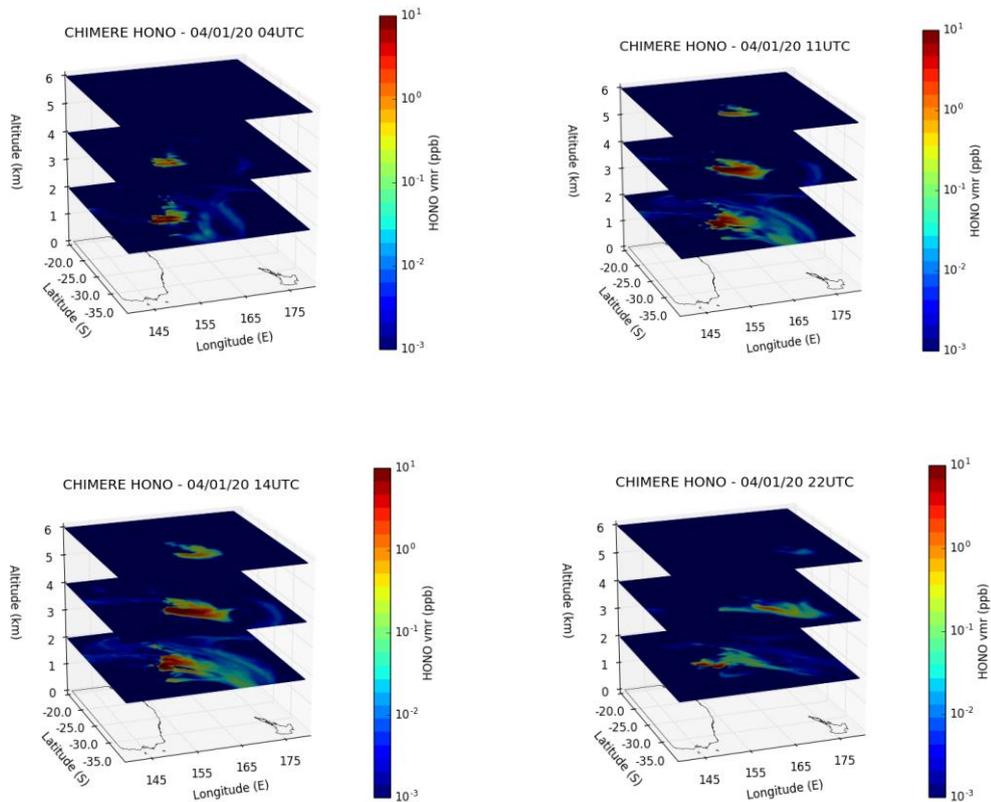
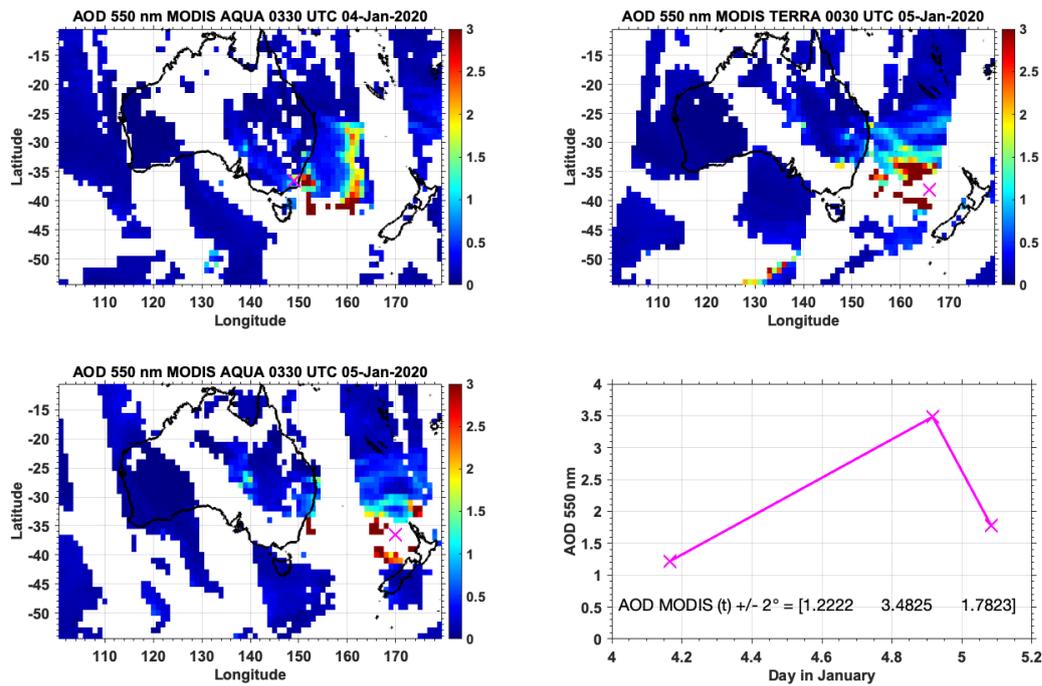


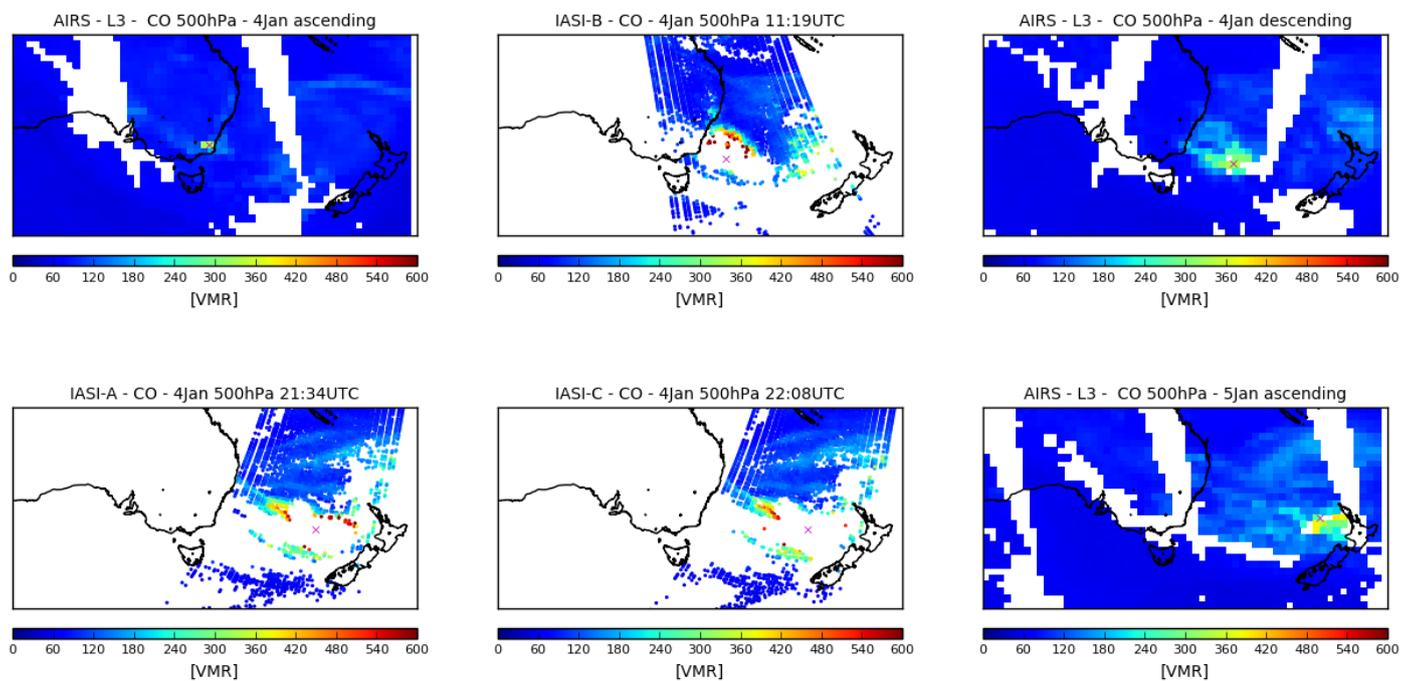
## Supplementary Materials



**Figure S1.** HONO vmrs simulated at 04:00 UTC, 11:00 UTC, 14:00 UTC and 22:00 UTC on 4 January 2020 for different levels by CHIMERE.



**Figure S2.** MODIS AOD observed close to the CrIS HONO detection time. The cross indicates the center of the detected HONO plume. The time evolution of the AOD averaged over a region +/- 2° around the center of HONO plume is displayed in the lower right panel.



**Figure S3.** Carbon monoxide vmrs retrieved at 500 hPa by AIRS (daily L3 product) and IASI instruments coincident or close in time with the HONO plume detection by CrIS and IASI reported in Figure 3. The ascending overpass of AIRS corresponds to the daytime CrIS observations (at 04:00 UTC on 4 January and at 02:00 UTC on 5 January). The descending overpass corresponds to the nighttime CrIS observations (at about 13:30 UTC). The center of the HONO plume is indicated by a magenta cross on each subplot.