Triennium Report 2014-2017 of Commission J

This is a brief summary of the activities of Commission J and the developments in radio astronomy during this triennium. Support of conferences and workshop that were supported financially and technically are listed, as are the topics for sessions at the Beijing GASS.

1. Officers of Commission J for this triennium:

Chair: Willem Baan, ASTRON, The Netherlands
Vice-chair: Richard Bradley, NRAO, United States
Past-chair: Justin Jonas, Rhodes University, South Africa

ECR: Stefan Wijnholds, ASTRON, The Netherlands
Andrew Siemion, UC Berkeley, United States

2. Terms of Reference for Commission J

The activities of the Commission include:

= Observation and interpretation of cosmic radio emissions from the early universe to the present epoch and
= Radio reflections from solar system bodies

Emphasis is placed on:

= The promotion of science-driven techniques for making radio-astronomical observations and data analysis,
= Support of activities to protect radio-astronomical observations from harmful interference.

3. Finances

The budget for Commission J has been used to support travel for officials, for support of a few workshops/meetings, and for young scientist travel support (for a total of 1300 Euro). Additional budget items to support a summer school have not been used. At this time the budget surplus cannot be determined.

4. Support of meetings and workshops

The following meetings and workshops were provided with moral and/or financial support.

Meeting	Country	Date	Support for young scientists
RCRS 2014, Regional Conference of Radio Science	Pune, India	January 2-5, 2014	500E
RFI 2016 – Coexisting with Radio Frequency Interference http://go.nrao.edu/rfi2016	Socorro, NM, USA	October 17-20, 2016	2000USD

5. Vice-chair and Early Career Representative nominees.

Di Li (NAO, China) and Douglas Bock (CSIRO, Australia) are the two nominees for Vice-chair of Commission J. Christopher Jordan (Curtin U, Australia) and Jacki Gilmore (Stellenbosch U, South Africa) have been nominated as Early Career Representatives.

6. AT-RASC 2015 at Gran Canaria, Spain

From the viewpoint of Comm J, the AT-RASC in 2015 was very successful. A total of 54 papers were submitted. The attendance for this meeting has been quite satisfactory considering that this was the first meeting of its kind. The atmosphere of the venue made it very easy/pleasant for participants to discuss and collaborate. While travel to Gran Canaria is not so easy for some participants from the Atlantic region, the organization needs to make it easier (more transparent) the next time for those participants. The format of the AT-RASC meetings should remain flexible and should allow holding URSI-related workshops in connection with the meetings.

Session	Session Topic	Papers
J2	Development in array technology for radio astronomy	7
J3	New telescopes, techniques, and observations	14
J5	Square Kilometre Array	4
J8	Latest results	3
S – JC	Realtime data processing	6
S - JG	Ionospheric models and their validation	10
S - JCD	Radio astronomy systems and enabling components	10
	Total	54

7. AP-RASC in Seoul, South Korea

The Asia-Pacific-RASC 2016 has been organised jointly by the National Committees of Japan, Korea, and China. The Comm J chairs provided support with the organisation of the Comm J program and with the selection of the YS awards. During Comm J had 9 sessions with 53 oral papers and an unknown number of poster papers.

Session	Session Topic	Papers
J1	Five Hundred Meter Aperture Spherical Telescope (FAST)	6
S-J1	New Technology in Very Long Baseline Interferometry and Single Dishes	5
S-J2	Science and Technology of the Square Kilometre Array	6
S-J3	Science and Technology of Atacama Large Millimeter/ Sub-millimeter Array	5
S-J5	Receivers for Radio Astronomy (Joint with The 17th Workshop on Sub-millimeter-Wave Receiver Technologies in Eastern Asia)	12

S-J6	Science and Technology for Solar and Heliophysics	12
S-JDE4	Digital Technology for Radio Astronomy	5
	Total	53

8. Montreal, Canada, URSI GASS Scientific Sessions

The topics of the scientific sessions for the Montreal GASS were chosen to match the exciting developments in radio astronomy across the globe and it is clear that GASS 2017 will be a successful meeting. There are a total of 242 papers submitted for all Comm J sessions and all Comm J joint sessions (excluding the Tutorial and General lectures) of which 52 were assigned as poster papers. A total of 42 Comm J sessions have been planned and 10 poster sessions. A special effort was made to assign oral presentations to as many participants as possible by creating parallel session where possible. In addition, there are three whole-day sessions, a two-day session, and a one-day workshop before the meeting. These sessions were created in order to facilitate workshop-like sessions that allow more in-depth discussions/presentations on selected topics and would attract a wider audience. The experience from the upcoming GASS may serve as an example for holding topical workshops in conjunction (before/after/during) with a GASS.

Session	Session Topic	Papers
J1	Very Long Baseline Interferometry	13
J2	The Square Kilometer Array	14
J3	Millimeter/Submillimeter Arrays	10
J4	Single Dish Instruments	14
J5	Historical Radio Astronomy	11
J6	Receivers and Radiometers: Design and Calibration	36
J7	Digital Signal Processing Hardware	10
J8	Detection of Short-Duration Transients and Pulsars	18
J9	Recent and Future Space Missions	8
J10	Latest News and Observatory Reports	16
JD1	AstroPhotonics	3
EFGHJ	Workshop on Characterisation and Mitigation of Radio Frequency Interference	22
JG	Ionospheric Models and their Validation	16
JT	Commission J Tutorial	
DJ	Special on Gravitational Wave detection	4
GJ	Workshop on Extreme Space Weather Environments	10
HJ	Solar, Planetary and Heliospheric Radio Emissions	37
GenLec	General Lecture on Detecting Gravitational waves	
	Total	242

9. Communication and membership

During the previous GASS and until the present, discussions have been ongoing about the 'average youth' of the URSI membership and the role for URSI in the

life and career of the radio scientists. It is clear that URSI can be attractive for radio scientists as an organisation providing places for discussions, presentations, and for meeting colleagues. While there may be some overlap in covering the certain radio science research fields with other organisations, URSI covers the broad radio science fields like no other. Still it is important to make URSI more a part of the 'daily life of the radio scientists'. In addition, the new generation of radio scientists needs to be attracted to URSI. The answers to such issues are complex but the leadership of Comm J has been discussing these issues and considering changes that may be made within URSI.

In an attempt to keep the Comm J membership informed about URSI-related activities and issues, a two/three monthly email has been send a number of times. However, this effort gradually died because of the absence of news items and also because of the lack of feedback from the membership.