

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

## **Lab #6 Test at Finite Conjugates**

### **Purpose:**

The purpose of this lab is to become familiar with the use of a laser based Fizeau interferometer for testing spherical and flat optics, prisms, and corner cubes. Both visual observations of the interference fringes, and computerized phase shifting measurements should be performed.

### **Procedure:**

- Using the procedure described by your TA test the concave, convex, and flat surfaces provided. Visually estimate the quality of the optics tested, and describe any aberrations present. Perform the computer analysis and compare your estimates with the computer's estimate.
- Using the radius slide and interferometer measure the radius of curvature of the ball bearing by finding the two positions for null fringes – focus of transmission sphere at center of curvature of surface tested and focus at test surface.
- Measure the right angle prism and corner cube to determine the errors in the 90 degree angles.
- If you wish, bring your camera lens to test. If you do test a camera lens, stop down the lens a couple of f-stops and look at the improvement.