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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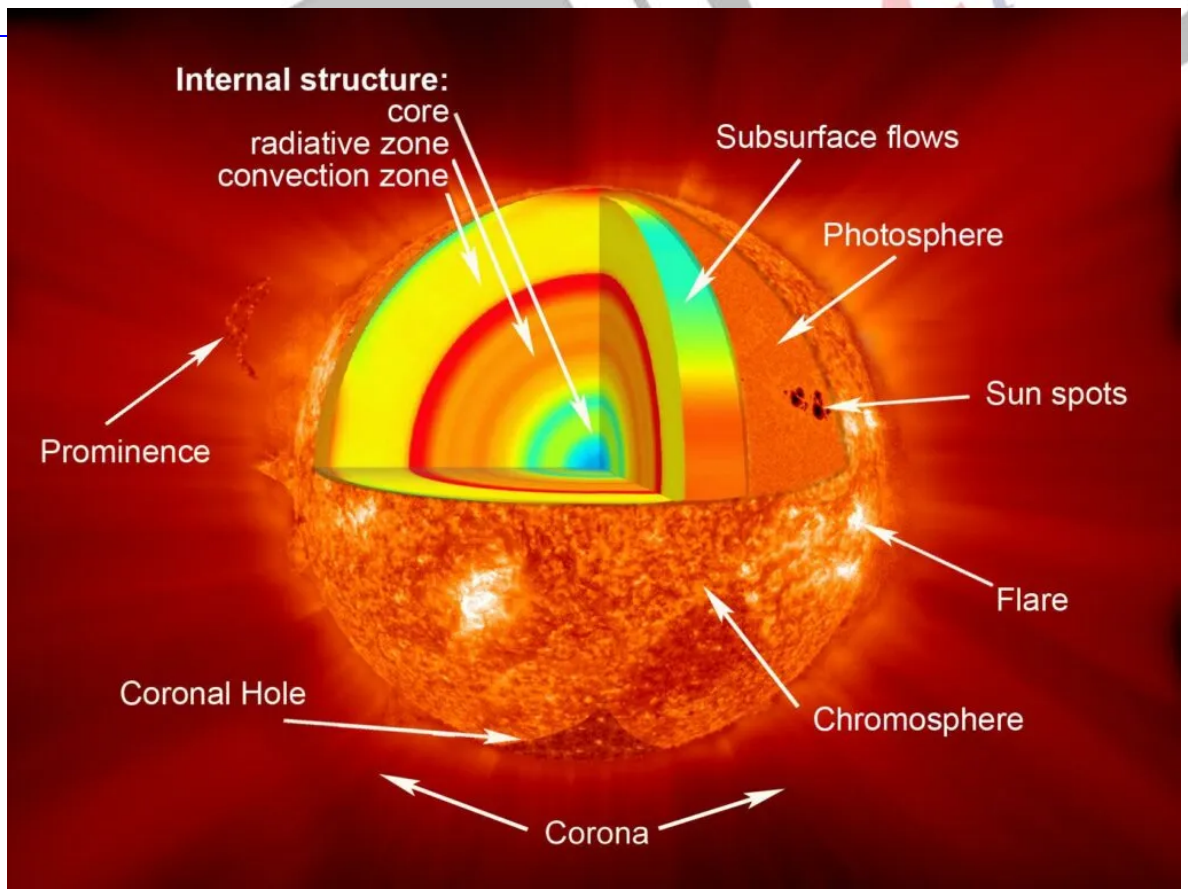

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