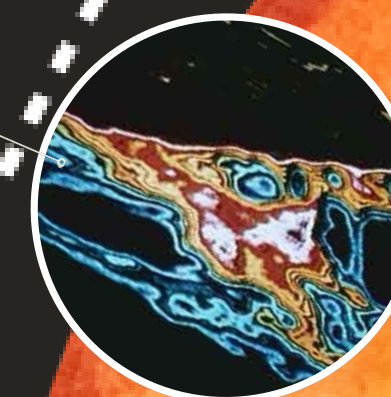


- SOHO - Solar Heliospheric Observatory was launched on the 2nd of december 1995

electric current and  
'magnetic circuits' are  
produced when loops collide  
very strong currents heat the  
corona

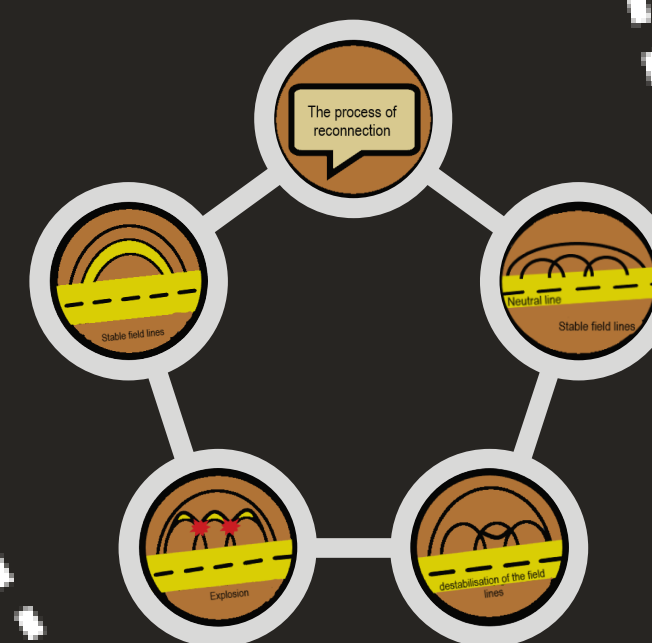


the 'loop process' is not sufficient to explain the high temperature of the corona, and therefore the existence of micro-eruptions, which would be the predominant source of heat in the corona, is assumed.



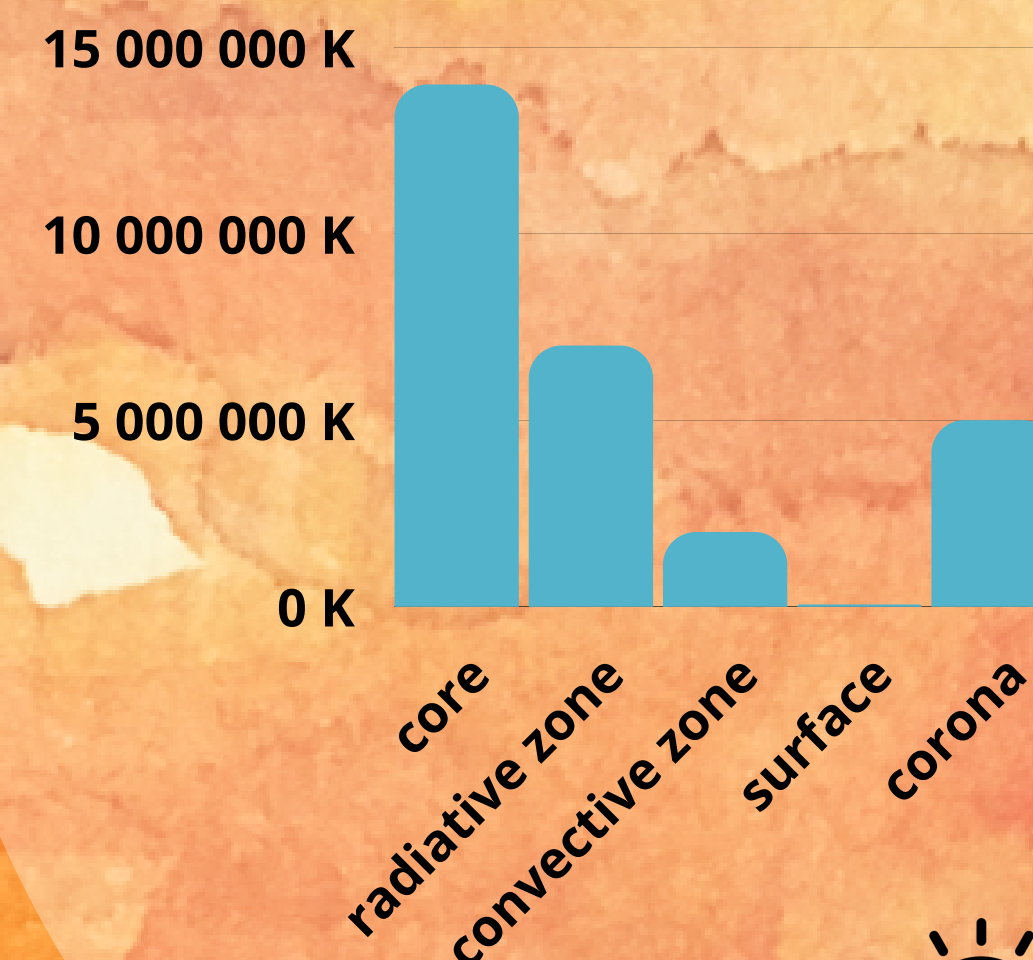
although the energy released in micro-eruptions is only about 1% of a large eruption, the process of small bipolar regions emerging is continuously, 'perpetuum mobile', across the Sun

magnetic field reconnection is the mechanism by which the Sun sheds its magnetic energy, the source of which is in the convective zone



during reconnection, the field lines of oppositely oriented magnetic fields come very close to each other and the result is released magnetic energy

### CHART COMPARING THE TEMPERATURE OF DIFFERENT PARTS OF SUN



the idea of reconnection was proposed to explain the sudden, rapid and highly energetic processes on the sun - eruption that release enormous energy, the energy equivalent of billions of terrestrial atomic bombs

there is no micro like micro  
a typical micro-eruption is about as  
big as our Earth and within 5  
minutes it releases as much energy  
as 10 million atomic bombs

# Magnetic carpet & heating of the corona

## INVISIBLE FORCE LINES OF MAGNETIC FIELDS

- **magnetic loops** extending from the photosphere into the corona are anchored in opposite polarities. The surface of The Sun is carpeted with tens of thousands of such magnetic poles - this is called **magnetic carpet**

- white lines represent closed loops of magnetic field lines

green and magenta lines are an example of open force lines of magnetic field, which create the largest escape of particles from the corona into interplanetary space

# TRACE satellite images of the sun's coronal loops

Transition region  
Chromosphere  
Photosphere