



San Mateo County Astronomical Society



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SMCAS General Meeting and Presentation on Saturday November 14, 2020

Dr. Lea Hirsch

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Here Come the Suns: The statistics and habitability of planets in binary star systems

Saturday, November 14, 2020 ,

SMCAS General meeting at 7:00 p.m. via Zoom videoconference.

Zoom login info will be sent via SMCASNews@groups.io and SMCAS@groups.io

Most planet searches focus on single stars, like the sun. But half of all sun-like stars actually live in binary or multiple stellar systems, whose planet-hosting capability may be quite different. Although planets in binary systems are common in pop culture (think Tatooine in Star Wars, or Gallifrey from Doctor Who), we know far less about them empirically than their counterparts in single star systems. In binary systems, planets can occupy either circum-stellar or circum-binary orbits, but many orbital configurations are thought to be unstable due to the effects of the binary companion. Binaries are also thought to affect the proto-planetary disks of their companions, affecting their ability to form planets at all.

In this talk, I will describe the current state of our theoretical and observational knowledge of the occurrence rates and statistics of planets in binary star systems. I'll also discuss efforts to simulate the habitability of planets in binaries, which may pass in and out of the so-called habitable zone in their trajectories around one or both of the stars in their system.

Dr Hirsch received her BA degree in Physics in 2012 at Cornell University (2012), and PhD in Astronomy in 2018 at the University of California Berkeley. Her PhD Dissertation was on 'Planets in Binary Systems: Studies with Precise Radial Velocities and High-Resolution Imaging'. She is author or co-author on 68 publications. Her research has taken her to nearby places such as Lick Observatory, as well as far into the wild blue yonder aboard the SOFIA flying observatory! She is an avid climber, hiker, sewer, and sci-fi fan in her spare time, as well as participating in public outreach such as the Bay Area Teen Science – Teen Career Conference, and Discovery Days at ATT Park.

