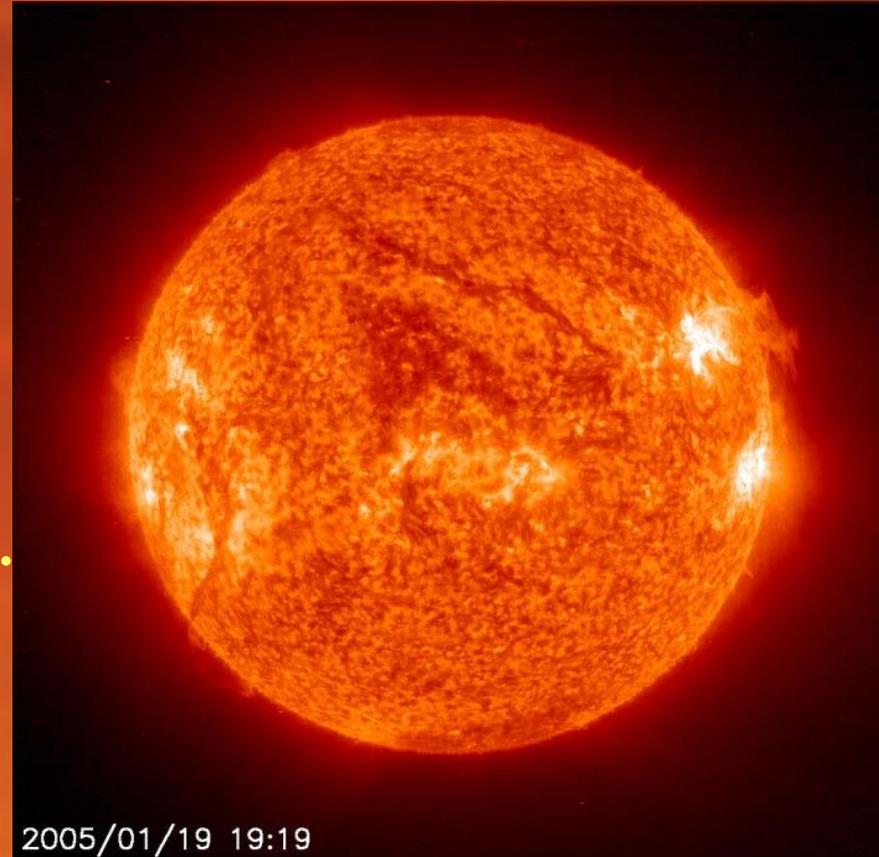


# A Few Sun Facts

Diameter-1,300,000 km  
1 million earths could  
fit inside the sun

The sun rotates on its axis  
once every 27 earth days.  
(33 at poles 25.3 at  
equator)

92 % Hydrogen & 8% Helium + traces  
of other elements



# Solar Activity

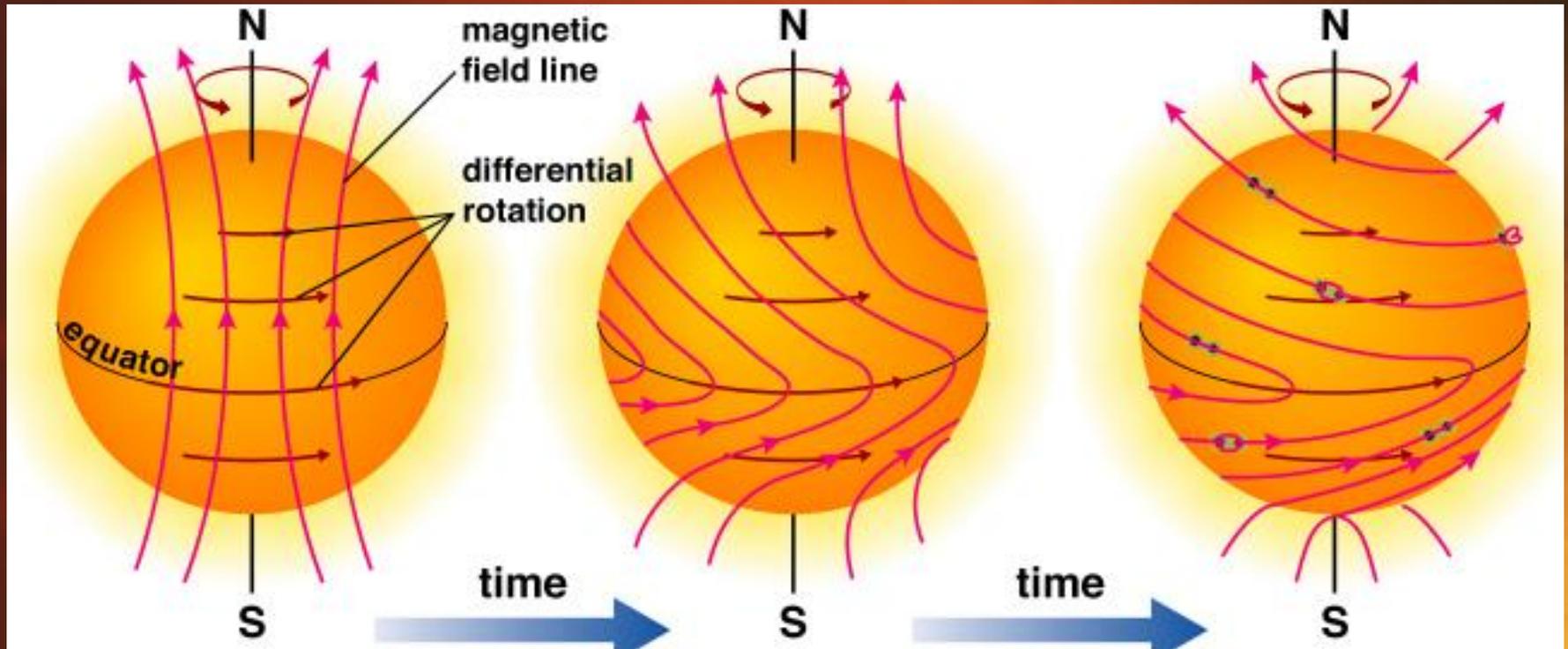
## Types:

- Sun Spots
- Solar Flares & Coronal Mass Ejections-C.M.E
- Prominances

## What Causes Solar Activity?

The Sun's Magnetic Field

# What makes the magnetic Field?

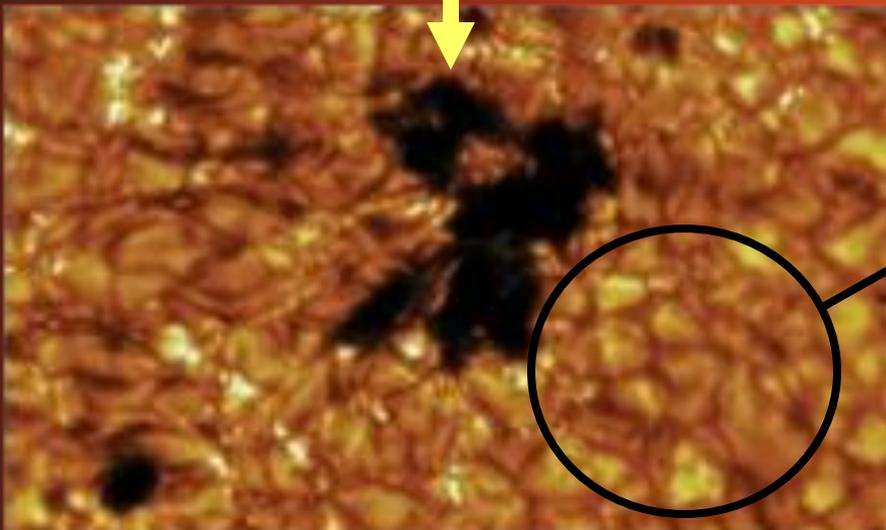
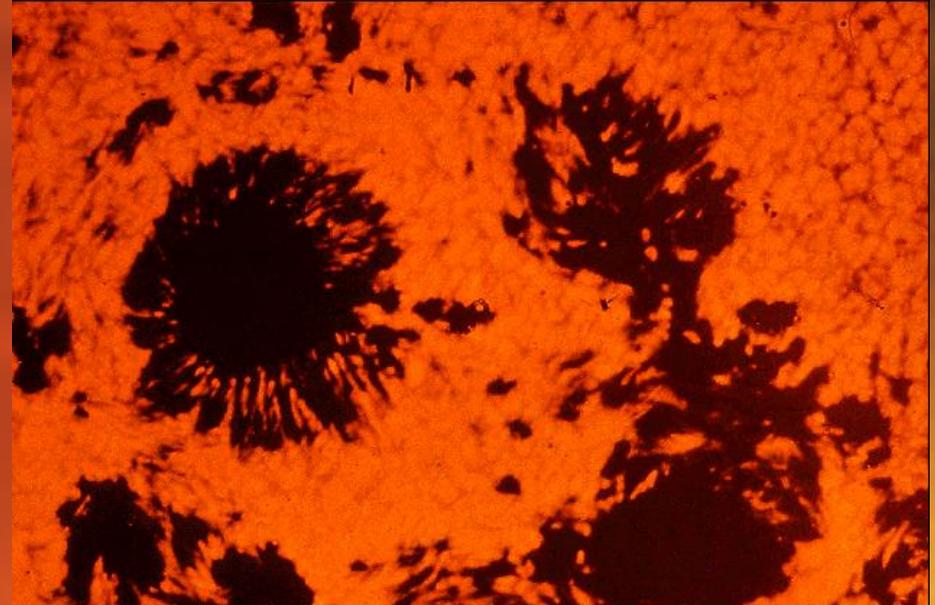


- 1) The spinning of the sun. (Faster at equator than the poles)
- 2) The convection of hot gasses in the convection zone.

# Sunspots on the Photosphere...

## Sunspots:

- Regions where the magnetic field pokes through the photosphere.
- Sunspots are *cooler* than the surrounding area, so they look dark!

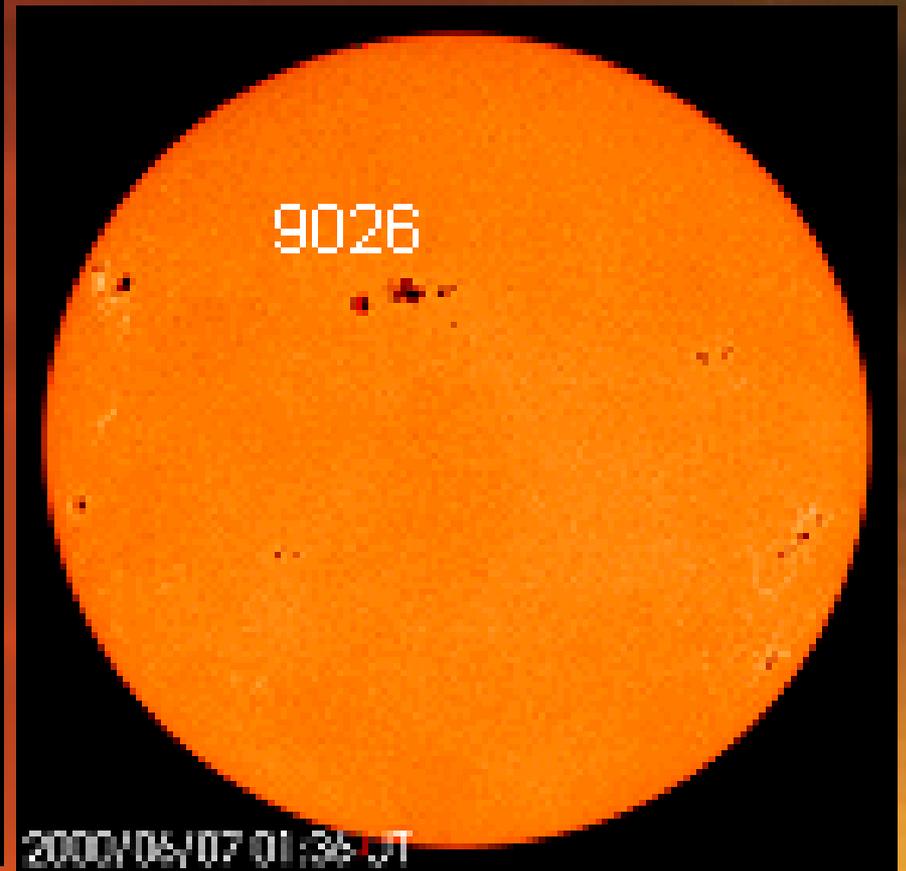


## Granules:

- Where the rolling, boiling convection zone underneath bubbles up.

# Sunspot Facts

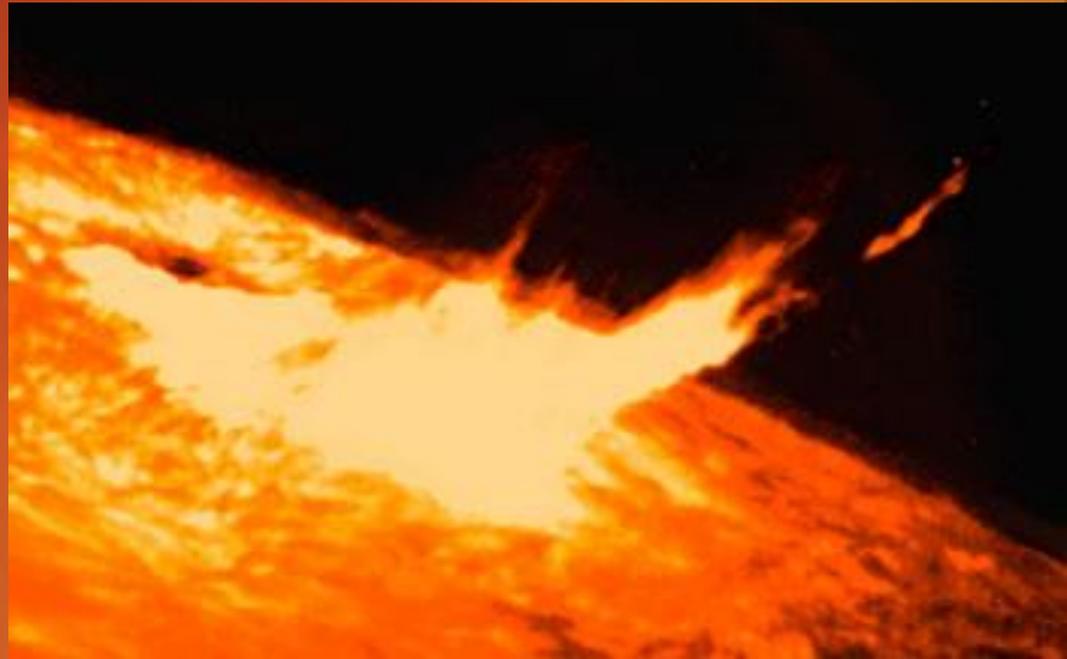
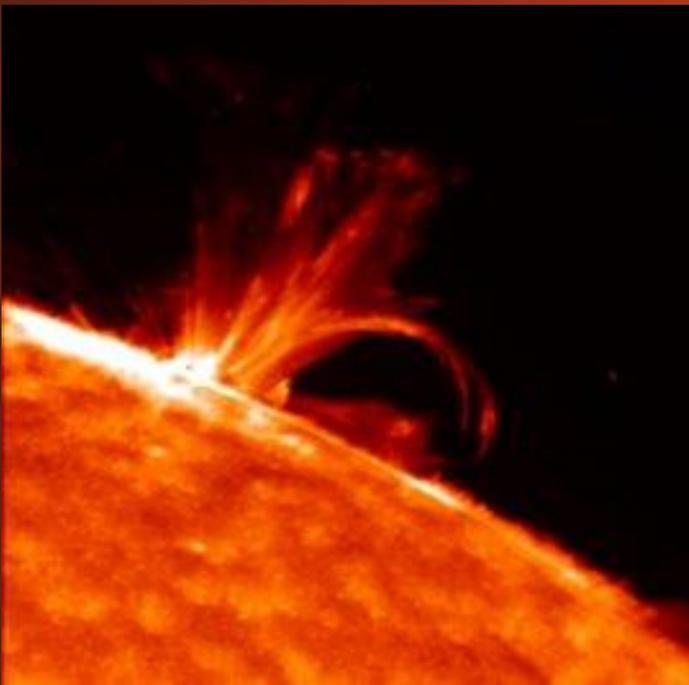
- They occur in an 11 year cycle.
- They are usually in pairs (S&N) charge.
- Hot gasses eject out of them (flares & prominences).
- **Size-** up to 100,000 km (3x size of earth)



- Location- between the equator & poles of the sun. Not on equator or Poles!

# Solar Flares

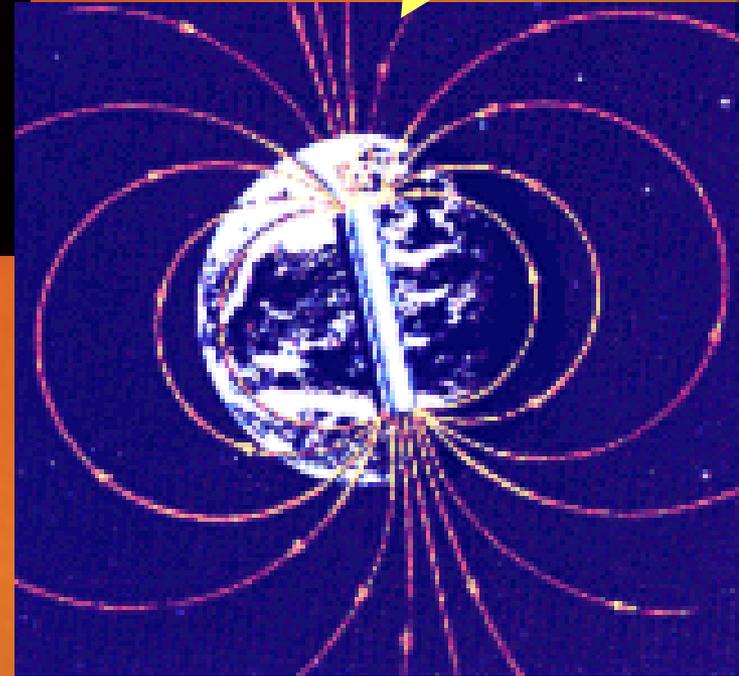
- 1) An Eruption of gas near a sun spot.(when 2 merge)
- 2)Sends particles into space & causes auroras on earth.



# Auroras

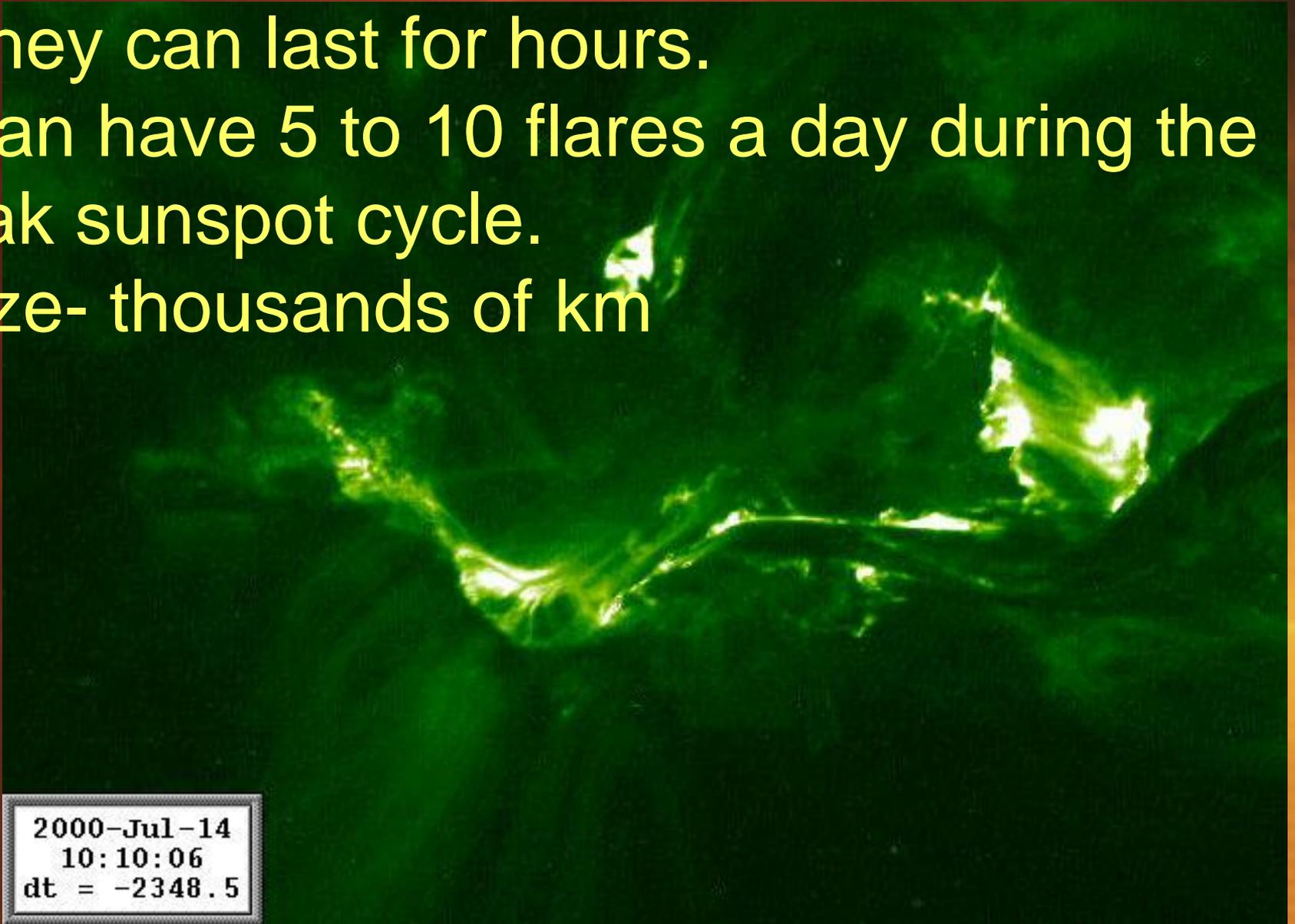


Only seen in polar regions because the charged particles are pulled in by the earth's magnetic field.



# Flares Facts....

- They can last for hours.
- Can have 5 to 10 flares a day during the peak sunspot cycle.
- Size- thousands of km

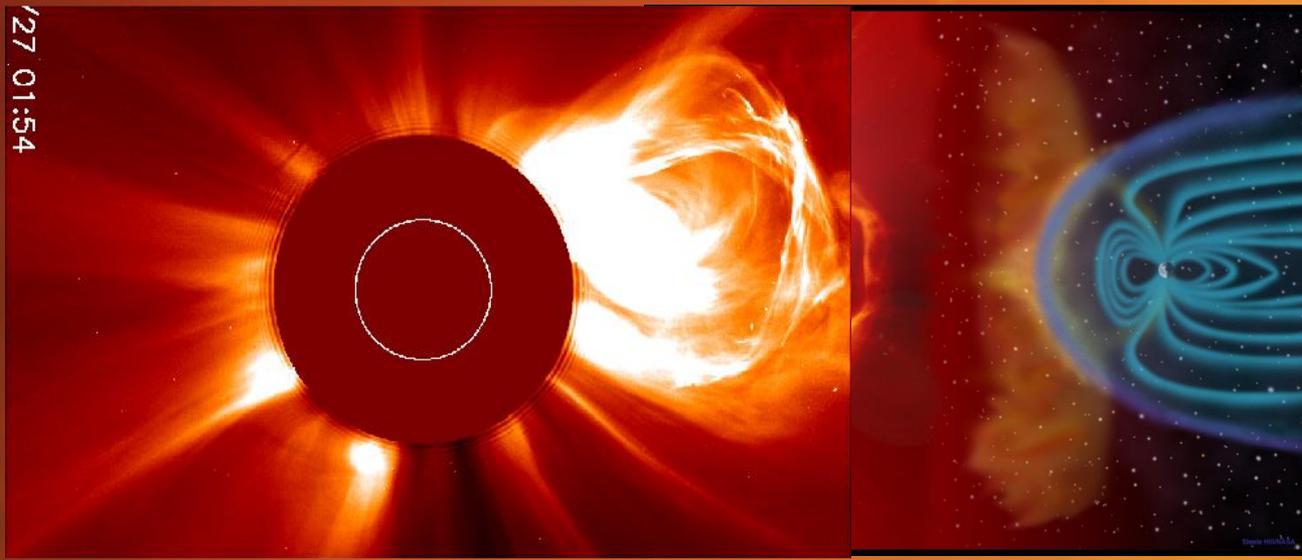


2000-Jul-14  
10:10:06  
dt = -2348.5

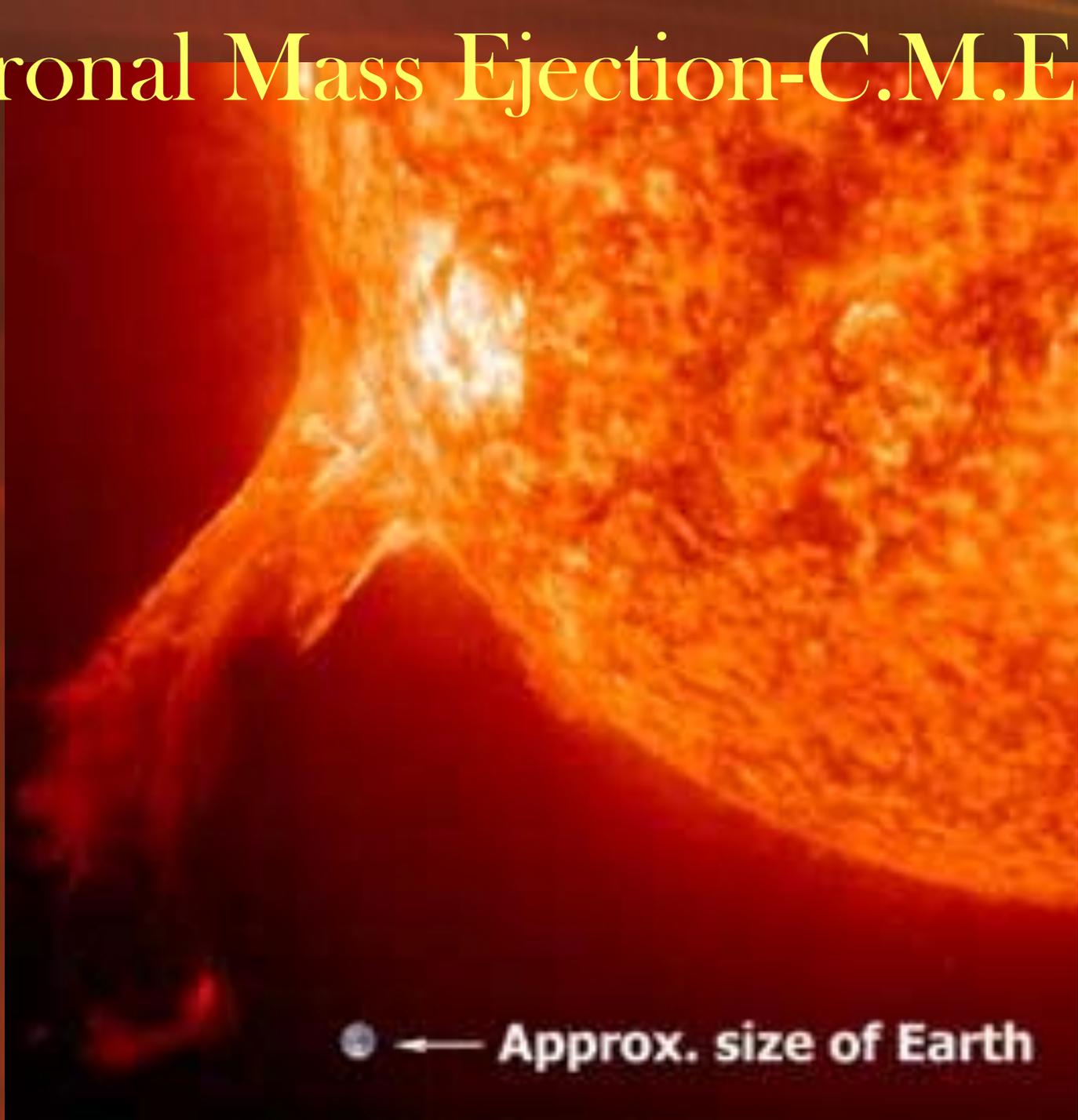
# Coronal Mass Ejections-C.M.E.

The corona ejects a massive amount of material into space, causing space weather, this is a CME.

Like a solar flare, but MUCH larger!

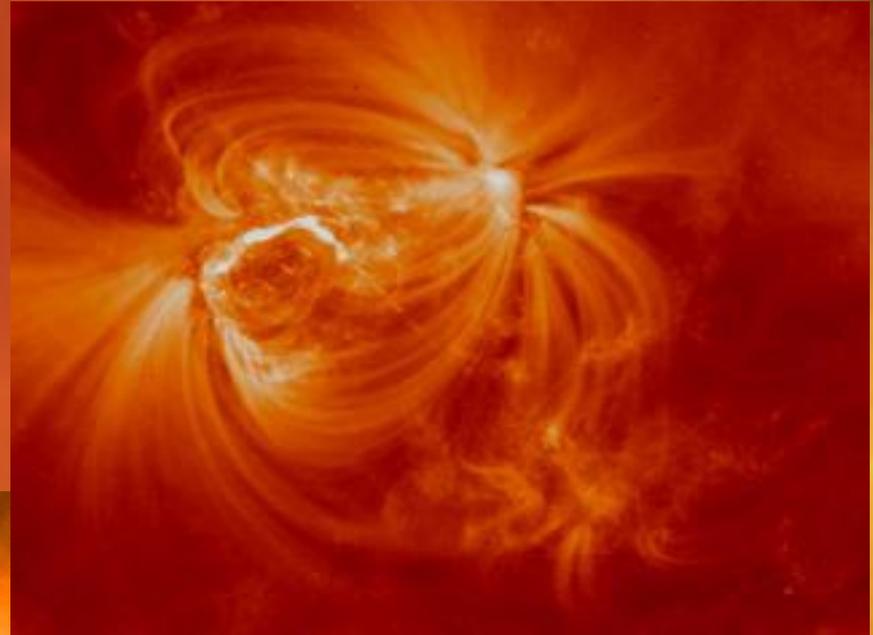


# Coronal Mass Ejection-C.M.E



● ← Approx. size of Earth

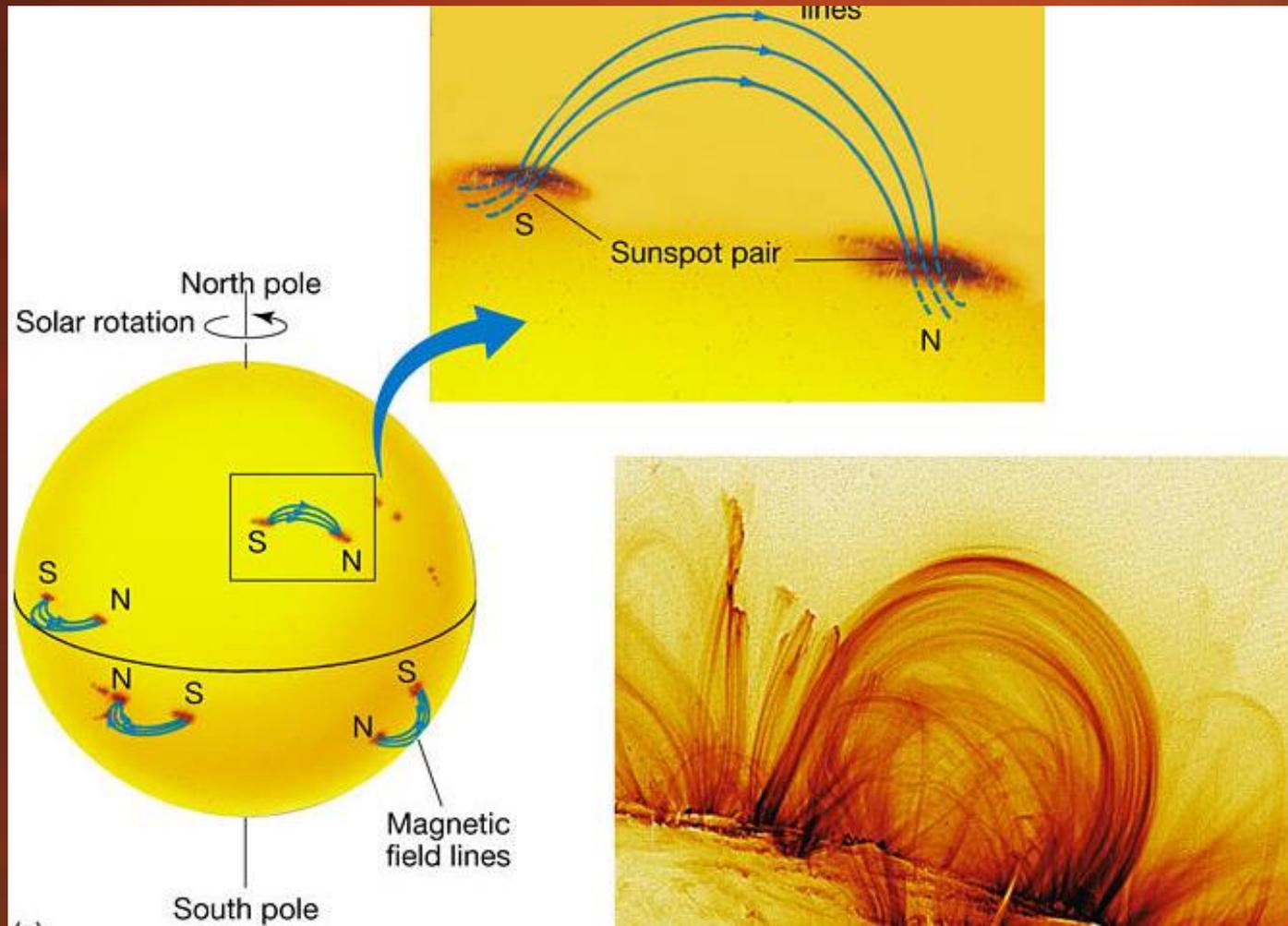
Prominence- a loopy structure that usually connects 2 sun spots!



Last weeks to a year

# Prominence- Formation

Gases follow the curved lines of the magnetic force from one sun spot to another.





Earth to scale.