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Transmission spectroscopy analysis of water vapor for the exoplanets atmospheres using HST database.

At present, the study of extrasolar planets is one of the research topics that are of interest to study in astronomy, because such studies can answer questions about the existence of extraterrestrial life and the ability of human habitation on other planets which is one of the important factors of living ability of organisms similar to life on Earth is the presence of H2O on the ground, on the surface or in the atmosphere of the planet. Nowadays, astronomers have discovered water in the atmospheres of more than 10 exoplanets by the transmission spectroscopy technique. However, in the study of each exoplanet's atmosphere, we used different techniques and tools. Therefore, confirming the findings with techniques and other equipment is still essential. This project presents an analysis of the transmission spectroscopy of water vapour for the exoplanets' atmospheres using the Hubble Space Telescope database. We have brought images during the transit of the Neptune-mass exoplanet HAT-P-26b to create a light curve, then a light curve was obtained to analyse the planet's physical properties, including transmission spectrum of the exoplanet which can be used to analyse the composition of the water vapour for the exoplanets atmospheres. The results of this study provided that HAT-P-26 b's atmosphere has water vapour same with previous studies. This confirmed the presence of atmospheric H2O for HAT-P-26b.

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