

Atmospheres

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An atmosphere is a layer of gases that envelop an astronomical object, held in place by the gravity of the object. The name originates from Ancient Greek *atmós* ('vapour, steam') and *sphaîra* ('sphere'). An object acquires most of its atmosphere during its primordial epoch, either by accretion of matter or by outgassing of volatiles. The chemical interaction of the atmosphere with the solid surface can change its fundamental composition, as can photochemical interaction with the Sun. A planet retains an atmosphere for longer durations when the gravity is high and the temperature is low. The solar wind works to strip away a planet's outer atmosphere, although this process is slowed by a magnetosphere. The further a body is from the Sun, the lower the rate of atmospheric stripping.

All Solar System planets besides Mercury have substantial atmospheres, as does the dwarf planet Pluto and the moon Titan. The high gravity and low temperature of Jupiter and the other gas giant planets allow them to retain massive atmospheres of mostly hydrogen and helium. Lower mass terrestrial planets orbit closer to the Sun, and so mainly retain higher density atmospheres made of carbon, nitrogen, and oxygen, with trace amounts of inert gas. Atmospheres have been detected around exoplanets such as HD 209458 b and Kepler-7b.

A stellar atmosphere is the outer region of a star, which includes the layers above the opaque photosphere; stars of low temperature might have outer atmospheres containing compound molecules. Other objects with atmospheres are brown dwarfs and active comets.

Standard atmosphere (unit)

*measured in either standard atmospheres (atm)[better source needed] or technical atmospheres (at).
International Standard Atmosphere "Water Pressures at Ocean*

The standard atmosphere (symbol: atm) is a unit of pressure defined as 101325 Pa. It is sometimes used as a reference pressure or standard pressure. It is approximately equal to Earth's average atmospheric pressure at sea level.

Atmosphères

in 1999 on a Sony Classical CD. Atmosphères is scored for an orchestra with the following instrumentation. Atmosphères eschews conventional melody, harmony

Atmosphères is a piece for orchestra, composed by György Ligeti in 1961. It is noted for eschewing conventional melody and metre in favor of dense sound textures. After Apparitions, it was the second piece Ligeti wrote to exploit what he called a "micropolyphonic" texture. It gained further exposure after being used in Stanley Kubrick's film 2001: A Space Odyssey.

Atmosphere (disambiguation)

pressure Atmosphere of Earth Extraterrestrial atmospheres Stellar atmosphere Atmosphere (group), an American hip-hop duo from Minnesota Atmosphere (Polish

An atmosphere is a gas layer around a celestial body.

Atmosphere may also refer to:

Atmosphere of Earth

Standard Atmosphere as 101325 pascals (760.00 Torr; 14.6959 psi; 760.00 mmHg). This is sometimes referred to as a unit of standard atmospheres (atm). Total

The atmosphere of Earth consists of a layer of mixed gas that is retained by gravity, surrounding the Earth's surface. It contains variable quantities of suspended aerosols and particulates that create weather features such as clouds and hazes. The atmosphere serves as a protective buffer between the Earth's surface and outer space. It shields the surface from most meteoroids and ultraviolet solar radiation, reduces diurnal temperature variation – the temperature extremes between day and night, and keeps it warm through heat retention via the greenhouse effect. The atmosphere redistributes heat and moisture among different regions via air currents, and provides the chemical and climate conditions that allow life to exist and evolve on Earth.

By mole fraction (i.e., by quantity of molecules), dry air contains 78.08% nitrogen, 20.95% oxygen, 0.93% argon, 0.04% carbon dioxide, and small amounts of other trace gases (see Composition below for more detail). Air also contains a variable amount of water vapor, on average around 1% at sea level, and 0.4% over the entire atmosphere.

Earth's primordial atmosphere consisted of gases accreted from the solar nebula, but the composition changed significantly over time, affected by many factors such as volcanism, outgassing, impact events, weathering and the evolution of life (particularly the photoautotrophs). In the present day, human activity has contributed to atmospheric changes, such as climate change (mainly through deforestation and fossil-fuel-related global warming), ozone depletion and acid deposition.

The atmosphere has a mass of about 5.15×10^{18} kg, three quarters of which is within about 11 km (6.8 mi; 36,000 ft) of the surface. The atmosphere becomes thinner with increasing altitude, with no definite boundary between the atmosphere and outer space. The Kármán line at 100 km (62 mi) is often used as a conventional definition of the edge of space. Several layers can be distinguished in the atmosphere based on characteristics such as temperature and composition, namely the troposphere, stratosphere, mesosphere, thermosphere (formally the ionosphere) and exosphere. Air composition, temperature and atmospheric pressure vary with altitude. Air suitable for use in photosynthesis by terrestrial plants and respiration of terrestrial animals is found within the troposphere.

The study of Earth's atmosphere and its processes is called atmospheric science (aerology), and includes multiple subfields, such as climatology and atmospheric physics. Early pioneers in the field include Léon Teisserenc de Bort and Richard Assmann. The study of the historic atmosphere is called paleoclimatology.

Atmosphere (group)

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Apollo: Atmospheres and Soundtracks

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Apollo: Atmospheres and Soundtracks is a studio album by the British musician and producer Brian Eno, the Canadian producer Daniel Lanois, and the composer Roger Eno, who is Brian Eno's brother. It was released on 29 July 1983 through EG Records. The music was originally written for a documentary film about the Apollo program, For All Mankind, though the film was not released until 1989. The music was written and performed by the trio.

Music from the album has appeared in the films 28 Days Later, Traffic, and Trainspotting, whose soundtrack sold approximately four million copies. Two of the songs from the album, "Silver Morning" and "Deep Blue Day", were issued as a 7" single on EG Records.

ATEX directives

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The ATEX directives are two of the EU directives describing the minimum safety requirements for workplaces and equipment used in explosive atmospheres. The name is an initialization of the term ATmosphères EXplosives (French for "explosive atmospheres").

Saturn

IMCCE. Retrieved 29 May 2023. Knecht, Robin (24 October 2005). "On The Atmospheres Of Different Planets" (PDF). Archived from the original (PDF) on 14 October

Saturn is the sixth planet from the Sun and the second largest in the Solar System, after Jupiter. It is a gas giant, with an average radius of about 9 times that of Earth. It has an eighth the average density of Earth, but is over 95 times more massive. Even though Saturn is almost as big as Jupiter, Saturn has less than a third its mass. Saturn orbits the Sun at a distance of 9.59 AU (1,434 million km), with an orbital period of 29.45 years.

Saturn's interior is thought to be composed of a rocky core, surrounded by a deep layer of metallic hydrogen, an intermediate layer of liquid hydrogen and liquid helium, and an outer layer of gas. Saturn has a pale yellow hue, due to ammonia crystals in its upper atmosphere. An electrical current in the metallic hydrogen layer is thought to give rise to Saturn's planetary magnetic field, which is weaker than Earth's, but has a magnetic moment 580 times that of Earth because of Saturn's greater size. Saturn's magnetic field strength is about a twentieth that of Jupiter. The outer atmosphere is generally bland and lacking in contrast, although long-lived features can appear. Wind speeds on Saturn can reach 1,800 kilometres per hour (1,100 miles per hour).

The planet has a bright and extensive system of rings, composed mainly of ice particles, with a smaller amount of rocky debris and dust. At least 274 moons orbit the planet, of which 63 are officially named; these do not include the hundreds of moonlets in the rings. Titan, Saturn's largest moon and the second largest in the Solar System, is larger (but less massive) than the planet Mercury and is the only moon in the Solar System that has a substantial atmosphere.

Atmosphere (novel)

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