

4.5: Spectra

Spectra are very important to astronomy because they can show the component wavelengths and specific elements present.

Continuous Spectrum



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A continuous spectrum shows all wavelengths and is produced by hot, dense solid objects at high temperatures.

Emission Line Spectrum



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An Emission Line spectrum produces a spectrum with **bright lines**. It occurs from heating an object, causing the electrons in the object's atoms/molecules to show at a specific wavelength.

Absorption Line Spectrum



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An Absorption Line spectrum produces a spectrum with **dark lines**. It occurs when one object absorbs specific photons given off by a second object. For example, a light behind a cloud of gas absorbs photons at the cloud's energy level while the rest of the photons pass through the cloud.

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