

Charlottesville Astronomical Society

"Promoting the Enjoyment of Observing and Learning for All"

Astro-OP Educator-News

2014:01:23



CAS Astro-OP *E-News* ...created especially for *Educators*!

Dear Educator,

It has been a very busy holiday season and consequently no Astro-OP E-News was published in December.

Now we have returned with vigor to build upon the outreach task that CAS started last fall. We have some very busy times ahead of us for the next several months with Astro-OP activities, school astronomy club presentations, star parties, and an Astronomy night at the Greene County/JMRL Public Library.

In addition, since January 2014 has five Friday's CAS will be conducting its second Heidi's night event at McCormick Observatory on Friday, January 31st from 7 to 9 PM.

If you are in the area, plan on visiting with us – admission is free, dress warm, and if you bring youngsters it's even more rewarding.

There are four planned activities including public observing using the 26" Clark refractor telescope.

Details on registration are contained in this issue.

While Astro-OP efforts are directed at public and private schools in Abermarle and the counties surrounding the greater Charlottesville area, CAS Outreach efforts extend to many other organizations, such as Senior Citizen and Elderly groups, Boy Scouts, Girl Scouts, Cub Scouts, and Brownie Troops, Church groups, Public Libraries, and scholars of all ages from Kindergarten to Undergraduate and Graduate students. CAS Outreach efforts also include:

- Public Star Parties (at the Ivy Creek Nature Center, McCormick Observatory, Fan Mountain, and many other central Virginia dark-sky locations through-out the year),
- Public, group, and school field trip indoor presentations and lectures, after-dark outdoor guided tours of the constellations, and star gazing through the 26" Clark refractor,

- 5th-Friday Heidi's Night (Friday, January 31st) see details in this issue), and support at UVA's Fan Mountain Public Night with CAS Member telescopes available for public observation twice a year in May and October.

CAS members are active in the greater Charlottesville area community supporting and promoting astronomy education, enjoyment, and observing for the general public, organizations, and schools throughout the year.

If you are interested in learning how CAS Astro-OP can benefit your students, school, or community organization contact us at:

<http://cvilleastro.com/> or
email: fred.repich@gmail.com

Best Regards,

Fritz (Fred) Repich,
CAS Astro-OP Director,
E-News Editor

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Contents

In This Issue	2
Calendar	2
Monthly Meetings	3
Astro-OP Activities	3
Astronomy Links	5
Astronomy Resources	7

In This Issue

We present the CAS Calendar listing upcoming astronomy activities, events, and functions for the next several months; upcoming guest speakers and their topics for the CAS Monthly Meetings; information and registration details for the second "5th Friday Heidi's Night"; CAS Astro-OP activities since our last issue, including: Heidi's Night activities (November 29, 2013); a review of the Inaugural Heidi Winter Memorial Lecture given by Dr. Ed Murphy on December 4th at NRAO Headquarters in Charlottesville; solar observing and presentations at the Locust Grove Middle School (Orange) Astronomy Club,.

Calendar

Fri, Jan 24th, 7 – 9 PM



McCormick Observatory's Historic 26" Clark Refractor Telescope

Group Night at McCormick Observatory

Cub Scout Pack 14 will be attending the Group Night at

McCormick Observatory on Friday, January 24, 2014 from 7 to 9 pm. We expect about 44 cub scouts from 6 to 12 years old with about 20 adults. Steve Layman is planning on providing an astronomical presentation and then opening up a telescope in the Doghouse for the group. Wes Epperly will show the group around the sky with the 26" McCormick telescope.

Fri, Jan 31, 7 – 9 PM

Heidi's Night - Educational Activities and Observing

The Charlottesville Astronomical Society (CAS) will conduct its second 5th Friday Heidi's Night Activity for students in grades 4 through 12 and their parents / grandparents on Friday, January 31 from 7 – 9 pm at the McCormick Observatory on the grounds of the University of Virginia.



CAS Vice-President Rich Drumm providing observational guidance at the first 5th Friday Heidi's Night on November 29, 2013

The event honors the memory CAS member Heidi Winter, former executive secretary to the Director of the National Radio Astronomy Observatory, who passed away in 2012. Attendees will have the opportunity to participate in four activities during the evening. These include:

- **A laser tour of the night sky**

- **Viewing the night sky through a homebuilt 4" scope**
- **A classroom activity**
- **Viewing the night sky through the historic 26" Clark refractor**

Participants should dress warmly as three of the activities will take place under the night sky. In case of inclement weather, the evening may be shortened and activities would be limited to indoors. For more information or to register, please contact CAS President, Steve Layman: slayman2528@comcast.net

Mon, Feb 3, 7 – 8:30 PM

Student Astronomy Night

The Charlottesville Astronomical Society will conduct an Astronomy Night for students (ages 9 through teens) at the Greene County Library, 222 Main Street, Stanardsville, VA on Monday, February 3, 2014 from 7:00 pm to 8:30 pm. The event, primarily geared for middle and high school students, their parents and/or grandparents, is expected to be attended by 100 people. Contact Ginny Reese, Librarian or Tom Walsh at 434.985.5227 to register for the event.

The agenda will start with a presentation, "Observing the Night Sky" by Ed Preston. After the presentation, attendees will proceed to the Westernmost parking area (serving the main entrance for PVCC and adjacent to the Cafe Lafayette) for observations and a laser tour of the night sky. In the event of uncooperative weather, the event will be conducted indoors - with Ed Preston's presentation and a live

tour of the actual Greene County nighttime sky on February 3rd, using Stellarium software projected onto a large screen.

Sat, Feb 22, 10AM – 3PM

Kid*Vention, Key Recreation Center, Charlottesville

CAS will support this science event with astronomy exhibits, telescopes, and solar observations. Kid*-Vention is a free community event at which children and their families can learn and play at a variety of stations run by VDM's friends in the Charlottesville community. Over twenty community groups are already planning to share their expertise about everything from astronomy to zoology. Come see their favorite parts of science made accessible to you through demonstrations, craft activities, and interactive games. Perfect for kids up to the age of 10, but all ages are welcome. Kid*-Vention will feature stations on meteorology, the human body, the environment, chemistry, and more!

Sat, Feb 22, 6 – 9 PM

Blue Ridge School Star Party, Dyke, VA

CAS members will setup their telescopes at the Blue Ridge School in Dyke, VA for observations of the night sky and will host an indoor presentation on an astronomy topic of interest for the students.

Fri, Mar 21, 7 – 9 PM

PVCC Star Party

CAS will conduct a Public Star Party at PVCC's main campus in

Charlottesville. Details are being coordinated by CAS PVCC Astro-OP Coordinator Armand Mottaghi and will be provided in the February E-News issue.

Monthly Meetings

On the first Wednesday evening of each month, from 6:45 PM to approximately 8:30 PM, CAS conducts its monthly meeting for members and guests at the McCormick Observatory on the UVA campus. After the meeting, weather permitting, CAS generally opens the dome to allow member and guest observations of the night sky with the 26"-inch Clark refractor telescope. So plan on visiting with us on the first Wednesday of the month as a guest, and if you like what you see, become a CAS member. Applications are available online at:

<http://cvilleastro.com/membership-application/>

Wed, Feb 5, 2014



Greg Brown presents a lecture on the Mars' Hillside Settlement

Greg Brown, the Education and Space Settlement Representative

for the Mars Foundation will be presenting a lecture on the Mars' Hillside Settlement at UVA's McCormick Observatory on Feb. 5, 2014 starting at 6:45 pm.

Wed, Mar 5, 2014



Steve Conard talks about Building the New Horizons LORRI Imager: a 20 cm Ritchey-Chretien for Pluto

Ever wonder how instruments used on spacecraft are built? Steve Conard, lead engineer for the New Horizons LORRI (Long Range Reconnaissance Imager) instrument, will make a presentation on how LORRI was fabricated and tested. He will also give general background information on the New Horizons missions to Pluto, and show images collected during the fly-by of Jupiter in 2007. Meeting starts at 6:45 pm.

Astro-OP Activities

The CAS Astronomy-Outreach Program (Astro-OP) directs our educational outreach efforts. CAS actively promotes and supports astronomy activities, events, and clubs at schools, libraries, and community organizations throughout Albemarle and the counties surrounding greater Charlottesville as well as for groups and organizations visiting UVA's McCormick Observatory. If you, your students, school, or organization is interested in learning more about CAS educational outreach or our

Astro-OP efforts, contact us at:
<http://cvilleastro.com/> or email:
fred.repich@gmail.com

The following paragraphs describe several of our recent as well as upcoming Astro-OP activities and events that are generally open to the public.

VPRSF Registration

The Virginia Piedmont Regional Science Fair (VPRSF) website <http://www.vprsf.org/> is now open and available for your review. If you have students interested in competing at the science fair, please check out the website and the rulebook – that can be downloaded and printed. This year, CAS is sponsoring the VPRSF Physics and Astronomy category, so we encourage any and all entries, especially those in astronomy and planetary sciences. The VPRSF will be conducted on March 12, 2014 at UVA's John Paul Jones Arena.

Please note that February 21, 2014 is the Deadline for Application for Entry Forms. CAS looks forward to your (students) participation in the VPRSF – Good Luck!

FMS Astronomy Club

The Fluvanna Middle School Astronomy Club, with 20 enthusiastic 5th-8th grade students, under the direction of Science educator Cheryl Gilliam has been working on a design for a Mars "Rover-type" robotic vehicle. The latest club sessions have been involved with how to land the vehicle on the surface of Mars.

Madison HS

On January 16th and 17th, CAS member Ed Preston delivered a 75 minute presentation on The

Cosmic Distance Ladder, or how did we find out the distance to the stars? Fifty of educator Alecia Mullins 11th grade students attended the presentation.



CAS' Ed Preston at Madison HS

LGMS Astronomy Club

"Our Sun" was the topic of a presentation by CAS Astro-OP Coordinator, Fritz Repich at the Locust Grove Middle School Astronomy Club.



CAS' Fritz Repich lecturing at LGMS

After the presentation the students observed the Sun with CAS member Ed Preston on one of the school's athletic fields through a CAS H-Alpha telescope and a 6"-Newtonian telescope fitted with a solar filter.



LGMS Astronomy Club Members

Solar sunspots as well as several solar prominences were observed by the students. The club consists of 42 (6th through 8th grade) students and is moderated by LGMS Science Teacher Dara Carter and Librarian Susan Midland.

Inaugural Heidi Winter Lecture

On Wednesday, December 4, 2014 Dr. Ed Murphy, Associate Professor, UVA Department of Astronomy presented the inaugural Heidi Winter Memorial Lecture before an estimated audience of 200 people at NRAO Headquarters in Charlottesville, VA. Dr. Murphy's lecture "The Winter Sky" was an intentional double entendre on his part – not only to further honor Heidi Winter's memory but to also acknowledge her love and passion for astronomy. CAS presented Dr. Murphy with a special plaque commemorating his presentation of the first annual Heidi Winter lecture.



CAS President, Steve Layman presenting Dr. Murphy with a special, commemorative plaque

Astronomy Links

Telescope Basics:

http://www.chuckhawks.com/telescope_basics.htm

<http://www.telescopes.com/telescopes/telescopes101article.cfm>

Weather and Observing Conditions

<http://weatherspark.com/>

<http://cleardarksky.com/c/CharvilVAkey.html>

<http://www.skyandtelescope.com/letsgo/whatsuptonight>

<http://www.eyesonthesky.com/>

<http://www.learnwhatsup.com/astro/index1.shtml>

<http://www.heavens-above.com/>

Organizations

<http://www.aavso.org/>

<http://webari.com/oldscope/>

<http://www.astrosociety.org/edu/nsn/nsn.html>

<http://cvilleastro.com/>

<http://www.planetary.org/>

<http://www.astronomy2009.org/>

<http://www.astroleague.org/>

Charlottesville Astronomical Society: <http://cvilleastro.com/>

Citizen Science Alliance: <http://www.citizensciencealliance.org/>

Clear Sky Chart Home Page: <http://cleardarksky.com/csk/>

Heavens Above: <http://www.heavens-above.com/>

Kansas Comosphere and Space Center: <http://www.cosmo.org/>

Kitt Peak National Observatory: <http://www.noao.edu/kpno/>

Lowell Observatory: <http://www.lowell.edu/>

Lunar and Planetary Institute: <http://www.lpi.usra.edu/>

Mount Graham International Observatory: <http://mgpc3.as.arizona.edu/>

Best FREE Astronomy Software

<http://www.techsupportalert.com/best-free-astronomy-software.htm>

Purchasing used telescopes

<http://www.telescopebluebook.com/>

<http://www.cloudynights.com/>

<http://www.astromart.com/>

AIAA Foundation Classroom Grant Program:

<http://www.aiaa.org/Secondary.aspx?id=4184&terms=grants%20to%20schools>

NASA Educator Links

<http://www.nasawavelength.org/>

<http://www.nasa.gov/offices/education/about/sequestration-NASA-education-guidance.html#.Umg6wvkqg8w>

<http://www.nasa.gov/audience/foreducators/#.Umg57Pkqg8w>

NASA Science – Citizen Science: <http://science.nasa.gov/citizen-scientists/>

Planetary Science Institute: <http://www.psi.edu/>

Star Size Comparison Video: <http://www.youtube.com/watch?v=HEheh1BH34Q>

The Exploratorium (A 21st – Century Learning Laboratory): <http://www.exploratorium.edu/>

UA Lunar and Planetary Sciences: <http://www.lpl.arizona.edu/>

US Naval Observatory: <http://www.usno.navy.mil/USNO/astronomical-applications>

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NASA opportunities for the education community. (Full descriptions below)

NASA Exploration Design Challenge

Audience: K-12 Educators and Students

Virtual Crew Registration Deadline: March 14, 2014

Frequently Asked Questions -- NASA Research Announcement (NRA) Competitive Program for Science Museums, Planetariums, and NASA Visitor Centers Plus Other Opportunities (CP4SMP+) (Announcement Number: NNH13ZHA001N, Catalog of Federal Domestic Assistance (CFDA) Number: 43.008)

Audience: Informal Education Institutions

Don't miss out on upcoming NASA education opportunities.

For a full list of events, opportunities and registration information, visit the Educator and Student Current Opportunity pages on NASA's website:

-- Educators: <http://www.nasa.gov/audience/foreducators/current-ops-index.html>

-- Students: <http://www.nasa.gov/audience/forstudents/current-ops-index.html>

Astronomy Resources - compiled by Steve Layman, CAS

Handbook for Astronomy Educators – A Course Planning Guide

Flick, Ventre, Boothe, Rutherford

Astronomical League

Science Service Building

1719 N. Street NW

Washington, DC 20030

Published by the Astronomical League

A+ Projects in Astronomy

Winning Experiments for Science Fairs AND Extra Credit

Janice Van Cleave

John Wiley and Son Publisher

Isbn: 0-471-32820-0

Practical Astronomy – A User Friendly Handbook

H. Robert Mills

Albion Publishing

Isbn: 1-898563-00-4

Eight Easy Observing Projects for Amateur Astronomers

David Cortner and Nancy Hendrickson

Kalmbach Books

Isbn: 0-913135-25-5

Out of this World Astronomy – 50 Amazing Activities and Projects

Joe Rhatigan and Rain Newcomb

Lark Books

Isbn: 1-57990-675-3

Astronomy for All Ages – Discovering the Universe through Activities for Children and Adults

Philip Harrington and Edward Pascuzi
Globe Pequot Press
Isbn: 0-7627-0809-3

Cosmos in the Classroom – Published most recently in 2010

A Hands on Symposium on Teaching Introductory Astronomy

Published by the Astronomical Society of the Pacific

www.astrosociety.org