

Building stars, planets and the ingredients for life in space

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One of the most exciting developments in astronomy is the discovery of planets around stars other than our Sun. More than two thousand exo-planets have now been detected. But how do these planets form, and why are they so different from those in our own solar system? Which ingredients are available to build them? Thanks to powerful new telescopes such as the Atacama Large Millimeter Array (ALMA), astronomers are starting to address these age-old questions scientifically. Stars and planets are born in the extremely cold and tenuous clouds between the stars in the Milky Way. These clouds also contain water and a surprisingly rich variety of organic material. How and where was the water formed that is now in our oceans on Earth? Can these organic molecules end up on new planets and form the basis for pre-biotic material and eventually life?