

# ELEMENT ABUNDANCES IN METAL-POOR STARS

G. ZHAO

*Beijing Astronomical Observatory, Chinese Academy of  
Sciences, Beijing 100080, China*

AND

Y.Q. CHEN

*Department of Astronomy, Beijing Normal University  
Beijing 100875, China*

We analyzed the observational material of high resolution spectra for a sample of 8 metal-poor stars. The data were collected with the Coude Echelle Spectrograph attached to the 2.16m telescope at Beijing Astronomical Observatory (Xinglong, China). The atmospheric parameters of these program stars have been determined. The effective temperature was derived from the color index or literatures. The surface gravity was determined by forcing the lines from two ionization stages of the same element to indicate consistent abundances. The micro-turbulent velocity was determined by forcing all the FeI lines with equivalent width between 0.1-0.8 nm to give the same abundance. We adopt a classical method of analysis, the abundance being deduced from each line by forcing the computed EW to agree with the observed one. The model atmosphere is interpolated in the grid of Magain, which was computed with a version of the Gustafsson's program. Overall abundance patterns of 19 important elements, such as light elements, iron peak and heavy elements, are deduced on the basis of the data reduction and line analysis. The light and iron peak elements are generally agree with the analysis of Zhao and Magain(1990). But aluminium abundance in HD 19445 is very low,  $[Al/Fe] = -1.52$  which is 0.77 dex lower than that of Magain (1989). The heavy elements behavior agree with most investigations.

## References

- Magain, P. (1989) *A&A*, **209**, 211  
Zhao, G., Magain, P. (1990) *A&A*, **238**, 242