Using a Fancy Spectrograph

How can we possibly know what stars of made of? In this activity (Part 2 after Build a Spectrograph) students move through stations to chart spectra of different light sources, learning how spectra tell us not about the color of a light, but about the components that create the light source.

Time

- 60 minutes

Grades

- 6-8

Next Generation Science Standards

- **MS:PS4 –** Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.

Utah Science Standards

- **8.2.5** Develop and use a model to describe the structure of waves and how they are reflected, absorbed, or transmitted through various materials.

Materials

- Spectrograph, one for each student, built in activity Part 1– Build a Spectrograph
- Homework from Build a Spectrograph
- Colored pencils
- 1 Strand of multi-colored Christmas lights
- 1 Strand of clear white Christmas lights
- 1 candle
- 1 glow stick
- 1/4 watt night light with neon bulb
- Directions for Using a Fancy Spectrograph– download below
- Lab Sheet printouts– one for each student, in Using a Fancy Spectrograph download

When astronomers look at the atmosphere of a planet, star or body in the cosmos, they can usually tell what the atmosphere is made from, helping us know what lies below. How can this be? Astronomers learn an immense amount of knowledge through spectroscopy. By doing the Build a Spectrograph and Using a Fancy Spectrograph activities, students gain a deeper understanding of the complexities of light, and the amazing things we can learn through separating light into spectra. Check out the video tab for extras.

Please download the other resources for lesson directions