

## COMMISSION No. 34

### INTERSTELLAR MATTER (MATIERE INTERSTELLAIRE)

Report of Meeting, 4-10 August 1988

PRESIDENT : M.J.Legueux  
VICE-PRESIDENT : J.Mathis

#### Business session, 10 August

The President summarized the activity of the Commission between the General Assemblies and presented the report for the period 1985-88. The subject of Intergalactic Medium has been covered for the first time in the report. The President thanks the members of the Organizing Committee as well as two other persons, T.Landecker and Y.Terzian, for their participation in the writing of the report. Some discussion took place about the format and usefulness of the report. Various opinions were expressed, but the accents was over the need to emphasize more the most interesting recent developments.

#### Membership and Structure

Commission 34 is the second largest of the IAU with 532 members after the previous 1985 General Assembly, compared to 470 before. During this triennium about 140 persons have expressed their desire to join the Commission and are going to be accepted at the end of this General Assembly. 2 members deceased to the knowledge of the President (E.Dibay and M.T.Martel) and 10 resigned. Thus our Commission is increasing very fast, showing the growing interest in the astronomical community for interstellar matter.

A new working group is added to the two existing ones (Planetary Nebulae and Interstellar Medium Nomenclature) : the working group on Astrochemistry chaired by A.Dalgarno.

#### Organizing Committee

Based on recommendations that he received from members and past officers of the commission, the President proposed H.Habing as the new Vice President and M.Dopita, R.Genzel, N.Kaifu, C.Lada and L.Rodriguez as new members of the Organizing Committee. As has been the convention, the present Vice-President J.Mathis will take over as President at the end of the XXth General Assembly. The continuing OC members are K.de Boer, D.Flower, J.Legueux, B.Shustov, D.York. S.D'Odorico, B.Elmeegreen, M.Peimbert, P.Shaver and P.Wannier will retire from the OC at the end of the current General Assembly.

#### Symposia, Colloquia and Scientific Sessions

Commission 34 has sponsored or co-sponsored during the last 3 years the following IAU Symposia : No 122, Circumstellar Matter (Heidelberg, 23-27 June 1987); No 131, Planetary Nebulae (Mexico City, 5-9 October 1987); No 135, Interstellar Dust (Santa Clara, Calif., 26-30 July 1988) and No 136, The Galactic Center (Los Angeles, 25-29 July 1988). In addition, the Commission has co-sponsored during the General Assembly 5 Joint Discussion

(Formation and Evolution of Stars in Binary Systems ; Supernova 1987A in the Large Magellanic Cloud; The Cosmic Dust Connection in Interplanetary Space : Comets, Interstellar Dust, and Families of Minor Planets; Atomic and Molecular Data for Astrochemistry; Disks and Jets on Various Scales in the Universe) and one Joint Commission Meeting (Molecules in External Galaxies). There have been also meetings of the three working groups of the Commission, including a full-day meeting on Planetary Nebulae. In view of all this activity, there has been no other scientific meeting of Commission 34.

The future symposia and colloquia sponsored and co-sponsored by the Commission and already approved by the Executive Committee are : Colloquium on Structure and Dynamics of the Interstellar Medium (Granada, 17-21 April 1989); Symposium 139 on Galactic and Extragalactic Background Radiation (Heidelberg, 12-16 June 1989); Symposium 140 on Galactic and Extragalactic Magnetic Fields (Heidelberg, 19-23 June 1989); a Symposium on Extragalactic Molecular Clouds : Dynamics and Evolution of Galaxies (Paris, 4-9 June 1990); a Symposium on Fragmentation of Molecular Clouds and Star Formation (Grenoble, presumably 11-15 June 1990); a Symposium on the Interstellar Medium away from the Galactic Plane (Leiden, 18-23 June 1990). There might also be a Colloquium on Radio Recombination Lines to be held in USSR in 1989.

The President mentioned a few other meetings which might be of interest to members of the Commission, in particular in 1989 : From Diffuse Matter to Stars and Planets (Institut d'Astrophysique, Paris, and June or early July); Chemistry and Spectroscopy of Interstellar Molecules (PACIFICHEM, Honolulu, Dec. 17-22).

#### Working groups

The Working Group on Planetary Nebulae chaired by Y.Terzian organized a one-day meeting whose program is reported later. A new and extensive catalogue of planetary nebulae prepared by A.Acker (Strasbourg Observatory and Stellar Data Centre) is almost completed and should be available soon. The working group will propose another Symposium on Planetary Nebulae in August or September 1992, in Innsbrück (these Symposia occur at 5 years intervals).

The report of the Working Group on Interstellar Medium Nomenclature chaired by H.Dickel has been published by H.Dickel, M.C. Lortet and K.de Boer in Astronomy and Astrophysics Supplement Series, 68, 75 (1987). The designation system conforms to the IAU resolutions (see Vol.XIX B of the Transactions of the IAU General Assembly, Resolutions C3 and C12, pp.40 and 49) and has been the basis of the advices given on matters of designation of diffuse objects by a "Clearing House" formed by H.R.Dickel, C.Jaschek, M.C.Lortet, J.M.Mead and W.H.Warren Jr.The Working Group will continue for the next three years as a resource group for the Clearing House and in general to assist IAU in resolving related problems. Its present members are T.Chester, K.de Boer, H.Dickel, J.Dickey, M.Felli, L.Higgs, L.Kohoutek, M.Kutner, M.C.Lortet, R.Manchester, J.Mead, J.Moran and N.Panagia.

The new Working Group on Astrochemistry is preparing a request for a Symposium on Astrochemistry in 1991 in South America, 6 years after the one in Goa.

Commission 34 Meeting

The proceedings of the Joint Discussions co-sponsored by Commission 34 will be published in Highlights of Astronomy, Vol.8. We give only here the programme of the other meetings.

Planetary Nebulae

- B.Balick : Morphology and Structure of Planetary Nebulae  
 You-Hua Chu : Extended Haloes of Planetary Nebulae  
 M.Perinotto : Winds from Central Stars of Planetary Nebulae  
 P.Van der Veen, H.Habing, T.Geballe: Evolution of Proto-Planetary Nebulae  
 B.Murray Lewis : Radio Frequency Observations of OH/IR Stars  
 J.H.Cahn : The Distance Scale of Planetary Nebulae  
 M.Azzopardi , N.Meyssonier, J.Lequeux : Planetary Nebulae in Nearby Galaxies  
 H.Nussbaumer : From Symbiotic Stars to Planetary Nebulae  
 W.J.Maciel : Galactic Vertical Gradients and Planetary Nebulae  
 D.C.V.Mallik, M.Peimbert : Filling Factor Determinations and their Effect of Planetary Nebulae  
 N.Rowlands, J.R.Houck, T.Herter, G.E.Gull, M.F.Strutskie: Electron Temperatures in the High Excitation Zones of Planetary Nebulae  
 D.C.V.Mallik, S.K.Jain, B.G.Anandarao, D.P.K.Banerjee: Internal Kinematics of NGC 2440  
 H.E.Bond, R.Ciardullo : CCD Photometric Monitoring of Planetary Nuclei  
 A.Acker, B.Stenholm, J.Köppen, G.Jasniewicz : First Results of the Spectrophotometric Survey of Planetary Nebulae  
 G.Jasniewicz, A.Acker : Periodic Variations of the Nucleus of Abell 35  
 D.Middlemass, R.E.S.Clegg : On Spectroscopic Detection of Planetary Nebulae Faint Haloes

Molecules in External Galaxies (Joint Commission Meeting with Commissions 28 and 40 )

- M.Guélin : CO(2-1) and (1-0) in M51 and edge-on galaxies  
 A.Hjalmarson : Molecular-cloud spiral arms in M51 and IC342, and results from tidal interaction modeling  
 K.Y.Lo : Interferometric maps in external galaxies  
 S.Vogel : Interferometric CO map of M51  
 N.Nakai : Molecular clouds in Maffei2  
 R.Kawabe : Nobeyama interferometer results on Maffei2  
 F.Combes : CO in NG4438 and tidal stripping in the Virgo Cluster  
 Y.Sofue : Molecular gas in the nuclear regions of spiral galaxies  
 P.Solomon : The molecular content of isolated and interacting spiral galaxies  
 F.Verter : Systematic properties of CO emission from galaxies  
 J.Young : The molecular gas content and star formation efficiency in nearby spiral galaxies  
 D.Adler, W.Roberts : Can galactic GMCs be identified from l-v

diagrams

- R.Genzel, A.Eckart : Far-infrared and sub-mm spectra of extragalactic sources
- A.Sargent : Recent CO(2-1) observations of galaxies from CSO
- A.Stark : Molecules in Galaxies: results from Bell Laboratories
- R.Wielebinski : M82:  $^{12}\text{CO}$  and  $^{13}\text{CO}$ (2-1) data
- C.Henkel : Molecular clouds in dwarf irregulars
- M.Rubio : Molecular clouds in the LMC and SMC
- T.Wiklind : CO emission in early-type galaxies
- F.Mirabel : The  $M(\text{H}_2) / M(\text{HI})$  ratio and OH emission in luminous infrared galaxies
- D.Sanders : Molecular gas in ultra luminous infrared galaxies and quasars
- N.Scoville : Molecular gas in the nuclei of luminous IRAS galaxies