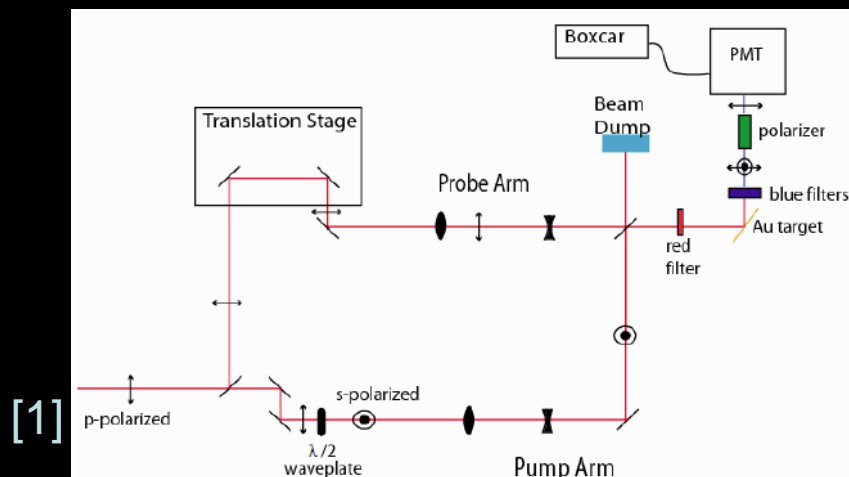
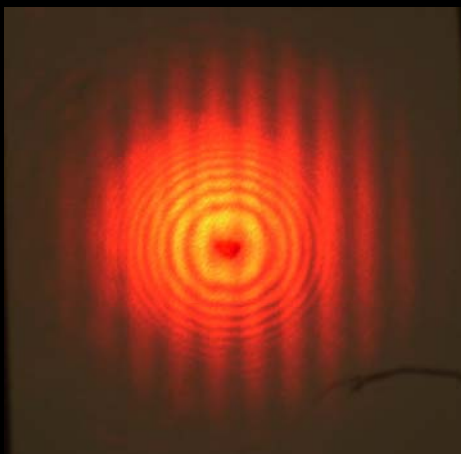


Measuring the Femtosecond Dynamics of Surface States in Gold

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Summer 2006



In this project we used an ultrafast Ti:Saph laser with a 50 fs pulse (FWHM) and peak wavelength of 800 nm to generate second harmonic (400 nm) light off of an Au target. By splitting the beam into a pump and probe configuration and including a translation stage in

the probe's path, we were able to measure the intensity of the second harmonic as a function of delay time after the pump hit the target. We attempted to observe the initial spike in intensity predicted by a model designed and perfected by many students before us. Although we were unable to confirm a match, we did become very familiar with the system, and learned many techniques for working with optics and ultrafast laser systems that will help us as we continue this project in the Fall.

[1] P. Arpin. *An Experimental Study of Non-Equilibrium Electron Distributions and Ultrafast Scattering Dynamics in Gold*. Harvey Mudd College. April 28, 2006