MOA-2011-BLG-262Lb: Free-Floating Planet with an Exomoon or Planetary System with Halo Kinematics

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Abstract: MOA-2011-BLG-262 is the shortest duration microlensing event to date with a planetary mass companion, and the lens-source relative proper motion is unusually high. The high relative proper motion suggests a nearby lens, but if this is the case, then the primary must have a mass of a few Jupiter masses. This would imply that the secondary is an exomoon of about an Earth mass. The other alternative is that the velocity of the planet host star is quite large, implying that it resides in the Milky Way's halo. I will describe what the current and future data might say to resolve this issue. Banquet at