

**International Academy of Astronautics**  
6 rue Galilee, Po Box 1268-16, 75766 Paris Cedex 16, France  
<http://www.iaaweb.org>

## **First IAA Symposium on**

# **SEARCHING FOR LIFE SIGNATURES**



*Nançay Decimetric Radio Telescope – Photo Credit Nançay RT.*

## ***Program***

***UNESCO, Paris, France,  
September 22-26, 2008***

Room III, 7 Place de Fontenoy, 75015 Paris, Metro Cambronne

Web site : <http://iaaseti.org/searchingforlife.htm>



The First IAA Symposium on Search for Life Signature is organized by the International Academy of Astronautics (IAA) and is co-sponsored by “Observatoire de Paris” and its Center of Nançay.

## Conference Rationale

SETI (the “Search for ExtraTerrestrial Intelligence”) refers to the experiments intended to find either radio or optical signals from extraterrestrial societies situated on planets around other stars. The largest radio telescopes world-wide have occasionally pursued SETI searches since 1960, in most cases hunting for signals near in frequency to 1420 MHz (the emission line of neutral hydrogen). Optical SETI searches have been pursued since the 1990s. These attempts to detect extraterrestrial signals are called “Passive SETI”.

In recent years, new kind of SETI, called “Active SETI”, has been discussed by radio astronomers and has actually been attempted in a few cases: it consists of deliberately transmitting signals to enhance the probability of making contact with other hypothetical galactic technological civilizations. In addition, the discovery since 1995 of more than 200 extrasolar planets makes it clear that both Passive



and Active SETI may now be “targeted” towards exoplanets that are situated within habitable zones, further increasing the probability of a SETI success.

In conclusion, it is now timely to gather a large conference of experts in SETI, biosignatures, the search for terrestrial exoplanets and related disciplines from all over the globe to openly discuss the strategies of both Passive and Active SETI. These are the goals of the “Searching for Life Signatures” Conference that will take place at UNESCO in Paris, September 22<sup>nd</sup> thru 26<sup>th</sup>, 2008, in the week just prior to the International Astronautical Congress to be held in Glasgow.

## Tentative Program

- Monday, Sept. 22: Morning: Registration and Opening Session.  
Afternoon: Passive SETI.  
Evening at 19:30: Public Outreach event with Jill Tarter (English language with French translation by Andre’ Brack). The title of Jill Tarter’s Lecture is: “Searching for ExtraTerrestrial Intelligence - Where We’ve Been and Where We are Going“. The Lecture will be given at the Lecture Theatre of the AeroClub de France, 6 Rue Galilee, Paris (Metro: Boissiere, No. 6 line, near the Etoile) (Organizer: Claudio Maccone).
- Tuesday, Sept. 23: Morning: Active SETI, Exoplanets from the Ground.  
Afternoon: Exoplanets from Space, Exoplanet and Life.  
Evening: Public Outreach event (French language only) with Stephane Dumas at the “science & technology town” of Les Ulis, some 25 km south of Paris. (Organizer: Elisabeth Ptielat).
- Wednesday, Sept. 24: Morning: Exoplanets, Astrophysics and SETI. Historical, Philosophical and Societal aspects of SETI.  
Afternoon: Detecting & Deciphering in SETI.  
Evening at 18:30: Public Outreach Event entitled “Message vers les étoiles” with Anne Jaffrennou and Marie Cuisset (French language only) : Auditorium de la Grande Galerie de l’Evolution, Museum national d’Histoire naturelle, 36, rue Geoffroy St. Hilaire, Paris. (Metro: Censier/Jussieu/Gare d’Austerlitz) (Organizer: Florence Raulin-Cerceau).
- Thursday, Sept. 25: Morning: At the Edge of the Knowledge. Legal International Issues. General Debate for all the Attendees ONLY.  
Afternoon: free.  
Evening: Conference Dinner starts at 6 p.m. (18 h) at the Restaurant ‘Le Bouillon Racine’, 3 rue Racine (Metro: Cluny – La Sorbonne, No. 10 line). Concert “Sing a Song of SETI”, slides and songs by H. Paul Shuch also known as Dr.SETI® (Organizers: Jean-Michel Contant and Jean Schneider).
- Friday, Sept. 26: 8 a.m.- 7 p.m. - Technical Visit to Nançay Observatory (3h by bus near Orléans) the grand decimetric radio telescope at which SETI searches were conducted in the 1980s and 1990s by Jill Tarter, François Biraud et al. (Organizer: Jean-Michel Martin).

## **TECHNICAL PROGRAM – interim schedule, subject to change**

8:00 – 9:00 Registration of Participants

### **Opening Ceremony**

**Monday Sept. 22, 09:00 - 09:20**

**Chair: J.-M. Contant, IAA, C. Maccone, IAA**

#### **Welcome to Participants**

*Maccone Claudio, Italy*

#### **Welcome Address**

*Egret Daniel, President of Observatoire de Paris, France*

#### **IAA and SETI: Fifty Years of Scientific Research and Tribute to Jean Heidmann**

*Contant Jean-Michel, France*

### **Session 1 : Keynote Lectures**

**Monday Sept. 22, morning**

**Chair: J.-M. Contant, IAA, Paris, Claudio Maccone, IAA, Turin, Italy.**

#### **Discoveries of solar system analogues and super Earths**

*Queloz Didier, Switzerland*

IAA-S8-0101

#### **SETI: From Pioneering Research to Recent Achievements**

*Drake Frank D., USA*

IAA-S8-0102

#### **10:20 – 10:50 Coffee Break**

#### **The Allen Telescope Array: a better pitchfork for exploring the Cosmic Haystack**

*Tarter Jill, USA*

IAA-S8-0103

#### **Formation of Giant Planets, Super Earths and Habitable Planets**

*Boss Alan, USA*

IAA-S8-0104

#### **Future Exoplanet Detections from Space, and SETI**

*Leger Alain, France*

IAA-S8-0105

#### **Biosignatures on Exoplanets: beyond the standard views**

*Schneider Jean, France*

IAA-S8-0106

#### **13:15 – 14:30 Lunch Break**

#### **Extraterrestrial life: what are we looking for?**

*Brack André, France*

IAA-S8-0107

#### **European radio message: origin and concept**

*Zaitsev Alexander, Russia*

IAA-S8-0108

### **Session 2: Passive SETI: Listening to Them**

**Monday Sept. 22, afternoon**

**Chair: Florence Raulin-Cerceau, Museum Histoire Naturelle, Paris**

**Rapporteur: Jean-Pierre Rospars, INRA, Versailles**

#### **New SETI sky survey for radio and optical pulses**

*Wertheimer Dan, USA*

IAA-S8-0201

#### **Project Argus Progress Report: T plus twelve years and holding**

*Shuch H. Paul, USA*

IAA-S8-0202

#### **16:30 – 17:00 Coffee Break**

#### **SETI Italia 2008: On-going Searches and Future Prospects**

*Montebugnoli Stelio, Monari Jader, Italy*

IAA-S8-0203

#### **A new 256 million channel spectrometer for SETI observations in Argentina**

*Larrarte J.J., Lemarchand Guillermo, Siemion A., Argentina, Wertheimer Dan, USA*

IAA-S8-0204

#### **Professional SETI in Australia to Restart**

*Oliver Carol, Australia*

IAA-S8-0205

#### **The SETI Program in Korea**

*Rhee Myung-Hyun, Korea*

IAA-S8-0206

#### **The new SETI in France**

*Martin Jean-Michel, France*

IAA-S8-0207

**Session 3: Active SETI: Sending Messages to Them**      *Tues. Sept. 23, morning*  
**Chair: Alain Labeque, IAS, Orsay, France**      **Rapporteur: Paul Shuch, USA**

<b>SETI: The Compact and the Controversy</b>	IAA-S8-0301
<i>Shostak Seth, USA</i>	
<b>Crypto analysis applied to Active SETI</b>	IAA-S8-0302
<i>Dumas Stephane, Dutil Yvan, Canada</i>	
<b>Active SETI: Scientific Experiment, Diplomatic Action or Artistic Expression?</b>	IAA-S8-0303
<i>Vakoch Doug, USA</i>	
<b>Active SETI and the Zoo hypothesis</b>	IAA-S8-0304
<i>Labeque Alain, France</i>	
<b>Active SETI and Its Possible Dangers: An Overview</b>	IAA-S8-0305
<i>Musso Paolo, Italy</i>	
<b>Overcome the Great Silence!</b>	IAA-S8-0306
<i>Zaitsev Alexander, Russia</i>	

**11:00 – 11:20 Coffee Break**

**Session 4: Exoplanets from the Ground**      *Tuesday Sept. 23, late morning*  
**Chair: Seth Shostak, SETI Institute, USA**      **Rapporteur: Alain Labeque, IAS, Orsay, France**

<b>Timing of Stellar Brightness Periodic Variations as a Method of Earth-Like Planet Detection</b>	IAA-S8-0401
<i>Beskin Grigory, Russia</i>	
<b>Stars as semaphore light towers: Artificial transit and SETI</b>	IAA-S8-0402
<i>Arnold Luc, France</i>	
<b>Detection of Biomarkers using Infrared Spectroscopy</b>	IAA-S8-0403
<i>Dumas Stephane, Joncas G., Dutil Yvan, Canada</i>	

**13:00 – 15:00 Lunch Break**

**Session 5: Exoplanets from Space**      *Tuesday Sept. 23, afternoon*  
**Chair: Jill Tarter, SETI Institute, USA**      **Rapporteur: Alain Labeque, IAS, Orsay, France**

<b>Searching for Inorganic Life in Universe</b>	IAA-S8-0501
<i>Tsytoich V. N, Russia, Morfill G. N., Germany</i>	
<b>Extended IRAS-based whole-sky upper limit on Dyson spheres and the implication for future Dyson spheres searches</b>	IAA-S8-0502
<i>Carrigan Dick, USA</i>	
<b>LUCAS Experiment: searching for vegetation and other biosignatures on planet Earth</b>	IAA-S8-0503
<i>Briot Danielle, France</i>	
<b>Super Earths and Life, and the role of NASA's Kepler Mission</b>	IAA-S8-0504
<i>Latham Dave, USA</i>	
<b>The diversity of low-mass exoplanets and the search for inhabited worlds</b>	IAA-S8-0505
<i>Selsis Franck, France</i>	
<b>Exploring Habitable Exoplanets with New Worlds Observer</b>	IAA-S8-0506
<i>Turnbull Margaret, USA</i>	

**16:20 – 16:40 Coffee Break**

**Session 6: Exoplanets and Life**      *Tuesday, Sept. 23, 2008, late afternoon*  
**Chair: Alexander Zaitsev, Russia**      **Rapporteur: Alain Labeque, IAS, Orsay, France**

<b>SETI in the light of Terrestrial Biological Evolution</b>	IAA-S8-0601
<i>Rospars Jean-Pierre, France</i>	
<b>Our search for extraterrestrial life may be modified considering the unique group of silicon-utilizing micro-organisms</b>	IAA-S8-0602
<i>Satadal Das, India</i>	
<b>Self-Assembly of Complex Systems: Artificial Living Cells?</b>	IAA-S8-0603
<i>Tamulis Arvydas, Lithuania</i>	
<b>Interstellar Organic Molecules: Evidence of prebiology or detritus of biology?</b>	IAA-S8-0604
<i>Wickramasinghe Chandra, UK</i>	
<b>Unpacking the Great Transmission Debate</b>	IAA-S8-0605
<i>Denning Kathryn, Canada</i>	

## **Session 7: Exoplanets, Astrophysics and SETI**

**Weds. Sept. 24, morning**

**Chair: Douglas A. Vakoch, SETI Institute, USA**

**Rapporteur: Jean Schneider, Paris Observatory, France**

<b>Galactic Habitable Zone</b> <i>Prantzos Nikos, France</i>	IAA-S8-0701
<b>The Statistical Drake Equation</b> <i>Maccone Claudio, Italy</i>	IAA-S8-0702
<b>Two-laser system to transmit optical images to ET civilizations</b> <i>Beskin Grigory et al., Russia</i>	IAA-S8-0703
<b>Laser transition in atomic iodine for passive and active SETI</b> <i>Kutaev Y. F., Mankevich S. K., Nosach O. Y., Orlov E. P., Russia</i>	IAA-S8-0704

**10:40 – 11:00 Coffee Break**

## **Session 8: Historical, Philosophical and Sociological Aspects of SETI**

**Weds. Sept. 24, late morning**

**Chair: Jean-Michel Martin, Paris Observatory, France**

**Rapporteur: Florence Raulin-Cerceau, Museum National d'Histoire Naturelle, Paris**

<b>Historical review of the first interplanetary communication attempts: a scientific and literary overview</b> <i>Raulin-Cerceau Florence, France</i>	IAA-S8-0801
<b>Evolution, history &amp; SETI: Some philosophical observations</b> <i>Lestel Dominique, France</i>	IAA-S8-0802
<b>The importance of Active SETI Strategies to Solve Synchronization Uncertainties in Time and Space among Galactic Civilizations – Ethical Issues</b> <i>Lemarchand Guillermo, Argentina</i>	IAA-S8-0803
<b>An Iconic Approach to Communicating Musical Concepts in Interstellar Messages</b> <i>Vakoch Doug, USA, Maccone Claudio, Italy</i>	IAA-S8-0804
<b>Interstellar Message Composition: Learning about ETs and ourselves through writings</b> <i>Lockwood Jeffrey, USA</i>	IAA-S8-0805
<b>What would a billion-year-old civilization look like?</b> <i>Dumas, Stephane, Dutil Yvan, Canada</i>	IAA-S8-0806

**13:00 – 15:00 Lunch Break**

## **Session 9: Detecting & Deciphering in SETI**

**Weds. Sept. 24, afternoon**

**Chair: Stephane Dumas, Canada      Rapporteur: Nikos Prantzos, IAP, Paris**

<b>Search for extraterrestrial civilizations in the optical range</b> <i>Beskin Grigory et al., Russia</i>	IAA-S8-0901
<b>Targets and SETI I – Shared Motivations and Active SETI</b> <i>Edmondson William, UK</i>	IAA-S8-0902
<b>Targets and SETI II – Strategic Issues and Passive SETI</b> <i>Edmondson William, UK</i>	IAA-S8-0903

**16:00 – 16:20 Coffee Break**

<b>Detecting the Signature of Intelligent Life</b> <i>Elliott John, UK</i>	IAA-S8-0904
<b>The KLT (Karhunen-Loève Transform) to extend SETI searches to broad-band and extremely feeble signals</b> <i>Maccone Claudio, Italy</i>	IAA-S8-0905
<b>Using Fractional Derivative as Degree of Symmetry to Characterize Natural Shapes</b> <i>Ilhan Husrev T., Linscott Ivan, USA</i>	IAA-S8-0906
<b>On the signature of LINCOS</b> <i>Ollongren Alexander, The Netherlands</i>	IAA-S8-0907
<b>The linguistic pre-requisites of SETI: a critical analysis of H. Freudenthal's book "LINCOS"</b> <i>Schneider Jean, France</i>	IAA-S8-0908



## ***Session 10: At the Edge of Knowledge***

***Thursday, Sept. 25, morning***

***Chair: Alexander Ollongren, Sweden***

***Rapporteur: Pierre Colom, France***

<b>Virtual Interstellar Cloning</b> <i>Gardner James N., USA</i>	IAA-S8-1001
<b>The lure of local SETI. Fifty years of field experiments</b> <i>Ailleris Philippe, The Netherlands</i>	IAA-S8-1002
<b>When SETI meets an alien form of intelligence: understanding the troubled relationships between SETI and ufology</b> <i>Lagrange Pierre, France</i>	IAA-S8-1003
<b>Investigation and analysis of transient luminous phenomena in the low atmosphere of Hessdalen valley, Norway</b> <i>Hauge Bjorn Gitle, Norway</i>	IAA-S8-1004
<b>Revelation: the Timescale of ETI Signal Interpretation</b> <i>Baxter Stephen, UK</i>	IAA-S8-1005

### ***10:20 – 10:40 Coffee Break***

<b>SETI meets a social intelligence: dolphins as a model for real-time interaction and communication with a sentient species</b> <i>Herzing Denise L., USA</i>	IAA-S8-1006
<b>Animal Communications, Information Theory and the Search for Extraterrestrial Intelligence</b> <i>Doyle Laurance R., USA</i>	IAA-S8-1007

## ***Session 11: Legal International Issues & SETI,***

***Thurs. Sept. 25, late morning***

***Chair: Paul Shuch, USA, Rapporteur: Philippe Ailleris, The Netherlands.***

<b>PAC: Protected Antipode Circle at the center of the Far Side of the Moon for the Benefit of all Humankind</b> <i>Maccone Claudio, Italy</i>	IAA-S8-1101
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***13:00 Afternoon free***

## ***Technical Visit to Nançay Radio Telescope***

***Friday, Sept. 26, 08:00 - 19:00***

Bus transportation from UNESCO to Nançay Observatory (3h), the grand decimetric radio telescope at which SETI searches were conducted in the 1980s and 1990s by Jill Tarter, François Biraud *et al.* (advance registration required).

First IAA Symposium on

**SEARCHING FOR  
LIFE SIGNATURES**

**Registration Form**

Please print out and return to:

**1<sup>st</sup> IAA Symposium on Searching For Life Signatures**

IAA

Po Box 1268-16, 6 rue Galilée, 75766 Paris Cedex 16, France

Phone +33 (0)1 47 23 82 15, **Fax +33 (0)1 47 23 82 16**

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e-mail .....

**Fees**

Regular Fee Early Bird (until September 1 <sup>st</sup> , 2008)	<b>€150.00</b>	_____
Regular Fee (after September 1 <sup>st</sup> , 2008)	<b>€200.00</b>	_____
On Site registration	<b>€250.00</b>	_____

Student Fee Early Bird (until September 1 <sup>st</sup> , 2008)	<b>€ 50.00</b>	_____
Student Fee (after September 1 <sup>st</sup> , 2008)	<b>€70.00</b>	_____

**Gala Evening (Thursday 25 September 20h)**

I'm booking \_\_\_\_ tickets for the Gala Evening at **€50.00** each \_\_\_\_\_

**Technical Visit to Radiotelescope of Nançay participating to SETI**

(including bus transport., coffee break and lunch) **€50.00** each \_\_\_\_\_  
(Number of participants Limited, first come first serve basis)

**TOTAL** \_\_\_\_\_

**Accompanying Person**

\*Last Name

\*First Name

*Accompanying persons can access social events and technical tour.*

**I plan to participate to the Symposium lunch:**

Monday	yes	no
Tuesday	yes	no
Wednesday	yes	no

### Cancellation Policy

Before September 10<sup>th</sup>, 15% of registration fee will be charged. After September 10<sup>th</sup>, 50% of registration fee will be charged. All cancellation or alteration must be made in writing by letter, fax or e-mail to IAA. Kindly note, that refunds will be paid back after the symposium.

### Payment

Note: The payment needs to arrive at the organizer in full amount. Do not forget to indicate your **name, affiliation,** and '**IAA-SETI-Symposium 2008**' together with your payment.

#### • by bank order to

IAA SETI Symposium 2008  
BNP Paribas  
Quartier Latin Branch Office  
7 rue Soufflot 75005 Paris, France

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**Nota:** Payment on site accepted only if advance registration has been sent before the deadline. Registrations by surface mail must be received in the Paris office Po Box before the deadline.

#### • by cheque

Please make cheque payable to: IAA

(for payment in Euro, foreign checks must be drawn on a bank in France)

- to the order of "International Academy of Astronautics"

- with on the back of the check your Last and First Name

For exact identification - please insert your name at the bottom of every page – thank you!

Last Name

First Name