



## Does maskelynite imply anything about impact craters?

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Becker et al. (2004a) interpreted the Bedout structure offshore near northwest Australia to be an impact crater, partly on the basis that maskelynite (a glass with the composition of the crystalline mineral plagioclase) was present. The paper received multiple comments and questions in the October 22 issue of *Science* (Wignall et al. 2004; Renne et al. 2004; Glickson 2004). The fact that, in defending their hypothesis, Becker et al. (2004b) placed strong emphasis on the observed presence of maskelynite implied that impact is the sole way of producing this glass.

I take no position on whether Bedout is an impact crater, but I do have 40-year-old evidence that shock is not required for production of maskelynite. It caught our attention because it is notably present in the Shergotty meteorite. To investigate this glass, P. B. Price, R. M. Walker, and I had a melt prepared of a glass of Shergotty composition for studies of nuclear track registration at the General Electric Research Laboratory some years ago.

The sample has a specific gravity of 2.74, a plagioclase composition, a mass of 950 grams, and is glassy throughout. Major cooling of so large a piece of glass would require 15 to 60 minutes. The existence of this glass is thus clear evidence that flash melting and quenching is not needed to produce maskelynite. So one piece of Becker et al.'s supporting evidence is not decisive. Therefore, the answer to the title question is "no."

As clarification, it may be that the presence of maskelynite with a particular combination of other phases, with deformation indicators, in a particular morphology may result from impact events; but the mere presence of maskelynite is not decisive.

### REFERENCES

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