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*** * Observing Basics April 18 at 7:00pm: B.Y.O.B. * * ***

B.Y.O.B.—Bring Your Own Binoculars! Yes, that's right—binoculars can be an excellent tool for observing the night sky. At the upcoming Observing Basics session (April 18, beginning at 7:00 PM at the Presidio Officers Club), we will focus on the use of binoculars. We ask that attending members bring their binoculars so that proper and efficient use of them can be demonstrated and directly exercised by members. Tripods are also a good idea – you may want to consider getting a binocular adapter to maximize your use and comfort.

01.

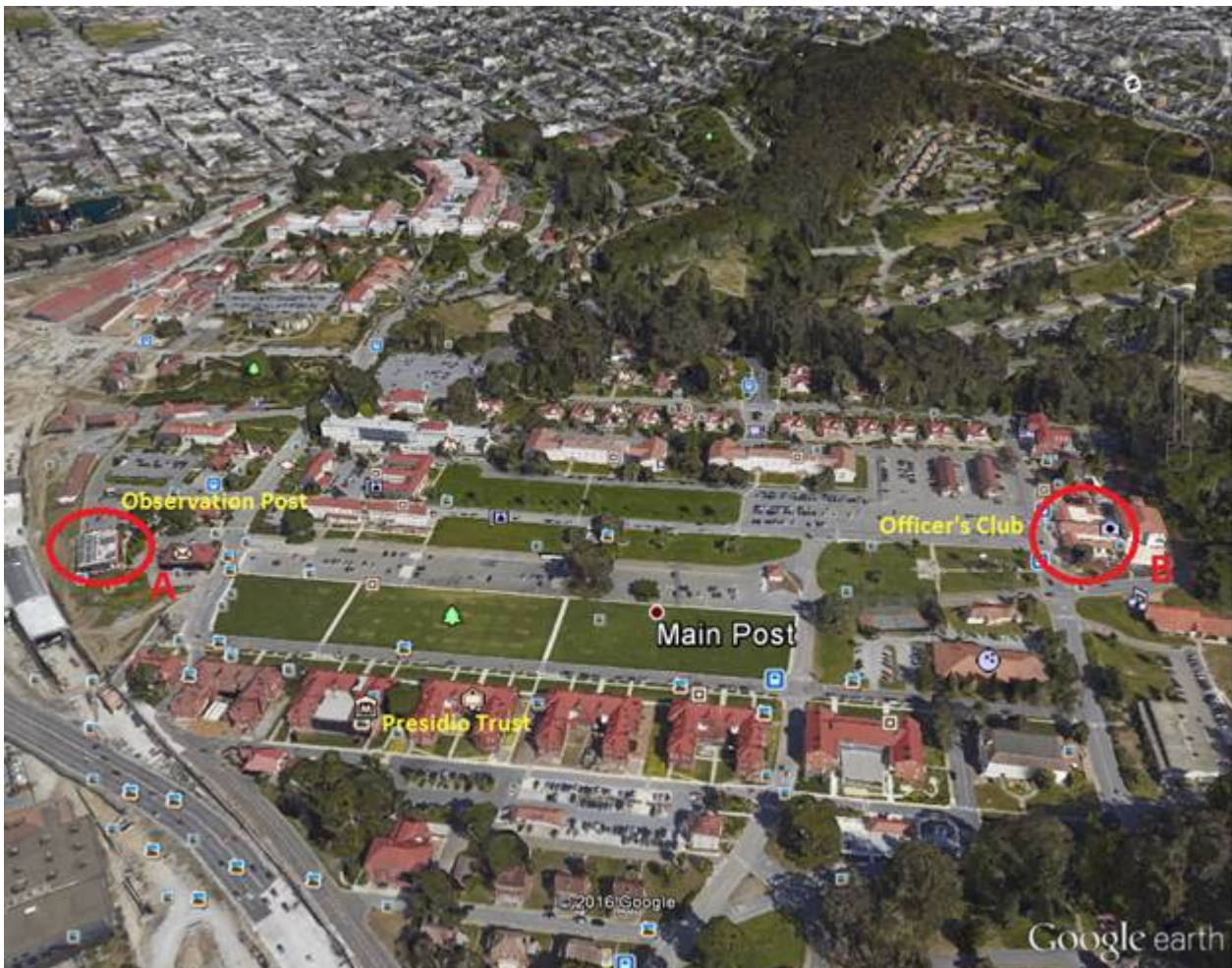
***** NOTE: NEW SFAA MEETING LOCATION FOR 2017 *****

We are happy to announce that, starting in 2017, we will be meeting at:
The San Francisco Presidio Officers' Club
50 Moraga Avenue, San Francisco, CA 94129

The SFAA meetings will take place in Moraga Hall, which is just inside the main entrance.

(As you may or may not know, the building where we have been meeting is scheduled to be demolished)

The image below illustrates the location of the Presidio Officers' Club relative to our prior location at the Observation Post.



02.

APRIL 18TH LECTURE |

**ROGER BLANDFORD, PH.D.,
KIPAC STANFORD UNIVERSITY**

THE PRESIDIO . PRESIDIO OFFICERS' CLUB, BUILDING 50 . MORAGA HALL

50 Moraga Avenue, San Francisco

7:00 pm Doors Open | 7:30 pm Light Refreshments | 7:45 pm Announcements | 8:00 pm Speaker

SFAA'S GENERAL MEETINGS OCCUR ON THE 3RD TUESDAY OF EACH MONTH (EXCEPT JANUARY)

“NEUTRON STARS AND PULSARS: THE INSIDE STORY”



**ROGER BLANDFORD, PH.D.,
KIPAC STANFORD UNIVERSITY**

Predicted in the 1930s and discovered in the 1960s by X-ray and radio astronomers, neutron stars are now known to be the typical result of the evolution of a massive star. There should be nearly of a billion of them in our galaxy alone. Neutron stars have roughly ten km radii and can spin six hundred times in a second. They can also have magnetic fields over a million billion times stronger than the Earth's magnetic field. A small fraction of these neutron stars create bright radio emission and they can be observed as periodic radio pulses and are called radio pulsars. Radio pulsars have turned out to be superb cosmic laboratories and to provide tools to explore gravity and its radiation.

Brief Bio

Roger Blandford took his BA, MA and PhD degrees at Cambridge University. Following postdoctoral research at Cambridge, Princeton and Berkeley he took up a faculty position at Caltech in 1976 where he was appointed as the Richard Chace Tolman Professor of Theoretical Astrophysics in 1989. In 2003 He moved to Stanford University to become the first Director of the Kavli Institute for Particle Astrophysics and Cosmology and the Luke Blossom Chair in the School of Humanities and Science. His research interests include black hole astrophysics, cosmology, gravitational lensing, cosmic ray physics and compact stars. He is a Fellow of the Royal Society, the American Academy of Arts and Sciences, the American Physical Society and a Member of the National Academy of Sciences. In 2008-2010, he chaired a two year National Academy of Sciences Decadal Survey of Astronomy and Astrophysics. He shared the 2016 Crafoord Prize for Astronomy.

03.

UPCOMING SFAA LECTURES 2017

THE PRESIDIO . PRESIDIO OFFICERS' CLUB, BUILDING 50 . MORAGA HALL

50 Moraga Avenue, San Francisco

7:00 pm Doors Open | 7:30 pm Light Refreshments | 7:45 pm Announcements | 8:00 pm Speaker

SFAA'S GENERAL MEETINGS OCCUR ON THE **3RD TUESDAY** OF EACH MONTH (EXCEPT JANUARY)

MAY 16TH | ANN MARIE CODY, PH.D., NASA AMES SETI INSTITUTE

"TWINKLE, TWINKLE, LITTLE STAR: HOW THE KEPLER SPACE TELESCOPE IS REVEALING THE BIRTHPLACES OF PLANETS"



Thanks to numerous astronomical surveys, we are now aware of over 3,400 planets orbiting other stars, with another nearly 2,500 candidates from the Kepler Mission awaiting confirmation. The Universe is teeming with rocky and gaseous bodies. How did these planet systems form and evolve toward their present configurations? The answer to this question lies in the study of their formation environments: dusty disks surrounding young stars. In this talk Dr. Cody will show how Kepler is illuminating the conditions surrounding planet formation by providing high-precision time series data on young stars and their protoplanetary disks.

JUNE 20TH | NATHAN WHITEHORN, UC BERKELEY, COSMOLOGY GROUP

"THE EARLIEST AND THE BRIGHTEST: THE DISTANT AND HIGH ENERGY UNIVERSE FROM THE SOUTH POLE"



The extreme universe is only dimly understood. What were the first luminous objects, and how does dark matter and dark radiation affect cosmic history? Learn how the 3rd generation South Pole Telescope, and the IceCube Neutrino Observatory, located at the Amundsen-Scott South Pole Station provide insight into these questions.

Photo: Nathan Whitehorn is shown at the South Pole.

UPCOMING SFAA LECTURES 2017 (continued)

JULY 18TH | IMKE DE PATER, UC BERKELEY, PROF. ASTRONOMY, EARTH AND PLANETARY SCIENCE

"PEERING THROUGH JUPITER'S CLOUDS WITH KECK AND THE VLA"

Imke de Pater is well known for her research on Jupiter and its moons, using the Keck, Gemini and VLT Telescopes. She will discuss the giant planet, and the many exciting discoveries from her long-term observations.

AUGUST 15TH | YASHAR HEZAVEH, STANFORD UNIVERSITY

"UNVEILING THE DARK UNIVERSE: A TALE OF FISH TANKS, WINE GLASSES, AND THE SMALLEST DARK MATTER CLUMPS"

Learn how ALMA, the world's most sophisticated Radio Telescope, observes some of the most distant galaxies in our universe. The light rays, on their 12 billion light year journey to us, pass near other galaxies. Dark matter halos bend their trajectories, causing images to look like a funhouse mirror.

SEPTEMBER 19TH | NATALIE Batalha, SPACE SCIENCES, NASA

"A PLANET FOR GOLDSILLOCKS: NASA'S SEARCH FOR LIFE BEYOND THE SOLAR SYSTEM"

Not too hot, not too cold, for a world just right for life. Launched in 2009, NASA's Kepler Space Mission is exploring planets orbiting other stars in the galaxy, to determine if Goldilocks planets abound. Dr Batalha will describe possibilities for finding inhabited environments in the future.

OCTOBER 17TH | TOM ABEL, KAVLI INSTITUTE. DIRECTOR OF KIPAC, STANFORD "HOW THE FIRST THINGS IN THE UNIVERSE CAME ABOUT, AND HOW THEY ENDED UP WITHIN US"

Join us for a fascinating journey through the early universe using the latest computer animations of early star formation, supernova explosions, and the build-up of the first galaxies. The first luminous objects were massive stars that seeded the cosmos with the chemistry needed for life.

NOVEMBER DATE IS CANCELLED DUE TO THANKSGIVING HOLIDAY

DECEMBER 19TH | TO BE ANNOUNCED

*** * * SFAA T-SHIRTS NOW AVAILABLE! * * ***

Many of you have asked when those handsome blue SFAA T-Shirts will be available for sale. We have a limited number available, so reserve yours now!

Prices:

\$10 for SFAA Members (membership must be current)

\$25 for non-Members

Shirts will be available for purchase and/or pick-up at the April 18th lecture at the Presidio Officers' Club. If you need to renew your membership or want to join as a new member, please submit the Membership Application, included as the final page of this newsletter, or from our web site, at:

<http://www.sfaa-astronomy.org/membership/>

04.

SFAA PRESIDENT'S NOTE | BRING YOUR BINOCULARS!

As announced at previous meetings and in Above the Fog, at our 18 April meeting / lecture we will be starting off with Observing Basics this time with an emphasis on effective use of binoculars. We will demonstrate how to best adjust binoculars to your eyesight, useful tips on positioning your body for extended observing, the advantage of having larger binoculars on a tripod and objects to view in the night sky.

I first began observing the night sky with a pair of 9 x 63 binoculars (we will explain what those numbers mean for those who are unsure) finding open clusters, nebula, observing the moon and realizing the importance of learning the constellations in order to find such objects. Indeed my binoculars were instrumental in my appreciation and beginning knowledge of observational astronomy and were a solid and practical first step before I eventually bought a telescope. I always encourage people who inquire about purchasing a telescope to first learn some constellations that are up that time of year, research some objects that would be visible with binoculars, observe and experience the immense satisfaction and wonder upon finding them. Such observing will develop a fundamental understanding of the night sky, which you will want before plopping down substantial money for an advanced instrument. You will get a lot more out of the telescope after you have explored with binoculars.

It is impressive that 67% of members surveyed in 2016 owned a pair of binoculars. So, dust them off, bring them to Observing Basics starting at 7:00pm on 18 April and start viewing wonders in your solar system, galaxy and beyond.

Dark, clear and stable skies,

Michael Patrick
President, SFAA

SFAA Board Officers and Directors:

President	Michael Patrick	president@sfaa-astronomy.org
Vice President	Liz Triggs	vice-president@sfaa-astronomy.org
Treasurer	Michael Patrick	treasurer@sfaa-astronomy.org
Secretary	Anthony Barreiro	secretary@sfaa-astronomy.org
Directors:	PJ Cabrera, Anil Chopra, Brian Kruse, Matthew Jones, Jessica Miller, Scott Miller, Mina Reyes, Douglas Smith, Paul Salazar	

05.

SFAA NEEDS YOU: VOLUNTEER OPPORTUNITIES | ANTHONY BARREIRO

Upcoming Volunteer Outreach Opportunities

In addition to our lectures and star parties, SFAA often partners with schools, museums, and other community organizations to offer astronomy-related outreach activities. We depend on our members to provide people of all ages a first-hand experience of the wonders of the universe. Outreach activities are often centered around telescope observing, but there are many ways to teach people about astronomy, and there are always roles for members at all levels of expertise, including beginners, whether or not you bring a telescope. Here are some upcoming outreach opportunities. Please help out as you're able.

The California Academy of Sciences is looking for help with the following activities. In addition to volunteers willing to help out, SFAA also needs a coordinator for each event. A coordinator needs to make a firm commitment to attending the event and will need to do some advance planning and coordination with Academy staff and other SFAA volunteers. If you're interested in helping with one or more of these events, either as a coordinator or as a volunteer, please send an email to Anthony Barreiro, secretary@sfaa-astronomy.org

- **Thursday, April 13 - YURI'S NIGHTLIFE**
- **Saturday, April 29 - ASTRONOMY DAY** (daytime programming)
- **Thursday, June 29** (NightLife) and/or **Friday, June 30 - ASTEROID DAY** (daytime programming)

The Bay Area Discovery Museum is planning an **Astronomy Festival, Saturday, June 3**, 10 am-2 pm. Michael Patrick is coordinating SFAA's participation in this festival. We're in the early planning stages, so ideas and suggestions are welcome. Solar telescopes are always a big hit at daytime astronomy events. If you're interested in helping out with this event, please send an email to president@sfaa-astronomy.org

Snack Volunteers Needed

SFAA also needs members to volunteer to bring **light refreshments** to our monthly **meetings and lectures** at the Presidio Officers Club, on the **Third Tuesday of Each Month**. Refreshments help to create a welcoming, sociable atmosphere for members and guests. If a few members each bring something, there's less burden on any one member, and we'll have a good variety of snacks and beverages. You may donate snack items or simply provide receipts to be reimbursed for your expenses, and your fellow members will be grateful to you! If you can bring refreshments, please send an email to Linda Mahan, speakerchair@sfaa-astronomy.org. Let Linda know which month or months you can help with, and what you would like to bring.

Ongoing Opportunities to Participate in our SFAA Club

SFAA is also looking for volunteers to help in these areas:

- **Star Parties** – both on Mt. Tam and for City Star Parties
- **Marketing** – we can use help posting SFAA event updates to SFGate, SF FunCheap, Eventful, Bay Area Science, etc.
- **Above The Fog** – submit an occasional article, astrophoto and/or serve as a member of the editorial team.

Please send an email to Michael Patrick at president@sfaa-astronomy.org if you're interested.

On behalf of the board of directors and your fellow SFAA members, thank you for your willingness to help out.

SFAA NEEDS YOU: VOLUNTEER OPPORTUNITIES (continued)

SFAA at Makers Faire May 19 – 21, 2017

Once again San Francisco Amateur Astronomers is participating in Makers Faire (<http://makerfaire.com>). Makers Faire is an event created by Make magazine to "celebrate arts, crafts, engineering, science projects and the Do-It-Yourself mindset". Very appropriate for SFAA to share how to build your own telescope!

Makers Faire takes place Saturday May 20th to Sunday May 21st. There is also a special school classroom day on Friday May 19. SFAA will be showing the design and construction of Dobsonian telescopes with live glass grinding demonstrations. We'll have some home-built telescopes on exhibit to show how they're balanced and designed around the optics. Additionally we'll be showing some 3D printed parts connecting electronics to accommodate remote views through the telescope.

SFAA are looking for additional help for our booth. Ideally volunteers will have built a telescope but that's not necessary. We can brief volunteers with all the information to share. In exchange you'll get Faire admission. We'd like more involvement so everyone participating can also explore the Faire! If you're interested, contact Douglas Smith for more information at dsmith@201design.com

2017 ASTRONOMER-IN-THE-PARK OPPORTUNITIES



Glacier National Park (in Montana) is looking to hire 2-3 volunteer astronomers this season. Ideally, the astronomer would start July 9th and work through September 9th, but there is a little flexibility in those dates. The positions include a stipend of \$150.00 a month and the Park will reimburse travel expenses up to \$400.00. Housing is not provided, but the Park has room for a camper or trailer. The announcement listed on the Park website, asks to have resumes submitted by April 1st, but the date is being extending at least until April 24th. More information is available at: <https://www.nps.gov/glac/getinvolved/astrovolunteers.htm>

06.

PLANET 9 SEARCH - CITIZEN SCIENCE OPPORTUNITIES | P.J. CABRERA

Citizen Science Overview

With the increasing popularity of the Internet over the last two decades, it has become easier to communicate and distribute information to people spread all around the globe. Scientists have seized on the proliferation of the Internet to coordinate collaborative activities with members of the general public interested in science. These projects seek not only to publish their information on the Internet, but also to enlist the public's help in the observation, cataloguing and categorizing of astronomical phenomena.

Citizen science projects are an exciting way in which amateur astronomers can contribute their time and effort to the advancement of science. They also provide a way to learn more about the science by being involved more directly in the process. Many of these projects do not require heavy or expensive equipment, and some only require access to a computer connected to the Internet.

Over the next several **Above The Fog** issues, I will give overviews of different citizen science projects looking for help from the public.

Planet 9 Search - Citizen Science Opportunities

The hottest astronomy news items of late all seem to revolve around the subject of exoplanets: planets detected around other stars through either occultation or radial velocity measuring methods. But the search is still ongoing for extra planets in our own backyard, looking for a possible large planet beyond the orbit of Pluto.

In early 2016, Caltech astronomer Mike Brown and theoretical astrophysicist Konstantin Batygin announced that they'd found evidence of a massive planet orbiting far off in the annex of the solar system with a predicted orbit of 20,000 years. Its presence is inferred from the orbit of several Kuiper Belt Objects which have highly elongated orbits with closely related arguments of periastron (oriented relatively the same direction with each other.)

Planet 9 is predicted to be a brown dwarf, about 10 times the mass and up to four times the size of our planet, and about 800 times the distance between Earth and the Sun. Planet 9 is too faint to be seen by amateur telescopes, but it may already have been imaged in infrared surveys conducted in the last decade. One such infrared survey was done by the WISE spacecraft.

The Zooniverse website now hosts the Backyard Worlds project (at www.backyardworlds.org) a citizen science project to find brown dwarfs and low mass stars in the data from the The WISE All-Sky Infrared Survey. Using your web browser, you mark possible previously undetected objects for the Backyard Worlds researchers to follow up on. It is expected that a few brown dwarfs in the vicinity of our solar system will be discovered in the data, along with several trans-Neptunian objects and comets. Studying these brown dwarfs will help settle some theories in star formation, so there is the opportunity for more transformative science than just finding one elusive extra planet.

07.

CITIZEN SCIENCE - ECLIPSE MEGAMOVIE PROJECT | BRIAN KRUSE

We're excited to announce an opportunity to contribute to a first-of-its-kind citizen science project: the Eclipse Megamovie!

Representing a collaboration between Google, UC Berkeley, the Astronomical Society of the Pacific and others, the project will use photographs of the upcoming August 21st total solar eclipse to build a movie of the entire eclipse from coast to coast. We need skilled photographers to help create the movie as well as support solar science research. For more on the goals of the project, see UC Berkeley's official press release:

<http://news.berkeley.edu/2017/02/21/megamovie-project-to-crowdsource-images-of-august-solar-eclipse/>

Our aim is to recruit over 1,000 amateur photographers and astronomers who will be on the path of totality on August 21, 2017. Team members receive training and submit a practice image before the eclipse. Once you qualify, you will receive a pin to designate your status as an official photographer for the project. Your name will also be included in the credits of the final Eclipse Megamovie. If you want to participate, visit our website at: <https://eclipsemega.movie> and SIGN IN to apply!

- Basic equipment necessary for participating in the Eclipse Megamovie Project:
- Camera: DSLR (digital single lens reflex)
- Telephoto or zoom lens: minimum focal length of 300mm
- A stable and level tripod
- Ability to identify the GPS coordinates and time to the nearest second

*** * * FREE ASTRONOMY BOOKS * * ***

Dear members of the SFAA:

The next meeting of our association, at the Officer's Club, there will also be a more traditional serving of astronomy, through the written and printed library of an astronomy buff. At the behest of the estate of George and Shirley Carvalho, we will be sharing their library of Astronomy Books with the members of SFAA.

All books will be free (with the exception that we ask you to send a note of thanks to the family) are almost all brand new and include many sky mapping books, lots of cataloging books on topics such as double stars and galaxies as well as books exploring the many facets of space.

We will be sharing these books at the April 18th meeting. Please come and share in the new worlds our speakers open up for us... and take home a few books!

ASTRONOMY EVENTS

SAN FRANCISCO AMATEUR ASTRONOMERS EVENTS APRIL 18, 2017 – MAY 20, 2017

Details at: <http://www.sfaa-astronomy.org>

Tuesday April 18, 7:00 pm – 7:45 pm
Presidio Officers' Club
Observing Basics—Adjusting & Using Binoculars for Observing the Night Sky

Tuesday April 18, 7:45 pm – 9:30 pm
Presidio Officers' Club
Meeting and Lecture

Saturday April 22, 7:00 pm
Mt. Tam Members Night

Saturday April 29, 7:00 pm
Mt. Tam Public Astronomy Night

Sunday April 30, 7:00 pm
City Star Party, Embarcadero at Pier 17

Saturday May 13, 7:00 pm
City Star Party, Presidio Main Parade Ground

Tuesday May 16, 7:30 pm, Presidio Observation Post
Meeting and Lecture

Saturday May 20, 7:00 pm
Mt. Tam Members Night



City Star Party Highlights

* * * * *

by Liz Triggs

Saturday, March 11 @ Point Lobos, San Francisco, CA

We set up on the sidewalk overlooking the Pacific Ocean from 6:30 9:00pm. We had 25-30 visitors over the course of the evening and everyone especially enjoyed terrific views of the very bright full Moon.

PJ Cabrera and I set up telescopes, and after having a minor issue with moisture on one telescope, the Dobsonian that **Scott Miller** built was the star of the evening. It's a great hands-on telescope and attendees enjoyed learning how to use the finder scope to align the telescope to the Moon. There were also a lot of surprisingly clear photos captured through the Dobsonian scope with iPhones!

See you at the next Star Party!

* * * GET REAL, LIVE HELP WITH YOUR TELESCOPE! * * *

Are you a new telescope owner? Or perhaps you could use some help with alignment, collimation or other adjustments? Collimating a reflector, like playing guitar or dancing the tango, can, with great effort, be learned from reading, but it is much easier and more enjoyable to learn hands-on from somebody who already knows how to do it.

Bring your telescope to a Star Party – we'll be happy to help!

BAY AREA ASTRONOMY EVENTS

Each month, long-time SFAA member Kenneth Lum assembles and sends out a list of Bay Area Astronomy events. As each month unfolds, check the following link for information regarding additional events:

<http://tech.groups.yahoo.com/group/bayastro/?v=1&t=directory&ch=web&pub=groups&sec=dir&slk=94>

09. SFAA EXPEDITION 2017

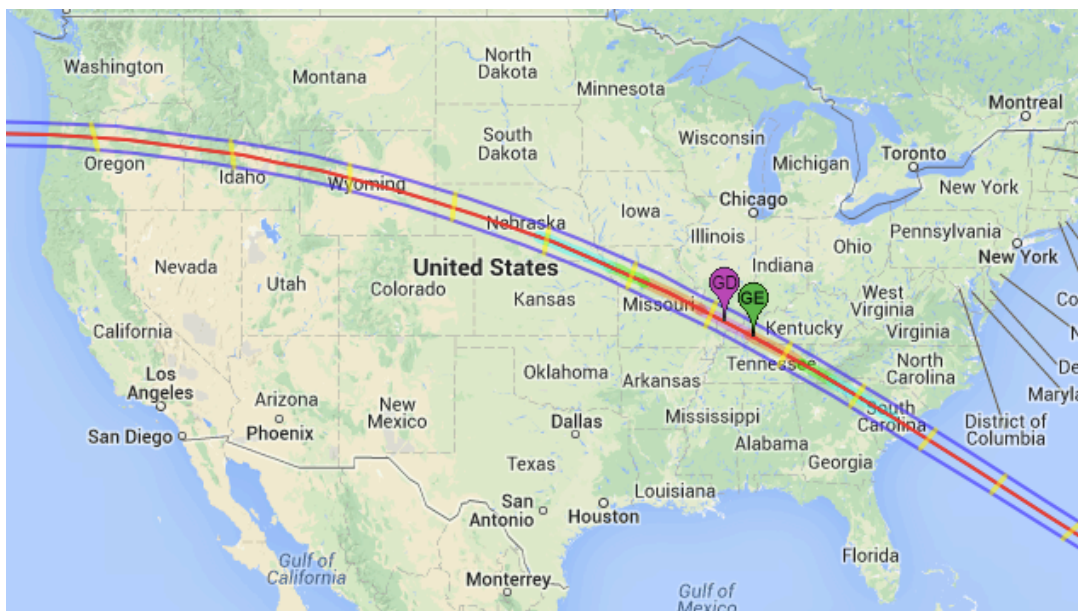
TOTAL SOLAR ECLIPSE August 21, 2017

Jackson Hole, Wyoming (Teton Mountains)

The San Francisco Amateur Astronomers is organizing an expedition to witness the August 21, 2017 Total Solar Eclipse. The eclipse will be visible across a broad swath of the USA, and club members will gather near Jackson Hole, Wyoming, to witness this spectacle high in the Teton Mountains. The trip is an opportunity for club members to gather in one place along the path of totality and journey together up the mountains for viewing of this spectacular astronomical phenomenon.

Over the past year as we have promoted this event, hotel space in all of the Jackson Hole region has sold out. So at this point in time, we welcome SFAA members to join us for the weekend of August 19th and 20th at our location in Teton Village, and for totality on Monday August 21st. However, you will have to find hotel or camping accommodations elsewhere and drive in. If you wish to join us or just to get updates, send an email to 2017eclipse@sfaa-astronomy.org to receive periodic updates.

If you have any other questions, send to 2017eclipse@sfaa-astronomy.org.



NASA SELECTS MISSION TO STUDY CHURNING CHAOS IN MILKY WAY AND BEYOND



NASA has selected a science mission that will untangle the complexities of the interstellar medium, and map out large sections of the plane of our Milky Way galaxy and the Large Magellanic Cloud.

Image credit: NASA, ESA, and Hubble Heritage Team.

NASA has selected a science mission that will measure emissions from the interstellar medium, which is the cosmic material found between stars. This data will help scientists determine the life cycle of interstellar gas in our Milky Way galaxy, witness the formation and destruction of star-forming clouds, and understand the dynamics and gas flow in the vicinity of the center of our galaxy.

The Galactic/Extragalactic ULDB Spectroscopic Terahertz Observatory (GUSTO) mission, led by principal investigator of the University of Arizona, Christopher Walker, will fly an Ultralong-Duration Balloon (ULDB) carrying a telescope with carbon, oxygen and nitrogen emission line detectors. This unique combination of data will provide the spectral and spatial resolution information needed for Walker and his team to untangle the complexities of the interstellar medium, and map out large sections of the plane of our Milky Way galaxy and the nearby galaxy known as the Large Magellanic Cloud.

"GUSTO will provide the first complete study of all phases of the stellar life cycle, from the formation of molecular clouds, through star birth and evolution, to the formation of gas clouds and the re-initiation of the cycle," said Paul Hertz, astrophysics division director in NASA's Science Mission Directorate in Washington. "NASA has a great history of launching observatories in the Astrophysics Explorers Program with new and unique observational capabilities. GUSTO continues that tradition."

The mission is targeted for launch in 2021 from McMurdo, Antarctica, and is expected to stay in the air between 100 to 170 days, depending on weather conditions. It will cost approximately \$40 million, including the balloon launch funding and the cost of post-launch operations and data analysis.

The Johns Hopkins University Applied Physics Laboratory in Laurel, Maryland, is providing the mission operations, and the balloon platform where the instruments are mounted, known as the gondola. The University of Arizona in Tucson will provide the GUSTO telescope and instrument, which will incorporate detector technologies from NASA's Jet Propulsion Laboratory in Pasadena, California, the Massachusetts Institute of Technology in Cambridge, Arizona State University in Tempe, and SRON Netherlands Institute for Space Research.

NASA's Astrophysics Explorers Program requested proposals for mission of opportunity investigations in September 2014. A panel of NASA and other scientists and engineers reviewed two mission of opportunity concept studies selected from the eight proposals submitted at that time, and NASA has determined that GUSTO has the best potential for excellent science return with a feasible development plan.

NASA's Explorers Program is the agency's oldest continuous program and is designed to provide frequent, low-cost access to space using principal-investigator-led space science investigations relevant to the astrophysics and heliophysics programs in agency's Science Mission Directorate. The program has launched more than 90 missions. It began in 1958 with the Explorer 1, which discovered the Earth's radiation belts, now called the Van Allen belt, named after the principal investigator. Another Explorer mission, the Cosmic Background Explorer, led to a Nobel Prize. NASA's Goddard Space Flight Center in Greenbelt, Maryland manages the program for the Science Mission Directorate in Washington.

For more information on the Explorers Program, visit:

<https://explorers.gsfc.nasa.gov>

For more information on scientific balloons, visit:

<https://www.nasa.gov/scientificballoons>

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Application for New or Renewing Membership

1. Memberships, with dues payment, are for one year running from standard renewal dates of 1 July to 30 June and 1 January to 31 December. SFAA is a 501(c)(3) nonprofit organization. Membership dues are tax-deductible, as allowed by law.
2. Submitting appropriate dues in April, May, June, July, August, September, membership will run to 30 June of the next year.
3. Submitting appropriate dues in October, November, December, membership will run to 31 December of the next year; submitting appropriate dues in January, February or March, membership will run to 31 December of the same year.
4. Renewals are maintained at the original membership date unless the renewal is made later than the original cutoff date (e.g. September or March as described in 3). In such cases the membership date is shifted to the next renewal date 30 June or 31 December.
5. New or renewal memberships sent in via USPS mail will have membership start date based on postmark date.

This application is for:

New

Renewing

Name: _____

Address: _____

Email: _____

Home Telephone (optional): _____

Cell Phone (optional): _____

Membership Type: Individual \$25.00 Family \$30.00 Student \$10.00 Supporting \$75.00
 Institutional \$40.00 **(All dues tax-deductible as allowed by law.)**

Please mail to me a Mt. Tamalpais Parking Permit (1 per membership)

To complete the membership process:

- A. Print and fill out this form
- B. Make check or money order payable to San Francisco Amateur Astronomers
- C. Mail this form and payment to:

Treasurer, SFAA
PO Box 15097
San Francisco, CA 94115

Both new and renewing members will receive a verifying email from the SFAA upon completion of the membership process.