

Table R1. Results of the total column comparisons of the FTIR to CrIS for observations with a $\text{DOF} < 0.9$. N is the number of averaged total columns, MD is the mean difference [10^{15} molecules cm^{-2}], MRD is the mean relative difference [frac, in %]. Value for the complete set used in Table 3 and Fig 4 are given in red. Take note that the combined value N does not add up with all the separate sites as observations have been included for FTIR total columns $> 5 \times 10^{15}$ molecules cm^{-2} .

Retrieval	Column range total in molecules cm^{-2}	N	MD in 10^{15} (1σ)	MRD in % (1σ)	FTIR mean in 10^{15} (1σ)
CrIS-NH3	$< 10.0 \times 10^{15}$	39	2.6 (4.1)	33.0 (54.9)	6.1 (2.2)
CrIS-NH3	$\geq 10.0 \times 10^{15}$	6	-4.3 (4.4)	-41.6 (44.3)	14.2 (4.3)
CrIS-NH3	$< 10.0 \times 10^{15}$	93	3.3 (4.1)	30.2 (38.0)	7.5 (1.5)
CrIS-NH3	$\geq 10.0 \times 10^{15}$	109	0.4 (5.3)	-1.39 (34.4)	16.7 (8.5)