

First Light Lite

May 1, 2023

Jim Lynch – Editor

Message from the CCAS President

My apologies if this newsletter is a bit terser than most. Due to a meeting coming up, I've been wearing my journal editor hat a bit more over the last few weeks, and so my writing time has been limited. I'll try to put as much content as I can in somewhat fewer words.

First off, we have a full slate of Werner Schmidt Observatory (WSO) activities planned for next month, but until we finish our agreement renewal negotiations with the Dennis Yarmouth school district, we will label them as “tentative” on our website and in this newsletter. The two WSO activities we currently have planned for May are the usual New Moon star party (May 15-20 weather window) and an “Astrophotography workday” (all welcome!) on May 26th. I should note that, even with a one-week weather window, two out of the three last month's star parties were cancelled due to weather. This has been a particularly bad spring for observing. 😞

One other “usual activity” that *won't* be tentative is our First Thursday talk, which will be on Zoom only, as our speaker will be talking from Morgantown, West Virginia. She is Dr. Maura McLaughlin, a Distinguished Professor from West Virginia University, and Director of their Center for Gravitational Waves and Cosmology. You can find out more about her and her research at <https://gwac.wvu.edu/about/people/maura-mclaughlin>. The web link for her Zoom talk Thursday is to be found under “This Month's Speaker” (below). Maura's title is: “The Hunt for Monster Black Holes with Pulsar Timing Arrays.”

The last, but not least, topic is a communication from the Phoenix Astronomical Society, of which a few of us are members. Paul Facuna, their VP, has graciously sent us a link to their talk this Thursday. Their meeting starts at 10:30 PM, and the abstract and Zoom meeting link are attached. The speaker is

Tom Sharp and the title of his presentation is "Shock Effects in Meteorites: The Impact History of the Solar System and a Gift from the Asteroid Belt."

This Month's Speaker (May 4th, 7:30 Zoom)

Dr. Maura McLaughlin is the Eberly Distinguished Professor of Physics and Astronomy at West Virginia University and Director of the Center for Gravitational Waves and Cosmology. She graduated from Penn State with a degree in Astronomy and Astrophysics, received her PhD from Cornell University, was an NSF Distinguished Research Fellow at the Jodrell Bank Observatory. She studies exotic stars called pulsars using the world's largest radio telescopes. She is Co-Director of the NANOGrav Physics Frontiers Center, which aims to detect gravitational waves using high-precision timing observations of these cosmic clocks. She was the recipient of the Research Corporation's Cottrell Scholar Award and an Alfred P. Sloan Fellowship. She is also the co-founder of the Pulsar Search Collaboratory program, which has involved over 2000 high-school students in pulsar searches over the past decade.

Title: The Hunt for Monster Black Holes with Pulsar Timing Arrays

Zoom Link:

Topic: CCAS First Thursday Talk and Zoom Meeting

Time: May 4, 2023 07:30 PM Eastern Time (US and Canada)

Join Zoom Meeting

<https://us06web.zoom.us/j/86394165108?pwd=NEU4am5DWnNtc1I2bVB1dkV0d0dVZz09>

Meeting ID: 863 9416 5108

Passcode: 105182

One tap mobile

+13017158592,,86394165108#,,, *105182# US (Washington DC)

+13052241968,,86394165108#,,, *105182# US

Dial by your location

+1 301 715 8592 US (Washington DC)

+1 305 224 1968 US

+1 309 205 3325 US

+1 312 626 6799 US (Chicago)

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+1 646 931 3860 US

+1 346 248 7799 US (Houston)

+1 360 209 5623 US

+1 386 347 5053 US

+1 507 473 4847 US

+1 564 217 2000 US

+1 669 444 9171 US

+1 689 278 1000 US

+1 719 359 4580 US

+1 720 707 2699 US (Denver)

+1 253 205 0468 US

+1 253 215 8782 US (Tacoma)

Meeting ID: 863 9416 5108

Passcode: 105182

Find your local number: <https://us06web.zoom.us/j/kcKjuNVc4p>

Last Month's Speaker

Dr. Jim Head, Brown University

Abstract: The Chinese Lunar Exploration Program (CLEP) has been phenomenally successful, with a series of robotic orbiters, landers, rovers, and sample return missions (Chang'e 5) on the lunar nearside, and a relay satellite and a robotic lander and rover (Chang'e 4) on the lunar farside. What is next in CLEP? Lunar farside sample return (Chang'e 6) followed by an International Research Station (Chang'e 7-8) near the lunar south pole. The nature, candidate landing sites and payloads of these robotic missions will be described as well as China's

plans for sending humans to the Moon around the end of the decade. These plans will also be placed in the context of China's Mars and deep space exploration program.

Biography: Jim Head graduated in geology from Washington and Lee University in 1964 and Brown University in 1969. From 1968 to 1972, while serving at NASA Headquarters, he participated in the selection of landing sites for the Apollo program, in training Astronaut crews in geology and surface exploration, in planning and evaluating the package of experiments to be deployed on the Moon, in mission operations in Houston during lunar surface exploration, and in preliminary analysis of the lunar samples returned by the Astronauts. His subsequent research has centered on the study of geological processes that form and modify the surfaces of planets, how these processes vary with time, and how such processes interact to produce the historical geological record preserved on planetary bodies. He has undertaken field studies of volcanism, tectonism and glaciation on active volcanoes in Hawaii and at Mt. St. Helens, on volcanic deposits on the seafloor with three deep-sea submersible dives/cruises, and during five field seasons in the Antarctic Dry Valleys, and one in the Arctic. He has been involved in dozens of NASA and international planetary exploration missions and principal advisor to over 55 MSc recipients and over 45 PhD recipients, and he involves his students in all international projects, missions and meetings.

Precis: Jim's well attended talk was an update of a talk he had given to CCAS last year about the impressive efforts China has made with their Lunar and Martian exploration technology and science. If Jim can excuse me this time for not doing a detailed recap of his talk, I'd rather talk about the social aspects of the meeting for a minute.

When we have mixed "live plus Zoom" meetings, we have a chance to talk to the speaker (and in this case his wife Anne as well) and socialize with them as well as other club members and guests. Our H&K dinner before the meeting is a low-key family style dinner and is a great way to relax and talk about "cabbages and kings" as well as astronomy. (Travel was a big topic at this last dinner.) The talk/meeting at the DY library gives things a bit more of a personal touch, with the audience clustering around the speaker. And as regards the Zoom link, it even gives the remote audience a little more feeling of a personal event. The questioning and

discussion from both the remote and live audiences for Jim's talk were quite lively, as an example. I'm hoping that our mixture of live and remote talks (which allows distant speakers) will continue to flourish.

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 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

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.