

Study resets date of earliest animal life by 30 million years

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University of Alberta researchers have uncovered physical proof that animals existed 585 million years ago, 30 million years earlier than all previous established records show.

The discovery was made U of A [geologists](#) Ernesto Pecoits and Natalie Aubet in Uruguay. They found fossilized tracks of a centimetre long, slug-like animal left behind 585 million years ago in a silty sediment.

Along with other U of A researchers, the team determined that the tracks were made by a primitive animal called a bilaterian, which is distinguished from other non-animal, simple life forms by its symmetry-its topside is distinguishable from its bottom side-and a unique set of 'footprints'.

The researchers say the fossilized tracks indicate the soft-bodied animal's [musculature](#) enabled it to move through the sediment on the shallow ocean floor. The pattern of movement indicates an [evolutionary adaptation](#) to search for food, which would have been [organic material](#) in the sediment.

The precise age of the tracks was calculated at the U of A by dating the age of an igneous rock that intruded into the siltstone in the area where the tracks were found. It took more than two years for U of A researchers to satisfy themselves and a panel of peer review scientists that the age of 585 million years is accurate. The dating process included a trip back to Uruguay to collect more samples of the fossilized rock and

multiple sessions of mass spectrometry analysis.

U of A [paleontologist](#) Murray Gingras said when it comes to soft-bodied animals and their tracks it's not unusual for the animal's body to disappear but its tracks become fossilized.

Prior to the U of A find and age confirmation, the oldest sign of [animal life](#) was dated at 555 million years ago from a find made in Russia.

Kurt Konhauser, a U of A geomicrobiologist, says the team's discovery will prompt new questions not only about the timing of [animal evolution](#), but also the environmental conditions under which they evolved. Konhauser explains that the challenge now is "to find out how these animals evolved to the point where they were able to move about and hunt for food."

The U of A's research team includes Ernesto Pecoits, Natalie Aubet, Kurt Konhauser, Larry Heaman, and Richard Stern and Murray Gingras. The research was published June 28, in the journal *Science*.

More information: "Bilaterian Burrows and Grazing Behavior at >585 Million Years Ago," by E. Pecoits et al., *Science*, 2012.

Provided by University of Alberta

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