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Planets are Places: Characterization of Other Worlds in the 2020s and Beyond

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The past 25 years have revealed a diversity of exoplanets far beyond what was imagined from the limited sample in the Solar System. With new and upcoming observing facilities and a rapidly growing number of nearby planets, we are poised to bring this diversity into focus, with detailed follow-up characterization of the planets' atmospheres. In this talk, I will discuss three frontier questions in exoplanet atmosphere studies: (1) what can we learn about the planets' origins and evolution based on their present-day atmospheres? (2) how are the climate and clouds of exoplanets shaped by their extreme irradiation environments? and (3) under what circumstances do terrestrial exoplanets retain atmospheres? Finally, I will conclude with my outlook on the search for biosignatures in the atmospheres of potentially inhabited planets.

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VIRTUAL SEMINAR