



Pecora
UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 NATIONAL ENVIRONMENTAL SATELLITE, DATA,
 AND INFORMATION SERVICE
 Washington, D.C. 20233

August 8, 1983

E/RA12:GO

Mr. Allen H. Watkins
 Chief, EROS Data Center
 U.S. Dept. of Interior, Geological Survey
 EROS Data Center
 Sioux Falls, South Dakota 57198

Dear Mr. Watkins:

Enclosed please find our Abstract entitled Application of Metsat
 Data in Land Remote Sensing for presentation at the Pecora VIII
 Symposium.

Sincerely yours,

George Ohring

George Ohring
 Chief, Land Sciences Branch

Enclosure

cc: Abstract
 M. Matson
 D. McGinnis
 S. Schneider

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ABSTRACT

Application of Metsat Data in Land Remote Sensing

by

George Ohring, Michael Matson, David F. McGinnis, Jr. and Stanley R. Schneider

National Environmental Satellite, Data and Information Service, NOAA,
Washington, D.C. 20233

The National Environmental Satellite, Data and Information Service operates two types of meteorological satellites that can be used for remote sensing of the Earth's land surface: the polar orbiting NOAA series and the geostationary GOES series. The two NOAA satellites provide global coverage twice daily; the two GOES satellites provide images of the Western Hemisphere between 55°N and 55°S every half-hour. The Advanced Very High Resolution Radiometer (AVHRR) on the NOAA satellites and the Visible and Infrared Spin Scan Radiometer (VISSR) on the GOES satellites are the instruments that can provide information about land surface parameters. The AVHRR has five channels in the visible, near IR and thermal IR portions of the spectrum and has a resolution of 1.1 km for local area coverage and 4 km for global coverage. The VISSR has a 1 km resolution visible channel and an 8 km resolution thermal IR channel. Examples are presented of the application of the satellite observations to agriculture, hydrology, glaciology, volcanology, and land use. Agricultural applications include vegetation index and solar insolation determinations; hydrological applications include local and continental snow cover mapping, flash flood forecasting, and flood extent mapping; glaciological applications include photo-mosaic mapping of polar ice caps; volcanological applications include detecting and monitoring volcanic eruptions and their subsequent ash clouds; and land use applications include urban heat islands and deforestation. Future applications will include land surface climatological parameters such as temperature, radiation budget components and soil moisture.