

# OPTI 415L / 515L - Optical Fabrication and Testing Laboratory

## Lab #9 Lens Centering and Wedge Measurement

### **Purpose:**

The purpose of this lab is to use the rotary table and accurately measure the wedge in a parallel plate and to center a lens on the axis of rotation.

### **Procedure:**

#### To determine the wedge in a parallel plate

- 1) Use the lever style test indicator on the surface of the rotary table and level the rotary table. This is done by observing the deflection on the indicator while rotating the table and turning the knobs on the rotary table to minimize deflection. Level it to better than 0.0001”.
- 2) Place the provided parallel plate on the rotary table. Use the indicator on the top surface of the plate to determine its wedge by recording the maximum deflection on the indicator.

#### To center a lens

- 1) Place the three-ball fixture on the rotary table and roughly center it.
- 2) Position the indicator such that it barely touches the sides of the ball bearings while rotating the table.
- 3) Observe the deflection on the indicator while rotating the table and tap the block to center it by minimizing the deflection.
- 4) Place the lens on the ball bearings. Position the indicator such that it barely touches the edge of the bottom surface of the lens. Observe the deflection on the indicator while rotating the table and tap the block to accurately center the block. If the lens is not heavy enough and is displaced during rotation, place a weight on top of the lens.
- 5) Position the indicator such that it barely touches the edge of the top surface of the lens. Observe the deflection on the indicator while rotating the table and tap the lens to center it.
- 6) Use the PSM and observe the image of the point source from the back surface of the lens. If the lens is centered the spot should not move upon rotating the table.