



# SearchLites

Vol. 17 No. 2, Spring 2011

The Quarterly Newsletter of The SETI League, Inc.

**Offices:**

433 Liberty Street  
PO Box 555  
Little Ferry NJ  
07643 USA

**Phone:**

(201) 641-1770

**Facsimile:**

(201) 641-1771

**Email:**

info@setileague.org

**Web:**

www.setileague.org

**President/Registered Agent:**

Richard Factor

**Secretary/Treasurer:**

A. Heather Wood

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## SETI League Appoints New Technical Advisor

**Little Ferry, NJ., 1 January 2011** -- The SETI League, Inc., nonprofit leaders in the privatized Search for ExtraTerrestrial Intelligence, has appointed Dr. Claudio Maccone to its scientific advisory board, filling a vacancy created by the untimely death last November of astrophysicist Dr. Malcolm I. Raff. A highly respected space scientist long involved in SETI research, Academician Maccone currently serves as Technical Director for Scientific Space Exploration at the International Academy of Astronautics. He is a longtime SETI League member and supporter. Raff, his predecessor on the advisory board, was a SETI League charter member who had chaired the organization's Strategic Planning Committee.

"Basically, I am a mathematical physicist," explains Maccone, "so I like to play with equations. SETI scientists try to get signals from alien civilizations. I think mathematics will tell us what we could expect from contact with someone else. My goal is to help The SETI League develop a set of mathematical equations that will help us to find Encyclopaedia Galactica."

Maccone was the 2002 recipient of the Giordano Bruno Memorial Award, The SETI League's highest technical honor. He is a prolific author of numerous technical books and journal articles on space exploration, mathematics, gravitational lensing, and digital signal analysis. He is a leading proponent of the establishment of a lunar farside radio observatory. Shuch and Maccone, both full members of the International Academy of Astronautics, have for several years co-chaired the IAA's SETI Permanent Study Group. Though Maccone lives in Italy, Shuch resides in Pennsylvania, and SETI League headquarters is located in New Jersey, the two meet in person several times a year at various venues, and have a long history of productive collaboration.

Largely using radio telescopes and optical telescopes, SETI scientists seek to determine whether humankind is alone in the universe. Since Congress terminated NASA's SETI funding in 1993, The SETI League and other scientific groups have privatized the research. Amateur and professional scientists interested in participating in the search for intelligent alien life, and citizens wishing to help support it, should email [join\\_at\\_setileague\\_dot\\_org](mailto:join_at_setileague_dot_org), check the SETI League Web site at <http://www.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 scientific Search for Extra-Terrestrial Intelligence. ❖

## 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.

**March 18 - 20, 2011:** *Lunacon 2011*, Rye Brook NY.

**April 2 - 3, 2011:** 36th annual *Trenton Computer Festival*, Ewing, NJ.

**April 11 - 15, 2011:** 18th IAA *Humans in Space Symposium*, Houston, TX.

**April 16, 2011, 0000 UTC - 2359 UTC:** Twelfth annual SETI League *Ham Radio QSO Party*: 3.551, 7.0309, 7.2039, 14.084, 14.204, 21.306, and 28.408 MHz.

**April 17 - 22, 2011:** *Third International Conference on Advances in Satellite and Space Communications*, Budapest, Hungary.

**April 24, 2011:** Seventeenth SETI League *Annual Membership Meeting*, Little Ferry NJ.

**June 27 - 30, 2011:** *Third IAA Symposium on Searching for Life Signatures*, St. Petersburg, Russia.

**August 17 - 21, 2011:** *Renovation* 69th World Science Fiction Convention, Reno NV.

**October 3 - 7, 2011:** *62nd International Astronautical Congress*, Cape Town, South Africa.

**April 21, 2012, 0000 UTC - 2359 UTC:** Thirteenth annual SETI League *Ham Radio QSO Party*: 3.551, 7.0309, 7.2039, 14.084, 14.204, 21.306, and 28.408 MHz.

**April 22, 2012:** Eighteenth SETI League *Annual Membership Meeting*, Little Ferry NJ.

**August 30 - September 3, 2012:** *Chicon 7* 70th World Science Fiction Convention, Chicago IL.

**September 2012 (dates TBA):** *Sixth International Congress for Radio Astronomy*, Medicina, Italy.

**October 1 - 5, 2012:** *63rd International Astronautical Congress*, Naples, Italy.

**April 20, 2013, 0000 UTC - 2359 UTC:** Fourteenth annual SETI League *Ham Radio QSO Party*: 3.551, 7.0309, 7.2039, 14.084, 14.204, 21.306, and 28.408 MHz.

**April 21, 2013:** Nineteenth SETI League *Annual Membership Meeting*, Little Ferry NJ.

**October, 2013 (dates TBA):** *64th International Astronautical Congress*, Beijing, China.

**April 19, 2014, 0000 UTC - 2359 UTC:** Fourteenth annual SETI League *Ham Radio QSO Party*: 3.551, 7.0309, 7.2039, 14.084, 14.204, 21.306, and 28.408 MHz.

**April 20, 2014:** Nineteenth SETI League *Annual Membership Meeting*, Little Ferry NJ.



## Annual Meeting Notice

In accordance with Article IV, Section 1 of our duly approved Bylaws, the Trustees of The SETI League, Inc. hereby schedule our Seventeenth Annual Membership Meeting for 1 PM Eastern time on Sunday, April 24, 2011, at SETI League Headquarters, 433 Liberty Street, Little Ferry NJ 07643. Our office is located just two blocks north of Route 46 and one mile east of the Teterboro Airport, on the northwest corner of Liberty and Kinzley Streets.

We recommend that out-of-town members and guests flying in commercially use the Newark International Airport (EWR), which is about twenty minutes South of our office. There is a wide variety of hotels available at the Newark Airport. A rental car is recommended. From Newark, drive North on the New Jersey Turnpike to US Route 46 Westbound, cross over the Hackensack River, and two long blocks after the traffic circle, turn right onto Liberty Street.

Our members and guests using General Aviation are invited to use the Teterboro Airport (there *is* a landing fee). Of the half-dozen Fixed Base Operators offering transient parking, we recommend Atlantic Aviation (ask Ground Control for parking in the Atlantic Midfield). They should be able to assist you with ground transportation. Please coordinate your schedules and needs in advance through our secretary, Heather Wood.

As attendance by one percent of the League's membership constitutes a quorum, all members in good standing are encouraged to attend. The preliminary agenda for this meeting, per Bylaws Article XII, appears below.

Per Article IV, Section 3 our Bylaws, written or electronic notice of this Meeting is being provided to all members in good standing, not less than ten days nor more than ninety days prior to the meeting date. Members are encouraged to submit additional Old Business and New Business items for inclusion in the Agenda. Please email your agenda items to [n6tx@setileague.org](mailto:n6tx@setileague.org), not later than April 1, 2011.

The annual Board of Trustees Meeting required per Bylaws Article V, Section 3 will immediately follow the Membership Meeting. All SETI League members in good standing are welcome to attend.

### Preliminary Agenda

- Call to Order
- Minutes of 2010 Membership Meeting
- Financial Report
- Committee Reports
- Old Business
- New Business
- Good and Welfare
- Adjournment



*Guest Editorial:*

## Try Some Other Library

by Erick Sherman

For half a century now, SETI scientists have been searching the electromagnetic spectrum, in hopes of uncovering Encyclopaedia Galactica. It is my considered opinion that they are looking in the wrong library. There is likely only a very brief period in the development of each intelligent civilization in which its society will be broadcasting electromagnetic radiation sufficiently strong to be identifiable by us, or by *them*, as a transmission containing discernible information.

I recently read "Space Contact The Day After" By Tim Folger (Scientific American, January 2011, pages 40 - 45). A thought I have actually considered, from childhood in the fifties, is that I don't believe any of the potentially tens or hundreds of thousands of possible civilizations would be transmitting strong, omnidirectional radio signals for a period significantly exceeding 200 Earth years.

Our first radio signals left this planet only about 100 years ago. The really strong signals (100,000 watts or more) began, at the earliest, around 40 years later. Yes, there are stronger signals transmitted by various radar systems. But these contain no "language," and so would not lend themselves to translation or interpretation. Radar signals should indeed be identifiable as being of intelligent origin, but would not convey easily recognized intelligence. Many of our other transmissions are highly directional, such as those we use to control satellites or the rovers on Mars, but these are considerably weaker and would not be as easy to detect. In addition, being directional, detection becomes less likely the more the receiver is displaced from the original line of transmission. Further, these mechanical controllers would not contain much usable "language" to interpret. We Earthlings have had functionally advanced civilizations for in excess of 4000 years, yet we have been broadcasting for less than 100.

In addition to our high powered broadcast television and radio signals, we emit various cell telephone and other microwave signals. Away from this planet, these signals would form an intense cacophony. Much as the effective averaging described in the Scientific American article would obscure specific intelligence, these signals are already an extensive average of multiple communication streams. However, these are much weaker than the older broadcast signals. As newer generations of cell signals are developed, ever more intelligence is spread across the electromagnetic spectrum, using incrementally less power. In the near future, this wireless form of

communication will become ubiquitous, using lower and lower power signals from less and less expensive connectivity devices. Using more connect points allows more connections, and allows more bandwidth to be shared by each of these connections. But, it diminishes the signals' detectability over interstellar distances.

There are a number of factors that prompt reducing the dependence on electromagnetic radiation as a means of communication. First, the basic broadcast concept is very limited in its overall ability to conduct communication. Interactive capability is inordinately more effective. However, as interactivity involves bidirectional communication, the distances are restricted. In addition to distance, the number of interactive connections is finite for a given concentration point. This second condition further restricts the distance, simply because of the number of connections. Further, on our planet, the ability to move large amounts of data (intelligence, or content) to and from our communications devices seems to be a very important to us. Larger amounts of data require more bandwidth, further restricting the number of connections at a particular concentrator and therefore further reducing the distance from concentrator to interacting connection. Economics drives our choice to operate each concentrator at lower and lower power. I personally believe we on this planet will functionally eliminate high power broadcasting except for special circumstances, such as radar.

While we may eventually intercept transmissions from other worldly civilizations, we may never be lucky enough to catch one during its "active transmissions" period that might allow interpretation of language or intelligence. If we do actually catch one of these, it would suggest that there are considerably more intelligent life forms in the Universe than even SETI optimists suppose. Since signal strengths are likely too low to detect over intergalactic distances, we would have to interpret data from our own galaxy in inferring possible numbers for our immediate Universe.

SETI observers, if they are extremely lucky, may some day receive the existence proof they seek. But they should not expect it to be information-rich electromagnetic communication. The best they should expect would be a repetitive and relatively coherent narrow band signal. If they're looking for Encyclopaedia Galactica, they'll have to try some other library.

**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. ❖

## Three Kinds of People

By H. Paul Shuch  
Executive Director Emeritus

There are two kinds of people in the world, according to an old joke: those who divide the world into two kinds of people, and those who don't.

I recalled that bit of whimsy recently, while attempting to impart some wisdom to one of my stepsons, a young adult who has yet to get his life together. "There are three kinds of people in the world," I told him. "Those who make things happen, those who watch things happen, and those who wait for things to happen."

The former are the movers and shakers, the ones who shape their own destiny, and with it, human history. All parents hope our offspring will fall in this category. We try to teach them by example, modeling for them thoughtful but decisive behavior. Most of them, if properly raised, get the message eventually. Some take longer than others.

But, not everyone is destined to become a world leader, to have a major impact on events. Some choose instead to place themselves near the seat of power, in the company of the movers and shakers. They are able to observe events as they unfold, and often make small, incremental, but crucial contributions to the course of human history. There is no shame in watching things happen, if you take advantage of the opportunities that present themselves -- opportunities to learn, and to contribute as your skills and talents allow.

And then, there are those who just sit back and let life unfold. By waiting for things to happen, they are placing their futures in the hands of fate. When things go their way, they attribute their good fortune to luck. When they don't, they blame their failures on bad breaks. It's very liberating not to have to take responsibility for the direction of your own life, but it seldom leads to desired outcomes.

All of this may (or may not) be very effective counsel for a young adult just choosing his path through life. But, what does it have to do with SETI?

On reflection, it occurred to me that, in the context of humanity's eventual interactions with extraterrestrial beings, the same three categories apply.

The humans who make things happen are those who facilitate contact. Many SETI League members fall in

this category. Those of you who are building and operating Project Argus stations, designing microwave receiving equipment, developing signal analysis software, contemplating protocols, and considering the social consequences of contact are making things happen. You may not see the results in your own lifetime, but if you can adopt a broad enough perspective, you will see that you are making a difference, at least for future generations. You are the sons and daughters I had always hoped to raise.

OK, I admit that not everybody has the training and resources to push the state of the art forward. Some of our members choose, of necessity, to stand on the sidelines and watch things unfold. Those of you in this category may not be making the big breakthroughs that will lead to a momentous discovery, but you are doing the next best thing. You are educating yourselves by reading books and articles on SETI and its related science and technologies. You are interacting with those Category 1 folks whose discoveries will impact your lives, and in so doing, putting a face for them on those who their work will influence. You are providing encouragement (and in some cases funding) to push the research forward. You are an essential element in the process of privatized science.

And then, there are those who sit and wait for something to happen. Perhaps they think that nothing they do will make a difference. Maybe they figure that extraterrestrial contact will have no impact on them. Or maybe they are so occupied with simple survival that they have no time or energy left for such esoteric fields of endeavor. It's possible they even think that the odds of SETI success are so low that they're not worth wasting neurons on. Whatever their reasoning, this segment of society has removed itself from the SETI equation. Clearly, they won't be reading this article.

Now, it's not my task to set priorities for others. But as a parent on the one hand, an educator on the other, it *is* my task to communicate the choices, and to emphasize to those around me that it *is* a choice. You may choose to take an active role in SETI science, through participation in Project Argus, SETI@home, or a number of other worthy enterprises. You may choose to sit on the sidelines, watching and learning and perhaps contributing an idea or two, but at the very least providing moral support and encouragement to those making things happen. Or, you may choose to sit and wait. If too many humans choose the latter, it may be a very long wait indeed.

How humanity chooses to involve itself in SETI, or not to, will determine our future on a cosmic scale. ❖

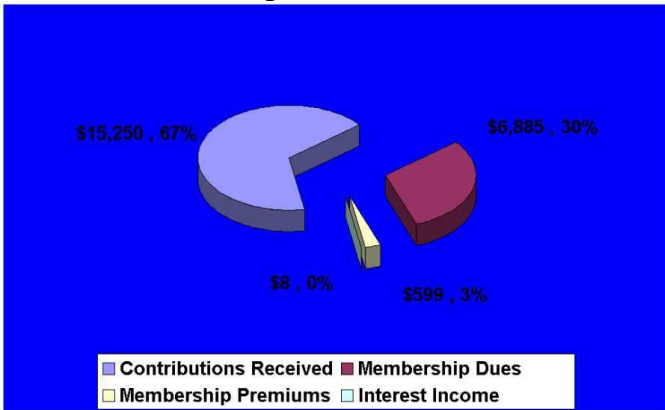
SETI League 2010 Financial Report

990 Line	REVENUES:	2010 (filed)
1d	Dues, Grants & Contributions	22,733
4	Interest & Investments	8
12	<b>Total Revenues:</b>	22,741
	<b>EXPENSES:</b>	
13	Educ. and Scientific Programs	16,222
14	Management & General	2,666
15	Fundraising	1,050
17	<b>Total Expenses:</b>	19,939
18	<b>Excess or (Deficit) for the year</b>	2,803
	<b>BALANCE SHEET:</b>	
19	Beginning Net Assets	8,178
21	Ending Net Assets	10,981

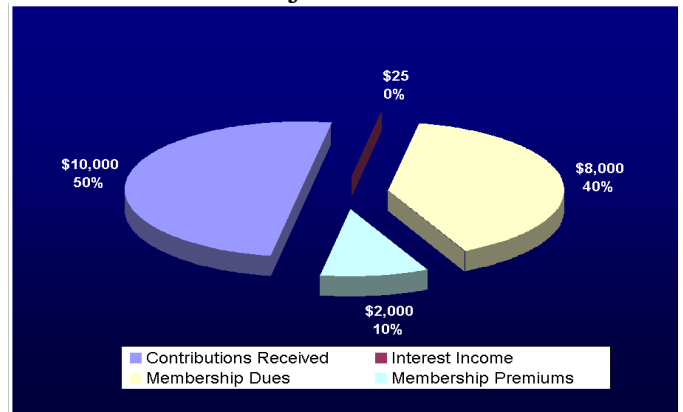
SETI League 2011 Annual Budget

990 Line	REVENUES:	2011 (projected)
1d	Dues, Grants & Contributions	20,000
4	Interest & Investments	19
12	<b>Total Revenues:</b>	20,020
	<b>EXPENSES:</b>	
13	Educ. and Scientific Programs	17,000
14	Management & General	4,600
15	Fundraising	1,400
17	<b>Total Expenses:</b>	22,000
18	<b>Excess or (Deficit) for the year</b>	(1,981)
	<b>BALANCE SHEET:</b>	
19	Beginning Net Assets	10,981
21	Ending Net Assets	9,000

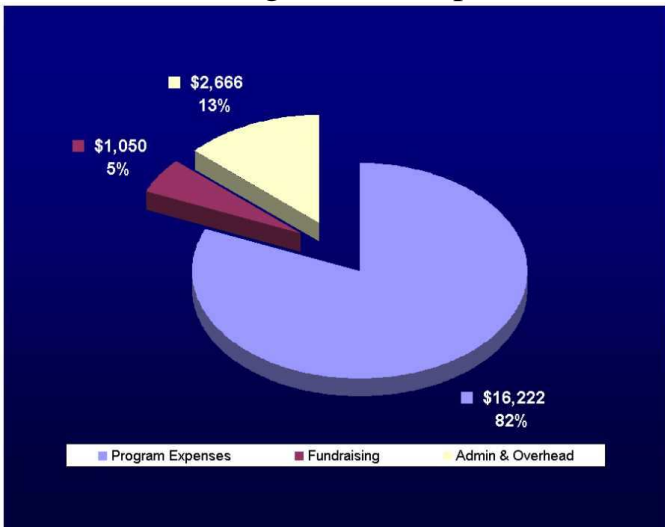
SETI League 2010 Revenues



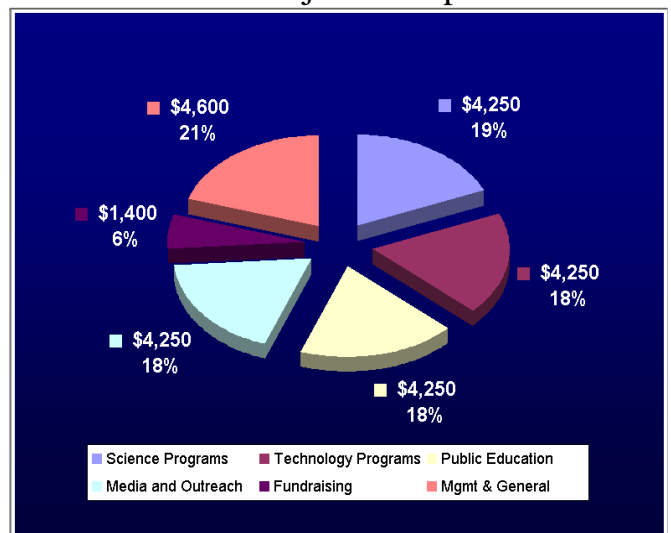
2011 Projected Revenues



SETI League 2010 Expenses



2011 Projected Expenses



## SETI League 2010 Program Service Accomplishments

(Excerpts from The SETI League 2010 Annual Report, available for download from <http://www.setileague.org>)

### Science

**During 2010, 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 2010.
- 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).

### Technology

**During 2010, The SETI League and its members made the following contributions to technology design and development:**

- Assisted three members in bringing new Project Argus stations online.
- Coordinated and archived four closed technical email lists.

### Education

**During 2010, The SETI League and its members made the following contributions to educating the public on SETI science and technology:**

- Executive Director Emeritus delivered six SETI lectures in the US, India, and Europe.
- Members participated in the 2010 Green Bank Technical Conference of the Society of Amateur Radio Astronomers (SARA), a SETI League affiliate, as well as SARA's regional conference at

Stanford University, by presenting papers and conducting workshops.

- Executive Director Emeritus published six technical articles in scholarly journals, Conference proceedings, and the popular press, and served as a manuscript reviewer for the International Academy of Astronautics and the British Interplanetary Society.
- More than twenty SETI League members contributed chapters to a 50<sup>th</sup> Anniversary SETI book published by Springer Verlag, Heidelberg, Germany.
- Provided webmastering and website hosting services to the International Academy of Astronautics SETI Permanent Study Group.
- 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.

### Outreach

**During 2010, 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 print media and broadcast interviews in California, Pennsylvania, New Jersey, India, and the Czech Republic.
- Awards Committee chairman designated recipients for the fifteenth annual Giordano Bruno Memorial Award, and twelve SETI SuperStar Awards.



**Media Review:**

## Solar System for iPad

by Marcus Chown

A breakthrough electronic book about the Solar System, offering hours of interactive exploration and presenting a treasure trove of visual information.

Best-selling author Marcus Chown leads us on a grand tour through the incredible diversity of planets, moons, asteroids, comets, and spacecraft that surround the Sun in our cosmic backyard. Illuminating his insightful and surprising text are a wealth of beautiful 3D objects, movies, images, animations, and diagrams, all fully interactive, richly detailed and accurately based on real scientific data. Set the heavens in motion in an interactive orrery that allows you to control the orbits of the moons and planets, observing them from any viewpoint with breath-taking surface detail. View the latest imagery returned by both astronauts and robot spacecraft, beautifully presented on the iPad screen.

This much-anticipated new title from Touch Press (publisher of *The Elements*) and Faber and Faber raises the bar yet again on what an electronic book can be. A perfect gift for anyone with an iPad, *Solar System* allows the imagination to roam free from Mercury to Pluto and beyond.

### Available from iTunes

- Released: Dec 21, 2010
- Version: 1.0.0
- Size: 842 MB
- Language: English
- Seller: Touch Press LLP
- © 2011 Touch Press LLP
- Rated 4+

**Requirements:** Compatible with iPad. Requires iOS 3.2 or later



### *Solar System for iPad* includes:

- a stunning specially-composed launch track from Björk never before released
- more than 150 beautifully presented story pages lavishly illustrated with interactive scenes, videos and 3D objects
  - over 40 fully-rotatable and pinch-zoomable 3D objects including the Sun, all its planets and their major moons
  - over 600 painstakingly selected images representing the very best of images returned by NASA, ESA and JAXA space missions
  - detailed captions for every image and object including technical data
  - live data from Wolfram | Alpha (internet connection required) providing comprehensive astronomical information

**About the author:** leading science writer Marcus Chown is cosmology consultant to *New Scientist* magazine and the author of numerous books including *The Quantum Zoo* (known internationally as *Quantum Theory Cannot Hurt You*).



## New Members

We are pleased to welcome the following individuals, who became members in good standing of The SETI League, Inc. during 2010:

- Chuck Gullage (USA)
- Michael Hresko (USA)
- Eric Korpela (USA)
- Michele Mallardi (Italy)
- Brian McCarthy (USA)
- Paulo Minafra (Italy)
- Gary Paulson (USA)
- Vincent Plousy (France)
- Joseph Ranger (Canada)
- William Severn (USA)
- Michael Veldman (USA)
- Connie Woods (USA)



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SearchLites Volume 17 No. 2, Spring 2011

**Annual Renewal: Is This Your Last SearchLites?**  
SETI League memberships are issued for the *Calendar Year*. Please check the expiration date indicated on your mailing label. If it reads December 2010 or earlier, you have already expired, and *must* renew your SETI League membership **now!** Please fill out and return this page along with your payment.

**Please renew my membership in this category:**

Full Member	\$50 / yr
Supporting Member (elderly, retired, or disabled)	\$35 / yr
Scholarship Member (full-time students only)	\$25 / yr
Household Member (same address as a Full Member)	\$15 / yr
Household Life Member (same address as a Life Member)	\$300
Life Member (until we make contact)	\$1,000
Sustaining Life Member – a generous <i>annual</i> pledge of:	\$1,000 / yr
Patron (priority use of The SETI League’s radio telescope)	\$10,000
Director (Patron membership plus seat on advisory board)	\$100,000
Benefactor (a major radio telescope named for you)	\$1,000,000

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

**Order Your Membership Premiums:**

	(u/c)*	(o)*
Pocket protectors	\$ 3	\$ 4
Mouse pads	\$ 5	\$ 7
<i>Tune In The Universe! (CD-ROM)</i>	\$25	\$30
<i>Proceedings of SETICon01</i>	\$20	\$27
<i>Proceedings of SETICon02</i>	\$20	\$27
<i>Proceedings of SETICon03 (CD)</i>	\$15	\$17
<i>Proceedings of EuroSETI04 (CD)</i>	\$15	\$17
<i>Proceedings of SETICon04(CD)</i>	\$15	\$17
<i>SARA Conference Proceedings:</i>		
2006, 2007, 2008, 2009 (specify)	\$20	\$27
<i>SETI League Technical Manual (CD)</i>	\$10	\$13
<i>Project Cyclops 2<sup>nd</sup> Edition</i>	\$20	\$30
<i>The Listeners</i> by James Gunn	\$15	\$21
<i>Sing a Song of SETI (Songbook)</i>	\$10	\$13
<i>Sing More Songs of SETI (Songbook)</i>	\$10	\$13
<i>Sing a Song of SETI (music CD)</i>	\$15	\$17
<i>Demented!</i> (music CD)	\$15	\$17
T-shirts, specify M, L, or XL	\$15	\$22
SETI Nerd Gift Set (one each Mouse Pad, Pocket Protector, <i>Project Cyclops</i> and <i>Tech Manual</i> ) at 20% Savings to <u>Members Only</u> :	\$30	\$43

\*Includes postage to (u/c) US/Canada, or (o) other locations  
Payments in US Dollars, check payable through a US bank

**Pleased to Accept PayPal**

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

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