

The "Antikythera-Mechanism"

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The world's oldest computer

For decades, researchers have been baffled by the intricate bronze mechanism of wheels and dials created 80 years before the birth of Christ. The "Antikythera Mechanism" was discovered damaged and fragmented on the wreck of a cargo ship off the tiny Greek island of Antikythera in 1900.

Now, a joint British-Greek research team has found a hidden ancient Greek inscription on the device, which it thinks could unlock the mystery. The team believes the Antikythera Mechanism may be the world's oldest computer, used by the Greeks to predict the motion of the planets. The researchers say the device indicates a technical sophistication that would not be replicated for millennia and may also be based on principles of a heliocentric, or sun-centred, universe - a view of the cosmos that was not accepted by astronomers until the Renaissance.

What was it for?

The Greek and British scientists used three-dimensional X-ray technology to make visible inscriptions that have gone unseen for 2,000 years. Mike Edmunds, an astrophysicist at Cardiff University, who is heading the British team, said: "The real question is, 'What was the device actually for?' Was it a used to predict calendars? Was it simply a teaching tool? The new text we have discovered should help answer these questions".

The mechanism contains over 30 bronze wheels and dials and was probably operated by hand, Mr Edmunds said. The most prominent appraisal of the mechanism's purpose was put forward in 2002 by Michael Wright, the curator of mechanical engineering at the Science Museum in London, who said it was used to track the movements of all the celestial bodies known to the Greeks: Mercury, Venus, Mars, Jupiter and Saturn. Mr Wright's theory is that the device was created in an academy founded by the Stoic philosopher Poseidonios on the Greek island of Rhodes.



The writings of the 1st-century BC orator and philosopher Cicero - himself a former student of Poseidonios - cite a device with similarities to the mechanism. Xenophon Moussas, a researcher at Athens University, said the newly discovered text seems to confirm that the mechanism was used to track planetary bodies. The researchers are looking at whether the device placed the sun, not the earth, at the centre of the solar system.

He said: "It is a puzzle concerning astronomical and mathematical knowledge in antiquity. The mechanism could rewrite certain chapters in this area." Yanis Bitsakis, also of Athens University, added: "The challenge

is to place this device into a scientific context, as it comes almost out of nowhere ... and flies in the face of established theory that considers the ancient Greeks were lacking in applied technical knowledge." Mr Edmunds said the researchers were prepared for an onslaught of conspiracy theories. "There's no indication that the device is anything we wouldn't expect of the Greeks or something that would require an extra-terrestrial explanation. "I think it is a great testament to the sophistication of the Greeks and how far they advanced before the jackboot of the Romans came through."

A timeshift in the history of astronomy

If the Antikythera Mechanism turns out to have been a machine for showing the movements of the planets around the sun, it would greatly alter our understanding of the history of astronomy. Although at least one Greek thinker posited a heliocentric view of the solar system, the dominant view at the time was Aristotle's - that the Earth was the centre of the universe and that everything rotated around it in perfect, circular orbits.

It was not until 1,400 years later that Copernicus and Galileo conclusively proved the heliocentric view, which greatly altered man's understanding of his importance and position in the universe. Their work was met with stern resistance, as the Church believed the Aristotelean view - which put humanity at the centre of the cosmos - was integral to man's direct relation to God. Researchers are now searching for clues that the Antikythera Mechanism might have been governed by heliocentric principles. If they are successful, it would suggest the heliocentric world-view was more accepted by the Greeks than thought.

