

From the Cretaceous/Paleogene boundary to the Paleocene/Eocene-boundary in the Gosau Group of Gams (Austria)

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In the area of Gams, Paleogene deposits of the Gosau Group crop out in the Gamsbach creek and several tributary creeks. The ca. 400 m thick sedimentary succession was deposited in a middle to lower bathyal environment and comprises the Paleocene and the lowermost Eocene (calcareous nannoplankton zones NP1 to NP12). Both the Cretaceous/Paleogene boundary and the Paleocene/Eocene boundary have been investigated in this area (Egger et al., 2009).

The Cretaceous/Paleogene boundary section includes the upper part of the Cretaceous *Nephrolithus frequens* Zone (CC26) and the lower part of the Paleocene *Markalius inversus* Zone (NP1). The boundary is characterized by (1) an enrichment of the contents of the siderophile elements Ir, Co, Ni, and Cr compared to background and continental crustal values, (2) a sudden decrease of carbon and oxygen isotopic ratios, (3) a sudden decrease of carbonate content, and (4) an acme of the calcareous dinoflagellate cyst *Operculodina operculata*, which is succeeded by an acme of the small coccolith species *Neobiscutum parvulum*.

The Danian is characterized by a predominance of red and grey pelagic to hemipelagic marlstones and marly limestones. Thin sandy turbidite beds are present in variable amounts, but sandstone to shale ratios stay below 1:5. Turbidite beds are typically calcarenitic, with <10% siliciclastic material.

The Selandian to lowermost Ypresian is characterized by siliciclastic turbidites with sandstone to shale ratios between 1:1 and 5:1. The turbidites display only weak cementation due to very low carbonate content. Centimetre thick turbiditic shales are dark grey and largely carbonate free. The Paleocene/Eocene-boundary interval has been recognized by the lower occurrence of the genus *Rhomboaster*. It occurs in a siliciclastic, high-frequency turbidite succession.

The largely carbonate-free turbiditic succession of the Paleocene/Eocene-transition grades into a succession dominated again by carbonate turbidites (NP10 to NP11). Within the lower part of this succession (sub-zone NP10a) four 3 to 9 cm thick montmorillonite layers were discovered, which are interpreted as volcanic ashes. Similar layers have been found in other Austrian sections and were correlated with the positive ash-series of the Fur Formation in northern Denmark.

Egger, H., Koeberl, C., Spötl, C. & Wagreich, M. (2009): Paleogene deep-water deposits at Gams (Austria): From the K/Pg-boundary to the P/E-boundary in a Tethyan setting. In: STRONG, P., CROUCH, E. & HOLLIS, C. (Eds.): Climatic and Biotic Events of the Paleogene - Conference Programme and Abstracts. GNS Science Miscellaneous Series, 16, p.105, Wellington.