

COMMISSION 33: STRUCTURE AND DYNAMICS OF THE GALACTIC SYSTEM
(STRUCTURE ET DYNAMIQUE DU SYSTEME GALACTIQUE)

Report of Meetings on 15, 16, 17, 21 and 22 August 1979

PRESIDENT: F. J. Kerr
VICE-PRESIDENT: G. G. Kuzmin

15 August 1979

Galactic Dynamics
Joint Meeting with Commission 28

Invited papers were presented by:

- A. Kalnajs: Dynamical Models of Galaxies
- A. Toomre: Stability of Galactic Disks
- R.H. Miller: Numerical Simulations of Galaxies
- G. Contopoulos: Integrals of Stellar Motion and their Disappearance
- P.O. Vandervoort: Resonance Phenomena in the Dynamics of Spiral
and Barred Galaxies
- C.C. Lin: Progress in Density-Wave Theory
- W.W. Roberts: Gas Flow in Galactic Bars

In addition, V.C. Rubin presented the results of recent observations on a substantial sample of spiral galaxies, B.J. Robinson stated that synthesis observations of four large southern barred spirals were planned, and J. Schwarz discussed gas flows in galactic bars.

Business Meeting of Commission 33

The new officers and Organizing Committee members were elected. G.G. Kuzmin will be the new President, and R. Wielen Vice-President. Nominations for new members of the Commission were discussed, and most of those proposed were admitted. During this discussion, it was found that some new members had expressed a wish to join Commission 33, without demonstrating their interest in the work of the Commission. The following resolution was adopted:

Commission 33 resolves that the Executive Committee should request an IAU member who wishes to become a member of a Commission to give briefly a good reason for his/her wish to join that Commission, adding references to one or two recently published papers in the areas covered by the Commission.

At the suggestion of B.J. Bok, it was agreed to send a telegram from the Commission to J.H. Oort, expressing regret that for the first time since the inception of the IAU he was unable to attend a General Assembly.

The present status of the system of galactic constants was discussed. Papers on the circular rotation velocity and the distance to the center were presented by G.R. Knapp and M.W. Feast, respectively. After a lengthy discussion, it was decided that it was premature to set up a working group at this stage to consider whether any changes in the system of constants should be recommended. Instead, the retiring President was asked to prepare a document, including the main results from the two papers presented at the meeting, and drawing the attention of Commission members to the need for further research in this field.

It was agreed that the tradition of having a detailed Commission report should be continued, in addition to the shorter version in the IAU Transactions.

16 August 1979

Impact of Space Astrometry on Astronomy and Astrophysics
Joint Meeting with Commission 24 and Others

This half-day session addressed the new possibilities that will be presented in several branches of astronomy and astrophysics if astrometric data are obtained from two proposed satellites, Hipparcos and Space Telescope. A detailed account of the meeting is given in the report of Commission 24. The main presentation from Commission 33 was an invited paper by P.O. Lindblad on "The Impact of Space Astrometry on Galactic Structure and Dynamics"

17 August 1979

Galactic Environment
Joint Meeting with Commission 28

Invited papers were presented by:

- W.E. Kunkel: The Galactic Environment, Optical Data
- A.N.M. Hulsbosch: High Velocity Clouds
- B.M. Tinsley: The Hypergalaxy
- R.B. Larson: Nature and Cosmogony of Population III Objects

The papers and the associated discussion covered the available evidence for a galactic halo, the possible nature and origin of invisible matter in the outer parts of galaxies, possible interpretations for the high velocity clouds of hydrogen, and the concept that a community of galaxies (including our own) might be embedded in a single corona as a Hypergalaxy.

17 and 22 August 1979

Some Topics in Galactic Structure

The following papers were presented:

- J.R. Lesh: The Gould Belt
- K.A. Janes: Evidence for an Abundance Gradient in the Galactic Disk
- C. Chiosi: Theoretical Results on Chemical Gradients across the Disk
- R. Giovanelli: High Velocity Clouds
- D. Downes: The Large-Scale Distribution of Radio Continuum Sources in the Galaxy
- A.F.J. Moffat: The Outer Region of the Galactic Disk
- D. Weistrop: The Distribution and Density of Dwarf M Stars in the Solar Neighborhood
- L.N. Kolesnik: On the Three-Dimensional Structure of the Spiral Arms of the Galaxy (Presented by E.K. Kharadze)
- R.D. Davies: Recent Jodrell Bank Radio Surveys at the Galactic Disk
- J. Tinbergen: On the Local Dust and Magnetic Field
- T.M. Bania: OB Stars and the Structure of the Interstellar Medium

A full account of the Joint Discussion on "Nuclei of Normal Galaxies", sponsored by Commissions 28, 33, 34, and 40, is given in the "Highlights of Astronomy".