The Universe has been studied using light since the dawn of astronomy, when starlight captured the human eye. The IceCube Neutrino Observatory, located at the geographic South Pole, observes the Universe in a different and unique way: in high-energy neutrinos. IceCube’s discovery in 2013 of a diffuse celestial neutrino radiation started an era of neutrino astronomy. Searches for astronomical sources responsible for creating these neutrinos have covered broad source types while combating background event rates that are 6 orders of magnitude higher. This year, the first observation of our own Milky Way galaxy in neutrinos was announced in June. This talk will cover how this observation was made, other milestone observations by IceCube, and the state of neutrino astronomy. The evolution of multi-messenger astronomy and where neutrino astronomy will fit in the future will be discussed.

Host: Reina Maruyama

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