

★ ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

Vol. 56, No. 7 - July 2008

Wednesday, July 16, 2008 – General Meeting

Randall Museum . 199 Museum Way . San Francisco

7:00 pm Doors Open . 7:30 pm Announcements . 8:00 pm Speaker

CLAIRE E. CHAPIN, PH.D.

INTERPRETING THE DANCE OF GRAVITY IN THE UNIVERSE



This talk explores the ways in which gravity manifests itself in the universe, and the theories that scientists and astronomers have used to describe it. It begins with the remarkable discovery of gravitation by Sir Isaac Newton and his interpretation of it in terms of his laws of motion. His theories brought a logic to the motions of planets and other objects in the universe, and provided astronomers with a tool for finding the masses of remote objects, but they did not address the deeper mystery of why or how gravitation occurs. Next is the tale of how gravity, the weakest of the four known physical forces, becomes the mightiest of them all. It starts with its action of gravity in cold molecular clouds of gas and dust and ends with the formation of black holes, with

star formation and supernova fireworks along the way. Einstein's different (space-time) picture of gravity is described. Black holes, those objects so tightly locked in the unshakeable and unremitting embrace of gravity are described in terms of Einstein's space-time picture. Then, there is the mysterious occurrence of gravity when there is no detectable mass to explain it, as, for example, at the edges of Galaxies. The explanation offered is "dark matter", but what is dark matter? The mystery deepens when "anti-gravity" in the form of "dark energy" is postulated to account for the acceleration of the expanding universe. Finally the picture of gravitation in terms of particle physics is contrasted with the field theory picture of Einstein.

Dr Chapin has taught astronomy and physics at community colleges for many years, most recently at Merritt College, and previously at Chabot College. In addition to teaching, he has worked both in industry and in research. He earned his Ph.D. from Purdue University after attending graduate school at Notre Dame University and the University of Michigan. At Purdue he specialized in the radiation energy transfer of high temperature gases. He continued research in this area at the Lawrence Livermore National Laboratory where he worked as a physicist. He left research to teach, and has taught since, except for a few years when he worked in the environmental field conducting air quality and meteorological studies and assessing air quality compliance. In addition to thoroughly enjoying teaching and talking about the field of astronomy, Dr Chapin is an avid swimmer, and enjoys painting and drawing. He lives in Oakland, California with his wife Holly.

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CLUB TELESCOPES

The SFAA owns eight very fine, easy to use, loaner telescopes well-suited for deep sky, planets, and star parties. All scopes are available to any SFAA member. The loaner custodians for the majority of our fleet are Pete & Sarah Goldie. Please contact them at telescopes@sfaa-astronomy.org for details if you are interested in borrowing a scope or if you have items you can donate for the loaner program (eyepieces, star maps/books, red flashlights, collimator, etc.). Please contact the appropriate member indicated below if you are interested in borrowing one of the telescopes.



- 1) 6" f/10.3 Dobsonian/Ken Frank ken@sfaa-astronomy.org
- 2) 8" f/7 Dobsonian/Pete Goldie
- 3) 8.5" f/6 Dobsonian/Pete Goldie
- 4) 10" f/8 Dobsonian/Pete Goldie
- 5) 114mm f/4 Newtonian StarBlast/Pete Goldie
- 6) 8" f/10 Celestron SCT/Annette Gabrielli/ annette@sfaa-astronomy.org
- 7) 8" f/10 Meade SCT/Stefanie Ulrey/treasurer@sfaa-astronomy.org
- 8) 9.5" f/5.6 Celestron Newtonian/Ken Frank/ ken@sfaa-astronomy.org

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. For information on the course tapes themselves:



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

MEMBERSHIP DUES

Membership is billed for each upcoming year on June 30. Members may receive no more than one bulletin after the expiration of membership.

SFAA Website and Online Services



The SFAA web site at sfaa-astronomy.org is provided to our members and the general public for the sharing of club information and services. The web site contains links for club [star parties](#), [events](#), [newsletters](#), [lectures](#) and [meetings](#). If you wish to interact with other people who are interested in astronomy, the SFAA web site offers public and members only [bulletin board forums](#). If you wish to remain up-to-date on club activities, then we encourage you to subscribe to one or both of our public [mailing lists](#), which will allow you to receive our newsletter and/or club announcements via email. Other useful and interesting information and services are available on the site such as [observing location reviews](#), member [astronomy photos](#), and [members only telescope loans](#). Information about SFAA's membership, organization and by-laws are available at the club's online public document [archive](#). If you need to contact a representative of the SFAA, then please visit our [contacts](#) page to help in finding the right person to answer your questions.

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 20th day of the month.** Send your articles to Editor@sfaa-astronomy.org.

PRESIDENT'S COLUMN

Astronomy Summer reading – or podcasts. Information about new astronomical discoveries, space flight missions and historical events that could previously only be accessed in the form of magazines, books, lectures, or TV series, is increasingly made available on the Internet and as (video) podcasts. I would like to feature a selection of podcasts on a variety of topics. All of these can conveniently be downloaded through iTunes – most of them free of charge. Some podcasts can also be accessed directly through the respective mission website.

- *NASACast Video*: A broad collection of space flight missions, astronomical events, and community updates. Episode 3, for example, provides a preview of the upcoming August 2008 total solar eclipse

The next group covers the NASA Great Observatory Program, which includes Hubble (visible), Spitzer (infrared), Chandra (X-ray), and Compton (gamma ray):

- *Hubblecast HD*: Videocasts produced by the ESA/Hubble team. Episode 16 covers Hubble's collection of 59 images of colliding galaxies
- *Spitzer Space Telescope Podcast*: Discoveries in the infrared band. Episode 2 discusses the recent discovery of Milky Way's "two missing arms" made possible by infrared surveys of the galactic plane that is obscured by gas clouds and dust at visible light wavelengths
- *NASA's Chandra X-ray Observatory Podcasts*: Videocasts from the Chandra mission. Episode 9 compares the appearance of M1 (Crab Nebula), the result of a supernova seen in 1054 AD, in visible and infrared light with the image of the neutron star left behind by the explosion that is now visible at X-ray wavelengths

The following podcasts cover various space flight missions:

- *HD – NASA's Jet Propulsion Laboratory*: JPL/NASA science findings with a focus on planetary missions. Episode 3 provides a moving account of the Phoenix Mars landing with a combination of computer animation and live images from the control room in Pasadena

- *NASACast: Space Shuttle and Space Station Video*: features unique videos; for example, episode 4 shows Discovery's solid rocket boosters separating from the orbiter and gliding back towards Earth filmed from the booster camera view

The last group includes podcasts that can be downloaded for a fee:

- *When We Left Earth – The NASA Missions, Season 1*: Discovery Channel series on space flight with a historical account from the early days of Mercury to today
- *The Universe, Season 2*: History Channel series on cosmology from dark matter to astrobiology

Finally, I would like to remind us of this month's space flight anniversary: on July 20, 1969, the human race accomplished its single greatest technological achievement of all time when a human first set foot on another celestial body. Starting in October, we will follow the footsteps of the missions from Apollo 7 to Apollo 11 as they happened exactly forty years before in a series of articles in "Above the Fog".



Buzz Aldrin on the Moon; Neil Armstrong and the LEM are visible as reflections on Buzz's visor (Source: NASA Apollo 11 Image Library: Image AS11-40-5903 (OF300))

DIRK LAMMERTS
PRESIDENT

IMPORTANT DATES

SFAA GENERAL MEETINGS & LECTURES

Wednesdays

July 16

August 20

September 17

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)

BOARD MEETINGS

Tuesdays

July 8

August 12

September 9

7:00-8:30 p.m.
Randall Museum, 199 Museum Way
(Near 14th Street and Roosevelt)

MT TAM STAR PARTIES – SPECIAL USE PERMIT – MEMBERS ONLY

Special Use Permit observing nights on Mount Tamalpais are private and open *only* to SFAA members. Please arrive by sunset (times listed below). A permit is required for each car. We must vacate the mountain by 2:00 a.m. except on specially approved nights (such as Messier Marathon).

SATURDAYS

July 5 – 8:35 p.m.

August 2 – 8:17 p.m. **GATEKEEPERS NEEDED**

August 30 – 7:41 p.m. **GATEKEEPERS NEEDED**

CITY STAR PARTIES - TELESCOPE CLINIC ONE HOUR BEFORE SUNSET

Saturday, July 26, 8:23 p.m. at Land's End (Point Lobos)

Saturday, August 23, 7:51 p.m. at Land's End (Point Lobos)

Saturday, September 20, 7:09 p.m. at Randall Museum

Weather may cancel the City Star Party.

Please note that while City Star Parties **WILL ALWAYS** be held on Saturdays, some will be closer to the last quarter phase of the moon, while others will be close to first quarter. This is so we can work around dates for Mt. Tam public star parties as well as our members-only events on Mt. Tam.

Map and directions – Land's End (Pt. Lobos) <http://www.sfaa-astronomy.org/clubarchive/directions-pointlobos.php>

MT TAM PUBLIC STAR PARTIES

VOLUNTEER GATEKEEPERS ARE ALWAYS NEEDED

Public nights on Mount Tamalpais start with a lecture in the Mountain Theatre, followed by public viewing in the Rock Springs parking lot. SFAA members may view privately after crowd departs, approx. 11 pm-2 am. For more information go here: <http://www.sfaa-astronomy.org/starparties/>

July 12 – 8:32 p.m.

August 9 – 8:09 p.m.

September 6 – 7:31 p.m.

NEW SFAA MEMBERS

Scope City is offering to new members a \$25 credit toward the purchase of telescopes and binoculars.

Obtain a receipt for dues payment from

Vivian White, Treasurer,

treasurer@sfaa-astronomy.org.

Contact Sam Sweiss at Scope City to arrange for your discount.



Membership Dues

Hello SFAA Members,

It's July and that means it's time to renew your membership to the San Francisco Amateur Astronomers. Did you know that you are a member of the club the SF Weekly paper voted 2008's "Best Local Nerds"?! It's been a great year so far and there are many upcoming events you can still attend. To make sure you don't miss out on all the fun to be had, please mail your payment to the following address, or bring it with you to a general meeting. If your address, email, or phone has changed, please include a note letting us know. Thanks!

\$10 - Youth (under 18) / Student Membership \$25 - Individual Membership
\$30 - Family or Foreign Membership \$40 - Institutional Membership
\$75 - Supporting Membership

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

For Astronomy magazine subscriptions that need to be renewed, please include an additional \$34 (or \$68 for 2 years) and a note with your membership renewal. Sky and Telescope can now be renewed directly at the same price when the notice comes to you, without going through SFAA, or at: <http://www.skyandtelescope.com/>

Looking up from Glacier Point,
Vivian, SFAA Treasurer

2008 San Francisco Amateur Astronomers Lecture Series

Free & Open to the Public sfaa-astronomy.org

7:30pm.

Randall Museum - Randall Museum Theater, 199 Museum Way, San Francisco . randallmuseum.org

UPCOMING LECTURES

August 20th - Lynda Williams, Santa Rosa Junior College - "Space Ecology: The Final Frontier of Environmentalism"

Lynda will survey the current space debris situation and speculate on possible future scenarios created by the deployment of space-based weapons, the private space industry and geo-engineering solutions to climate change. As Lynda likes to say: What the world needs now, before it is too late, is an environmental movement in heaven: Space Ecology.

September 17th - Dana Bachman, SOFIA, NASA Ames - "SOFIA : NASA's Stratospheric Observatory for Infrared Astronomy"

SOFIA , a 2.5-meter (100-inch) telescope mounted in a modified 747SP aircraft, is expected to begin scientific observations in spring 2009. Flying above more than 99% of Earth's atmospheric water vapor, SOFIA will have nearly the same access as a space telescope to far-infrared and sub-millimeter radiation from celestial sources. The talk will cover development and testing of SOFIA as well as prospects for some of the exciting scientific observations that SOFIA will make possible.

October 15th - To be announced

November 19th - Jeff Cuzzi, NASA Ames - "What Have We Learned from the Cassini/Huygens Mission to Saturn"

In this talk, Jeff Cuzzi will review the key science highlights so far on the giant planet Saturn, its spectacular rings, its small but very diverse icy moons, and its planet-sized moon, Titan.

December 17th - Member's Night

Our December meeting features presentations from our SFAA members, plus the annual contests from our members of entries of astronomy art, astrophotography and astronomy literary works. Elections of our volunteers for Officers and Board Members are held on this festive evening.

SFAA Yosemite Star Party at Glacier Point July 11-12, 2008



We have a First Quarter Moon weekend so our quota will fill up quickly. To sign up, please [email Jorge](mailto:jorge@sfaa.org) with "Yosemite" in the subject line; and in the text body: your name(s), number of people, type & size of scope(s). panshot courtesy of Mojo

If you are [currently registered](#) and decide for some reason you cannot come, please let Jorge know as soon as possible so others may fill your campsite. Those on the [wait list](#) will thank you for your consideration.

A note for non-members and those not making the list: Yosemite is your national park, and you may come if you arrange your own accommodations. In this case, you would be welcome to join us at Glacier Point for the public star party and the observing afterward; however, you would not be obligated to set up for the public.

Location: The Star Party will be held at [Glacier Point](#), hosted by the National Park Service (NPS). Here are [directions and guidelines](#). Rustic camping is located at the Bridalveil Creek campground group site. There is room for several tents. Cold running water is convenient but sans showers. The campsite is 8.5 miles away from Glacier Point.

Background: For those of you unfamiliar with this event, we are given free reserved admission and camping space. In exchange, we give 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, and then the rest of the night (and all day) to ourselves. This is a mighty good deal, considering how some folks come 12,000 miles to see these rocks.

NPS limits astronomy clubs to a maximum of 30 SFAA campers. Please do not ask if your friends can come ... unless they are SFAA members. Want to [join](#) the SFAA? You are expected to have at least one public telescope for every two people.

Check the [National Weather Service](#) for up-to-date weather info on Yosemite Park current weather and conditions. Here is a live cam of Half Dome from [Ahwahnee Meadow](#).

Once confirmed, you will be given an Entrance Fee Waiver Form that needed to present to the ranger at the park entrance. They will be available at our meetings. You may be asked to show the ranger your telescope when you enter the park.

Observing site: The observing area is mostly open, with incredible views from about NNW to the east, around to due south. The horizon from south around to the west is partly blocked by tall trees. Still, there is a lot of open sky, and typically, the seeing and transparency are excellent. It has warm temperatures of 70 to 90 during the day, and cool to chilly 40's at night, due to the elevation of 7200 feet.

Star Party: One of the rangers does a sunset talk, and then delivers the crowd to us. Following that, a member of the club will give an evening talk. Some of the public will have white flashlights, and we need to be tolerant of that. We will have club members with red brake light tape to cover the offending flashlights.

Expect many questions from the public. Here is an [object list](#) with corresponding finder charts and some brief information.

Fun part- By around 9:30 or so, we will have the place to ourselves, and can stay until dawn. Scopes must be removed when we quit, then set up again on Saturday. Some of us may set up sun scopes during the afternoon, show Half Dome, and invite people to come again after sunset.

Gastronomic Astronomic: Early Saturday eve is traditionally potluck and is always fun. Please provide enough for ~ say 4 or 5. Salads, main course, pu pu's and desserts are all welcome. Let's try again for the best astronomical theme of incredible edibles. Prizes will again be awarded! Please remember this repast takes time so it's better to start our own gastronomic party early so there's no need to rush for set up Saturday evening on Glacier Point. Sunset Saturday will be at 8:25 pm.

See you there, Jorge

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FULL CIRCLE by Dave Frey

I moved from Lexington, KY to San Francisco, CA in 1986. I always had a love for astronomy but never owned a telescope. In late 1995, I decided to obtain a telescope and a friend told me about John Dobson. I had no idea who he was or that there were many different types of telescopes. I thought that all instruments essentially had a viewer and a lens that pointed to the sky. I decided to enroll in John's class and subsequently discovered that this small, curmudgeonly man was responsible for much of what amateur astronomy is today. I produced a classic ten inch Dobsonian reflector – complete with cardboard optical tube, focuser, porthole glass and computer disk bearings. I then made the trek for First Light to the top of Mount Tamalpais, north of the Golden Gate Bridge. My first experience went something like this:

Veteran amateur, "So, what are you looking at this evening?"

Me, "Uh, I don't know. I just built the thing in John Dobson's class and this is the first time I've used it."

The veteran amateur grabbed the end of the tube and moved the kludge around on the diagonal. He used the word "interesting" to refer to the smoothness of the movement and the draw tube focuser. Without looking through the telescope he offered, "Oh, well, the first thing you're going to have to do is buy a new focuser and eyepiece". He also offered without looking into the scope, "These homemade dob's are nice but at some point you'll need to get better optics." He then trained it on M42 and said, "Mmm, very nice."

I took my turn and was instantly hooked.

Later a ten-year-old-boy came over and said, "Whatchalookinat?" I answered, "M42."

He took a look, "Cool, have you seen Saturn?" I told him this was the first time I'd ever looked through a telescope and that I was basically clueless. He whipped the scope around and after a couple of seconds proclaimed, "Check this out!" I looked into the scope and had one of those OH MY GOD moments you often hear at Star Parties.

In the distance, out of the velvety blackness of the Star Party I heard, "Johnny, Oh Jahhhhhhhny, Where are you?"

Johnny said, "That's my mom, I gotta go." Before I could thank him, he disappeared into the dark.

Fast forward 10 years.

I'm older now. I've seen all the Messier objects and I've become a glass pusher. Thanks to John Dobson, I've nearly a lethal case of aperture fever. I've ground and built a sixteen incher and a twenty incher, had three kids and started a career.

Now I take my boys up to Mt Tam. for Star Parties. One evening, we watched the lecture and afterwards descended into the field of telescopes. My two younger boys ran around, much to the dismay of some of the other telescopers, as my ten-year-old and I drifted around and eventually came upon a family with a brand new six-inch store-bought reflector. Thinking about that wonderful, life-changing night ten years ago I said, "So, what are you looking at this evening?"

A tall, bright young lady of about ten or twelve said, "Not much." Her little brother hid behind his mom's leg while the father remained silent and pretended not to hear.

The mom broke the silence with her confession, "We just bought this and this is our first night out." I asked if I could help and they collectively breathed a sigh of relief. Saturn was low in the west. I pointed the scope and remembered the little boy from ten years ago as if it were yesterday. I said, "Check this out!" The girl looked through the eyepiece, "Ohmygaw! I can see the rings!"

Just then, in the distance, out of the velvety blackness of the star party, I heard, "Daaaad, Noooooah! Where are you guys?" Noah said, "That's my little brother. Gotta go." And they were swallowed by the dark.

Written by: Dave "Does Anybody Know Where I Can Get A twenty-five in. Blank?" Frey, Summer 2007

Dave Frey assists Ken Frank & John Dobson in the Randall Telescope Making class again being offered this fall starting Thursday, October 2nd.

2008 BEST OF SAN FRANCISCO**BEST LOCAL NERDS****SAN FRANCISCO AMATEUR ASTRONOMERS**<http://sfweekly.com/bestof/2008/award/best-local-nerds-1033080/>

The San Francisco Amateur Astronomers is one of those societies that truly make learning enjoyable. Its name might summon images of Trekkies at a sci-fi convention, but club members are supernice and hail from all kinds of professional backgrounds. You've likely seen them cavorting around the city when something cosmological is about to occur — you can simply identify them by their enormous painted telescopes, which are sometimes handmade but always effective. Best of all, they're so darned accessible and informative that it's fun to stop and gab with them about Leonid meteor showers or just life in general. If you're interested in, you can always sign up and revel in the society's myriad star parties and field trips to dark sites in Northern California (which is definitely a big deal, considering all the light pollution that has mucked up the skies for modern-day Galileos). They also hold their annual Astrophotography, Literary and Art Awards, an event that's invariably kooky and ethereal, a bit like fun with presentations on stuff like solar eclipses and black holes, so you can live out all your vicarious Stephen Hawking fantasies.

Saturday July 12, 8:30pm
MOUNT TAMALPAIS ASTRONOMY PROGRAMS
MOUNT TAMALPAIS MOUNTAIN THEATER
Dr. Adrian Lee, UC Berkeley

"The microwave background is a cosmic time machine" according to Dr. Adrian Lee of UC Berkeley. Come and hear how researchers are probing the universe using telescopes in stratospheric balloons, at the South Pole and in the high Andes to map the faint cosmic background radiation giving a baby picture of the universe just after the Big Bang.

Telescope viewing with the San Francisco Amateur Astronomers in the Rock Spring Parking Lot following the talk. All programs are FREE and open to the general public. Students and youth encouraged to attend. Dress warmly, bring a flashlight and car pool if possible. More information at www.mttam.net

NASA – What's Up

Summer is here so it's the perfect season to talk about the Sun. Although this "What's Up" is designed for June, it's still an excellent video. What's Up from Jane Houston Jones:

<http://www.jpl.nasa.gov/videos/whatsup/whatsup20080630/>

Heads Up on Air Quality for Viewing the Night Sky

Many of us will be taking off for star parties this weekend. To help alleviate questions of air quality, see for yourself the NPS Air Quality Web Cams to help you judge visibility and more: <http://www.nature.nps.gov/air/webcams/>



Saturday, July 19, 1:00 p.m. - 3:00 p.m.

**SETI Institute
515 N. Whisman Road
Mountain View CA 94043**

The public is invited to the SETI (Search for Extra-Terrestrial Intelligence) Institute on Saturday, July 19, from 1:00 - 3:00 p.m., for a celebration of science and the imagination! "Celebrating Science 2008" is an interactive science fair for the entire family. Meet SETI Institute scientists and learn about the Institutes's pioneering exploration for life, both in our solar system and beyond.

Fun, interactive activities for youth aged 8-15 will be set up. Come sign up on a first-come, first-serve basis for such activities as "Night and Day," "Oil Spill," and "Time Shadows." There will also be a few activities for younger kids. And adults can enjoy virtual tours of the new Allen Telescope (that is searching for intelligent signals from civilizations among the stars) and the Cassini exploration of the amazing Saturn system.

Meet the father of SETI and author of the Drake Equation, Dr. Frank Drake. Visit the gift shop for a

Drake Equation t-shirt and ask Dr. Drake himself to sign it! Other scientists from the Institute will also be available to talk with visitors.

Hear California Professor of the Year and SETI Board member Andrew Fraknoi speak at 1:30 p.m. about "What Really Happened with Pluto"(including the latest news on the new category of plutoids!) Fraknoi will be available between 1:45 - 2:30 to autograph his latest book, Disney's Wonderful World of Space, also available in the gift shop.

Admission is free, but reservations are available on a first come first served basis only. For more information and to register now and reserve your spot, visit:<http://www.seti.org/celebratingscience2008> For directions to the Institute, see: <http://www.seti.org/about-us/directions-to-institute.php>

July 27-August 1

Practical Observational Astronomy from the Sierra Nevada

General Description

This is a laboratory course that emphasizes astronomical observations made from the field. Within a national forest in the mountains, far from bright city lights, the Field Campus area has the dark sky ideal for observing faint celestial objects and meteors.

The course is designed for a person who wants to learn to identify the stars and constellations and to make simple observations with the naked eye, binoculars and telescopes. Telescopes and their accessories will be studied. We stress hands-on use of telescopes to view the moon, planets, sun, stars and nebulae of our own Milky Way galaxy, and other galaxies. Students will learn how to use star charts and atlases and the setting circles of an equatorial mounting to locate faint celestial objects. It should be particularly helpful to those beginning amateur astronomers who, having purchased their first telescopes, may now be having difficulty finding anything but the moon and brighter planets to observe. Students enroll to receive a letter grade, but have the option of switching to credit-no credit grading, or to audit, at the first class meeting.

Class Schedule

The first class meeting at the SNFC will be at 2:00 PM, Sunday, July 27 and the final session will be late Thursday night (Friday morning), August 1, 2008.

The class meetings are in the afternoon and at night, leaving the mornings open for hiking.

Each class member will construct a pocket sundial and a quadrant to observe the motion of the sky. We will learn to use the sundial as a compass on a luncheon hike to beautiful Frazier Falls, an easy mile hike from the trailhead. Other daytime activities include using the

moon to find the time, learning to use your star dial and doing experiments on telescope optics and on spectra. At night we drive to the Packer saddle area where we have an observation site on the Pacific Crest Trail.

Nighttime activities include naked-eye observations: constellation study, use of the quadrant to study sky motion, meteor counting, and observations of variable stars. With binoculars and telescopes we observe planets, comets, stars, nebulae, the Milky Way and other galaxies. On Thursday, the last night, the course culminates with a star party at which we show roughly a hundred vacationers and area residents the beautiful objects we have learned to observe!

For more information click on the names to visit the web sites of co-instructors Steve Gottlieb, [Jim Shields](#) and [Ray Cash](#).

Useful equipment and supplies

The sun sets at about 20:10 this time of year, and twilight ends about 22:00. Bring lots of WARM CLOTHING (hat, gloves, parka with hood) for the cold, late-night observing sessions, a DIM flashlight with a RED lens (Orion Telescope's "Adjustable Brightness Starlite LED Flashlight" is ideal), notebooks, pens and pencils, and the below texts. You are encouraged to bring your own observing equipment: telescopes, binoculars, astrolabes, cameras...

REQUIRED MATERIALS

- The July edition of "Sky & Telescope". Look in better bookstores in early July
- THE NIGHT SKY, a planisphere [Order at Amazon](#)
- The Bright Star Atlas by Wil Tirion [Order at Amazon](#)

A personal message from SFAA member Dave Goggin

The level of light pollution in the Bay Area (despite its supposed reputation for environmental consciousness) is as bad as ever. Here in San Francisco, I've noticed the new developments/remodels on Van Ness are being done with extensive uplighting. And, with all the Proposition G and south of market development planned, the City's light pollution can only get worse.

I perceive that the typical response by bay area astronomers to this situation is to try to find dark sky sites ever further from the cities, enduring ever increasing driving time (and very noticeably lately, fuel cost!) to get a decent view of the sky.

But this response is unsustainable. We cannot run away from the bad lighting forever! Without the active involvement of all amateur astronomers everywhere, the ugly sky glow will inevitably expand until there is no place left for us, or anyone, to experience a night sky unaffected by light pollution. Instead, we all need to be involved in lobbying and educating for good lighting wherever we happen to live. Only by becoming active participants in local political and planning processes can we ever hope to roll back light pollution, restore decent visibility of the night sky to our towns and cities, and enjoy truly exceptional dark sky sites within a reasonable distance from our homes.

Accordingly, I am putting together a citizen's committee to work on lighting issues in San Francisco. The group, tentatively called Citizens for Smart Lighting, will focus on various projects, such as advocating that city policy statements (such as the Better Streets Plan, the Street Lighting Master Plan, and General Plan) contain rigorous dark sky friendly language about lighting policy. We'll also lobby for the enactment of a tough, comprehensive, and enforceable lighting ordinance in San Francisco. Finally, we'll work toward creating a designated dark-sky preserve in the western portion of the city, including collaborating with the city, neighbors, and merchants to replace or retrofit most (or all) unshielded lighting in the surrounding neighborhoods.

If you are interested in joining the effort to bring the beauty of the night sky back to San Francisco (and the bay area and surrounding regions), and helping everyone understand the connection between environmentalist energy efficiency aspirations and good lighting design, please contact me or simply join the Yahoo! Group [smartlighting-sf](#)

Dave Goggin
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2008-2009 MEMBERSHIP DUES

SFAA membership now comes due in June. Before now, dues were payable in the month a member first joined. Last year, the SFAA board voted to make everyone's dues payable at the same time - in June of each year. This was done for two reasons: 1) to save a great deal of work for our volunteer Treasurer, present and future, and, 2) for the convenience of members - it's easier to remember! In the past, many members forgot their due date and their membership unintentionally lapsed.

N.B. for those of you who have a club discounted *Sky and Telescope* magazine subscription, you will need to renew your subscription separately. The magazine will send you a renewal notice. In the past, you had to send that renewal notice with payment to the SFAA; now you can mail your *Sky and Telescope* subscription renewal payment directly to *Sky and Telescope*. **Note: Not renewing your club membership on time may mean your magazine subscription(s) will also terminate.**

Thanks for bearing with us during this transition process -- it'll all seem worth it next year! Just complete the membership form on the last page of the newsletter and submit with your renewal check to:

San Francisco Amateur Astronomers
P.O. Box 15097
San Francisco, CA 94108

YEARLY RATES FOR MEMBERSHIP

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\$30 – Family or Foreign Membership	\$40 – Institutional Membership
\$75 – Supporting Membership	

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- Subscribing to our Announcements mailing list to receive newsletter, activity and event announcements.
- Interaction with world class speakers as they present cutting edge astronomical research
- Discounts on [Sky & Telescope](#) and [Astronomy](#) magazines*
- Discounts on equipment and accessories at [local telescope retailers](#)
- Annual club Astrophotography, Literary & Art Awards
- Social events, such as our annual picnic and our awards dinner
- Club telescopes – use one of the club's loaner scopes on a month-to-month basis
- Yosemite Star Party – held at Glacier Point exclusively for SFAA members
- Access to events and resources in Northern California and beyond
- Field trips – to observatories and other locations of scientific interest, such as Mt. Wilson Observatory in Pasadena, Chabot Space and Science Center, Fremont Peak, and the Stanford Linear Accelerator Center
- Extended observing hours at the Mount Tamalpais Astronomy Program
- Access to dark sites in Northern California

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