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TITLE: On the abundance of planetary water and exo-life after Kepler

ABSTRACT BODY:

Abstract Body: Combining the recent results of the Kepler mission on the abundance of small planets within the Habitable Zone with a Drake-equation formalism I derive the space density of planets with surface water and biotic planets as a function of the yet unknown probabilities for the evolution of an Earthlike atmosphere and biosphere, respectively. I describe how these probabilities may be estimated by future spectral observations of exoplanet biomarkers such as atmospheric oxygen and water. I find that planets with surface liquid water may be expected within 10 light years and biotic planets within 10 -- 100 light years from Earth. ArXiv 1412.1302.

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PRESENTATION TYPE: Oral