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An Overview of Dark Stars

Monday, 8 July 2024 15:00 (30 minutes)

“Dark stars” are a theoretical class of celestial objects powered by dark matter annihilation rather than nuclear fusion. I will review the conditions in the early universe conducive to the formation of dark stars, covering the theoretical basis of dark matter annihilation as an energy source. I will discuss the expected properties of dark stars, including their size, luminosity, lifespan, and spectral signatures. I will also address the observational challenges and opportunities for detecting dark stars, including possible candidates identified by the James Webb Space Telescope (JWST).

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Session Classification: First stars and their remnants as dark matter probes

Track Classification: Dark Matter (DM): First stars and their remnants as dark matter probes