

Chemical abundances in 43 metal-poor stars

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Abstract. We have derived abundances of O, Na, Mg, Al, Si, Ca, Sc, Ti, V, Cr, Fe, Ni and Ba for 43 metal-poor field stars, mostly stars at the turn-off point and on the subgiant branch, in the interval $-3.0 < [\text{Fe}/\text{H}] < -0.4$. The analysis is differential relative to the Sun. Oxygen abundances, with consideration of NLTE effects, were derived from the OI 777.4 nm triplet lines. We find $[\text{O}/\text{Fe}]$ to gradually increase with decreasing $[\text{Fe}/\text{H}]$, though considerably slower than has earlier been obtained from OH lines in the UV. A scatter in $[\text{O}, \text{Mg}, \text{Ca}, \text{Ti}/\text{Fe}]$ at a given $[\text{Fe}/\text{H}]$ is found and we argue that this scatter is partly real. The deviations from the mean trends of abundance ratios vs $[\text{Fe}/\text{H}]$ are found to correlate in non-trivial ways for different abundances. Similar trends are found from results of accurate studies by other groups. This seems to give further evidence for the hypothesis that the stars once formed in different subsystems, with different star-formation rates.

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Keywords. Stars: abundances, Galaxy: halo, Galaxy: evolution.



Monique and François Spite talking with John Norris at the welcome reception, in the Paris Observatory historical building.



Monique Spite and Ruth Peterson at the welcome reception.