

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.

Preliminary Program

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

Room XIII, 1 rue Miollis, 75015 Paris, Metro Cambronne
<http://iaaweb.org/content/view/295/434/>



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 22nd thru 26th, 2008, in the week just prior to the International Astronautical Congress to be held in Glasgow.

Tentative Program

- Sunday, Sept. 21: Public Outreach Event in French language, Air Museum, Le Bourget airport.
- Monday, Sept. 22: Morning: Opening Session. Afternoon: Passive SETI. Evening: public outreach event with Dan Werthimer and the French SETI@Home group (Organizer: Elisabeth Piotelat).
- Tuesday, Sept. 23: Morning: Active SETI, Exoplanets from the Ground. Afternoon: Exoplanets from Space, Exoplanet and Life. Evening: Public Outreach event (English language) with Michael Shermer (Organizer: Elisabeth Piotelat).
- Wed., Sept. 24: Morning: Exoplanets, Astrophysics and SETI. Historical, Philosophical and Societal aspects of SETI. Afternoon: Detecting & Deciphering in SETI. Evening: Public Outreach Event with Anne Jaffrennou and Marie Cuisset. (Organizer: Florence Raulin-Cerceau).
- Thurs., Sept. 25: Morning: At the Edge of the Knowledge. Legal International Issues. General Debate and “SETI Paris 2008 Declaration”. Afternoon: free. Evening: Conference Dinner.
- Friday, Sept. 26: 8h-19h- 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

8:00 – 9:00 *Registration of Participants*

Opening Ceremony Monday, September 22, 2008, 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, September 22, 2008, 09:20 - 15:00

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

Discoveries of solar system analogues and super Earths IAA-S8-0101

Queloz Didier, Switzerland

SETI: From Pioneering Research to Recent Achievements IAA-S8-0102

Drake Frank D., USA

10:20 – 10:50 *Coffee Break*

The Allen Telescope Array: a better pitchfork for exploring the Cosmic Haystack IAA-S8-0103

Tarter Jill, USA

Formation of Giant Planets, Super Earths and Habitable Planets IAA-S8-0104

Boss Alan, USA

Future Exoplanet Detections from Space, and SETI IAA-S8-0105

Leger Alain, France

Biosignatures on Exoplanets: beyond the standard views IAA-S8-0106

Schneider Jean, France

13:15 – 14:30 *Lunch Break*

Extraterrestrial life: what are we looking for? IAA-S8-0107

Brack André, France

European radio message: origin and concept IAA-S8-0108

Zaitsev Alexander, Russia

Session 2: Passive SETI: Listening to Them Monday, Sept. 22, 2008, 15:30 - 18:40

Chair: Florence Raulin-Cerceau, Museum Histoire Naturelle, Paris, Rapporteur: Jean-Pierre

Rospars, INRA, Versailles

New SETI sky survey for radio and optical pulses IAA-S8-0201

Werthimer Dan, USA

Project Argus Progress Report: T plus twelve years and holding IAA-S8-0202

Shuch Paul, USA

16:30 – 17:00 *Coffee Break*

Extended IRAS-based whole-sky upper limit on Dyson spheres and the implication for future Dyson spheres searches IAA-S8-0203

Carrigan Dick, USA

SETI Italia 2008: On-going Searches and Future Prospects IAA-S8-0204

Montebugnoli Stelio, Monari Jader, Italy

A new 256 million channel spectrometer for SETI observations in Argentina IAA-S8-0205

Larrarte J.J., Lemarchand Guillermo, Siemion A., Argentina, Werthimer Dan, USA

The new SETI in France IAA-S8-0206

Martin Jean-Michel, France

The Statistical Drake Equation IAA-S8-0207

Maccone Claudio, Italy

Session 3: Active SETI: Sending Messages to Them

Tuesday, September 23, 2008, 09:00 - 11:00

Chair: Alain. Labeque, IAS, Orsay, France, Rapporteur: Jader Monari, Institute of Radio Astronomy, CNR, Italy

SETI: The Compact and the Controversy <i>Shostak Seth, USA</i>	IAA-S8-0301
Crypto analysis applied to Active SETI <i>Dumas Stephane, Dutil Yvan, Canada</i>	IAA-S8-0302
Active SETI: Scientific Experiment, Diplomatic Action or Artistic Expression? <i>Vakoch Doug, USA</i>	IAA-S8-0303
Active SETI and the Zoo hypothesis <i>Labeque Alain, France</i>	IAA-S8-0304
Active SETI and Its Possible Dangers: An Overview <i>Musso Paolo, Italy</i>	IAA-S8-0305
Overcome the Great Silence! <i>Zaitsev Alexander, Russia</i>	IAA-S8-0306
<i>11:00 – 11:20 Coffee Break</i>	

Session 4: Exoplanets from the Ground, Tuesday, Sept. 23, 2008, 11:20 - 12:20

Chair: Seth Shostak, SETI Institute, Mountain View, CA, USA, Rapporteur: Alain Labeque, IAS, Orsay, France

Timing of Stellar Brightness Periodic Variations as a Method of Earth-Like Planet Detection <i>Beskin Grigorii, Russia</i>	IAA-S8-0401
Stars as semaphore light towers: Artificial transit and SETI <i>Arnold Luc, France</i>	IAA-S8-0402
Detection of Biomarkers using Infrared Spectroscopy <i>Dumas Stephane, Joncas G., Dutil Yvan, Canada</i>	IAA-S8-0403
<i>13:00 – 15:00 Lunch Break,</i>	

Session 5: Exoplanets from Space, Tuesday, September. 23, 2008, 15:00 - 16:20

Chair: Jill Tarter, SETI Institute, Mountain View, CA, USA , Rapporteur: Alain Labeque, IAS, Orsay, France

Searching for Inorganic Life in Universe <i>Tsyтовich V. N, Russia, Morfill G. N., Germany</i>	IAA-S8-0501
LUCAS Experiment: searching for vegetation and other biosignatures on planet Earth <i>Briot Danielle, France</i>	IAA-S8-0502
Super Earths and Life, and the role of NASA's Kepler Mission <i>Latham Dave, USA</i>	IAA-S8-0503
Exploring Habitable Exoplanets with New Worlds Observer <i>Turnbull Margaret, USA</i>	IAA-S8-0504
<i>16:20 – 16:40 Coffee Break</i>	

Session 6: Exoplanets and Life, Tuesday, September 23, 2008, 16:40 - 17:40

Chair: Alexander Zaitsev, Russia, Rapporteur: Alain Labeque, IAS, Orsay, France

SETI in the light of Terrestrial Biological Evolution <i>Rospars Jean-Pierre, France</i>	IAA-S8-0601
Our search for extraterrestrial life may be modified considering the unique group of silicon-utilizing micro-organisms <i>Satadal Das, India</i>	IAA-S8-0602
Self-Assembly of Complex Systems: Artificial Living Cells? <i>Tamulis Arvydas, Lithuania</i>	IAA-S8-0603

Session 7: Exoplanets, Astrophysics and SETI

Wednesday, September 24, 2008, 09:40 - 10:40

Chair: Douglas A. Vakoch, SETI Institute, Mountain View, USA , Rapporteur: Jean Schneider, Paris Observatory, France

- Galactic Habitable Zone** IAA-S8-0701
Prantzos Nikos, France
- Two-laser system to transmit optical images to ET civilizations** IAA-S8-0702
Beskin Grigorij et al., Russia
- Laser transition in atomic iodine for passive and active SETI** IAA-S8-0703
Kutaev Y. F., Mankevich S. K., Nosach O. Y., Orlov E. P., Russia
10:40 – 11:00 Coffee Break

Session 8: Historical, Philosophical and Sociological Aspects of SETI

Wednesday, September 24, 2008, 11:00 - 13:00

Chair: Jean-Michel Martin, Paris Observatory, France, Rapporteur: Florence Raulin-Cerceau, Museum National d'Histoire Naturelle, Paris.

- Historical review of the first interplanetary communication attempts: a scientific and literary overview** IAA-S8-0801
Raulin-Cerceau Florence, France
- Evolution, history & SETI: Some philosophical observations** IAA-S8-0802
Lestel Dominique, France
- The importance of Active SETI Strategies to Solve Synchronization Uncertainties in Time and Space among Galactic Civilizations – Ethical Issues** IAA-S8-0803
Lemarchand Guillermo, Argentina
- An Iconic Approach to Communicating Musical Concepts in Interstellar Messages** IAA-S8-0804
Vakoch Doug, USA, Maccone Claudio, Italy
- Interstellar Message Composition: Learning about ETs and ourselves through writings** IAA-S8-0805
Lockwood Jeffrey, USA
- What a billion years civilization looks like?** IAA-S8-0806
Dumas, Stephane, Dutil Yvan, Canada
13:00 – 15:00 Lunch Break,

Session 9: Detecting & Deciphering in SETI Wednesday, Sept. 24, 2008, 15:00 - 18:00

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

- Search for extraterrestrial civilizations in the optical range** IAA-S8-0901
Beskin Grigorij et al., Russia
- Targets and SETI – I – Strategic Issues and Passive SETI** IAA-S8-0902
Edmonson William, UK
- Targets and SETI – II – Shared Motivations and Active SETI** IAA-S8-0903
Edmonson William, UK
16:00 – 16:20 Coffee Break
- Detecting the Signature of Intelligent Life** IAA-S8-0904
Elliot John, UK
- The KLT (Karhunen-Loève Transform) to extend SETI searches to broad-band and extremely feeble signals** IAA-S8-0905
Maccone Claudio, Italy
- Using Fractional Derivative as Degree of Symmetry to Characterize Natural Shapes** IAA-S8-0906
Ilhan Husrey T. & Linscott Ivan, USA
- On the signature of LINCOS** IAA-S8-0907
Ollongren Alexander, The Netherlands
- The linguistic pre-requisites of SETI: a critical analysis of H. Freudenthal's book “LINCOS”** IAA-S8-0908
Schneider Jean, France

Session 10: At the Edge of Knowledge, Thursday, Sept. 25, 2008, 09:20 - 11:20

Chair: Alexander Ollongren, Sweden, Rapporteur: Pierre Colom, France

Virtual Interstellar Cloning IAA-S8-1001
Gardner James N., USA

The lure of local SETI. Fifty years of field experiments IAA-S8-1002
Ailleris Philippe, The Netherlands

When SETI meets an alien form of intelligence: understanding the troubled relationships between SETI and ufology IAA-S8-1003
Lagrange Pierre, France
10:20 – 10:40 Coffee Break

Revelation: the Timescale of ETI Signal Interpretation IAA-S8-1004
Baxter Stephen, UK

Unpacking the Great Transmission Debate IAA-S8-1005
Denning Kathryn, Canada

Session 11: Legal International Issues & SETI,

Thursday, Sept. 25, 2008, 11:20 - 13:00

Chair: Beskin Grigorij, Russia, Rapporteur: Philippe Ailleris, The Netherlands.

PAC: Protected Antipode Circle at the center of the Far Side of the Moon for the Benefit of all Humankind IAA-S8-1101
Maccone Claudio, Italy

13:00 Afternoon free

Technical Visit to Nançay Radio Telescope

Friday, Sept. 26, 2008, 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. (in advance registration required).

First IAA Symposium on

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Registration Form

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Fees

Regular Fee Early Bird (until September 1st, 2008) **€150.00** _____

Regular Fee (after September 1st, 2008) **€200.00** _____

On Site registration **€250.00** _____

Student Fee Early Bird (until September 1st, 2008) **€ 50.00** _____

Student Fee (after September 1st, 2008) **€70.00** _____

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 10th, 15% of registration fee will be charged. After September 10th, 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**

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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)

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- 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!

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First Name