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# The shortest time just got quicker

**By Mark Henderson**  
Science Correspondent

THE length of an instant has just become shorter: scientists have measured the smallest time interval recorded, lasting a ten million billionth of a second.

Researchers in Austria and Germany have used pulses of laser light to watch an electron moving around inside an atom, distinguishing motion over periods as brief as 100 attoseconds. As an attosecond is one thousand million billionth of a second, the intervals recorded by the team are a ten million billionth of a second long.

A gap of 100 attoseconds is to a second what one second is to about 300 million years. It is about 10 times shorter than

the previous shortest measured interval, which lasted approximately one femtosecond or a million billionth of a second. In the study, details of which are published today in the journal *Nature*, a research team at the Technical University of Vienna and the Max Planck Institute in Bielefeld, Germany, used pulses of ultraviolet light lasting 250 attoseconds to excite atoms, which in turn emitted electrons.

A laser recorder was used to record the position of the electrons at intervals of 100 attoseconds.

It takes an electron roughly 150 attoseconds to complete a single orbit of the proton at the centre of a hydrogen atom, according to calculations first made by the Danish physicist Niels Bohr.