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The Przybylski's star is the first rapidly-pulsating Ap star (roAp) ever discovered. It also is the most chemically peculiar star in the sky having heavy elements abundances more than 4 dex higher than the solar value. The nature of such strong anomalies is still unexplained. Since its discovery as an roAp star, the Przybylski's star has been well-studied photometrically. However, due to its faintness, no spectroscopic investigations of pulsations of the Przybylski's star have been carried out.

We present the first results of precise radial velocity (RV) studies of the Przybylski's star (HD 101065, V=8.02) obtained using the recently commissioned HARPS spectrograph on the ESO's 3.6 m telescope taken during nights March 2 - 6, 2004. We have detected rapid multi-mode RV variations with periods around 12.1 min. The maximum integrated (using all spectral lines) RV amplitude is about 200 m s<sup>-1</sup>. The RV variations show modulation due to multiperiodicity. We will discuss preliminary results on the detected frequencies and their frequency spacing.

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