

# **SCHOONER: THE LAST LARGE-YIELD U. S. NUCLEAR CRATERING EVENT**

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## **ABSTRACT**

Schooner, a 31 kt nuclear event was detonated 8 December 1968 at Nevada Test Site. culminating a series of U.S. nuclear cratering experiments dating back to the 1945 Trinity (Henny; MABS-18) and 1951 Jangle events (Henny, Rinehart and Duray; MABS-19). The device was buried 108 m in a horizontally layered tuff sequence, slightly below a 65-m nearly saturated weakly welded tuff layer which was sandwiched between two dry densely welded tuff layers. The apparent crater dimensions were: radius = 130 m, depth = 63 m and volume =  $1.7 \times 10^6 \text{ m}^3$ . Ejecta size distribution was strongly bimodal ranging from car-size joint-faced welded tuff blocks to beds of sand-size weakly welded tuff. Ejecta was distributed as a layered blanket extending outward in eleven near-equally spaced rays to 500 m with individual ejecta blocks out to at least 2000 m, all controlled by the joint structure of the welded tuff. The in situ multicolored tuff sequence allowed for clear identification of the source of each layer of ejecta providing conclusive proof (far superior to previous nuclear cratering events) of the overturned stratigraphic nature of the deposits. As a result Schooner was chosen as a primary training exercise in crater field-mapping for the Apollo Astronaut crews with success demonstrated by voice transcripts from the Lunar surface referencing the Schooner crater and ejecta.