Astronomy & Astrophysics

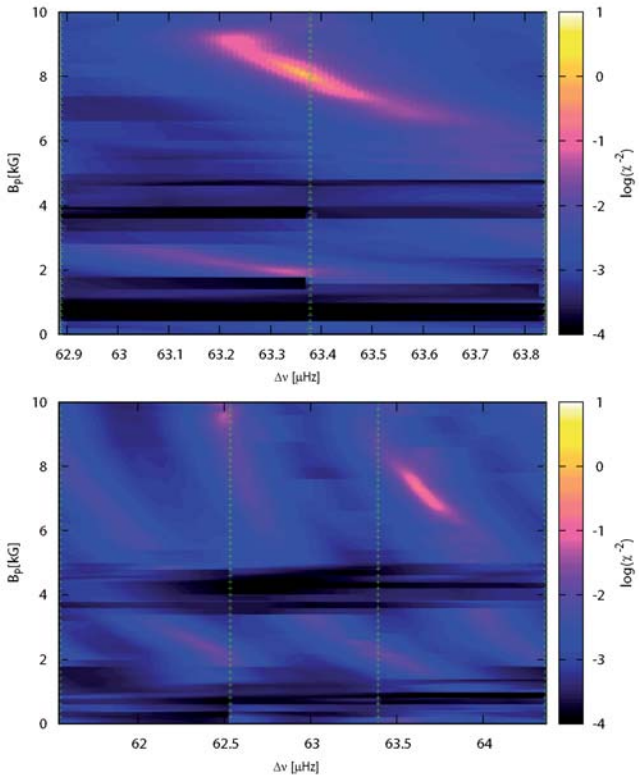
HIGHLIGHTS: this week in A&A

Volume 480-1 (March II 2008)

In section 7. Stellar structure and evolution

"MOST photometry and modeling of the rapidly oscillating (roAp) star gamma Equulei", by M. Gruberbauer, H. Saio, D. Huber, T. Kallinger, W.W. Weiss, D.B. Guenther, R. Kuschnig, J.M. Matthews, A.F.J. Moffat, S. Rucinski, D. Sasselov, and G.A.H. Walker, A&A 480, p. 223

Rapidly oscillating Ap (roAp) stars form a class of pulsating hot magnetic stars, with modes most likely excited by a Kappa mechanism in the hydrogen ionization zone and selected by the magnetic field. Their rich oscillation spectra have often been difficult to characterize well from observations interrupted by daylight and weather contingencies. The authors used the MOST satellite to obtain an almost uninterrupted 19-day photometry sequence of the gamma Equulei roAp star, thereby characterizing its pulsation spectrum in unprecedented detail. This rich spectrum in turn allows them to precisely constrain the mass, effective temperature, and magnetic field of gamma Equulei.



In section 1. Letters to the Editor

"CN in prestellar cores", by P. Hily-Blant, M. Walmsley, G. Pineau des Forets, and D. Flower, A&A 480, p. L5

Finding suitable density and velocity field tracers for prestellar cores is important in furthering our understanding of to what extent the CN is depleted in the high-density peaks and behaves like the N-containing tracers (NH3 and N2H+). This is the first C-containing molecules to show this behavior and it has a strong effect on the chemistry in these regions.

In section 6. Interstellar and circumstellar matter

"A search for diffuse bands in the circumstellar envelopes of post-AGB stars", by R. Luna, M.A. Satorre, A. García Hernández, O. Suárez, and P. García Lario, A&A 480, p. 133

Luna et al. (...) searched for diffuse bands in circumstellar envelopes of a selected sample of post-AGB stars and failed to find any evidence of them. They therefore conclude that the carriers are not present under the prevailing conditions in these objects. This robust result appears to be independent of the chemistry or the spectral type of the star and has important consequences for the nature and formation of the carriers of the diffuse bands.