

## Radio waves

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FM radio wave : 3m long

AM radio wave : 300m long (300m - 500m)

FM means frequency modulated  
↓  
cycles per second.

AM means Amplitude modulated  
↓  
height of wave.

- AM waves are longer than FM waves

## Telescopes

- Astronomers collect 99% of their data indirectly from EM radiation.

## Visible Light

Electrons create electricity that makes light.  
Light is an energy that is given off.

### 3 types of Spectral Lines

#### 1. Continuous Spectrum

- a continuous array of all rainbow colors
- spectral lines - each element produces a unique set of spectral lines
- analysis of the spectral lines can determine composition.
- continuous spectrums have no spectral lines.

#### 2. Emission Spectrum

- produced when electrons jump from a high energy level to a lower level
- colored lines, dark background.

#### 3. Absorption Spectrum

- when electrons jump from low energy level to high energy level.