Crossword Puzzle

Across

1. **Electromagnetic spectrum** – The entire range of wavelengths or frequencies of electromagnetic radiation.
2. **Wein's Displacement Law** – This law relates the temperature of an object to the wavelength at which it emits radiation most strongly.
3. **Spectral signature** – Unique pattern of reflectance or emittance of a surface as a function of wavelength.
4. **Atmospheric windows** – The specific wavelengths of electromagnetic radiation that can pass through the Earth's atmosphere without significant absorption.

Down 2. **Remote sensing** – The science of obtaining information about objects or areas from a distance, typically from aircraft or satellites. 3. **Scattering** – The process by which small particles or molecules deflect incoming radiation in various directions. 6. **Stefan-Boltzmann Law** – A principle stating that the total energy radiated per unit surface area of a black body is directly proportional to the fourth power of its temperature. 8. **Absorption** – The process by which matter takes up photons and changes the energy of the particles.

Answer Key:

Across

1. **EM Spectrum**
2. **Wein**
3. **Spectral Signature**
4. **Atmospheric Windows**

Down 2. **Remote Sensing** 3. **Scattering** 6. **Stefan-Boltzmann** 8. **Absorption**

Fill-in-the-Blanks

1. The _____ **spectrum** includes all the wavelengths of light, from gamma rays to radio waves. (Answer: Electromagnetic)
2. The _____ **theory** explains the behavior of light as particles. (Answer: Particle)
3. _____ **law** states that the total radiation emitted by a black body is proportional to the fourth power of its temperature. (Answer: Stefan-Boltzmann)
4. _____ **scattering** occurs when the diameter of the particles is much smaller than the wavelength of the radiation. (Answer: Rayleigh)
5. The _____ **signature** of an object is its unique pattern of reflectance as a function of wavelength. (Answer: Spectral)