

Figure S1: Mean wind direction for each $^{14}\text{CO}_2$ sample used in this analysis. Calculated as the mean across the 30 minutes prior to sampling.

Figure S2. Mean wind speed for each $^{14}\text{CO}_2$ sample used in this analysis. Calculated as the mean across the 30 minutes prior to sampling.

Figures S3-S10: Shows data used to estimate median tracer/ CO_2ff ratios with and without low CO_2ff cutoff (see Sec 2.6 for description) and wind speed (see Sec. 2.1 for description) filters. In all figures, blue data corresponds to S wind sector and red data corresponds to N/E wind sector. See Sec. 2.1 for wind sector definitions. Row 1 (a, d, g, j): wind speed and low CO_2ff cutoff filter; row 2 (b, e, h, k): low CO_2ff cutoff filter only; row 3 (c, f, i, l): wind speed filter only. Column 1 (a-c): time series of individual data points; columns 2 and 3 (d-i): histograms of data in column 1 for N/E (red, d-f) and S (blue, g-i) wind sectors; column 4 (j-l): median tracer/ CO_2ff ratios for N/E (red) and S (blue) wind sectors. The data shown in row 1 corresponds to the data used to derive emission ratios and absolute emissions estimates in the manuscript.



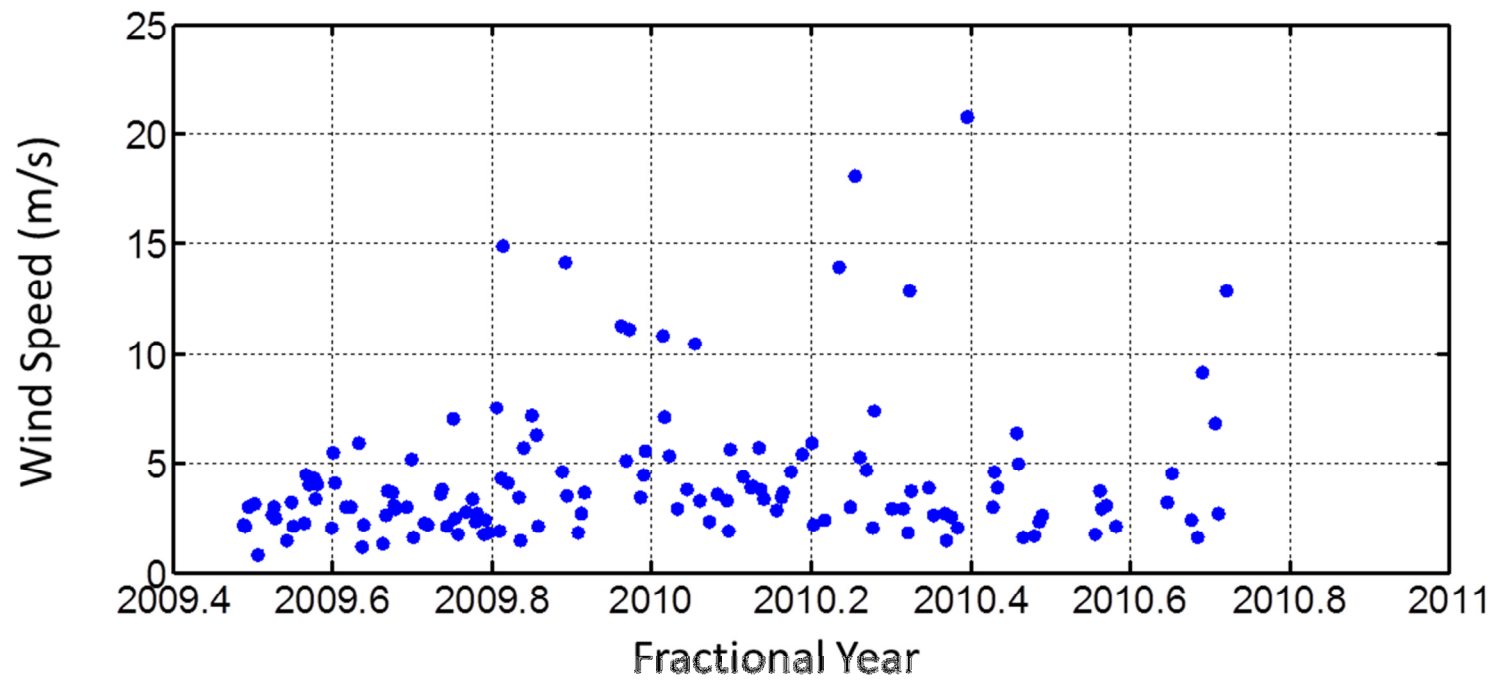


Figure S2

CO/CO₂ff (ppb/ppm)

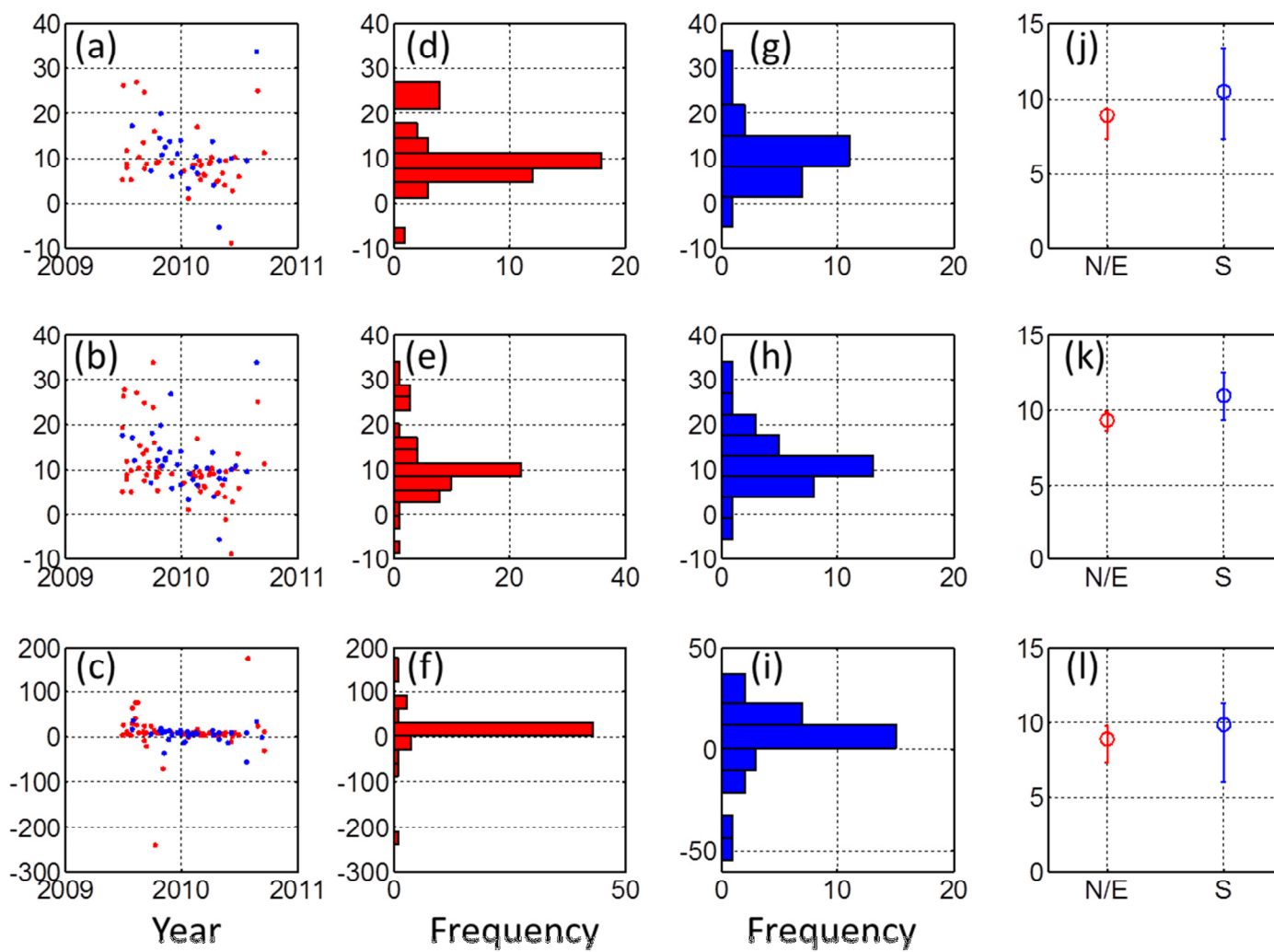


Figure S3 CO/CO₂ff ratios

$\text{CH}_4/\text{CO}_2\text{ff}$ (ppb/ppm)

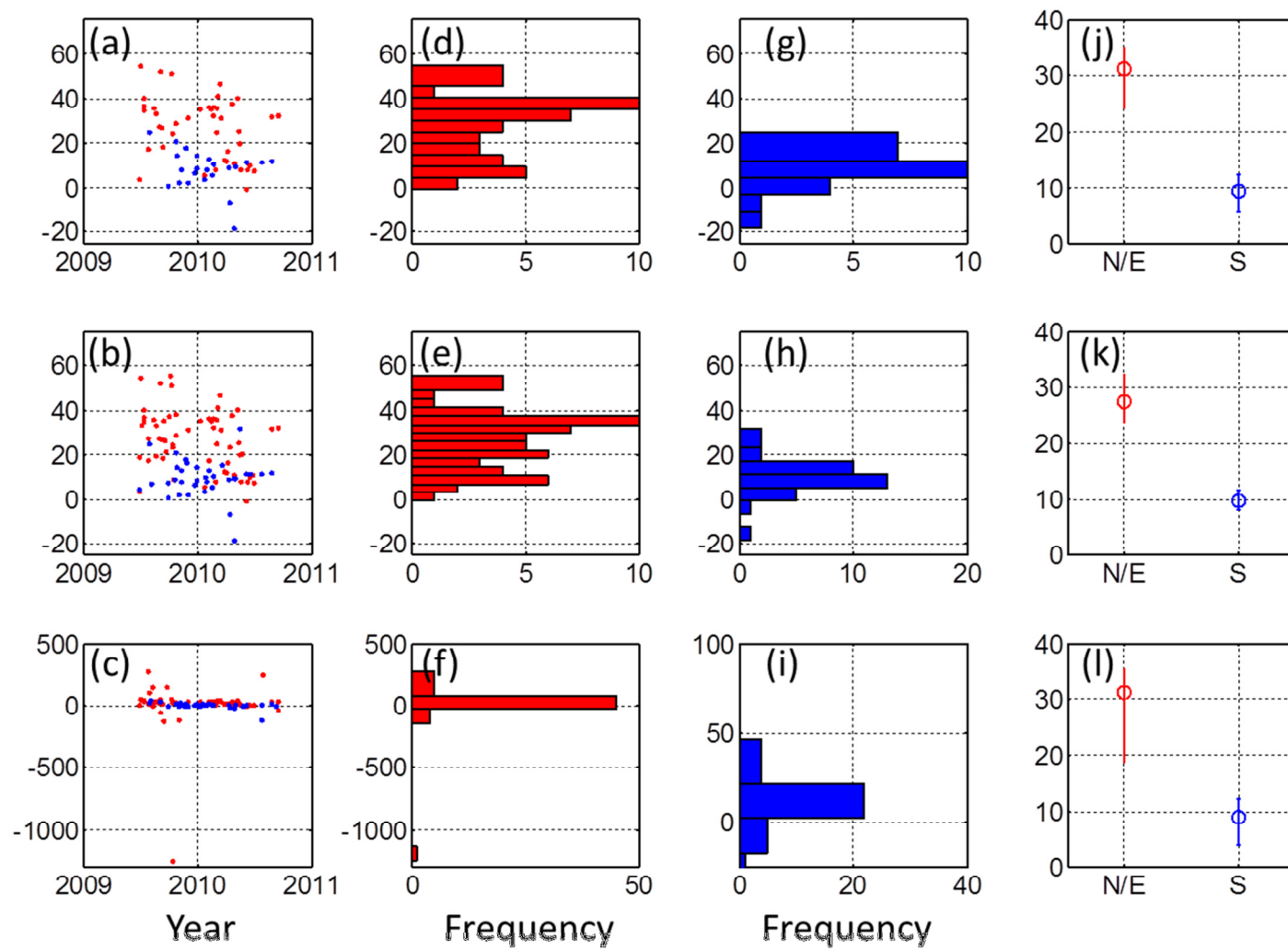


Figure S4 $\text{CH}_4/\text{CO}_2\text{ff}$ ratio

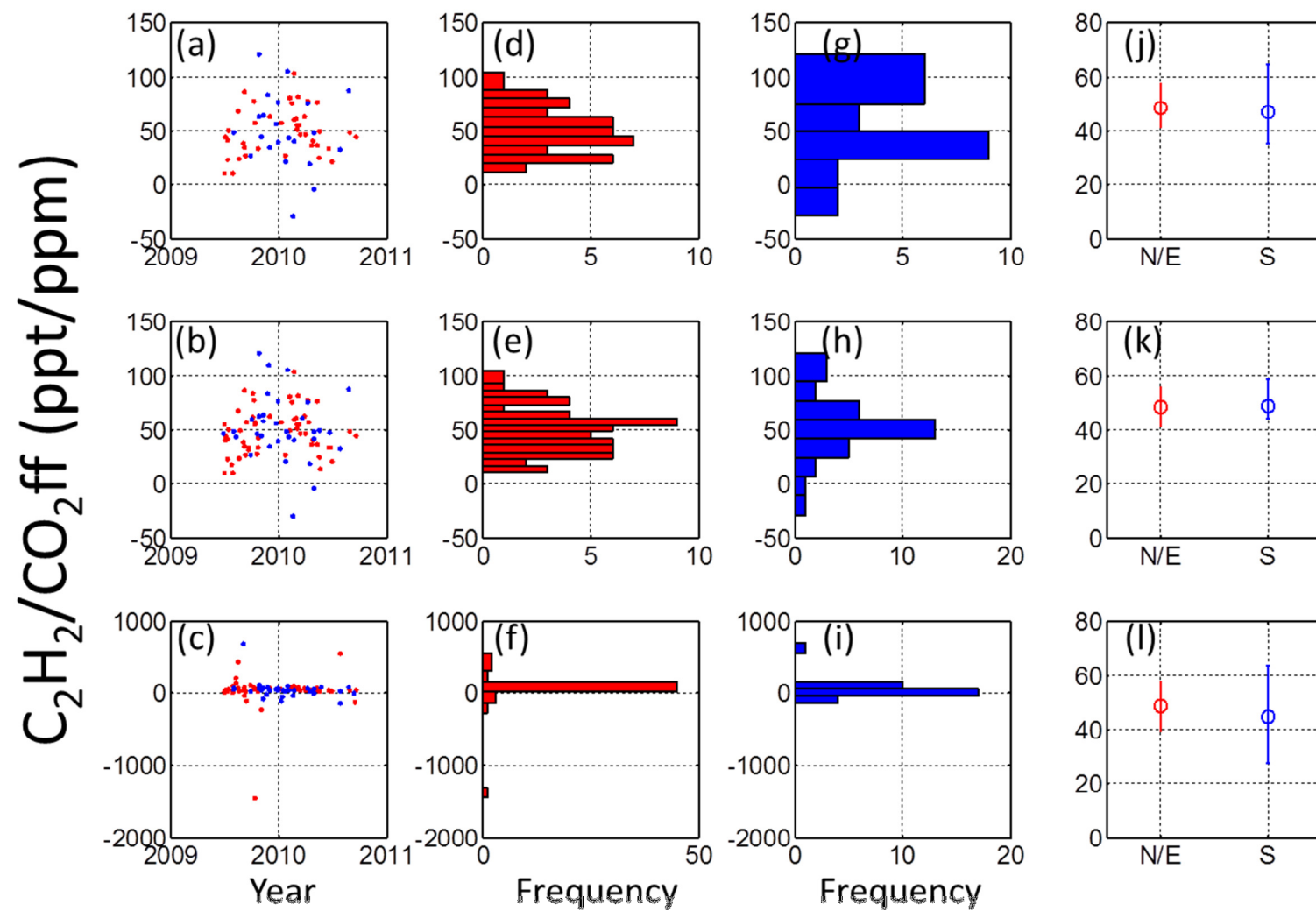


Figure S5 C_2H_2/CO_2ff ratio

C_6H_6/CO_2ff (ppt/ppm)

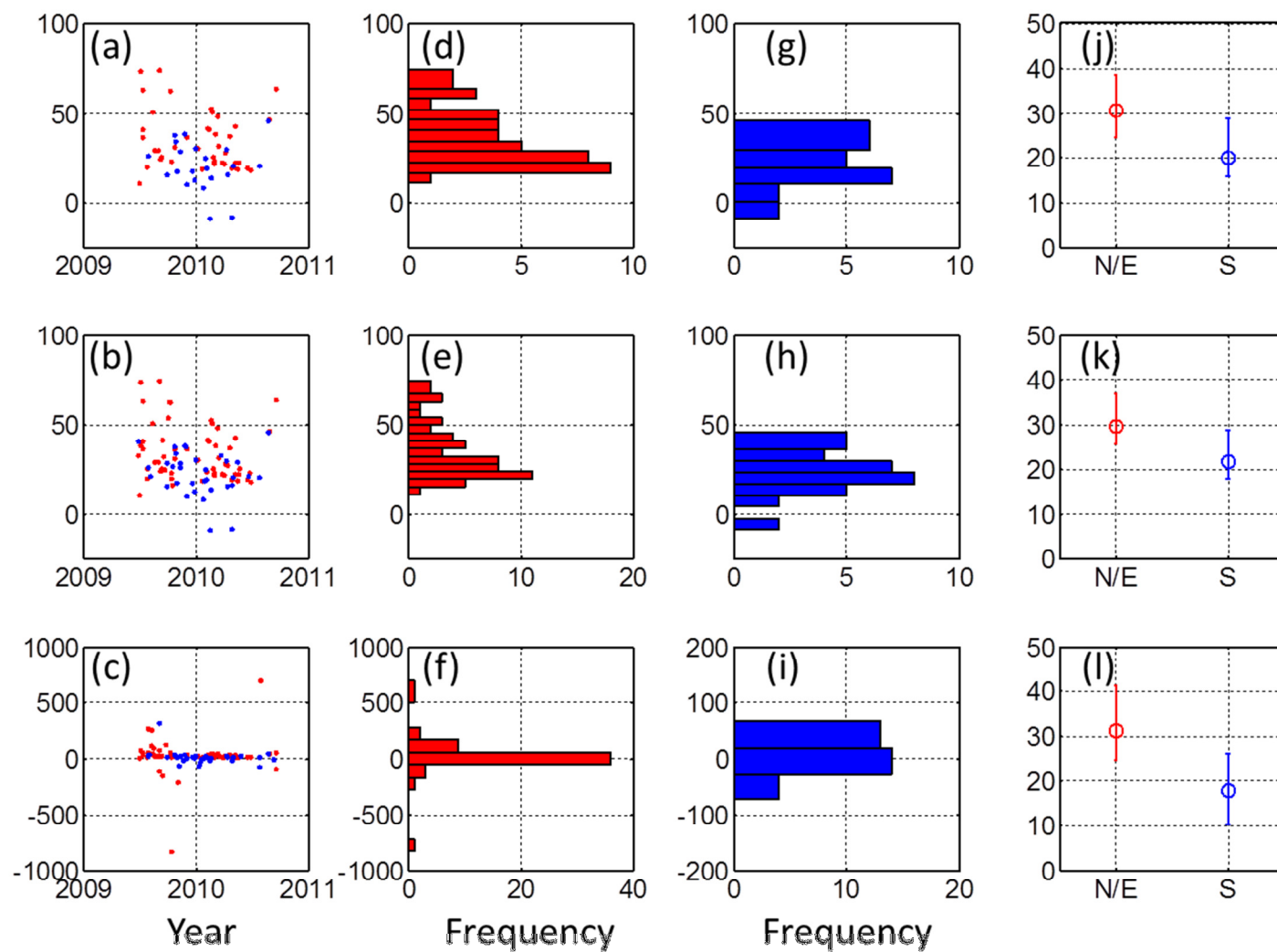


Figure S6 C_6H_6/CO_2ff ratio

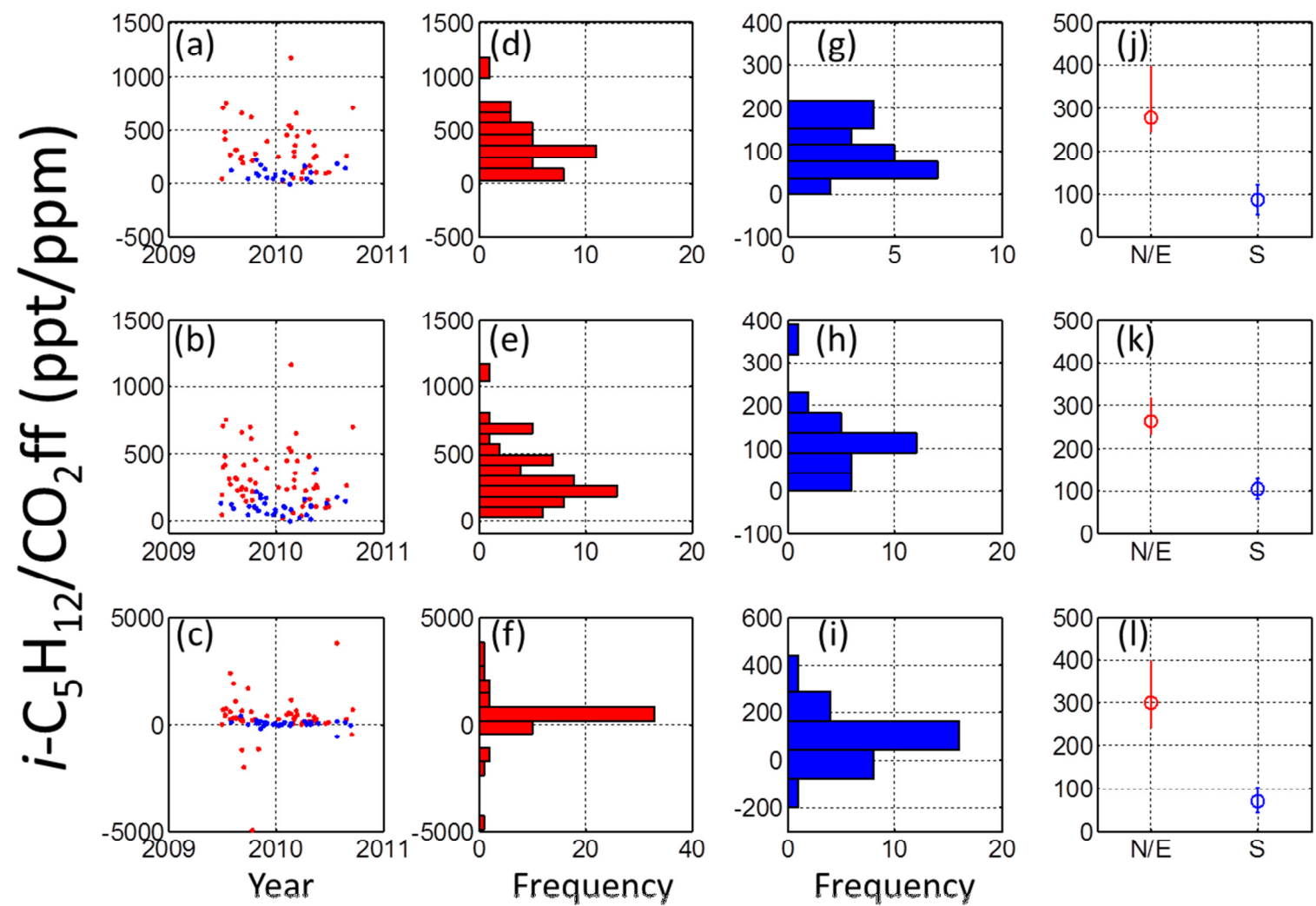


Figure S7 $i\text{-C}_5\text{H}_{12}/\text{CO}_2\text{ff}$ ratio

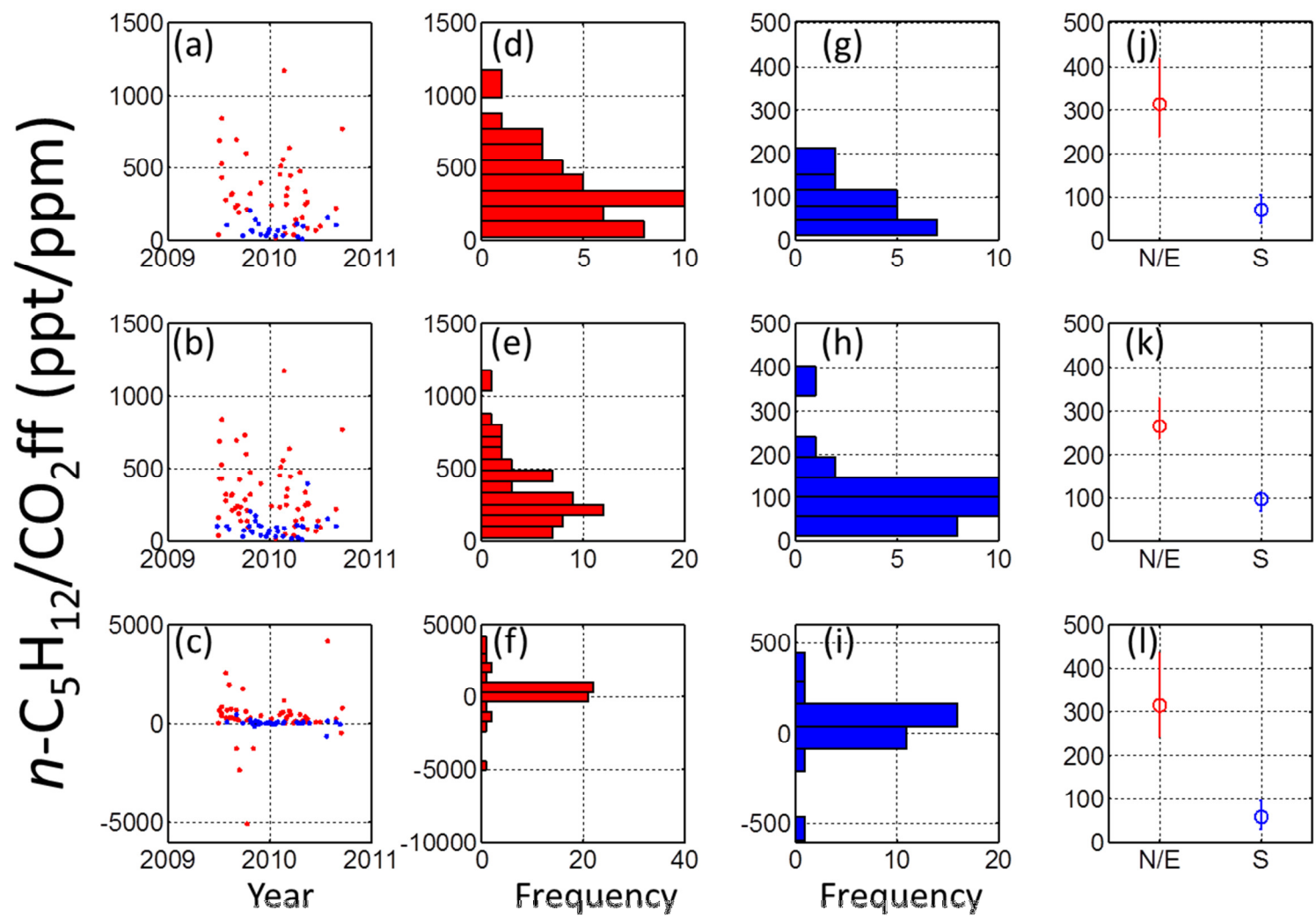


Figure S8 $n\text{-C}_5\text{H}_{12}/\text{CO}_2\text{ff}$ ratio

$n\text{-C}_4\text{H}_{10}/\text{CO}_2\text{ff}$ (ppt/ppm)

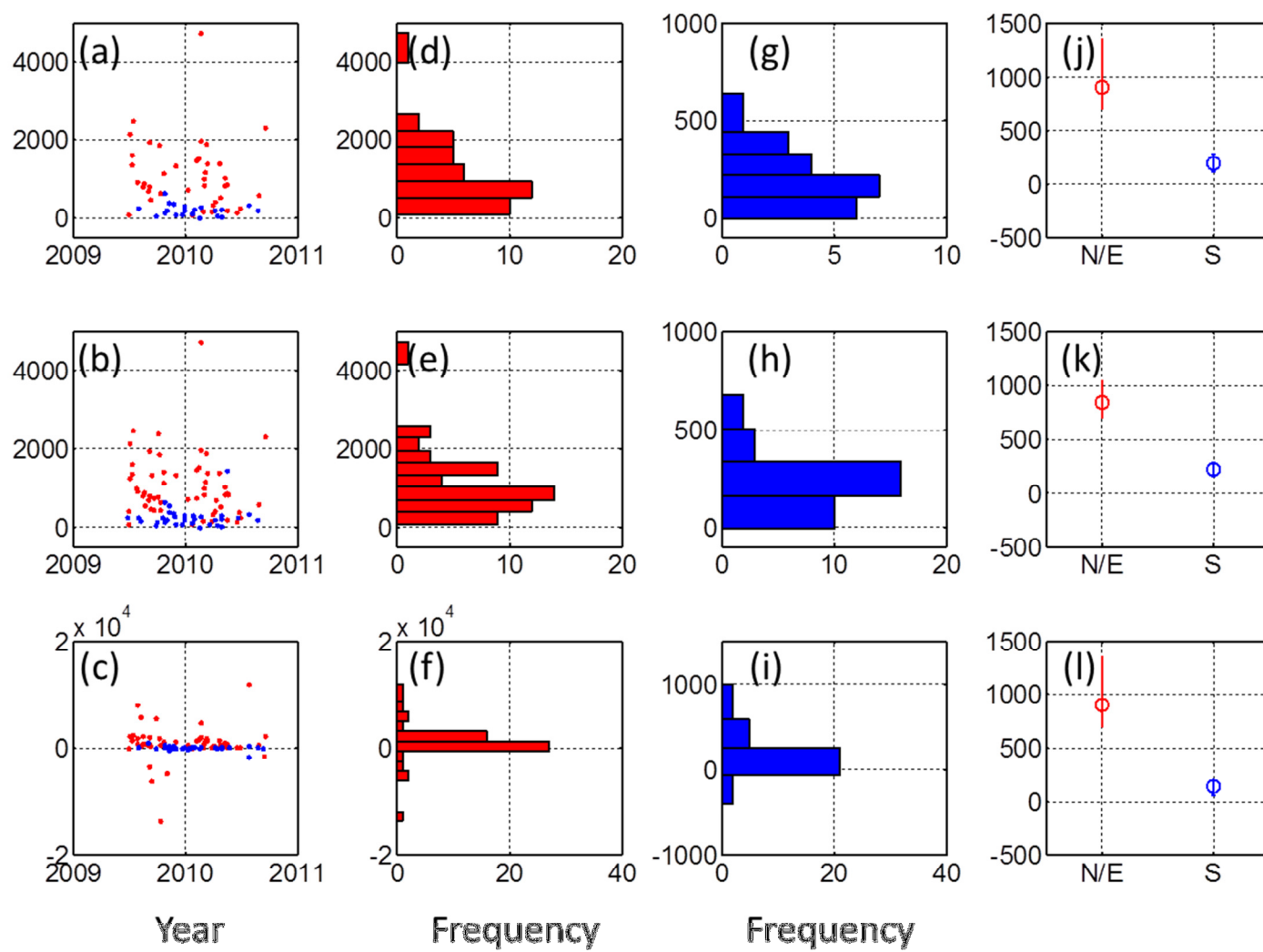


Figure S9 $n\text{-C}_4\text{H}_{10}/\text{CO}_2\text{ff}$ ratio

C_3H_8/CO_2ff (ppt/ppm)

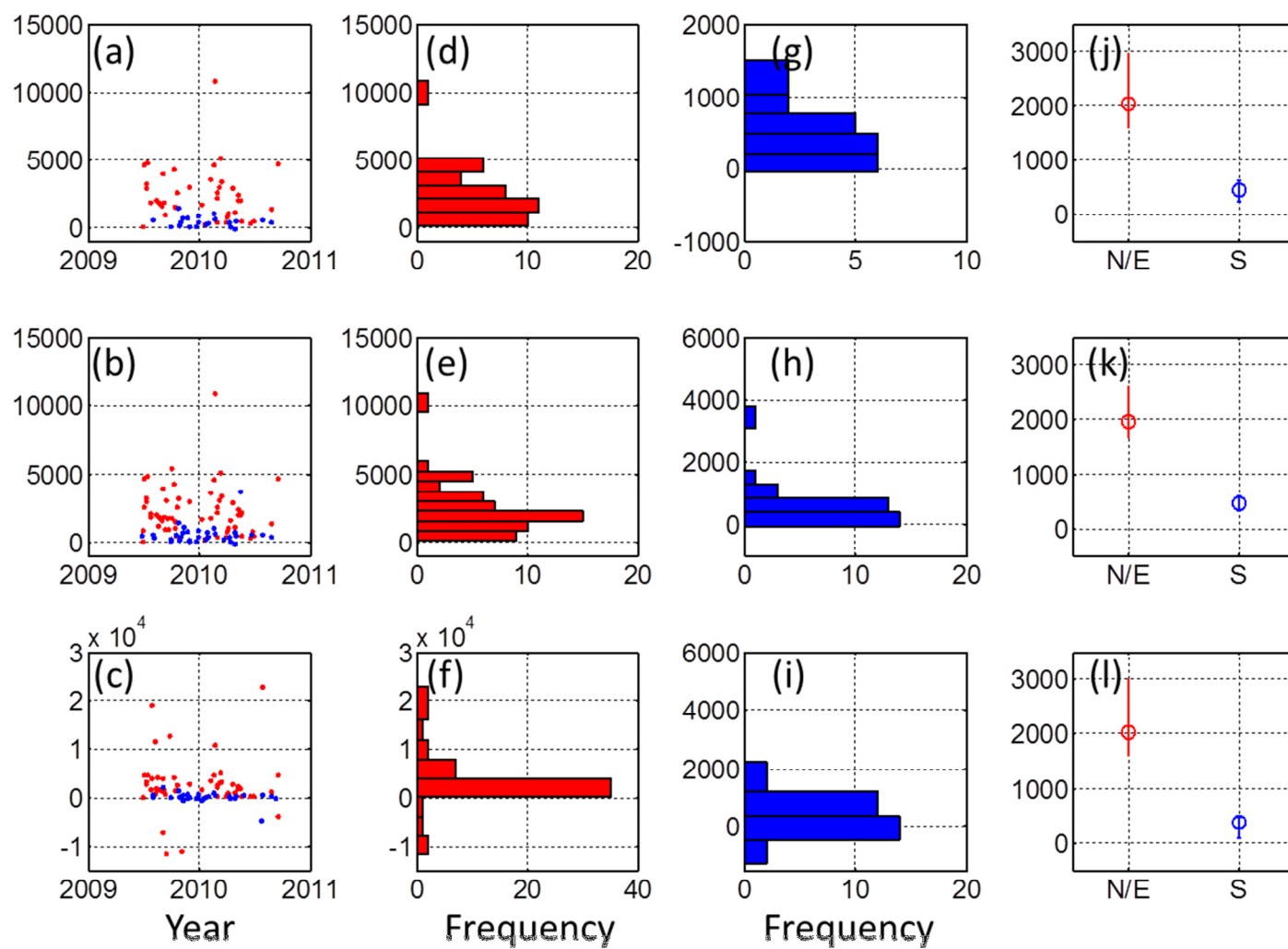


Figure S10 C_3H_8/CO_2ff ratio