

Spectrally — Electromagnetic Radiation

Energy as electric and magnetic fields

Oscillate at $c = 3 \times 10^8$ m/s

Wavelength: short (μm), long (m)

Frequency: high, low, (cycles/s)

Standard Wave Equation: $c = \lambda \cdot \nu$

Reflected vs. Emitted

Electromagnetic Spectrum: Array of all wavelengths of EMR.

Visible (red, green, blue: 0.4 - 0.7 μm)

Near Infrared (NIR: 0.7 - 1.0 μm)

Middle Infrared (MIR: 1.0 - 3.0 μm)

Thermal Infrared (TIR: 3.0 - 30.0 μm)

Microwave

Ultraviolet

Others

Why This Interest in Surface Leaving Radiance?

Unique Spectral Properties of Objects

Unique Spectral Signatures of Objects

Infer Nature of Objects From Spectral Signatures