



MUNICIPIO 3



Stagione della Scienza nel Municipio 3 in via Sansovino 9

Riparte la Stagione della Scienza nel Municipio 3, iniziata nel 2012 e proseguita fino al 2018 con conferenzieri del Planetario di Milano.

Quattro conferenze gratuite si terranno dalle 18 alle 19.30 presso la sala consiliare del Municipio 3 in via Sansovino 9.

Il programma è il seguente:

Martedì 21 Novembre 2023

**Cesare GUAITA (Chimico- GAT/Planetario di Milano)
CONSEGUENZE PLANETARIE DEL CLIMA IMPAZZITO.**

Martedì 28 Novembre 2023

**Piermario ARDIZIO (Tecnico elettronico-LEONARDO)
ARTEMIS: RITORNO ALLA LUNA.**

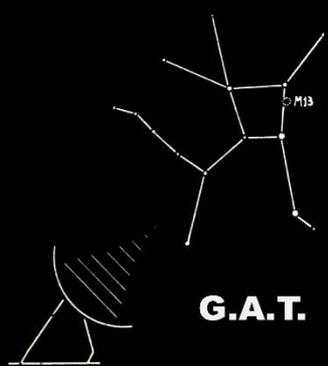
Martedì 5 Dicembre 2023

**Luigi BIGNAMI (Geologo-Mediaset)
TURCHIA E MAROCCO: APOCALITTICI TERREMOTI
ANNUNCIATI.**

Martedì 12 Dicembre 2023

**Fabio PERI (Astrofisico-Planetario di Milano)
LA STELLA DEI MAGI**

comune.milano.it/municipio3

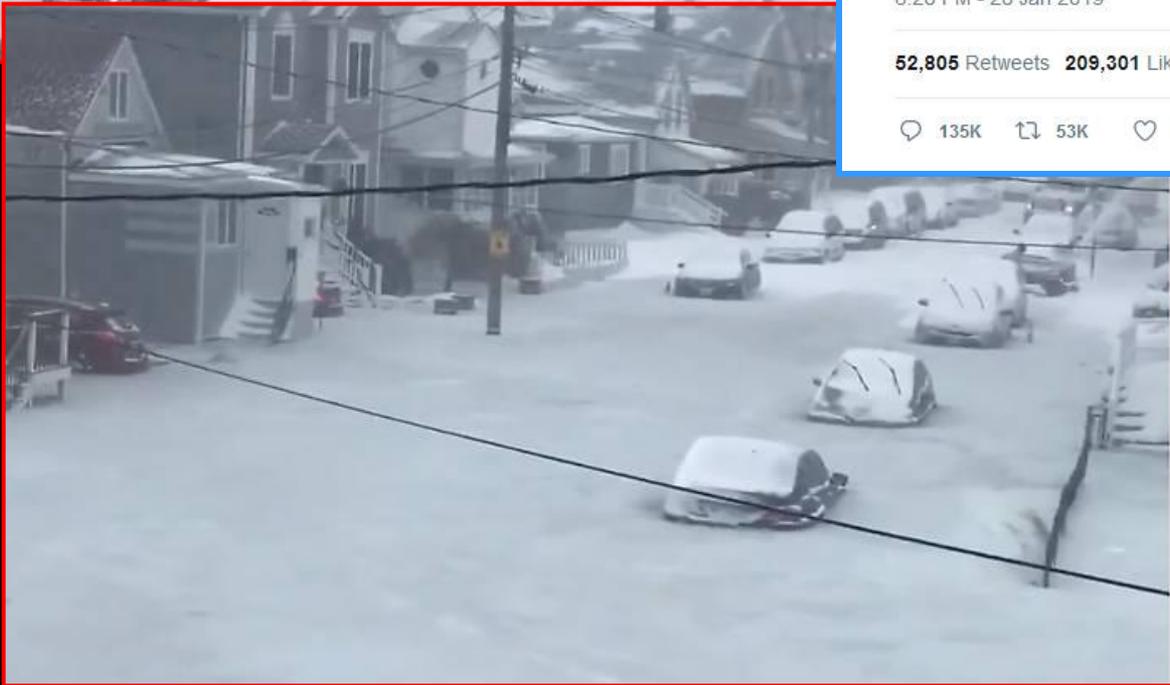


Martedì 21 Novembre 2023, h 181

CONSEGUENZE PLANETARIE DEL CLIMA IMPAZZITO.

Rel.: Cesare GUAITA

USA, 28 Gennaio 2019,,,



Donald J. Trump 
@realDonaldTrump

[Follow](#)

In the beautiful Midwest, windchill temperatures are reaching minus 60 degrees, the coldest ever recorded. In coming days, expected to get even colder. People can't last outside even for minutes. What the hell is going on with Global Warming? Please come back fast, we need you!

6:28 PM - 28 Jan 2019

52,805 Retweets 209,301 Likes

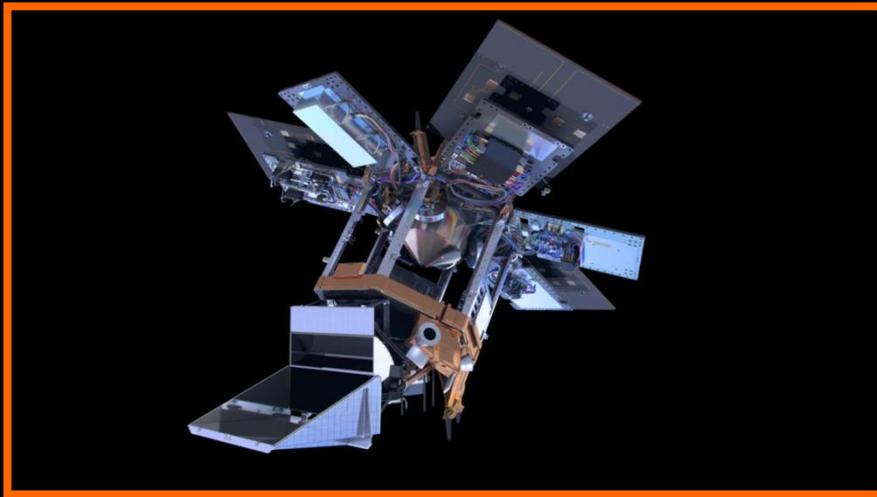


 135K  53K  209K 



ESA Copernicus Program

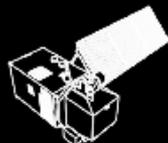
Sentinel 5 P in orbita a 824 km di altezza dal 13 ottobre 2017



Sentinel-1
SAR
Land monitoring



Sentinel-2
Optical
Land monitoring



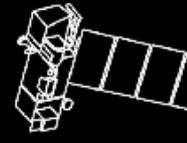
Sentinel-3
Optical & Altimeter
Surface temperature,
Sea surface topography



Sentinel-4
Spectrometer
Air quality
Geostationary



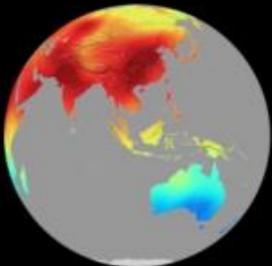
Sentinel-5 Precursor
Spectrometer
Air quality



Sentinel-5
Spectrometer
Air quality



Sentinel-6
Altimeter
Sea surface topography



Methane
CH₄
1,6



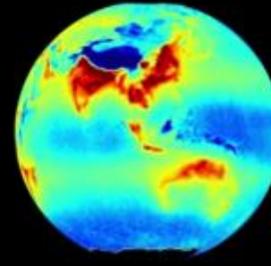
Nitrogen dioxide
NO₂
0,43



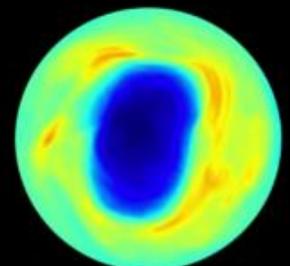
Carbon monoxide
CO
2,3



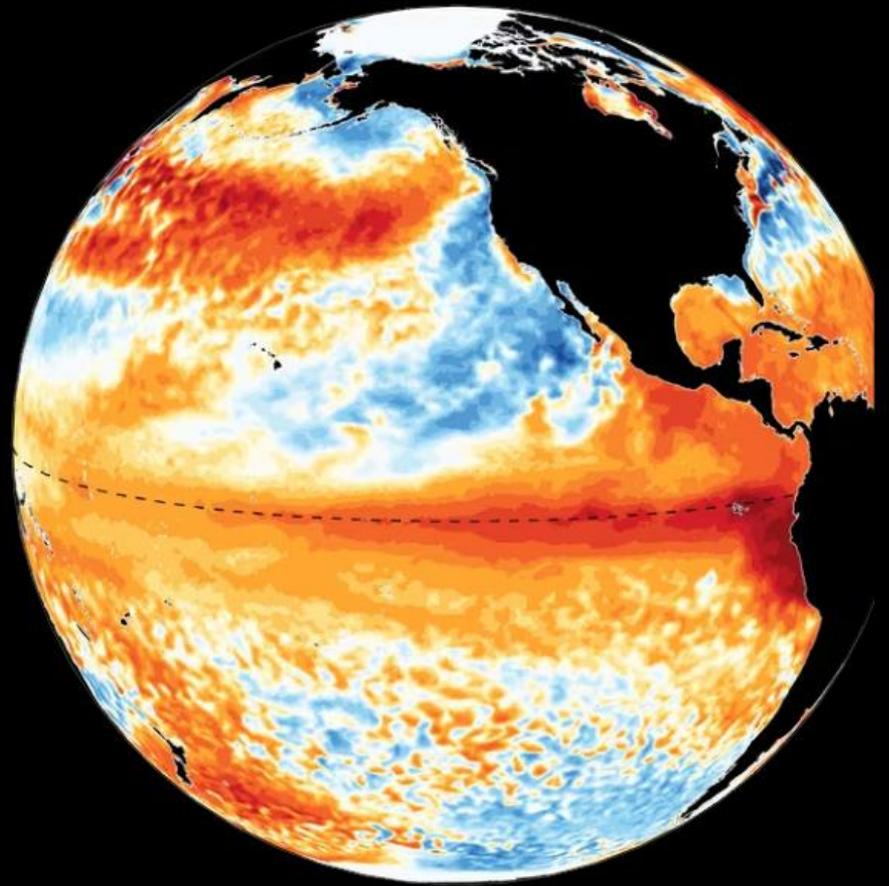
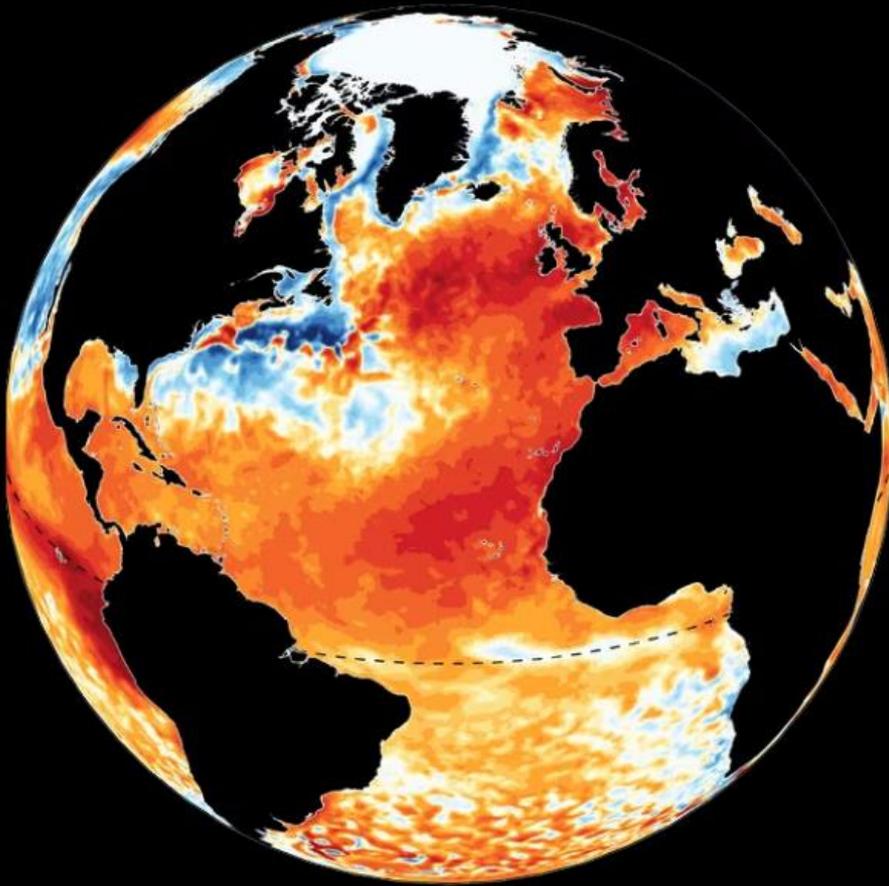
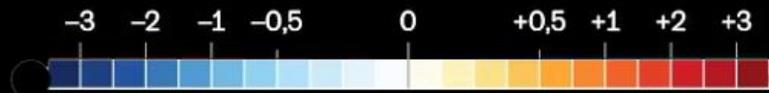
Sulfur dioxide
SO₂
0,31



Formaldehyde
HCHO
0,34



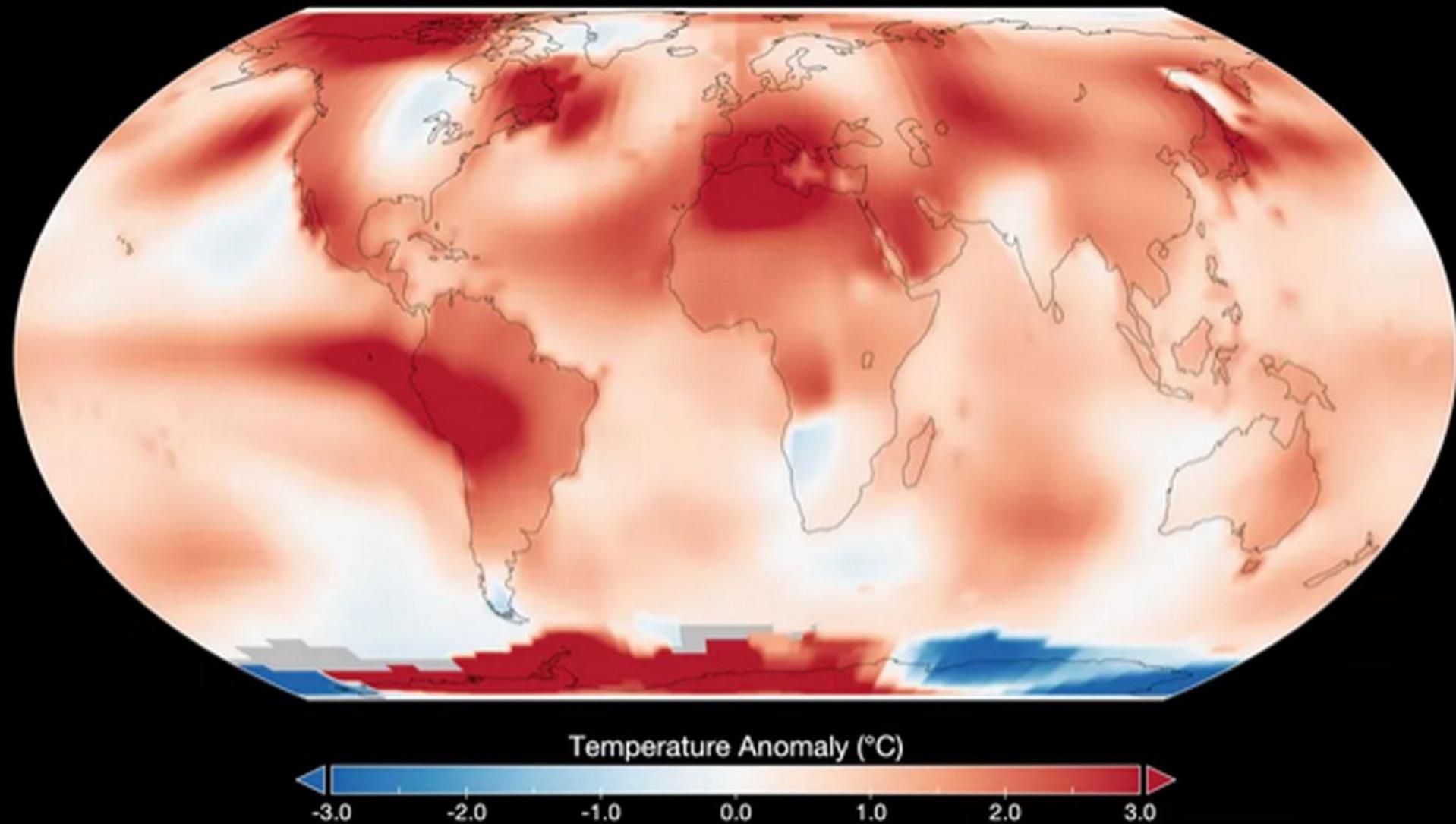
Ozone
O₃
0,3 μm



Fuente: C3S / ECMWF, Copernicus
EL PAÍS

June of 2023, compared to the average temperature in the 1991-2020 period.

Luglio 2023, riscaldamento globale



9 Luglio 2021: 54,4°C nella valle della morte

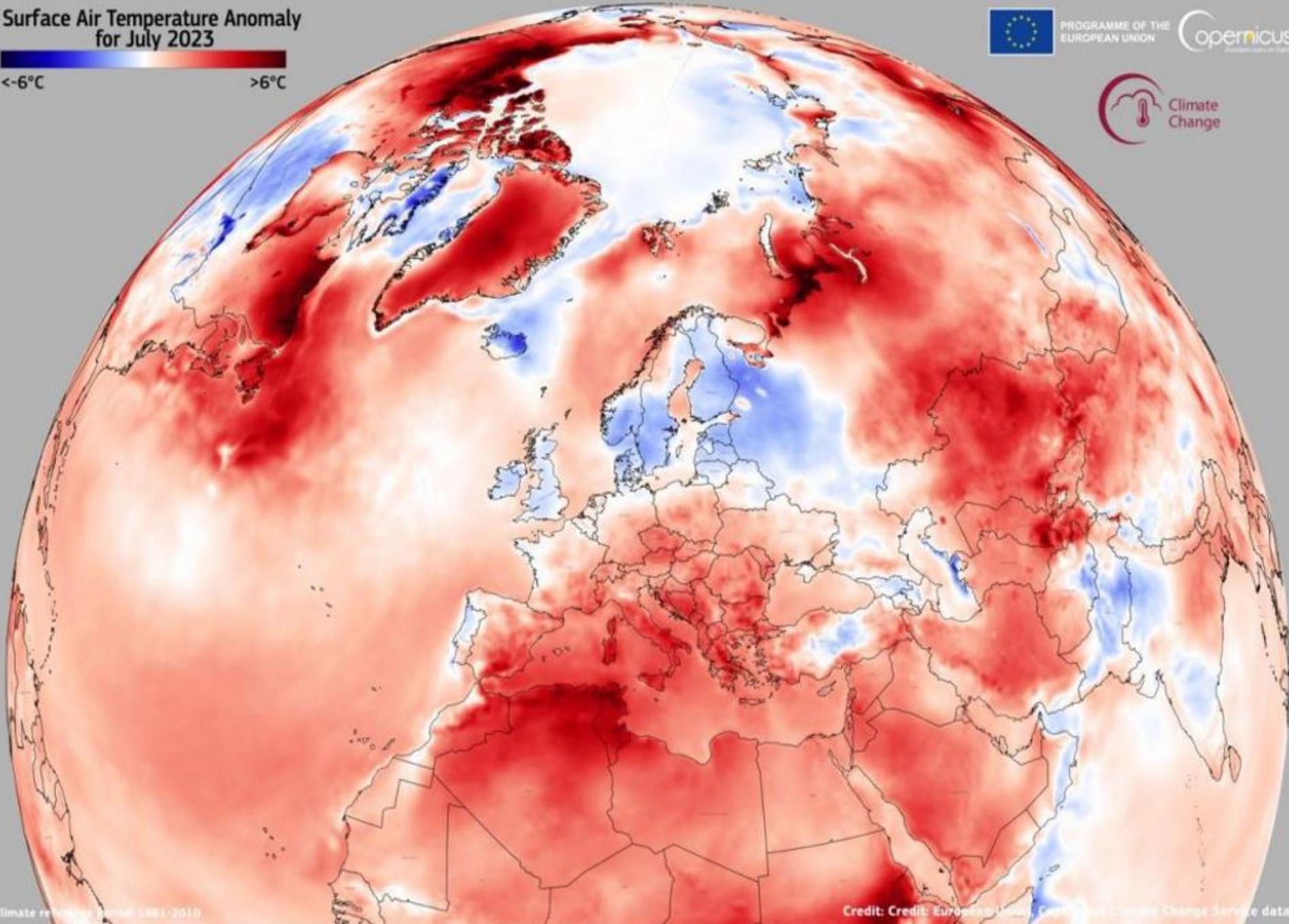
Surface Air Temperature Anomaly for July 2023



<math><-6^{\circ}\text{C}</math> $>6^{\circ}\text{C}$



PROGRAMME OF THE EUROPEAN UNION





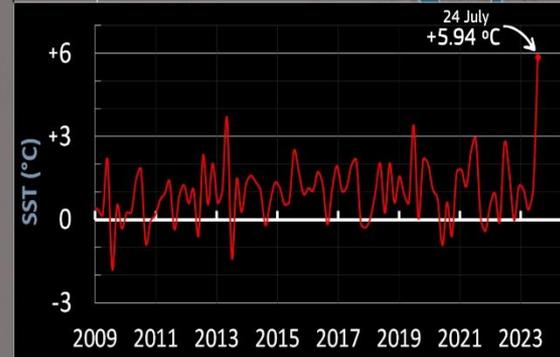
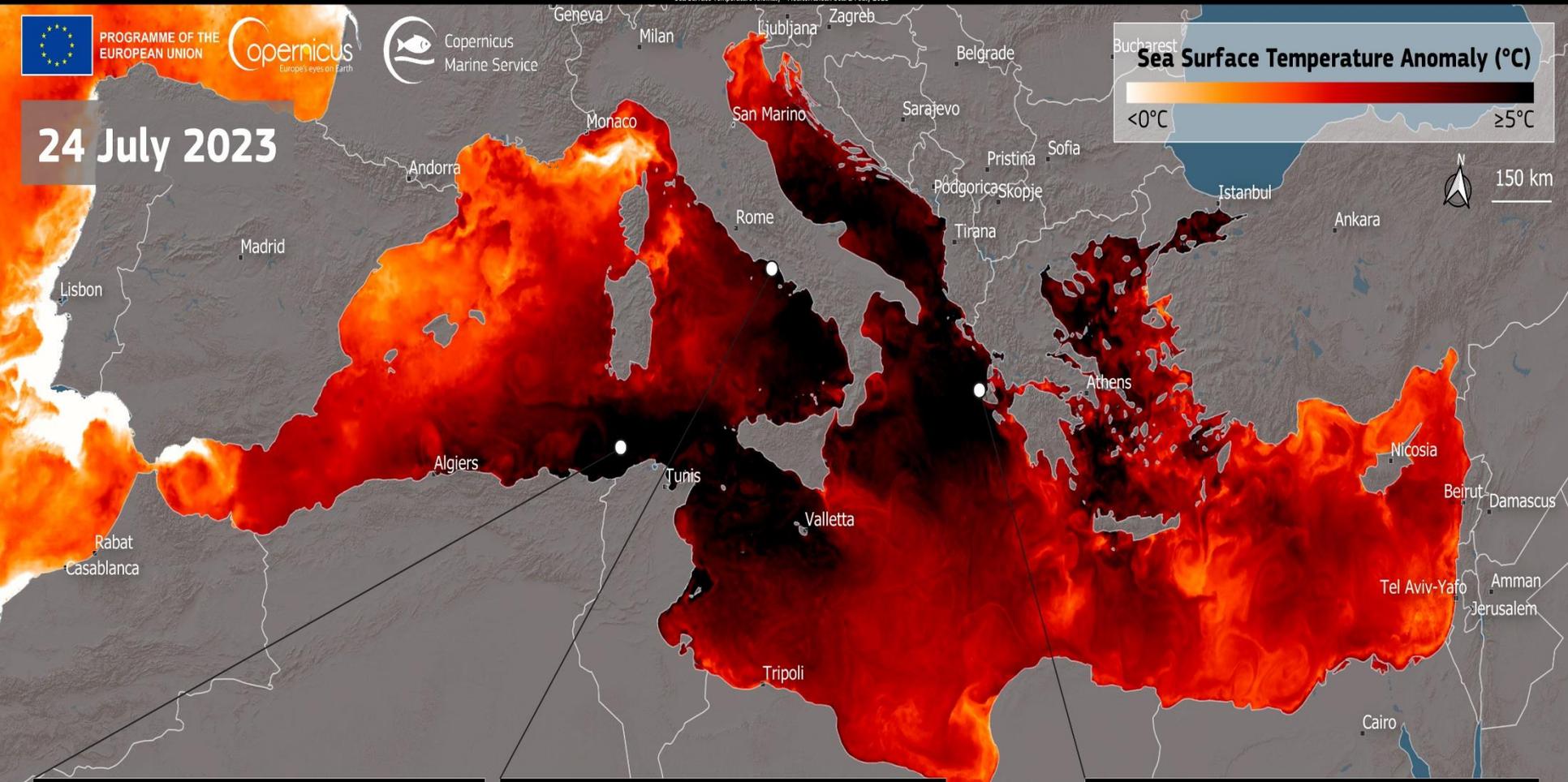
PROGRAMME OF THE EUROPEAN UNION



Copernicus Marine Service

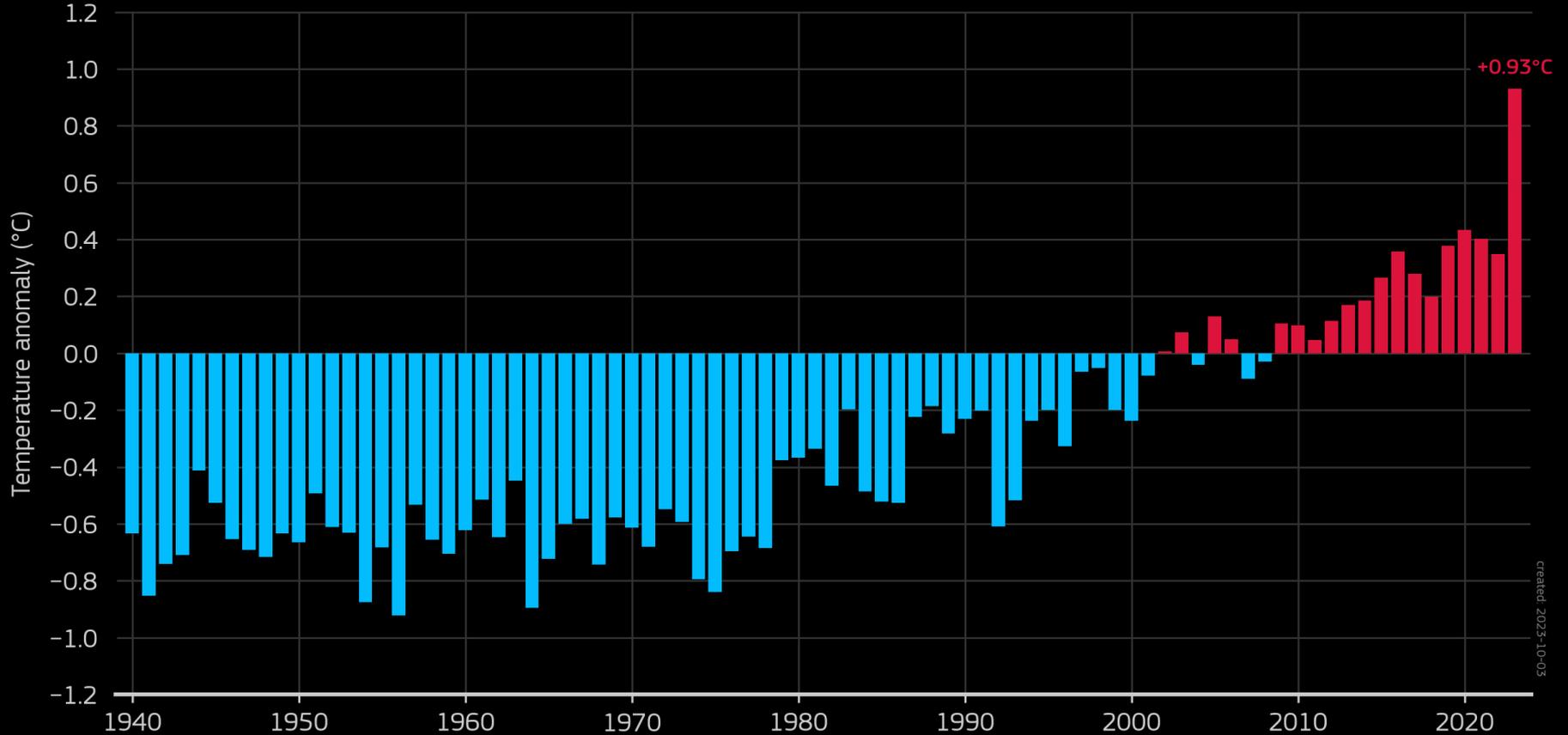
Sea Surface Temperature Anomaly - Mediterranean Sea, 24 July 2023

24 July 2023



GLOBAL SURFACE AIR TEMPERATURE ANOMALIES • SEPTEMBER

Data: ERA5 • Reference period: 1991-2020 • Credit: C3S/ECMWF



created 2023-10-03

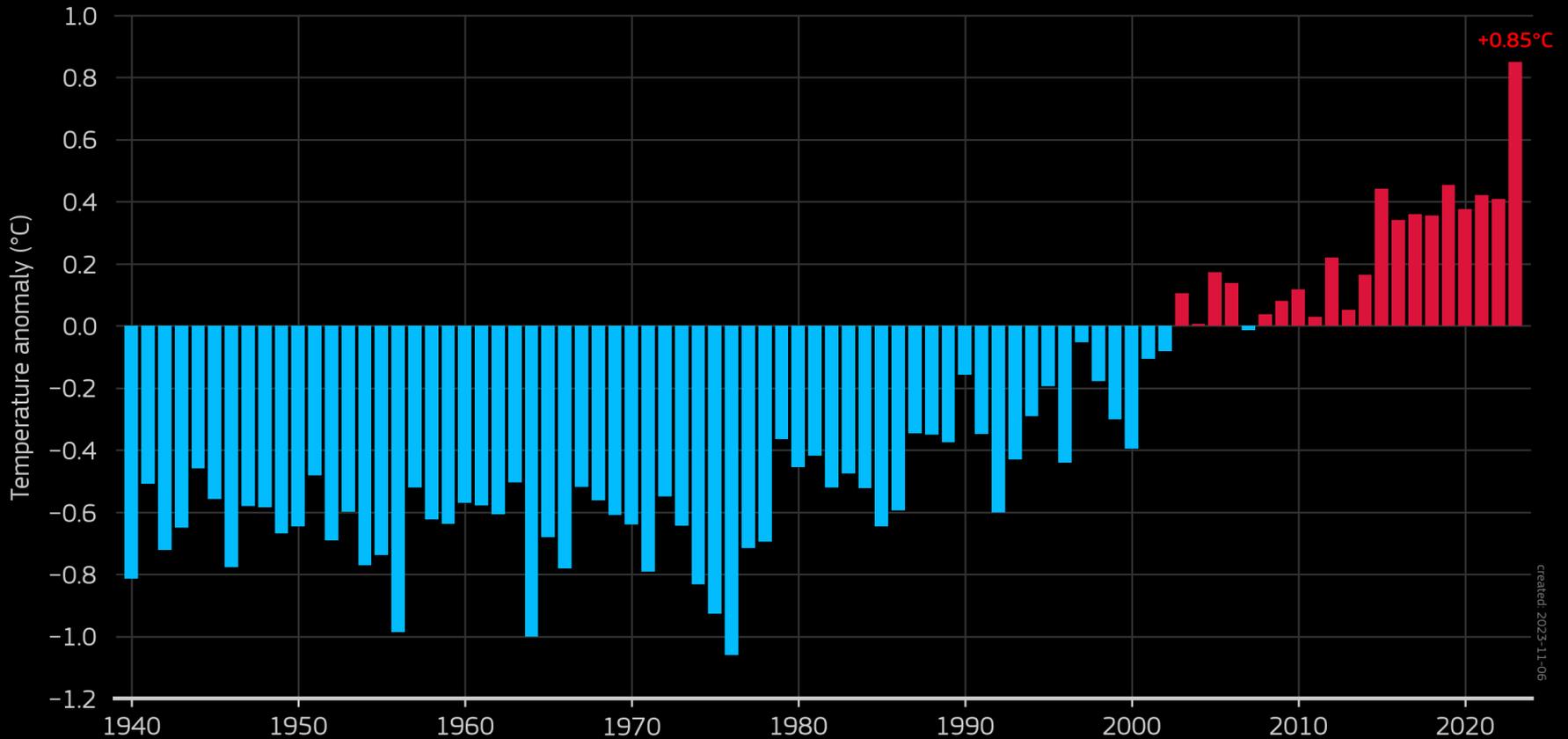


PROGRAMME OF THE EUROPEAN UNION



GLOBAL SURFACE AIR TEMPERATURE ANOMALIES • OCTOBER

Data: ERA5 • Reference period: 1991-2020 • Credit: C3S/ECMWF



created: 2025-11-06



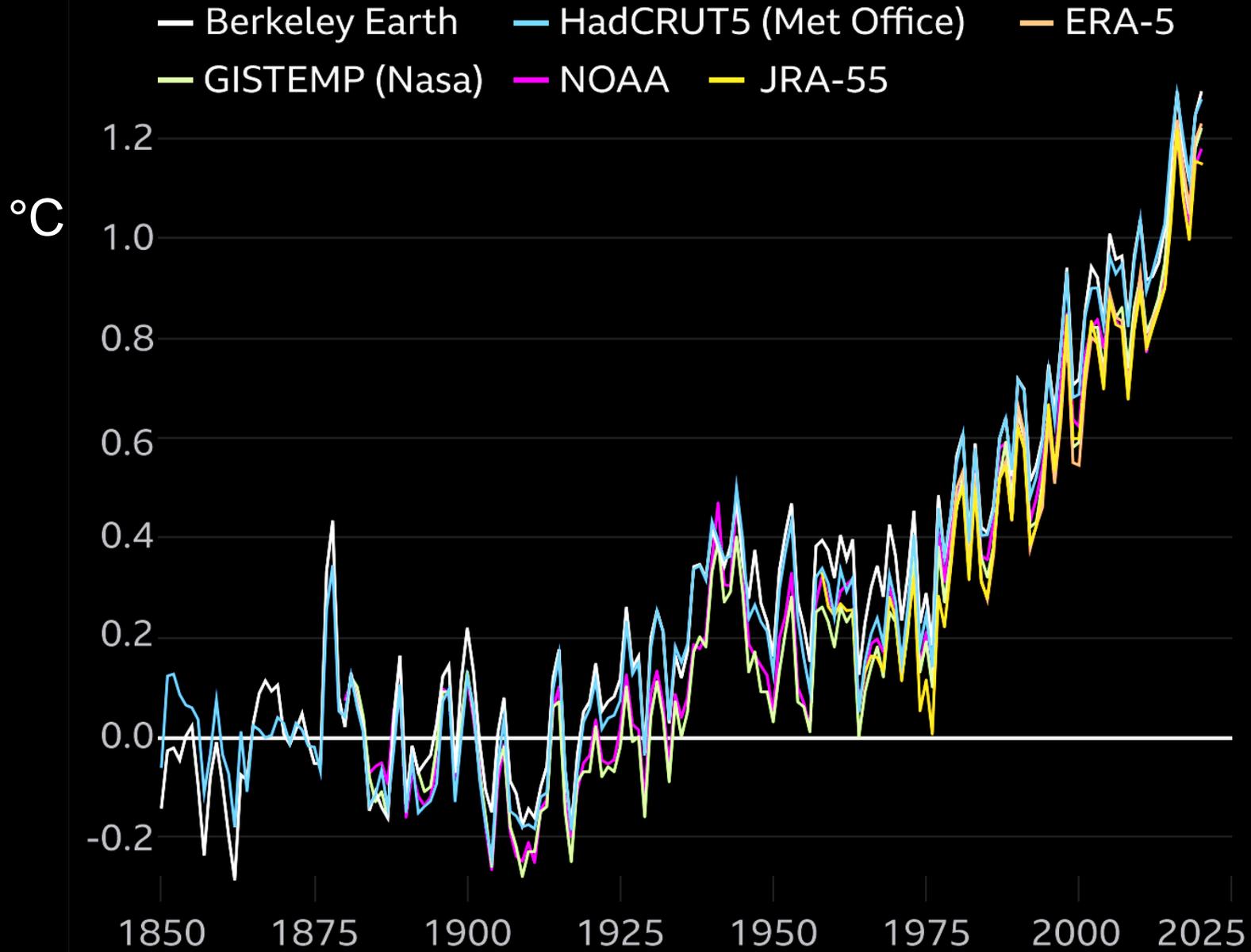
PROGRAMME OF THE EUROPEAN UNION





900 NOAA ASOS (Automatic Surface Observing System). *Qui Childress Municipal Airport*

Aumento della Temperatura globale dal 1850





Trentino, 29 Ottobre 2018...



Romagna, 4-10 Maggio 2023...

Milano, 25 Luglio 2023...



2005

Rita
23 September

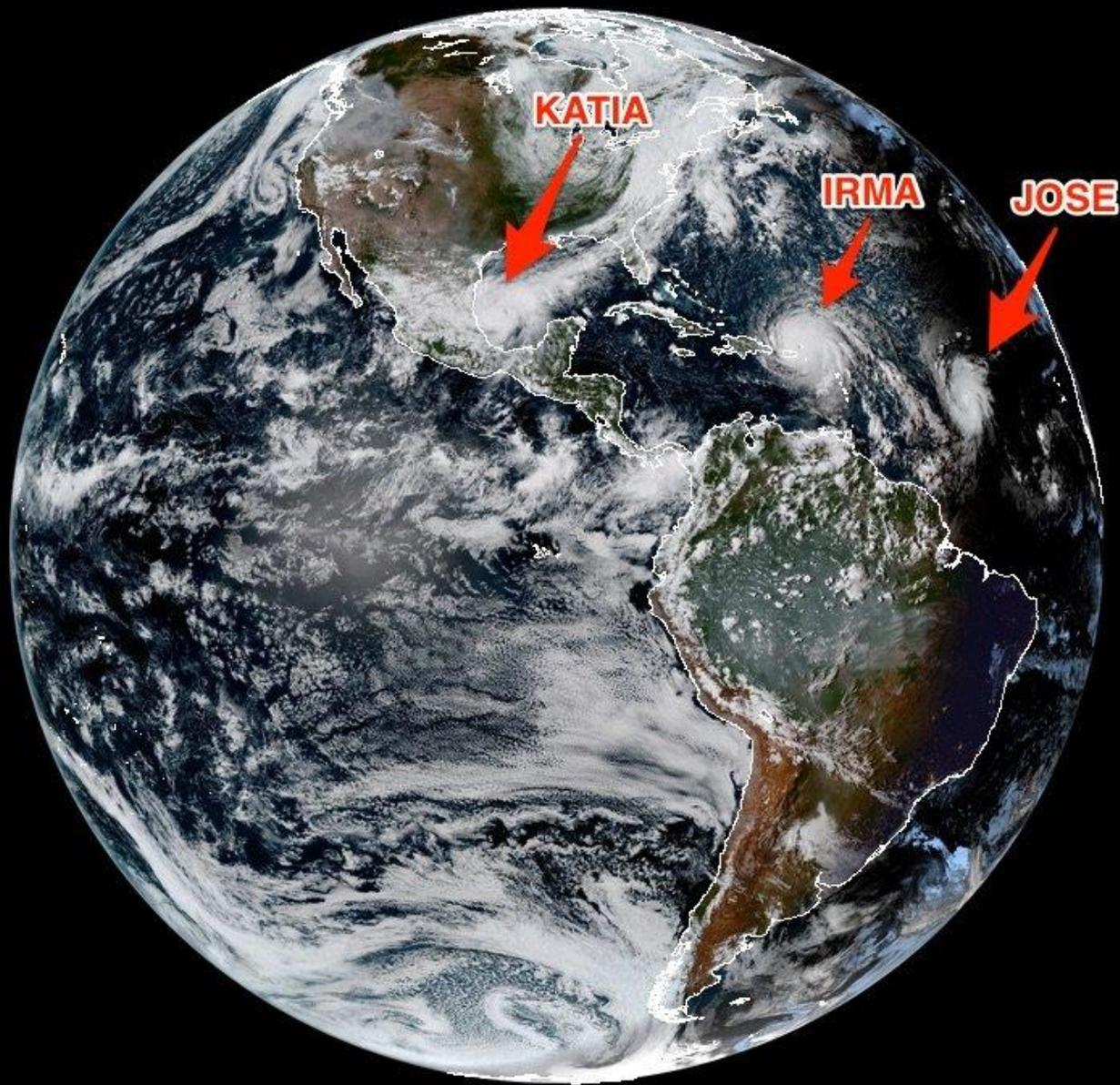
Dennis
10 July

Katrina
28 August

Wilma
21 October

Emily
17 July





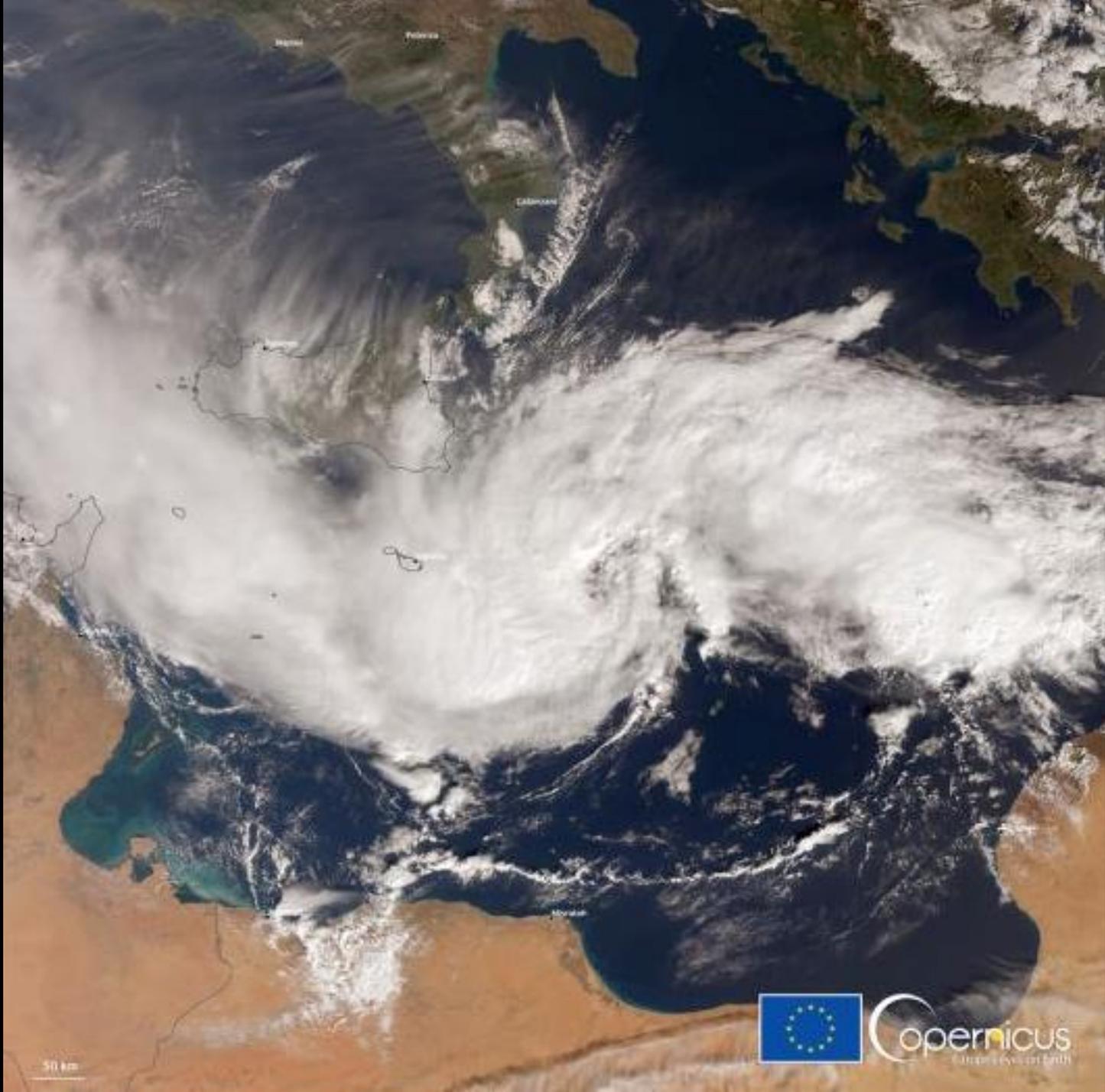
7 settembre 2017



Italy

Greece

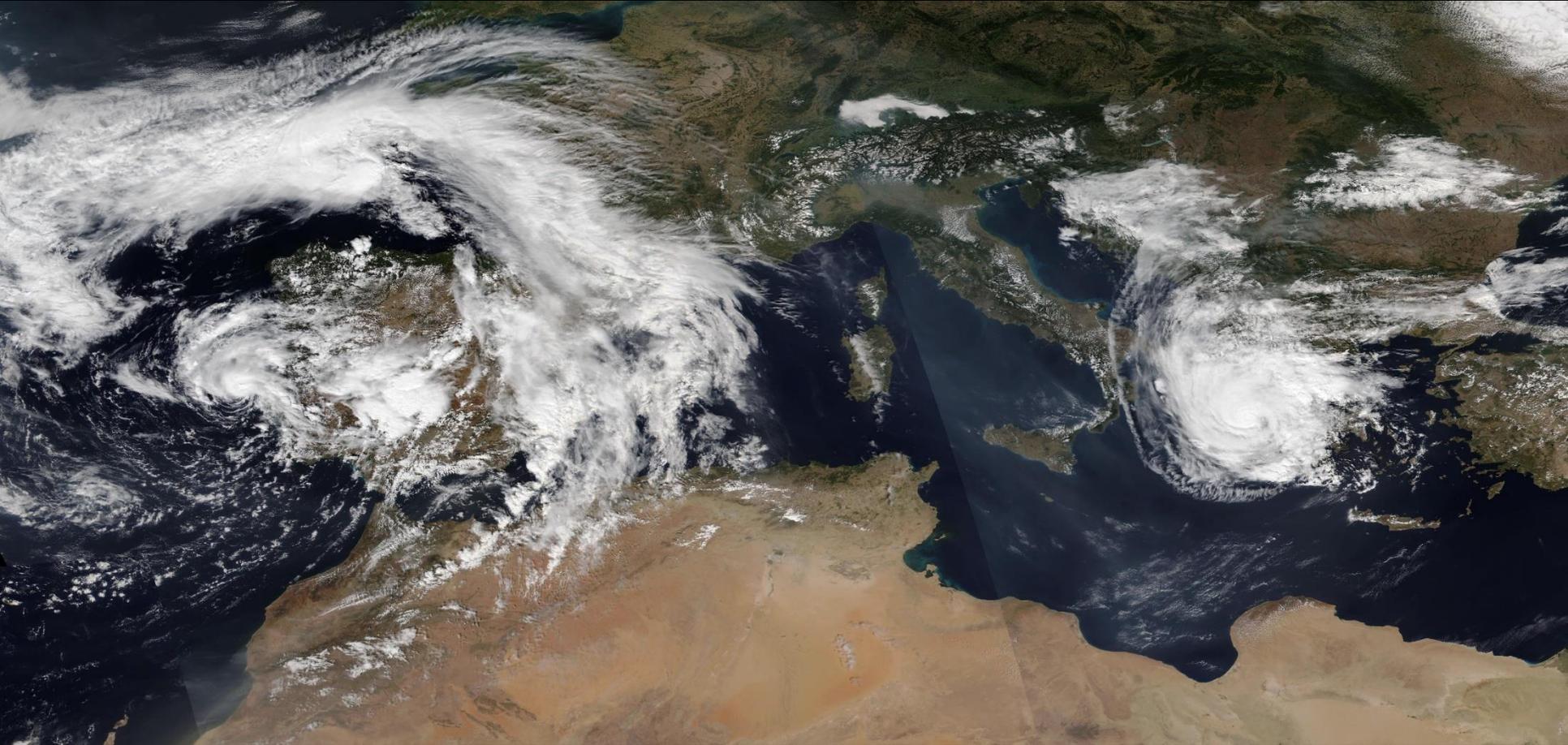




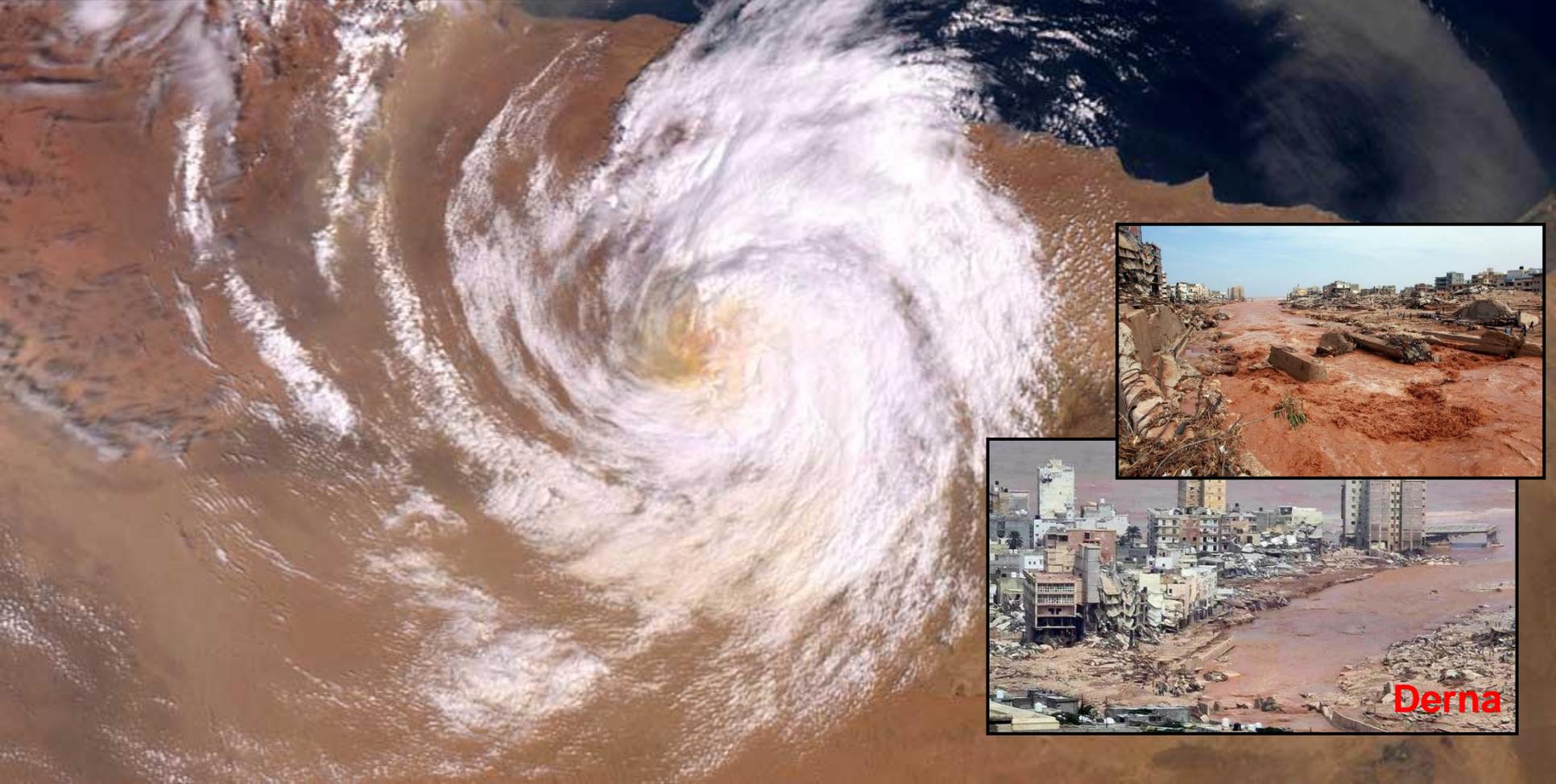
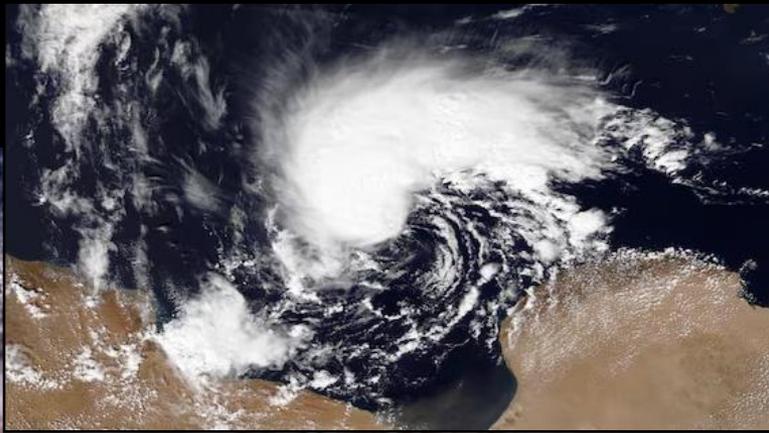
50 km

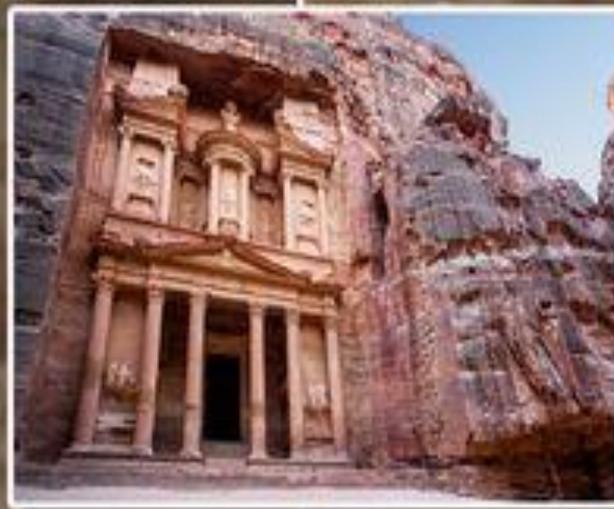


Copernicus
Europe's Eye on Earth



11-12 Settembre 2023: il ciclone DANIEL sulla





PETRA, 9 Novembre 2018,,





VENEZUELA

SURINAME

COLOMBIA

GUYANA

FRENCH
GUIANA

ECUADOR

Rio Negro

+
MANAUS

BRAZIL

PERU

BOLIVIA

OM





Manaus





Il ritiro del ghiacciaio del Monte Bianco



Dicembre 2008....



Dicembre 2008











Dicembre 2012













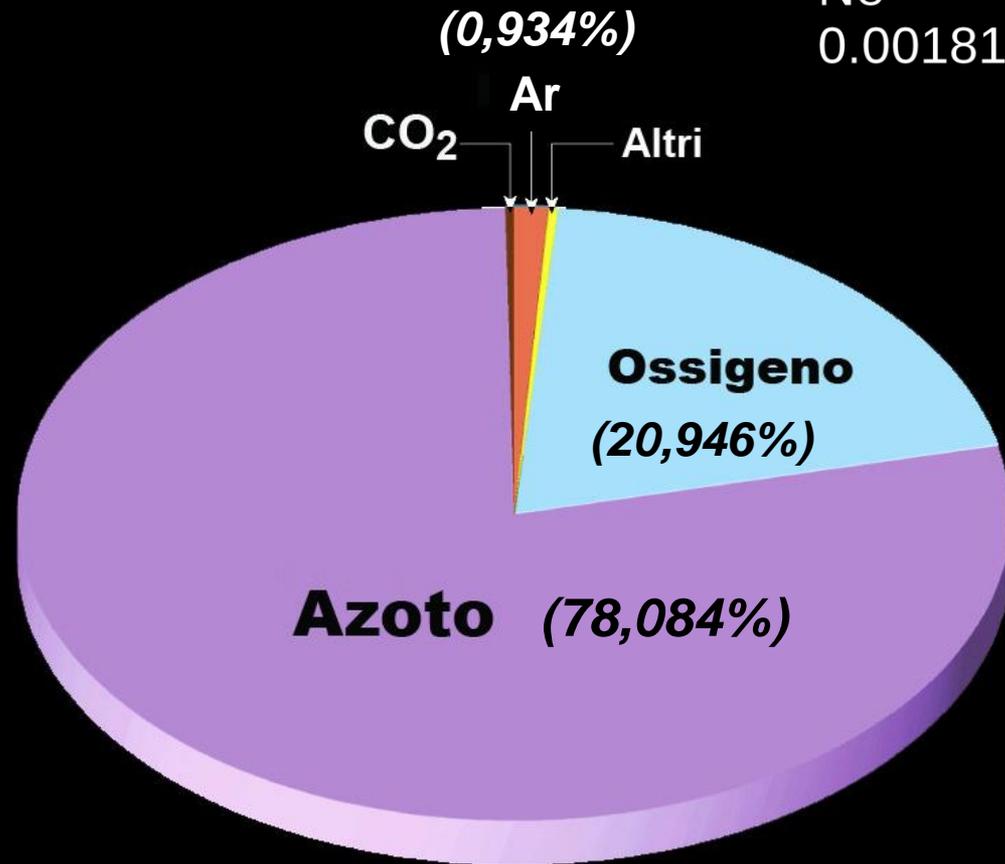




Dicembre 2012...



Dicembre 2008...



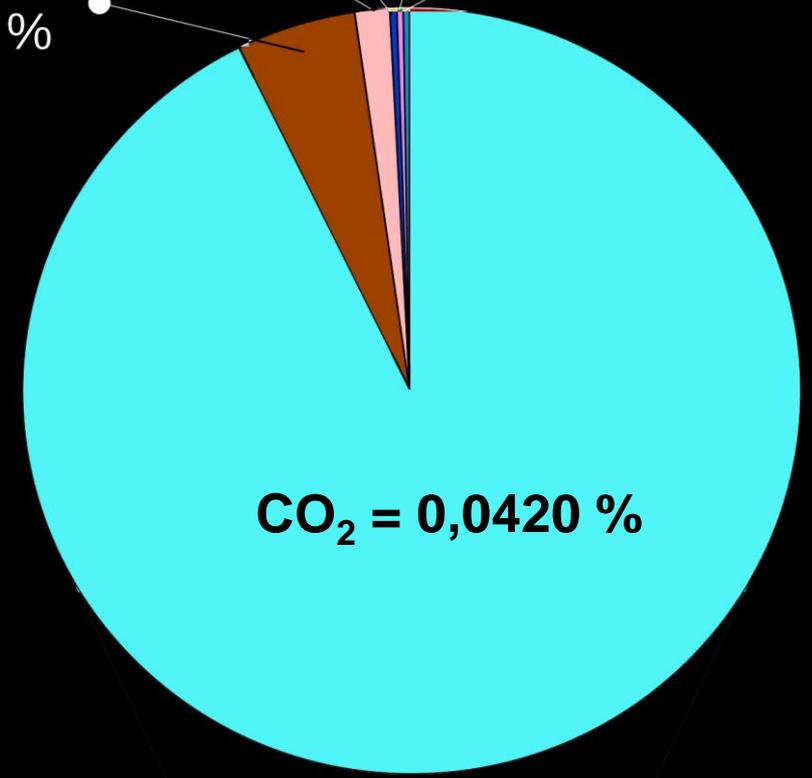
CH₄
0.000179 %

He
0.000524 %

Ne
0.001818 %

Kr
0.000114 %

H₂
0.000055 %





MAUNA LOA OBSERVATORY

Earth System Research Laboratories
Global Monitoring Division

Est. June 28, 1958 • Elevation 3,396m (11,141 ft)



Atmospheric CO₂

October 2023

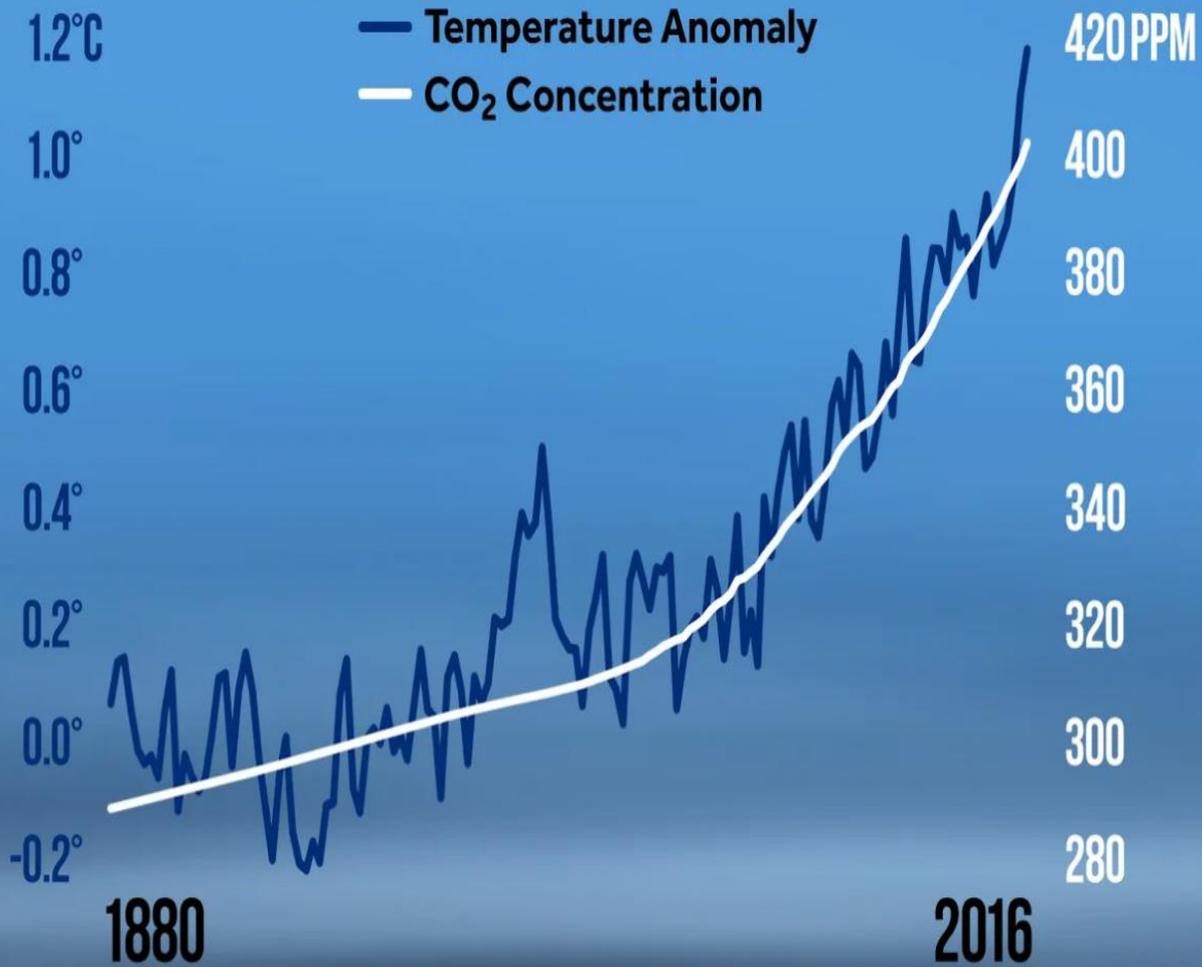
418.82

parts per million (ppm)

Mauna Loa Observatory, Hawaii (NOAA)

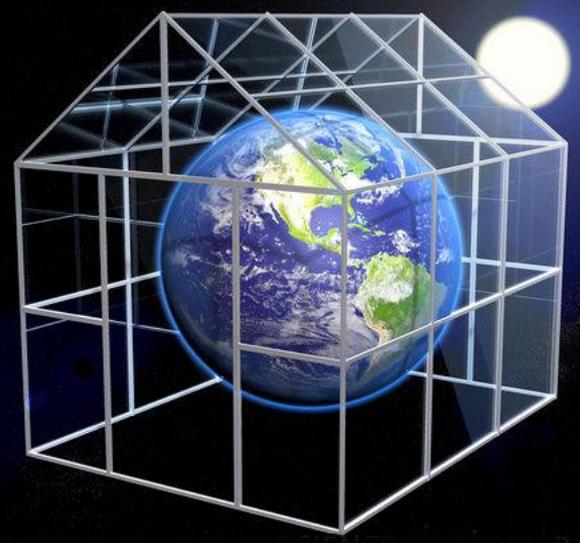
Preliminary data released November 5, 2023

Global Temperature and Carbon Dioxide



Global temperature data averaged and adjusted to early industrial baseline (1881-1910).
Source: NASA GISS, NOAA NCEI, ESRL

EFFETTO SERRA



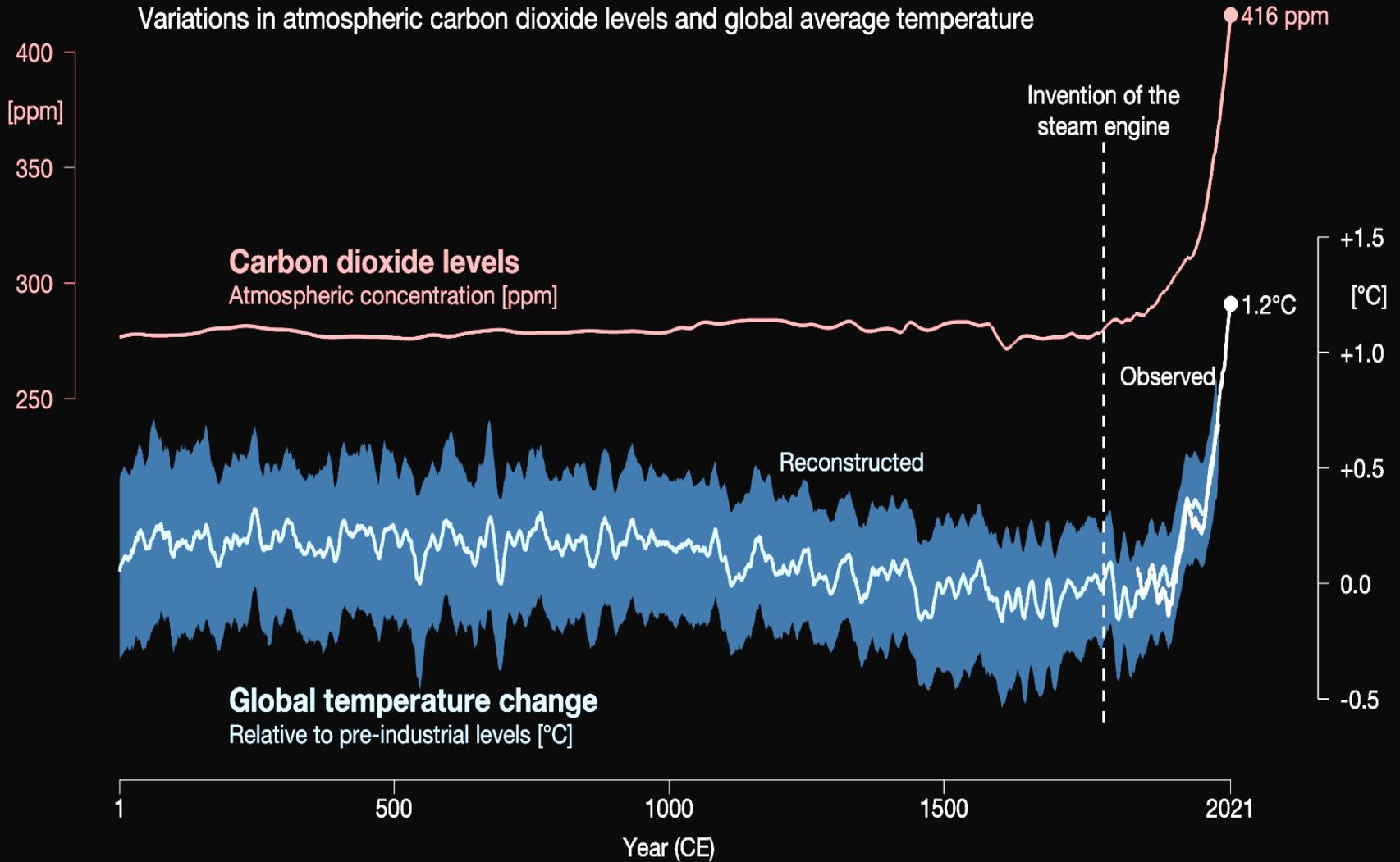
Some sunlight that hit the earth is reflected.
Some bec...

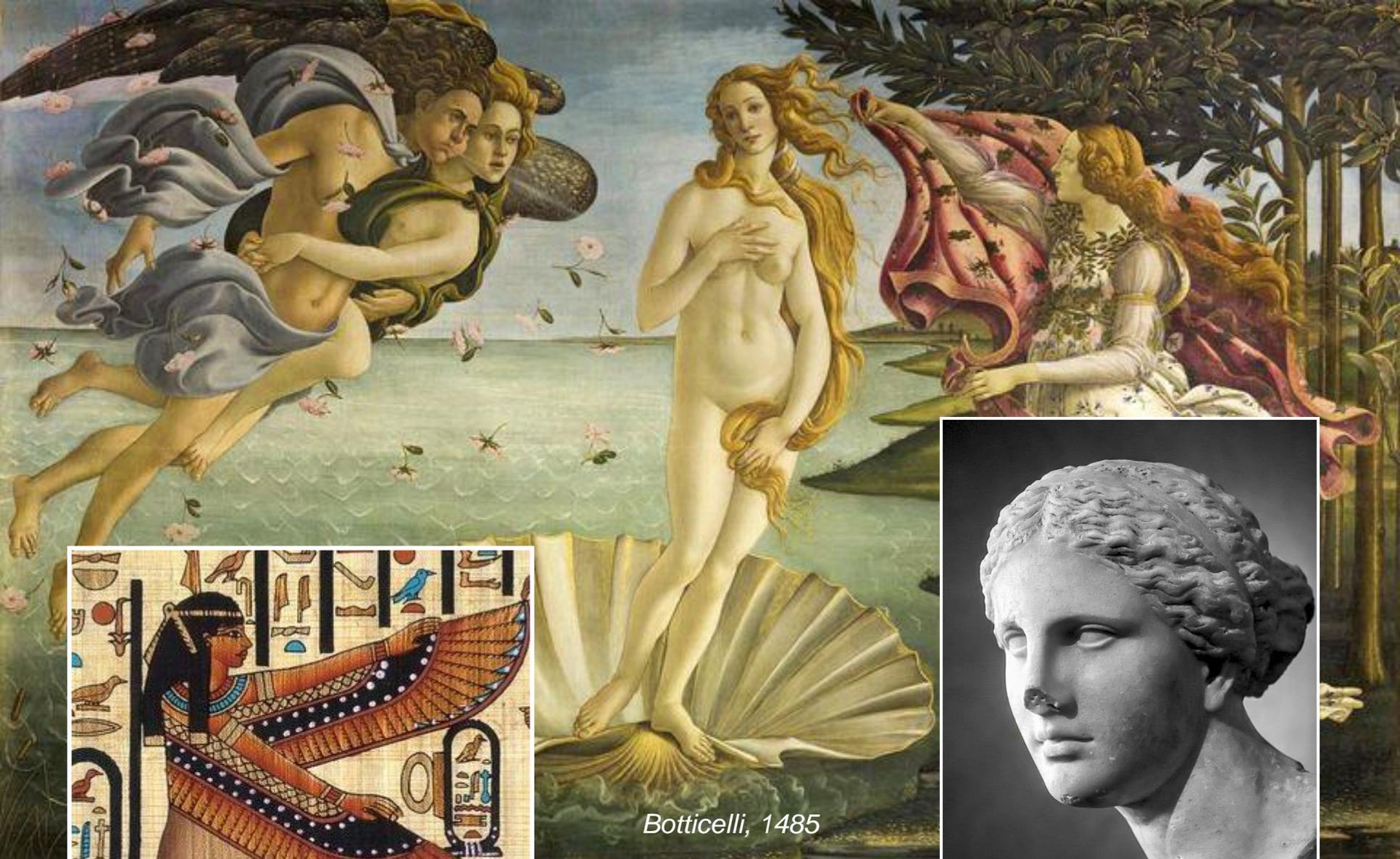


LIBRARY
...there as
...to
...ing
...ing

Observed changes in climate over the last 2021 years

Variations in atmospheric carbon dioxide levels and global average temperature

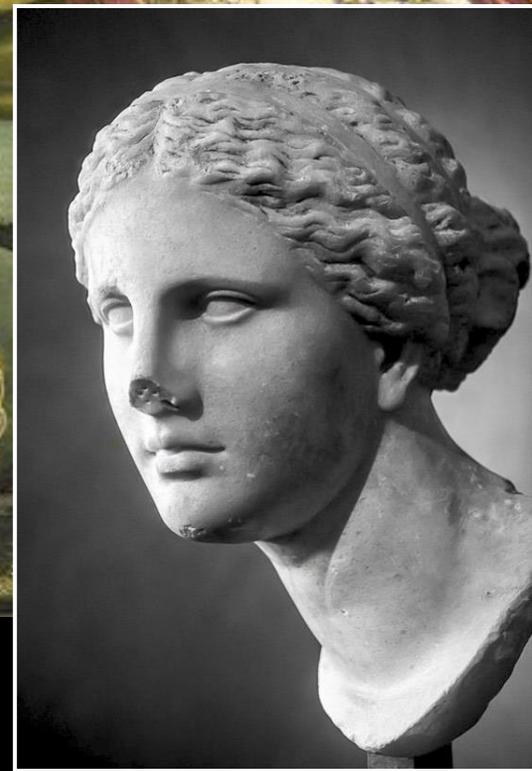




Botticelli, 1485



Ishtar



Afrodite

Tutte le mitologie antiche
identificavano Venere come la
dea della bellezza



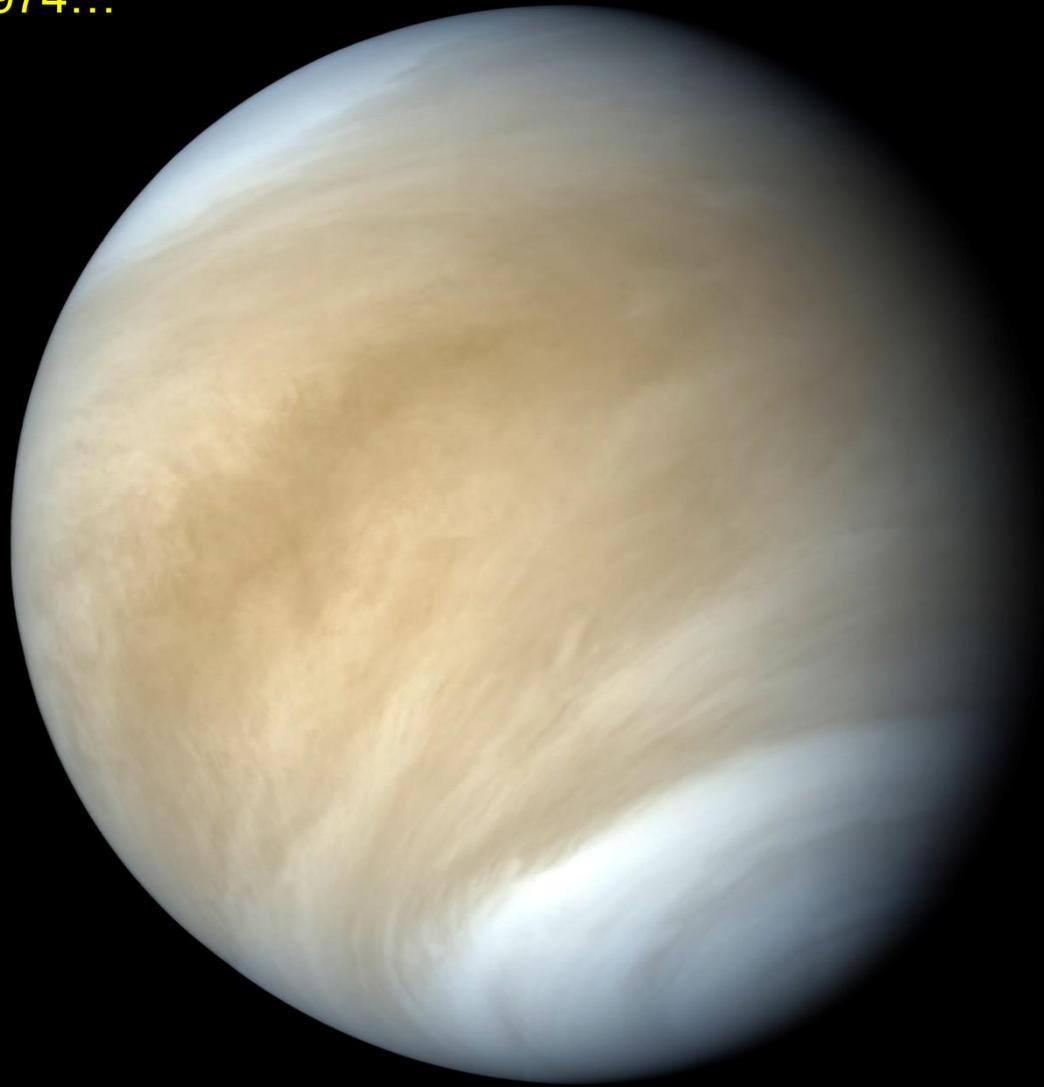
TRADATE, 5 Dicembre 2021, h 18,30...



8 Aprile 2020
h21, C8 proiezione oculare 9mm, Canon 60Da, **REGISTAX**

4 Maggio 2020

Mariner 10, 1974...



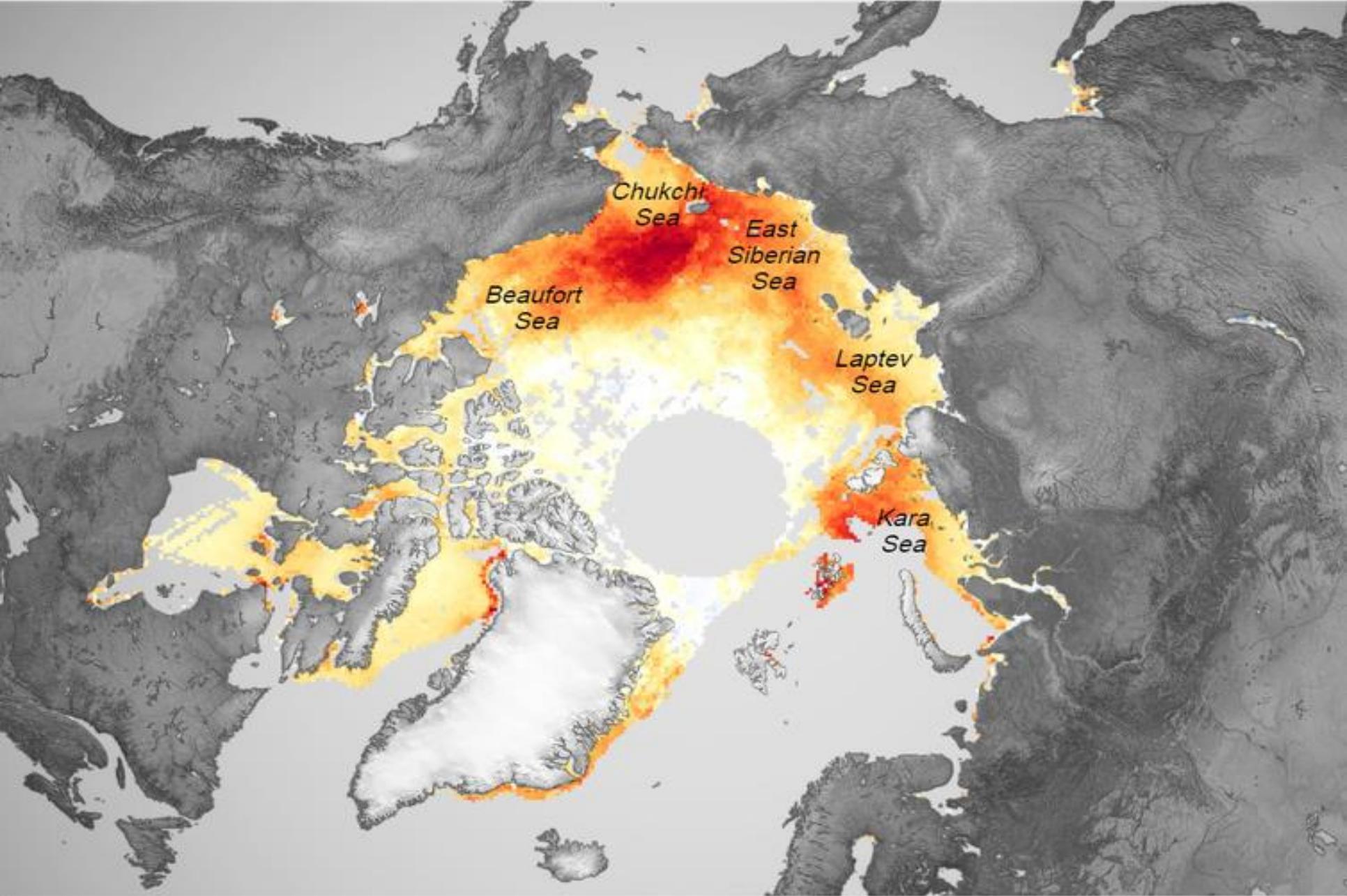
Gas	% in volume
Carbon Dioxide (CO ₂)	96.5
Nitrogen (N ₂)	3.5
Sulfur Dioxide (SO ₂)	150 ppm
Carbon Monoxide (CO)	17 ppm
Water Vapor (H ₂ O)	20 ppm
Neon (Ne)	7 ppm
Argon (Ar)	70 ppm
Helium (He)	17 ppm

Venera 4, 18 Ottobre 1967





Venera13...



Freeze Trend (days per decade, 1979-2019)





Brattahlíó

Narsarsuaq

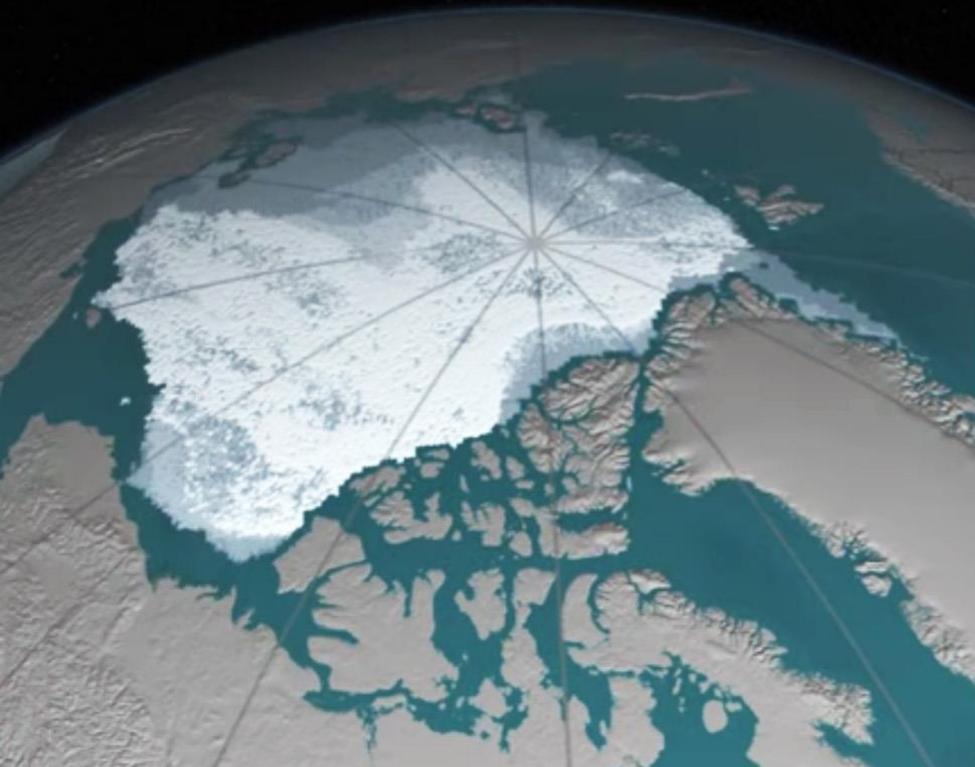
Igaliku



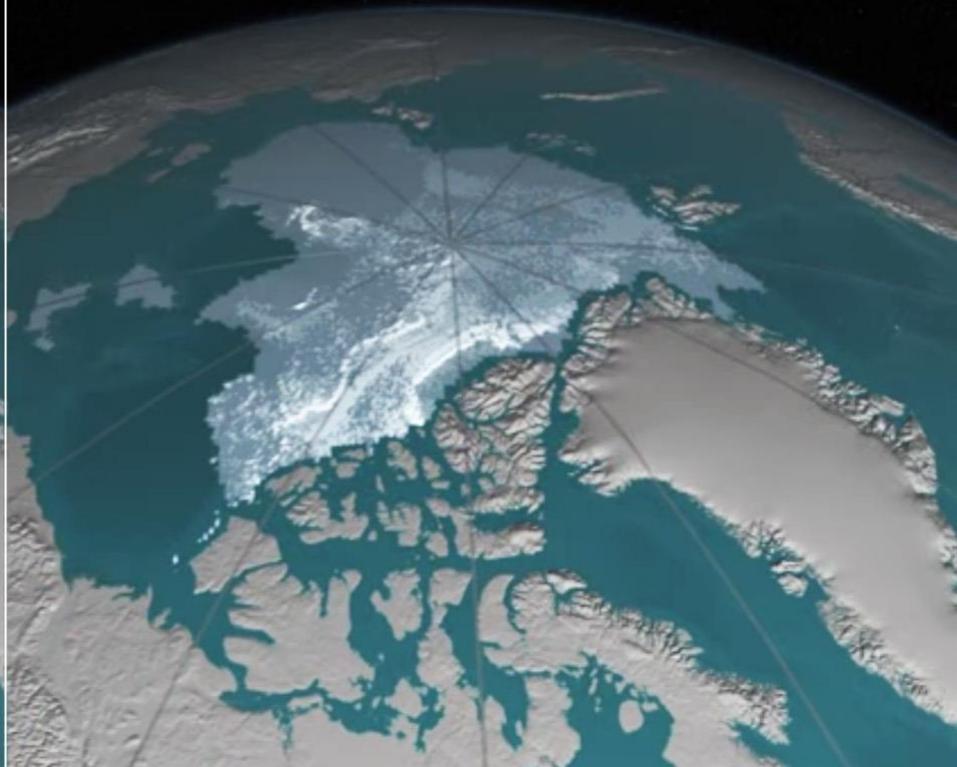
PROGRAMME OF THE
EUROPEAN UNION



Sep 1984



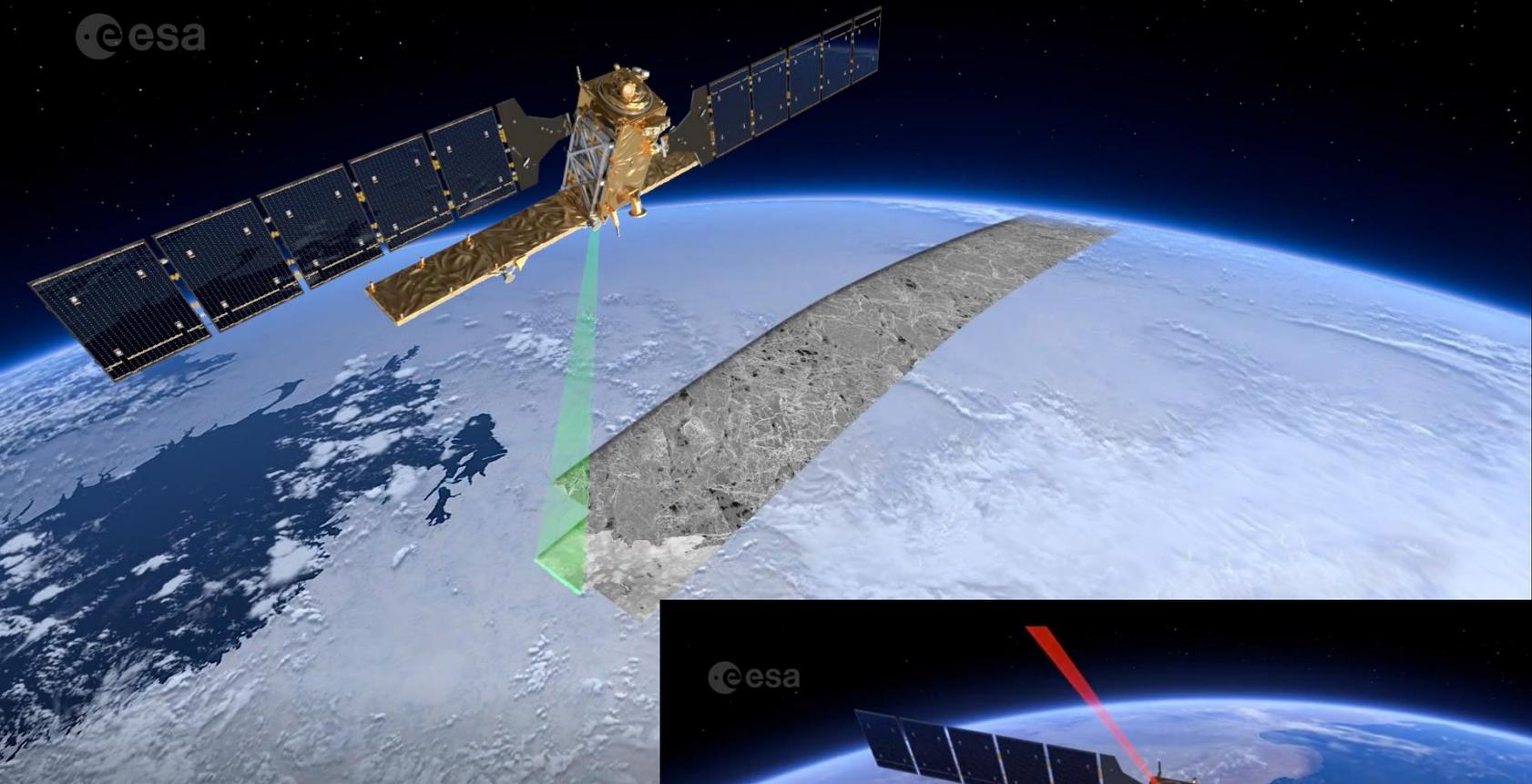
Sep 2016







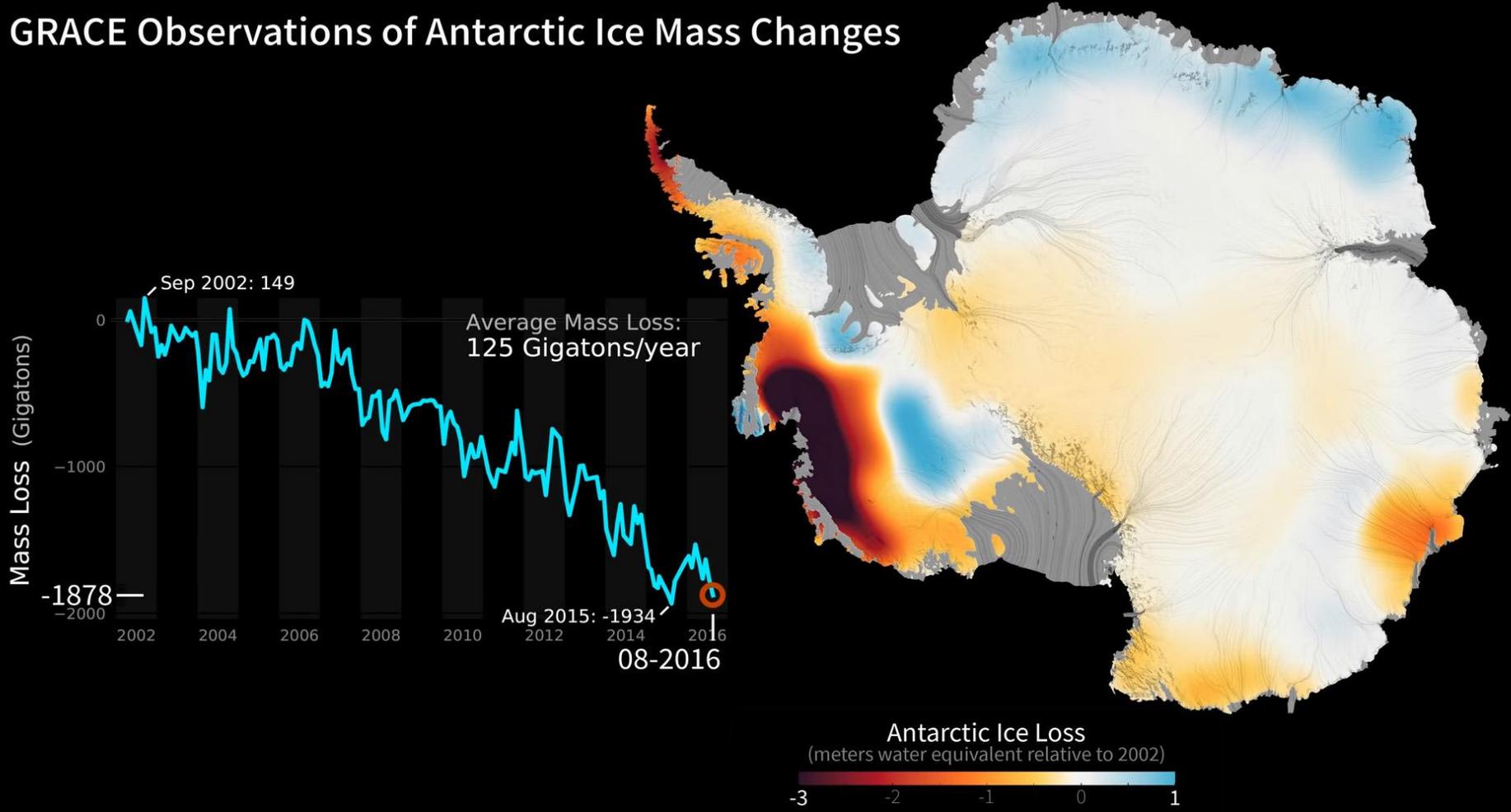
esa

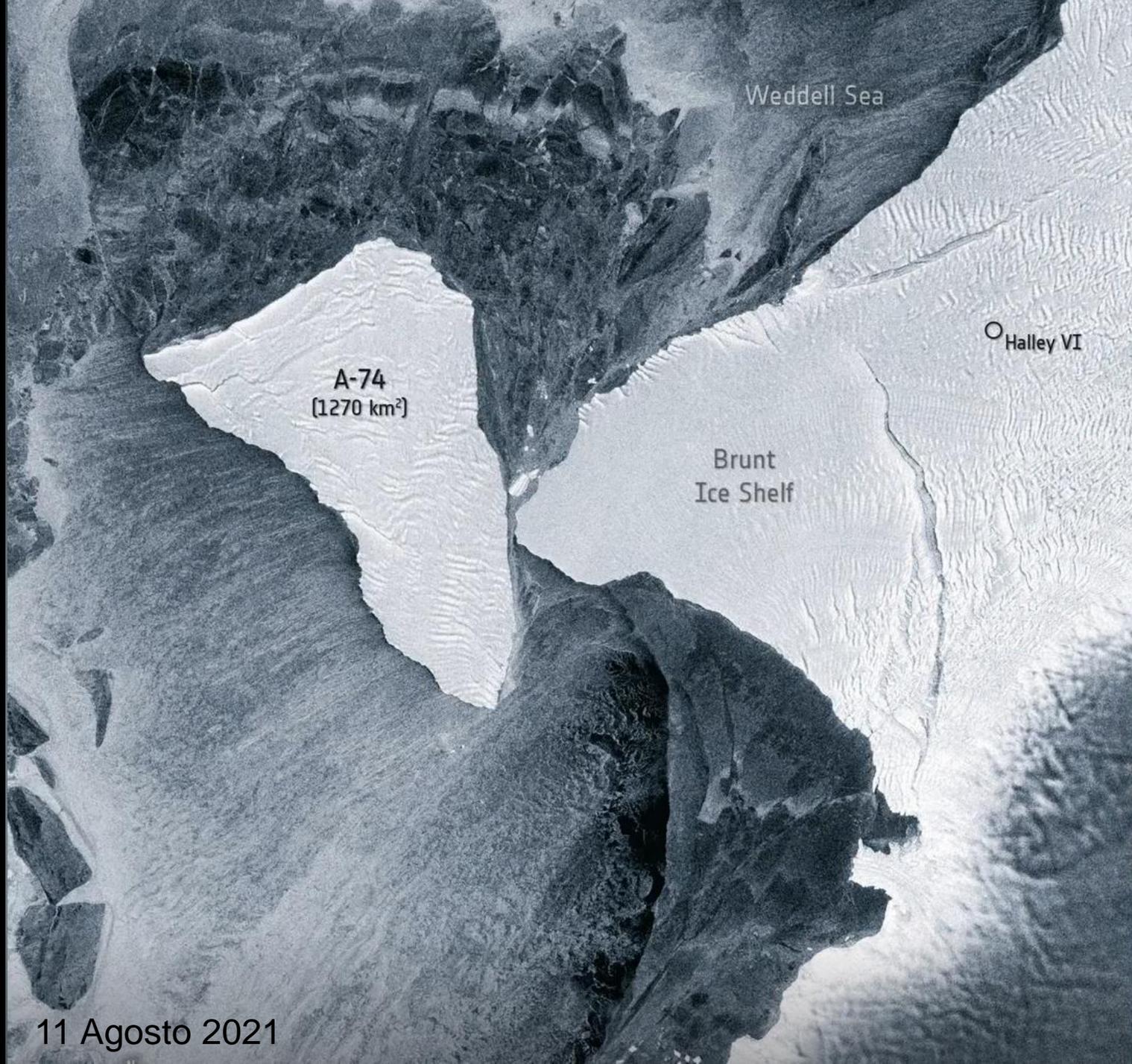


esa



GRACE Observations of Antarctic Ice Mass Changes





Weddell Sea

○ Halley VI

A-74
(1270 km²)

Brunt
Ice Shelf

11 Agosto 2021



Mediterranean Sea

Gulf of Hammamet

TUNISIA

A-68
5800 km² when it calved
in July 2017 from the Larsen-C Ice Shelf

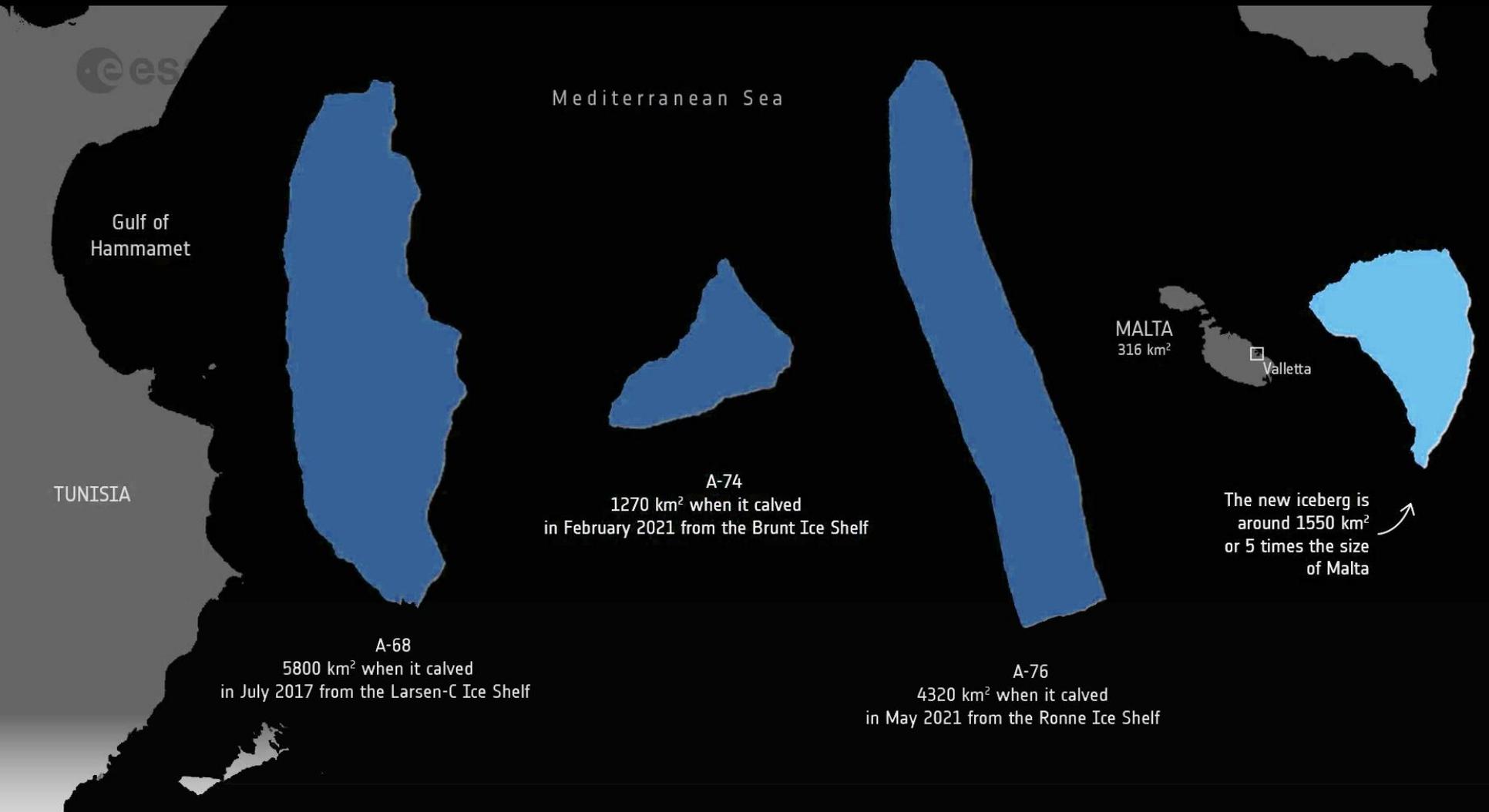
A-74
1270 km² when it calved
in February 2021 from the Brunt Ice Shelf

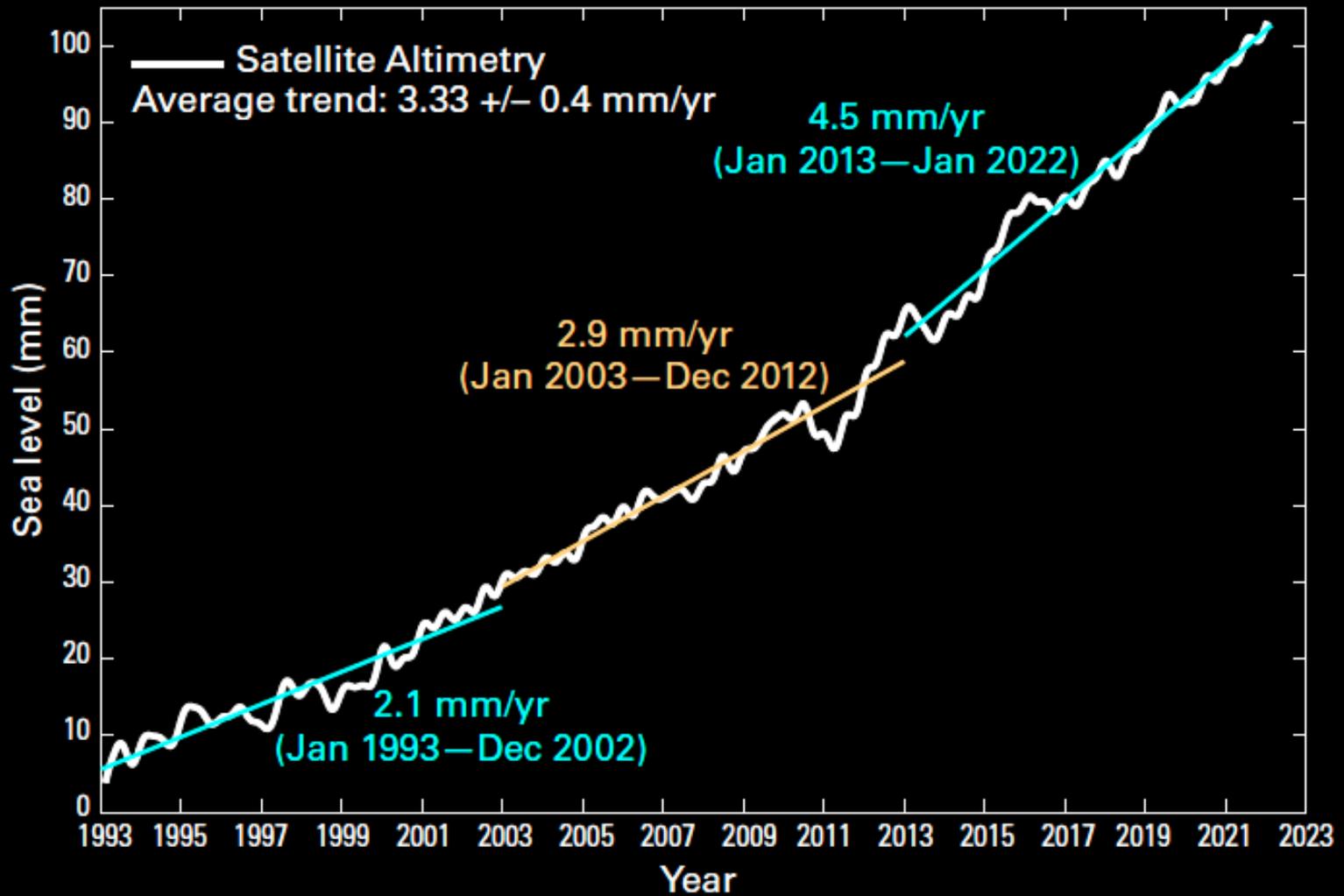
A-76
4320 km² when it calved
in May 2021 from the Ronne Ice Shelf

MALTA
316 km²

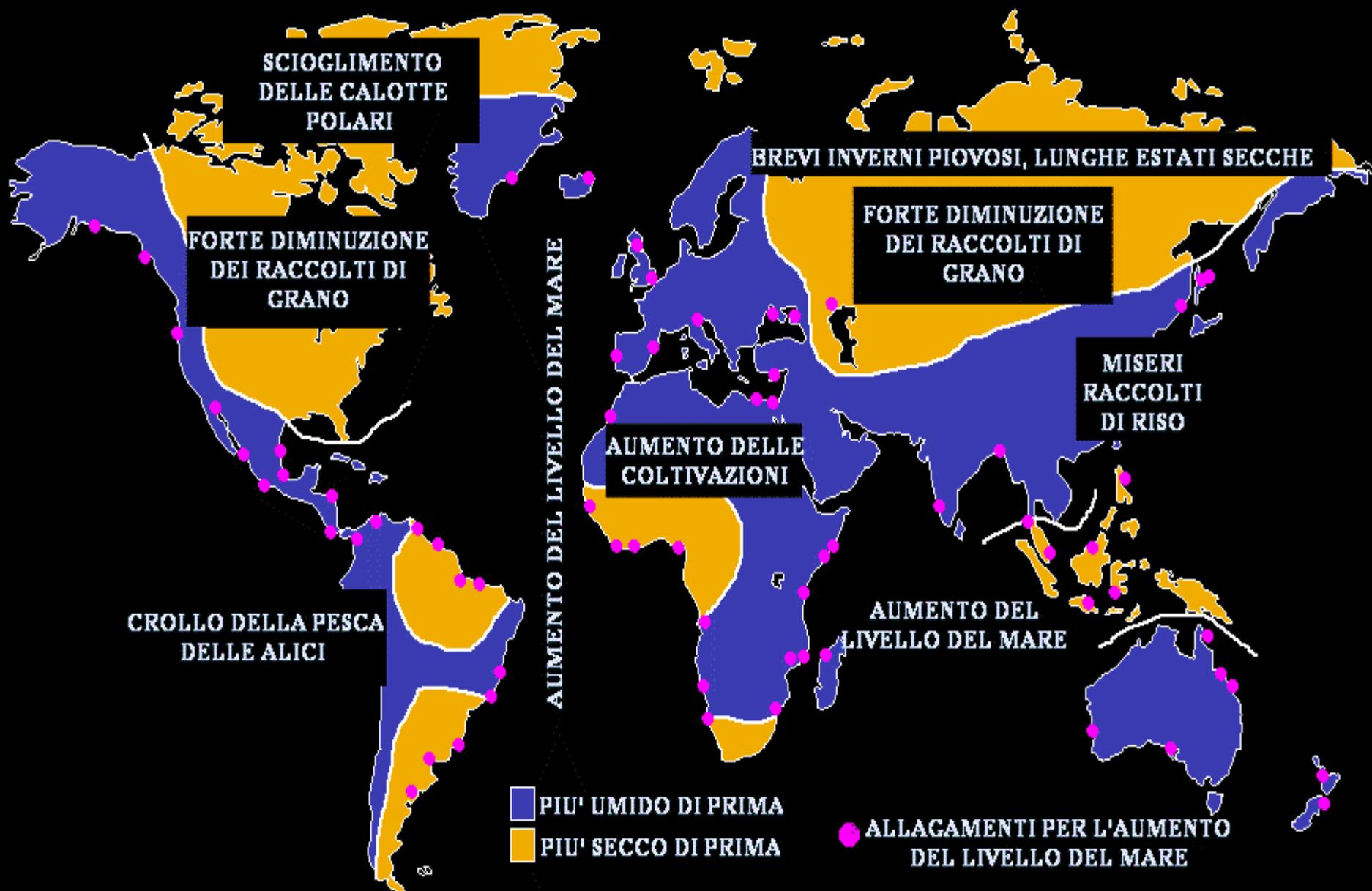
Valletta

The new iceberg is
around 1550 km²
or 5 times the size
of Malta





COSA ACCADREBBE SE LA TEMPERATURA SUPERFICIALE DELLA TERRA AUMENTASSE, IN MEDIA, DI 1°C









Porta dell' Inferno....





— Batagaika Crater

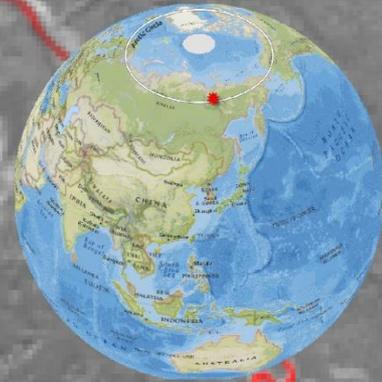
1 km





Batagaika, 2022

0 250 m



Extension Area
(2016-2020)

