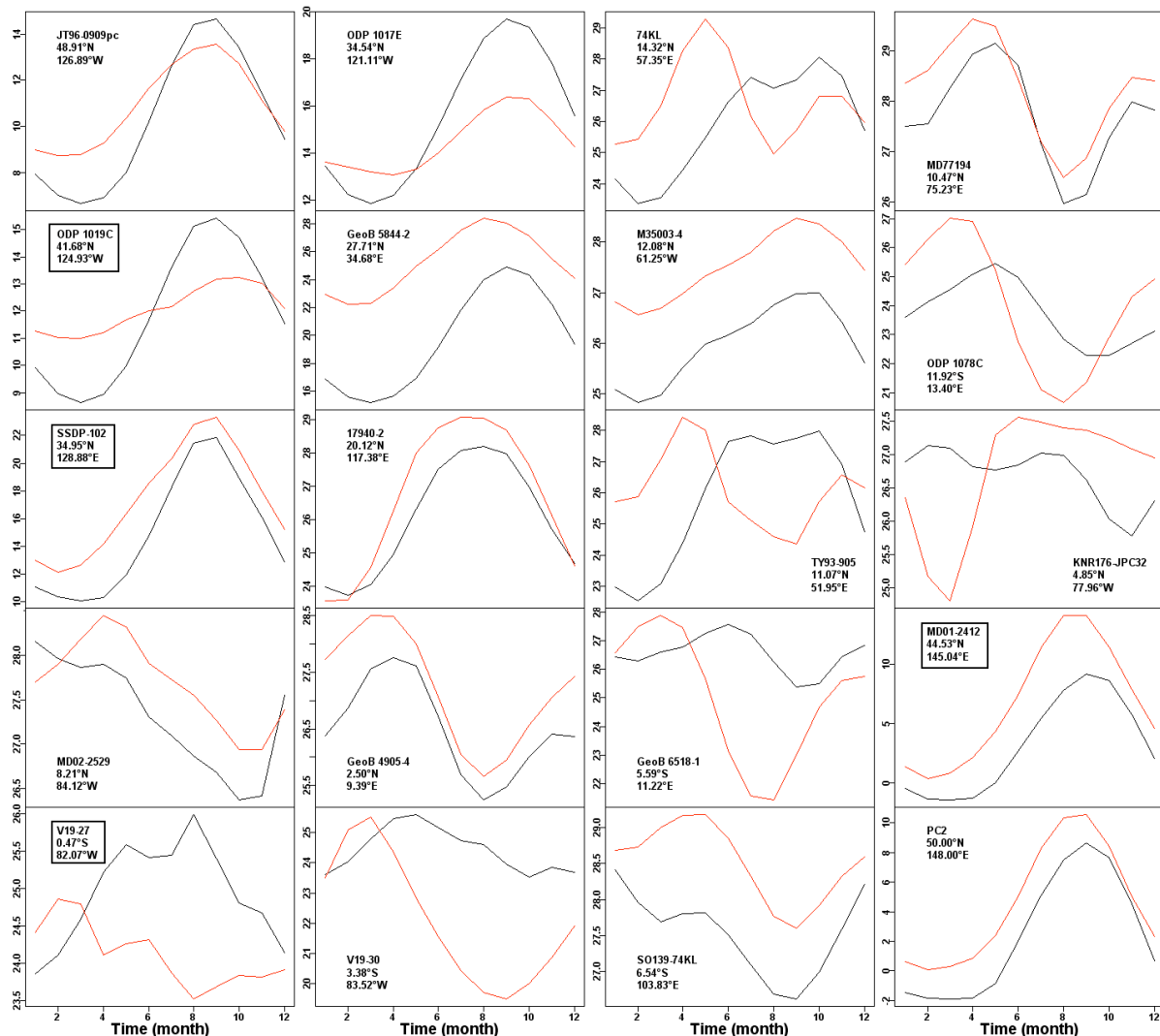
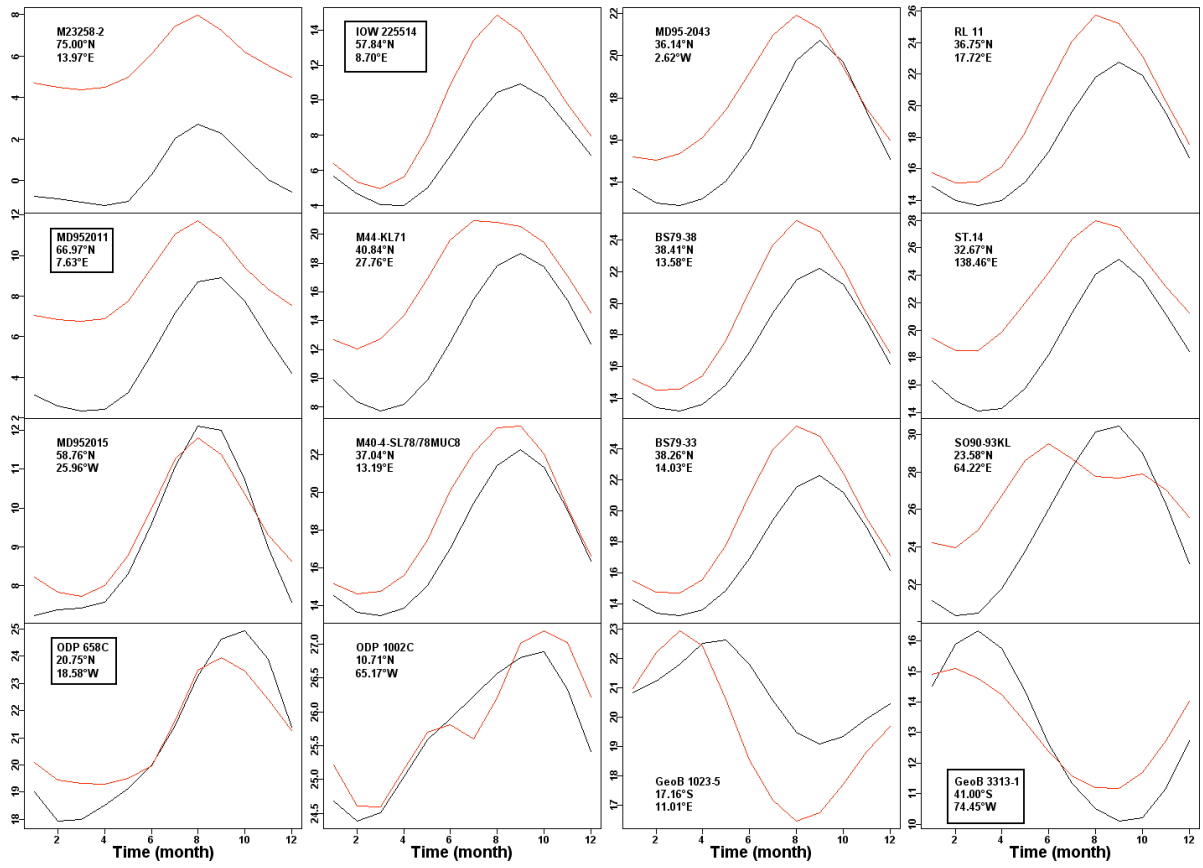


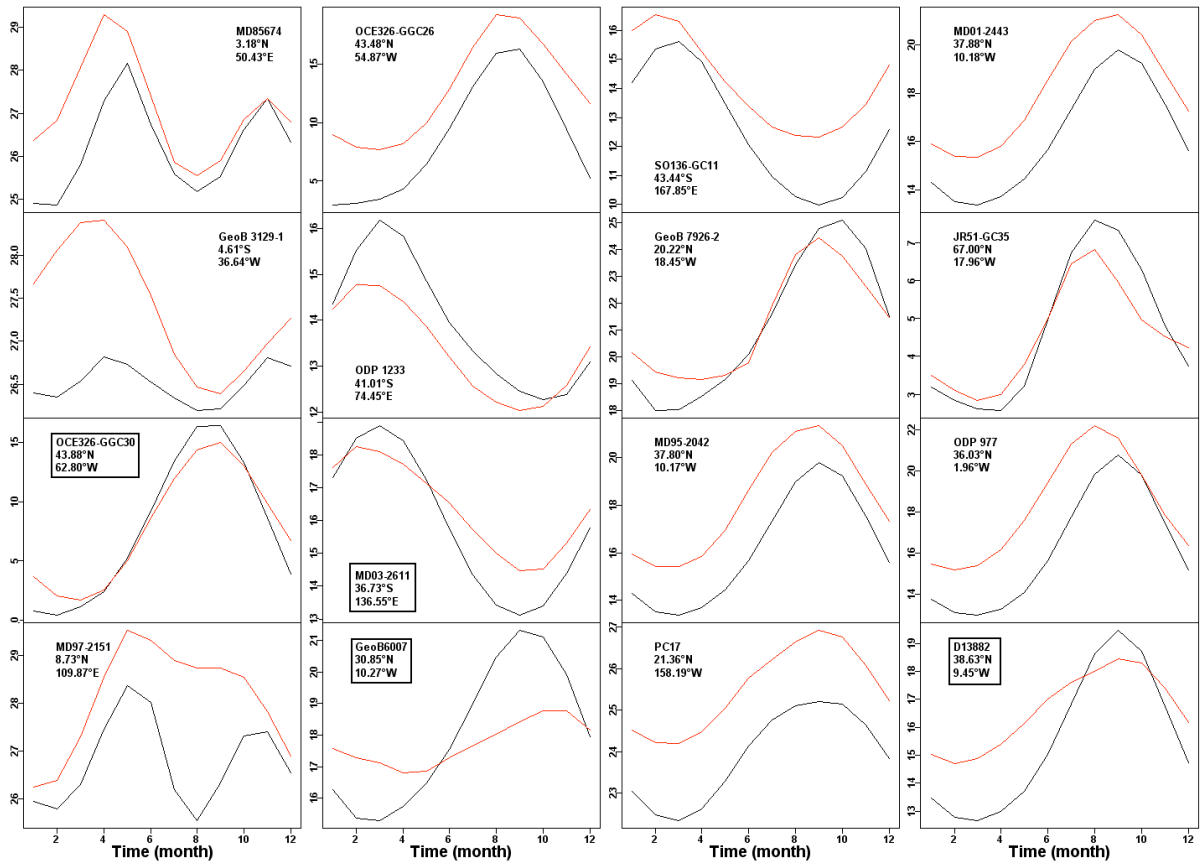
**Supplementary Information to: “A model-data comparison of the Holocene global sea surface temperature evolution” (Clim. Past)**  
 by G. Lohmann, M. Pfeiffer, T. Laepple, G. Leduc, and J.-H. Kim.



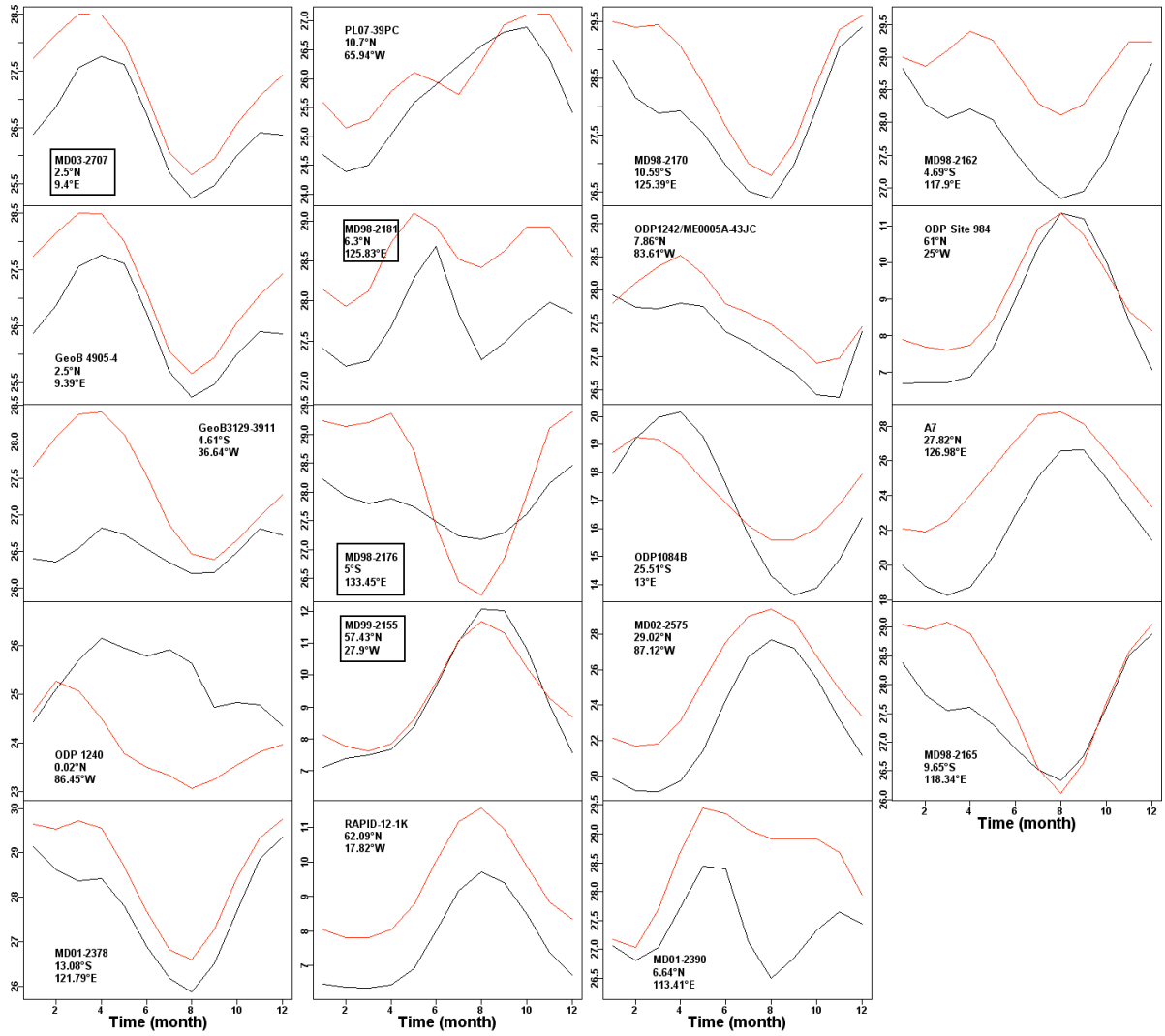
**Figure S1.** Seasonal cycle at the Alkenones core locations (cf. Fig. 1). The black lines represent the modeled seasonal cycle with ECHO-G, while the red represent the observational SST seasonal cycle based on the ocean reanalysis data SODA (Carton and Giese, 2008; Carton et al., 2005). For the data, we calculated the mean seasonal cycle covering the period 1958-2001. In the model, we used the last 50 years off the latest Holocene to calculate the mean seasonal cycle. The inserts provide information about the core location. Boxed inserts indicate cores which fail the residual test as described in section 3.2.



**Figure S2.** As Fig. S1, but related to the core locations from Fig. 2.



**Figure S3.** As Fig. S1, but related to the core locations from Fig. 3.



**Figure S4.** As Fig. S1, but related to the seasonal cycle at the Mg/Ca core locations (cf. Fig. 4).

	Alkenones		Mg/Ca	
	R	R weighted	R	R weighted
Annual mean	0.47, p<0.05	0.45, p<0.05	-0.31, p>0.05	-0.45, p>0.05
Local winter	0.03, p>0.05	0.01, p>0.05	0.06, p>0.05	0.07, p>0.05
Local summer	0.53, p<0.05	0.49, p<0.05	-0.44, p>0.05	-0.69, p<0.05

**Table S1.** List of the correlation between modeled and reconstructed trends (weighted and unweighted, cf. Table 4) if we take into account only the proxy data with random residuals. See section 3.2 for more details.