

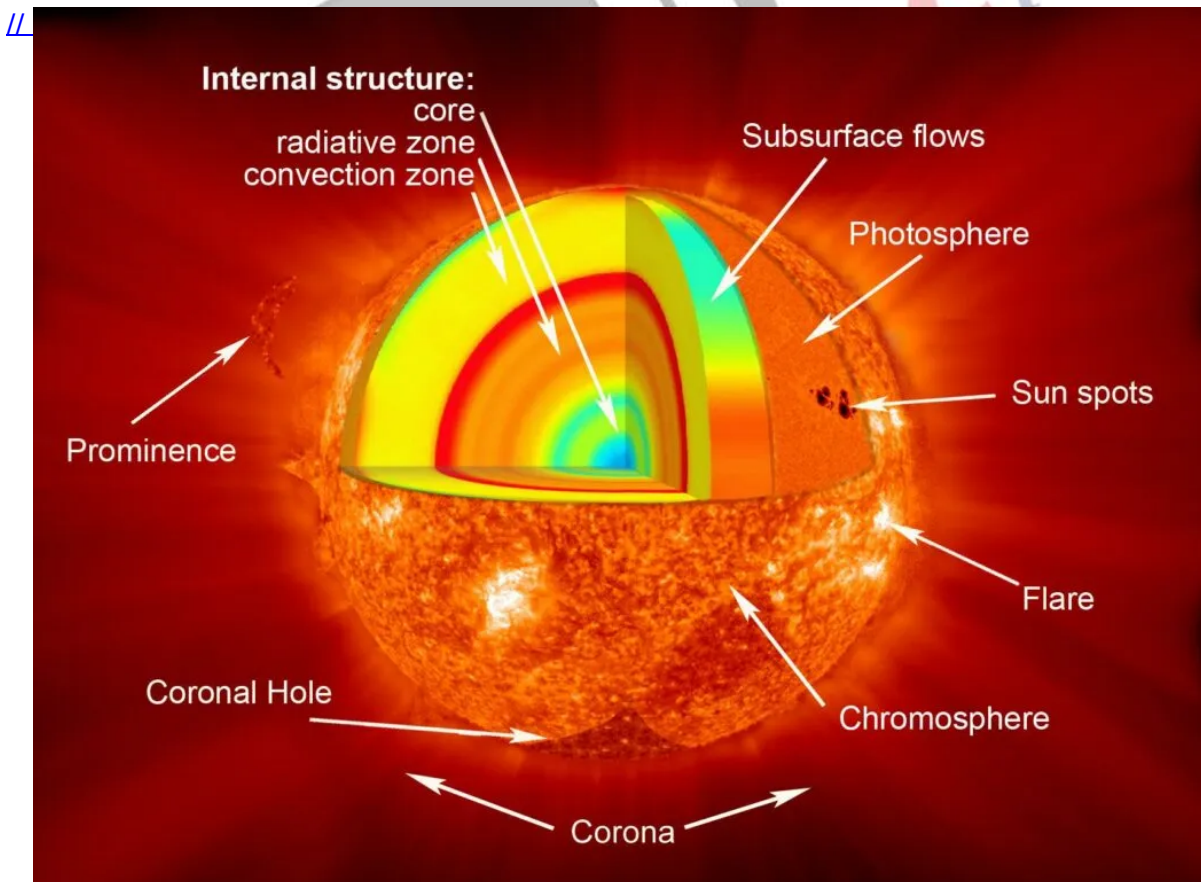


## Differential Rotation of the Sun

[Source: TH](#)

The **Sun exhibits a unique rotational pattern** called **differential rotation**, where different parts rotate at varying speeds.

- The [Sun's rotation period varies by latitude](#), with the equator rotating in 26.5 days, the **sunspot zone** (16° north) in 27.3 days, and the poles in 31.1 days.
  - The Sun has a **north and south pole**, and **rotates on its axis**. However, unlike Earth which rotates at all latitudes every 24 hours, the Sun rotates **every 25 days at the equator and takes progressively longer to rotate at higher latitudes**. This is known as differential rotation.
    - [Sunspots](#) are areas that appear dark on the surface of the Sun. They appear dark because they are cooler than other parts of the Sun's surface.
  - The Sun's core temperature is 15 million degrees K, and its surface temperature is 6,000 degrees K, creating a **high-pressure gaseous state known as plasma**.
- Despite extensive research, the underlying cause of differential rotation remains an unsolved puzzle for solar physicists.



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