Table S1: Pearson's linear correlation values between annual chemical species, MPC 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 $ssNa^+$ record for each site. Gray cell highlights the correlation between the diatom abundance at JUR and SKBL. (*) MPC record from JUR covers the interval 1992-2011 CE.

		SHIC						JUR						SKBL					
		diat-A	MPC	nssCa²⁺	nssK⁺	ssNa⁺	MSA	diat-A	MPC*	nssCa²⁺	nssK⁺	ssNa⁺	MSA	Diat-A	MPC	nssCa²⁺	nssK⁺	ssNa⁺	MSA
SHIC	diat-A	x	-0.491			0.784							0.626				-0.625		
	MPC		x				-0.552	-0.609		-0.689									
	nssCa²⁺			x	0.540														
	nssK⁺				x				0.575										
	ssNa⁺					x	0.532												
	MSA						x												
JUR	diat-A							x		0.637		-0.462		0.841				0.612	
	MPC*								x				0.645			-0.581			-0.572
	nssCa²⁺									x	0.876			0.643					
	nssK⁺										x								
	ssNa⁺											x							
	MSA												x						
SKBL	diat-A													x				0.519	
	MPC														x		0.583	-0.582	
	nssCa²⁺															x			
	nssK⁺																x	-0.447	
	ssNa⁺																	x	
	MSA																		x