



NEMIRNI KONTINENTI

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Prirodoslovno-matematički fakultet, Zagreb

Radionica Udruge za
darovitost DAR
11. i 18.2.2016.

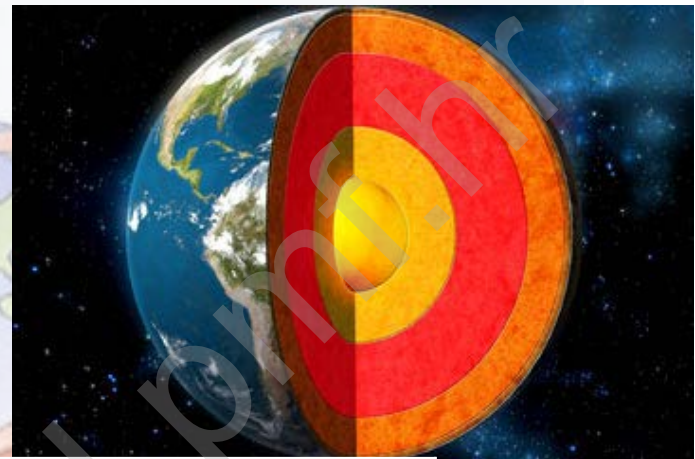
SADRŽAJ

- Unutarnja građa Zemlje
- Dinamika tektonskih ploča
- Putovanja kontinenata kroz geološko vrijeme
- Kakva nas budućnost čeka?



U utrobi Zemlje

...

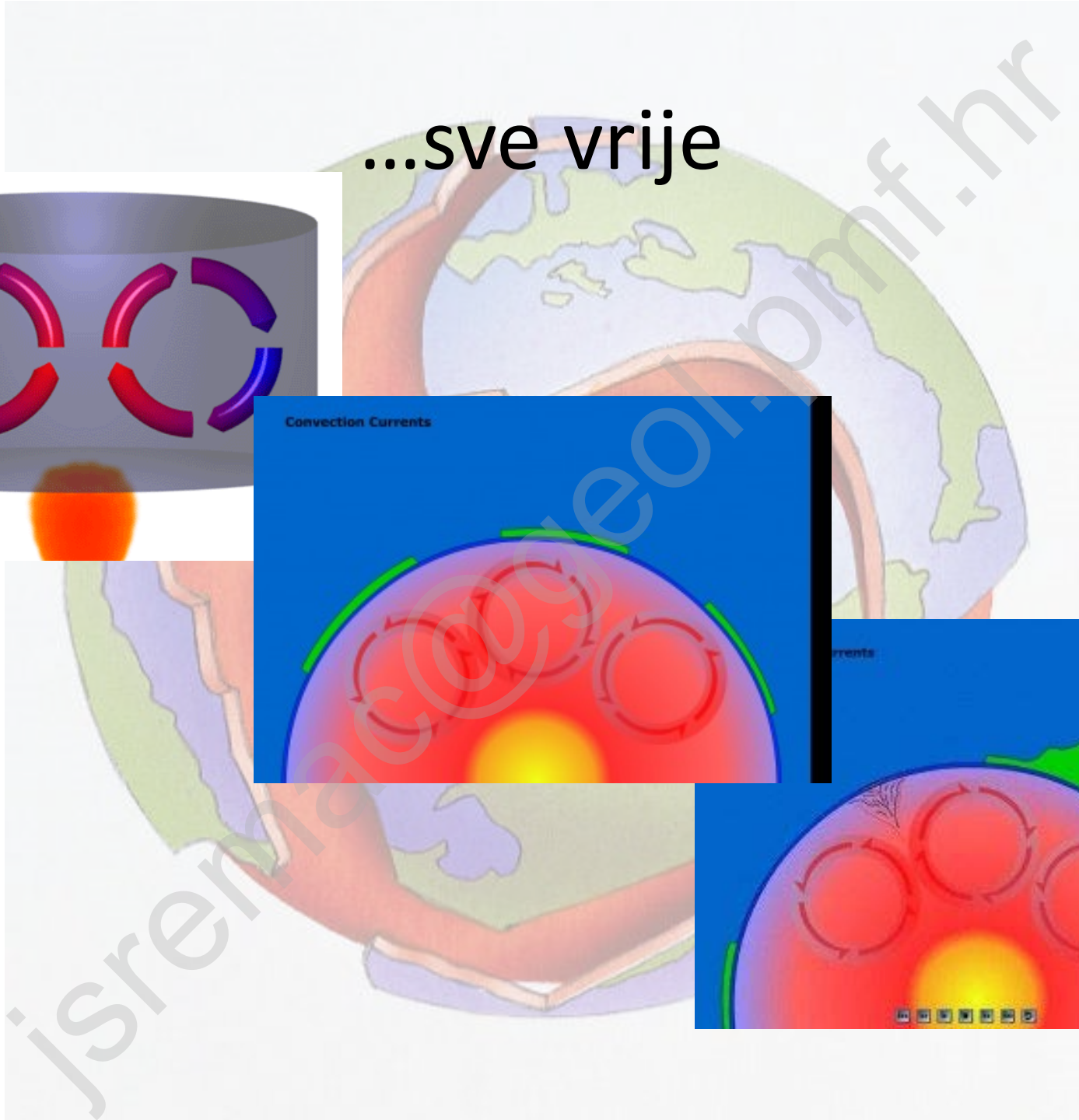
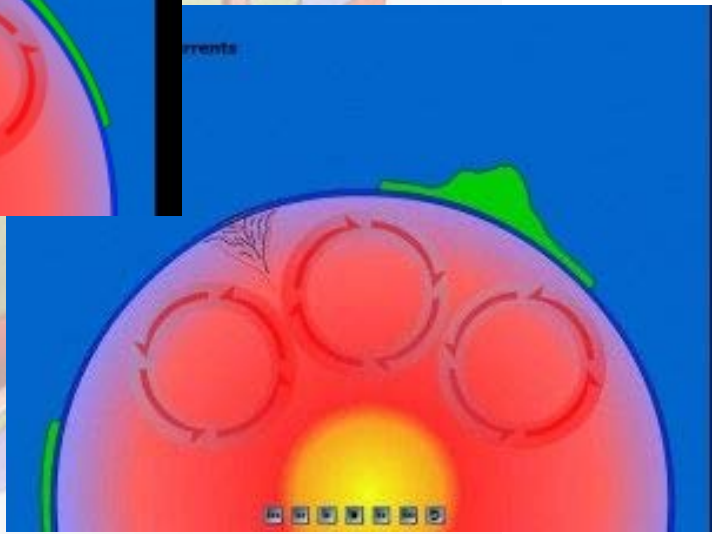
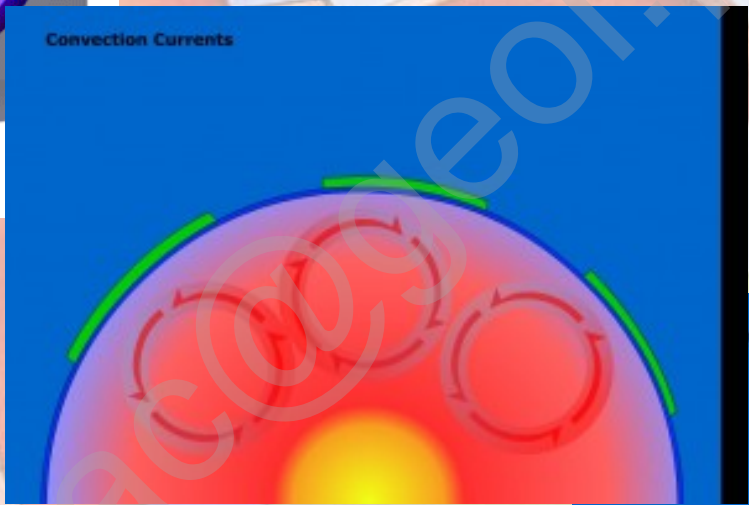
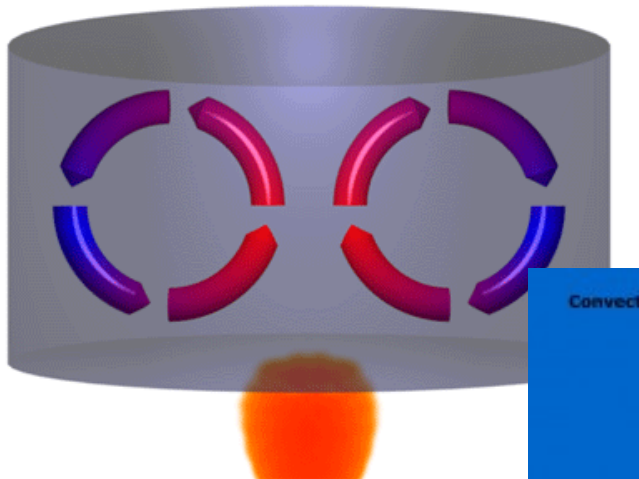


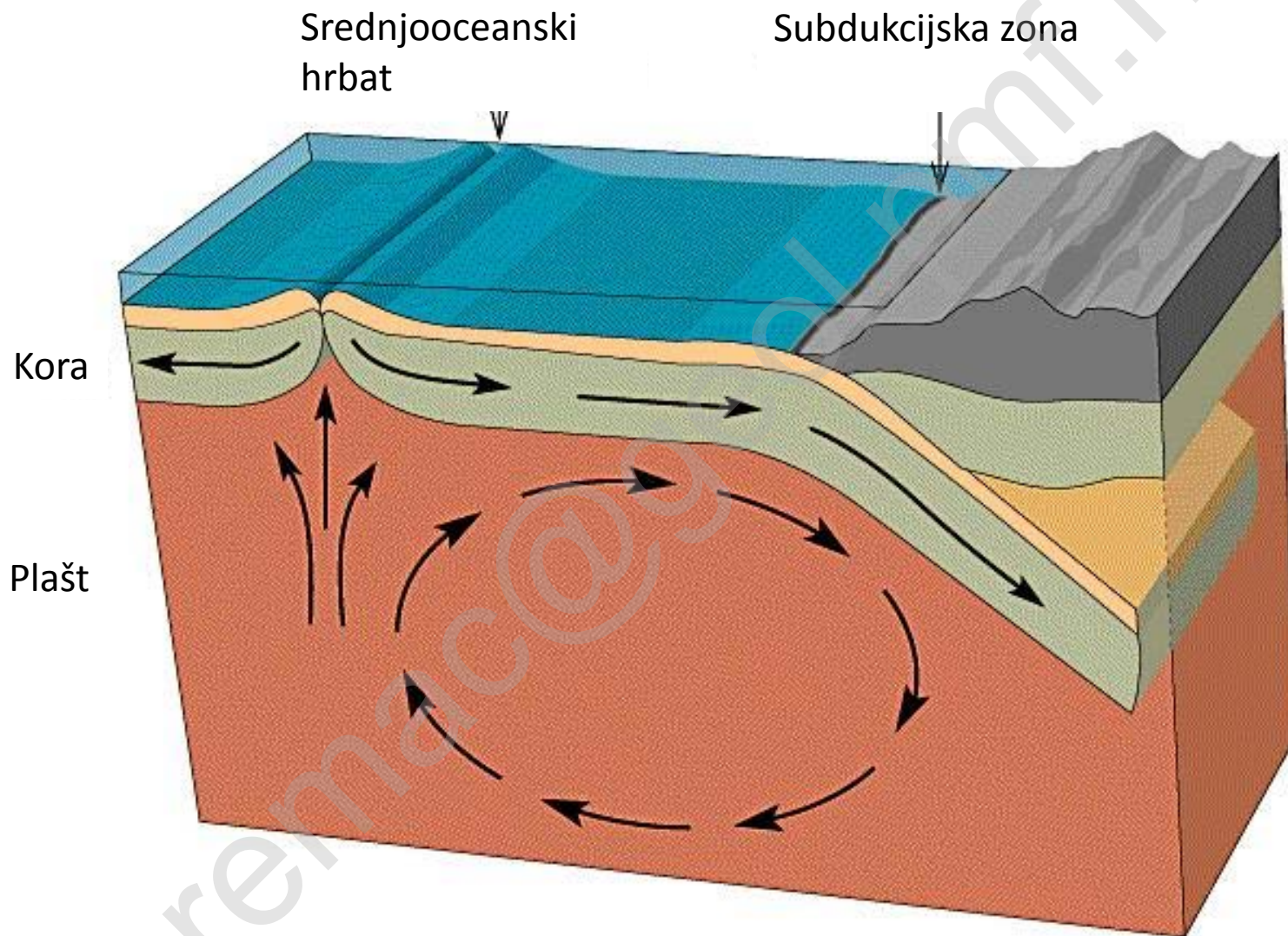
SLOJ	ČVRSTOĆA	DUBINA [km]	TEMPERATURA
LITOSFERA: KAMENA KORA GORNJI PLAST	čvrsta	0 - 40 km	do 870° C
ASTENOSFERA	tekuća	150 – 650 km	
PLAŠT	čvrst	650 – 2.700 km	do 3.700° C
VANJSKA JEZGRA	tekuća	2.890 – 5.150 km	do 4.300° C
UNUTARNJA JEZGRA	kruta	5.150 – 6.378 km	do 7.200° C

**MOHOROVIČIĆEV
DISKONTINUITET**

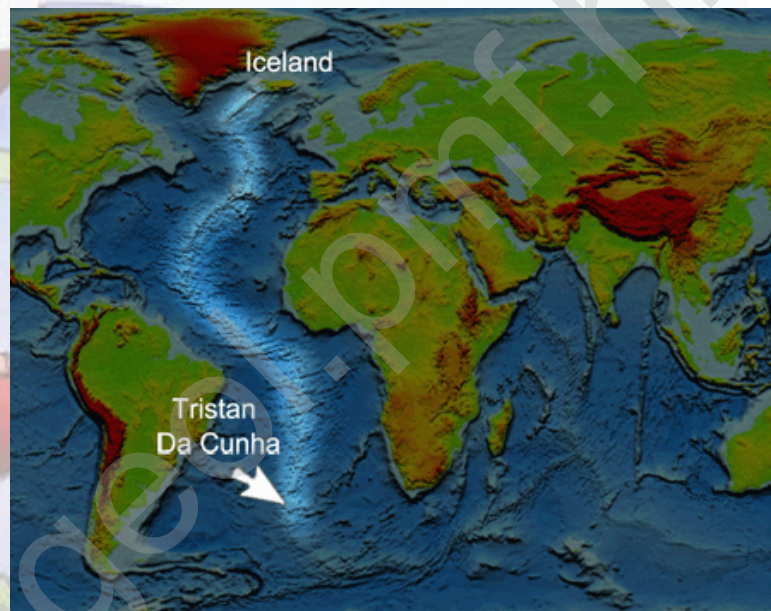
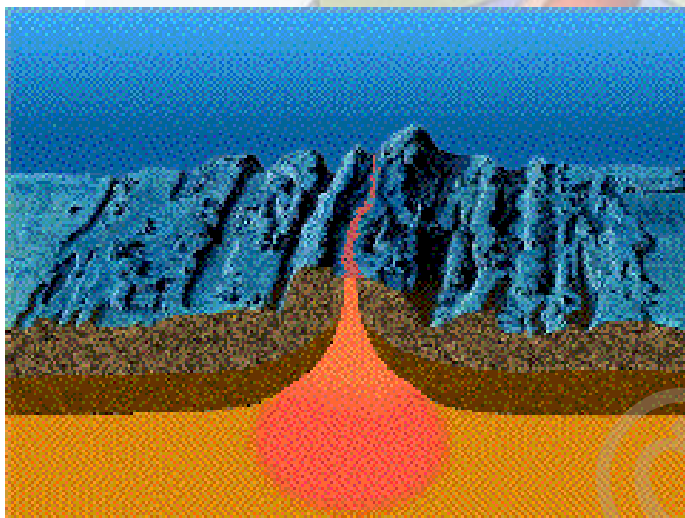
**GUTENBERGOV
DISKONTINUITET**

...sve vrije



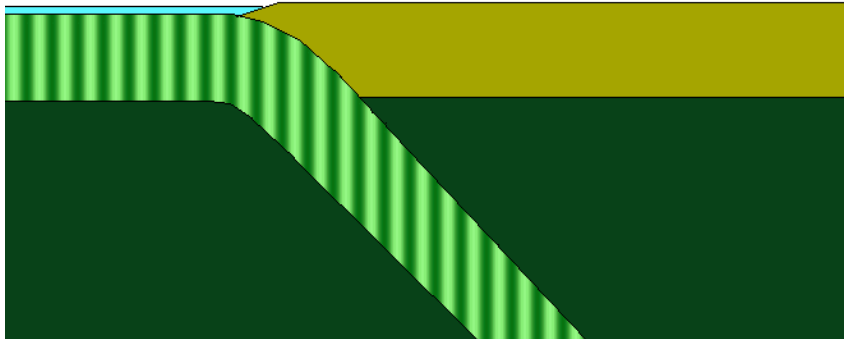


Divergencija (udaljavanje) ploča

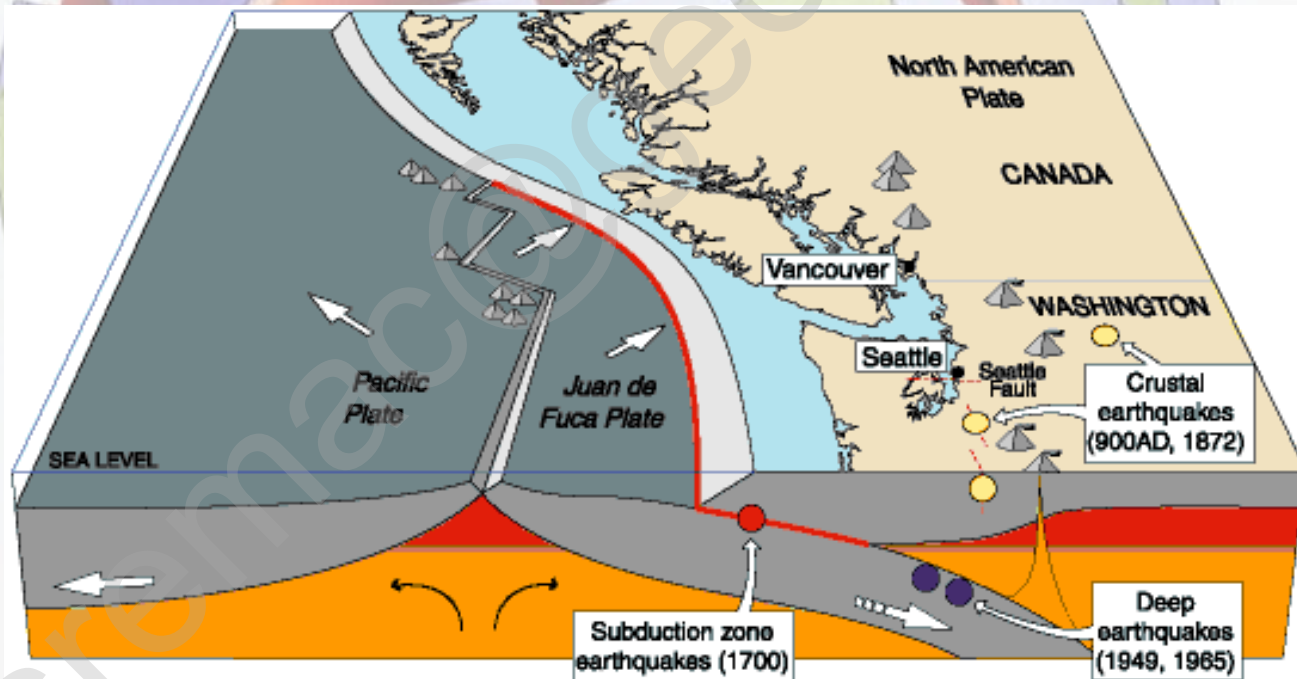


Juan de Fuca Plate

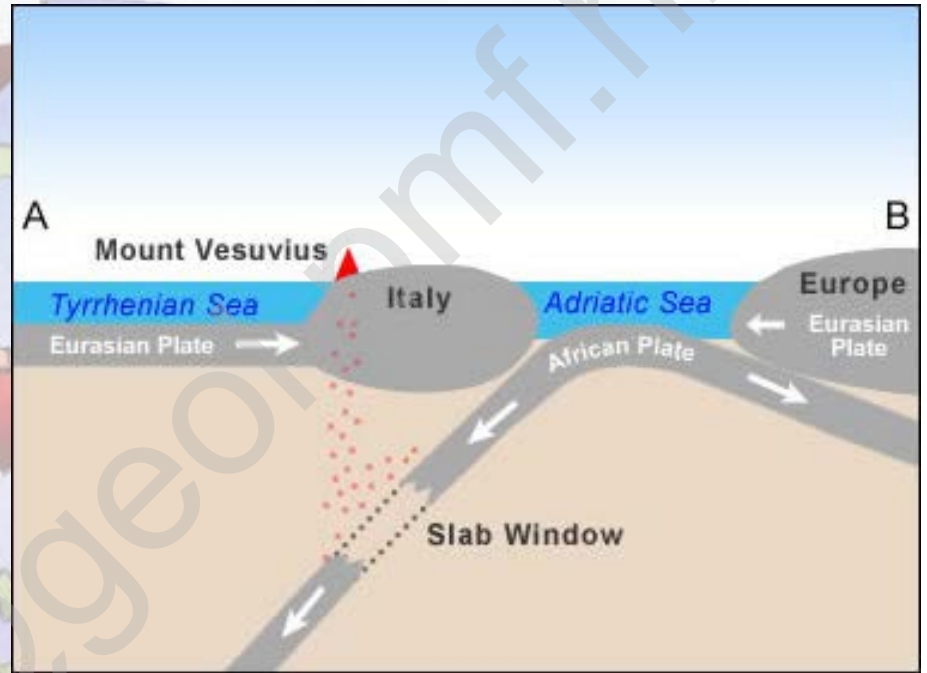
North America Plate



Konvergencija – Subdukcija



Erupcija Vezuva g. 79.



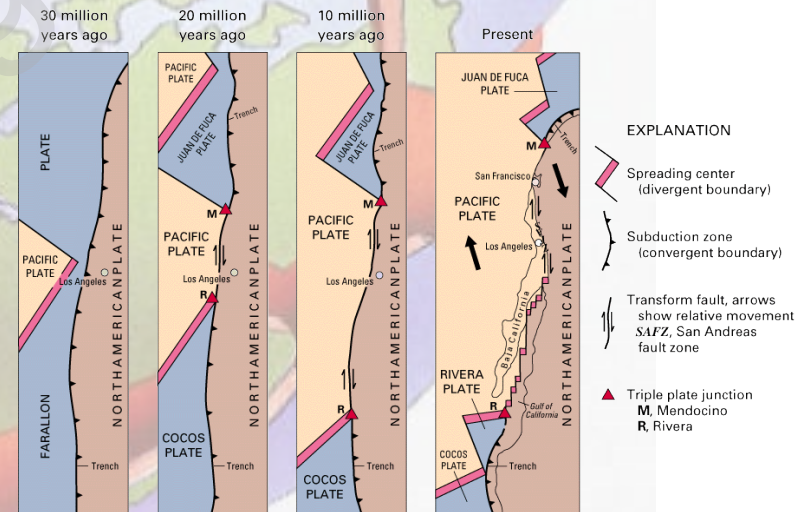
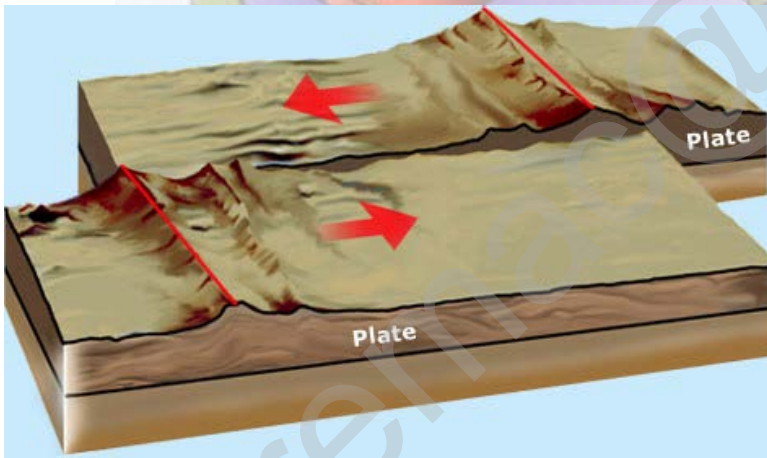
A map of the Gulf of Naples region in Italy. It shows the coastline with several ancient sites marked with red dots: Misenum, Neapolis, Herculaneum, Oplontis, Stabiae, Surrentum, Pompeii, Nuceria, and Salerno. Mt. Vesuvius is shown as a large dark area inland. The Gulf of Naples is to the west, and the Gulf of Salerno is to the east. A scale bar shows 10 miles and 10 kilometers. An inset map shows the location of the region within Italy.

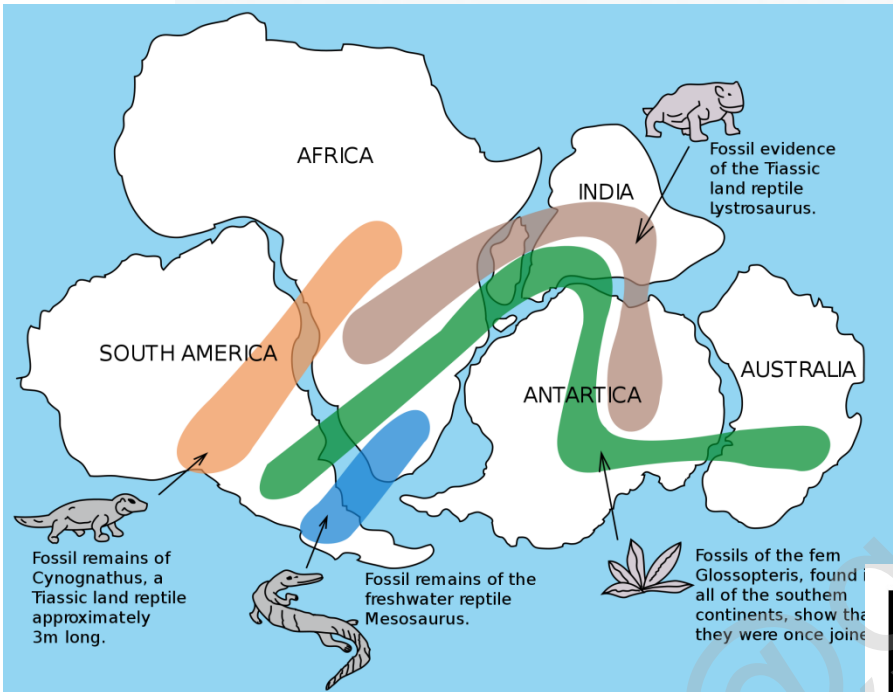




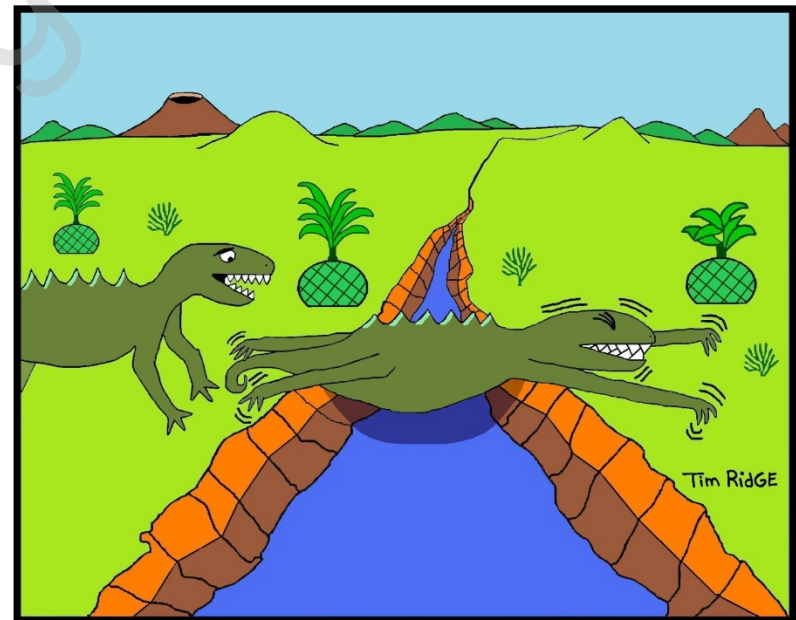
Transformni
Rasjedi:

San Andreas





Paleobiogeografija i tektonika ploča



Kad se tome doda vrijeme od nekoliko milijardi godina....

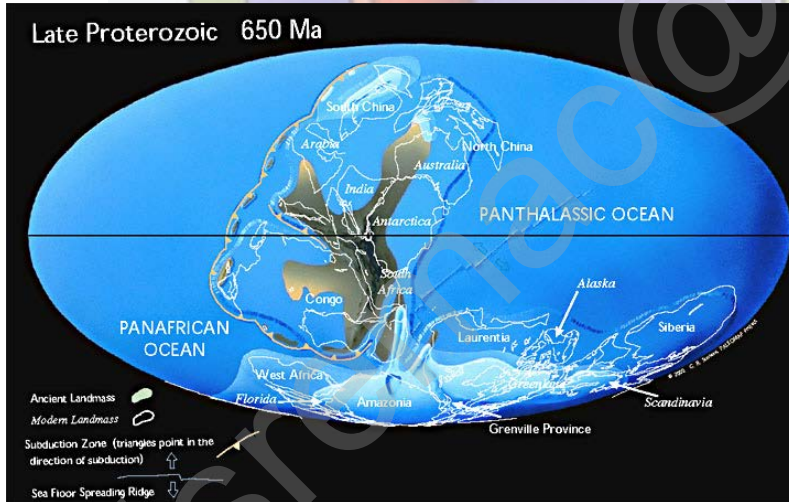


Postanak Mjeseca

- Kratko vrijeme nakon postanka Zemlje, prije oko 4,5 milijardi godina, protoplanet Zemlja se sudarila s objektom veličine Marsa, nazvanim Theia, sličnog izotopnog sastava.
- Mjesec je nastao od krhotina nastalih u tom sudaru.



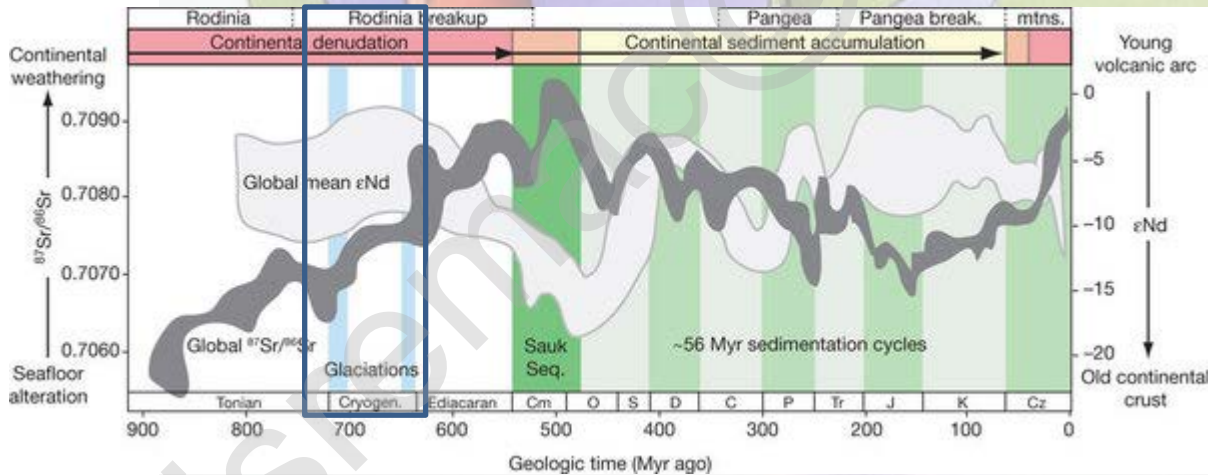
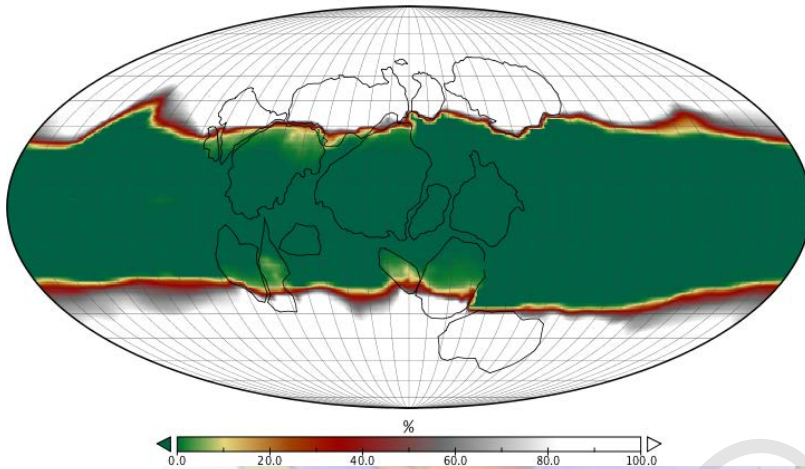
Prvi kontinenti



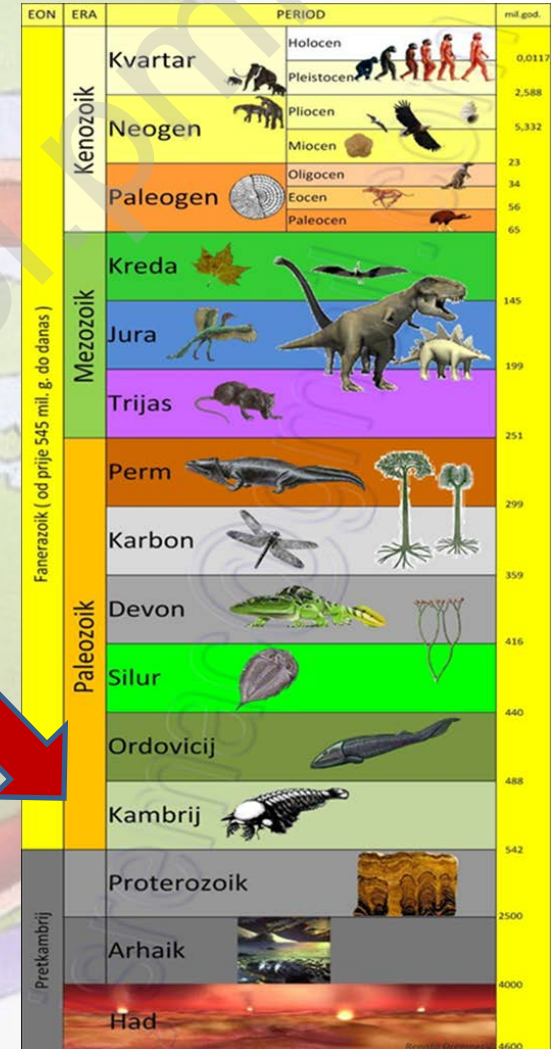
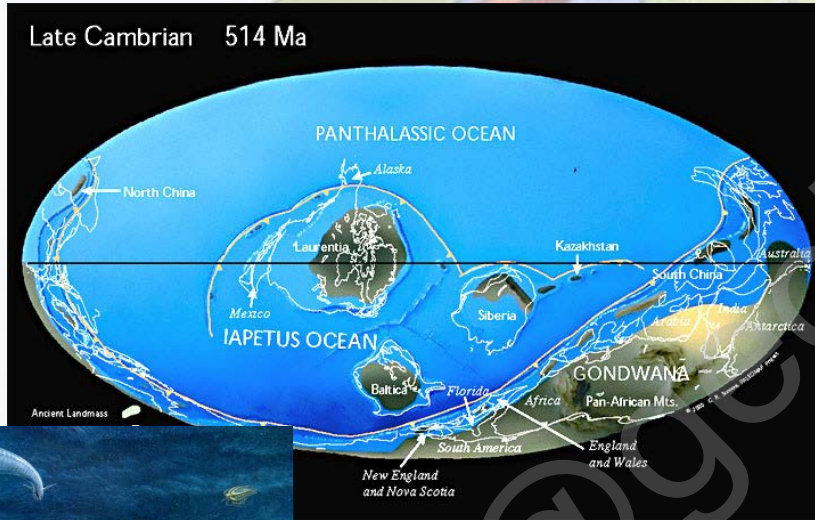
EON	ERA	PERIOD	mil. god.	
Fanerozoik (od prije 545 mil. g. do danas)	Kenozoik	Kvartar	Holocen	0,0117
		Neogen	Pleistocen	2,568
			Pliocen	5,332
		Paleogen	Miocen	23
			Oligocen	34
	Eocen		56	
	Mezozoik	Kreda	Paleocen	65
			Jura	145
		Trijas	199	
		Perm	251	
Karbon			299	
Paleozoik	Devon	359		
	Silur	416		
	Orдовичј	440		
	Kambrij	488		
	Proterozoik	542		
Pretkambrij	Arhaik	2500		
	Had	4000		
			4600	

Zemlja – snježna kugla

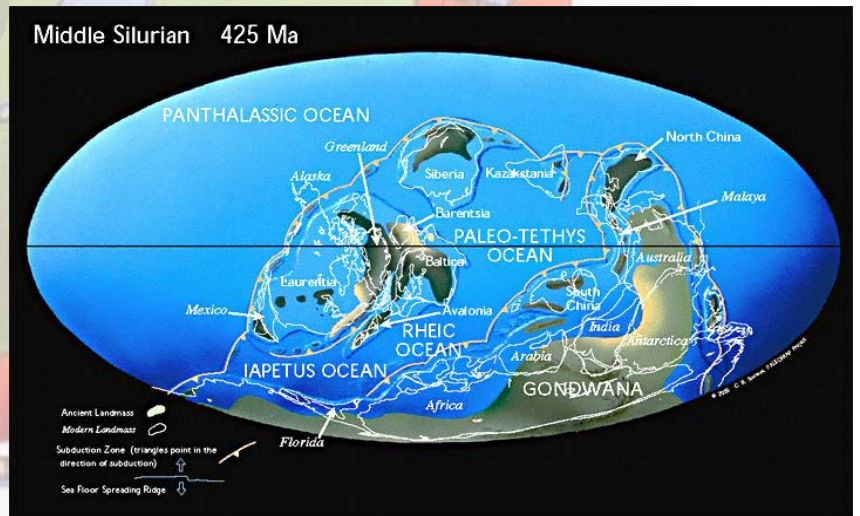
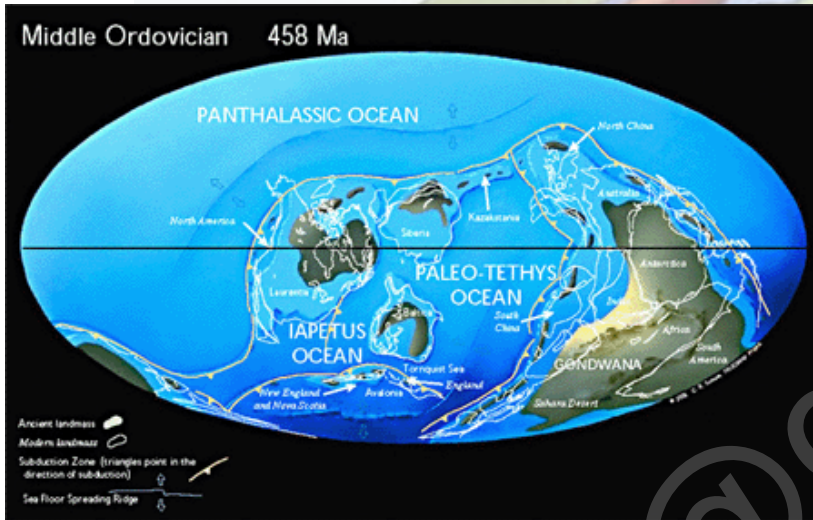
SNOW AND ICE COVERAGE



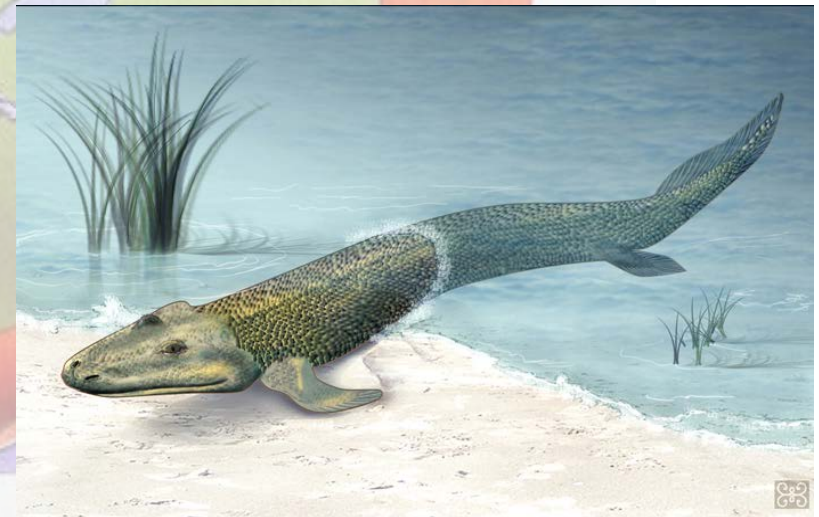
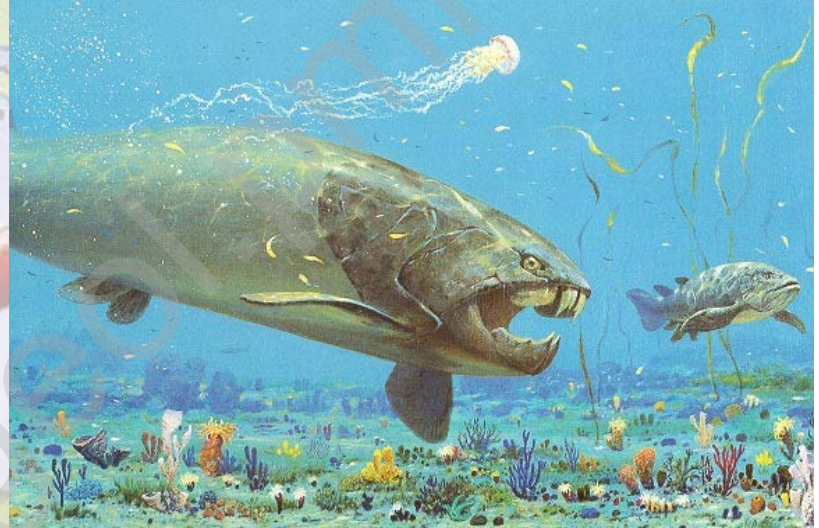
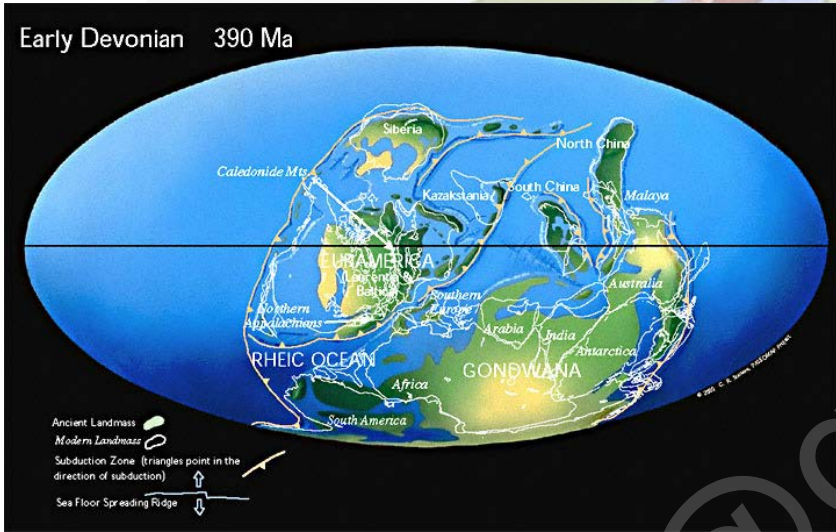
U vrijeme kambrijske eksplozije ...



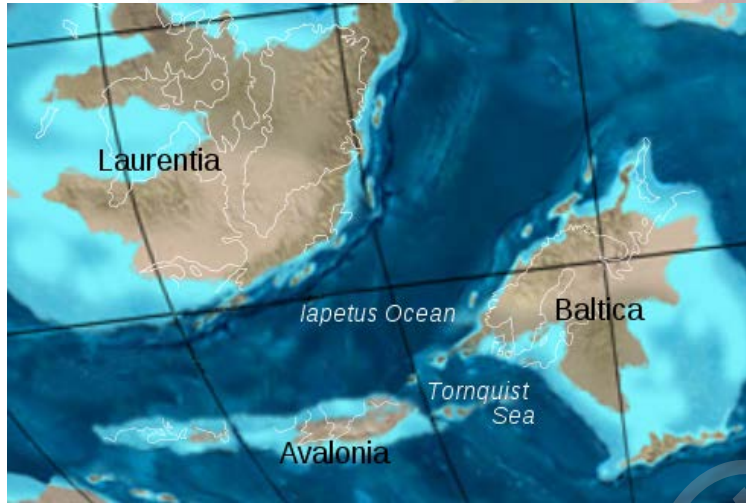
U ordoviciju i siluru



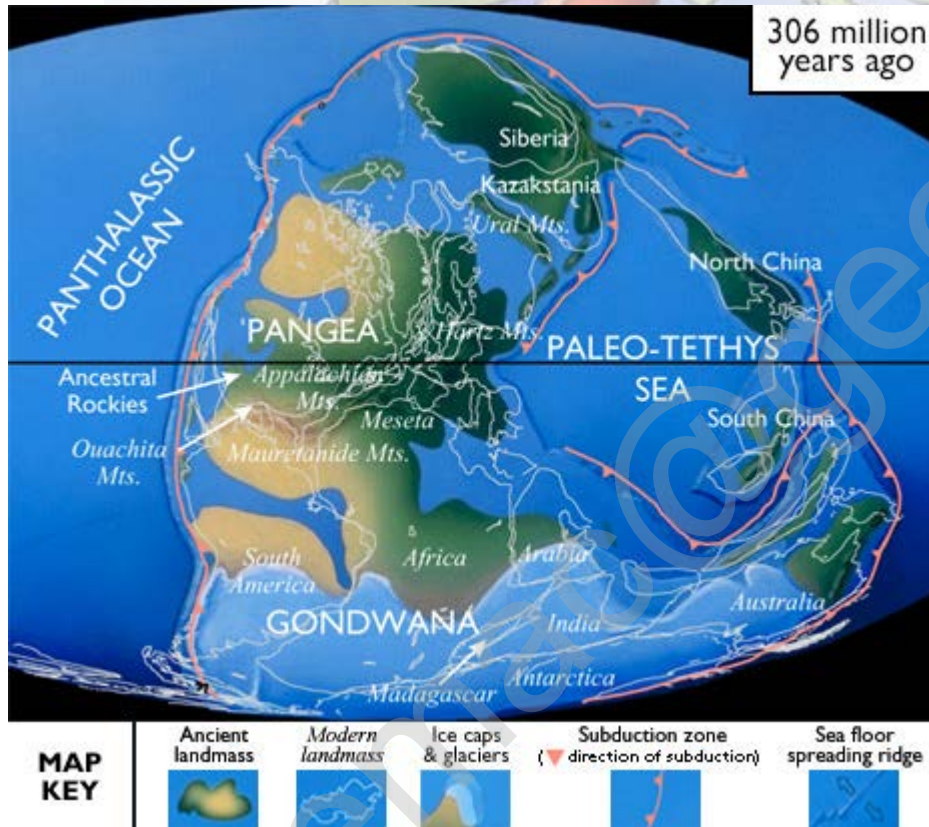
... devonu



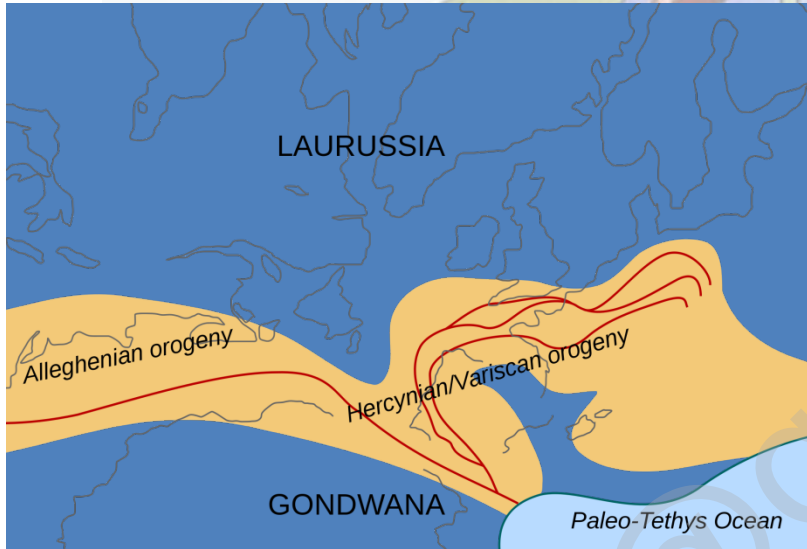
Kaledonska orogeneza



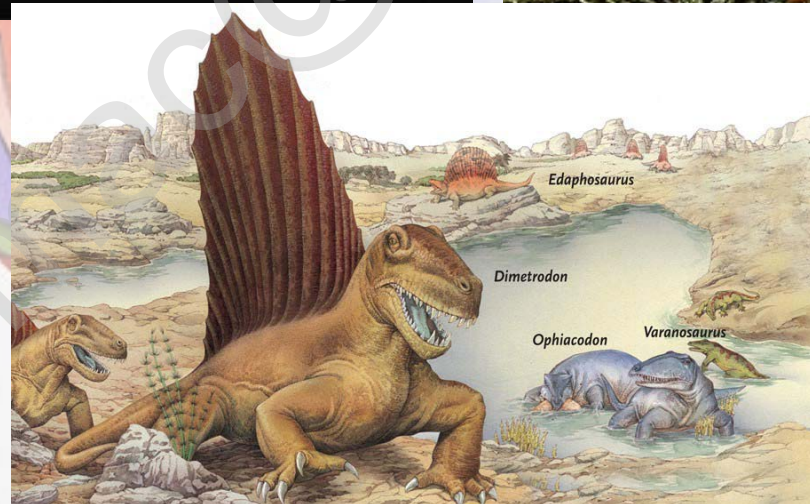
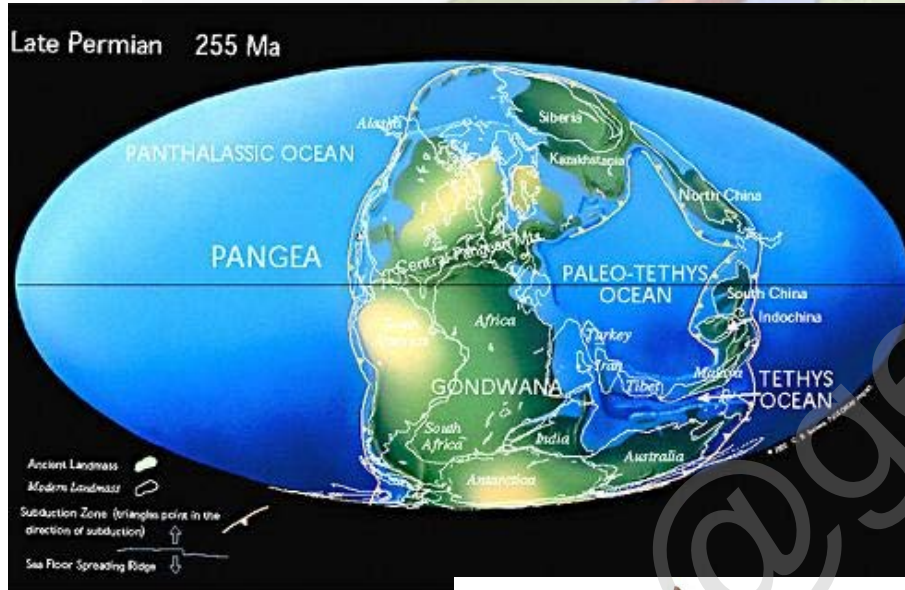
Karbon – doba močvarnih šuma



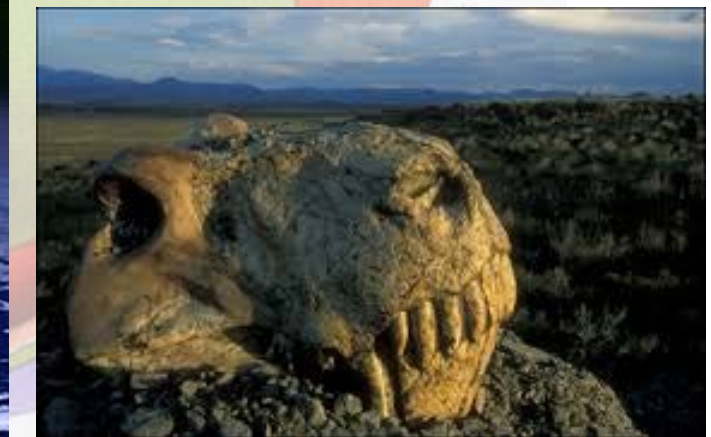
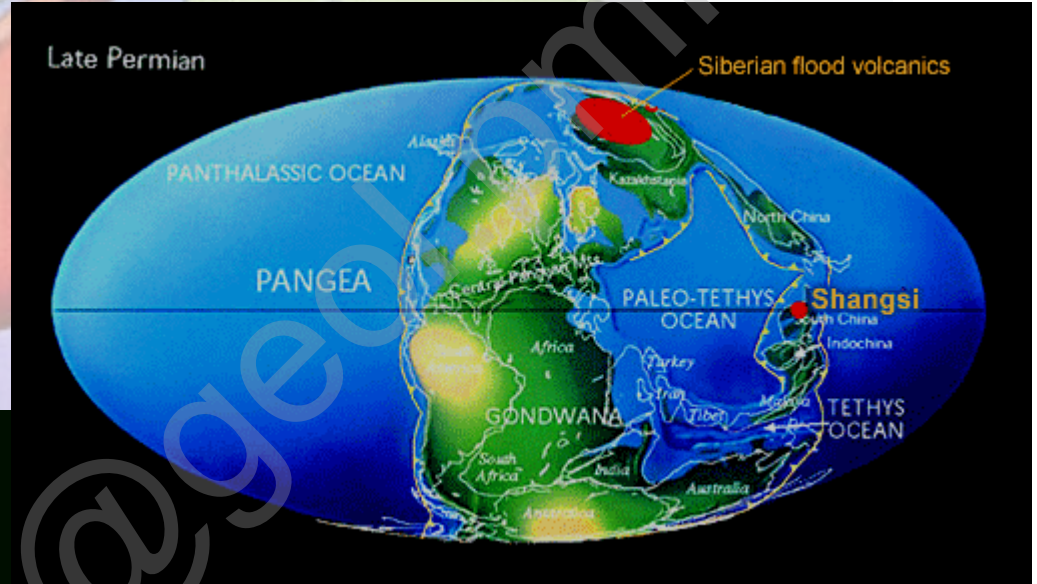
Hercinska (variscijska) orogeneza



Perm – spremaju se nevolje

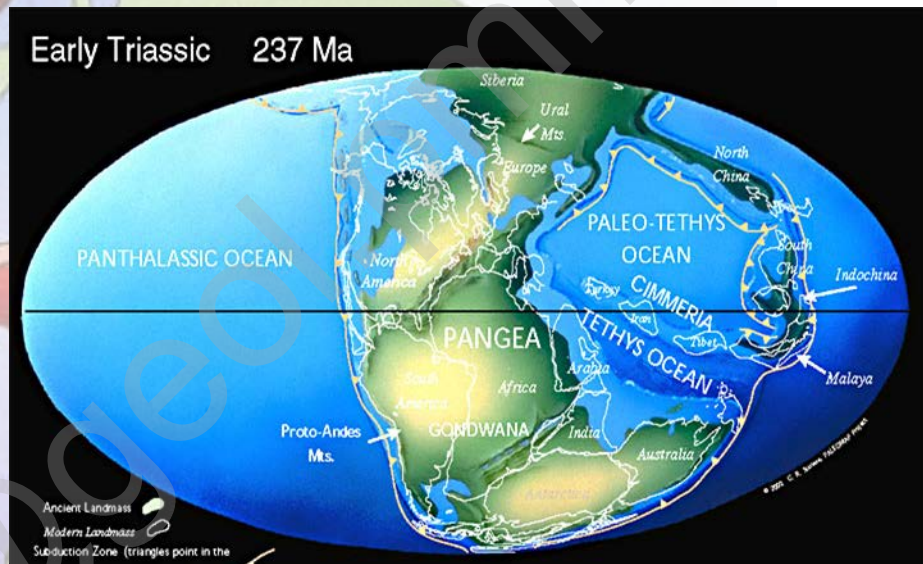


Majka svih izumiranja

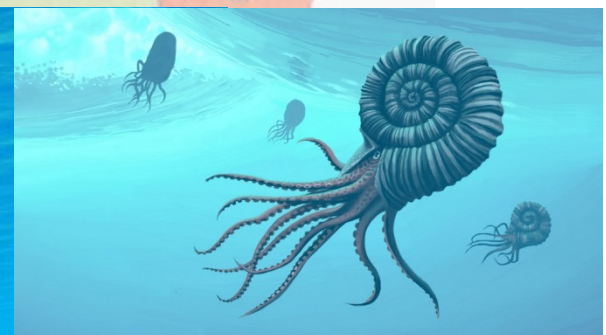
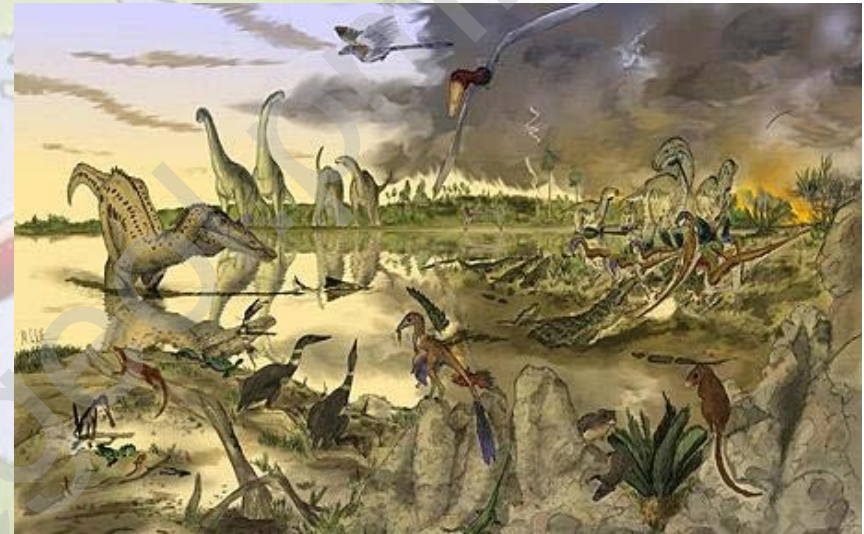
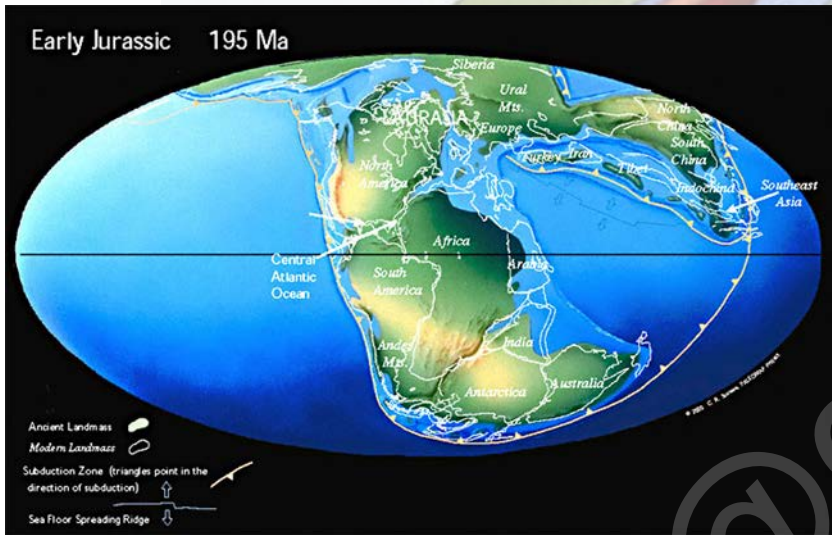


Trijas – počinje mezozojska era

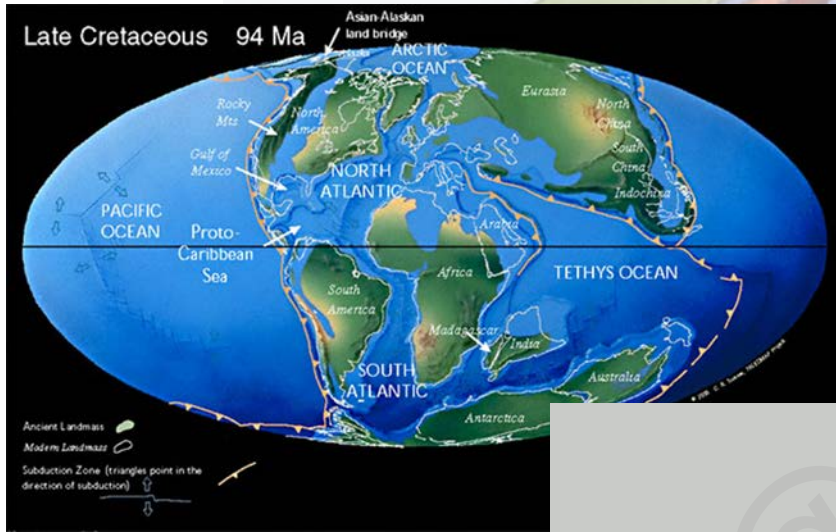
EON	ERA	PERIOD	mil. god.	
Fenerozoik (od prije 545 mil. g. do danas)	Kenozoik	Kvartar	Holocen	0.0117
			Pleistocen	2,588
		Neogen	Pliocen	5,332
			Miocen	23
			Oligocen	34
	Paleogen	Eocen	56	
			65	
	Paleozoik	Mezozoik	Kreda	145
			Jura	199
			Trijas	251
Paleozoik		Perm	299	
		Karbon	359	
		Devon	416	
		Silur	440	
		Ordovicij	488	
		Kambrij	542	
		Proterozoik	2500	
Pretkambrij	Arhaik	4000		
	Had	4600		



Jura – vladavina divova



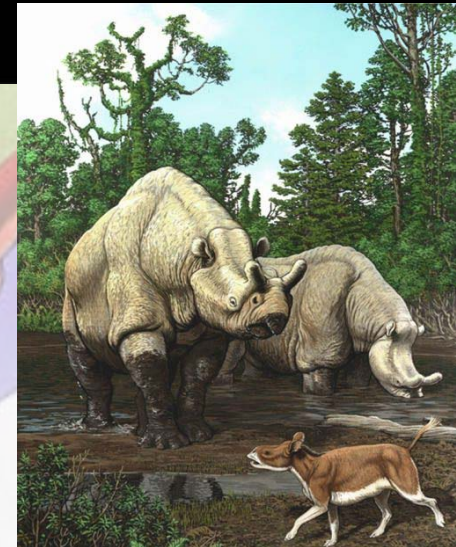
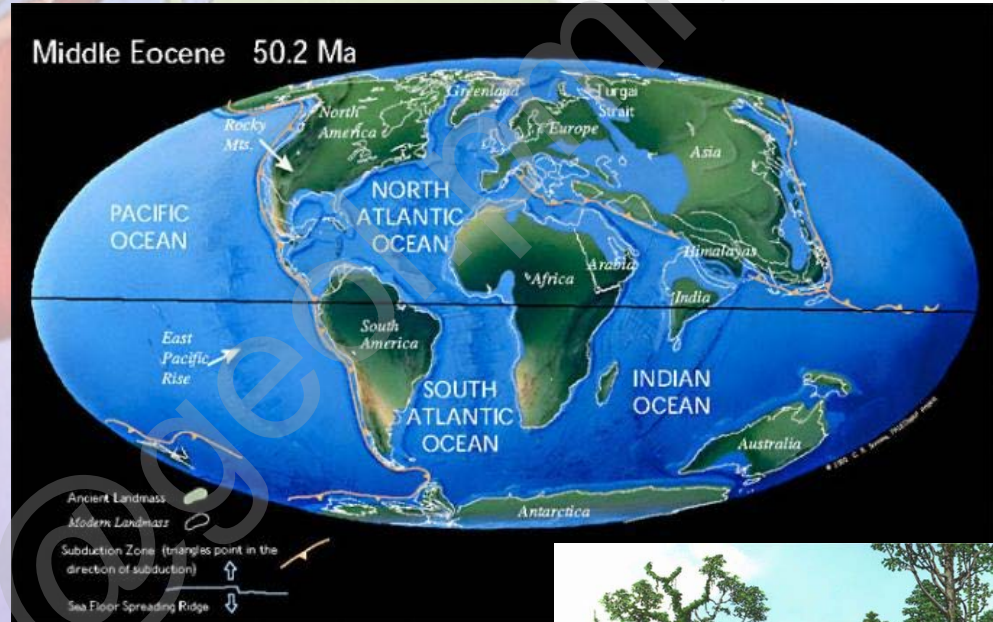
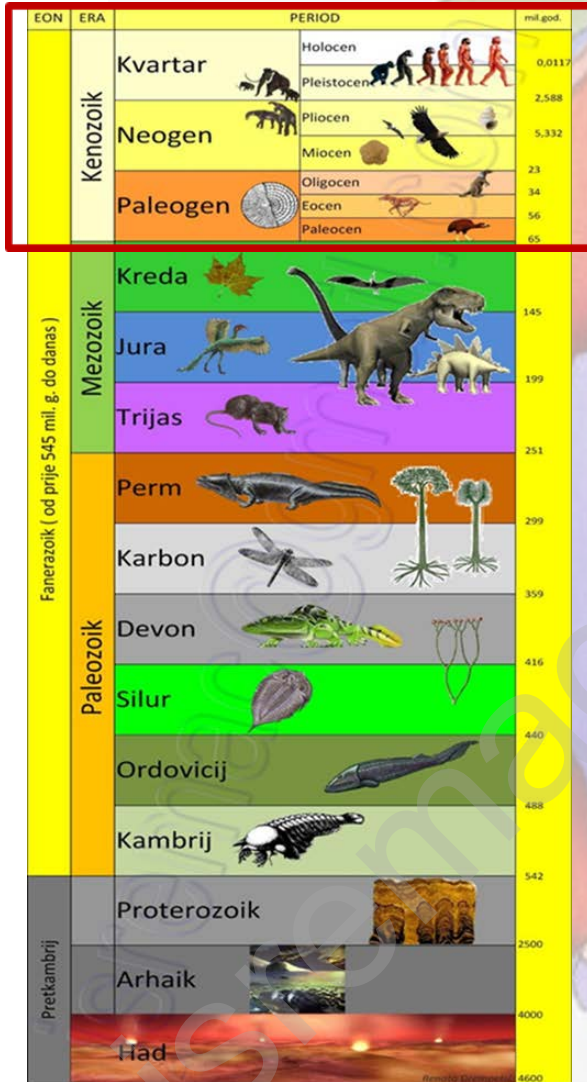
Kreda – mezozojska era se bliži kraju



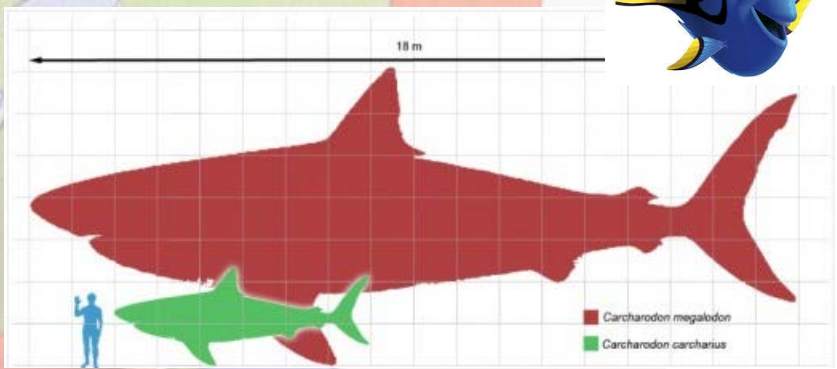
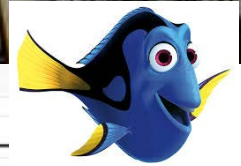
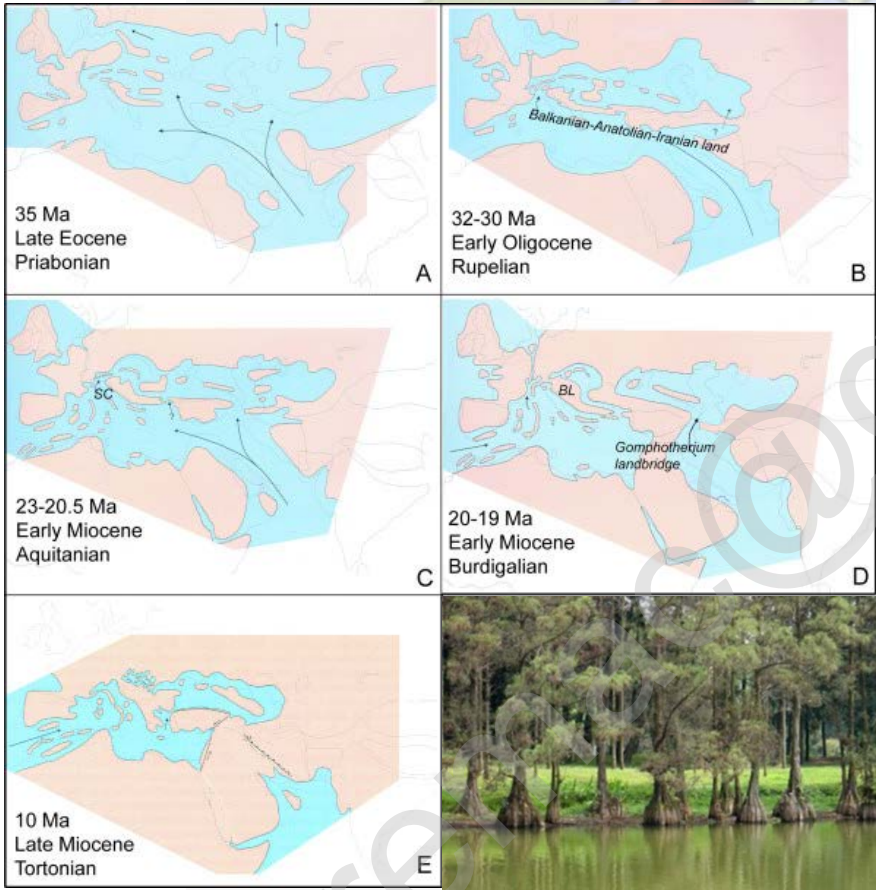
Smrt divova



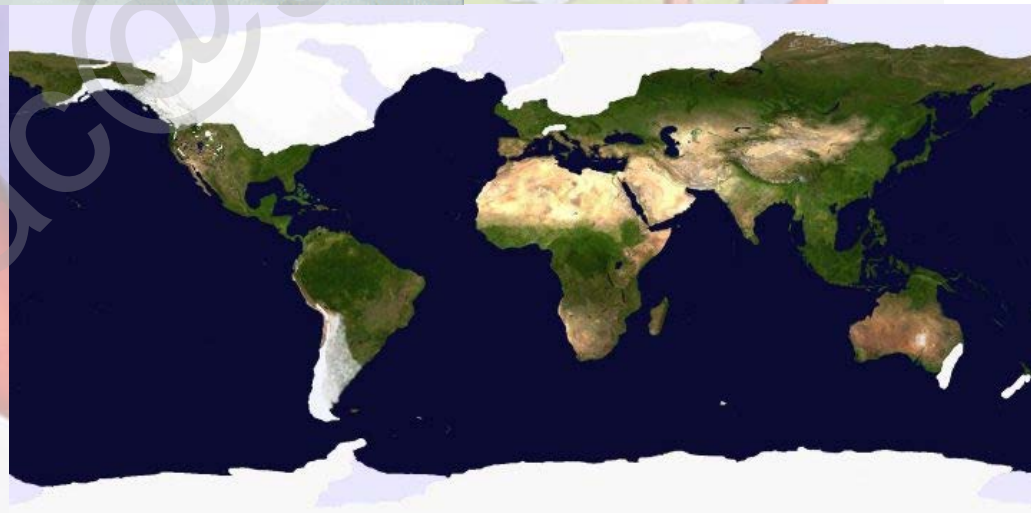
Paleogen – nova zora za sisavce



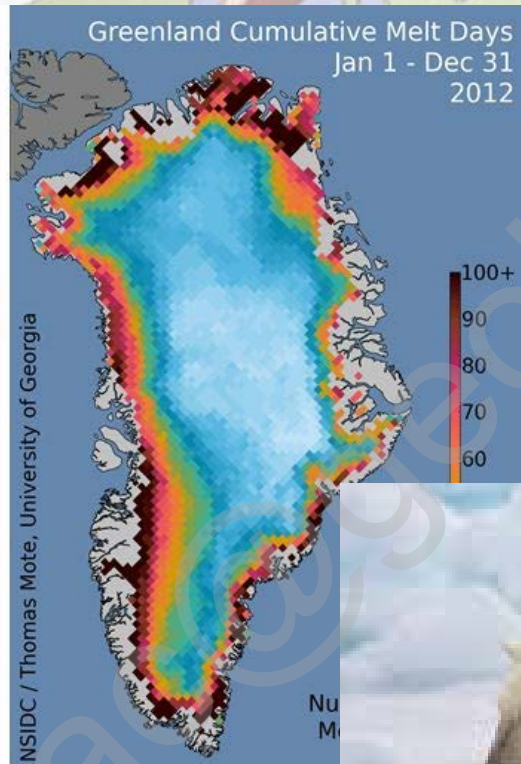
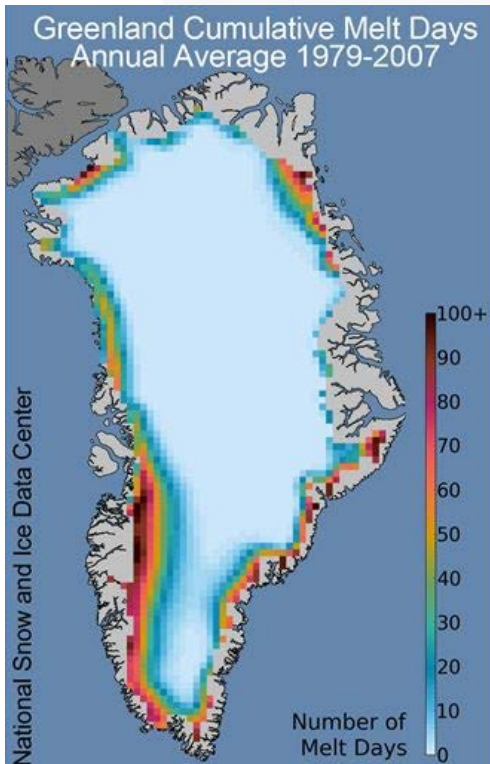
Paleogen – neogen : mora nastaju i nestaju



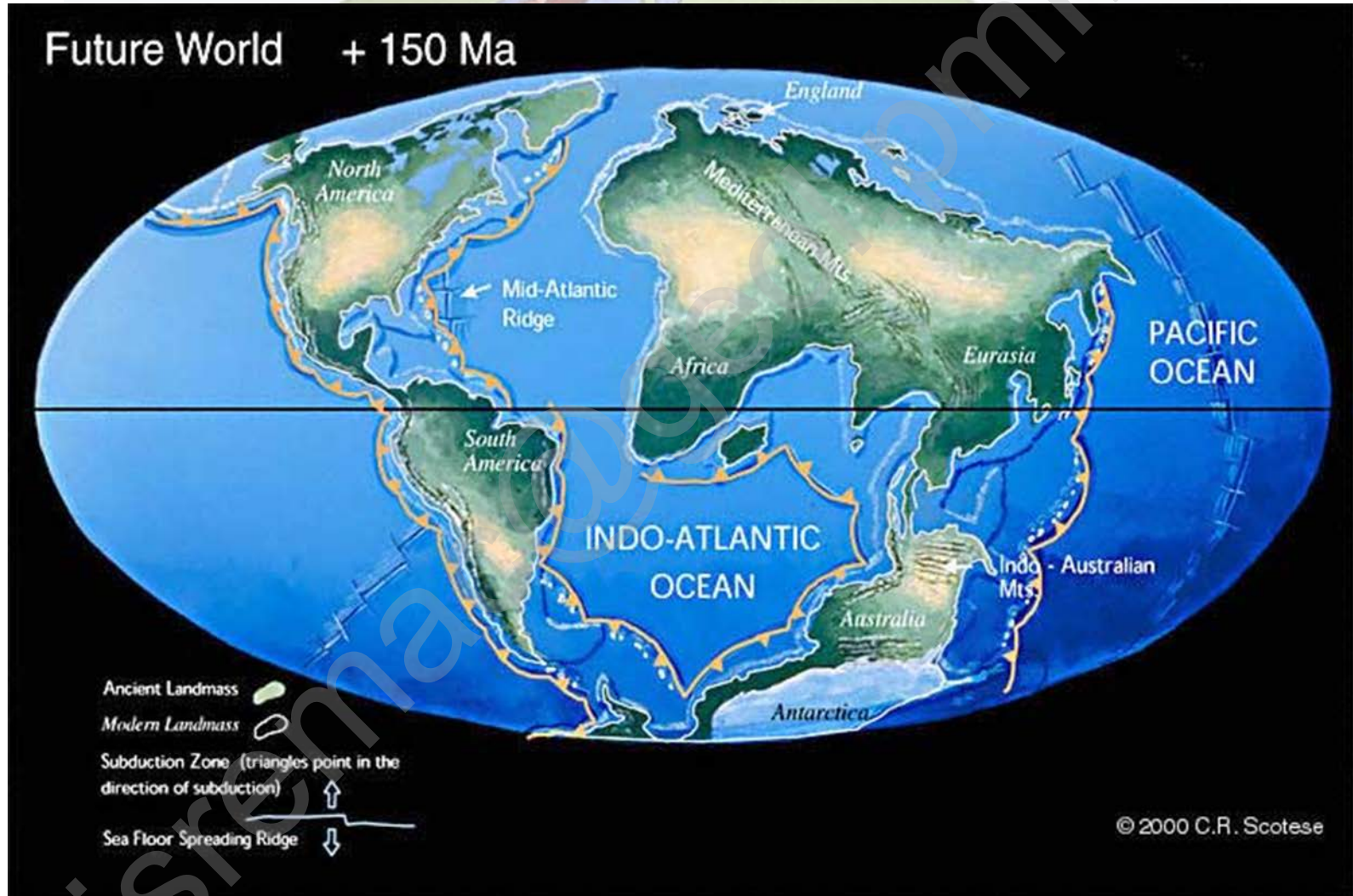
Postaje hladno



... pa opet toplo ...



... ali kontinenti i dalje putuju



Čeka li nas
zatopljenje

.....



EON	ERA	PERIOD	mil.god.	
Fanerozoik (od prije 545 mil. g. do danas)	Kenozoik	Kvartar	Holocen	0.0117
			Pleistocen	2.588
		Neogen	Pliocen	5.332
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	Paleocen		65	
	Mezozoik	Kreda		145
			Jura	199
		Trijas		251
Perm			299	
Paleozoik		Karbon		359
	Devon		416	
	Silur		440	
	Ordovicij		488	
	Kambrij		542	
Pretkambrij	Proterozoik		2500	
	Arhaik		4000	
	Had		4600	



... ili novo
ledeno doba?

Pitanja možete poslati i elektroničkom poštom
na adresu:
jsremac@geol.pmf.hr

Hvala na pažnji 😊

