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The first atmospheric characterisation of Wasp-15b with Gaussian Process modelling

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Wasp-15 b is an inflated hot Jupiter orbiting a bright host star. Its low density and consequent large atmospheric scale height make it an excellent candidate for atmospheric characterization using transmission spectroscopy. In fact, it has previously been observed with the FORS2 spectrograph on the VLT, but large systematics have so far prevented this data from being used. Here, we show that Gaussian Process modelling can remove systematic noise features with amplitudes up to that of the transit signal, allowing us to achieve a precision comparable to later data without the systematics. We present the first transmission spectrum of the atmosphere of Wasp-15 b and compare it to theoretical spectra to discuss the implications.