COMMISSION 40: RADIO ASTRONOMY (RADIO ASTRONOMIE)

Report of Meetings, 20, 21, 22, 23, 25, 26, 27 November 1985

PRESIDENT: K. Kellermann. SECRETARY: M. Gordon.

Business Meetings

I. NEW OFFICERS

John Baldwin (UK) was elected President and Peter Mezger (FRG) Vice-President for the period 1986-1988. Continuing members of the Organizing Committee are: G. Setti (Italy), R. Strom (Netherlands), S. Wang (China), T. Wilson (FRG), and K. Kellermann (USA). The following were selected as new members of the SOC: A. Barrett (USA), D. Jauncey (Australia), V. Kapahi (India), A. Baudry (France), N. Kaifu (Japan), L. Matveyenko (USSR), R. Booth (Sweden), G. Nicolson (South Africa), and E. Seaquist (Canada).

II. NEW MEMBERS

Approximately 130 new members were approved by the Commission bringing the total membership to about 690. Commission 40 thus continues as the largest Commission in the Union creating significant communication problems. The Commission felt, however, that the membership should not be restricted.

III. IUCAF/CCIR REPRESENTATION

G. Swarup (India) and R. Schilizzi (Netherlands) were unanamously approved to continue as IAU representatives to IUCAF. John Whiteoak (Australia) continues as representative to CCIR while A. R. Thompson (USA) will replace L. Doherty (Canada) who asked to step down. The President thanked all of these individuals for their continued efforts on the behalf of radio astronomy.

IV. IUCAF/CCIR ACTIVITIES

John Findlay, Chairman of IUCAF, reported on recent IUCAF activities. A major concern of IUCAF has been the 1667 MHz down link associated with the VEGA mission. IUCAF has publicized the problem so that radio astronomers may be aware of potential interference. So far no difficulties have been reported, but a potential problem exists with OH observations of Halley's Comet at the time of the VEGA encounter.

There is also increasing pressure for more geostationary satellites operating in the 1300-1700 MHz band where high technology receivers are not needed. Spurious radiation may be a problem and radio astronomy may effectively lose a ten degree band centered on the geostationary arc to these devices. Also, mobile services may be growing in this band.

Findlay discussed the future of IUCAF in light of the work being carried out by CCIR. There was general agreement that the continued activity of a non-government body such as IUCAF is important and that IUCAF should remain active.

Vern Pankonin reviewed CCIR activities as neither of the two IAU representatives to CCIR attended the General Assembly. More and more satellites are using spread spectrum and frequency flexible techniques which blanket L-band from 1400 to 1700 MHz. CCIR is recommending extra protection from out of band

emissions from these satellites. The 1982 IAU list of important frequencies has also been inserted into the CCIR system.

The concerns of radio astronomy appear to be adequately represented in CCIR activities.

V. IAU REPRESENTATIVE TO URSI

John Baldwin was appointed as the IAU representative to URSI.

VI. RESOLUTIONS

Resolutions concerning the growing threat to radio astronomy from spacecraft emissions in the 1.4 to 1.7 GHz band, the importance of CCIR's Study Group II Report, and the need to coordinate planned spacecraft transmissions through IUCAF, were introduced by K. Kellermann on behalf of Commission 40, and by John Findlay on behalf of IUCAF. After discussion and redrafting by an ad hoc committee of Findlay, Pankonin, Schilizzi, and Smith, these resolutions were unanamously passed by the Commission, and later approved by the General Assembly as Resolutions B3 and B4.

R. Schilizzi introduced a resolution concerning the coordinating of space and ground VLBI activities throughout the world. The resolution was unanamously approved by the Commission and endorsed by the General Assembly as Resolution B5.

VII. SYMPOSIA

Commission 40 has participated in the planning of six symposia (No's 107, 109, 110, 112, 115, and 119) during the period 1983-1985. The Commission agreed to support the planned symposia on Activity in Galaxies (No. 121), Observational Cosmology (No. 124), Neutron Stars (No. 125), VLBI (No. 129), and the Large Scale Structure of the Universe (No. 130).

The proposals put forth by Richard Wielebinski to hold a symposium on Magnetic Fields in Astrophysical Plasmas in 1987 in Germany, and by Frank Drake for a SETI symposium in Hungary in 1987, were enthusiastically endorsed by the Commission.

VIII. REPORT OF WORKING GROUPS

(a) Nomenclature

Burke (Chairman), Baldwin, Dickel, Felli, Heinz, Kapahi, Johnston, and Strom.

There was considerable discussion of the use of coordinate names together with J2000 coordinates. The Commission endorsed a resolution jointly sponsored by Commissions 5, 34, 40, and 48 recommending appropriate nomenclature.

(b) Protection of Spectral Lines

Robinson (Chairman), Swarup, Baudry, Doherty, Morimoto, Pankonin, Slish, Turner, Wilson, Kaufmann, Webster, Tiuri, Schilizzi, and Hjalmarson.

In the absence of the Chairman, G. Swarup reported on the activities of the Working Group and reported on a poll made by the Chairman. The following lines were found to be used relatively infrequently and poorly supported with receivers: Formaldehyde (14.488 GHz), DCO^+ (72.039 GHz), water (183.310 GHz), and CS (195.962 GHz). Usage of these lines should be monitored between now and 1988 to judge whether they should continue to be classified as "astrophysically important." All other lines are observed frequently and their protection should be maintained. No changes were recommended to the 0-275 GHz list which will keep the IAU list consistent with the CCIR SG2 list confirmed at the September 1985 SG2

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"Final" meeting in Geneva. The possible addition of C_3H_2 at 18.343 GHz was deferred to 1988.

The President thanked the Chairman, B. Robinson, for his work on behalf of the radio astronomy community, and the Commission unanamously endorsed the proposal that Robinson continue as WG Chairman until 1988.

(c) VLBI

Johnston, (Chairman), Ananthakrishnan, Backer, Bajaja, Booth, Legg, Cohen, Grueff, Manchester, Kaufman, Kellermann, Kus, Matveyenko, Morimoto, Nicolson, Pauliny-Toth, Schilizzi, Wilkinson, Yeh, Aobenz, and Biraud.

The VLBI Working Group is compiling a list of observatories active in VLBI and the available instrumentation at each facility. The WG aims to improve the flow of information between the observatories and scientists needing these facilities, to help in the coordination of observations requiring the simultaneous use of facilities throughout the world, and the planning of new space and ground facilities. Individual scientists are encouraged to contact a member of the WG for more information.

IX. MISCELLANEOUS BUSINESS

The future of Commission 40 and the preparation of the Triennial Report was vigorously discussed. Radio astronomy is impacting essentially all areas of astronomy and it is no longer feasible for the Commission to be involved in all activities of the Union concerning radio astronomy. The Commission felt that the Triennial Report forms a valuable service and is part of the historical record of radio astronomy. It should continue in roughly its present form.

The President thanked the members and particularly the Scientific Organizing Committee for their help and support during the past three years. The Commission joined in thanking the local hosts in India for their splendid hospitality and efficient organizing of the activities in New Delhi.

Scientific Sessions

I. COMMISSION MEETINGS

Instrumentation, November 20, 1985 Chairman: M. Gordon

3-Station Solar Wind Observatory in India	Hari Om Vats
Solar 3 arc min Fan Beam Array at 35 MHz	Ch.V. Sastry
RRI 1.5-meter Millimeter Telescope	V. Radhakrishnan
New Technology 15-meter Dishes	P. de Jonge
Millimeter Receivers at IRAM	D. Emerson
Instrumentation on the NRAO 12-meter Millimeter Telescope	M. Gordon
Shanghai-Kashima VLBI Experiment	T. S. Wan

Solar Systems and Galactic Research, November 26, 1985 Chairman: N. Kaifu

Observations of Star Forming Regions	N. Kaifu
Recent Developments at DRAO A New Galactic Plane Survey	L. Higgs
Reports from MPIfR	R. Wielebinski
Interstellar Scattering at Low Galactic Latitudes	R. Rao
Low Frequency Pulsar Observations	A. Deshpande
Southern Hemisphere Recombination Line Survey	M. J. Gaylard
MM and IR Observations of Bipolar Outflow Source G35.2N	G. H. McDonald
Reports from ARO	P. Feldman
Radio Bursts at cm-wavelength	V. N. Ikhsanova

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Properties of Lunar Surface Obtained from Observations with RATAN 600	N. S. Soboleva and M. N. Nougolna
Observations of the Moon at 1.2 and 3 mm with the 30-m Telescope	D. T. Emerson

Extragalactic Research, November 26, 1985 Chairman: R. Strom

Report from the MPIfR	R. Wielebinski
Edge-on Galaxies	S. Sukumar
The Giant Radio Galaxy MSH 05-22	C. V. Subrahmanya
New Results from the VLA: 3C 75, Cygnus A, M87	F. Owen
Entrainment and Evolution of Radio Jets	D. De Young
327 MHz WSRT Observations of the Perseus Cluster	A. G. de Bruyn
The Cambridge-VLA Rotation Measure Survey	J. P. Leahy
The MG Survey	B. F. Burke
1144-379: A Rapidly Variable BL Lac Source	D. Bramwell
VLA Observations of Rapid Variability in OJ 287	D. Roberts
Report on VLBI at the MPIfR	E. Preuss

Reports from Observatories, November 26, 1985 Chairman: S. G. Wang

New Developments at the VLA	R. Sramek
Report from the Hat Creek Observatory	J. Welch
Report from Nancay	I. Kazes
Report from China	S. G. Wang
Report from Hartebeesthoek	M. J. Gaylard
Report from Nobeyama	N. Kaifu
Report from Ooty	M. Joshi
Report from Bologna	G. Tofani
Report from OVRO	M. Cohen
Report from Westerbork	A. G. de Bruyn
Report from the Soviet VLB Network	L. Matveyenko

New Radio Telescopes, November 22, 1985

This all day meeting is summarized in "Highlights of Astronomy." The meeting consisted of three sessions.

Recently Completed Radio Telescopes	Chairman: K. Kellermann
Telescopes Now Under Construction	Chairman: V. Radhakrishnan
Radio Telescopes of the Future	Chairman: R. Wielebinski

II. JOINT MEETINGS

Galaxy Radical Velocities (28,30,40)	November 20
Twenty-five Years of Radio SETI (40,52)	November 23

III. JOINT DISCUSSIONS

Reference Frames	November 20
Radio Astronomy and Cosmology	November 21
Stellar Activity	November 25
Supernovae	November 27