the seeing was much poorer and Sirius was very shimmery. None of us could see the pup star.

3: Approx: 8:10pm. Betelgeuse. Bright orangy star, no details, seeing not so good even higher up.

4: Approx: 8:20pm, Castor. We were able to cleanly split it

5: Approx: 8:40pm, NGC 2301 in Monoceros. Nice, small open cluster with 25 or so stars in it.

6: Approx: 8:55pm. "Hubble's Variable Nebula" in Monoceros. Fairly bright, easy to see a fan shape spreading out from a star, I could not see any color in it.

7: Approx: 9:10pm, Mars. Not nearly as nice as the night before, harder to focus, surface detail much harder to spot.

8: Approx: 9:40pm, NGC 2903 in Leo. Bright spiral galaxy, bright core and I could see a bit of brightening on either side of it.

9: Approx: 9:55pm, Gamma Leonis star system. Nice yellow / yellow double star system. Clear separation between the two.

10: Approx: 10pm, NGC 3190 in Leo. Edge on galaxy, thin streak with a brighter core and maybe a hint of a dust lane.

11: Approx: 10:20pm, NGC 3226 and 3227 in Leo. 2 galaxies in the same field of view, one bright and oval, the other fainter, smaller and round.

12: Approx: 10:30pm, NGC 3412. Galaxy, round, very bright core with possible faint extension around it.

13: Approx: 10:45pm, M 95 Galaxy in Leo. Smaller than I thought it would be, bright round core, couldn't see much other detail.

14: Approx: 11pm, M 96 galaxy in Leo. Brighter than M 95, bright core, fainter, circular extension around it.

15: Approx: 11:10pm, M 105 galaxy in Leo, bright, round, no other detail seen.

16: Approx: 11:20pm M 81 galaxy in Ursa Major. Very bright oval core, with a diffuse background. No definite background detail seen.

17: Approx: 11:30pm, M 82 galaxy in Ursa Major. Very nice, long, edge on, bright. I could see dark mottling in the core and near one edge.

18: Approx: 11:45pm, M 65, galaxy in Leo. Bright, easy to see, with extensions from the spiral arms extending out up and down.

19: Approx: 12:10am, M 66 Galaxy in Leo. Bright, elongated, almost an S or hook shape with a little bit of mottling near the bottom.

20: Approx: 12:25am. Saturn again. Not great, fuzzy, Cassini division pops in and out once in a while, but nothing like the night before. Still bright enough in the eyepiece to cause some night blindness, but overall a disappointment. Good thing we didn't have seeing like this the whole time…

21 and last object: Approx: 12:35am, 3C 273 in Virgo. Quasar 3 billion light years away, though one of the closer to us. Bright star like, close to another star. No other details seen.

At 1pm we called it quits. The seeing was poor and we were tired. If the seeing had been better, we would have stuck it out, but overall, the conditions were not nearly as good as the night before and we were spoiled by that.

http://youtu.be/gAV7sFedJ3Q
http://youtu.be/l4Hk0m7Kt3c

Be Prepared for the Transit of Venus: June 5, 2012

Dave Huestis

This notice is a brief reminder about the rare transit of Venus that will be visible here on the evening of June 5. A more detailed account appeared last month, which can also be viewed at the Skyscrapers website (http://www.theskyscrapers.org). Following are the highlights of this event, the last one to occur until the year 2117.

Local circumstances for Providence, Rhode Island:

- June 5, 2012
- Transit begins at 6:03:32 pm EDT — this event is called first contact when the disk of Venus will begin to encroach upon the Sun's top left edge
- Venus will continue to move "onto" onto the solar disk and its dark image will become silhouetted against the Sun
- At 6:21:22 pm EDT, Venus will be entirely in front of the solar disk — this event is called second contact.
- At this time the "black drop" effect can be observed with a telescope (a portion of Venus' dark disk will seem like it is dripping towards the solar limb, or edge, like a teardrop)
- Within a few seconds the effect will vanish
- The transit's progress will continue locally through sunset at around 8:17 pm EDT
- Choose an appropriate site with an unobstructed western view to maximize your observation

How to safely observe:

- When observing the Sun, observe caution as well
- Do not stare at the Sun even while it is setting — ultraviolet and infrared can still damage one's eyes
- If you've never done any telescopic solar observing prior to this day, don't start now
- Only experienced observers using the proper methods or filters should be observing the Sun
- Non-telescope methods — #14 welder's glass or special solar eclipse glasses are safe to use
- Do not use the eclipse glasses to look through a telescope — the concentrated sunlight will burn a hole through them instantly and severely damage your eye
- Don't use small glass or plastic filters that usually come with the small department store refractors — they can shatter (and have done so)
- Do not use exposed film of any kind
- Don't stare at the Sun even with sunglasses
- Don't risk your eyesight due to an oversight

Ladd Observatory in Providence and Frosty Drew Observatory in Charlestown will be hosting transit of Venus observing sessions. Visit their websites for details, and cross your fingers for some clear skies. You won't be able to wait around until the next one!

Venus transit of June 8, 2004 photo by Jim Hendrickson.

M5: Globular Cluster in Serpens

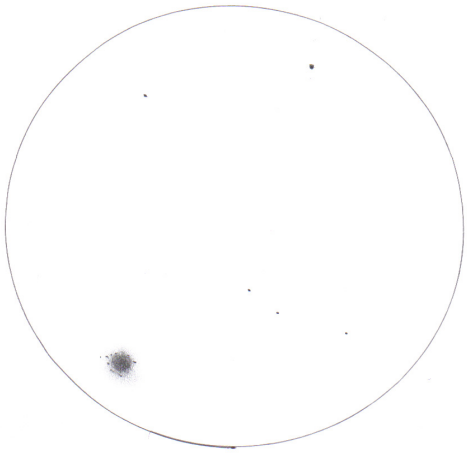
Glenn Chaple's Sky Object of the Month

Much astronomical hoopla has been made about the June 5th Venus transit – and rightfully so. But what happens after that, when post-Venus Transit Depression sets in? I can't think of a better cure than a telescopic trip to the globular cluster M5.

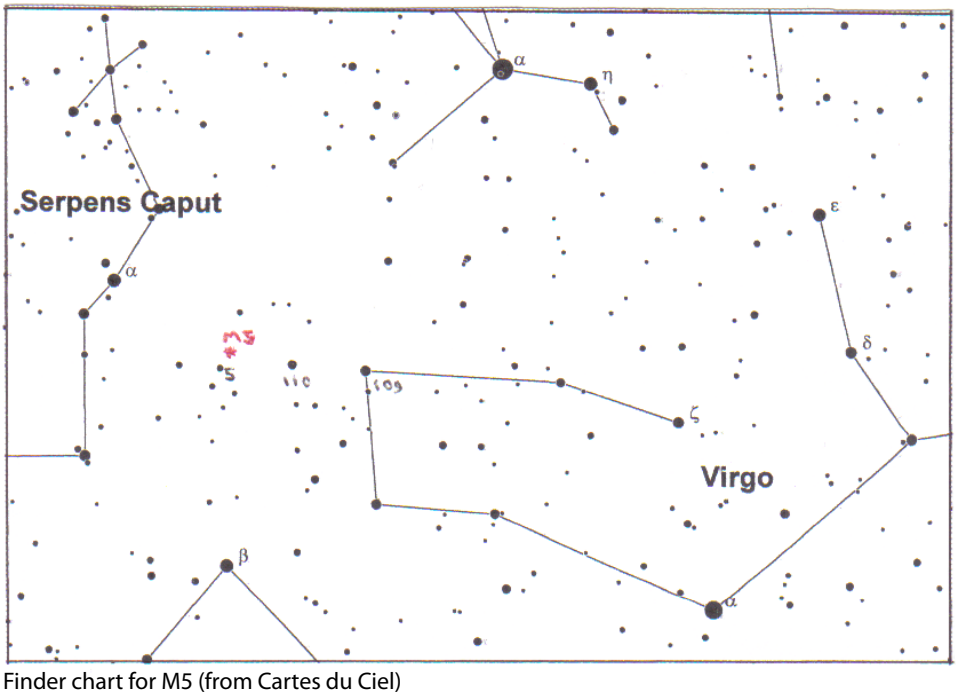
M5 was discovered by the German astronomer Gottfried Kirch in 1702 – more than 60 years before Charles Messier observed and recorded it in his Catalog. It ranks as one of the finest globular clusters visible from mid-northern latitudes and is a worthy rival of M13 in visual splendor. Its brightness (magnitude 5.7, just visible to the unaided eye), apparent size (17.5'), and distance (25,000 LY), mirror those of M13.

Why, then, does M13 garner more attention? The answer is location. M13 is conveniently placed between the stars zeta (ζ) and eta (η) in the "Keystone" of Hercules. M5, on the other hand, lies in a relatively star-poor part of Serpens. One of the easiest ways to find M5 is by tracing a line from 109 to 110 Virginis and extending it an equal distance beyond to the star 5 Serpentis (refer to the finder chart). M5 is in the same low-power field as this star, just 0.4° to its northwest.

Like M13, M5 is one of the few globular clusters that can be resolved with small scopes. Through an Edmund Astroscan, M5 looked to me like a circular glow interspersed with faint stellar specks. The effect was especially noticeable when I viewed M5 with averted vision. With large-aperture scope, M5 is nothing less than spectacular – a rounded mass comprised of thousands of stars of 12th to 15th magnitude. I say "rounded," but some observers describe M5 as being slightly elongated in a NE to SW direction. See if you agree.



M5, as seen with a 4-inch f/4 reflector (Astroscan) at 75x



Finder chart for M5 (from Cartes du Ciel)

The Full Moon in June

Francine Jackson

Walking in your garden this month, you should find your rosebush beginning to bud. Within a few days, barring infestation by Japanese beetles, if you have the traditional plant, you will soon have unbelievable flaming red flowers, unless you have invested in some of the incredible hybrids that are showing up in yards near you. Therefore, it's only logical to look up on June 4th at the Full Rose Moon. Unfortunately for us New Englanders, we will not be able to witness that evening's partial lunar eclipse, but it will be visible throughout much of the central and western states.

And, who doesn't love the ripe, juicy strawberry? Because they are best at this time of year, the Algonquin Indians dedicated their Full Moon to the fantastic strawberry. To other cultures, it was the Corn Tassel Coming Out Moon. And, of course, who isn't ready to spend June on their Honey Moon?

In time for July's celebration of the historic Apollo Moon missions, you might want to start thinking about reading a book that preceded NASA'a great feat: Jules Verne's From the Earth to the Moon. In this incredible introduction to leaving the Earth and landing on our neighbor, Verne used a space gun, a giant cannon that, although it won't give the required escape velocity to reach the Moon, at least he tried his best to mathematically get us away from here and onto another world.

May Reports

Tom Thibault, Secretary
Lloyd Merrill, Treasurer

Board of Directors Meeting Minutes
April 30, 2012

Attendees: Ed Haskell, Bob Horton, Lloyd Merrill, Tom Thibault, Bob Napier, Jim Hendrickson, Steve Siok, Conrad Cardano and Dave Huestis.

Meeting called to order at 7:00PM at Seagrave by Ed Haskell.

Items discussed: **Round table discussions occurred based on the following questioned posed by Ed.** 1. What are your hopes and aspirations for Skyscrapers? • Increase member activities and involvement • Improve internal and external communication • Property improvements 2. What would you like to see us accomplish during our term? • Automate the 16" Meade • Increase membership benefits • Secure restroom facilities • Increased member activities 3. Where should we take the organization and how should we get there? • Increase our membership base by providing more innovated means of communication • Improve Public Night activities by developing more structured Programs 4. What potential problems do you foresee arising? • Finances • Lack of participation

The following Appointments were made by Ed Haskell. Alex Bergemann – Librarian • Jim Hendrickson – Web Master (Ed recognized Jim's outstanding work) • Kathy Siok – Refreshment Coordinator • Jim Crawford – Archivist • Dave Huestis – Historian • Bob Forgiel – Outreach Coordinator

The following Committees were appointed by Ed Haskell: Personnel Committee: Dave Huestis: BOD Succession planning • Membership skills inventory • Support Nomination Committees; Facilities Committee: Tom Thibault, Steve Siok, Bob Forgiel, and Bob Napier: Remote Automated Telescope access • Restrooms; Program/Activities: Bob Horton: Identify activities that involve and benefit members. • Focus on activities that are appropriate to Skyscrapers' mission. • Continue the high level of programs which characterize Skyscrapers. The purpose of all appointments and committees is to show value of our organization.

Discussion regarding Skyscrapers sponsored trips occurred and the decision was made that at the current time the current focus is on other activities. It was noted that there is no objection to any of our members announcing and coordinating trips amongst themselves and members who may be interested.

Meeting adjoined at 9:40PM

Skyscrapers May Meeting Minutes
May 4, 2012

President Ed Haskell called the Skyscraper May Meeting to Order at 7:30PM.

Ed informed the membership of the format of tonight's meeting and discussed the format changes that will be occurring in the future. The business portion of the meetings will be reduced or eliminated dependent upon the needs of the organization. Ed then turned the floor over to 1st VP Bob Horton.

Bob Horton introduced our speaker for the evening, fellow member **Francine Jackson**. After a brief exchange of accolades between Francine and Bob, a discussion ensued regarding whom had seen more years pass them by. It was final agreed upon by both that neither had witness the Venus Transits it the 1800s.

This was an excellent introduction to Francine's presentation **"A General History and Significance of the Transit of Venus"**. Francine explained the significance and identified the key players regarding this event throughout history. Bob Horton followed

Francine's presentation with a brief talk and slides regarding Solar Viewing Safety. The two presentations were excellent primers for the upcoming Venus Transit on June 5th.

Francine and Bob noted that both Frosty Drew and Ladd Observatory will be organizing Transit Events and welcome any interested in volunteering to assist with these events. Please contact either Francine or Bob regard-

YTD Budget 4/1/2012 - 5/25/2012	2012-2013 Budget	Actual	Difference
INCOME			
Astroincome	$3,500.00	$0.00	-$3,500.00
Cookoutinc	$450.00	$0.00	-$450.00
Donation, Other	$300.00	$185.05	-$114.95
Dues	$3,310.00	$1,430.00	-$1,880.00
Interest Inc	$60.00	$3.91	-$56.09
Starparty Donations	$200.00	$111.00	-$89.00
TOTAL INCOME	**$7,820.00**	**$1,729.96**	**-$6,090.04**
EXPENSES			
Astroexp	-$2,750.00	$0.00	-$2,750.00
Cookoutexp	-$400.00	$0.00	-$400.00
Corporation, State Fee	-$22.00	$0.00	-$22.00
Domain Name	-$15.00	$0.00	-$15.00
Donations	-$50.00	$50.00	$0.00
Electric	-$175.00	$25.46	-$149.54
Other Insurance, Property	-$2,600.00	$0.00	-$2,600.00
Postage and Delivery	-$225.00	$0.00	-$225.00
Presidents Fund	-$150.00	$0.00	-$150.00
Printing and Reproduction	-$83.00	$0.00	-$83.00
Propane	-$100.00	$0.00	-$100.00
Property Maint Fund	-$200.00	$0.00	-$200.00
Refreshment Expense	-$350.00	$77.94	-$272.06
Trustee Exp	-$700.00	$53.54	-$646.46
TOTAL EXPENSES	**-$7,820.00**	**$206.94**	**-$7,613.06**
Cash Assets			
Citizens	$9,496.37		
Capital One	$12,260.92		
Total	**$21,757.29**		

ing your interest.

Business: Treasurer – Lloyd Merrill: Emilio Rodriguez-Peris introduced for family membership • Casey Darconte membership vote postponed to the June Meeting • Tom Gilson voted in as a member

Trustee – Steve Siok: Thanked fellow member Alex Bergemann and his Scout Troop for the great job assisting in clearing debris on the adjacent property of Gene Allen. • Alex and the Troop will be treated to a night of viewing in show of appreciation • A round of applause was given by the membership

President – Ed Haskell: The following Committee Appointments were announced • Personnel Committee – Dave Huestis • Ambassadors for our new members • Succession Planning • Members skills inventory • Programs/Activities Committee– Bob Horton • Members activities development • Activities appropriate to Skyscrapers mission • Continue high level of activities for the public • Facilities Committee– Tom Thibault • Restroom solution • Internet connection to facility • Remote telescope access • Refreshments – Kathy Siok

2nd VP – Kathy Siok: Jim Crawford will assist with refreshments • Refreshments will be Coffee, Soda, and some small snacks • Welcomed members to contribute goodies, please let Kathy or Jim know so they can plan accordingly

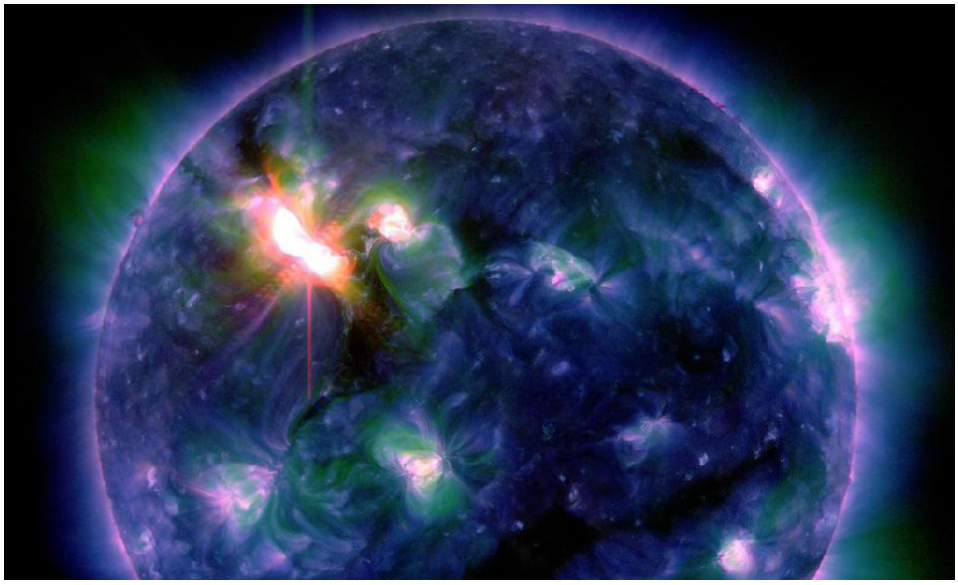
1st VP – Bob Horton: June speaker – Savvas Koushiappas - TBD • July speaker – Peter Shultz – Observing the Moon • August speaker – Ed Ting – Product Reviews

Ed Haskell closed the meeting indicating that we will be experimenting with the format of our meetings, and as a start, we would be holding our Summer Meetings on Saturday Evenings.

NASA's Space Place

Thank Goodness for Magnetism

By Dr. Tony Phillips



Multiple-wavelength view of X5.4 solar flare on March 6, captured by the Solar Dynamics Observatory (SDO) in multiple wavelengths (94, 193, 335 angstroms). Credit: NASA/SDO/AIA

Only 93 million miles from Earth, a certain G-type star is beginning to act up.

Every 11 years or so, the solar cycle brings a period of high solar activity. Giant islands of magnetism—"sunspots"—break through the stellar surface in increasing numbers. Sometimes they erupt like a billion atomic bombs going off at once, producing intense flares of X-rays and UV radiation, and hurling massive clouds of plasma toward Earth.

This is happening right now. Only a few years ago the Sun was in a state of deep quiet, but as 2012 unfolds, the pendulum is swinging. Strong flares are becoming commonplace as sunspots once again pepper the solar disk. Fortunately, Earth is defended from solar storms by a strong, global magnetic field.

In March 2012, those defenses were tested.

At the very beginning of the month, a remarkable sunspot appeared on the Sun's eastern limb. AR1429, as experts called it, was an angry-looking region almost as wide as the planet Jupiter. Almost as soon as it appeared, it began to erupt. During the period March 2nd to 15th, it rotated across the solar disk and fired off more than 50 flares. Three of those eruptions were X-class flares, the most powerful kind.

As the eruptions continued almost nonstop, Earth's magnetic field was buffeted by coronal mass ejections or "CMEs." One of those clouds hit Earth's magnetosphere so hard, our planet's magnetic field was sharply compressed, leaving geosynchronous satellites on the outside looking in. For a while, the spacecraft were directly exposed to solar wind plasma.

Charged particles propelled by the blasts swirled around Earth, producing the strongest radiation storm in almost 10 years. When those particles rained down on the upper atmosphere, they dumped enough energy in three days alone (March 7-10) to power every residence in New York City for two years. Bright auroras circled both poles, and Northern Lights spilled across the Canadian border into the lower 48 states. Luminous sheets of red and green were sighted as far south as Nebraska.

When all was said and done, the defenses held—no harm done.

This wasn't the strongest solar storm in recorded history—not by a long shot. That distinction goes to the Carrington Event of September 1859 when geomagnetic activity set telegraph offices on fire and sparked auroras over Mexico, Florida, and Tahiti. Even with that in mind, however, March 2012 was remarkable

It makes you wonder, what if? What if Earth didn't have a magnetic field to fend off CMEs and deflect the most energetic particles from the Sun.

The answer might lie on Mars. The red planet has no global magnetic field and as a result its atmosphere has been stripped away over time by CMEs and other gusts of solar wind. At least that's what many researchers believe. Today, Mars is a desiccated and apparently lifeless wasteland.

Only 93 million miles from Earth, a G-type star is acting up. Thank goodness for magnetism.

With your inner and outer children, read, watch, and listen in to "Super Star Meets the Plucky Planet," a rhyming and animated conversation between the Sun and Earth, at http://spaceplace.nasa.gov/story-superstar.

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

Directions to Seagrave Memorial Observatory

From the Providence area:
Take Rt. 6 West to Interstate 295 in Johnston and proceed west on Rt. 6 to Scituate. In Scituate bear right off Rt. 6 onto Rt. 101. Turn right onto Rt. 116 North. Peeptoad Road is the first left off Rt. 116.

From Coventry/West Warwick area:
Take Rt. 116 North. Peeptoad Road is the first left after crossing Rt. 101.

From Southern Rhode Island:
Take Interstate 95 North. Exit onto Interstate 295 North in Warwick (left exit.) Exit to Rt. 6 West in Johnston. Bear right off Rt. 6 onto Rt. 101. Turn right on Rt. 116. Peeptoad Road is the first left off Rt. 116.

From Northern Rhode Island:
Take Rt. 116 South. Follow Rt. 116 thru Greenville. Turn left at Knight's Farm intersection (Rt. 116 turns left) and follow Rt. 116. Watch for Peeptoad Road on the right.

From Connecticut:
• Take Rt. 44 East to Greenville and turn right on Rt. 116 South. Turn left at Knight's Farm intersection (Rt. 116 turn left) and follow Rt. 116. Watch for Peeptoad Road on the right.

• Take Rt. 6 East toward Rhode Island; bear left on Rt. 101 East and continue to intersection with Rt. 116. Turn left; Peeptoad Road is the first left off Rt. 116.

From Massachusetts:
Take Interstate 295 South (off Interstate 95 in Attleboro). Exit onto Rt. 6 West in Johnston. Bear right off Rt. 6 onto Rt. 101. Turn right on Rt. 116. Peeptoad Road is the first left off Rt. 116.

47 Peeptoad Road
North Scituate, Rhode Island 02857