Exoplanet

An exoplanet is a planet that is located outside our Solar System.

Habitable Zone

The Habitable Zone is the region around a star where the conditions could potentially be suitable to sustain life on a planet within this region, for example allowing the presence of liquid water on its surface.

Planet

A planet is a celestial body that is in orbit around the Sun, has enough mass to be roughly round in shape and has significantly more gravitational attraction than anything else near it.

Dwarf Planet

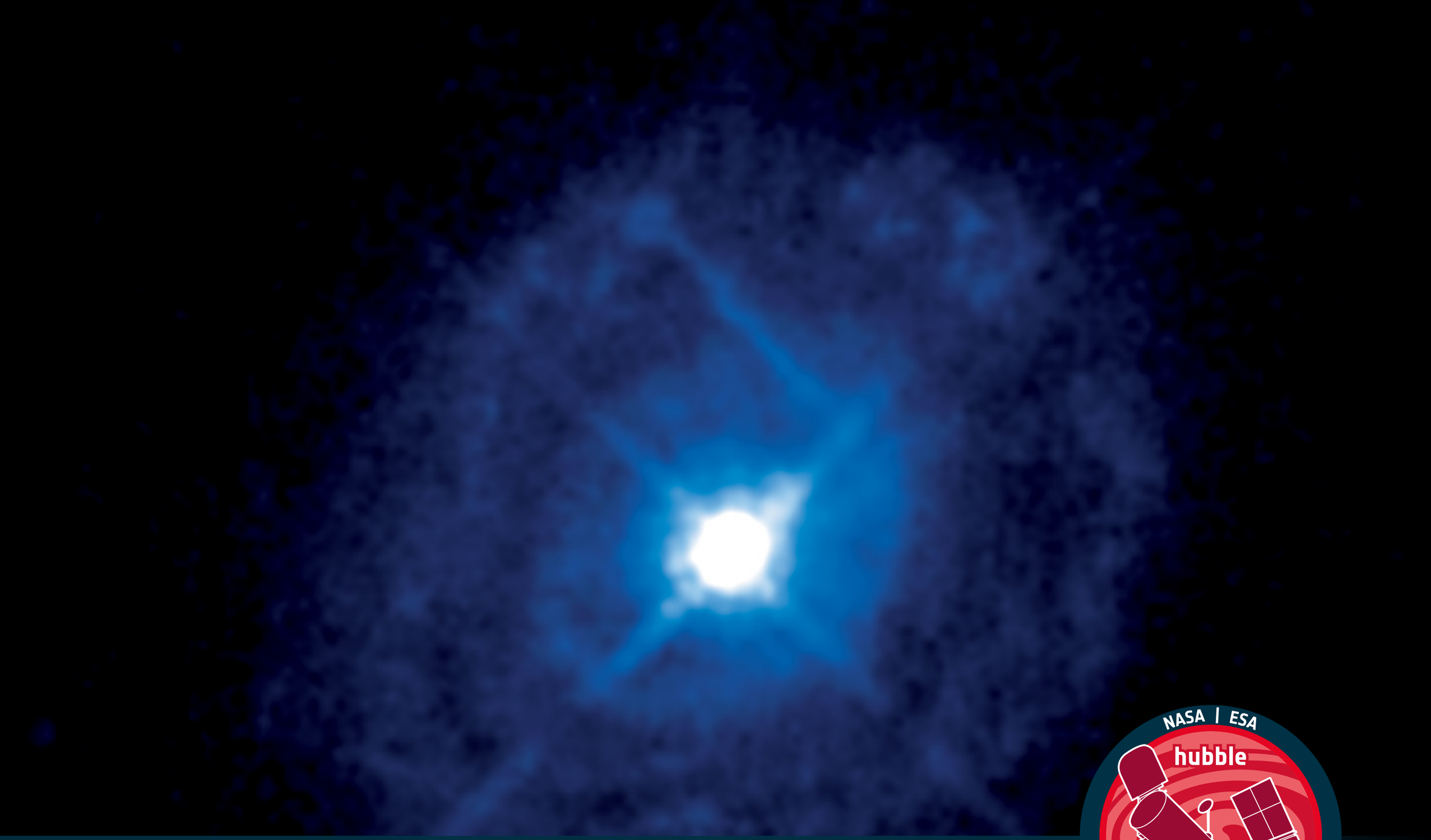
A dwarf planet is a celestial body that is in orbit around the Sun and has enough mass to be roughly round in shape.

Black Hole

Black holes are objects so dense, and with so much mass, that even light cannot escape their gravitational pull.

Quasar

A quasar is an extremely active and luminous type of active galactic nucleus (AGN). All quasars are AGNs, but not all AGNs are quasars.



Active Galactic Nucleus

An active galactic nucleus, or AGN, is an extremely bright central region of a galaxy that is dominated by the light emitted by dust and gas as it falls into a black hole.

Gravitational Wave

Gravitational waves are distortions in spacetime which result from the movements of objects with mass.

White Dwarf

A white dwarf is the stellar core left behind after a dying star has exhausted its nuclear fuel and expelled its outer layers to form a planetary nebula.

Neutron Star

Neutron stars are the incredibly dense remnants of supermassive stars that have exploded as supernovae.

Red Giant

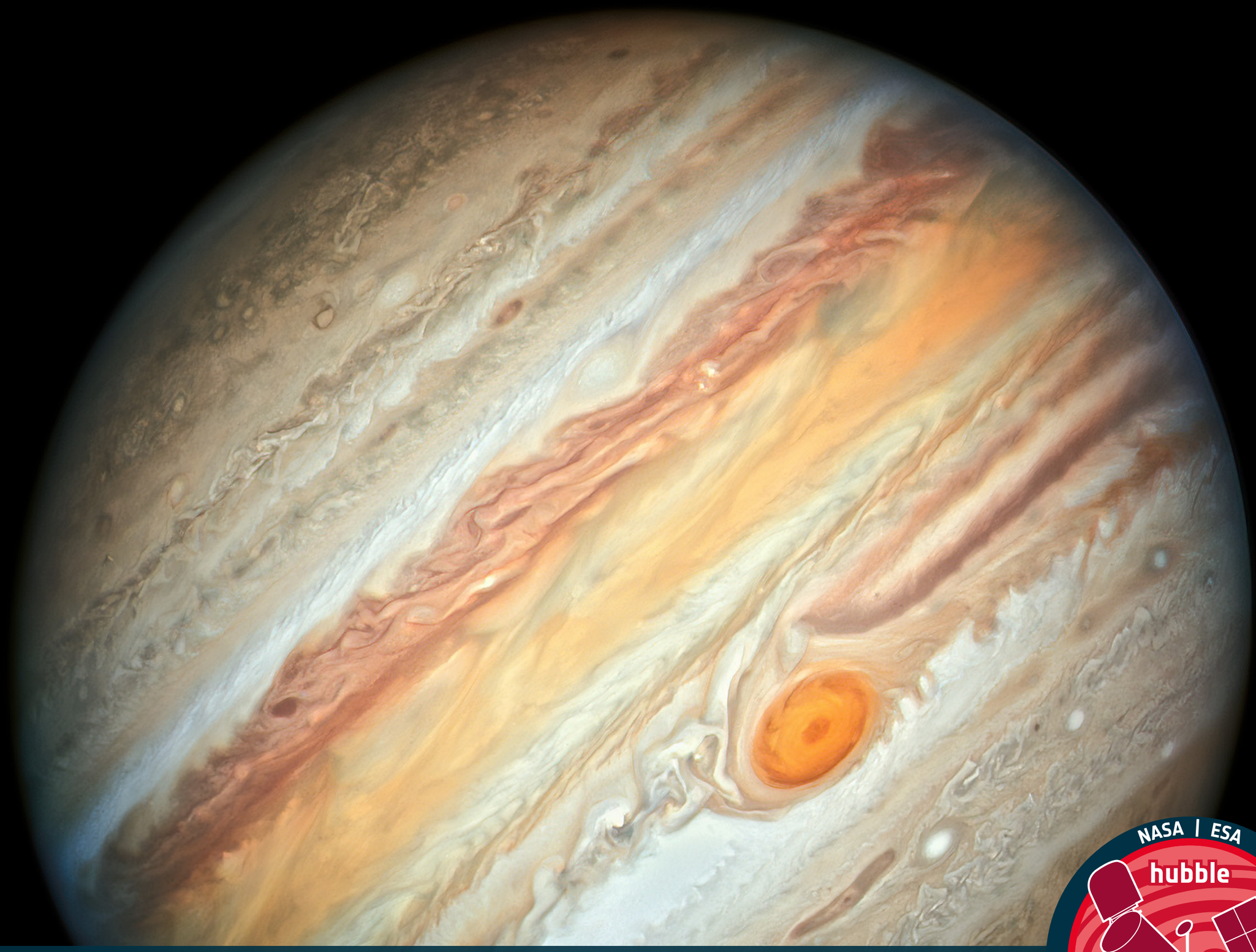
A red giant forms after a star has run out of hydrogen fuel for nuclear fusion, and has begun the process of dying.

Atmosphere

An atmosphere is a layer (or several layers) of gas that surrounds a planet, or other celestial body.

Saturn

Saturn is the sixth planet from the Sun. It is a gas giant, and the second largest and second most massive planet in our Solar System. It is famous for the ring-like structures that circle its equator.



Jupiter

Jupiter is the fifth planet from the Sun. It is a gas giant, and the largest and most massive planet in our Solar System. It is famous for its ‘stripy’ appearance and for the Great Red Spot.

Big Bang

The Big Bang is the popular name for the moment in time when the Universe started.

Galaxy

A galaxy is a ensemble of stars, dust, gas and dark matter that are bound together by gravity. Galaxies contain anywhere between a few hundred million to a hundred trillion stars.

Spiral Galaxy

A spiral galaxy typically has a rotating disc with spiral ‘arms’ that curve out from a dense central region. The Milky Way is a spiral galaxy.

Elliptical Galaxy

Elliptical galaxies have an even, ellipsoidal shape. They typically contain a much greater proportion of older stars than spiral galaxies do.

Dwarf Galaxy

Dwarf galaxies are small galaxies composed of a few billion stars.

Globular Cluster

Globular clusters are stable, tightly bound clusters of tens of thousands to millions of stars. They are associated with all types of galaxies.

Open Cluster

Open clusters are loosely bound groups of a few tens to a few hundred stars. They are found in spiral and irregular galaxies.

Nebula

Nebulae are interstellar clouds of gas and dust. Many nebulae are formed from the remnants of dying stars. Nebulae are often also regions where new stars are born.

Supernova

Supernovae are dramatic explosions that take place during the final stages of the death of a supermassive star.

Planetary Nebula

A planetary nebula is a region of cosmic gas and dust formed from the cast-off outer layers of a dying star. Despite their name, planetary nebulae have nothing to do with planets.

Asteroid

Asteroids are rocky celestial bodies that orbit the Sun, but do not meet the requirements to be classified as a planet.

Comet

A comet is an icy, rocky mass that has passed close by the Sun within our Solar System, and has thus warmed up and begun to release gases, causing a visible atmosphere — and sometimes a ‘tail’ — to form.

Dark Energy

Dark energy is the name given to the unknown energy source that is causing our Universe's expansion to accelerate.

Dark Matter

Dark matter is a form of matter that cannot currently be observed directly, but is thought to comprise about 85% of all matter in the Universe.

Optical Astronomy

Optical astronomy refers to an area of astronomy where astronomers observe and analyse light from the Universe that falls within the wavelength range that the human eye is sensitive to, also referred to as visible light.

Infrared Astronomy

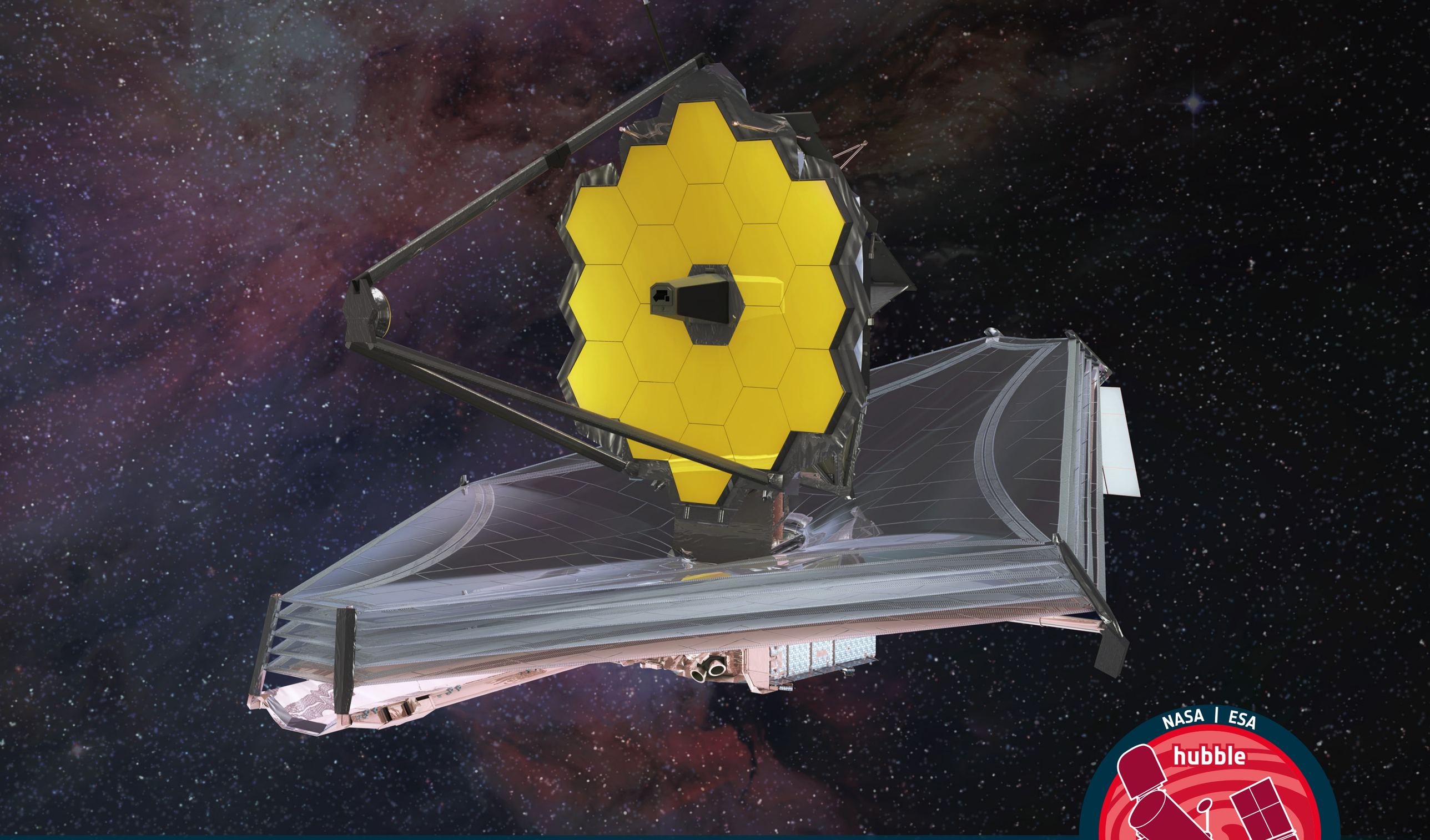
Infrared astronomy refers to an area of astronomy where astronomers observe and analyse light from planets, exoplanets and the clouds of dust found between stars and galaxies.

Gravitational Lensing

Gravitational lensing occurs when a massive celestial body — such as a galaxy cluster — causes a sufficient curvature of spacetime for the path of light around it to be visibly bent, as if by a lens. The body causing the light to curve is accordingly called a gravitational lens.

Spectrograph and Spectroscopy

Spectroscopy is a fundamental tool that astronomers use to study the Universe. Spectrographs are instruments that are used to conduct spectroscopy. They provide scientists with the data they need to analyse the materials that make up stars, nebulae, galaxies and the atmospheres of planets.



James Webb Space Telescope

The James Webb Space Telescope will be the next great space science observatory, designed to answer outstanding questions about the Universe and to make breakthrough discoveries in all fields of astronomy.

Circumstellar Disc

Circumstellar discs are discs of dust, gas, asteroids and other objects that rotate around a star. Circumstellar discs around newly formed stars are known as protoplanetary discs.

Stellar Wind

Stellar winds are fast-flowing streams of particles that are emitted from a star.

Star

A star is an approximately spherical body of plasma, which is held together by its own gravity and prevented from collapsing by the energy generated inside it by the fusion of hydrogen into helium. The Sun is a star.

Electromagnetic spectrum

The electromagnetic spectrum is a range of wavelengths of electromagnetic radiation. From long to short wavelength, the EM spectrum includes radio waves, microwaves, infrared, visible light, ultraviolet, x-rays and gamma rays.