

SNC1D

## Lab: Spectroscopy

A

### Purpose

In this lab, you will be determining the spectrum of various elements, then determining the elements making up various objects seen in the night sky.

### Observations

Write the name of the element from the list on the left beside its spectrum of absorption lines on the right.

/6

#### Element with selected absorption wavelengths in nm

Hydrogen 433, 486, 656

Helium 447, 502, 587, 668

**Example: Carbon 427, 515, 600, 678**

Sodium 580,589

Calcium 429, 527, 593, 645

Iron 417 to 433, 516,562, 619

Mercury 436, 546, 579

### Analysis

- Determine the composition of each of the Sun & mystery objects. /10

Sun: \_\_\_\_\_

\_\_\_\_\_

#1: \_\_\_\_\_

\_\_\_\_\_

#2: \_\_\_\_\_

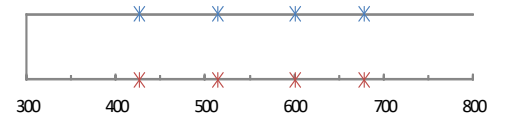
\_\_\_\_\_

#3: \_\_\_\_\_

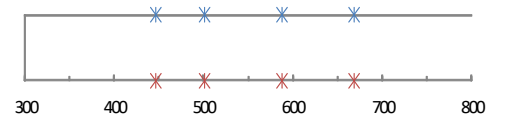
\_\_\_\_\_

### Absorption Spectrum

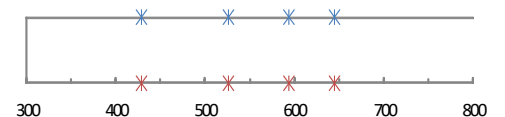
1. Carbon



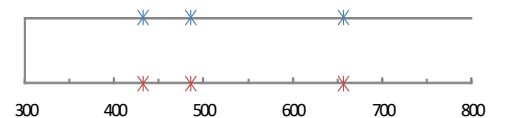
2. \_\_\_\_\_



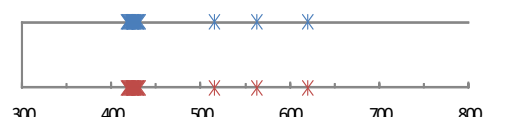
3. \_\_\_\_\_



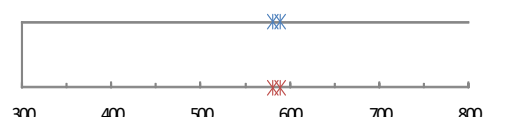
4. \_\_\_\_\_



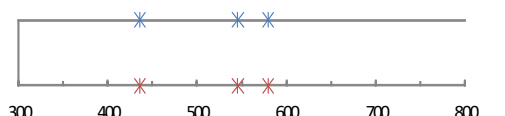
5. \_\_\_\_\_



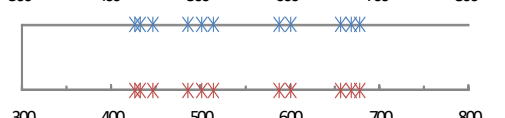
6. \_\_\_\_\_



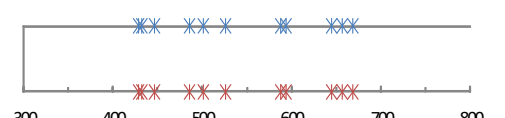
7. \_\_\_\_\_



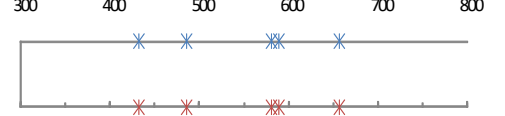
Sun



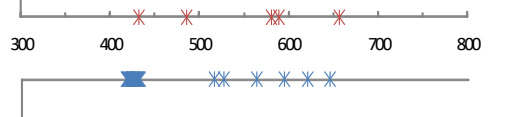
Mystery #1



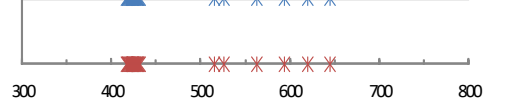
Mystery #2



Mystery #3



1



2. Which of the mystery objects is most like the Sun? Explain. /3
3. Which of the mystery objects is least like the Sun? Explain. /3
4. Which mystery object, if any, contains sodium? /1
5. Suppose you were to analyse the light from the full Moon with a spectroscope. Predict the spectra that you would see. Explain your answer. /3