

2017-2018 Astrophysics Seminar Series

The Grand Planetary Ensemble

The Solar System furnishes our most familiar planetary architecture: many planets, orbiting nearly coplanar to one another. However, a typical system of planets in the Milky Way orbits a much smaller M dwarf star. Small stars present a very different blueprint in key ways, compared to the conditions that nourished evolution of life on Earth. My research program combines detailed individual planetary studies with ensemble studies of hundreds-to-thousands of exoplanets. Single planets provide crucial case studies, but understanding planet occurrence and formation requires a wider lens. I will describe ongoing efforts to understand the links between planet formation from disks, orbital dynamics of planets, and the content and observability of planetary atmospheres. Studies of exoplanets with the James Webb Space Telescope comprise the clear next step toward understanding the hospitability of the Milky Way to life. Our success hinges upon leveraging the many thousands of planet discoveries in hand to determine how to use this precious and limited resource.

Monday, April 9 at 3:30PM
725 Commonwealth Avenue
Room 502



Sarah Ballard
MIT Kavli Institute

