

How many moons does the Earth have? One, two, or more?

Well, the answer depends on what you define as a moon. We certainly have one. But back in the 18<sup>th</sup> century there were various theories that we might also have a “dark” moon. Despite various “observations” this has been proven not to be the case. But we do have what some people call a moon, others (more correctly) a near-Earth object.

It’s called Cruithne<sup>1</sup> after an early Celtic tribe and is in a normal elliptic orbit around the Sun. Its period of revolution around the Sun, about 364 days at present, is almost equal to that of the Earth. Because of this, Cruithne and Earth appear to follow each other in their paths around the Sun. This is why Cruithne is sometimes called “Earth's second moon”.

Cruithne is approximately 5 kilometers (3 mi) in diameter, and its closest approach to Earth is 12 million kilometers (7,500,000 mi), approximately thirty times the separation between Earth and the Moon.

Although Cruithne's orbit is not thought to be stable over the long term, calculations show that it has probably been synchronized with Earth's orbit for a long time. There is no danger of a collision with Earth for millions of years, if ever. Its orbital path and Earth's do not cross, and its orbital plane is currently tilted to that of the Earth by 19.8°.

Cruithne, having a maximum near-Earth magnitude of +15.8, is fainter than Pluto and would require at least a 320-millimetre (12.5 in) reflecting telescope to be seen.

Other small natural objects in orbit around the Sun may enter orbit around Earth for a short amount of time, becoming temporary natural satellites.

One of these has the quaint name of 2004 GU9 and is a sub-kilometer asteroid, classified as near-Earth object (NEO) an asteroid of the Apollo group. It will be a quasi-satellite of Earth until around 2600, when it is predicted it will gradually move away from the Earth.

We also have 2006 FV 35 another NEO. It’s been the Earth’s companion for around 10,000 years, but it too will find a new orbit in around 800 years, when it will fall under the influence of Venus’s gravitational pull.

Other near-Earth objects (NEOs) have since been discovered. These include 54509 YORP, 1998 UP1, 2002 AA29, and 2009 BD which exist in orbits similar to Cruithne's.

And so the answer to the question is – whatever you decide!

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<sup>1</sup> 3753 Cruithne was discovered on October 10, 1986, by Duncan Waldron on the UK Schmidt Telescope at Siding Spring Observatory, Coonabarabran, [Australia](#).