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SIR,

Hail-debris flow in north-central Nevada, U.S.A.

I should like to bring to the attention of other glaciologists some observations of an unusual phenomenon. On 17 July 1974, a group of geologists from Stanford University observed the remnants of a hail-debris flow in arid, north-central Nevada. The observation took place at the intersection of Highway 82 and the stream bed of Faulkner Creek in Antelope Valley, east of Antelope Peak in the Monitor Range. The flow was partially melted, and it most likely was the product of a regional thunderstorm that had occurred the day before.

The flow consisted of a 15 cm thick, 10–20 m wide, mass of cubic closest packed, rounded to subrounded hail. The grains consisted of both clear and white, bubbly ice ranging from 2.5 to 10.0 mm in diameter. The surface and edges of the flow were covered with fine-grained sediment and pieces of brush. This covering seemed to have served as insulation, preserving the flow in daytime temperatures of up to 32–35° C.

The observation took place at an altitude of 1 936 m above sea-level. The flow traveled about 8 km, originating from the canyon east of Antelope Peak at an altitude of approximately 2 317 m above sea-level. Therefore, the flow traveled down a slope of 0.047 6.

Both water and air were considered as possible materials lubricating the flow. However, field evidence revealed only water-marked chutes and ripple laminations under, and around, the flow, indicating an alluvial origin.

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