

Dark Matter Experiments

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One of our purposes during the 2013 Quarknet Summer Research Program is to study the three frontiers of particle physics. Dark matter research falls under both the Energy Frontier and the Cosmic Frontier. During these few weeks, we studied the history of dark matter research, the present methods of dark matter detection, and the various effects dark matter have on our universe. The exploration of dark matter started with Jan Oort when he conducted experiments on galaxy rotation. This discovery led Vera Rubin to produce her Galactic Rotation Curve. Current theories include hot dark matter, warm dark matter, and cold dark matter. ([Candidates for](#)) Cold dark matter include MACHOs, RAMBOs, and WIMPs ([which of these is leading candidate?](#)). Evidence for dark matter includes Gravitational Lensing and the Cosmic Background Radiation ([specifically, the "anisotropy" in the CMB](#)). Future evidence will be provided through experiments such as Coupp-60, CDMS, LUX, and DAMA/LIBRA. ([XENON100?](#) [DAMIC?](#))

Do you want so much history in your abstract? I think it's a little too detailed Marky Mark... -Koch

I agree with Brian: maybe mention, with fewer words, that (e.g.) DM began as an explanation for aberrant galactic rotation curves