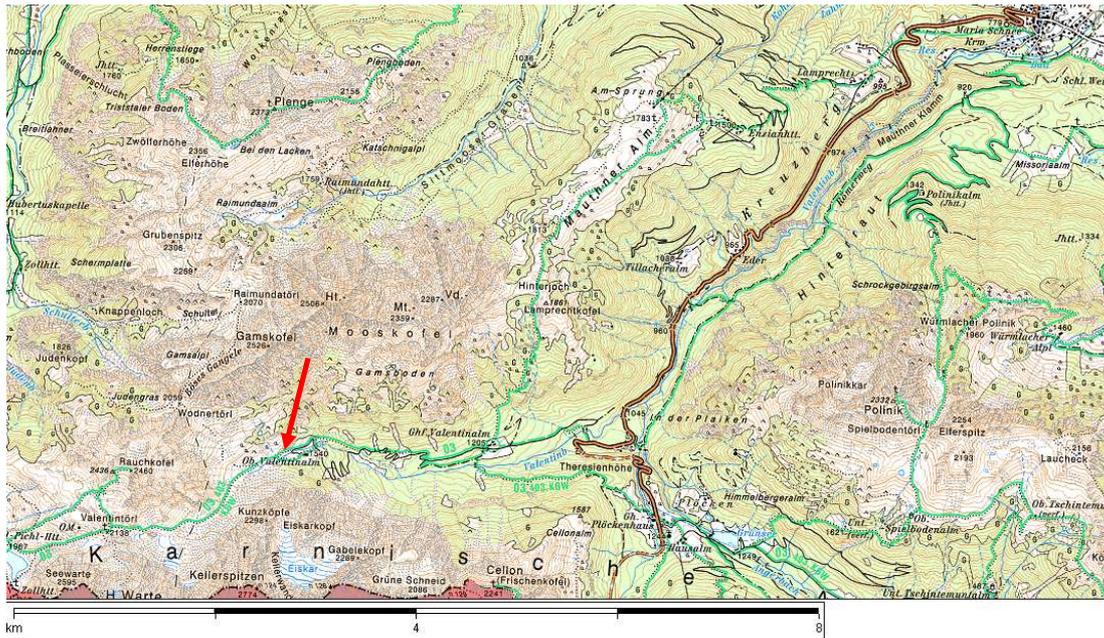


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## Geotope 77: Upper Valentinalm



Red marking: location of the geotope; green tracks: hiking trails; ©BEV: Federal Office for Calibration and Measurement, 2005.

### Access:

The road to Lower Valentinalm branches off near the World War I cemetery half-way between Mauthen and Plöckenpaß. From the lower alm to the upper the marked trail has to be followed. The private forest road is closed for the public.

## Description of the Geotope



View from Hinterjoch to Cellon, Grüne Schneid, Kolinkofel and Kellerwand.

The Upper Valentinalm can be reached within one hour walk from Lower Valentinalm along the long-distance trail 403. The base of the outstanding Kellerwand Cliff is only a few meters to the south. To the north mountain Rauchkofel (2,460 m) is located. This mountain seems to be connected via the Wodener Törl with the Gamskofel-Mooskofel massif (2,506 m). East of the Valentin Creek the prominent mountain Polinik is situated which across the Angerbach Valley is followed to the south by the mountain chain of Kleiner Pal, Freikofel and Großer Pal (1,814 m). The latter are the eastern continuations of mountain Cellon (2,241 m) which is characterized at its northern flank by vertically dipping limestone beds.

All above mentioned mountain massifs are composed of rocks of Paleozoic age. During the Silurian and Devonian Periods (440 – 360 m.y. BP) predominantly limestones and dolomites were deposited, during the Ordovician (80 to 440 m.y. BP) and Carboniferous (360 to 290 m.y. BP), however, clastic sedimentation prevailed. The different lithologies determine the kind of vegetation: limestones and dolomites are often without a soil cover, shales and sandstones are characterized by flower-rich meadows.

The recent geography of rocks and facies does not correspond to the original distribution of the depositional areas in the sea during

the Paleozoic. Only the southernmost limestone zone of mountains Piz Timau, Großer Pal, Freikofel, Kleiner Pal, Cellon, Kellerwand, Hohe Warte, Seewarte, Seekopf and Biegengebirge in the west can be regarded as a continuous zone in which the original settings are more or less preserved. In particular, the transition from a shelf area to the deeper sea is a textbook-like example which can be studied here. During the Silurian and Devonian an open sea environment characterized the area east of the Plöckenpass, towards west, however, shallow-water deposits including reefs and lagoons developed. For example, the major part of the Biegengebirge is composed of lagoonal deposits.

Apparently, mountain Rauchkofel in the centre does not fit into this scheme. This applies also to mountains Gamskofel, Mooskofel and Polinik which are mainly composed of dolomitic rocks. For example, at the peak of mountain Polinik finely laminated rhythmically deposited algal-bearing rocks together with well-bedded dolomites occur which seem to have no relation with the surrounding strata, in particular with those in the Kellerwand Cliff. Instead, they resemble the rocks in the Biegengebirge to the west. How can this situation be explained?

During the Variscan Orogeny in the Carboniferous (360 to 290 m.y. BP) the Carnic Alps were intensely deformed and compressed to a pile of nappes. The original side by side was lost and rocks from more distant settings were moved into closer “unnatural” proximity with others. Later on, during the Alpidic Orogeny the whole pile of rocks was again affected by tectonic deformation. In addition to the south-north shortening, however, also lateral displacements along the Periadriatic Fault Zone occurred, which affected the Carnic and Karavanke Alps another time. During these movements some crustal wedges were considerably displaced in eastern direction. The Gamskofel, Mooskofel and Polinik mountains may have shared this fate.



Aerial view of Eiskar, Kolinkofel, Kellerwand and Rauchkofel mountains.