**Physics 40 Lab**

**Finding Your Focus**

**Objective: Find the focal point of an unknown concave mirror**

**Material:** Small concave mirror, clay, candle, meter stick and 2 sheets of paper

**Procedure:**  Lay meter stick on the edge of a bench top. Place the candle on one end of the meter stick and a clay mounted mirror at the other end. The mirror must be slightly skewed so the image does not reflect back to the candle. Fold one sheet of paper in half. Record the distance between the mirror and the candle. Light the candle. Use the folded paper to locate the sharpest image possible projected onto the paper. Record if the image is enlarged or reduced and inverted or upright. Record its distance from the mirror. Move the candle 10 cm closer and repeat the image location and description.

**Calculations**: Calculate the focal point of the mirror for every image found.

Use the following equation: **1/f = 1/di + 1/do**

**Questions:**

1. What is the average focal point length?
2. Was an image found at every location? Why?
3. What is the center of curvature of the mirror?

**Diagrams:** Create ray diagrams of the following situations showing the image:

1. Candle beyond point ‘c’
2. Candle at point ‘c’
3. Candle between ‘f’ and ‘c’
4. Candle between mirror and ‘f’