

The Ephemeris

June 2013

Volume 24 Number 6 - The Official Publication of the San Jose Astronomical Association.



Houge Park June Events

6/2

Solar observing. 2 - 4 p.m.
Fix-It Day 2 - 4 p.m.

6/14

Star party. 9:30 p.m. - midnight.

6/21

Beginners Imaging Group 7:30 - 9 pm

6/22

General Meeting
7:30 - 8 p.m. Social time pot luck
8 - 10 p.m. Speaker: Dr. Dana Backman,
"SOPHIA—Science from 41,000 Feet".

6/28

7 to 8:15 p.m. Board of Directors
Beginners Class 8:30 - 9:30 p.m.

From the Editor - Mina Wagner

Hello friends! Summer is fast approaching and Star Party season is just around the corner. It's time to get the telescopes out, clean them, review your observing accessories, cold-weather clothes, favorite snacks and drinks, thermoses, etc. One major star party already took place, the Texas Star Party (TSP) in the West Texas desert, and the Golden State Star Party (GSSP) begins on July 6th in north-east California.

If you have never been to GSSP you should treat yourself this year. The skies are very dark, the scenery spectacular, and the Albaughs, our hosts, make it feel like a family affair.

Please check our website: sjaa.net for updates on local weekend star parties. If you have never joined us for those you should go to one. Bring your telescope, or just bring yourself. Children will love the experience and will never forget it. You can look through other people's telescopes and share a nice evening of observing. Don't forget your jacket and snacks.

If you have any ideas about an observing trip, maybe you want to share them and we can organize an outing and have other people join us for it.

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Astronomy Day 2013

Members of your club showed up for Astronomy Day 2013, and treated the public to the best show in the solar system—our very own star, aka—The Sun.

The photo at left is of the SJAA's participation at Martin Luther King Library in downtown San Jose. The SJAA participates at numerous events aside from the usual "solar observing" dates at Houge Park, our home, the first Sunday of the month, 2-4 p.m. Never seen surface detail or prominences? Come out!

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About the SJAA

The SJAA raises money to support its various programs through your membership and charitable donations.

Small efforts = big results! Its so easy to help the club. Maintain your membership and encourage others to join. \$20 tax deductible memberships are quick and easy.

We also hold two fund raising events each year - an Auction in the spring, and a fall Swap. If you have astronomy gear you don't use, consider donating it to SJAA. Contact Board member Dave Ittner.

Shallow Sky June Planets

By Akkana Peck

How to eat a spacecraft

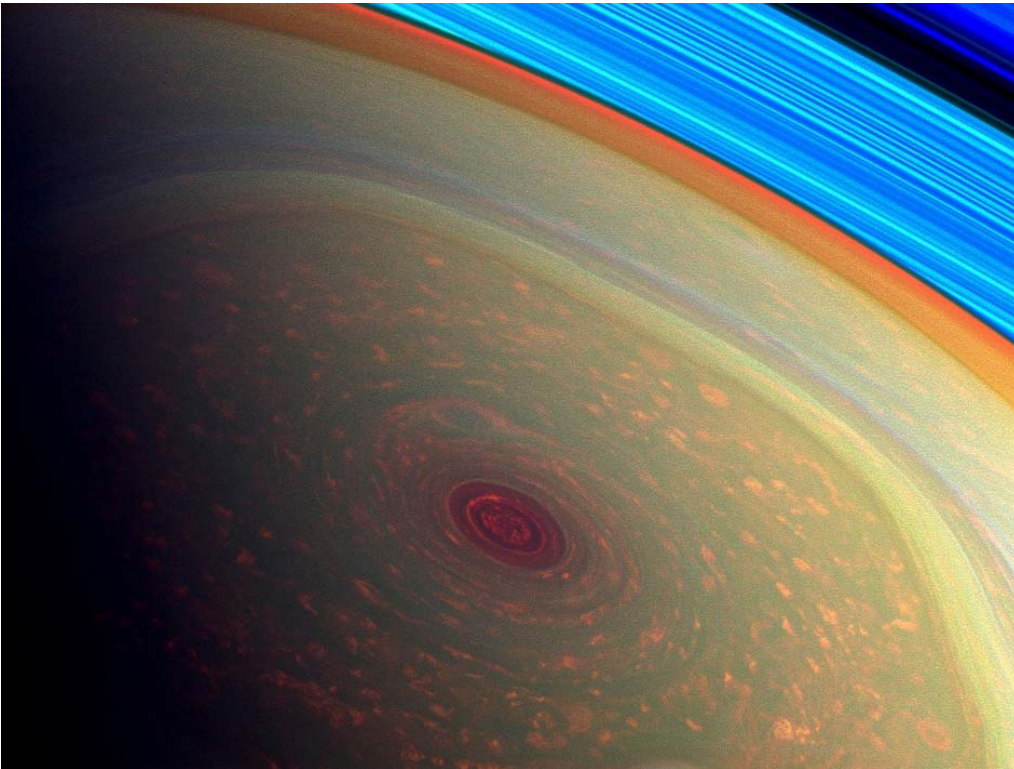
There aren't many planets visible in June, as Jupiter sinks deep into the dusk twilight and disappears by the end of the month. Mercury and Venus are a bit higher in that twilight: Mercury is best during the first half of the month, while Venus will improve as the month goes on.

But don't give up completely. Saturn is well placed for observing all evening. It transits at 10:30 pm at the beginning of June, moving to a little before 9 by the end of the month. The rings are tilted at 17 degrees to us.

Saturn had a big storm that was in the news last month, though actually the storm has been going on for a lot long-

looking a lot like an earth-based hurricane, except much bigger. The whole hurricane is nearly the size of our whole planet; the eye alone is about 2000 km across, half the size of Australia. (If you type 2000 km into Wolfram Alpha, it helpfully tells you that's about the same distance, a thousand miles, that the Proclaimers would walk to fall down at your door.)

Photos of the hurricane look remarkably like Jupiter's Great Red Spot, but that's misleading: it's elongated because many photos show it from the side, foreshortened, and it's red because it's a false-color image, where red clouds are lower than the clouds around it. Still, the image is spectacular.



er than that. Remember Saturn's strange north polar hexagon? The Cassini team has been trying to get a look at what's inside the hexagon for some time, but it's been winter on Saturn's northern hemisphere, so it wasn't until recently that they got enough sunlight on it to see inside. (That also means it's not visible to earthbound telescopes, alas.) What's inside? A huge hurricane,

Pluto is also visible most of the evening, transiting a few hours after midnight. But it stays very low, never getting even a third of the way to the zenith, so you'll have to be fairly determined to find it among the stars of the Sagittarius Milky Way.

Uranus and Neptune are morning objects, Neptune rising a little past

midnight, Uranus an hour and a half later. Mars, too, is a morning object in June, but only in morning twilight, so you're best off waiting a few months to catch the red planet.

With so few planets in the sky, let's talk about spacecraft. Last month, I attended part of the Design West embedded systems show in San Jose, and caught a couple of interesting talks related to spacecraft and planetary science. (This is a fun conference if you have any interest in hardware hacking, and an expo pass is free.)

Luke Dubord, of JPL, was one of the keynote speakers, speaking on "Waiting on the Speed of Light: Engineering Autonomy at Mars." He talked about the Curiosity rover, and the difficulties in engineering a system that has to operate twenty light-minutes away -- so the rover has to be capable of acting on its own for at least forty minutes while it waits for round-trip messages between the Earth and Mars.

Curiosity has quite a bit of compute power: 5 processors (2 PPC, 3 SPARC) plus 31 FPGAs split among the various components of the spacecraft. It's a far cry from those old Apollo-era missions. But of course, it's still dependent on human control for most operations.

Dubord's talk wasn't highly technical, but it did include a few good quotes, like: "This vehicle is 6-wheel drive, 4 wheel steer, and can probably outrun a tortoise."

More detailed was Jack Ganssle's presentation, "Mars Ate my Spacecraft!" Ganssle talked about the various ways embedded systems -- like the ones in a spacecraft -- can fail.

Take the 1999 Mars Polar Lander. Apparently the landing electronics were never tested under high G loads (like, say, the ones you might get when landing on a planet). The hardware

(continued on page 3)

(Shallow Sky)

engineers knew the electronics might give spurious transient signals leading to a false "Down" indication, but that message somehow never got to the software engineers. So the software saw the first "Down" signal and switched off the engine, while the craft was still 40 meters up. The MPL crashed.

Ganssle comments that the contractor building MPL had the engineers working 60 to 80 hour weeks for an extended time. This was a recurring theme of his talk: "Tired people make mistakes."

More recently, we had the Mars Expedition Rover mission (Spirit and Opportunity). That mission, as we know, ended up a roaring success. But back at the beginning of the mission, when Spirit first deployed its rock grinder, the operating system (VxWorks) crashed. Turns out the rovers used a flash filesystem, where removing a file didn't actually remove it -- it just set a flag indicating that the file should be removed later. Spirit's rock grinder tried to write some data, ran out of space, and crashed. The system rebooted -- and the first thing it did upon booting was to try to write a file, causing another crash. The problem was that the system was never tested for more than nine days at a stretch, so the filesystem never filled up during ground-based testing. Fortunately, ground control was able to send a hard reset and upload a fix to get around the problem.

Apparently this particular bug has caused failures on at least six other missions.

Then there was Clementine, the 1994 moon mission. Its telemetry computer got a floating point exception -- not an uncommon failure, but somehow it caused a system reset that opened all the fuel nozzles. By the time they sent a hardware reset, Clementine was nearly out of fuel. Clementine got a lot of great lunar data, but its post-moon mission to the near-earth asteroid Geographos had to be abandoned.

In 1998, another asteroid mission, NEAR, unexpectedly went quiet for 27 hours. When it finally came back, its fuel was gone. Engineers had

HEARD AND OVERHEARD... By Mina Wagner



I have heard that the SJAA Board of Directors is going to get a large screen for our Hogue Park meetings. This will give everyone in the hall a clear view without anybody blocking you and having a stiff neck the next day from straining to see. It won't be exactly stadium seating but it will help tremendously.

On the same line, I also heard that we are going to have some movie nights with popcorn and all kinds of goodies. It will be BYOC (bring your own chair, reclining preferably). I am already cleaning mine so I can enjoy a night of camaraderie and astronomical entertainment!

I have heard that the Texas Star Party was a success, even though they had a couple of days of clouds and rain, they had 3 or 4 nights of perfect dark skies.

warned the NEAR team -- which was re-using some of the Clementine software -- about the fuel-dumping error, but the NEAR team was too overworked to implement tests for all the possible failure modes. Worse, it turns out NEAR had launched with the wrong version of its software -- although the software team had written error handlers that would have recovered without the loss of fuel, the team didn't use a version control system to keep track of version numbers, and the spacecraft launched with an old version of the software.

Ground Control was able to save the NEAR mission, but it took a year longer than planned to reach the asteroid due to the lack of fuel.

Ganssle had quite a few other examples in his entertaining talk, from the Titan IVb Centaur that ran out of fuel because somebody had made a single character mistake in a hand-edited data file, to Ariane 5, which went into a tumble that destroyed it because its inertial nav system overflowed converting a 64-bit floating point number to a 16 bit integer, plus lots of non space related examples. But nearly all of them boiled down to two points: tired people make mistakes, and rushed projects tend to scrimp on testing.

Fortunately, as amateur astronomers we don't do anything quite so mission critical. But when you're rushing through a Messier Marathon and have trouble finding all those Ophiuchus globulars in the wee hours, tell yourself it's okay: tired people make mistakes. Even NASA engineers.

.Here is a note about it in the New York Times:

<http://www.nytimes.com/2013/05/11/us/in-west-texas-a-gathering-to-consider-the-universe.html>

Ed Wong via googlegroups.com - Apr 23 to SJAA:

Hi All, It was a slow Fixit session this past month. We had a gentleman come in with a truss style dob which needed help in repairing a misaligned secondary housing. Phil, Dave and Dwayne we able to help him get that

fixed. Phil bought back the Meade SCT which he deforked and cleaned up. It looks really good. We are working on getting it mounted on a dovetail bar. We are looking at using radius blocks to mount the dovetail bar but, this will take some modification as even though radius block mounts for SCT's are the best and secure way to mount a dovetail bar to a SCT. They only use the Losmandy style dovetail bar which is not supported by our mounts. Dave and I are looking into building a modification that will allow this system to work on our mount. We should have a solution soon. I worked on collimating the dob that came back from the QuickStarT program. One thing I would like to request is that the Fixit program seems to need more promotion, maybe this is something we can discuss at the board meeting.

Thanks, Ed Wong

(continued on page 4)

(Heard and Overheard)

Dave Ittner - Apr 23 - to sjaa-board:

Hi folks, The Advanced Loaner program is progressing along as planned, albeit slower than I had hoped for. An Orion Sirius EQ Mount has been purchased, along with a battery pack, a storage tub with wheels. The mount is working quite well and has been loaned out already to one of our members. I plan to have the terms of the loan for this item to be different than other equipment. This mount requires someone to teach the member how to properly use it (from transporting and storing it to performing polar alignment). Therefore as a condition of the loan - the member being trained is required to learn the mount well and then train the next person to borrow the set-up. This will help to alleviate burn out on the part of those who support this aspect of the loaner program. The Meade LX 8" SCT has been deforked and cleaned. The plan was to mount a dovetail bar to it but the OTA wall was found to be quite thin so we are looking into purchasing radius blocks first and then adding the dovetail bar. We hope to have this scope up and running in a month. I am sad to report that I screwed up in that I did not pull out the 1-1/4" diagonal from the box of items that this scope came with. This box with the fork mount and related items was sold at the auction. Now the club will need to request someone donate a diagonal or buy a used/new one. Due to personal issues I have not been able to put a lot of time and effort into this AL program. It is my goal to start to actively promote it. We have a decent set of scopes in the program as it stands. Ones that the members should be glad to try out. The one weakness I see that still exists in the program is that we only have one go-to mount and one alt az mount. I also put forth a Power Point presentation (attached once again to this email) outlining my long range plan for this program and look forward to discussing it at the upcoming board meeting. It would be greatly appreciated if everyone can look it over and be ready to provide input.

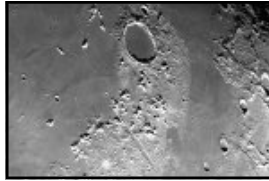
Regards, Dave

Mooning At Houge Park - 1st Quarter Targets for June 14

Here are a few suggested targets culled from Akkana Peck's Hitchhikers Guide to the Moon: <http://www.shallowsky.com/moon/>



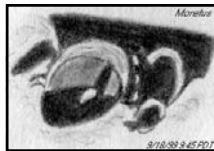
Barrow Ray - Rukl Atlas page 4 - originated from the east wall at approximately 71.5 N lat and 12.5 deg long. The ray projected 75 km across Barrow's floor and ended at the western sunlit rim of the crater and just to the north of Barrow A. Viewing in this area is difficult due to crater's relatively close proximity to the lunar limb and the nearby terminator. Larry Smith. Sketch of by Akkana Peck.



Alpine Valley - Rukl Atlas page 4 - Strikingly straight and relatively narrow gash through the eastern Alps. A narrow rille runs along the center of the floor, and is an interesting challenge for small to medium apertures. Its visibility is best at low sun angles. Thierry Legault's CCD image the Alps (top left) . Jay Reynolds Freeman.



Alexander - Rukl Atlas page 13 - (bottom, just peeking into the sunlight), Eudoxus (middle), and Aristotle (top), at sunrise. Sketched from an 80mm f/7 refractor at 112x; note that the image is reversed. Observation and sketch by Akkana Peck.

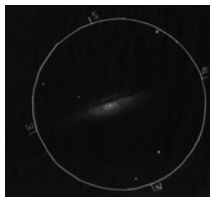


Morteus - Rukl Atlas 73. A prominent central peak; it's easily mistaken for Tycho if you catch it before Tycho is lit. It's fun to watch the shadow of the peak grow when Moretus is right on the terminator. . Observation and sketch by Akkana Peck.

Houge Park's Top Targets Of The Deep for June 28

By Mark Wagner

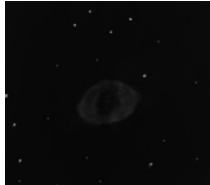
Even in brighter suburban skies, one can glimpse deep sky targets and have satisfying views. Here are a few to try - and Houge is a great place to get help from experienced observers! Drawings from Astronomy Sketch of the Day: <http://www.asod.info/>



M104 - The Sombrero Galaxy - This galaxy is a showpiece, and on good nights at Houge Park you can get a glimpse of its bright central core, and the dark lane that nearly bisects it edge-on. It is an easy star hop off of Corvus - with a few very distinctive asterisms in the eyepiece to guide you. Sketch by Anne Ebeling



Alberio - This easy to locate double star is beautiful for its vibrant colors. As the head of Cygnus "The Swan" or the bottom of the Northern Cross - it appears to sit near the center of the Summer Triangle comprised of Vega, Deneb and Altair. Sketch by Ebrahim Haq.



M57 - The Ring Nebula - If you have a narrow-band filter, you will have a nice view of this otherwise ghostly object from Houge Park. This is the most famous of planetary nebulae - and super easy to locate - the first object my daughter found in a scope! Sketch by Robert Twarogal.



M13 - The Great Cluster In Hercules - Even in the city, at Houge Park, using moderate magnification and averted vision, you will be rewarded with this target resolving into hundreds of stars. Also easy to locate on one of the long sides of the Keystone In Hercules. Sketch by Michael Rector.

Cinco de Solar!

Solar Viewing at Houge Park on Sunday 5/5.

I really didn't like the way the sky looked. I was tempted to not go. But as I saw the sun peek through now and then, I just couldn't resist. So I finished up my honey-do's and made it to the park. Michael Packer was already there, all alone. I backed in next to his car, got out, had a couple views though his set up, and figured I might as well get set up my gear too. Before I was finished we had attracted a crowd of 8-10 people. He got into a really interesting discussion about super novae with some people while I was helping a father and son get some quick views.

The sky was pretty cloudy but as the clouds slowly moved across the sky the sun would peak through for a few minutes here and there. We mostly sat and talked. However, the views we did get now and then were really good, and even though it was fairly windy, the scopes performed pretty well. There was a large gnarly spot group, plenty of surface activity, lots of dramatic swirly flows of plasma, nice filaments, some pretty prominences.

I had hoped for better weather but I am glad I went. I think we had a good time.

These Sunday afternoon solar viewing gatherings at Houge Park are fun. I usually bring my kids who enjoy the playgrounds in the park, ride their ripsticks or play ball. Maybe next time I'll bring some picnic stuff and stay longer.

Michael Swartz

"May the 'Swartz' be with you always"

June Board Meeting Notice

Board Meeting date has been changed.

**Was: June 22, 2013
Now is: June 28, 2013**

7 p.m. in the Hall at Houge Park
All are welcome to attend and participate.

This immediately precedes
Beginners Astronomy Class (8:30)
And public star party (9:30)

Come for the board, stay for the sky!

SJAA Board Meeting

Raw Minutes from May 17, 2013

Board members present: Rob Jaworski, Lee Hoglan, Dave Ittner, Rich Neuschaefer, Ed Wong, Greg Claytor, Mina Reyes Wagner, Michael Packer, Teruo Utsumi

Guests: Anna Taime, Mark Wagner

Signups for Houge events

Volunteers needed to sign up for open and close duties for Houge Park events through the rest of 2013.

6/14 close Rob

7/12 open Rich

The Website

Rob and Greg have been in on-going discussions on a overhaul of the club website. Greg talked to experts, looked at website of other clubs. Next steps:

1. Everyone should look at various websites to get a feel for what's desirable (astronomy.clubs.org). Feedback to Greg.
2. Come up w/ a draft structure of website. Rob suggests starting a committee to move forward. Formed committee: Greg (chair), Rob, Michael.

General Meeting, May

We were able to get Dr. Beckwith (UCB/UCOP) on short notice. To be started w/ potluck, start @ 6:30pm.

Calstar

We will hear status on insurance, planning and any other items that need to be done by the SJAA for the event. AANC confirmed it will cover insurance cost. Sponsored by jointly by SJAA/ AANC. LCO to organize.

Signup Infrastructure

We have been examining Jooners and Google Forms; each has their own use which we will examine. The idea is to incorporate these into the website, and each program owner should manage the forms.

Got general agreement to use Jooners and Google Doc forms. To be used in the near future and re-evaluated after we've gained some experience.
=> *Teruo to modify permissions on forms and distribute to program owners.*

Advanced Loaner Program Update

Rob authorized president's committee to evaluate needs of the program and present recommendations to the board: Dave (chair), Ed, Rich, Dwaine Maxwell.

Given the need to move quickly on Rich's XT8g, Dave proposes the club purchase the XT8g for \$700.

Rob makes motion to approve Dave's proposal.

=> *Mina seconds, approved (6 in favor, 3 abstain).*

Dark Sky Site Questions were raised about accessibility of the proposed dark-sky site and related expenses. The lack a plan and budget is preventing the board from making any decisions to move forward with the site. Michael agreed to head up the effort to form a plan.

Rob authorizes a president's committee for the effort: Michael (chair), Lee, Mark.

=> *5-year plan to be presented at June board meeting.*

Large Projection Screen

Briefly discussed options for a large projection screen to be mounted along the back wall.

Michael proposed a \$1000 budget for the screen. Michael to research and make purchase. To be install by July General Meeting.

Dave makes a motion approve the proposal.

=> *Mina seconds, approved by all.*

Publication Statement

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Articles for publication should be submitted by the 16th of each month for inclusion in the next month's issue.

Report: A Mixed Night At Willow Springs - Deep Sky Observing

By Mark Wagner

A few intrepid observers took a chance Saturday night and met up at Willow Springs, hoping conditions further south would be better than that in the forecast for other bay area observing sites. Results were ok, but not great. Joining my wife Mina and me were Steve Gottlieb, Mark Johnston, Richard Navarrete and Carter Scholz. Kevin Ritschel was our genial host - and offered some great views of some spring favorites in Dobzilla, the 33.4" beast.

As to the conditions, they were varied. During the night we had high clouds coming through, changing the transparency from good to poor, then back. It was Forrest Gump's box of chocolates - never knowing what you were going to get. But overall, it was a useable night, with some good views, and quite worth the time and effort.

I don't know what the others were observing - except one view through Mark's 18" at a billion light year distant object, the Sombrero through the Beast, and Omega Centauri in a 20x80 binocular, I spent the evening at the eyepiece of my 18" f/4.5 Dob. I had put together a list of Abell Galaxy Clusters, Arp galaxies, and Messiers, all within a 30 degree swath of sky rising in the east. As usual, I began at the northern-most target, and worked my way south. I never seem to get much past zenith on any particular night - it would take me at least two nights to complete a typical list - and indeed, I finished up in Dobson's hole.

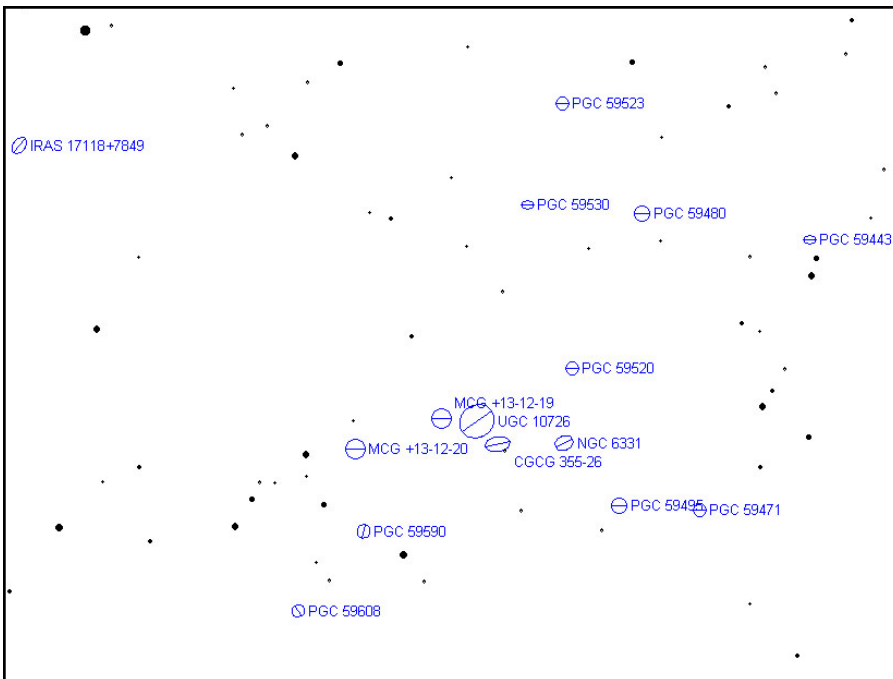
Of the targets I logged, a few stood out in terms of challenge or intellectual curiosity. One I'll note here is the tiny group of galaxies that include the brightest component NGC 6331 of Abell Galaxy Cluster (AGC) 2256, which was my first target of the night, being the furthest north on my list. The four components also comprise Arp 124, on that well known list of unusual or interacting galaxies. Here are Steve Gottlieb's notes on the group, mine are included in my observing notes below:

"Nice compact cluster of three 15th-magnitude galaxies including NGC 6331: ab easy; c (beside star) suspected with averted vision. About 5 arc-minutes W of distinctive asterism. This is a very distant cluster: about 900 million light-years away." - an image of this distant group can be seen here: <http://tinyurl.com/bqonyfr>

I liked this group because of its amazing distance - which explained the tiny appearance of the galaxies.

Another interesting occurrence during the night was finding a mis-plotted galaxy in my older version of The Sky software. Megastar had it plotted correctly. This was in Arp 310, which is centered on the galaxy IC 1259.

I finished up a bit after 2 a.m. with dense AGCs ahead of me on my list, sky conditions beginning to deteriorate again, and my energy waning - I just couldn't imagine trying to ID all the dim galaxies in those groups at that point! But, it was quite a good night, with great company, and a nice return to observing after several months away. I hope to become more regular, again. Here are a few selected observations from the night:



AGC2256 NGC 6331 17 03 35 78 37 46
NGC 6331 most obvious, CGCG 355-26 is next most apparent, third and next to brightish star is MCG 13-12-17 is difficult, but comes in. Fourth is MCG 13-12-20, which is very difficult, requiring averted vision, in and out - maybe 25% of the time, with likely only its small bright core showing. You can read an excellent report by Steve Gottlieb - where he and I observed this galaxy cluster at GSSP: <http://old.observers.org/reports/2008/2008.07.22.1.shtml>

Arp 185 NGC 6217 16 32 38 78 11 56
7mm - nice elongated galaxy with pinpoint bright nucleus, larger oval core and extended spiral structure from WNW/ESE.

Arp 38 NGC 6412 17 29 37 75 42 18
12mm - located just W of the N tip of an evenly spaced line of stars, about 7 arc minutes in length, two brightest to the S, brightest in the middle. Listed as a globular in Dryer's descriptions. If Dryer thought this was a globular, it was certainly unresolved. Galaxy appears moderate size, even brightness

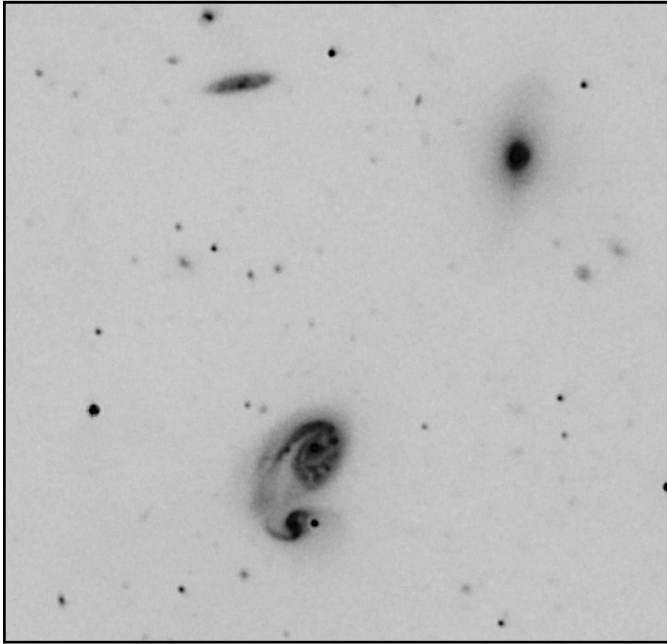
and mostly oval elongated 3x2 N/S. Quite obvious galaxy. IC 4660 barely visible nearby with 7mm.

Arp 293 NGC 6286 16 58 31 58 56 16

7mm - eastern galaxy NGC 6286 is brighter and more elongated NNE/SSW, NGC 6285 is nearly as bright, to the NW but close by, and appears more oval with perhaps more of an E/W orientation. Very nearby with an easy in the eyepiece star hop are NGC 6290 and NGC 6291. 6290 appears slightly elongated NW/SE and has a distinct core around a tiny stellar nucleus, while 6291 is smaller, more round, and has no core around its tiny stellar nucleus.

Arp 310 IC 1259 17 27 24 58 31 01

7mm - badly mis-plotted on (my old version of) The Sky - Megastar shows it correctly. I see, an isosceles triangle of galaxies with UGC 10969 and IC 1259 appearing as one mottled object, and IC 1258 as even brightness, and KAZ 140 dimly coming in. The UGC and 1259 are plotted twice with the same catalog number in The Sky.



Arp 239 NGC 5278 13 41 39 55 40 22

7mm - all four galaxies in this group are visible. NGC 5278 is obvious as an elongated glow E/W, and surprisingly NGC 5279 is very visible as a small "spur" separated very closely to the E. Much dimmer is UGC 8671 to the SW and even more difficult MCG 9-22-94 WNW.

Arp 136 NGC 5820 14 58 40 53 53 10

7mm - NGC5820 is smallish and bright, elongated 2x1 E/W with an occasionally glimpsed tiny stellar nucleus. Nearby NGC 5821 is much dimmer, and difficult to detect. It appears larger, and much more round - 8.5 arc minutes ENE of the brighter of the pair. No detectable shape other than mostly round.

Arp 90 NGC 5930 15 26 07 41 40 39

7mm - NGC 5829 and 5830 are very close together, different in shape, and similar in brightness. It is an easy star hop off a pair of naked eye 5th magnitude stars off the top of Bootes, also easy to locate. 5829 is smaller and off angle compared to 5830 - and 5929 appears to have a very bright stellar nucleus, but only using averted vision

Image of Arp 239 / NGC 5278 from Astrosurf.com

SJAA's June 22, 2013 Special Guest Speaker

Dr. Dana Backman, SOFIA

NASA's stratospheric Observatory for Infrared Astronomy: Science from 41,000 Feet.

Meet and Greet at 7:30 PM Speaker begins at 8:00 p.m. Please be on time.

For directions, see <http://www.sjaa.net/directions.shtml>

In 2003, Dr. Dana Backman became the manager of SOFIA E/PO, a program subcontracted by USRA to the SETI Institute and the Astronomical Society of the Pacific. Prior to that he was a professor of physics and astronomy at Franklin and Marshall College in Lancaster, Pennsylvania for 12 years.

An infrared astronomer, he received his doctoral degree in astrophysics from the University of Hawai'i. He worked on several research flights of SOFIA's predecessor the Kuiper Airborne Observatory while an NRC post-doc at NASA-Ames. Before that he was a post-doctoral researcher and infrared observer support scientist at Kitt Peak Observatory

Coming July 20, 2013: Movie Night at the SJAA.

Take a break from lectures and kick back with popcorn, soft drinks, and a good astro-flick!





Earth → •

Massive Flare off Sun May 8th. Handheld eyepiece projection image using an 80mm Lunt and a Panasonic LX5 @ f2.8, 1/200 Sec, ISO 800, Manual Mode. Photo by Michael Packer

By Michael Packer -

May 8th the sun was particularly active with a Sunspot Number of 118 (NOAA). Seen at the bottom of this image is a huge Zirin Class I Quiescent Prominence or H-Alpha Flare in the shape of a fan. It measures a whopping 20 Earth diameters wide and 4 Earth diameters high. At the upper left edge is a Zirin Class II Active Flare called a Surge. Surges can often be seen to change shape or disappear over the course of a few minutes to a few hours while quiescent class flares may take a few hours to over a day to appreciably change shape. The large sunspot group close to the bottom is AR 1734 and next to it is a smaller Active Region AR 1732. To the left of these sunspot groups are two dark filamentary looking structures which are solar prominences more or less point toward us! The sun has yet to go through a 2nd peak of this very odd



Solar Sundays!

The SJAA's newly acquired Lunt 100mm solar scope is a top performer, and has opened a new avenue of interest for the club. Members now come out for "Solar Sunday" on the first Sunday of each month, between 2 and 4 p.m. at Houge Park.

This is a great safe way to get outstanding views of the ever changing features of our home star. The views can be simply breathtaking. Bring your own solar equipment out to share, and bring your friends and family - it's a great day in the sun at Solar Sunday!

A Heavenly Threesome



Nikon D3s ISO 200 F10 1/8 sec 230mm

Michael Packer sent us this nice shot of the planetary conjunction of May 26, 2013, visible from Houge Park. Bright Venus lower right, Jupiter upper left, Mercury upper right. How many of you have been watching the progression of the planets? This rare sight - all three planets in once binocular field of view, will not be repeated until 2026.

CreaTV in SJAA's Future?

I still have an e-mail from Mark Wagner where he talked about creating videos for SJAA. It's dated Nov. 11, 2009. The glacial process has moved forward.

Rob Jaworski and I have taken a couple of classes at CreaTV - a San Jose program helping San Joseans and other members produce videos. We are at a point where we would like to get our feet wet. Rob and I have ideas for videos. One idea that I'm pushing is a video that would show what happens at a star party. We would like to make use of a Houge Park star party where we could try some ideas that could be incorporated into a video. We want to demonstrate the answers to some questions

- a) How can you do video in the dark?
- b) Can you use enough red light and still not blind everyone else at the star party?
- c) What's the best way to pick up audio like the "Wow" when someone sees Saturn?

The first Houge Star Party that I think we could try this is Aug. 2. We would stop shooting at the mid-point of the star party. Some of you reading this may be interviewed. We would add an announcement to the sjaa-announce group before any star party where we do any shooting.

I hope the following is assumed but just in case: anyone interviewed will need to sign a release, anyone helping in any way will be listed in the credits, no one is making any money on this, all products of this effort are the property of the SJAA. So far this doesn't require any money from SJAA (using our own equipment) but that might change as we add production values. I think we need a proof-of-concept before we could ask for money.

How would this video be used?

- A. It could be used at schools to set expectations for students before a school star party;
- B. It could be used at schools where a Star party is part of a "Science Night" or similar activity but that Star party gets clouded out;
- C. The video can be shown on the community access cable channels that CreaTV uses;
- D. The video will hopefully be shown at a General Meeting.

- Paul Kohlmler

Need To Get Fixed Up?

The SJAA's "Fix-It" Program is a great way to find true love.

That old scope you can't collimate, or has a broken do-hickey? The SJAA is the place to reignite your love for astronomy - and learning how to use your gear, or repairing it with the help of the SJAA is just the ticket. And it's a free service! See Ed Wong's remarks in "Heard And Overheard" on page 3.

Oh - while you are at the Fix-It Day, step outside and have a view through our great solar scope as well. The Vitamin D will do you good!!

Darker Skies Are Close-By! Starry Nights at RCDO

Did you know the SJAA has teamed with the Santa Clara County Open Space Authority in the Starry Nights programs at Rancho Canada del Oro? This public event occurs roughly monthly, and offers skies compared favorably with Henry Coe State Park - but without the longer drive.

As a benefit of this affiliation, SJAA opens RCDO up for non-public night, allowing you access to this fine location for your own observing and imaging. Note that the site is not open without prior arrangement by the SJAA. Sign up to the SJAA's Announcements e-mail list (top right on <http://www.sjaa.net>) to be notified when the park is available.

San Jose Astronomical Association
P.O. Box 28243
San Jose, CA 95159-8243

San Jose Astronomical Association Membership Form

P.O.Box 28243 San Jose, CA 95159-8243

New **Renewal** (Name only if no corrections)

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Subscribing to Sky & Telescope magazine through the SJAA saves you \$5 off the regular rate. (S&T will not accept multi-year subscriptions through the club program. Allow 2 months lead time.)

I prefer to get the Ephemeris newsletter in print form (Add \$10 to the dues listed on the left). The newsletter is always available online at <http://ephemeris.sjaa.net>.

Questions? Send e-mail
sjaamemberships@gmail.com

Bring this form to any SJAA Meeting or send to the address (above). Make checks payable to "SJAA", or join/renew at <http://www.sjaa.net/membership.shtml>

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