Astronomy & Astrophysics

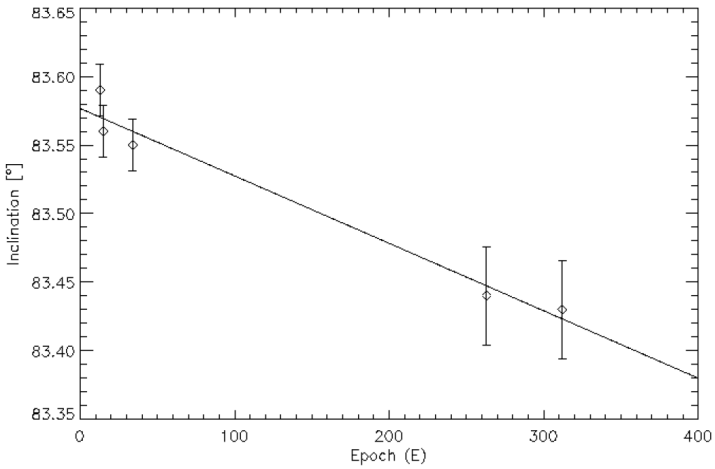
HIGHLIGHTS: this week in A&A

Volume 500-3 (June IV 2009)

In section 1. Letters to the Editor

"Detection of orbital parameter changes in the TrES-2 exoplanet?", by D. Mislis and J.H.M.M. Schmitt, A&A 500, p. L45

TrES-2 is a system formed by a solar-type star and a Jupiter-mass companion exoplanet that transits in front of its star every 2.47 days. Mislis and Schmitt present new measurements that indicate a change in the duration of the transits: from 110 minutes in 2006 (as measured by Holman et al.) to 106 minutes in 2008. The measurements were made with different instruments and need to be confirmed by further observations. They imply that for the first time, a variation in the orbital characteristics of a planet, probably because of an unseen companion, may have been detected.



In section 1. Letters to the Editor

"First evidence of a magnetic field on Vega. Towards a new class of magnetic A-type stars", by F. Lignières, P. Petit, T. Böhm, and M. Aurière, A&A 500, p. L41

This is the first detection of a magnetic field on the bright star Vega. Using the NARVAL spectropolarimeter of the Bernard-Lyot telescope on top of the Pic du Midi (France), Lignières et al. clearly observe the Zeeman effect in the spectrum of Vega, thereby showing that the star possesses a magnetic field, something unknown so far. See the A&A press release dedicated to this article.

In section 5. Galactic structure, stellar clusters, and populations

"The EROS2 search for microlensing events towards the spiral arms: the complete seven season results", by Y.R. Rahal, C. Afonso, J.-N. Albert, et al., and the EROS-2 collaboration, A&A 500, p. 1027

The EROS-2 project spanned 7 years and surveyed seven fields in the first and fourth quadrants from anticenter (from 305 - 27 deg within 2.5 degrees of the Galactic plane with fields of view ranging from 3 to 8 degree), finding 27 candidate microlensing events. The lensing optical depth derived from the samples is consistent with a Galactic model with a cuspy bar – a long bar is not favored by the statistical analysis – and some presence of the spiral arms, so several simple models are ruled out. A special feature of the paper is a section on possible improvements and extensions for future surveys and an especially extensive discussion of catalog optical depth and modeling.