



SearchLites

Vol. 29 No. 4, Autumn 2023
The Quarterly Newsletter of The SETI League, Inc.

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Remembering Muriel Hykes

11 January, 1956 – 28 July, 2023

by H. Paul Shuch, Executive Director Emeritus

Those SETI League members who have attended our Annual Membership Meetings, SETICon, or, various astrobiology and bioastronomy conferences around the world over the past three decades, will probably have met Muriel Hykes, the wife of our Executive Director Emeritus. A biochemist with degrees in biology and psychology, as well as teaching credentials and a strong research interest in neuropharmacology, Muriel was forced by illness to drop out of medical school at LSU Medical Center in New Orleans. Despite this, thanks to the advent of the Internet, she managed to establish herself as an independent science consultant, educational advocate, and practitioner of the alternative healing arts. She often said that if she had been healthier, she would probably have ended up “just another asshole MD-PhD researcher working for Big Pharma.”

Muriel was out doing Christmas shopping the day in December 1994 that SETI League founder Richard Factor phoned Paul up and asked him to head our nascent organization. When he told her about the call, Muriel’s response was “let me get this straight. You’re being asked to give up a tenured Full Professorship, a job for life backed by the taxing authority of the State, in order to pursue fringe science on soft money. How can you possibly pass up a golden opportunity like that?”

From that moment on, Muriel’s support was unwavering. She proofread every SETI League newsletter, editorial, song, web update, and press release. She encouraged the whole membership in our Quixotic quest, knowing full well that it was unlikely any of us would live long enough to witness SETI Success. And she raised her five sons with the belief that, working together, there was no limit to what a dedicated corps of enthusiasts could accomplish.

Muriel Hykes died on 28 July 2023, following a 19-month long struggle with congestive heart failure. The SETI League will be grateful to accept memorial contributions in her name.



***A Sign in Space* – A Dialog between H. Paul Shuch and Daniela DePaulis**

Paul: What is the purpose of *A Sign in Space*?

Daniela: *A Sign in Space* simulates one of the many possible scenarios following the reception of a confirmed extraterrestrial signal. In the scenario I designed, scientists release the data of the signal in the public domain so that the general public can attempt to understand if the signal contains a message and to interpret it. The project aims at questioning communication through one of the possibly most radical scenarios, in which human-kind attempts to understand the meaning of a message created by an extraterrestrial intelligence.

Paul: Why did you start it?

Daniela: I started the project in 2019, after being invited by a satellite company in Italy to upload an artistic work on one of their upcoming launches. I proposed uploading a simulated extraterrestrial message onto one of their satellites, and from there the initial proposal developed thanks to the growing network of collaborators I gathered around the project.

From the very start, I decided to call the project *A Sign in Space*, like the short story by Italian novelist Italo Calvino, published in his collection *Cosmicomics*. I thought the novel described the Search for Extraterrestrial Intelligence in a poetic and humorous way.

Paul: Is this art, or science? Or both?

Daniela: The project is very interdisciplinary and can be interpreted through different lenses. It is a combination of theatre, live performance art, electronic literature, ARG (Alternate Reality Game), science, including radio astronomy and SETI. It also crosses other disciplines, such as space studies, anthropology, semiotics, computer science and several others. The decoding and interpretation process are also very articulated and encompass many fields of research.

Paul: How many people are participating?

Daniela: There are about 5,000 people registered on Discord to participate in the decoding and interpretation process. There are between 200 and 300 people active at every single hour of the day, depending on their time zone. Some people participate outside of Discord, for example sending drawings or sounds through the tools developed on the project's website, or by directly sub-

mitting ideas through the submission form on the website. Some people are active on social media. I wanted to make sure people had several options to engage with the project.

Paul: From how many countries?

Daniela: It is impossible to guess from the Discord platform. However, the website has been visited by 168 countries so far and we reached more than 150 million people through online press article, during the first week only. During that particular week, millions of people were imagining what it would be like to receive an extraterrestrial signal, just like with the fiction created by a play in a physical theatre setting, with the difference that the performative stage in *A Sign in Space* is the entire planet and even the cosmos. The project is both a performance for the global audience and a transformative experience that happens at a subjective pace.

Paul: What, if anything, do the participants have in common?

Daniela: The participants on Discord and other platforms seem to be very diverse, some of the people currently active in the decoding process have strong technical and/or artistic skills. There are people who are working on the decoding for hours a day, even losing sleep over the process. Other participants return every few days or weeks to check the progress, add some ideas, while continuing working independently on a possible solution.

People collaborating on Discord have become part of a community. There is occasional frustration emerging as part of the process as the message seems to be very challenging to decode, however the Discord community manages to overcome these challenges as it is very self-motivated and self-led.

Paul: Who composed the message?

Daniela: I composed the message in collaboration with a team of international advisors. Two of these advisors, computer scientist and artist Giacomo Miceli and astronomer Roy Smits, played an equally important role in the message composition. We are the only three people in the world who know the exact content of the message. The message composition process took two years and it was very challenging. I can't wait to share the story behind the message after it is decoded.

Paul: How was it transmitted / received?

Daniela: The message was transmitted by the Trace Gas Orbiter, a spacecraft of the European Space Agency orbiting Mars. The transmission of the message in X-band lasted 30 minutes in total. The signal was received by five ground antennas: the Green Bank Telescope and the Allen Telescope Array in the US, the Medicina Radio Astronomical Station in Italy, the Raega Radio Telescope in the Azores and the Bochum Radio Antenna in Germany.

My scientific collaborators from the European Space Agency, the Green Bank Observatory, the Istituto Nazionale di Astrofisica and the SETI Institute would be able to give you all technical details of the transmission and reception. The process of pairing the spacecraft with the various radio telescopes took more than a year, with various tests before the live event on May 24.

Paul: What are some of the methods being used to decode / interpret it?

Daniela: On Discord, there have been many different attempts to decode and interpret the message. After one week only, several Discord users, including BatchDrake and HayleyStorm, managed to extract the message from the data of the signal received by the various telescopes. The message extracted looks like a B/W image.

Since then, the Discord community has continued further decoding the message, producing an incalculable number of theories and experiments. The community is now planning to create a Wiki to summarize the ideas that had most impact throughout the process. Some of the methods proposed include printing the message on paper and creating 3D shapes from it.

Other interpretations look at the image extracted from the signal as a star map, or as a series of dots forming arcane signs. Some other decoders tried to divide the image into symmetrical shapes or to extract various meanings from the binary code itself, using various software and digital tools. Each decoder looks at the image in a subjective way, however people are learning from each other's methodology and findings and give mutual feedback.

The technical and scientific interpretation is often accompanied by philosophical questions around the topic of extraterrestrial intelligence or about the limits of communication. At times some frustration arises as a result of the challenges posed by the message.

Overall, there is a sense that participants on Discord did not expect the message to be so challenging, many of the participants are experienced developers or specialists in correlated fields and find themselves struggling with the solution.

Paul: Which have been most successful?

Daniela: So far, no thread has led to the full decoding of the message, however some of the threads look very promising. It would be great to collect all various hypothesis and meanings created around the project as part of a book in the future.

Paul: Have any of the participants proposed a reply message or strategy?

Daniela: Not yet, however some of the project's collaborators have proposed composing a reply to the message once this is fully decoded.

Paul: Has anything happened that you failed to anticipate?

Daniela: When we launched the project, my collaborators and I had no clear idea of how the project would unfold once shared in the public domain, how many people would participate or find the project interesting. The outcome however was unexpected: the main international media outlets covered the launch of the project on May 24, making the project truly global and culturally relevant.

Besides the interpretation process on Discord, we are receiving a great number of submissions through the project's website, where people send images, possible solutions consisting in scientific papers, data sets, sounds, drawings and poetry. Many generic messages have been flowing in, either from people commenting on the project or on the possibility of encountering an extraterrestrial civilization.

The main surprise was finding out that the public reacted with overwhelming positivity towards the project and the possibility of receiving an actual ET signal.

Paul: How will you know when the project is concluded?

Daniela: There is no specific date for the conclusion of the project. Once the message has been decoded, I will make an announcement together with the SETI Institute and the other collaborating institutions. At that point, people from all walks of life will be able to share their own interpretation of the message, continuing the process of meaning-making around it. I think the project will leave room for further analysis and interpretation long after its completion. The interpretation work on Discord might provide some very interesting content for researchers from all fields.

In the coming months, I will work on publications and academic papers, in collaboration with some of the key players in the project. We will cover several aspects of the project, its history, the public outreach, the scien-

tific contents and of course the process that led to the message composition. There are some wonderful episodes behind each of these aspects of the project.

Paul: Is there anything that you wish you had done differently?

Daniela: No, not particularly. One of the most challenging aspects of the project has been team management as the group of collaborators has grown exponentially and that can make things difficult to coordinate. On the other hand, everyone brings something very important and special to the project so I wouldn't necessarily change the dynamic but I wish I had been more prepared for the incremental expansion of the project.

Paul: What has been learned in this project that can be applied to an actual message?

Daniela: It is probably early to assess the cultural and possibly scientific legacy of the project. For me, while creating the message, it was important to convey the many challenges that interpreting an actual ET message would entail. I wanted the message to be simple and at the same time complex, to present a scenario in which human knowledge would be radically questioned, while making sense of an ET message. The scenario that is unraveling on Discord is very interesting as participants have been testing their knowledge, embarking on an unusual and challenging journey with no certainty of success. Yet, they are attempting any possible interpretation of the simulated ET message.

Paul: Do you anticipate a follow-up project, and what would it look like?

Daniela: For now, A Sign in Space is still keeping me very busy and I am not starting a new project yet. I might be planning an online conference in collaboration with the SETI Institute, to host talks by the Discord participants, and invite them to present their various interpretations and theories. Other future outcomes might include a book, different types of publications, possibly an art exhibition in Shanghai in 2024 and other collaborative events connected to the project.

Paul: Does this project address the Fermi Paradox? How?

Daniela: The reception of an actual extraterrestrial signal is extremely challenging. A Sign in Space presents an imaginary scenario that might actually happen in the future. If we ever detected an ET signal, we might be

able to understand why it is so difficult to find life or intelligent life outside of Earth.

Paul: Do you believe any of this matters? Why, or why not?

Daniela: I am optimistic there is extraterrestrial life. As human technology develops, we might be able to find life more easily in many parts of the cosmos. It might not be the kind of life we consider intelligent according to our current parameters. While searching for life outside of Earth, we would need to make progress on our understanding of intelligence and consciousness, looking at different life forms here on Earth. There might be exceptionally intelligent life living with us already that we are completely overlooking, blindsided by our secular beliefs.

Paul: And, the most difficult question: are we alone?

Daniela: Finding an extraterrestrial signal will likely not help humans answer this question. The signal might generate from a civilization now extinct. Seeing possible signatures of life on another planet through remote observing might not answer the question either. However, these findings, besides radically shifting our cultural foundations, might increase our chances to meet our cosmic cohabitants one day. ❖

Event Horizon

SearchLites readers are apprised of the following conferences and meetings at which SETI-related information will be presented. League members are invited to check our World Wide Web site (www.setileague.org) under *Event Horizon*, or email to 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.

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

April 14, 2024, 1 PM EDT: *SETI League Annual Membership Meeting*, virtually, via the Zoom platform. Members and guests should contact Secretary at hwood50@aol.com to request Zoom log-on link.

August 8 - 12, 2024: *81st World Science Fiction Convention*, Glasgow, Scotland.

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

June, 2025 (dates to be announced): *Second Annual Penn State SETI Symposium*, State College PA.

September 29 - October 3, 2025: *76th International Astronautical Congress*, Sydney, Australia. ❖

Guest Editorial:

The Truth Is Out There.

But this UFO "whistleblower" likely doesn't have it

By Seth Shostak, Senior Astronomer, SETI Institute

First published on www.msnbc.com

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On July 26, 2023, David Grusch, a former military intelligence officer, told a House Oversight subcommittee that all those stories you've read on the internet are true: The government has debris collected from crashed alien spacecraft. He also told the assembled lawmakers that federal retrieval teams have collected biological remains from alien bodies.

Grusch, who considers himself a whistleblower, claims he has interviewed dozens of people, several of whom claim to have been injured by UFOs, now officially known as unidentified anomalous phenomena, or UAPs. He also claimed the Pentagon has been working for years to collect and study crashed UAPs. That is a truly extraordinary claim, begging for extraordinary evidence.

But where is the evidence?

It's MIA. Neither Grusch nor anyone else claiming to have knowledge of secret government UAP programs has ever been able to publicly produce convincing photos showing alien hardware splayed across the landscape. And remember, we're not talking about a Cessna that plowed into a wheat field. We're talking about, presumably, an alien interstellar rocket, capable of bridging trillions of miles of space, and sporting technology that is obviously alien.

The believers maintain that such photos exist but are being kept under wraps. For reasons that are always unclear, the critical evidence that would convince anyone of alien presence in our 'hood is classified. It can't be made public. Note that the subcommittee's star witness, Grusch, made this claim, too.

This is an argument I have long viewed with skepticism. Society should not (and generally does not) accept scientific "discoveries" without any evidence. The cure for cancer cannot be classified.

If there really was some physical evidence of visitation, thousands of scientists would be fighting one another to study it. And the government would want it studied. This has always been another big sticking point in the UAP conspiracy theory universe. What is the point of hiding extraterrestrial technology in a Nevada hangar? What would be the goal, at this point, of shutting out the

scientific community. The information, technology and — importantly — wealth incentives here seem overwhelming.

Returning to the issue of visual evidence, there are thousands of satellites orbiting Earth. The majority sport cameras aimed downward. Actual alien craft in our air-space bigger than an office desk would likely be visible to satellites that — among other things — supply imagery to Google Earth.

Hypothetically, a vast conspiracy to scrub such images could exist. And the American populace readily accepts conspiracy explanations. Ever since the government's disingenuous response to the 1947 discovery of crash debris near Roswell, New Mexico, the public has decided that the feds will never tell civilians the truth about visiting aliens. Not even dead ones, such as the crew of the spacecraft that reputedly pancaked into the desert that year.

This theory is even prevalent in the halls of Congress, as evidenced by this recent testimony. But I still strongly maintain that alien visitation is not something that could be kept secret. The size of such a secret is just too big.

Nevertheless, a 2021 Gallup poll showed that more than 40 percent of Americans believe that some UFOs are alien spacecraft. And even the most conservative scientist can't rigorously argue that it's impossible for extraterrestrials to visit Earth. It doesn't violate physics to go from one planet to another, even if that planet is in orbit around another star. Hard, yes. Impossible, no.

But admitting that aliens could be here is a far cry from claiming that they are here. And that they somehow manage to arrange things so that they're exclusively met by government employees anxious to hide them.

And why is it that the aliens at least seem to invariably set their navigation hardware to visit America and not some other country that might not feel the need to keep these visitors under wraps? There is a kind of national hubris operating here: If extraterrestrial beings are going to come to Earth, they're going to visit us!

So have the aliens arrived? From the standpoint of science, there's still no good evidence for that, only an "argument from authority." David Grusch says they're here. But either he can't prove it, or he won't. Until he does, we should consider his stories to be just that: stories.





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SearchLites Volume 29 No. 4, Autumn 2023

Printed in the USA

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