

Minutes

**IAA Committee on SETI
Saturday, October 2, 1999
Amsterdam, The Netherlands**

1. Attendance:

Chairman: Jill Tarter
Co-chairmen : Ivan Almar, Tom Pierson,
Secretary: Jean Heidmann

Members: Billingham J., DeBiase R., Doyle S., Fasan E., Harrison A., Kopal V., Malina R.,
Maccone C., Michaud M., Montebugnoli S., Ramirez de Arellao R., Santoli S., Shostak S.,
Sterns P., Tennen L., Tough A., Vakoch D.

Guests: Genta G., Pletser V., Rummel J., Ollogren A.
(see appendix 1)

2. Adoption of the Agenda of the Meeting

The chairman, Jill Tarter, opened the meeting. The following topics were on the agenda (see appendix 2):

The agenda was approved as presented with the following amendments:
Item 7. was moved to become item 2.

As a new item 5, the issue of expiring committee memberships, election of new members, and appointments to sub-committees was added.

3. Approval of the Report on the Last Meeting

Chair Jill Tarter pointed that the last year minutes as submitted by the Chair were changed by IAA before sending them out. She learned that the secretariat was in charge to review the minutes to make it consistent with the Academy committee rules.

4. IAA Conferences and Symposia

4.1 Academy participation in the International Astronautical Congress

For the current congress, there will be two sessions titled:
28th Review Meeting of the Search for Extraterrestrial Intelligence (SETI)

Coordinators: Jill Tarter (USA), Ivan Almar (HUN)

Session 1:
Theme: SETI Science and Technology

Chairmen: R. Norris (AUS), H. Butcher (NL)
Rapporteur: S. Shostak (USA)

IAA-99-IAA.9.1.02 will be presented by second author M. Turnbull
IAA-99-IAA.9.1.07 is withdrawn

Session 2:
Theme: SETI Interdisciplinary Connections
Chairmen: T. Pierson (USA), F. Israel (NL)
Rapporteur: S.E. Doyle (USA)

IAA-99-IAA.9.2.03 will be presented by third author S. Shostak
IAA-99-IAA.9.2.05 is withdrawn
IAA-99-IAA.9.2.06 is withdrawn

4.1.1. Status of 2000 Sessions at Rio

Session 1: SETI Science and Technology
Chairmen: Guillermo Lemarchand (Argentina), Seth Shostak (USA)
Rapporteur: Cristiano Cosmovici (Italy)

Session 2: SETI Interdisciplinary Connections
Chairmen: A.A. Cocca (Argentina), A. Harrison (USA)
Rapporteur: Jean Heidmann (France)

We are also considering organizing a press briefing in Rio, and would like to provide content for the outreach program

4.1. 2. Status of Preparation of the 2001 Toulouse

Session 1: SETI Science and Technology
Chairmen: Jean Heidmann (France), Stellio Montebugnoli (Italy)
Rapporteur: Donald De Vincenzi (USA)

Session 2: SETI Interdisciplinary Connections
Chairmen: Roger Malino (USA), Douglas Vakoch (USA)
Rapporteur: Patricia Sterns (USA)

We intend to cooperate with the IAA Committee on Space activities and Society to prepare an SETI exhibit/event for the public during the Congress.

4.1. 3. Status of Preparation of the 2002, Houston

The Committee has not yet prepared its contribution to the World Space Congress, however we anticipate a vigorous program in cooperation with our space science colleagues.

4.2. Status of Participation at COSPAR Congress, Warsaw, July 2000

This committee will have no official presence in Warsaw.

4.3. Status of New Participation at COSPAR 2002, Houston

This is being considered, but no plans have been formulated at this time.

4.3 Stand Alone Symposium 2000-2001

No stand-alone symposia are planned for this period. In 2001 we will present a request to the Scientific Program Committee that the IAA co-sponsor the 7th International Bioastronomy Meeting in the summer of 2002. The IAA sponsored the 6th International Bioastronomy Meeting that took place in Hawaii during August 2-6, 1999.

5. Committee Membership

The SETI Committee has four sub-committees. This year there will be a substantial change in the officers of both the committee and its sub-committees:

SETI Committee: Chair reminded everyone of lengthy email traffic on recommendation for Thomas Pierson to become an additional Co-Chair (along with Ivan Almar who will continue for one additional year) to allow her to share the committee load with someone who is close by. This will facilitate work during the year. After discussion during which Pierson left the room, the Committee elected Pierson to the position of Co-Chair.

Sub-committee on Transmissions from Earth: Michael Michaud nominated Ernst Fasan to replace him as the sub-committee chair. Patricia Sterns said he would be excellent for post of Chair and he was elected unanimously.

Post-Detection Science and Technology Sub-Committee: Govind Swarup has requested that a new chair be found for this committee. His travel is limited and he cannot really carry out the task. Jill has spent a lot of time thinking about the role of this sub-committee and now realizes that it is not likely that the sub-committee will actually meet upon the detection of a signal. Instead, due to the need for rapid action, an electronic meeting and communication between the sub-committee members is what is needed. Jill suggests Ray Norris as the new Chair of this subcommittee, but he is not a member of the Academy. He will be nominated this fall, and hopefully elected as a Corresponding Member next spring. Tough moved and Michaud seconded. Norris was elected unanimously, pending his election. Until then, Tarter will act as interim chair, and Norris will serve as secretary of the sub-committee. The Post Detection Committee will hold meeting Wed at 4 PM. in room known as the IPC Co-chairman's office, across from the IAA Secretariat.

Lunar-SETI Sub-committee: Jean Heidmann remains Chair. During subsequent meeting of the sub-committee, Claudio Maccone was elected as a Co-Chair

Sub-committee on Media and Education: Doyle is resigning as Co-Chair. Malina will continue as Chair and a search for Co-Chair will begin. Doyle clarified that he really must resign because of his new career position which is totally consuming his time. He has enjoyed this work in the past, but simply has no time available for it now. Doyle recommended Carol Oliver because of her knowledge and interest in the topic. Carol is not yet a member of the IAA. Nomination to the Academy will occur this fall. In the interim, Malina is sole Chair. Oliver will be invited to help Malina in the role of secretary for the sub-committee.

5.1 Current Members proposed for a New Term Membership extended for:

Because of their continuing activity in support of this committee, and in SETI-related research, the following members, whose terms expire in 1999, will be asked to continue for another 3-year term.

Jill Tarter - Chair (USA)
Ivan Almar -- Co-Chair (Hungary)
Jean Heidmann -- Secretary (France)
Ragbir Bathal (Australia)
Stuart Bowyer (USA)
Donald Devincenzi (USA)
Ben Finney (USA)
Nikolai Kardashev (Russia)
Vladimir Kopal (Czech Republic)
Michael Michaud (USA)
Carol Oliver (USA)
Rosa Ramirez de Arellano (Mexico)
Martin Rees (UK)
Ye Shuhua (China)
Vladimir Strel'nitskij (Russia)
Allen Tough (Canada)
Dan Werthimer (USA)

5.2 New Members Recommended as new members:

The IAA Seretariat should send letters of invitation to join the SETI Committee to the following people:

Alexander Ollongren (Netherlands)
Leiden Institute for Advanced Computer Science
Leiden University
Niels Bohrweg 1
2333 CA Leiden
The Netherlands

Vladimir Pletser (Netherlands)
Senior Physicist/Engineer

Microgravity Payloads Division
Directorate of Manned Spaceflight and Microgravity
ESA
ESTEC
Keperlaan 1 - P.O. Box 299 - 2200 AG Noordwijk ZH
The Netherlands

John Rummel (USA)
Planetary Protection Officer
NASA Headquarters
Code S
Washington, DC 20546
USA

Arthur Goods (Switzerland) -- note: He expressed interest in joining the Committee after the meeting, the Chair approved
Im Grund 21, 8424 Embrach, Switzerland

5.3 Withdrawal

The following members are withdrawn:

Rod Davies (UK)
John Dreher (USA)
V.I. Slysh (Russia)
Peter Sturrock (USA)
Govind Swarup (India)
David Whitehouse (UK)
Nan Renong (China)

6. Committee Publication Activity Review

6.1. Publications

None during this past year. However, special issue of ACTA: SETI 6 is being edited by Ragbir Bhtal. He wants papers back by mid-October.

6.2 Position Paper or Cosmic Study

Work on the Cosmic Study on a Lunar Farside Radio Observatory is well advanced. It is being edited by Jean Heidmann. The manuscript will be completed in the summer of 2000, and the IAA is requested to publish it as rapidly as possible.

6.3 Report to the U.N.

The Chair failed to provide a report in 1998. A report will be prepared for Jerry Grey within one month for inclusion in the 1999 report.

7. Nominations for Academy 2000 Book Awards

"The Beauty of SETI" by Ivan Almar was published in Hungarian by Vince Publishing Co. This should be nominated for an award from Section 1.

Although no recommendations were made during Committee meeting, several members raised the point afterwards that the recently published "Social Implications of the Detection of an Extraterrestrial Civilization", Billingham et. al. should be nominated for Section 4.

8. Schedule Conflicts to be avoided at the next Astronautical Congress

A list of conflict to be avoided was prepared and given to Lubos Perek during the IPC meeting.

8.1 List of recommended sequence of meetings:

SETI I: Science and Technology should be scheduled prior to SETI II: Interdisciplinary aspects.

8.2 List of Committee Meetings or Technical Sessions that should not be in parallel

Space Activities and Society, Interstellar Space Exploration, Lunar, IISL Bureau

9. Committee Contribution to the IAA World Wide Web Site

The Chair noted that the Committee 5-year Plan, Terms of Reference for the Committee and its sub-committees were not on the web site, although they do exist. The Chair will supply the Secretariat with these items and request their inclusion. We should also request a link to the SETI Institute site at www.seti.org and copy examples of educational activities that have already been developed onto the IAA web site. This is an activity that could benefit from some volunteer effort from committee members or interested individuals.

10. Other Business

Sub-committee reports

Transmission from Earth Sub-Committee Report: Goal is to take the IAA Position Paper containing the two Declarations before the UN COPUOS Committee. There will be a sub-committee meeting today following full committee meeting. Fasan will now take the lead as the new Chair. Subsequent to the committee and sub-committee meetings, Fasan and Tarter met with Michael Yarymovych (IAA President), Prof. Haerendel (Chair of IAA International Scientific Program Committee), and Dr. J.M. Contant (IAA Secretary General).

Lunar SETI Sub-Committee. There will be a meeting on Monday at 4 PM. There should be an

election for Co-chair and for the members. Heidmann will also report on Nagoya symposium, and the IAA Cosmic Study on Lunar SETI. There is a two-year time scale from IAA, so this paper should be produced by summer 2000. Action for Chair (Tarter): recommend publishing by IAA by Fall of 2000 (this is a fast track Cosmic Study, and should be published quite soon). Billingham suggests that we pursue publication of the second protocol under the same fast track.

Education and Media Sub-Committee Report -- Terms of Reference comments have been collected. Computer copies have been lost. Doyle has physical copies and he will find them again and he will rebuild the terms and send them to Malina, Oliver and Tarter. Subcommittee will meet Wednesday at noon at the Ruby restaurant. Goal will be to discuss Oliver's suggestion of being proactive rather than reactive.

Panel Discussion Format

Student panel discussion did not come together as envisioned for the SETI II session. Surprisingly, there was not identifiable cultural diversity among students, nor much thoughtful interest in the question of immediate challenges post-contact that could be found at Leiden, where Frank Israel is on the faculty. Chair opened discussion to floor for ideas to fill in the time slot. Allen Tough suggested we could enlist folks from our committee with divergent opinions and backgrounds to sit as a panel. It would lead to a very interesting discussion. Roger Malina suggested that the web environment is the best format to get the divergent types of people that Jill is trying to get involved. Ivan Almar discussed a student panel he moderated at Unispace 3 that showed quite a different level of interest by the young people. They were very eager to participate. Thus, maybe the approach is to go to the students there, not ask them to come to us at an International Astronautical Congress.

Chair encouraged discussion on what we could do Tuesday along the lines of Allen's suggestion. Conclusions: The experiment of trying have a diverse student population works with us at a meeting failed. Malina will work with Jill to brainstorm how to make this happen on the web or otherwise. Meanwhile, this week we will work out a panel of diverse interests from our committee membership. Chair asked for panel members: Michaud, Tough, Shostak, Harrison, and Vakoch will make up the panel, and each will undertake to define one provocative question to stir discussion during the session and involve our audience. Subsequently this panel discussion was held and was extremely successful. Many of the ESTEC-supported students attended and participated actively from the audience. We will attempt to find a way to continue the dialog electronically.

Tough asked how to go about a suggesting a different panel for a future meeting. Chair advised him to submit abstract through the usual process.

Review of current SETI and related work:

Tarter summarized key things in U.S. SETI@home now have 1.2 million subscribers. SETI Institute has finished two-year international working group to plan next 20 years of SETI. Three prime recommendations: (1) The One Hectare Telescope (1hT) should be developed as combined SETI and astronomy instrument that also serves as prototype for the Square Kilometer Array (SKA), [1hT is being developed jointly by SETI Institute and U.C. Berkeley]. (2) encourage optical SETI work, [the SETI Institute is supporting 3 early efforts: Berkeley (Werthimer & Townes), San Francisco State (Marcy), and Harvard (Horowitz)]and (3) begin the theoretical work required to build an all sky all frequency all time system to be

called the Omni-directional Sky Survey (OSS).

Maccone and Almar described current SETI work being done by Russian Gregory Beskin, who is doing optical SETI.

Montebugnoli described SETI Italy's effort. At end of 1998 they were online with 8 million channels. They are currently in process of upgrading to 24 million channels thanks to grant support from SETI Institute to buy the necessary boards. They are now in position to offer software of they have developed that allows the SERENDIP board system to act as an RFI monitoring system to other observatories. They have also built an inexpensive wide band low-resolution spectrometer. Designed to be both a follow-up system and a new system. There is a three-element network of antennas that will be available to do SETI for four months per year.

Jean Heidmann asked about any work underway in looking at KLT algorithm? Tarter responded that there is a group at Yale making some progress on this work. Maccone explained that the KLT may be an improvement in that it may be better than the FFT. However, the price you pay is that you need more compute power. Maccone asked if the KLT might be a good application for SETI at home. Alex Pantlan at MIT has a paper out on a particular KLT algorithm that SETI@home might incorporate.

Tough reported on web based invitation to ETI. Group of 60 have now endorsed this. 16 members of this committee are part of the 60. More will be reported in his paper on Tuesday morning.

Tarter reported that SETI Australia has also obtained new SERENDIP processing boards thanks to financial support from the SETI Institute. They are installing them now, and will use one board on each of the 13 beams of the new focal plane array of the Parkes telescope.

Argentina search continues and Tarter is unaware of any changes, so assumes that it is going well.

BETA search at Harvard, Massachusetts halted last March when wind damaged the telescope. Currently looking at possibly finding a way to continue to use the antenna at a fixed elevation. Meanwhile Paul continues with his optical SETI work.

Heidmann reported that the Nancay radio telescope is has successfully upgraded its focal system, but is struggling to find continuing financial support. Jean fears that the observatory may have a very limited continued life, perhaps as short as four years from now. The new science minister is not favorably inclined to astronomy. He feels that, as the world's second largest telescope, the SETI Community should be interested in using it and, if they can come forward, it may save the telescope. Otherwise, he is confident it will be closed within 4 years. Jill asked if there is some way Paul Horowitz and BETA system might be able to use Nancay? Jean said that this is possible, and would need to be pursued via a proposal to the Paris Observatory.

Montebugnoli said the threat is the same for the Northern Cross telescope in Italy. However, it is not good at SETI frequencies.

Jill pointed out that in U.S. whenever we bring forward an idea for a new telescope, we are asked which one we will close.

Billingham described the recently published book on the Social Consequences of the Detection of an Extraterrestrial Civilization.

Tough reported on two July meetings on the social consequences of Contact. One, in Denver, immersed participants in a Contact scenario. Second was supported by Foundation for Future and occurred just before the Bioastronomy meeting in Hawaii. This conference dealt with six topics and John Billingham summarized the work in a paper at Bioastronomy. Al Harrison and Steven Dick are editing the proceedings and draft is already ready.

Maccone reported on an unfortunate development in Italy, which caused him to resign from a SETI related committee. There are some in the Roman Catholic church who have an idea of using SETI to convert extraterrestrials to the Roman Catholic religion.

Web Site: Pierson reviewed how we discussed this in 1997 and the SETI Institute posted up a site. It has not been rigorously kept up to date. Pierson asked whether maintaining this separate site makes sense now that the IAA has a fairly current site. Seth said we could maintain the separate site and post our own information that could become content rich with stuff we are interested in as a committee. We can then link with IAA.

Tough suggest we do both. Shostak suggests we can keep text rich site with the right stuff from meetings, abstracts, etc. Conclusion -- Institute will keep the site active and encourage mirror link on IAA site. Re. suggestions of a moderated discussion site, Jill would like to combine this with Malina's idea of using web as place to obtain the multicultural input.

Pesek Lecture for Toulouse -- Invite Martin Rees. ACTION: Jill will send a letter.

Any nominations for new members in the academy must be submitted by November. We need to include today's recommendation for Carol Oliver. Almar reminded everyone who is a corresponding member to be very careful about the five-year expiration and remind us all to help you take care of the transfer to full membership.

Almar said that we need to be very careful that our committee is represented on the Board of Trustees. Tarter mentioned that she would love to find a way to have John Billingham be on the Board of Trustees. JB is on section 3. Heidmann pointed out that Co-Chairs for sub-committees must be a full member of Academy? Answer: yes.

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Almar brought up his concern that at the UNISPACE Congress this past year SETI did not have any prominent role other than Almar's talk. He is concerned that neither in COPUOS nor in UNISPACE is there any significant activity in SETI. There is a lack of interest in the topic, even if Dr. Jasentuliyana was part of the organizing committee. Nandi is now retired, which could make matters even lower re. visibility for SETI. Vladimir Kopal informed us that a woman from Malaysia has actually been appointed to replace Dr. Jasentuliyana. Michaud asked that either Fasan or Kopal brief this new person.

Fasan reported on the 1997 effort to approach 63 member nations with our second protocol has not generated any positive response. Just polite declines re. someone to lead. He then read from a 1995 letter from someone who indicated a willingness to lead. Fasan has spoken with Perek and it looks like the only way to proceed is for the President of the Academy file the

revised petition. Kopal suggested that getting such an item on the agenda requires a consensus agreement of all. Key is for the IAA President to bring this forward. Most delegates know nothing about this issue, so we may not succeed the first time, but we must start it forward and begin the process. Michaud believes that since 1997 it seems that we have lost some support from the top level of IAA. Fasan and Kopal should help us get the right level of endorsement from the senior leadership in IAA.

Jill Tarter said that JM Contant said the SETI Protocol was mentioned as a single paragraph in 1998 presentation to COPUOS, and there is some record of this. We can take this up further at the committee meeting at 4 PM. (See Appendix 3 for report on additional action on this topic.)

Other business:

Toulouse -- We should consider the academy's recommendation to not just continue with same sessions every year. However, Jill's belief is that we are involved in a fundamental research arena where the two general program titles fit well for getting the correct papers into the program.

Who for Pesek lecture: Rees, or Chyba. Michaud suggests that if we get someone at his level it should be as a big public lecture. Or perhaps have him do both. Tough suggests Steven Dick. Another would be Kopal or someone who did space law. Michaud suggests possibly a major science fiction writer (Brin, Benford). The first choice is Rees.

ACTION -- Tarter and Heidmann will expand the ten line summaries of the sessions for Toulouse that appear in the call for papers to try to increase interest in submitting papers.

How to avoid conflict with other sessions: Ivan pointed out that because we are strict for asking for early days and close together, then it is hard to avoid conflicts. If we could meet on any days, then it is more realistic avoid conflicts. The SETI sessions are among the best attended, so when a conflict occurs it is the other sessions whose attendance suffers more than ours. Jean or Ivan will undertake to look out for our interests in April. Enter same list in minutes as last time. We need to add IISL Bureau meetings.

11. Next Meeting

The next meeting of the committee will take place in Rio.