ABOVE THE FOG
• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

VOL. 50, No. 5 – May 2002

The 50th Anniversary Speakers Series
Women In Astronomy

Celebration of the San Francisco Amateur Astronomer's 50th Anniversary

Wednesday May 15, 2002

In celebration of our 50th anniversary, members of the Cañada College "Magic Flute Ensemble" conducted by Pam Ravanelle will perform. Kristine Berta, the daughter of our member, Bob Berta is a member of this ensemble. Dave Watkins playing the synthesizer will accompany the fifteen flute ensemble. The Jupiter Suite from The Planets by Holst and Adventures in Space by R Lombard will be played while an astrophotography extravaganza choreographed by Toney Burkhart and Bob Berta is being shown on the Morrison Planetarium dome. Hubble Space Telescope images as well as other breathtaking images of space will be included. Also a surprise encore will be played.

Then two of our founding members, Lew Epstein and Betty Neal will talk to us about their memories of the history of the SFAA. Betty was the first Vice President and Lew the first secretary of the San Francisco Amateur Astronomers. Also, long time member Bill Cherrington will share his memories about Herman Fast.

Some special edible treats will be a part of this celebration.

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Important Dates

Board Meeting – May 8 – 7:00 p.m.
-- June 12 – 7:00 p.m.
Western Addition Library, Scott & Geary Sts., SF
SFAA General Meeting – April 17
May 15
June 19
Morrison Planetarium, Golden Gate Park
Refreshments at 7:00 p.m.
Speakers begin at 7:30 p.m.

Mt. Tam Star Party
May 11 – 8:30 p.m.
June 8 – 8:30 p.m.
City Star Party
April 20 – 8:00 p.m.
May 18 – 8:30 p.m.
June 15 – 8:30 p.m.

2002 Club Officers & Contacts

President	*Bill Stepka* *(415) 928-7105*
Vice President	Nancy Cox (415) 826-2217
Secretary	Jason Burkhart
Treasurer	Chelle Owens (415) 479-5313
City Star Party Coordinator	Randy Taylor
Membership & Subscriptions	Chelle Owens (415) 479-5313
Bulletin Editor	Lorrie Boen (415) 921-1432
Telescope Loans	Pete Goldie (415) 206-9867
Honorary Director	John Dobson
Board Members	Lorrie Boen Dan Christian Art Owens Michael Portuesi Al Stern Dennis Tye Jim Webster
Alt. Board Members	Rita Nossardi Stern Randy Taylor
SFAA Website	www.sfaa-astronomy.org

Club Telescopes

The SFAA owns 3 club loaner telescopes, Dobsonian/Newtownian reflectors: 6" f/10, 8" f/7, and 10" f/8. These 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 (pg@lbin.com) or phone (415-206-9867). Email communication is preferred and strongly recommended for a quick and accurate reply.

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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 Lorrie Boen at 765 Geary Street #302, San Francisco, CA 94109 or at lorrenlee@aol.com

"Observing with Carolyn, Williamina and Jocelyn"
Jane Houston Jones
April 17, 2002

You've got your Messiers, your Arps, your Hicksons. But have you observed the Carolyn Herschels yet? Yes, Carolyn Herschel discovered 14 deep sky objects in addition to the comets she is so well known for. The next time you look at the beautiful spindle galaxy in Sextans, NGC 253, tip your hat to its discoverer, Carolyn Herschel. And did you know that Carolyn also discovered M110 independently of Mr. Messier? Due to some sloppy bookkeeping on his part, Messier's discovery of this object was never recorded. Williamina Fleming discovered over 200 variable stars, including RS Ophiuchi, while Annie Jump Cannon discovered 300 variables. And the next time you observe M1, the Crab nebula, think of the pulsar spinning within, discovered by graduate student Jocelyn Bell in the 1960's.

From Your President

Volunteerism is very much in the news these days and we have a mutually beneficial opportunity for our members on April 25th. When we control the gate at the Mt. Tam Star Party after the public leaves, only those members, who have gone through a short Ranger volunteer orientation for the State Park, can legally open and close the gate.

So, what possible benefit could that be to me personally – you ask? Think about it, it is a beautiful clear Mt. Tam evening, the City is fogged in and the person responsible for the gate cannot stay up any later than 2am. You finally got that new *#*#* blankety, blank CCD Camera to get a good image at 1:30am. Do you want to start packing up to leave at 2am? Heck No!! Do you want to stay on the mountain until dawn? Absolutely!! Now you can – at any Mt. Tam Star Party!!

Here's the deal – a couple of hours starting at 7pm on April 25 at the Marin Community Foundation and, you can be guaranteed to see the Sun rise at any Mt. Tam Star Party!

The directions are: Take Highway 101 North to the Richmond/San Queintin exit. Turn right on East Sir Francis Drake Blvd. and get into the left lane. Turn left on Larkspur Landing Road and an immediate left on to Victoria Way. Park. The Marin Community Foundation's actual address is 17 East Sir Francis Drake Blvd.; but, like so many things in this life, you can not get to it from there and must enter from the parking lot in the back. The room is Suite 200.

You must get your name and number to Nancy Cox or me as soon as possible, so that we can forward the list to the park. While this may seem like short notice, it is actually the longest notice ahead of any training we have had in several years. Take advantage of this great opportunity and let others sleep, while you witness a beautiful dawn break on Mt. Tam!

Bill Stepka, Stepka@aol.com, and (415) 928-7105

SFAA 50th Anniversary SPEAKER CALENDAR 2002

Women In Astronomy & Related Sciences Series

Helen Quinn
Stanford Linear Accelerator (SLAC)
July 17, 2002

Yosemite, Davis, and Pt. Lobos ~~ a Star Party Conjunction!

Mark your calendars, make a decision…where do I want to be on the weekend of July 19 & 20, 2002?

The annual SFAA Yosemite Star Party and the Davis Star Party are on the nights of July 19 and 20 this year. The City Star Party at Pt. Lobos is July 20.

Watch this space for more details!

San Francisco Amateur Astronomers and the
San Francisco Morrison Planetarium, California Academy of Sciences

Golden Jubilee 2002 Speaker Series

Celebrating Their 50th Anniversaries

PRESENT

Tuesday June 25, 2002 at 7:30 PM
California Academy of Sciences

Dr. Jill Tarter
Bernard M. Oliver Chair for SETI (Search for Extraterrestrial Intelligence)
and Director, Center for SETI Research

Aliens abound on the movie screens, but in reality we are still trying to find out if we share our universe with other sentient creatures. SETI, the search for extraterrestrial intelligence, is actually an attempt to detect evidence of another distant technology. Dr. Tarter in her talk SETI: Science Fact, Not Fiction, will speak to us about this search which is being conducted by the use of radio telescopes and more recently by looking for very short optical pulses as well.

Thursday September 5, 2002 at 7:30 PM
California Academy of Sciences

Timothy Ferris

Timothy Ferris, the author of twelve books among them the bestsellers The Whole Shebang and Coming of Age in the Milky Way will be our guest speaker. He is a frequent contributor to major magazines, TV shows and TV specials. He is also a consultant to NASA. Professor Ferris has taught in five disciplines at four universities, and is emeritus Professor at the University of California, Berkeley. He will be talking about his soon to be released book, Seeing in The Dark: How Backyard Stargazers Are Probing Deep Space, Charting Cosmic History, And Guarding the Earth from Interplanetary Peril.

***** Timothy Ferris' talk will be followed by a star party, telescopes provided by the members of the SFAA***

Admission is $3.00 per program - Please send a check payable to "Morrison Planetarium" indicate which talk you wish to attend and how many tickets you are purchasing and a SASE to:

Jubilee Lectures
Morrison Planetarium
California Academy of Sciences
Golden Gate Park, San Francisco, CA 94118

"The Golden Jubilee Speakers Series" is jointly presented by
the San Francisco Amateur Astronomers and
Morrison Planetarium of the California Academy of Sciences

Morrison Planetarium's
Benjamin Dean Lecture Series
presents
The Multi-Colored Sky

May 7
Dr. Harvey Tananbaum, Harvard Center for Astrophysics
X-Ray Telescopes: Present and Future
With the launch of the Chandra X-ray Observatory in July, 1999, astronomers can now obtain high resolution images of the x-ray sky. This talk will show some recent Chandra results and will describe x-ray telescopes planned for the next two decades.

June 4
Dr. Valerie Connaughton, University of Alabama
Gamma Ray Astronomy
Gamma rays, the Universe's most energetic light, are difficult to capture in telescopes. How do astronomers study gamma rays and what do they hope to learn from them? Discover some of the stranger objects seen at this end of the spectrum.

All programs begin at 7:30 p.m. in the Planetarium - Tickets are $3.00 each
DEAN LECTURE INFORMATION LINE at (415) 750-7141

CALIFORNIA ACADEMY OF SCIENCES
GOLDEN GATE PARK

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Observing Through 60 Inches
by
Jane Houston Jones

Nothing prepares you properly for your first look at or through a big telescope. We drove to Pasadena and up into the San Gabriel mountains during the January 2002 new moon weekend. Our destination was the historic 60-inch telescope at Mount Wilson. Our hosts for the weekend were the Los Angeles Sidewalk Astronomers, who usually set up their homemade reflectors outside the dome for public star parties.

This weekend they arrived without telescopes, and spent Friday and Saturday night peering through the eyepiece of the 60-inch telescope instead. I could write an entire article about the the history of Mount Wilson, the mirrors and telescopes, the current research using adaptive optics with the 100-inch Hooker telescope, but you can read that yourselves if you are interested. Here is the website for Mt. Wilson Observatory and the Mount Wilson Observatory Association for your telescope and history fix - http://www.mtwilson.edu/General/.

Before dark, I made sure to walk by the famous storage lockers. One square foot in size each, a wall of three rows of four lockers bore the names of some of the famous Mount Wilson astronomers: Minkowski, Zwicky and Hubble, to name but a few. An old phone list on the bulletin board lists Halton "Chip" Arp, next to one of the many black rotary telephones.

The telescope operator and Mount Wilson Observatory Association docents have a list of target objects that show well in the 60-inch f/16 telescope. And in-between objects they tell tales, give telescope and observatory history, and answer any questions you may have. The upper cage had been removed and the telescope was in its cassegrain configuration for the star party.

The base of the 60 inch telescope, pointed at the zenith. The four inch focuser for the cassegrain configuration can be seen at the left.

With a group of 25 people, it takes about an hour for everyone to view one object. As with most group star parties, many of the participants seemed to poop out by midnight or so, which meant they had only looked at about 5 objects. After midnight, with a smaller crowd, we were able to move through objects more quickly, and for those of us who stayed until 5:00 a.m. that meant we got plenty of observing time. The conditions on the two nights at longitude 118 degrees 3.6 minutes west, latitude 34 degrees 13.0 minutes north were not too bad. The sky brightness at Mount Wilson from Los Angeles is approximately equal to the sky brightness from the full moon, and the seeing ranged from good to poor. Even so, we had some spectacular views of some amazing objects.

Group shot of the Saturday night observing tream.

Our first observation on the first night was the blue and yellow double star, iota Triangulum. Next was Saturn, with six moons (even Mimas) visible and a large brown oval storm on the north equatorial band. The storm was as big or bigger than the red spot of Jupiter. And speaking of that other big planet, Jupiter's red spot was near the central meridian too early for observing on the first night, but we went back to it the second night at about 1:00 a.m. and got a real treat! The red spot hollow sported a black dot of moon shadow near where a tear duct would appear on a drawing of an eye. Right next to the shadow of the moon, I saw the round beige disk of Europa. The red spot itself was nearly invisible, a washed out faint pink oval. All belts and zones, including the faint equatorial band were visible. The four of us who were sketching were busy getting looks at the planets, and then comparing drawings.

Jupiter near opposition showed the Great Red Spot preceded by Europa and its shadow

Other highlights (for me, at least) were IC418 in Lepus (the red planetary), Eskimo NGC2392 in Gemini, and Ghost of Jupiter NGC3242 in Hydra at about 800 power. It looked like a Hubble Photo! The trapezium and surrounding nebula in M42 was spectacular. I was able to see the G star inside the trapezium, and the telescope operator told me it is not unusual on a sub arc-second night to see a dozen stars inside the trapezium through this telescope! He also told me that spring and summer are the best observing months, with steady air, and that January is pretty dismal. NGC3115 needle galaxy in Sextans was one of the few high-surface brightness galaxies we attempted to view, the other being the Sombrero Galaxy, M104, in Corvus.

But the absolute highlight for me was to clearly see the jet in M-87. It looked like blobs of material, a string of clumpy clusters, forming a pipe of hydrogen

blowing off the elliptical galaxy and pointing at 9:30 in our eyepiece view at 220 and 440 power. The x-ray images we see of this object do not do justice to the visual observations. All pictures I have ever seen of the jet show the galaxy overexposed as a bright oval with no detail and the jet appears outside the oval, almost like a nearby companion cluster or small galaxy. The 60 inches of light gathering power, and the 50 mm eyepiece view for 440 power, showed the jet forming within the galaxy itself. It was worth the trip to the southland just to see this object with my own eyes!

Speaking of quasars, we also observed magnitude 17 Q957 +561 A and B, the variable double quasar in Ursa Major. This "double" quasar is the first example found that demonstrates Einstein's prediction of gravitational lensing. This is a single quasar that has two nearly identical images caused by the gravitational effect of an (unseen) intervening galaxy. Here's a picture of the quasar and the galaxy, compliments of the Hubble Space Telescope. http://www.astr.ua.edu/keel/agn/q0957.html

We also observed our nearest quasar, only 2 billion light-years away, magnitude 12.8 3C273 in Virgo. The strange name "3C273" comes from a radio survey that detected many strong radio sources in the sky such as this quasar. Not only do these objects emit prodigous amounts of energy (more than 100 times an ordinary galaxy), they also change in brightness on very small timescales.

At midnight on our first night, we walked over to the 100-inch Hooker telescope, and got to stand outside on the catwalk as the dome rotated. We got a cook's tour (thanks to a friend who is the telescope operator on the 100-inch adaptive optics system), and then went into the control room, the shop, saw where the 100-inch gets bathed and realuminized, and then, back to the 9-inch thick, 1900-pound 60-inch mirror, for more peeks into the past.

A night on Mount Wilson isn't your typical star party, and although a deep sky observer may get antsy waiting for a telescope operator to cycle through the crowd to the next object, it was a deeply satisfying new moon observing weekend. I wonder what Mr. Hubble stored in his locker on those observing nights long ago?

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NATIONAL ASTRONOMY DAY
April 20, 2002

National Astronomy Day was founded right here in the bay area by AANC President Doug Berger in 1973. The first Astronomy Day was celebrated at Oakland's Jack London Square. Today, Astronomy Day is celebrated all over the country! Here is a rundown of the National Astronomy Day events scheduled in and around the California bay area. Many clubs also celebrate a fall astronomy day in September or October, and we"ll publicize those events too. This list is also on our AANC website, http://aanc-astronomy.org

California Academy of Sciences celebrates Astronomy Day and Earth Day with solar observing during the day, exhibits and more. The SFAA, Hercules Stargazers [(510) 526-5974], and Palomares 4-H club will be there to lend a hand, too. In the evening, join the San Francisco Amateur Astronomers at their once a month City Star Party at Lands End. Information is covered in the April star party e-mail announcement, or you can get info here: Same day weather hotline: (415) 566-2357 Morrison Planetarium: http://www.calacademy.org/planetarium SFAA: http://www.sfaa-astronomy.org/sfaa

Chabot Space & Science Center: Activities will include solar telescope viewing, finding your birthday star, telescope making with jello lenses and learning how telescopes work. Telescopes open in the evening for viewing, weather permitting. http://www.chabotspace.org/visit/calendar/ Phone for info: (510) 336-7300

Eastbay Astronomical Society: Activities will include helping out at Chabot Space and Science Center. Check their website for other locations. http://www.eastbayastro.org/ (510)524-2146 President Carter Roberts

Lawrence Hall of Science: Activities will include solar viewing in the daytime between 12 and 2 p.m. and Saturday Night Stargazing in the evening on the plaza. It is also Cal Day this day, so everything in the

Discovery Corner gift shop that starts with a "B" (as in Go Bears) is 10% off. At 1:00 p.m. there will be a special kids program called "The Sky's the Limit" featuring air-burst rockets, lunar stomp rocket and X-Zylo. Kids, age 6 and up. http://lawrencehallofscience.org/specialevents/#Astronomy

Mount Diablo Astrononomical Society holds their monthly public stargazing on Mount Diablo on April 13. Information is covered in the April star party announcement, or you can get info here: http://members.aol.com/mdas101b/private/index.htm

Sacramento Valley Astronomical Society holds its Astronomy day on May 18th. Join the club with free activities and displays for all ages from noon until 10:00 p.m. at Rusch Park, 7801 Auburn Blvd. in Citrus Heights. This year the guest speaker is internationally published illustrator Chris Butler, who will be on hand displaying his world renowned artwork. Activities include Starlab portable planetarium shows, astrophotography and telescope displays; planet walk and interactive astronomical and science displays; junior astronomy club activities; telescope making with free Galileo telescopes (first 100); SVAS scholarship applications; free balloons and Astro-Packs with valuable printed astronomy material; telescope viewing by day (with sun-safe filters) and by night (weather permitting). Co-Sponsored by Sunrise Recreation and Park District. http://www.svas.org for more information. Bud Bafia (99916) 992-1869

Sonoma County Astronomical Society holds events in three locations throughout the county for Astronomy Day. Petaluma's Lucchesi Park, McDowell Blvd 1 block north of Washington Street; Santa Rosa's Youth Community Park, Fulton Road across from Piner High School and Sonoma's "The Marketplace", 201 W. Napa Street near Longs Drugs. For information, call (707) 585-7849. All events begain at 7:30 p.m.

Robert Ferguson Observatory holds their once a month public stargazing on April 13. Information is covered in the April star party e-mail announcement, or you can get info here:(707) 833-6979 http://www.rfo.org/

Sidewalk Astronomers will celebrate astronomy day somewhere to be announced on the hotline (415) 289-2007, usually joining one of the other clubs in the area. I think we'll be at Jack London Square in Oakland, solar observing in the afternoon, and moon and planets at night. http://www.sfsidewalkastronomers.org/

The Peninsula Astronomical Society will celebrate Astronomy day at Foothill Observatory or in the Foothill Parking Lot, depending on the bservatory construction project. More information here: http://www.foothill.fhda.edu/ast/pas.htm

The San Mateo County Astronomical Society holds one of their two annual Astronomy Day events this year at College of San Mateo on April 20th. The Skyshow/Open House will feature sun and stargazing, with repeating video and planetarium shows, and make-it-yourself sessions. Featured speaker will be Dr. Mike Reynolds, Exec Director of Chabot Space & Science Center, speaking on his book "Falling Stars" and displaying his meteorite collection, followed by a book signing. Contact Mike Ryan at (650)592-3192 Directions and more here http://home.covad.net/~alcoat/smcas/apr/apr.htm

The San Jose Astronomical Association holds its Astronomy Day event April 19th at Hogue Park in San Jose. There will be a regularly scheduled ATM class at Hogue Park Sat night April 20. Directions and more at http://www.sjaa.net/directions.html

Fremont Peak Observatory in Fremont Peak State Park celebrates Astronomy Day on April 20 with a public observing program. http://www.fpoa.net/

Stockton Astronomical Society holds their monthly Sky tour at San Joaquin Delta College in the parking lot near the Clever Planetarium.Info and directions: http://astro.sci.uop.edu/~sas

Jane Houston Jones
President, AANC

2002 MT TAM ASTRONOMY PROGRAMS

May 11 - 8:30 pm
Michael Bennett
Astronomical Society of the Pacific
"Astronomy from 41,000 Feet -The Story of SOFIA"

The Stratospheric Observatory for Infrared Astronomy (SOFIA),the largest airborne telescope ever built, will begin observations in late 2004.

June 8 - 8:30 pm
Dr.Jeff Moore
NASA-Ames Research Center
"The Moons of Jupiter as Revealed by the Galileo Spacecraft"

For the last 6 years the Galileo orbiter has been returning stunning images of Jupiter's moon, leading to new discoveries and theories of their nature and evolution.

July 13 - 8:30 pm
Dr.Philip Plait
Sonoma State University
"Bad Astronomy"

Despite what Fox TV and other dubious sources are telling you,
NASA really did send men to the moon.

August 10 - 8:30
Dr.Diane Wooden
NASA-Ames Research Center
"Are We Stardust? Crystals,Comets and the Formation of Solar Systems"

Follow the formation of cosmic dust grains through a possible path
leading from the stars to interstellar space to our bodies.

September 7 - 8:00 pm
Dr.Gibor Basri
University of California Berkeley
"What is a Planet?"

The Pluto controversy, discovery of "free-floating planets"and brown dwarfs, and the ambiguous nature of some extrasolar "planets", have led astronomers to reconsider what we mean by the word "planet".

October 12 - 7:30 pm
Tinka Ross
California Academy of Sciences
"Astronomy is Women's Work"

Historically some extraordinary women were able to overcome societal pressures and
lack of opportunities to make significant contributions in astronomy.

Dinners with the speakers: at Lau's China Bistro, Tam Junction, 252 Almonte Boulevard, Mill Valley, 2 1/2 hours before the scheduled talk. To participate, call the restaurant at (415) 389-8868, and add your name to the "Mt Tam Party." The no-host dinners run between $10 and $15, including tax and tip.

Information: **Telephone: (415) 455-5370, (415) 388-2070 Same day Hotlines: (415) 566-2357, (415) 455-5370 (messages after 4:00 pm)** Mailing Address: **MTIA/Astronomy Programs, P.O. Box 3318, San Rafael, CA 94912**

San Francisco Amateur Astronomers
Membership Application

Name:_____ Telephone:_____

Address:_____

Email address:_____

Select one category:

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

make checks payable to **San Francisco Amateur Astronomers** and mail to:
Treasurer, SFAA, 13 Mabry Way, San Rafael, CA 94903

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.

San Francisco Amateur Astronomers
c/ Morrison Planetarium
California Academy of Sciences
Golden Gate Park, San Francisco, CA 94118

Information Hotline: (415) 566-2357

Web Page: www.sfaa-astronomy.org

Sharing the Wonders of the Universe