The age of the Sella platform (Triassic, Dolomites): new insights from palynological studies

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The Sella massif is one of the most prominent carbonate platforms in the Dolomites, Southern Alps. It's atoll-like shape with steep clinoforms (> 30°) on all sides and spectacular interfingering with basinal sediments made it to a field trip eldorado for both academics and people from the oil industry. The stratigraphic position of the Sella platform, however, is not satisfactorily settled. Ammonoids and conodonts from toe-of-slope deposits at the Gröden-Gardena Pass, the Sella Pass and the Campolongo Pass all indicate an Upper Ladinian age (*regoledanus* zone). Consequently, the same age has been inferred for the entire Sella platform. Here we present a pollen study from the youngest, so far undated part of the basinal succession (St. Cassian Formation) as well as from the overlying, so-called "Raibl beds". The section of the St. Cassian Fm. is located on the eastern flank of the Sella platform (Crep de Munt, near Campolongo Pass), is tectonically downfaulted and thus, in contrast to other basin sediments around the Sella, not removed by erosion. The exposed section is about 25 m thick and consists predominately of peloidal packstones to ooid grainstones, fenestral wackestones to microbial boundstones, as well as decimetre to metre-thick black marlstones. The succession is interpreted as shallow subtidal facies und passes upsection gradually in decimetre-thick stacked dolomite beds. Samples from the St. Cassian Fm. showed rich pollen fauna containing among others the taxa *Concentricisporites* cf. *bianulatus* and *Gordonispora fossulata.* No conodonts have been found. The pollen findings clearly indicate a Lower Carnian age. This puts the stratigraphic position of the Sella a new light. First, the Late Ladinian age reported so far from the lower interfingering zones around the Sella massif matches well with biostratigraphic data from the Schlern-Seiser Alm area. But in contrast to the Schlern platform, whose growth terminated in the Late Ladinian, the growth of the Sella platform continued into the Early Carnian. Based on our new data the sedimentary evolution of the upper part of the Sella platform may be directly comparable with the well-dated platform pair "Richthofen reef"–Settsass, the Lagazuoi or the Dürrenstein/Picco di Vallandro in the east-

ern Dolomites. In addition, the growth rates of the Sella platform as well as the displacement rates of the clinoforms have to be recalculated based on the new, "prolonged" age. Platform growth came to a standstill during the Early Carnian (Julian 2) and a mixed siliciclastic-carbonate succession ("Raibl beds") covered the platform and former basins. Pollen from the uppermost "Raibl beds" at Piccolo Pordoi, just a few metres below the Hauptdolomit – Dolomia Principale contained the taxa *Vallasporites ignacii*, *Duplicispo - rites verrucatus*, *Pseudoenzonalasporites summus*, *Patinasporites densus*, *P*. cf. *densus*, *Ovalipollis pseudoalatus*, *Camarozonosporites* cf. *rudis* and *Hevizipollenites* sp. This association indicates a Julian 2 (*austriacum* zone) to lowermost Tuvalian age and thus correlates with the Heiligkreuz Formation in the eastern Dolomites. Thus a major stratigraphic gap, which probably occupies most of the Tuvalian, has to be assumed between the topmost "Raibl beds" at Pordoi and the overlying Hauptdolomit.