

Remote Sensing Geology

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Remote sensing, in the simplest words, means obtaining information about an object without touching the object itself. It has two facets: the technology of acquiring data through a device which is located at a distance from the object, and analysis of the data for interpreting the physical attributes of the object, both these aspects being intimately linked with each other. Taking the above definition literally, various techniques of data collection where sensor and object are not in contact with each other could be classed as remote sensing, e.g. looking across a window or reading a wall-poster, as also many standard geophysical exploration techniques (aeromagnetic, electromagnetic induction, etc.), and a host of other methods. Conventionally, however, the term remote sensing has come to indicate that the sensor and the sensed object are located quite remotely apart, the distance between the two being of the order of several kilometers or hundreds of kilometers. In such a situation, the intervening space is filled with air (aerial platform) or even partly vacuum (space platform), and only the electromagnetic waves are able to serve as an efficient link between the sensor and object. Remote sensing has, therefore, practically come to imply data acquisition of electromagnetic radiation (commonly between the 0.4 f.μm and 30 cm wavelength range) from sensors flying on aerial or space platforms, and its interpretation for deciphering ground object characteristics.