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Free-floating planets with DREAMS, K-ROAM and ET using gravitational microlensing

Monday, December 15, 2025 12:20 PM (20 minutes)

The mass function of free-floating planets (FFPs) could key insights into the planet formation and dynamics. Microlensing provides a powerful technique to probe this population, especially at the low-mass end. We will describe preliminary search results of FFPs using the existing KMTNet survey data (KMTNet Rogue Objects Astrophysical Monitoring, K-ROAM), and the ongoing DECam Rogue Earths And Mars Survey (DREAMS) using ~ 70 nights on the Blanco telescope in Chile.

We will also discuss future prospects to determine the FFP mass function using the Earth Two satellite mission (currently scheduled for launch in October 2028).

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