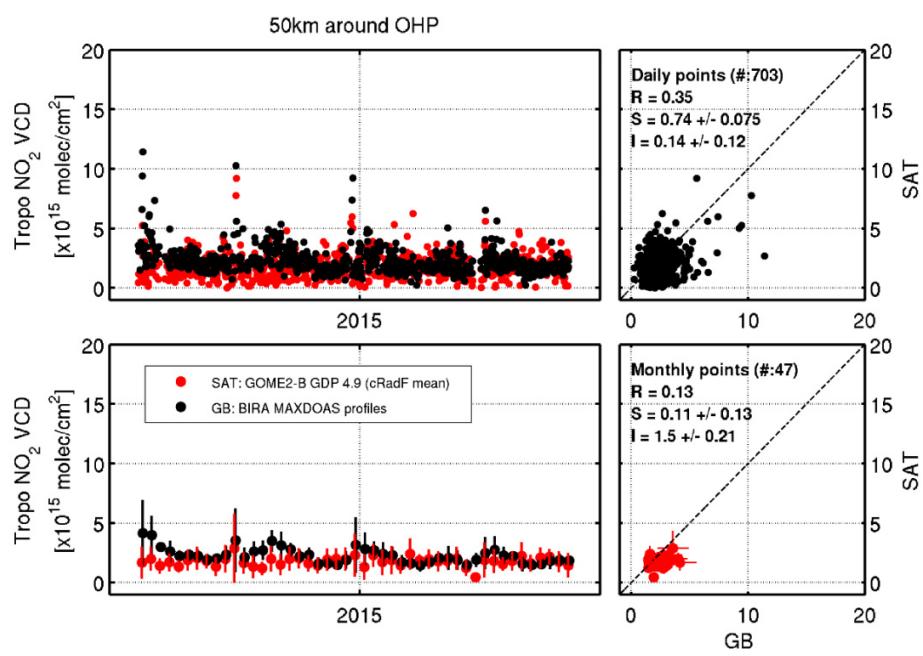
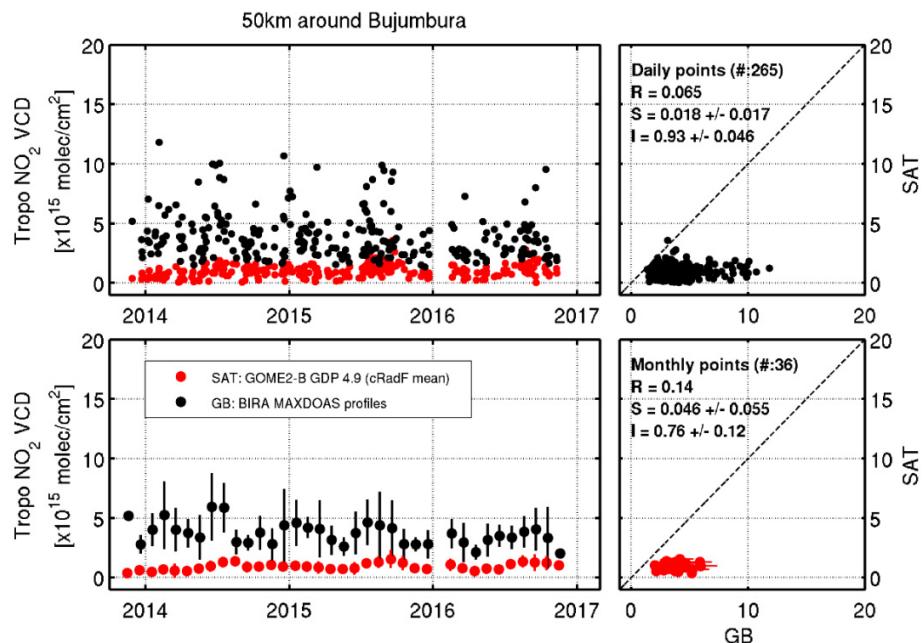
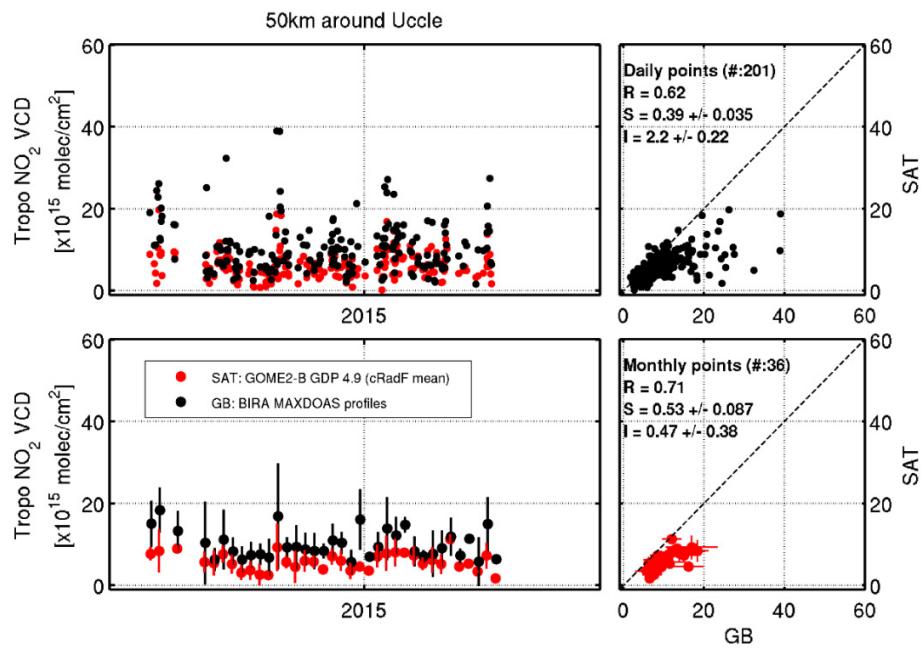
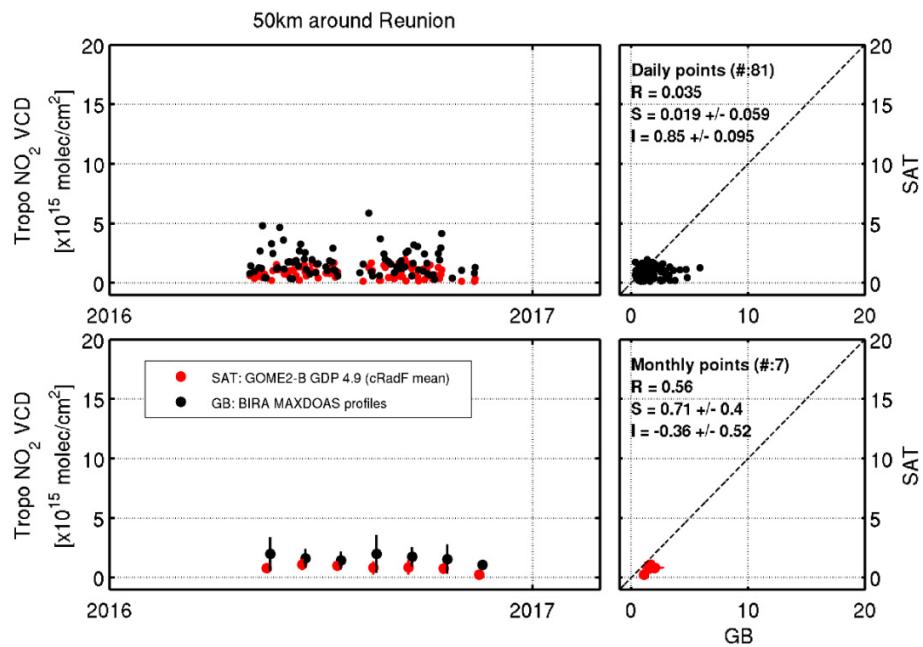


Figure S1. Daily (upper row) and monthly mean (lower row) time series and scatter plot of GOME-2A and MAXDOAS NO₂ tropospheric columns (mean value of all the pixels within 50km around Beijing, Bujumbura, OHP, Reunion, and Uccle).





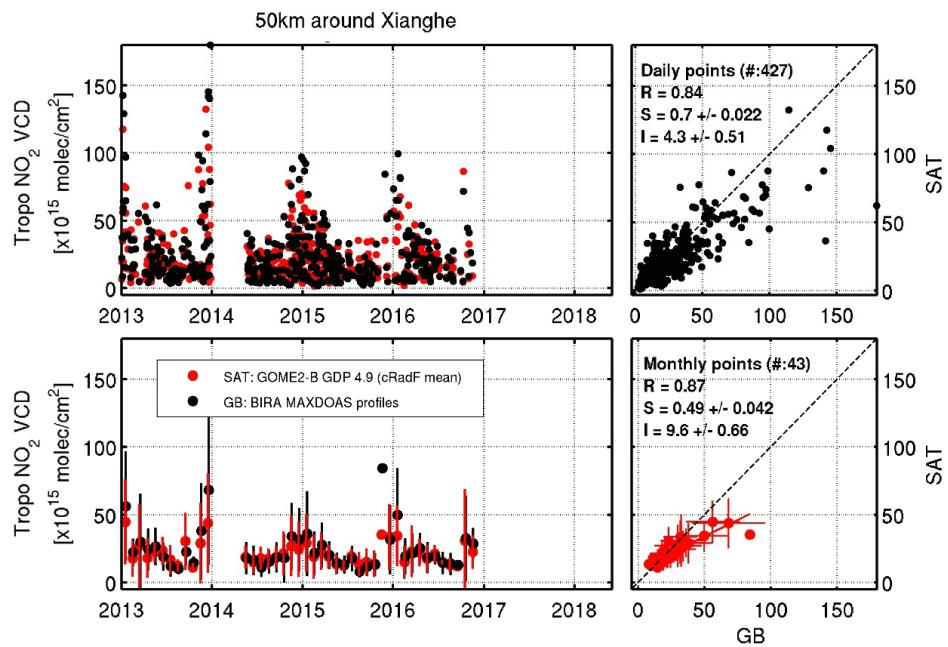
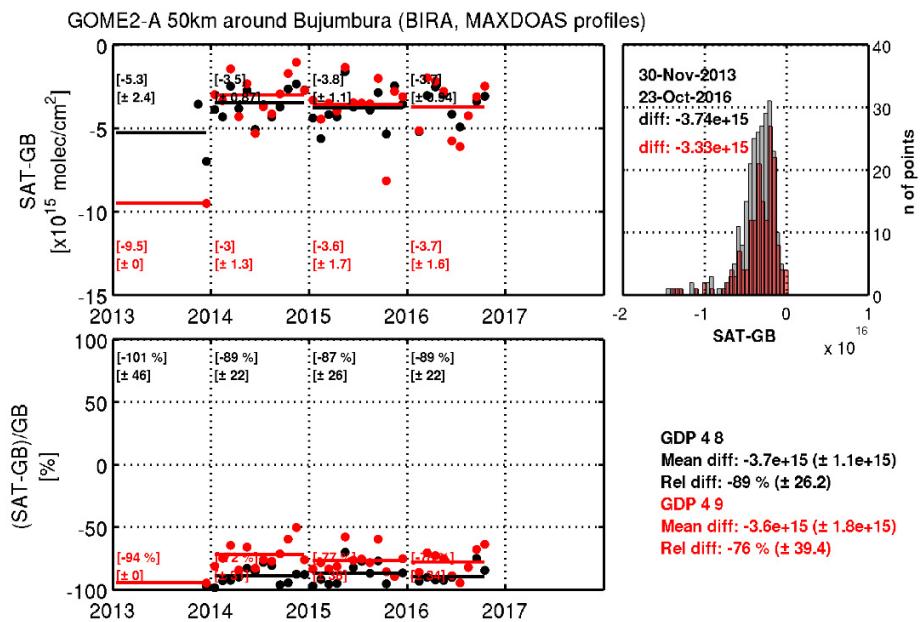
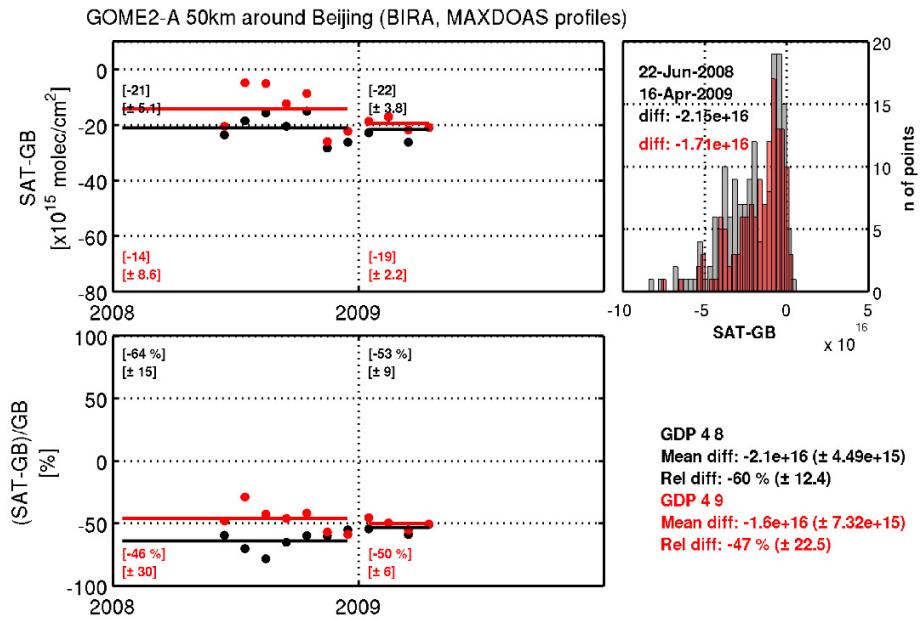
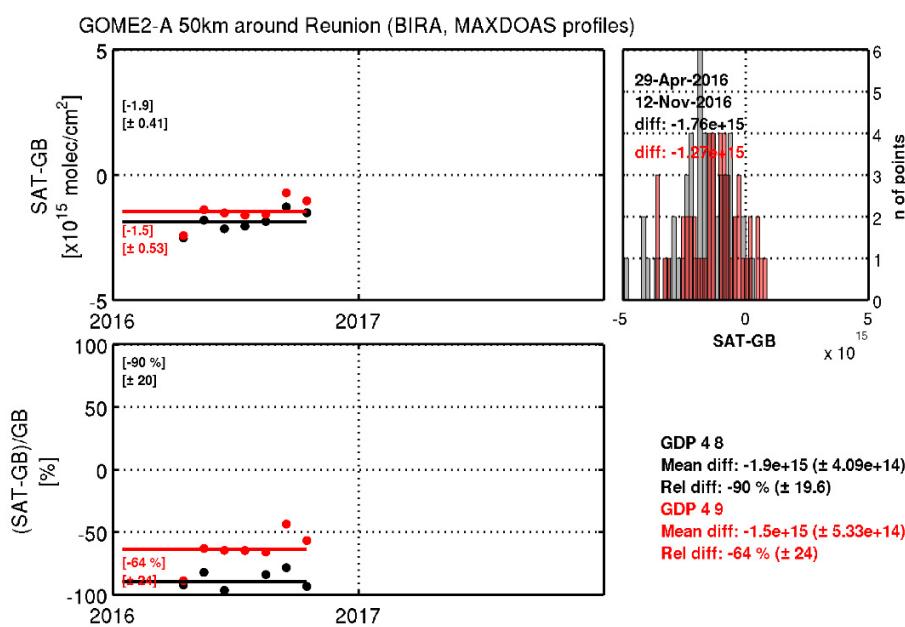
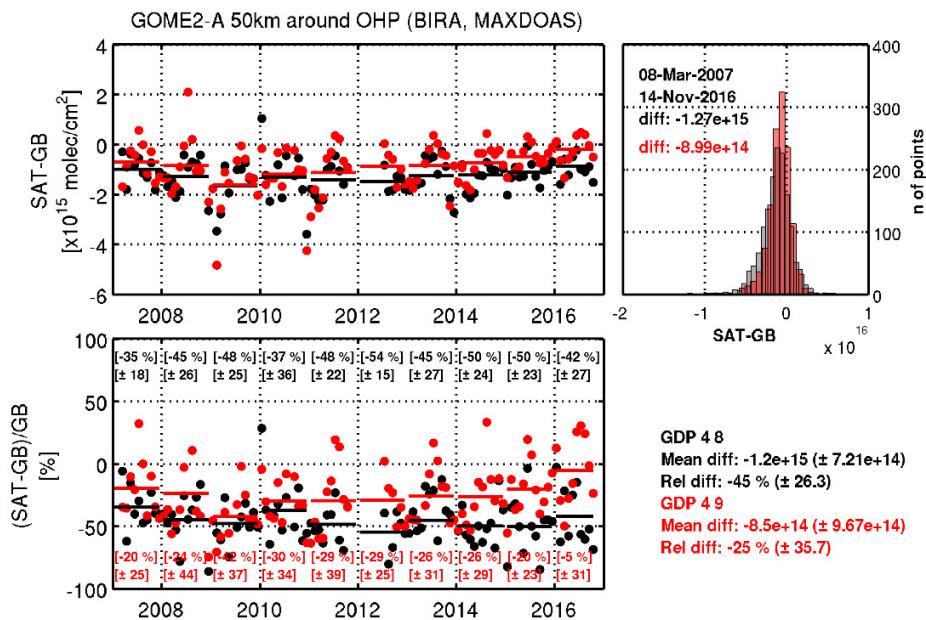


Figure S2. Same as Fig. S1 but for GOME-2B product (around Bujumbura, OHP, Reunion, and Xianghe).





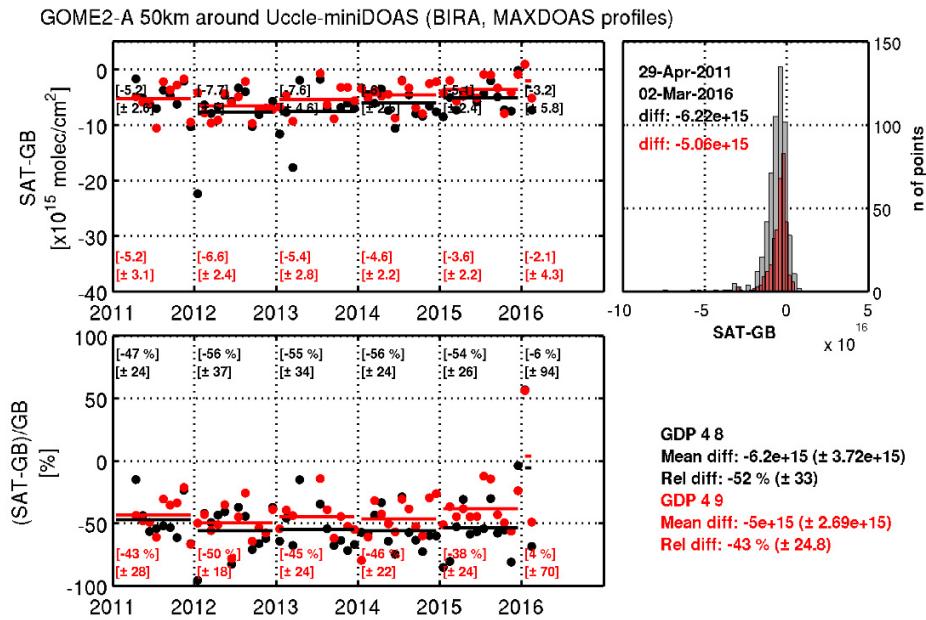
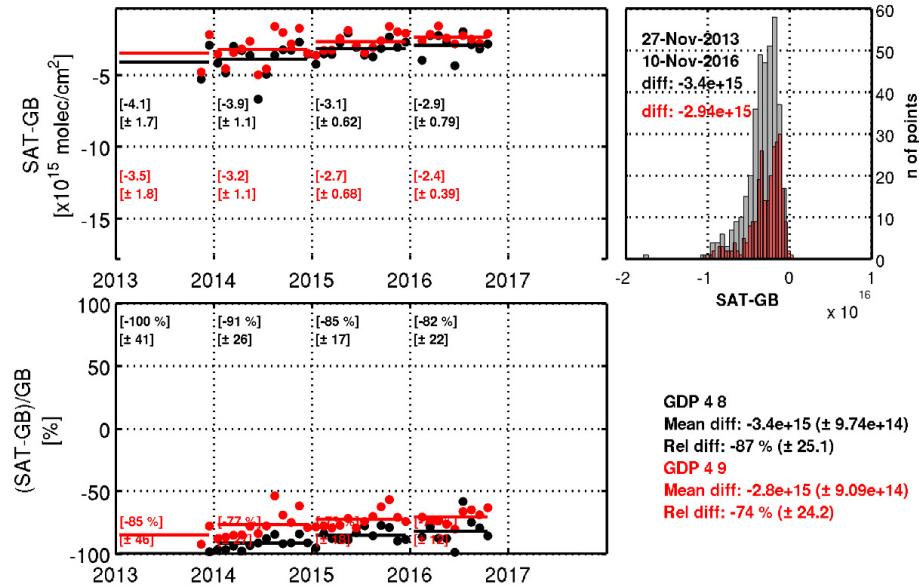
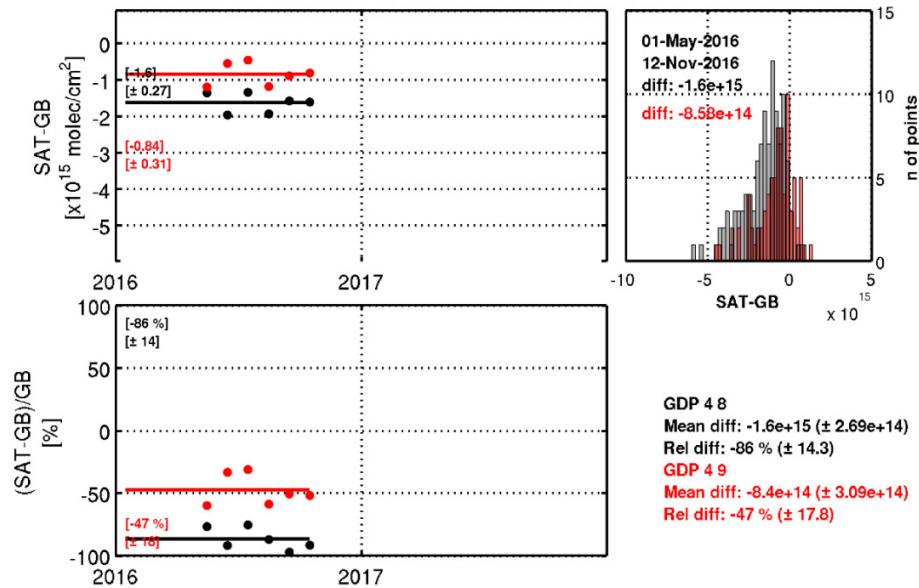


Figure S3. Absolute and relative differences of GOME-2A and MAXDOAS NO₂ tropospheric columns at Beijing, Bujumbura, OHP, Reunion, and Uccle. The time-series presents the monthly mean differences for GDP 4.8 (black) and GDP 4.9 (red). The total mean differences values and standard deviations are given, as well as the yearly values. The histogram presents the daily differences over the whole time-series for the two products (grey for GDP 4.8 and red for GDP 4.9).

GOME2-B 50km around Bujumbura (BIRA, MAXDOAS profiles)



GOME2-B 50km around Reunion (BIRA, MAXDOAS profiles)



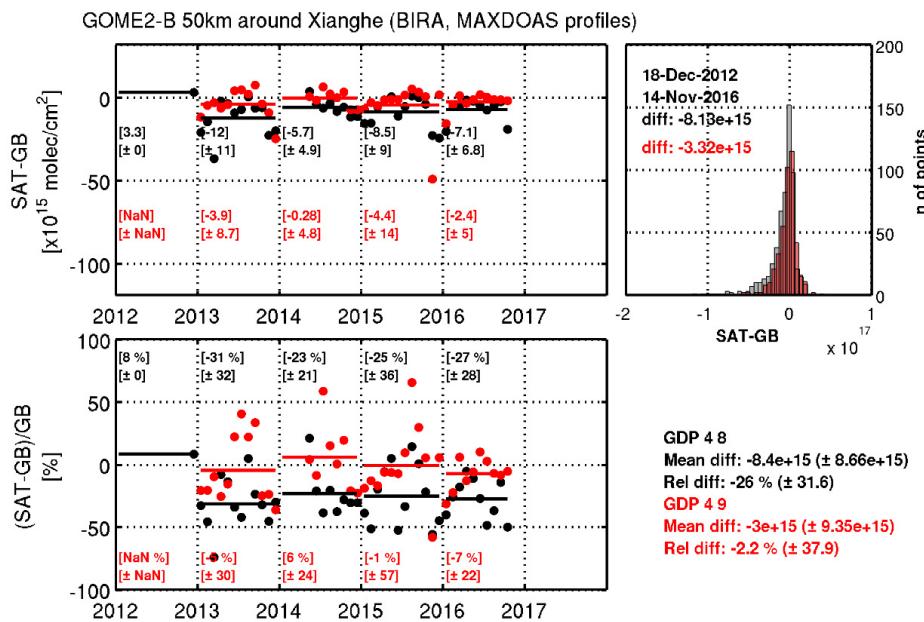
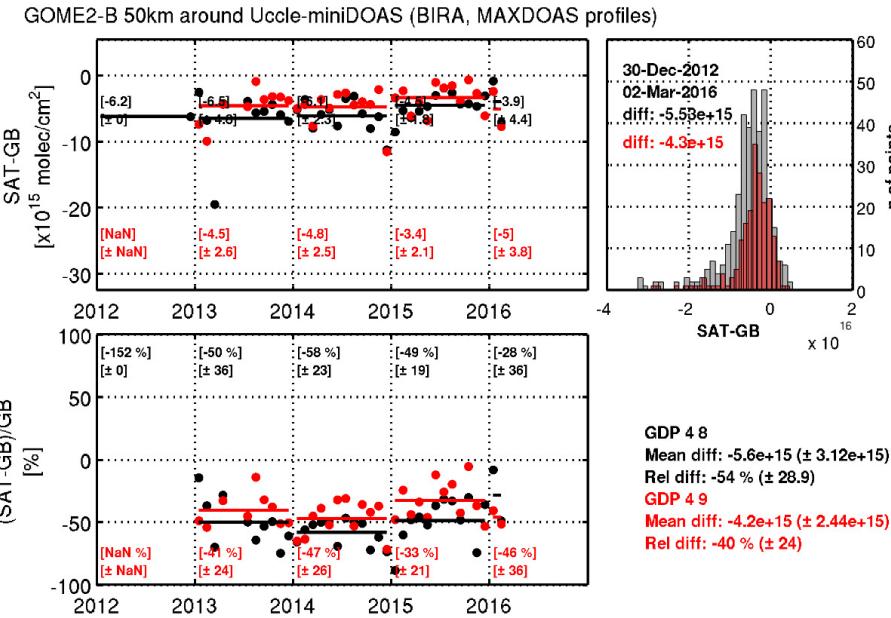
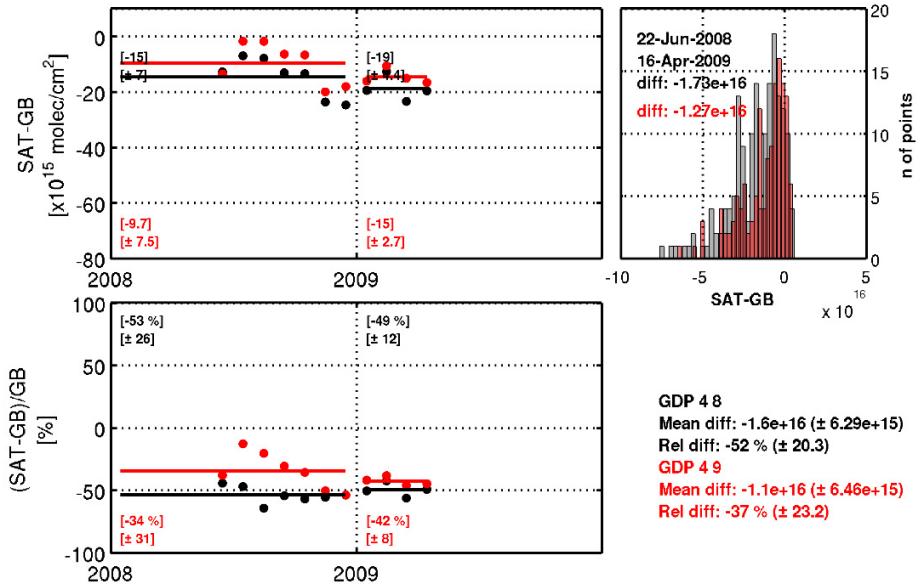
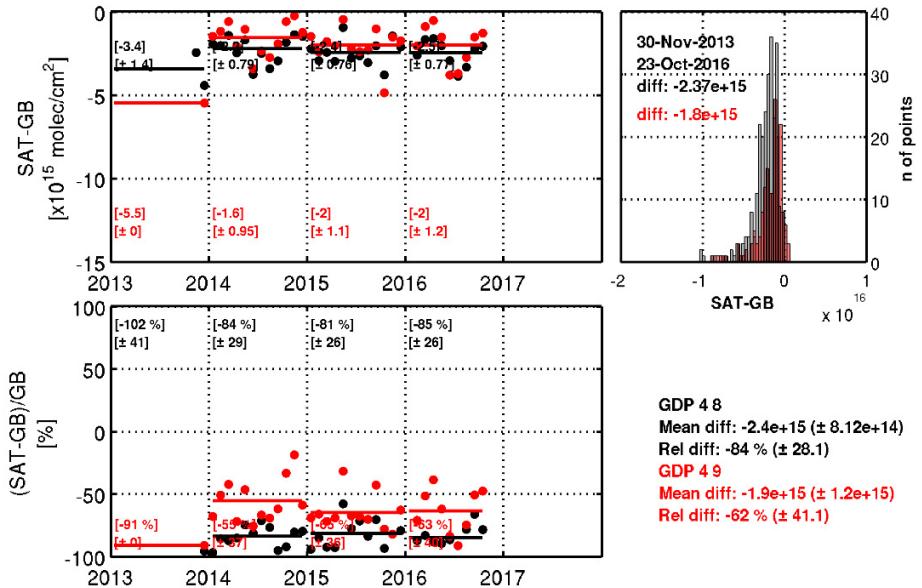


Figure S4. Same as Fig. S3 but for GOME-2B product (around Bujumbura, Reunion, Uccle, and Xianghe).

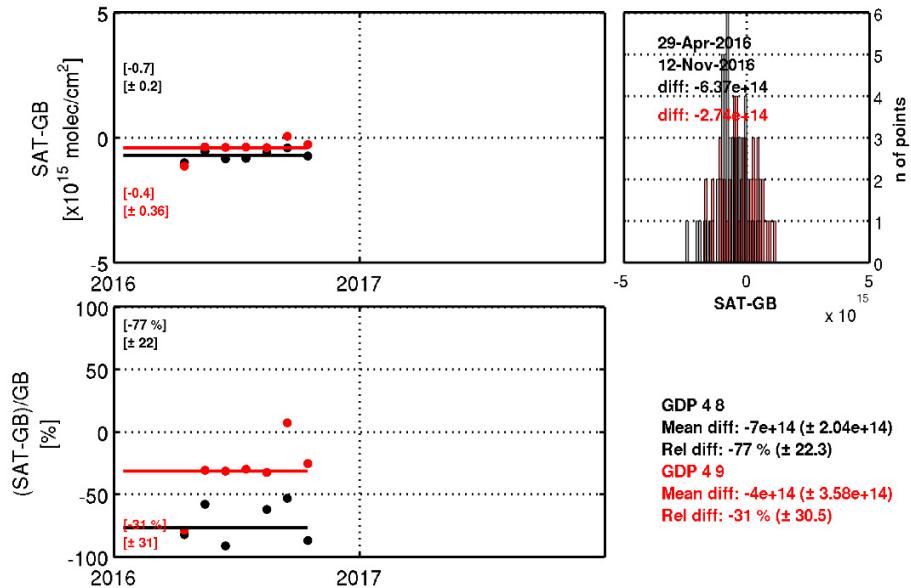
GOME2-A 50km around Beijing (BIRA, MAXDOAS profiles smoothed)



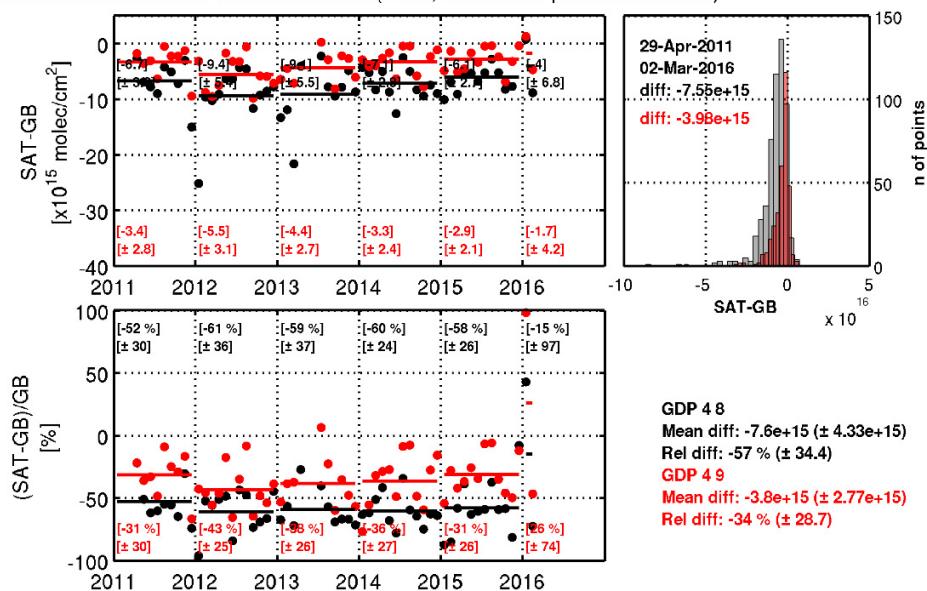
GOME2-A 50km around Bujumbura (BIRA, MAXDOAS profiles smoothed)



GOME2-A 50km around Reunion (BIRA, MAXDOAS profiles smoothed)



GOME2-A 50km around Uccle-miniDOAS (BIRA, MAXDOAS profiles smoothed)



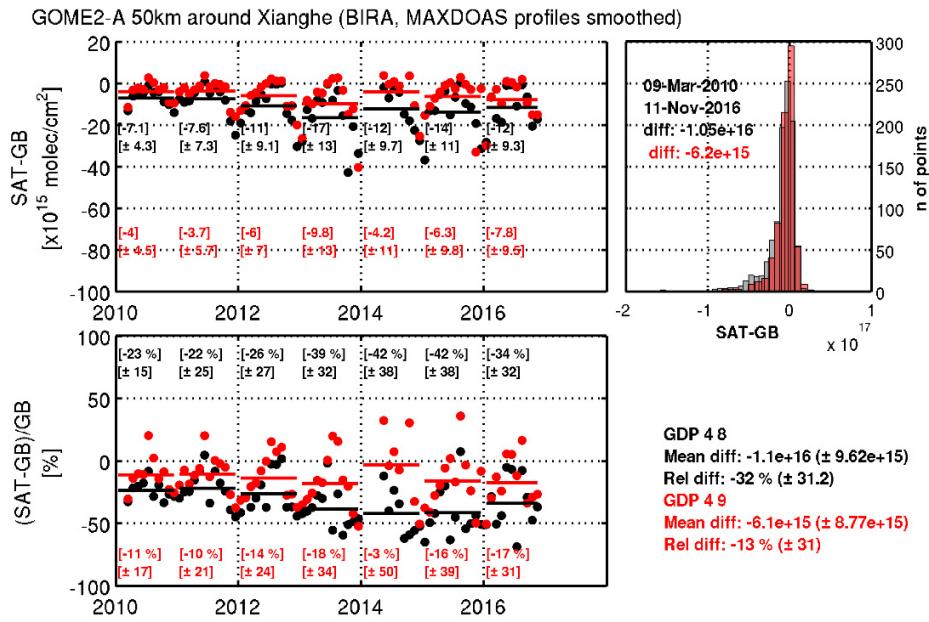
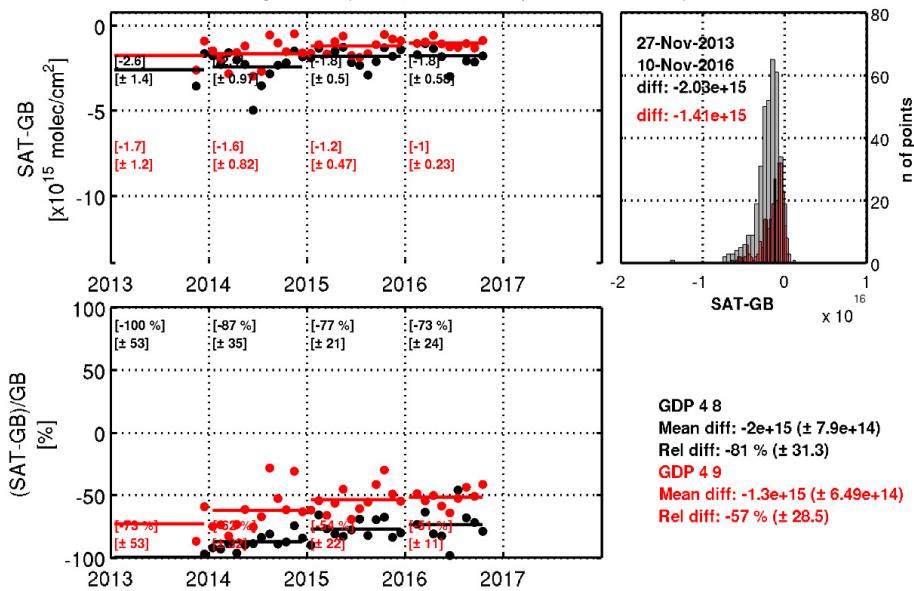
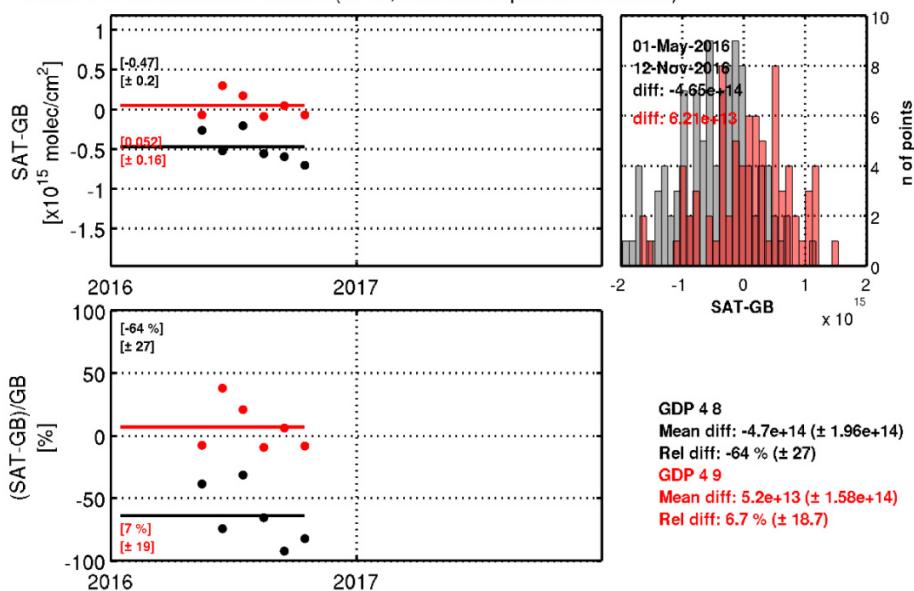


Figure S5. Same as Fig. S3 but with smoothed MAXDOAS columns (around Beijing, Bujumbura, Reunion, Uccle, and Xianghe).

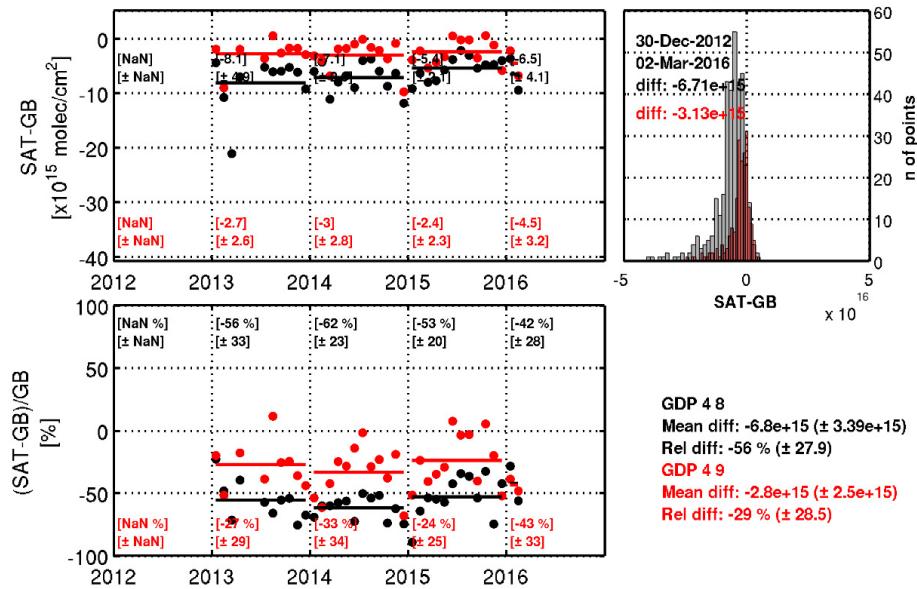
GOME2-B 50km around Bujumbura (BIRA, MAXDOAS profiles smoothed)



GOME2-B 50km around Reunion (BIRA, MAXDOAS profiles smoothed)



GOME2-B 50km around Uccle-miniDOAS (BIRA, MAXDOAS profiles smoothed)



GOME2-B 50km around Xianghe (BIRA, MAXDOAS profiles smoothed)

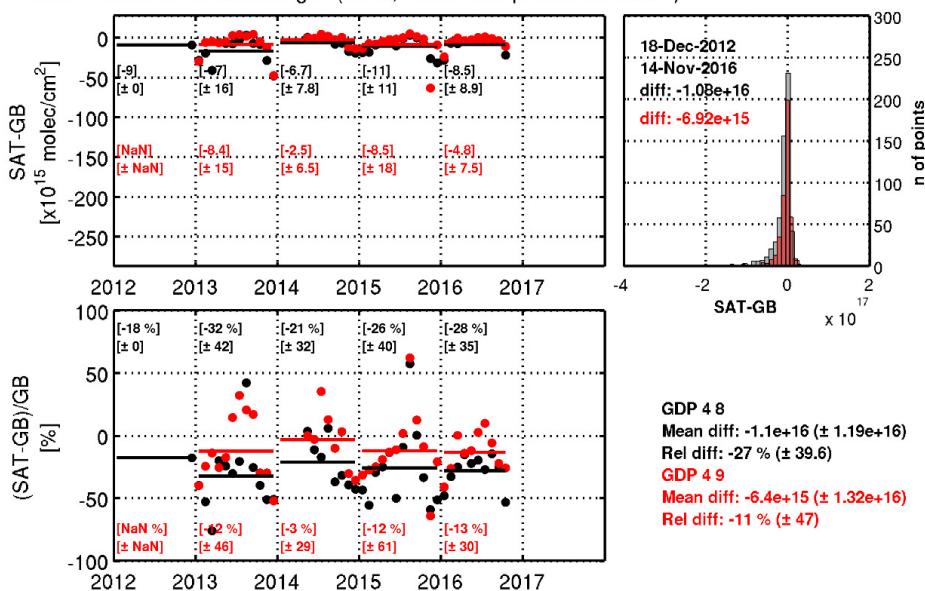


Figure S6. Same as Fig. S4 but with smoothed MAXDOAS columns.