THE 100th ANNIVERSARY OF THE FALL OF NAKHLA: THE SUBDIVISION OF BM1913,25

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This year marks the 100th anniversary of the fall of Nakhla, a cumulate clinopyroxenite of martian origin that fell near Alexandria, Egypt in 1911. Multiple fragments of the meteorite were seen to fall over an area of 4.5 km in diameter. Approximately 40 stones were recovered with a combined weight of about 10 kg [1]. Most of the larger specimens found their way to museums and meteorite collections in Cairo, Paris, Berlin, and the Smithsonian, to name a few.

In 1998, the British Museum sent a 641g (BM1913,25), fully fusion crusted stone of Nakhla to the Johnson Space Center (JSC) for processing in the Antarctic Meteorite Lab in order to allocate samples to the scientific community. The stone was split in half in a dry nitrogen glove box. One half of the stone was sent back to the museum and the other half (346g) was used for sample allocations. From 1998-2001, 37 scientists requested 65 separate samples of Nakhla, including 2 thin sections

This set of allocations was especially important in that all of the sample splits are from the same piece of Nakhla and it had a known history since it was acquired by the museum in 1913. With the multiple fragments of Nakhla, it is not known from what pieces the main bulk of research has been done, what variation may exist between all the pieces and to what contaminants the fragments may have been exposed, (i.e. water, solvents or cutting fluids, etc.). All of the allocations prepared at JSC were processed in a nitrogen cabinet using only stainless steel, aluminum, and Teflon tools and containers to reduce the chance of introducing any new contaminants.

The focused effort to subdivide and distribute samples of Nakhla to the meteorite community resulted in enhanced understanding of Nakhla and nakhlites in general: organic geochemistry [2,3], weathering [4], sulfur isotopes [5], radiometric age [6], and magmatic history [7,8].

There are 13 Nakhlites that have been recovered to date: Nakhla, Layfayette, Governador Valdares, three from NW Africa, three from Yamato and four from Miller Range regions in Antarctica. The Yamato Nakhlites are paired [9] as are the Miller Range samples [10].

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