

The Synthesis of Organic and Inorganic Compounds in Asymptotic Giant Branch Stars

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Infrared and millimeter-wave observations have identified many inorganic and organic molecules in the stellar winds of asymptotic giant branch (AGB) stars. Also synthesized in the outflows are solid-state minerals such as amorphous silicates and refractory oxides. The production of acetylene in extreme carbon stars leads to the formation of benzene and other aromatic and aliphatic compounds in the post-AGB phase. The formation of mixed aromatic/aliphatic nanoparticles (MAONs) and their ejection into the interstellar medium may have enriched the primordial Solar System with complex organics.

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