Name _____ Date _____ Period _____
Env. Earth Science

Simple Spectroscope Lab

Objectives:
- Compare spectra from different light sources

Materials:
- Spectroscope
- Lamp with incandescent bulb
- Colored pencils and spectrum coloring grids
- Additional light sources provided and operated by teacher. **WARNING: STAND 3 FEET AWAY FROM SPECTRUM TUBES. DO NOT TOUCH ANY LIGHT UNIT.**

Procedure:

1. Turn on a lamp with an incandescent bulb. Observe the spectrum that appears on the screen at the rear of your spectroscope. Use color pencils to draw the pattern you see in the space provided.
2. Repeat step 1 using a fixed fluorescent light source such as the light in the ceiling. Make a colored sketch of this pattern.
3. Point the spectroscope through a window at the sky away from the sun. **CAUTION: Do not look directly at the sun.** Make a drawing of the spectrum you see.
4. Point the spectroscope at the black light source in the room. Make a drawing of the spectrum you see.
5. The teacher may provide other light sources. Repeat step 1 for each of these sources.

Pre- Lab Questions:

1) What is the electromagnetic spectrum?

2) What part of the electromagnetic spectrum can we see? Meaning: What is it called?

3) Why are we able to see this spectrum? (Hint: It has to do with the lens in your eye)

4) What does the spectrum tell you about the composition of white light? (hint: use your drawings)

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Post Lab Questions (Analysis and Conclusions):

1. Compare and contrast the spectra for incandescent, fluorescent, and daylight. How are all three similar? How are all three different? (hint: use your drawings)

Light source	Similarities	Differences
Incandescent		
Fluorescent		
Daylight		

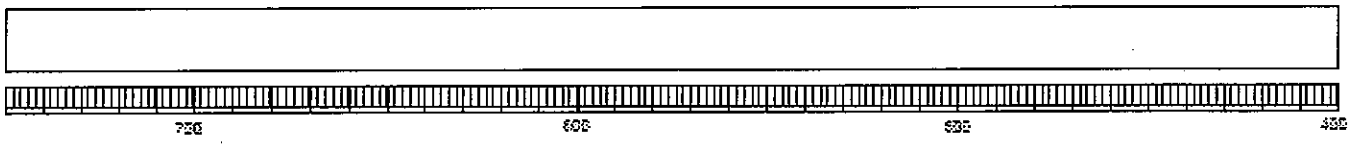
2. Describe the spectrum for backlight. What type of spectrum is it? How do the colors differ from the other spectra you have seen? (hint: use your drawings)

3. Describe the spectrum for neon and hydrogen. What type of spectrum was in each? How are they alike and how are they similar?

Light source	Spectrum (colors) present	Comparison of neon and hydrogen spectrum
Neon		
Hydrogen		

Earth Science / Ms. Burt Name: _____

1. **Name of the source:** _____



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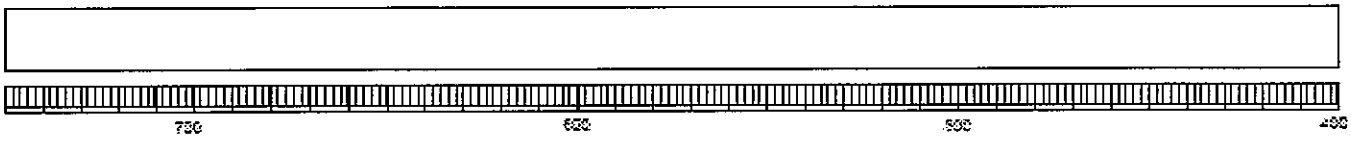

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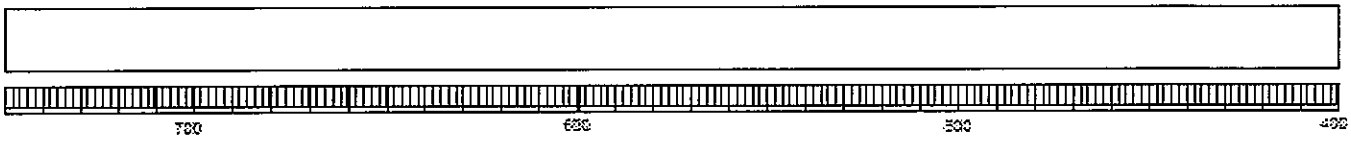

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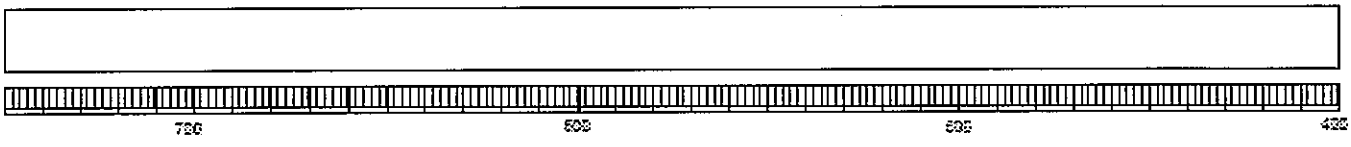

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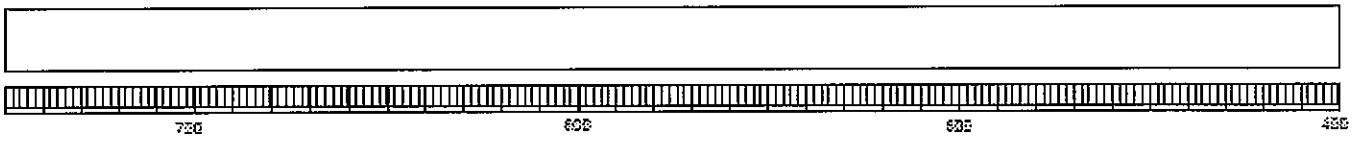

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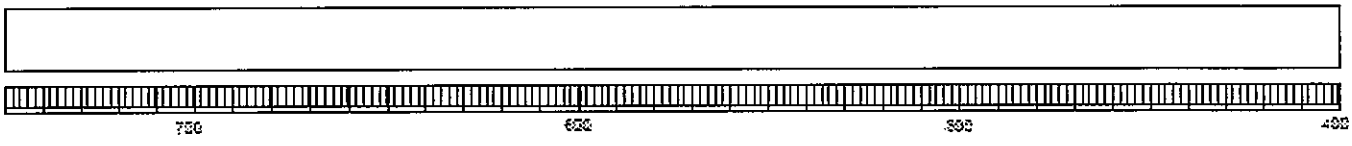

7. **Name of the source:** _____