

# One-of-a-kind meteorite unveiled

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The depths of space are much closer to home following the University of Alberta's acquisition of a meteorite that is the only one of its kind known to exist on Earth! What makes it so rare? The meteorite is 'pristine' – that is, still frozen and uncontaminated – and so provides an invaluable preserved record of material from when the solar system formed 4.57 billion years ago.

The Tagish Lake Meteorite is carbonaceous chondrite and, as such, represents primitive material from which the solar system formed. The meteorite is rich in pre-solar grains – grains from other stars that were present near our solar system when it formed. The meteorite contains primitive molecules that are the building blocks of the components necessary for life. The pristine state of the meteorite makes it especially important for scientific research purposes; it presents an unprecedented opportunity to look for extraterrestrial ices.

The University of Alberta, through the Department of Museums and Collections Services and the Department of Earth and Atmospheric Sciences, led a consortium of partners that, together, acquired the pristine samples for mutual research and heritage interests. These partners include the Department of Canadian Heritage, the Royal Ontario Museum, Natural Resources Canada, and the Canadian Space Agency.

Dr. Christopher Herd, the Curator of the University of Alberta Meteorite Collection, will lead future research on the University's approximately 650 grams of this unique extraterrestrial rock.

"What's fascinating about the Tagish Lake Meteorite is that it enables us to probe the farthest reaches of our solar system by studying material that has come to us,' noted Dr. Herd, a professor of Earth and Atmospheric Sciences at the University of Alberta. The study of the meteorite has the potential for revolutionizing our understanding of the formation of the solar system. The meteorite fell on the frozen surface of Tagish Lake, northern BC, in Canada on January 18, 2000.

Source: University of Alberta

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