Resolution of Extrasolar Planetary Systems

GREG WILLE, Stony Brook University — Astronomy has always been a bountiful source of data with which scientists test the accuracy of their physical models. Each time a more powerful telescope or technique is developed, our understanding of the universe is fine tuned. The next generation of stellar imaging technology promises to reveal details never before possible, allowing the resolution of individual planets in orbit about remote stars. The following is a discussion of the methods and technology behind extrasolar planetary system imaging. In particular, extra-solar planet discovery by land and space based telescopes using the Transit method, Doppler Spectroscopy, and Astrometry such as the Large Binocular Telescope (LBT), and the Hubble Space Telescope. Additionally, resolution of these planetary systems using combinations of Coronagraphy and Interferometry to block and/or cancel bright glare from parent stars, and Adaptive Optics to correct imperfections in the wavefront of the light traveling from distant worlds. This technology will be utilized in future missions such as the James Webb Space Telescope and upgrades to the Gemini Observatory.

Prefer Oral Session

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