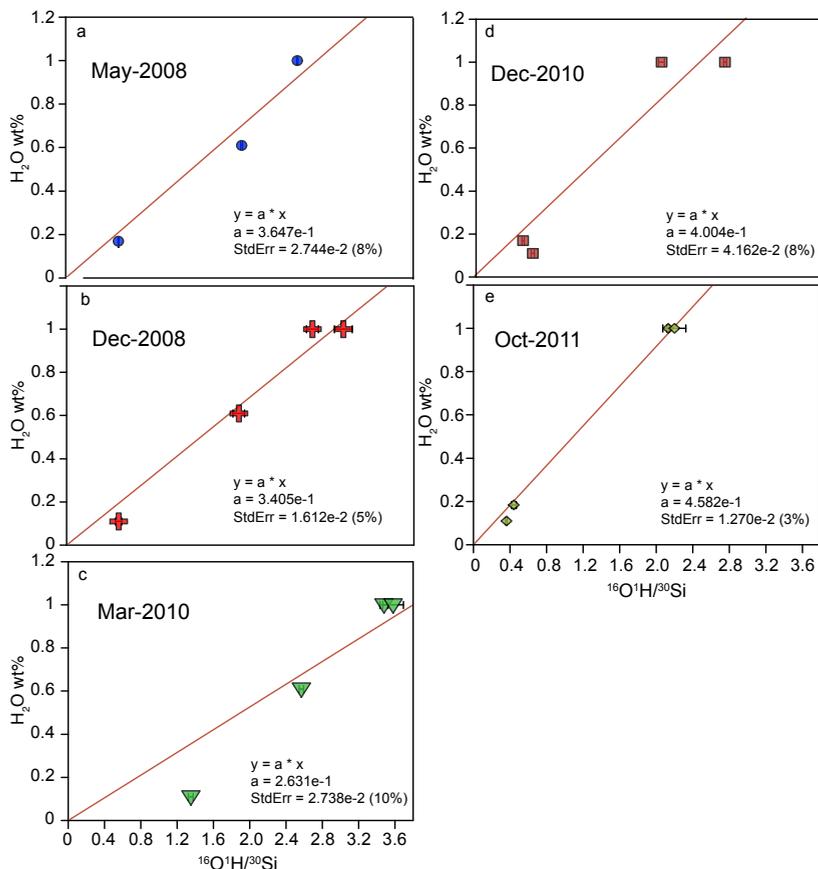
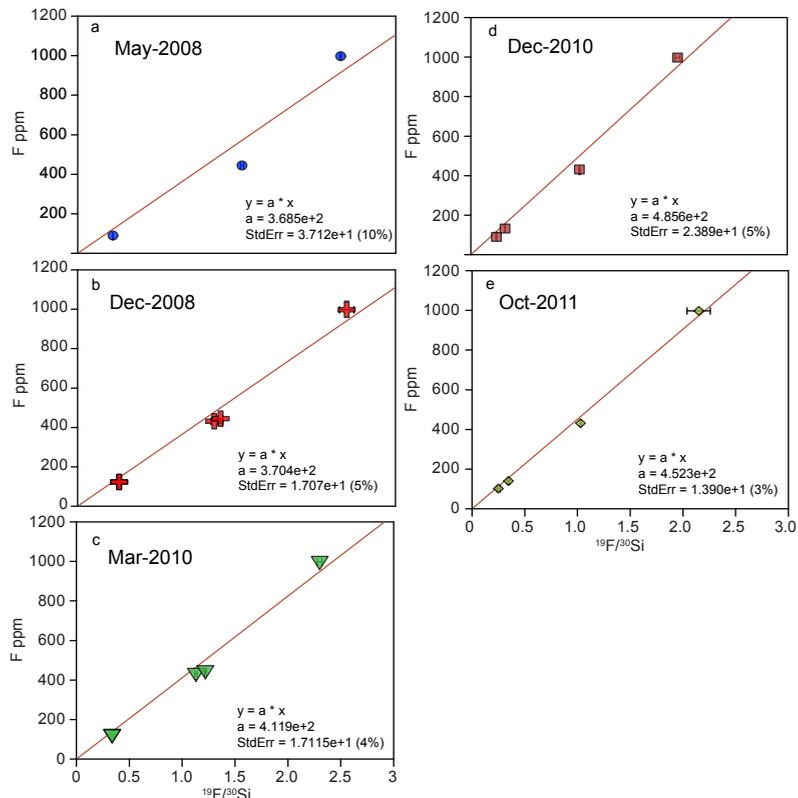


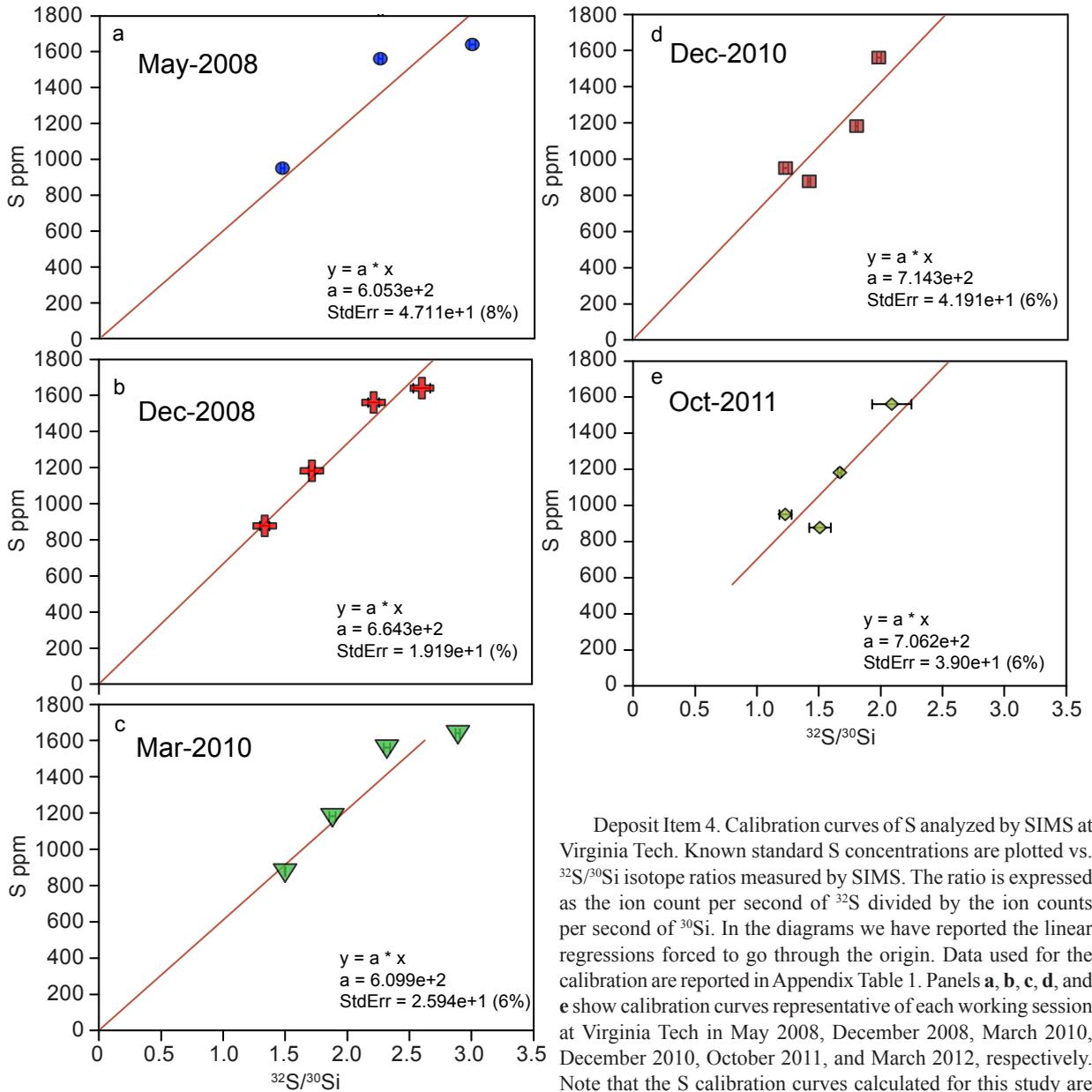
Deposit Item 1. Calibration curves for CO<sub>2</sub> analyzed by SIMS at Virginia Tech. Known standard CO<sub>2</sub> concentrations are plotted vs. <sup>12</sup>C/<sup>30</sup>Si isotope ratios measured by SIMS. The ratio is expressed as the ion count per second of <sup>12</sup>C divided by the ion counts per second of <sup>30</sup>Si. In the diagrams we have reported the linear regressions forced to go through the origin. Data used for the calibration are reported in Appendix Table 1. Panels a, b, c, d, e, and f show calibration curves for each working session at Virginia Tech in May 2008, December 2008, March 2010, December 2010, October 2011, and March 2012, respectively. Note that CO<sub>2</sub> calibration curves calculated for this study are consistent with those reported by Helo et al. (2011).



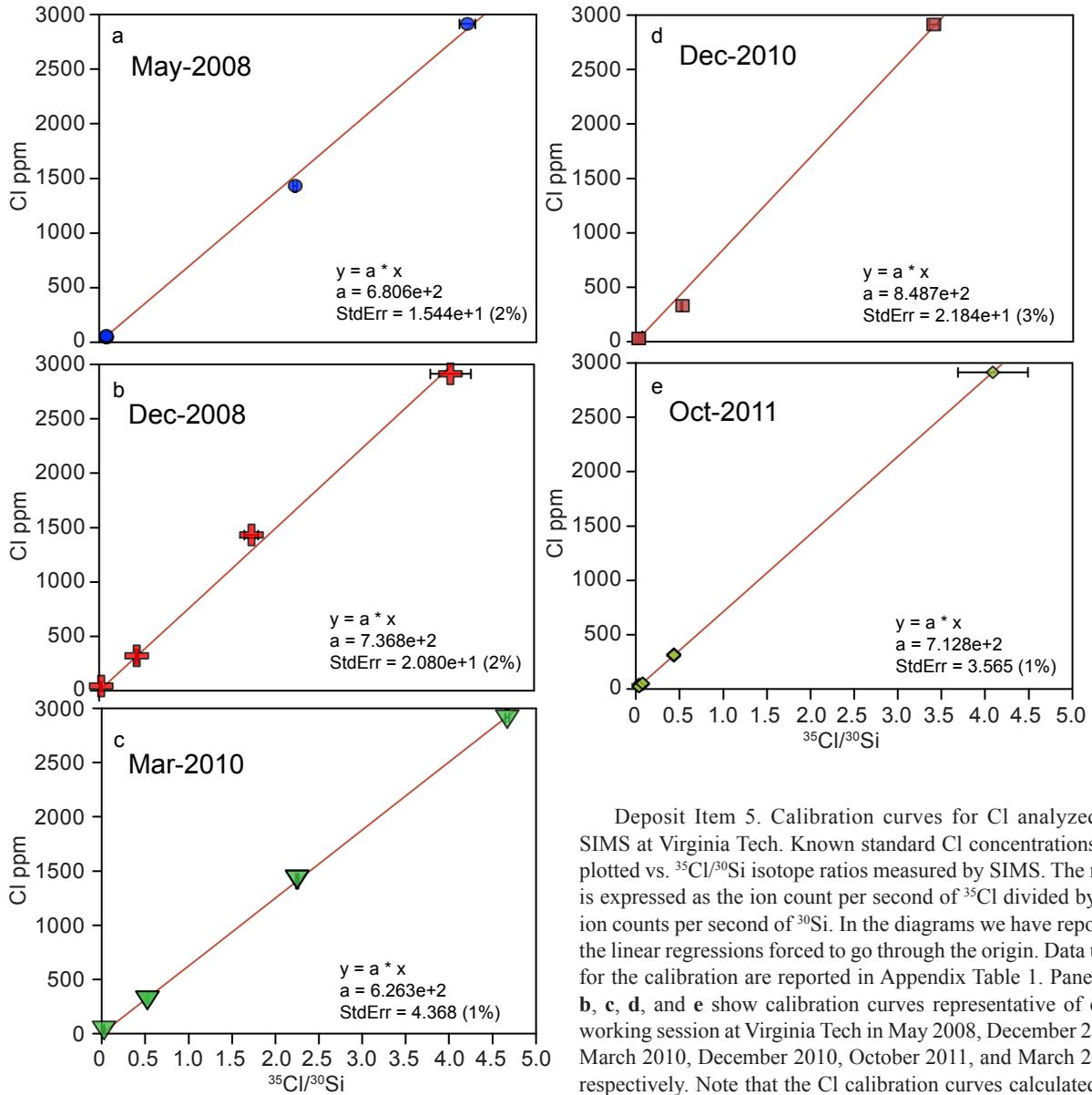
Deposit Item 2. Calibration curves for H<sub>2</sub>O analyzed by SIMS at Virginia Tech. Known standard H<sub>2</sub>O concentrations are plotted vs. <sup>16</sup>O<sup>1</sup>H/<sup>30</sup>Si isotope ratios measured by the SIMS. The ratio is expressed as the ion count per second of <sup>16</sup>O<sup>1</sup>H divided by the ion counts per second of <sup>30</sup>Si. In the diagrams we have reported the linear regressions forced to go through the origin. Data used for the calibration are reported in Appendix Table 1. Panels a, b, c, d, and e show calibration curves representative of each working session at Virginia Tech in May 2008, December 2008, March 2010, December 2010, October 2011, and March 2012, respectively. Note that H<sub>2</sub>O calibration curves calculated for this study are consistent with those reported by Helo et al. (2011).

Deposit Item 3. Calibration curves for F analyzed by SIMS at Virginia Tech. Known standard F concentrations are plotted vs. <sup>19</sup>F/<sup>30</sup>Si isotope ratios measured by SIMS. The ratio is expressed as the ion count per second of <sup>19</sup>F divided by the ion counts per second of <sup>30</sup>Si. In the diagrams we have reported the linear regressions forced to go through the origin. Data used for the calibration are reported in Appendix Table 1. Panels a, b, c, d, and e show calibration curves representative of each working session at Virginia Tech in May 2008, December 2008, March 2010, December 2010, and October 2011 respectively. Note that the F calibration curves calculated for this study are consistent with those reported by Helo et al. (2011).

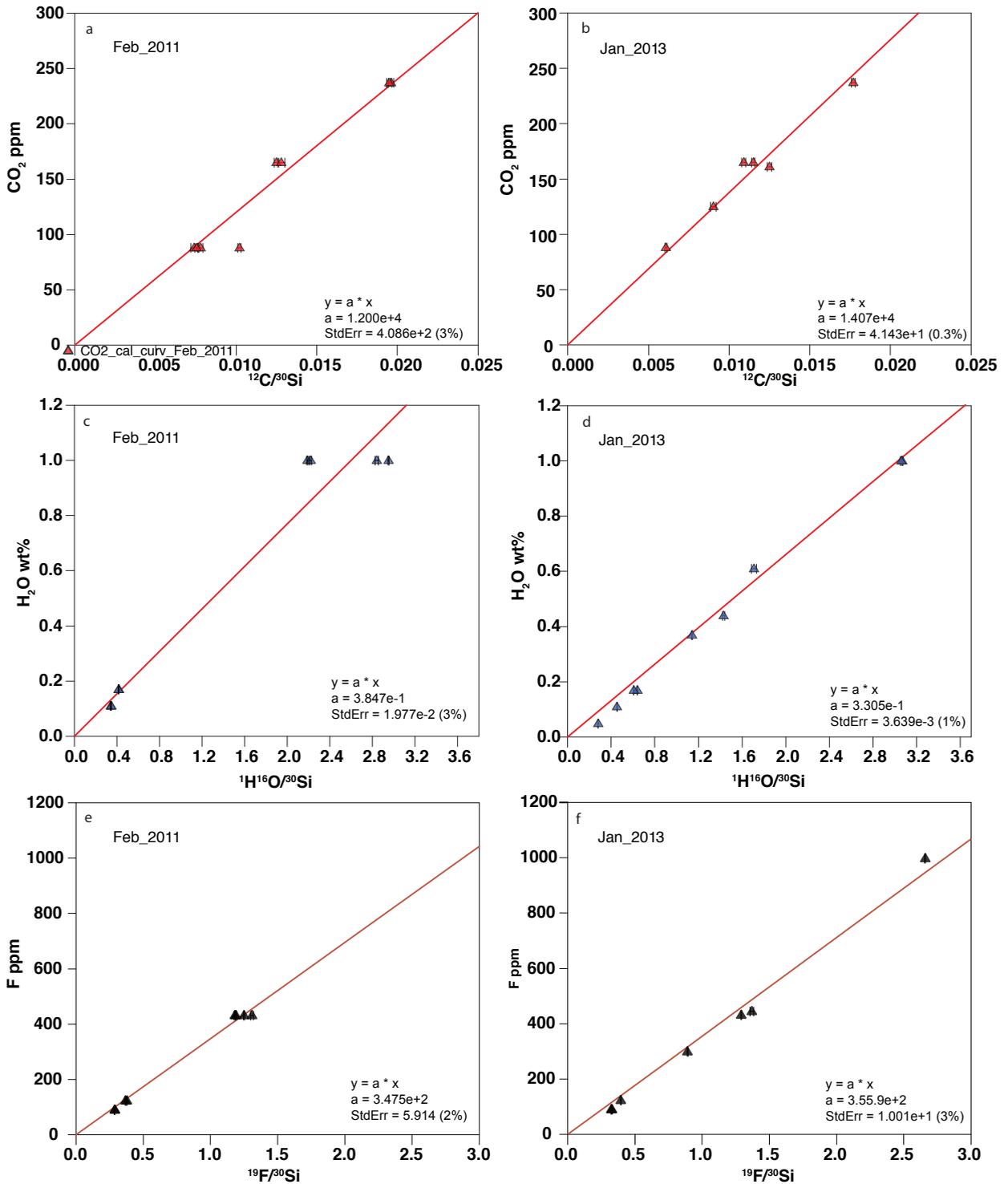




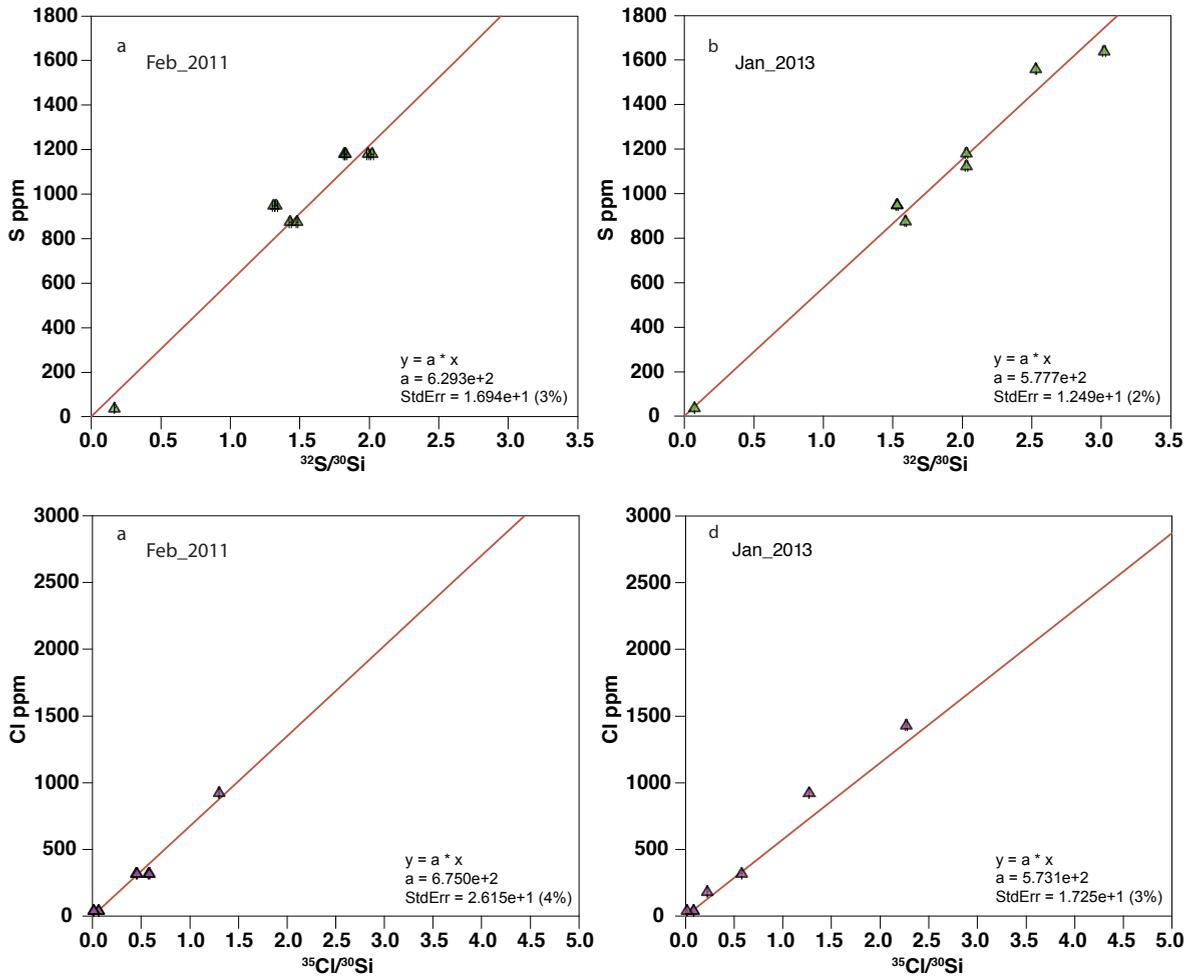
Deposit Item 4. Calibration curves of S analyzed by SIMS at Virginia Tech. Known standard S concentrations are plotted vs.  $^{32}\text{S}/^{30}\text{Si}$  isotope ratios measured by SIMS. The ratio is expressed as the ion count per second of  $^{32}\text{S}$  divided by the ion counts per second of  $^{30}\text{Si}$ . In the diagrams we have reported the linear regressions forced to go through the origin. Data used for the calibration are reported in Appendix Table 1. Panels **a**, **b**, **c**, **d**, and **e** show calibration curves representative of each working session at Virginia Tech in May 2008, December 2008, March 2010, December 2010, October 2011, and March 2012, respectively. Note that the S calibration curves calculated for this study are consistent with those reported by Helo et al. (2011).



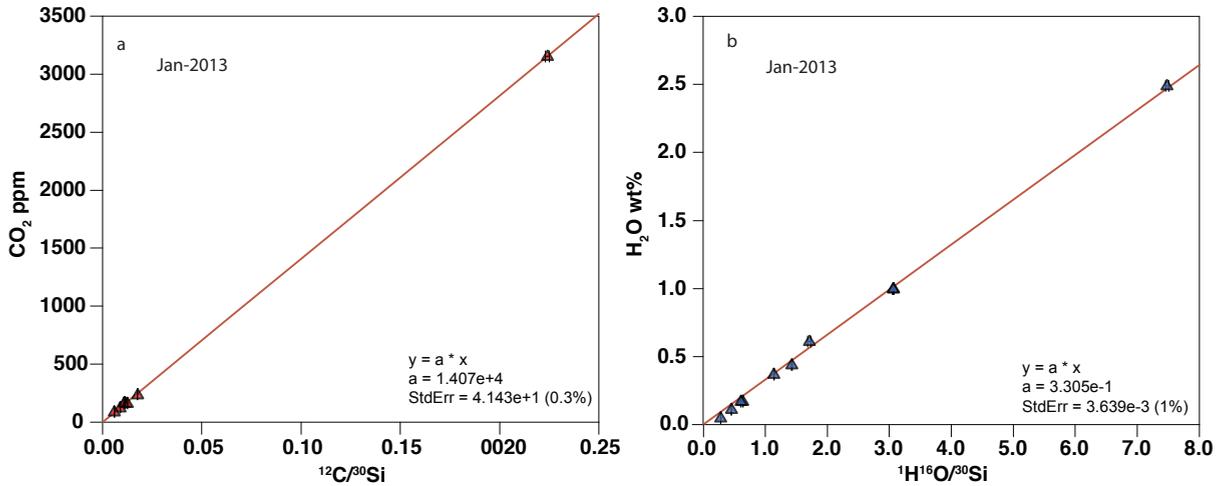
Deposit Item 5. Calibration curves for Cl analyzed by SIMS at Virginia Tech. Known standard Cl concentrations are plotted vs.  $^{35}\text{Cl}/^{30}\text{Si}$  isotope ratios measured by SIMS. The ratio is expressed as the ion count per second of  $^{35}\text{Cl}$  divided by the ion counts per second of  $^{30}\text{Si}$ . In the diagrams we have reported the linear regressions forced to go through the origin. Data used for the calibration are reported in Appendix Table 1. Panels **a**, **b**, **c**, **d**, and **e** show calibration curves representative of each working session at Virginia Tech in May 2008, December 2008, March 2010, December 2010, October 2011, and March 2012, respectively. Note that the Cl calibration curves calculated for this study are consistent with those reported by Helo et al. (2011)



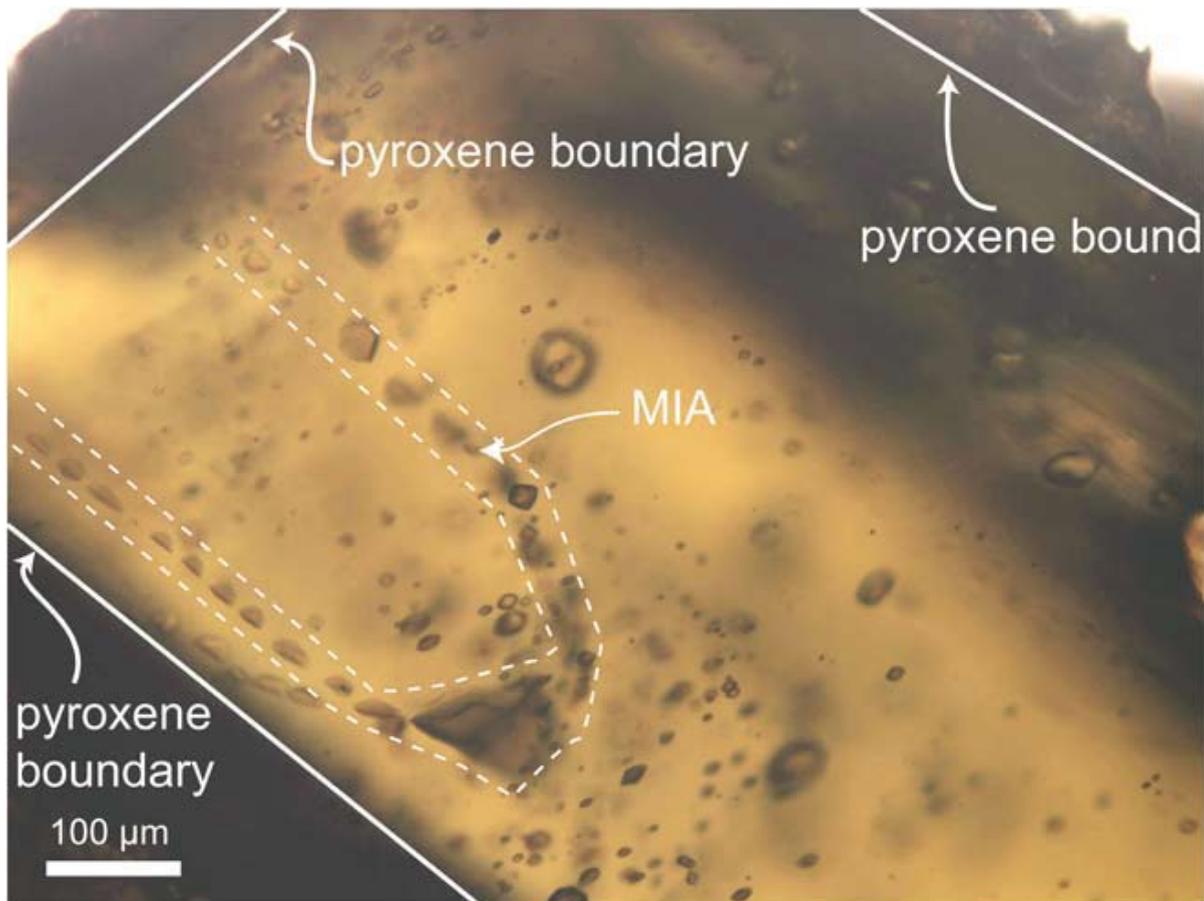
Deposit Item 6. Calibration curves for CO<sub>2</sub>, H<sub>2</sub>O, and F analyzed by SIMS at WHOI. Known concentrations of standard glasses are plotted vs. <sup>12</sup>C/<sup>30</sup>Si, <sup>16</sup>O/<sup>30</sup>Si, and <sup>19</sup>F/<sup>30</sup>Si isotope ratios measured using SIMS. The ratio is expressed as the ion count per second of <sup>12</sup>C, <sup>16</sup>O, <sup>19</sup>F divided by the ion counts per second of <sup>30</sup>Si. In the diagrams we have reported the linear regressions forced to go through the origin. Data used for the calibration are reported in Appendix Table 1. Panels a, c, e, show calibration curves for February 2011 working session at WHOI. Panels b, d, f show calibration curves for January 2013 working session at WHOI. Note that CO<sub>2</sub>, H<sub>2</sub>O, and F calibration curves calculated for this study are consistent with those reported by Helo et al. (2011).



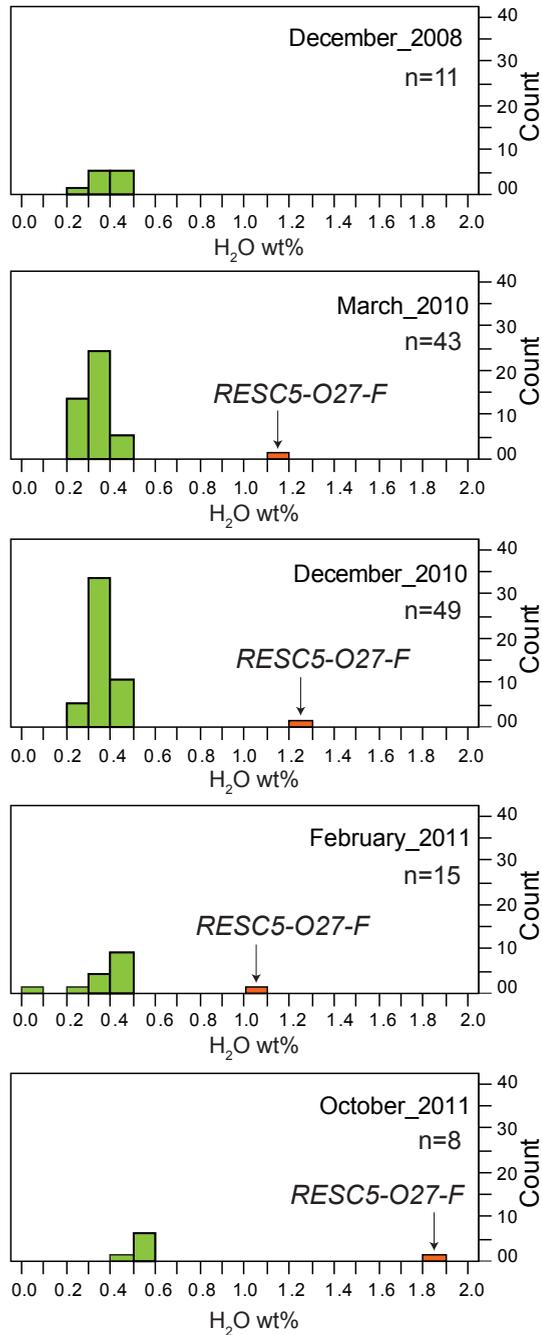
Deposit Item 7. Calibration curves for S and Cl analyzed by SIMS at WHOI. Known concentrations of standard glasses are plotted vs.  $^{32}\text{S}/^{30}\text{Si}$  and  $^{35}\text{Cl}/^{30}\text{Si}$  isotope ratios measured using SIMS. The ratio is expressed as the ion count per second of  $^{32}\text{S}$  and  $^{35}\text{Cl}$  divided by the ion counts per second of  $^{30}\text{Si}$ . In the diagrams we have reported the linear regressions forced to go through the origin. Data used for the calibration are reported in Appendix Table 1. Panels **a** and **c** show calibration curves for February 2011 working session at WHOI. Panels **b** and **d** show calibration curves for January 2013 working session at WHOI. Note that S and Cl calibration curves calculated for this study are consistent with those reported by Helo et al. (2011).



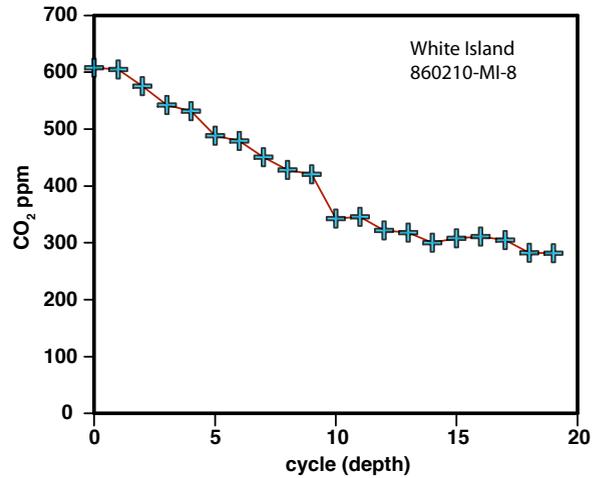
Deposit Item 8. CO<sub>2</sub> and H<sub>2</sub>O calibration curves of January 2013 sessions at WHOI showing the CO<sub>2</sub>-rich and the H<sub>2</sub>O-rich standard glasses included for the calibration of this session. It is important to note that the slopes of calibration curves for the January 2013 session are consistent with the slopes of the previous working sessions both at Virginia Tech and WHOI.



Deposit Item 9. Photomicrograph of a "pseudosecondary MIA" hosted in pyroxene from White Island observed in transmitted light. Notice the more elongated shape of the MI in this MIA relative to those shown in Figures 3 and 4.



Deposit Item 10. Variability in H<sub>2</sub>O contents observed in different analytical sessions. Note that concentrations from the October 2011 session are slightly higher, and those from March 2010 are slightly lower, than those from the other working sessions. It is important to note that the same MI (RESC5-O27-MF from Solchiaro sample) was measured in different working sessions. The concentration variability likely reflects slight differences in the calibration curves determined for each working



Deposit Item 11. CO<sub>2</sub>-depth profile of one MI (860210-MI-8) from the 1986 eruption at White Island measured at WHOI during the January 2013 session (Table 5). The profile is the compilation of two analyses done on the same spot inside the MI. As reported in the text, it is important to note that the concentration varies from 608 ppm (the shallowest glass analyzed) to 282 ppm (the deepest glass analyzed). The data used for this plot are reported in [Appendix Table 1](#).