

★ ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

Vol. 64, No. 2 - February 2016

GENERAL MEETING

THE PRESIDIO . OBSERVATION POST . BUILDING 211

211 Lincoln Boulevard, San Francisco

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

*SFAA's General Meetings occur on the 3rd **TUESDAY** of each month (except January)*

May 17, 2016

DR. MARK SHOWALTER

Senior Research Scientist, SETI Institute

**PLUTO ON THE HORIZON: OUR FIRST ENCOUNTER WITH
THE DOUBLE PLANET**

**THE NEW HORIZONS FLYBY OF PLUTO:
AN INSIDER'S VIEW**



NASA's New Horizons spacecraft passed through the Pluto system on July 14, sending back our first closeup views of that distant, mysterious world and its retinue of moons. The spacecraft executed its observing sequence flawlessly, and the images are still being slowly downlinked back to Earth. The images have already revealed a remarkable landscape containing including broad plains, mountain ranges several km high, and evidence for volcanoes. The planet is enshrouded by a thin, blue atmosphere. Pluto's four small moon are spinning wildly, for reasons not currently understood. Mark Showalter, a member of the New Horizons science team, will recount the inside story of the historic flyby and discuss the latest scientific results.

Dr. Mark Showalter, a senior research scientist at the SETI Institute in Mountain View, studies the dynamics of rings and small moons in the Solar System. His investigations using Voyager data and the Hubble Space Telescope have led to the discoveries of six planetary moons: Pan at Saturn, Mab and Cupid at Uranus, Kerberos and Styx at Pluto, and an as yet unnamed moon of Neptune. He is a co-investigator on NASA's New Horizons mission and has been deeply involved in the search for small moons and faint rings.



SFAA 2016 LECTURE SERIES UPCOMING LECTURES

SFAA Lecture Series

August 16th

SF Presidio Observation Post

Kepler's Heartbeat Stars: When Binary Stars Get Funky

Susan Mullally, SETI Institute

Using the continuous, high-precision photometry available from the Kepler spacecraft, the Kepler team discovered a type of eccentric binary star named heartbeat stars. In these systems, the two stars come close enough to each other to cause large, periodic changes in the tidal deformation and mutual irradiation of the stars. Additionally, these tidal forces are known to cause the stars in some of these systems to continually 'ring' at shorter periods. Currently, we have discovered more than 150 of these in the Kepler data and have been taking extensive follow-up spectroscopy to model and understand these systems.

Dr. Mullally will present an overview of these systems and discuss how these systems

August 16th - SUSAN MULLALLY, SETI INSTITUTE

KEPLER'S HEARTBEAT STARS: WHEN BINARY STARS GET FUNKY

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Dr. Mullally will present an overview of these systems and discuss how these systems are allowing us to explore the physics of stellar tidal dissipation.



**SEPTEMBER 20TH - LYNN COMINSKY, CHAIR, PHYSICS &
ASTRONOMY, SONOMA STATE UNIVERSITY
GRAVITATIONAL WAVES FROM MERGING BLACK HOLES**

Professor Lynn Cominsky will report on the recent observations of merging Black Holes as detected by the twin facilities that comprise the Laser Interferometer Gravitational-wave Observatory, (LIGO)



The SFAA is excited to announce that our 2016 Yosemite star party is scheduled for June 24th and 25th.

To sign up, email Dave Frey at yosemite@sfaa-astronomy.org

Be sure to put "Yosemite Sign Up" in the subject line to reserve your campsite.

Sign up soon – It's filling up fast!

Remember, The trip is available to MEMBERS ONLY.

Since this is a Public Viewing Event that the SFAA attends as guests of the National Parks, all campers are expected to bring a telescope and be willing to host public viewing. The club aims to bring one telescope for every two SFAA members attending.

About the Trip --

The SFAA is provided with FREE admission to Yosemite National Park as well as FREE reserved, shared campgrounds at Bridalveil Group Campground. The campsite is 8.5 miles away from Glacier Point.

We will host two public star parties at Glacier Point, on Friday and Saturday night. We 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. The National Park Service limits astronomy clubs to a maximum of 30 SFAA campers. Please do not ask if your friends can come ...unless they are SFAA members and have telescopes.

Observing site at Glacier Point --

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.

StarParty --

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, (want to volunteer?) The public will have white flashlights, and we need to be tolerant of that. We will have 3 club members with red brake light tape to politely cover the offending flashlights. Expect many questions from the public.

The Reward --

By around 9:30 or so, we will have the place to ourselves, and can stay until dawn if you so choose. 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 festooned with rock climbers, and invite people to come back again after sunset.

Gastronomic Astronomic --

Early Saturday eve is the traditional potluck meal and is always tons of fun. Please provide enough food for ~ say 3 or 4 people. Salads, main courses, pu pu's and desserts are all welcome. The question is: Who will have the best astronomical gastronomic theme of incredible edibles this year? Remember the Brown Dwarfs? Prizes will be awarded!

Please remember this repast takes time. It's better to start our own gastronomic party early so that there's no need to rush for set up Saturday evening on Glacier Point.

Check the National Weather Service for up-to-date weather info on Yosemite Park current weather and conditions.



See you at the campsite -- Dave & Kati
**SAN FRANCISCO
AMATEUR ASTRONOMERS
EXPEDITION**

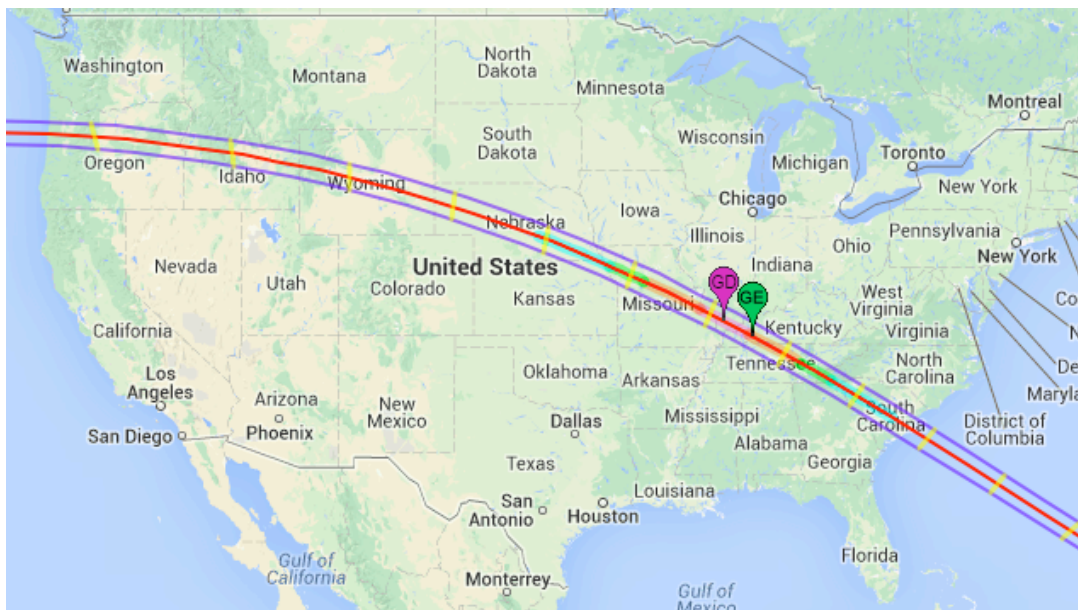
August 21, 2017

**TOTAL SOLAR ECLIPSE
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.

The club has arranged with a hotel in Teton Village, Wyoming, to enable advance bookings (2 years in advance!) with a special club rate of 10% discount. If you are a member of the SFAA and are interested in this, send an email to 2017eclipse@sfaa-astronomy.org and you'll be provided with additional details on the hotel and booking code. In the coming months the club will organize additional talks and events that will take place at the hotel on and before the date of totality. At this time, the most important thing is to book your hotel room so if you are at all considering this eclipse, get in touch and get your reservation in today. SFAA is not organizing air or ground transportation; that is left to each individual group or attendee.

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



BAY AREA ASTRONOMY EVENTS

Kenneth Lum

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>

BAY AREA REGULARLY SCHEDULED EVENTS

**EVERY FRIDAY NIGHT
7:00 PM – 10:00 PM
excluding major holidays**

**The Telescope Makers'
Workshop**

**CHABOT SPACE AND
SCIENCE CENTER
10000 Skyline Boulevard
Oakland, CA 94619-2450**

THE TELESCOPE MAKERS' WORKSHOP is held every Friday night from 7pm - 10pm, excluding major holidays (e.g. Christmas Day and New Year's Day) that fall on Fridays. The Workshop is always closed on Memorial Day Weekend. Attendance every Friday night is not mandatory, and members work at their own pace. The Workshop meets at Chabot Space & Science Center, 10000 Skyline Blvd., Oakland.

Chabot's TMW is one of only a handful of regularly scheduled telescope making workshops in the U.S., and probably the world; it meets every Friday evening throughout the year, except Memorial Day weekend. It has been in operation since December of 1930, founded by Franklin B. Wright, and is currently run by Eastbay Astronomical Society member Rich Ozer, with help from other EAS members, Dave Barosso, Barry Leska, and others. The price of admission is FREE. All you have to do is show up, buy a mirror blank and a "tool" (typically around \$100 - \$200 depending on the size of the mirror) and start "pushin' glass!" We supply you with instruction, the various grits you'll need to first grind, and then polish and figure your mirror, and all the testing equipment needed. With a small bit of luck, you could wind up with a telescope that costs 1/3 or 1/4 the cost of a store-bought telescope, that is yet optically superior! It does take time - depending on how much time you put in on it, and other factors, it could take a few months or several months. But, it's a fun project, great for kids, and at the end you get a great telescope!

For more information call or email Richard Ozer at rozer@pacbell.net or phone (510) 406-1914.

**EVERY FRIDAY &
SATURDAY EVENING,
weather permitting
7:30 PM – 10:30 PM**

**CHABOT SPACE AND
SCIENCE CENTER
10000 Skyline Boulevard
Oakland CA 94619-2450
(510) 336-7300**

EXPLORE THE NIGHT SKIES AT THE CHABOT OBSERVATORIES

For more information: <http://www.chabot.space.org/>

Free Telescope Viewing

Regular hours are every Friday & Saturday evening, weather permitting: 7:30pm - 10:30pm

Come for spectacular night sky viewing the best kept secret in the Bay Area and see the magnificence of our telescopes in action!

Daytime Telescope Viewing On Saturday and Sunday afternoons come view the sun, moon, or Venus through Chabot's telescopes. Free with General Admission. (weather permitting)

12pm - 5pm: Observatories Open

<p>Sunset – 5:11 PM (TWICE MONTHLY)</p> <p>Inclement weather (clouds, excessive wind and showers) will cause the event to be canceled without notice.</p> <p>SAN MATEO COUNTY ASTRONOMICAL SOCIETY STAR PARTY</p>	<p>STAR PARTIES AT CRESTVIEW PARK, SAN CARLOS</p> <p>Come out and bring the kids for a mind expanding look at the universe</p> <p>The City of San Carlos Parks and Recreation Department and the San Mateo County Astronomical Society have open Star Parties twice a month. These events are held in Crestview Park, San Carlos California. Note that inclement weather (clouds, excessive wind and showers) will cause the event to be canceled without notice.</p> <p>For more information call Bob Black, (650)592-2166, or send an email to SMCAS@live.com or call Ed Pieret at (650)862-9602.</p> <p>Reasons to Attend</p> <p>If you have kids interested in space or planets bring them here for a real life view of planets, nebula, star clusters and galaxies.</p> <p>If you are thinking of buying a telescope or want help using a telescope you own, come here to talk with experienced users. If you think you might have an interest in astronomy come and talk to experienced amateur astronomers.</p> <p>Cautions</p> <p>Dress warmly and wear a hat.</p> <p>Visitors should park on the street and walk into the park so your headlights don't affect the observer's dark adaptation.</p> <p>Only park in the parking lot if you are arriving before dark and plan to stay until the end of the event.</p> <p>You shouldn't need lights but if you feel you do, only bring a small flashlight with the lens covered using red cellophane or red balloon.</p> <p>Please respect the telescopes and ask permission from the owner if you wish to touch.</p> <p>Parents, please watch your children.</p> <p>The park is residential, and adjacent to homes and backyards, please keep noise to a minimum.</p> <p>Schedule Time</p> <p>Astronomers arrive to set up at around sunset. Observing starts at about one hour after sunset and continues for two to three hours.</p>
<p>EVERY CLEAR SATURDAY MORNING OBSERVATORY 10:00 AM – 12:00 PM</p> <p>FOOTHILL COMMUNITY COLLEGE 12345 Moody Road Los Altos Hills</p> <p>Cost: Free</p>	<p>Solar observing with a Hydrogen alpha solar telescope every clear Saturday morning. This allows spectacular views of solar prominences and unusual surface features on the Sun not otherwise visible with regular white light telescopes.</p> <p>Admission is free.</p> <p>Foothill Observatory is located on the campus of Foothill College in Los Altos Hills, CA. Take Highway 280 to the El Monte Rd. exit. The observatory is next to parking lot 4. Parking at the college requires visitor parking permits that are available from the machines in the parking lots for \$ 3.00.</p>

<p>EVERY CLEAR FRIDAY EVENING 9:00 PM – 11:00 PM</p> <p>FOOTHILL COMMUNITY COLLEGE OBSERVATORY 12345 Moody Road Los Altos Hills</p> <p>Cost: Free</p>	<p>Foothill Observatory is open for public viewing every clear Friday evening from 9:00 p.m. until 11:00 p.m. Visitors can view the wonders of the universe through the observatory's computer-controlled 16- inch Schmidt-Cassegrain telescope. Views of objects in our solar system may include craters and mountains on the moon, the moons and cloud-bands of Jupiter, the rings of Saturn, etc. Deep space objects including star clusters, nebulae, and distant galaxies also provide dramatic demonstrations of the vastness of the cosmos. The choice of targets for Any evening's viewing depends on the season and what objects are currently in the sky.</p> <p>The public viewing programs at Foothill are free of charge and are open to guests of all ages. Please note that the observatory is closed when the weather is cloudy. Also note that visitor parking permits are available from the machines in the parking lots for \$3.00.</p> <p>Come to Foothill Observatory and join us in the exploration of our Universe!</p> <p>Foothill Observatory is located on the campus of Foothill College in Los Altos Hills, CA. Take Highway 280 to the El Monte Rd exit. The observatory is next to parking lot 4. Parking at the college requires visitor parking permits that are available from the machines in the parking lots for \$3.00.</p>
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BAY AREA EVENTS - MAY 2016

<p>MONDAY, 02/01/16 7:00 PM - 9:00 PM</p> <p>HEWLETT TEACHING CENTER STANFORD UNIVERSITY Room 201 Stanford, CA 94305</p>	<p>STEVE KIVELSON SUPERCONDUCTIVITY AND QUANTUM MECHANICS AT THE MACRO-SCALE (LECTURE 2)</p> <p><i>Superconductivity is perhaps the most spectacular macroscopic quantum phenomenon. A “persistent current” in a ring of superconducting wire will continue to flow forever - a laboratory realization of perpetual motion. A voltage across a junction between two superconductors produces an oscillating current with a frequency that is determined exactly by the voltage and the fundamental constant of quantum mechanics, Planck’s constant. Superconductivity is the quintessential example of an “emergent phenomenon” in physics, in which the collective behavior cannot be understood in terms of the properties of any finite collection of microscopic constituents (i.e. electrons). Notable physicists including Einstein, Heisenberg, and Feynman tried and failed for half a century to achieve the basic understanding of superconductivity that was only achieved in the mid 1950’s and early 1960’s. However, many fundamental issues remain to be resolved, including those related to the more recent discovery of unconventional “high temperature superconductivity” in a variety of synthetic metals and the construction of coherent superconducting “Q-bits” which act as laboratory realizations of Schrodinger’s cat.</i></p> <p>Cost: Free</p>
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<p>Monday, 5/16 7:00 PM</p> <p>CUBBERLEY COMMUNITY THEATRE 4000 Middlefield Road Palo Alto, CA 94303</p> <p>Cost: \$20 General \$12 Member \$8 Student</p>	<p>SEAN CARROLL THE ORIGINS OF LIFE AND THE UNIVERSE ITSELF</p> <p><i>Sean Carroll, the award-winning author of The Particle at the End of the Universe, explains the difference between how the world works at the quantum, the cosmic and the human levels-and how each connects to the other.</i></p> <p><i>Carroll examines the principles that have guided the scientific revolution from Darwin and Einstein to the origins of life, consciousness and the universe. He explores how an avalanche of discoveries in the past few hundred years has changed our world and what really matters to us.</i></p>
<p>Tuesday, May 17 12:00 PM</p> <p>SETI INSTITUTE COLLOQUIUM SERIES 1065 La Avenida Microsoft SVC Building One Galileo Auditorium Mountain View, CA 94043</p>	<p>ROSS BEYER, SETI INSTITUTE CHARON: PLUTO'S FASCINATING MOON FROM NEW HORIZONS</p> <p><i>Charon is Pluto's large companion, and last summer it went from a distant point of light to a full-fledged world in human understanding. Join us as we discuss the interesting fractured geology of Charon. Dr. Ross Beyer, member of the New Horizons team and a Research Scientist at the SETI Institute will take you on a tour of the canyons, faults, craters, smooth plains, enigmatic mountains, and all manner of terrains that New Horizons observed as it flew through the Pluto system.</i></p>
<p>Tuesday, 5/17 4:30 PM</p> <p>Hewlett Teaching Center Stanford University Room 201 Stanford, CA 94305</p>	<p>STANFORD APPLIED PHYSICS COLLOQUIUM</p> <p>SPEAKER: MIKHAIL LUKIN, HARVARD EXPLORING NEW FRONTIERS OF QUANTUM OPTICAL SCIENCE'</p> <p>Cost: Free</p>
<p>Tuesday, 5/17 7:00 PM - 7:45 PM</p> <p>FREMONT MAIN LIBRARY 2400 Stevenson Blvd Fremont, CA 94538</p>	<p>SPACE - LOOKING UP TO THE STARS</p> <p><i>Our Universe is full of stars in different patterns. Learn what these patterns mean and are they really the same patterns on different parts of our solar system.</i></p> <p>Cost: Free</p>

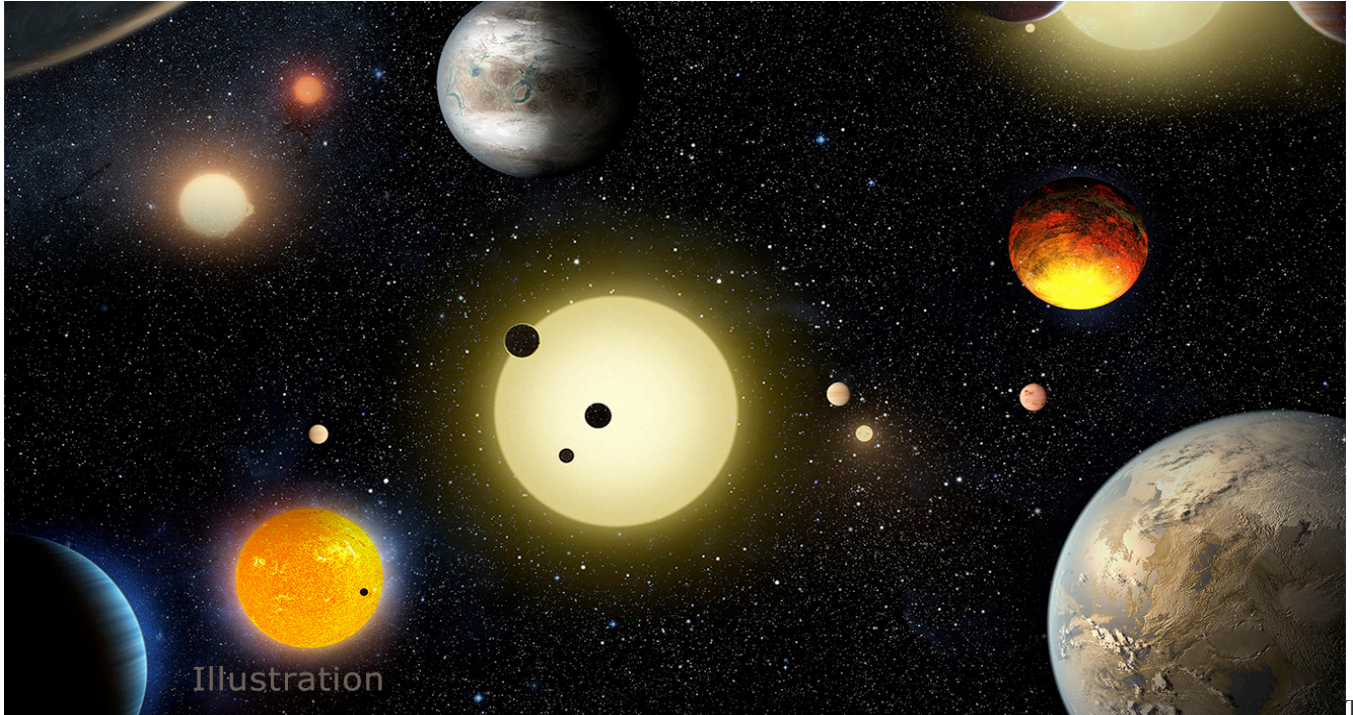
<p>Friday, 5/20 1:00 PM-7:00PM</p> <p>Saturday, 05/21/16 10:00 AM - 07:00 PM</p> <p>Sunday, May 22, 2016 10AM-6:00 PM</p> <p>SAN MATEO COUNTY EVENT CENTER 1346 Saratoga Drive San Mateo, CA 94403</p>	<p>MAKER FAIRE BAY AREA</p> <p><i>Come celebrate Maker Media's 11th anniversary in the Bay Area, showcasing creative and resourceful people in the areas of science and technology, engineering, food, and arts and crafts.</i></p> <p><i>Website: https://www.eventbrite.com/e/maker-faire-bay-area-2016-tickets-20741987844</i></p>	
<p>Saturday, 5/21 10:00 AM – 2:00 PM</p> <p>BANKHEAD THEATER 2400 First Street Livermore, CA 94551</p> <p>Cost: Free</p>	<p>SANDIA SCIENCE AND TECHNOLOGY COMMUNITY SHOWCASE</p> <p>Sandia National Laboratories invites you to enjoy a day of science and technology in Livermore. Hear national security experts talk about elements of the perfect heist and the frontiers of cybersecurity in the digital age. Learn how high performance computing is being used to improve the efficiency of car engines, watch cybersecurity experts crack a password in front of your eyes, check out different radiation detection methods, make your own bristle-bot, and much more.</p>	

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>

NASA JPL SCIENCE NEWS

MAY 10, 2016

NASA's Kepler Mission Announces Largest Collection of Planets Ever Discovered



The image is a concept piece depicting select Kepler planetary discoveries made to date. Credits: NASA Ames/W. Stenzel

NASA's Kepler mission has verified 1,284 new planets -- the single largest finding of planets to date.

"This announcement more than doubles the number of confirmed planets from Kepler," said Ellen Stofan, chief scientist at NASA Headquarters in Washington. "This gives us hope that somewhere out there, around a star much like ours, we can eventually discover another Earth."

Analysis was performed on the Kepler space telescope's July 2015 planet candidate catalog, which identified 4,302 potential planets. For 1,284 of the candidates, the probability of being a planet is greater than 99 percent - the minimum required to earn the status of "planet." An additional 1,327 candidates are more likely than not to be actual planets, but they do not meet the 99 percent threshold and will require additional study. The remaining 707 are more likely to be some other astrophysical phenomena. This analysis also validated 984 candidates that have previously been verified by other techniques.

"Before the Kepler space telescope launched, we did not know whether exoplanets were rare or common in the galaxy. Thanks to Kepler and the research community, we now know there could be more planets than stars," said Paul Hertz, Astrophysics Division director at NASA Headquarters. "This knowledge informs the future missions that are needed to take us ever-closer to finding out whether we are alone in the universe."

Kepler captures the discrete signals of distant planets - decreases in brightness that occur when planets pass in front of, or transit, their stars - much like the [May 9 Mercury transit](#) of our sun. Since the discovery of the first planets outside our solar system more than two decades ago, researchers have resorted to a laborious, one-by-one process of verifying suspected planets.

This latest announcement, however, is based on a statistical analysis method that can be applied to many planet candidates simultaneously. Timothy Morton, associate research scholar at Princeton University in New Jersey and lead author of the scientific paper published in *The Astrophysical Journal*, employed a technique to assign each Kepler candidate a planet-hood probability percentage - the first such automated computation on this scale, as previous statistical techniques focused only on sub-groups within the greater list of planet candidates identified by Kepler.

"Planet candidates can be thought of like bread crumbs," said Morton. "If you drop a few large crumbs on the floor, you can pick them up one by one. But, if you spill a whole bag of tiny crumbs, you're going to need a broom. This statistical analysis is our broom."

In the newly validated batch of planets, nearly 550 could be rocky planets like Earth based on size. Nine of these orbit in their sun's habitable zone, which is the distance from a star where orbiting planets can have surface temperatures that allow liquid water to pool. With the addition of these nine, 21 exoplanets are now known to be members of this exclusive group.

"They say not to count our chickens before they're hatched, but that's exactly what these results allow us to do based on probabilities that each egg (candidate) will hatch into a chick (bona fide planet)," said Natalie Batalha, co-author of the paper and the Kepler mission scientist at NASA's Ames Research Center in Moffett Field, California. "This work will help Kepler reach its full potential by yielding a deeper understanding of the number of stars that harbor potentially habitable, Earth-size planets -- a number that's needed to design future missions to search for habitable environments and living worlds."

Of the nearly 5,000 total planet candidates found to date, more than 3,200 now have been verified, and 2,325 of these were discovered by Kepler.

Launched in March 2009, Kepler is the first NASA mission to find potentially habitable Earth-size planets. For four years, Kepler monitored 150,000 stars in a single patch of sky, measuring the tiny, telltale dip in the brightness of a star that can be produced by a transiting planet. In 2018, NASA's [Transiting Exoplanet Survey Satellite](#) will use the same method to monitor 200,000 bright nearby stars and search for planets, focusing on Earth and Super-Earth-sized.

Ames manages the Kepler missions for NASA's Science Mission Directorate in Washington. The agency's Jet Propulsion Laboratory in Pasadena, California, managed Kepler mission development. Ball Aerospace & Technologies Corporation operates the flight system, with support from the Laboratory for Atmospheric and Space Physics at the University of Colorado in Boulder.

For more information about the Kepler mission, visit:

<http://www.nasa.gov/kepler>

For briefing materials from Tuesday's media teleconference where the new group of planets was announced, visit:

<http://www.nasa.gov/feature/ames/kepler/briefingmaterials160510>



San Francisco Amateur Astronomers

PO Box 15097
San Francisco, CA 94115

San Francisco Amateur Astronomers 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.
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

Please mail to me a Mt. Tamalpais Parking Permit

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

New members will be entered onto the SFAA roster on the Night Sky Network (NSN) and will receive a verifying email from the NSN with username and password for the NSN. Renewing members will have their information updated but will not receive an email from the NSN. Both new and renewing members will receive a verifying email from the SFAA Treasurer upon completion of the membership process.