



MOON

APOLLO 11 AND BEYOND...

THE ULTIMATE GUIDE TO OUR NEAREST NEIGHBOUR

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MOON WORSHIP

Ancient peoples were in awe of the Moon. For a start, it was mysteriously beautiful. It was obviously powerful too, as anyone living by the sea noticed: the highest tides coincided with the fullest Moon. The Moon's regular changes also gave pattern to life. Clearly, it was something to be worshipped.



📍 The Pyramid of the Moon, built for the worship of the Moon goddess Chalchiutlicue, in the pre-Aztec city of Teotihuacan.

STONEHENGE

The 5,000-year-old monument known as Stonehenge in England was perhaps a gigantic calculator. The circles and rectangles, marked with stones and ditches, allowed the priests to predict eclipses of the Sun and Moon over hundreds of years.

SACRIFICE

Worship means recognising in public that something or someone is tremendously powerful and needs to be kept on your side. How do you make the Moon god or goddess happy? The Egyptians did it by fashioning a statue of the god and offering it food every day. Other primitive religions had images of the Moon carved in stone or wood.

Ancient Hindu ritual involved offering sacrifices to the Moon – demonstrating how important it was by giving it the most precious things they possessed: food, an animal or even a human life. The Aztecs' ritual of cutting out human hearts was associated with sacrifice to the Moon goddess Coyolxauhqui.

LIGHT AND SHADE

Moon worship changed with the phases. Full Moon was a time of bright light and ecstasy, when worshippers danced, sang and took part in rituals of fertility. Some African mothers washed their newborn babies by moonlight to make them especially pure.

The three days in each month when there is no Moon were the opposite: nights of absolute darkness when the powers of evil threatened to take over the world. Some peoples saw this as a time of battle, when the silvery deity was being attacked. To help it fight off its opponent and return to light the Earth, worshippers made loud noises to scare off the Moon's enemy.

'When ever you have need of anything, once in a month ... when the Moon is full, ye shall assemble in some secret place and adore the spirit of Me who am Queen of all Witches.'

A MODERN MOON-WORSHIP RITUAL



📌 Is it really a joking matter? Postcard witches dance by the light of a smiling Moon.



HEY DIDDLE DIDDLE!

From nursery rhymes to good luck charms, Moon myths are deeply embedded in the traditional culture of every land. A full Moon was thought to bring good fortune, so those born under one enjoyed lucky lives. Similarly, for centuries, wise Scottish lasses refused to marry unless the Moon was full.



MOON DREAMS

The Moon has always been associated with love and fertility. Husbands who dream of a Moon with their own face, runs traditional lore, will father sons. On the other hand, wives who in their sleep see a Moon with their face are certain to give birth to daughters. What happens if husband and wife have their dreams at the same time remains a mystery!

*Hey diddle diddle,
The cat and the fiddle,
The cow jumped over
the moon
The little dog laughed
to see such fun,
And the dish ran away
with the spoon.*

🕒 Arthur Rackham's weirdly fascinating illustration of 'Hey Diddle Diddle'.

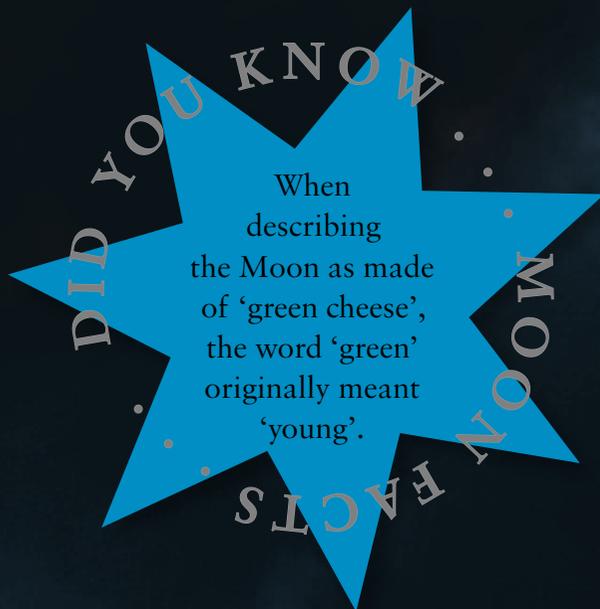
BLUE MOON

Because the solar and lunar calendars are slightly different, occasionally a year has thirteen full Moons instead of twelve. The rare thirteenth is a 'blue' Moon, giving us the expression 'once in a blue Moon'.

JUST A DITTY?

This English nursery rhyme, with its silly words and catchy sounds, has been beloved of children for generations. But is that all it is, just jolly nonsense? Some scholars believe it was written to mock Queen Elizabeth I. She was the 'cow' who was in love ('over the Moon') with Robert Dudley, Earl of Leicester – the 'dog'!

Another idea is that the names – cat, fiddle, cow, little dog, Moon, dish, spoon – were features of the night sky. The Moon is obvious, while the cat, for example, was the constellation Leo, the lion. When they all appeared at the same time, in April, it was time to sow crops. So what we consider a children's rhyme was really a piece of advice to farmers.



BOYS AND GIRLS...!

Among the many, many children's rhymes mentioning the Moon, English also has:

*Boys and girls, come out to play.
The Moon doth shine as bright as day.*



*I see the Moon
and the Moon sees me –
The Moon sees the somebody
I'd like to see.*

TRADITIONAL CHILDREN'S
RHYME

MOON HORROR

A full Moon hangs in a clear night sky. In its clean, cold light a lonely figure stumbles homeward across the desolate landscape. From far away comes the low howl of a wolf. The man stops, listening anxiously. A cloud slides silently over the face of the Moon, plunging the world into darkness... The terrified traveller is doomed.

THE MOON CLICHÉ

Directors of horror films have made and re-made this scene countless times. Vampire films, mummy films, zombie films ... horror movies of every type – even a comic-horror Simpsons episode – make the Moon a symbol of evil. This has happened so often that the Moon as a sign of wickedness has become a cinema cliché.

Poor Moon! From *Death Moon* to *Full Moon Fright Night* and *Zombie Honeymoon*, the lifeless sphere of rock and dust is made responsible for every crime and beastliness imaginable. In *Black Moon* it allows a weird hag to have a squeaky conversation with a giant rat! And when a piece of stray meteor enters a man, as happens in *Track of the Moon Beast*, the innocent Moon is somehow at fault when he turns into a monster!

🕒 *Fright Night*: the Moon hangs over a suburban nightmare in the 1985 horror movie.



NEW LEGENDS

The cinema industry invented the Moon as an image of malevolence. Traditionally, our nearest neighbour was rarely associated with wickedness. Nasty things were sometimes said to happen when the Moon shone full, but normally people welcomed friendly moonlight. Lovers met by it and travellers relied on it to find their way after dark.

Electric light started the change. When streets and homes were lit at the flick of a switch, moonlight was seen as unreliable and the Moon itself became associated with darkness instead of light.



ONE IN THE EYE

The 1902 French film *A Trip to the Moon* is the earliest – and strangest – Moon movie. Mixing science-fiction, fantasy and classical mythology, it features a space rocket hitting the Man in the Moon in the eye!



① Moon movie: *A Trip to the Moon* was the first film to cast the Moon in a starring role.



THE CHANGING MOON

Our view of the Moon changes night by night. These ‘phases’ occur for two reasons. First, the Moon emits no light of its own: ‘moonlight’ is in fact the Sun’s light reflected off the Moon. Second, the area lit up by the Sun varies as the Moon circles the Earth.

THE EIGHT PHASES OF THE MOON

Together these eight phases make up a full lunar month (about 29.5 days).



New Moon: when the Moon is directly between the Earth and the Sun, so we can’t see it at all.



Waxing Crescent Moon: all we can see is a thin sliver of Moon – best viewed just after sunset.



First Quarter or Waxing Half-Moon: the Moon has completed a quarter of its journey round the Earth and 25 per cent of it is lit. Visible until about midnight.



Waxing Gibbous Moon: almost there! So bright it can often be seen while the Sun is still shining.



ANCIENT MEANINGS

‘Wax’, which comes from Latin and ancient Greek, means to increase in size and strength. ‘Wane’, which also comes from Latin and ancient Greek, means to decline in power and size. It has the same root as our word ‘vain’ – as ‘in vain’.

☞ Greek astronomer Ptolemy considers the movement of celestial spheres such as the Moon.



Full Moon: the Sun lights up the whole of one half of the Moon, which shines with great brilliance all night.



Waning Gibbous Moon: on the wane, with the right side (Northern Hemisphere) sliding into darkness.



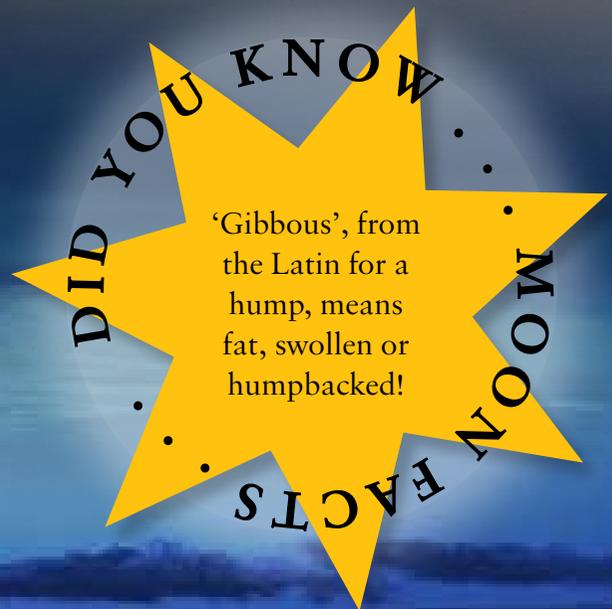
Last Quarter or Waning Half-Moon: the Moon, which has completed a quarter of its journey round the Earth, rises after midnight and can still be seen in the morning.



Waning Crescent Moon: the final thin ribbon before the Moon disappears entirely from view (although it’s still there, of course!) for three to four days.

SHAPES AND VIEWPOINTS

The Moon appears different when viewed from the Northern or Southern Hemisphere. A waxing crescent in the north, for instance, curves to the right. In the Southern Hemisphere the same Moon curves to the left.



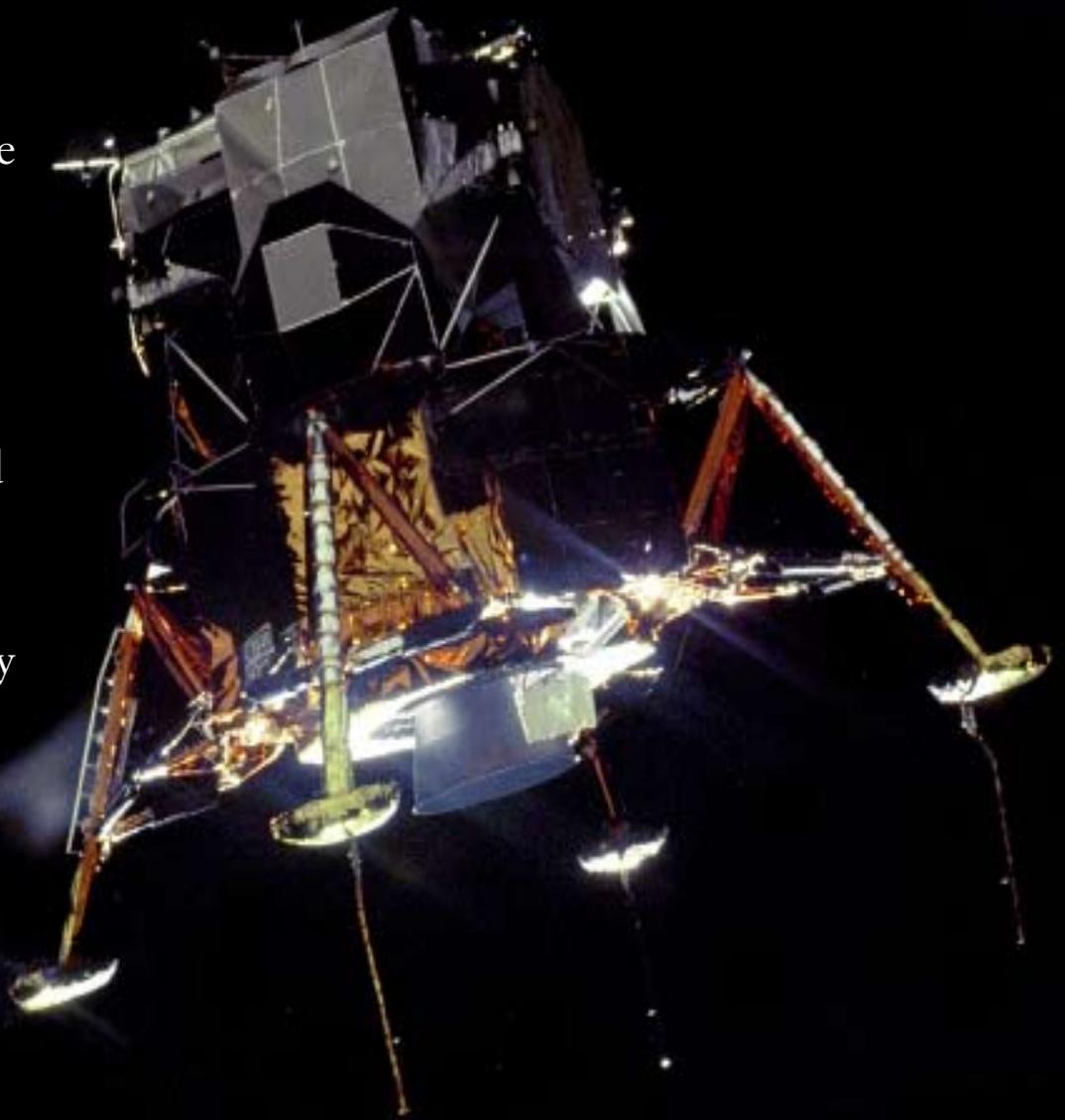
‘Gibbous’, from the Latin for a hump, means fat, swollen or humpbacked!



THE EAGLE HAS LANDED!

Apollo reached the Moon in three days. At first, the Earth's gravity pulled it back, slowing it to just 3,200 km/h. But when lunar gravity came into play, it sped up again. Had the crew not used the SM engine as a brake, they would have shot off into distant space!

🔗 Eagle, the lunar module, ready for its Moon landing. Note its two-part structure and the probes below its legs.



INTO THE EAGLE

With *Apollo* in low lunar orbit, the crew checked their landing place in the Sea of Tranquility. NASA had chosen this site because it appeared flat and smooth. When all was ready, Armstrong and Aldrin said goodbye to Collins and climbed into the lunar module. Hatches sealed and last checks made, the lunar module – Eagle – then eased away from the CSM – Columbia – in which Collins was now alone. After a few somersaults in front of Collins so he could check for damage, the Eagle began its descent.

RELIGIOUS ROW

Buzz Aldrin, a deeply religious man, took Holy Communion shortly after landing on the Moon. He did so in secret because there had been a row when previous astronauts had read from the Bible in space.

THE DESCENT

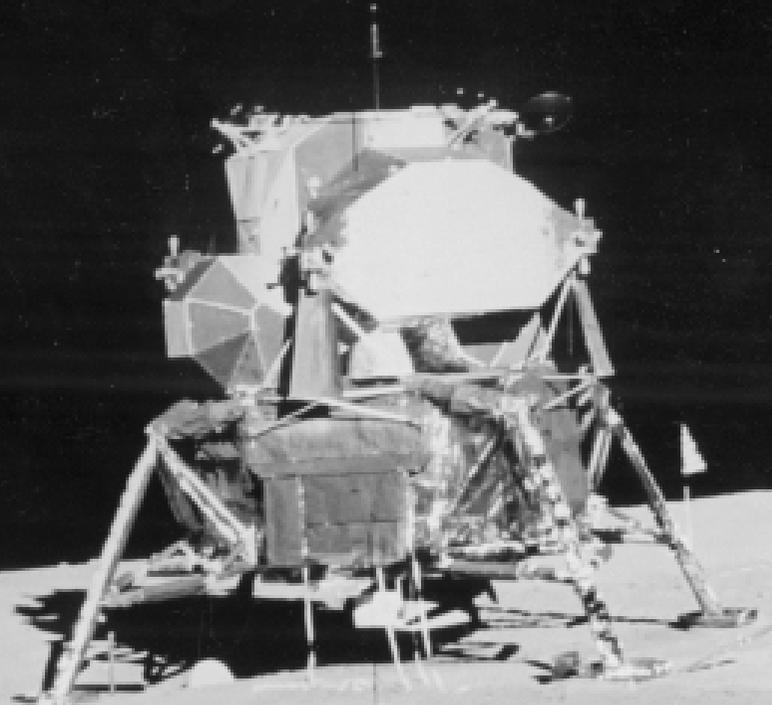
The Eagle was in two sections. The larger, four-legged descent module (10,334 kg), situated at the bottom, could land on the Moon under its own power. The smaller ascent module (4,930 kg), which rode piggy-back on the descent module, was to carry the astronauts back to Columbia.

Piloted by Buzz Aldrin, the Eagle slowly edged towards the chosen landing ground. With only about 100 m to go, he suddenly realised that what had looked smooth from a distance was actually covered with large boulders. Unfazed, he searched around and found a safer spot. Just above the surface he cut the engine and, 102 hrs 45 minutes and 40 seconds after take-off, *Apollo 11* was on the Moon. 'Houston, Tranquillity Base here,' radioed Armstrong to the command centre in Texas. 'The Eagle has landed.'

'I'd like to take this opportunity to ask every person listening in ... to pause for a moment and contemplate the events of the past few hours and give thanks in his or her own way.'

BUZZ ALDRIN, AFTER LANDING ON THE MOON

➡ We've made it! The lunar module on the surface of the Moon.



⬅ The folks back home: every stage of the *Apollo 11* mission was monitored and controlled by the Kennedy Space Center, Florida, and Mission Control, Houston, Texas.



HOMeward BOUND

As things had gone so well, Armstrong and Aldrin were given an extra fifteen minutes on the Moon's surface. At the end of this period, they climbed carefully back up the ladder into the ascent module, hauling their boxes of film and rock samples with them on a pulley system.

MOMENT OF TRUTH

The tiny cabin of the lunar module's ascent stage was packed with instruments. Struggling around inside in his bulky spacesuit, Buzz Aldrin accidentally hit the switch that prepared the engine for take off. For a few dreadful seconds, the astronauts and ground control feared the engine

could not be re-started: the astronauts would slowly suffocate in their module tomb. Happily, the problem was solved after a bit of nifty work with a felt pen! Mightily relieved, the two men threw out unwanted heavy equipment, sealed the module, repressurised it and lay down for a well-deserved rest.



🕒 Neil Armstrong working with the lunar module's bewildering array of controls and displays.

REUNITED

Mission Control in Houston, Texas, woke the astronauts seven hours later. It took a couple of hours to prepare for take-off, at the end of which the ascent module's rocket engine started without a hitch. Using the descent stage as a launch pad, *Apollo 11* lifted off the Moon in a cloud of fine dust.

A short flight and careful manoeuvring brought the lunar module level with the command module. Collins had been piloting this in orbit round the Moon all the time Armstrong and Aldrin had been on the surface. The two craft docked, allowing the lunar astronauts to be reunited with their delighted colleague. After casting off from the unwanted lunar module, the crew fired their main engine to break out of orbit and begin the long journey home.

🕒 With the Earth in the background, the lunar module's ascent stage nears the orbiting command module.



SIGNS OF PEACE

On leaving the Moon, the Apollo astronauts left behind a small bag. It contained a small replica (less than half a foot in length) of a golden olive branch, the symbol of peace. It also contained a silicon disc carrying goodwill messages from 73 heads of state.



DID YOU KNOW
MOON FACTS

Abandoned in lunar orbit, the ascent module crashed into the Moon's surface years later.

