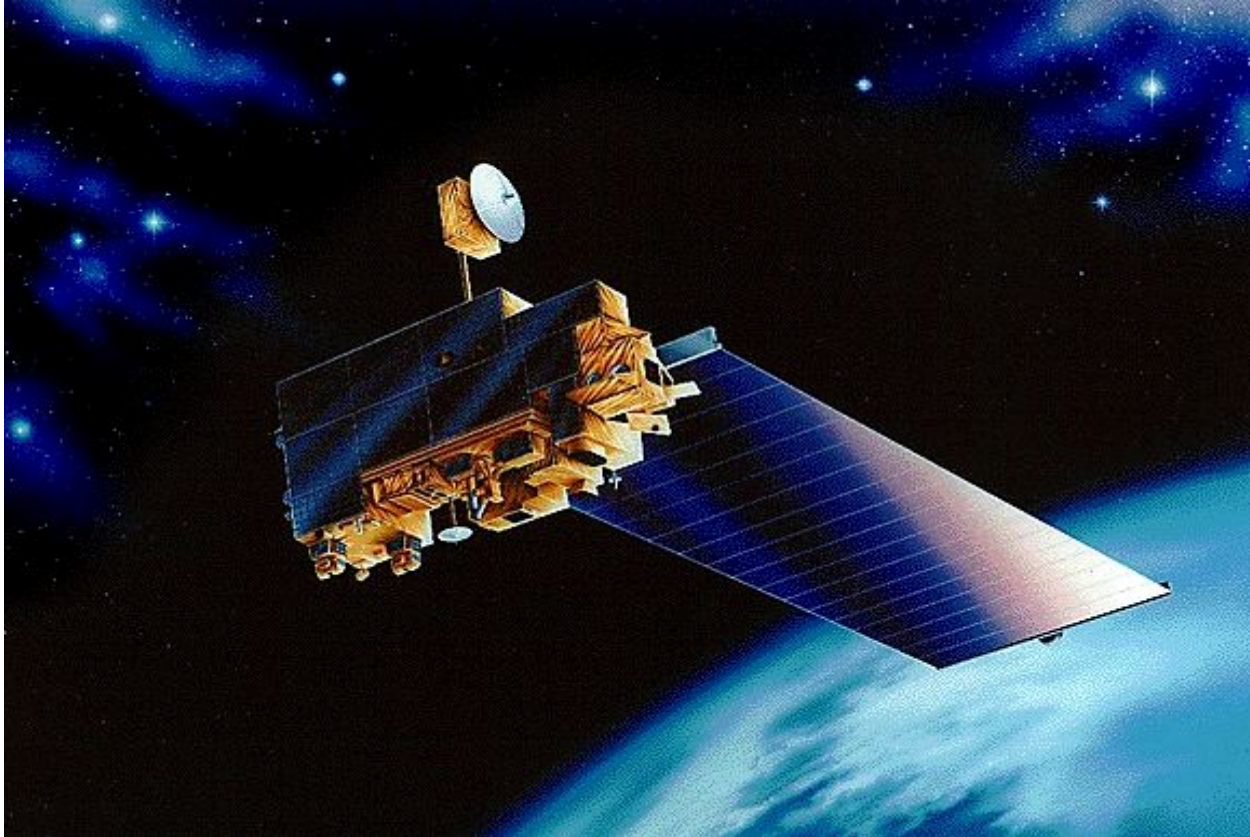


Weather Satellites



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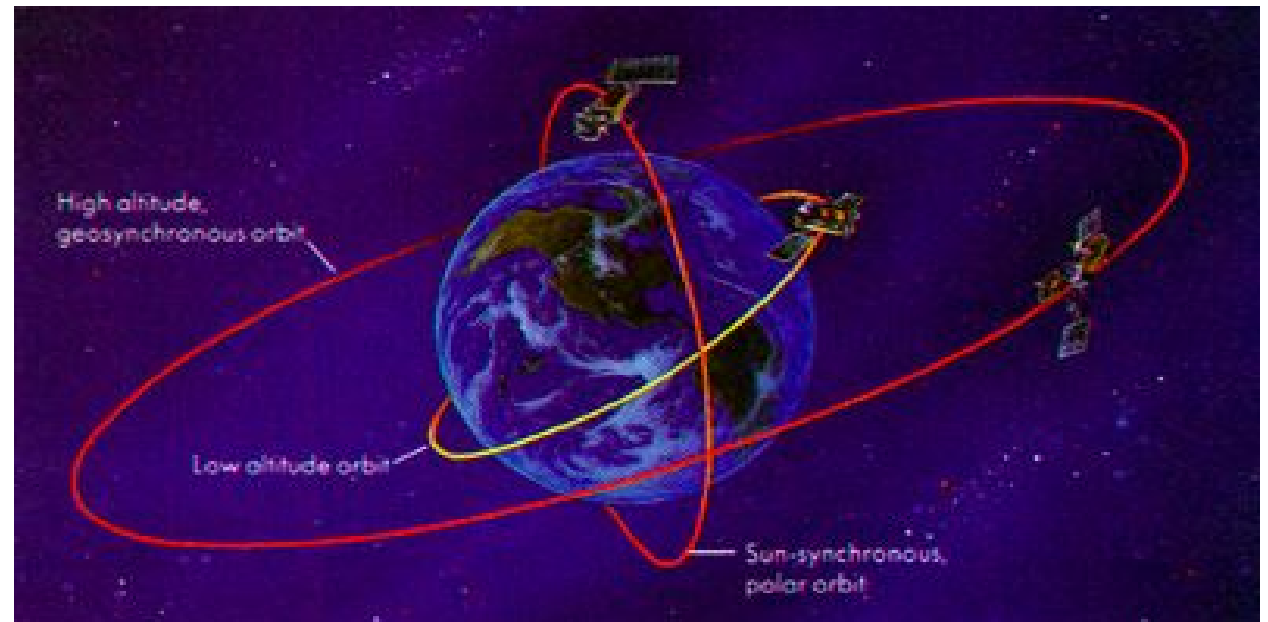
<http://atschool.eduweb.co.uk/radgeog/>

Weather Satellites

There are 2 main types of weather satellite

1. Geostationary

2. Polar Orbiting



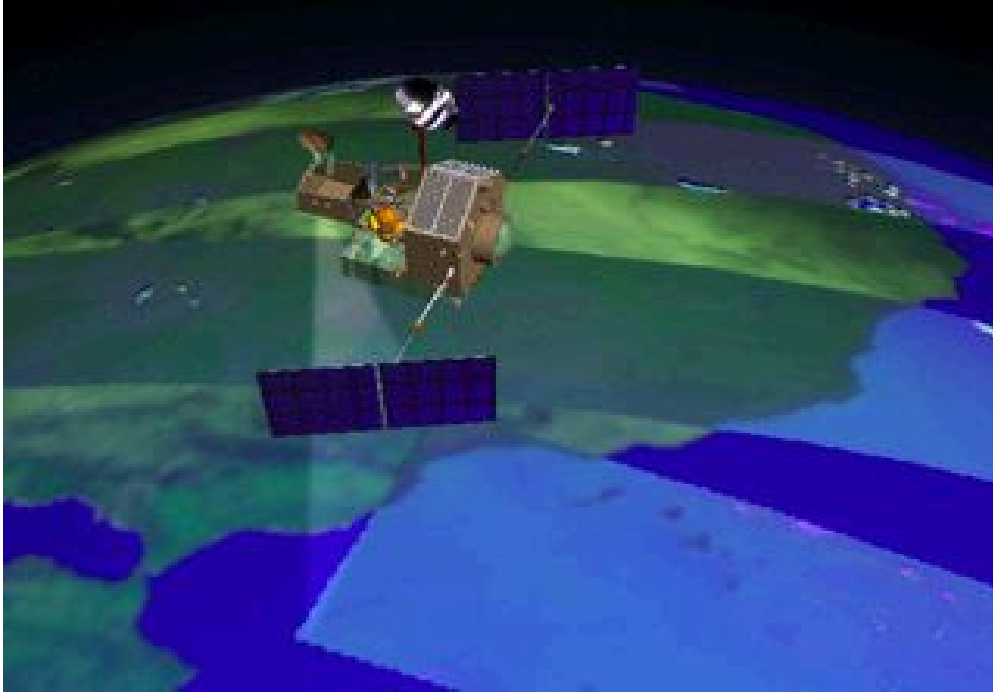
Geo stationary satellites



eg Meteosat

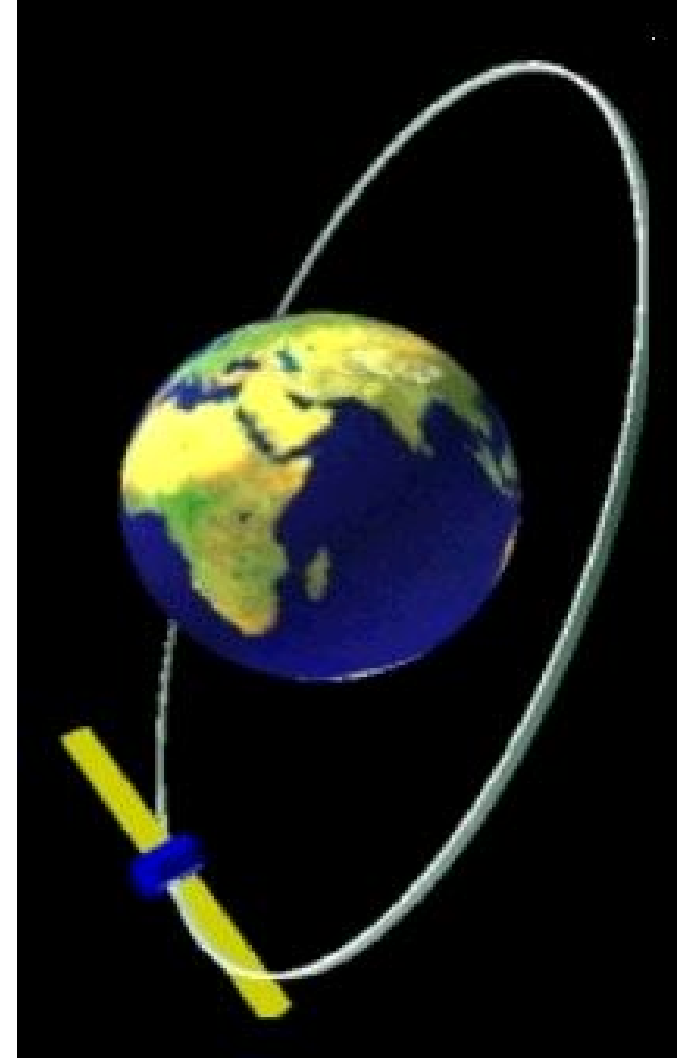
- located over the equator at a height of 36 000 km.
- remain stationary with respect to the Earth's surface.
- give continuous low detail images (good for animation).

Polar orbiting satellites



eg NOAA

- lower altitude of 850km.
- orbit from pole to pole in about 100 minutes.
- more detailed but less continuous images.
- do not always fly over the same regions.

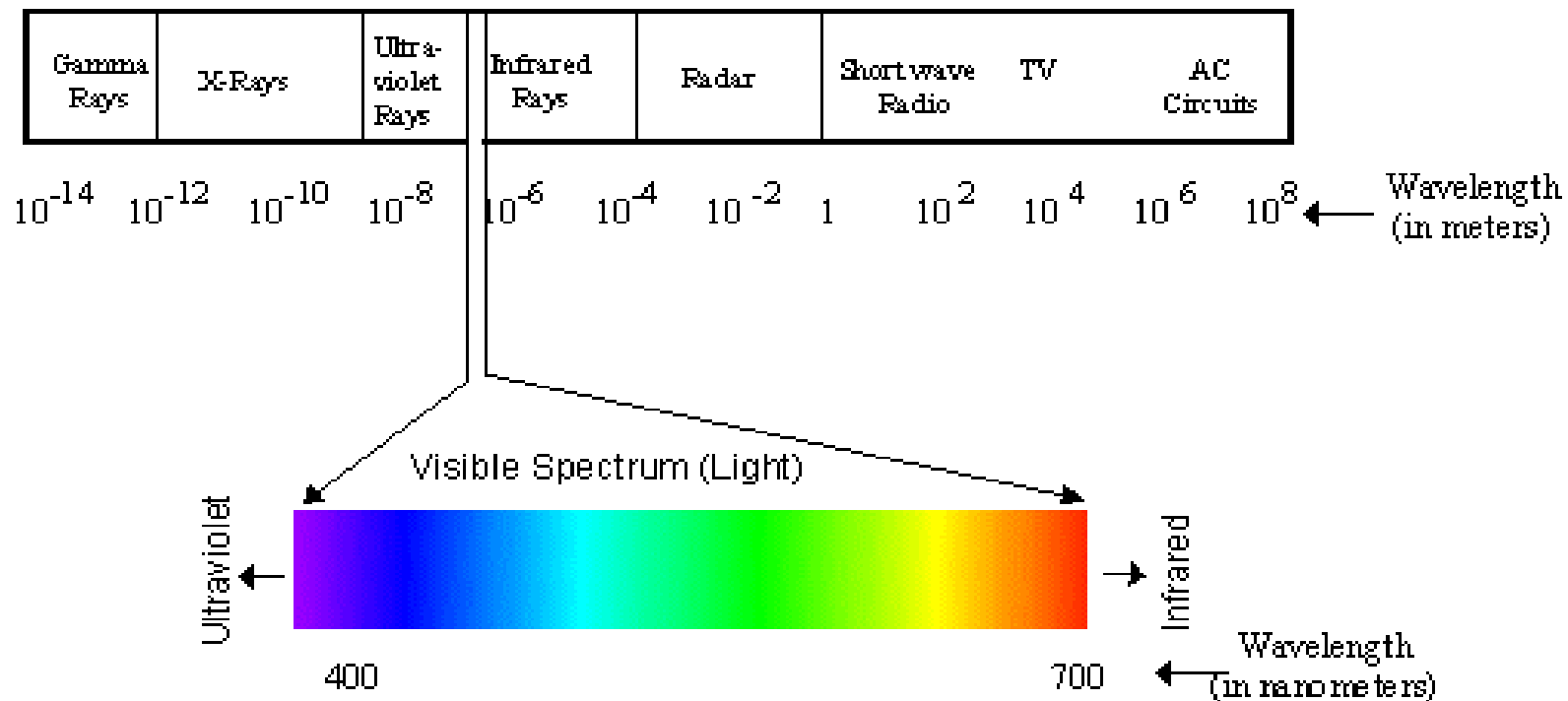


Types of image

Satellites “see” the earth and clouds by sensing radiation.

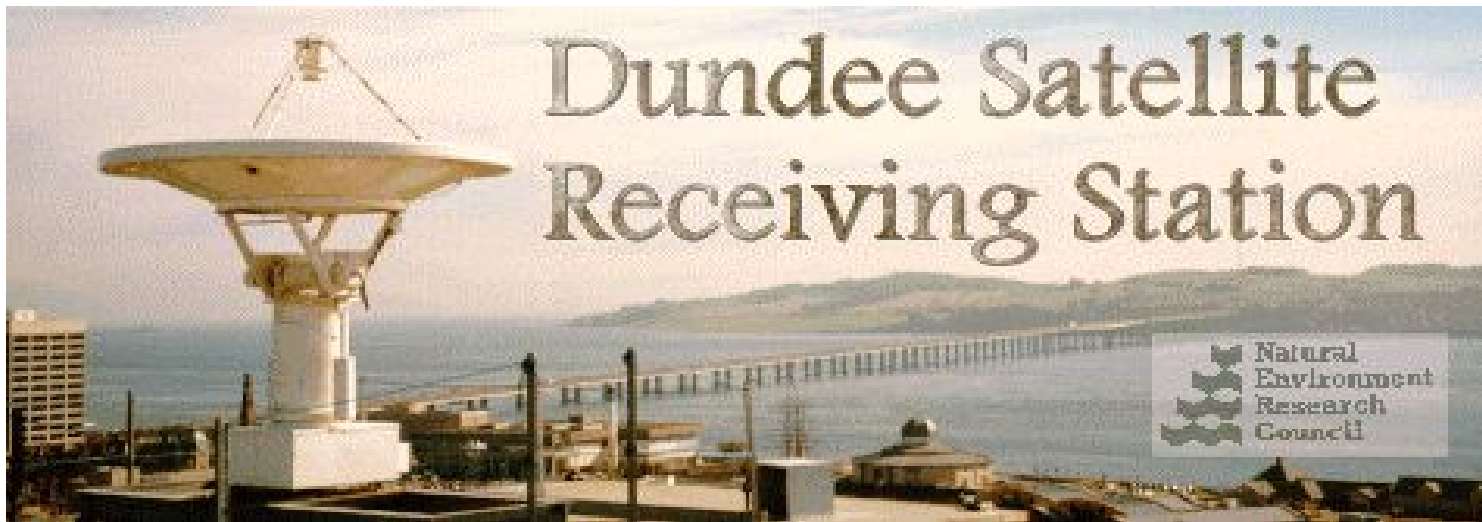
Radiation is measured at a variety of **wavelengths** especially:

Visible and **Infra-Red**



How do we get the data?

The data is transmitted to a **receiving station** where it is decoded, coloured and coastlines added.



The image is transmitted back to the satellite and can then be received via a satellite dish.

Weather mages are widely available on the web.

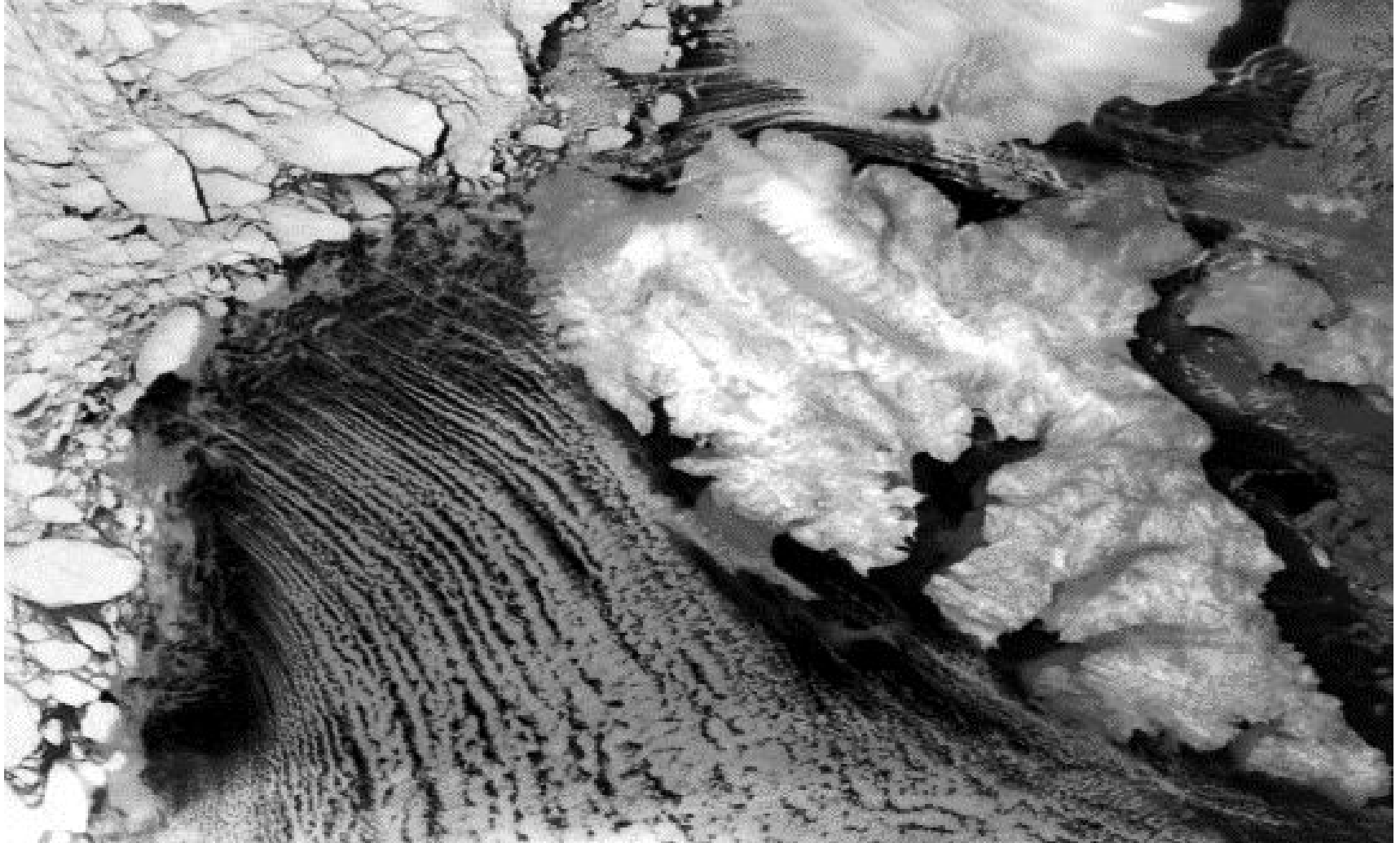
Visible images

Visible images are detailed.

Question:
Where is it?

What is it?

Clue: this is a cold place, north of the Norwegian mainland...



Answer: this shows ice bergs around the island of Spitzbergen. The lines are “cloud streets”

Infra-Red

Dark areas are relatively **warm**.

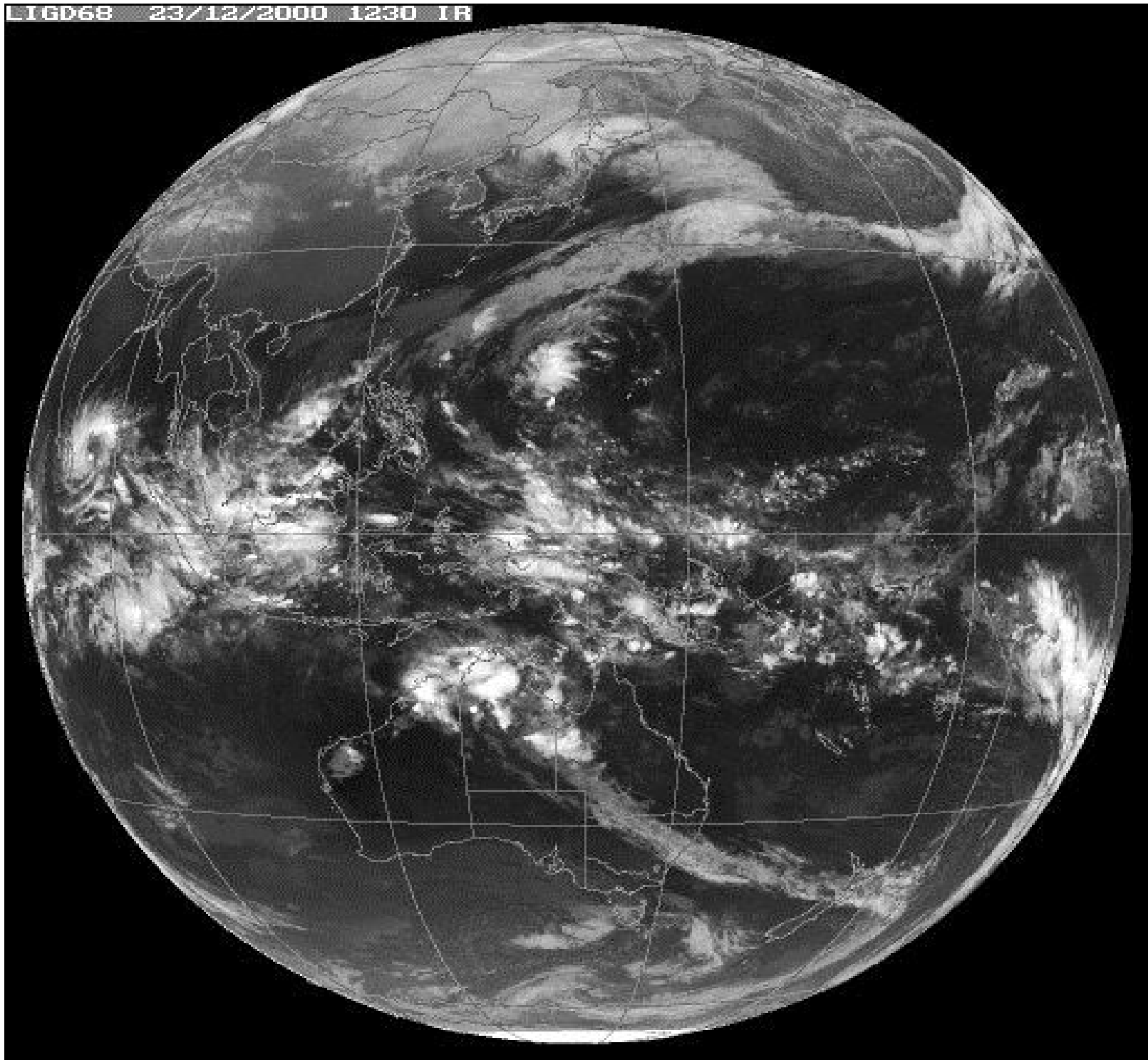
Lighter areas are relatively **cold**.

Question

Why are there so many clouds in equatorial regions?

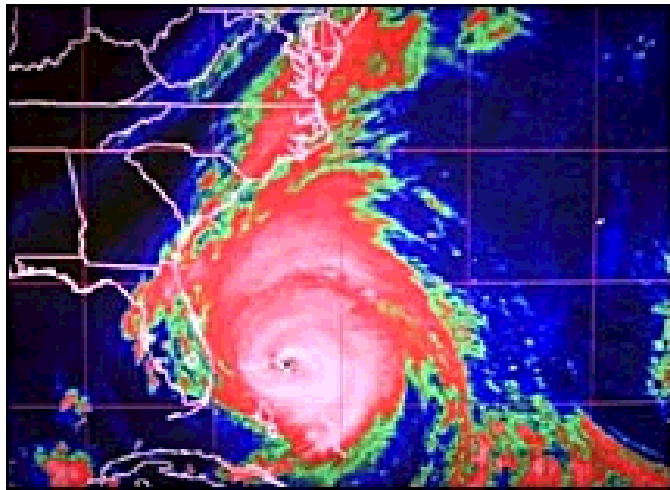
Answer

This is where **warm** moist air is rising (convection) **cooling** and **condensing** to form clouds.

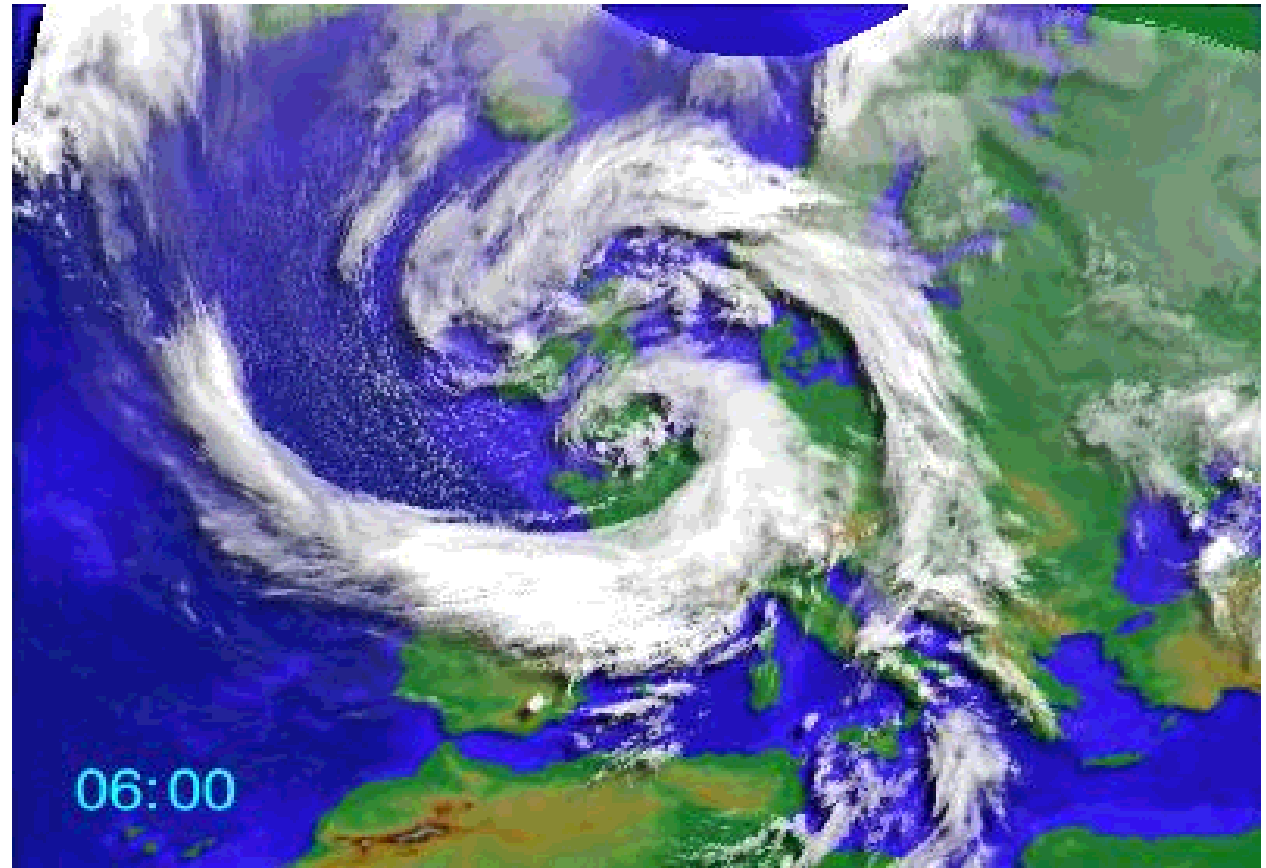


Countries and Coasts

Countries, coastlines and colours can be added later to make it easier to interpret.



**Hurricane Mitch
east of Florida, US**



A depression over Western Europe