Hang power supply at extreme left end of rod below chalkboard. Hang support A from the two rods, somewhat to the right of the power supply, and support B approximately 60 cm to the right of A. Mount the concave mirror (f = 16 cm) on support B. Darken the room as desired. (The darker the room the better the light rays show up, but some light is helpful in seeing the apparatus.)

Although the lecturer will probably wish to improvise frequently, the following basic demonstrations are suggested:

1. (a) Using two rays (from $S_1$ and $S_2$) parallel to the axis as indicated in Fig. 1 (see back of sheet), determine, and mark the position of the principal focus $F$. Mark also the center of curvature $C$. Leave the mirror in this position for all subsequent demonstrations. (b) Using a single source placed well off the axis, orient the ray so that it strikes first one and then other portions of the mirror. Note in particular the reflected ray when the incident ray is parallel to the axis; (2) Passes through $F$ before striking the mirror; (3) Passes through $C$ before striking the mirror.

2. Using two rays crossing appropriately outside the principal focus, as indicated in Fig. 2, observe the real, inverted image I. By moving $S_2$ vertically and/or reorienting this ray, thus changing the position of the object $O$, show that the image is always real and inverted whenever the object is outside the principal focus. For one arrangement draw in both the object and the real image.

3. Adjust the ray from $S_2$ so that the object is inside the principal focus, as indicated in Fig. 3, and note that the image is virtual, erect and larger than the object.

4. Place a single source $S$ at the point farthest from the axis in the object drawn in section 2, nearly fill the mirror with a divergent beam as indicated in Fig. 4, and note that all rays from a given point in the object pass through a common, corresponding point in the image. The entire image can be traced, point for point, by moving $S$ vertically along the length of the object.