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What we have learned from the Cosmic Microwave Background (I)

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It is now 100 years since Planck received a Nobel Prize for describing blackbody radiation. It is 75 years since McKellar found a background temperature of molecules in space and 55 years from the recognized discovery of the cosmic microwave background. Measurements of the spectrum, and the the anisotropy of the intensity and polarization patterns of the CMB have told us about thermal equilibrium in the first weeks of the Universe, the geometry, baryon fraction and expansion history of the Universe and constrain neutrino masses, among many other things. I will describe these measurements and also the current experimental efforts to measure large angular scale odd-parity polarization patterns in a hope to understand cosmic inflation and perhaps GUT-scale physics.

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