^{14}C TERRESTRIAL AGES OF METEORITES FROM THE ATACAMA DESERT (CHILE).

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Introduction: The terrestrial age is an important parameter in understanding the current degree of weathering [1,2] and compositional changes in a desert meteorite [3]. Substantial numbers of meteorites are found in arid environments and can survive for at least 50,000 yr [4,5,6]. A few meteorites of much older age have been reported from Arabia and there are some meteorites over 250,000 yr old from these locations [5,7].

Atacama Desert: The Atacama is a semiarid to hyperarid desert [8] located in northern Chile between the Andes and the Pacific Ocean. It is one of the oldest desert of the world [9], and has the lowest rainfall records, some as little as 1mm/yr.

Meteorites studied: We studied 34 ordinary chondrites and 1 carbonaceous chondrite from various locations within the Atacama Desert: 17 meteorites were found in the Coastal Range within and near the Pampa de Mejillones [8] and 18 come from diverse locations of the central part of the desert.

Trends in terrestrial ages: At our laboratory, we make measurements of ^{14}C and ^{14}C/^{10}Be. In this study, we have applied ^{14}C measurements to the terrestrial-age distribution of the meteorites. The terrestrial ages measured span a range from recent falls to >35kyr. The age distribution for the Atacama Desert appears to define a modified simple exponential decay process, as has been discussed earlier [5,6]. We will compare the age distributions with those of other sites such as Arabia, Western Australia and North American deserts. Furthermore, we will study the proportions of L and H chondrites according their terrestrial ages as it was shown that, in hot deserts, meteorites with higher iron content weather faster [1].

We will also discuss improvements to our methodology at Arizona and the application of terrestrial-age measurements to meteorites from desert environments and their significance for understanding of climatic effects.

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