Geophysical Research Abstracts,
Vol. 10, EGU2008-A-02573, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-02573
EGU General Assembly 2008


# New data for the elemental fractionation in the slow solar wind.

**C. Giammanco** (1), P. Wurz (1) and R. Karrer (1)
(1) Physikalisches Institut, University of Bern.

In the solar wind an enrichment of the elements with low first ionization potential (FIP) is observed in comparison to their photospheric abundances. In general the enrichment is a function also of the wind speed. In particular we can divide the wind speed in two ranges: high and low wind speed. The general knowledge based in previous investigation is that for the low FIP elements there is an enrichment of about a factor four in the slow range, and of about factor two in the fast range. In this vision the FIP divide the elements in two groups in which the enrichment is constant. Many models have been created to explain this effect, but what about data?

The data of MTOF, a sensor of the CELIAS instrument flying on SoHO, represent a precious capital of information. We collected several years of solar wind observations, which is important to filter every possible fluctuation effect from the abundance measurement. Several years after the launch our experience in data analysis is increased, and until now MTOF is the only mass spectrometer able to measure low abundant elements as P and K. Then, through the analysis of MTOF data, we are able to measure the abundances for elements such as, Mg, S, P, K, and have additional elements to study elemental fractionation in the solar wins. It results that as postulated in the past by Geiss and Bochsler, the good parameter to organize the enrichment data is the first ionization time (FIT) and the enrichment is a continuous decreasing function of this parameter. The new data strongly favours the FIT as organizing parameter, rather than a step function of the FIP how was believed.