



The SETI League, Inc.

2012 Annual Report
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SETI scientists seek to determine, primarily through microwave and optical measurements, whether humankind is alone in the universe. Since Congress terminated NASA's SETI funding in 1993, The SETI League and other scientific groups have been attempting to privatize the research. Experimenters interested in participating in the search for intelligent alien life, or citizens wishing to help support it, should visit us on the Web at <http://www.setileague.org/>, email to join@setileague.org, send a fax to +1 (201) 641-1771, or contact The SETI League, Inc. membership hotline at +1 (800) TAU-SETI. Be sure to provide us with a postal address, to which we will mail further information. The SETI League, Inc. is a membership-supported, non-profit [501(c)(3)], educational and scientific corporation dedicated to the electromagnetic Search for Extra-Terrestrial Intelligence.



SETI League Vision

Recognizing that confirmed evidence of extraterrestrial intelligence will change forever our view of humanity's place in the cosmos, The SETI League, Inc. envisions a worldwide network of amateur and professional scientists working together to hasten our entry into the galactic community.

SETI League Mission

To encourage and support the Search for Extra-Terrestrial Intelligence by:

1. attracting a wide range of amateur and professional scientists into the SETI community;
2. developing technologies to assist the SETI experimenter in assembling a workable radio or optical SETI observatory;
3. disseminating hardware and software designs in support of SETI;
4. coordinating SETI experimenters worldwide in conducting a thorough sky survey;
5. providing a variety of forums and media for wide-ranging communication among SETI experimenters, enthusiasts, and organizations;
6. designing, assembling, and operating advanced optical and radio telescopes;
7. identifying and publicizing potential spin-off applications of SETI technologies; and
8. raising public consciousness as to the importance and significance of a broad-based Search for Extra-Terrestrial Intelligence that encompasses a variety of strategies.



The Case for Amateur SETI

When the NASA SETI Program was cancelled in 1993, the US government accomplished three things: they reduced their science expenditures by 5 cents per US citizen per year; they reduced the federal deficit by 0.0006%; and they drew a curtain across the sky, shielding us from possible membership in the cosmic community. The initial reaction most SETI supporters was dismay. That gave way to elation a year later, with the founding of The SETI League and the privatization of SETI science.

The giant radio telescopes once employed to scan the heavens for signs of life have a limitation. They are incredibly sensitive, but can only view a tiny portion (perhaps a millionth) of the sky at a given time. That means that if such an instrument is turned on, at precisely the right frequency, at precisely the instant The Call comes in, there's still a 99.9999% chance it will be pointed the wrong way.

One solution is to build a network of a million such instruments. But, at a cost of a hundred million dollars apiece, we'll quickly exceed the Gross Planetary Product.

Fortunately, there is another way. Amateur radio telescopes are less sensitive than NASA's dishes, but each can see two hundred times more sky. Which means that only five thousand of these smaller instruments (which cost only a few hundred to a few thousand dollars apiece to build) can, if properly coordinated, accomplish something which no government project ever contemplated: See in all directions at once.

Around the world, around 150 of such amateur radio telescopes have already been built, using discarded satellite television dish antennas, home computers, and readily available signal analysis software. The SETI League envisions a day when thousands of stations will be online, and our great goal achieved: that no direction on the sky shall evade our gaze.

Privatized science makes good sense. When governments get involved in large-scale projects, they often end up taking twice as long, costing twice as much, and working half as well. The SETI League is now doing its modest search on just half a percent of NASA's old SETI budget. But, we do need your support and participation, to keep that search alive. Whether you choose to operate your own radio telescope, to help develop new technology, or merely to share vicariously in the thrill of discovery, you are invited to join The SETI League. Together, there's no limit to what we might yet accomplish.



A message from our Executive Director Emeritus:

Pearl Harbor Protocols

by Prof. H. Paul Shuch

Joseph Lockhard, who hailed from the Newberry section of Williamsport, PA (coincidentally just six miles from my present residence), was never a SETI League member. He was not a radio amateur, and as far as I know, evidenced no interest in the electromagnetic Search for Extraterrestrial Intelligence. Nevertheless, his passing on 2 November 2012, at the age of 90, should be marked by historians and SETIzens alike. For Joe was, as far as I can determine, the first person to follow the SETI Post-Detection Protocols.

Joe Lockard's fifteen minutes of fame started shortly after 7 AM on Sunday morning, 7 December 1941 (in FDR's words, "a date which will live in infamy"). Lockard was one of two US Army privates operating a primitive radar at Opana Point on the island of Oahu, Hawaii, when a huge echo appeared on their radar screens, heading directly toward the US naval base at Pearl Harbor. Lockard called nearby Fort Shafter to warn of possible approaching enemy aircraft. An officer at the other end of the circuit dismissed his detection as probably just American B-17 bombers inbound from California.

Of course, Lockard's target turned out to be a swarm of Japanese aircraft launching the attack that took over 2400 lives, and triggered the entry of the US into the Second World War.

"There was this thing up on the screen," stated Lockard in a 1988 interview. "It was the biggest blip I'd ever seen! At first, we thought something was wrong with the equipment, so we ran it through a series of tests. I checked out the receiver and transmitter to see if anything was mechanically wrong. There was nothing electronically wrong that we could see, so we started plotting the blip. We did that for a while, then decided we'd call to see if there was anyone down there on the phone."

All of this should sound vaguely familiar to The SETI League's cadre of Project Argus observers. Unwittingly, Lockard had established a set of procedures that stand to this day as the SETI Post-Detection Protocols. First, run a diagnostic on your equipment, to make sure it's not lying to you. Continue to track the detection for as long as possible, and call up another observer to try to get verification.

Joe Lockard was neither seeking, nor detecting, extraterrestrial intelligence. But the same procedures used then to detect terrestrial hostility still apply in our more peaceful pursuit. Unlike Lockard, who on Pearl Harbor Day was operating one of the very few radar warning systems in the world, we in the SETI community are blessed with the availability of dozens of very capable radio telescopes around the world, all straining to confirm our individual observations. We can be extremely proud that most of those telescopes are built and operated by SETI League members.

We should continue to monitor the skies, as Joe Lockard did 72 years ago, and follow our own post-detection protocols. When we do get a credible hit, let's just hope that the person on the other end of the phone line doesn't casually dismiss our detections as "probably just American B-17s, inbound from California."

Program Service Accomplishments – Science

During 2012, The SETI League and its members made the following contributions to radio astronomy and SETI science:

- Supported 147 Project Argus radio telescopes built by members in 27 countries on all seven continents. Coordinated their SETI and astrophysical observations. Argus stations analyzed and cataloged several new candidate signals during 2012.
- Members' stations continued to monitor telemetry signals and science beacons from several NASA and ESA interplanetary space probes.
- Provided Committee leadership (as co-chairman) to the SETI Permanent Study Group of the International Academy of Astronautics.
- SETI League members continue to lend computer support to the SETI@home distributed computing experiment, through the Berkeley Open Infrastructure for Networked Computing (BOINC).



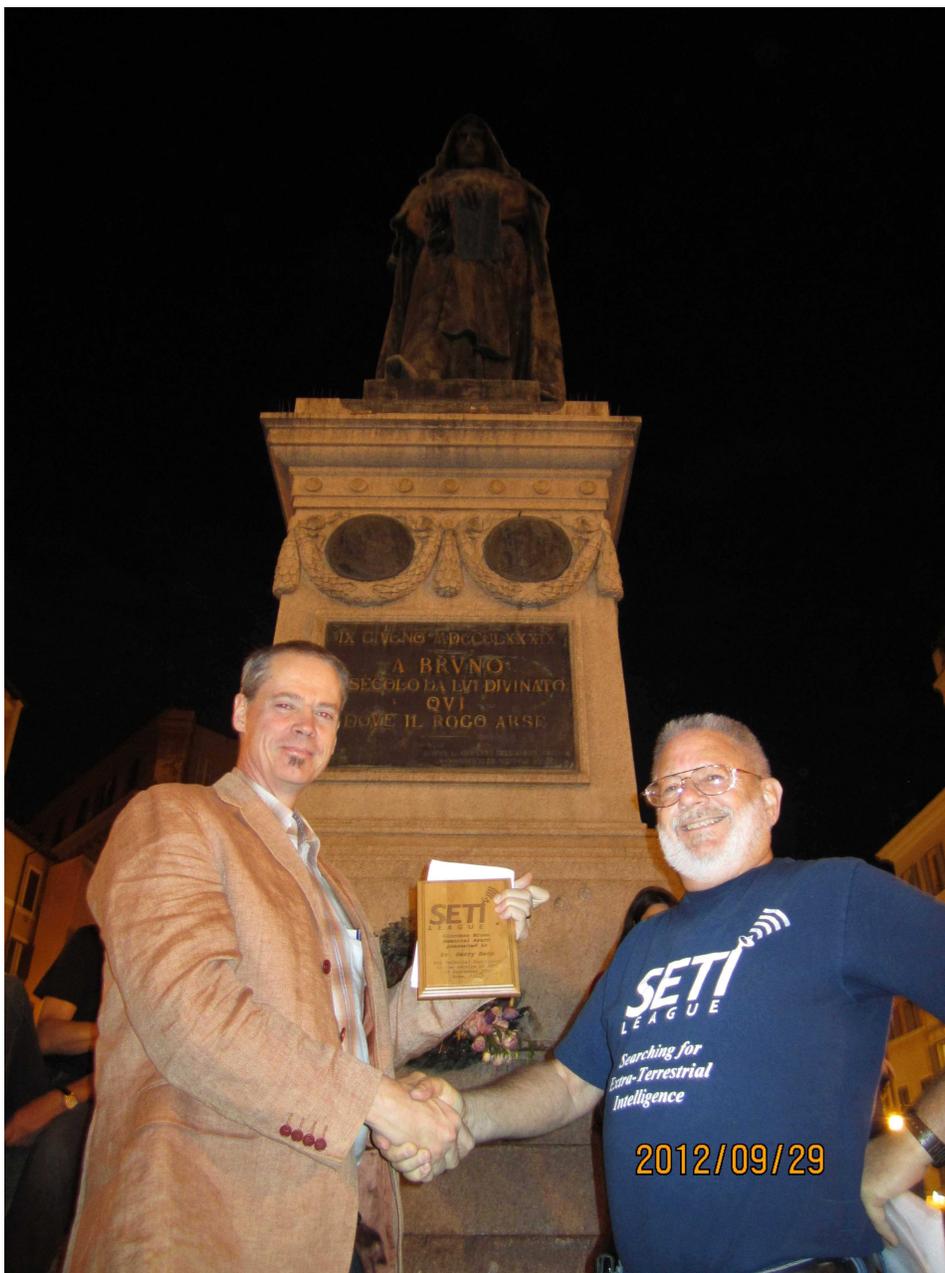
Executive Director Emeritus Dr. H. Paul Shuch jamming in Florida with Robert Heller, a fellow member of the Flying Musicians Association. Paul's science and SETI songs continue to educate and entertain listeners around the world.

(FMA photo)

Program Service Accomplishments – Technology

During 2012, The SETI League and its members made the following contributions to technology design and development:

- Assisted several members in construction of pending Project Argus stations.
- Coordinated and archived four closed technical email lists.



At the base of the Bruno Monument at Campo de' Fiori in Rome, physicist Dr. Gerry Harp is presented the 2012 Giordano Bruno Memorial Award, the SETI League's highest honor, by our Executive Director Emeritus, Dr. H. Paul Shuch.

(Stephane Dumas photo)

Program Service Accomplishments – Public Education

During 2012, The SETI League and its members made the following contributions to educating the public on SETI science and technology:

- Executive Director Emeritus delivered seven public SETI lectures in the Republic of San Marino, the US, and Italy.
- Members participated in the 2012 Green Bank Technical Conference of the Society of Amateur Radio Astronomers (SARA), a SETI League affiliate, presenting papers and conducting workshops.
- Executive Director Emeritus published six technical articles in scholarly journals, Conference proceedings, and the popular press, served as a manuscript reviewer for the International Academy of Astronautics, and as a member of the British Interplanetary Society's editorial board.
- The SETI League provided webmastering and website hosting services to the International Academy of Astronautics SETI Permanent Committee.
- Distributed CD copies of "The SETI League Technical Manual" and "Tune In The Universe!", a radio amateur's guide to the Search for Extra-Terrestrial Intelligence.
- Officers and volunteer Regional Coordinators answered numerous email queries from around the world on technical and societal aspects of SETI.
- Distributed numerous print and CD copies of various SETI League Conference Proceedings.

Stephane Dumas, SETI League volunteer Regional Coordinator for Eastern Canada, lecturing at the International Academy of Astronautics conference on Searching for Life Signatures, in the Republic of San Marino.

(SETI League photo)



Program Service Accomplishments – Media and Outreach

During 2012, The SETI League and its members engaged in the following media and outreach activities:

- Published four issues of SearchLites, the quarterly newsletter of The SETI League, Inc.
- Coordinated and archived two open public email lists.
- Distributed four Press Releases and twelve Editorials to over 700 media outlets worldwide.
- Filed 52 weekly updates to The SETI League's extensive website.
- Mailed out dozens of membership brochures to email requesters.
- Several of our 60 volunteer Regional Coordinators in 46 countries conducted print and broadcast media briefings and interviews.
- Executive Director Emeritus granted interviews to print media and broadcast outlets in New Jersey, Pennsylvania, San Marino, and Italy.
- Awards Committee chairman designated recipients for the seventeenth annual Giordano Bruno Memorial Award, the tenth Orville Greene Service Award, and twelve SETI SuperStar Awards.



Half a dozen SETI League members met last autumn at the Medicina Radio Telescope facility near Bologna, Italy, for an impromptu technical meeting.

(SETI League photo)

Trustees and Officers

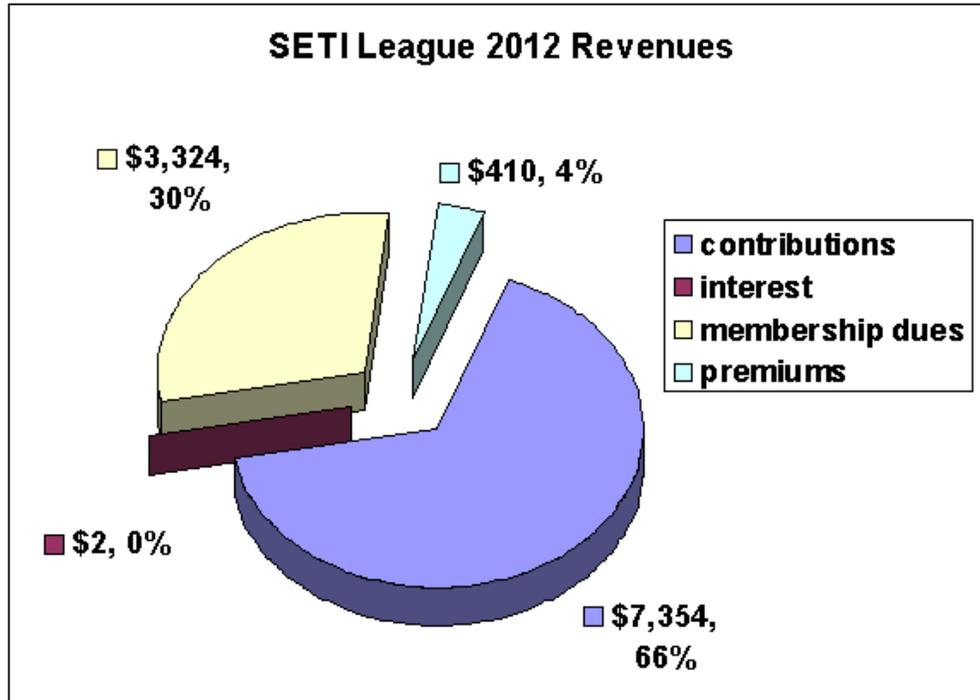
In accordance with Article V, Section 2 of the Bylaws of The SETI League, Inc., as amended, “The Board shall consist of all officers along with such other trustee positions as determined by the Board of Trustees at their annual meeting.” At its annual meeting on 22 April 2012, the Board confirmed the following officers and trustees to serve for a term of one year:

<u>Appointee</u>	<u>Position</u>	<u>Professional Affiliation</u>
Richard Factor	President	Chairman, Eventide Inc.
A. Heather Wood	Secretary/Treasurer	The SETI League, Inc.
Martin Schreiber, CPA	Trustee	Brand Sonnenschine LLP
H. Paul Shuch, Ph.D.	Executive Director Emeritus	AvSport of Lock Haven

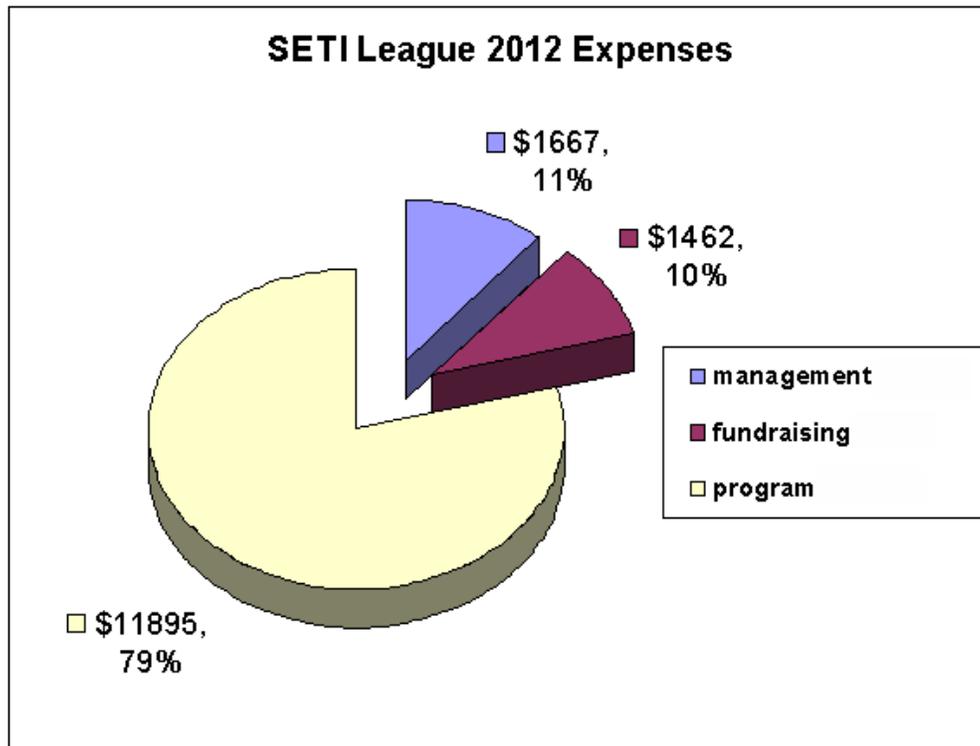


Dr. Clarence Spector receives The SETI League’s 2012 Orville Greene Service Award from Executive Director Emeritus Dr. H. Paul Shuch, at his home in San Jose CA. Having introduced the SETI League’s founding President to Shuch three decades ago, Spector can claim indirect responsibility for the League’s formation. *(Libby Spector photo)*

Financial Highlights



2012 Revenues



2011 Expenses



Budget Tracking – 2012

990 Line	REVENUES:	2012 (budget)	2012 (actual)
1d	Dues, Grants & Contributions	18,000	11,088
4	Interest & Investments	5	2
12	Total Revenues:	18,005	11,090
	EXPENSES:	2012 (budget)	2012 (actual)
13	Educ. and Scientific Programs	17,000	11,895
14	Management & General	3,000	1,667
15	Fundraising	1,000	1,462
17	Total Expenses:	21,000	15,024
18	Excess or (Deficit) for the year	(2,995)	(3,934)
	BALANCE SHEET:	2012 (budget)	2012 (actual)
19	Beginning Net Assets	6,851	6,851
21	Ending Net Assets	3,856	2,917

Annual Budget – 2013

990 Line	REVENUES:	2013 (proposed)
1d	Dues, Grants & Contributions	11,000
4	Interest & Investments	2
12	Total Revenues:	11,002
	EXPENSES:	
13	Educ. and Scientific Programs	10,000
14	Management & General	1,600
15	Fundraising	1,400
17	Total Expenses:	13,000
18	Excess or (Deficit) for the year	(1,998)
	BALANCE SHEET:	
19	Beginning Net Assets	2,917
21	Ending Net Assets	919



2012 Donors

The SETI League recognizes the extraordinary commitment of our Major Donors, each of whom has provided contributions of \$1,000 US or more, in cash or in kind, during 2012:

- Mr. Richard Factor (USA)
- Second Foundation (USA)
- Mr. Mark Pankhurst (BWI)
- Prof. H. Paul Shuch (USA)

The SETI League welcomes the following individuals, who became new members of The SETI League during 2012:

- Fred Collins II (USA)
- James Crosland (USA)
- John Doby (USA)
- Joseph Foley (USA)
- William Jackson (USA)
- Joseph Johaneman (USA)
- Brodrick McGill (USA)
- Andrew J. Moore (USA)
- John Russell (USA)
- Fred Seymour (USA)
- Julia Shea (USA)
- Regis-Martin Simard (Canada)
- Michel Tossaint (Netherlands)

We gratefully acknowledge the following supporters, who during the past year have made financial or in-kind contributions to The SETI League above and beyond membership dues:

- Adriano V. Autino
- Francesco Brigante
- Peter Cheasley
- Stephane Dumas
- Paul Gilster
- Jon Lomberg
- Claudio Maccone
- DD Purohit
- Rob Sawyer
- Seth Shostak

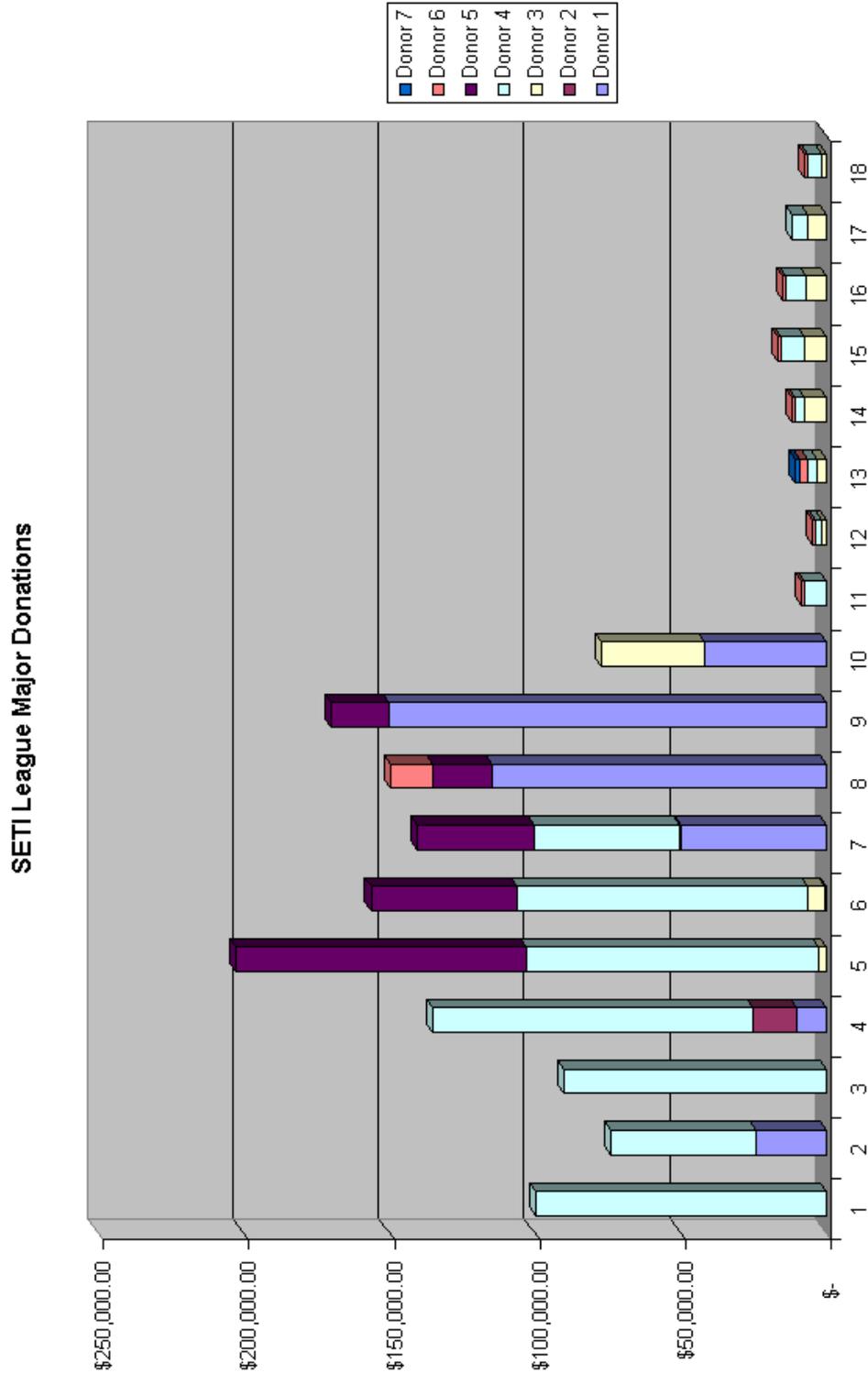


Among the respectable turnout at the September 2012 IAA Searching for Life Signatures conference in San Marino were half a dozen SETI League members. Two of them can be identified by their t-shirts.

Francesco Brigante photo



Major Donations, Since Inception



Additional Information

For additional information about The SETI League, Inc. and its various educational and scientific programs, please see the following pages on The SETI League website.

Main Page	http://www.setileague.org
Financial Information	http://www.setileague.org/finances
Membership Services Department	http://www.setileague.org/admin
Publications Department	http://www.setileague.org/articles
Press Relations Department	http://www.setileague.org/press
Photo Gallery	http://www.setileague.org/photos
Technical Programs:	
Project Argus	http://www.setileague.org/argus
Very Small Array	http://www.setileague.org/vsa
Array2k	http://www.setileague.org/array2k
Moonbounce Beacon	http://www.setileague.org/eme
Awards Program	http://www.setileague.org/awards
Hardware Support	http://www.setileague.org/hardware
Software Support	http://www.setileague.org/software
Technical Symposium	http://www.setileague.org/seticon
Dr. SETI ® On Tour	http://drseti.org



In central Italy, member Dr. Claudio Maccone lectures to eighteen SETI enthusiasts about the meteor impact that led to the extinction of the dinosaurs, at the discovery site of the geological evidence that supports the prevailing theory of cyclical mass extinctions.

(SETI League photo)