

Avances en la Geología en torno a la Reserva Nacional Altos de Lircay

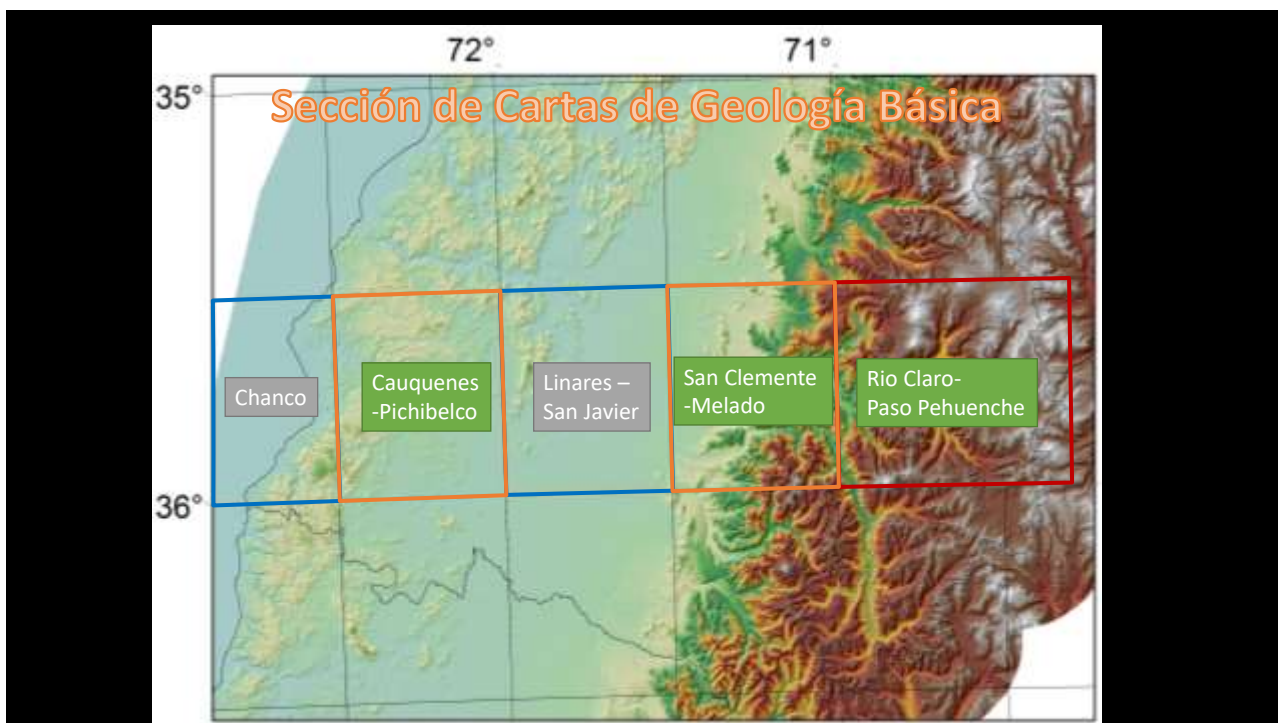
*Una historia de cerca de 30 Millones de
años*



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Departamento de Geología General
SERNAGEOMIN

1



2

1. Geología General

3

Generalidades acerca de la Tierra

4

La Tierra **está viva** y ha evolucionado desde hace mucho tiempo

¿Cuántos años tiene la Tierra?

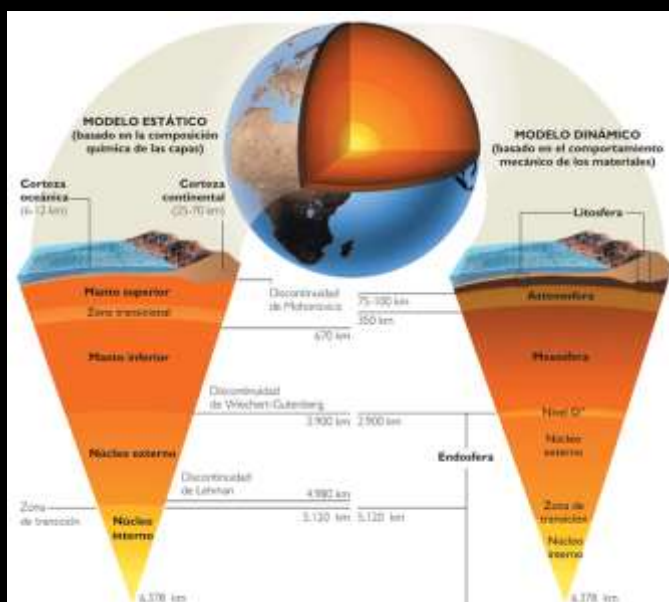
4.600 Millones de años!!!!



Tomado de Chong 2001

5

Estructura interna Actual



6

Teoría de Tectónica de Placas

7



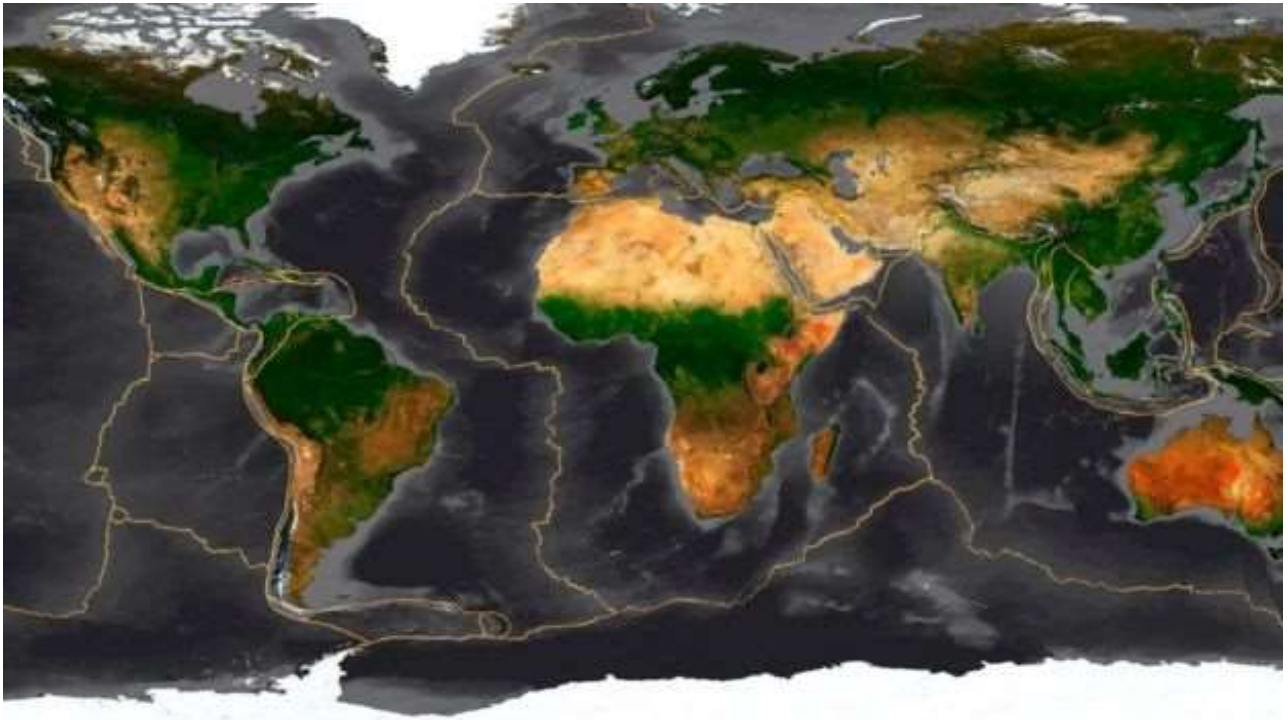
Alfred Wegener 1912

Propuso la hipótesis de

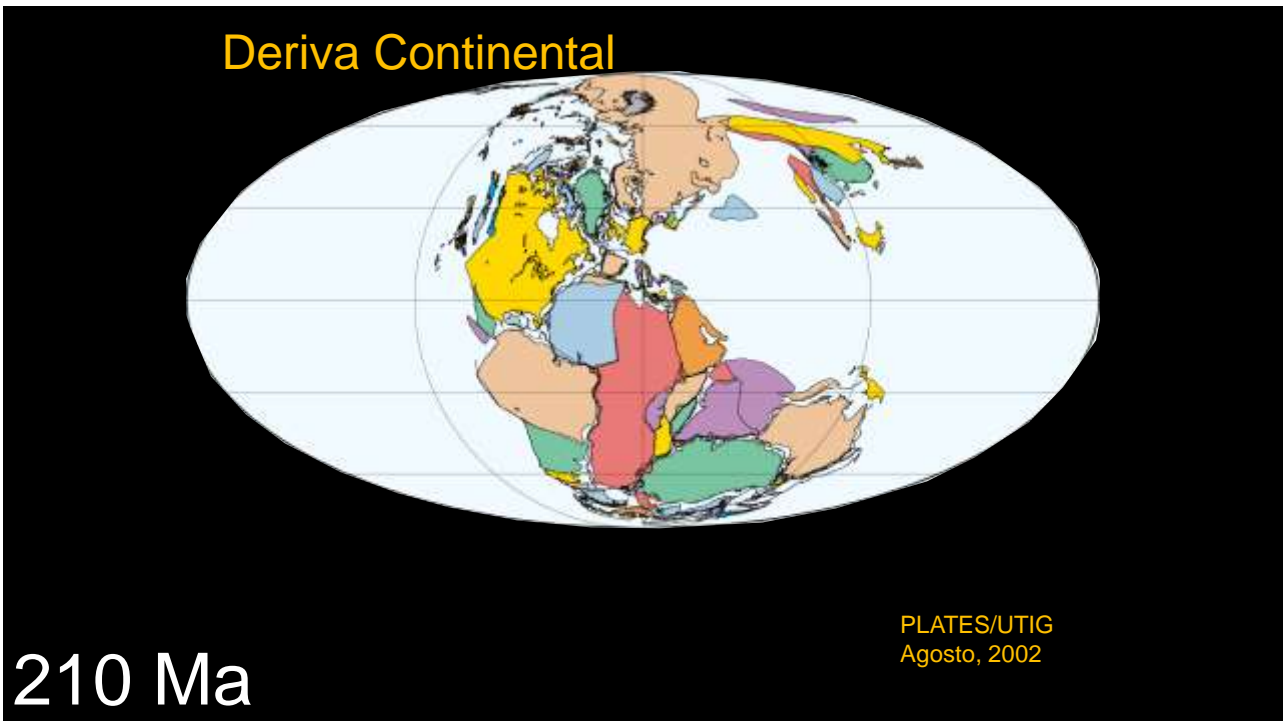
La Deriva Continental

...su teoría recién fue aceptada por la comunidad científica
en los años **60's 70's!!!**

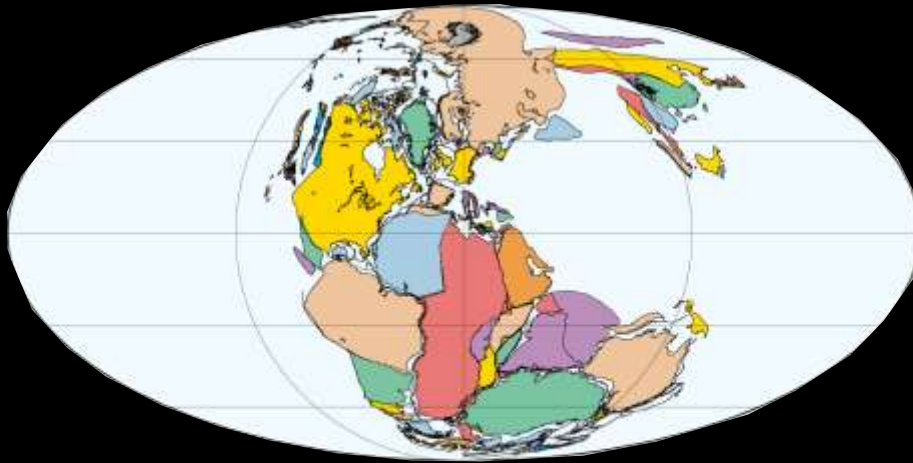
8



9

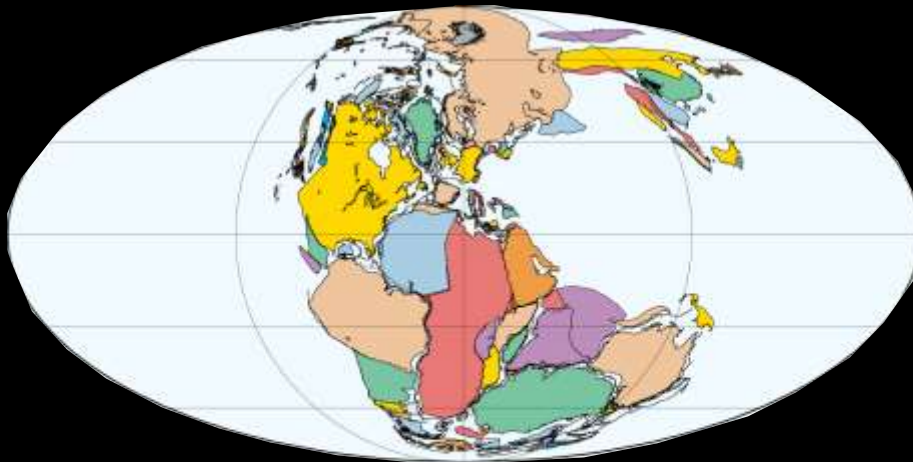


10



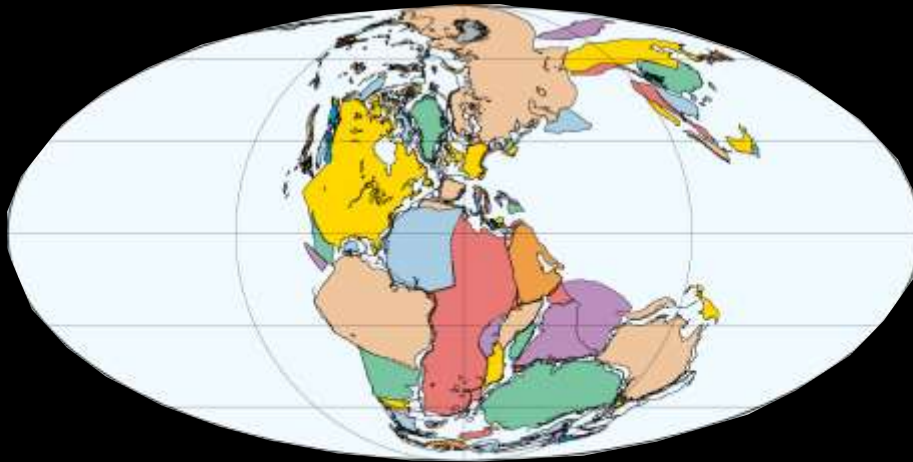
200 Ma

11



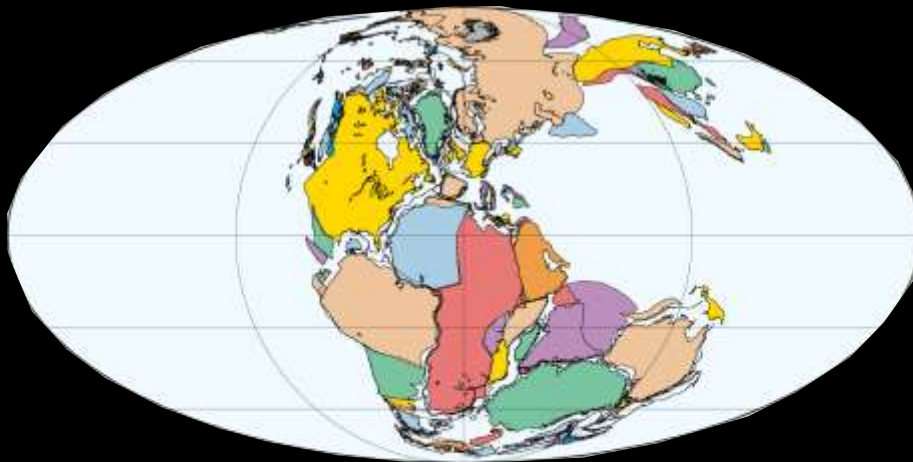
190 Ma

12



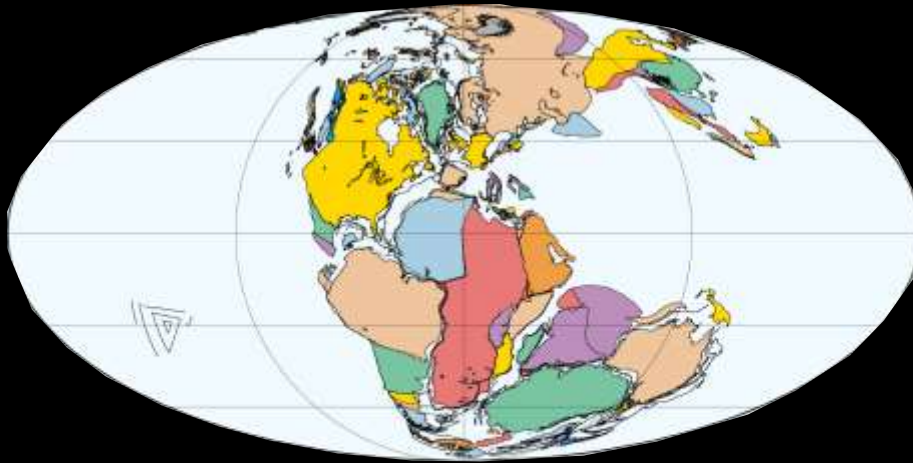
180 Ma

13



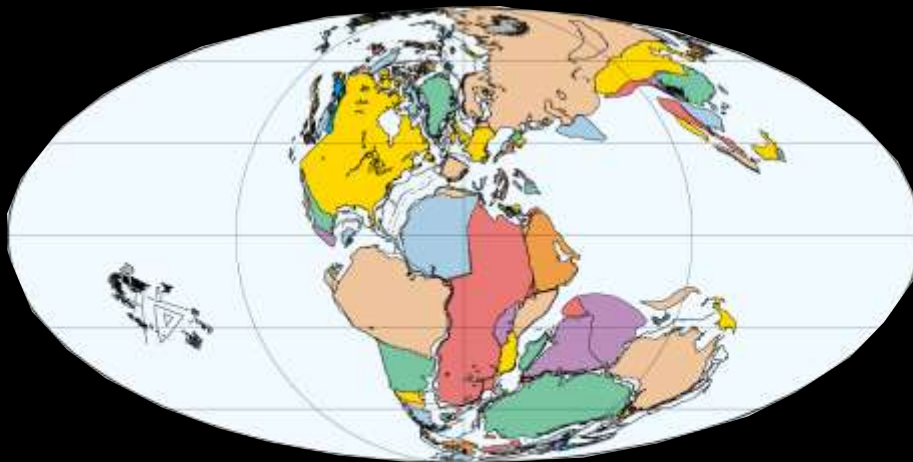
170 Ma

14



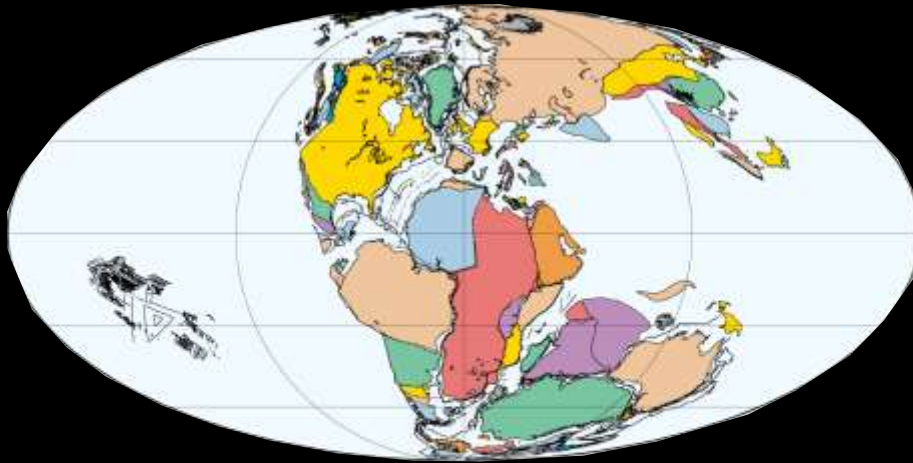
160 Ma

15



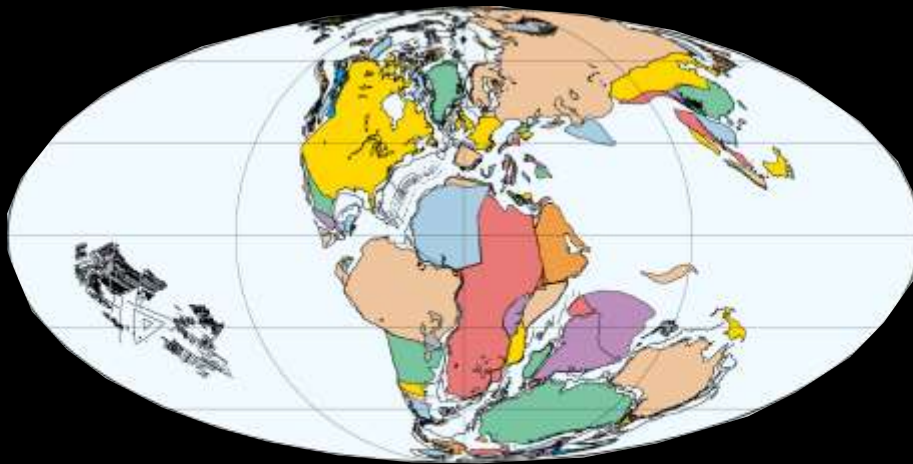
150 Ma

16



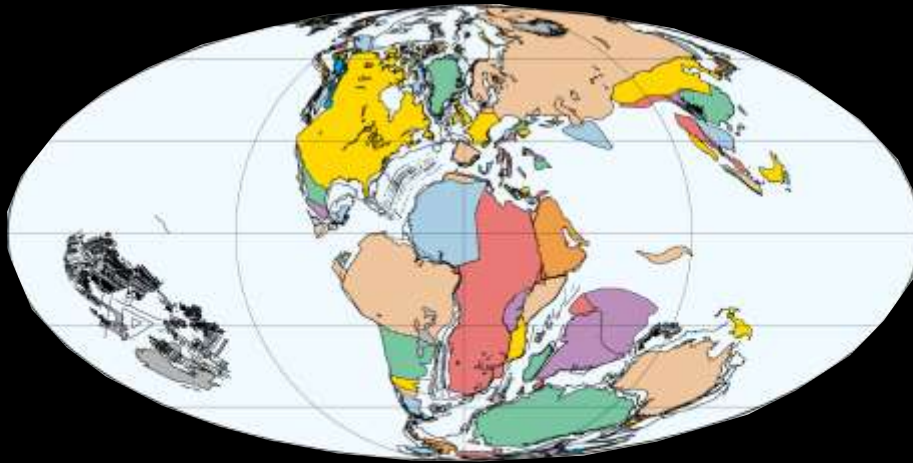
140 Ma

17



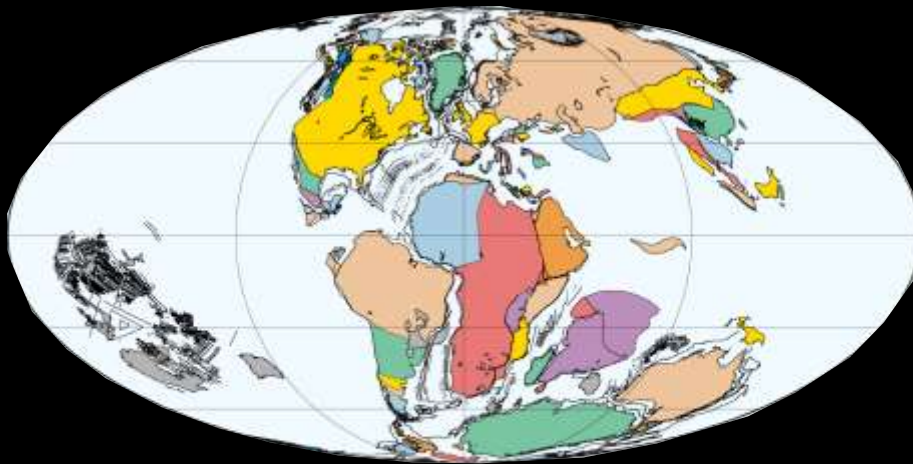
130 Ma

18



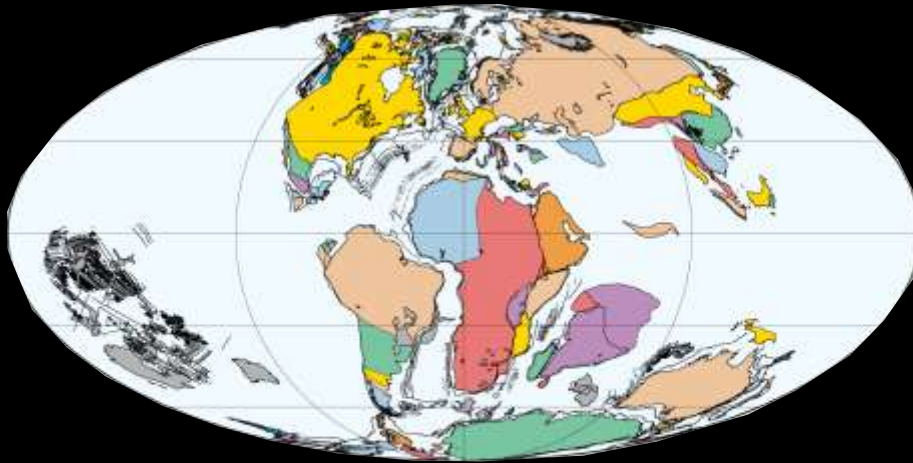
120 Ma

19



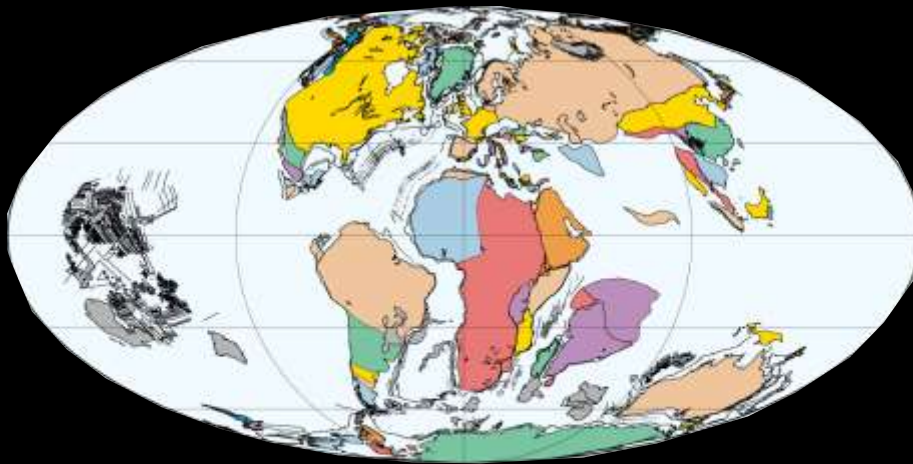
110 Ma

20



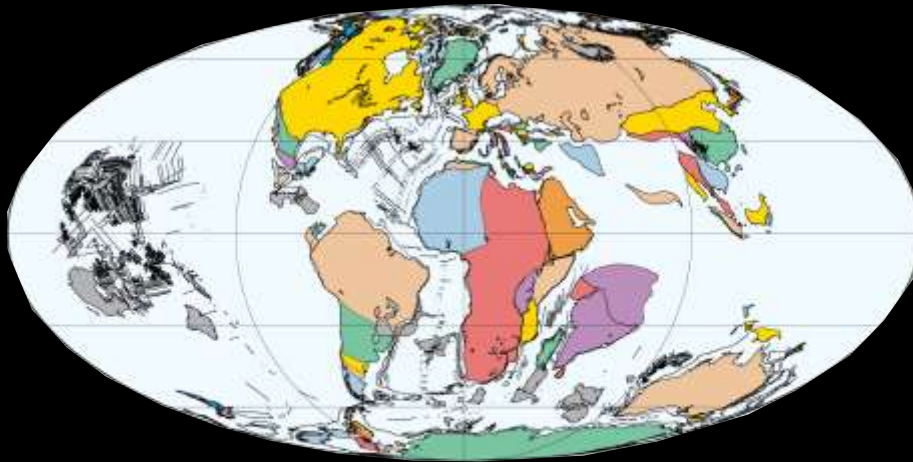
100 Ma

21



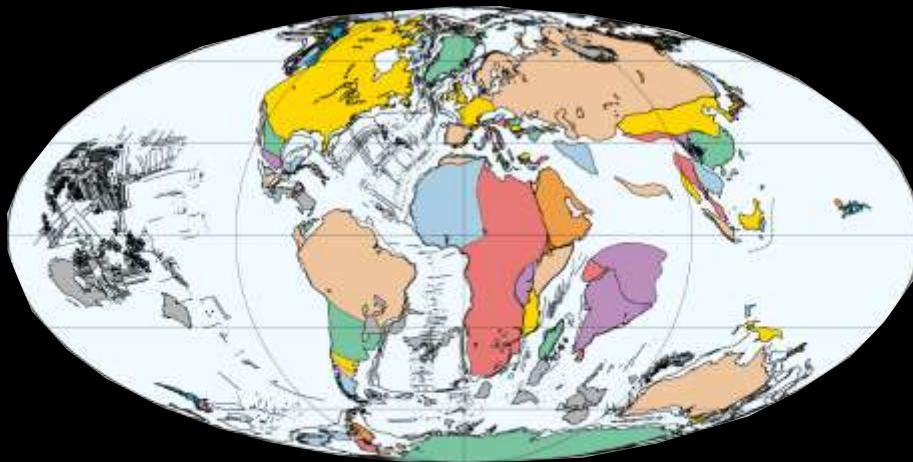
90 Ma

22



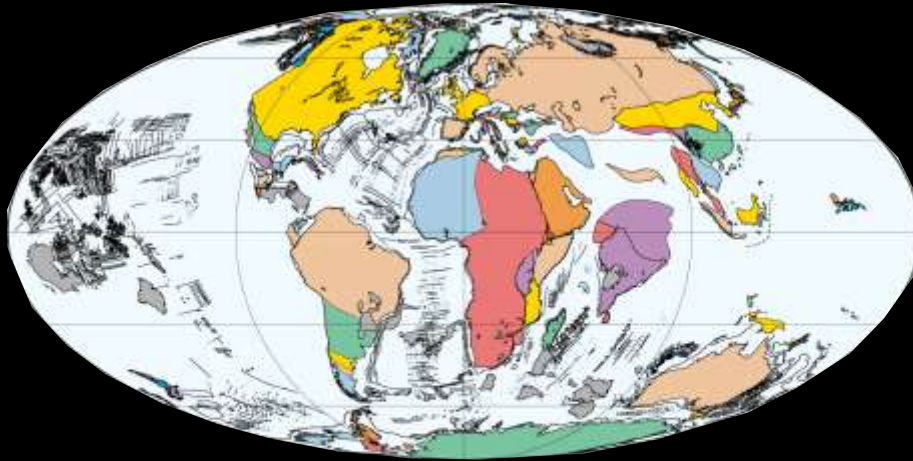
80 Ma

23



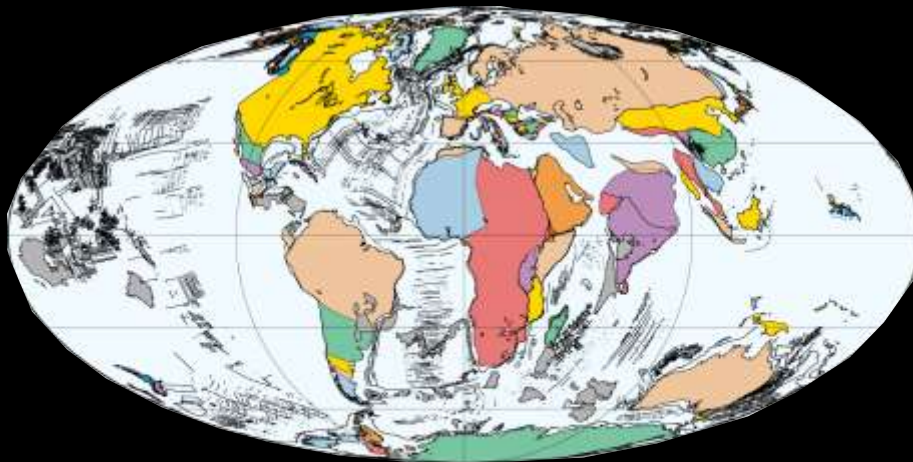
70 Ma

24



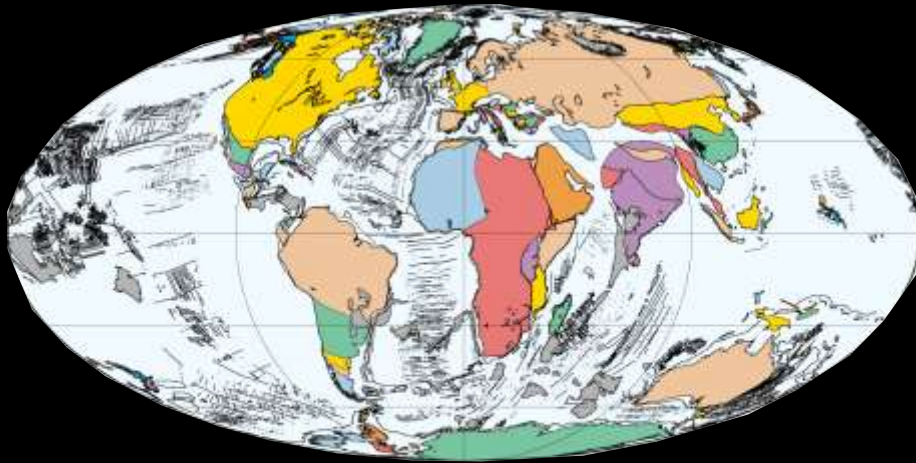
60 Ma

25



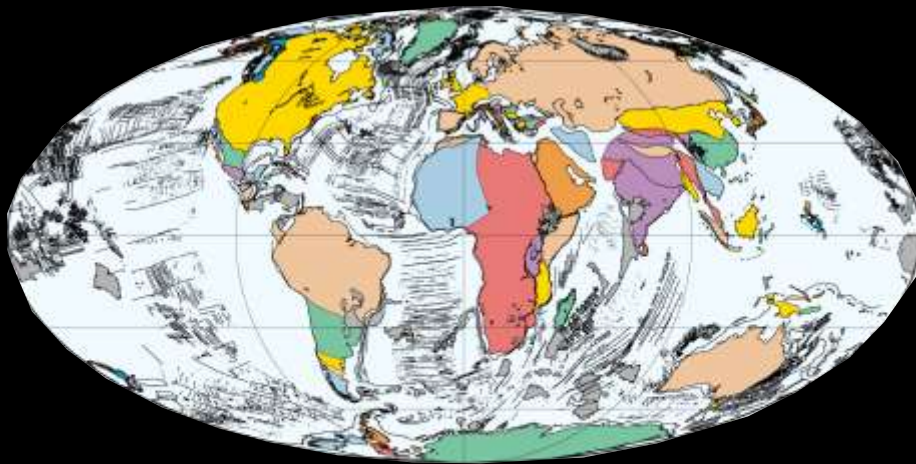
50 Ma

26



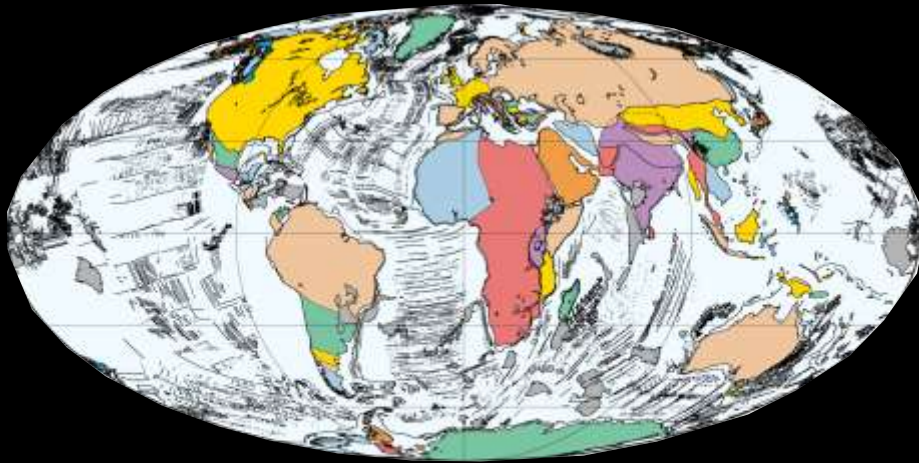
40 Ma

27



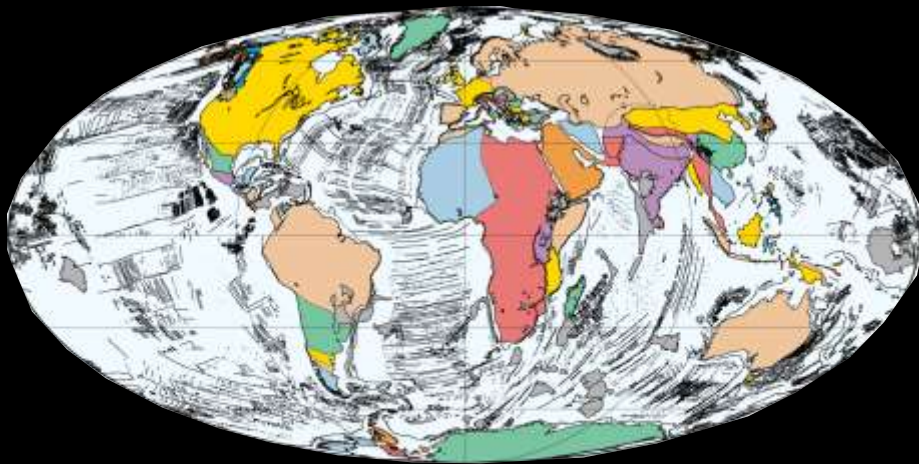
30 Ma

28



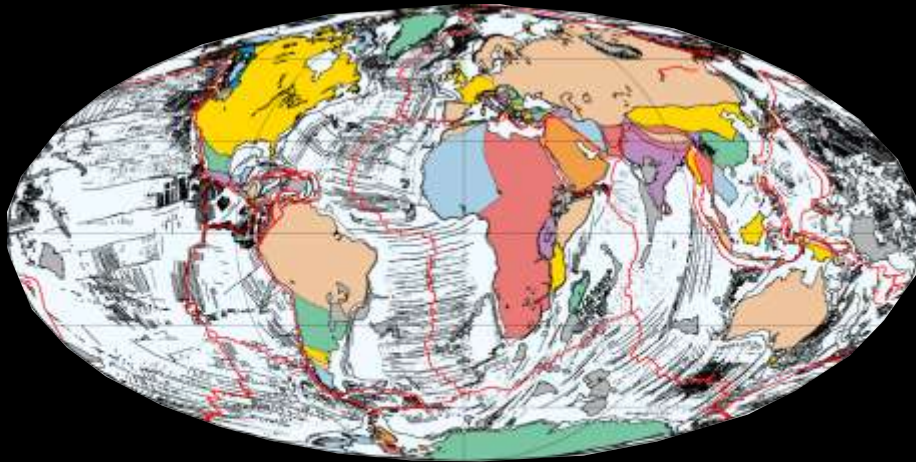
20 Ma

29



10 Ma

30



0 Ma

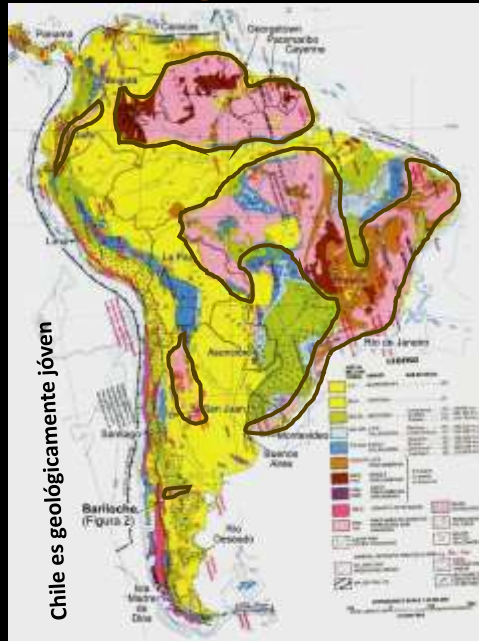
31

Contexto Chileno

32

El Tiempo Geológico

Eon	Era	Millions of years ago	
Phanerozoic	Cenozoic	65	
	Mesozoic	245	
	Paleozoic	540	
Precambrian	Late	900	
	Middle	1600	
	Early	2500	
	Archean	Late	3000
		Middle	3400
		Early	3900
Hadaean		4500	



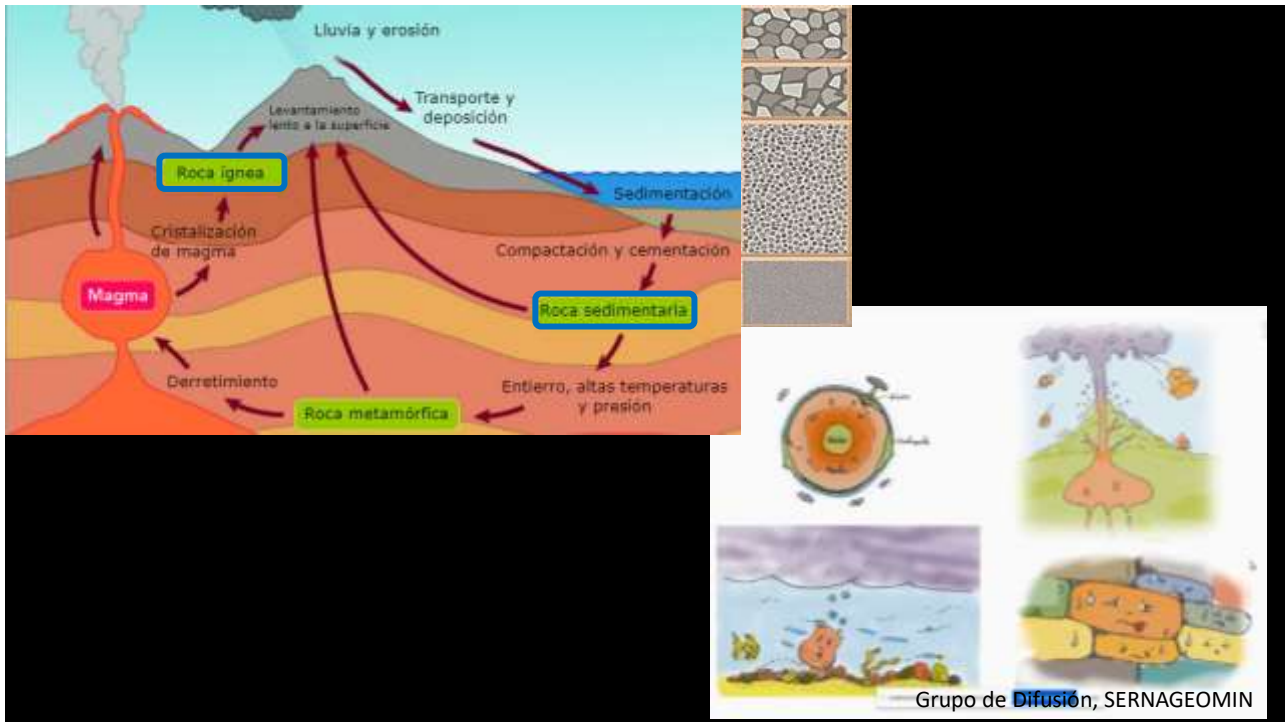
33

¿Por qué el borde occidental es más joven?
Subducción



Tomado de Sketch of Geology

34



35

USGS
United States Geological Survey

Fragmentos

Cristales tamaño similar

Cristales distinto tamaño

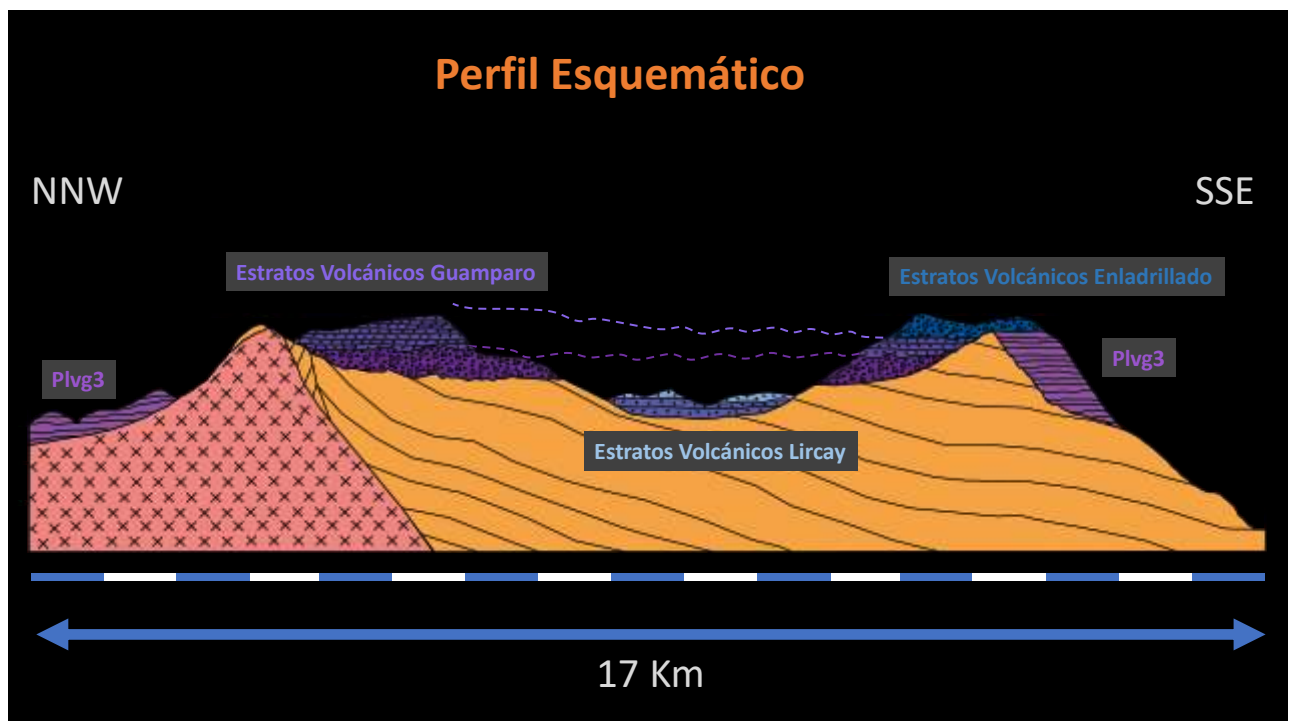
1 mm

Most volcano hazards are associated with eruptions. However, some hazards, such as lahars and debris avalanches, can occur even when a volcano is not erupting.

36

- <https://www.youtube.com/watch?v=5dHfD5kG5KY>
- Erupción Explosiva. Flujo Piroclástico
- <https://www.youtube.com/watch?v=GocXN7EQb3Q>
- Erupción efusiva Volcan de Fuego , Guatemala 13-10-2018

37



38



Tomada de Google Earth Pro
Verónica Hernández - Montañas

39



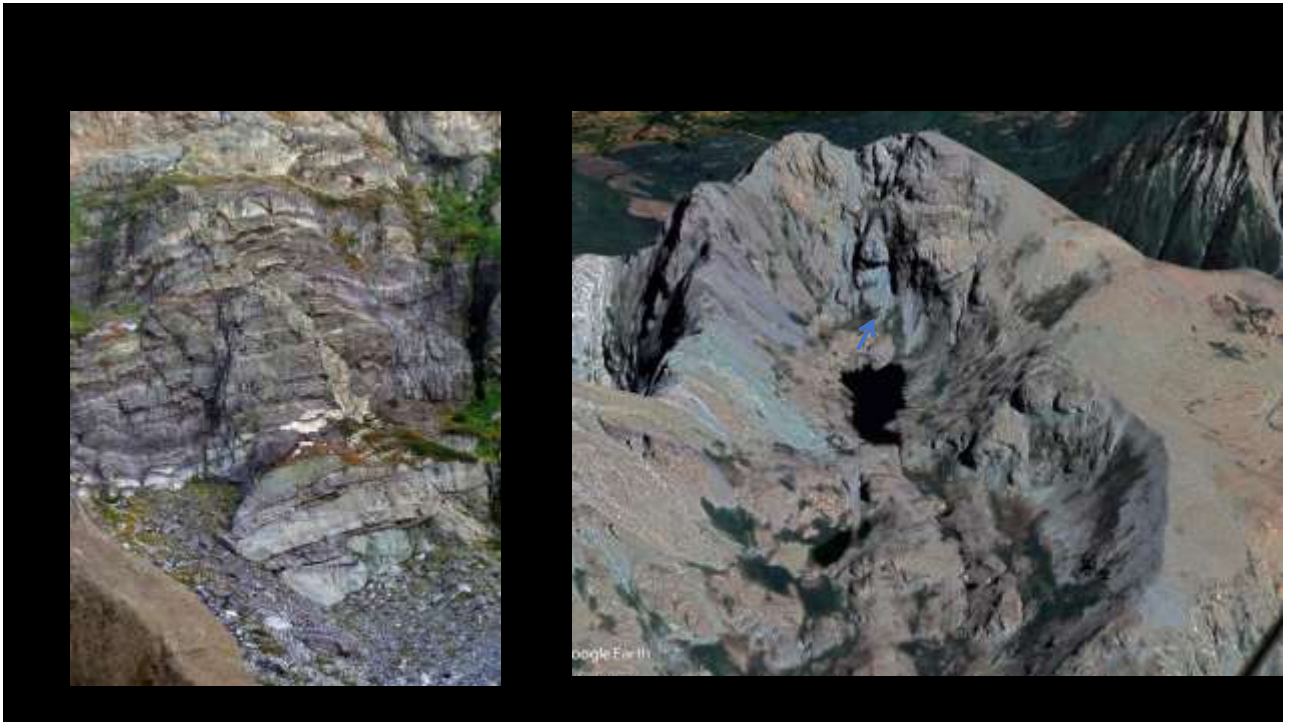
40

Laguna del Alto Grupo Rocas Antiguas

41



42



43



44



45

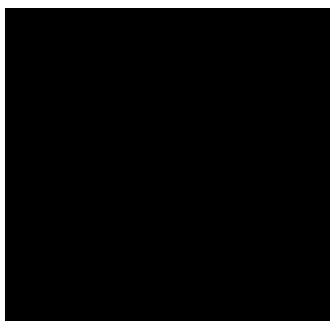
Laguna del Alto Grupo Depósitos Jóvenes (registro Glaciar)

46

Forma: Circo Glaciar



47



Morrena Lateral, ¿o central?

48



49

El Guamparo y Enladrillado Grupo Rocas Jóvenes (Volcanismo pre Glaciar)

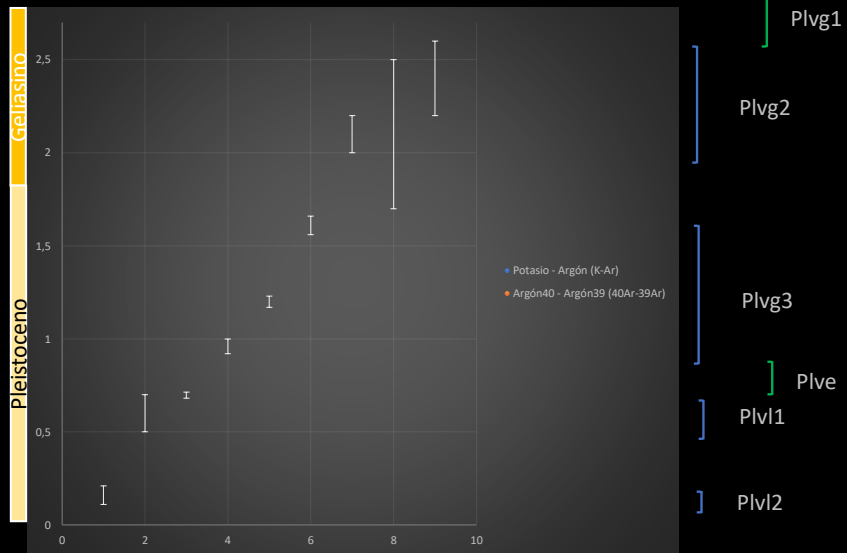
50

Problemas Geológicos

• Complejo Volcánico Vilches

Gelasiano
Plioceno o
Pleistoceno?

K-Ar Drake (1976)
 $^{40}\text{Ar}/^{39}\text{Ar}$ RNVV sin publicar

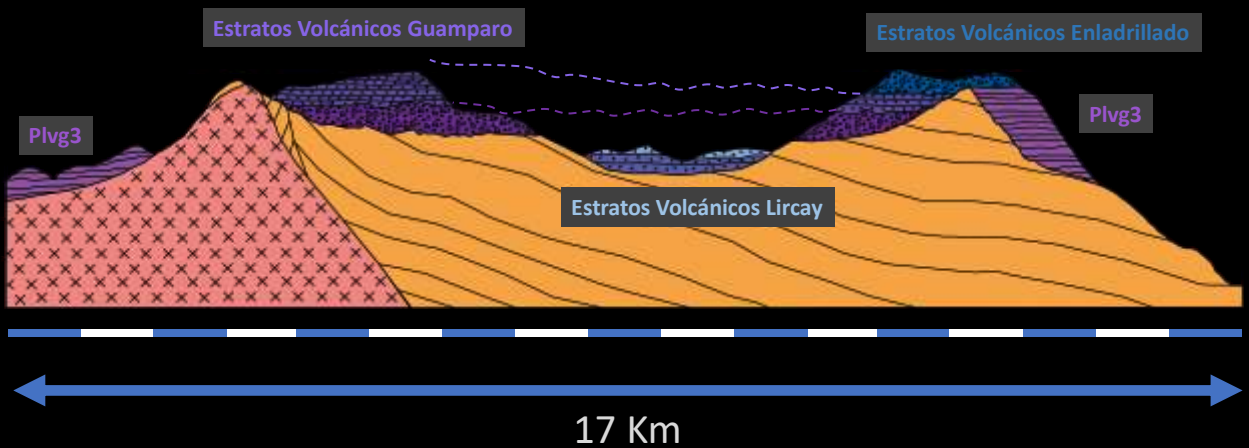


51

Perfil Esquemático

NNW

SSE



52

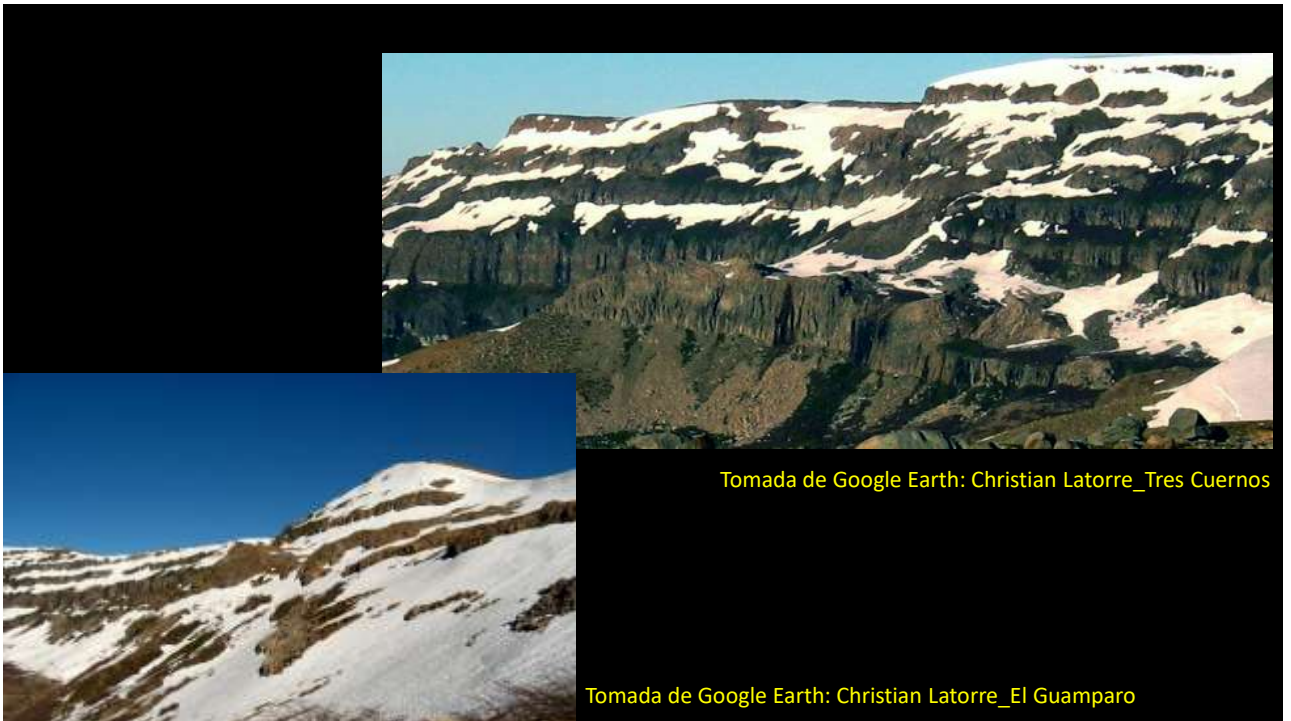


Guamparo.
Rxs Jóvenes sobre
Rxs antiguas (3
Cuernos)



Tomada de Google Earth: Christian Latorre_Tres Cuernos

53

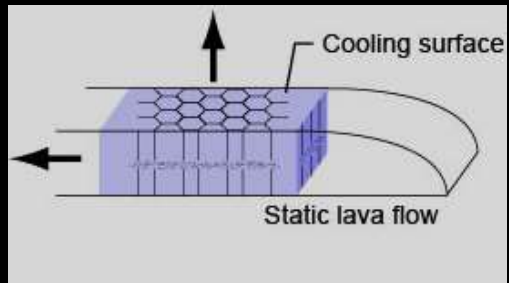
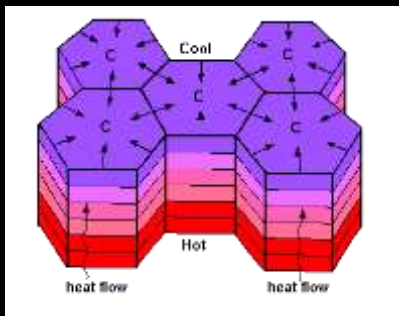


Tomada de Google Earth: Christian Latorre_Tres Cuernos

Tomada de Google Earth: Christian Latorre_El Guamparo

54

Diaclasamiento columnar (Enfriamiento lento)



55



56



Tomada de Google Earth:
Patricio Ahumada_Hecho con tecnología avanzada



Tomada de Google Earth: Patricio Ahumada_Untitled



57



Diaclasamiento Columnar en Tobas

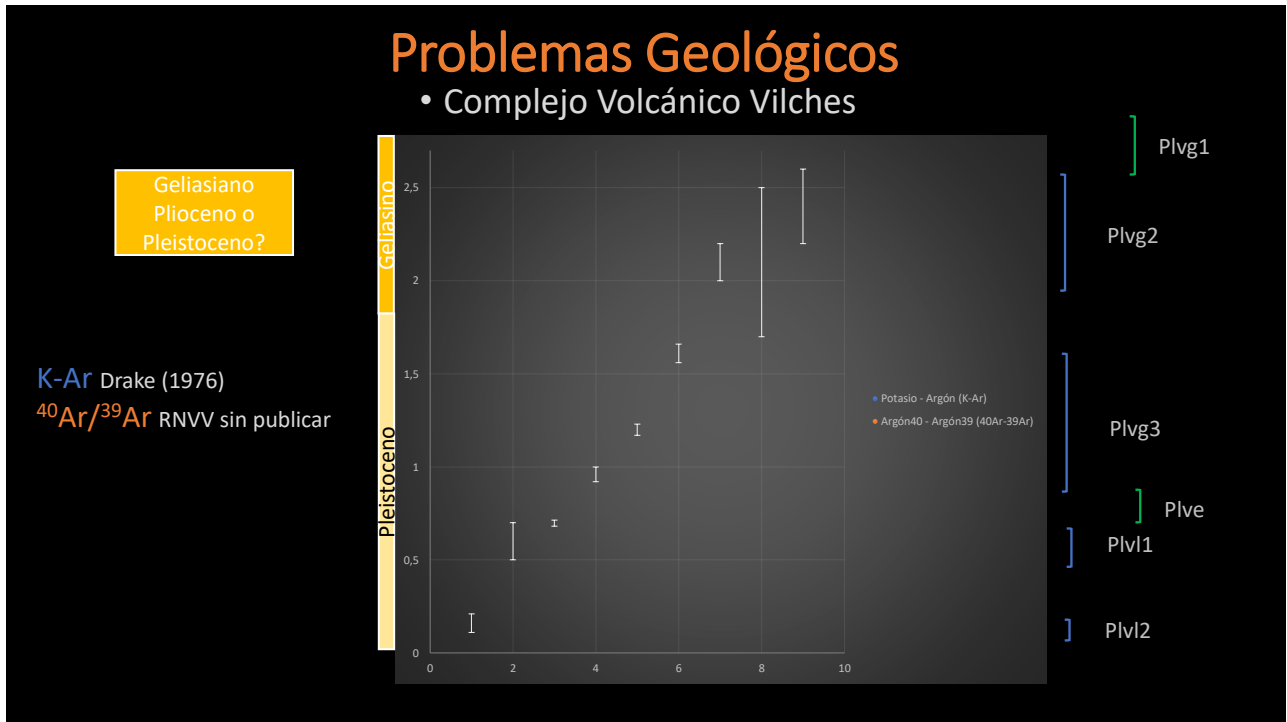
58



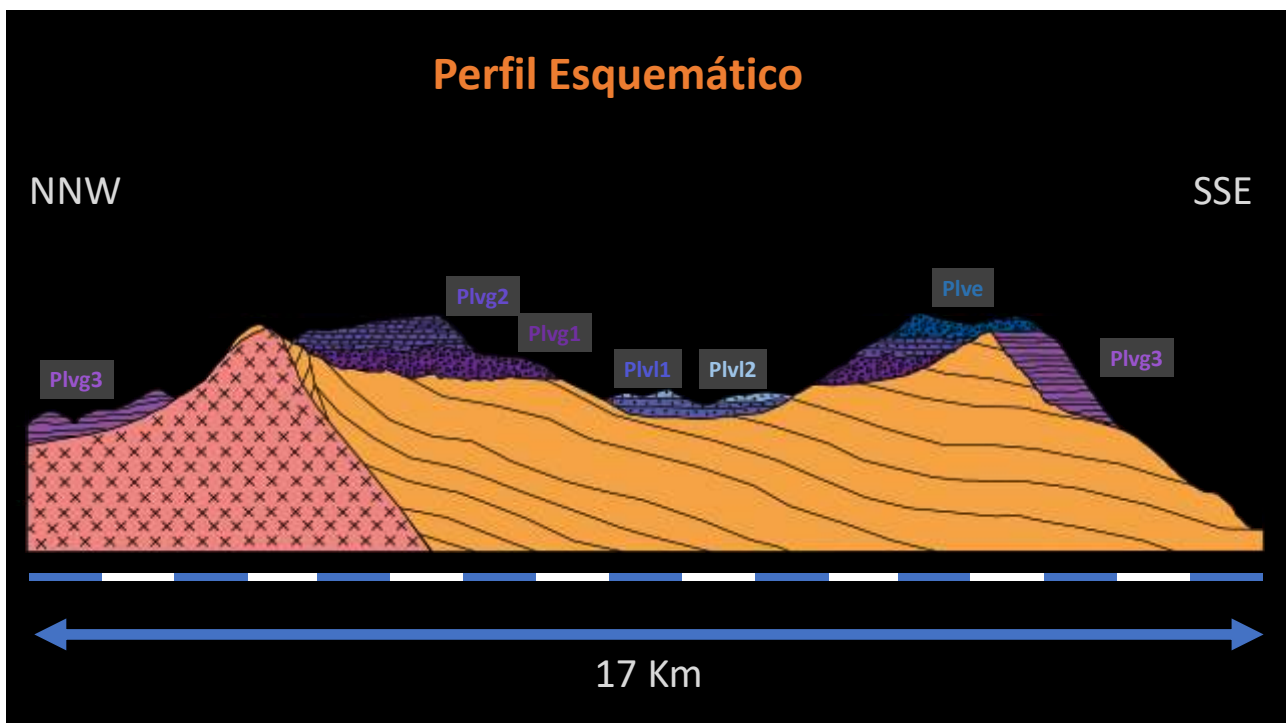
59

Vilches Alto Grupo Rocas Jóvenes (Volcanismo post-Glacial)

60



61

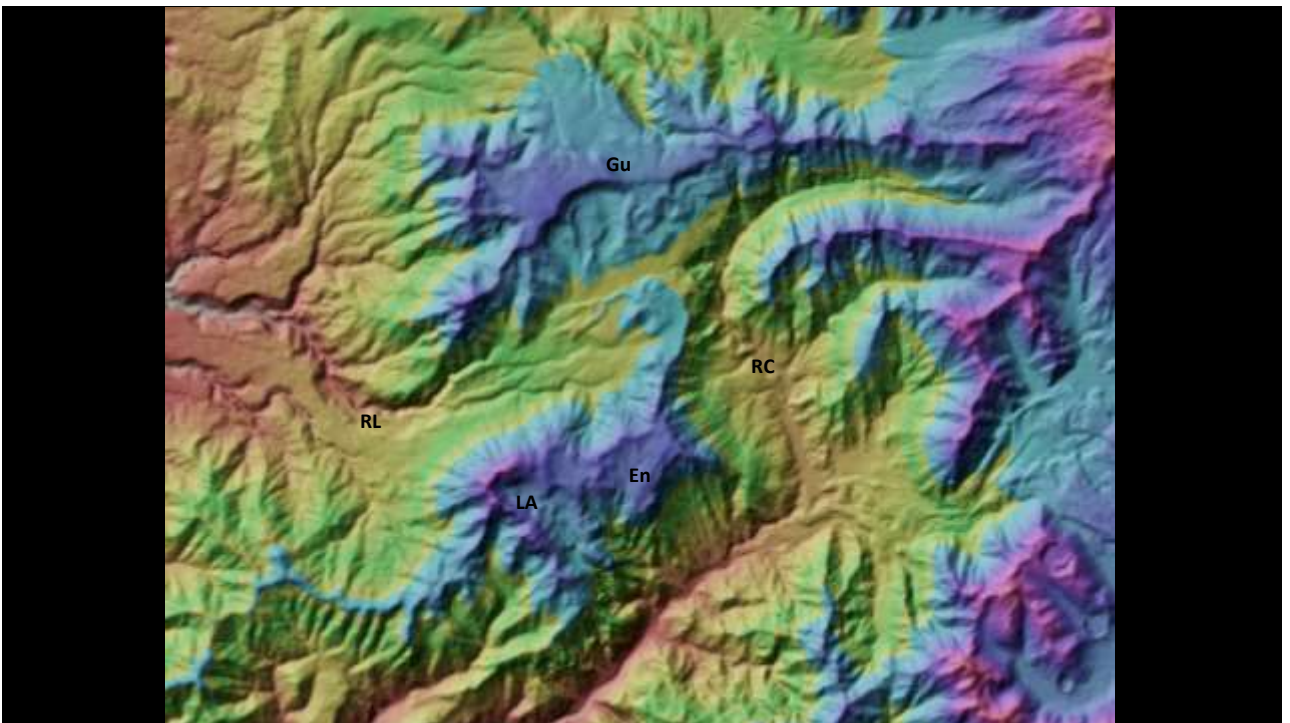


62

Lava de valle? con cono individual posterior?



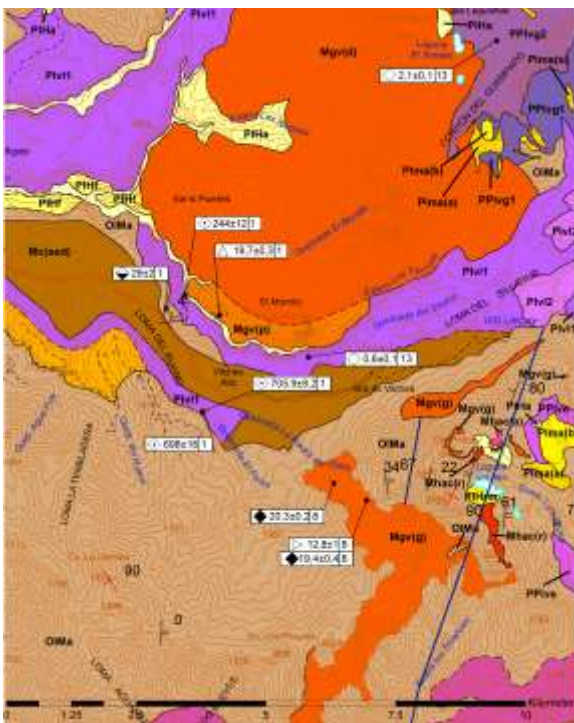
63



64



65



Muchas Gracias

66