

Detections of C₆₀ in circumstellar environments

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C₆₀ (Buckminsterfullerene) was first discovered more than two decades ago in laboratory experiments designed to understand dust processing in circumstellar environments (Kroto et al. 1985, *Nature*, 318, 162). The molecule is remarkably stable and is expected to exist in space. Many efforts have been made to search for C₆₀ in space. Only very recently, C₆₀ was discovered in the infrared spectrum of a planetary nebula by Cami et al. (2010, *Science*, 329, 1180). Thus far, C₆₀ has been detected in a variety of circumstellar environments. In this talk, I will review recent detections of C₆₀ in different sources, and their implications on the circumstellar chemistry. I will also discuss some key questions, including whether these C₆₀ molecules are in solid or gas phase, what the excitation mechanism is, and how they are formed.