Notre Dame Science
Department of Physics

LENS ORBITAL MOTION IN BINARY MICROLENSING EVENT OGLE-2009-BLG-020

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I will present the first example of binary microlensing for which the parameter measurements can be verified (or contradicted) by future Doppler observations. This test is made possible by a confluence of two relatively unusual circumstances. First, the binary lens is bright enough to permit Doppler measurements. Second, we measure not only the usual 7 binary-lens parameters, but also the "microlens parallax" (which yields the binary mass) and two components of the instantaneous orbital velocity. Thus we measure, effectively, 6 'Kepler+1' parameters. Since Doppler observations of the brighter binary component determine 5 Kepler parameters, while the same spectroscopy yields the mass of the primary, the combined Doppler + microlensing observations would be overconstrained. This makes possible an extremely strong test of the microlensing solution.

Astrophysics Seminar

All interested persons are cordially invited to attend.