First Light Lite

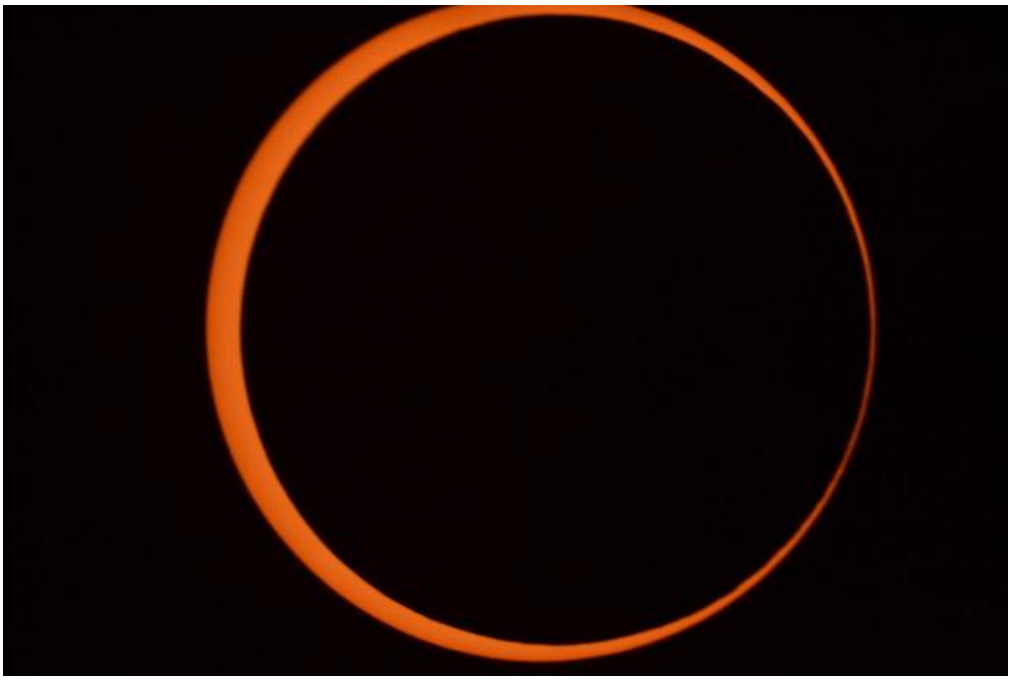
Nov 1, 2023

Jim Lynch – Editor

Message from the CCAS President

Autumn is officially with us, and its constellations are now riding high in the eastern sky after the Sun sets. October did not treat us well during our weather window, and so we did not have a star party, but it did show us a beautiful Supermoon, the last of 2023. Hopefully November's weather will be better. Our next star party is slated for the window of 13-18 November. As usual, we will announce the event on the day of the event, both on our website and via email (to our newsletter list) given the notorious unpredictability of clear conditions on the Cape.

October also gave us an annular eclipse, which we did not pursue observing here at WSO, it being only 18%. But Keith Chamberlain of our club did see it from New Mexico, and here is a picture of the full event that he asked to share with us!



This April 8th will feature a full Solar eclipse visible in the USA, and we are hoping that some of our members will have the opportunity to go either just north of here, or towards the Southwest to see the event. We will also have an event at CCAS for those of us who can't travel off Cape.

Our work with the DYHS students has now been resumed after a long break due to Covid, and two projects are underway. We also have one project starting with Falmouth Academy, and so we feel good about our student programs again!

The main dome telescope automation project is well into its initial planning stages, with the money available and a suite of equipment already identified. The main scope still needs some work on its alignment in the meantime, but we hope to have that done by the next star party.

Our monthly speaker program also goes well. Last month's speaker, Dr. Martina Arndt, talked very appropriately on the topic of solar eclipses, which will be described later in this newsletter. This month's speaker is one of our own members, Dr. Frank Isik, who will describe the latest happenings in large telescope technology.

Three last items, repeated from the last two months: 1) for those contacting us on the web or by email, please give us a day or two to respond. Our mail is checked roughly every other day, and also on the days of star parties. We are still somewhat personnel limited! 2) for those asking for special star parties, please know that we can sometimes handle large group requests, but not always. We generally ask smaller groups to come to our regular star parties, where we are used to dealing with groups as well as individuals. 3) we are offering some used gear we have acquired (some in mint condition) on our website and via email to our members and friends. We can also loan this gear out to members if they are interested. There is a separate attachment with pictures and descriptions.

Dues

During Covid, we did not require dues, and left them to be entirely voluntary at $30 per family. This year, as we are resuming activities, we are requesting dues at a reduced flat rate of $15 per family (or individual, if there is no family to consider. Also, dues are waived for any students.) Dues were 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.

I'd note that most CCAS activities will be available to those who do not pay dues, but when we eventually have remote observing online, that might be restricted to those who are dues paying members. Also, we plan to make our surplus and donated equipment available to members at a reduced rate. It is a small amount, and it is hoped you can pay if you wish to be active in CCAS.

Last Month's Speaker (October): Dr. Martina Arndt, Bridgewater State University

Date: October 7th, 2023

Title: The Beauty and Science of Solar Eclipses

Biography: Dr. Martina Arndt is currently the Interim Dean of the Bartlett College of Science and Mathematics at Bridgewater State University (BSU). Prior to joining the dean's office, she taught physics and astronomy at BSU for 20 years and has traveled the world as part of a research team to make observations of 12 different total solar eclipses (two with her husband and daughter!) She has been a co-author on many eclipse related publications, and is also incredibly proud of the work she has done with undergraduate students on exoplanet, variable star, and asteroid projects.

She earned her undergraduate degree in Astronomy from Wellesley College in 1991, her PhD in Physics from the University of New Hampshire in 2000, and her MBA from BSU in 2021. A lifelong learner, she is currently working on her MSA from BSU as well.

Abstract: In her presentation, Dr. Arndt gave an overview of the Sun and eclipses, suggestions on how to safely observe partial, annular, and total eclipses, and also shared some of the science and adventures that have come from some of her eclipse expeditions.

Precis: Dr. Arndt started her talk with an overview of the Sun, showing its various features and its internal structure. The Sun's variable looks in various wavelengths of light, solar flares, the solar wind and its fascinating internal structure were all discussed as a prelude. The Moon and eclipses came next, with a look at how the Moon varies in apparent size due to its non-circular orbit. We just saw two nice examples of that last month, with the annular eclipse and the Hunter Moon supermoon. A very nice geometry graphic showing how shadow effects work to give annular and total eclipses came next.

Dr. Arndt then talked a bit about some of her own eclipse expeditions, and her group of hardy colleagues and students called the "Solar Wind Sherpas." (Chasing eclipses and rapidly setting up gear and testing it takes a bit of pluck and stamina!)

A section on spectroscopy came next, with some discussion about basics like blackbody radiation, Kirchoff's laws (for absorption and emission spectra), spectral lines as element fingerprints, and the discovery of helium on the Sun.

A DIY section followed next, dealing with how you can observe the Sun during eclipses with simple equipment, and even do spectroscopy!

A discussion of professional spectroscopy came next, as it is a primary tool for solar astronomers (and all other types!). Some beautiful examples of solar flares and the solar corona in both white and filtered light followed next.

Yet another expedition to Bikini Atoll, made famous by the hydrogen bomb tests, came next. As if Svalbard wasn't exotic enough, a remote atoll made for some very challenging work (and also some fun, it would seem!) A simultaneous irradiance and temperature graph made for some interesting discussion about what affects the temperature during an eclipse.

The next exotic sites were on a track from Nebraska through Idaho and Wyoming and ending in Oregon. (Hey, if you haven't visited these states, they can certainly be pretty exotic!) Having several sites is "cheating" in a good sense, in that you never know what the weather will be like at any given site, so covering your bets with widely spaced sites makes sense. The views of Carhenge, a large picnic, and some family gatherings showed that a "goodwill tour" was also part of the science agenda! The talk ended with a nice advertisement for the April eclipse and also for Texas BBQ, as the eclipse will be tracking through Texas, and indeed Texas is expecting a large influx of tourists. Both the eclipse and the BBQ will be super, I predict!

Next Month's Speaker: Dr. Frank Isik, CCAS

Date: November 2nd, 2023 at DYHS and on Zoom

Title: Terrestrial & Space Based Telescopes On The Horizon.

Abstract: This is internet research of upcoming ground-based and space-based telescopes that hopefully will be operational and see first light before 2030.

Bio: Dr. Frank Isik obtained his bachelor's degree from Queens College and medical degree from Mount Sinai School of Medicine in New York. After a 5-year General Surgery residency at Boston Medical Center he completed an NIH Cardiovascular Research fellowship and Plastic Surgery residency at University of Washington Medical Center in Seattle. Dr. Isik was recruited to join the University of Washington Plastic Surgery faculty and ascended to rank of Professor of Surgery with an active reconstructive surgery practice and an NIH-funded research program in angiogenesis and wound repair.

During this time, he was a scientific reviewer for the NIH and Department of Defense and other private funding agencies. He maintained his busy reconstructive surgery practice in Seattle when he moved to The Polyclinic, where he also served on the Board. Dr. Isik has 55 publications in peer-reviewed journals, 4 book chapters, and numerous invited scientific and clinical lectures. He served as

Associate Editor of Plastic & Reconstructive Surgery Journal, received over $6.5 Million in NIH and DOD research funding and has gone on cleft lip and palate missions to China and Africa.

After 32 years in Seattle, he retired from the practice of Medicine in 2021 and with his wife, Dr. Nicole Gibran, relocated to Wellfleet, Massachusetts. He now enjoys more time for photography, astronomy, fishing, woodworking, and gardening with his wife. He has two sons in NYC: Alexander, a Merger and Acquisition banker and Oliver, an Anesthesiologist in training. An amateur astronomer and astrophotographer, Dr Isik has no formal training in astronomy or cosmology, besides college physics courses, but loves the challenge of astrophotography.

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.