First Light Lite

June 1, 2022

Jim Lynch – Editor

Message from the CCAS President

Cape Cod Astronomical Society (CCAS) is back "live" again (and hopefully with Zoom as well) at DYHS 😊

Last month, we celebrated our first "live, in-person" CCAS dinner and meeting at the Peking Palace and Falmouth Public Library. This month, we will return to our "basecamp" location at the Dennis Yarmouth HS Library. We also will open up the Werner Schmidt Observatory to attendees after the meeting, unless it is raining. The directions to the Hearth and Kettle restaurant and to the DYHS Library are found at the end of this newsletter, as was usual two years ago. We will be working to set up a Zoom link as well as a live talk, as we did last month. This "hybrid" approach takes a bit more work, but is worth it. As we are finalizing details, we will send out a last-minute update and a repeated Zoom invitation. We apologize for this way of doing things, but it is taking us a bit of extra effort to adjust to the "new normal" after two years of Covid.

DETAILS

Dinner attendees pay for their own dinner, unless they are speakers from 2020 and 2021 or the current speaker, who will be guests of CCAS. (We previously had invited all of our speakers to dinner, but couldn't do so in 2020-21 due to Covid.)

The Zoom link is posted to anyone interested. If someone didn't get a link and wants one, either pass on this newsletter or contact Jim Lynch at jlynchwhoi@gmail.com by 12 PM June 2nd and he will send the link. (Those already on the CCAS mailing list receive it automatically via our newsletter, see below.)

Star Parties (as per last month)

As we've just signed a one-year extension of the existing contract between the Cape Cod Astronomical Foundation (CCAF, our non-profit organization legal component) and the Dennis-Yarmouth Regional School District (DYRSD), in

order to allow time for long-term negotiations, we also will have use of the Werner Schmidt Observatory (WSO) this coming year, and so will be planning star parties there in the near future. We are still talking about safety rules and logistics, but once we have those details ironed out, the weather is starting to become more agreeable, and we're as eager as anyone to be back outside and doing a little observing! Again, stay tuned!

School Projects and Activities (as per last month)

With our contract extension in place, we will be talking to the DYHS teachers soon about projects with their students for next fall. The same goes for other schools that we have interacted with. This spring semester is already well underway, so that next fall looks like the best bet.

Day of Astronomy (as per last month)

We are *still* planning a full "Day of Astronomy" event at the Werner Schmidt Observatory (WSO) for the public and our club members and friends. However, it will have to wait for the warmer weather. Our guess right now is for a mid-summer event. Getting our usual pre-covid activities back on track is our priority at this time!

Speakers

Last Month's Speaker

Dr. Jim Lynch, CCAS

May 5th, 2022

Topic: "A Two-Part Invention"

PRECIS: Last month's talk was made into a "Two-Part Invention" (again, apologies to Bach) because I thought that a brief introduction to our club and what such clubs do would be appropriate after such a long in-person absence due to covid. As most all of the audience was familiar faces, that first part was abbreviated. The second Part (discussion of Dr. Katie Mack's book "*The End of Everything (Astrophysically Speaking)*) was included because a good part of what we amateurs do is try to keep current, at least at a layman's level, with what is going on in the most active areas of modern astronomy.

I'll give only a brief description of what I talked about, in that I'd rather you buy Katie Mack's book and read it! (Only $17.00 online.) Our CCAS free book program for students has featured four books so far that I would strongly recommend to everyone, not just amateurs or students. *Turn Left at Orion, Proving Einstein Right,* and *The Last Stargazers* are *all* wonderful reads, as is *The End of Everything*.

Katie Mack's book has a unique and effective "hook" that it uses to attract readers – specifically, how does the entire *universe* end? There is a well-known human fascination with terminal endings (perversely, the grislier, the more interesting), and her book doesn't disappoint. The Big Crunch, Heat Death, the Big Rip, Vacuum Decay, and the Big Bounce all provide plenty of lurid astrophysical detail. The comforting part for the squeamish among us is that these events all occur billions, and sometimes trillions of years into the future. (Ooops, except for vacuum decay, which (if real) is also *probably* many megayears into the future, but *could* happen at any time!)

Like our other distributed books, this book uses its story line to administer large doses of astronomy, astrophysics and cosmology to the reader. But it does this with large additional doses of humor and wit, which makes the hard science discussed much easier to stick with. *The End of Everything* and *The Last Stargazers* get my award for the "most entertaining," while still making some very serious points!

One more point – even with live talks, we will still be distributing these books to any HS students attending. This has been a good program, and we will keep it running!

This Month's Speaker

Dr Larry Marschall

Professor of Physics, Emeritus, Gettysburg College
June 2, 2022

Title: The Astronomer's Disappearing Sky

Since the dawn of the space age in 1957, tens of thousands of satellites have been launched into orbit around our planet, and though most of them fell back to earth as their orbits decayed, many remained in orbit, and others fragmented, littering our neighborhood with an estimated million bits of space debris larger than a centimeter in size. This population is about to increase significantly with the launch of "satellite constellations" that promise to provide cheap and global

wireless internet service. SpaceX, already operative in its early stages, plans to deploy as many as 42,000 satellites when it is complete, and competitors from several other US, European, and Chinese firms will soon join the growing swarm. These satellites, while representing an important advance in communications and industry, present a unique challenge to astronomy, in some cases threating cutting-edge research at the world's largest telescopes. I'll present a description of how these new satellites will affect the darkness of the night sky, and describe the measures astronomers and satellite operators are developing to mitigate their effects.

ZOOM Link for this month's CCAS talk

NOTE: We are assuming that an internet connection will be available and thus providing the link below. If for some reason it is not, you will be notified.

James Lynch is inviting you to a scheduled Zoom meeting.

Topic: CCAS Zoom Meeting June 2 2022
Time: Jun 2, 2022 07:00 PM Eastern Time (US and Canada)

Join Zoom Meeting
https://us06web.zoom.us/j/82077137920?pwd=L1ZxeGJhNlpGb29hcWpVTjhIRVE4UT09

Meeting ID: 820 7713 7920
Passcode: 823575
One tap mobile
+16465588656,,82077137920#,,,,*823575# US (New York)
+13017158592,,82077137920#,,,,*823575# US (Washington DC)

Dial by your location
- +1 646 558 8656 US (New York)
- +1 301 715 8592 US (Washington DC)
- +1 312 626 6799 US (Chicago)
- +1 720 707 2699 US (Denver)
- +1 253 215 8782 US (Tacoma)
- +1 346 248 7799 US (Houston)

Meeting ID: 820 7713 7920
Passcode: 823575
Find your local number: https://us06web.zoom.us/u/kcP5FEjE9E

Next Month's Speaker – Dr. Tony Stark, HSCfA

Next month, Dr. Antony (Tony) Stark is on the agenda to give an update on the CMB-S4 project (Cosmic Microwave Background – Stage Four). This is a huge undertaking with many goals, including proving/disproving inflation, setting neutrino mass limits, finding new light particles, exploring dark matter and dark energy, mapping the mass of the universe, and more.

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.

For meetings, drive in 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.

H&K directions

Please be reminded that CCAS "hosts" a dinner gathering for members and friends each CCAS meeting night (before the meeting) at the South Yarmouth Hearth & Kettle restaurant at 5:45pm; (the meetings begin at 7:30 at D-Y.) The speaker for each meeting is always invited. Please join the group to dine and talk about all things interesting, including astronomy, each month 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).