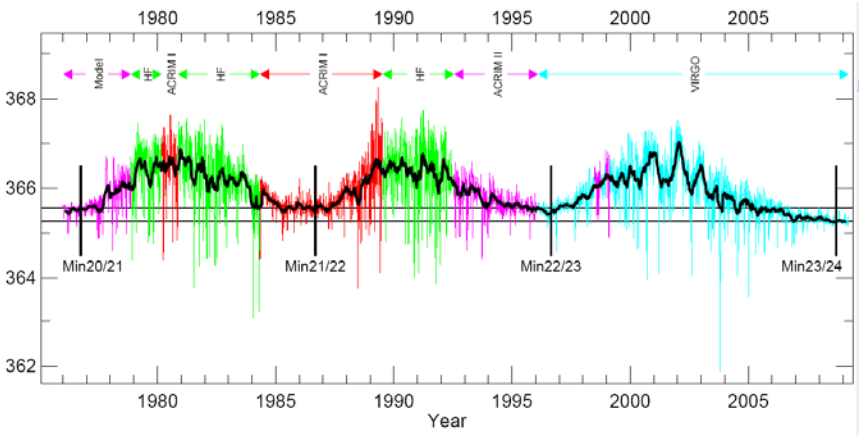
Astronomy & Astrophysics

HIGHLIGHTS: this week in A&A

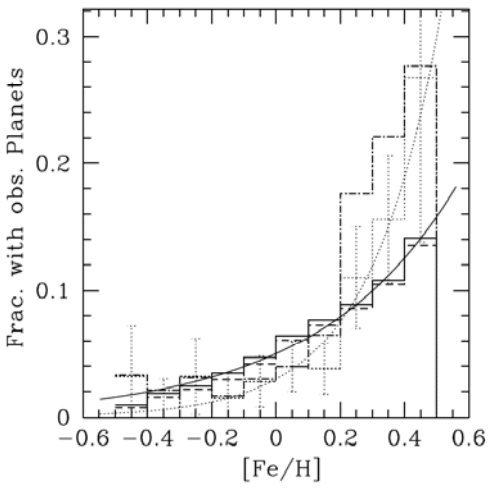
Volume 501-3 (July III 2009)



In section 1. Letters to the Editor. Sub-sect. 9. The Sun

"Observational evidence of a long-term trend in total solar irradiance", by C. Fröhlich, A&A 501, p. L27

This study shows that the Sun is not as bright in the current activity minimum than in the minima before (see figure), which would be the most relevant when considering the impact of solar radiation on the Earth. The calibration of these data is very difficult and is still being disputed.



In section 10. Planets and planetary systems

"Extrasolar planet population synthesis: I. Method, formation tracks, and mass-distance distribution; and II. Statistical comparison with observations, by C. Mordasini et al., A&A 501, p. 1139 & 1161

In this issue, Mordasini, Alibert, and Benz build upon previous work to present a detailed formation model of extrasolar planets that includes both the physics of the evolution of disks and that of migrating planets with their interactions. In an accompanying paper, Mordasini, Alibert, Benz, and Naef compare the model planets to those really observed and present theoretical evidence of a vast population of small planets, 10 times larger than the presently known population.

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

"The Geneva-Copenhagen survey of the solar neighbourhood.III. Improved distances, kinematics, and ages", by J. Holmberg, B. Nordström, and J. Andersen, A&A 501, p. 941

The authors are engaged in a long-term program that aims at determining ages, metallicities, and kinematical information for a large sample of nearby stars in an unbiased way. This information is fundamental to the study of stellar and galactic evolution, and uses the improved Hipparcos astrometry from van Leeuwen (2008).