First Light Lite

Jan 4, 2025

Jim Lynch – Editor

Message from the CCAS President

First off, a Happy New Year to all. I hope that 2025 treats us all well. I also hope you had an enjoyable Holiday season and are now keeping warm in what looks to be a cold winter here climatologically.

Things were quieter, but not totally quiet, for CCAS in December. We did have a star party on December 14th where the emphasis was on trying out the new small scopes that CCAF (our Foundation which owns the equipment) just purchased. Our members have been able to run both the Seestar and the Unistellar scopes at home individually, but we'd not tried these together at the same place or in cold (slightly below freezing) weather. As we anticipated, there were some "gotcha's." The Seestar didn't like the cold weather, and also the new Unistellar didn't work as it should, though it was perfectly fine when Frank Isik took it back home to test. So cold and possible interference between instruments seem to be issues. But testing and learning equipment quirks is part of the game, even for our amateur instruments, so this was a useful exercise.

Our star party this month will be the week of January 27th to Feb 1st. We will try to give people more advanced notice than same day, and also have the event even if the skies are cloudy, as there are some interesting things to see at the Observatory.

We also had a great speaker last month, Dr. Mario Motta, and his talk will be described below. And we have another great speaker this month on January 9th, Dr. Stacy McGaugh, whose talk also will be described below. I hope you can listen in on this talk, and if possible do so live at DYHS after our H&K dinner!!

Communications

The mailing list is still problematic, but at least we know the problem areas and are addressing fixing them. We have a list of names of people who are having difficulty receiving our newsletter, and we're working on getting to them individually. . If you use Comcast for email, this may be part of the problem, as many of the missing names use Comcast. We'll also get back to people with various requests.

Speakers and Hybrid Meetings

Our hybrid meeting format has been working out reasonably well, allowing us both an in-person H&K dinner and DYHS meeting and also a remote Zoom link for those who can't attend the live event. The upcoming meetings will all be this format, whether the speaker is in-person or not. So, a bit of technical progress, and some lively dinner conversation!

Star Parties

This month, the star party is scheduled for the week of January 27th, as noted above. The weather has turned very cold, so please dress warmly if you come. But the winter nights are beautifully clear, and the fall and winter sky have some wonderful features to see. There is also a visual conjunction of the planets this month, and if you look up tonight after sunset, you can see Venus, Saturn and the Moon in close proximity. Jupiter is higher up in the sky, and Mars follows afterward. And if you have a telescope, you'll find Uranus and Neptune between Saturn and Jupiter. So quite a bit to see, and something for us to shoot for at our next star party!

We'd also like to consider again an occasional extra star party in Falmouth, as we have an 8" Dob, a Seestar, and binoculars available there. Our main problem has been locating an open, light-free venue.

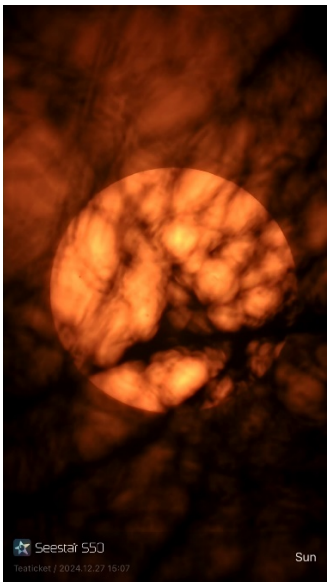
Small smart telescopes

As mentioned last month, CCAS recently purchased both Unistellar and Seestar small, smart telescopes which are very easy to set up and also provide real time stacked images. They both work with iPhones and tablets and WiFi and Bluetooth and can also provide images to a bigger screen. They are excellent for wide-field sky viewing and imaging. I'll repeat a Seestar picture shown last month (below) and also include one I took with about 3 minutes of setup the first time I used the Seestar. For people interested in imaging, these could provide a simple beginning tool. The Seestar price point, around $500, is also attractive.

We also plan to devote some time to training our members how to use these new systems. A big thank you to Frank Isik who has written up an instruction set for the Unistellar scope and to Marinna Martini who has done the same for the Seestar. As noted, we plan to devote some time, either during a star party or separately, to having a tutorial session for our members. Charlie Burke will be coordinating these sessions.

Below are examples of how well the Seestar scopes can work, courtesy of CCAS members Allan Collette and Jim Lynch. Shown are M33 and a sunset. These are big, wide objects (the Sun is ~ ½ degree across), but perfect for this small scope.

M33, courtesy of Allan Collette.



Sunset, courtesy of Jim Lynch

Main Dome Scope News

Thanks to Charlie Burke, Gary Walker, and Brian Twohig, our main scope is working again. While doing the troubleshooting, they are also making a detailed "operator's manual" so that other club members can also learn to operate the scope (which is not totally a trivial chore.) When done with this, interested members are invited to "give it a go" using the manual. The more people who can use the scope the better. (That goes for all of our scopes…)

The Observatory Director has come to feel that our "automation project" should be limited to having the dome rotation automatically track the position the scope is pointing. This is a far less complicated project than full remote control of the Observatory and should be within our resources to do at a reasonable cost. This needs Foundation approval and should be discussed at our next Board meeting.

Some Projects for the New Year

We have previously discussed trying to get some "community projects" started for club members, which can be pursued both individually and in groups.

Astrophotography is one, and if any of the readers of this newsletter have purchased a Seestar or Unistellar scope, or want to use CCAS's (for members), these scopes make entry level photography of the sky easy. We'd love to see a collection of new sky photos this year and will be asking people to send us what they get! This seems like an achievable goal.

Another doable set of projects involves looking at the Sun, Moon, and the planets, which are all bright, accessible targets. If you're up early, tracking where the Sun comes up in the sky versus season is a good project, except that it rises rather early in the summer. But you don't have to do daily measurements and if you have young kids or pets, getting up at dawn should be natural! 😉

Tracking the paths of the Moon and planets needs to be done versus altitude and azimuth and also clock time. And plotting these positions on a sky chart also is useful. Luckily, all the equipment needed for this is a cell phone and an available printer. An app called CamSextant provides altitude, azimuth and clock time, and allows a user to make very quick, simple iphone observations. And printable star charts abound on the web. And if you wish to "check your observational answer", an app called MoonCalc provides exact answers for the Moon for your exact

location and more data than you can ask for. And it also can be used to track the Sun, planets and satellites. Chris Lynch and I will be giving the Moon tracking project a try this year, and we hope someone else will as well.

There are even more advanced amateur projects available in the book "Astronomical discoveries you can make, too" by Robert Buchlein. It is rather amazing how much can be done with amateur gear!

And finally there are many citizen science computer projects that can be pursued. Jonathan Hatch is looking into these and should have some good recommendations soon.

Speakers

Last month's speaker: Dr. Mario Motta, MD, FACC

Date and place: December 5th, 7:30 PM. At DYHS and on Zoom

Title: Human and Environmental health effects of LED Lighting, and How to minimize ill effects

https://www.mariomottamd.com/

CV: Mario is well known as an astronomer. Working with the American Association of Variable Star Observers, Harvard–Smithsonian Center for Astrophysics, and MIT, he has numerous observations and publications. In 2013, the International Astronomical Union named an asteroid in his honor. (asteroid *133537mariomotta)* In the astronomical community, Dr. Motta is well known for his large and completely homemade telescope and observatory including the optics, a 32-inch f6 telescope.

Next month's speaker: Professor Stacy McGaugh , Department of Astronomy Case Western Reserve University
http://astroweb.case.edu/ssm

Date and place: January 9th, 7:30 PM. At DYHS and on Zoom.

Title: Does Dark Matter Make the Galaxies Go 'Round?

Bio: Professor Stacy McGaugh is an astronomer who studies galaxies, cosmology, dark matter, and modified gravity. McGaugh was a student at MIT (S.B. Physics 1985), Princeton, and the University of Michigan (Ph.D. Astronomy 1992) and a postdoc at the Institute of Astronomy of the University of Cambridge, the Department of Terrestrial Magnetism of the Carnegie Institution of Washington, and Rutgers. He joined the faculty of the University of Maryland in 1998, commuting for fourteen years from Cleveland where his wife is a member of the faculty of John Carroll University. In 2012, McGaugh moved to Case Western Reserve University where he served as the Chair of the Department of Astronomy and Director of the Warner and Swasey Observatory from 2015 to 2022.

McGaugh is the author of over 150 refereed publications that have been cited more than 16,000 times. He ranks in the top 2% of the top 2% of impactful authors across all sciences in the Stanford-Elsevier Updated science-wide author databases of standardized citation indicators and in the top 100 of those working in astronomy & astrophysics (of over 49,000 listed in that field in the top 2% database). He is thanked in the acknowledgements of over 200 papers of which he is not an author, and blogs about science at a high but accessible level.

McGaugh has made important contributions to multiple fields, including low surface brightness galaxies, galaxy dynamics, elemental abundances, stellar populations, cosmology, dark matter, and modified gravity. He demonstrated that low surface brightness galaxies are more common than had previously been thought, settling a decades-long debate over Freeman's Law. He and his collaborators discovered that low surface brightness galaxies are dark matter dominated, the central density relation, and the radial acceleration relation. He showed that baryonic mass (rather than luminosity) was the salient variable in the Tully-Fisher relation, coining the term "Baryonic Tully-Fisher relation." In

Directions to Dennis Yarmouth HS and Werner 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 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.