

ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

VOL. 52, No. 7 – JULY 2004

JULY 21, 2004 – GENERAL MEETING

RANDALL MUSEUM
199 MUSEUM WAY
SAN FRANCISCO

7:00 PM DOORS OPEN
7:30 PM ANNOUNCEMENTS
8:00 PM SPEAKER

“WHAT ARE THE STARS?”

MICHAEL PORTUESI



Look out on any clear night, and see a sky speckled with stars bright, dim, and if you look carefully, colorful. What causes the gem-like colors in stars? What makes some stars millions of times brighter than the Sun, and others so dim as to require large telescopes to detect? How did the Sun come into being, and what is its ultimate fate? And finally, how did astronomers answer these questions in the first place? We will cover all these topics and more in the first part of SFAA's two-part lecture series on the Stars.

Join us for this exciting and informative talk, featuring breathtaking photographs from SFAA astrophotographers Bert Katzung (<http://www.astronomy-images.com>) and Geoffrey Collins, as well as other amateur astronomers worldwide. Newcomers to astronomy and students are especially welcome. The concluding lecture, by SFAA board member Steve Bryson, will be featured at the SFAA August General Meeting.

Michael Portuesi is President of the San Francisco Amateur Astronomers. He bought a book on the constellations in third grade, and has been entranced by the sky ever since. The passage of Comet Hyakutake in 1996 inspired him to build his own 10-inch telescope in John Dobson's telescope making class. An avid observer, he holds the Astronomical League Messier and Sunspotter certificates, and is a member of FLOP (the Fraternal Loyal Order of Plutocrats, those who have found Pluto with their own telescope). He is

currently pursuing several more observing programs. He enjoys sharing the Universe through his telescopes, public talks, articles, and even TV appearances. His past SFAA talks have covered the planet Mars, viewing nebulae, handheld computers for astronomy, and telescopes. See his website at <http://astro.jotabout.com>.

ARE THESE OUR DARKEST DAYS?

NORMAN AND LINDA MAHAN

Can anything be done to reverse the light polluting effects of urban sprawl and bad planning? Will it only get worse? Seasoned astronomers must continue to go farther afield just to see the dark skies they remember from only a few years ago. Humans and animals are adversely affected from light glare, skyglow and light trespass.

The International Dark-Sky Association is dedicated to bringing public awareness to the problems, and offer valuable solutions. SFAA Club members Norman and Linda Mahan will show an excellent video developed by the Southern Arizona membership of the IDS on light pollution, what it is and what can be done about it.

2003 CLUB OFFICERS & CONTACTS

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MEMBERSHIP DUES

The mailing label on the back of this issue shows the month and year through which your membership was paid. If the date has passed, your membership has expired. Members may receive no more than one bulletin after the expiration of membership.

Please renew soon if your membership is expiring.

ONLINE SERVICES FOR SFAA MEMBERS



The SFAA's Secretary's Web Site helps keep SFAA information together and accessible to members. The site URL is <http://www.whiteoaks.com/sfaa/>. At this site you can find such information as minutes from meetings of the Board of Directors, the SFAA official by-laws, and other information. SFAA also offers email lists to supplement the bulletin board offered at the SFAA's official web site. At present there are two email lists – an unmoderated list for use primarily for business and discussion by the Board of Directors (but open to all members), and a moderated announcement list for all SFAA members. If you would like to be added to the SFAA-announce email list, please contact the secretary (<mailto:secretary@sfaa-astronomy.org>) and let him know. You can also sign up for the list yourself at this URL: <http://www.whiteoaks.com/mailman/listinfo/sfaa-announce>

Above the Fog is the official bulletin of the San Francisco Amateur Astronomers. It is the forum in which club members may share their experiences, ideas, and observations. We encourage you to participate by submitting your articles, announcements, letters, photos and drawings. We would also like to hear from our new members. Tell us about yourself – what you have done in the past and what other clubs you have joined. The deadline for the next issue is the seventh day of the month. Send your articles to Phil Estrin at pestrin@dir.ca.gov.

CLUB TELESCOPES

The SFAA owns 4 club loaner telescopes, Dobsonian/Newtonian reflectors: 6" f/10, 8" f/7, and 10" f/8 and a Starblast. They are available for extended periods (30 days or more) to SFAA members. These are generally very fine scopes, easy to use and well-suited for deep sky, planets, and star parties. The loaner custodians are Pete Goldie & Sarah Szczechowicz, located in San Francisco. If you are interested in borrowing a scope, or if you have items you can donate for the loaner program (eyepieces, star maps/books, collimator, etc.) please contact them via email (<mailto:pg@lbin.com>) or phone (415-206-9867). Email communication is preferred and strongly recommended for a quick and accurate reply.



CLUB ASTRONOMY VIDEOS

The SFAA owns a series of astronomy videotapes featuring Alex Filippenko, a world-renowned professor of astronomy at UC Berkeley. The videotapes provide an introduction to astronomy and cover topics such as the Solar System, the lifecycles of stars, the nature of galaxies, and the birth of the Universe. The SFAA loans the tapes free to all members. If you are interested in viewing these tapes, you may check them out at any of the SFAA General Meetings. These tapes were kindly donated to the SFAA by Bert Katzung. Our librarian is Dan Christian.



For information on the course tapes themselves:

<http://www.teach12.com/ttc/assets/coursedescriptions/180.asp>

FROM YOUR PRESIDENT **MICHAEL PORTUESI**

Special congratulations go out this month to two SFAA members. Mark Mickels, an SFAA member who built his first telescope last year, won the prestigious merit award for "the outstanding telescope displayed at the 2004 RTMC Astronomy Expo". He also won the Astronomers Choice Award where the winner was selected by ballot. And Jane Houston Jones has been awarded the G. Bruce Blair Award – called the "Nobel Prize" of amateur astronomy – by the Western Amateur Astronomers. Congratulations Mark and Jane!

I am pleased to announce, and to be part of, a special two-part SFAA lecture series on the Stars. I will be presenting the first talk at the upcoming SFAA meeting this July 21. The second talk in the series will be presented in August by SFAA's own Steve Bryson. If you are new to astronomy, these talks will be especially worthwhile, because they will help deepen your appreciation of the night sky. So come on out, and bring a friend. See the lecture announcement on the front page for more details.

Summertime sunshine has brought us two special solar observing events for kids this month. We will have solar observing Saturday, July 17th 1-3 pm at the San Francisco Public Library, and Saturday, July 24th 10am-3pm at the Randall Museum. At both events, I will be presenting a 15-minute talk, aimed towards youngsters, entitled "Let's Explore the Sun." Bring your kids out for some Sun fun, or if you have a solar telescope, bring it out and share the view with the public.

Finally, don't forget our two special events this month and next month. Our field trip to Fremont Peak State Park to observe through the 30-inch Challenger Telescope is this Friday, July 9. And our annual trip to Yosemite National Park is Friday, August 20 and Saturday August 21. See this issue for details, and if you are interested please let Ken Frank know.

Here's hoping your summer is filled with barbecue, beaches, and long dark nights under the stars.



IMPORTANT UPCOMING DATES

BOARD MEETING
JULY 14 – AUGUST 11 – SEPTEMBER 8
7:00 P.M.

*Western Addition Library
Scott & Geary Streets, San Francisco*

SFAA GENERAL MEETING & LECTURE
JULY 21 – AUGUST 18 – SEPTEMBER 15
7:00 P.M. DOORS OPEN – 7:30 P.M.
ANNOUNCEMENTS
8:00 P.M. SPEAKER

*Randall Museum, 199 Museum Way
(near 14th Street and Roosevelt)*

CITY STAR PARTY
JULY 10 – 7:30 P.M.
OCTOBER 23 – 6:21 P.M.
NOVEMBER 20 – 4:55 P.M.

Star parties on the above dates sponsored by the National Park Service

MY SCOPE

MARK MICKELS



Mark and his Scope

First of all I have never made a telescope, and never owned one apart from having been given a department store refractor. My wife and I are both avid campers and hikers. We love stargazing when we are outdoors. Aside from planning some trips around the Perseid meteor shower we weren't into astronomy, yet.

Additionally I have been a machinist for nearly eighteen years. The job is fun. Having the opportunity to make something out of a shapeless piece of metal is a privilege. I've made parts for movies (*James & The Giant Peach*), Military & electronics parts (too numerous to mention), and even the Keck Observatory (I think they were parts to align the mirror segments). Aside from a garlic press I made for my customers, I haven't designed and made anything but fixtures for manufacturing parts in my shop.

I have had numerous "walk in" jobs in my shop. Some of these jobs have been for amateur astronomers. I've made some custom knobs, lens adapters, etc., for these people. One of them even suggested that I make a telescope. I politely declined the suggestion at the time.

A couple of years ago one of our camping/hiking friends named Rolly bought a small refractor with Go To. My wife and I enjoyed looking at Messier objects while camping with Rolly. Rolly then bought a 9.25 SCT. The views in this new scope were phenomenal. It was about this time the astronomy bug started to hit. I was hooked up with the San Francisco Sidewalk Astronomers and met Jane Houston Jones & her husband Mojo. I couldn't believe the views from their Dobs in downtown San Rafael. The first time (big time cliché here, sorry) I saw Saturn, I was hopelessly hooked.

I asked them how much the scopes cost, and the answer seemed a bit high to

me. I did some research and decided to build one for myself. I figured that I could build a better one (I'll let you be the judge here), for cheaper. Boy was I wrong! How hard could it be to make a simple Newtonian reflector?

I found myself staying up late at night online doing research. My wife was describing herself as a "Scope Widow." I was alerted to Royce's conical mirrors during this research period. I also found some helpful programs for my optically challenged self. They were "Newt" and "The Newtonian Design Planner." I ordered a mirror from Bob Royce and figured I would finish the project before the Mars opposition. Well, the war in Iraq meant that Royce couldn't get the blank he needed to make my mirror. I ended up waiting some more. I also was looking for some 18.5" O.D. x 13.5" I.D. x 5.125 thk 6061 aluminum tubing. As far as I know it isn't made this large, then I stumbled on a company in Wisconsin that makes centrifugal castings to order. I gave them my specs and placed the order. Each piece was \$500.00 about the same price as solid rod would have been. The advantage here was the fact that the castings were less than half the weight of solid stock. I didn't want to be carrying around parts that nearly outweighed me! The castings arrived weighing about 65 lb. each. This weight would soon change. I mostly am accustomed to making small parts, so I had to do some serious thinking about how to approach parts of this size. Here is a picture of one of the centrifugal castings and the crate they were shipped in. What most of you know as a ruler is a 24" machinist scale in the foreground.



Mirror

The other problem was the fact that I wasn't familiar with the terminology involved with telescope design. The very patient people I talked to might as well be speaking Latin. Once the concepts were explained in terms that a "Dumb Machinist" could understand I forged ahead.

My idea was to make a scope that could be easily assembled, transported, required little or no collimation, and didn't require tools for assembly. I would of course use materials familiar to me, ie. , metals & plastics. I figured that by using three poles the collimation would hold fairly well (three points define a plane, and three poles would keep the mirrors coplanar). Each of the poles would be cut to

the exact same length, have a way of locating not just the distance, but the angle as well (this means no angular adjustment of the rocker bearings would be necessary). I also wanted it to be light weight, I'm not a very big guy and figured I would use the thing more if I didn't need to have too much help setting it up.

MACHINING 101



6' long truss tube milling set

- 1 Upper Cage
- 1 Lower Cage
- 1 Mirror Cover
- 1 Tailgate/ Mercedes plate
- 1 Mirror Cell
- 1 Mirror Stud
- 2 Mirror Nuts
- 12 Clamp Pads (Delrin pads for the bicycle seatpost clamps)
- 1 Focuser Adapter (For the KineOptics HC2 Focuser I made 3 that varied .250" from one another in height)
- 3 Truss Tubes (1.5" O.D. .085" wall 6061 tubing)
- 3 Shroud Tubes (to keep the shroud out of the light path .5" O.D. x .375" I.D.)
- 6 Shroud Tube Mounts (1 for each end of the shroud tubes)
- 3 Collimation Screws (1/2-32)
- 3 Collimation Knobs (to be pressed on to the ends of the collimation screws)
- 2 Rocker Box Side Plates (1/2" aluminum plate was used for the rocker box)
- 1 Rocker Box Front Plate
- 1 EP/ Optimism Rack (so named because I'm optimistic that one day it will be filled)
- 1 Rocker Box Base
- 1 Ground Board/ Tripod Plate
- Tripod Spindle with Disc for Brake
- 1 Brake Mount
- 1 Brake Lever

A milling machine moves in three axis, X, Y, Z. Z is the spindle movement towards and away from the part. The machine I used the most for this project was my Vertical Machining Center (VMC), a Computer Numerically Controlled mill (CNC). It has a maximum spindle speed of 8000 rpm and can hold 24 different tools. The travels are as follows Z axis 600 mm, Y axis 500 mm, and X axis 1000 mm. The side plates of the rocker box exceeded the travel in the Y axis for the machine, so these parts were machined partly, repositioned and machined again. Separate programs were written for each operation. The upper and lower cages presented the most challenge due to the amount of machining that needed to be performed around the circumference of each part. I had to drill and tap holes and cut slots etc. My vise jaws are only about 1.75" tall, there would be no way of easily putting these parts into a regular vise set up and maintaining the degree of rigidity needed for machining them.

The solution was to make vise jaws that had a matching radius to the parts and place each cage around the table of my manual mill. I had the foresight to drill holes for locating the secondary operations on both ends for the upper and lower cages. Below is a picture taken prior to boring the hole for the focuser. Note that the "Ram" has been swiveled about 45 degrees to allow me to machine the ring off center of the mills' table.

Here is my parts list. It doesn't include things like the bicycle seatpost clamp handles that were given to me. These are the parts that I designed and made for the project.



Milling the knobs



Focuser adapter and focuser



One of the centrifugal castings

- 1 Brake Pad
- 3 Azimuth Bearing Mounts
- 1 1.25" EP Adapter (no fooling I made that too)
- 1 Brass Counterweight (at the suggestion of some CN folks)

The price of the materials were roughly:

\$2000.00 for both mirrors and spider

\$3000.00 for aluminum ("aluminium" for my friends in England) and fasteners.

\$330.00 for plating (all black parts are hard black anodized)

Total time spent programming, setting up and machining was around 180 hours.



Mercedes Plate Tailgate

- Mercedes Plate/Tailgate
- Bottom plate of Rocker Box
- Milling the Knobs
- Focuser adapter and focuser
- Mirror

INITIAL ASSEMBLY



Disassembled on carpet

The problem with making your own telescope is that you don't have that familiar white booklet with nice drawings and instructions when it comes time to put the thing together. Even though I designed and made this scope it took me over a day to do the initial assembly. I had to figure out a logical order to put it together. Subsequent assembly is a breeze. It takes about 5 minutes to put it together for viewing. I remove the three wingnuts and locating plugs from the upper cage. Remove the upper and lower cages from the transportation position inside the rocker box. Unscrew the bolts and remove three more plugs. I then place the tubes in position inside the bores of the lower cage. Place the upper cage on the three poles. Lock 12 clamps on the cages. Pick the assembly up and put it on the rocker box. Install the light shield and Telrad. Screw in the brake screw. Remove the mirror covers. Install an EP and I'm viewing!

Not only was the telescope terminology challenging, but also this wide range of tolerances of some large fraction of an inch (my normal working tolerances are + or - .005" (about the diameter of a human hair) and even sometimes as small as .0001" (no typo)). I found it frustrating not to have an exact number to shoot for.

I do think that this project has turned out well. Here is my stepdaughter's perspective of the project and its results.

"I was over from England a few years ago and I went camping with my Mum and Step dad Mark up at a place called Sawmill Lake. We were later joined by a couple of their friends Rolly and Ray. Rolly brought a telescope along with him and we all had great fun sitting back under the stars, viewing the planets and stars of our solar system.

A while after this trip, my step dad got more and more into star gazing and went along to a star party, but this time it was all he could think about. Mark being an excellent Machinist and loving a challenge decided that he would like too make his own telescope. During the making of his telescope I was back in England and was getting regular updates of how well things were coming along and I managed to arrive back while Mark was doing the finishing touches.

Mark bought the telescope home and set it up outside the house, well this was the moment of truth, was all this hard work going to pay off. Well the views were absolutely amazing. Mark set the telescope up to look at Saturn you could see the ring around it and the moons so clearly that it was breathtaking.

We were all so proud that not only had he made this telescope that it also worked so well. Looking at Mark's telescope, knowing about the force that drove him to make it and the time and effort that he put into it, it was a truly great moment.

The real moment of truth came after, when Mark took the telescope to it's first star party at Lands End in San Francisco. We got there early and Mark set it up, while a few other people from the star party started to arrive. I noticed that a lot of the other people who had telescopes had these store bought, hi-tec powered scopes, after a while I decided to go and have a look though their telescopes and to be perfectly honest the views were good, but they were nothing compared to my Step dad's scope. There were also people there who had also made their own scope, which were fantastic, but none of them look like the work of art Mark had produced. By this time I was thinking maybe I'm a little biased, but then people started to come and looked though it and they all said how amazing the views were.

I went around and looked at the other telescopes again and I overheard people saying have you looked though the telescope at the end the views are wonderful. I sat back and listened to everyone else comments, they all loved it, and some of these people were seasoned astronomers by then I knew I wasn't being biased. It really is a work of art.

My best viewing time I've had was up at Loon lake, this was the telescopes first proper outing. We camped up at about 6,200ft and found a large open space. Mark and Rolly had gone though the star charts and made plans of what we were going to look at. The set it up to look at M13, well everyone who had a look though were saying "that's amazing". Then it was my turn, I put my eye up to the telescope and the only way I can describe what I saw, was it looked like a firework had just exploded, M13 is more than a half of a million stars all very close to each other and the view of this was tremendous though Mark's telescope.

All I can say to you now is go and have a look though it yourself and tell us what you think."

NAME THIS SCOPE

At this time I don't have a name for my scope. Any suggestions? I have toyed with the idea of naming it after my dad Orson, but then had thoughts about the old TV program "Mork and Mindy" and I kept hearing Mork calling Orson, come in Orson or in my case (Mark calling Orson).

I can't quantify, in dollars, the sense of accomplishment that I get every time I put the thing together and look through it. For this reason alone the project was well worth the money and effort. If I had it to do all over again, I would do it all over again!

I would like to offer my own words of encouragement here to anyone who desires to make their own telescope. I would say to do your research/homework. Use the best optics you can afford/make (you won't be able to turn hamburger into a Filet mignon). Be patient & have faith in yourself.

My scope was not perfect when first completed, (as if an ATM project will ever be complete), But I was able to tweak the things that required tweaking. For my next project I would like to make a smaller scope that I could take with me on long trips. I'm thinking 8" aperture would be good. I will post my progress in CN of course.

My main nonhuman resources were

The Internet The Newtonian Design Planner Newt

I would like to thank these people for the reasons stated.

Rolly Matson (for providing assistance and encouragement)

Jane Houston Jones (for the view of Saturn that ignited my fire)

Bob Royce (for his patience, explanations, and making my mirror)

Allen Keller (Sci Tech astronomical for making my light shield, patience, & enthusiasm about my project)

My Dad Orson Mickels (for sanding every part of the scope, unfortunately he was never able to see the end result)

The CN crowd (for their help with the bearing issues)

My wife Maureen (she's been a saint through the whole process)

To everyone "Clear Skies"

Mark Mickels

VENUS TRANSIT: REPORT FROM YOUR "MICHIGAN REPORTER"

BOB BERTA (STILL A SFAA MEMBER ;-)

One of the advantages of my recent retirement move to Michigan from California was the fact that I would be able to see the Venus transit of the Sun on June 8th. I live about 30 miles north of Detroit and am now a member of two clubs here...the Warren Amateur Astronomers...and the Oakland Astronomy Club (the last is named after the county it resides in). Luckily both clubs have observatories relatively close to me...one is only 6 miles from my house and has both a domed observatory housing a 12.5" classical cassegrain on a big German mount as well as a shed that houses a 22" DOB. It is located in a big city park that is about the size of Golden Gate Park. While the park is locked up at night normally...members have access to the keys to get into the park and turn off all the security lighting and have free use to both the scopes and observatories as well as the grounds to setup their own scopes. That was the site that 5 of us elected to setup this morning to view the transit. Other members went to different public sites to share the views.

The weather was gloriously clear and steady this morning giving tack sharp images through my TV-85 APO equipped with a Coronado H-alpha 60mm filter setup. We also had another 80mm scope setup for white light viewing and 35mm photography. The sun came up above the horizon around 6:00 and we had to wait a few minutes for it to get above the low trees in that direction (about 4 degrees above the horizon). We ALL were impressed with the size of the planet as compared to the sun. We expected a tiny spot across the face requiring a telescope to see. The relative size was so large that we could easily see it naked eye through a #14 welding lens hand at 1x. By the time it got above the horizon in Michigan the planet had traveled about 1/2 way across the face. The disk was a sharp black sphere that steadily moved towards a nice flare/prominence on the edge of the sun. In the same relative area there were a couple of other edge on flares (in H-alpha these show up as a thin black line against the sun's disk that looks like a hair on your optics). We also saw excellent mottling and surface detail across the sun and some very small sun spots.

You may have read about a strange phenomenon that happens when the planet makes third contact (the point when the edge of the planet first touches the edge of the visible sun on its move out of the sun. I believe this phenomenon is due to refraction but I would have to go back and review past articles



Venus tear drop

on the subject. In any case all of us were able to detect this effect which is a subtle deformation of the planet disk into a tear drop or bulged shape for a very short time. Needless to say the views through my H-alpha setup were the most popular and while the white light scopes got little use...one was setup with a 35mm camera so we are hoping for some nice pictures once the film is developed.

As the planet moved out of the solar sphere the last contact is known as 4th contact...the travel from 3rd to 4th contact was easily the one we all enjoyed the most...by this time the sun was high enough to yield the sharpest and contrastiest images through the scope and revealed the flares and surface detail. While the flares and prominences weren't quite as prevalent as they had been the last few days...they were still there just enough to make this event a very memorable one.

So at the end of our viewing we all made plans to do it again in 8 years for the return visit...and with a bit of luck something like 122 years after that for the next one ;-)

My good friend and SFAA past member Bob Naeye has been writing to me from Iran about his experiences there and coverage of the transit for *Sky & Telescope* magazine. In addition the president of the Warren club here went to Greece to view the transit. It will be interesting to hear how their viewing went compared to what I saw from the US.

SATURDAY, JULY 24, 10 AM-3 PM
SOLAR VIEWING FOR KIDS AT RANDALL MUSEUM
SUN, WIND AND WATER DAY

RANDALL MUSEUM . 199 MUSEUM WAY . SAN FRANCISCO, CA 94114 . PHONE: (415) 554-9600

[HTTP://WWW.RANDALLMUSEUM.ORG](http://www.randallmuseum.org)

SFAA HOTLINE: (415) 289-6636

SF Amateur Astronomers will focus their telescopes on the sun (using Special filters) so that we can see the star closest to us. Michael Portuesi, President of the San Francisco Amateur Astronomers, will also present his introductory talk, "Let's Explore the Sun", for kids of all ages. We will also have a few prisms available for hands-on activities. Kids of all ages and their parents are invited.

SFAA NIGHT AT FREMONT PEAK OBSERVATORY, JULY 9
KENNETH FRANK



You may be interested in having an evening with a little quality time with a very large telescope. Mark your calendar for the night of Friday, July 9th. I have reserved the Fremont Peak Observatory that evening for a private gathering of members of SFAA, as Mojo & Jane did last May.

The Fremont Peak Observatory features a fine 30-inch f/4.8 newtonian telescope built by Kevin Medlock of the Eastbay Astronomical Society. The telescope is mounted on an English cross-axis equatorial mount. There are also powered observing pads outside the observatory, new this year, where visiting astronomers can set up to observe in Fremont Peak's dark skies.

Our July 9th party date is a third-quarter moon weekend, and there will be plenty of spectacular summer deep-sky objects to see: the M57 Ring Nebula

and the Double Double in Lyra, Veil Nebula and North America Nebula in Cygnus, M20 Trifid Nebula, M8 Lagoon Nebula and M17 Swan Nebula in Sagittarius, M13 globular cluster in Hercules, M5 Globular Cluster in Serpens, M22 globular cluster in Sagittarius, M6 and M7 open clusters in Sagittarius, and lots, lots more.

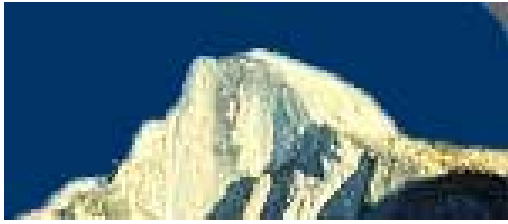
FPOA's annual StarBQ is the 17th, if you're interested in attending. Mt. Tam star party is July 24th, so if you can, make plans that allow you to attend all events.

From April through October, Fremont Peak Observatory conducts programs for the public at least three Saturday evenings a month, excluding the Saturday closest to full moon.

Attendance at the SFAA Fremont Peak party is limited, so please reserve your place by sending email to kennethfrank@planitarium.net, or call me at 415 789 0459.

Fremont Peak State Park is about 100 miles south of San Francisco, and eleven miles south east of the town of San Juan Bautista. The park features camping facilities which are available either by reservation or first come first served basis. Please be sure and pay the day or or if camping the overnight fee in the green box by the public phone. At the bottom of the hill in San Juan Bautista is the San Juan Inn for those who would like more civilized overnight amenities.

For more information about Fremont Peak Observatory, including excellent directions to the park and observatory, visit their web site at <http://www.fpoa.net/>. Hope to see you there.



GLACIER POINT - YOSEMITE AUGUST 20-21, 2004 KENNETH FRANK

The annual Yosemite star party is held at Glacier Point, hosted by the NPS and Ranger Dave Balogh. Camping is at the Bridalveil Creek campground (the group site, rather primitive). There is room for several tents. There is cold water and a deep sink adjoining the toilets but no showers. The camp is 8.5 miles away from Glacier Point. We are given free admission and camping space. In exchange, we provide two public star parties at Glacier Point, on Friday and Saturday night. We'll have the public (about 200 - 300 people) from twilight for a few hours, then the rest of the night (and all day) to ourselves. Mighty good deal, seeing how some people come 10,000 miles to see those rocks. We may take a maximum of 30 people, with priority given to SFAA members. We are expected to have at least one public telescope for every two people. If you wish to go, email Ken Frank with the number of people and telescopes. I'll be at the SFAA meetings and star parties where you can pick up the entrance pass, map and page of rules.

A note for non-members and those not making the list: Yosemite is your park, and anyone may come if they arrange their own accommodations. In this case, you would be welcome to join us at Glacier Point for the public star party and the observing afterward. But you would not be obligated to set up for the public; there are some useful spots that would leave you mostly alone. You would have to follow the ranger's rules for driving in to unload, then parking in the regular lot (as do we all).

When you arrive at Yosemite, make your way up to the Bridalveil Creek campground. This is close to Bridalveil Falls, but upriver from it; the driving distance is 18 miles, uphill. Allow at least an hour from the Falls parking lot; make a stop at the Wawona Tunnel overlook, which is *the* classic view of Yosemite Valley. Try to reach the camp by 5 pm. At the campground, look for the group camp, with several regular campsites with "Reserved for SFAA" on the space marker. We won't know exactly what this consists of until we get there, so we'll need to be flexible when we arrive. Pick out a place to sleep, set up tent, as needed and do use the bear box for all food items.

Glacier Point is another 8.5 miles up the road. Allow time to find your way and set up; the summer sunset is late, so there's plenty of time. There is electricity in the observing area, but you may need a long extension cord. We usually are setting up by 7:30, and it's a good idea to be there earlier, as we can bring in only a few vehicles at a time. Drive in, unload your scope stuff, then immediately park your vehicle by the toilets. If we do this quickly, there will be no car line. Then we can leisurely set up after. The observing area is open, with good views from about NNW to the east, around to due south. From south around past west is partially to mostly blocked by tall trees. Still, there's a lot of open sky, and typically, the seeing and transparency are excellent. It is warm (70 to 90) during the day, and cool to chilly (40's) at night, due to the elevation, 7200 feet.

One of the rangers does a sunset talk, and then delivers the crowd to us. Many will have flashlights, (we'll provide red plastic and rubber bands) however and need to be tolerant of that. Pick out an object that you are familiar with, tell about it, etc., just as we do at Lands End and Rock Springs on Mt. Tam. We'll have a list and accompanying chart of suggested objects to show. Expect questions. By 2216 after the Moon sets, we'll have the place to ourselves, and can stay until dawn, or you drop...whichever occurs first. Scopes to be removed when we quit, then set up again on Saturday.

Because of the altitude, I recommend getting plenty of sleep during the day, take a few aspirin and call me later.

JULY 18-23, 2004 - [DOBSON2000] SUMMER ASTRONOMY BOOTCAMP KENNETH FRANK

San Francisco State University is offering a weeklong course in observational astronomy this summer from July 18-23 at its scenic Sierra Nevada Field Campus. I took the class last year and it was a great hands-on course. In fact, it was my major inspiration for taking John Dobson's telescope building class this past fall. You learn to identify the various constellations and read star charts. They had several 16" and 17" Dobsonian telescopes which we used each night. We mostly looked at Messier objects, however, one ambitious student was able to observe Pluto! Perhaps, someone will see Sedna this year. :-)

The campus and class schedule is very nice. Although you don't have to, most people choose to live at the campsite during the week. The university has large tents as well as bathrooms and showers. They also have dining facilities which serves breakfast/dinner and provides bagged lunches. The astronomy lectures are in the afternoon so most people go hiking or lake swimming during the morning. After lectures, you get a couple of more hours to relax and have dinner. We then drive up to the observation point and usually stay until the wee hours. The "final" is a star party, although last year it was overcast so it was a little disappointing. For more information on the campus and class, check out: <http://www.sfsu.edu/~sierra>; <http://www.sfsu.edu/~sierra/astrc1.htm> Or feel free to e-mail me directly.

2004 MT TAM ASTRONOMY PROGRAMS
TINKA ROSS

MT TAM ENTHUSIASTS

BELOW IS A LISTING OF OUR PROGRAMS FOR THE 2004 SEASON
LOOK FORWARD TO SEEING YOU ON THE MOUNTAIN!

A FEW CHANGES THIS YEAR

- 1) Our astronomy programs will be on the Saturdays near the First Quarter Moons (not new moons)
- 2) The Madrone Picnic Area (next to the Mt Theater) is reserved 1 1/2 hours before each program for informal gathering. Bring your picnic supper and meet the speakers before the talk.
- 3) We have added two storytelling evenings - suitable for young and old alike. No telescope viewing with these programs

Plenty of time to get your raffle tickets for the trip to Egypt to view the Transit of Venus this coming June. Purchase at our March-May programs, check out our website at <http://www.mttam.net/> or send money to Mt Tam Astronomy Programs, c/o Tinka Ross, 89 Dominican Drive, San Rafael, CA 94901. \$5 per ticket or 5 tickets for \$20. Proceeds will benefit the Mt Tam Astronomy Programs and the MTIA Gravity Barn Project.

2004 MT TAM ASTRONOMY PROGRAMS

JULY 24 - 8:30PM

DR. SAUL PERMUTTER, LAWRENCE
BERKELEY LABS

"SUPERNOVAE, DARK ENERGY AND THE ACCELERATING UNIVERSE"

Astronomers use exploding stars to investigate one of the biggest scientific mysteries of our day.

2004 MT TAM STORYTELLING

JULY 10 - 7:30PM

DOREEN DEVORAH
DAVID PONKEY

Doreen Devorah

"ANDREW P. HILL AND THE BEGINNING OF OUR STATE PARK SYSTEM"

David Ponkey

"THE LABOURS OF HERCULES: A STORY WRITTEN IN THE STARS"

OCTOBER 23 - 5:00PM

MARY ELLEN HILL

"WE ARE THE STARS THAT SING: THE STORY OF THE UNIVERSE"

SAN FRANCISCO CITY STAR PARTY . 2004

SATURDAY, JULY 10, 7:30 P.M.

SATURDAY, SEPTEMBER 18, 6:00 P.M.

SATURDAY, NOVEMBER 20, 5:00 P.M.

SATURDAY, AUGUST 7, 7:00 P.M.

SATURDAY, OCTOBER 23, 6:15 P.M.

SATURDAY, DECEMBER 18, 5:00 P.M.

Join the San Francisco Amateur Astronomers (SFAA) and the National Park Service in sharing the wonders of the night sky in San Francisco. Ask about your favorite constellation or astronomical phenomenon. Telescopes will be provided, or you may bring your own. The San Francisco Amateur Astronomers will co-sponsor the City Star Party in the winter and fall months, January, February, March, October, November and December. The National Park Service will sponsor the City Star Party in the spring and summer--April, May, June, July, August and September. The star parties will be held in the parking lot next to the *USS San Francisco* Memorial at Lands End on El Camino del Mar, just north of 48th and Pt. Lobos avenues, off of Geary Blvd. For more information about the program and weather conditions for the winter and fall events, please call the SFAA hotline at (415) 289-6636 or visit the SFAA website at www.sfaa-astronomy.org. For more information about the spring and summer programs, call the National Park Service at (415) 239-2366 or visit their website at www.nps.gov/goga/parknews/events.

Founded in September 1952, the San Francisco Amateur Astronomers (SFAA) is an association of people who share a common interest in astronomy and other related sciences. Our membership consists of people from all walks of life, educational backgrounds and ages. Many SFAA members own their own telescopes; some have been made by hand in local telescope-making classes and vary in size from 6 to 25 inches.

make checks payable to **San Francisco Amateur Astronomers** and mail to:
Treasurer, SFAA, 765 Geary St., #302, San Francisco CA 94109

- \$10 enclosed, youth/student membership
- \$25 enclosed, individual membership
- \$30 enclosed, family or foreign membership
- \$40 enclosed, institutional membership
- \$75 enclosed, supporting membership

Select one category:

Name: _____ Telephone: _____

Address: _____

Email address: _____

San Francisco Amateur Astronomers Membership Application

San Francisco Amateur Astronomers
P.O. Box 15097
San Francisco, CA 94115



Information Hotline: (415) 289-6636

Web Page: www.sfaa-astronomy.org

Sharing the Wonders of the Universe

Has your membership expired? Your mailing label includes the month and year through which your membership is paid. If it is past, your membership has expired and this may be your last issue.