Light From The Stars

Use Rich's.

It has video.

Light From The Stars

Objective: Observe spectral patterns of various metal salts and relate them to star analysis: age, composition, temperature.

Research

- Stars: large bodies of gases undergoing fusion; light from them can be analyzed.
- Sun: the closest, brightest star we can see.
- Visible Light: small part of the electromagnetic spectrum we can see. Each element emits specific colors when it burns.

Research

- Spectroscope: separates white light into colors.
- Star's Composition: spectroscopes determine star's composition by the colors showing through it.
- Star's Spectral Pattern: tells elements making up a star by colors shown; telling you the life stage & temperature of the star.

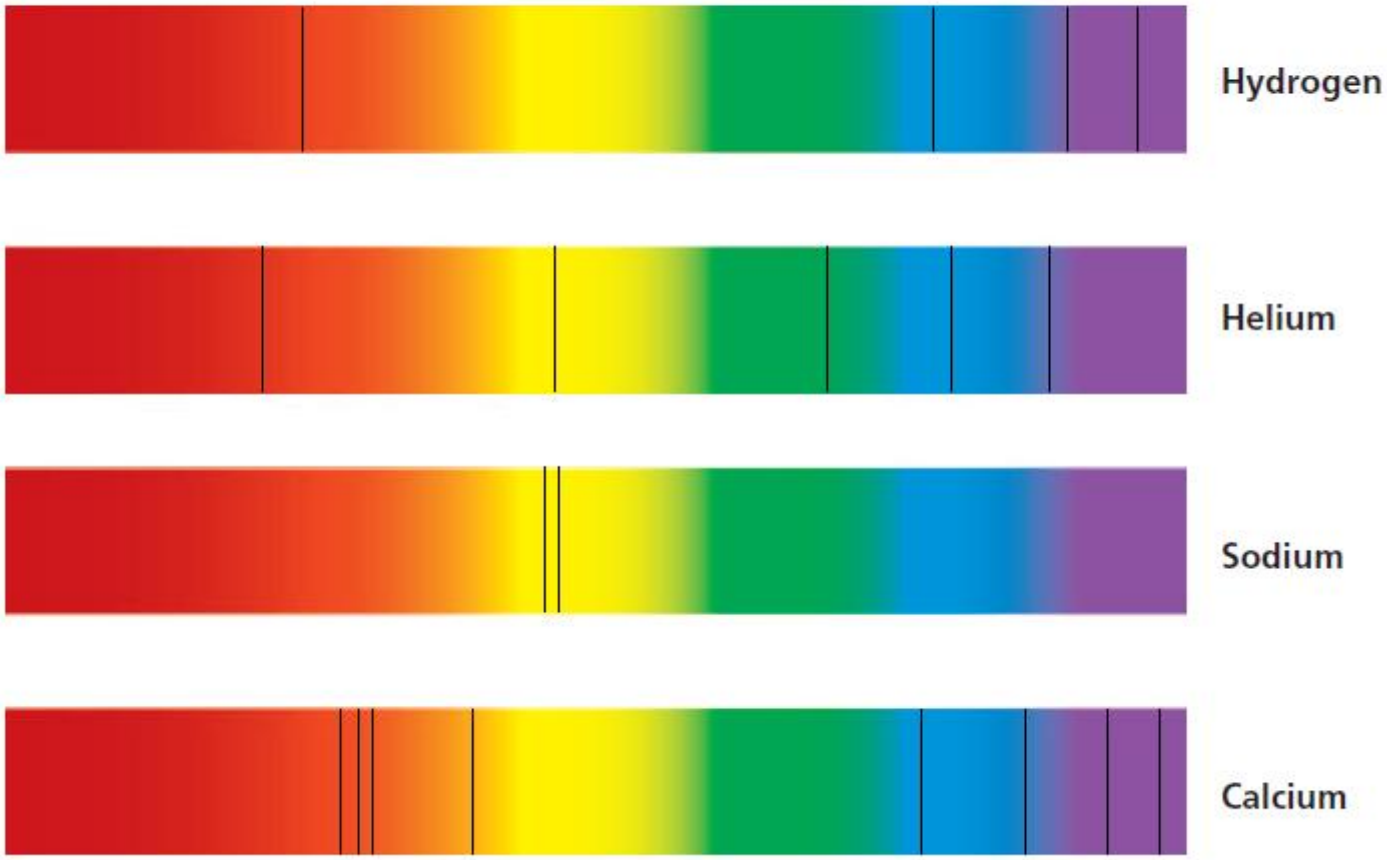
Star's Life Stages

- Nebula: beginning "proto star" – cloud of dust & gas
- Main Sequence: "adult" star. The sun & most stars. Longest life stage.
- Red Giant: expanding, cooling – final stages of life.
- White Dwarf: dim, very dense. Cooling & contracting.

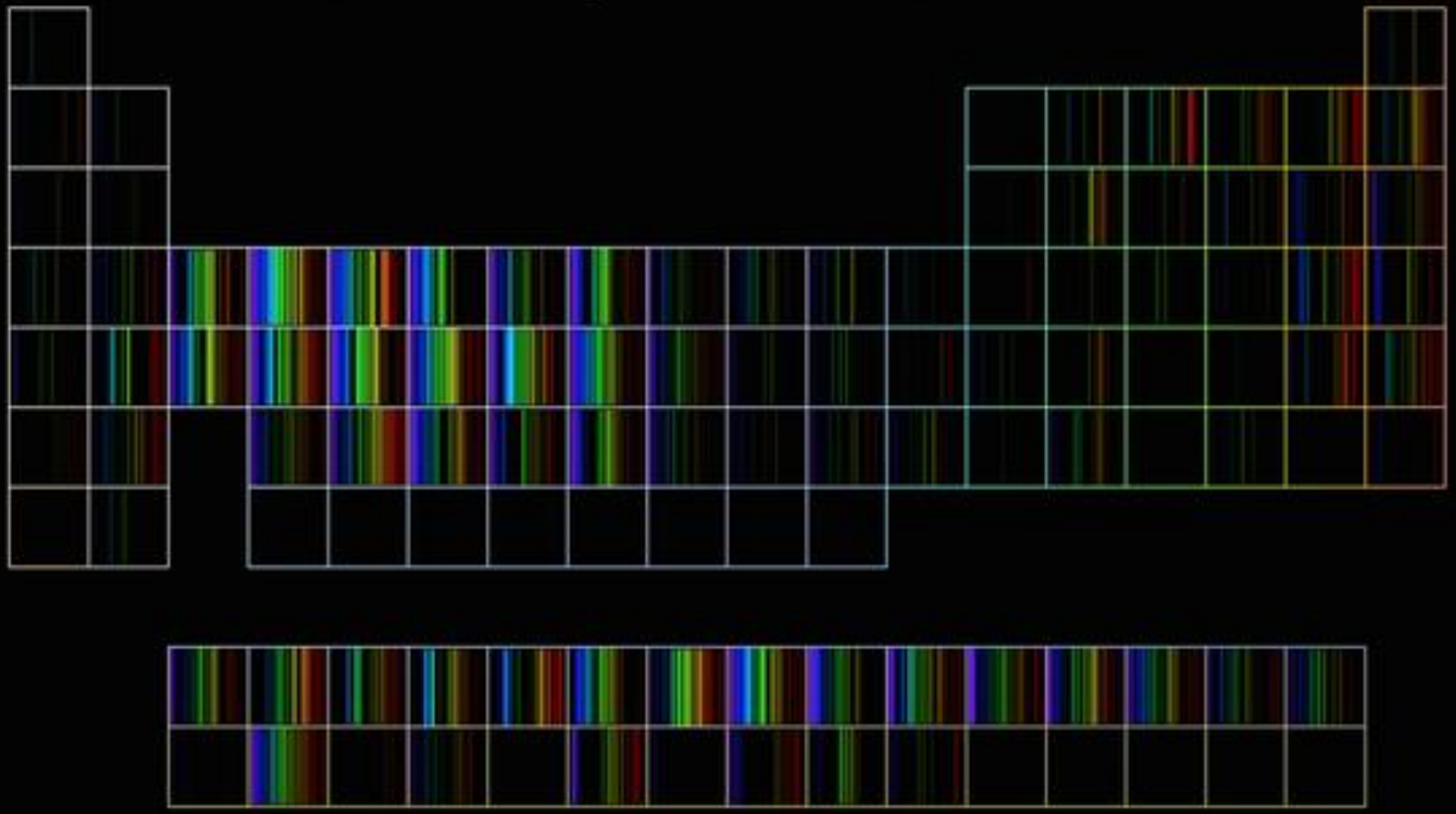
Star's Life Stages

- Black Dwarf: emits no light. Dead.
- Supernova: massive star that explodes → bright light.
- Black Hole: small dense object left from a massive supernova.
- Neutron Star: small dense star left from a medium supernova.

8.156 Star Spectrums



Emission Spectra of the Elements



Questions

- What is a spectral pattern?
- A color pattern produced when visible light is separated.
- Why do the spectral patterns from different stars vary?
- Because different stars are made of different elements

Questions

- How do spectroscopes help scientists analyze starlight?
- Light from a star is separated and the spectral pattern tells what makes it up
- High surface temp = Blue, White
- Low surface temp = Red