Earth resources satellites have been used for about two decades to assist in geologic exploration and environmental monitoring worldwide. Synoptic and repetitive coverage, multispectral sensitivity, and high resolution are among the advantages of spaceborne imagery.

A second generation satellite, the Landsat Thematic Mapper (TM), covers a broad portion of the electromagnetic spectrum, and consists of seven discrete bands covering visible, reflected and thermal infrared regions. Six reflective TM bands have a resolution of 30 m$^2$ and are utilized for coastal water mapping, geobotanical investigations, and biomass control, as well as other applications. TM band 6 has a resolution of 120 m$^2$; it is useful in vegetation stress analysis, soil moisture discrimination, and thermal mapping.

The emergence of SPOT, a French satellite, initiated a new era in space remote sensing. The multispectral “push-broom” scanner consists of three bands with a resolution of 20 m$^2$, while a panchromatic band provides a high resolution of 10 m$^2$ from space. Stereoscopic imaging and successive day “revisit” capabilities of this satellite are pertinent to dynamic or catastrophic geology.

Nineteen hundred ninety is the decade of spaceborne radar because five synthetic aperture radar systems would operate from space. The prospect of repetitive coverage from orbital radar systems holds considerable potential for geologic exploration and environmental monitoring.