

THE NEW SOLAR COMPOSITION AND THE SOLAR METALLICITY

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With Martin Asplund (Max Planck Institute for Astrophysics, Garching, Germany), Jacques Sauval (Observatoire Royal de Belgique, Brussels, Belgium) and Pat Scott (Stockholm University, Sweden) we have very recently re-determined the abundances of nearly all the available chemical elements in the solar photosphere, from Lithium to Thorium. The new data are compared with all the available data in a review to appear in Annual Review of Astronomy and Astrophysics.

This new complete and homogeneous analysis results from:

- a careful selection of spectral lines of all the indicators of the abundances present in the solar photospheric spectrum and discussion of the atomic and molecular data,
- an analysis of these lines based on a new 3D model of the solar outer layers taking non-LTE effects into account when possible.

We shall present these new results, compare them with other solar data as well as with recent results for the solar neighbourhood and discuss some of their most important implications, including the solar metallicity.

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