G P23 Spectroscopic multiperiodicity analysis of the pre-main sequence pulsator HD 104237

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We present the results of multisite observations spanning over two years of the pre-main-sequence Herbig Ae star HD 104237. The star was observed in high resolution spectroscopy (R $\geq$ 35000) for a total of 157.3 hours of effective exposure time, over 42 nights, corresponding to a data base of 1888 individual echelle spectra. We confirm that the HD 104237 system includes a spectroscopic binary, whose primary component HD 104237 A is pulsating. The resulting high quality radial velocity curve allow us to detect for a first time by spectroscopic means multiperiodic oscillations in a pre-main sequence star. Five different modes are detected with very high confidence, with frequencies ranging between 28.5 and 35.6 d^{-1}, typical of δ Scuti pulsations; additional 3 frequencies have been extracted from the data, but with a lower level of confidence. The pattern of frequencies indicates that at least some of the detected modes are non-radial. The precise orbit determination and the measurement of the double line spectroscopic binary observed around periastron enabled us to determine a mass ratio of 1.29$\pm$0.02 between the primary and the secondary; based on the primary mass of 2.3 $M\odot$ we conclude that the secondary HD 104237 B should lie right within the pre-main sequence instability strip. A search for pulsations in the radial velocity curve of the much weaker secondary component was not concluding at this stage.