

First Light Lite

July 1, 2021

Jim Lynch – Editor

Message from the CCAS President

1) Elections

At this month's meeting a vote will be held for President, Vice-President, Secretary, and Treasurer of CCAS as well as for one CCAF Board member. As you likely know, CCAS is the "Society Affairs" part of the club, whereas CCAF's charge is the equipment the club uses, including the Werner Schmidt Observatory.

We have nominations for all but the CCAS Secretary position, which deals mainly with our website, communications, and the membership rolls. This is not an onerous position, and we hope someone is interested in it!

We welcome further nominations, which can be given to Christine Lynch via roadracers@aol.com, or made last minute at the July meeting, just after we hear from our Guest Speaker and before we start the voting. If you send a nomination via email, please use the subject header "CCAS Elections."

2) Membership and Dues

Last year, CCAS suspended all dues requests, due to the fact that the pandemic greatly limited our activities and so we didn't think it fair to charge dues. This year, we will still be limited at first, but will be asking for \$20.00 in *voluntary* dues. These dues are used for speaker expenses, the "book program" for local high schools, and other such outside expenses. (The CCAF Foundation deals with our equipment costs, not CCAS.) We hope that you are enjoying the speaker program, and can be supportive of our book program for the schools, and so will chip in.

CCAS dues (checks made to CCAS) can be sent to:

Dr. Ken Brink
Cape Cod Astronomical Society
16 Greengate Road
Falmouth, MA 02540

As a last-minute note, we have received a good early response so far, and thanks to those who have done so! (Traditionally, our dues are due by the first Thursday meeting in July.)

3) Committees

The committees which we formed this February have started to come back to life! To refresh people's memories of what the committee's and their charters were, in a very brief form:

- a) Membership/Outreach – Recruiting new members Cape-wide, and making links to schools, organizations and clubs both on-Cape and off.
- b) Programs/Content – Star party organization, special events, school program offerings, offerings for club members.
- c) Communications – Website, Videos/podcasts, advertising of events and programs.
- d) Speaker Program – Finding invited speakers for CCAS meetings and also tracking other interesting talks that club members can access.

Our committee meetings will now be held (together as a group) via Zoom the third Tuesday of every month, and are posted on our website. Agendas and links will be sent to committee members beforehand. And we still have room for anyone interested!

4) Ramping Up After Covid (update)

As mentioned last month, we are working to ramp our in-person programs back up, gradually and safely, following local and state guidelines. Our (indoors) speaker program will “go live” when the schools and public facilities open up for events (probably next fall), although we will still keep the Zoom format available, as we can get some wonderful speakers “from afar” with Zoom! Our star parties are looking towards “socially distanced” but live events in mid-to-late summer, transitioning to our usual format by fall. We already have a green light from DYHS to use WSO, and as soon as we have our paperwork and protocols in place, we should start again. And our school interactions should be live by next fall, with interaction directly in the classrooms and at our Observatory. The state has

approved fully in-person classes, and we believe that we also can work with them in person, pending their approval.

In the meantime, we still have a *great* lineup of speakers on Zoom this summer! I'll describe them in our "Upcoming Speakers" section shortly. And we also have had some ongoing invitations from the Phoenix Astronomical Society to attend their Zoom events.

5) Website

We've finally have begun refreshing our poor, neglected (during the pandemic) website, and if you look at it you will see the following updates: 1) new introduction by President, 2) an updated calendar, with speakers and their abstracts included, 3) a complete list of this year's and previous year's speakers (to January 2017) and their topics, and 4) this year's and previous year's FLL newsletters (through last year, with through 2017 coming soon.) Other sections and features will also be updated in the not-too-distant future.

Upcoming Speakers

July 2021

Thanks to CCAS member Paul Fucile, we have one his Stellafane colleagues talking to us this month, Dr. Tom Spirock. His talk will be on "Lucky Imaging Results Using the 13" Schupmann Telescope at Stellafane and the 6" Warmer and Swasey Refractor at Mount Wilson." Anyone interested in planetary imaging should be sure to attend this talk!

ABSTRACT: In this presentation Thomas Spirock will present the latest results using the "lucky imaging" technique with the 13" f-10 Schupmann telescope at Stellafane, in Springfield, VT, USA, and the 6" f-15 Warney and Swasey refractor, with a Brashear lens, at Mt. Wilson, in southern California. First, the unique and advantageous characteristics of the Schumann telescope will be discussed along with a brief history and description of the 6" W&S refractor at Mt. Wilson. Next, the "lucky imaging" technique will be described. Finally, a comprehensive list of resulting images will be presented; including

Mars, Jupiter, Saturn and both “full disk” and high resolution images of the Moon.

BIO: Thomas Spirock has been a member of the Springfield Telescope Makers, at Stellafane, since 1989. He was instrumental in building both the 13” Schupmann telescope and the McGregor Observatory, at Stellafane, both of which were completed in 1995. He earned a Ph.D. from the New Jersey Institute of Technology working to develop the latest iteration of the solar vector-magnetograph at the Big Bear Solar Observatory in southern California in 2005. During the past several years, he has been applying the “lucky imaging” technique to data collected with both the 13” f-10 Schupmann telescope at Stellafane and the 6” f-15 W&S refractor, the 16” f-10 Mead Catadioptric and the 60” Cassegrain telescopes at Mt. Wilson.

August 2021

Our Guest Speaker in March, Dr. Jim Gates, mentioned in passing and with more than a slight hint of pride, that his daughter Delihlah was finishing her PhD work in General Relativity (Black Holes) at Harvard this spring, Being a shameless opportunist, I cadged the link to her thesis defense and also asked her if she would be interested in giving a talk to our club. Happily, she agreed and so she will be speaking to us about Black Holes this August. However, we are not sure at this time whether a “live” lecture is possible, due to most public meeting places still being cautious about large gatherings. We will keep everyone posted!

September 2021

Dr. Alyssa Goodman, whose work on the "Radcliffe Wave" discovery has been prominent in the news this last year, has also agreed to talk to CCAS this fall. Her exact topic/title is TBD.

October 2021

Dr. Jim Head, who has given us two excellent talks on Lunar Exploration and the Chinese Space Program, has offered to talk this October about the latest

news from Mars, which should be very exciting. Perseverance and a number of other rovers and orbiting craft are making Mars a busy place these days, and there should be plenty to relate and synthesize!

Last Month's Speaker

Mr. George Silvis, CCAS and AAVSO

During the club portion of our meeting (after the Guest Speaker), we often have presentations of club activities, observations, etc. George Silvis gave an extremely nice exoplanet observation talk in April, and had more topics to talk about as our primary speaker last month. Specifically, George gave talks about 1) Sudden Ionospheric Disturbances (SIDs) monitoring - what they are, and how to observe and report them, 2) the Supernova Early Warning System (SNEWS) and how amateurs can participate, and 3) Photometry and how to prepare observations for the American Association of Variable Star Observer), AAVSO.

George's first talk, on SIDS, showed the "radio telescope" he made to receive these solar flare effects. There is a very nice writeup of this on the AAVSO website, including instructions, with the link <https://www.aavso.org/solar-sids>. The receiver he built consists of a \$40 electronics/computer interface component and a coil of wire wrapped around a wooden frame – very simple! (Note: CCAS has an older version SIDS receiver at WSO, and one of our other members has volunteered to help students upgrade that system in the coming year.) But, simple equipment can also give some amazingly good results, which George then showed.

When giving the talk, George despaired (well, just a little) that the Sun was not showing much activity, but he DID at least show what the signals from the array look like, sans flare signals. But, as Murphy would have it, when he dug back into his stored data later on, he came up with plenty of activity! (See Fig 1 below.) Let me quote him:

We quit too soon on the sids data: May is jumping! We've got C and M level events. Haven't seen these for years!

So, the outlook for both SIDS receivers and our solar telescopes looks promising this fall! And again, I'd recommend reading the AAVSO site link

above, as it gives a very nice description of SIDS monitoring from A to Z (and allows me to be a bit lazy here! 😊)

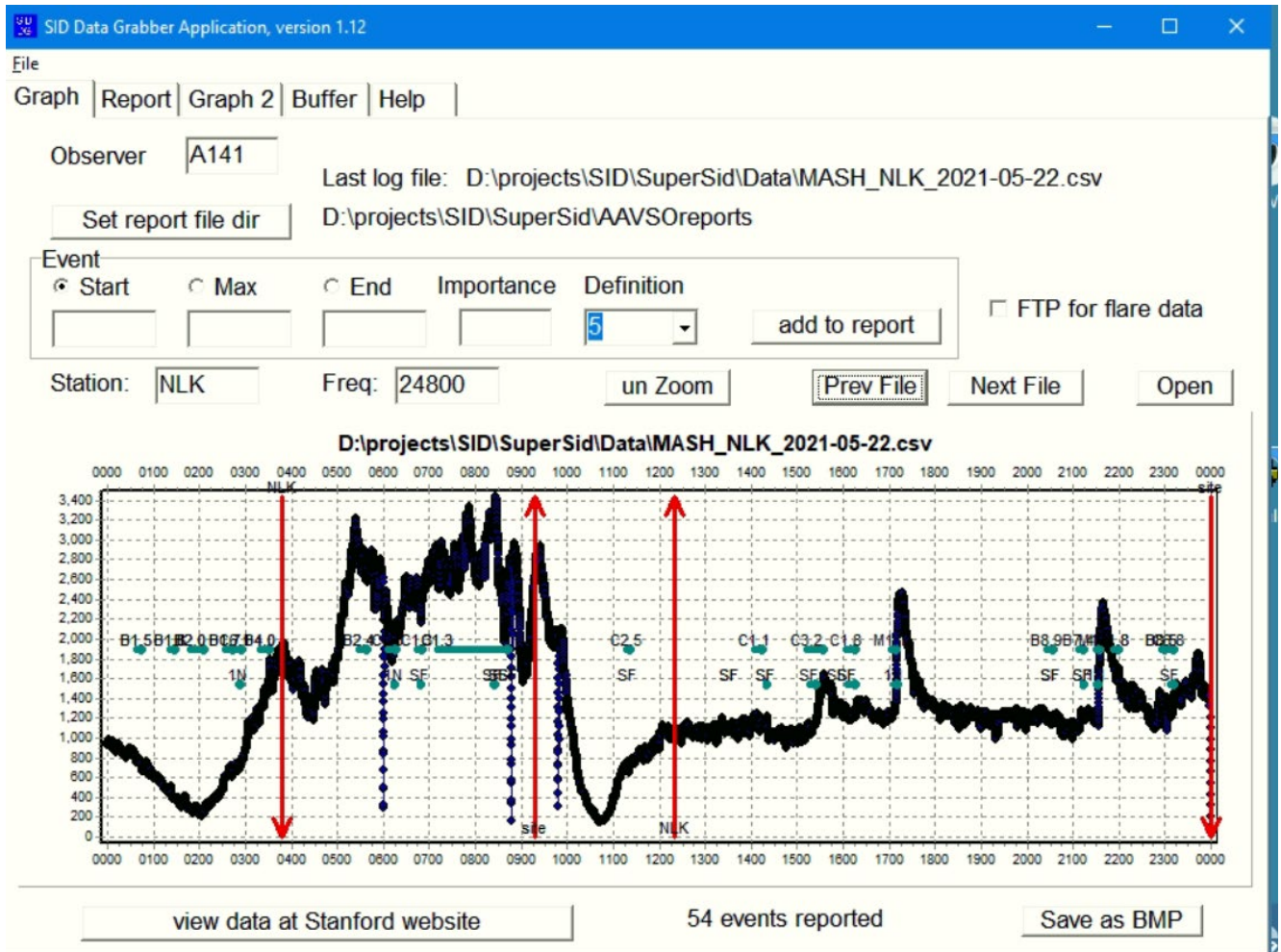


Fig 1. Active period SIDS data, courtesy George Silvis. Peaks on RHS are the events.

Not content to just monitor solar activity, George then turned to his second topic, monitoring potential core collapse supernovae in our Galaxy. And again, I'm going to be lazy and just provide you with an excellent link that George based this part of the talk upon.

https://drive.google.com/file/d/1EsGmkRSu0LoYLJUvA6B0f-2gWJ7yR6_p/view

By the way, members of this club are mostly familiar with core collapse supernovae (core implosions at the end of a massive star's life that spectacularly eject the star's outer layers) vs. Type 1a supernovae (the "standard candles" that

result from a gravitationally greedy white dwarf in a binary system stealing enough matter from its companion to exceed the “Chandrasekhar limit,” and thus explode.) But there is also some interesting recent buzz about “electron capture supernovae” having been recently confirmed (see Astronomy magazine or space.com, for example). This is a third category of Sn’s, and just shows how creative Nature can be in blowing up stars!

George went on to briefly discuss how people report data (astrometry, etc.) to AAVSO, but given time limits, promised that this could be delved into more deeply at another date. Let me just put up the AAVSO website link as a proxy until George can get back to us and relate things in detail!

www.aavso.org

It is an excellent amateur organization to look into, even if you can’t be as active as George is!