

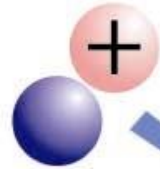
Stars – the life cycle **and classification of**

Week 18

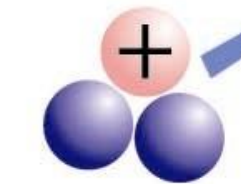
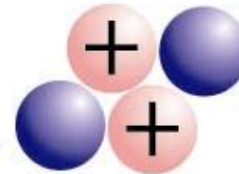
- <https://www.youtube.com/watch?v=OOdMphcFsws>
- <https://www.youtube.com/watch?v=JlpO7ThTqQQ>

Fusion

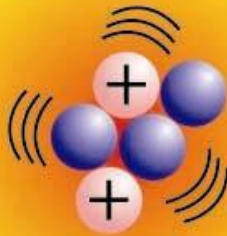
Deuterium



Helium



Tritium

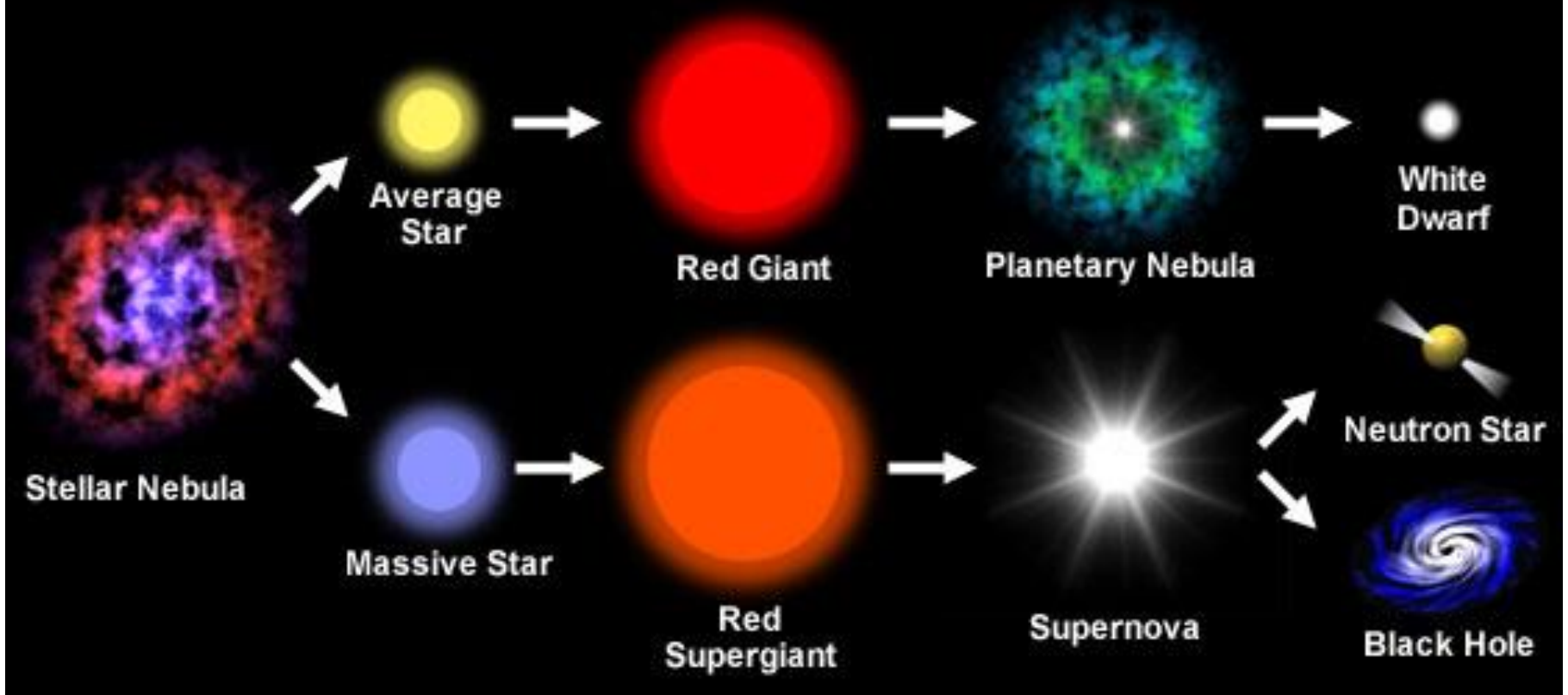


Neutron

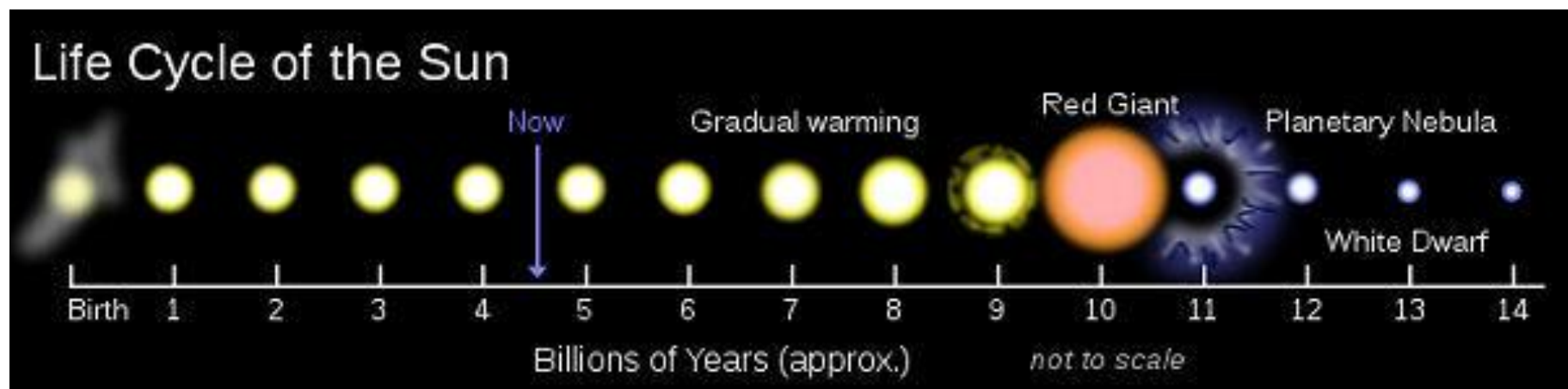
Energy



Life Cycle of a Star



Life Cycle of the Sun



A Colorful Universe

Star Color and Temperature

Spring and Summer

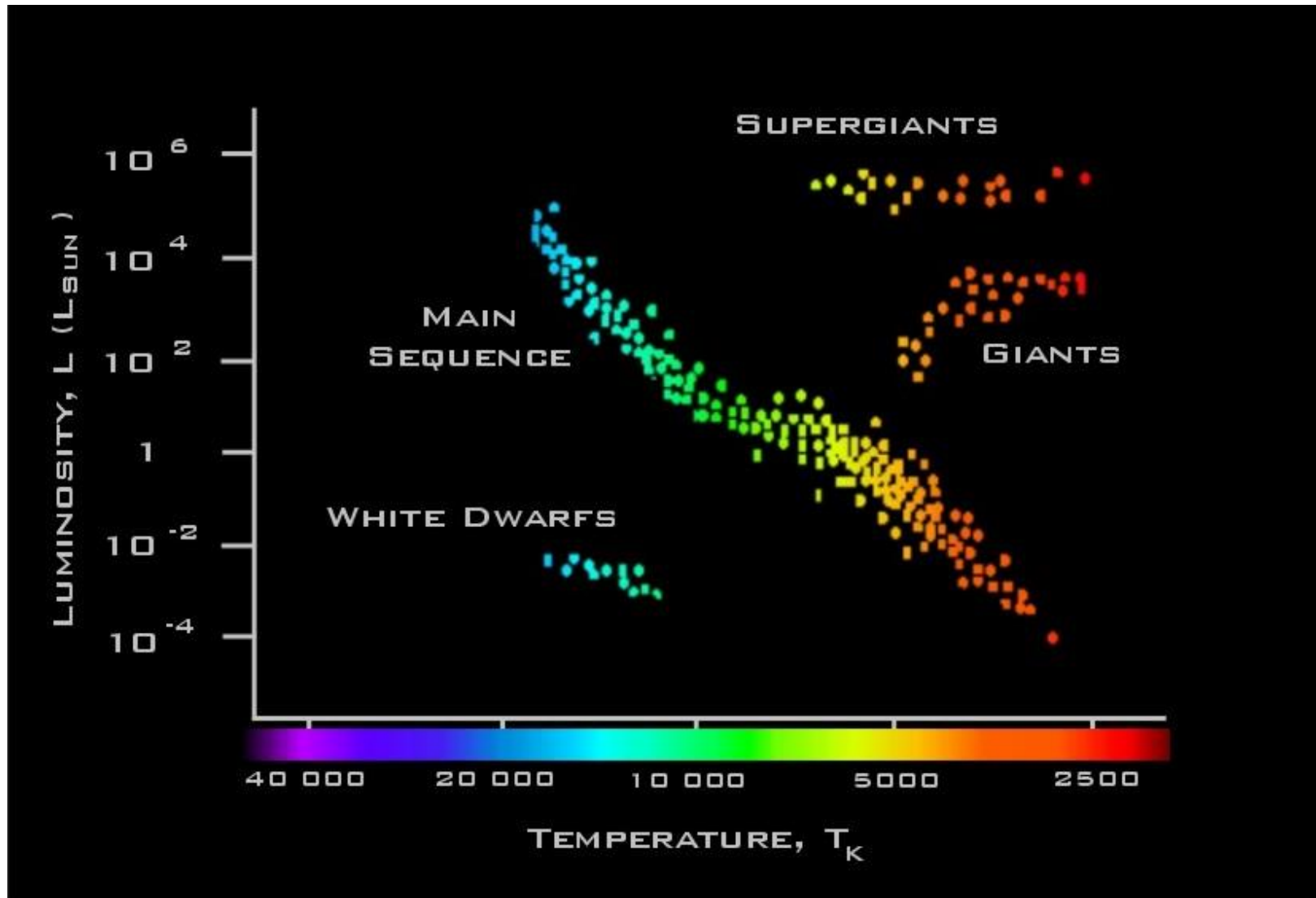
Color	Example	Surface Temp Celsius
	Spica (Virgo)	28,000-11,000
	Vega (Lyra)	11,000 - 7,500
	Sun	6,000 - 5,000
	Arcturus (Bootes)	5,000 - 3,600
	Antares (Scorpius)	3,600 - 2,000

STAR TYPES AND THEIR TEMPERATURE

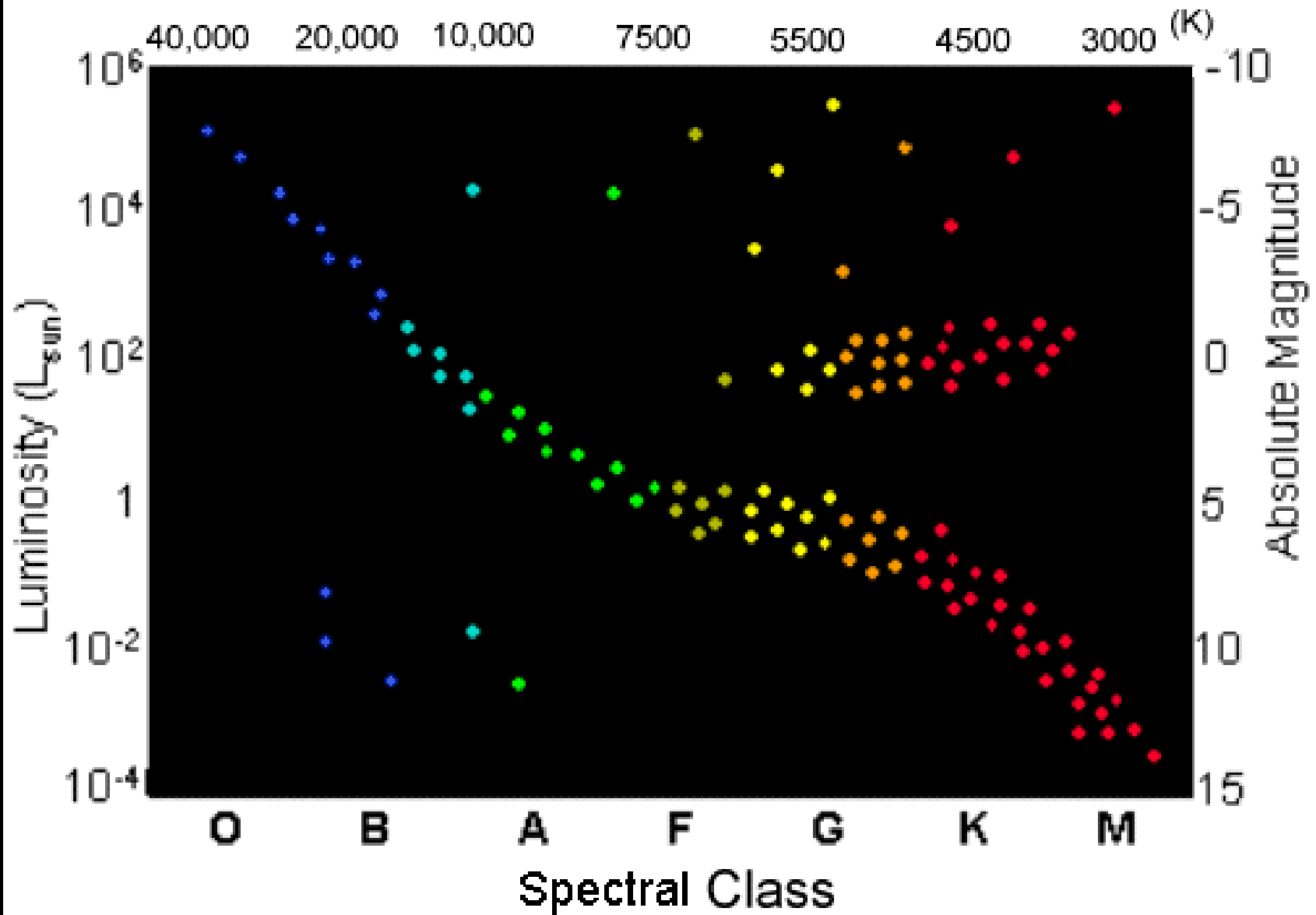


Type	Color	Temperature (in K)
O	Bluish	30 000 – 80 000
B	Bluish	10 000 – 30 000
A	Bluish	7 500 – 10 000
F	White	6 000 – 7 500
G	Yellow	5 000 – 6 000
K	Red orange	3 500 – 5 000
M	Reddish	2 000 – 3 500

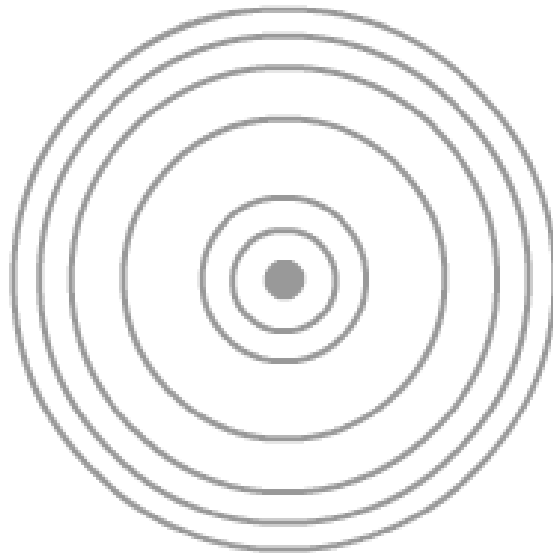
The Hertzsprung-Russell Diagram



Schematic Hertzsprung-Russell Diagram



Atoms have different orbits or shells.
It takes a certain amount of energy to be stored in each shell.
This corresponds to different wavelengths of light.
Each element has its own set of energy levels.



Electron orbits in a hydrogen atom



Electron levels in a hydrogen atom

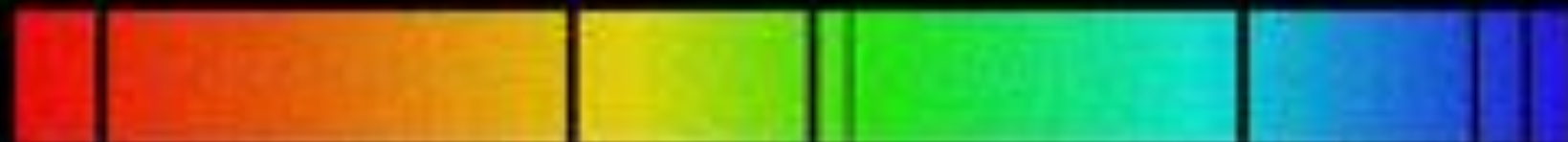
Continuous Spectrum



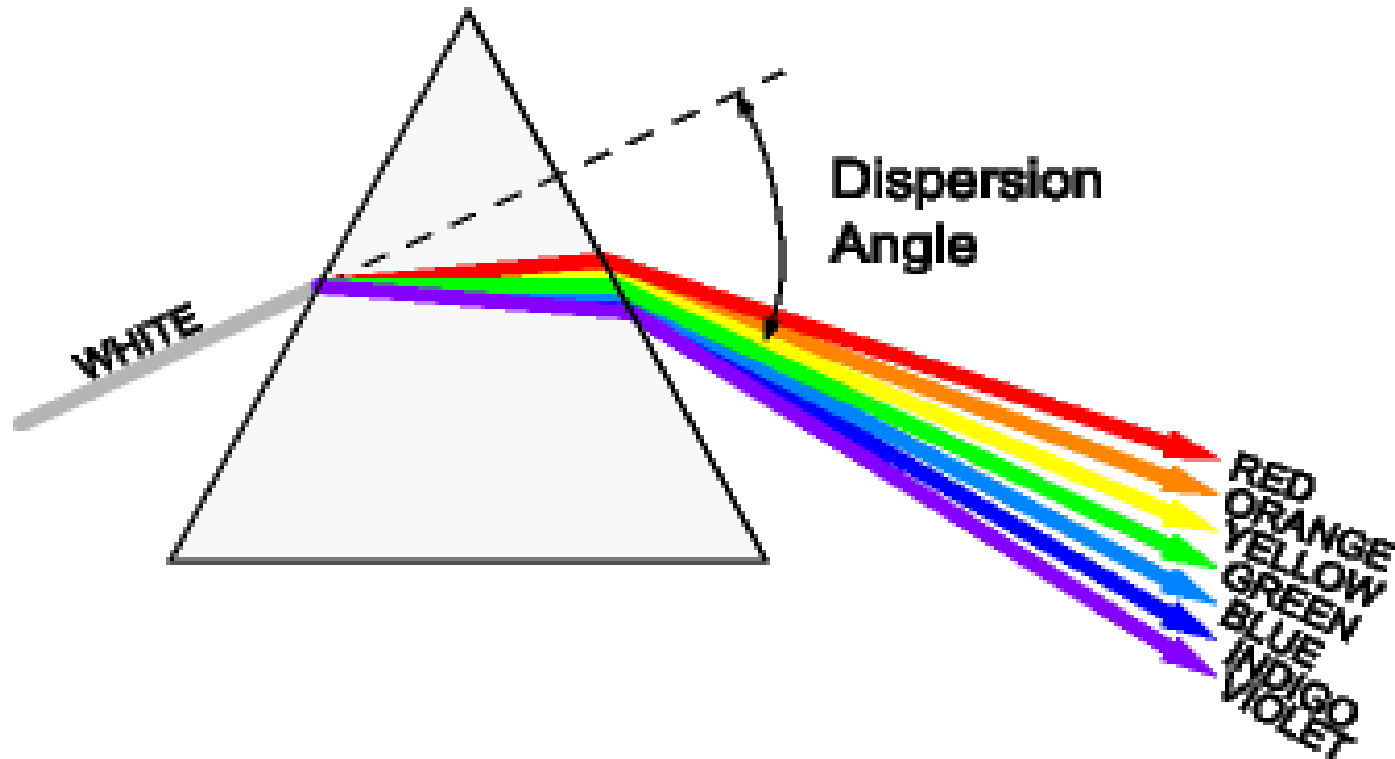
Emission Spectrum



Absorption Spectrum



Spectral analysis of starlight



Spectral analysis of starlight

