

УДК 524.33

Unprecedentedly rapid rotational braking of the He-strong CP star HD 37776

Z. Mikulasek^{1,2}, J. Krticka¹, G.W. Henry³, J. Zverko⁴, J. Ziznovsky⁴, J. Janik¹, T. Graf²

¹Institute of Theoretical Physics and Astrophysics, Masaryk University, CZ-611 37, Brno, Czech Republic

²Observatory and Planetarium of J. Palisa, VSB – Technical University, Ostrava, Czech Republic

³Center of Excellence in Information Systems, Tennessee State University, Nashville, Tennessee, USA

⁴Astronomical Institute, Slovak Academy of Sciences, Tatranska Lomnica, Slovak Republic

We study long-term light variations in the well-known He-strong CP star HD 37776 = V901 Ori to search for changes in its photometric period. We analyze all published reliable photometric observations of this star, including 861 $uvby\beta$, BV , V and H_p measurements. These observations are supplemented by 506 new BV observations obtained during the last two observing seasons. All the observations are treated simultaneously in our analysis.

We confirm a previously suspected lengthening of the photometric period in HD 37776 and measure the rate of increase to be 52.4 ± 2.1 s per century (!). We interpret this ongoing period increase to be the slowing of the star's surface rotation, most likely due to momentum loss through a magnetically confined stellar wind.