



SearchLites

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The Quarterly Newsletter of The SETI League, Inc.

Offices:

433 Liberty Street
Little Ferry NJ
07643 USA

Phone:

(201) 641-1770

Facsimile:

(201) 641-1771

Email:

info@setileague.org

Web:

www.setileague.org

President

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Registered Agent:

Anthony Agnello

Secretary/Treasurer:

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Why Do Volunteers Have To Pay Dues?

by H. Paul Shuch

Executive Director Emeritus

From time to time, I receive requests from active members to waive their annual dues, in consideration of their in-kind donations to our scientific mission. Our SETI League was established nearly 3 decades ago under the US tax code as a membership-supported tax exempt nonprofit. At our peak, we had 1500 dues-paying members, with revenues sufficient to support two fulltime employees, providing limited benefits and travel expenses for personnel, and a printed and mailed newsletter. All of our active members, committee chairs, and researchers paid dues, as well as volunteering their efforts. (Even paid staff contributed membership dues.)

One by one, as membership dues dwindled, those niceties eroded, so now we have essentially no income other than dues contributions from about 100 remaining active members. But fixed expenses still exist, so this is not a sustainable business model.

Last year, with the pandemic crashing the economy in most developed nations, the Board used funds from a few generous donors to declare a dues holiday. All members who were in good standing throughout 2021 were given free renewals for 2022. Thus, this year we anticipate no income, and are surviving off of what little we managed to save over the years. Your Board continues to volunteer our efforts, while endeavoring to contribute financial support.

By the end of 2022, I expect we will need to reinstitute dues, or go broke. We will also need volunteers to run our scientific mission, and further, if we do not receive minimal contributions from the general public, our tax-exempt status is in jeopardy.

Every one of the several nonprofits I belong to relies upon both contributed services, and dues income from its volunteers. Without both, their missions cannot be sustained. That said, we will continue to make an effort to find support for any current volunteer/member who encounters financial difficulty. We are, after all, a family, and are committed to helping each other out.

Guest Editorial:

SETI League Salutes John Mather

by H. Paul Shuch

Executive Director Emeritus

Hats off to my friend John C. Mather, NASA Senior Project Scientist on the James Webb Space Telescope, for the successful launch of his great science instrument this past Christmas Eve. Initially dubbed the Next Generation Space Telescope during its decades-long development, the JWST is the logical successor to the spectacular Hubble Space Telescope, which has informed and shaped our view of the cosmos for over three decades, and (amazingly) continues to function far beyond its design lifetime. We are confident the Webb will be just as productive.

Though John and I have only met a few times in person, I feel a deep personal connection to him. Our lives have run parallel in many ways. John and I are of the same generation, having been born just ten weeks apart. We both lived in Pennsylvania as undergraduates, and both attended the University of California, Berkeley, where we were both Hertz Fellows and earned our PhDs. John and I share a commitment to space exploration, albeit employing very different research techniques. He seems to favor massive and expensive, government-funded research instrumentation, while we in the SETI League continue to do fringe science in our spare time, on an all but nonexistent budget.

Here, the comparisons break down. John has admittedly received a Nobel prize, an honor that thus far eludes me. This disparity is clearly the fault of you, the members of our SETI League, for your failure (thus far) to uncover incontrovertible evidence of the existence of extraterrestrial intelligence! Once one of you has succeeded in our bold endeavor, I assure you we will share our very own Nobel. Until then, let us join in wishing John and his newest research tool the very best.



The SETI League salutes our friend Dr. John Mather, NASA's Senior Project Scientist for the James Webb Space Telescope, on its successful launch from Kourou, French Guiana on Christmas Eve 2021. John is seen here with his wife Jane, and SETI League executive director emeritus H. Paul Shuch, at the National Radio Astronomy Observatory in this 2014 photo.

SETI League photo



This mosaic image shows the alignment process of the JWST's segmented mirror. According to NASA's February 2022 blog post, this image helps to "confirm that NIRCam was ready to collect light from celestial objects, and then identify starlight from the same star in each of the 18 primary mirror segments. The result is an image mosaic of 18 randomly organized dots of starlight, the product of Webb's unaligned mirror segments all reflecting light from the same star back at Webb's secondary mirror and into NIRCam's detectors. What looks like a simple image of blurry starlight now becomes the foundation to align and focus the telescope in order for Webb to deliver unprecedented views of the universe this summer. Over the next month or so, the team will gradually adjust the mirror segments until the 18 images become a single star."

NASA image



As this issue of SearchLites goes to press, winter weather has invaded the Northern Hemisphere. Since that's where most of our Project Argus participants are located, it is no surprise that many of our radio telescopes are off the air for the season. Here we see our Executive Director's antenna at Argus Station FN11h, in bird-bath mode and awaiting spring thaw.

SETI League photo



Last December in Bird-In-Hand PA, Prof. Shuch gave a presentation on the birth and death of the Interstellar Beacon project, at the Winter Solstice Regional Gathering of Central PA Mensa.

SETI League photo



The SETI League is saddened to report the death of our dear colleague Alexander L. Zaitsev on 29 November 2021, at the age of 76. Dr. Zaitsev had served as Chief Scientist of the Institute of Radio Engineering, Russian Academy of Sciences. A longtime SETI League member, Sasha was our Regional Coordinator for Russia, recipient of the 2013 Orville N. Greene Service Award, a strong proponent of METI (Messaging to ExtraTerrestrial Intelligence) science, and conducted numerous transmissions to the stars from the Evpatoria Radio Telescope in Ukraine. This 2004 photo shows him with our Executive Director at the European Radio Astronomy Club's Mannheim Radio Observatory.

SETI League photo

Robert Hansen Gray

March 7, 1948 – December 6, 2021

Remembered by Sharon Hoogstraten

Data scientist, community leader, and radio astronomer Robert Hansen Gray of Chicago, aged 73, passed gently from this world to the next on Monday, December 6, 2021 after a brief battle with cancer. He is known for his contributions to the Search for Extraterrestrial Intelligence, directing searches from top facilities around the world.

Born March 7, 1948 to the late Paul and Marian (Hansen) Gray at Fort Sill, Oklahoma, he lived in many different places due to his father's career as an army officer, including Ft. Bliss, Texas; Ft. Monroe, Virginia; Bad Godesberg, Germany; Fort Hancock, New Jersey; and Washington, DC.

Studying the great books at Shimer College in Mount Carroll, Illinois, Bob received a BA in Liberal Arts. After a stint in the Army, he returned to Illinois to study geodesic domes and minimal surfaces at Southern Illinois University. Successfully pursuing a Masters of Urban Planning and Policy (MUPP-1980) at University of Illinois-Chicago campus, Chicago became his permanent hometown.

Robert made his career in data science, analyzing mortgage lending patterns for signs of bias, and calculated damages in over 100 securities lawsuits. His avocation—and true life's work—was the Search for Extraterrestrial Intelligence (SETI). He constructed his own backyard radio telescope and conducted searches using it and many much larger professional observatories, including the Very Large Array (VLA) in New Mexico. He published a book documenting that search in 2012, *The Elusive Wow*, based on the “Wow” signal, observed at Ohio State University in 1977, which remains

the best candidate for an interstellar radio transmission observed to date. Over the past decade he continued to lobby for more searches and wrote numerous papers for popular (*Sky & Telescope*, *The Planetary Report*) and scientific journals (*Astrophysical Journal*, *Icarus*) including “The Fermi Paradox” (*Scientific American*).

Along with his wife, Sharon, he settled in the Logan Square neighborhood of Chicago in 1983 where they raised their two sons and rescued a 1908 home along the Logan Square boulevards. He was a pillar of the community, volunteering, organizing and advocating for improvements that contributed to the neighborhood's revitalization. Not content with meetings and agendas, he planted trees in Palmer Square Park and was often seen doing maintenance work with his own hands.

Robert is survived by his wife Sharon Hoogstraten, children Alex and Dillon Gray (Hailey Willis), sister Barbara Gray, one grandson, 4 nieces, and numerous in-laws. We hope he has discovered the answers to the universe in a galaxy far away.





Want a painless way to support The SETI League? Browse to:

www.smile.amazon.com.

In the "Pick your own charitable organization" box, just type in "SETI League." Now, every time you shop Amazon, they will donate a half percent of your purchase price to SETI research!



SETI League members are encouraged to nominate SETI-relevant websites for our monthly SETI SuperStar Award. Nominating emails to our Awards Committee may be sent to:

Awards_at_setileague_dot_org.

Please be sure to indicate the URL of the candidate website you are nominating, and a brief explanation as to why you consider the site worthy of recognition.

Event Horizon

SearchLites readers are apprised of the following conferences and meetings at which SETI-related information will be us at info@setileague.org, to obtain further details. Members are also encouraged to send in information about upcoming events of which we may be unaware.

April 24, 2022, 1300 EDT (tentative): 28th SETI League Annual Membership Meeting, to be held virtually on the Zoom online platform.

June 27 - 30, 2022: Penn State SETI Symposium, State College, PA.

July 16 - 24, 2022: 44th COSPAR Scientific Assembly, Athens, Greece.

August 2 - 11, 2022: 31st International Astronomical Union General Assembly, Busan, Republic of Korea.

September 1 - 5, 2022: 80th World Science Fiction Convention, Chicago, IL.

September 18 - 22, 2022: 73rd International Astronautical Congress, Paris, France.

August 23 – 29, 2023: 81st World Science Fiction Convention, Chengdu, China.

September 25 - 29, 2023: 74th International Astronautical Congress, Baku, Azerbaijan.

October 11 - 18, 2024: 75th International Astronautical Congress, Milan, Italy.

Please note that the global COVID-19 pandemic has resulted in the cancellation or rescheduling of many planned scientific meetings and conferences. We recommend you check with the event sponsors for updates before making travel arrangements. ❖

Special Projects

By Scott Carter, VE3CGN
Special Projects Coordinator

There simply has never been a better time to participate in SETI. Recent advancements in computer and radio technology, the discovery of new exoplanets and of course the SETI League community make it an exciting time to be involved!

If I haven't had the pleasure of speaking with you yet, my name is Scott Carter, VE3CGN. I have been operating a Project Argus station in Canada for five years now, and am pleased to have recently accepted the position of Special Projects Coordinator for SETI League.

During the third grade, I read a book about a boy who built a flashlight for his sister who was trapped in a dark closet. He built it from a light bulb and batteries taped to a ruler. I can't remember the name of the book, but I was hooked on electronics after reading it, and I set out to build my own flashlight. Once I got to high school, I landed a job fixing citizens band radios and car audio equipment. However, computers caught my eye, and I eventually got involved professionally in the computer industry.

I have been an amateur radio operator for over 30 years, so I have a background in radio. Since I grew up in the space shuttle era, I was also interested in space early in life. Although I did run SETI@Home for several years, SETI really grabbed my attention more recently when I was researching Project Argus on the SETI League web site. That is when I decided to build my own station. I really enjoy helping others by making my radio telescope remotely accessible to those who are unable to have one of their own.

My radio telescope is under construction most of the time, as I am continuously working on improvements. It is a three metre (ten foot) hydrogen-line telescope with a choke and cylindrical feed. It feeds a Low-Noise-Amplifier, 1420 MHz bandpass filter and LMR-400 coaxial cable. The dish uses a Spectra-Cyber radio telescope back-end and a custom SETI software package written in Java.

Dish control is managed using Arduino boards and a Raspberry Pi, which are accessible via fiber optic cable between the dish and the receiver room. The dish has an actuator arm for elevation, and is undergoing modifications to add azimuth control and full tracking capability.

I am very excited about bringing some new ideas to the table at SETI League, including the introduction of

a new project, Project Locus. This project will be a targeted SETI search of nearby stars that have known exoplanets similar to Earth. Keep an eye on this space for details as we roll out the project in 2022.

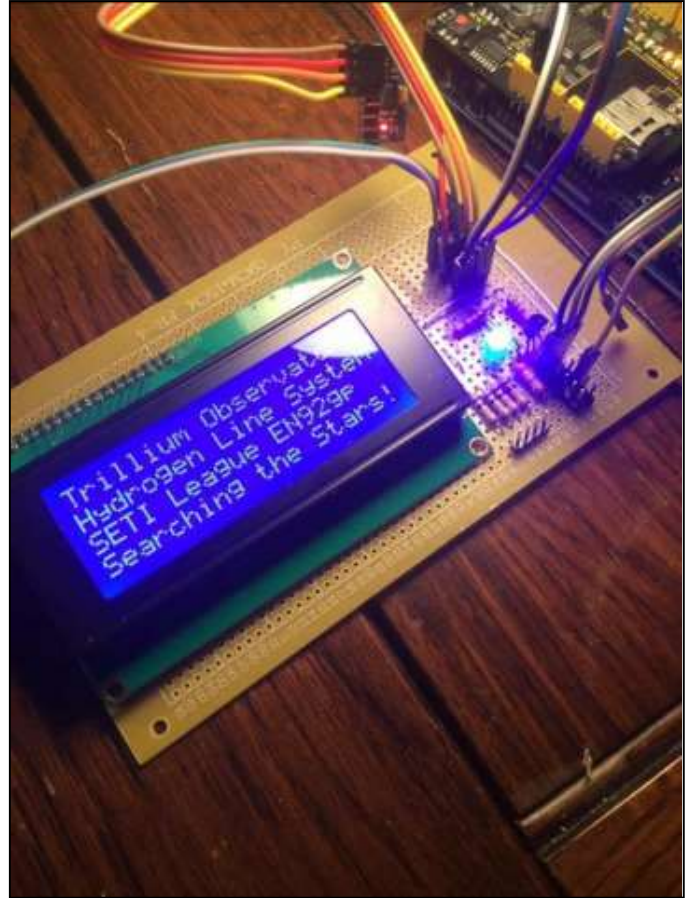
In order to better coordinate our search projects, I kindly ask that you send me a quick email expressing your desire to participate in Project Locus or with your continued support for Project Argus, so that I can update our database. I can be reached at search@setidata.ca, and I look forward to hearing from you.

What is your favorite software package for SETI use? Do you have specific frequency bands you prefer to monitor? Do you have questions about building a station? Project Argus and Project Locus station operators are encouraged to join the "SETI Station Builders" Facebook group. This group is intended to help new SETI station operators get started, and for members to share experiences with different hardware and software platforms. We would like to grow our active SETI League on-line community, and we can only do so with your participation. I look forward to exchanging ideas with you in the new group, and learning what type of gear everyone is using for their stations.

To move our search projects forward, I would also like to start up the Software Committee again so that we can work on developing SETI League's next generation of search software. While we encourage you to use whatever software you have available for searching, the project would benefit from a common search platform, especially with regards to reporting functionality. Please email me at search@setidata.ca if you are interested in participating in the Software Committee.

If you are a software developer and haven't heard of SETI on the Allen Telescope Array (SonATA) project, this is one project you might want to take a look at. The SETI open-source project is located at <https://github.com/setiQuest/SonATA> and is something I am looking at myself. It will need to be adapted to work with SDR receivers, but it has real potential. This is one project that the Software Committee will be keeping an eye on as well.

We are interested in what SETI League members are doing, so please share with the group or send us an email. SETI League is your organization, and we would like to hear from you. Please send in your station updates and any comments or suggestions that you may have to search@setidata.ca, join us at [Facebook.com/setileague](https://www.facebook.com/setileague), and visit our website at <http://www.setileague.org> today! ❖





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Annual Renewal: Is This Your Last *SearchLites*?
SETI League memberships are issued for the *Calendar Year*. Please check the expiration date indicated on your mailing label. If it reads December 2021 or earlier, you have already expired, and *must* renew your SETI League membership **now!** Please fill out and return this page along with your payment.

Please renew my membership in this category:

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Annual memberships are issued for the calendar year. Those processed in January through April expire on 31 December of that year. Those processed in September through December expire on 31 December of the *following* year. Those members joining in May through August should remit half the annual dues indicated, and will expire on 31 December of the same year.

Pleased to Accept PayPal

The SETI League invites you to pay your membership dues and additional contributions via credit card, using the PayPal online payment system. Simply log on to www.paypal.com and specify that your payment be directed to paypal@setileague.org.

Name: _____

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<i>The Listeners</i> by James Gunn	\$15	\$21
<i>Sing More Songs of SETI</i> (Songbook)	\$10	\$13
<i>Sing a Song of SETI</i> (music CD)	\$15	\$18
<i>Sing More Songs of SETI</i> (music CD)	\$15	\$18
T-shirts, specify M, L, or XL	\$15	\$22
SETI Nerd Gift Set (one each Mouse Pad, Pocket Protector, <i>Project Cyclops</i> and <i>Tech Manual</i>) at 20% Savings to Members Only:	\$30	\$45

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