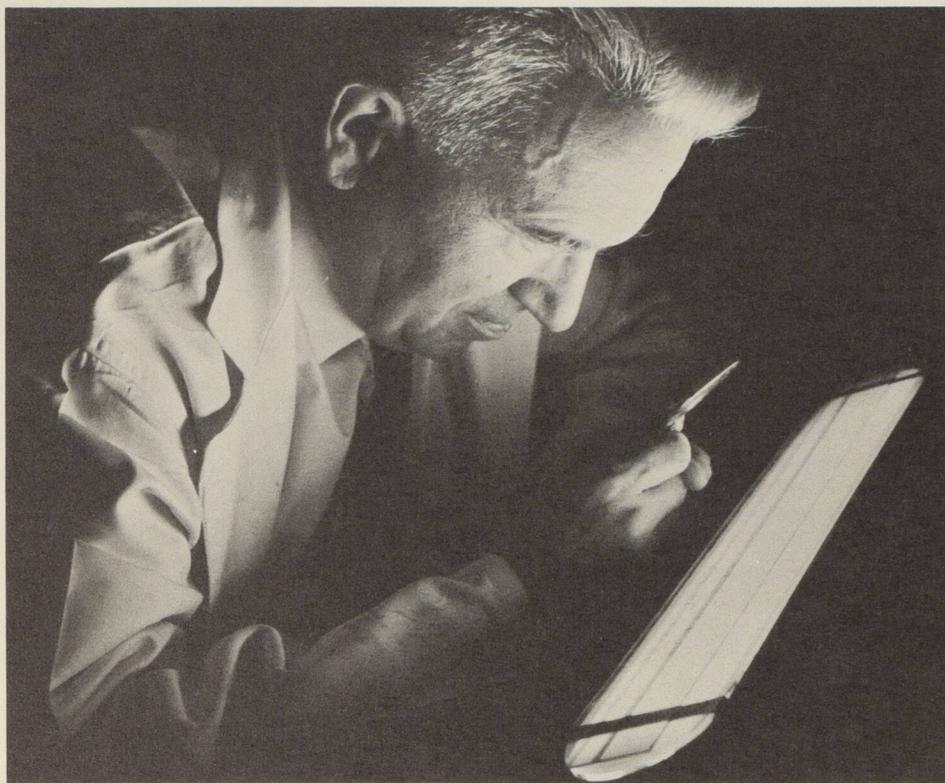


Secrets of space unravelled through Cosmic fingerprints



Dr. Gerhard Herzberg, a pioneer in molecular spectroscopy, pores over a spectrogram, a photographic record of a spectrum.

Pionnier de la spectroscopie moléculaire, le Dr Gerhard Herzberg examine un spectrogramme.

The star-filled night has always instilled in man a sense of wonder and awe. The planets, meteors, comets and auroras piqued his curiosity until he strove to know them better and to reduce them to his terms — and the science of astronomy was born.

What atoms and molecules are to be found in the whirling gases and molten cores of the cosmic bodies? Astrophysicists are at grips with literally the whole solar system to provide answers to this basic question. But the panoply of space looms very large to earthlings, who are still in the process of taking their first few steps away from earth. At present they have gone no farther than the moon, a mere one hundredth of the way to the nearest planet, Venus. To complicate matters, almost any one of the conventional methods of chemical analysis requires carefully controlled conditions and direct manipulation of samples. Supra-terrestrial bodies, in violent upheaval

billions of miles from the earth, mock at such land-locked methods.

But there exists a procedure for cosmic analysis; there is a way to gather the “fingerprints” of the stars and decode them to determine the astral constituents. Scientists call it spectroscopy.

The National Research Council of Canada has long been interested in spectroscopy, and has an entire section of its Division of Physics devoted to it. Moreover, at NRC, one of Canada's most distinguished scientists, Dr. Gerhard Herzberg has devoted most of his scientific career to this field. Dr. Herzberg, who has been called a founding father of the science of molecular spectroscopy, has been eminently successful in clarifying the structure of atoms and molecules found on earth, in contributing substantially to astrophysics, and in developing experimental spectroscopic techniques and spectra theory. —>