

**The Gosau Group of Austria – reference sections for the
Santonian-Campanian boundary in the NW Tethys
and the *Broinsonia parca parca* bioevent**

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Santonian-Campanian sections of the Gosau Group at Gosau (Upper Austria) and Abtenau (Salzburg) record various stratigraphic signals around the boundary interval. Ammonite, inoceramid, echinoid, plankton and isotope data from the upper Santonian Schattau section are complemented by the Postalm section where the boundary could be defined by the base of the reversed magneto-Chron C33r above the Long Cretaceous Normal Chron C34n. A composite section indicates the following sequence of regional marker events in the late Santonian to lowermost Campanian interval from base to top:

- consistent occurrence/acme of *Calculites obscurus* (base of nannofossil zone CC17)
- FO of curved *Lucianorhabdus cayeuxii* ssp. B (base of subzone CC17b)
- late Santonian ammonites and inoceramids, e.g. *Boehmoceras arculus*, *Cordiceramus muelleri muelleri*
- (local) FO of *Globotruncanita elevata* and *Gta. stuartiformis*
- occurrence of *Marsupites laevigatus* in a *Micraster* bed
- FO of *Arkhangelskiella* (cf.) *cymbiformis* (base of UC13)
- highest local ammonite occurrence (*Texasia dentatocarinata*)
- Onset of positive carbon isotope excursion (probably the SCBE – Santonian-Campanian boundary event)
- FO of *Stensioina pommerana*
- Peak of negative oxygen isotope excursion, onset of positive magnetic susceptibility excursion
- FO of *Calculites obscurus* W (widely separated sutures; local event?)
- magnetostratigraphic reversal - base of the Campanian as defined by base of reversed Chron C33r (strontium isotope value of 0.707534)
- LO of *Muricohedbergella flandrini*
- LO of *Dicarinella asymetrica* (top of D. asymetrica Zone, base of *Globotruncanita elevata* Zone)
- FO of *Broinsonia parca parca* sensu stricto (base of CC18a and UC14a)
- rare FO of *Ceratolithoides* sp.
- FO of *Broinsonia parca constricta* (base of CC18b and UC14b)
- LO of *Marthasterites furcatus* (base of CC19)

Five transitional forms of the *Broinsonia parca*-group can be distinguished according to two morphological parameter, i.e. the length of the coccolith and the b/a ratio (ratio between width of the central area b and rim/shield(s) width): (1) *Broinsonia enormis* ssp.1 (length < 9 µm, b/a ratio ≥ 2); (2) *Broinsonia enormis* ssp.2 (length < 9 µm, b/a ratio < 2); (3) *Broinsonia parca expansa* (length > 9–10 µm, b/a ratio ≥ 2); (4) *Broinsonia parca parca* (length > 9–10 µm, b/a ratio < 2 - ≥ 1 = *Broinsonia parca parca* sensu stricto); *Broinsonia parca constricta* (length > 9–10 µm, b/a ratio < 1).