



# SearchLites

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The Quarterly Newsletter of The SETI League, Inc.

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## Special METI Issue

The emerging science of METI (Messaging to Extraterrestrial Intelligence, also known as Active SETI) has in recent years emerged as a subject of major controversy within the SETI community. At present, The SETI League is not directly involved in experiments involving transmissions into space, and we have as yet adopted no official policy on the matter. Several of our members have voiced support of pursuing active messaging from Earth, while many others believe such a pursuit to be fraught with dangers. This issue of *SearchLites* is devoted to several Guest Editorials, which espouse opinions on both sides of the METI issue.

The stated goal of SETI science (as well as its companion activity of METI) is to stimulate contact between the inhabitants of Earth and our cosmic companions. Disagreement as to the wisdom of actively soliciting dialog centers on perceived inherent risks, as well as differing opinions as to the risk/reward ratio. In contemplating the diversity of opinions expressed by the various authors whose works appear in this newsletter, we urge our members to remember that not all transmissions into space are created equal. Both risk and reward are a function of several calculable variables, as well as numerous incalculable ones. These include transmitter power, directionality, detectability, and duration, as well as information content, coding methodology, and the values and perceptions of the recipient of such messages in a bottle.

While there are no easy answers to the METI debate, we make a sharp distinction between three specific types of METI activities: scientific experiments, commercial pursuits, and publicity stunts. All three classes of transmission have occurred in recent decades, and many more have been proposed. The SETI League opposes blanket policies that would either inhibit science, or encourage pseudo-science. Rather, we would hope that each METI proposal to come before the SETI community be evaluated on a case-by-case basis. In the final analysis, those who propose and oppose METI activity must come to an agreement as to how best to pursue meaningful science, without exposing humanity to irreversible risk.



*Guest Editorial:*

## **Is Active SETI Really Dangerous?**

**by John Traphagan**

In general, when we think about scientific inquiry, much of its power rests in the idea that everything is open to question. Turning a scientific gaze upon the world enlightens us and opens our potential to understand more deeply, while often challenging us to reconsider previously held beliefs and ideas. But science is not an unambiguously moral good.

Einstein questioned the ethics of building the atomic bomb. We know that research like the Tuskegee study of syphilis in African Americans has deep moral problems related to racism and informed consent. More recently, Stephen Hawking and others have raised ethical questions about whether or not we should engage in sending messages to the stars — the risks of letting ET know we're here may outweigh the benefits of making contact if ET happens to be in a particularly foul mood when they answer our interstellar phone call.

Those opposing Active SETI or METI (messaging extraterrestrial intelligence) have a point. There could be some risk involved with alerting ET to our presence in the universe, although if ET has knowledge of physics allowing them to visit our corner of the galaxy, hiding probably won't do us much good anyway. If the extraterrestrials want to vaporize us, they'll go ahead and do it. More likely the extreme distances between Earth and possible other civilizations will mitigate against any real threat — if we send a message out to a star in the Orion constellation today, it will take over 1,000 years to get there...

Perhaps a more important question is not about the risks of transmitting, but the dangers in receiving. Many in the SETI community have shown commitment to the belief that a technologically advanced civilization will be altruistic, despite the lack of evidence supporting that assumption. Therefore it is assumed there are no significant risks with listening quietly.

Maybe they're right. But even so, contact may prove quite dangerous to humans.

Why? Because of the potential to destabilize our civilization. How will humans react? Will there be panic, infighting, conflict? Imagine if the Chinese intercept the first message from aliens and want to keep the information they gain to themselves. How will the American and other governments respond if they think the Chinese might have information from ET about physics that would allow them to build super weapons? How will religious zealots, who are suddenly confronted with the idea that humans may not be so special after all, cope with news that we are not alone? Imagine if ET sends us an encyclopedia of information about themselves in which we learn that they are a civilization of card-carrying atheists.

And, perhaps, the most important question is what does sending a message say about them? One way to interpret this is to assume it means they want contact. But if they are significantly more advanced than we are morally (and there's no guarantee), perhaps they are also aware of what normally happens when more advanced civilizations come into contact with

lesser ones. It's not typically great for the less advanced society whose culture tends to get run over, even if intentions are good on the part of those making contact. We have plenty of data to support this scenario from our own history.

Put another way, if ET is so advanced, shouldn't they have something equivalent to Star Trek's Prime Directive in which they make every effort to avoid meddling in the development of less advanced civilizations? Perhaps the very fact that they sent the message indicates nefarious intentions, or just plain stupidity, on the part of aliens who didn't give much thought to how sending might negatively influence the civilization at the receiving end, whose culture they knew nothing about when they sent the message.

Now, we need to turn this around to ourselves. Many scientists in the SETI community argue against METI on the grounds that it is dangerous. We should simply wait and listen until we are sufficiently advanced to deal with contact. We should hold off until we mature from our cultural and technological adolescence, whatever that means, to adulthood.

However, if we really think about it, the activity likely to be more dangerous to humans is receipt of a signal rather than sending a message. The way in which people will react on our socially fragile world is quite unpredictable. Awareness of the existence of another likely more technologically advanced civilization might propel our world into political chaos or it might have little influence. And we are left with the problem of what to think about an extraterrestrial civilization that sent a message without giving much thought to what it might do at the other end. Those aliens may be malicious at worst or naïve at best. Neither possibility is terribly good from our perspective.

The alternative, of course, is to roll up in a ball and hide. This seems rather pointless, since the genie is already out of the bottle, given the wide array of transmissions we constantly send from our planet. A society with technology 1,000 or 10,000 years beyond ours may well be able to pick up even the faint signals we are leaking out to the galaxy.

Instead of hiding, we should give a great deal of thought to the kind of message we might send and to what the possible consequences are of sending. By consequences here, I do not mean self-centered worries about ET blasting us, but other-centered concerns about how sending a message might influence or harm the recipient.

Perhaps the silence we have experienced to date is a product of more advanced civilizations saying, "don't send anything that way; those beings are primitive and we might ruin their development." If that's the case, then our only shot at contact will be METI as a way of alerting extraterrestrials that we are ready for contact.

If SETI scientists are right and ET is likely to be much older and wiser than humans, the real question is not the dangers of sending a message, but the risks of receiving one. It seems much less likely that messaging to more advanced extraterrestrials will have a significant impact on their society, while receipt of a message from advanced extraterrestrials might have a very significant impact on ours.

*Guest Editorial:*

## Mixed Messages

by Louise Butler

from the March, 2016 issue of Mensa Bulletin,  
used by permission

When I contemplate what message I would send to an alien species, I think first of Isaac Asimov and Carl Sagan. In many ways, they have answered the question for us, Asimov through his fictional writings and Sagan through his work with the intergalactic cryptographic disc placed on Pioneer 10.

On the gold-anodized aluminum plaque placed on both Pioneer 10 and 11, a naked and relatively anatomically correct man and woman stand before an outline of the spacecraft. The man's hand is raised in greeting but also to show limb mobility. The plaque also has a diagram of our solar system with the path Pioneer took from the third planet. Probably the most important part is a diagram of a hydrogen atom with a notation showing its hyperfine transition from an electron spin state up and spin state down. A number 1 connects them as a key to possible measurement of either wave length or frequency. This plaque was designed by Sagan and Frank Drake, and math was their language of choice.

I believe that communicating with an alien race would be much like going on a first date. You want to look interesting but not needy, friendly but independent, sensitive yet curious.

Of course, any good date requires two-way communication. My primary question to them would be how they manifest the basic functions of life. According to NASA scientist Bruce Jakosky, in his book *The Search for Life on Other Planets*, being "alive" means meeting three requirements:

1. using energy from some source to drive chemical reactions
2. being capable of reproduction
3. undergoing evolution

Longer lists simply take these three and break them down into more specific tasks. Far from complicating a simplicity, there is practical reason to stretch Jakosky's big three to include specifics. Saying you can move is essential, but there is a broad perceptual difference between something that oozes and something that leaps. Saying you react to stimuli is basic, but there is a world of difference between creatures that perceive and those that intuit.

Broadly formed but targeted questions will inform our interlocutors as to what our species is like and let them know that we are searching for some form of commonality. (I have come up with six.) We are a species that hopes our terrestrial and extraterrestrial Venn diagrams will show some overlap. We hope for compatibility, and that is a good sign.

Every living creature on Earth, from humans to yeast, metabolize energy to drive chemical reactions. We exchange food and gasses for energy. Both require us to take in the desired product, utilize it effectively and then dispose of waste, yet contrasting how these activities occur in a human and in a yeast give us two entirely different views of the operating system. Because the purpose of communicating with another planet of sentient beings is to get to know them and not their entire zoological garden, we need a micro-view, at least to start with. So I would break a question of energy usage into two: (1) What do you use as energy to fuel your corporate selves? And (2) how do you eliminate waste resulting from that energy transfer? Now you have a filter through which to sift possible physical types.

Next we have the question of reproduction. Reproduction implies death. It also implies an urge to continue as a player in one's environment. Far from simply getting it on and getting it done, reproduction may be the most hopeful thing any species does. In this case the how is not nearly as important as the why. You are either replacing units which no longer exist or are populating a seemingly infinite environment, the latter being a logical improbability. This invites another question: Given normal conditions, how long do you exist as a corporate self? No need for prurient interest here, just who and how often are they replacing. That is the difference between a salmon and an elephant.

Undergoing evolution, as a condition for life, is as convoluted as reproduction is straightforward. All living things on this planet maintain a stable internal environment. Yet, within the parameters of that homeostatic state, they react and respond to stimuli. They grow and show movement, even if only at the cellular level. All living things either adapt or succumb to changing stimuli, and somehow (in Earth's case, through nucleic molecules) pass those successful adaptations on to future generations.

So evolution is a broad word that involves too many variables for a cogent examination of what a species is, how it appears and behaves. It requires more than just a yes or no response: (4) How do you perceive the environment? (5) How do you react in response to stimuli? (6) Has your macro-environment changed over time?

And so our three macro-view definitions of life become six more specific questions. Up to now, the question has been academic. It is designed to provoke thought among the only side of this equation that is now revealed to us. But, if answered, the specificity of these questions involves a chance to see our fellow galactic beings through words when a picture may be impossible or confusing. Asimov envisioned such answers. Sagan tried to anticipate and answer such questions from others.

Just like on a first date, the questions you ask reveal more about you than them. Just like a first date, the right questions and the right answers can lead to a second meeting, one that has more anticipation and less anxiety than the first.

**Guest Editorial:**

**Reviewing METI**

by John Gertz

**Excerpts from his article *Reviewing METI: A Critical Analysis of the Arguments*, available at:  
<https://wattsupwiththat.files.wordpress.com/2016/05/analysis-meti.pdf>**

In the medical sciences, proposed experiments must pass ethics review boards. Some experiments are simply too dangerous or unethical to be performed, certainly not just on one's own lonely say-so. We do not clone humans; we do not conduct table top experiments with smallpox; and we no longer inject human subjects with pathogens in order to trace the course of a disease or to see how long it might take for subjects to die. Though a commonplace in medical research, astronomers face no such ethical reviews, since theirs is normally an observational science only. When it comes to METI (Messaging to ET Intelligence, also called or Active SETI), which is not observational but manipulative, and on which may hinge the very fate of the world, perhaps they should.

Do space aliens present a clear and present danger and, if so, is there anything we can do about it? There is not one scintilla of credible evidence that Earth has ever been visited by space aliens, much less that aliens have sought to do damage to the Earth. However, extraterrestrials (ET), if they exist, may soon learn that Earth harbors technologically advancing life forms, and that may change everything. Our electromagnetic (EM) emissions leave Earth at the speed of light. EM that left Earth in 1930 has already swept over approximately the nearest 7,000 stars.

That said, Earth's EM leakage is either very weak, not pointed at nearby stars, or both. Further, the Earth grows quieter annually as more information is transmitted via cable, the Internet, and satellites rather than terrestrially over the air. Unless ET's receivers are both sensitive and omnidirectional, they will not detect us. ET's receivers could be omnidirectional, but unable to pick up a signal so weak as the proverbial *I Love Lucy*. For example, the gigantic Arecibo radio telescope could not decode terrestrial TV transmissions, if broadcast from the distance of our nearest neighboring stars. Alternatively, an ET receiver could be very sensitive, but it might take millennia for it to get around to slewing in our direction, given the large number of potential targets. By the time Earth returns into ET's crosshairs for a routine check in, we might have gone silent.

The first modern SETI search was conducted by Frank Drake in 1960. From that date until today, there has been no agreed upon detection of an alien signal. Some are now arguing that since so much time has elapsed without success, it is time to announce ourselves to ET by using our most powerful radio telescopes as transmitters in order to proactively send our signals to Earth's nearest stars in an

effort to attract ET's attention. Arecibo, for instance, is so powerful that, when used as a transmitter, its signal is potentially capable of being detected at vast interstellar distances.

A new consideration of the METI debate assumes some urgency at this time. When the SETI Institute (SI) rejected a proposal from Doug Vakoch and Seth Shostak to initiate immediate high power radio transmissions directed to Earth's neighboring stars, Vakoch founded another organization, METI International, with the same intent. Fearing a gathering storm, a cohort of SETI scientists and thinkers issued a statement in opposition to METI in February, 2015.

Whenever one hears a "scientist" assert that ET must be altruistic, or that ET surely knows we are here, or that the closet ET civilization is at least x LY away, ask to see the data set on which they base their conclusions. As of today, no such data set exists. In the absence of any evidence whatsoever, whether one believes that the extraterrestrial civilization we might first encounter will be benign, in the fashion of Spielberg's *Close Encounters of the Third Kind* and *ET*, or malicious, as in Ridley Scott's *Alien*, or robotic, or something else entirely is strictly a matter of one's personal taste. SETI experiments seek to learn what actually resides or lurks out there in the universe. METI plays Russian roulette without even knowing how many bullets are in the chamber.

It would be wiser to listen for at least decades if not centuries or longer before we initiate intentional interstellar transmissions, and allow all of mankind a voice in that decision. The power of SETI has grown exponentially with Moore's Law, better instruments, better search strategies, and now thanks to Yuri Milner's visionary Breakthru Listen initiative, meaningful funding. The advances are so profound that it is reasonable to say that the SETI of the next 50 years will be many orders of magnitude more powerful than the SETI of the last 50 years. Shostak, perhaps METI's most articulate proponent, knows this and has widely predicted that we will achieve Contact within the next two decades. So why can he and his fellow METI-ists not wait at least until then before initiating transmissions?

A METI experiment based on an actual methodology that includes a plan to receive ET's reply, might leave some to call that method madness, but at least it would qualify as actual science. Sending a message without a practical plan in place to receive a return message, leads to the conclusion that METI transmissions are like a Hail Mary, they have more in common with a faith based religion than with science. METI-ists implicitly believe that ET is omniscient (they know we are here even though our leakage is trivial); all good (ET must be altruistically interested in our welfare); and omnipotent (even though we have made no provision to receive their return message, they will make themselves known to us somehow). It is fair to ask that METI-ists not impose their religion on the rest of us.

**Guest Editorial:**

**Hiding From Aliens No Longer An Option**

**by Bruce Dorminey**

**used by permission from his Forbes.com blog:**

**<http://www.forbes.com/sites/brucedorminey/2016/05/19/hiding-from-hostile-space-aliens-is-no-longer-an-option/>**

Two new separate groups of scientists now want to send coded radio messages into the cosmos in hopes of deliberately attracting the attention of intelligent space aliens. Known as Active SETI (Active Search for Extraterrestrial Intelligence), it's arguably no safer to entice unknown offworlders into our planetary living room than to invite total strangers in for coffee and crullers.

But even if they are totally unsavory, it's highly likely that an interstellar civilization would already be picking up our electromagnetic leakage and therefore already know we're here, Douglas Vakoch, President of the San Francisco-based non-profit METI (Messaging Extraterrestrial Intelligence) International, told me.

"It's too late to conceal ourselves in the universe, so we should decide how we want to represent ourselves," said Vakoch, an expert in interstellar message construction. "Extraterrestrials may be waiting for a clear indication from us that we're ready to start talking."

To that end, METI International plans to launch what it terms a sustained project in messaging extraterrestrial intelligence that will draw upon an international cadre of experts to make certain that the message will be both information-rich and provocative enough to elicit a response.

"We hope to [radio] transmit by the end of 2018, with an emphasis on messages conveying basic mathematical and scientific concepts," said Vakoch. "It would be ideal to use a powerful transmitter like those used for planetary radar studies, such as Arecibo Observatory."

There have already been several intentional messages beamed into the cosmos. One of the most famous was a 1974 three-minute pulsed message sent from the Arecibo radiotelescope in Puerto Rico. Aimed toward M13, a stellar globular cluster some 24,000 light years away within our own Milky Way, it was written in part by longtime SETI searcher Frank Drake and the late Carl Sagan. But its 1679 binary digits offered only a few details about our solar system, the human species and Earth's biochemistry.

Thus, proponents of sending future such messages contend that just as in politics, it's better if we define ourselves before others make unwarranted assumptions

about the nature of our civilization. That's because any civilization capable of tapping into our interstellar broadcast leakage now drifting into the cosmos might soon get a warped view of our culture.

"If so, they will receive a biased view of our species based mostly on how it entertains itself," Joao Pedro Magalhaes, a biologist at the University of Liverpool and an advocate for an Active SETI group, told me.

Although Magalhaes's own U.K.-based active SETI initiative — which is not affiliated with METI International — doesn't yet have a timeline for an actual transmission, he advocates that we simply send a message declaring we're ready to learn from older, more advanced extraterrestrial civilizations.

"My proposal is for [sending] a transmission under the assumption that extraterrestrial intelligences are already aware of our existence," said Magalhaes. If so, he says, then attempting to communicate with them using transmissions that are not above our normal broadcast radio and TV leakage will not put us in any more danger than we are already.

Both Magalhaes and Vakoch agree that any new attempts at active contact should ensure that we represent ourselves credibly. Vakoch says that this should include a means for E.T. to readily "unpack" the encoded information in our directed signals.

Although Vakoch supports previous efforts at such communication, he contends that instead of just sending a few of the chemical notations for compounds key to life here on Earth, we should include the whole Periodic Table of the Elements. He contends that this would allow the aliens to see the similarities and differences between the elements based on how they are grouped.

As for sending selfies?

Vakoch says we'd need to provide E.T. with a tutorial on how to read pictures.

"There are a lot of hidden assumptions embedded in the ways we portray three-dimensional objects on two-dimensional surfaces," said Vakoch. "Even if aliens use pictures, they may use a different set of conventions to map solid objects onto flat surfaces."

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**Disclaimer:** The opinions expressed in editorials are those of the individual authors, and do not necessarily reflect the position of The SETI League, Inc., its Trustees, officers, Advisory Board, members, donors, or commercial sponsors.



## Minutes of the Twenty-Second Annual Membership Meeting

17 April 2016, Eventide Inc., Little Ferry, NJ  
(adjacent to SETI League Headquarters)

### Call to Order

The meeting was convened at 13:03 hours EDT at Eventide Inc. (adjacent to SETI League Headquarters) in Little Ferry NJ, by Executive Director Emeritus Dr. H. Paul Shuch. Three SETI League members in good standing, as well as three guests, are present. The SETI League currently has 120 members in good standing. Our Bylaws requiring one percent of the current membership to be in attendance for the conduct of SETI League business, the attendees represent a quorum.

### Minutes of 2015 Membership Meeting

The Minutes of the 2015 Membership Meeting having been previously posted to The SETI League's World Wide Web site, a motion was passed to accept the minutes as posted.

### Treasurer's Report

Developed jointly by Dr. Shuch and Secretary/Treasurer Heather Wood, covering the calendar year 2015 (as e-filed).

- Revenues: Dues and Contributions \$12,448; Interest Income \$0; Total \$12,448.
- Expenses: Educational/Scientific Programs \$11,274; Management/General \$2,126; Fundraising \$1,350; Total \$14,751.
- Revenues minus Expenses: (\$2,302).
- End of 2015, SETI League account balances equalled \$3,845. 2015 beginning net assets \$6,147.
- 2016 Budget: Projected Revenues \$15,000; Program Expenses \$12,000; Management/General Expenses \$2,000; Fundraising Expenses \$1,000; Total Expenses \$15,000; Projected excess \$0; Projected Ending Balance \$3,845.
- This report was accepted by those present.

### Executive Director's Report

During 2015, the Executive Director:

- published four issues of SearchLites, the quarterly newsletter of The SETI League, Inc.
- gave SETI public lectures and/or concerts in Sebring FL, Boston MA, Palo Alto CA, Hunt Valley MD, Jerusalem Israel, and Cherry Hill NJ.
- performed 52 weekly updates of The SETI League website
- posted roughly 100 photos, plus numerous links and comments, to The SETI League Facebook page
- issued one press release and conducted several press interviews

- authored two SETI technical articles published in scientific journals
- served as co-chair and webmaster for the IAA SETI Permanent Committee
- responded to several dozen email and telephone inquiries from members and prospective members.
- collected modest SETI book royalties, which he contributed to The SETI League.

### Committee Reports

#### EME Committee

Report by SETI League president and station trustee Richard Factor. The EME beacon remains off the air following the sale of Mr. Factor's New Jersey property. Relocation of the beacon station to his new Arizona residence is highly unlikely. Thus, future EME activities are suspended indefinitely. However, his new location is an ideal site for Optical SETI observations, therefore such activities are likely in the future.

#### Awards Committee

Awards Committee chairman David Ocame being absent, report provided by Dr. Shuch. There were no Giordano Bruno Awards or Orville N. Greene Awards presented during 2015. Twelve websites have been given the SETI SuperStar award this year. More nominations are requested from the members. Paul will note this in the next issue of *SearchLites*.

### Old Business

- **Very Small Array**  
Dr. Shuch reports that the project remains on hold, due to lack of funding, with no progress to report since last year.
- **Mid-Year Renewal Letter**  
Last May, Ms. Wood emailed a mid-year appeal to lapsed members, with hardcopies distributed to members for whom we have no current email address. This letter generated ten reinstatements of lapsed members. The November renewal letter generated 25 more renewals of lapsed members. Sending of these letters will continue for 2016.
- **Annual Report**  
Publication of The SETI League's 2015 Annual Report was delayed pending receipt by the Executive Director of additional 2015 financial information, and adoption of the 2016 annual budget. It will be made available to members via the website, in Portable Document Format (PDF), later this month. Ms. Wood will distribute hard-copies of this report to our major donors.
- **Web Server**  
Mr. Factor reports that the website is functioning well, though it currently supports neither File Transfer Protocol nor bulk email lists. We con-

tinue to use a commercial email service for official SETI League communications.

#### New Business

- **Website Server Proposal**  
Dr. Shuch reports the successful results his business has experienced with low-cost, highly reliable web and email hosting from a commercial service, which provides him with FTP access and mailing lists. He recommends that the Board consider at the upcoming Board meeting a similar solution for The SETI League.
- **Next Meeting**  
The next Annual Meeting will be held on Sunday 23 April 2016. The date has been verified as not in conflict with Easter, Passover, or US tax season. The meeting will be at Eventide, Inc. at 1300 hours EDT, to be followed immediately by the Board of Trustees meeting. The date and time will be announced to the membership via the website and newsletter.

#### Good and Welfare

- The SETI League's Facebook page [www.facebook.com/setileague](http://www.facebook.com/setileague) has now generated more than 1,000 "likes", numerous member posts, and considerable discussion among members. The SETI League recently posted an offer of heavily discounted membership dues to our Facebook friends. To date, there have been no takers.
- Mr. Factor reported on the status of the sale of his New Jersey properties.
- Dr. Shuch read an email from Awards Chairman David Ocame regarding his recent health issues. The membership present wishes him a full and speedy recovery.
- The SETI League welcomed three guests and potential members: engineers Matt Bajor KC2ORE and Jenny Maung KK4BYG, and retired school-teacher Leonard R. Bajor. They reported briefly on their plans to construct and operate a Project Argus station.

#### Adjournment

The Annual Membership Meeting was adjourned by the Executive Director Emeritus at 13:38 hours EDT on 17 April 2016. A Regular Board of Trustees meeting followed.

#### Business Transacted by Board of Trustees:

1. **Quorum Call**  
Trustees and Officers present: A. Heather Wood, Richard Factor, H. Paul Shuch  
Trustees and Officers absent: Martin Schreiber  
A quorum is present.

2. **Election of Officers**  
The following slate of officers was retained for an additional one-year term:  
President - Richard Factor, serving without compensation  
Secretary/Treasurer - A. Heather Wood  
Executive Director Emeritus - H. Paul Shuch, serving on a volunteer basis  
Registered Agent - Anthony Agnello
3. **Personnel matters**
  - No executive session was convened nor Personnel reviews conducted, as all persons involved expressed satisfaction with present performance and arrangements.
  - The Executive Director Emeritus reviewed with the Board of Trustees the previously adopted terms for cost-sharing of his health insurance premiums, as a program expense, which will continue at last year's percentage, pending availability of funds and subject to periodic review.
4. **Annual Budget**  
The draft 2016 Budget presented during the Membership Meeting was adopted.
5. **Advisory Board**  
The Executive Director Emeritus will draft an annual letter to our Advisory Board members, thanking them for their continued service to The SETI League. The Secretary/Treasurer will provide a list of email and/or postal addresses for distribution of said letter.
6. **Bank Fees**  
The Secretary/Treasurer reports that during 2015 there was a change in credit card processing, resulting in a reduction of bank fees from \$50 to \$21 per month. She will continue to query banks as to the availability of a free non-profit checking account.
7. **Tax Return Filing**  
The Secretary/Treasurer reports that, for the sixth year in a row, she attempted to eFile our organizational tax return using the electronic Form 990 postcard, and for the sixth year in a row, it was rejected by the IRS website. Several phone calls ensued, the most recent of which resulted in a request that we try again in one week. Heather will file, either electronically or by post, before the filing deadline.



8. **Registered Agent**

The New Jersey Division of Revenue continues to require that we designate a Registered Agent to execute certain state documents. Mr. Factor was previously appointed to this post, but is no longer a New Jersey resident. The Secretary/Treasurer has recruited member and New Jersey resident Anthony Agnello to take on this important duty. The Board thanks Mr. Agnello for his assistance.

9. **Web Hosting and Press List**

As the press corps has proved resistant to using Facebook as a means of disseminating SETI League information, Dr. Shuch recommends that all SETI League website and email facilities (including a reconstructed Press Distribution List) be transferred to a commercial hosting service, at an approximate cost of \$10 per month. Mr. Factor agreed to continue attempting to implement FTP and email lists on his server, with an understanding that if he is not successful in doing so within a reasonable time, Dr. Shuch is authorized to secure commercial web hosting. He did stipulate that we continue to use Network Solutions as our domain registrar.

10. **Telecommunications**

It has been reported that incoming SETI League phone calls are being routed to a non-accessible voicemail box, and that our published fax number is not currently connected to an active fax machine. Dr. Shuch expressed concern about potentially lost communications compromising member retention. Mr. Factor reports that implementation of a Verizon voicemail box is imminent. Ms. Wood will investigate a fax to email forwarding service.

11. **Scheduling of Next Meeting**

The SETI League Board of Trustees will next meet on Sunday, 23 April 2017, immediately following the 23rd Annual Membership Meeting, in Little Ferry NJ.

12. **Adjournment**

The Board of Trustees meeting was adjourned at 13:58 EDT. ❖

## 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](http://www.setileague.org)) under *Event Horizon*, or email to us at [info@setileague.org](mailto:info@setileague.org), to obtain further details. Members are also encouraged to send in information about upcoming events of which we may be unaware.

**August 17 - 21, 2016:** *MidAmeriCon II*, the 74th World Science Fiction Convention. Kansas City, MO.

**September 26 - 30, 2016:** *67th International Astronautical Congress*, Guadalajara, Mexico.

**November 10 - 15, 2016:** *AMSAT Space Symposium*, Galveston, TX.

**November 18 - 20, 2016:** *Philcon*, Cherry Hill, NJ.

**April 15, 2017, 0000 UTC - 2359 UTC:** Seventeenth annual SETI League Ham Radio *QSO Party*: 3.551, 7.0309, 7.2039, 14.084, 14.204, 21.306, and 28.408 MHz.

**April 23, 2017, 1300 EDT:** Twenty Third SETI League *Annual Membership Meeting*, Little Ferry, NJ.

**August 9 - 13, 2017:** *75th Science Fiction Convention*, Helsinki, Finland.

**September 25 - 29, 2017:** *68th International Astronautical Congress*, Adelaide, Australia.

**October 1 - 5, 2018:** *69th International Astronautical Congress*, Bremen, Germany ❖



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