

# Correlating the Induan-Olenekian Boundary GSSP

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## INTRODUCTION

A potential way to consider correlation of a base-Olenekian GSSP is to first consider the sequence stratigraphy in various sections. Assuming 1) the base-Olenekian GSSP should be located above a sequence boundary (SB) and at or above the equivalent correlative conformity or maximum regressive surface (MRS), and 2) that these surfaces can be reliably identified, then we have a reasonable way to compare the ranges of various taxa.

## WESTERN AND ARCTIC CANADA

Baud et al. (2008) showed a co-planar SB and flooding surface in the Blind Fiord Formation with *Novispathodus waageni* above and *Euflemingites romunderi* just a little higher. The exact same occurrences are found above a SB at Opal Creek in SW Alberta. In west-central Alberta there is a SB within a coquina unit and a major flooding surface a little higher that includes *Novispathodus waageni*. In east-central British Columbia Orchard and Zonneveld (2009) showed a section which appears to be conformable with a turbidite unit (Meosin Mountain Mbr) a little higher. Immediately overlying this MRS the conodonts *Nv. waageni* and *Nv. latiformis* co-occur with *Discretella discreta* and *Euflemingites* is a little higher.

## OTHER SECTIONS

The sequence stratigraphically significant surface discussed above is interpreted by me at the Mud (bed 13A), Chaohu (bed 25-18), and Nammal Gorge (near top of Ceratite Sandstone) sections that represent potential GSSPs. Using this surface as a datum suggests that above the surface some *Nv. waageni* morphotypes including *Nv. latiformis* occur with *Flemingites nanus* at Mud (Krystyn et al., 2007a, b). Similar taxa occur above this surface at Chaohu including *Eurygnathodus costatus* (Tong et al., 2004), but *Flemingites* and *Euflemingites* are just below. The latter may be a good secondary marker in tethyan faunas. The top of the Ceratite Sandstone was the original top of the Induan. According to Romano et al. (2013), *Fleminites nanus*, *F. bhargavai*, and *Nv. waageni* occur below the surface and *Euflemingites*, *Nv. waageni* and *Nv. spitiensis* occur above.

## CONCLUSION

There are some issues with my seemingly simple initial correlation of a SB/MRS surface in terms of biotic occurrences on either side, but overall there is a close correspondence that sug-

gests correlation is likely, especially as new details emerge from the workshop. In addition, other physico-chemical markers need to be considered before a GSSP can be determined.

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