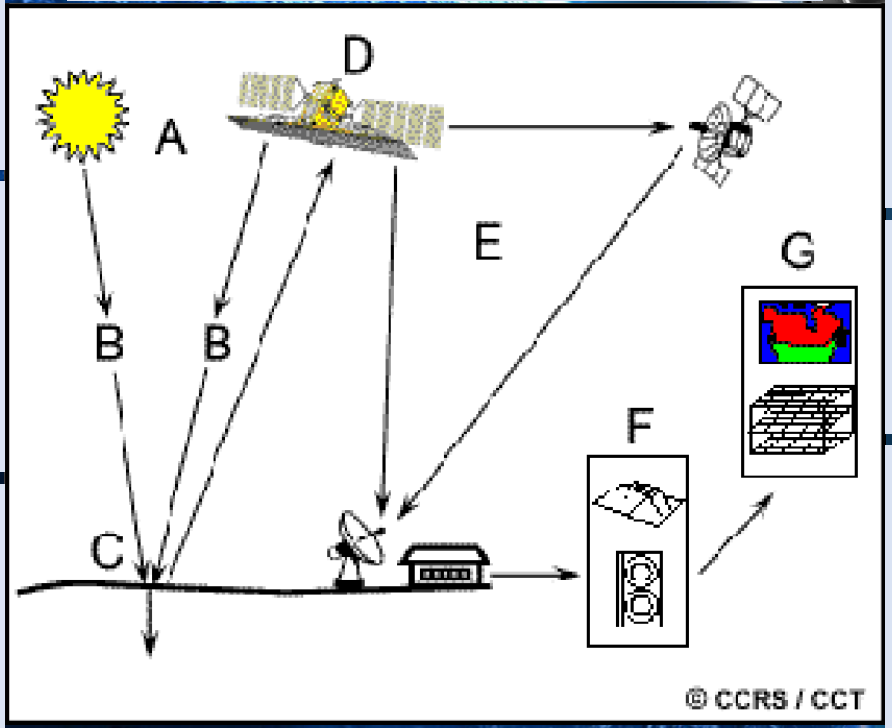
PROCESS OF REMOTE SENSING

A. Energy Source or Illumination
the first requirement for remote sensing is to have an energy source which illuminates or provides electromagnetic energy to the target of interest.

B. Radiation and the Atmosphere
as the energy travels from its source to the target, it will come in contact with and interact with the atmosphere it passes through. This interaction may take place a second time as the energy travels from the target to the sensor.

C. Interaction with the Target
once the energy makes its way to the target through the atmosphere, it interacts with the target depending on the properties of both the target and the radiation.

D. Recording of Energy by the Sensor
after the energy has been scattered by, or emitted from the target, we require a sensor (remote - not in contact with the target) to collect and record the electromagnetic radiation.

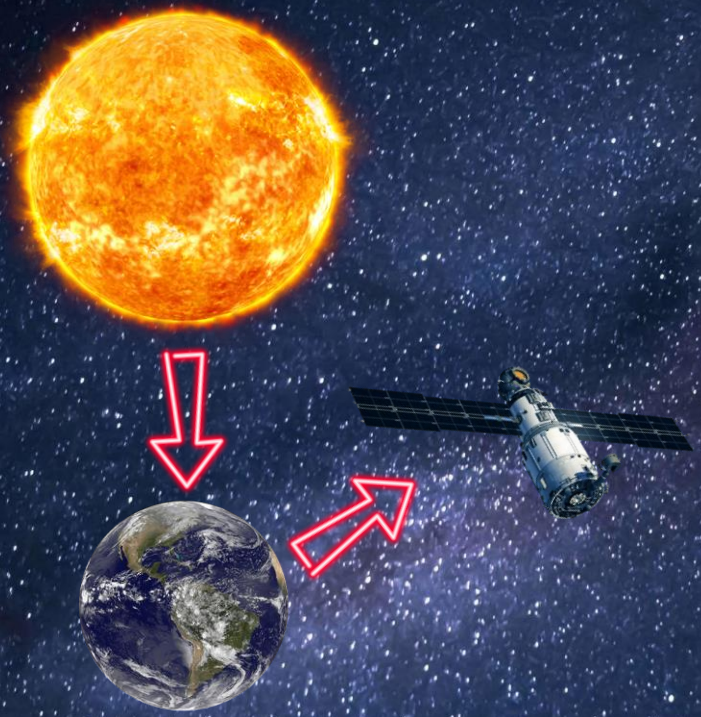


E. Transmission, Reception, and Processing
the energy recorded by the sensor has to be transmitted, often in electronic form, to a receiving and processing station where the data are processed into an image (hardcopy and/or digital).

F. Interpretation and Analysis
the processed image is interpreted, visually and/or digitally or electronically, to extract information about the target which was illuminated.

G. Application
the final element of the remote sensing process is achieved when we apply the information we have been able to extract from the imagery about the target in order to better understand it, reveal some new information, or assist in solving a particular problem.

PASSIVE & ACTIVE REMOTE SENSING



PASSIVE REMOTE SENSING
Measure energy that is naturally available.
(e.g. Optical sensor, Infrared, Radiometers, Charge-coupled devices)

ACTIVE REMOTE SENSING
Provide their own energy source for illumination.
(e.g. Synthetic Aperture Radar (SAR), Laser Scanner (LIDAR))