

# AIRBORNE IMAGERY

At left below is a geologic map of an area known as the Cuprite mining district near Tonopah, Nevada. Prepared as an aid to locating mineral deposits, this map was produced from data acquired in a number of field explorations, a tedious and time-consuming process. At right is an image of the same area taken by an Airborne Thematic Mapper (ATM) developed for NASA by Daedalus Enterprises Inc., Ann Arbor, Michigan; the ATM data was computer processed—by Geospectra Corporation, also of Ann Arbor—to reveal the maximum color differences among the various rock types in the area. To the skilled interpreter, the colored image represents a geologic map bearing close similarity to the map produced by ground investigation—but the data was acquired on a single flight of a Gates Learjet. Airborne photographic and imaging systems have been used for some time in geological work, but the Daedalus AADS1268 ATM and a related system, the AADS 1285 Thermal Infrared Multispectral Scanner (TIMS), offer expanded capabilities for timely, accurate and cost-effective identification of areas with prospecting potential.

Daedalus' ATM was developed for Ames Research Center, which is using it in agricultural studies and

in validations of data from the Landsat 4 Thematic Mapper (TM) that went into service last year; from 40,000 feet, the airborne system provides resolutions approximately the same as those of the TM at altitudes above 400 miles. Daedalus developed the TIMS for NASA's National Space Technology Laboratories; Jet Propulsion Laboratory is using TIMS data in studies of discrimination of quartz-bearing rock types by airborne scanning. Both systems developed for NASA are now being offered commercially by Daedalus Enterprises for sale, lease or for data collection services. One data collection program involved use of the ATM to cover more than 35,000 square miles of the western United States. Sponsored by 13 energy and mining companies, it provided data used to map exposures of clay minerals and to segregate iron oxides; such exposures are associated with deposits of gold, silver, uranium, copper, lead and zinc.

