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Canada hosts astronomy's stars

For the first time in its 57-year history, the International Astronomical Union held its triennial General Assembly in Canada at the Université de Montréal. More than 2000 astronomers from around the world gathered for the meeting and for numerous symposia, colloquia and workshops held at various locations in North America during the summer. Astronomers met to discuss Star Clusters (Victoria, B.C.), Solid Particles in the Solar System (Ottawa), Close Binary Stars (Toronto), Interstellar Molecules (Mont Tremblant, Qué.) and Convection and Turbulence in Stellar Atmospheres (London, Ont.). In addition, two workshops were held in Ottawa, one on Radio Recombination Lines and the other on Radio Stars.

Particles in space are receiving an increasing amount of attention. Clues to the formation of new stars, the existence of stars now dead, and the mechanism leading to the creation of our solar system are being uncovered through the study of microscopic or molecular-sized motes drifting between the stars. The subject has advanced rapidly over the past decade and it has attracted enough attention to warrant its own disciplinary name — "astrochemistry".

Conditions in space are sharply divided between environments which preserve molecular integrity and those which destroy it. On the one hand, the study of particles near stars is difficult due to the high levels of radiation and energy transfers. Detecting molecules in the smear of stellar radiation is a challenge to available technology and the process is slow and uncertain. On the other hand, the cold of space allows the existence of molecules that otherwise would be destroyed near stars or under terrestrial conditions. Creation and identification of these molecules in the laboratory for the purpose of research was the subject of

much of the discussion at Mont Tremblant.

Interplanetary dust, discussed at Ottawa, has been studied sufficiently to permit its classification into types. Many of these particles originate in comets, while others are the products of ablating meteors. Some evidence of this dust may be found on the Earth's surface but more effective collections are likely present in oceanic sediments or the upper atmosphere. Representing frozen clues to the early years of the sun's formation, interplanetary dust provides a "time capsule" for researchers. Plans are under way to study the material in more detail with space probes during the passage of Halley's and other comets during the next decade.

The mixing of disciplines appears to have been a focus of attention at the 17th General Assembly. Much of the scientific work performed by the Union is conducted through 38 Commissions, each charged with the task of pursuing particular fields of astronomy. At the Montreal meeting, a number of these commissions "cross-bred" their findings of recent years by engaging in joint discussions. Among the eight mixed commission presentations was a lively session on "The Search For Extra-terrestrial Life". Other interdisciplinary sessions included such topics as the Exploration of the Solar System, and observation of ultra-violet radiation from the heavens through the use of satellites, a relatively recent form of astronomy.

Among the notable figures giving addresses to the various IAU meetings, Dr. Gerhard Herzberg stressed the interplay of astronomy and spectroscopy, and Dr. Bart Bok of the Steward Observatory (University of Arizona) urged young astronomers to "play the whole piano" by developing skills in several branches of astronomy. □

Stephen A. Haines

