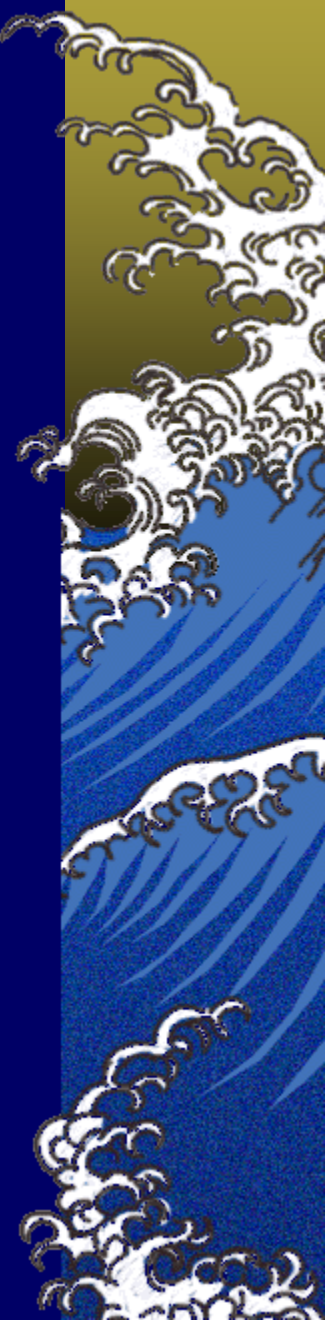
Reljef podmorja

Danijel Orešić

Geografski odsjek PMF-a, SuZ

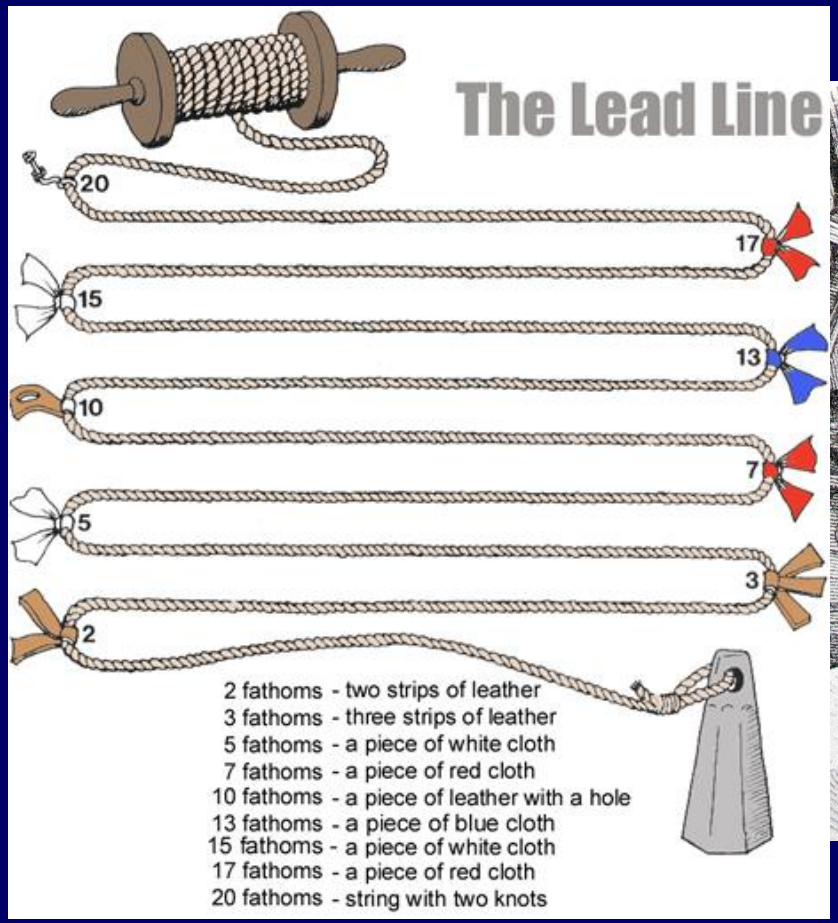


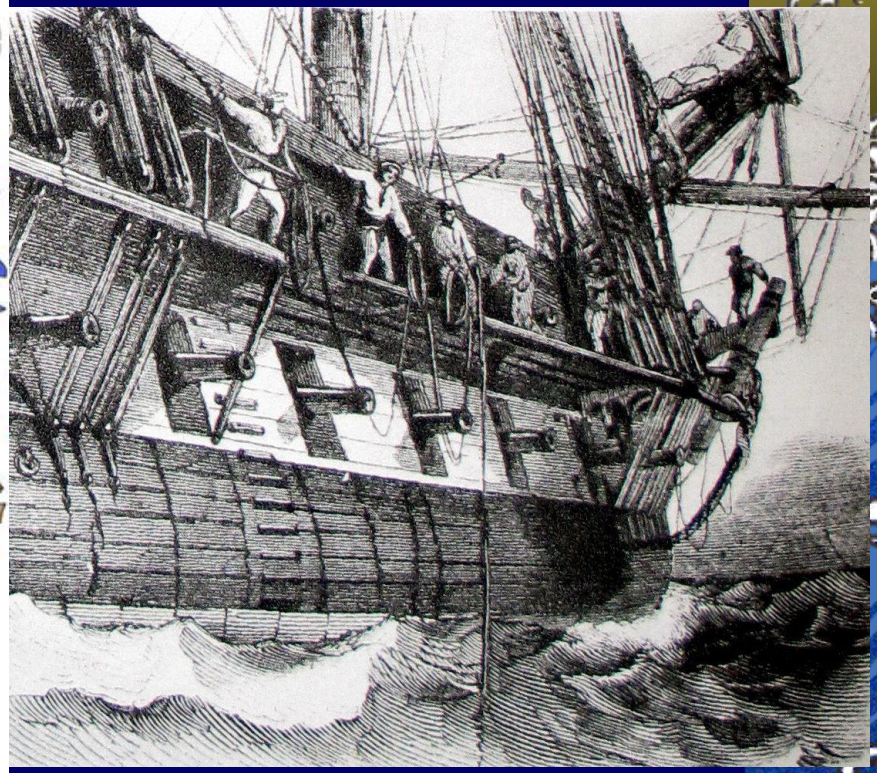
Mjerenja - batimetrija

- Olaus Magnus: Historia om de nordiska folken, 1555.

Mjerenja - batimetrija

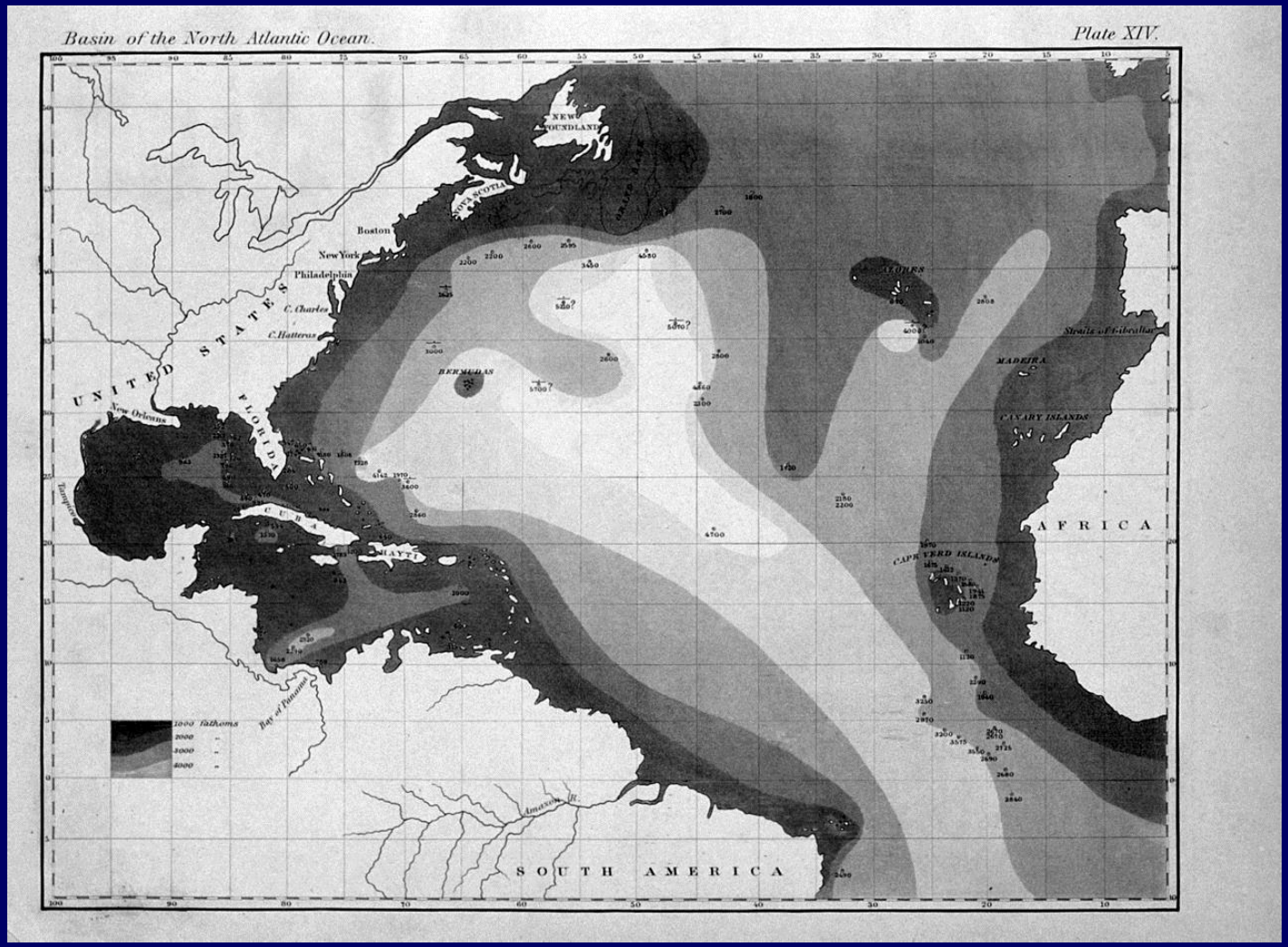
- 18 stoljeće





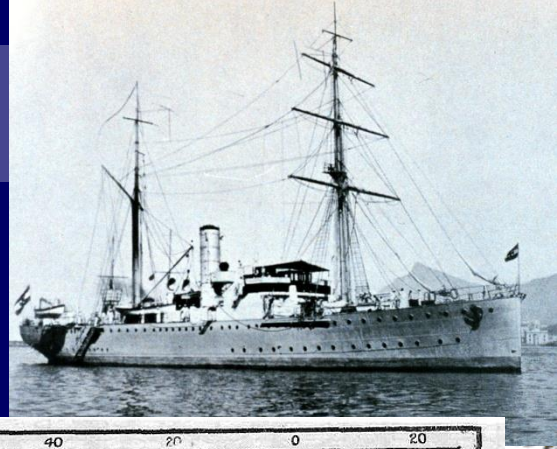
Mjerenja - batimetrija

- Matthew Fontaine Maury: Explanations and Sailing Directions to Accompany the Wind and Current Charts, 1853



Mjerenja - batimetrija

- Ipak 1875. samo 7000 mjerenja dubina preko 2000 m
- Revolucija: zvučno mjerenje – eholot (H.S.Berggraf 1904, A. Behm, 1913.) – 1922. prvi profil amer. razarač *Steward* ; prva oceanografska ekspedicija njem. brod *Meteor* 1925-27



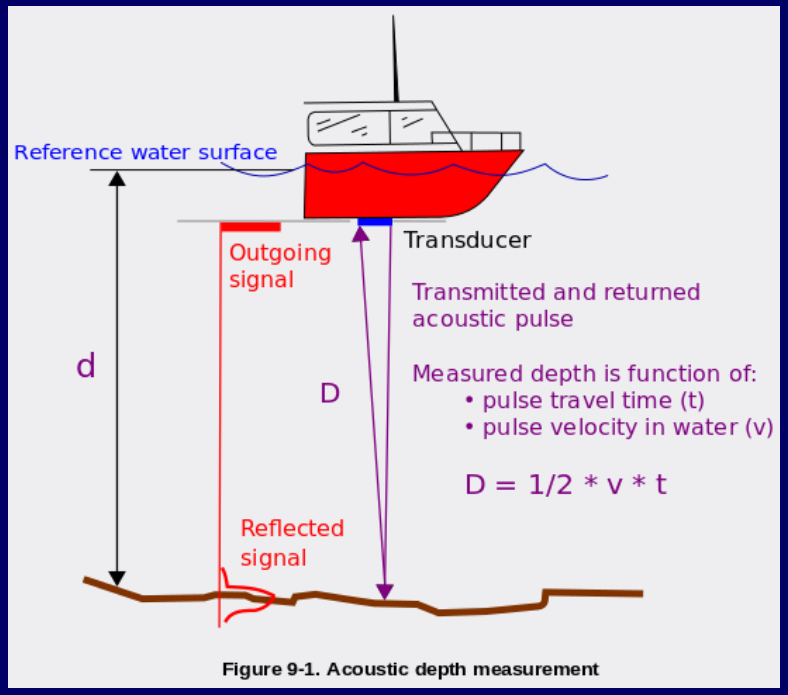
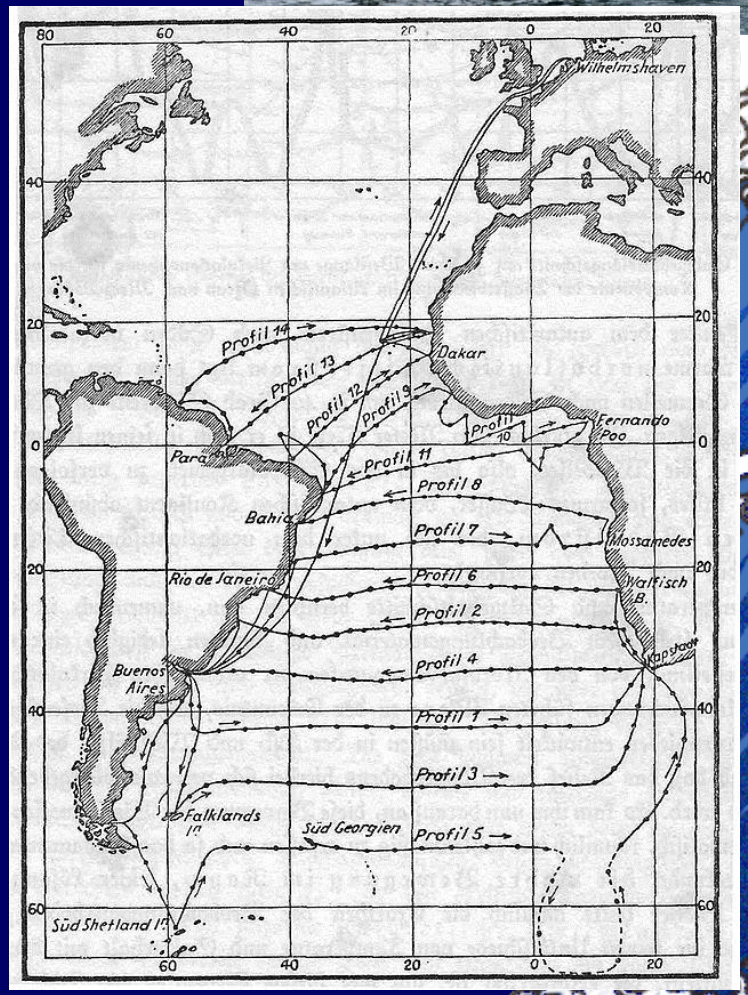


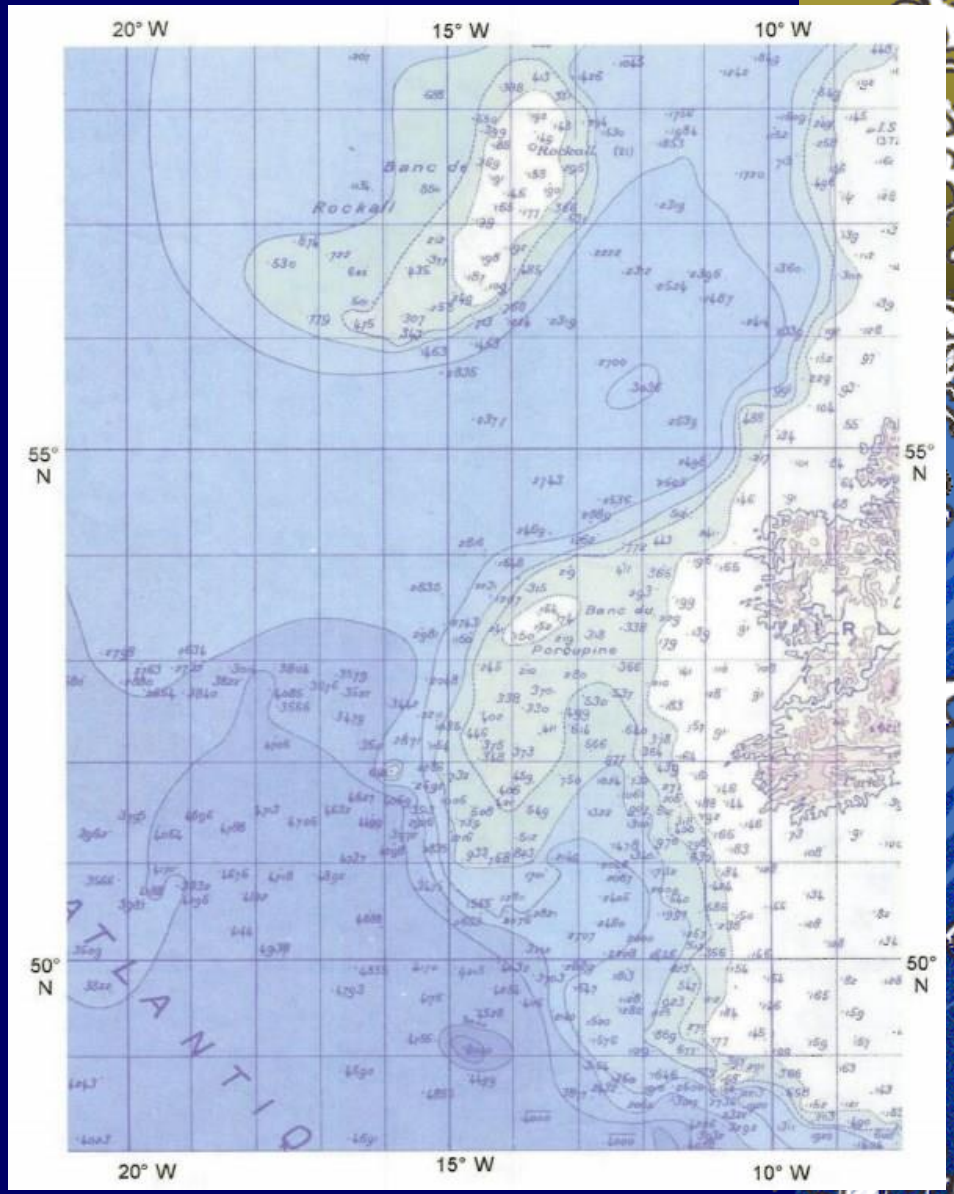
Figure 9-1. Acoustic depth measurement



Mjerenja - batimetrija

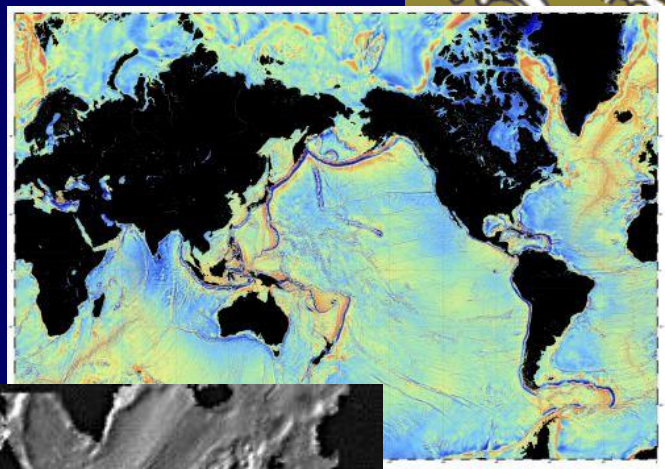
- 7 međunarodni kongres geografa, Berlin 1899. pokreće projekt GEBCO (batimetrijska karta oceana) – komisija pod vodstvom princa Alberta I od Monaca, prvo izdanje 1905, zatim znatno poboljšano 1912-31 (1:10 mil.); danas projekt IHO i IOC (UNESCO) - digitalna izdanja

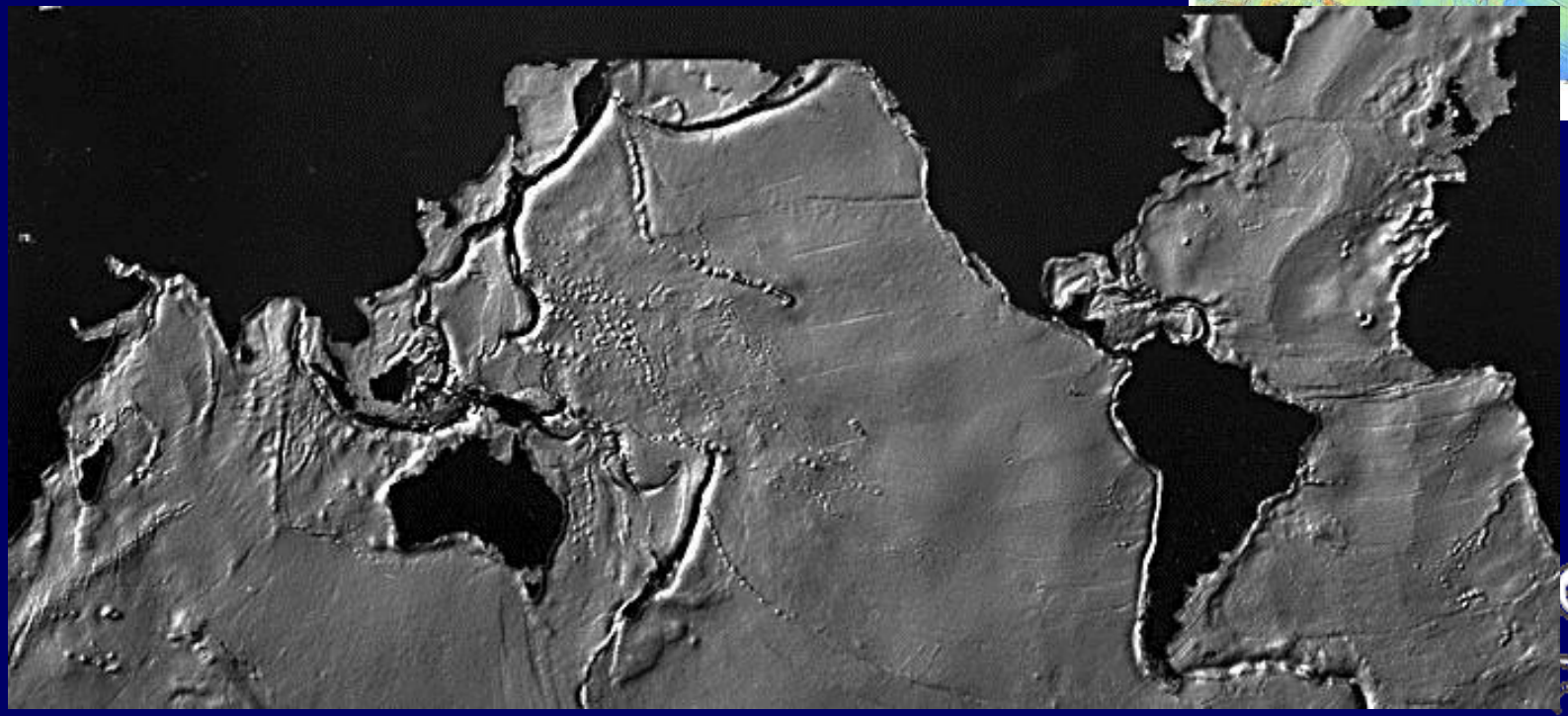
- List B1 – drugo izdanje, 1926.



Mjerenja - batimetrija

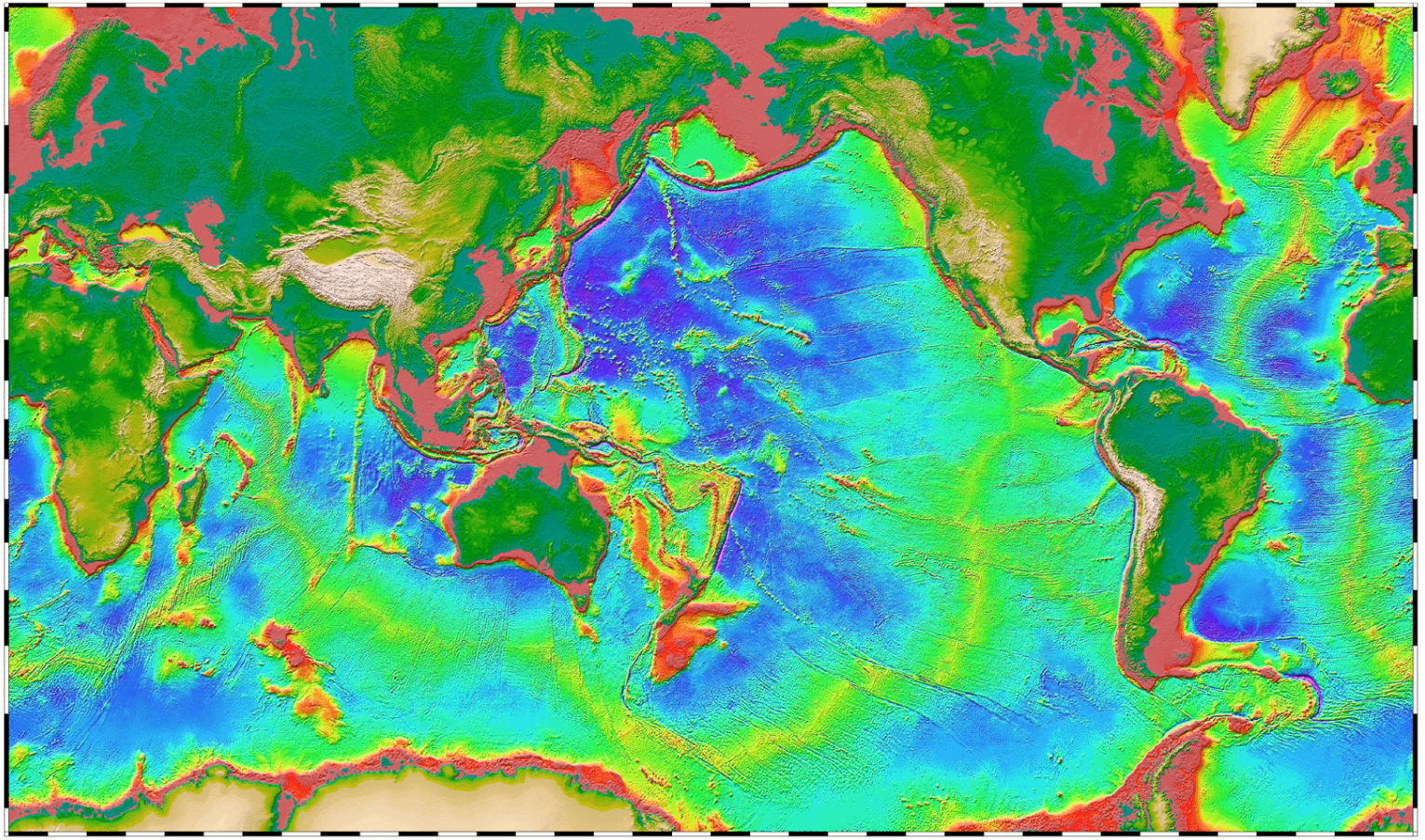
- Nova revolucija – satelitsko doba; SEASAT A, 1978
- Od 1992. (revolucionarni satelit Topex/Poseidon 1992.-2006., potom sateliti Jason1 2001.-2013. i Jason2 2008.) provode se precizna mjerenja topografije mora





Topografija Zemljine površine

- Sva ta mjerenja omogućila su suvremene prikaze topografije Zemljine površine; npr. Smith & Sandwell topografska karta svijeta, 1995.



Hipsometrija Zemlje

- Hipsometrijska (hipsografska) krivulja Zemlje

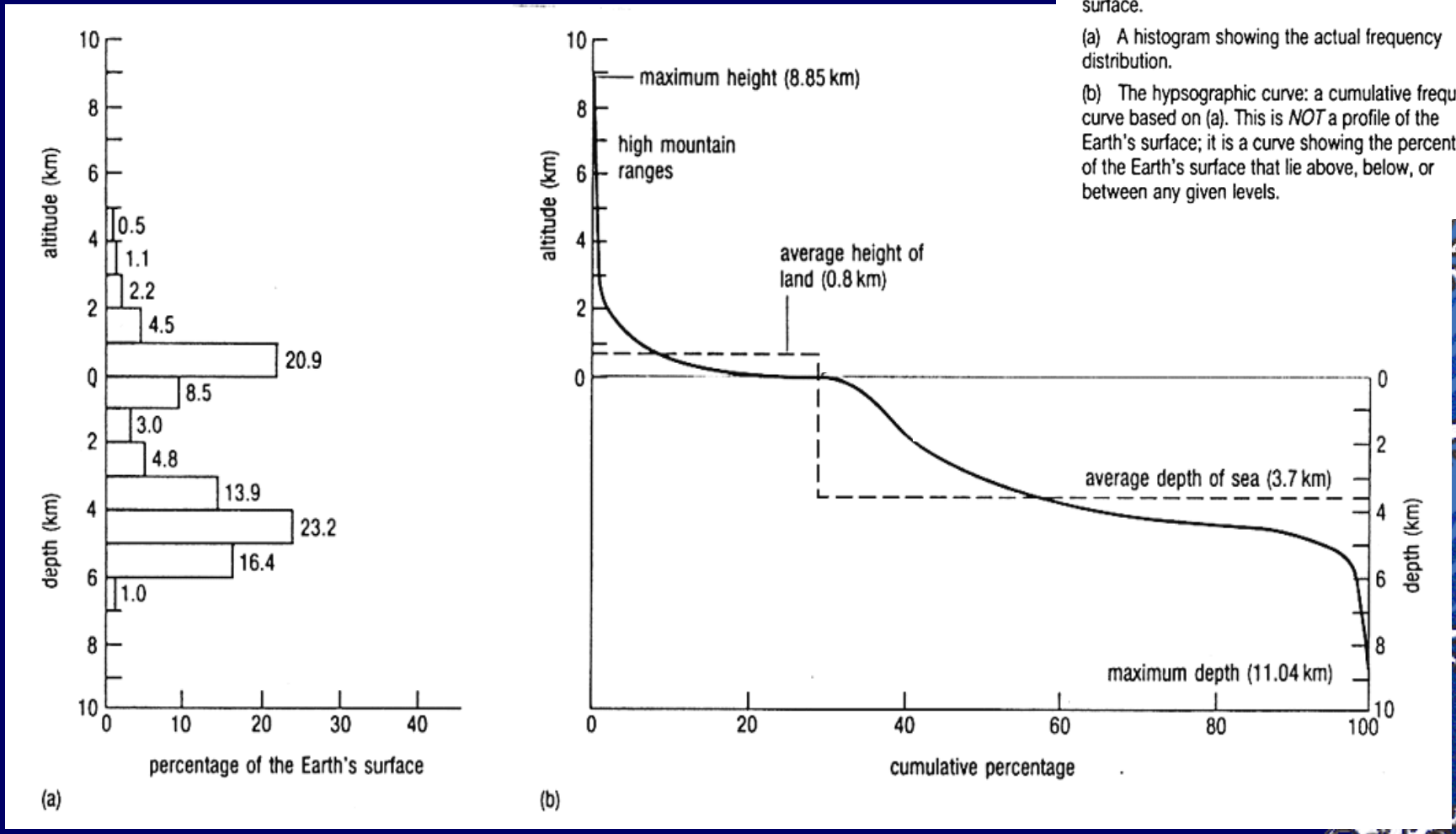


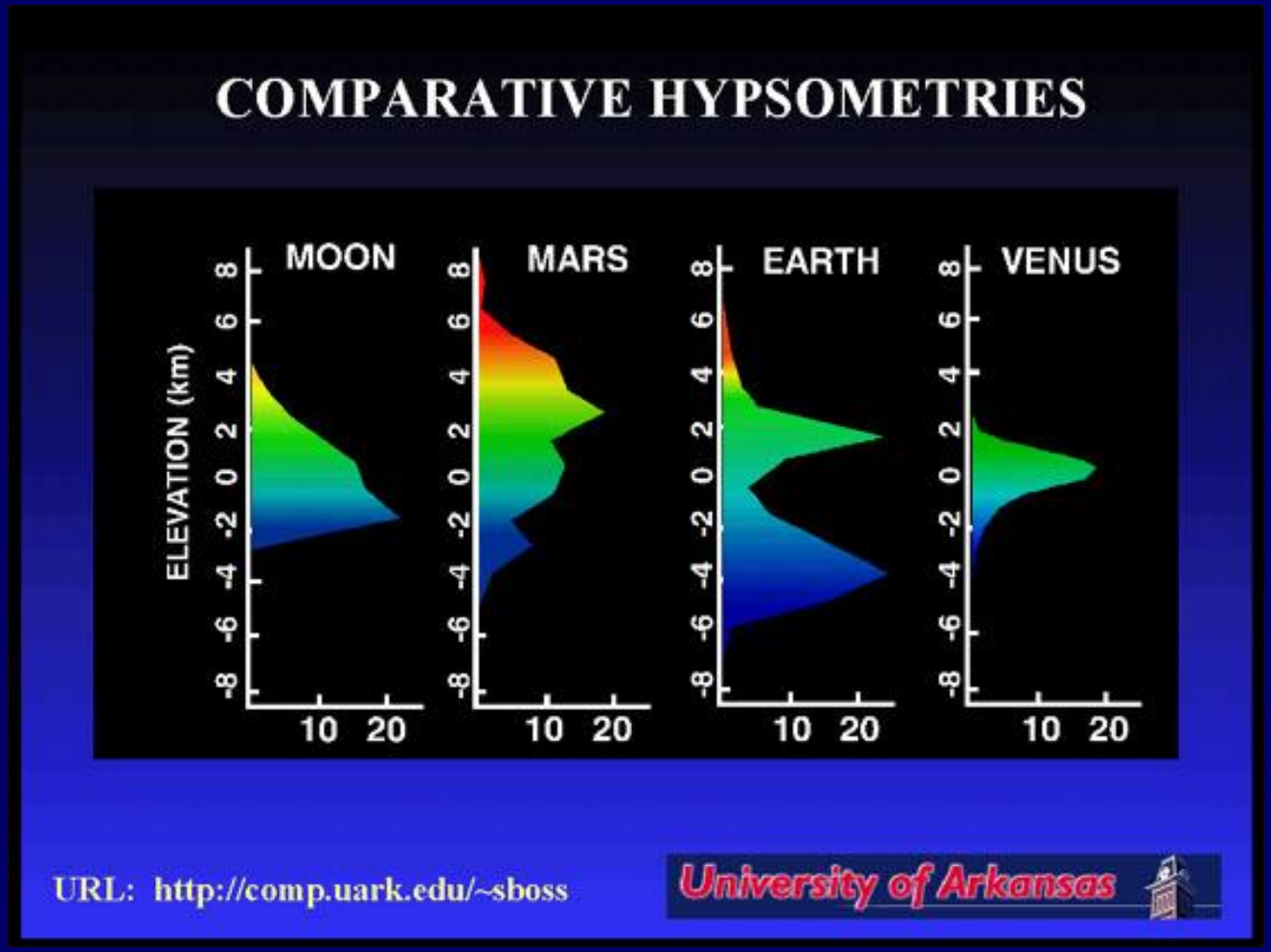
Figure 2.4 The distribution of levels on the Earth's surface.

(a) A histogram showing the actual frequency distribution.

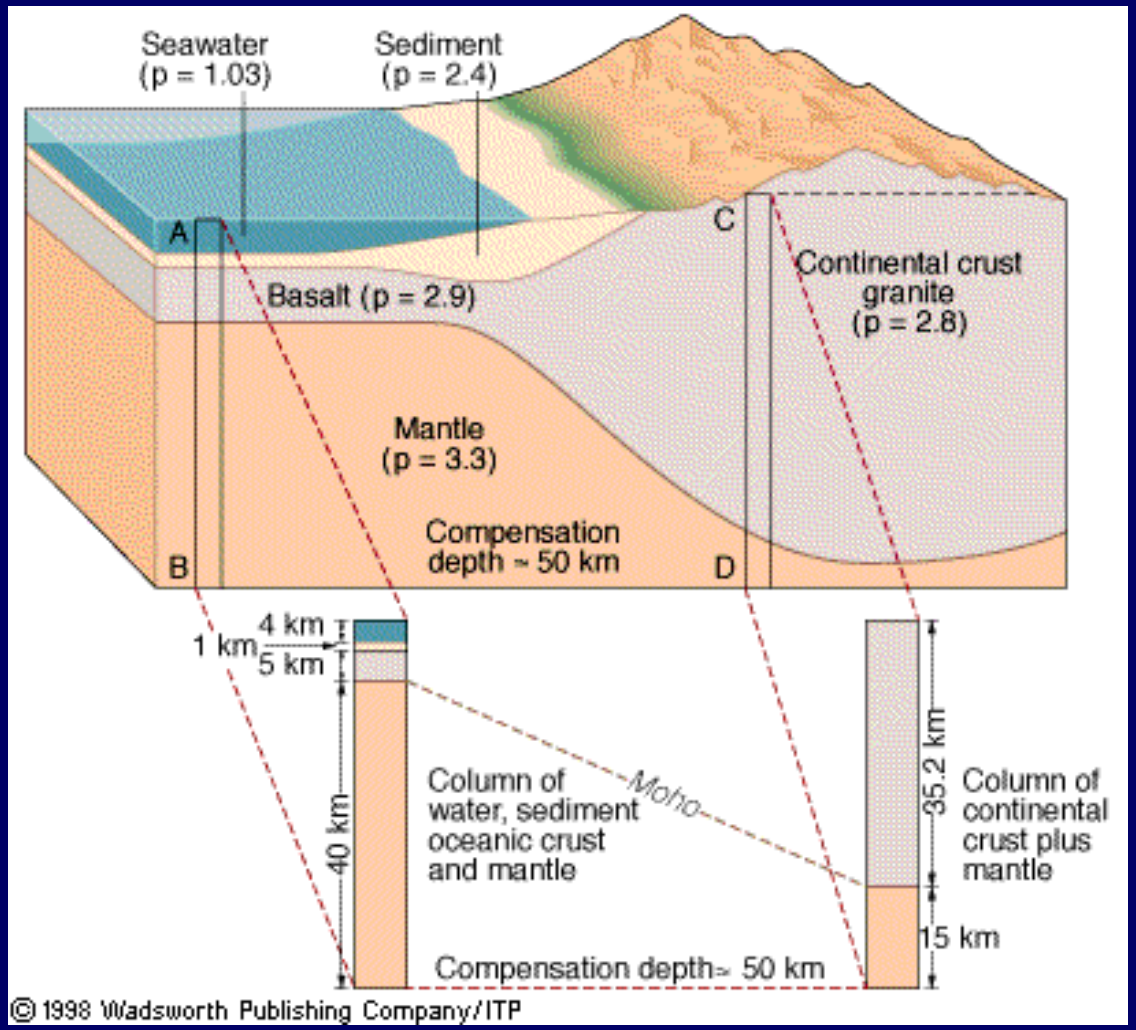
(b) The hypsographic curve: a cumulative frequency curve based on (a). This is *NOT* a profile of the Earth's surface; it is a curve showing the percentages of the Earth's surface that lie above, below, or between any given levels.

Hipsometrija Zemlje

- Krivulja ili histogram zastupljenosti koji dodatno ilustrira važnu činjenicu da je visinska raspodjela Zemljine površine bimodalna



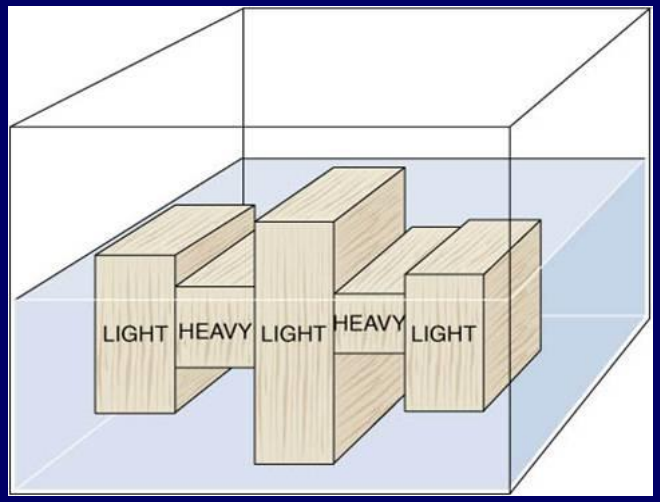
Hipsometrija Zemlje

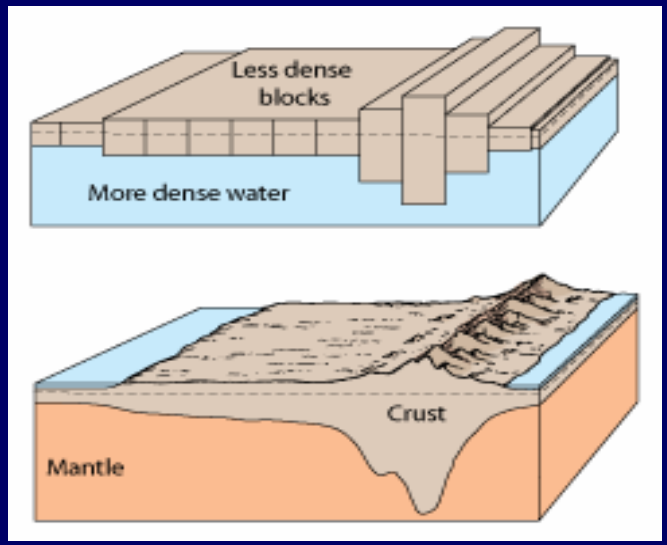


Hipsometrija Zemlje

- http://www.geo.cornell.edu/hawaii/220/PRI/isostasy.html

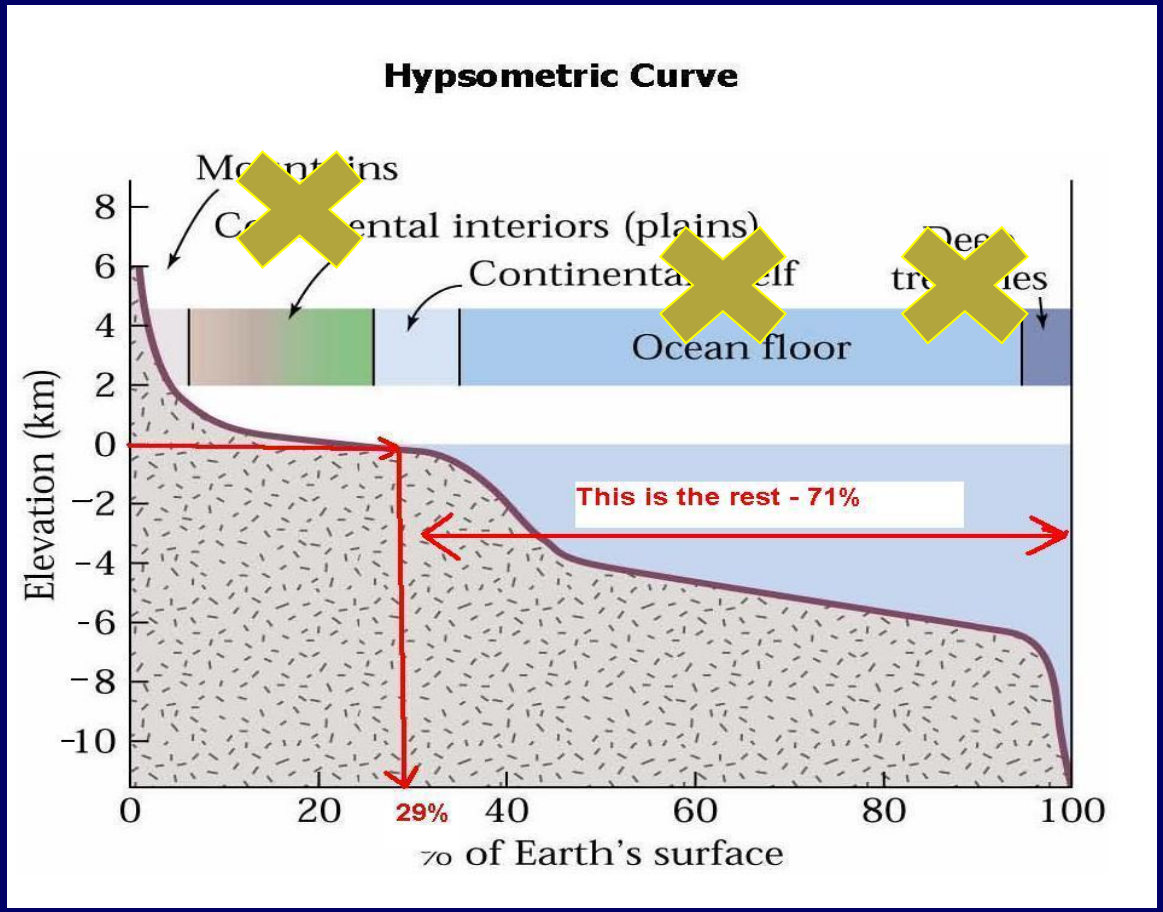
- Kontinentska kora
  - 2,7 g/cm^3, 30 km (25-70)
- Oceanska kora
  - 2,9 g/cm^3, 8 km (5-10)
- Astenosfera
  - 3,3 g/cm^3
- Uronjenost kontinentske kore = 81,81 % vol, h ispod = 24,5 km, h iznad = 5,5 km
- Uronjenost oceranske kore = 87,87 % vol, h ispod = 7 km, h iznad = 1 km
- Razlika ploha = 4,5 km
- Razlika između srednje visine kontinenata 0,8 km i srednje dubine oceana -3,7 km = 4,5 km





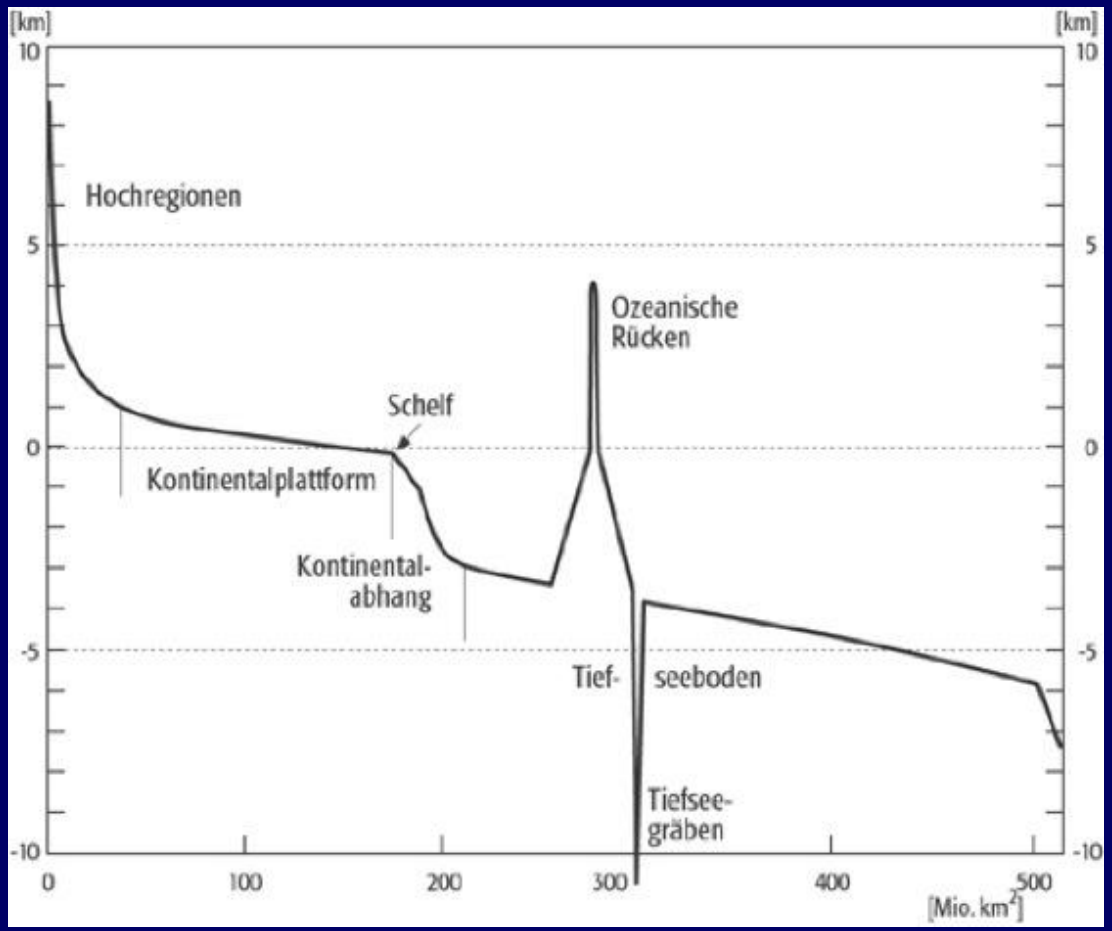
Hipsometrija Zemlje

- Hipsometrijska (hipsografska) krivulja Zemlje pa tako ni batimetrijska krivulja Zemljina podmorja ne prikazuje reljef



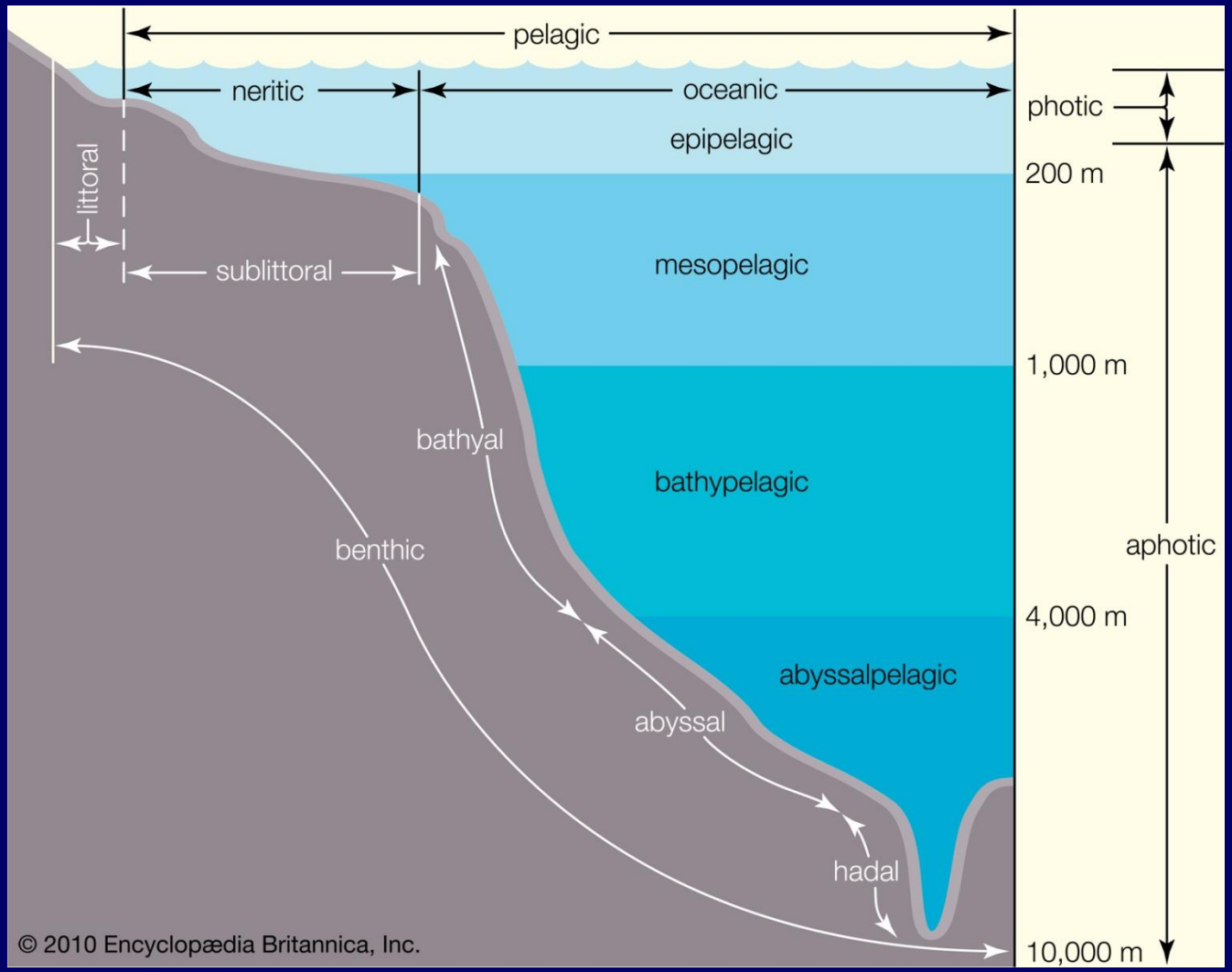
Hipsometrija Zemlje

- Morfotektonska krivulja (Louis, 1975.) također ne prikazuje reljef, ali prikazuje površinske udjele nekih kategorija reljefa na Zemlji



Hipsometrija Zemlje

- Za dubinske (batimetrijske) kategorije treba koristiti odgovarajuće nazive – to nisu reljefne kategorije



Reljef podmorja

- 1 Kontinentski rub (continental margin)
  - Kontinentski plićak (shelf), prijelomnica plićaka (shelf break)
  - Kontinentska strmina (continental slope)
  - Kontinentsko podnožje (continental rise)

  + prateći oblici na svakoj cjelini
- 2 Dubokomorski bazeni
  - Dubokomorska ravnica (abyssal plain)
  - Srednjooceanski lanac (mid-ocean ridge) + prateći oblici
    - Ostala dubokomorska uzvišenja
      - Vulkanski luk (volcanic ark)
      - Aseizmički niz (aseizmic ridge)
      - Samostalne dubokomorske planine (seamount, guyot)
      - Dubokomorski plato ili ravnjak (ocean plateau)
  - Dubokomorski jarak (deep sea trench)
    - Ostala dubokomorska udubljenja
      - Dubokomorska zavala (deep sea trough)