

Automated instrumentation for analysis of centrifugal microfluidic discs

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(BS Bioinformatics, 2012)

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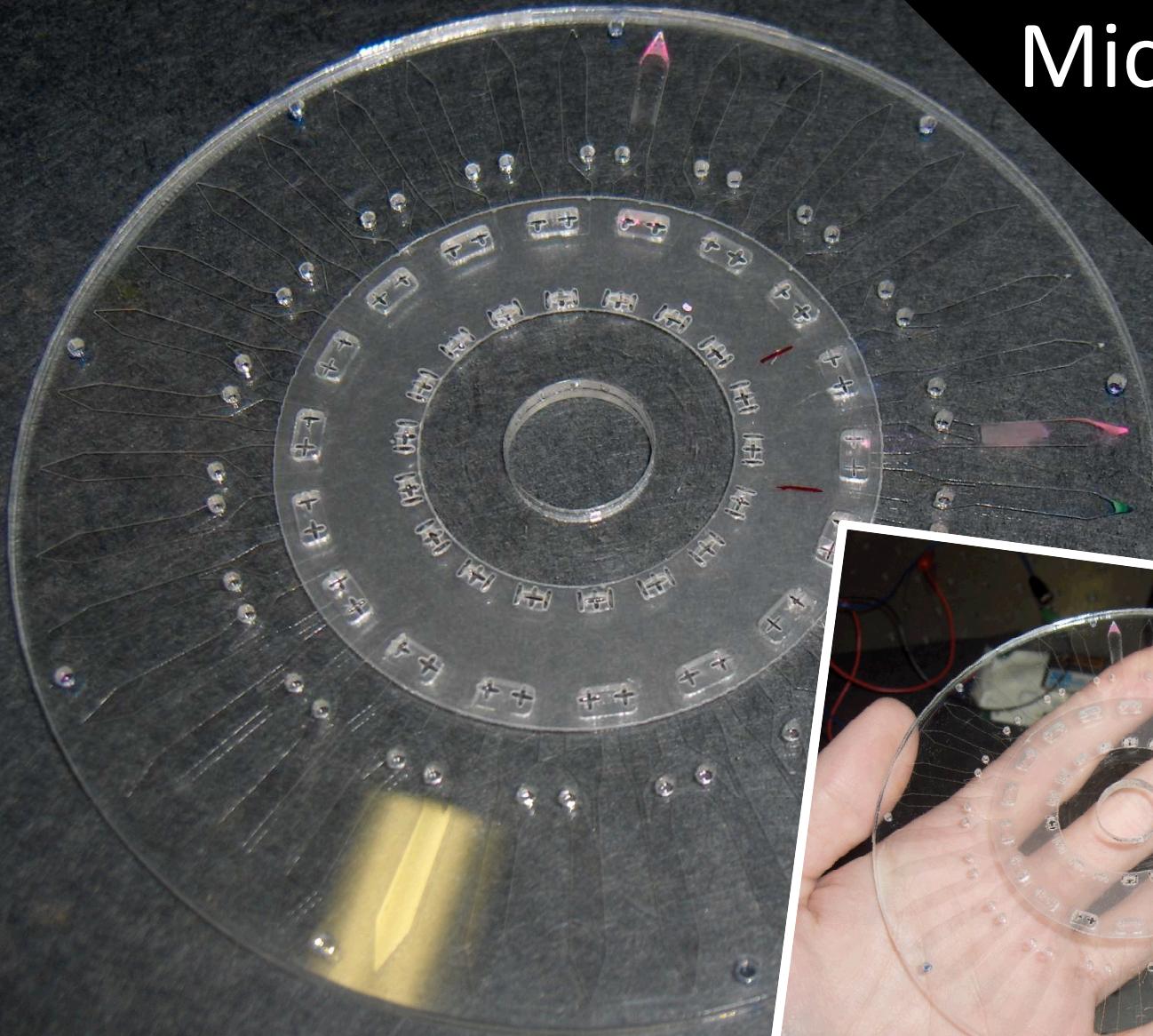
R·I·T | College of SCIENCE



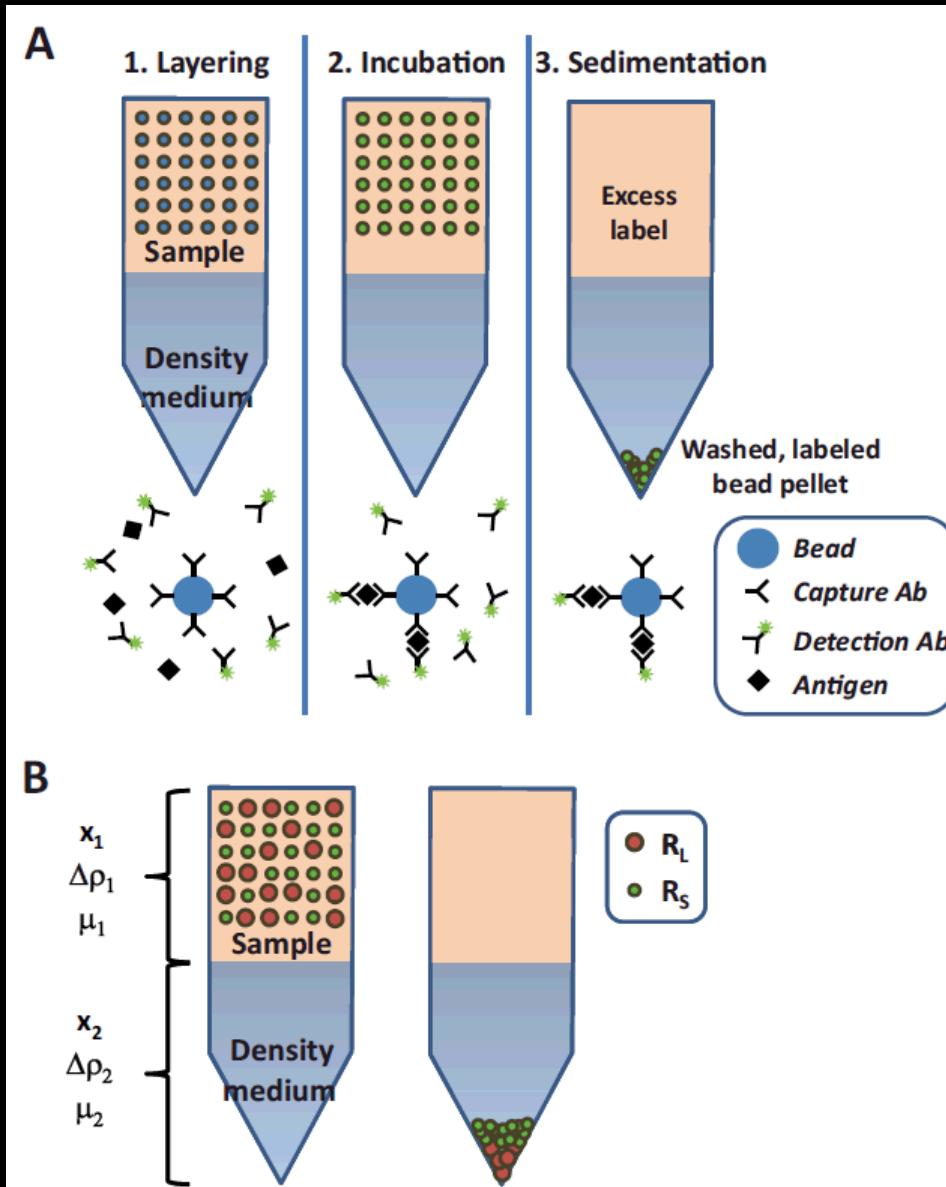
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Centrifugal Microfluidic Disc



Example Assay



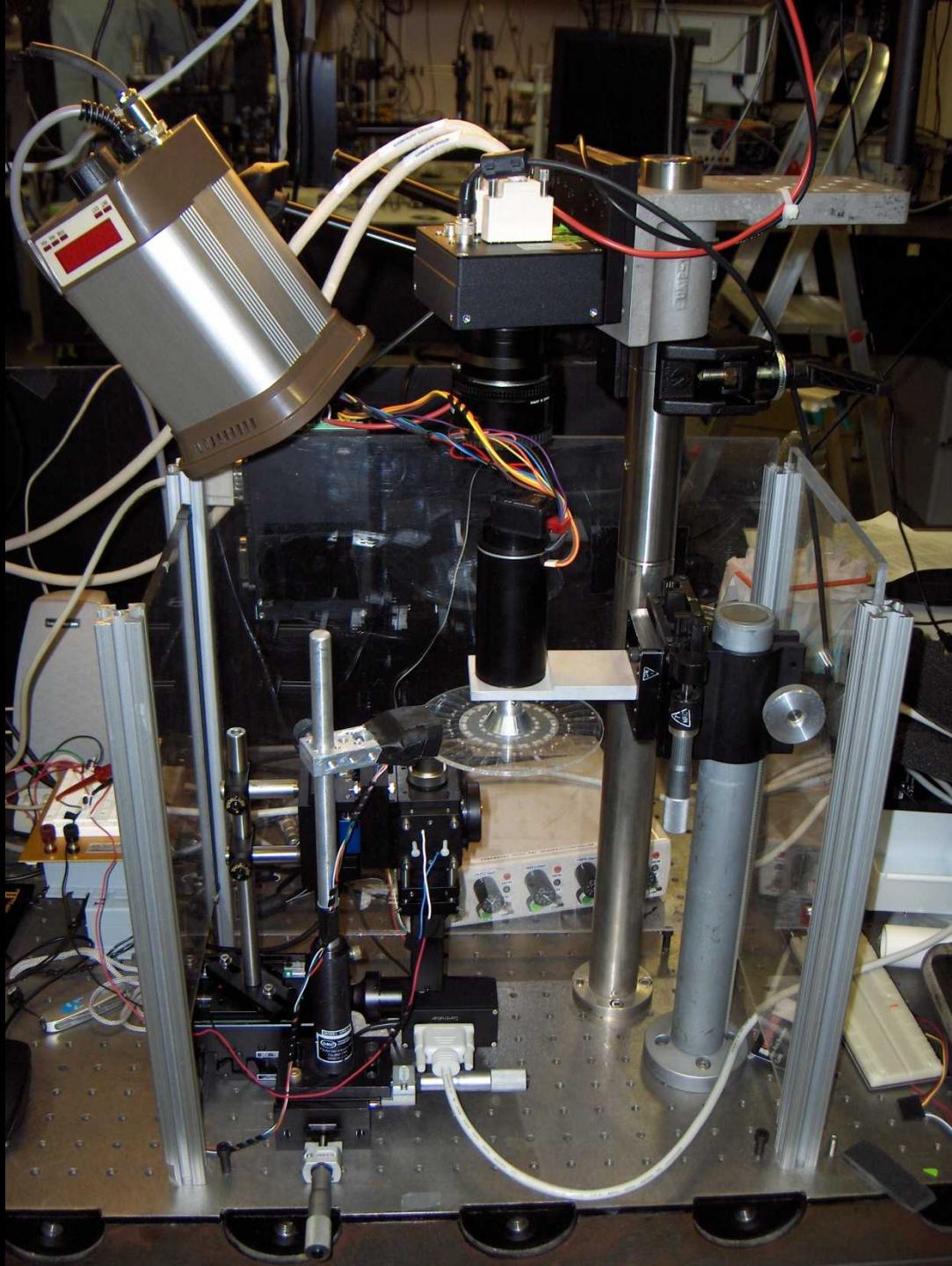
U. Schaff, G. Sommer.
Whole Blood
Immunoassay Based
on Centrifugal Bead
Sedimentation.
Clinical Chemistry.
57:5 753–761 (2011)

Qualitative Analysis

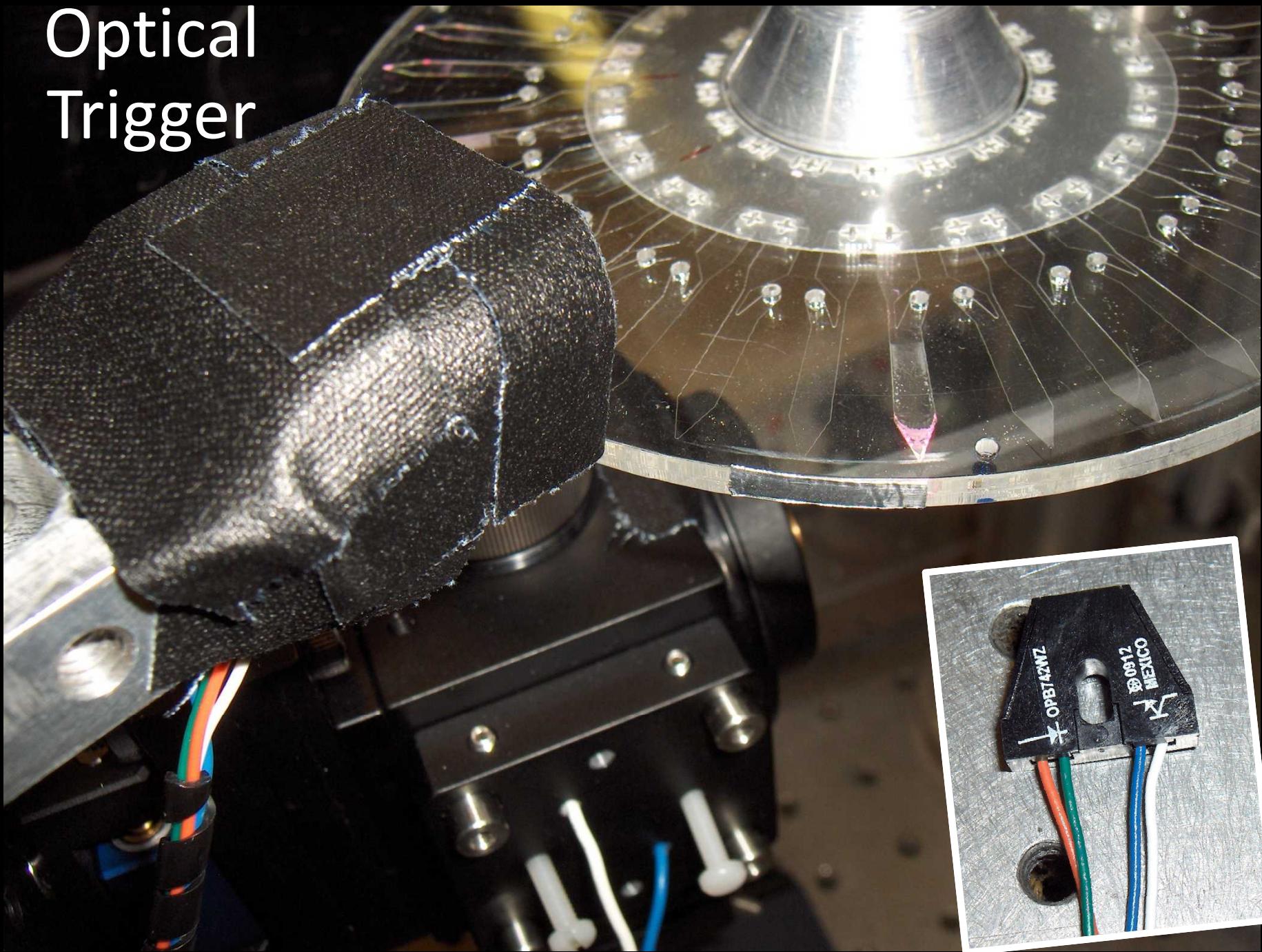
(disc video)

How was this video captured?

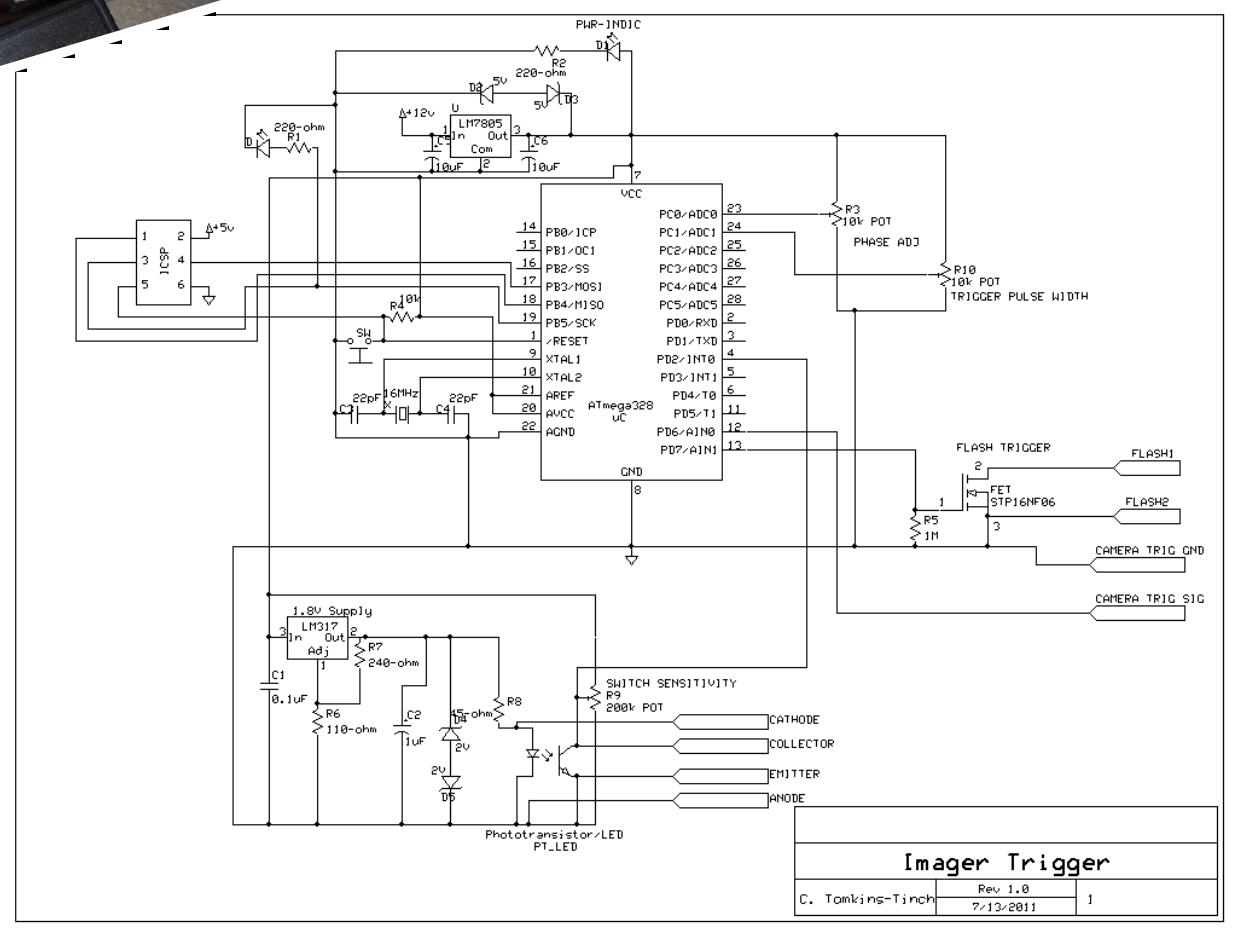
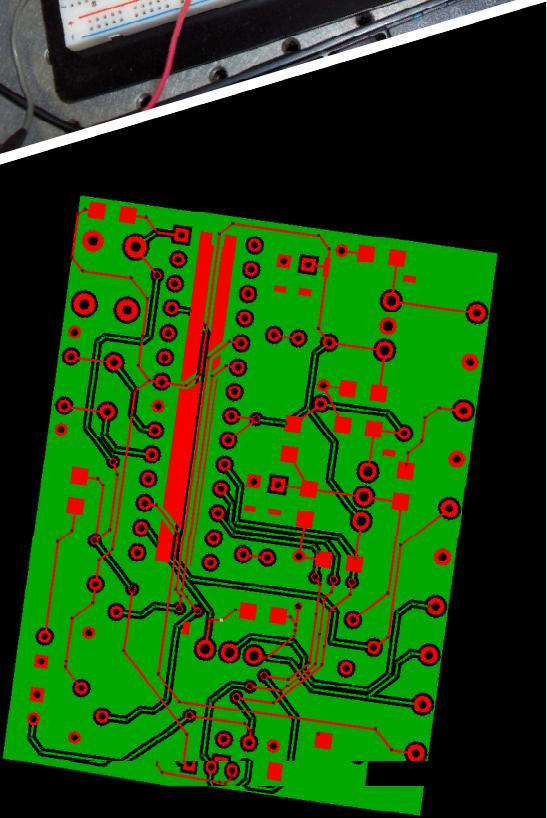
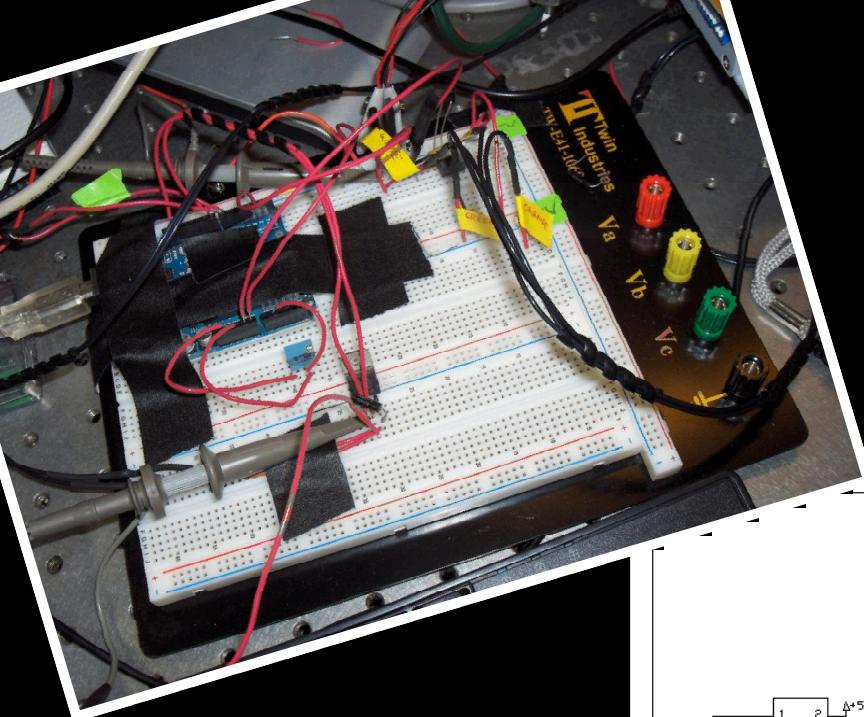
Platform Layout



Optical Trigger



Control Board



Trigger Waveforms

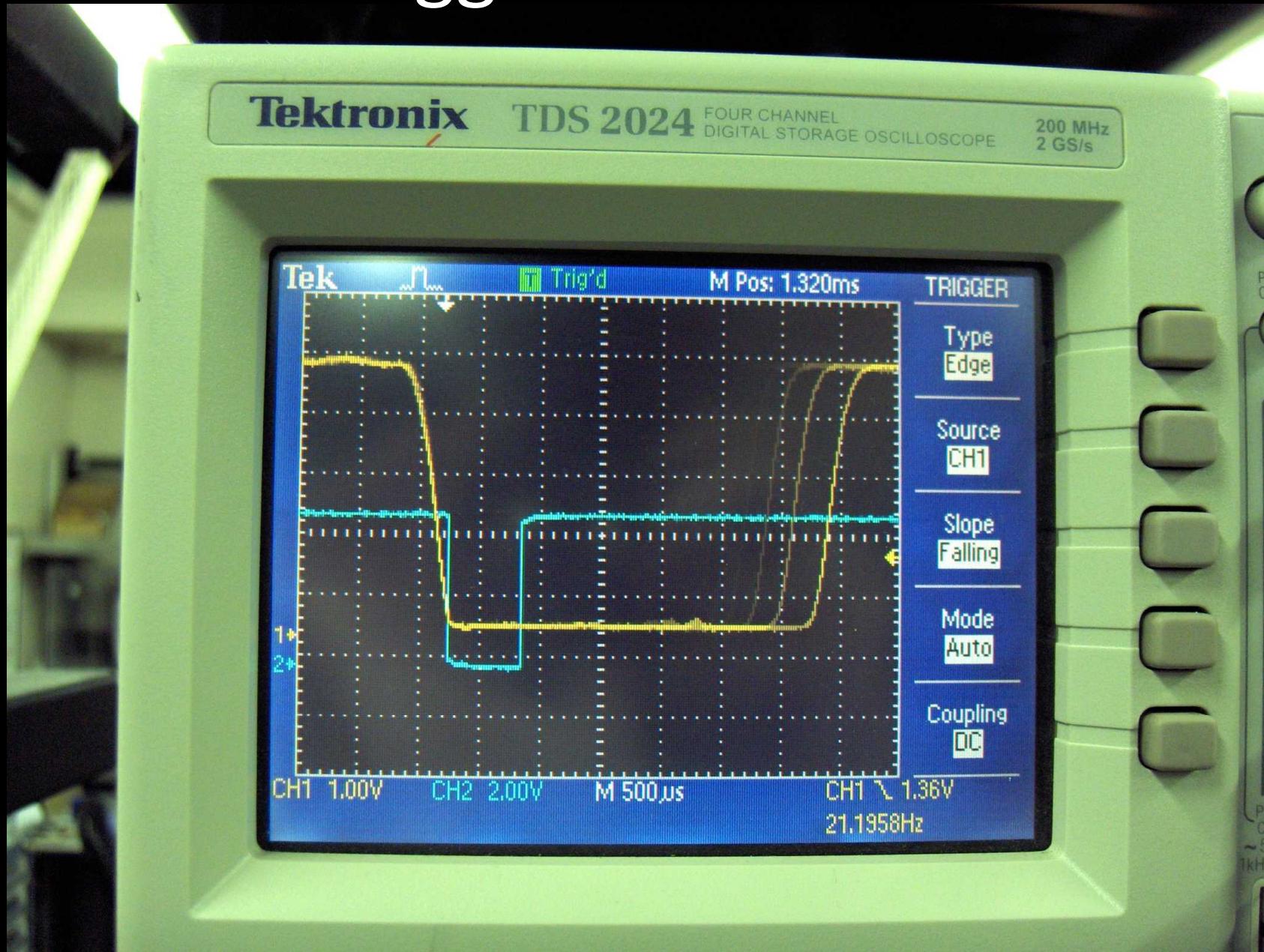
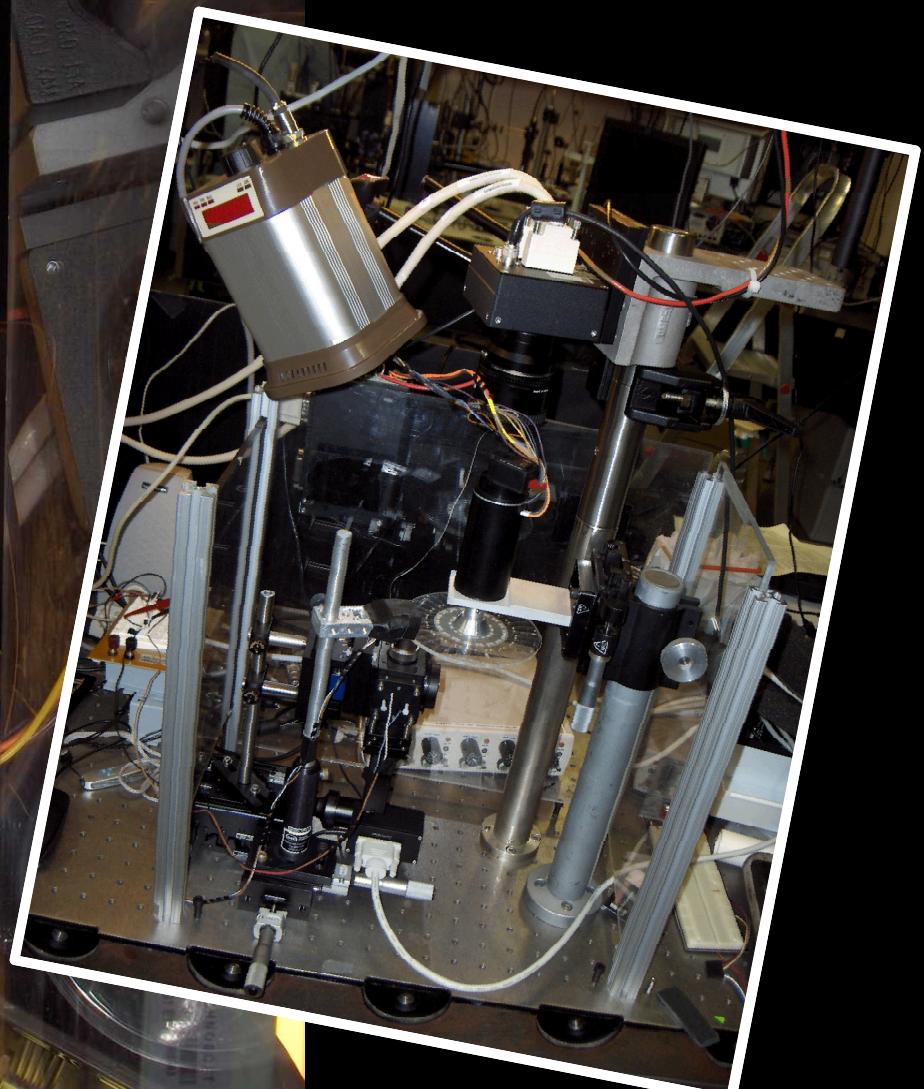
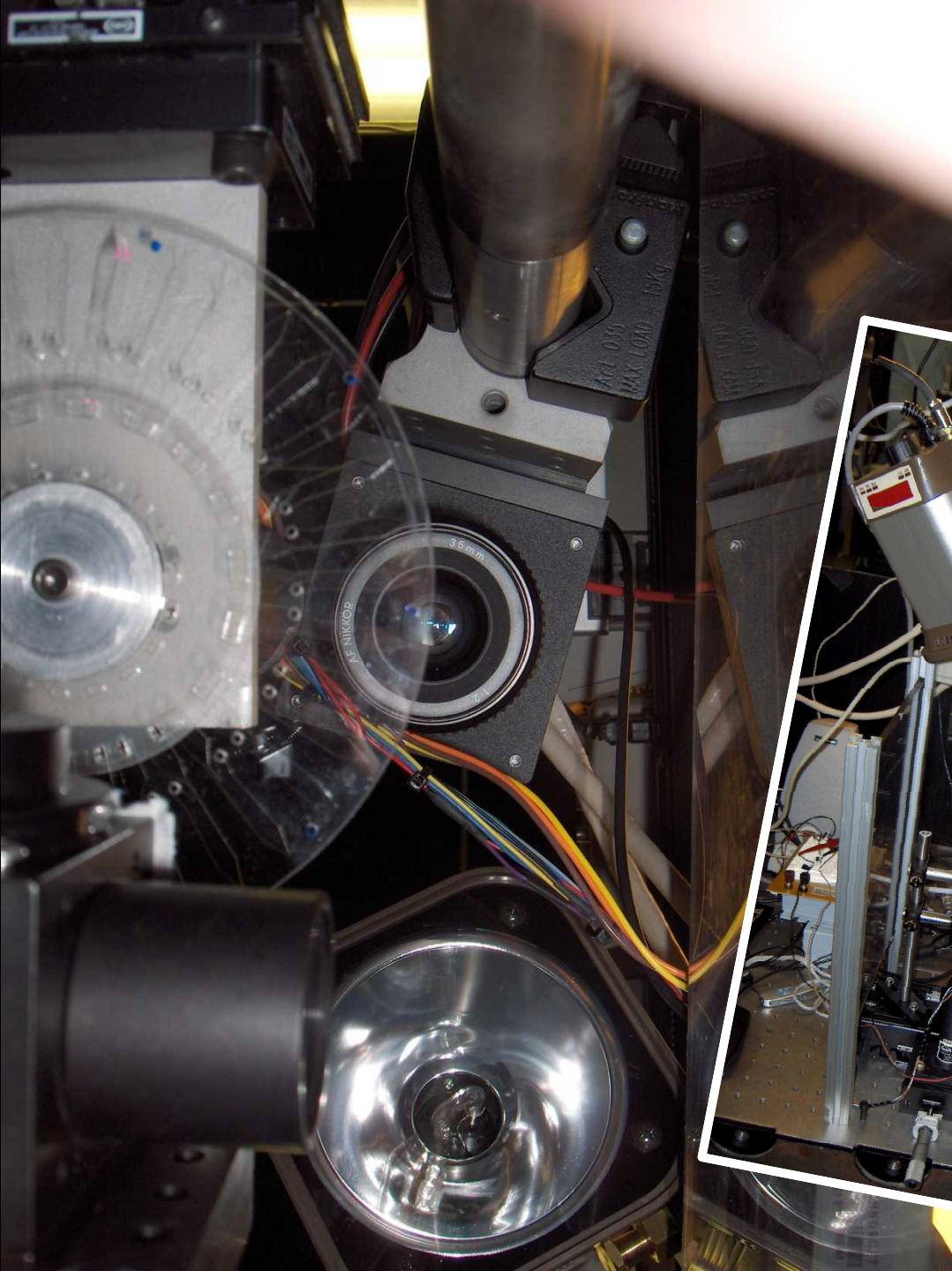


Image Chain



Example Frame

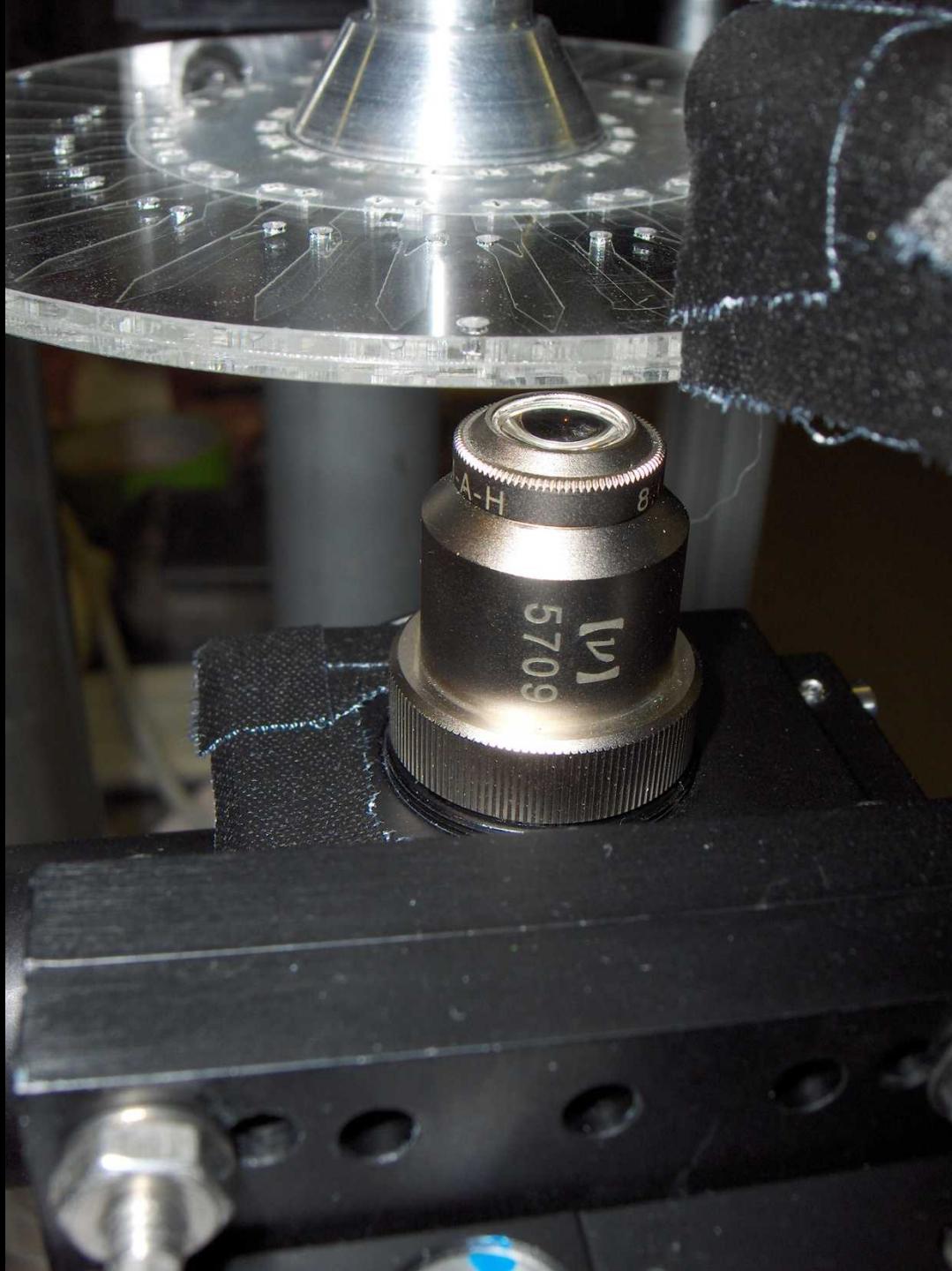


Control Software

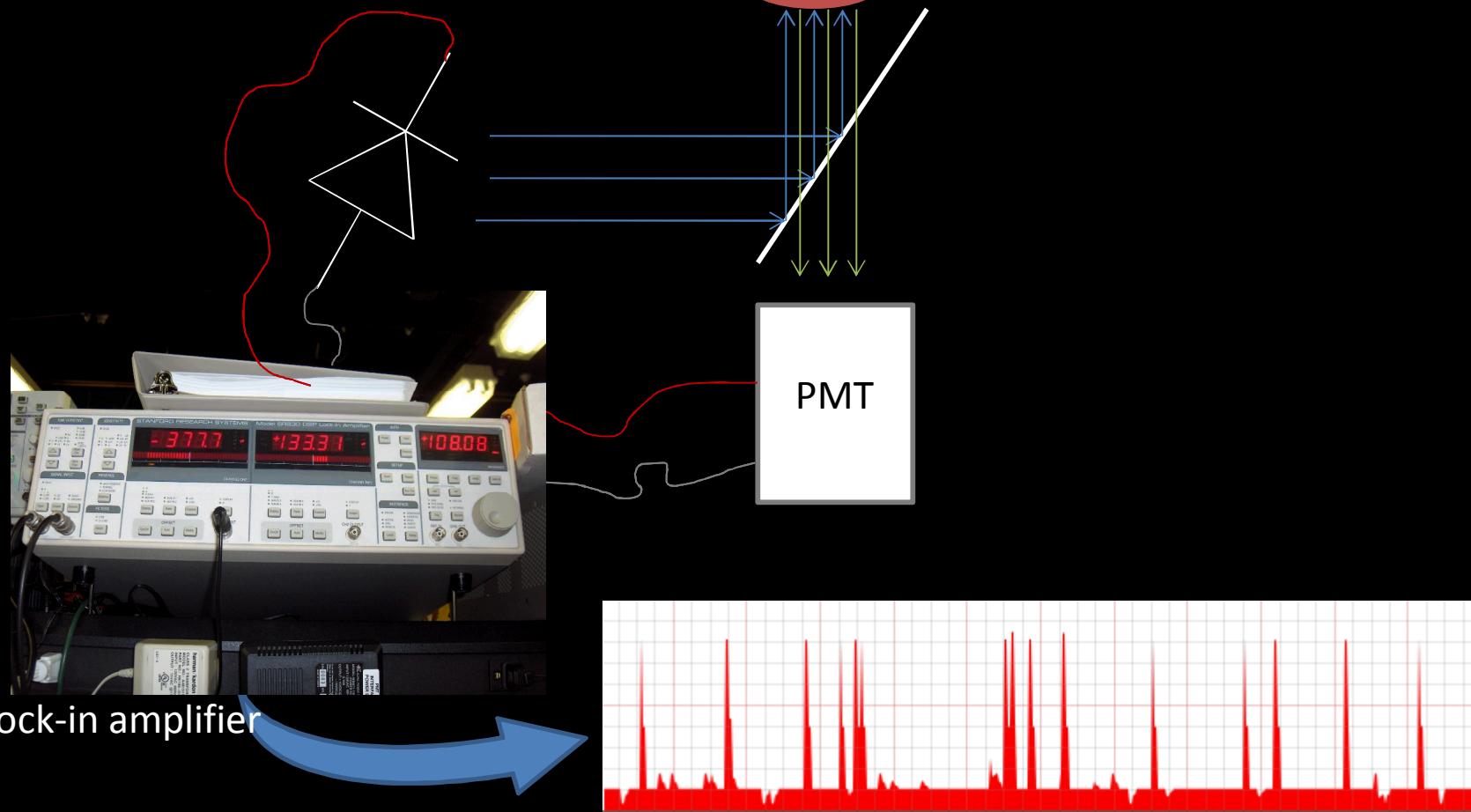


Quantitative Analysis

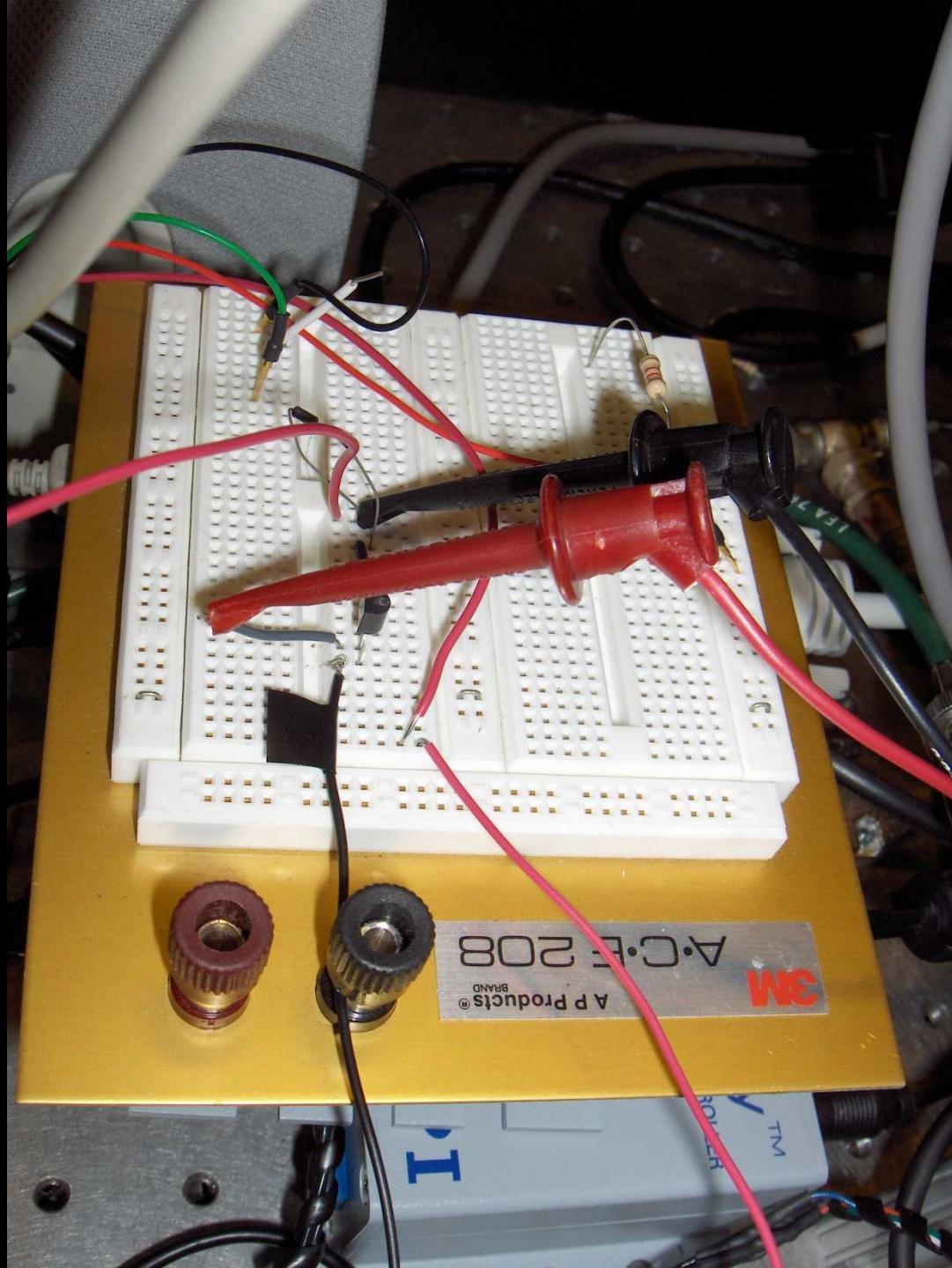
Optical Measurement



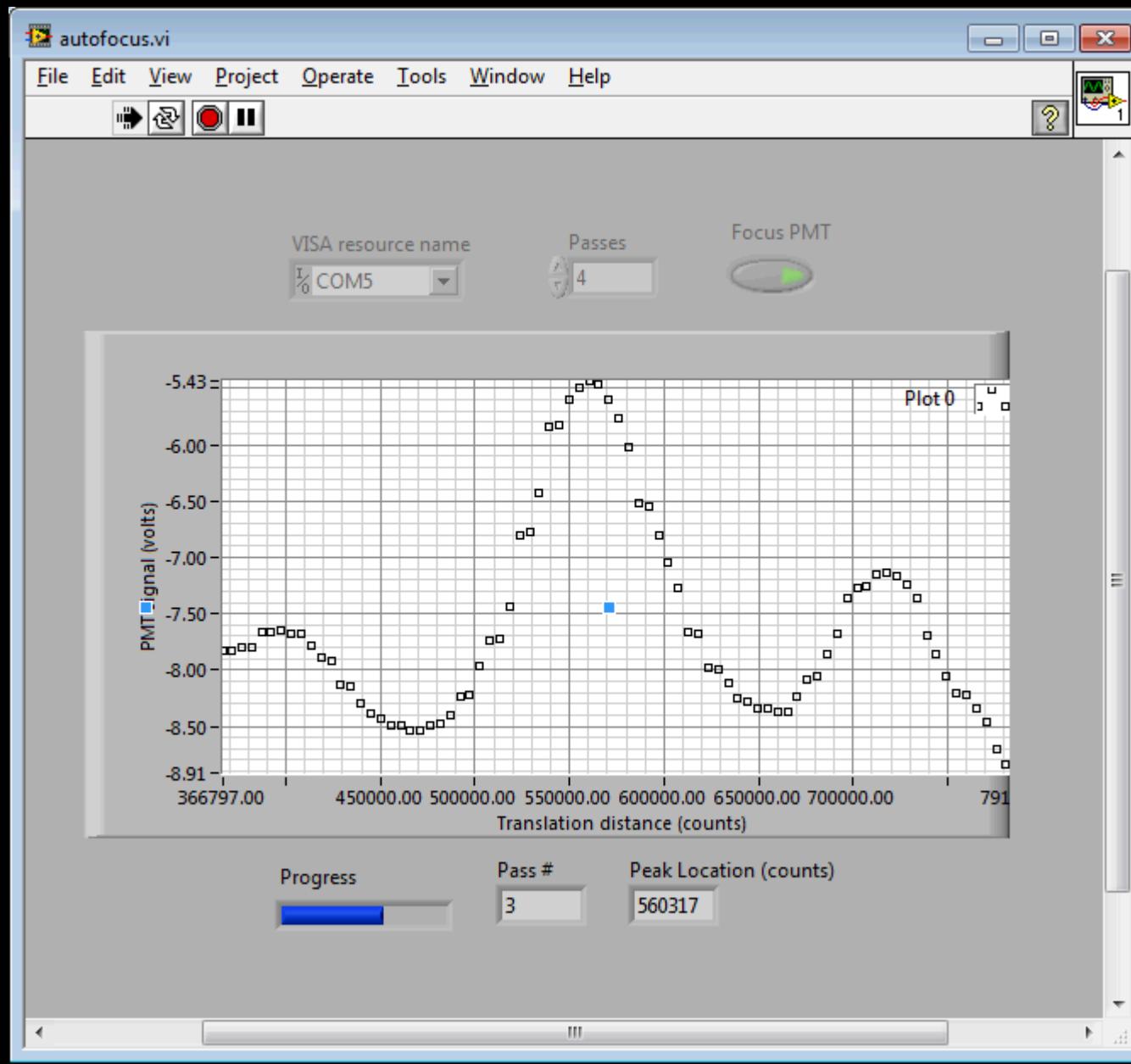
Measurement Method



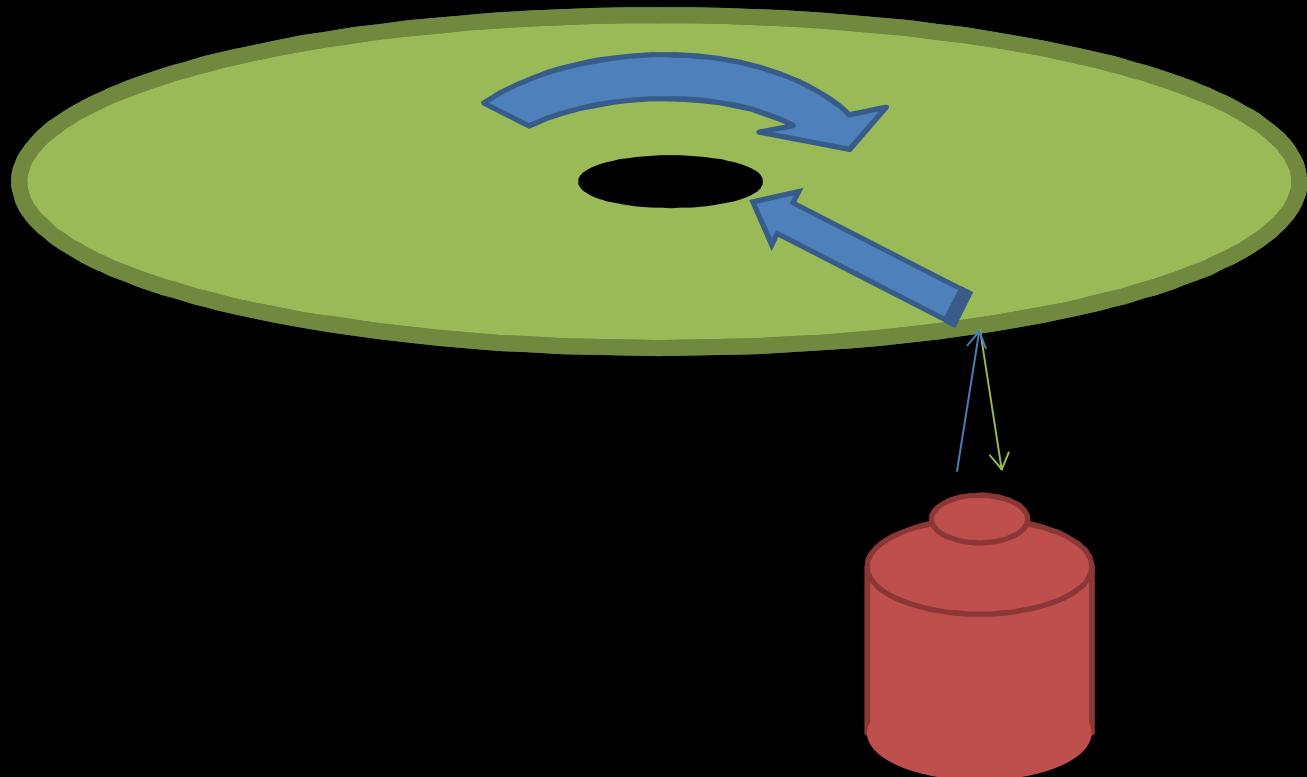
Noise Reduction (cont.)



Focusing the Objective



Building an intensity map



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Questions?

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