



determining and measuring objects from a distance. Unlike the eye or the conventional camera, it is not limited to detecting only what can be seen in the visible spectrum but can function in the infrared region as well. From its vantage point 570 miles above the earth ERTS-1 takes continuous pictures of swathes of the earth's surface 115 miles wide and "still" frames of patches measuring 115 miles by 115 miles, an area of some 13,000 square miles per image. This results in coverage of the United States in 500 pictures as compared with 50,000 from high-altitude aircraft.

The ERTS "still" images of the earth are taken by the satellite's return beam vidicon (RBV) cameras. Each of three similar RBV cameras views the same scene but in a different "color" or, more precisely, in a different spectral band including one in the infrared region, ensuring even more complete information than with conventional photography. The cameras do not carry film. When their shutters are operated, the images are stored on a photosensitive surface within each camera tube and the tube is then scanned by an internal electron beam to produce a video picture. The three images are transmitted to earth separately in their respective colors and can then be

*Dr. Vladimir Kratky preparing laboratory tests to define the errors of the reproducing systems used in the production of ERTS satellite photographs. • Le Dr Vladimir Kratky prépare des essais en laboratoire pour définir les erreurs du système de restitution donnant les photographies prises par le satellite ERTS.*

superimposed. The result is a single color image received once every 25 seconds.

The scanned images of the earth's surface are taken by a 118 pound instrument called a multispectral scanner (MSS). It provides a continuous video strip corresponding to the RBV coverage with images of excellent quality, photograph-like in appearance. The MSS can simultaneously detect in four spectral bands, including two in the infrared region, making the identification of resources more complete and reliable.

ERTS data from the RBV and MSS systems can be received at three American stations, and, by virtue of an agreement with NASA, at a receiving station at Prince Albert, Saskatchewan. The Prince Albert station receives ERTS imagery for all of Canada except the extreme Arctic and the easternmost parts of the Maritime provinces. Information on the latter areas is made available by NASA. The imagery, recorded in videotape form, is flown from Prince Albert to Ottawa and processed at the