

**Benzene formation in the inner regions of protoplanetary disks**

*Paul Woods (Paul.M.Woods at jpl.nasa.gov), JPL/Caltech  
Karen Willacy, JPL/Caltech*

Benzene (C<sub>6</sub>H<sub>6</sub>) formation in the inner 3 AU of a protoplanetary disk can be efficient, and results in high abundances of benzene throughout the midplane region. The formation mechanism is different to that found in interstellar clouds and in protoplanetary nebulae, and proceeds mainly through the reaction between allene (C<sub>3</sub>H<sub>4</sub>) and its ion. This has implications for PAH formation, although the lifetime of benzene in the solar protoplanetary nebula is too short for the benzene detected in Jupiter and Saturn to be primordial.