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Probing The Atmosphere Of Hot-jupiters With Transmission Spectroscopy

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More than 420 exoplanets, i.e. planets orbiting a star different from our Sun, are now known thanks to indirect detection techniques. In the first decade after their initial discovery in 1995, the task was to find more and more of these astronomical bodies. In recent years, attention has switched from finding planets to characterising them. Among the variety of exoplanets discovered so far, special attention is devoted to those planets which transit their parent star. Most recent observations, in fact, have proved being possible to use the wavelength dependence of the reduction in the brightness of the central star as the planet passes in front to identify key chemical components in the planet's atmosphere. Molecules such as water, methane, carbon monoxide and dioxide have already been detected in the atmospheres of hot, giant exoplanets. We will present here new observations of the atmosphere of four specific Hot-Jupiters, obtained with primary transit technique with Hubble and Spitzer Space Telescopes or from the ground. The data show similarities and differences among these three planets, we will discuss the implications of our results.