NORTHERN COLORADO ASTRONOMICAL SOCIETY

October 2014 Newsletter

2014 OFFICERS

add @ncastro.org to email

TMT construction begins!

Photos of the Oct 8 lunar eclipse

DATE

Date: November 6, 2014
Meeting (NEW TIME): 6:15 pm
Dinner (NEW TIME): 7:45 pm

LOCATION

Location: FoCo Museum of Discovery
Speaker: Dr. Ken Ogan
Topic: An inside tour of the new, large astronomical observatories in Chile

MEETINGS

Want more? Check out The Museum of Discovery news & events here or NCAS member submissions, events, meeting and more at our website.
MOON SAW GEOLOGICALLY RECENT VOLCANIC ERUPTIONS:
Dark outpourings of lava gave the "man in the moon" his face more than three billion years ago. And volcanic activity continued on the moon until it halted a billion years ago – or so lunar scientists have long thought…

SCIENTISTS NAME LARGE BOULDER ON COMET 67P/CHURYUMOV-GERASIMENKO:
Since this cluster of boulders reminded the scientists of the pyramids of Giza, the boulder has been named Cheops after the largest pyramid within the Giza Necropolis.

MAPPING THE WEATHER ON AN EXTREME EXOPLANET:
Scientists using the Hubble Space Telescope have mapped the temperature and water vapor in an exoplanet's atmosphere. Tidally locked with its star, this planet has different sides for day and night. Think: howling winds at the speed of sound from a day side that is hot enough to melt iron (nearly 3000 degrees F) to the black night side that seeds temps plunge to nearly 1000 degrees F. View a time-lapse video of one planet rotation.

DIVERSE MICROBES FOUND DEEP BELOW ANTARCTIC ICE SHEET:
Nearly 4,000 species of microorganisms were found in the cold, dark waters of Lake Whillans, which sits about half a mile below Antarctica's ice sheet. Scientists have isolated the genetic material (ribosomal RNA gene sequences) and detected nearly 4,000 species of bacteria in water taken from below 800 meters of ice and almost 2,500 species of bacteria in the sediment.

NASA PREPARES ITS SCIENCE FLEET FOR OCT 19:
NASA’s extensive fleet of science assets, particularly those orbiting and roving Mars, have front row seats to image and study a once-in-a-lifetime comet flyby on Sunday, Oct. 19. "I would have been very surprised if you had told me we were going to use CRISM to look at a comet," Humm said. "The likelihood of being this close to a new comet is really very small, and we’re operating well beyond our design lifetime, so this exciting an opportunity is completely unexpected."
### MEASURING ATMOSPHERIC CARBON DIOXIDE FROM SPACE:

Atmospheric scientists have recently launched space-based instruments with the potential to provide global measurements of greenhouse gas concentrations, including carbon dioxide (CO2). If we can account for the confounding effects of aerosols, satellite-based measurements of CO2 will improve our understanding of Earth’s carbon cycle.

### THE DAYSIDE: WOMEN IN PHYSICS - A VIEW FROM 1948:

Physics Today made its debut in 1948. In that year’s December issue the young magazine ran a feature article about a topic that continues to challenge the physics community: encouraging women to become and remain physicists.

### ENTER THE NAME-EXO-WORLDS CONTEST:

The IAU invites all public organisations with an interest in astronomy to register on the IAU Directory for World Astronomy website for the NameExoWorlds contest, where they will in early 2015 be able to suggest names for exoplanets and their host stars. For the first time in history the public will then be able to vote for the official name of stars and planets.

### MEGA FLARES FROM A MINI STAR:

On April 23, NASA’s Swift satellite detected the strongest, hottest, and longest-lasting sequence of stellar flares ever seen from a nearby red dwarf star. The initial blast from this record-setting series of explosions was as much as 10,000 times more powerful than the largest solar flare ever recorded. (Video.)

### MONSTER BLACK HOLE IN DWARF GALAXY:

Astronomers have just discovered the smallest known galaxy that harbors a huge, supermassive black hole at its core. The relatively nearby dwarf galaxy may house a supermassive black hole at its heart equal in mass to about 21 million suns.

### 2014 PHYSICS NOBEL:

Developers of blue LEDs win 2014 physics Nobel. This invention greatly extended the range of applications for efficient and long-lived solid-state lighting. Besides the potential for slashing the world’s electricity bill, GaN-based LEDs have other important and widespread applications. The devices deliver light to the screens of cell phones, computers, and TVs. In poor countries, solar-powered LED lights are supplanting lamps fueled by kerosene.

### Isamu Akasaki
### Hiroshi Amano
### Shuji Nakamura
## SCIENCE VIDEOS

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| **COSMIC QUERIES: FUNDING SPACE EXPLORATION WITH BILL NYE:**
Bill Nye, CEO of the Planetary Society, is back as guest host for an episode about a subject near and dear to his heart: funding space exploration. You’ll learn how NASA works with contractors and why the privatization of space still costs taxpayers money, and why for every $1 we spend on NASA, we get back $3.60. |
| **ANTI-MATTER EXPLAINED:**
Minute Physics provides an energetic and entertaining view of old and new problems in physics -- all in a minute! |
| **ISS PASSING IN FRONT OF THE MOON:**
This video is actually only 1.3 seconds long. Watch this amazing sequence slowed 10x with the moon 240,000 miles away and ISS 400 miles away. |
| **ARE YOU LIVING IN A SIMULATION?**
Philosophers have long considered the possibility that we live in an artificial or simulated reality. Dr. Beane gives a short overview of some of the simulation arguments/scenarios that he personally finds most compelling. Dr. Beane then attempts to frame the simulation argument in the context of science. In particularly, discusses recent work which suggests various observational tests of the hypothesis that we are currently living in a simulated universe. |
| **NEIL DEGRASSE TYSON DISCUSSES THE IG NOBEL PRIZE:**
Dive into the strange world of the Ig® Nobel Prize. You’ll discover the “first scientifically documented case of homosexual necrophilia in the Mallard Duck community”, “whether it is mentally hazardous for a human being to own a cat,” prize-winning teams that have researched Coca Cola as a spermicide and the validity of the “5-Second Rule.” |
Membership dues are only $20/year, collected in January and prorated for new members who join at other times of the year. Membership benefits include: membership in the Astronomical League (and their Reflector Magazine), use of club equipment and books and a discount on Sky and Telescope Magazine and/or Astronomy magazines.

Don't forget to renew your membership today!

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**BOULDER ASTRONOMY & SPACE SOCIETY (BASS):**
Meetings are hosted by the UC campus at the Fiske Planetarium. Open to students and the public. Membership and meeting info here.

**DENVER ASTRONOMICAL SOCIETY (DAS):**
DAS Promotes understanding of astronomical phenomenon with monthly meetings, outreach and activities at the University of Denver’s historic Chamberlin Observatory. Don’t forget to follow the Chamberlin Observatory on Twitter.

**FORT COLLINS MUSEUM OF DISCOVERY (FOCO MOD):**
The MoD isn’t just where we hold our meetings. Check out their calendar for current events to find out more or just schedule a visit any time.

**FRONT RANGE ASTRONOMICAL SUPERCLUSTER (FRASC):**
A confederation of regional astronomy clubs for sharing information and hosting joint summertime star parties. Includes societies in Denver, CO Springs, Pueblo, Cheyenne, FoCo (That’s us!), Longmont, Boulder and many more…

**LITTLE THOMPSON OBSERVATORY (LTO):**
No-charge public access to the universe available during regularly-scheduled public star nights or a private event.

**LONGMONT ASTRONOMICAL SOCIETY (LAS):**
Promotes amateur astronomy through monthly meetings, star parties and public observing sessions. Meetings are open to the public.

**ESTES PARK MEMORIAL OBSERVATORY (EPMO):**
Has many goals, including raising interest of kids in K-12th grade in math, physics and science. EPMO encourages enthusiasm for physics and math and wants their facility to be free of charge to everyone.

**FRONT RANGE COMMUNITY COLLEGE (FRCC) OBSERVATORIES:**
Sunlight Peak Observatory and Stargazer Observatory of Fort Collins are both operated by FRCC. Sunlight Peak Observatory is located on campus; Stargazer Observatory in Observatory Village near Fossil Ridge High School.

**SOMMERS BAUSCH OBSERVATORY (SBO):**
SBO is operated by the Department of Astrophysical and Planetary Sciences (APS) at CU Boulder. Check out the visitor’s guide for more info.