



DARK GAS AND SOLID H₂ IN THE GALAXY

Mark Walker | Manly Astrophysics

In astronomy, solid hydrogen has been largely ignored for over 50 years. That was a mistake. It came about because the pure solid was shown to sublime rapidly under interstellar conditions; but in the ISM solid H₂ is expected to become electrically charged, and the electric field suppresses sublimation. I will argue that the spectroscopic properties of interstellar dust make a strong case in support of solid H₂ being a major dust component. In turn, that suggests that our Galaxy possesses a substantial reservoir of dark gas clouds - hydrogen "snow clouds". I'll describe a new picture of the physics of interstellar scattering of radio waves, based on the tidal disruption of H₂ "snow clouds" by stars. Somewhat surprisingly, that work has also led us to a beautiful new model of the rare, but spectacular, R Coronae Borealis stars.

13-MAY-2024

3:30 PM ET

BELL ROOM