

**Overlying unit(s):** Quartzitic phyllites of the Gerichtsgraben Formation.

**Lateral unit(s):** Gerichtsgraben Formation; ? correlation with acid tuffs above the Kalwang Conglomerate N Kalwang/Lange Teichen valley (LOESCHKE et al., 1990; NEUBAUER et al., 1994: p. 69).

**Geographic distribution:** E-GWZ; Styria, Kaintaleck area.

**Remarks:** -

**Complementary references:** -

### **Blasseneck Porphyroid / Blasseneck Porphyry**

FRITZ EBNER

**Validity:** Invalid; lithostratigraphic unit used since PANTZ & ATZL (1814) in terms of a formation but not formalized; well characterized by HEINISCH (1981).

**Type area:** Eisenerzer Alpen, ÖK50-UTM, map sheet 4215 Eisenerz (ÖK50-BMN, map sheet 101 Eisenerz) and ÖK50-UTM, map sheet 4214 Trieben (ÖK50-BMN, map sheet 131 Kalwang).

**Type section:** Not yet indicated.

**Reference section(s):** -

**Derivation of name:** After Mt. Blaseneck (N 47°29'54" / E 14°37'09"), ÖK50-UTM, map sheet 4214 Trieben (ÖK50-BMN, map sheet 131 Kalwang) in the Eisenerzer Alpen/Styria. The correct writing of the type locality in the ÖK50-BMN, map sheet 131 Kalwang is Blaseneck!

**Synonyms:** "Blasseneckgneis" (FOULLON, 1886); "Körnige Grauwacke, obere körnig-schiefrige Grauwacke" (SCHOUPPE, 1854; VACEK, 1900).

**Lithology:** Some types of ignimbrites, unwelded tuffs and volcanoclastics, often intensively intercalated with fine siliciclastic rocks. Geochemically alkali-rhyolitic and rhyolitic types are dominating over rhyodacite, dacite and trachyandesite (HEINISCH, 1981).

**Fossils:** -

**Origin, facies:** Thick sequences are interpreted as sub-aerially extruded ignimbrites in topographic highs whereas the volcanic debris has been washed by sediment flows into shallow marine basins (MOSTLER, 1970; HEINISCH, 1981; HEINISCH & SCHÖNLAUB, 1993). They resulted from an extended late Ordovician magmatic event which is evident overall the Eastern and Southern Alps. However, modern plate tectonic concepts are not sufficient to explain the geodynamic relevance of this "Porphyroid"-event (HEINISCH, 1981; LOESCHKE & HEINISCH, 1993).

**Chronostratigraphic age:** Upper Ordovician (Katian–Hirnantian).

**Biostratigraphy:** In the E-GWZ dating was possible due to the position of the Blasseneck Porphyry between formations with conodonts of the *Amorphognathus ordovicicus* Zone (FLAJS & SCHÖNLAUB, 1976). The porphyroids of the W-GWZ were correlated with the Blasseneck Porphyry of the E-GWZ due to lithological criteria and their position below Llandoveryan limestones dated by conodonts (MOSTLER, 1964, 1968, 1970).

**Thickness:** The thickness of the total volcanogenic sequence including all clastic and volcanoclastic materials displays strong regional differences even along short distances (HEINISCH, 1981: Figs. 2, 3).

W-GWZ: up to 600 m; E-GWZ: Eisenerzer Alpen: up to 1,500 m (Polster area: 400 m, Rötziggraben: > 1,000 m, Blaseneck: 1,500 m).

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** E-GWZ: Gerichtsgraben Formation (FLAJS & SCHÖNLAUB, 1976; SCHÖNLAUB, 1982a, b).

W-GWZ: Wildschönau Schists (MOSTLER, 1970; SCHÖNLAUB, 1979, 1980a). In the Wildseeloder Unit W Zell am See the underlying schists are sheared off (HEINISCH, 1988).

**Overlying unit(s):** The Blasseneck Porphyry is overlain above erosional unconformities in the E-GWZ by the Polster Quartzite (FLAJS & SCHÖNLAUB, 1976) and in the W-GWZ by "Conglomerates" and Llandoveryan "Dolomites, Limestones with tuffs" (MOSTLER, 1964, 1968, 1970).

**Lateral unit(s):** W-GWZ: parts of the Wildschönau Schists. E-GWZ: Volcanoclastics and coarse quartzites (= reworked Blasseneck Porphyry; SCHÖNLAUB, 1982a).

**Geographic distribution:** W-GWZ: Tyrol – Salzburg: Kitzbüheler Alpen, Dientener Berge, N Pongau.

E-GWZ: from the Eisenerzer Alpen in Styria to Gloggnitz in Lower Austria (HEINISCH, 1981).

**Remarks:** In the GWZ a great variety of low grade metamorphic acid volcanic rocks of calc-alkaline geochemical character is summarized within the Blasseneck Porphyry. The volcanic origin of these rocks was already recognized by PANTZ & ATZL (1814), some later authors, however, postulated a paragne formation until the volcanogenic origin was renewed (OHNESORGE, 1905; REDLICH, 1907, 1908).

**Complementary references:** ANGEL (1919), OHNESORGE (1909), CORNELIUS (1952a), FLAJS (1964), MALZER (1964), EBERHARD & MOSTLER (1966), BAUER et al. (1969), MAVRIDIS & MOSTLER (1970), LOESCHKE (1977), TOLLMANN (1977), EBNER et al. (1989), SCHLAEGEL-BLAUT (1990), SCHÖNLAUB & HEINISCH (1993).

### **Lydite, Arkosen, Schiefer / Lydites, Arkoses, Schists**

FRITZ EBNER

**Validity:** Invalid; informal working term.

**Type area:** ÖK50-UTM, map sheet 4215 Eisenerz (ÖK50-BMN, map sheet 101 Eisenerz, ÖK50-BMN, map sheets 131 Kalwang and 132 Trofaiach).

**Type section:** Not indicated.

**Reference section(s):** -

**Derivation of name:** According to lithologies.

**Synonyms:** Partim "(feinschichtige) Grauwackenschiefer" (HAMMER, 1924); "Schiefer über dem Porphyroid i.A." (SCHÖNLAUB & DAURER, 1978), Grauwackenschiefer (SCHÖNLAUB, 1982a).

**Lithology:** Grey-striped schists, sericitic schists, sandy schists, black schists, alun schists, marly schists, lydites, arkoses and sandstones associated with basic metavolcanics and scattered dark limestones.

**Fossils:** Some conodonts in limestones of the hanging parts.

**Origin, facies:** Basinal environment, partly euxinic and with volcanic influence.

**Chronostratigraphic age:** ?Upper Ordovician–Silurian (Llandovery/lower Wenlock).

**Biostratigraphy:** *amorphognathoides* conodont zone (SCHÖNLAUB, 1977b).

**Thickness:** > 1,000 m.

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** Blasseneck Porphyry, Gerichtsgraben Formation.

**Overlying unit(s):** Crinoidal Limestones (SCHÖNLAUB, 1982a).

**Lateral unit(s):** Polster Quartzite, Cystoid Limestone.

**Geographic distribution:** E-GWZ; Styria, Eisenerzer Alpen.

**Remarks:** Working term of SCHÖNLAUB (1982a) for ?Upper Ordovician–Silurian metaclastics and lydites above the Blasseneck Porphyry. Thick basic volcanics included within this unit are separated as “Volcanics” in the ASC 2004.

**Complementary references:** TOLLMANN (1977), SCHÖNLAUB (1979, 1980a), EBNER et al. (1989), FLAJS & SCHÖNLAUB (1973), SCHÖNLAUB & HEINISCH (1993).

### Polster Quarzite / Polster Quartzite

FRITZ EBNER

**Validity:** Invalid; detailed descriptions (FLAJS & SCHÖNLAUB, 1976; STATTEGGER, 1980) are used in terms of a formation but not formalized.

**Type area:** Präbichl area, ÖK50-UTM, map sheet 4215 Eisenerz (ÖK50-BMN, map sheet 101 Eisenerz).

**Type section:** Polsterkar (N 47°32'05" / E 15°00'55"), ÖK50-UTM, map sheet 4215 Eisenerz (ÖK50-BMN, map sheet 101 Eisenerz).

**Reference section(s):** -

**Derivation of name:** According to the lithology and the mountain Polster (1,910 m; N 47°31'11" / E 14°58'28") in the Eisenerzer Alpen; ÖK50-UTM, map sheet 4215 Eisenerz (ÖK50-BMN, map sheet 101 Eisenerz).

**Synonyms:** “Rogenstein-Quarzit” (HIESSLEITNER, 1929).

**Lithology:** Grey to grey-brownish massive and indistinctly bedded, coarsening upwards quartzites (diameter of quartz components: 2 mm to 0.5 mm) (FLAJS & SCHÖNLAUB, 1976; STATTEGGER, 1980).

**Fossils:** Imprints of brachiopods, bryozoans (REDLICH, 1923; HERITSCH, 1927a; SCHOUPE, 1950).

**Origin, facies:** Sandy coastal transgressional sequence with detrital material deriving from a low grade metamorphic hinterland and the reworked underlying Blasseneck Porphyry (STATTEGGER, 1980).

**Chronostratigraphic age:** Upper Ordovician (Katian–Hirnantian).

**Biostratigraphy:** *amorphognathoides ordovicicus* Zone is assumed due to conodonts in the footwall and hanging wall (see Gerichtsgraben Formation and Cystoid Limestone, respectively; FLAJS & SCHÖNLAUB, 1976; SCHÖNLAUB, 1982a).

**Thickness:** 60–80 m.

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** Blasseneck Porphyry (erosional unconformity?).

**Overlying unit(s):** Cystoid Limestone.

**Lateral unit(s):** Petersbaumgraben Formation (PGF in Text-Fig. 2).

**Geographic distribution:** E-GWZ; Styria, NE Eisenerzer Alpen.

**Remarks:** -

**Complementary references:** TOLLMANN (1977), SCHÖNLAUB (1979, 1980a), EBNER et al. (1989), SCHÖNLAUB & HEINISCH (1993).

### Petersbaumgraben-Formation / Petersbaumgraben Formation [= acronym PGF in Text-Fig. 2]

FRITZ EBNER

**Validity:** Invalid; first, but not formalized description in the rank of a formation as “Petersbauernbach-Formation” by HERMANN (1992) which was later re-named to Petersbaumgraben Formation (NEUBAUER et al., 1994; PILLER et al., 2004).

**Type area:** Petersbauernbachgraben, ÖK50-UTM, map sheet 4216 Bruck an der Mur (ÖK50-BMN, map sheet 132 Trofaiach).

**Type section:** NE striking ridge W of Petersbauernbach (N 47°27'41" / E 15°03'16"), ÖK50-UTM, map sheet 4216 Bruck an der Mur (ÖK50-BMN, map sheet 132 Trofaiach); not described in detail by HERMANN (1992).

**Reference section(s):** -

**Derivation of name:** After the Petersbauernbach valley, ÖK50-UTM, map sheet 4216 Bruck an der Mur (ÖK50-BMN, map sheet 132 Trofaiach) which name was later wrongly changed to Petersbaumgraben (NEUBAUER et al., 1994) and also adopted in the ASC 2004.

**Synonyms:** “Petersbauernbach Formation” (HERMANN, 1992).

**Lithology:** The sequence starts with alternating black siliceous schists, phyllites and some ignimbritic layers followed by horizons of conglomerates/breccias, light sandstones and phyllitic quartzites. The top is made up by dark phyllites with thin intercalations of coarse sands and fine conglomerates (HERMANN, 1992).

**Fossils:** -

**Origin, facies:** -

**Chronostratigraphic age:** ?Uppermost Ordovician.

**Biostratigraphy:** -

**Thickness:** 60 m.

**Lithostratigraphically higher rank unit:** “Norische Gruppe” (HERMANN, 1992).

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** Blasseneck Porphyry.

**Overlying unit(s):** Rad Schists (HERMANN, 1992).

**Lateral unit(s):** Polster Quartzite.

**Geographic distribution:** E-GWZ; Styria, NE Trofaiach.

**Remarks:** According to the ÖK50-BMN, map sheet 132 Trofaiach the today's name of the type locality is Petersbauernbach.

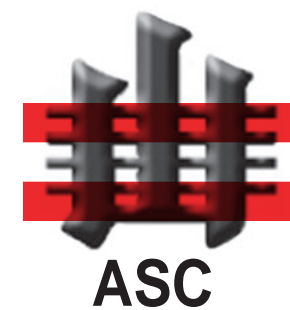
**Complementary references:** -



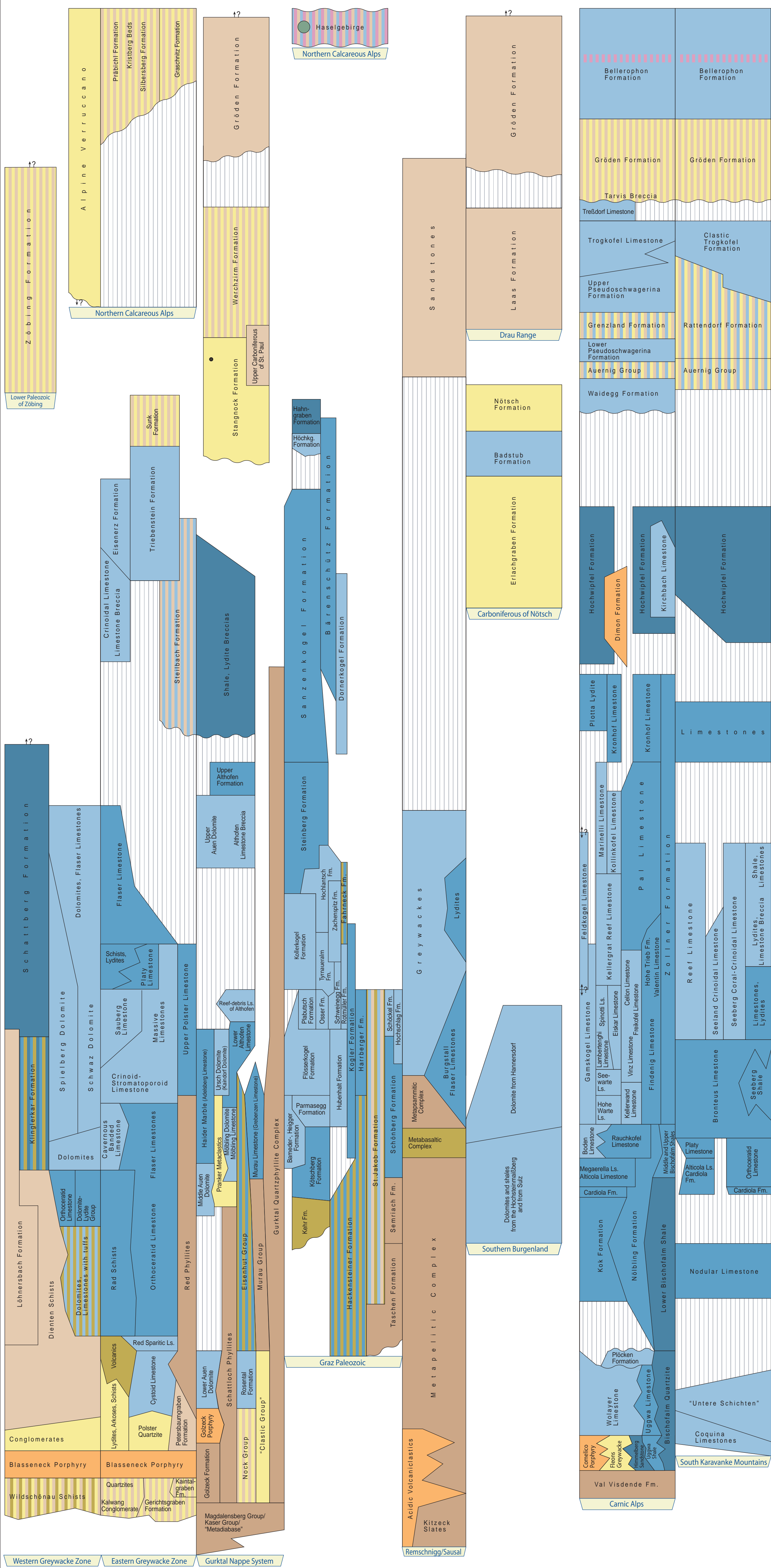
# Austrian Stratigraphic Chart 2004 - Paleozoic

(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 / Dufuian	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			
		PRAGIAN	410						
		LOCHKOVIAN	415						
		PERMIAN	LOWER DEVONIAN			LUDFORDIAN / GORSTIAN	420	PERMIAN	LOWER DEVONIAN
						HOMERIAN / SHEINWOOD	425		
TELYCHIAN	430								
AERONIAN	435								
RHUDDANIAN	440								
HIRNANTIAN	443.7								
445									
450									
455									
460									
PERMIAN	UPPER ORDOVICIAN	DARRIWILIAN	465	PERMIAN	UPPER ORDOVICIAN				
		470							
		475							
		480							
		485							
		488.3							
		490							
		495							
		500							
		PERMIAN	MIDDLE CAMBRIAN			PAIBIAN	505	PERMIAN	MIDDLE CAMBRIAN
510									
515									
520									
525									
530									
535									
540									
542									
CAMBRIAN	LOWER CAMBRIAN			545	CAMBRIAN	LOWER CAMBRIAN			
		550							
		555							
		560							
		565							
		570							
		575							
		580							
		585							
		590							



- 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

© Commission for the Palaeontological and Stratigraphical Research of Austria (CPSA) of the Austrian Academy of Sciences and Austrian Stratigraphic Commission

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

The Austrian Stratigraphic Chart 2004 - Paleozoic is a supplement of:  
 Hubmann, B., Ebner, F., Ferretti, A., Kido, E., Krainer, K., Neubauer, F., Schönlaub, H.-P. & Suttner, T.J. (2014): The Paleozoic Era (them), 2<sup>nd</sup> edition. - In: Pillner, W.E. (Ed.): The lithostratigraphic units of the Austrian Stratigraphic Chart 2004 (sedimentary successions) - Vol. 1 - Abhandlungen der Geologischen Bundesanstalt, 66, 9-133, Wien.

Printing: Grasl Druck & Neue Medien GmbH, Bad Vöslau 2014

Landesmuseum Joanneum

OAW

Geologische Bundesanstalt

UNI GRAZ

OGG

Universität Wien

Naturhistorisches Museum Wien