



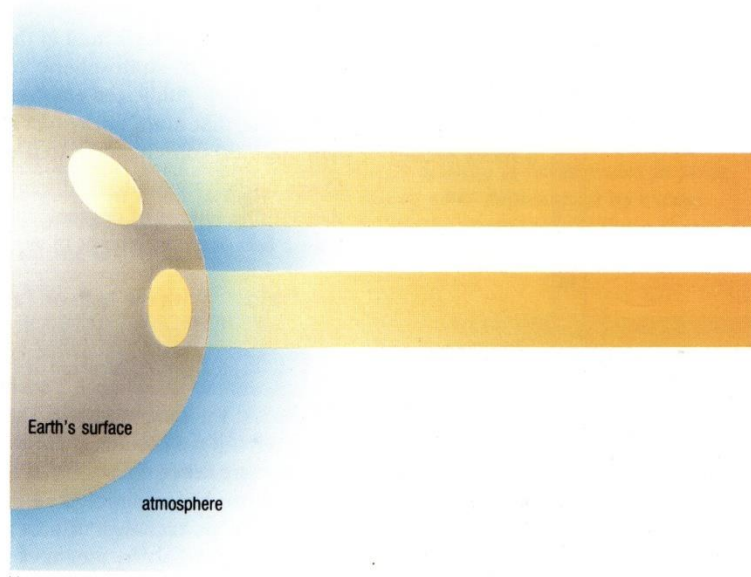
LA RICERCA OCEANOGRAFICA IN ANTARTIDE

DOTT. YURI COTRONEO, PhD

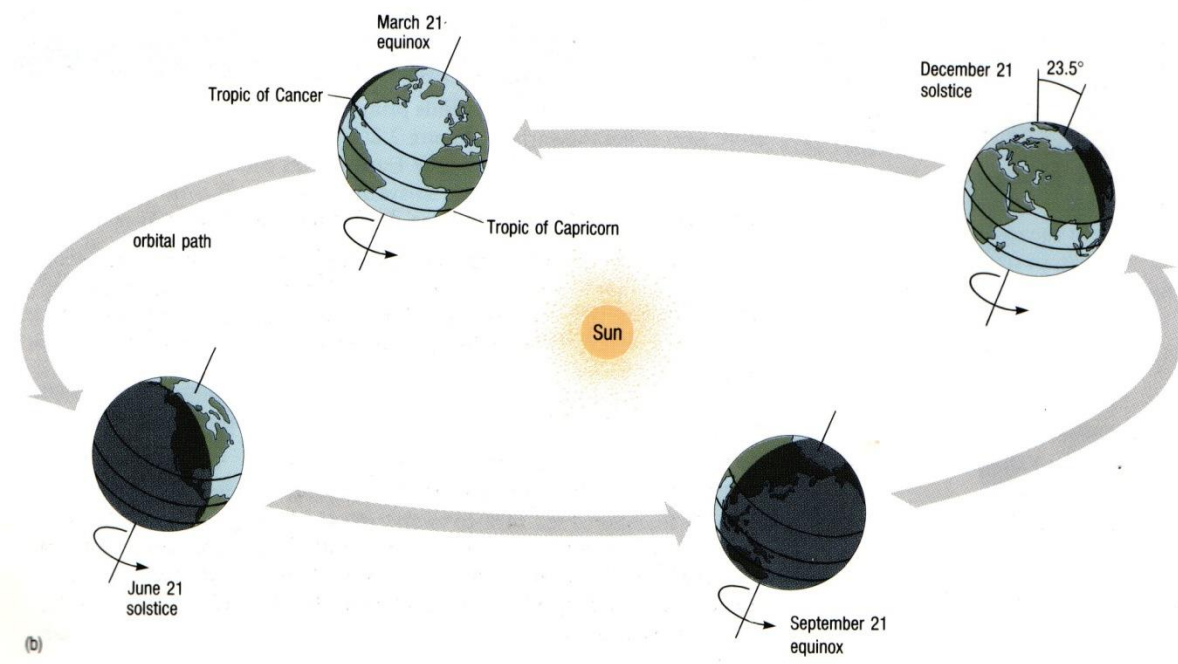


Perchè l'oceanografia in Antartide?

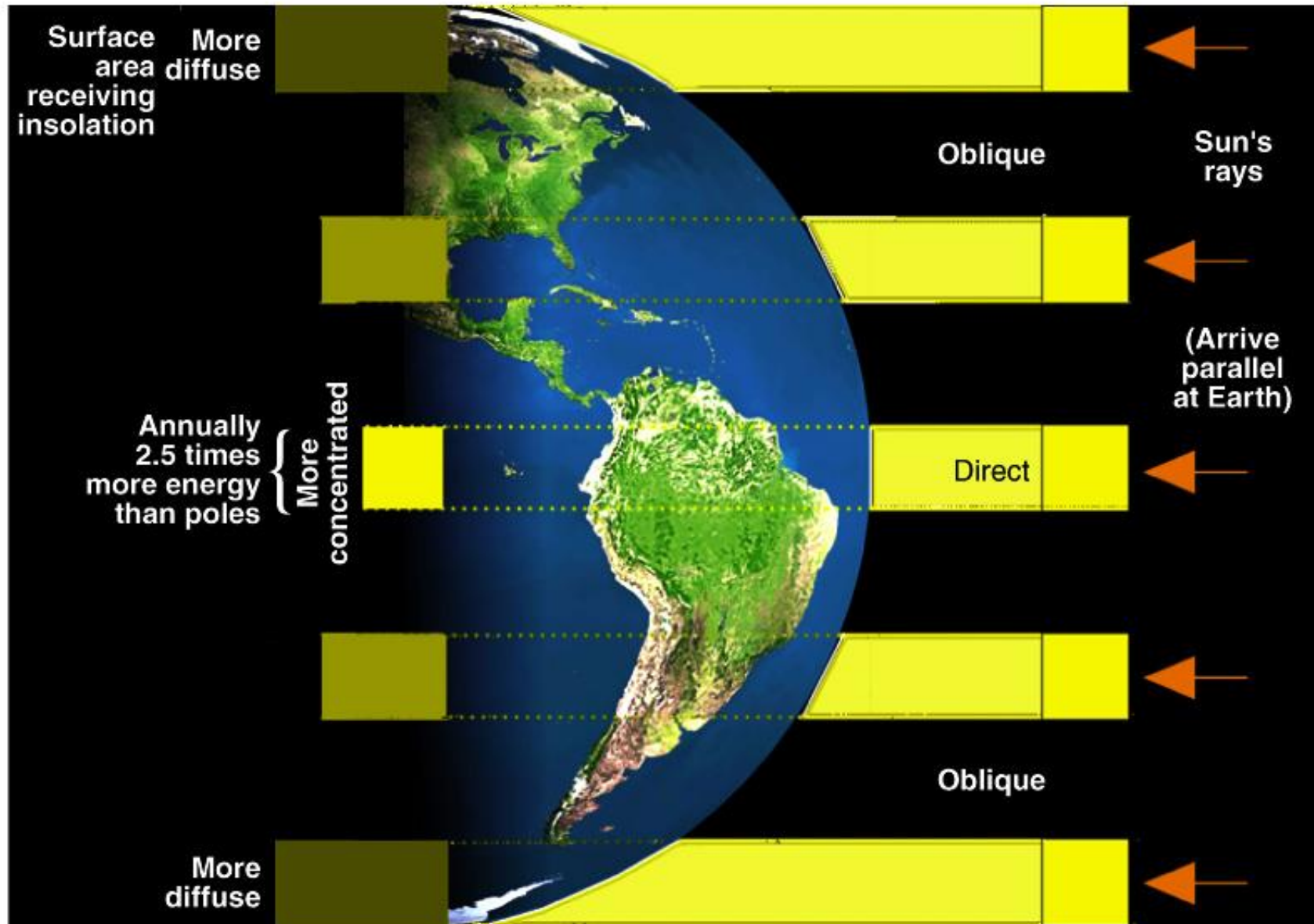


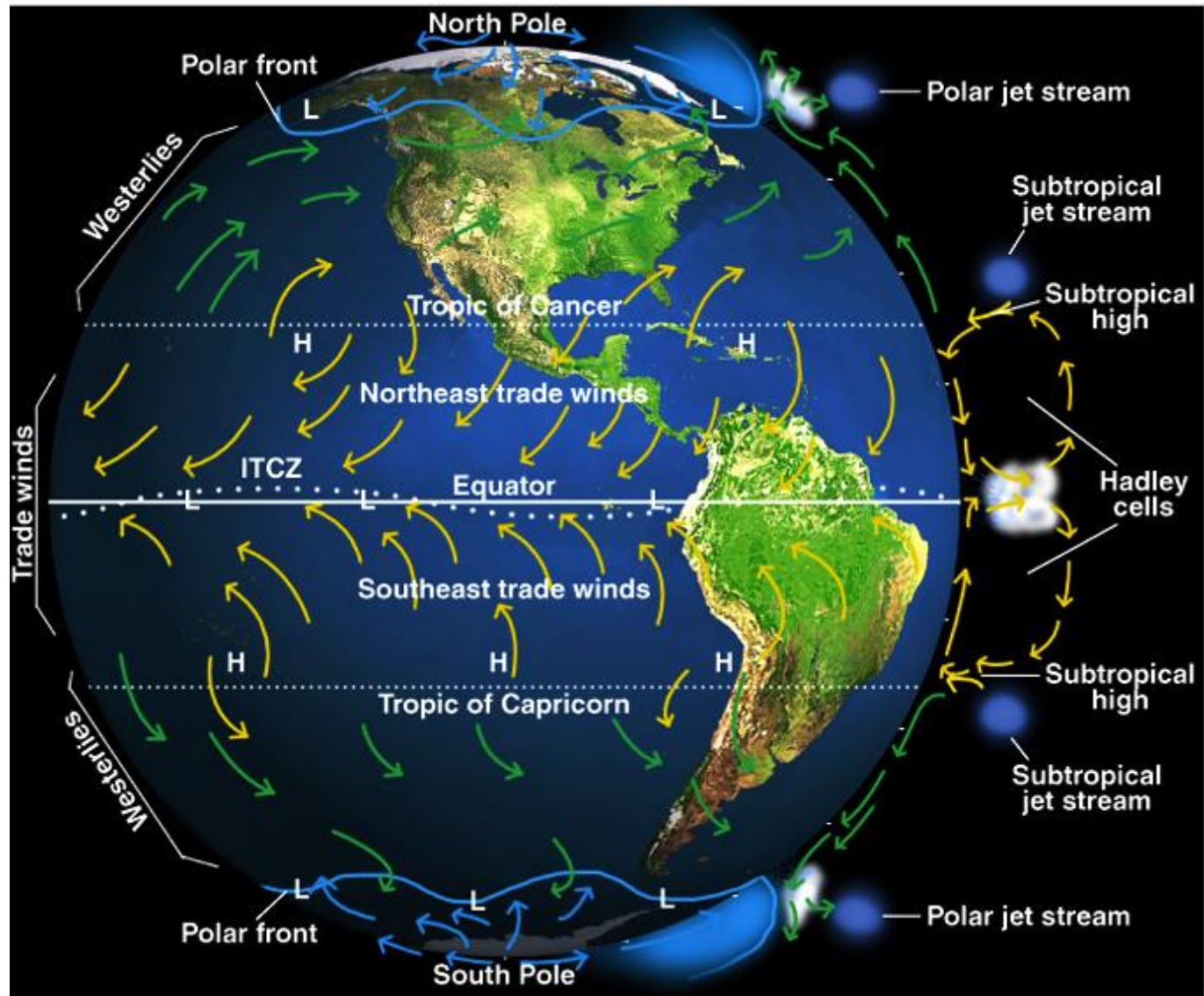


(a)

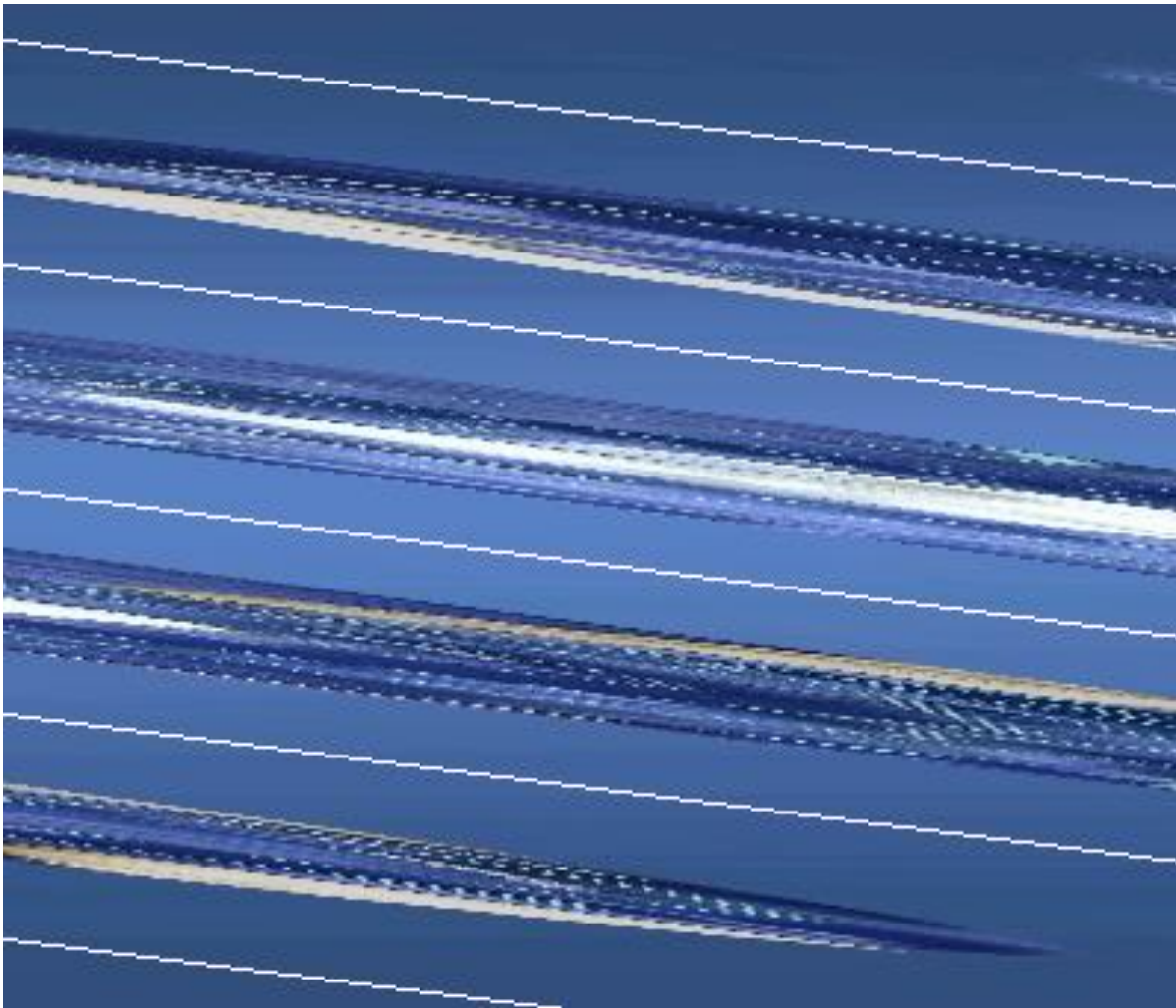


(b)







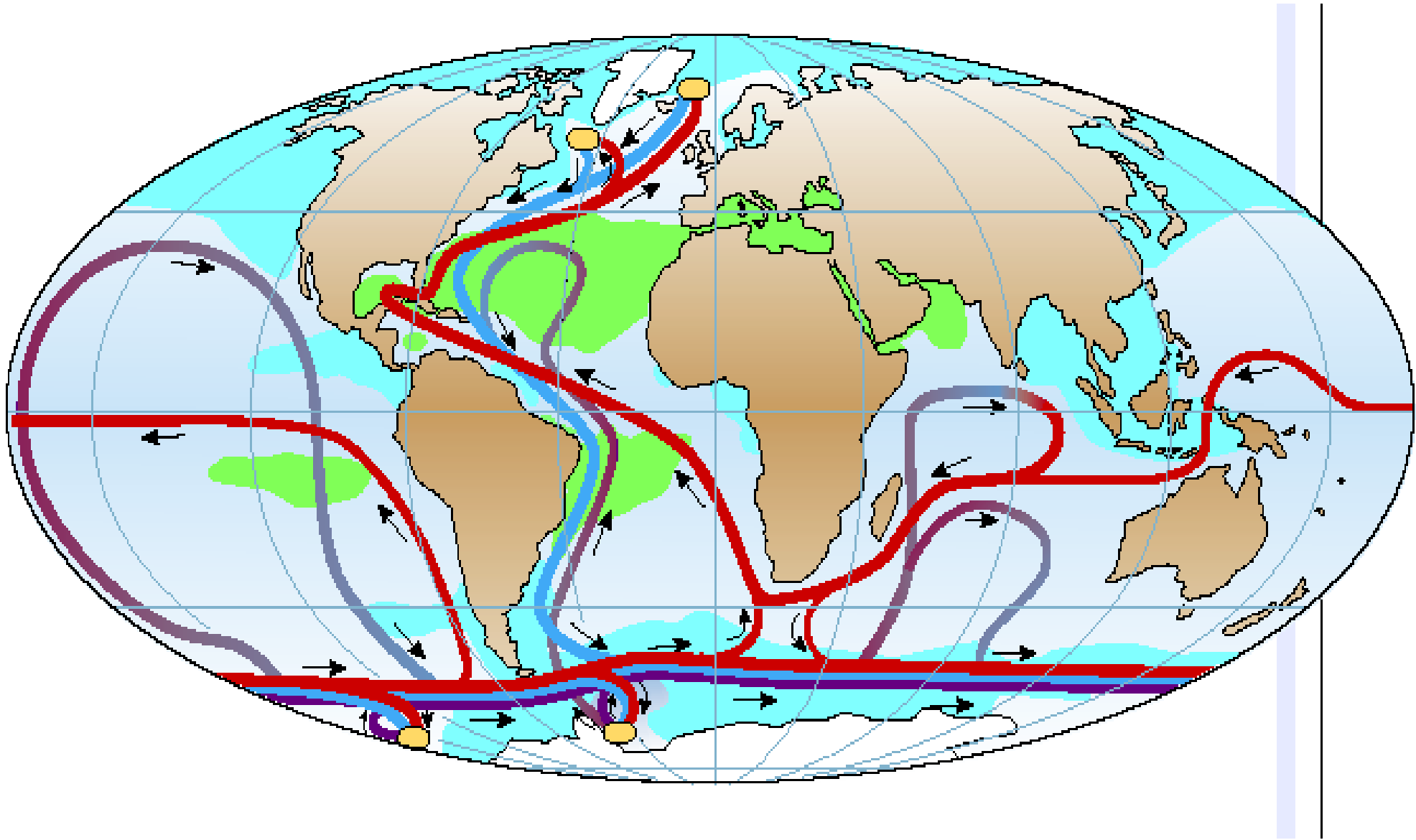


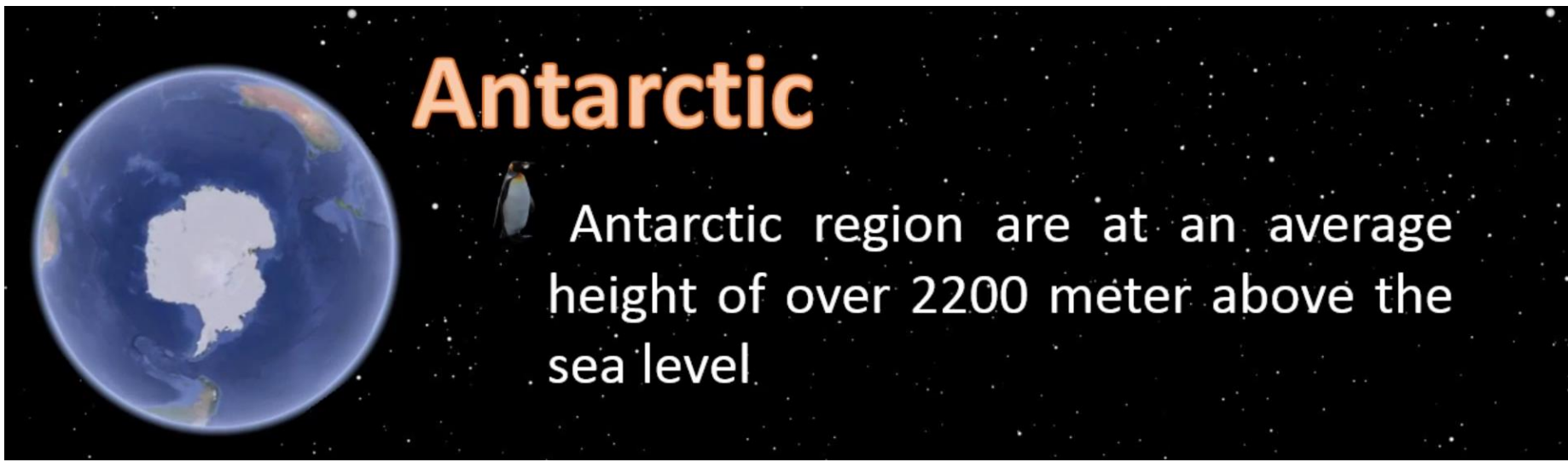
Southern Ocean è l'unico oceano che circonda **interamente** una fascia del pianeta.

Al suo interno si sviluppa la più grande corrente marina della Terra, la **Corrente Circumpolare Antartica**
Antarctic Circumpolar Current
ACC

Nei **Mari di Ross e di Weddell** inoltre sono localizzati i cosiddetti “**motori freddi del pianeta**” ovvero i siti di produzione delle acque super fredde che mettono in movimento la famosa **Conveyor Belt**





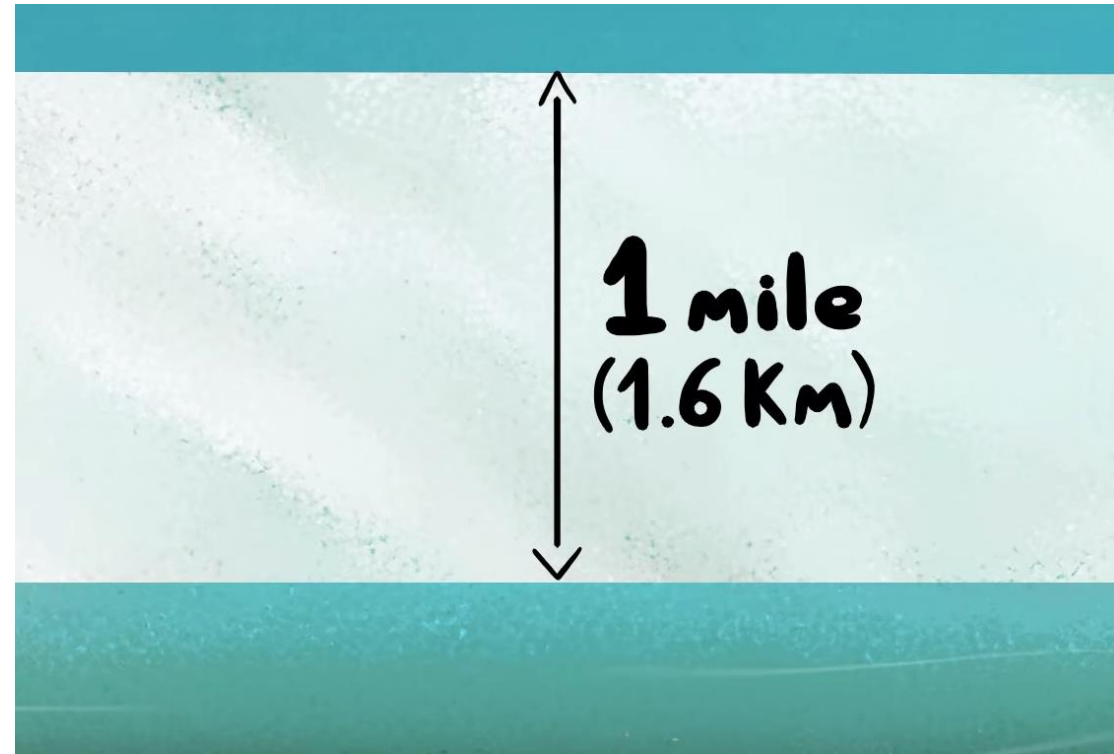


Antarctic

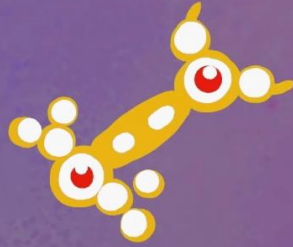
Antarctic region are at an average height of over 2200 meter above the sea level



98%
of ice

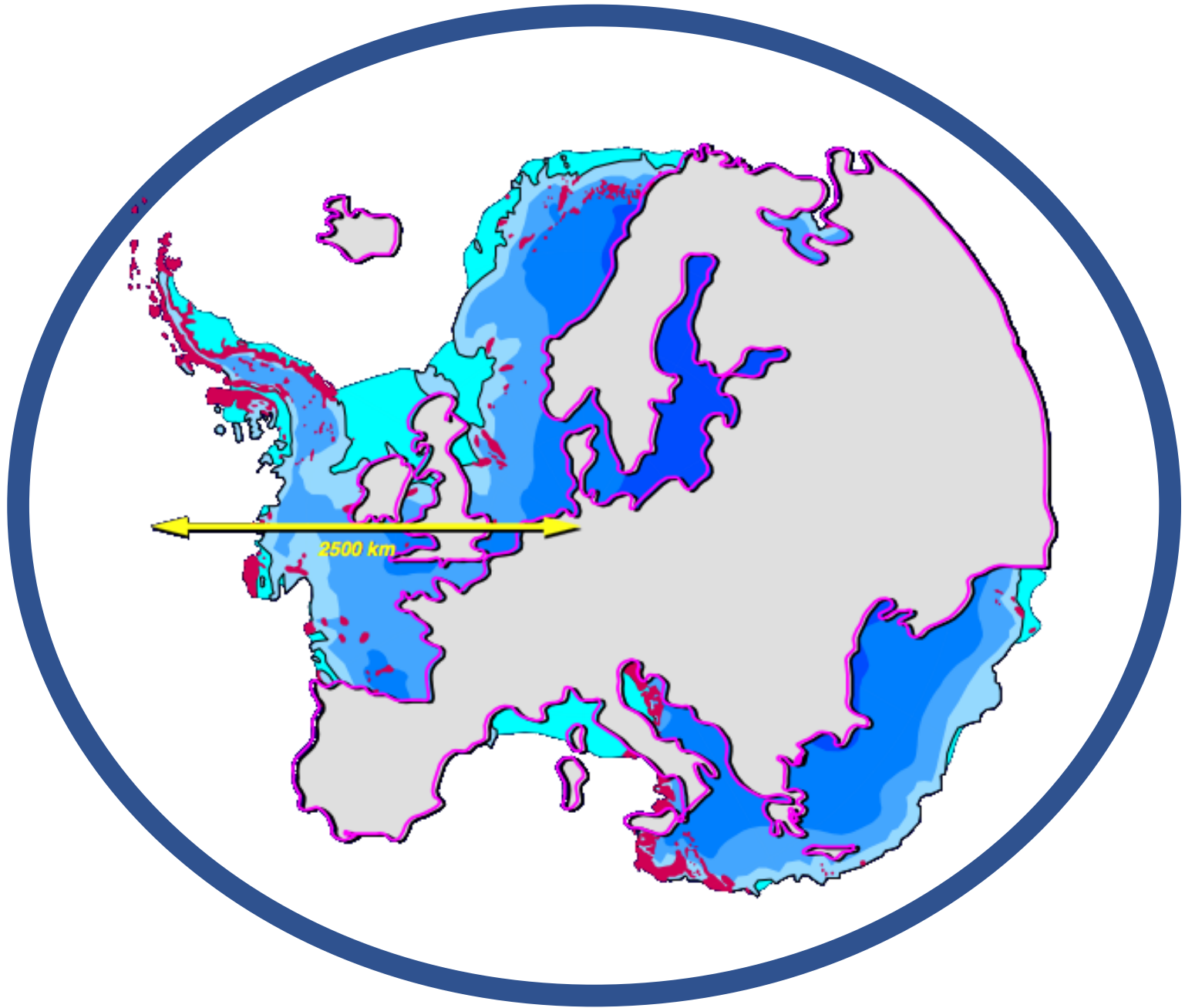


1 mile
(1.6 Km)



Antarctic

Antarctic region being very high above sea level have low temperature with winter temperature ranging from -62°C to -55°C





North America:
24,709,000 km²



Europe:
9,938,000 km²



Asia:
44,579,000 km²



Antarctica:
13,829,430 km²



South America:
17,819,000 km²



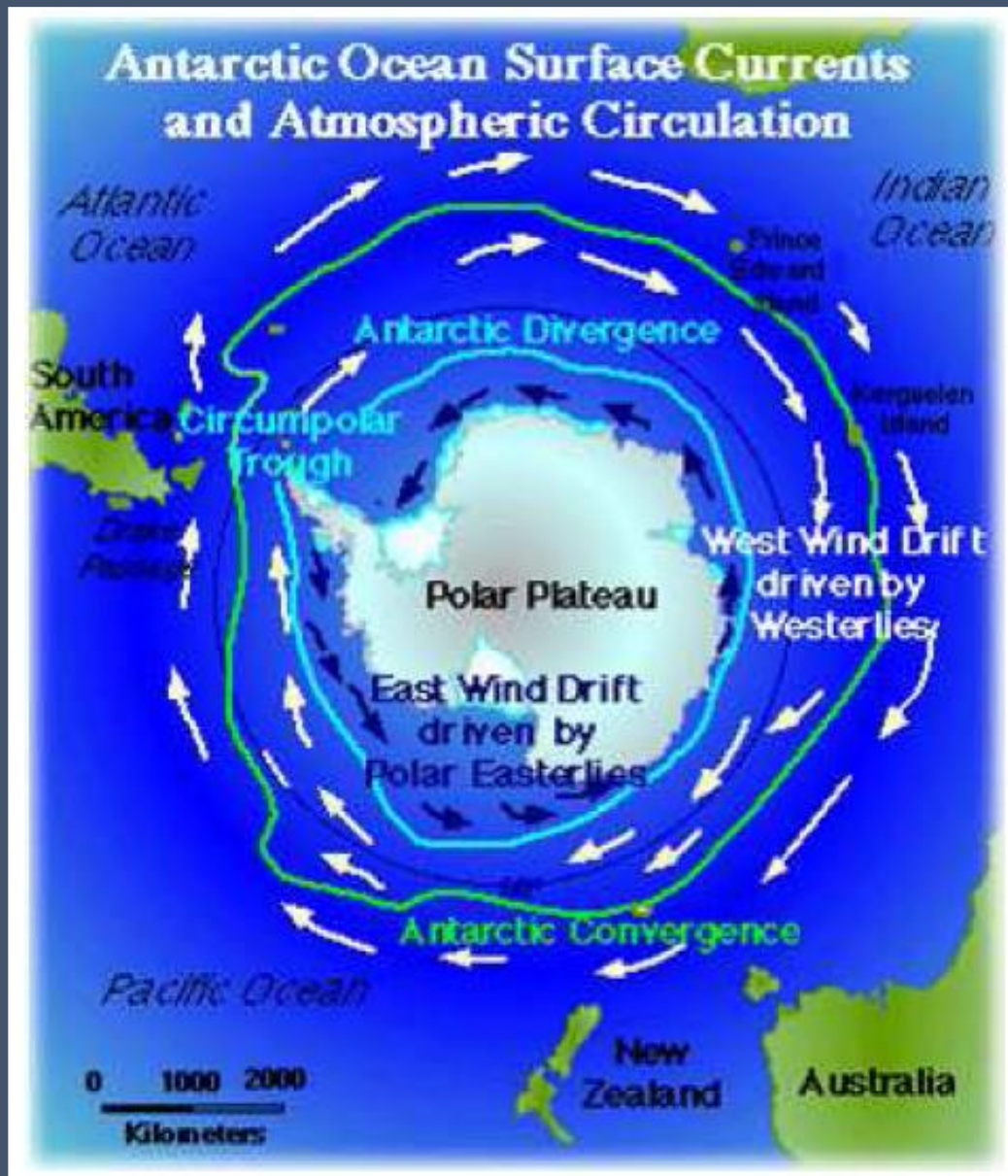
Africa:
30,065,00 km²



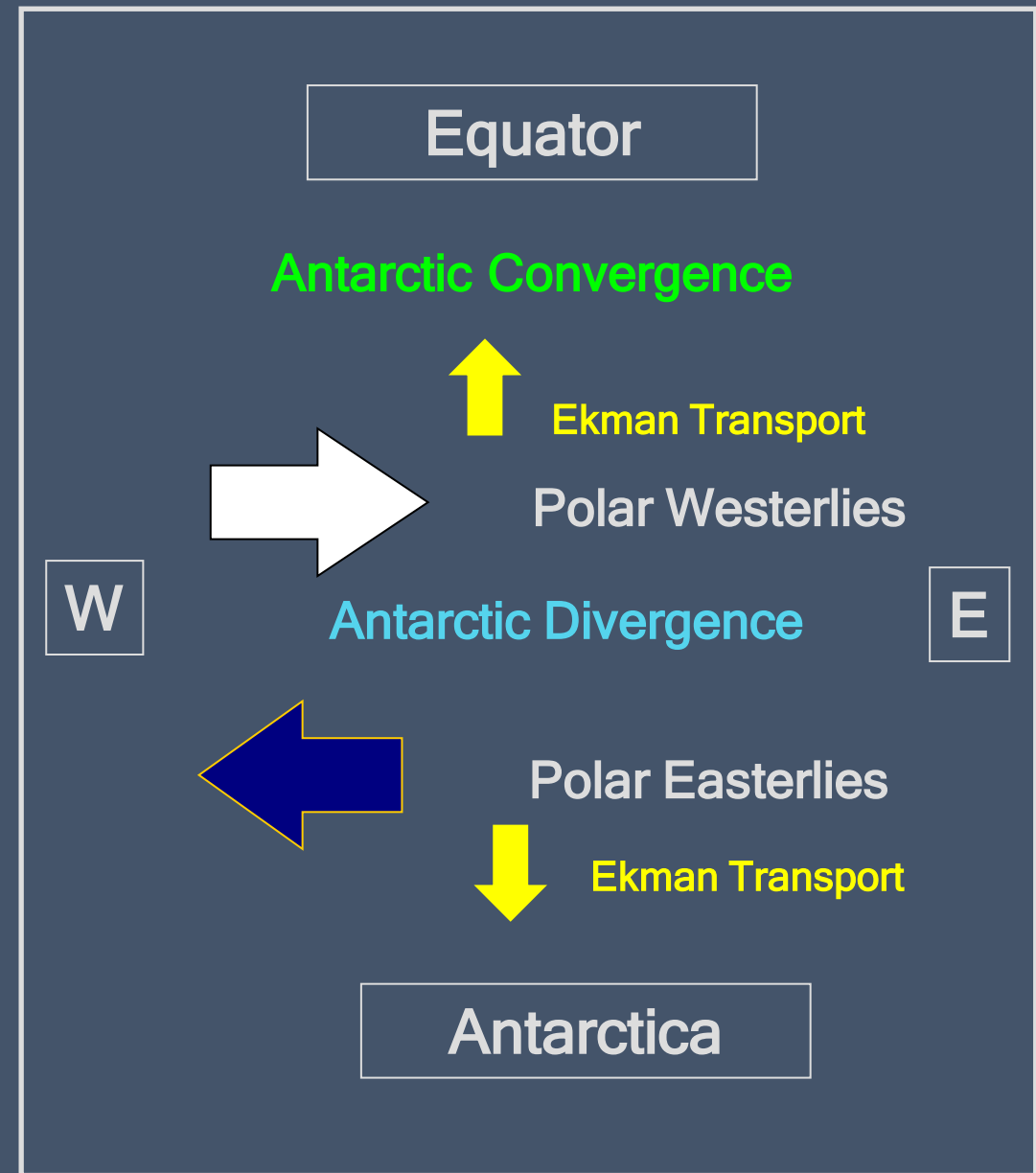
Australasia:
7,687,000 km²

Antarctic Ocean Circulation





(Sugden, 1982)











In such a vast domain, we collect two main type od data:

Lagrangian

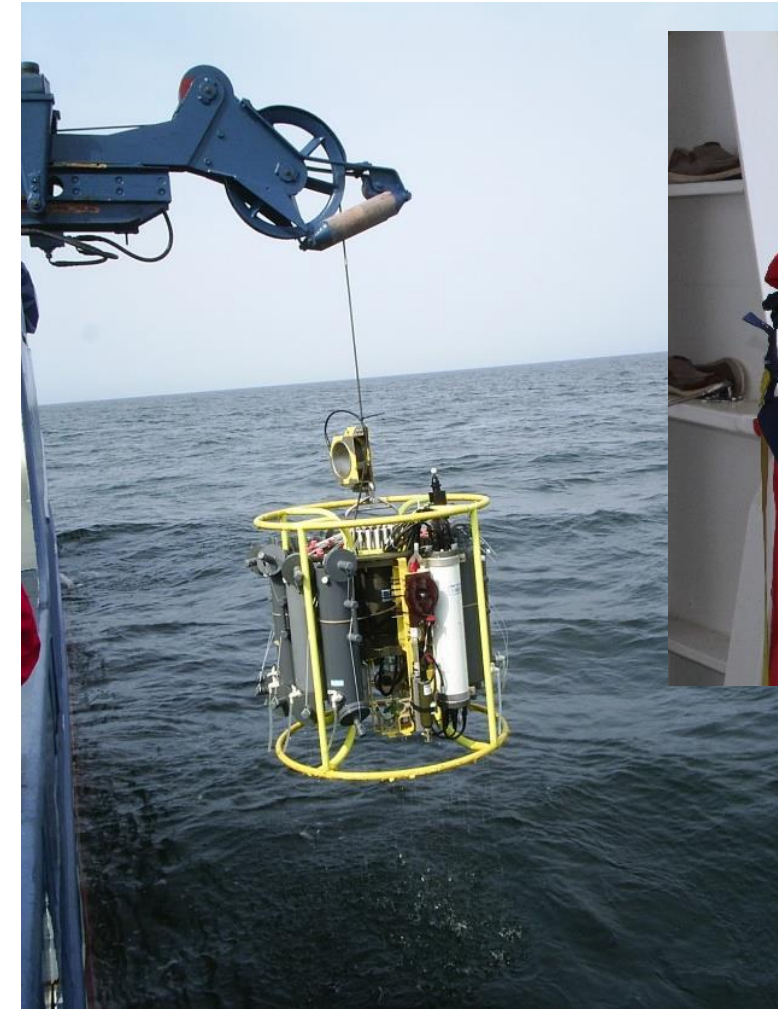
Float and Drifter

Eulerian

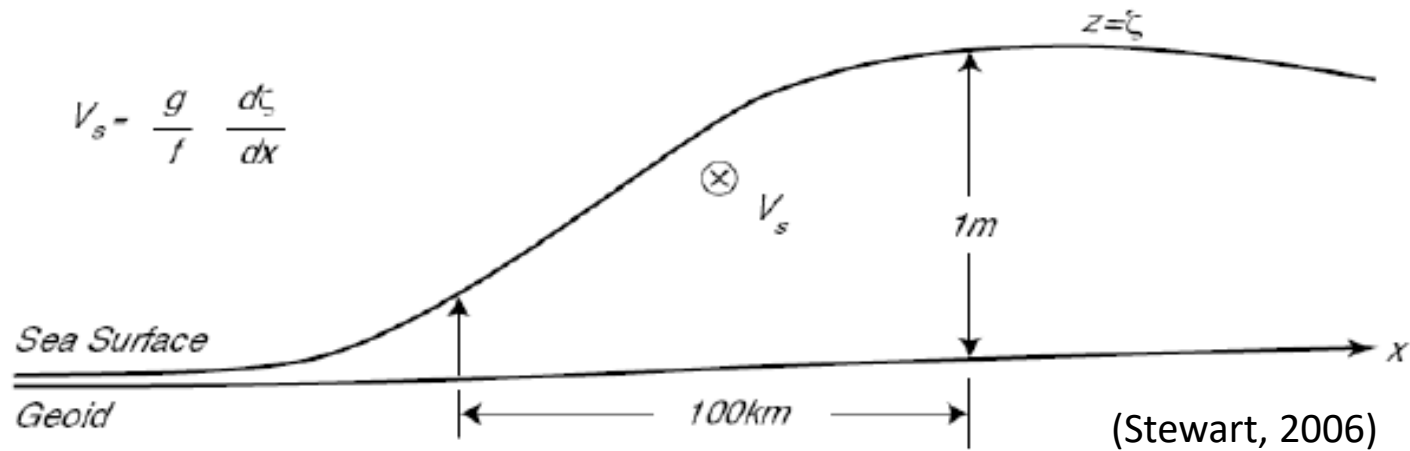
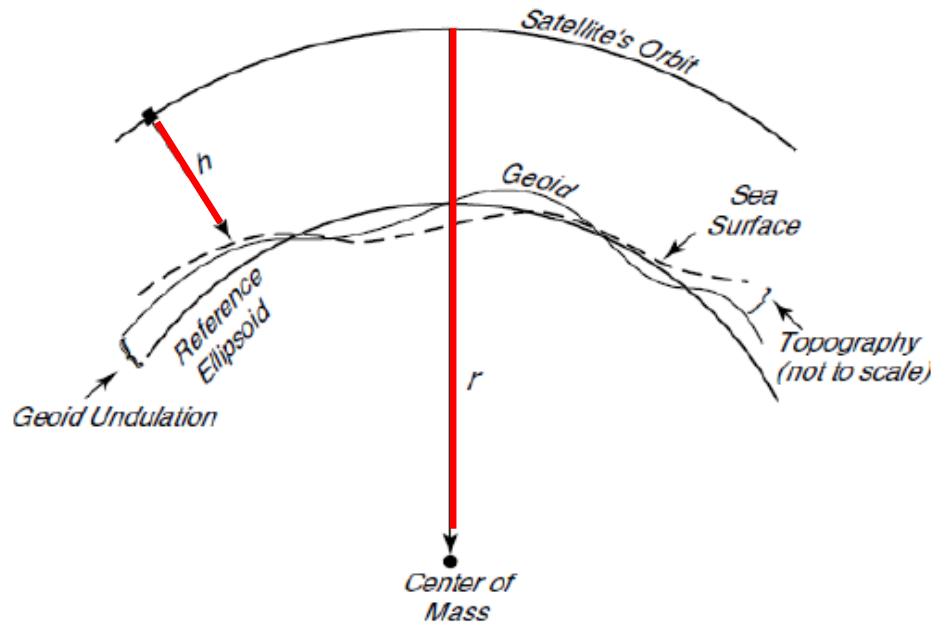
XBT,XCTD,CTD,TSG

Satellite data

Altimetry data

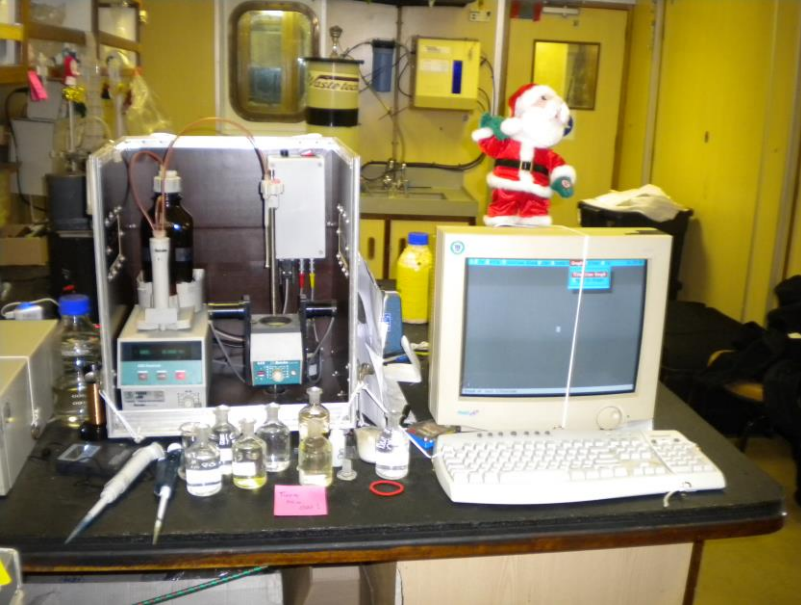


Satellite Altimetry



$$V_s = \frac{g}{f} \frac{d\zeta}{dx}$$

(Stewart, 2006)



Vita in Campagna Oceanografica



Vita in Campagna Oceanografica





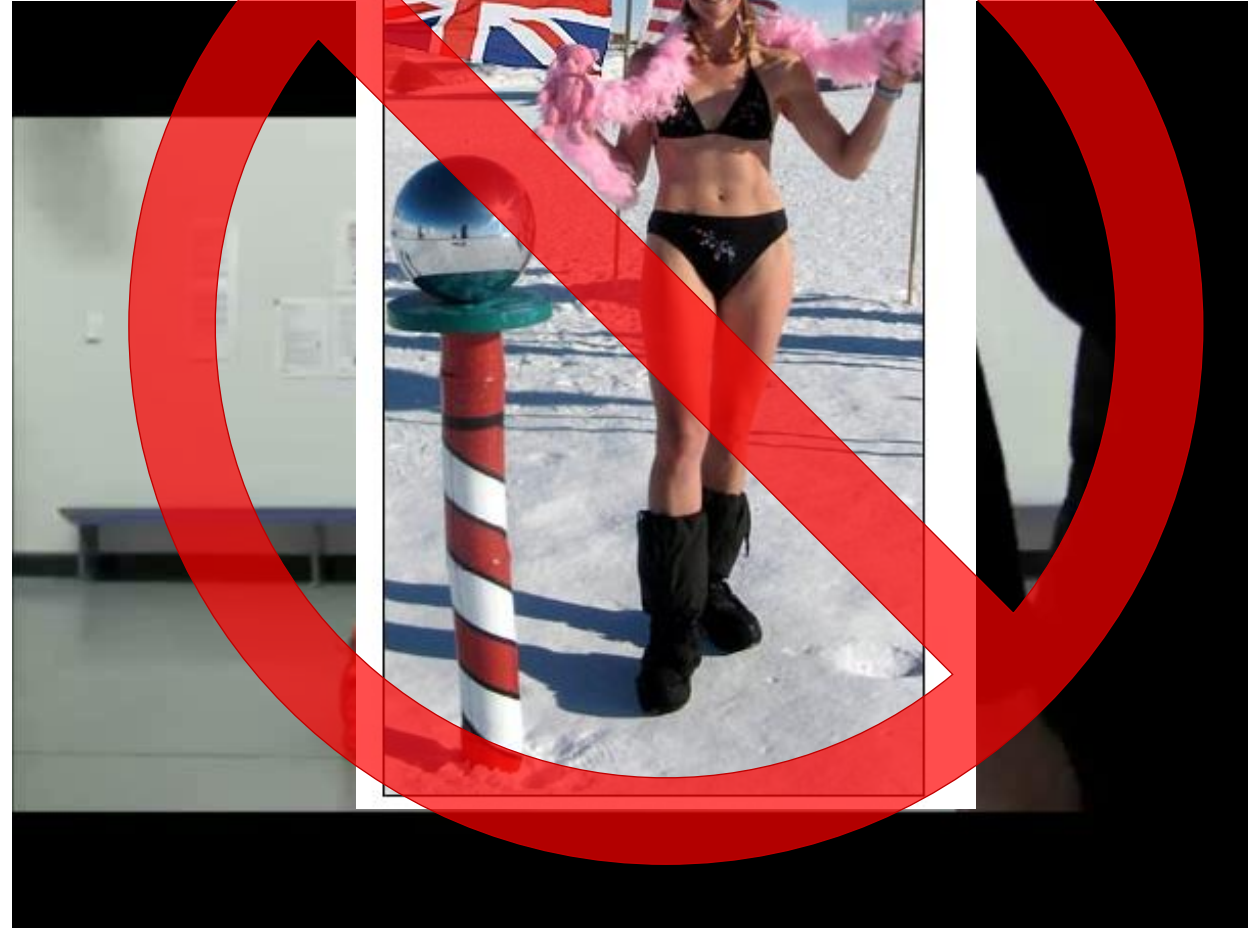
Vita in Antartide



Vita in Antartide



Vita in Antartide







Aspetti legati all'arte:

Lo spazio

Il ghiaccio

Il Silenzio

I colori e la loro assenza

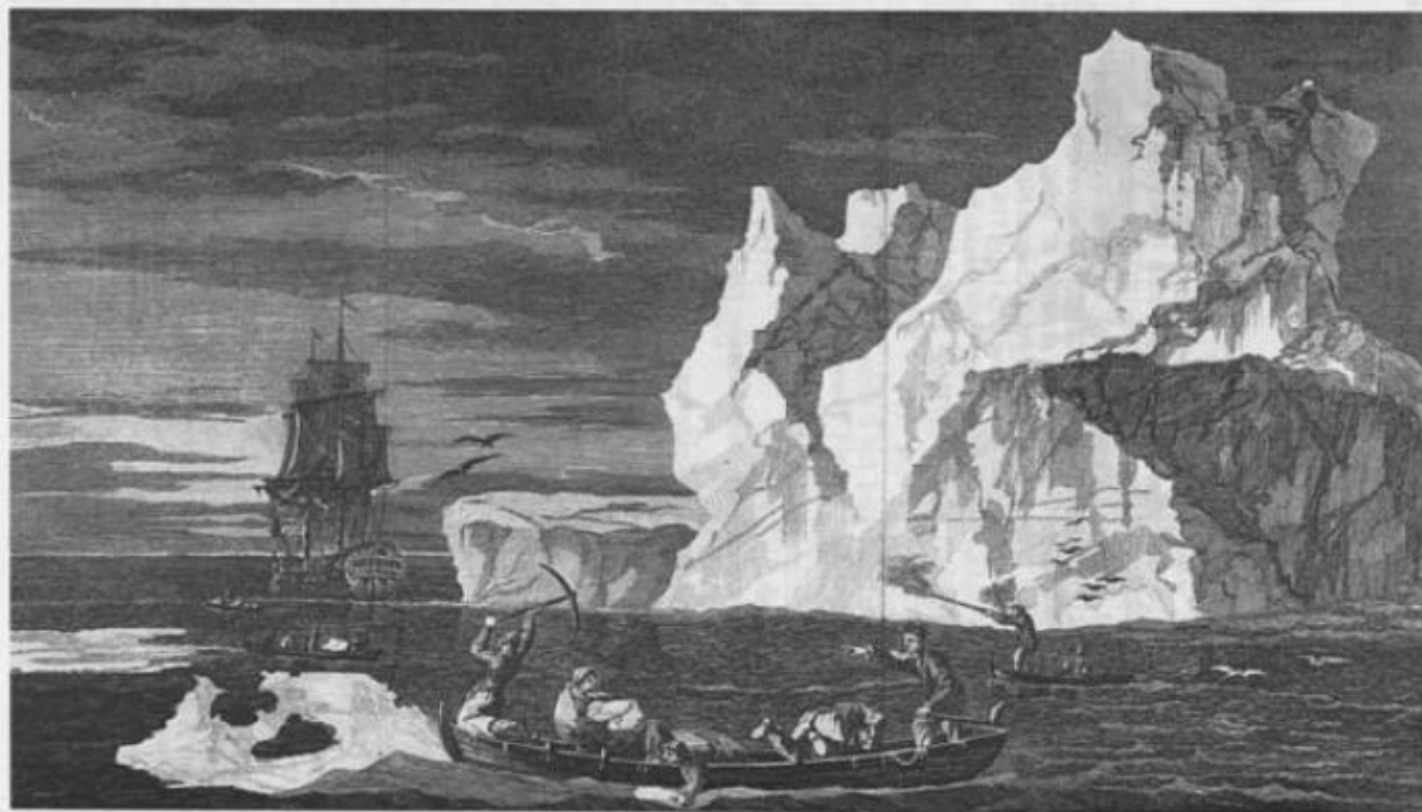


Plate 2: *The Ice Islands, seen the 9th January 1773.* James Cook [140]
(From the 1777 edition of *Cook's voyage*; Scott Polar Research Institute)

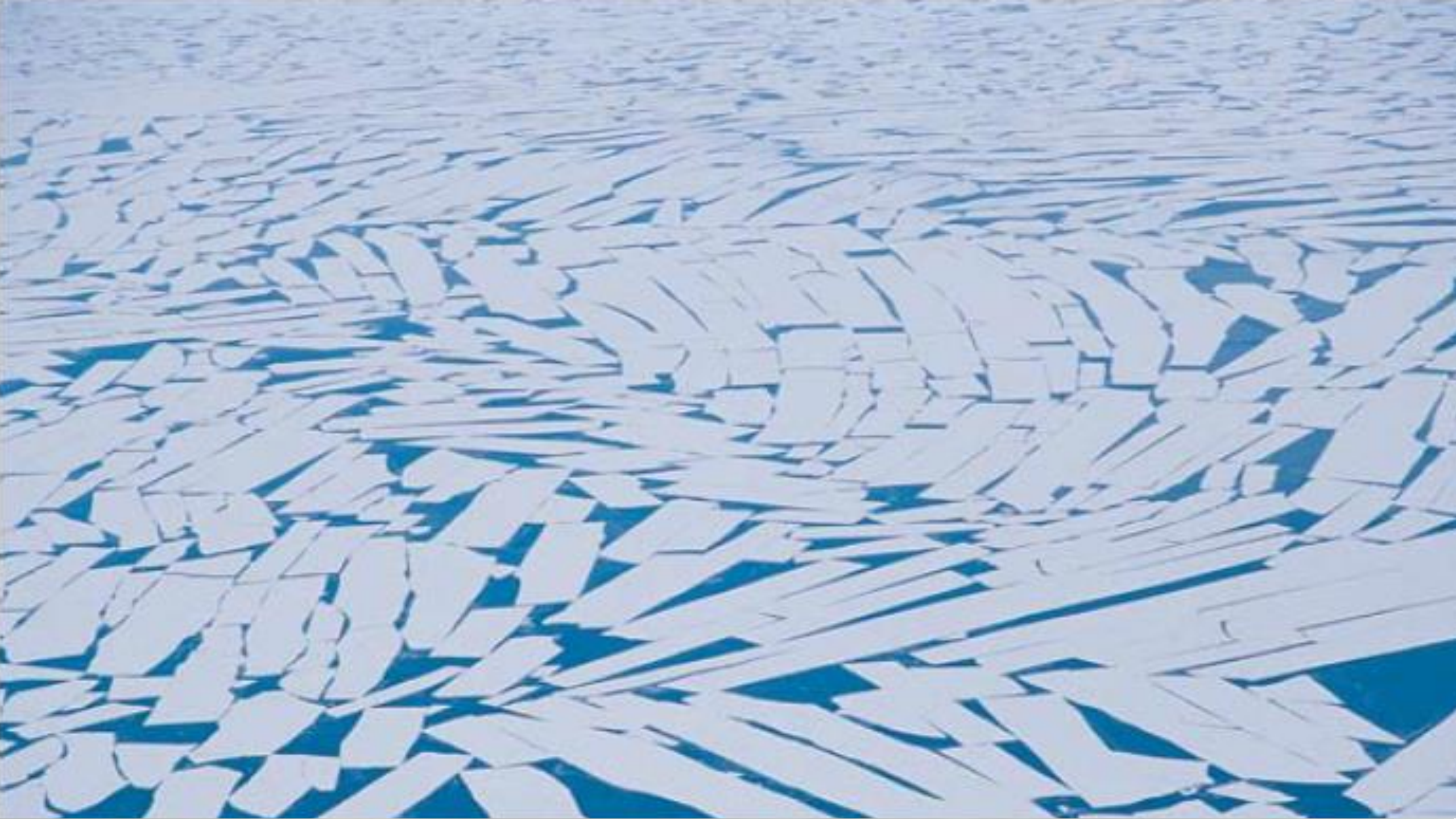


Acquarello di G.E. Marston, partecipante alla spedizione Nimrod guidata da Ernest H. Shackleton, 1908-09

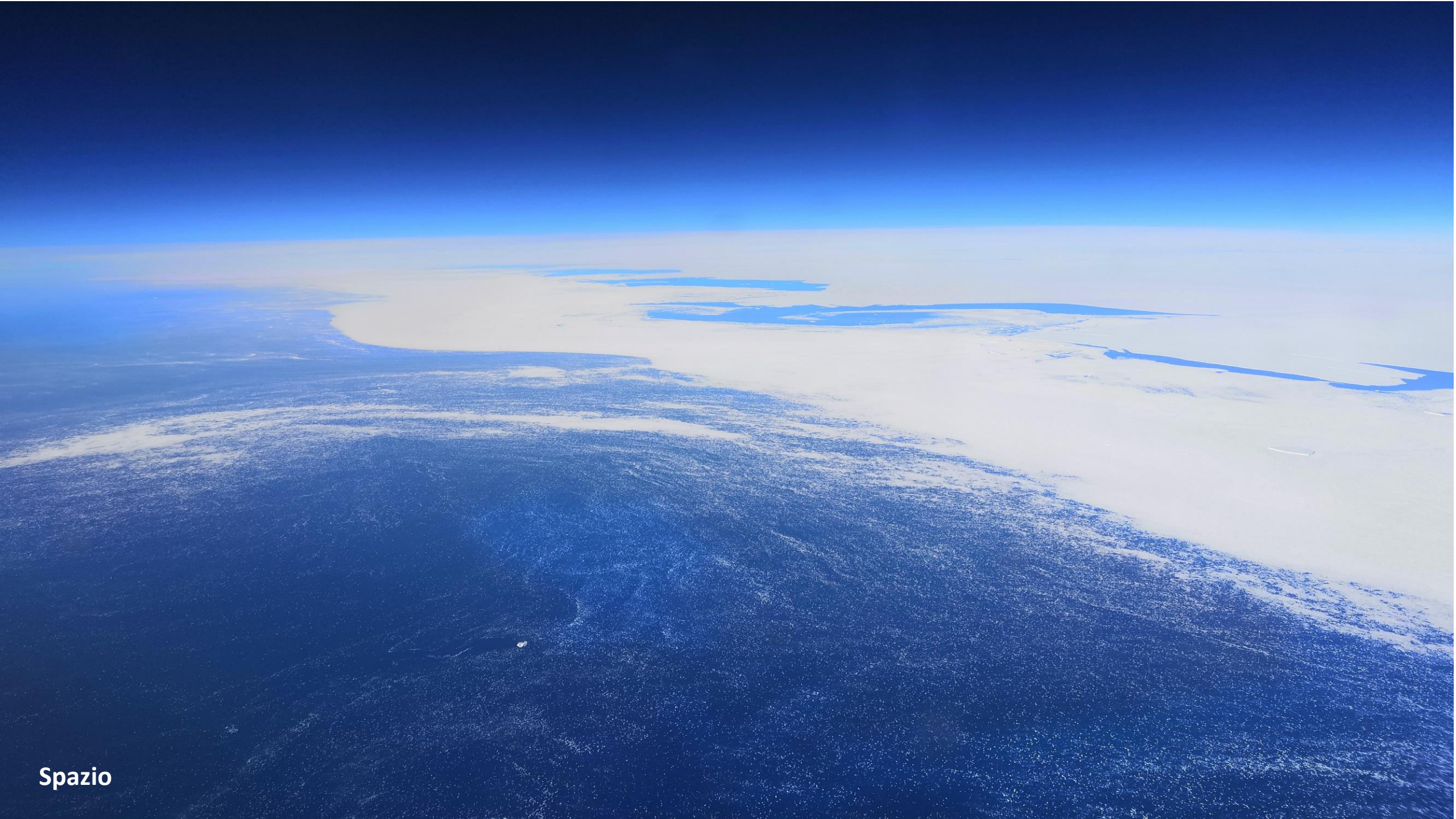












Spazio



Spazio



Spazio



Colori



Colori



Colori



Ghiacci



Ghiacci



Ghiacci



Ghiacci



Ghiacci



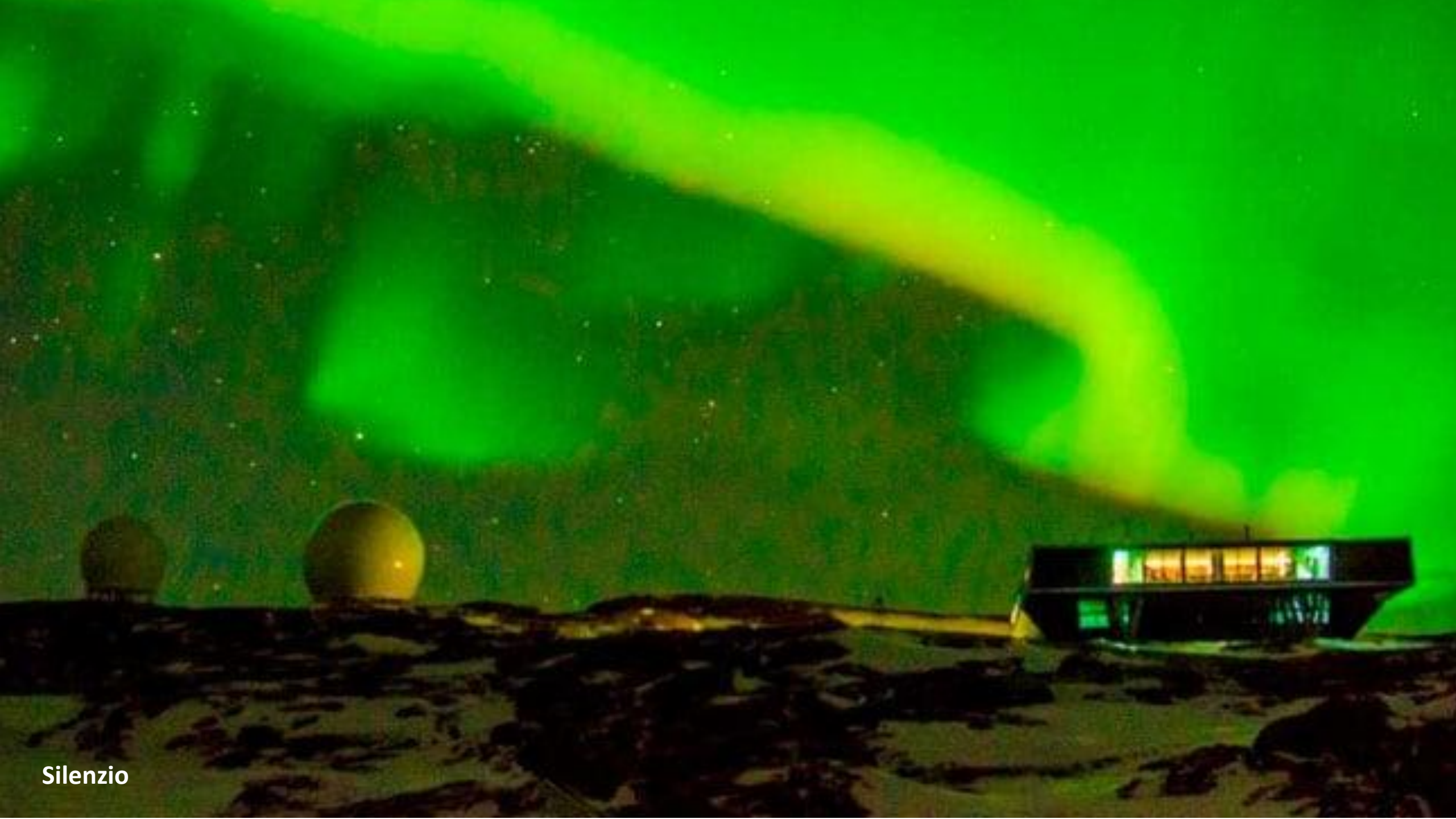
Ghiacci



Ghiacci



Ghiacci



Silenzio

Le reazioni nucleari all'interno del sole sono accompagnate dalla liberazione di energia che, si diffonde nello spazio circostante sotto forma di onde elettromagnetiche e di particelle elementari. Quando le particelle arrivano in prossimità della Terra, fluiscono attorno al campo magnetico ed alcuni sciami di particelle si insinuano in corrispondenza dei Poli.

In seguito agli urti con gli atomi dell'atmosfera, alcuni atomi si caricano di energia e diventano luminescenti.





Video links:

https://www.youtube.com/watch?v=JOuJt4_TRP0

<https://www.youtube.com/watch?v=LkRQjTdTvFE>

https://www.youtube.com/watch?v=3niR_-Kv4SM

<https://www.youtube.com/watch?v=Z5VRoGTF60s>

<https://ed.ted.com/lessons/how-do-ocean-currents-work-jennifer-verduin>

<https://mashable.com/video/south-pole-aurora-southern-lights-timelapse/?europe=true>

LIBRO ARTE-ANTARTIDE

http://www.mna.it/sites/default/files/Arte_Antartide_catalogo.pdf