

Supplementary Material:

Variation of the BrO/SO₂ molar ratio in the plume of Tungurahua volcano between 2007 and 2017 and its relationship to volcanic activity

1 SUPPLEMENTARY TABLES AND FIGURES

The supplementary data comprises of a collection of the dataset of the BrO/SO₂ ratio as well as the co-added SO₂ and BrO SCDs for the 11 phases discussed in the manuscript.

1.1 Figures

Each figure comprises of the BrO/SO₂ ratio calculated with 2 methods and for different periods (daily and longer periods, top), the SO₂ SCDs (blue, middle) as well as the BrO SCDs (red, bottom). For shorter phases several phases are put together in one plot.

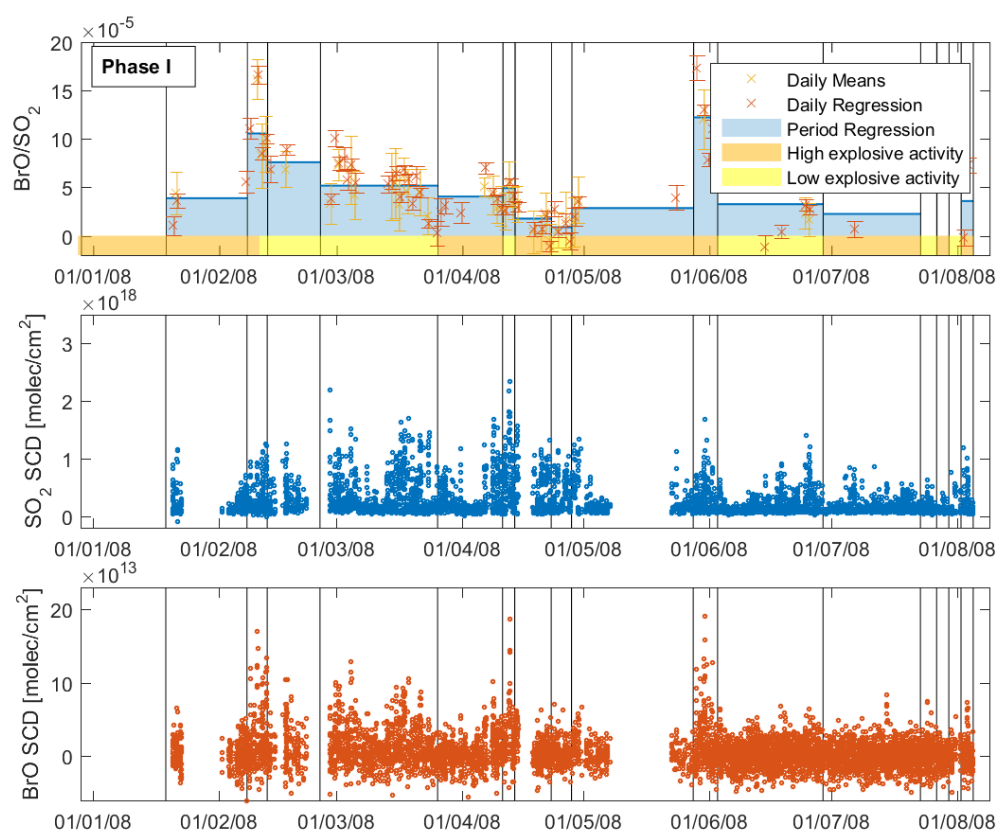


Figure S1. NOVAC data observed during eruptive phase I. **top:** The molar BrO/SO₂ ratio calculated by a regression for each of the parts (blue, parts indicated by vertical lines), daily regression (red) and daily means method (yellow). Activity classification is indicated with orange (HEA) and yellow (LEA). **middle:** Multi-add SO₂ slant column densities (SCD, blue) and **bottom:** BrO slant column density (red).

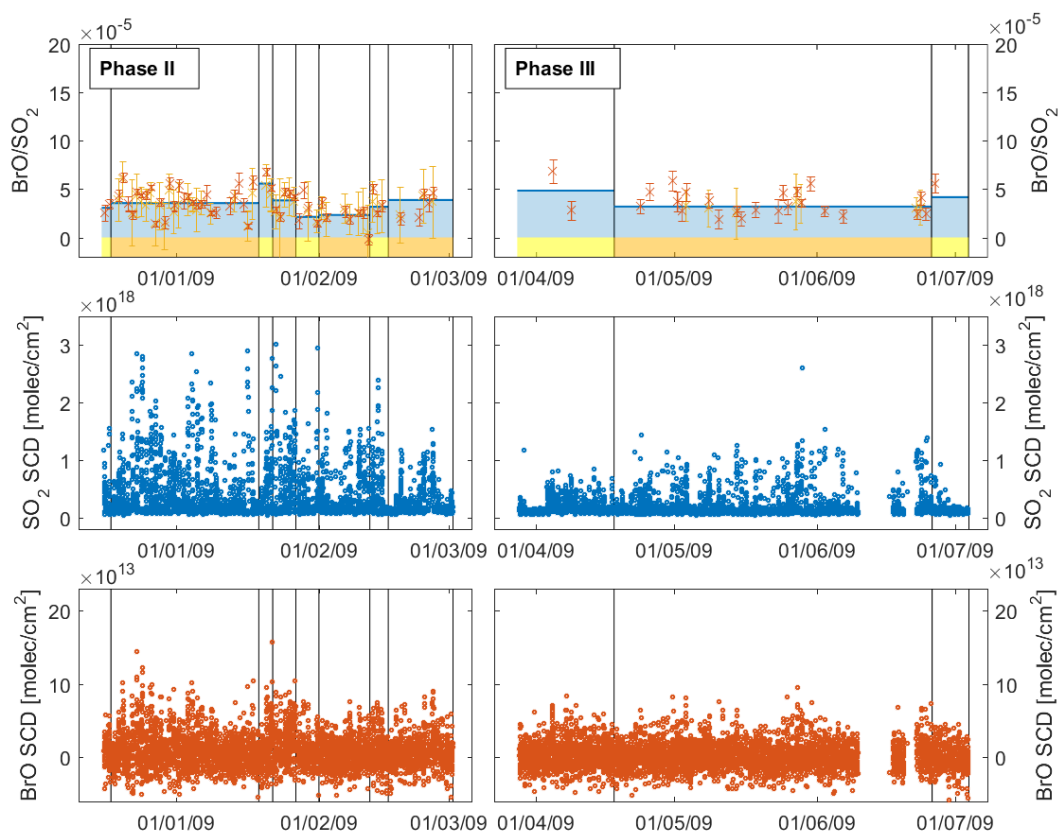


Figure S2. NOVA data observed during eruptive phase II and III. **top:** The molar BrO/SO₂ ratio calculated by a regression for each of the parts (blue, parts indicated by vertical lines), daily regression (red) and daily means method (yellow). Activity classification is indicated with orange (HEA) and yellow (LEA). **middle:** Multi-add SO₂ slant column densities (SCD, blue) and **bottom:** BrO slant column density (red).

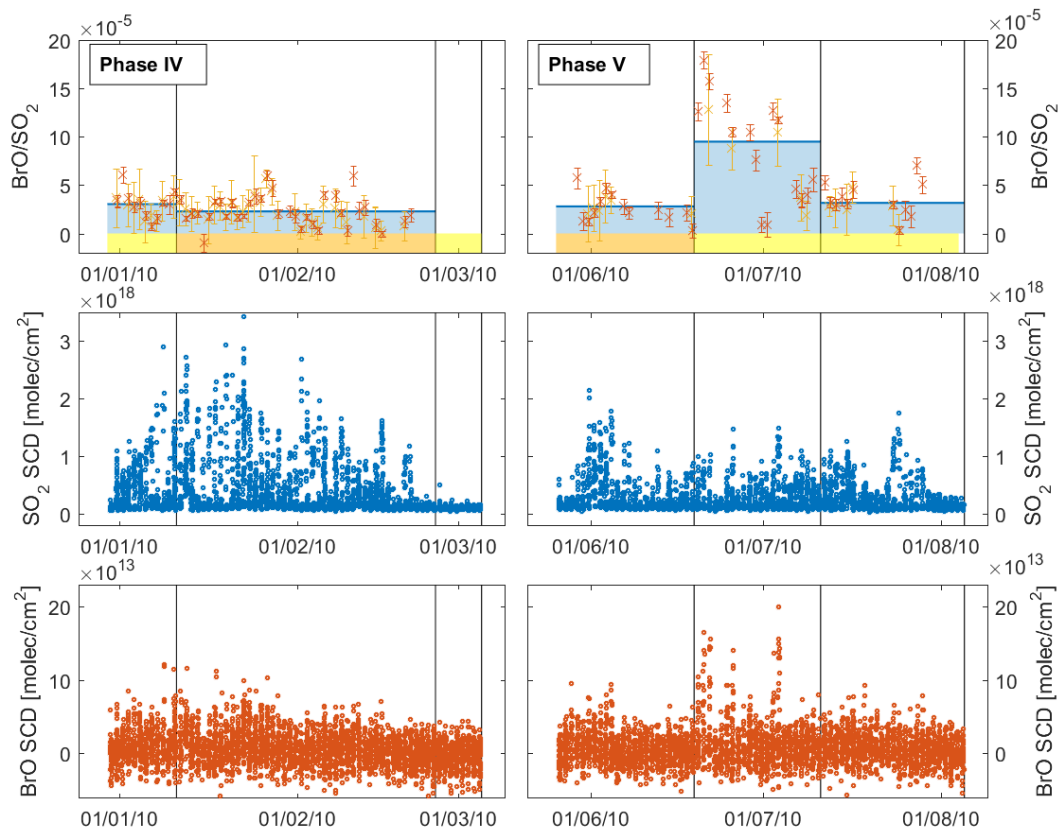


Figure S3. NOVA data observed during eruptive phase IV and V. **top:** The molar BrO/SO_2 ratio calculated by a regression for each of the parts (blue, parts indicated by vertical lines), daily regression (red) and daily means method (yellow). Activity classification is indicated with orange (HEA) and yellow (LEA). **middle:** Multi-add SO_2 slant column densities (SCD, blue) and **bottom:** BrO slant column density (red).

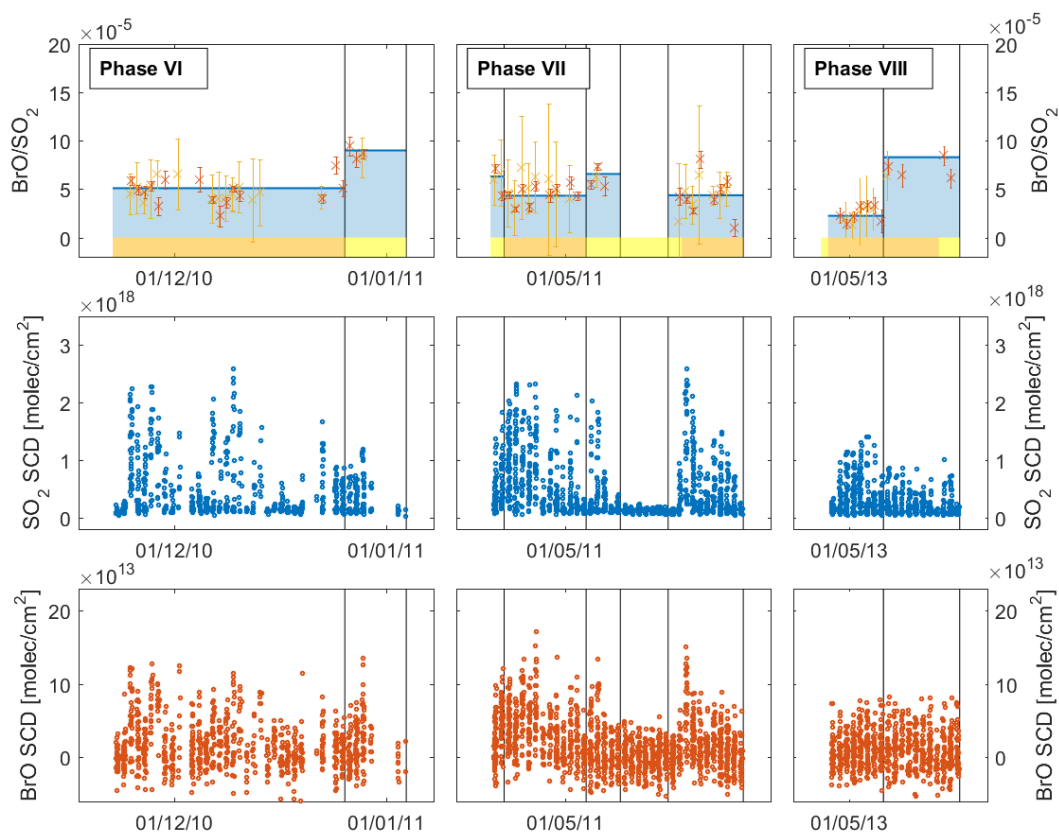


Figure S4. NOVA data observed during eruptive phase VI, VII, and VIII. **top:** The molar BrO/SO_2 ratio calculated by a regression for each of the parts (blue, parts indicated by vertical lines), daily regression (red) and daily means method (yellow). Activity classification is indicated with orange (HEA) and yellow (LEA). **middle:** Multi-add SO_2 slant column densities (SCD, blue) and **bottom:** BrO slant column density (red).



Figure S5. NOVA data observed during eruptive phase IX, X, and XI. **top:** The molar BrO/SO_2 ratio calculated by a regression for each of the parts (blue, parts indicated by vertical lines), daily regression (red) and daily means method (yellow). Activity classification is indicated with orange (HEA) and yellow (LEA). **middle:** Multi-add SO_2 slant column densities (SCD, blue) and **bottom:** BrO slant column density (red).