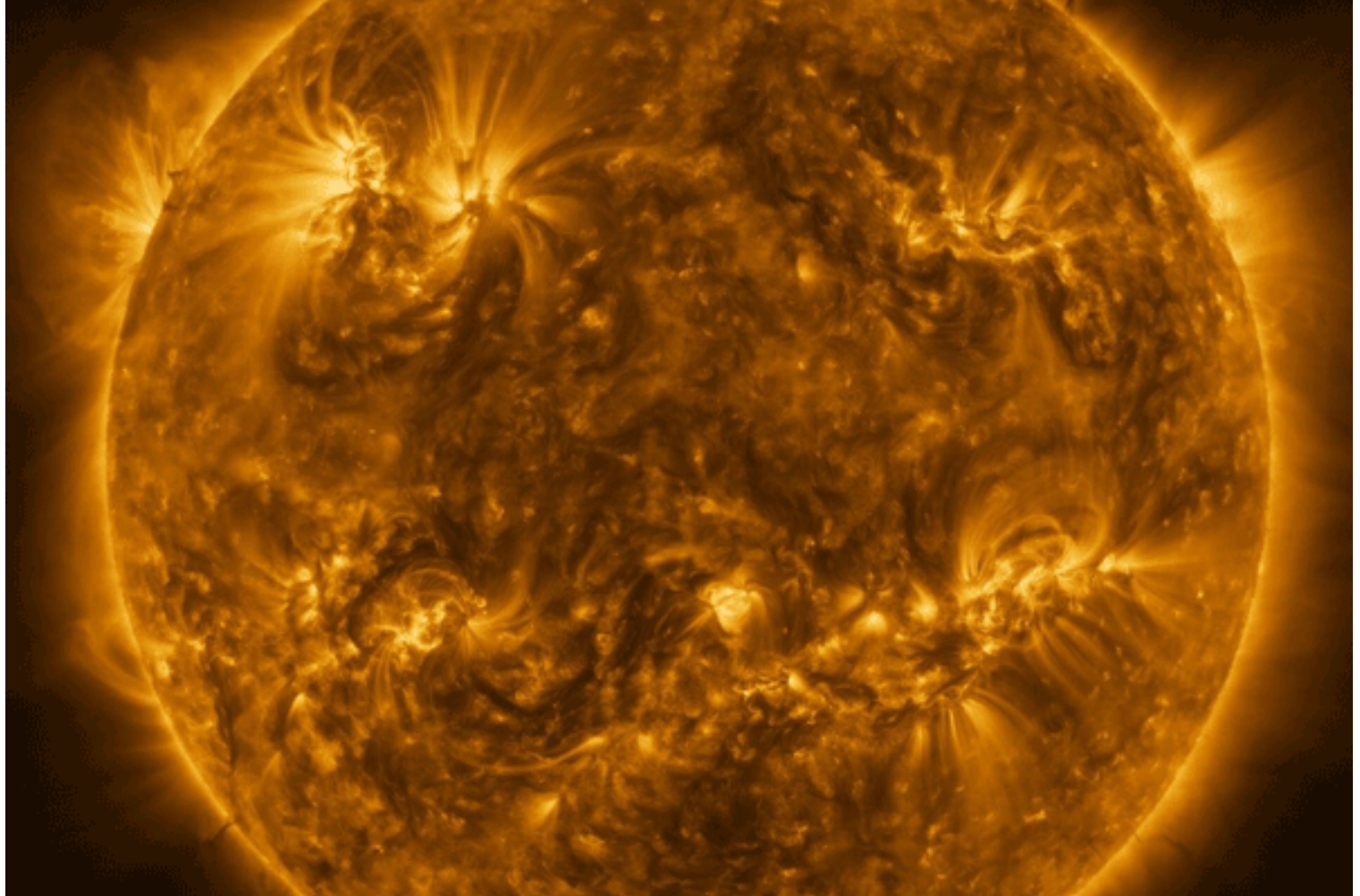


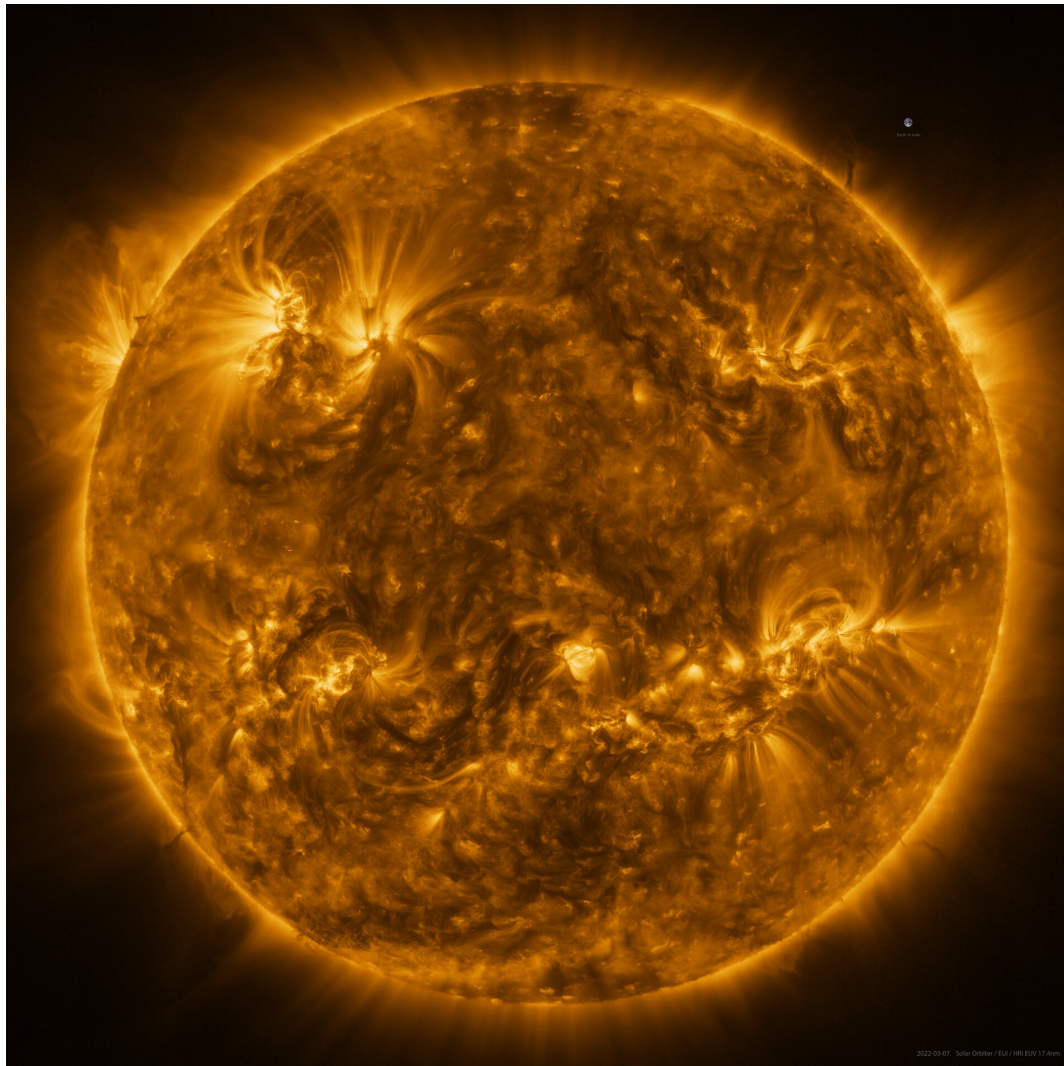
Clearest picture of Sun

By IAS Toppers | 2023-12-08 15:30:00



Clearest picture of Sun

The **European Space Agency's Solar Orbiter** has captured the most **detailed image of the Sun's** full disc and outer atmosphere, the corona, to date.



[ref-ESA]

About the picture:

- Captured in **extreme ultraviolet light** at a **wavelength of 17 nanometers**, this extraordinary image reveals **intense environment** of the **Sun's upper atmosphere** with a temperature of approximately 1 million degrees Celsius.
- The **Solar Orbiter**, a collaborative mission between the **European Space Agency (ESA)** and **NASA**, took this image from an approximate distance of **75 million kilometers** away from the **Sun**.
- Constructed from **25 individual images stitched together**, all captured by the **high-resolution telescope** of the **Extreme Ultraviolet Imager (EUI)** instrument on board the spacecraft.
- In addition to EUI, the **Spectral Imaging of the Coronal Environment (SPICE)** instrument was also recording data.
 - SPICE is designed to trace the **layers in the Sun's atmosphere** from the corona, down to a layer known as the chromosphere, getting closer to the surface.
 - The instrument does this by looking at the different wavelengths of **extreme ultraviolet light** that come from different atoms.

How did Solar Orbiter capture the image?

- The Solar Orbiter's close approach to the Sun, within the **orbit of Mercury**, allows it to capture such **high-resolution images**.
- Equipped with a suite of 10 instruments, the spacecraft is designed to **study the Sun** in great detail, including its **magnetic fields, solar winds, and energetic particles**, providing insights into the workings of Earth's closest star.

Significance of the image:

- It will help in understanding the **Sun's influence on the solar system**.
- The data collected will help scientists unravel the **mysteries of the solar wind** and the **corona's extreme temperatures**, which have puzzled astronomers for decades.
 - The corona reaches a **million degrees Celsius** whereas the surface is only about 5000°C