Sedimentary rocks

Cenozoic

- Q — Quaternary *
- N2 — Pliocene
- N1 — Miocene
- N — Neogene
- E3 — Oligocene
- E2 — Eocene
- E1 — Palaeocene
- E — Palaeogene
- CZ — Cenozoic

Mesozoic

- K2 — Late Cretaceous
- K1 — Early Cretaceous
- K — Cretaceous
- J3 — Late Jurassic
- J2 — Middle Jurassic
- J1 — Early Jurassic
- J — Jurassic
- T3 — Late Triassic
- T2 — Middle Triassic
- T1 — Early Triassic
- T — Triassic
- MZ — Mesozoic

Palaeozoic

- P2-3 — Middle - Late Permian
- P1 — Early Permian
- P — Permian
- C2 — Late Carboniferous
- C1 — Early Carboniferous
- C — Carboniferous
- D3 — Late Devonian
- D2 — Middle Devonian
- D1 — Early Devonian
- D — Devonian
- S3-4 — Late Silurian
- S1-2 — Early Silurian
- S — Silurian
- O3 — Late Ordovician
- O2 — Middle Ordovician
- O1 — Early Ordovician
- O — Ordovician
- Є3 — Late Cambrian
- Є2 — Middle Cambrian
- Є1 — Early Cambrian
- Є — Cambrian
- PZ — Palaeozoic

Precambrian

- NP — Proterozoic III
- MP — Proterozoic II
- PP — Proterozoic I
- PR — Proterozoic
- AR — Archaean
- PЄ — Precambrian

Igneous rocks

intrusive

- Cenozoic
- Mesozoic
- Palaeozoic
- Precambrian
- N1 — example: Miocene intrusive rock

extrusive

- Cenozoic
- Mesozoic
- Palaeozoic
- Precambrian
- Є — example: Cambrian extrusive rock

Metamorphic rocks

metamorphic grade

- low grade
- medium grade
- high grade
- undifferentiated

Depending on their origin, metamorphic rocks are displayed as a combination of the colour of the protolith and the pattern of its particular metamorphic grade.

- metamorphic rock, protolith undivided

Examples:

- low grade sedimentary metamorphic rock, first orogenic event in the Palaeozoic
- medium grade extrusive metamorphic rock, first orogenic event in Precambrian
- high grade metamorphic rock, protolith undivided

Miscellaneous units

- ophiolite complex
- glacier
- aeolian sediments of Quaternary age
- salt pan or lake

Drilling sites

- 650 — Ocean Drilling Program (ODP), site and number
- 134 — Deep Sea Drilling Project (DSDP), site and number

Additional units in the off-shore areas

The geological boundaries were derived from the magnetic seafloor spreading anomalies (Cande et al., 1989) and transferred into standard geological time (geochronological) subdivisions using the geomagnetic polarity timescale of Cande & Kent (1995). For high latitudes, not covered by the map of magnetic anomalies from Cande et al. (1989), ocean crustal ages were estimated from the digital age grid of Müller et al. (1997). The resulting isochrons were controlled and adjusted by comparison with the magnetic anomaly map of the Arctic and North Atlantic oceans of Verhoeff et al. (1996).

- continental crust of various ages
- ocean-continent transition (exhumed mantle) of various ages
- rifted thinned continental crust of various ages
- MZ / ? — example: rifted thinned continental crust of Mesozoic/unknown age
- oceanic crust
- K2 — example: oceanic crust of Late Cretaceous age
- fold belt

Geological and faults boundaries

general

- geological boundary
- geological boundary, inferred
- fault, normal or undifferentiated
- fault, inferred, normal or undifferentiated
- thrust
- thrust, inferred
- strike/slip fault
- strike/slip fault, inferred
- impact structure

off-shore

- ocean-continent boundary
- transform fault
- transform fault, inferred
- gravity fault
- boundary of extension of Messinian salt
- boundary of extension of Messinian salt, inferred
- boundary of extension of Triassic to Jurassic salt
- boundary of extension of Triassic to Jurassic salt, inferred
- active spreading axis
- fossil spreading axis

Topography

- coast, highlighted in white
- large river
- river
- small river
- canal
- lake
- isobaths

- Lyon — over 1 million inhabitants
- Kiel — 100 000 to 1 million inhabitants
- Vaasa — under 100 000 inhabitants
- MADRID — capital

General explanation

All geological units (sedimentary, igneous and metamorphic) on the map are identified by a colour code and an abbreviation indicating the geochronological age of the rock.
For sedimentary rocks the age and colours subdivisions of the International Stratigraphic Chart (Remane et al. 2000/2004) were used; transitional and general units like Permo-Triassic, Mesozoic or undifferentiated Triassic are shown in the colour of the respective oldest unit, e.g. Mesozoic is marked with the colour of Triassic which itself receives the colour of Early Triassic (dark violet). Thus, the oldest unit characterises the whole rock unit. Abbreviations within the polygon on the map may give the exact age indication, such as MZ, T, T1, P-T.
Geological units of the same age but of different lithology are treated as separate geological units in the map-related database. On the map they will share the same colour, but are distinguished by a geological boundary when adjacent to each other.
The metamorphic grade follows the classification of Winkler (1976) and Frey et al. (2002).
The classification of igneous rocks is based on Streckeisen (1976, 1978).

*Although the map focuses on the pre-Quaternary on- and off-shore geology, all Quaternary extrusive rocks are shown. In some areas (e.g. the desert regions of the Middle East and North Africa) the pre-Quaternary geology is not well known. Here the extent of the cover of Quarternary aeolian sediments is shown.

1 : 5 000 000

0 100 200 300 400 500 km