

# The 13th Torino Workshop on AGB stars & the 3rd Perugia Workshop on Nuclear Astrophysics



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## The complex behaviour of the s-process element abundances at young ages

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Open clusters appear as simple objects in many aspects, with a high degree of homogeneity in their (initial) chemical composition, and the typical solar-scaled abundance pattern for the majority of the chemical species. The striking singularity is represented by heavy elements produced from the slow neutron-capture process reactions. In particular, young open clusters (ages less than a few hundred Myr) exhibit extreme and atypical enhancement in their [Be/Fe] ratios ( $\sim 0.6$ - $0.7$  dex) which is not followed by the other s-process elements, as lanthanum or cerium. This is labelled as the Barium Puzzle. The definite explanation for such a peculiar trend is still wanting (and missing), as many solutions have been envisaged. In this talk, I will review the status of this field and present the new results obtained by our group on young open clusters and the pre-main sequence star RZ Piscium.

### Session

Stellar observations (photometry and spectrometry)

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