



# SearchLites

Vol. 16 No. 2, Spring 2010

The Quarterly Newsletter of The SETI League, Inc.

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## SETI League Honors SETI@home Chief Scientist

**San Diego, CA., 21 February 2010** -- The SETI League, Inc., nonprofit leaders in a global Search for Extra-Terrestrial Intelligence, today awarded its highest technical honor to the head of the world's best known distributed computer processing experiment. Dan Werthimer, a respected scientist with the Space Sciences Lab at the University of California, Berkeley, was presented with the League's annual Giordano Bruno Memorial Award at the annual meeting of the American Association for the Advancement of Science (AAAS).

In his position as Chief Scientist of the landmark SETI@home project, Werthimer has succeeded in coordinating some 5.2 million users worldwide in distributed processing of observational data gathered at the Arecibo Radio Observatory in Puerto Rico. Since 1999, participants have been able to recycle their unused computing cycles in helping to analyze data collected from radio telescopes in search of signals from other worlds. This unprecedented network of independent volunteers constitutes the world's largest supercomputer. The goal of SETI@home is to sift through the cosmic static in search of patterns indicative of extraterrestrial technology. Werthimer is responsible for various other UC Berkeley SETI searches at radio, infrared and visible wavelengths, including the Search for Extra-Terrestrial Radio Emissions from Nearby Developed Intelligent Populations (SERENDIP). He is also the principal investigator for the worldwide Collaboration for Astronomy Signal Processing and Electronics Research (CASPER).

The Bruno Award honors the memory of Giordano Bruno, the Italian monk burned at the stake in 1600 for postulating a multiplicity of inhabited worlds. It is presented annually by the grassroots SETI League, to a person or persons making significant technical contributions to the art and science of SETI. Werthimer is the seventeenth recipient of the Bruno award since it was established at the 1995 AAAS meeting.

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 20 - 21, 2010:** Society of Amateur Radio Astronomers regional meeting, Stanford University, Palo Alto CA.

**April 10, 2010:** *50° Ozma Bioastronomia SETI*, Varese, Italy.

**April 17, 2010, 0000 UTC - 2359 UTC:** Eleventh annual SETI League Ham Radio QSO Party: 3.551, 7.0309, 7.2039, 14.084, 14.204, 21.306, and 28.408 MHz.

**April 18, 2010:** Sixteenth SETI League Annual Membership Meeting, Little Ferry NJ.

**April 24 - 25, 2010:** Trenton Computer Festival, Ewing NJ.

**April 26 - 29, 2010:** Astrobiology Science Conference 2010, League City, TX.

**June 4 - 6, 2010:** Rochester Hamfest, Rochester NY.

**July 4 - 7, 2010:** *Society of Amateur Radio Astronomers Conference*, NRAO Green Bank WV.

**July 22 - 24, 2010:** Central States VHF Conference, St. Louis MO.

**September 2 - 6, 2010:** *Aussiecon 4*, 68th World Science Fiction Convention, Melbourne Australia.

**September 27 - October 1, 2010:** *61st International Astronautical Congress*, Prague, Czech Republic.

**October 4 - 8, 2010:** *Second IAA Symposium on Searching for Life Signatures*, Milton Keynes, UK.

**November 17 - 18, 2010:** *IAA 50th Anniversary Celebration*, Washington, DC.

**November 19 - 21, 2010:** Philcon 2010, Cherry Hill, NJ.

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

**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.

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

**October, 2012 (dates TBA):** *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.

**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:** Twentieth 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 Sixteenth Annual Membership Meeting for 1 PM Eastern time on Sunday, April 18, 2010, 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, 2010.

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 2009 Membership Meeting
- Financial Report
- Committee Reports
- Old Business
- New Business
- Good and Welfare
- Adjournment



## Crossing the Golden Gate

by H. Paul Shuch

"To cross the Golden Gate," wrote the late Dr. Bernard M. Oliver fifteen years ago, "you need a bridge 6,000 feet long. Six thousand bridges of one foot each won't cut it." His analogy was intended as constructive criticism of the Project Argus all-sky survey then being launched by the nonprofit SETI League.

Oliver, one of the giants of SETI science, had good reason to be skeptical of our efforts. As the chief architect of Project Cyclops, the greatest radio telescope never built, he proposed in 1971 an array of a thousand dishes, each 100 meters in diameter, to scan the skies for electromagnetic radiation of intelligent alien origin. Surely our modest proposal to network 5,000 backyard satellite TV dishes, each only three to five meters across, seemed paltry by comparison. We SETIzens hoped to make up in strength of numbers what we lacked in budget, sophistication, or capture area. But 5,000 bridges of three meters each, Barney reasoned, would be incapable of spanning the gulf of interstellar space.

I disagreed with my esteemed mentor then, and still do today, although it turns out he was right in at least one respect: Project Argus has yet to capture SETI's holy grail. In fact, it hasn't even come close. But that's a matter of economics, not scientific or technological merit.

The five thousand dish goal was by no means arbitrary. Given the four pi steradian surface area of a sphere, and the three millisteradian capture area of our small antennas, that's how many elements (properly coordinated and appropriately aimed) our virtual array would require to see in all directions at once. What we proposed was a first for sky surveys: *real time* all sky coverage, so that no direction on the sky should evade our gaze. And, in 1995 when first proposed, that goal seemed entirely achievable.

We should have been there by now. But in 2010, instead of 5,000 Project Argus dishes, our network is composed of just twelve dozen. Barney had questioned how much could be accomplished with a global phased array. He should instead have questioned how we were going to accomplish building one.

Of course, neither we nor Barney Oliver could anticipate what would transpire during the early years of the 21st Century: new global wars, recessions, economic meltdowns, and realignments of finite resources. What felt entirely feasible in the heady days of the dot-com boom now seems wildly optimistic. Though our hearts still scan the skies, our minds have been brought back down to Earth.

At last year's International Astronautical Congress, in a paper recapping lessons learned from Project Argus, I grudgingly admitted defeat. But, while outlining the project's current status and lessons learned, I also proposed a future direction for The SETI League, and other privatized scientific endeavors. These are the handful of recommendations in that paper, which I put before the SETI League membership today:

1. Scale back expectations
2. Do more with less
3. Attract new constituencies
4. Embrace new technologies
5. Forego instant gratification.

The full paper, designated IAA Preprint IAC-09.A4.2.7, amplifies those suggestions. It is reproduced in the *Proceedings of the 2009 Conference of the Society of Amateur Radio Astronomers*, available from The SETI League via [www.setileague.org/seticon/sara2009.htm](http://www.setileague.org/seticon/sara2009.htm). I urge our members to take a look, and to take those recommendations to heart. Together, we may yet cross the Golden Gate. ❖

## Guest Editorial:

### Neuropsychology and SETI

by J. B. Arriola

Super intelligence, or superior artificial intelligence, should be able monitor much, if not all, of the information transmitted via our technology. If we assume they have the ability to view all of our communications, they should be able to aggregate our behavior and build analytical models to predict it in hypothetical situations. With that, they should be able to infer what our reaction would be to them, depending on how they present themselves and what they are actually like. These mathematical models could be run automatically, with extraordinarily accurate results. In this way they can not only study our evolution, but also find the best method and time for revealing their presence.

Until such intelligences feel that the aggregate of humanity will react favorably to the discoveries that SETI seeks to make, they can be expected to remain anonymous and beyond our reach. Websites such as [Invitation to ETI](#) are an important part of that aggregate. I would encourage its Signatories to increase the reach of their initiative, to spread its presence through the internet as well as through other communications outlets. I would suggest not just artificial increases, but ones that would make the equation more favorable for super intelligences contemplating whether to reveal themselves.

The credibility of this idea lies with the developing science of neuropsychology. This field is leading to the discovery that the behavior of the human species is tied up in our biology. Even the most simple things that once were connected to individuality and personality appear now to be more like biochemical reactions to unique stimuli. Our behavior thus can give us insight into our genetic and biological makeup. With enough information, we humans will be able to use neuroscience to make predictions about human behavior. To extend that predictive ability to super intelligence is not far fetched in the least.

Predictably, the full extent of the statistical model is beyond the scope of this editorial, but consider our ability to extrapolate information by minor tests to create the technology we now have. We have no reason to believe that we would find a super intelligence entirely unintelligible. We can expect to be able to advance science by simply witnessing super intelligence. We need to consider our own violent history and the likelihood of a negative reaction to it. ETI might actually consider it dangerous to reveal themselves to us. This reluctance would be exaggerated by the importance they attach to their continued existence. If (as some have suggested) they have acclimated to indefinite lifespan through the technology available to them, death would be the worst thing that they could imagine. Thus, immortality (whether biological or machine) would color their interactions.

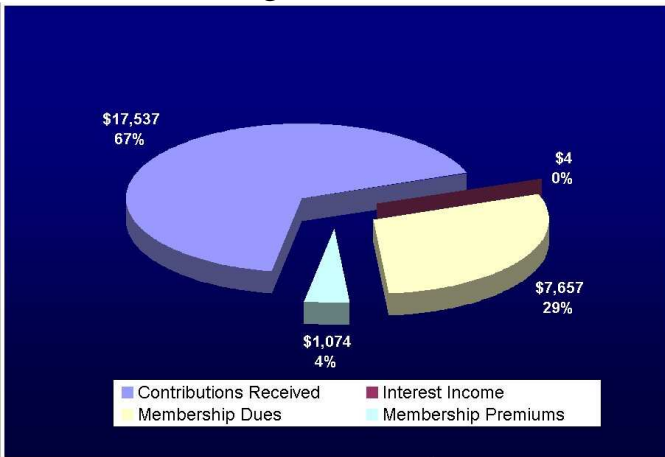
We should all consider these thoughts as we enter a new calendar year, and continue our efforts to connect ourselves with that which is beyond ourselves.

**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. ❖

SETI League 2009 Financial Report

990 Line	REVENUES:	2009 (filed)
1d	Dues, Grants & Contributions	26,269
4	Interest & Investments	4
12	<b>Total Revenues:</b>	26,273
	<b>EXPENSES:</b>	
13	Educ. and Scientific Programs	17,196
14	Management & General	4,441
15	Fundraising	1,400
17	<b>Total Expenses:</b>	23,038
18	<b>Excess or (Deficit) for the year</b>	3,235
	<b>BALANCE SHEET:</b>	
19	Beginning Net Assets	4,943
21	Ending Net Assets	8,178

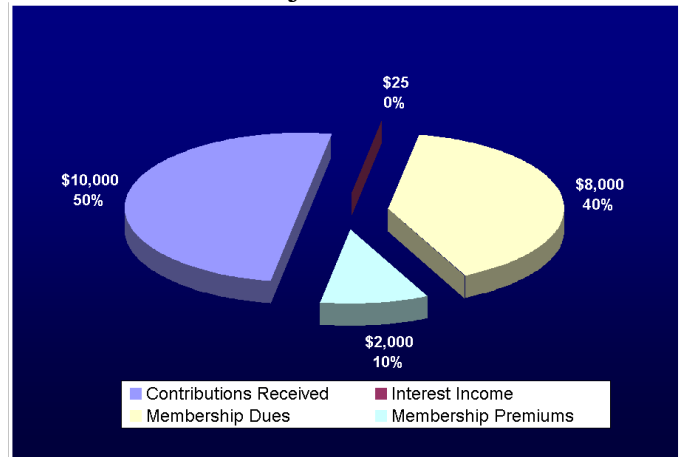
SETI League 2009 Revenues



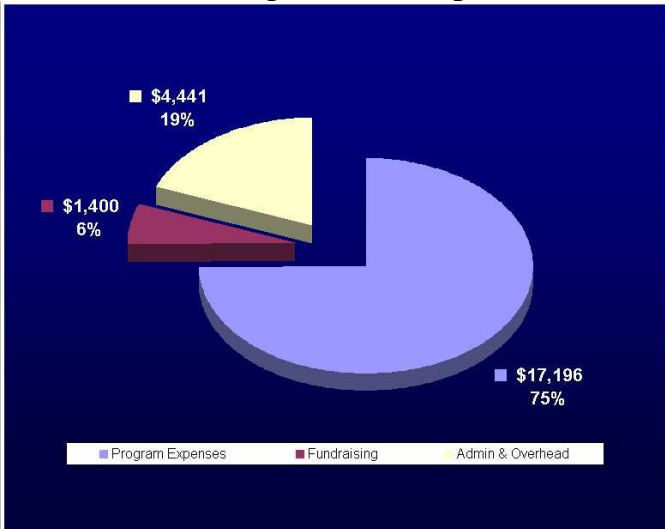
SETI League 2010 Annual Budget

990 Line	REVENUES:	2010 (projected)
1d	Dues, Grants & Contributions	20,000
4	Interest & Investments	25
12	<b>Total Revenues:</b>	20,025
	<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>	(1,975)
	<b>BALANCE SHEET:</b>	
19	Beginning Net Assets	8,178
21	Ending Net Assets	6,203

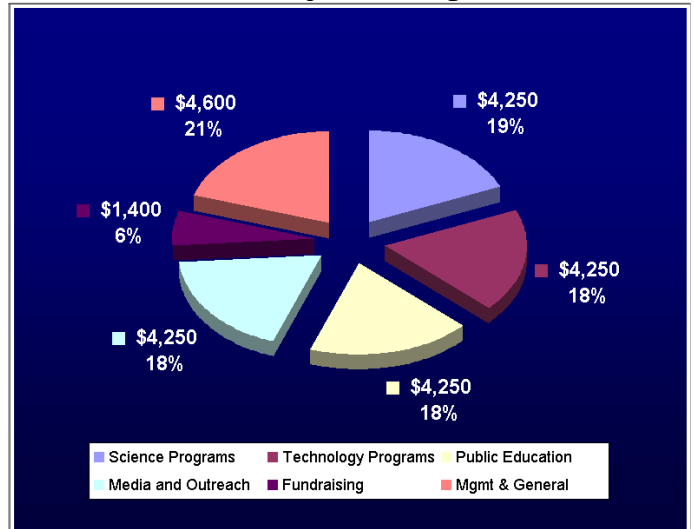
2010 Projected Revenues



SETI League 2009 Expenses



2010 Projected Expenses



## SETI League 2009 Program Service Accomplishments

(Excerpts from The SETI League 2009 Annual Report, available for download from <http://www.setileague.org>)

### 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).

### 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.

### 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.

### 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.



## Film Review:

# Avatar, a movie of this time

Reviewed by Adriano V. Autino

I saw the movie in 2D, in the original language. Maybe I'll be curious to enjoy the 3D version later. By now I was more interested in understanding the actual cultural quality of this film that is already being called, by many, a true masterpiece. And the exceptional audience turnout, since the early days, seems to confirm such an opinion.

In fact, the film certainly deserves medium-high ratings on several valuation metrics.

The photography, if we can still call it so, seen that it is nowadays a sublime multimedia art, can just earn the highest marks: beautiful pictures, from beginning to end, immersive, wonderful pictures.

A great Sigourney Weaver is Dr. Augustine, chair of the scientific detachment of the Pandora team, contributes to an extremely accurate and convincing recitation, also enhanced by the degree of extreme sophistication and mastery achieved by the digital cinema art. The remainder of the cast are less known names, but all of them offer a passionate and highly professional interpretation. Moreover the previous James Cameron's works all stand for excellence in direction and for the ability to interpret various topics including, but always with passion and great talents. Just think about the terrific "Alien" series, the excellent "The Abyss", and "Titanic".

The story is beautiful and captivating, and it is easy to forgive some evident naivety - or poetic license: a moon in orbit around a giant planet cannot have an Earth-like day-night cycle! However the Pandora's night ignites by fantastic blue lights and a kind of vegetable optical fibres, and we never want to be deprived of such images in name of a better realism!

The theme, well tested, is the one of the rebellion against an empire - well known by the lovers of the Star Wars series, by George Lucas - empire that, this time, adds the extinction of the Planet Earth's nature to their sins.

From the philosophical point of view the story is therefore, so to speak, up to date. But it only looks at the today pre-Copernican concepts, and it portrays, though in a very sophisticated and convincing way, the after all proven American Filmography clichè.

The quantum of social criticism that can be expected is present, in the movie: the main character - in the excellent interpretation of Sam Worthington - is a young ex-marine forced into a wheelchair by a tragic accident. He cannot afford the advanced neuroregeneration technology that would restore the use of his legs. And when in his video-diary he records his impressions, the young man is asking: "why should the natives of Pandora allow us to exploit the resources of their planet?

for some light beer and some jeans? We have nothing they may want, it is wasted time".

There is a rebellion against a chauvinist and fascist power that, in order to exploit the natural resources of a world, tramples with pragmatic indifference its own excellence in science and philosophy, and perpetrates its disruptive technology violence against an "enemy" that fights by means of bows and arrows.

But the "savages" - very similar to the native Americans, especially in their great respect for nature and their indomitable character - will win in the end (no doubt about the happy end, do not panic :-), thanks to what?

It is here that the movie enters the fable.

Meanwhile - another meme dear to the over-Atlantic cinema - the violence and killing, however, can only be opposed by violence and killing. And they have a possibility to win only by beating the tyrants on their own ground, the violence. As if Gandhi had never existed. By a Terrestrial director, living in our globalized time-country, we could now expect something more.

For example what? I would like very much to see a philosophical and humanistic, morally superior technology, which allows the good ones to win without killing the bad ones nor the "collateral" goods.

But the Na'vi win thanks to their ability to relive their myths and even more, thanks to a kind of philosophical technology of the planet itself, Eywa - metaphor of Gaia, the living planet. In this case we are faced with a sentient Gaia, endowed of intelligence, and of communication media, a kind of neural interface, with its own people. Eywa feels the impending destruction, and uses his power (I will not say too much to not spoil the suspense) in support to the Na'vi warriors.

What is then the philosophical message? Basically the following one: humans failed, setting out on the path of the Neolithic revolution, they had to remain hunters and gatherers (such as Native Americans), and then live in harmony with nature.

Nature would then have rewarded them by developing, herself, the "technology" required for defending itself and them from possible attacks. Obviously, the references to the ancient shamanistic beliefs, tied to a mystical and metaphysical nature, are anything but random (btw I don't mean of course deny their undeniable charm, nor their ancient wisdom).

Taking the road of agriculture - and of the technological culture - a people can only reach to the destruction of nature, then being constrained to venture on other planets, in an obsessive repetition of the massacre: it is well known that when we fail, we tend to keep on repeating the same mistake, in order to show that we are not stupid, and that we were right!

We are therefore fully immersed in the pre-Copernican metaphysics of the closed world, though, in the Avatar story, the worlds are more than one: the inhabitants of each world are better to stay each ones at their own home, trying to make peace with their "own" local nature and, live in harmony with it. The only problem is to defend against possible invaders.

No mention about a more mature understanding of a cosmic ecology. And technology - our poor heavy and "unnatural" technology - is once again showing as the devil, embody-



ing the evil. None awareness of the number and of the vital cultural relevance of growth - for an intelligent species that shall travel the road of knowledge and ethic evolution by their own forces, inevitably making mistakes, and trying to recognize them and learning from them.

No, Avatar doesn't envisage and doesn't call for a transcendent fusion between humans and nature - according to the excellent concept expressed by Robert M. Persig - but imagines an "intelligent nature", making the whole work in place of humans.

In summary, the above are the messages that anyone will be able to get by this good movie, especially thinking of an audience still aimed to hear that technology is evil and nature is good.

Looking it in its essence, we realize that the narrative solution holds a main weak point. Nature is, yes, magic and mysterious, no one can deny, but her gifts, when she does, are of a different kind. Nature offers no beautiful "technological" ready solutions. Humans, at least on this planet, should always sweat every ounce of knowledge, and when we will come to understand and measure the electrical activity and the communication interfaces of nature, it will certainly be a great goal! Neither we could understand what would be the place in the universe for an intelligent species that are not in the need to use their intelligence to increase their own culture, since nature cuddle them from the beginning, providing an advanced communication technology ... a natural kind of world wide web. While we, poor humans, had to sweat our web... And the fact that our science could someday reach to enable us to use some kind of natural web, does not alter, in retrospect, the dedication and the great humanism, the many mistakes (often disastrous but not less tender) of the researchers who sacrificed themselves in history, in order to allow us to achieve great goals. How not to think about the tender Sigourney-Dr. Augustine when, mortally wounded, while in the care of the Eywa philosophical tree, says, "I should take some samples ....".

Another, perhaps less obvious, message exists in this movie. And that is why I love the American cinema, which is based upon a philosophical environmentalist underworld, but not a radically anti-human one. Humans, of course, lead death and destruction to Pandora, with their weapons and with their imperialist arrogance. But they also lead their science, the avatars technology, which allow to interact directly in a non-breathable for humans air. And also humans bring their capacity for compassion and love, which is essential for the salvation of Pandora and its people.

The ideology of profit, I would say, in my free interpretation, at the end is not the devil. It could be enough, at least in case of conflict or potential conflict, that profit was not always considered the ultimate and decisive authority.

And the ideologues of profit, ultimately, make a very stupid choice by entrusting their fate to the military, since they will then, thanks to that wicked choice, have to renounce to any profit. Had they instead relied on science, communication and compassion, they probably wouldn't have remained with dry mouth ...



**At the 2010 American Association for Advancement of Science (AAAS) meeting in San Diego, radio astronomer Jill Tarter presents this year's Giordano Bruno Memorial Award to Dan Werthimer of the Space Sciences Lab, University of California, Berkeley. Tarter was last year's Bruno Award recipient.**

## New Members

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



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SearchLites Volume 16 No. 2, Spring 2010

**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 2009 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
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