

CSC/SETI Institute Colloquium Series



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**Wednesday, Feb. 13, 12:00 noon
The SETI Institute, Europa room**

Terrestrial Planet Formation and Habitability in Binary Star Systems

Most stars reside in binary/multiple star systems. Perturbations from a companion star can disrupt the formation and long-term stability of planets. More than 40 extrasolar planets have been detected in binary star systems, including 3 with stellar separations of only ~ 20 AU, well within the region spanned by planets in our Solar System. I will present results from a large suite of numerical simulations that explore the final stages of terrestrial planet formation in main sequence binary star systems. Planetary accretion is examined around one star of widely separated (> 5 AU) binary stars, and also around both members of close (< 0.5 AU) binary stars, in order to determine whether/where Earth-like planets can form. I will also review the dynamics of planetary habitability via the delivery of volatiles, and examine the likelihood of a habitable world with two Suns.



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