

**Table S3:** Pearson's linear correlation values between annual chemical fluxes, MPC flux and diatom abundance for each site and across all sites. Only statistically significant values ( $p < 0.05$ ) are included in this table. Correlation values are colour-coded. Red values indicate positive correlations. Blue values indicate negative correlations. Yellow cells highlight the persistent significant correlation between the diatom abundance and the  $\text{ssNa}^+$  flux record for each site. Gray cell highlights the correlation between the diatom abundance at JUR and SKBL. (\*) MPC flux record from JUR covers the interval 1992-2011 CE. Degrees of freedom (df) for each correlation can be obtained using the following expression dependent on the sample size (n);  $\text{df} = n - 2$ .

[illegible]

