
Contribution ID: **690** Type: **not specified**

# Optimal Celestial Bodies for Dark Matter Detection

*Wednesday 15 May 2024 16:15 (15 minutes)*

A wide variety of celestial bodies have been considered as dark matter detectors. Which stands the best chance of delivering the discovery of dark matter? Which is the most powerful dark matter detector? We investigate a range of objects, including the Sun, Earth, Jupiter, Brown Dwarfs, White Dwarfs, Neutron Stars, Stellar populations, and Exoplanets. We quantify how different objects are optimal dark matter detectors in different regimes by deconstructing some of the in-built assumptions in these sensitivities, including observation potential and particle model assumptions. We show how different objects can be expected to deliver corroborating signals. We discuss different search strategies, their opportunities and limitations, and the interplay of regimes where different celestial objects are optimal dark matter detectors.

## Mini Symposia (Invited Talks Only)

**Authors:** TONG, Joshua (Stanford University); LEANE, Rebecca (SLAC)

**Presenter:** TONG, Joshua (Stanford University)

**Session Classification:** Dark Matter

**Track Classification:** Dark Matter