

Tatort Plattengrenze

Prof. Dr. Renée Heilbronner

1. allgemeine Einführung in die Plattentektonik
2. konstruktive Plattengrenzen
3. destruktive Plattengrenzen
4. konservative Plattengrenzen

Links und Literatur:

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<http://www.unibas.ch/earth/micro/>

<http://ansatte.uit.no/kku000/webgeology/>

<http://www.seismo.ethz.ch/>

<http://de.wikipedia.org/wiki/Plattentektonik>

http://en.wikipedia.org/wiki/Plate_tectonics

Tarbuck, E.J. and Lutgens, F. K., 2009. Allgemeine Geologie, 9. aktualisierte Auflage, Pearson, München, 877 S.

Zusammenfassung

13.7 Ga Urknall

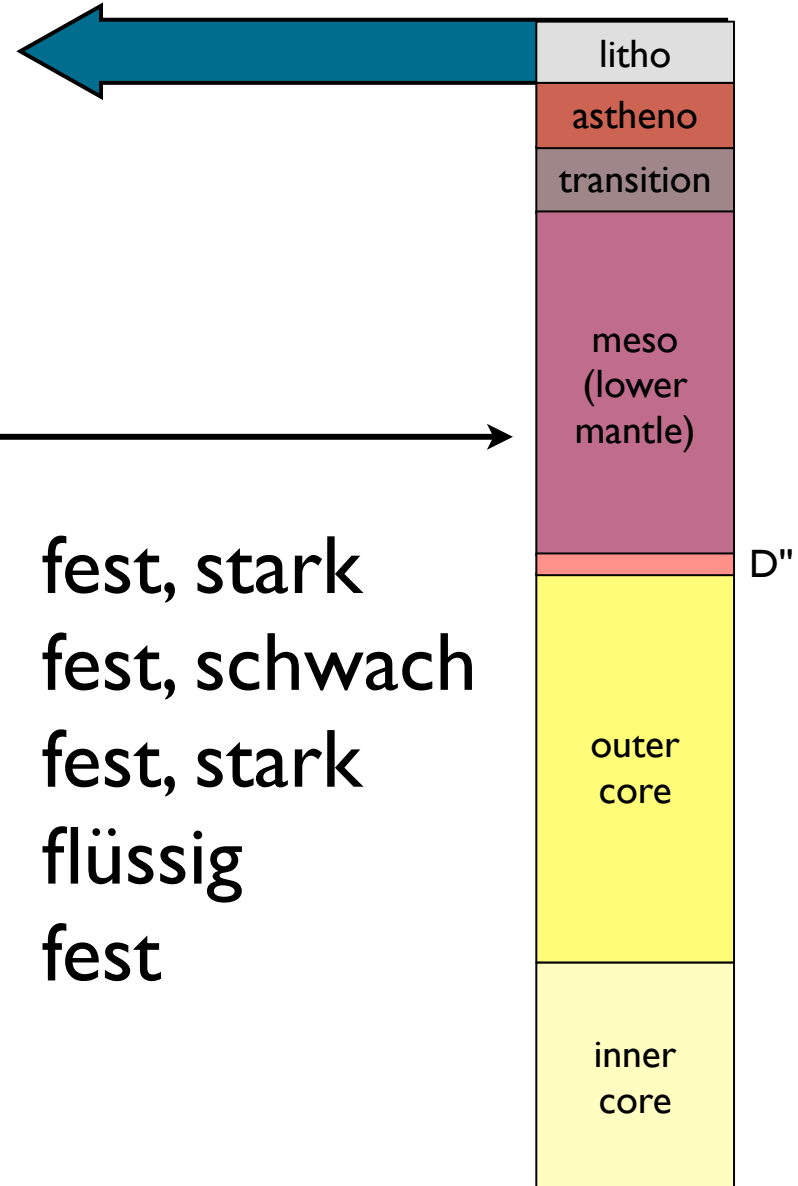
4.7 Ga Sonnensystem und Erde entstehen

~225 Ma Pangäa bricht auseinander

	Zusammensetzung	Dicke Volumen	Dichte (kg / m ³)	Alter
kontinentale Kruste	Granodiorit	35 - 40 km	2700	≤ 4 Ga
ozeanische Kruste	Basalt	~ 7km	3000	≤ 200 Ma
Mantel	Peridotit	82% des Erdvolumens	3000-5000	± Erdalter
Kern	Fe-Ni-Legierung		11'000	± Erdalter

Zusammenfassung

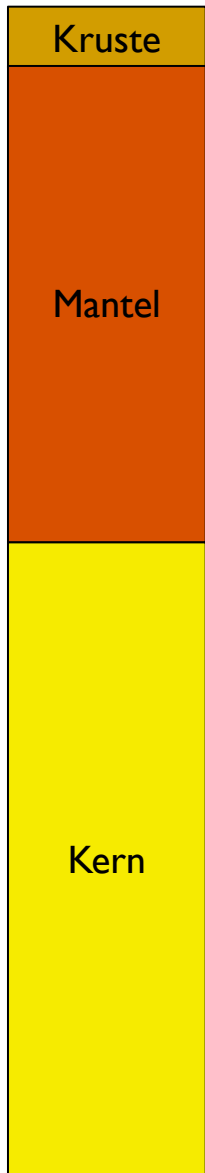
Plattengeschwindigkeiten:
bis zu 20 cm / Jahr



Aufbau der Erde

chemisch:

physikalisch:



Kruste

Mantel

Kern

Lithosphäre

Asthenosphäre

unterer Mantel

äusserer Kern

Innerer Kern

fest, stark

fest, schwach

fest, stark

flüssig

fest

litho

astheno

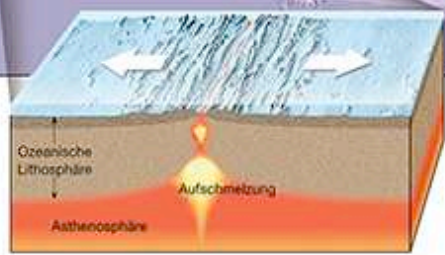
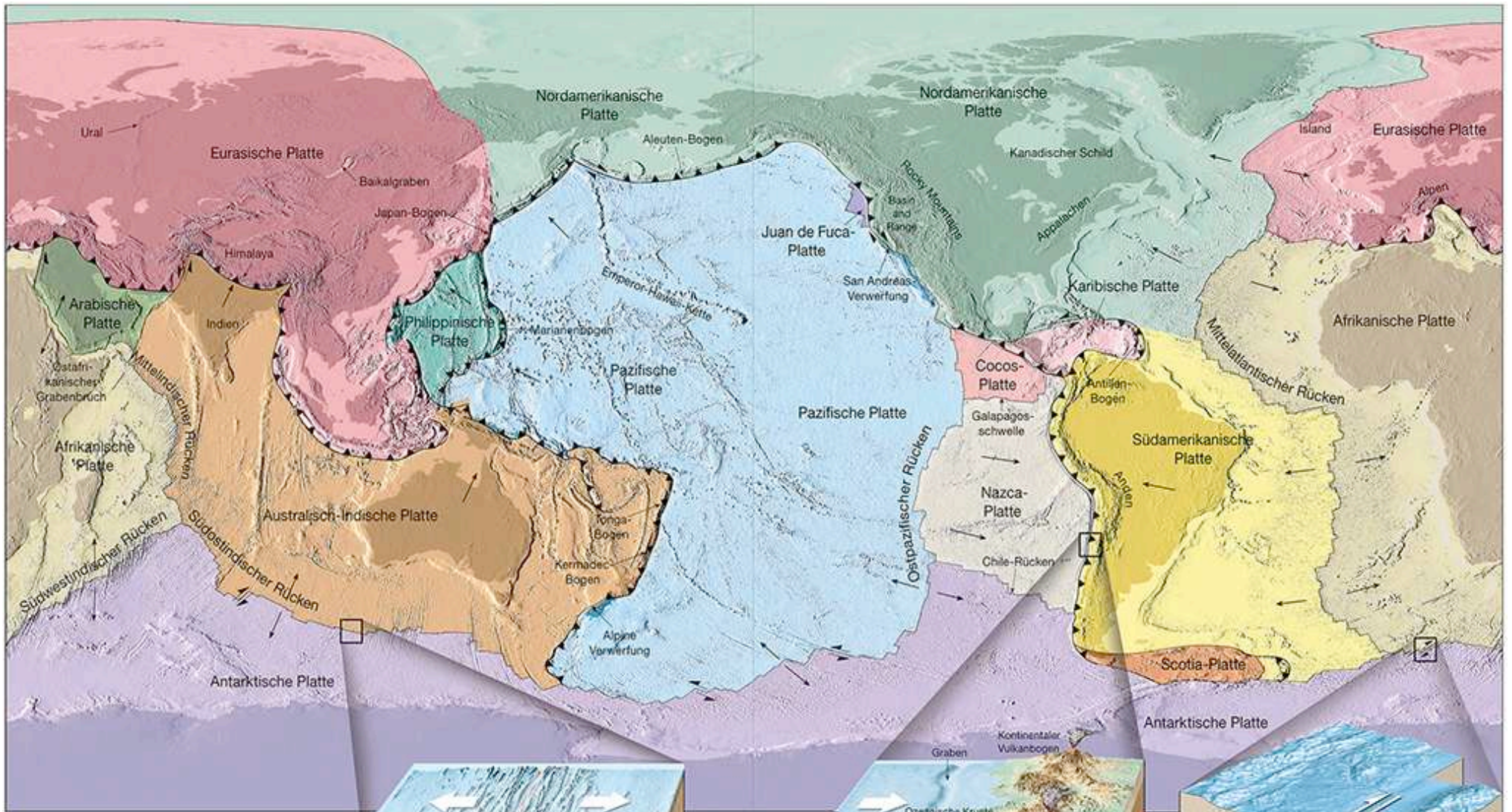
transition

meso
(lower
mantle)

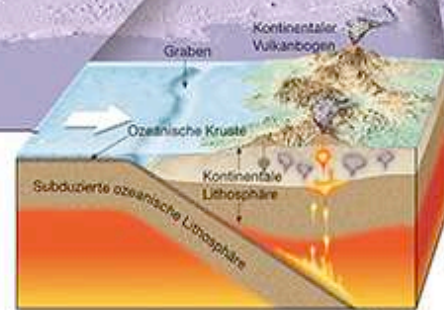
D''

outer
core

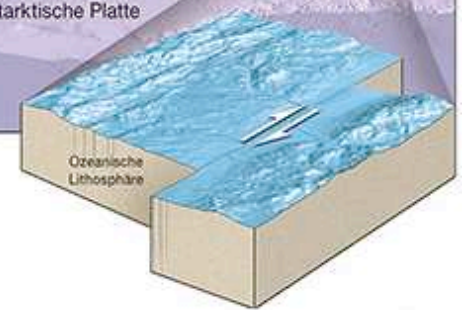
inner
core



Divergente Plattengrenze ↗↖



Konvergente Plattengrenze ↘↙



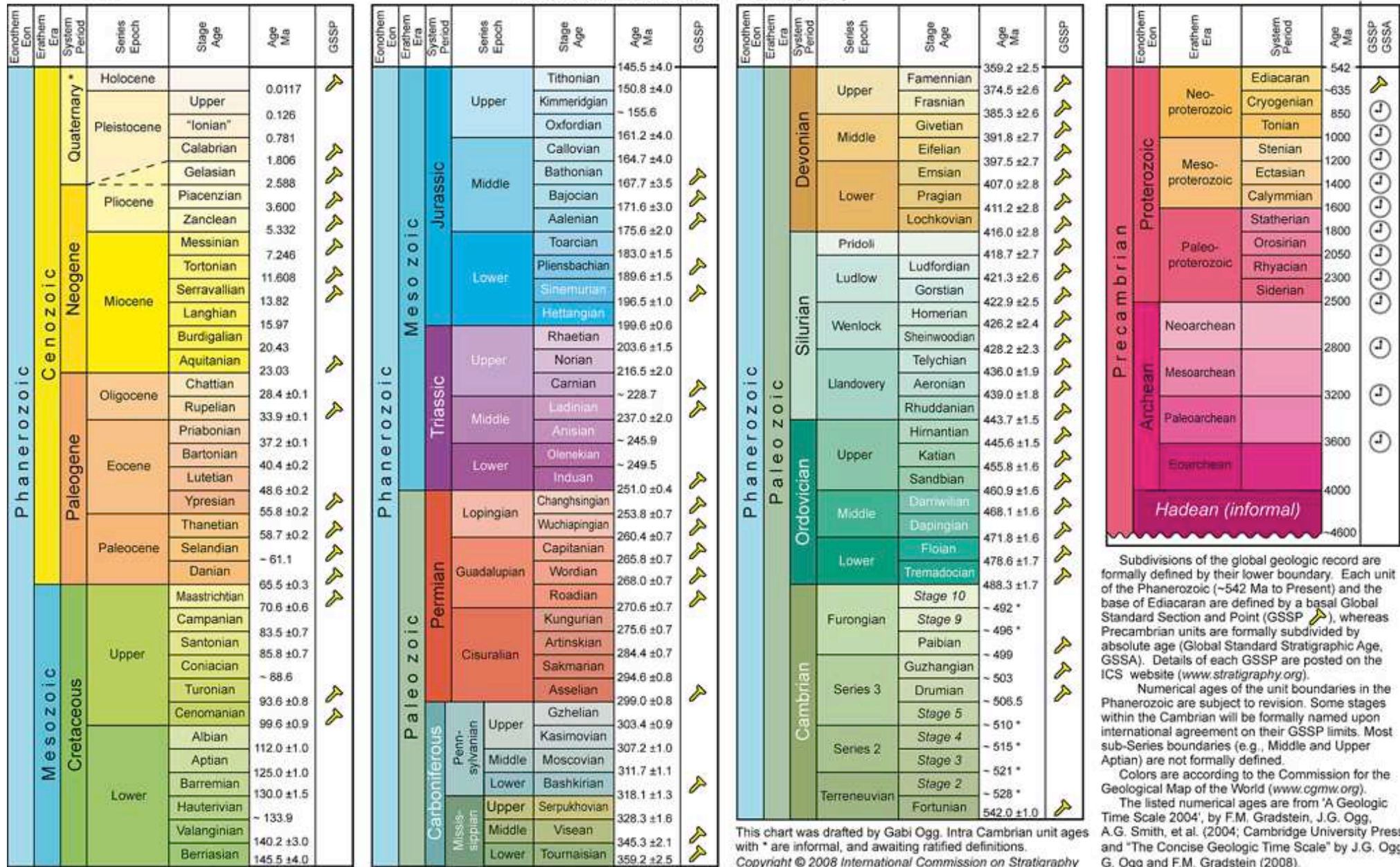
Transformstörung als Plattengrenze ↗↖

(plattessharpcomp.pdf)



INTERNATIONAL STRATIGRAPHIC CHART

International Commission on Stratigraphy



* Definition of the Quaternary and revision of the Pleistocene are under discussion. Base of the Pleistocene is at 1.81 Ma (base of Calabrian), but may be extended to 2.59 Ma (base of Gelasian). The historic "Tertiary" comprises the Paleogene and Neogene, and has no official rank.

This chart was drafted by Gabi Ogg. Intra Cambrian unit ages with * are informal, and awaiting ratified definitions. Copyright © 2008 International Commission on Stratigraphy

Subdivisions of the global geologic record are formally defined by their lower boundary. Each unit of the Phanerozoic (~542 Ma to Present) and the base of Ediacaran are defined by a basal Global Standard Section and Point (GSSP), whereas Precambrian units are formally subdivided by absolute age (Global Standard Stratigraphic Age, GSSA). Details of each GSSP are posted on the ICS website (www.stratigraphy.org).

Numerical ages of the unit boundaries in the Phanerozoic are subject to revision. Some stages within the Cambrian will be formally named upon international agreement on their GSSP limits. Most sub-Series boundaries (e.g., Middle and Upper Aptian) are not formally defined.

Colors are according to the Commission for the Geological Map of the World (www.cgmw.org). The listed numerical ages are from 'A Geologic Time Scale 2004', by F.M. Gradstein, J.G. Ogg, A.G. Smith, et al. (2004; Cambridge University Press) and 'The Concise Geologic Time Scale' by J.G. Ogg, G. Ogg and F.M. Gradstein (2008).

(strati.pdf)