The observed CIMS-to-LIF ratios of OH and HO$_2$ show similar dependence on temperature as on water mixing ratio (Figure S1). At lower temperature ($<5$ °C), the CIMS measured OH mixing ratios are smaller than the LIF measured OH on average. When the temperature is greater than 5 °C, the median CIMS-to-LIF OH ratio is close to 1. The observed CIMS-to-LIF HO$_2$ ratio exhibits an opposite temperature dependence compared to the OH ratio. At lower temperatures ($<10$ °C, in particular $<-10$ °C), the CIMS measured HO$_2$ mixing ratios are greater than the LIF measured OH. When the temperature is greater than 10 °C, the median CIMS-to-LIF HO$_2$ ratio is close to 1.

**Figure S1.** Observed CIMS-to-LIF ratios of OH (left) and HO$_2$ (right) as a function of temperature. Individual points represent 1-minute data for the entire ARCTAS mission and linked circles are the median values of temperature bins. The dotted lines indicate a ratio of 1.