PROCEEDINGS OF SCIENCE

Probing MACHOs in M31

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From observations, little is known about the nature and structure of dark matter halos. From microlensing surveys towards the Magellanic Clouds there are indications that part of the Galactic halo might consist of dark compact objects (MACHOs), but the exact amount is uncertain. M31 provides a significantly better target for a microlensing survey than the Magellanic Clouds. Due to the lensing geometry and the availability of lines-of-sight through very dense parts of the M31 halo, the microlensing rates are greatly enhanced. The Microlensing Exploration of the Galaxy and Andromeda (MEGA) is performing a large-scale microlensing survey towards M31 using several telescopes. A first set of 14 microlensing candidates, suggestive of the presence of a microlensing halo, was previously reported by MEGA (De Jong et al, 2004). We present the most recent microlensing events from combined data of the Isaac Newton Telescope and the KPNO 4m telescope and the implications for the compact object content of the M31 halo.

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