

Light and Color

(Pre-planetarium review and post-planetarium activity)

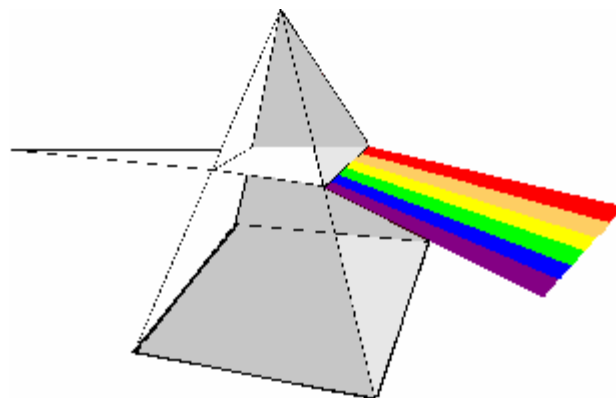
Introduction

All of the knowledge we have about the stars, including our Sun, comes to us from their light. It is up to us to discover the secrets of the stars and the nature of the Universe by unraveling the information contained in that light. The second part of the Starlab Planetarium program will investigate the colors of stars and the reason stars have different colors. The students will gain maximum benefit with a brief review of light before they take part in the planetarium show.

Procedure

Take all or part of a class period to review what the students already know about light (electromagnetic radiation, or the spectrum). Here is a partial list of the basic concepts:

- Everything, including you, radiates light.
- Light travels in waves, as does sound and ripples on a pond.
- Wavelengths of light can be as small as an atom or as big as a mountain.
- Our eyes are only sensitive to the wavelengths of visible light.
- Each color of visible light that we see has a different wavelength. Our eyes respond differently to each wavelength. That is how we perceive color.
- Starlight is a mixture of many different colors because it is made up of many different wavelengths.
- The amount of light emitted at each wavelength depends on the temperature of the object.
- Wavelength and energy are related. The shorter wavelengths carry more energy than do longer wavelengths.



Follow-up



The Space Telescope Science Institute (STSCI) has a wonderful and extensive package of information, lesson plans, background information, and related topics at their

Amazing Space Web Page. Although geared toward middle school students, the lesson plans could be adapted for elementary grades. The web site is educational for students of **all** ages, and includes information on where to obtain the materials for non-computer based work.

<http://amazing-space.stsci.edu/>