Exploring the Properties of Light: Absorption

(astrophysicist 1)	**(astrophysicist 2)**	**(astrophysicist 3)**	**(astrophysicist 4)**

Over the course of this week, you will explore properties of light and propose experiments about the observed phenomena. You will observe diffraction, refraction, absorption, reflection and intensity, through videos of experimental stations and some of your own explorations.

Essential Questions:

- Can we tell what light is made of?
- What evidence can we gather to better understand the properties of light?
- How do the properties of light help us understand the Big Bang?

Procedure:

- Each station will have one or more videos to watch in order to show the phenomenon. You will make careful observations, possibly watching the video more than once and record your observations. There are hints about how to be careful and organized with your observations.
- Finally you will use your observations to come up with a testable question and propose a *new* experiment to test your question. Your new experiment can use any materials you want including things not in the videos.

Station 1: Absorption of Light

Things to notice:

- We added just a tiny amount of milk to the water which lets you see the laser beam as it passes through the water.
- There are two colors of laser and four pieces of plastic placed in front of each beam. This information would be best organized into a table, different beams in each row and different pieces of plastic in each row.
- Be very careful in your observations. Notice that there is more to observe than whether the beam passes through the plastic. You can also notice how much light is scattered back or to the sides of the plastic. What do those observations mean?

Videos:

- View of Plastic Pieces
- Red Beam
- Green Beam

Station 1: Absorption of Light

Observations: Type your observations for each set up below.

New Experiment: Type a simple description of a new experiment you thought of to look at the absorption of light. What is your question/hypothesis? What variable will you change and control, your independent variable? What variable will you observe and measure, your dependant variable?