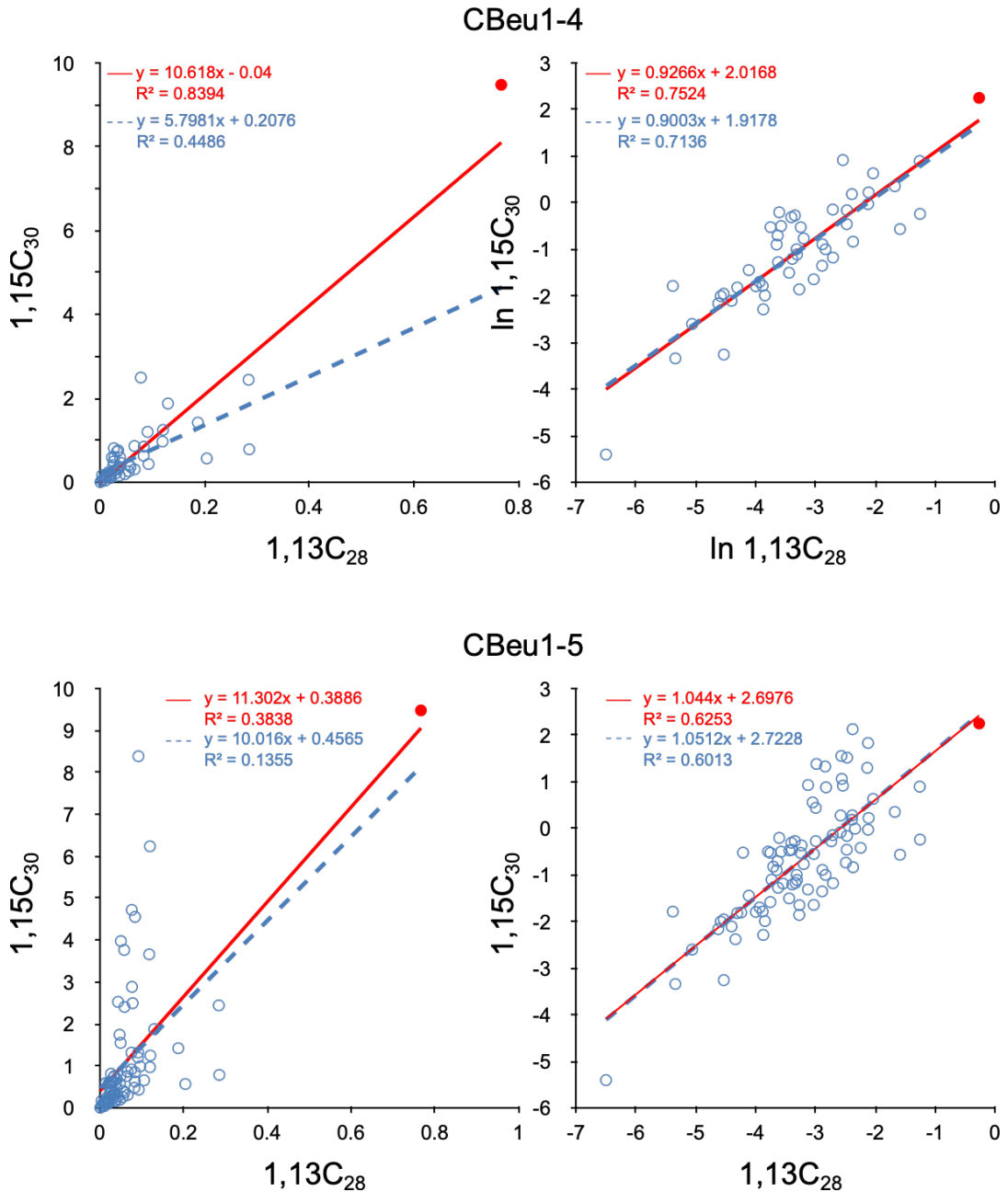
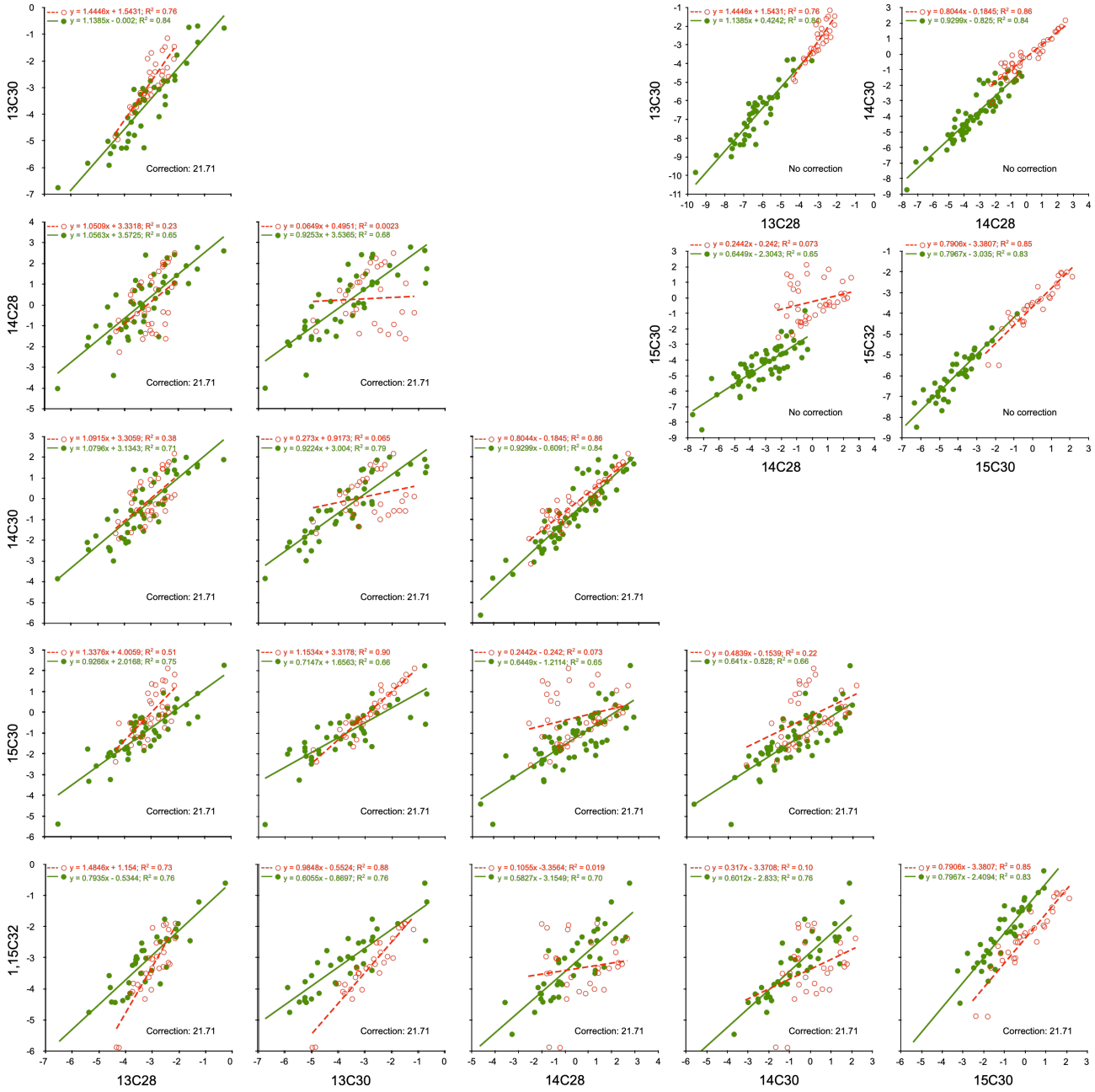
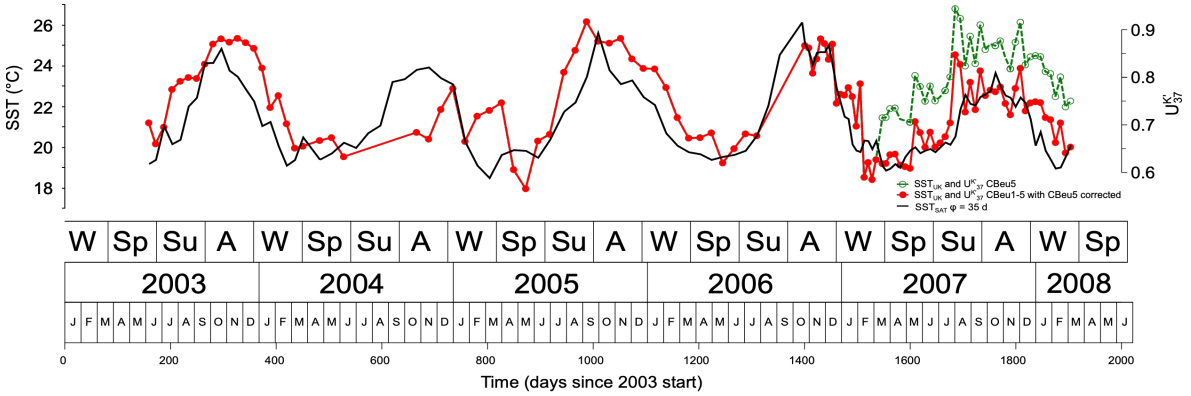
Supplemental Figures belonging to :

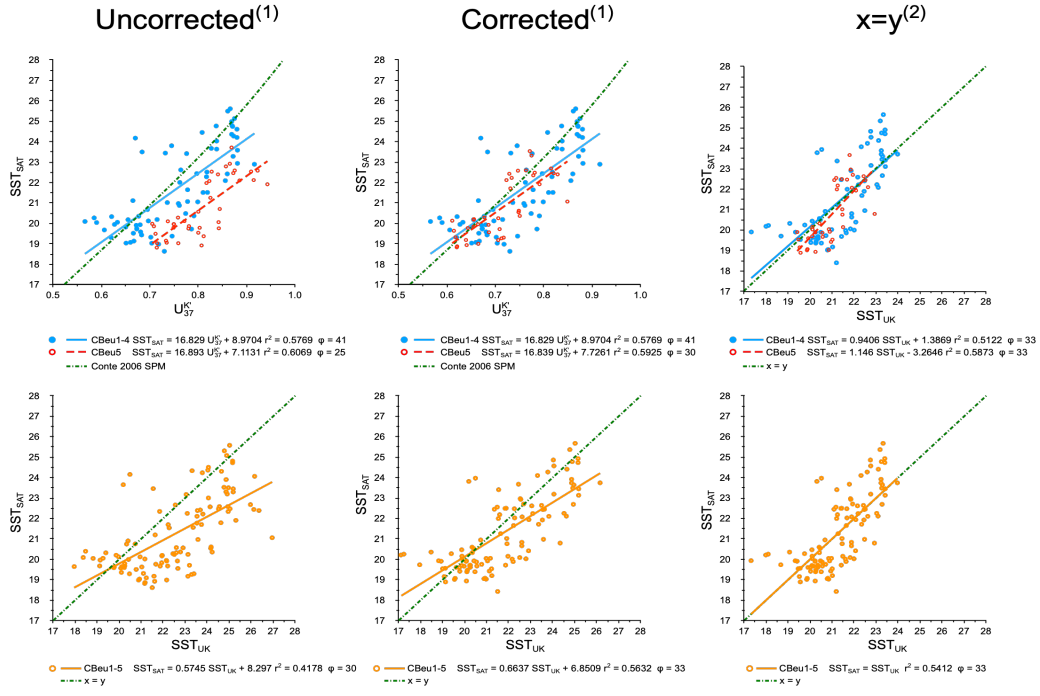


Supplemental Figure S1: Demonstration of the logarithmic nature of the diol flux data and the extraordinary effect of a single extreme on the regression line through the untransformed data in contrast to the minor effect of such an extreme on the log transformed data. Solid red line with outlier (red filled dot). Dashed blue line regression without outlier (blue open circles only).



Supplemental Figure S2: Regressions of natural logarithms of the diol flux data prior to and after correction. Solid green, for CBeu1–4, open red, for CBeu5. The four plots in the upper right corner provide examples prior to correction and demonstrate how the log normalized flux data for CBeu1–4 are systematically lower than and do hardly overlap with those of CBeu5. The remaining plots represent how the datasets agree after multiplying the fluxes of CBeu1–4 by 21.71.





(1)Using global SPM calibration (Conte et al., 2006): $SST_{SAT} = -0.957 + 54.293\ U^{K'}_{37} - 52.894\ (U^{K'}_{37})^2 + 28.321\ (U^{K'}_{37})^3$

(2)Using local calibration (This paper): $SST_{SAT} = 0.64733 + 54.293\ U^{K'}_{37} - 52.894\ (U^{K'}_{37})^2 + 23.382\ (U^{K'}_{37})^3$

Supplemental Figure S3: Upper panel, green dashed line with empty circles, initial values for CBeu5, red with filled circles final record with initial values for CBeu1–4 and after subtraction of 0.094 $U^{K'}_{37}$ units from the CBeu5 record. Black line satellite-derived SST values (SST_{SAT}) shifted by 35 days. Clearly visible is that the values of CBeu1–4 fit nicely with the SST_{SAT} and that the values for CBeu5 are shifted upwards relative to this.

Lower 6 smaller panels. Regressions for CBeu1–4 (blue solid dots), CBeu 5 (red empty dots) and CBeu1–5 (lowermost three panels, orange). Top left and top middle, regression lines of $U^{K'}_{37}$ to SST_{SAT} using the phase with the highest correlation. Green -.- line, global calibration line for suspended particulate matter (SPM) of Conte et al. (2006). Other panels, fit of reconstructed (SST_{UK}) temperatures to SST_{SAT} with green line x=y. Left panels without correction for CBeu5, middle panels, using the Conte et al., 2006 calibration, right panels, using the local cubic calibration.