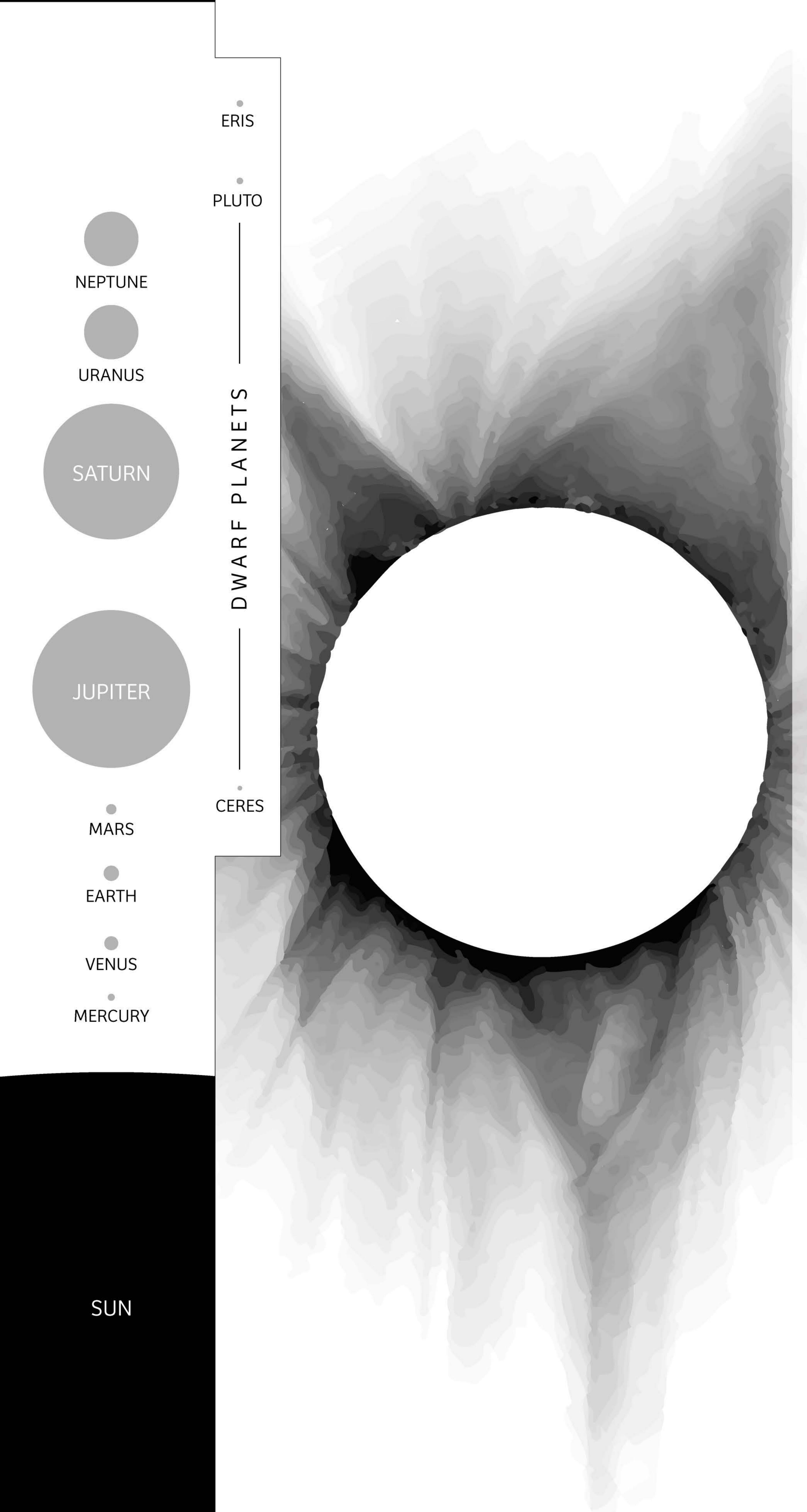


SUN: CENTRE OF THE SOLAR SYSTEM - THE SOURCE OF ALL LIFE ON EARTH



The Sun is an average middle-aged star. It is the central star in our solar system, and through gravity brings together its family of 8 planets, an (as yet) unknown number of dwarf planets, more than a 150 moons, and hundreds of thousands of asteroids and comets.

The Sun's enormous energy comes from the fusion of hydrogen to helium atoms in its core. The tiny amount of excess mass in each reaction leads to 4 million tonnes of mass being converted to energy (E=mc2) every second. When the Sun's hydrogen runs out, in about 5 billion years time, the Sun will swell to become a red giant star engulfing the inner solar system.

The Sun's visible surface, the photosphere, is continually churning and active. Dark sunspots, typically lasting a few days, grow and fade in numbers varying on an 11-year cycle. The daily motion of sunspots across the disk shows that the Sun rotates faster at the equator than at higher latitudes.

By chance, the Sun and Moon are the same apparent size in the sky. From time to tie the Moon crosses the face of the Sun producing a solar eclipse. At these times the thin pink solar 'chromosphere' becomes visible.

SUN STATISTICS

Distance from Earth: 150 million km (1 AU*)

Mass: 2 x 10³⁰ kg (3.3 x 10⁵ Earth's)

Light travel time to Earth: 8.3 minutes

Diameter: 1.4 million km

Temperature of the core: 15 million K

Surface temperature: 5,800 K Luminosity: 3.8 x 10³⁰ watts

Age: 4.6 billion years

Mean rotation period: 25.4 days Composition: 70% hydrogen, 28% helium, 2% heavy elements

FASCINATING FACT: The mass of the Sun is about 2 trillion, trillion, trillion tons, and that is 750 times larger than all the planets put together.

^{*} One Astronomical Unit (AU) = mean distance of the Earth from the Sun.