**Supplementary Material**

E. Yildirim et al. ***In-situ TEM characterization of cavity evolution in tungsten at 800 °C under dual W2+/He+ irradiation***

A graph of a red and blue line

Description automatically generated

* + - 1. 10keV He ion distribution

A graph of a red and blue line

Description automatically generated

* + - 1. 600keV W ion distribution

**Fig. S1.** Normalised SRIM calculations of damage (blue) and ion distribution (red) for the different ion species. These were normalised with respect to the maximum value outputted from the SRIM calculations described in the main paper.

A screenshot of a computer screen

Description automatically generated

**Fig. S2.** Steps involved in micrograph processing throughout this study. This approach was used on both in-situ and post-mortem microstructure analysis, with the filter kept consistent across all micrographs. An initial bandpass filter was used to improve contrast, a background value was then taken by finding the smallest gray value of an area not containing cavities and using this as a threshold, the particle analysis function was then used on the thresholded image.