Electronic Appendix 1: Four examples of calibration curves used in this study. (a) Measured $^{16}$O$^1$H$^-$/$^{30}$Si$^-$ in olivine standards as a function of their known H$_2$O content; (b) measured $^{16}$O$^1$H$^-$/$^{30}$Si$^-$ in glass standards as a function of their known H$_2$O/SiO$_2$ ratio; (c) measured $^{19}$F$^-$/$^{30}$Si$^-$ in glass standards as a function of their known F/SiO$_2$ ratio; and (d) measured $^{35}$Cl$^-$/$^{30}$Si$^-$ in glass standards as a function of their known Cl/SiO$_2$ ratio. In (b), (c) and (d) the corresponding H$_2$O, F and Cl contents, respectively, are given on top of each graph. All standard data have been corrected for blank. $R^2$: regression coefficient for a least-squared regression forced through zero; Slope: slope of the regression line; LOD: limit of detection. The lowest part of each curve is magnified in insets.