SUPPLEMENTARY INFORMATION: Ben-Israel et al., ESurf -2019-54; 2019

Figure S1 – Three isotope diagrams for low-temp stages, 450°C (marked by squares) and 750°C (marked by circles) of Miocene chert samples. All data points fall within uncertainty of the spallation line (in grey).

Figure S2 – Three isotope diagrams for low-temp stages (≤950°C) of Miocene sand samples. All data points fall within uncertainty of the spallation line (in grey).

Figure S3 – Three isotope diagrams for 450°C stage of Jordanian chert samples. All data points fall within uncertainty of the spallation line (in grey).

Figure S4 – Three isotope diagrams for high-temp (950°C) stage of Miocene chert samples. Samples are enriched in 21Ne but do not fall on the spallation line.

Figure S5 – Three isotope diagrams for high-temp stage (1250°C) of Miocene sand samples. All data points fall within uncertainty of the spallation line (in grey) but show high uncertainty.

Figure S6 – Three isotope diagrams for high-temp stages, 750°C (marked by squares) and 950°C (marked by circles) of Jordanian chert samples. All data points fall within uncertainty of the spallation line (in grey) but show high uncertainty.

Figure S7 – Calculated 21Neex vs. measured 22Ne of all samples with uncertainties. There is no correlation between total 22Ne measured and cosmogenic 21Ne, as would be expected if Ne diffused from the SiO2 lattice.