First Light Lite

Mar 4, 2019

Jim Lynch - Editor

This month's First Light Lite starts out with some sad news, which many of us already know – the passing of long time CCAS member Bernie Young. Bernie was a stalwart of CCAS, and perhaps our most "tech savvy" member when it came to hands-on use of equipment. Bernie was also a gem of a good soul, and will be sorely missed. If you wish to read his obituary, it is to be found at: https://www.ccgfuneralhome.com/obit/bernard-john-young-ii . Suggestions for where to send in memoriam donations are also found there.

There is much other news this month, thankfully not as sad. Perhaps the most appropriate to mention first is the new telescope, which has been ordered, and which is in the process of being installed. The CCAF board members have been leading this effort, and I'm sure Mike Hunter and Gus Romano will give another monthly update at our next meeting. Though the exact installation schedule is still a work in progress, one item that was agreed upon at the last CCAF board meeting (which I attend as CCAS President) is that we will, as a Society, have a special celebration event for the new scope this spring or early summer. Any and all ideas about what this event should include are welcomed!

Outreach activities will be very active this month. A STEM activity at Sandwich High School entitled "STEM Journey VI" was scheduled for March 2nd, and CCAS had a booth scheduled. Unfortunately, a snow cancellation was made, and the event will be rescheduled. It should be a good one, featuring 40 booths and a ham radio connection to the International Space Station. A second outreach activity is a star party at Sandwich HS, scheduled for March 6th. So far, the weather looks good. And finally, I will be speaking at a Bourne Newcomers Club meeting on March 12th, about CCAS and amateur astronomy in general. So, in addition to our regular star parties and lecture, March will be quite a busy month!

Two "Communications/Advertising" advances have been made this month which have should help quite a bit. First, thanks to the efforts of a number of CCAS members, the CCAS brochure has been updated, and 100 copies made for initial distribution. I will bring some copies to the March meeting. We will not win

a Pulitzer Prize for literature with this brochure, but it's not half bad, either! The second advance was that we have now have almost completed moving our full mailing list to Mail Chimp, which not only hides the list when distributed, but also gives us very useful stats to look at as to who is opening their mail and looking at our material. It is far more useful than just email addresses!

Finally, let me mention an idea that was floated at our last meeting, and which met with reasonable acceptance. The idea was to have our club members sign onto some "hands-on" projects, akin to the projects given to the DYHS students, to test them out, as well as to get involved (if not already) with some real observational astronomy. This would be done by groups, and pitched at a level commensurate with amateur astronomy. I have created, using the DYHS projects, some web sites, and an excellent book entitled "Astronomical Discoveries You Can Make, Too" a first order list of projects that I hope that all our club members will be interested in. I will pitch that list either at the March or April meeting, as time permits. These projects are designed to be do-able by amateurs without technical backgrounds, so I hope people will not be reluctant to try them. (We also have a fair number of techno-types in CCAS who can help as team members!) Some of the best fun in astronomy is seeing that this stuff actually works, so I hope you will give this a try!!!

Upcoming Speakers and Topics

March - Dr. Jim Lynch CCAS, "The Formation of the First Stars and Galaxies - Dr. Loeb's Book Simplified for Us Amateurs"

Abstract – We have been fortunate to have had a number of talks here on the topics of the Dark Ages and "reionization", when the first stars and galaxies formed and when the "recombined" (giant misnomer) neutral hydrogen was again ionized (the first time being the primeval plasma.) As Dr. Ken Brink talked about plasmas last month, and since I had recently read Dr. Abraham (Avi) Loeb's book on "How did the first stars and galaxies form?", I figured it might not be amiss to continue this topic. My approach will be pitched a little bit more towards the physical processes that occur in forming the stars and galaxies, and in reionizing the Interstellar Medium (ISM). I promise to keep the math to a very basic, conceptual level, and to allow you to bring a reasonable amount of rotten fruit past the security devices, for deployment should I not keep my promise!

April - Dr. Charles Lada, HSCfA, Topic TBA

May - Mr. Jim Mitchell and DYHS Students - Astronomy Honors Program plus Dr. Mike Hunter – Observatory Update

June - Dr. Marion Dierickx, HSCfA, Topic TBA

Last Month's Speaker - Dr. Ken Brink, WHOI/CCAS

Plasmas and Their Role in the Cosmos

Plasmas are the fourth state of matter, along with solids, liquids and gases. A plasma is essentially a gas that is so hot that electrons separate from their normal atoms, leaving a gas composed of both negatively charged electrons and positively charged ions (atoms missing one or more electrons). Given the wealth of charged particles, plasmas such as lightning are far better carriers of electrical currents than are normal gases. The presence of charged particles means that plasma properties depend strongly on ambient magnetic fields, and the plasma, in turn, can create its own magnetic effects. The strong dependence on the electromagnetic environment, combined with the usual properties of fluid flow, means that plasma flows are

often turbulent and very complex. Cosmic examples of plasmas to be discussed include the solar wind, the aurora borealis, stellar interiors, and accretion disks. Plasmas are believed to be the most common type of non-dark matter in the universe.

February Meeting Minutes and CCAS Business

Mike Hunter started the CCAS business meeting by breaking the bad news about Bernie Young. He then announced when and where the services would be. As a post-note, those services were very well attended by our CCAS members.

Mike Hunter and Gus Romano then gave the latest update on the status of our main observatory telescope replacement. We're looking at about three months (guesstimate) overall for the new scope to be installed, and then will be training a core of people to use it.

Jim Lynch discussed the "projects" idea with the members, and as noted the "yeses" won the day. 😊

Jim Lynch also discussed making some upgrades to our website, and pursuing membership more aggressively this year.

Star Parties

From September thru June, we will have two regularly scheduled Star Parties each month taking place at 7:30 -10:30pm on the *Saturday* closest to the date of First Quarter Moon (about 7 days old). This is an increase from our old schedule of one per month in the fall, winter, and spring.

From July through August, we have three regularly scheduled Star Parties each month taking place on *Thursdays* at 8:30-10:30pm.

When the moon is near its First Quarter, the terminator (the line dividing light from dark) is favorable for viewing sunlight or shadow on the sides of craters. This time is also favorable for observing the dark side of the moon occult (visually cover)

stars in the sky as the moon moves in its orbit. Depending upon the calendar, we may also be able to observe planets and other celestial objects.

Here is the schedule for winter "Star Parties" up to April, 2019; **the public is cordially invited**:

March 9th and 16th

April 6th and 13th

POSSIBLE CANCELLATIONS for Star Parties: Cancellations will be very rare since we have lots to do "inside" as well as outside. Even if the forecast is "iffy"; the Staff Leader for the night may elect not to cancel in spite of possible clouds. If clouds arrive after staff and guests have convened, a virtual Star Party will usually take place indoors to include overviews of the sky for that night using computer simulations with our big screen TV, videos of interesting sky events recorded previously, demonstrations and/or training on the use of scopes and other equipment, and consultation/discussions on things astronomical, etc.

However, sometimes a solid forecast for overcast or rain or a storm will result in cancellation of a given Star Party. IF IN DOUBT ABOUT THE WEATHER AND THE STATUS OF A STAR PARTY, CALL THE OBSERVATORY AT 508-398-4765 AFTER 7:45 pm. No answer means the event has been cancelled.

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 half way 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 Gus Romano or his delegate "host" a Dutch-treat 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).