



The SETI League, Inc.

2009 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.



Are We Alone?

by Prof. H. Paul Shuch
Executive Director Emeritus

Are we alone, the sole sentient species in the cosmos? Or, might there be others with whom we share the universe? It's a fundamental question, which has haunted humankind since first we realized that the points of light in the night sky are other suns. Now, for perhaps the first time in human history, we have the technology to begin to seek a definitive answer.

Contemporary scientific theories point to the likelihood that we inhabit a universe teeming with life. The emerging science of astrobiology, which contemplates the origin and distribution of life, is just beginning to bring in supporting evidence. Over the past dozen years, astronomers have detected hundreds of planets orbiting distant stars. A few of those planets now appear likely to support liquid water, a condition necessary for the emergence of life as we know it. We have long known that the chemical precursors of life permeate the black void of space. Recently, in the space between the stars, we have detected chemical process abundant that seem to mimic life. Many of us now believe that the emergence of life is as much a part of the natural cycle as are the burning of stars and the spinning of planets.

But, belief itself does not make it so. Scientists must continually guard against allowing their beliefs to overshadow their objective observations. We take pains to separate faith from fact. We can argue until our sun burns out, but the only way we will ever know for sure about other life is to search for it.

Fortunately, the tools for that search fall readily to hand. Around the world, dozens of organizations are digging deep for life's signature. They are doing so under private funding, with sophisticated equipment developed on a shoestring budget. The search for life is one of the greatest scientific bargains of all time.

One of the many search strategies to detect intelligent extraterrestrial life (the one to which I have dedicated a significant fraction of my life) is SETI, a science that uses radio telescopes to seek out artificially generated radio and laser signals in space. So far, none has been convincingly confirmed. But, we're in our technological infancy; a thorough SETI search may take generations. SETI is not a science that offers much to he or she who demands instant gratification. To date, not only have we not yet scratched the surface; we haven't even felt the itch.

If we do the search, and we do it right, sometime in the distant future we will have arrived at one of two conclusions: either we are not alone in the cosmos, or we are. Either possibility boggles the imagination.



Case for Support

Ever since mankind first used intellect to distinguish itself from the rest of the animal world, a fundamental and profound distinction became evident --- we do not seek simply to survive, we seek to understand.

Intellectual curiosity is part of what separates man from beast. And scientific endeavor has always been driven less by need than by desire. We desire knowledge not for what we can do with that knowledge, but for the sake of the knowledge itself.

Modern scientific research has until recently followed the same principle: ask the questions, find the answers, then figure out how to apply that knowledge. But today, more and more scientific research is being dictated by a pre-determined end, an application in search of a question.

Scientific research isn't about application, but discovery. The Search for ExtraTerrestrial Intelligence (SETI) is mankind's search to know what, or who, is out there. Because it is contrary to our nature to not try and discover if there is intelligent life beyond our own world.

The SETI League was established in 1994 to continue the scientific research formerly conducted by NASA. When funding for NASA's SETI research was cut, it was left up to a handful of visionary pioneering scientists to privatize the search for intelligent life in the universe.

The SETI League is a 501 (c)(3) not-for-profit scientific research and education organization. Universal in its scope, it is international in its composition, with more than fifteen hundred volunteers in five dozen countries participating in the organization's activities.

Project Argus is a prime example of the type of work **The SETI League** is involved in. *Project Argus* is an effort to deploy and coordinate roughly 5,000 small radio telescopes around the world, in an all-sky survey searching for microwave signals which might possibly be of intelligent extra-terrestrial origin. When fully operational, *Project Argus* will provide the first ever continuous monitoring of the entire sky, in all directions in real time.

SETI League members have developed the necessary hardware, software, protocols, and procedures for distribution worldwide. Traditional research grade telescopes, of the type used by NASA, can view only a small fraction of the sky at a given time, typically on the order of one part in a million. To achieve the goal of continuous all-sky coverage would require one million telescopes, properly located and aimed. The cost for such an enterprise would exceed the Gross Planetary Product.

Project Argus has taken an innovative approach to the problem. By employing much smaller, relatively inexpensive amateur radio telescopes, built and operated by **SETI League** members at their own expense, we will be able to achieve an all-sky view for an infinitesimal expenditure.

Only 5,000 of these smaller instruments, properly coordinated, are required to see in all directions at once. The equipment, though modest, is capable of detecting microwave radiation from likely sources out to a distance of several hundred light years.

This is an example of the innovative volunteer projects in which members of **The SETI League** are engaged. And, while the relative cost of these types of projects is low, there are hard costs nonetheless.

To continue this research and expand **SETI League** activities, the organization needs to raise \$600,000 over the next three years. Membership dues, gifts, and contributions will certainly help, but it is necessary to expand funding sources beyond current levels and current sources.

The SETI League is seeking investments of \$50,000 from foundations, corporations, and individuals, those who are committed to scientific research and radio astronomy.

We welcome the opportunity to present our annual report and a full proposal for funding. And while spin-off technologies and applications are an inevitable result of scientific exploration and discovery, it is the search that inspires us, that causes us to lift our eyes to the heavens and wonder.

Program Service Accomplishments – Science

During 2009, The SETI League and its members made the following contributions to radio astronomy and SETI science:

- Supported 144 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 2009.
- 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.
- Five SETI League members were selected to serve on the Foreign Advisory Council of the newly formed SETI Korea Society.
- SETI League members continue to lend computer support to the SETI@home distributed computing experiment, through the Berkeley Open Infrastructure for Networked Computing (BOINC).



This dish at the Yonsei University Observatory in Seoul, Korea is used for SETI experiments by Prof. Myung-Hyun Rhee and his students. Several SETI League members, including our Executive Director Emeritus, serve on the Foreign Advisory Council to the SETI Korea Society. (SETI League photo)

Program Service Accomplishments – Technology

During 2009, The SETI League and its members made the following contributions to technology design and development:

- Refined and reported on electromagnetic link analysis for an Interstellar Radio Message (IRM) beamed toward Alpha Centauri.
- Coordinated and archived four closed technical email lists.
- Inducted one additional amateur radio astronomer into the Extra-Terrestrial Century Club, bringing the total number of ETCC honorees to sixteen.



Numerous SETI League members were active participants at the 2009 technical conference of the Society of Amateur Radio Astronomers, a SETI League affiliate society, at the National Radio Astronomy Observatory, Green Bank WV USA. (SARA photo)

Program Service Accomplishments – Public Education

During 2009, The SETI League and its members made the following contributions to educating the public on SETI science and technology:

- Executive Director Emeritus delivered ten SETI lectures on three continents.
- The SETI League co-sponsored the Fifth International Radio Astronomy Congress in Heidelberg, Germany.
- Our members coordinated the 2009 Technical Conference of the Society of Amateur Radio Astronomers (SARA), a SETI League affiliate, editing and contributing to the Proceedings for that Conference.
- Executive Director Emeritus completed his term as Vice President for the Society of Amateur Radio Astronomers (SARA), a SETI League affiliate.
- Executive Director Emeritus published seven technical articles in scholarly journals and the popular press, plus six SETI related papers in Conference proceedings.
- Provided webmastering services to several sister organizations, including the Society of Amateur Radio Astronomers, International Academy of Astronautics SETI Permanent Study Group, and Invitation to ETI.
- 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.
- Released the third SETI League music CD, featuring a dozen new SETI songs.



More than two dozen SETI League members participated in the Fifth International Radio Astronomy Congress, co-sponsored by The SETI League, held at the Heidelberg University of Applied Science in September, 2009.

(Jan Maltry photo)

Program Service Accomplishments – Media and Outreach

During 2009, 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 eight 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 print media and broadcast interviews in the US, Germany, and Korea.
- Awards Committee chairman presented the fourteenth annual Giordano Bruno Memorial Award, the eighth annual Orville N. Greene Service Award, and twelve SETI SuperStar Awards.



During the 2009 Society of Amateur Radio Astronomers (SARA) technical conference at NRAO Green Bank WV, SETI League executive director emeritus H. Paul Shuch (left) presented the annual Giordano Bruno Memorial Award to prominent radio astronomer Jill Tarter, for technical excellence in the furtherance of SETI science.

(SETI League photo)

Trustees and Officers

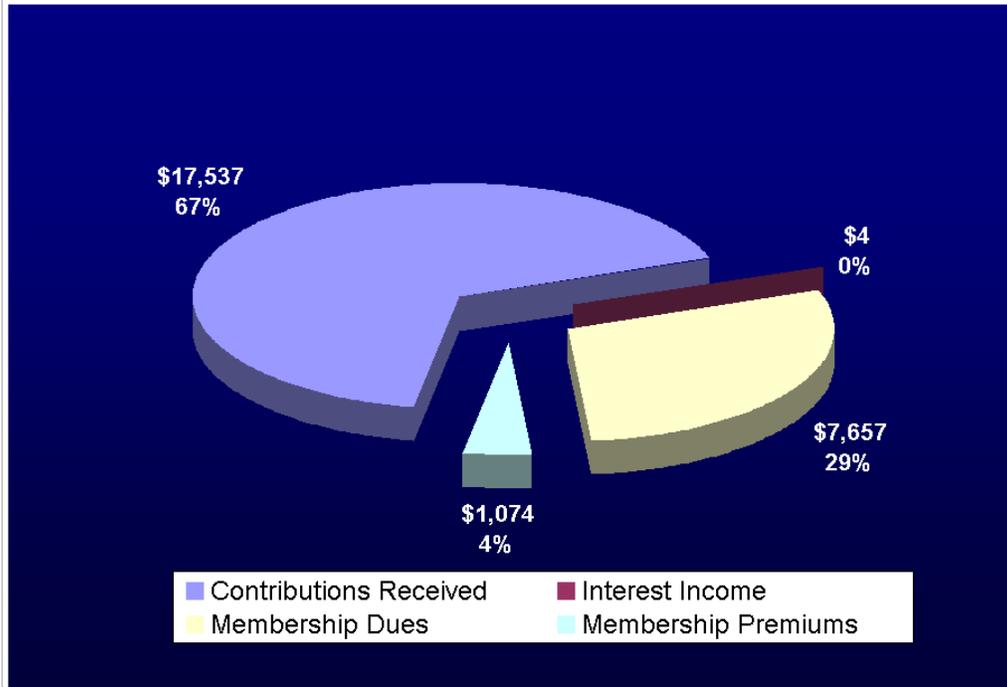
In accordance with Article V, Section 2 of the Bylaws of The SETI League, Inc., as amended, “The Board shall consist of all officers along with such other trustee positions as determined by the Board of Trustees at their annual meeting.” At its annual meeting on 19 April 2009, the Board confirmed the 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	Executive Secretary, The SETI League, Inc.
Martin Schreiber, CPA	Trustee	Accountant, Brand Sonnenschine LLP
H. Paul Shuch, Ph.D.	COO	Executive Director Emeritus, The SETI League, Inc.

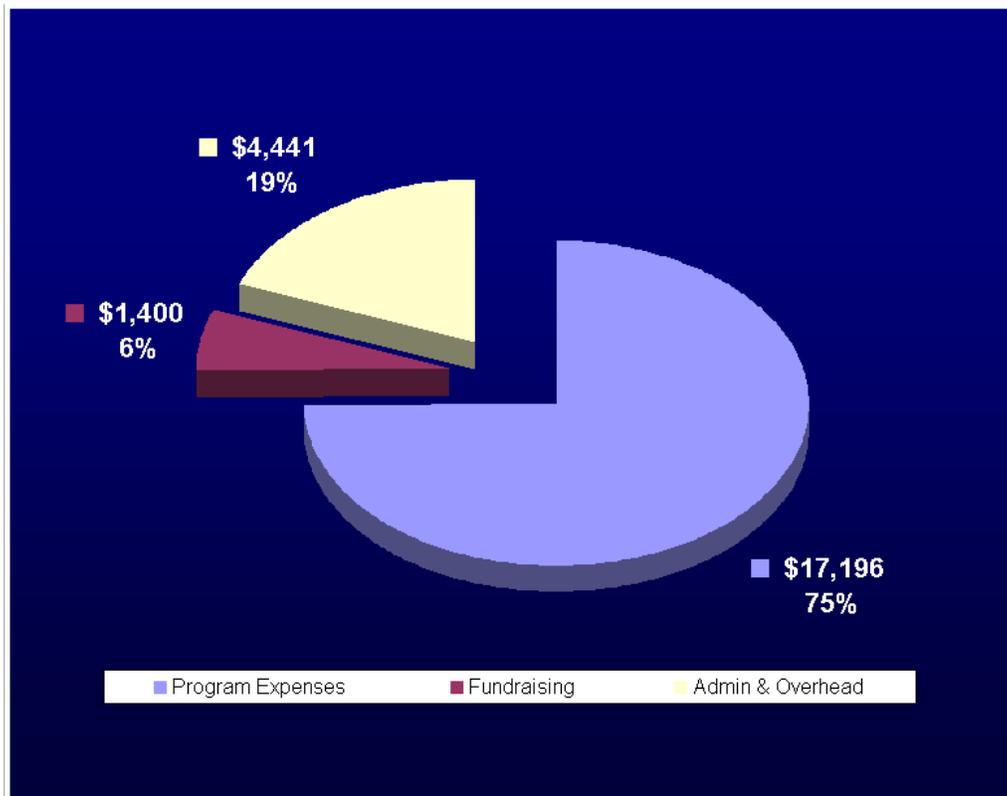


In addition to his public science lectures SETI League executive director emeritus Prof. H. Paul Shuch gave half a dozen concerts around the world, at which he performed his popular and educational SETI songs. (Jan Maltry photo)

Financial Highlights



2009 Revenues

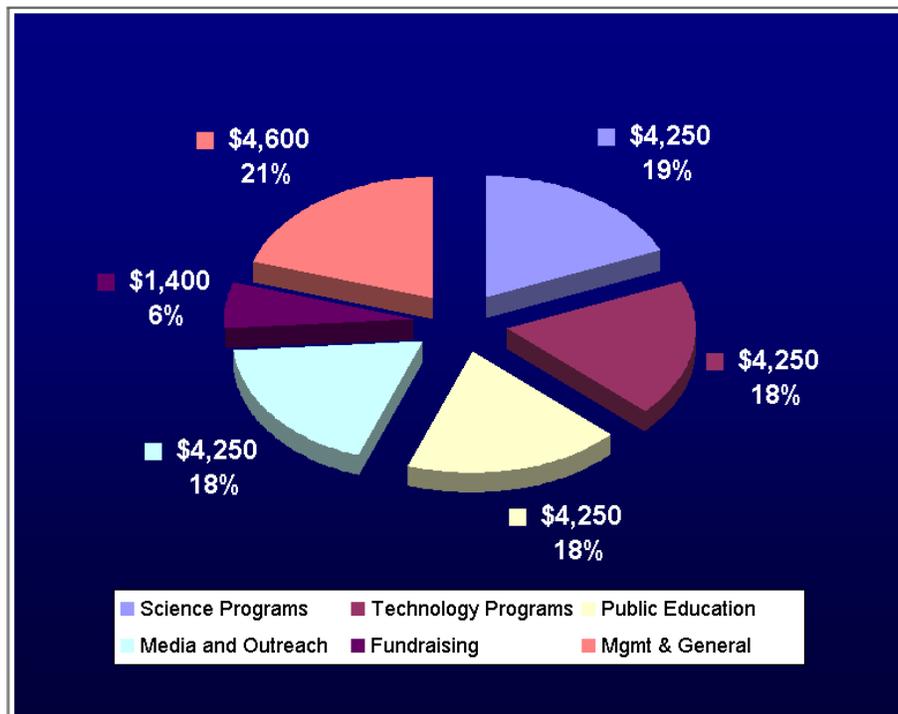


2009 Expenses



Annual Budget – 2010

990 Line	REVENUES:	2010 (projected)
1d	Dues, Grants & Contributions	20,000
4	Interest & Investments	25
12	Total Revenues:	20,025
	EXPENSES:	
13	Educ. and Scientific Programs	17,000
14	Management & General	4,600
15	Fundraising	1,400
17	Total Expenses:	22,000
18	Excess or (Deficit) for the year	(1,975)
	BALANCE SHEET:	
19	Beginning Net Assets	8,178
21	Ending Net Assets	6,203



2010 Projected Expenses



2010 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 2009:

- Mr. Richard Factor (USA)
- Mr. Mark G. Pankhurst (British West Indies)
- Second Foundation (USA)
- Prof. H. Paul Shuch (USA)

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:

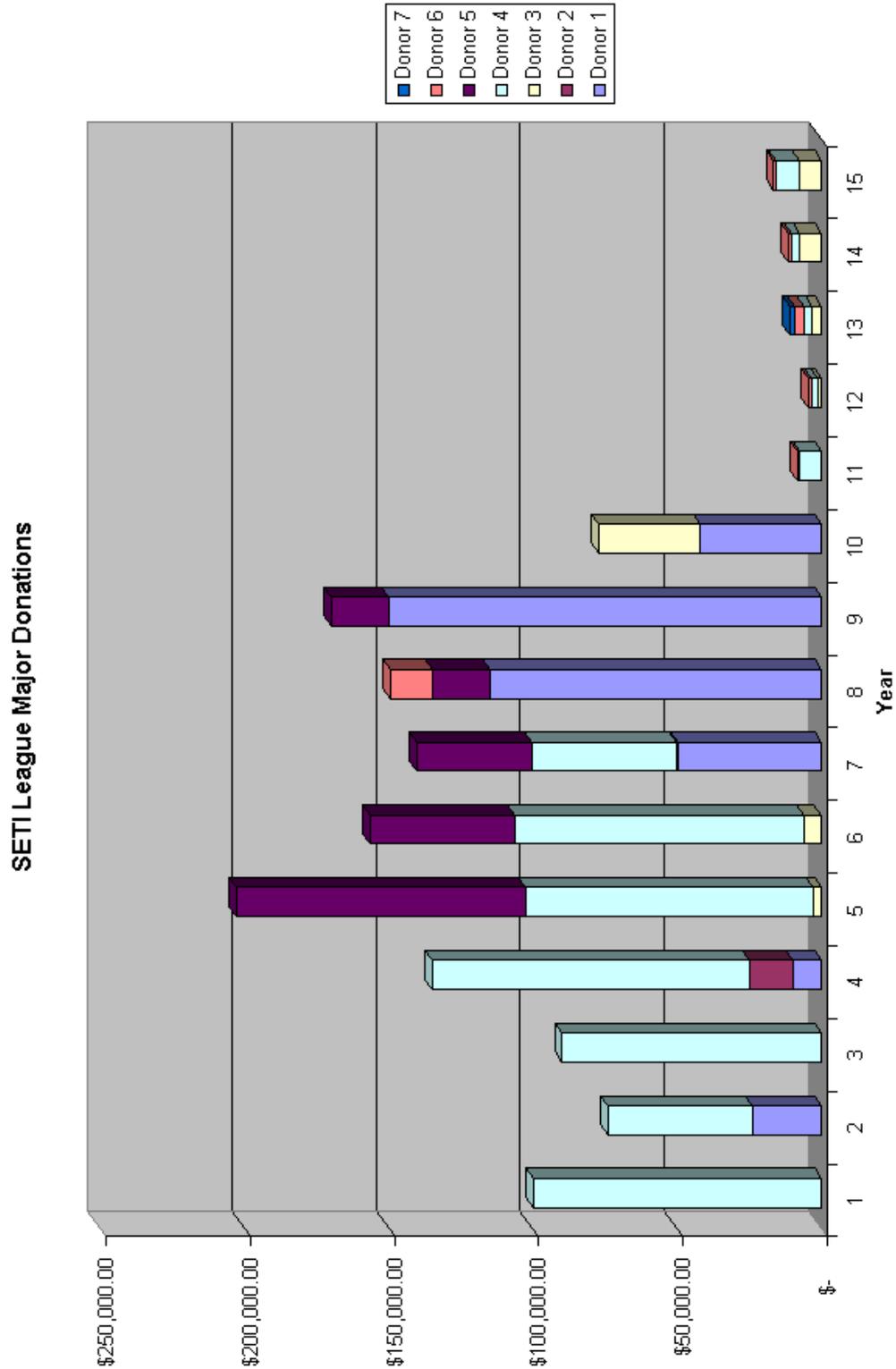
- Alfred Aburto
- Peter Cheasley
- Stephane Dumas
- Don Lallier
- Carl Mayo
- Dennis Murphy
- Malcolm Raff
- Christopher Rossie
- Michiano Sakamoto
- Allen Tough
- Heather Wood

The SETI League welcomes the following individuals, who became new members of The SETI League during 2009:

- Mike Bloemer (USA)
- Donald Burnette (USA)
- Karl-Heinz Gansel (Germany)
- Terrance Marengi (USA)
- Carl Mayo (England)
- Rick Neuman (USA)
- Jean Marie Polard (France)
- Jose-Luis Roman (Puerto Rico)
- Michiano Sakomoto (Japan)
- Richard Van Tieghem (USA)
- Barry Voss (England)
- Steve Vukusic (USA)
- Philip Watson (USA)



Major Donations, Since Inception

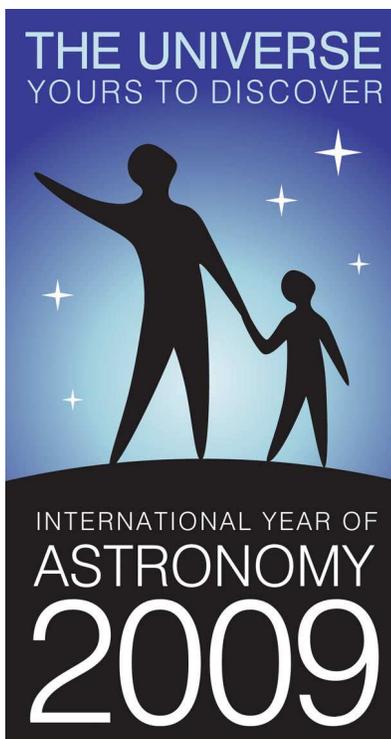




Additional Information

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



The SETI League marked the International Year of Astronomy by joining with several of its affiliate societies in sponsoring and participating in various public outreach events.