

# SETI PC Meeting Notes

## IAC 2018, Bremen

3 October 2018.

Attending: Claudio Maccone (CM), Michael Garrett (MAG), Leonid Gurvits, S. Pete Worden (PW), Eamon Ansbro, Stelio Montebugnoli, Les Tennen, Nelly ben Hayoun (NbH), Andrea Melis, Daniela de Paulis, Germano Bianchi, Christian Reuwer, Elizabeth Piotelat (EP), Emilio Enriquez (EE), David Deboer, Jamie Drew (JD), Griffin Foster (GF), Leonid Gurvits (LIG), Roberto Lulli, Bill Johnston, Jacob Haqq-Misra (JHM), Nicolò Antonietti, John Rummel (JR), Albert Jackson (AJ), Paolo Musso (PM).

Attending remotely: Martin Dominik (MD), + others (not known).

### 1. Welcome

Welcome by the Chair, Claudio Maccone (CM), and co-chairs Michael Garrett (MAG) & Leonid Gurvits (LIG).

The Breakthrough Listen (BL) team tried to connect remote participants but the wifi signal was very poor in the conference centre. A “tour de table” followed.

### 2. Meeting notes and Actions from SETI PC Adelaide 2017

MAG asked for comments on the notes from the last meeting, circulated earlier by e-mail. No comments were made. The notes from the meeting were unanimously approved.

Almost all of the action items from IAC2017 were completed. Les Tennen noted that he would present a talk on the status of the SETI detection protocols in SETI session 2 at IAC2018 (Friday 5 October).

One outstanding action remains:

“Action item: the PC will review its membership at each meeting. This activity will be scheduled as a standing item on PC agendas (CM)”.

The action remains with CM.

### 3. PC membership

CM and MAG noted that PC membership has grown significantly in the last few years but the process of appointing new members has been rather adhoc.

A simple process was proposed:

- 1) Prospective members can be nominated by other PC members by informing the chair by e-mail.
- 2) Prospective members should provide a short text (< 1 page) on their qualifications and motivation to join the PC.
- 3) The PC chair will circulate the list of prospective members and their motivational texts to the PC members two weeks before the IAC face-to-face meeting.
- 4) A simple majority vote will be required to appoint new members, and this will take place at the annual IAC face-to-face meeting.

**Decision:** The process to appoint new members (see above) was unanimously agreed by the membership.

#### **4. Report from PC chair**

##### *Moon far-side*

CM highlighted the importance of protecting the far-side of the Moon for radio astronomy and SETI research. There will be a one-day meeting on 27<sup>th</sup> of March 2019 to consider how the astronomical community and space agencies can best engage with each other, in order to allocate some frequency for radio astronomy. Identifying possible RFI exclusion zones on the far-side would also be on the agenda. It will be important that expert groups such as CRAF, CORF etc. are involved in this initiative.

##### *COSPAR*

The meeting took place in July 2018 – it was a good opportunity for SETI to engage with the large space science community.

##### *NASA Techno-signatures workshop*

CM attended the workshop. The range and quality of the papers presented was very impressive. Workshop presentations (including video) should become publicly available soon. CM made a presentation on European SETI activities. He also included some slides on the Lunar far-side protection issue.

#### **5. Report from Breakthrough Listen (BL)**

Andrew Siemion was unable to join the meeting remotely. PW reported that BL will be using MeerKAT as part of the BL SETI programme – the joint BL/SARAO announcement was made yesterday at IAC 2018. SETI

observations with MeerKAT will be commensal in nature, employing 64 beams. Observations with Parkes and GBT continue as before. There continues to be an interest in forging collaborations with FAST. A collaboration agreement was signed with Jodrell Bank Centre for Astrophysics, and moves towards SETI at low frequencies using LOFAR that are on-going. Optical SETI activities are also likely to increase in terms of overall effort this year. Supporting workshops and activities in exciting new areas such as Genome SETI, Solar System studies, Breakthrough Starshot represented a very broad effort across the various Breakthrough Initiatives – one challenge is to see how cross-fertilisation between the various efforts can be maximised. PW was delighted that NASA is interested in funding SETI – private-public efforts are of great interest to the Foundation.

GF reported on the technical aspects of the BL MeerKAT programme. Roll-out of the compute node cluster is expected to happen next year. There was a significant software development associated with this, including provision for the huge data rates generated. SETI interest at UK, IRL and SE LOFAR stations continues to grow – a common backend was under-construction for SETI, PSR/FRB, and all-sky mapping applications.

CM reported on the current collaboration between Berkeley and INAF (Italy). The implementation of the KLT for SETI searches has been a key activity.

EE noted that BL will be moving to doing searches at higher frequencies, and that the GBT remained the programme's premier instrument in the northern hemisphere.

## **6. SETI Institute report**

Bill Diamond was unable to join the meeting remotely. JR noted that he was organizing a “Life in Space” session at the IAC 2018 Global Forum - 4 October, 15.30 <http://www.iafastro.org/events/iac/iac-2018/global-networking-forum/04-thursday-dlr-hall-1530-1630-life-in-space-the-science-the-challenges-and-the-broad-horizon/>

NbH noted that in the future we should explore the possibilities of organising similar events under the GNF umbrella.

NbH invited PC members to attend the IAC 2018 E1.9 Space Culture session: <https://iafastro.directory/iac/browse/IAC-18/E1/9/>

## **7. Post-detection subcommittee**

Unfortunately, Katheryn Denning, John Elliot and Paul Davies were unable to join the meeting (apologies received). It's understood that progress is being made in establishing the sub-committee, and the role of this group would be discussed again at the next SETI PC (video) quarterly meeting.

## **8. SETI Protocols 2.0.**

LT had left the meeting by this stage to give a talk at another session. It was noted that LT would make a presentation on the topic of SETI protocols at Friday's IAC 2018 SETI Session 2.

## **9. Upcoming SETI related meetings.**

The Paris spring meetings are scheduled for 25-28 March 2019. CM is organising a Lunar Far-side meeting (27 March 2019) during this period.

*SETI and Big History (15-18 July 2018)* – CM saw this as a timely meeting – aims are evolving but the idea would be to bring the communities together, and consider the impact of a SETI detection on the future of humankind (near-term and long-term). For example, our future maybe someone else's past.

*Next IAC (21-25 October 2019)* – location is Washington DC (note 50<sup>th</sup> anniversary of Apollo 11). CM noted that the pressure on the total number of sessions available was high – space activities are growing greatly – we will need to fight hard to keep 2 SETI sessions within IAC 2019 – interactive presentations are likely to become more common in the future.

*All-sky radio meeting – end of October* – MAG reported that the programme was under construction and the workshop would include a visit to the new SKA HQ building at Jodrell Bank. A summary paper would be one of the outcomes of the meeting.

MAG noted that the IAC 2018 SETI Session 1 had enjoyed an excellent attendance – largest in recent memory – at the peak (mid-way through the session) there were ~ 80 participants in the room.

NbH noted that we should make sure that the SETI session 2 and E1.9 Space Culture continue to engage with each other before and during the Paris meeting in March 2019. There is a peer-reivew process being used by E1.9 that the SETI PC might want to adopt for their sessions.

CM noted that there would be SETI IP (Interactive Presentations) for the first time at this week's IAC 2018, including a presentation by Danille de Paulis.

EP paid tribute to Stephane Dumas who had been an active member of the SETI PC for many years, and who passed away a few years ago. He had compiled a large list of historic SETI publications that should be maintained. It was noted by CM that the history of SETI is not well documented in general, and he was thinking that a sub-committee should be formed to tackle the issue.

*SETI Conference in Byurakan?* – the famous 1971 USSR/US (actually global) meeting was held there. Leonid Gurvits noted that there may be an opportunity to celebrate the 50<sup>th</sup> anniversary of the original meeting, with a second SETI meeting in Byurakan in 2021. Byurakan Observatory would be happy to host such a meeting but another group (e.g. the SETI PC) would have to take the initiative to organise it.

### *Publishing SETI papers*

At this point a discussion arose about publishing SETI papers. GF suggested that maybe the SETI PC should make an effort to highlight ground-breaking papers in the field, encompassing all fields, not just those related to physics/astrophysics on the arXiv.org. EP encouraged all SETI papers to be “published” also in the arXiv.org. AJ noted that the NASA ADS system was very useful but links to some papers (e.g. those published in JBIS and Acta Astronautica) were not always linked there.

CM noted he had a dream to establish a “SETI Journal” – earlier enquiries suggested there was no appetite for this from the major publishers but perhaps the recent revival of SETI’s fortunes would change their minds. MD thought this would not be such a great idea – SETI was already seen as a “niche activity” and establishing a SETI journal would not help.

JHM noted that a SETI journal had existed in the past – “Contact in Context”, - this had been an initiative of the SETI Institute. It would be good to find out what happened with that – there are probably lessons to be learned. There is a Russian journal – “SETI Messenger” but this is a Russian language journal.

GF noted it was important to be rigorous, publishing in ApJ, MNRAS, AJ, A&A etc. ensured SETI papers are taken seriously and were of high quality.

MAG noted that he found James Davenport’s <http://seti.news> e-mailing list useful, though he had the feeling it was focused on identifying obvious papers appearing in arXiv.org.

JD noted that from the BL perspective it was important to capturing and

preserve past contributions. Metrics were important – things that can be measurable – so far BL had produced 60 peer review publications in the last 2 years. Agency and legitimacy were important areas to bear in mind when engaging with government agencies such as NASA – clearly convincing external partners of state-of-the-art capabilities was crucial. NASA feels strongly about moving SETI beyond a niche activity. Sensitivity and diversity is also a theme – agencies like NASA are typically wary of connections to culture or art.

Paulo Russo - introduced SETI activities at Lima university, Peru. He has established a course on Life in the Universe. CM gave several guest lectures in Lima there. Interest is in optical SETI, international partnerships and contributing to SETI history.

## **12. New members**

With the new process now endorsed by the PC (see section 4), new members should be proposed at IAC 2019.

Past Action item: the PC will review its membership at each meeting. This activity will be scheduled as a standing item on PC agendas (CM).

New Action Item: the PC chair (CM) will send a reminder to SETI PC members on the process of appointing new members 2 months in advance of IAC 2019.

## **13. AOB**

There were no other items to discuss.

Notes by MAG 3-Oct-2018