



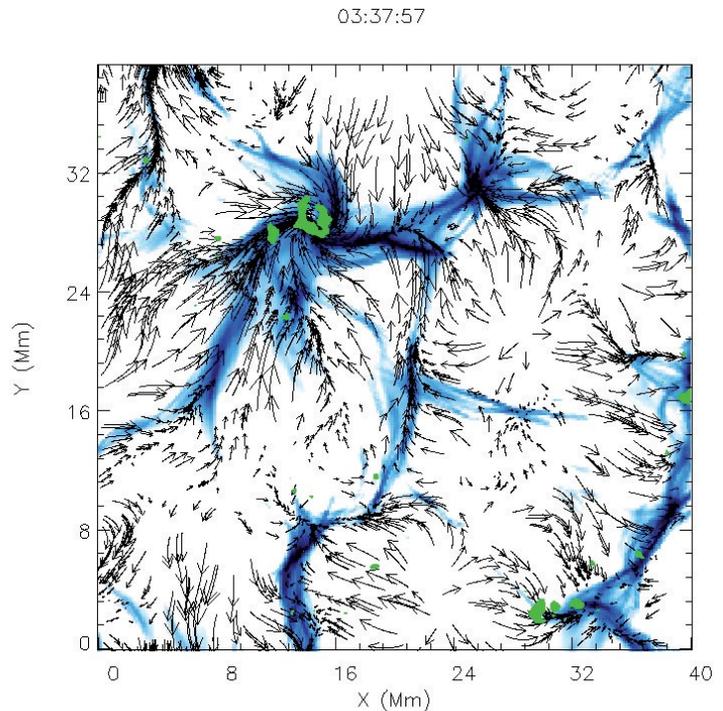
HIGHLIGHTS: this week in A&A

Volume 493-2 (January II 2009)

In section 1. Letters

"Evidence of photospheric vortex flows at supergranular junctions observed by FG/SOT (Hinode)", by R. Attie, D. E. Innes, and H. E. Potts, *A&A* 493, p. L13

Using new instrumentation, the authors could show the existence of vortex flows at supergranular junctions. While there have been some reports of whirls before, this study can relate the vortex motions to the photospheric magnetic field. This is pivotal for the magneto-convective processes on the surface of a star, such as the magnetic helicity or local dynamo operation.



In section 10. Planets and planetary systems

"The HARPS search for southern extra-solar planets.XIII. A planetary system with 3 Super-Earths (4.2, 6.9, and 9.2 M_{Earth})", by M. Mayor, S. Udry, C. Lovis, et al., *A&A* 493, p. 639

Mayor et al. discovered a very interesting planetary system orbiting a star that is 20% less massive than the Sun. The system consists of three planets with minimal masses of 4.2, 6.9, and 9.2 Earth masses. and periods of 4.3, 9.6, and 20.5 days. The planet with the shortest period is the lightest planet detected to-date that orbits a main sequence star. The detection required a very detailed monitoring of the star with the HARPS instrument operated by ESO, as illustrated by the 135 high-quality measurements provided in the paper.

In section 6. Interstellar and circumstellar matter

"Rotational spectrum of deuterated and 15N ethyl cyanides: CH₃CHDCN and CH₂DCH₂CN and of CH₃CH₂C¹⁵N", by L. Margulès, R. Motiyenko, K. Demyk, et al., *A&A* 493, p.565

One of the peculiarities of the so-called "hot cores" (apparently one of the first manifestations of high-mass protostars) is the high abundance of ethyl cyanide that is presently not satisfactorily explained by chemical models. A step towards a better understanding is to obtain spectra, both in the laboratory and from space, of the isotopically substituted species and this is what has been done by Margules et al. in the article highlighted in this issue. Such studies are also needed for identifying the "forest" of lines seen in objects like Orion-KL.