Atmospheric characterization of extrasolar planets: from Earth to Moon

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In this talk I will first discuss the current status of characterization observations of extrasolar planet atmospheres, explaining the different techniques that are utilized. What information can and cannot be extracted from these distant worlds? Subsequently, I will particularly focus on techniques that are being used using ground-based telescopes. The future extremely large telescopes (ELTs) will be particularly geared towards studying the atmospheres of Earth-like planets, like that of Proxima b and those in the TRAPPIST family. Detection of potential biomarker gases like molecular oxygen could result in the first evidence of extraterrestrial life by the end of the next decade.

Short Summary

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