

Lithostratigraphically higher rank unit: -
Lithostratigraphic subdivision: -
Underlying unit(s): Different units of the Kaser Group.
Overlying unit(s): Rosental Formation.
Lateral unit(s): -
Geographic distribution: In the area of the Nockalm road; ÖK50-UTM, map sheet 3106 Radenthein (ÖK50-BMN, map sheet 183 Radenthein).
Remarks: -
Complementary references: NEUBAUER & PISTOTNIK (1984), LOESCHKE (1989b), SCHÖNLAUB & HEINISCH (1993).

Rosental-Formation / Rosental Formation

BERNHARD HUBMANN

Validity: Invalid; name of the formation and position of the unit published within a lithostratigraphic frame in SCHÖNLAUB & HEINISCH (1993: "Rosental Fm.").
Type area: ÖK50-UTM, map sheet 3106 Radenthein (ÖK50-BMN, map sheet 183 Radenthein).
Type section: No type section published; type region Rosental (N 46°54'25" / E 13°48'48"), a valley in the Nockalm area. NEUBAUER & PISTOTNIK (1984) published a section (location point 1 in Fig. 1 and section 1 "Nockstrasse" in Fig. 2).
Reference section(s): -
Derivation of name: After Rosental in Carinthia, a valley north of Bad Kleinkirchheim.
Synonyms: Partly: "Vulkanogene Basisfolgen" of NEUBAUER & PISTOTNIK (1984).
Lithology: Phyllites with various ferruginous dolomites and cherty intercalations that are overlain by tuffites and greenschists.
Fossils: Conodonts.
Origin, facies: Probably shallow marine environment.
Chronostratigraphic age: Upper Ordovician.
Biostratigraphy: -
Thickness: ?
Lithostratigraphically higher rank unit: -
Lithostratigraphic subdivision: -
Underlying unit(s): Units of the Nock Group.
Overlying unit(s): ?Eisenhut Group.
Lateral unit(s): -
Geographic distribution: Along the Nockalm road in the area of the Rosentaler Alm up to an altitude of 1,800 m; ÖK50-UTM, map sheet 3106 Radenthein (ÖK50-BMN, map sheet 183 Radenthein).
Remarks: -
Complementary references: -

Eisenhut-Gruppe / Eisenhut Group

BERNHARD HUBMANN

Validity: Invalid; first nomination by PETERS (1855: "Eisenhut-Schieferserie"), comprehensive description by KERNER & LOESCHKE (1991: "Eisenhutschiefer").

Type area: ÖK50-UTM, map sheet 3106 Radenthein (ÖK50-BMN, map sheet 184 Ebene Reichenau).

Type section: No type section defined; typical rocks are exposed at Eisenhut mountain (N 46°57'08" / E 13°55'42") (see sections in KERNER (1990) and KERNER & LOESCHKE (1991)).

Reference section(s): -

Derivation of name: After Eisenhut (2,441 m), a mountain near Turracher Höhe, approximately 65 km northwest of Klagenfurt.

Synonyms: Eisenhut-Schieferserie (PETERS, 1855); Eisenhutschiefer (SCHWINNER, 1932, 1938); Eisenhut-Schiefer (IIIb) (SCHWINNER, 1936); Eisenhutschiefer (HERITSCH, 1943; SCHÖNLAUB, 1979; KERNER & LOESCHKE, 1991); Eisenhutschiefer der Turracher Höhe (SCHÖNLAUB, 1979); "Eisenhutschiefer partim" (FLÜGEL & NEUBAUER, 1984); Eisenhutschieferserie (MULFINGER, 1988); volcanoclastic Eisenhut Group (SCHÖNLAUB & HEINISCH, 1993).

Lithology: Weakly metamorphosed lila-colored ash tuffs, dark-green hyaloclastites and green tuffites, dolomite lenses.

Fossils: Conodonts within the dolomite lenses.

Origin, facies: According to KERNER & LOESCHKE (1991) the formation of most of the rocks of the Eisenhut Group is the result of intra-plate volcanic activity which occurred in a tensional tectonic regime on thinned continental crust during the Silurian. Phreatomagmatic processes were responsible for the formation of the tuffs and hyaloclastites.

Chronostratigraphic age: Lower Silurian–(presumably) Lower Devonian.

Biostratigraphy: -

Thickness: About 200 m.

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

Underlying unit(s): Rosental Formation.

Overlying unit(s): ?

Lateral unit(s): Murau Group (?).

Geographic distribution: Gurktal mountains; ÖK50-BMN, map sheet 184 Ebene Reichenau.

Remarks: -

Complementary references: -

„Klastische Gruppe“ / "Clastic Group"

BERNHARD HUBMANN

Validity: Invalid; comprehensive description of the unit by MULFINGER (1988: "Klastische Serie").

Type area: ÖK50-UTM, map sheet 3106 Radenthein (ÖK50-BMN, map sheet 184 Ebene Reichenau).

Type section: No type section defined; MULFINGER (1988) mentioned typical occurrences at Rapitzsattel (2,088 m; N 46°55'56" / E 13°56'35"), Torer and Spielriegel to Schafferalm (1,365 m; N 46°58'10" / E 14°00'14").

Reference section(s): -

Derivation of name: Collective name for a unit built up by various clastic rocks.

Synonyms: Klastische Serie (MULFINGER, 1988).

Lithology: At the base coarse grained massive sandstones frequently alternating with argillaceous shales and phyllites. Sandstones are mostly developed as light colored arkoses, feldspar-rich fine-grained grey sandstones and light-colored quartz-sandstones.

Fossils: -

Origin, facies: Probably sediments of a marginal marine basin.

Chronostratigraphic age: ?Middle–Upper Ordovician.

Biostratigraphy: -

Thickness: Strong variations; up to 1,000 m.

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

Underlying unit(s): Magdalensberg Group, Kaser Group.

Overlying unit(s): Murau Group, ?Eisenhut Group.

Lateral unit(s): ?Nock Group.

Geographic distribution: ÖK50-UTM, map sheet 3106 Radenthein (ÖK50-BMN, map sheets 183 Radenthein, 184 Ebene Reichenau).

Remarks: -

Complementary references: SCHÖNLAUB & HEINISCH (1993).

Murau-Gruppe / Murau Group

THOMAS J. SUTTNER

Validity: Invalid; the name Murau-Gruppe was introduced by NEUBAUER (1979: p. 484).

Type area: ÖK50-UTM, map sheets 3230 Tamsweg, 4225 Murau (ÖK50-BMN, map sheets 158 Stadl, 159 Murau).

Type section: -

Reference section(s): Area between Bodendorfer Ochsenberg and Rosenkranzhube south of St. Lorenzen; the best outcropping section is found close to the Lorenz creek north of Konrad farmstead in the area of Georgenberg (N 47°05'38" / E 14°05'31"); Birkleitenkogel (NEUBAUER, 1979: Fig. 10, p. 484).

Derivation of name: After the town Murau.

Synonyms: Phyllitische Glimmerschiefer (THURNER, 1935); Phyllonite [partim] (THURNER, 1935).

Lithology: Fine grained micaceous shale, graphitic micaceous shale containing sometimes garnet, phyllites, siliceous shale, phyllites with carbonate lenses, quartzite beds, siliceous shale with lydites intercalated, grey bedded dolomite, grey laminated micaceous shale.

Fossils: Conodonts.

Origin, facies: The depositional environment suggests an euxinic basin with intercalations of calciturbidites (NEUBAUER, 1984: p. 57).

Chronostratigraphic age: Llandovery–Ludlow.

Biostratigraphy: *sagitta* and *crispa* conodont zones.

Thickness: > 200 m.

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

Underlying unit(s): "Clastic Group" (conformable contact).

Overlying unit(s): Murau Limestone (Greibenzen Limestone) (conformable contact).

Lateral unit(s): Eisenhut Group; "Gurktal Quartzphyllite Complex".

Geographic distribution: Styria, surrounding of Murau between Bodendorfer Ochsenberg and Lorenzer Bach (NEUBAUER, 1979: Figs. 1, 10, p. 484).

Remarks: NEUBAUER (1979) distinguished 3 groups within the Lower Paleozoic sequence of the Gurktal Nappe: the Auen Group, Pranker Group and Murau Group. The Murau Group consists of several epimetamorphic units which are not discriminated into distinctive formations until now (compare Text-Fig. 3).

Complementary references: THURNER (1958), SCHÖNLAUB (1979, 1992).

Murau-Kalk (Greibenzenkalk) / Murau Limestone (Greibenzen Limestone)

BERNHARD HUBMANN

Validity: Invalid; early descriptions by ROLLE (1854: "Kalklager der Grebenzen") and GEYER (1891a: "Kalke [der Murauer Mulde]"); THURNER (1933) considered the Grebenzenkalk as a facial variety of the "Murauer Kalk".

Type area: ÖK50-UTM, map sheet 4225 Murau (ÖK50-BMN, map sheet 159 Murau).

Type section: No type section defined; THURNER (1933) mentioned typical "Murauer Kalke" at Blasenkogel (1,602 m; N 47°06'44" / E 14°18'26"); METZ (1963) specified the Grebenzen (1,870 m; N 47°02'21" / E 14°19'49"), a mountain north of Friesach (Carinthia) as "locus typicus" for the Grebenzen Limestone.

Reference section(s): -

Remarks: The synonymy of Murau Limestone and Grebenzen Limestone respectively their relationship is a matter of controversy in the literature.

Derivation of name: After the town Murau respectively the mountain Grebenzen (1,900 m).

Synonyms: Grebenzenkalk (THURNER, 1930); Murauer Kalke (THURNER, 1930); Murauer-Kalke und Dolomite (THURNER, 1952); Grebenzer-Kalk (THURNER, 1952); Pleschaitz-Kalk (THURNER, 1952); Grebenzen-Pleschaitz-kalk (SCHÖNLAUB, 1979); Bänderkalke (Typ Murau) (SCHÖNLAUB, 1979); Murau-Kalk (NEUBAUER, 1980b); Kalke der Grebenzen und des Pleschaitz (THURNER & VAN HUSEN, 1980); Murauer Kalke (THURNER & VAN HUSEN, 1980); Murauer Bänderkalke (THURNER & VAN HUSEN, 1980); Murauer Kalk (FLÜGEL & NEUBAUER, 1984); Grebenzenkalk (FLÜGEL & NEUBAUER, 1984).

Lithology: Recrystallized banded limestones and marbles. Locally lower parts of the succession are dominated by grey laminated marbles which contain fragments of crinoids whereas upper parts are mainly built up by whitish to pink colored marbles which are in some part cloudy dolomitized.

Fossils: Crinoids and rare conodonts.

Origin, facies: Open marine environment (?).

Chronostratigraphic age: Pridoli–Emsian.

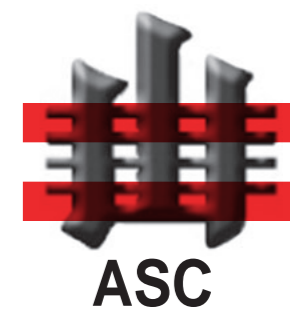
Biostratigraphy: -

Thickness: 200–800 m.

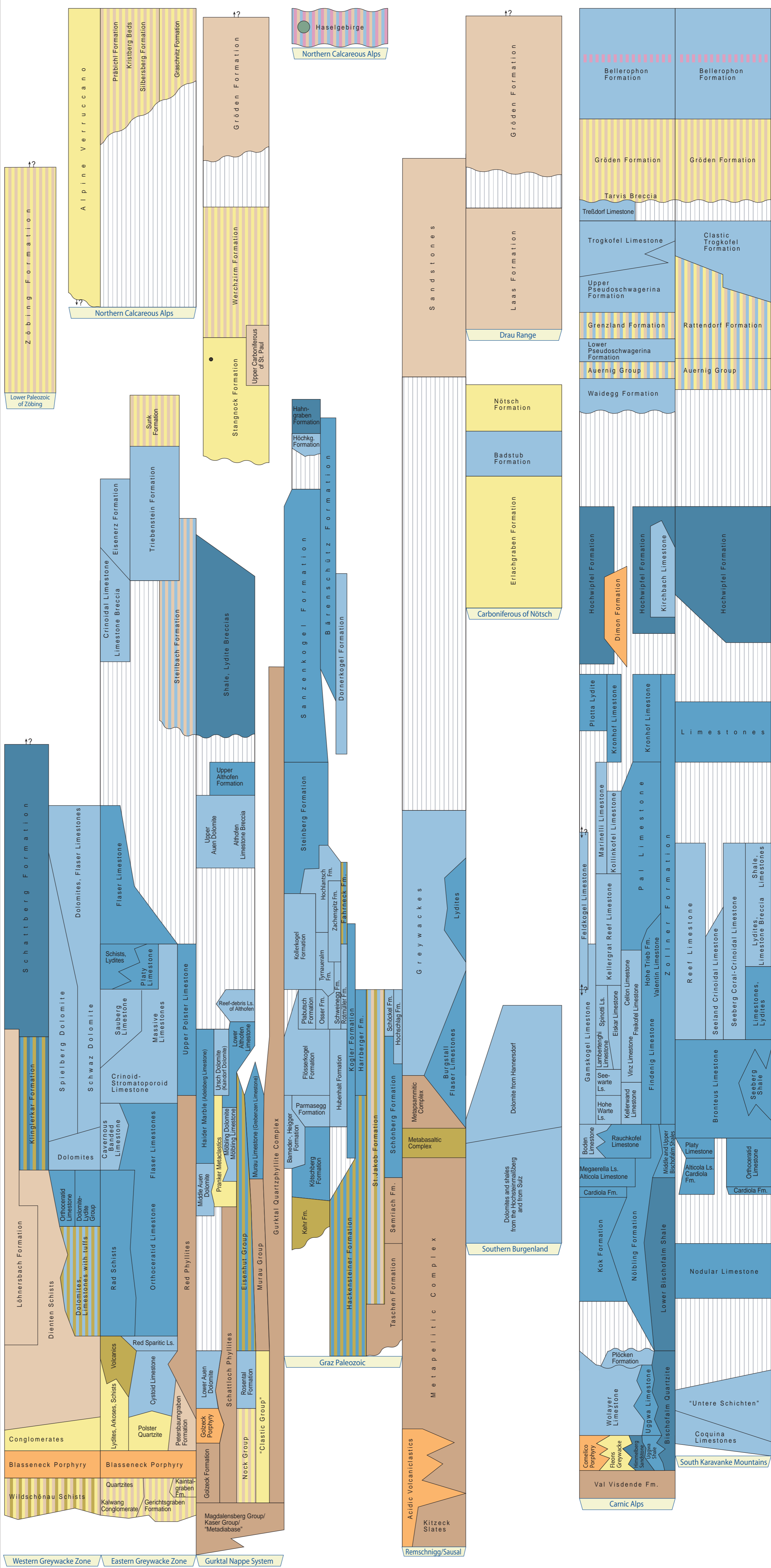
Austrian Stratigraphic Chart 2004 - Paleozoic

(sedimentary successions)

Austrian Stratigraphic Commission



ERA	SYSTEM / PERIOD / SERIES / EPOCH	STAGE / AGE	DURATION Ma	Global Classification					
				ERATHM / ERA	SYSTEM / PERIOD / SERIES / EPOCH				
PALEOZOIC	PERMIAN	CHANGHSINGIAN / Dorashanian	251	PERMIAN	MID PERMIAN / GUADALUPIAN / LOPINGIAN				
		WUCHIAPINGIAN / Dufuflian	255						
		CAPITANIAN	260						
		WORDIAN	265						
		ROADIAN	270						
		PERMIAN	LOWER PERMIAN / CISURALIAN			KUNGURIAN	275		
						ARTINSKIAN	280		
						SAKMARIAN	285		
						ASSELIAN	290		
		PERMIAN	UPPER PERMIAN / CARBONIFEROUS / PENNSYLVANIAN			GZHELIAN	295	PERMIAN	LOWER PERMIAN / CISURALIAN
KASIMOVIAN	300								
MOSKOVIAN	305								
BASHKIRIAN	310								
PERMIAN	UPPER PERMIAN / CARBONIFEROUS / PENNSYLVANIAN			SERPUKHOVIAN	315				
				VISEAN	320				
					325				
PERMIAN	LOWER PERMIAN / MISSISSIPPIAN			TOURNAISIAN	330	PERMIAN	LOWER PERMIAN / MISSISSIPPIAN		
				335					
				340					
		345							
		350							
		355							
		359.2							
		365							
		370							
		375							
PERMIAN	UPPER DEVONIAN	FAMENNIAN	380	PERMIAN	UPPER DEVONIAN				
		FRASNIAN	385						
		GIVETIAN	390						
		EIFELIAN	395						
		DEVONIAN	LOWER DEVONIAN			EMSIAN	400		
						405			
		DEVONIAN	LOWER DEVONIAN			PRAGIAN	410		
						415			
		PERMIAN	MIDDLE DEVONIAN			LOCHKOVIAN	420	PERMIAN	MIDDLE DEVONIAN
						425			
430									
435									
440									
443.7									
445									
450									
455									
460									
PERMIAN	LOWER DEVONIAN	LUDFORDIAN / GORSTIAN	465	PERMIAN	LOWER DEVONIAN				
		HOMERIAN / SHEINWOOD	470						
		TELYCHIAN	475						
		AERONIAN	480						
		RHUDDANIAN	485						
		HIRNANTIAN	490						
		495							
		498.3							
		500							
		505							
PERMIAN	UPPER CAMBRIAN	PAIBIAN	510	PERMIAN	UPPER CAMBRIAN				
		515							
		520							
		525							
		530							
		535							
		540							
		542							
		CAMBRIAN	LOWER CAMBRIAN			MIDDLE CAMBRIAN	UPPER CAMBRIAN	CAMBRIAN	LOWER CAMBRIAN



- Legend**
- pelagic, offshore, siliciclastic
 - pelagic, nearshore, calcareous
 - shallow marin, neritic
 - terrestrial-continental, coarse clastic
 - terrestrial-continental, fine clastic
 - evaporite (chloride, sulphate)
 - rhyolite, dacite
 - (basaltic) andesite, trachyandesite
 - basalt
 - phyllite
 - mixed-facies (in corresponding colors)
 - coal (may include several seams)
 - ? position/age doubtful/controversial
 - | equal units
 - \ older unit left \ younger unit right
 - hiatus
 - unconformity
 - GSSP
 - Fm. Formation
 - Ls. Limestone

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Cutout and English adaptation of the "Die Stratigraphische Tabelle von Österreich 2004": Geological Survey of Austria

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