



Long-term magnetic field stability of Vega

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(Submitted on 28 Jul 2011)

We present new spectropolarimetric observations of the normal A-type star Vega, obtained during the summer of 2010 with NARVAL at Telescope Bernard Lyot (Pic du Midi Observatory). This new time-series is constituted of 615 spectra collected over 6 different nights. We use the Least-Square-Deconvolution technique to compute, from each spectrum, a mean line profile with a signal-to-noise ratio close to 20,000. After averaging all 615 polarized observations, we detect a circularly polarized Zeeman signature consistent in shape and amplitude with the signatures previously reported from our observations of 2008 and 2009. The surface magnetic geometry of the star, reconstructed using the technique of Zeeman-Doppler Imaging, agrees with the maps obtained in 2008 and 2009, showing that most recognizable features of the photospheric field of Vega are only weakly distorted by large-scale surface flows (differential rotation or meridional circulation).

Comments: Proceedings of the conference "Stellar polarimetry: from birth to death", 2011 Jun 27-30, Madison

Subjects: **Solar and Stellar Astrophysics (astro-ph.SR)**

Cite as: [arXiv:1107.5639](#) [astro-ph.SR]

(or [arXiv:1107.5639v1](#) [astro-ph.SR] for this version)

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From: Pascal Petit [[view email](#)]

[v1] Thu, 28 Jul 2011 07:45:54 GMT (212kb,D)

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