First Light Lite

June 5, 2024

Jim Lynch – Editor

Message from the CCAS President

May was semi-active for CCAS, with a distinct outreach flavor. We didn't have a star party due to a bureaucratic snag (insurance) that was encountered and is still being addressed. Our First Thursday talk was not by an external speaker, but rather by our members who discussed their observations of the April 8th eclipse, including a few who were fortunate enough to view the totality event. And we continued to do outreach to various Cape organizations, with a May 26th event at the historical Cataumet Schoolhouse being the prime affair. Chris Lynch has a writeup on that event below, together with a photo sprinkled in for good measure.

CCAS Joins in a Multi-Week STEM Event in Cataumet (credit Chris Lynch)

CCAS took part in the Science in the Schoolhouse series held at The Cataumet Schoolhouse on May 26. Established by Matina Heisler and Levi Gorrell who invited CCAS to join them for a day of astronomy. Janice Marks, Jim & Chris Lynch, and Marinna Martini talked with the youngsters and parents about the components of the Solar System, identifying celestial objects, using spectroscopy to categorize elements, and trying out both a refractor type telescope and an 8" Dobsonian.

In fact, Matina Heisler with her father Dr. Kenneth Heisler both attended the CCAS telescope building workshop many years ago when John Dobson demonstrated how to make a telescope from large cardboard tubes and a hand ground mirror. And, they still have the working 10" one they crafted.

It was a fun, well-attended day held in a beautifully restored historic space. We hope to join them again next May for another Sunday of science at The Schoolhouse. 😊

Figure 1. Janice Marks and Marinna Martini prepare exhibits on one of the four tables we had set up at the Cataumet Schoolhouse on May 26th.

Star parties

As mentioned in a previous newsletter, we didn't have any night star parties in April due to the usual (you guessed it) poor weather, but the one daytime event we had perhaps made up for that (and then some!)

To compound the usual weather problem, we recently have had to switch insurance carriers, and so we didn't have any star parties in May either. The bottom line is that we have delayed having star parties at the WSO dome until that transaction is finalized. This may be a "make lemonade" opportunity to fix/maintain our gear in WSO (including the main scope) and also educate people in their use while we are waiting for our legal documents.

Technical Projects for the club/schools

As also mentioned in prior months, many of our club members are looking for astronomy-related technical projects which can be done either individually or as a team. Some of the possibilities mentioned to date have been: 1) a radio telescope project, 2) displaying the spectral classes of stars using RSPEC, 3) measuring the full set of lunar orbital parameters, 4) a photo gallery of deep sky objects using the main telescope, and 5) an analemma (which is timely, as the summer solstice is approaching!) At the April 22nd meeting, Gary Walker also mentioned that he was taking a long series of photos of T Corona Borealis, which goes nova every ~80 years, and is due for another explosion any day between now and September. Analyzing that time series and describing the underlying physics would be a nice project for someone and a good club talk, and Gary said he would make the data available. These are also things we can do while our public star parties are temporarily halted.

Contributed Newsletter Articles

As we have become more active with in-person activities, there are more things to relate that would be of interest to other club members and friends. If people would like to submit brief (1-2 paragraph) articles for the newsletter about such activities or events, the newsletter editor would be more than happy to include them. (Chris Lynch's writeup above is a great example!) Such input would be subject to editing, and pictures of people (especially children) are not overly encouraged, as permission rules have become rather strict of late.

Dues

This year, as we have resumed normal activities, we are requesting dues at a flat rate of $15 per family (or individual, if there is no family to consider. Dues are waived for any students.) Dues will be due July 1st. If you have sent our treasurer (Dr. Ken Brink) dues in the last year, you will be considered to have paid dues for this year. If not, we would ask you to submit them, as this money is used to support our activities with the schools and the public. (We don't buy equipment, as that is the Foundation's function.) Dues should be sent to: Dr. Ken Brink, 16 Greengate Rd., Falmouth, MA 02540. If you send your dues to the Observatory or DYHS, they will be delayed in their transmission to the CCAS Secretary.

Officer Elections June 13th

On the 13th, before the speaker starts, we will hold a quick vote for CCAS officers and one CCAF Board member. (Normally, this is in July, but as the First Thursday is July 4th, we are moving things up by two weeks.) At this point, we have the current officers listed as candidates, but we will check in the coming week whether they are willing to stand to continue. We also will be soliciting new names and would be happy to see some interested parties. Please email Chris Lynch at cca@capecodastronomy.org if you are interested or would like to nominate someone else. Just before the election, we will send out the slate of candidates via email.

Speakers

Last month's speakers: CCAS members, moderated by Jim Lynch

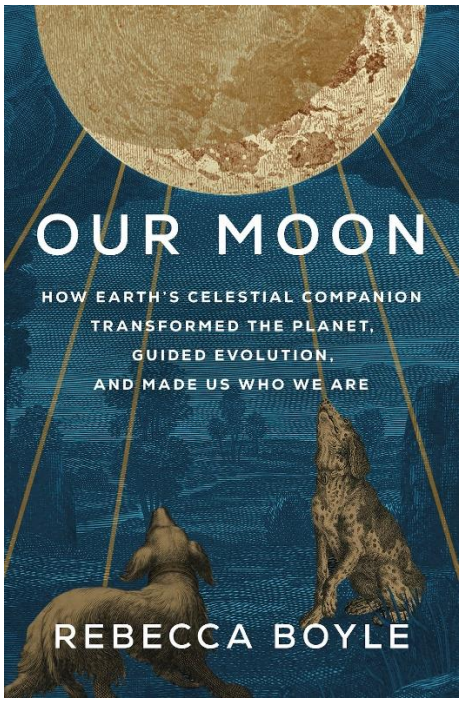
Topic: The April Solar Eclipse: CCAS's observations.

This Month's Speaker (June 13th): Ms. Rebecca Boyle

Title: Our Moon

CV*:* As a journalist, Rebecca Boyle has reported from particle accelerators, genetic sequencing labs, bat caves, the middle of a lake, the tops of mountains, and the retractable domes of some of Earth's largest telescopes. Her first book, OUR MOON: How Earth's Celestial Companion Transformed the Planet, Guided Evolution, and Made Us Who We Are (Random House, 2024) is a new history of humanity's relationship with the Moon, which Rebecca has not yet visited on assignment. (Book is available through the Cape's "Clams" system libraries.) Based in Colorado Springs, Colo., Rebecca is a contributing editor at Scientific American, a contributing writer at Quanta Magazine, and a columnist at Atlas Obscura. She is a frequent contributor to the New York Times, The Atlantic, Smithsonian Air & Space, and many other publications. Rebecca's work has been anthologized multiple times in the Best American Science and Nature Writing series, and she is the recipient of multiple writing awards throughout her career. As a daily newspaper reporter, Rebecca interviewed presidents and presidential candidates, state and local lawmakers, and covered major criminal court cases. Rebecca got her start in a small newsroom but attending Space Camp in 6th grade is really what set the course of her career.

Abstract: The Moon is one of Earth's most unique features, and it shapes all of the other things that make our planet special, from its geology to its multitudes of life. Earth would be a vastly different planet without our Moon, and we would be different too. In this lecture, author Rebecca Boyle will dive into the spectacular journey that the Earth and the Moon have shared, providing a new perspective on human history through a lunar lens. You will come away from this event with a new appreciation for our Moon as something greater than just a beautiful object in the sky.



Our Moon: How Earth's Celestial Companion Transformed the Planet, Guided Evolution, and Made Us Who We Are (Random House)
USA Today and ABA Indiebound Bestseller, NYT Book Review Editor's Choice

July 4th Speaker – None. Enjoy the holiday!

August 1st Speaker – Dr. Tony Stark, Senior Astronomer, Harvard &Smithsonian Center for Astrophysics

CV: Antony Stark is a pioneer of Antarctic Astronomy and is a founder and designer of the South Pole Telescope (SPT), which is among the most important instruments for observational cosmology. He is PI and designer of the Parallel Imager for Southern Cosmology Observations (PISCO), a photometric camera on the Magellan Clay telescope for taking fast simultaneous g, r, i, and z band images. PISCO is being used to take the first images of galaxy clusters discovered by the SPT to determine their mass by gravitational lensing analysis. PISCO is also in use by several groups from Magellan consortium institutions to study asteroids, galaxy formation, exoplanets, and X-ray sources. Stark is a member of the STO and GUSTO balloon-borne telescope teams for Milky Way and Magellanic Cloud TeraHertz spectroscopy surveys of the dominant cooling lines of the interstellar medium.

Title: "The LSST Survey and You"

Abstract: The Large Synoptic Survey at the Vera Rubin Observatory is starting up and will operate for the next decade. It will survey the Southern Sky in six visual-wavelength bands with an 8 meter primary mirror, covering a large fraction of the sky repeatedly with billions of CCD pixels, in order to detect time-variable sources and build up a long exposure of deep sky objects over the years. It will be producing data as if from a fire hose, data that will be immediately available to the public, and that includes you!

September 5th Speaker: Dr. Antonio Hales, National Radio Astronomy Observatory

Title: ALMA Studies of Eruptive Stars

CV: Antonio Hales is a scientist and the Deputy Manager of the North American ALMA Regional Center at the National Radio Astronomy Observatory (NRAO). He works in astrophysics, education, outreach, and the art-science relationship. Hales is also the lead of the Telescope Interface Group and his research interests include the formation and evolution of planetary systems, protoplanetary and debris disks, and episodic accretion in young stars.

Abstract: Stars are now believed to acquire a significant fraction of their mass in short episodes of accretion outbursts. This episodic accretion picture has replaced the traditional steady-state accretion model. It is changing our understanding of

how stars gain their mass (and the origin of the IMF), binary formation, planet formation, the luminosity spread in young clusters, disk chemistry, and snowline migration. Despite its relevance to the field, the physical mechanisms responsible for episodic accretion still need to be better understood. In this talk, I will present recent observational and modeling advancements aimed at constraining the physical properties of outbursting sources to help understand what drives this critical phase of star formation.

Directions to Dennis Yarmouth HS and Schmidt Observatory

For information on the location of our Dome behind Dennis-Yarmouth High School, click on the purple button "Old Website" and once there, click on "Meeting Location" viewing the two maps that are there: external for the Dome, and internal to locate the high school library where meetings are held. **NOTE:** We are redoing the website, so that this information may become dated soon. We intend to move any currently useful information to our new website.

For meetings, drive along the south entrance road and go around behind the main building. Park in the lot about halfway down the building and go in the back door and turn down the hall to your left to find the library.

For Star Parties at the Dome, drive in the north entrance road all the way past the north side of the main high school building, through a gate, and on to park near our Dome. You can (and should) park on the grass there.

H&K directions

CCAS hosts a dinner gathering for the speaker (if available), members and friends on meeting nights (just before the meeting) at the South Yarmouth Hearth & Kettle restaurant at 5:45pm; (the meetings begin at 7:30 at D-Y.) Please join the group to dine and talk about all things interesting, especially astronomy, before our meeting. The H&K is at 1196 Rt 28, South Yarmouth, about a half mile west of the Station Avenue/Main Street intersection with Rt 28 (stop light). **NOTE:** Since Covid, we have a mix of fully remote and hybrid in-person+ remote meetings. Check the newsletter and/or website to see what the format is each month! There are no dinners when the meeting is fully remote.