

DISCUSSION

K. C. Russell¹ (written discussion)—The authors are to be complimented on resolving a dilemma that has plagued workers in void nucleation for 15 years. Use of the measured surface energy gives embryonic voids, which are unstable against collapse into faulted loops or stacking fault tetrahedra, and even if somehow prevented from collapsing the voids would nucleate at rates many orders of magnitude lower than observed. To accept the high measured surface energies meant rejecting void nucleation theory, and accepting the theory meant rejecting the measured surface energy. Workers in the field accepted theory over experimental results, and now, as so often happens, their choice has been proven correct.

Larry E. Seitzman (author's closure)—Professor Russell's comment highlights a primary motivation for this study. As Professor Russell mentions, it was necessary to invoke surface energies significantly lower than experimentally established values in order for void nucleation theories to be useful models. The goal of this paper was to demonstrate that oxygen acted in the role of a surface modifying agent rather than as a normal gaseous nucleating agent. Future experimental work is intended to strengthen this argument.

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