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Supporting Information for

24-hour evolution of an exceptional HONO plume emitted by the record-breaking 2019/2020 Australian Wildfire tracked from space: role of heterogeneous photoinduced production

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Contents of this file

Introduction

The supporting information consists in figures supporting the discussion.

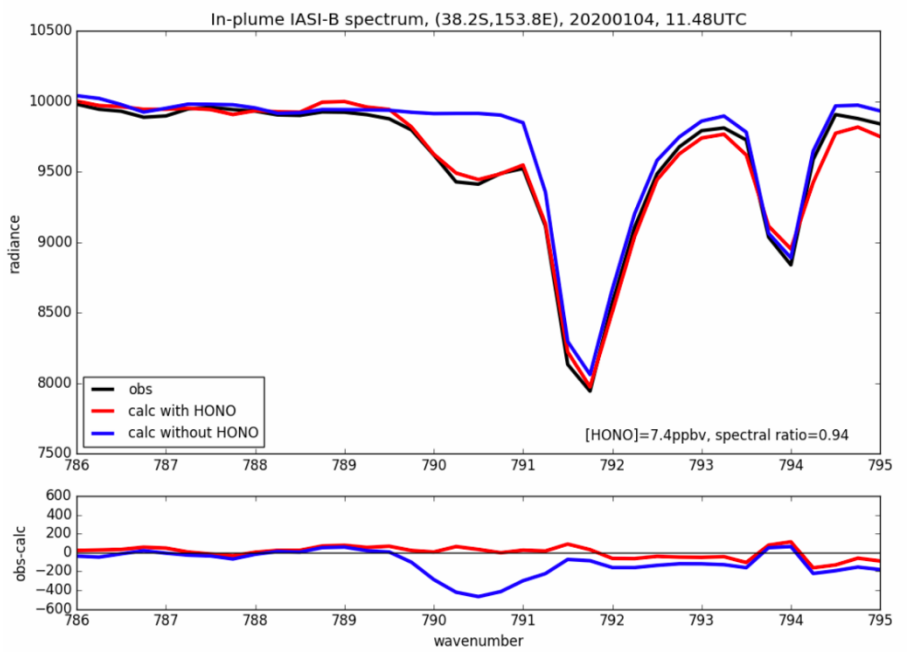

Figure S1. Example of a spectrum measured within an Australian fire plume detected on 4 January 2020 at 11.48 UTC by IASI-B. The observed spectrum (black) is compared to the direct radiative transfer calculation with (red) and without (blue) HONO included. The difference between the observed and the calculated spectra is displayed in the lower panel. The HONO contribution is visible between 790 and 791 cm^{-1}.

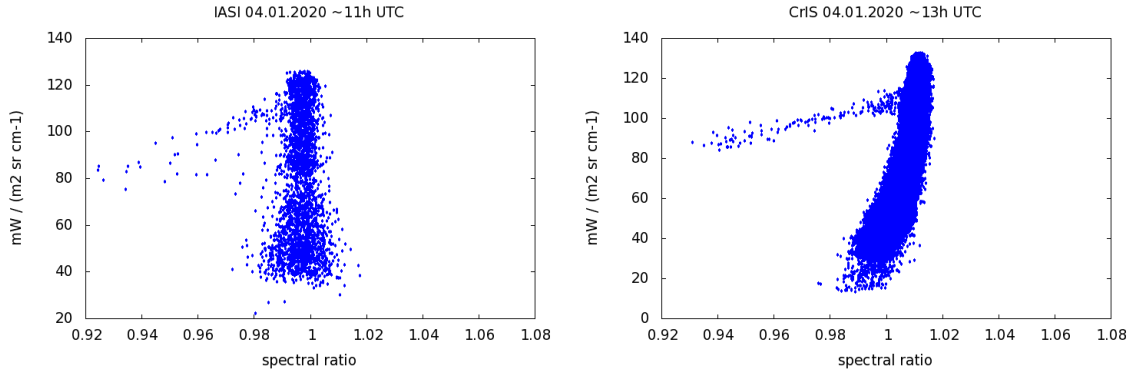

Figure S2. Examples of spectral ratio distribution for IASI (left) and CrIS (right).

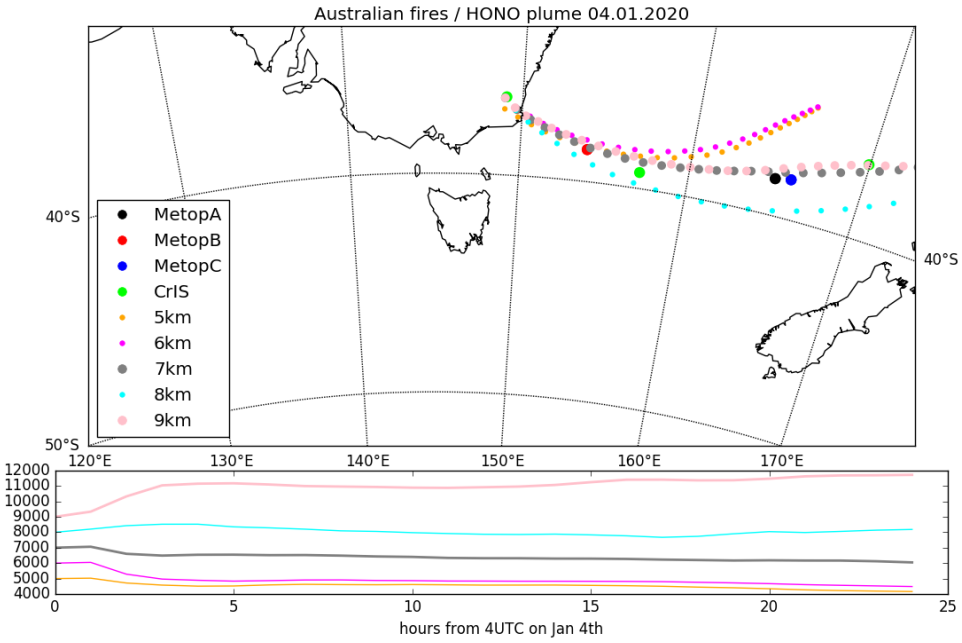

Figure S3. HYSPLIT forward trajectories initialized at different altitudes compared to plume observed from IASI and CrIS. The height evolution of the trajectories is presented in the lower panel.

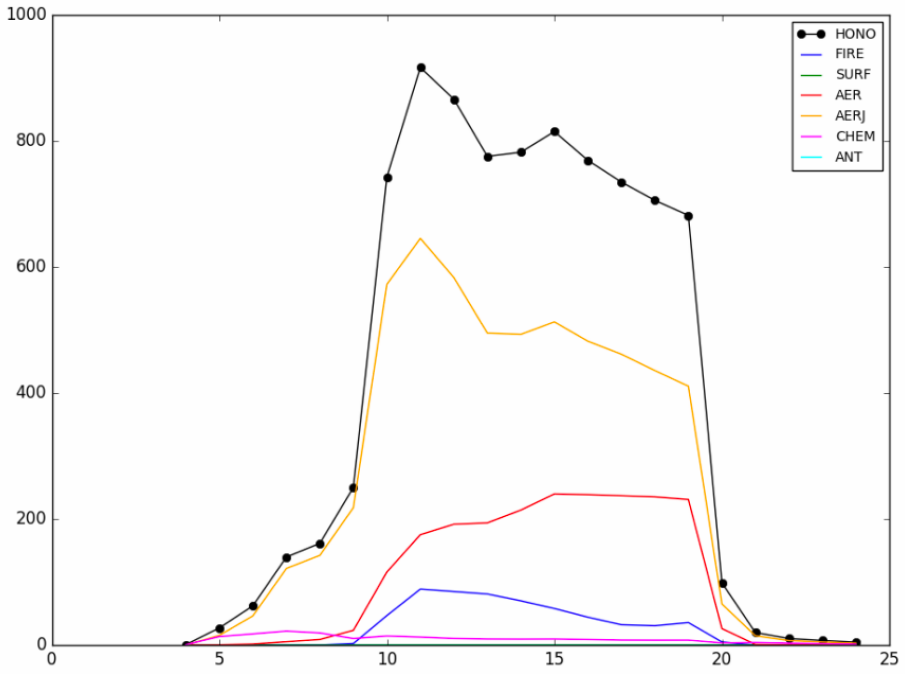

Figure S4. Contributions of the different processes to the temporal evolution of HONO within the plume calculated from the HONOMAXJ simulation. HONO corresponds to

the simulated concentrations, FIRE to the tracer of primary fire emissions, ANT to the tracer for CAMS anthropogenic emissions, CHEM to the tracer for (R1), SURF to the tracer for (R4), AER to the tracer for (R5), and AERJ to the tracer for (R6).