This study reports the first radiometric dating applied to kite stone structure in Jordan using rock surface luminescence dating to three rock samples collected from the Jibal al-Gadiwiyt kite structure in the south east of Jordan. The sampling location, part of the kite enclosure, is in the form of a 125-cm-deep hole lined with long slabs at the base and with stacked cobbles above. The pit had been back-filled by natural sediment deposition after abandonment. Three rock samples were collected from the site, and three sediment samples were taken in close association with two of the rocks. Using quartz fast-component-dominated OSL signals, it proved possible to define a rock burial age of ~10 ka by examining the profile of luminescence with depth into the rock surfaces. Various light exposure events (including the most recent following archeological excavation) could also be identified. The direct radiometric dating of this kite argues for a construction ~10 ka ago, with no evidence for use beyond ~1 ka after building.

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