

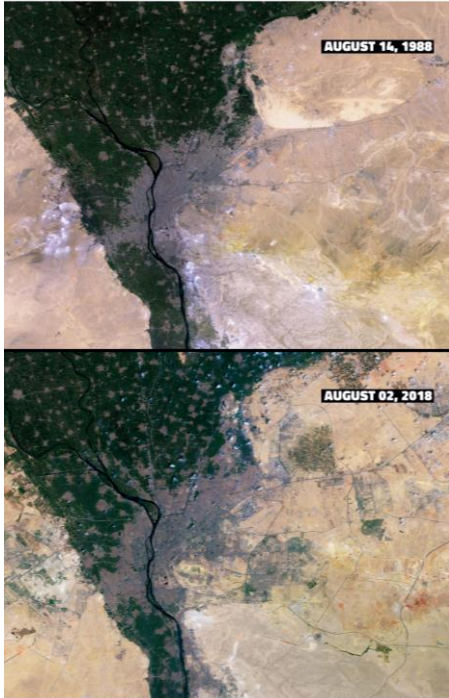
# Through the Lens of Space

## HANDOUT english

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### Africa

#### Cairo City Growth in Egypt 1988 and 2018



We can use satellites to track the growth of cities or towns over time. These two images, taken three decades apart, show the city of Cairo in Egypt. Can you see the difference in size? The first image was captured by the US Landsat-5 in 1988, and the second by the Copernicus Sentinel-2 mission in 2018.

Image Credits: ESA with modified Copernicus Sentinel data (2018) and NASA with US Landsat-5 Data (1988)

### North America

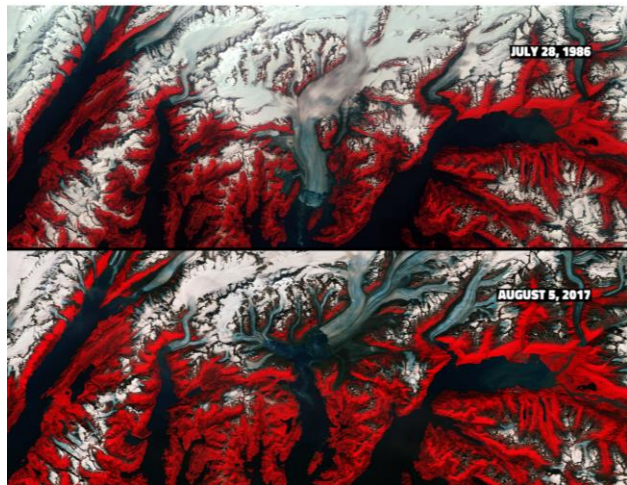
#### Columbia Glacier 1986 and 2017

Over the last 30 years, the Columbia Glacier in Alaska has retreated over 20 km. The changing climate drove it into retreat in the 1980s, resulting in the end of the glacier breaking off. This one glacier accounts for nearly half of the ice loss in the Chugach Mountains. However, researchers believe that the Columbia Glacier will stabilise again – probably in a few years – once the leading edge of the glacier retreats into shallower water and it regains traction. It is important to keep



monitoring glaciers such as the Columbia Glacier so that scientists can predict changes in sea levels.

Image Credits: ESA with modified Copernicus Sentinel data (1986 and 2017)

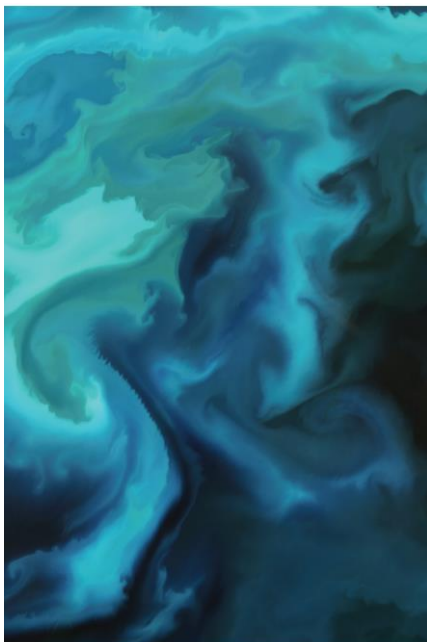
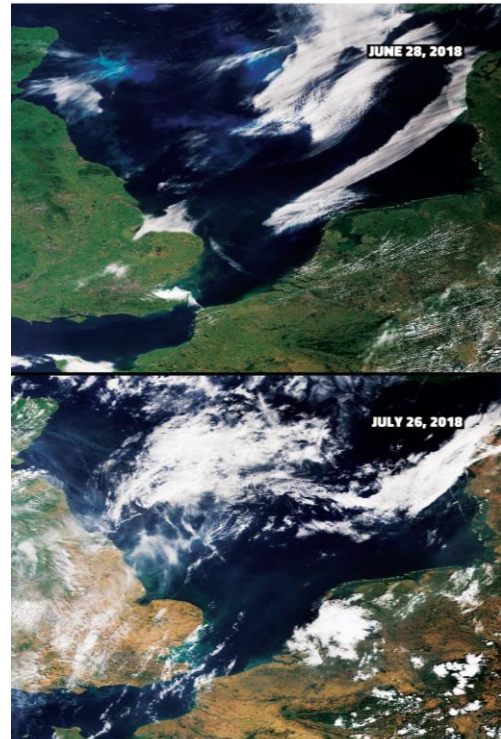


## Europe

### From Green to Brown in a Month 2018

The images reveal how the vegetation changed in just one month in 2018. We can see part of Ireland, the UK, the Netherlands, Belgium, and parts of Germany and France in these two images. The difference between them could not be more striking. The first, captured on 28 June 2018, is green and lush. The second, captured on 25 July 2018, however, is mainly brown. It clearly shows us how much the vegetation changed during the long hot dry spell that Europe endured.

Image Credits: ESA with modified Copernicus Sentinel data (2018)



## Arctic

### Barents Bloom in the Arctic Ocean 2016

It may seem like a watercolour painting, but this image is a natural-colour capture of a plankton bloom in the Barents Sea. Plankton are microscopic marine plants that drift on or near the surface of the sea. Often called 'grass of the sea', these plants contain pigments, which give them a greenish colour. These simple organisms play a similar role in the sea as green plants on land. They remove as much carbon dioxide from the atmosphere as their land-based counterparts. Some algae species, however, are toxic or harmful. If they



surge out of control, they can deplete the oxygen in water and lead to the suffocation of larger fish.

Image Credits: ESA with modified Copernicus Sentinel data (2016)



## Asia

### **Panda Solar Power Fields in Datong, China 2017**

Can you see a panda in this satellite image? Most solar farms align their

solar arrays in rows and columns to form a grid but this farm decided to be creative with the layout. The 250-acre solar energy farm in Datong, China purposely designed the solar cells to resemble the shape of a panda when viewed from space. It is hoped this unusual shaped solar farm will power over 10,000 households annually. The company behind it is planning to open more of them across China and beyond.

Image Credits: CNES and Airbus DS (2017)

