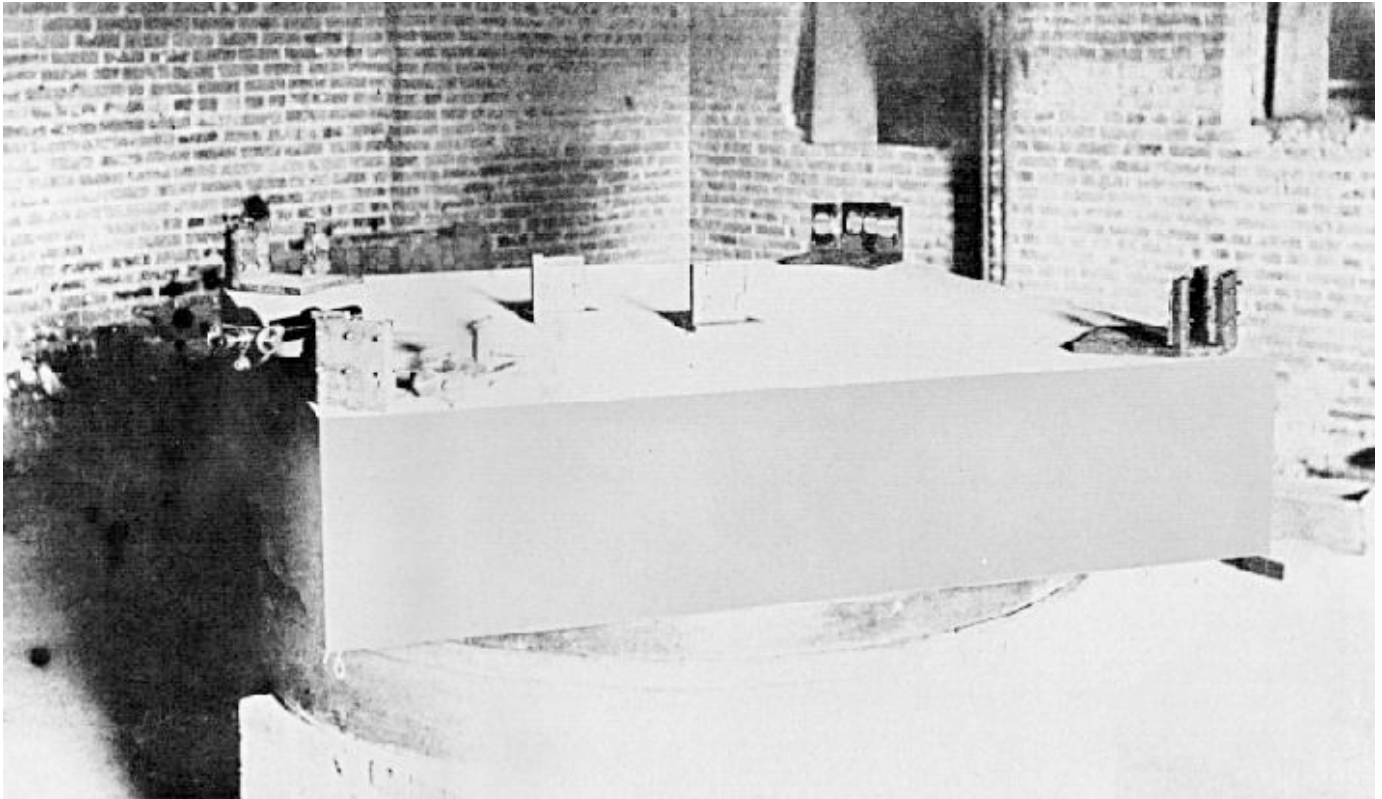


PHYS 3345: OPTICS

JCA Department of Physics and Astronomy



Michelson Interferometer

Spring 2008

You should be ready to perform two simple experiments using the interferometer in the lab. If you have not reviewed the equipment manual provided, you should not attempt to simply wing it. Please be responsible and respectful, and please do not disturb any equipment that you are not using directly.

Where

The equipment will be available in room LSC 005, and if you do not have a code for the door, one will be provided for you. The equipment case will be on the table, with the interferometer base, an adjustable laser, and assorted pieces and parts. You should have everything you need, but if you think you need additional equipment, please ask before cannibalizing what you see around you.

When

The equipment will be available from Monday, 03/04/08 through Friday, 03/14/08. You will need to be responsible for your own time management. The experiments are not overly long, but require unhurried data collection. Plan to spend about two hours aligning the apparatus and collecting sufficient data. Please return the parts to the case when you have completed your work.

What

You should use the manual provided as a guide for determining the wavelength of the laser provided. Set up the Michelson configuration and collect sufficient data. The repeat with the Fabry-Perot method. You should collect enough data for each technique to convincingly calculate an accurate wavelength.

How

You will find the equipment manual fairly comprehensive. However, you will probably have an easier time collecting data if you do not attempt to count fringes on the tiny viewing screen provided. Instead of mounting the screen to the base, allow the final image to project onto the wall. You will have a larger image to view (place a sheet of paper with a reference mark on the wall). Oh, and *count out loud*. Seriously.

Report

Format details are provided online. You have until 03/21/08 to submit a completed lab report. This is worth 100 points, so treat it accordingly. You should budget enough time to bring me a draft for comments before the final due date.

