PyCAMA report generated by tropl2-proc

tropl2-proc

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1 Short Introduction

1.1 The list of parameters

You may want to keep the list given in table 1 at hand when viewing the results.

2 Definitions

The averages shown here are *unweighed* averages:

$$\overline{x} = \frac{1}{N}\sum_{i=1}^{N} x_i \tag{1}$$

with N the number of observations in the dataset.

The spread of the measurements is indicated with the variance $V(x)$, or rather the standard deviation $\sigma(x) = \sqrt{V(x)}$.

$$V(x) = \frac{1}{N-1}\sum_{i=1}^{N}(x_i - \overline{x})^2 \tag{2}$$

We also report the more robust statistics median, minimum, maximum, various percentiles and inter quartile range.

The median m is the value of parameter x for which half of the observations of x is smaller than m:

$$P(x \leq m) = P(x \geq m) = \int_{-\infty}^{m} f(x)\,\mathrm{d}x = \frac{1}{2} \tag{3}$$

with $f(x)$ the probability density function.

The median is a special case of a percentile. Instead of ½ in equation 3, other threshold values can be used. We report results for 1 %, 5 %, 10 %, 15.9 %, 25 %, 75 %, 84.1 %, 90 %, 95 % and 99 %. The inter quartile range is the difference between the 75 % and 25 % percentiles. Similarly the minimum and maximum values correspond to the 0 % and 100 % percentiles respectively.

For normally distributed parameters the mean and median are the same, while the $\mu \pm \sigma$ values and the 15.9 % and 84.1 % percentiles coincide.

To get a measure for the relation of one variable $x_{(k)}$ with another $x_{(l)}$, we calculate the covariance matrix C_{kl}.

$$C_{kl} = C(x_{(k)}, x_{(l)}) = \frac{1}{N-1}\sum_{i=1}^{N}(x_{(k),i} - \overline{x_{(k)}})(x_{(l),i} - \overline{x_{(l)}}) \tag{4}$$

Rather than a dimensionally dependent covariance, it is often easier to interpret a correlation matrix R_{kl}, a matrix of Pearson's r coefficients:

$$R_{kl} = R(x_{(k)}, x_{(l)}) = \frac{C_{kl}}{\sqrt{C_{kk}C_{ll}}} = \frac{C_{kl}}{\sqrt{V(x_k)V(x_l)}} \tag{5}$$

The diagonal elements of the covariance matrix are the variances of the elements, $V(x_{(k)}) = C_{kk}$ and obviously $R_{kk} = 1$.

Table 1: Parameterlist and basic statistics for the analysis

Variable	mean $\pm\sigma$	Count	Mode	IQR	Median	Minimum	Maximum
qa value [1]	0.630 ± 0.408	19869776	0.995	0.790	1.000	0.0	1.000
sulfurdioxide total vertical column [DU]	$(2.645 \pm 82.581) \times 10^{-2}$	19869776	0.294	0.467	1.123×10^{-2}	-91.5	244
sulfurdioxide total vertical column precision [DU]	0.503 ± 0.589	19869776	0.247	0.335	0.335	4.629×10^{-2}	51.2
sulfurdioxide slant column density corrected [DU]	$(1.934 \pm 39.822) \times 10^{-2}$	19869776	0.276	0.396	1.026×10^{-2}	-29.1	312
sulfurdioxide slant column density cobra [DU]	$(1.913 \pm 37.308) \times 10^{-2}$	19869776	0.276	0.396	1.026×10^{-2}	-29.1	39.0
sulfurdioxide slant column density cobra precision [DU]	0.317 ± 0.132	19869776	0.237	0.152	0.276	8.739×10^{-2}	29.7
sulfurdioxide slant column density window1 [DU]	$(8.635 \pm 68.336) \times 10^{-2}$	19869776	0.125	0.746	9.022×10^{-2}	-214	102
sulfurdioxide slant column density window1 precision [DU]	0.317 ± 0.132	19869776	0.237	0.152	0.276	8.739×10^{-2}	29.7
sulfurdioxide slant column density corrected win1 [DU]	$(2.558 \pm 67.524) \times 10^{-2}$	19869776	-2.500×10^{-2}	0.735	8.227×10^{-3}	-214	103
background so2 slant column offset window1 [DU]	$(-6.076 \pm 13.491) \times 10^{-2}$	19869776	-0.140	0.156	-8.362×10^{-2}	-0.646	2.22
sulfurdioxide slant column density window2 [DU]	1.59 ± 8.95	19869776	1.75	11.3	1.55	-1.243×10^{3}	995
sulfurdioxide slant column density window2 precision [DU]	8.06 ± 2.35	19869776	7.43	2.68	7.70	2.29	749
sulfurdioxide slant column density corrected win2 [DU]	0.348 ± 8.741	19869776	0.250	11.0	0.363	-1.241×10^{3}	995
background so2 slant column offset window2 [DU]	-1.25 ± 2.25	19869776	0.750	3.37	-0.682	-11.8	6.06
sulfurdioxide slant column density window3 [DU]	-6.02 ± 23.79	19869776	-8.40	29.3	-6.40	-1.083×10^{3}	703
sulfurdioxide slant column density window3 precision [DU]	28.1 ± 13.5	19869776	21.5	10.3	24.4	9.18	339
sulfurdioxide slant column density corrected win3 [DU]	-1.27 ± 23.17	19869776	-0.560	28.4	-1.17	-1.080×10^{3}	707
background so2 slant column offset window3 [DU]	4.75 ± 5.55	19869776	9.52	9.49	4.83	-15.7	25.5
sulfurdioxide slant column cobra flag [1]	2.00 ± 0.00	19869776	1.67	0.0	2.00	2.00	2.00
fitted radiance shift [nm]	$(-1.448 \pm 25.624) \times 10^{-4}$	19869776	1.000×10^{-4}	1.679×10^{-3}	-1.373×10^{-4}	-5.551×10^{-2}	4.668×10^{-2}
fitted radiance squeeze [1]	$(-3.127 \pm 18.172) \times 10^{-5}$	19869776	-3.000×10^{-5}	2.085×10^{-4}	-2.687×10^{-5}	-1.935×10^{-2}	3.430×10^{-2}
fitted root mean square [1]	$(1.293 \pm 0.518) \times 10^{-3}$	19869776	1.025×10^{-3}	5.257×10^{-4}	1.150×10^{-3}	3.417×10^{-4}	0.106
sulfurdioxide total air mass factor polluted [1]	0.920 ± 0.478	19869776	0.780	0.578	0.827	5.000×10^{-2}	2.88
sulfurdioxide total air mass factor polluted precision [1]	0.116 ± 0.125	19869776	3.500×10^{-2}	0.114	7.077×10^{-2}	4.099×10^{-3}	1.97
sulfurdioxide clear air mass factor polluted [1]	0.758 ± 0.316	19869776	0.780	0.373	0.732	5.777×10^{-2}	2.71
number of spectral points in retrieval [1]	73.4 ± 0.5	19869776	73.0	1.000	73.0	52.0	74.0

Table 2: Percentile ranges

Variable	1 %	5 %	10 %	15.9 %	25 %	75 %	84.1 %	90 %	95 %	99 %
qa value [1]	0.0	0.0	3.000×10^{-2}	9.000×10^{-2}	0.210	1.000	1.000	1.000	1.000	1.000
sulfurdioxide total vertical column [DU]	−2.03	−0.858	−0.540	−0.368	−0.219	0.248	0.407	0.595	0.949	2.29
sulfurdioxide total vertical column precision [DU]	0.105	0.139	0.168	0.196	0.231	0.566	0.739	0.941	1.32	2.96
sulfurdioxide slant column density corrected [DU]	−0.893	−0.531	−0.386	−0.288	−0.186	0.210	0.319	0.425	0.589	1.04
sulfurdioxide slant column density cobra [DU]	−0.893	−0.531	−0.386	−0.288	−0.186	0.210	0.319	0.425	0.589	1.04
sulfurdioxide slant column density cobra precision [DU]	0.154	0.183	0.198	0.209	0.225	0.377	0.431	0.482	0.566	0.794
sulfurdioxide slant column density window1 [DU]	−1.73	−0.969	−0.679	−0.486	−0.286	0.461	0.655	0.840	1.12	1.89
sulfurdioxide slant column density window1 precision [DU]	0.154	0.183	0.198	0.209	0.225	0.377	0.431	0.482	0.566	0.794
sulfurdioxide slant column density corrected win1 [DU]	−1.66	−0.977	−0.717	−0.541	−0.354	0.381	0.583	0.779	1.08	1.91
background so2 slant column offset window1 [DU]	−0.335	−0.226	−0.187	−0.170	−0.152	3.975×10^{-3}	5.994×10^{-2}	0.110	0.188	0.376
sulfurdioxide slant column density window2 [DU]	−19.8	−12.8	−9.41	−6.90	−4.09	7.21	10.0	12.6	16.1	23.6
sulfurdioxide slant column density window2 precision [DU]	4.25	5.06	5.57	6.00	6.51	9.19	10.1	11.0	12.3	15.0
sulfurdioxide slant column density corrected win2 [DU]	−20.9	−13.8	−10.4	−7.89	−5.13	5.83	8.57	11.0	14.4	21.6
background so2 slant column offset window2 [DU]	−6.80	−5.47	−4.61	−3.83	−2.80	0.570	0.874	1.09	1.40	2.31
sulfurdioxide slant column density window3 [DU]	−65.6	−44.3	−34.7	−28.0	−20.7	8.56	16.5	23.7	33.6	53.2
sulfurdioxide slant column density window3 precision [DU]	13.2	15.6	17.6	19.1	20.6	30.9	35.6	41.2	53.1	85.6
sulfurdioxide slant column density corrected win3 [DU]	−60.4	−39.3	−29.6	−22.7	−15.4	13.1	20.4	27.2	36.5	55.6
background so2 slant column offset window3 [DU]	−6.30	−3.80	−2.42	−1.31	5.103×10^{-2}	9.54	10.8	11.8	13.0	15.2
sulfurdioxide slant column cobra flag [1]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
fitted radiance shift [nm]	-8.031×10^{-3}	-3.922×10^{-3}	-2.470×10^{-3}	-1.663×10^{-3}	-1.008×10^{-3}	6.705×10^{-4}	1.324×10^{-3}	2.178×10^{-3}	3.698×10^{-3}	7.953×10^{-3}
fitted radiance squeeze [1]	-5.237×10^{-4}	-3.250×10^{-4}	-2.441×10^{-4}	-1.897×10^{-4}	-1.329×10^{-4}	7.569×10^{-5}	1.282×10^{-4}	1.771×10^{-4}	2.475×10^{-4}	4.156×10^{-4}
fitted root mean square [1]	6.029×10^{-4}	7.468×10^{-4}	8.271×10^{-4}	8.873×10^{-4}	9.593×10^{-4}	1.485×10^{-3}	1.725×10^{-3}	1.962×10^{-3}	2.297×10^{-3}	3.137×10^{-3}
sulfurdioxide total air mass factor polluted [1]	0.118	0.278	0.379	0.468	0.585	1.16	1.42	1.65	1.91	2.19
sulfurdioxide total air mass factor polluted precision [1]	1.195×10^{-2}	1.986×10^{-2}	2.612×10^{-2}	3.204×10^{-2}	3.931×10^{-2}	0.153	0.200	0.253	0.350	0.612
sulfurdioxide clear air mass factor polluted [1]	0.233	0.324	0.389	0.450	0.539	0.912	1.01	1.12	1.36	1.83
number of spectral points in retrieval [1]	73.0	73.0	73.0	73.0	73.0	74.0	74.0	74.0	74.0	74.0

Table 3: Parameterlist and basic statistics for the analysis for observations in the northern hemisphere

Variable	mean $\pm\sigma$	Count	IQR	Median	Minimum	Maximum	25 % percentile	75 % percentile
qa value [1]	0.566 ± 0.417	13366059	0.860	0.490	0.0	1.000	0.140	1.000
sulfurdioxide total vertical column [DU]	$(2.539 \pm 86.234) \times 10^{-2}$	13366059	0.440	1.024×10^{-2}	-41.9	97.9	-0.207	0.233
sulfurdioxide total vertical column precision [DU]	0.497 ± 0.638	13366059	0.325	0.313	4.629×10^{-2}	21.2	0.215	0.541
sulfurdioxide slant column density corrected [DU]	$(1.924 \pm 37.822) \times 10^{-2}$	13366059	0.379	9.517×10^{-3}	-3.94	113	-0.178	0.201
sulfurdioxide slant column density cobra [DU]	$(1.901 \pm 36.222) \times 10^{-2}$	13366059	0.379	9.517×10^{-3}	-3.94	26.1	-0.178	0.201
sulfurdioxide slant column density cobra precision [DU]	0.302 ± 0.128	13366059	0.135	0.261	8.739×10^{-2}	5.58	0.217	0.352
sulfurdioxide slant column density window1 [DU]	$(7.385 \pm 66.219) \times 10^{-2}$	13366059	0.720	8.110×10^{-2}	-10.3	25.7	-0.283	0.437
sulfurdioxide slant column density window1 precision [DU]	0.302 ± 0.128	13366059	0.135	0.261	8.739×10^{-2}	5.58	0.217	0.352
sulfurdioxide slant column density corrected win1 [DU]	$(2.373 \pm 65.058) \times 10^{-2}$	13366059	0.706	6.024×10^{-3}	-10.3	26.0	-0.341	0.364
background so2 slant column offset window1 [DU]	$(-5.012 \pm 14.791) \times 10^{-2}$	13366059	0.188	-7.870×10^{-2}	-0.646	2.22	-0.156	3.204×10^{-2}
sulfurdioxide slant column density window2 [DU]	1.79 ± 8.34	13366059	10.7	1.77	-267	475	-3.59	7.14
sulfurdioxide slant column density window2 precision [DU]	7.54 ± 2.03	13366059	2.30	7.23	2.29	334	6.19	8.49
sulfurdioxide slant column density corrected win2 [DU]	0.266 ± 8.059	13366059	10.3	0.309	-275	471	-4.87	5.45
background so2 slant column offset window2 [DU]	-1.52 ± 2.46	13366059	4.11	-1.13	-11.8	6.06	-3.45	0.658
sulfurdioxide slant column density window3 [DU]	-6.41 ± 21.95	13366059	27.1	-7.01	-185	156	-20.2	6.88
sulfurdioxide slant column density window3 precision [DU]	26.1 ± 13.0	13366059	7.99	22.6	9.18	234	19.6	27.6
sulfurdioxide slant column density corrected win3 [DU]	-1.07 ± 21.19	13366059	26.2	-1.05	-189	162	-14.1	12.1
background so2 slant column offset window3 [DU]	5.33 ± 5.88	13366059	10.4	6.80	-15.7	19.2	-0.176	10.2
sulfurdioxide slant column cobra flag [1]	2.00 ± 0.00	13366059	0.0	2.00	2.00	2.00	2.00	2.00
fitted radiance shift [nm]	$(-3.747 \pm 2520.047) \times 10^{-6}$	13366059	1.542×10^{-3}	-1.851×10^{-5}	-4.147×10^{-2}	3.854×10^{-2}	-7.940×10^{-4}	7.475×10^{-4}
fitted radiance squeeze [1]	$(-5.494 \pm 17.242) \times 10^{-5}$	13366059	2.005×10^{-4}	-4.403×10^{-5}	-5.015×10^{-3}	1.474×10^{-2}	-1.484×10^{-4}	5.209×10^{-5}
fitted root mean square [1]	$(1.244 \pm 0.506) \times 10^{-3}$	13366059	4.771×10^{-4}	1.098×10^{-3}	3.498×10^{-4}	2.206×10^{-2}	9.274×10^{-4}	1.405×10^{-3}
sulfurdioxide total air mass factor polluted [1]	0.951 ± 0.531	13366059	0.726	0.840	5.000×10^{-2}	2.88	0.548	1.27
sulfurdioxide total air mass factor polluted precision [1]	0.131 ± 0.143	13366059	0.135	7.954×10^{-2}	4.099×10^{-3}	1.97	3.990×10^{-2}	0.175
sulfurdioxide clear air mass factor polluted [1]	0.759 ± 0.358	13366059	0.438	0.715	5.777×10^{-2}	2.71	0.490	0.928
number of spectral points in retrieval [1]	73.5 ± 0.5	13366059	1.000	73.0	52.0	74.0	73.0	74.0

Table 4: Parameterlist and basic statistics for the analysis for observations in the southern hemisphere

Variable	mean $\pm\sigma$	Count	IQR	Median	Minimum	Maximum	25 % percentile	75 % percentile
qa value [1]	0.762 ± 0.353	6503717	0.560	1.000	0.0	1.000	0.440	1.000
sulfurdioxide total vertical column [DU]	$(2.863 \pm 74.515) \times 10^{-2}$	6503717	0.525	1.370×10^{-2}	-91.5	244	-0.246	0.280
sulfurdioxide total vertical column precision [DU]	0.516 ± 0.471	6503717	0.339	0.384	5.816×10^{-2}	51.2	0.265	0.604
sulfurdioxide slant column density corrected [DU]	$(1.954 \pm 43.646) \times 10^{-2}$	6503717	0.437	1.200×10^{-2}	-29.1	312	-0.204	0.232
sulfurdioxide slant column density cobra [DU]	$(1.937 \pm 39.445) \times 10^{-2}$	6503717	0.437	1.200×10^{-2}	-29.1	39.0	-0.204	0.232
sulfurdioxide slant column density cobra precision [DU]	0.347 ± 0.137	6503717	0.166	0.321	0.104	29.7	0.246	0.412
sulfurdioxide slant column density window1 [DU]	0.112 ± 0.724	6503717	0.804	0.111	-214	102	-0.291	0.513
sulfurdioxide slant column density window1 precision [DU]	0.347 ± 0.137	6503717	0.166	0.321	0.104	29.7	0.246	0.412
sulfurdioxide slant column density corrected win1 [DU]	$(2.940 \pm 72.326) \times 10^{-2}$	6503717	0.801	1.342×10^{-2}	-214	103	-0.382	0.419
background so2 slant column offset window1 [DU]	$(-8.264 \pm 9.966) \times 10^{-2}$	6503717	9.491×10^{-2}	-8.771×10^{-2}	-0.529	2.03	-0.138	-4.354×10^{-2}
sulfurdioxide slant column density window2 [DU]	1.20 ± 10.09	6503717	12.6	1.02	-1.243×10^{3}	995	-5.20	7.39
sulfurdioxide slant column density window2 precision [DU]	9.13 ± 2.58	6503717	2.85	8.78	2.29	749	7.52	10.4
sulfurdioxide slant column density corrected win2 [DU]	0.516 ± 9.996	6503717	12.5	0.496	-1.241×10^{3}	995	-5.74	6.74
background so2 slant column offset window2 [DU]	-0.680 ± 1.596	6503717	2.00	-0.283	-9.52	5.89	-1.56	0.443
sulfurdioxide slant column density window3 [DU]	-5.22 ± 27.16	6503717	34.4	-4.82	-1.083×10^{3}	703	-22.1	12.3
sulfurdioxide slant column density window3 precision [DU]	32.2 ± 13.5	6503717	10.8	28.8	9.68	339	24.5	35.3
sulfurdioxide slant column density corrected win3 [DU]	-1.66 ± 26.77	6503717	34.0	-1.48	-1.080×10^{3}	707	-18.5	15.5
background so2 slant column offset window3 [DU]	3.56 ± 4.59	6503717	6.49	2.52	-13.1	25.5	0.256	6.75
sulfurdioxide slant column cobra flag [1]	2.00 ± 0.00	6503717	0.0	2.00	2.00	2.00	2.00	2.00
fitted radiance shift [nm]	$(-4.346 \pm 26.238) \times 10^{-4}$	6503717	1.868×10^{-3}	-4.345×10^{-4}	-5.551×10^{-2}	4.668×10^{-2}	-1.411×10^{-3}	4.573×10^{-4}
fitted radiance squeeze [1]	$(1.738 \pm 19.044) \times 10^{-5}$	6503717	2.229×10^{-4}	1.291×10^{-5}	-1.935×10^{-2}	3.430×10^{-2}	-9.672×10^{-5}	1.262×10^{-4}
fitted root mean square [1]	$(1.396 \pm 0.528) \times 10^{-3}$	6503717	5.700×10^{-4}	1.265×10^{-3}	3.417×10^{-4}	0.106	1.046×10^{-3}	1.616×10^{-3}
sulfurdioxide total air mass factor polluted [1]	0.856 ± 0.335	6503717	0.395	0.810	5.000×10^{-2}	2.73	0.639	1.03
sulfurdioxide total air mass factor polluted precision [1]	$(8.623 \pm 6.881) \times 10^{-2}$	6503717	7.874×10^{-2}	5.840×10^{-2}	4.356×10^{-3}	1.30	3.862×10^{-2}	0.117
sulfurdioxide clear air mass factor polluted [1]	0.758 ± 0.205	6503717	0.265	0.752	9.073×10^{-2}	1.79	0.623	0.889
number of spectral points in retrieval [1]	73.4 ± 0.5	6503717	1.000	73.0	52.0	74.0	73.0	74.0

Table 5: Parameterlist and basic statistics for the analysis for observations over water

Variable	mean $\pm\sigma$	Count	IQR	Median	Minimum	Maximum	25 % percentile	75 % percentile
qa value [1]	0.677 ± 0.388	13513868	0.720	1.000	0.0	1.000	0.280	1.000
sulfurdioxide total vertical column [DU]	$(2.342 \pm 76.458) \times 10^{-2}$	13513868	0.475	1.113×10^{-2}	-41.9	228	-0.224	0.251
sulfurdioxide total vertical column precision [DU]	0.493 ± 0.537	13513868	0.323	0.335	5.400×10^{-2}	36.4	0.238	0.561
sulfurdioxide slant column density corrected [DU]	$(1.693 \pm 36.581) \times 10^{-2}$	13513868	0.397	9.844×10^{-3}	-10.2	209	-0.187	0.210
sulfurdioxide slant column density cobra [DU]	$(1.692 \pm 36.131) \times 10^{-2}$	13513868	0.397	9.844×10^{-3}	-10.2	39.0	-0.187	0.210
sulfurdioxide slant column density cobra precision [DU]	0.319 ± 0.132	13513868	0.165	0.277	8.739×10^{-2}	16.4	0.223	0.388
sulfurdioxide slant column density window1 [DU]	$(8.768 \pm 68.280) \times 10^{-2}$	13513868	0.752	9.741×10^{-2}	-53.7	102	-0.283	0.469
sulfurdioxide slant column density window1 precision [DU]	0.319 ± 0.132	13513868	0.165	0.277	8.739×10^{-2}	16.4	0.223	0.388
sulfurdioxide slant column density corrected win1 [DU]	$(2.484 \pm 67.372) \times 10^{-2}$	13513868	0.742	1.041×10^{-2}	-53.7	103	-0.356	0.386
background so2 slant column offset window1 [DU]	$(-6.284 \pm 13.752) \times 10^{-2}$	13513868	0.151	-8.761×10^{-2}	-0.646	2.22	-0.153	-2.713×10^{-3}
sulfurdioxide slant column density window2 [DU]	1.47 ± 8.99	13513868	11.4	1.37	-818	995	-4.29	7.11
sulfurdioxide slant column density window2 precision [DU]	8.11 ± 2.22	13513868	2.61	7.76	2.29	422	6.61	9.23
sulfurdioxide slant column density corrected win2 [DU]	0.382 ± 8.789	13513868	11.1	0.397	-817	995	-5.16	5.93
background so2 slant column offset window2 [DU]	-1.09 ± 2.23	13513868	3.16	-0.422	-11.8	6.06	-2.52	0.636
sulfurdioxide slant column density window3 [DU]	-3.64 ± 24.17	13513868	30.2	-4.09	-379	649	-18.8	11.4
sulfurdioxide slant column density window3 precision [DU]	27.5 ± 11.8	13513868	9.48	24.4	9.44	339	20.9	30.4
sulfurdioxide slant column density corrected win3 [DU]	0.606 ± 23.265	13513868	29.0	0.436	-369	656	-13.9	15.1
background so2 slant column offset window3 [DU]	4.24 ± 5.55	13513868	9.39	3.68	-15.7	25.5	-0.319	9.07
sulfurdioxide slant column cobra flag [1]	2.00 ± 0.00	13513868	0.0	2.00	2.00	2.00	2.00	2.00
fitted radiance shift [nm]	$(-1.850 \pm 22.975) \times 10^{-4}$	13513868	1.620×10^{-3}	-1.675×10^{-4}	-4.961×10^{-2}	3.443×10^{-2}	-1.015×10^{-3}	6.045×10^{-4}
fitted radiance squeeze [1]	$(-2.347 \pm 18.332) \times 10^{-5}$	13513868	2.092×10^{-4}	-1.872×10^{-5}	-1.649×10^{-2}	3.430×10^{-2}	-1.252×10^{-4}	8.392×10^{-5}
fitted root mean square [1]	$(1.307 \pm 0.527) \times 10^{-3}$	13513868	5.754×10^{-4}	1.155×10^{-3}	3.498×10^{-4}	6.396×10^{-2}	9.541×10^{-4}	1.530×10^{-3}
sulfurdioxide total air mass factor polluted [1]	0.890 ± 0.422	13513868	0.494	0.827	5.000×10^{-2}	2.41	0.605	1.10
sulfurdioxide total air mass factor polluted precision [1]	0.103 ± 0.111	13513868	8.770×10^{-2}	6.359×10^{-2}	4.637×10^{-3}	1.95	3.974×10^{-2}	0.127
sulfurdioxide clear air mass factor polluted [1]	0.775 ± 0.309	13513868	0.351	0.757	5.777×10^{-2}	2.34	0.571	0.922
number of spectral points in retrieval [1]	73.4 ± 0.5	13513868	1.000	73.0	70.0	74.0	73.0	74.0

Table 6: Parameterlist and basic statistics for the analysis for observations over land

Variable	mean $\pm\sigma$	Count	IQR	Median	Minimum	Maximum	25 % percentile	75 % percentile
qa value [1]	0.589 ± 0.433	4386351	0.890	1.000	0.0	1.000	0.110	1.000
sulfurdioxide total vertical column [DU]	$(2.766 \pm 89.961) \times 10^{-2}$	4386351	0.459	1.061×10^{-2}	-91.5	244	-0.215	0.245
sulfurdioxide total vertical column precision [DU]	0.519 ± 0.652	4386351	0.358	0.345	4.629×10^{-2}	51.2	0.217	0.574
sulfurdioxide slant column density corrected [DU]	$(2.061 \pm 44.018) \times 10^{-2}$	4386351	0.386	9.924×10^{-3}	-29.1	312	-0.181	0.205
sulfurdioxide slant column density cobra [DU]	$(2.015 \pm 37.322) \times 10^{-2}$	4386351	0.386	9.924×10^{-3}	-29.1	36.8	-0.181	0.205
sulfurdioxide slant column density cobra precision [DU]	0.305 ± 0.128	4386351	0.118	0.268	9.914×10^{-2}	29.7	0.226	0.344
sulfurdioxide slant column density window1 [DU]	0.104 ± 0.660	4386351	0.720	9.644×10^{-2}	-214	69.4	-0.262	0.457
sulfurdioxide slant column density window1 precision [DU]	0.305 ± 0.128	4386351	0.118	0.268	9.914×10^{-2}	29.7	0.226	0.344
sulfurdioxide slant column density corrected win1 [DU]	$(2.640 \pm 65.454) \times 10^{-2}$	4386351	0.709	6.906×10^{-3}	-214	69.6	-0.341	0.368
background so2 slant column offset window1 [DU]	$(-7.746 \pm 12.046) \times 10^{-2}$	4386351	0.141	-9.510×10^{-2}	-0.531	1.36	-0.157	-1.581×10^{-2}
sulfurdioxide slant column density window2 [DU]	1.46 ± 9.04	4386351	11.3	1.51	-1.243×10^{3}	956	-4.16	7.10
sulfurdioxide slant column density window2 precision [DU]	8.13 ± 2.69	4386351	2.81	7.73	2.29	749	6.48	9.29
sulfurdioxide slant column density corrected win2 [DU]	0.320 ± 8.836	4386351	10.9	0.331	-1.241×10^{3}	955	-5.12	5.76
background so2 slant column offset window2 [DU]	-1.14 ± 2.14	4386351	3.18	-0.636	-10.9	6.06	-2.61	0.572
sulfurdioxide slant column density window3 [DU]	-11.3 ± 22.9	4386351	27.7	-10.9	-903	703	-24.9	2.82
sulfurdioxide slant column density window3 precision [DU]	30.3 ± 17.2	4386351	13.2	25.4	9.18	331	20.4	33.6
sulfurdioxide slant column density corrected win3 [DU]	-6.39 ± 23.20	4386351	28.3	-5.51	-899	707	-20.1	8.18
background so2 slant column offset window3 [DU]	4.86 ± 5.43	4386351	9.18	5.14	-13.1	21.9	0.287	9.47
sulfurdioxide slant column cobra flag [1]	2.00 ± 0.00	4386351	0.0	2.00	2.00	2.00	2.00	2.00
fitted radiance shift [nm]	$(-5.322 \pm 320.964) \times 10^{-5}$	4386351	1.876×10^{-3}	-6.473×10^{-5}	-5.551×10^{-2}	4.668×10^{-2}	-1.013×10^{-3}	8.623×10^{-4}
fitted radiance squeeze [1]	$(-3.798 \pm 17.510) \times 10^{-5}$	4386351	2.037×10^{-4}	-3.501×10^{-5}	-1.935×10^{-2}	1.352×10^{-2}	-1.378×10^{-4}	6.593×10^{-5}
fitted root mean square [1]	$(1.242 \pm 0.472) \times 10^{-3}$	4386351	4.161×10^{-4}	1.126×10^{-3}	3.417×10^{-4}	0.106	9.609×10^{-4}	1.377×10^{-3}
sulfurdioxide total air mass factor polluted [1]	0.937 ± 0.551	4386351	0.715	0.782	5.000×10^{-2}	2.88	0.535	1.25
sulfurdioxide total air mass factor polluted precision [1]	0.142 ± 0.147	4386351	0.163	9.752×10^{-2}	4.356×10^{-3}	1.94	3.587×10^{-2}	0.199
sulfurdioxide clear air mass factor polluted [1]	0.707 ± 0.312	4386351	0.360	0.663	9.073×10^{-2}	2.71	0.487	0.847
number of spectral points in retrieval [1]	73.4 ± 0.5	4386351	1.000	73.0	52.0	74.0	73.0	74.0

Table 7: Correlation matrix

	Viewing zenith angle	Solar zenith angle	Latitude	SO_2 vertical column	SO_2 vertical column precision	Corrected SO_2 slant column	Cobra SO_2 slant column	SO_2 slant column precision (Cobra)	SO_2 slant column (window 1)	SO_2 slant column precision (window 1)	SO_2 slant column background correction (window 1)	SO_2 slant column precision (window2)	Corrected SO_2 slant column (window 2)	SO_2 slant column background correction (window 2)	SO_2 slant column (window 3)	SO_2 slant column precision (window 3)	Corrected SO_2 slant column (window 3)	SO_2 slant column background correction (window 3)	DOAS fit wavelength shift	DOAS fit wavelength squeeze	SO_2 RMS	Total AMF (polluted)	Precision of total AMF (polluted)	Clear AMF (polluted)
Viewing zenith angle	1.000	6.864×10^{-3}	-9.406×10^{-3}	1.318×10^{-2}	0.282	6.813×10^{-3}	7.085×10^{-3}	0.374	1.779×10^{-2}	0.374	8.931×10^{-2}	0.158	5.781×10^{-3}	7.834×10^{-2}	-1.042×10^{-2}	4.288×10^{-2}	-2.103×10^{-2}	-4.312×10^{-2}	-6.040×10^{-3}	-4.356×10^{-3}	0.338	−0.194	−0.150	−0.195
Solar zenith angle	6.864×10^{-3}	1.000	-1.945×10^{-2}	1.559×10^{-2}	0.116	2.137 × 10^{-2}	2.234 × 10^{-2}	0.577	−0.104	0.577	0.614	0.256	4.989 × 10^{-3}	−0.678	−0.156	5.849 × 10^{-3}	−2.510 × 10^{-2}	0.563	−9.864 × 10^{-2}	−0.121	0.547	0.224	5.145 × 10^{-2}	0.162
Latitude	-9.406×10^{-3}	-1.945×10^{-2}	1.000	7.805×10^{-4}	-4.646×10^{-3}	5.572 × 10^{-3}	5.609 × 10^{-3}	2.052 × 10^{-2}	−8.373 × 10^{-2}	2.052 × 10^{-2}	0.408	−0.288	−1.659 × 10^{-2}	−0.503	−9.469 × 10^{-2}	−0.233	7.206 × 10^{-3}	0.436	5.856 × 10^{-2}	−0.302	2.542 × 10^{-2}	0.260	0.251	0.119
SO_2 vertical column	1.318×10^{-2}	1.559 × 10^{-2}	7.805×10^{-4}	1.000	5.306 × 10^{-2}	0.720	0.722	4.978 × 10^{-2}	0.390	4.978 × 10^{-2}	1.170 × 10^{-2}	1.737 × 10^{-2}	1.206 × 10^{-2}	−1.407 × 10^{-2}	−1.055 × 10^{-3}	−2.502 × 10^{-4}	8.520 × 10^{-4}	8.074 × 10^{-3}	−2.575 × 10^{-3}	5.169 × 10^{-4}	2.967 × 10^{-2}	−1.264 × 10^{-2}	−6.128 × 10^{-3}	−1.336 × 10^{-2}
SO_2 vertical column precision	0.282	0.116	−4.646 × 10^{-3}	5.306 × 10^{-2}	1.000	1.740 × 10^{-2}	1.741 × 10^{-2}	0.436	2.544 × 10^{-2}	0.436	0.123	0.230	5.131 × 10^{-3}	−0.119	−7.109 × 10^{-2}	3.355 × 10^{-2}	−4.447 × 10^{-2}	0.119	−2.761 × 10^{-2}	3.271 × 10^{-3}	0.388	−0.518	−0.276	−0.430
Corrected SO_2 slant column	6.813 × 10^{-3}	2.137 × 10^{-2}	5.572 × 10^{-3}	0.720	1.740 × 10^{-2}	1.000	0.952	6.339 × 10^{-2}	0.514	6.339 × 10^{-2}	1.669 × 10^{-2}	1.512 × 10^{-2}	1.937 × 10^{-2}	−2.123 × 10^{-2}	−2.518 × 10^{-5}	−4.873 × 10^{-3}	3.145 × 10^{-3}	1.323 × 10^{-2}	−1.980 × 10^{-3}	−1.159 × 10^{-4}	2.974 × 10^{-2}	1.188 × 10^{-2}	7.673 × 10^{-3}	6.290 × 10^{-3}
Cobra SO_2 slant column	7.085 × 10^{-3}	2.234 × 10^{-2}	5.609 × 10^{-3}	0.722	1.741 × 10^{-2}	0.952	1.000	5.559 × 10^{-2}	0.541	5.559 × 10^{-2}	1.746 × 10^{-2}	1.086 × 10^{-2}	1.556 × 10^{-2}	−2.199 × 10^{-2}	−5.527 × 10^{-4}	−5.278 × 10^{-3}	2.720 × 10^{-3}	1.372 × 10^{-2}	−2.113 × 10^{-3}	1.141 × 10^{-4}	3.092 × 10^{-2}	1.229 × 10^{-2}	8.114 × 10^{-3}	6.173 × 10^{-3}
SO_2 slant column precision (Cobra)	0.374	0.577	2.052 × 10^{-2}	0.720	0.436	6.339 × 10^{-2}	5.559 × 10^{-2}	1.000	3.892 × 10^{-3}	1.000	0.478	0.558	1.081 × 10^{-2}	−0.477	−0.120	0.176	−3.663 × 10^{-2}	0.359	−7.888 × 10^{-2}	−9.428 × 10^{-2}	0.921	−5.848 × 10^{-2}	−0.131	−8.794 × 10^{-2}
SO_2 slant column (window 1)	1.779 × 10^{-2}	−0.104	−8.373 × 10^{-2}	0.390	2.544 × 10^{-2}	0.514	0.541	3.892 × 10^{-3}	1.000	3.892 × 10^{-3}	−0.159	3.401 × 10^{-2}	−1.445 × 10^{-3}	0.111	2.914 × 10^{-2}	2.436 × 10^{-2}	4.523 × 10^{-3}	−0.106	−2.813 × 10^{-2}	0.274	−2.603 × 10^{-2}	−7.702 × 10^{-2}	−6.027 × 10^{-2}	−4.994 × 10^{-2}
SO_2 slant column precision (window 1)	0.374	0.577	2.052 × 10^{-2}	4.978 × 10^{-2}	0.436	6.339 × 10^{-2}	5.559 × 10^{-2}	1.000	3.892 × 10^{-3}	1.000	0.478	0.558	1.081 × 10^{-2}	−0.477	−0.120	0.176	−3.663 × 10^{-2}	0.359	−7.888 × 10^{-2}	−9.428 × 10^{-2}	0.921	−5.848 × 10^{-2}	−0.131	−8.794 × 10^{-2}
SO_2 slant column background correction (window 1)	8.931 × 10^{-2}	0.614	0.408	1.170 × 10^{-2}	0.123	1.669 × 10^{-2}	1.746 × 10^{-2}	0.478	−0.159	0.478	1.000	8.536 × 10^{-2}	1.449 × 10^{-2}	−0.639	−0.141	−7.332 × 10^{-2}	−1.131 × 10^{-2}	0.557	−5.508 × 10^{-2}	−0.220	0.482	0.233	0.138	0.134
SO_2 slant column precision (window2)	0.158	0.256	−0.288	1.737 × 10^{-2}	0.230	1.512 × 10^{-2}	1.086 × 10^{-2}	0.558	3.401 × 10^{-2}	0.558	8.536 × 10^{-2}	1.000	6.247 × 10^{-3}	−6.649 × 10^{-2}	−4.895 × 10^{-2}	0.583	−3.981 × 10^{-2}	4.358 × 10^{-2}	−5.794 × 10^{-2}	5.314 × 10^{-2}	0.577	−0.159	−0.209	−0.118
Corrected SO_2 slant column (window 2)	5.781 × 10^{-3}	4.989 × 10^{-3}	−1.659 × 10^{-2}	1.206 × 10^{-2}	5.131 × 10^{-3}	1.937 × 10^{-2}	1.556 × 10^{-2}	1.081 × 10^{-2}	−1.445 × 10^{-3}	1.081 × 10^{-2}	1.449 × 10^{-2}	6.247 × 10^{-3}	1.000	3.293 × 10^{-2}	−2.842 × 10^{-2}	1.799 × 10^{-3}	−3.044 × 10^{-2}	6.167 × 10^{-3}	0.172	3.103 × 10^{-2}	6.331 × 10^{-3}	4.479 × 10^{-4}	3.656 × 10^{-3}	4.861 × 10^{-3}
SO_2 slant column background correction (window 2)	7.834 × 10^{-2}	−0.678	−0.503	−1.407 × 10^{-2}	−0.119	−2.123 × 10^{-2}	−2.199 × 10^{-2}	−0.477	0.111	−0.477	−0.639	−6.649 × 10^{-2}	3.293 × 10^{-2}	1.000	0.181	8.423 × 10^{-2}	−2.379 × 10^{-2}	8.423 × 10^{-2}	−2.775 × 10^{-2}	6.077 × 10^{-2}	0.209	−4.270 × 10^{-2}	−3.276 × 10^{-2}	−6.765 × 10^{-2}
SO_2 slant column (window 3)	−1.042 × 10^{-2}	−0.156	−9.469 × 10^{-2}	−1.055 × 10^{-3}	−7.109 × 10^{-2}	−2.518 × 10^{-5}	−5.527 × 10^{-4}	−0.120	2.914 × 10^{-2}	−0.120	−0.141	−4.895 × 10^{-2}	−2.842 × 10^{-2}	0.181	1.000	−1.076 × 10^{-2}	0.972	−0.227	−0.110	7.306 × 10^{-3}	−0.114	4.118 × 10^{-4}	−3.754 × 10^{-2}	4.839 × 10^{-2}
SO_2 slant column precision (window 3)	4.288 × 10^{-2}	5.849 × 10^{-3}	−0.233	−2.502 × 10^{-4}	3.355 × 10^{-2}	−4.873 × 10^{-3}	−5.278 × 10^{-3}	0.176	2.436 × 10^{-2}	0.176	−7.332 × 10^{-2}	0.583	−3.981 × 10^{-2}	−3.044 × 10^{-2}	6.167 × 10^{-3}	−1.076 × 10^{-2}	1.000	−2.379 × 10^{-2}	−5.318 × 10^{-2}	6.077 × 10^{-2}	−0.460	−0.313	−0.205	−0.148
Corrected SO_2 slant column (window 3)	−2.103 × 10^{-2}	−2.510 × 10^{-2}	7.206 × 10^{-3}	8.520 × 10^{-4}	−4.447 × 10^{-2}	3.145 × 10^{-3}	2.720 × 10^{-3}	4.523 × 10^{-3}	−0.106	4.523 × 10^{-3}	−1.131 × 10^{-2}	−3.044 × 10^{-2}	−5.275 × 10^{-3}	0.972	−0.227	−2.379 × 10^{-2}	1.000	−4.175 × 10^{-2}	−0.123	−3.031 × 10^{-2}	−3.565 × 10^{-2}	5.209 × 10^{-2}	1.859 × 10^{-2}	4.919 × 10^{-2}
SO_2 slant column background correction (window 3)	−4.312 × 10^{-2}	0.563	0.436	8.074 × 10^{-3}	0.119	1.323 × 10^{-2}	1.372 × 10^{-2}	0.359	−0.106	0.359	0.557	4.358 × 10^{-2}	−5.275 × 10^{-3}	−0.748	−5.318 × 10^{-2}	6.907 × 10^{-3}	−4.175 × 10^{-2}	1.000	−0.158	9.487 × 10^{-2}	0.340	0.216	7.695 × 10^{-3}	−2.041 × 10^{-3}
DOAS fit wavelength shift	−6.040 × 10^{-3}	−9.864 × 10^{-2}	5.856 × 10^{-2}	−2.575 × 10^{-3}	−2.761 × 10^{-2}	−1.980 × 10^{-3}	−2.113 × 10^{-3}	−7.888 × 10^{-2}	−2.813 × 10^{-2}	−7.888 × 10^{-2}	−5.508 × 10^{-2}	−5.794 × 10^{-2}	0.172	4.337 × 10^{-2}	−0.110	−2.775 × 10^{-2}	−4.175 × 10^{-2}	1.000	9.487 × 10^{-2}	−7.897 × 10^{-2}	2.119 × 10^{-2}	3.210 × 10^{-2}	7.695 × 10^{-3}	−9.761 × 10^{-2}
DOAS fit wavelength squeeze	−4.356 × 10^{-3}	−0.121	−0.302	5.169 × 10^{-4}	3.271 × 10^{-3}	−1.159 × 10^{-4}	1.141 × 10^{-4}	−9.428 × 10^{-2}	0.274	−9.428 × 10^{-2}	−0.220	5.314 × 10^{-2}	3.103 × 10^{-2}	0.227	7.306 × 10^{-3}	6.077 × 10^{-2}	−0.158	9.487 × 10^{-2}	1.000	−0.100	−0.131	−8.327 × 10^{-2}	−9.761 × 10^{-2}	−7.069 × 10^{-2}
SO_2 RMS	0.338	0.547	2.542 × 10^{-2}	2.967 × 10^{-2}	0.388	2.974 × 10^{-2}	3.092 × 10^{-2}	0.921	−2.603 × 10^{-2}	0.921	0.482	0.577	6.331 × 10^{-3}	−0.460	−0.114	0.209	−3.565 × 10^{-2}	0.340	−7.897 × 10^{-2}	−0.100	1.000	−6.176 × 10^{-2}	−0.152	−7.069 × 10^{-2}
Total AMF (polluted)	−0.194	0.224	0.260	−1.264 × 10^{-2}	−0.518	1.188 × 10^{-2}	1.229 × 10^{-2}	−5.848 × 10^{-2}	−7.702 × 10^{-2}	−5.848 × 10^{-2}	−0.131	−0.159	4.479 × 10^{-2}	−0.313	−0.204	−0.313	5.209 × 10^{-2}	0.216	2.119 × 10^{-2}	−0.131	−6.176 × 10^{-2}	1.000	0.537	0.663
Precision of total AMF (polluted)	−0.150	5.145 × 10^{-2}	0.251	−6.128 × 10^{-3}	−0.276	−0.430	7.673 × 10^{-3}	8.114 × 10^{-3}	−6.027 × 10^{-2}	−8.794 × 10^{-2}	0.138	−0.209	6.331 × 10^{-3}	−0.313	4.118 × 10^{-4}	−3.754 × 10^{-2}	1.859 × 10^{-2}	0.238	3.210 × 10^{-2}	−8.327 × 10^{-2}	−0.152	0.537	1.000	7.532 × 10^{-3}
Clear AMF (polluted)	−0.195	0.162	0.119	−1.336 × 10^{-2}	−0.430	6.290 × 10^{-3}	6.173 × 10^{-3}	−8.794 × 10^{-2}	−4.994 × 10^{-2}	−8.794 × 10^{-2}	0.134	−0.118	4.861 × 10^{-3}	−0.148	4.839 × 10^{-2}	−6.765 × 10^{-2}	4.919 × 10^{-2}	−2.041 × 10^{-3}	7.695 × 10^{-3}	−9.761 × 10^{-2}	−7.069 × 10^{-2}	0.663	7.532 × 10^{-3}	1.000

Table 8: Covariance matrix

	Viewing zenith angle	Solar zenith angle	Latitude	SO_2 vertical column	SO_2 vertical column precision	Corrected SO_2 slant column	Cobra SO_2 slant column	SO_2 slant column precision (Cobra)	SO_2 slant column (window 1)	SO_2 slant column precision (window 1)	SO_2 slant column background correction (window 1)	SO_2 slant column precision (window2)	Corrected SO_2 slant column (window 2)	SO_2 slant column background correction (window 2)	SO_2 slant column (window 3)	SO_2 slant column precision (window 3)	Corrected SO_2 slant column (window 3)	SO_2 slant column background correction (window 3)	DOAS fit wavelength shift	DOAS fit wavelength squeeze	SO_2 RMS	Total AMF (polluted)	Precision of total AMF (polluted)	Clear AMF (polluted)
Viewing zenith angle	383	2.16	−6.99	0.213	3.24	5.309×10^{-2}	5.172×10^{-2}	0.969	0.238	0.969	0.236	7.26	0.989	3.44	−4.85	11.3	−9.53	−4.68	-3.029×10^{-4}	-1.549×10^{-5}	3.429×10^{-3}	−1.82	−0.367	−1.21
Solar zenith angle	2.16	259	−11.9	0.207	1.10	0.137	0.134	1.23	−1.14	1.23	1.34	9.67	0.702	−24.5	−59.7	1.27	−9.37	50.3	-4.071×10^{-3}	-3.553×10^{-4}	4.563×10^{-3}	1.72	0.104	0.823
Latitude	−6.99	−11.9	1.441×10^{3}	2.447×10^{-2}	−0.104	8.423×10^{-2}	7.943×10^{-2}	0.103	−2.17	0.103	2.09	−25.7	−5.51	−42.9	−85.5	−119	6.34	91.8	5.696×10^{-3}	-2.083×10^{-3}	4.998×10^{-4}	4.72	1.20	1.42
SO_2 vertical column	0.213	0.207	2.447×10^{-2}	0.682	2.580×10^{-2}	0.237	0.222	5.446×10^{-3}	0.220	5.446×10^{-3}	1.304×10^{-3}	3.369×10^{-2}	8.705×10^{-2}	-2.611×10^{-2}	-2.072×10^{-2}	-2.780×10^{-3}	1.630×10^{-2}	3.702×10^{-2}	-5.450×10^{-6}	7.757×10^{-8}	1.269×10^{-5}	-4.987×10^{-3}	-6.345×10^{-4}	-3.487×10^{-3}
SO_2 vertical column precision	3.24	1.10	−0.104	2.580×10^{-2}	0.347	4.079×10^{-3}	3.824×10^{-3}	3.398×10^{-2}	1.024×10^{-2}	3.398×10^{-2}	9.760×10^{-3}	0.318	2.641×10^{-2}	−0.157	−0.996	0.266	−0.607	0.389	-4.166×10^{-5}	3.500×10^{-7}	1.183×10^{-4}	−0.146	-2.037×10^{-2}	-8.003×10^{-2}
Corrected SO_2 slant column	5.309×10^{-2}	0.137	8.423×10^{-2}	0.237	4.079×10^{-3}	0.159	0.142	3.344×10^{-3}	0.140	3.344×10^{-3}	8.964×10^{-4}	1.414×10^{-2}	6.743×10^{-2}	-1.899×10^{-2}	-2.386×10^{-4}	-2.612×10^{-2}	2.902×10^{-2}	2.925×10^{-2}	-2.021×10^{-6}	-8.384×10^{-9}	6.135×10^{-6}	2.261×10^{-3}	3.831×10^{-4}	7.917×10^{-4}
Cobra SO_2 slant column	5.172×10^{-2}	0.134	7.943×10^{-2}	0.222	3.824×10^{-3}	0.142	0.139	2.747×10^{-3}	0.138	2.747×10^{-3}	8.785×10^{-4}	9.511×10^{-3}	5.076×10^{-2}	-1.843×10^{-2}	-4.904×10^{-3}	-2.650×10^{-2}	2.351×10^{-2}	2.841×10^{-2}	-2.020×10^{-6}	7.735×10^{-9}	5.975×10^{-6}	2.191×10^{-3}	3.796×10^{-4}	7.278×10^{-4}
SO_2 slant column precision (Cobra)	0.969	1.23	0.103	5.446×10^{-3}	3.398×10^{-2}	3.344×10^{-3}	2.747×10^{-3}	1.755×10^{-2}	3.523×10^{-4}	1.755×10^{-2}	8.548×10^{-3}	0.174	1.252×10^{-2}	−0.142	−0.377	0.314	−0.112	0.264	-2.678×10^{-5}	-2.270×10^{-6}	6.320×10^{-5}	-3.703×10^{-3}	-2.174×10^{-3}	-3.682×10^{-3}
SO_2 slant column (window 1)	0.238	0.238	−2.17	0.220	1.024×10^{-2}	0.140	0.138	3.523×10^{-4}	0.467	3.523×10^{-4}	-1.462×10^{-2}	5.458×10^{-2}	-8.632×10^{-3}	0.170	0.474	0.224	7.161×10^{-2}	−0.402	-4.926×10^{-5}	3.407×10^{-5}	-9.214×10^{-6}	-2.515×10^{-2}	-5.164×10^{-3}	-1.079×10^{-2}
SO_2 slant column precision (window 1)	0.969	1.23	0.103	5.446×10^{-3}	3.398×10^{-2}	3.344×10^{-3}	2.747×10^{-3}	1.755×10^{-2}	3.523×10^{-4}	1.755×10^{-2}	8.548×10^{-3}	0.174	1.252×10^{-2}	−0.142	−0.377	0.314	−0.112	0.264	-2.678×10^{-5}	-2.270×10^{-6}	6.320×10^{-5}	-3.703×10^{-3}	-2.174×10^{-3}	-3.682×10^{-3}
SO_2 slant column background correction (window 1)	0.236	1.34	2.09	1.304×10^{-3}	9.760×10^{-3}	8.964×10^{-4}	8.785×10^{-4}	8.548×10^{-3}	-1.462×10^{-2}	8.548×10^{-3}	1.820×10^{-2}	2.705×10^{-2}	1.709×10^{-2}	−0.194	−0.452	−0.133	-3.536×10^{-2}	0.417	-1.904×10^{-5}	-5.397×10^{-6}	3.371×10^{-5}	1.504×10^{-2}	2.332×10^{-3}	5.695×10^{-3}
SO_2 slant column precision (window2)	7.26	9.67	−25.7	3.369×10^{-2}	0.318	1.414×10^{-2}	9.511×10^{-3}	0.174	5.458×10^{-2}	2.705×10^{-2}	5.52	0.128	76.4	0.647	−5.91	0.212	−6.16	0.321	-3.487×10^{-4}	3.855×10^{-3}	4.929×10^{-5}	2.866×10^{-5}	1.871×10^{-3}	4.006×10^{-3}	1.343×10^{-2}
Corrected SO_2 slant column (window 2)	0.989	0.702	−5.51	8.705×10^{-2}	2.641×10^{-2}	6.743×10^{-2}	5.076×10^{-2}	1.252×10^{-2}	-8.632×10^{-3}	1.252×10^{-2}	1.709×10^{-2}	0.128	76.4	0.647	−5.91	0.212	−6.16	0.321	-3.487×10^{-4}	3.855×10^{-3}	4.929×10^{-5}	2.866×10^{-5}	1.871×10^{-3}	4.006×10^{-3}	1.343×10^{-2}
SO_2 slant column background correction (window 2)	3.44	3.44	−42.9	−2.611 × 10^{-2}	−0.157	−0.996	-1.843×10^{-2}	−0.142	0.170	1.755×10^{-2}	−0.194	−0.351	0.647	5.05	9.65	2.55	−3.45	0.321	-5.397×10^{-6}	2.268×10^{-5}	4.929×10^{-5}	9.286×10^{-5}	3.158×10^{-5}	1.486×10^{-4}
SO_2 slant column (window 3)	−4.85	−59.7	−85.5	-2.072×10^{-2}	−0.996	-2.386×10^{-4}	-4.904×10^{-3}	−0.377	0.474	−0.377	−0.452	−2.73	−5.91	9.65	566	−3.45	536	−29.9	-6.704×10^{-3}	3.158×10^{-5}	-1.407×10^{-3}	4.682×10^{-3}	−0.112	0.364
SO_2 slant column precision (window 3)	11.3	1.27	−119	-2.780×10^{-3}	0.266	-2.612×10^{-2}	-2.650×10^{-2}	0.314	0.224	0.314	−0.133	18.4	0.212	2.55	−3.45	181	−7.42	537	0.888	-7.298×10^{-3}	-1.276×10^{-4}	-4.279×10^{-4}	0.577	5.400×10^{-2}	0.360
Corrected SO_2 slant column (window 3)	−9.53	6.34	−119	1.630×10^{-2}	−0.607	2.902×10^{-2}	2.351×10^{-2}	7.161×10^{-2}	−0.112	−0.112	-3.536×10^{-2}	−2.17	−6.16	0.321	536	−7.42	537	0.888	-7.298×10^{-3}	-1.276×10^{-4}	-4.279×10^{-4}	0.577	5.400×10^{-2}	0.360
SO_2 slant column background correction (window 3)	−4.68	91.8	−2.780 × 10^{-3}	3.702×10^{-2}	0.389	2.925×10^{-2}	2.841×10^{-2}	0.264	0.264	0.264	0.417	0.568	3.855×10^{-3}	−9.33	−9.33	−3.97	0.888	30.8	-5.940×10^{-4}	-1.592×10^{-4}	9.786×10^{-4}	0.572	0.166	-3.581×10^{-3}
DOAS fit wavelength shift	-3.029×10^{-4}	-4.071×10^{-3}	5.696×10^{-3}	-5.450×10^{-6}	-4.166×10^{-5}	-2.021×10^{-6}	-2.020×10^{-6}	-2.678×10^{-5}	-4.926×10^{-5}	-2.678×10^{-5}	-1.904×10^{-5}	-3.487×10^{-4}	3.855×10^{-3}	-2.678×10^{-5}	-6.704×10^{-3}	-9.569×10^{-4}	-7.298×10^{-3}	-5.940×10^{-4}	6.566×10^{-6}	4.418×10^{-8}	-1.048×10^{-7}	2.595×10^{-5}	1.031×10^{-5}	6.232×10^{-6}
DOAS fit wavelength squeeze	-1.549×10^{-5}	-3.553×10^{-4}	-2.083×10^{-3}	7.757×10^{-8}	3.500×10^{-7}	-8.384×10^{-9}	7.735×10^{-9}	-2.270×10^{-6}	3.407×10^{-5}	-2.270×10^{-6}	-5.397×10^{-6}	2.268×10^{-5}	4.929×10^{-5}	9.286×10^{-5}	3.158×10^{-5}	1.486×10^{-4}	-9.569×10^{-4}	-5.940×10^{-4}	4.418×10^{-8}	3.302×10^{-8}	-9.421×10^{-9}	-1.139×10^{-5}	-1.897×10^{-6}	-5.606×10^{-6}
SO_2 RMS	3.429×10^{-3}	4.563×10^{-3}	4.998×10^{-4}	1.269×10^{-5}	1.183×10^{-4}	6.135×10^{-6}	6.320×10^{-5}	-9.214×10^{-6}	3.407×10^{-5}	6.320×10^{-5}	3.371×10^{-5}	7.014×10^{-4}	2.866×10^{-5}	-5.348×10^{-4}	-1.407×10^{-3}	1.458×10^{-3}	9.786×10^{-4}	9.786×10^{-4}	-1.048×10^{-7}	-9.421×10^{-9}	2.683×10^{-7}	-1.529×10^{-5}	-9.880×10^{-6}	-1.157×10^{-5}
Total AMF (polluted)	−1.82	1.72	4.72	-4.987×10^{-3}	−0.146	2.261×10^{-3}	2.191×10^{-3}	-3.703×10^{-3}	-2.515×10^{-2}	-3.703×10^{-3}	1.504×10^{-2}	−0.179	1.871×10^{-3}	−0.336	4.682×10^{-3}	−0.275	0.572	0.572	2.595×10^{-5}	-1.139×10^{-5}	-1.529×10^{-5}	0.228	3.218×10^{-2}	0.100
Precision of total AMF (polluted)	−0.367	0.104	1.20	-6.345×10^{-4}	-2.037×10^{-2}	3.831×10^{-4}	3.796×10^{-4}	-2.174×10^{-3}	-5.164×10^{-3}	-2.174×10^{-3}	2.332×10^{-3}	6.166×10^{-2}	4.006×10^{-3}	-5.779×10^{-2}	−0.112	-5.528×10^{-2}	0.166	0.166	-1.039×10^{-5}	-1.897×10^{-6}	-9.880×10^{-6}	3.218×10^{-2}	1.572×10^{-2}	2.985×10^{-4}
Clear AMF (polluted)	−1.21	0.823	1.42	-3.487×10^{-3}	-8.003×10^{-2}	7.917×10^{-4}	7.278×10^{-4}	-3.682×10^{-3}	-1.079×10^{-2}	-3.682×10^{-3}	5.695×10^{-3}	-8.793×10^{-2}	1.343×10^{-2}	−0.105	0.364	−0.288	0.360	-3.581×10^{-3}	6.232×10^{-6}	-5.606×10^{-6}	-1.157×10^{-5}	0.100	2.985×10^{-4}	9.988×10^{-2}

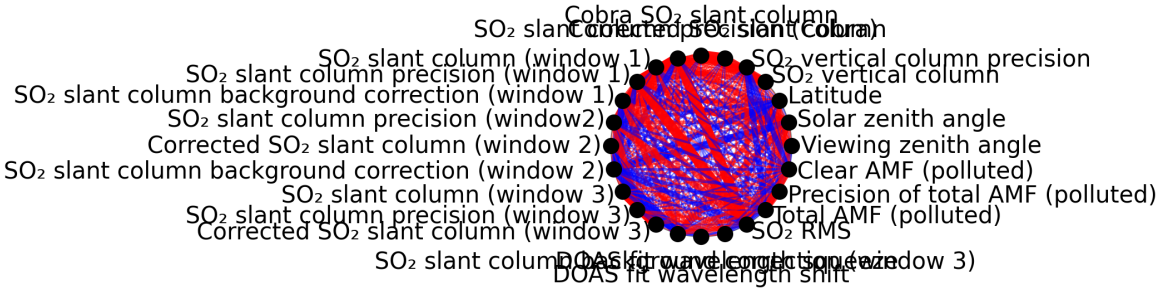


Figure 1: Map of correlation graph for 2025-05-15 to 2025-05-16.

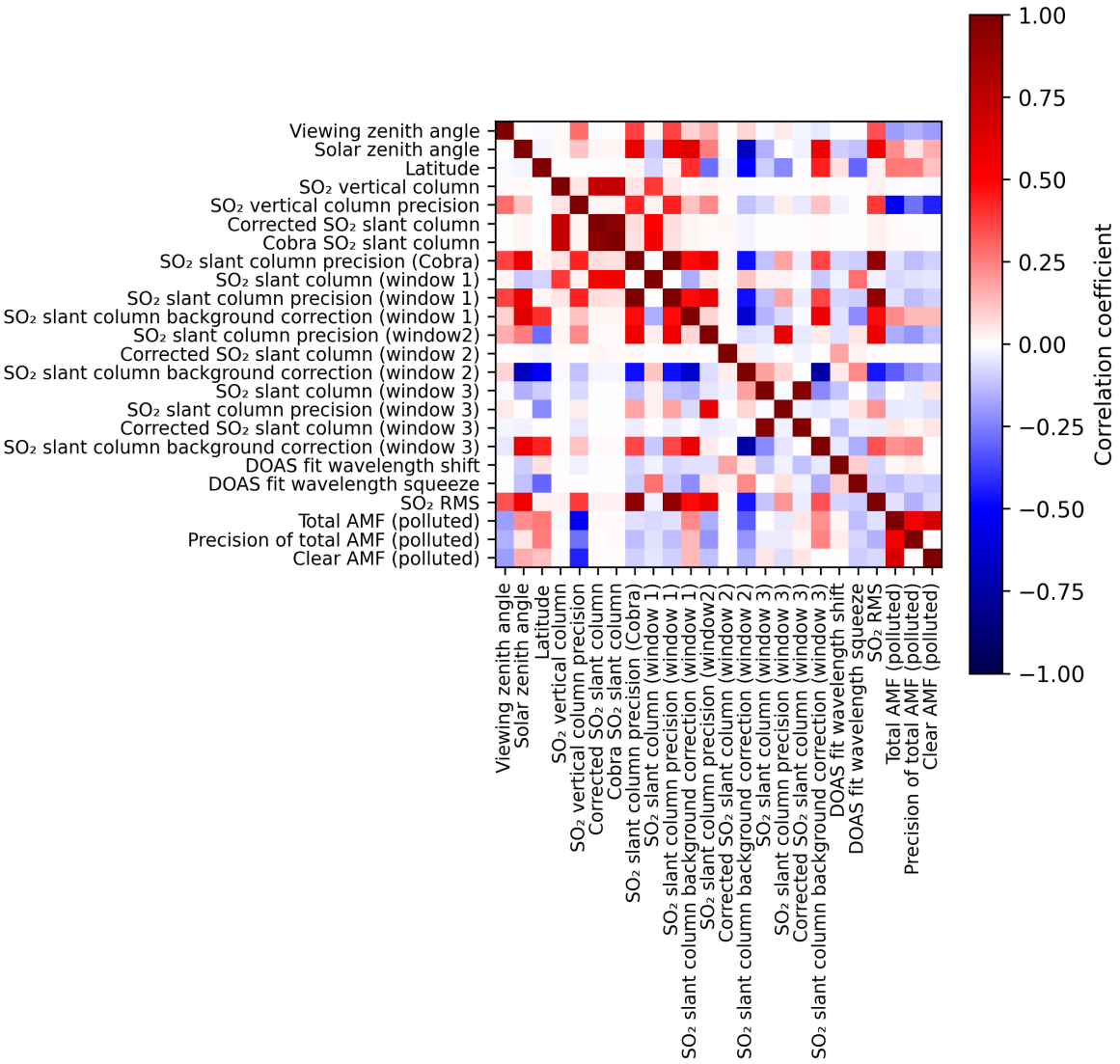


Figure 2: Map of correlation matrix for 2025-05-15 to 2025-05-16.

3 Granule outlines

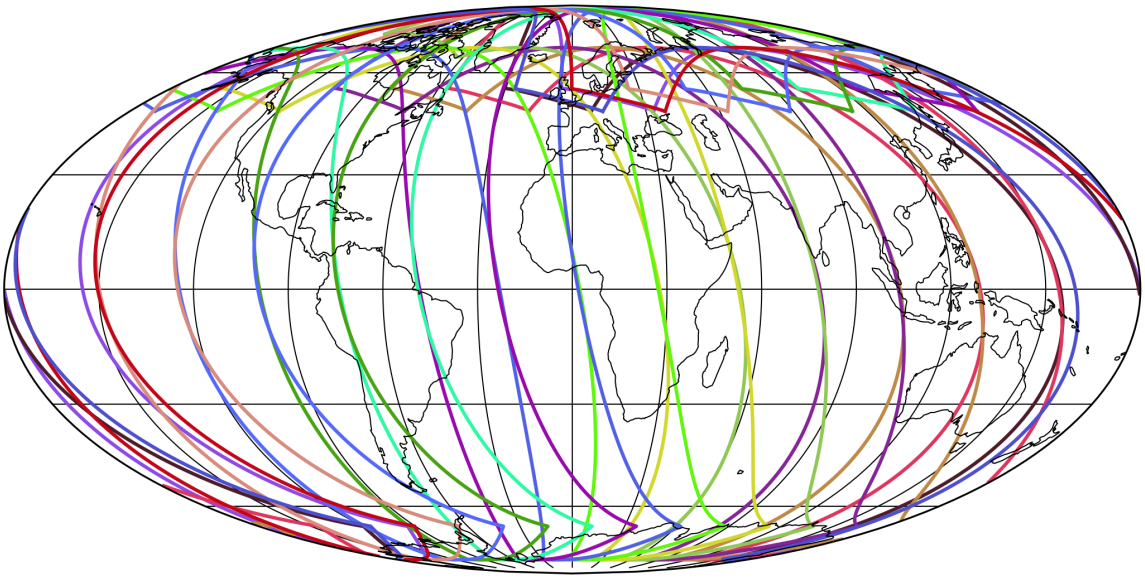


Figure 3: Outline of the granules.

4 Input data monitoring

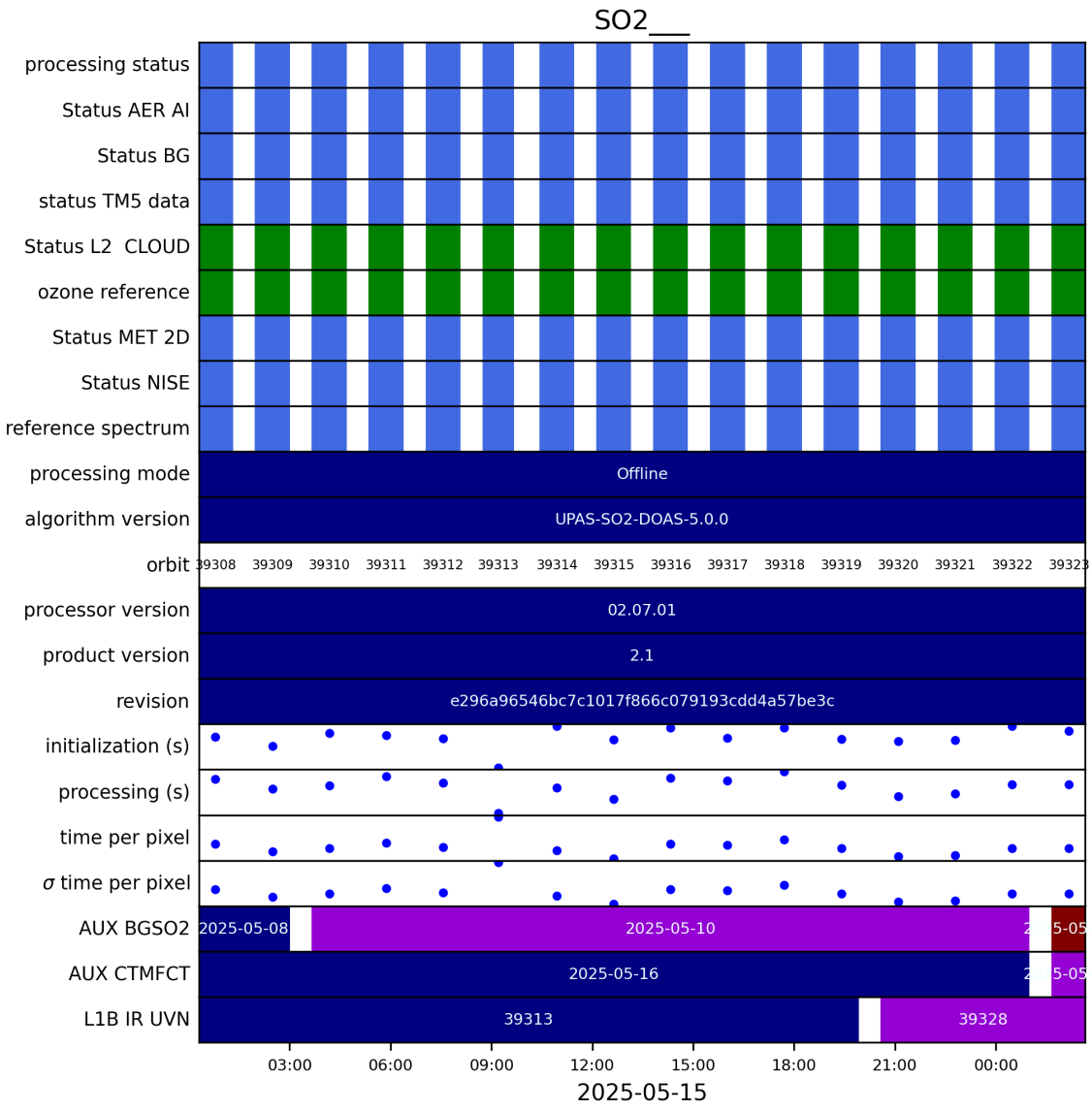


Figure 4: Input data per granule

5 Warnings and errors

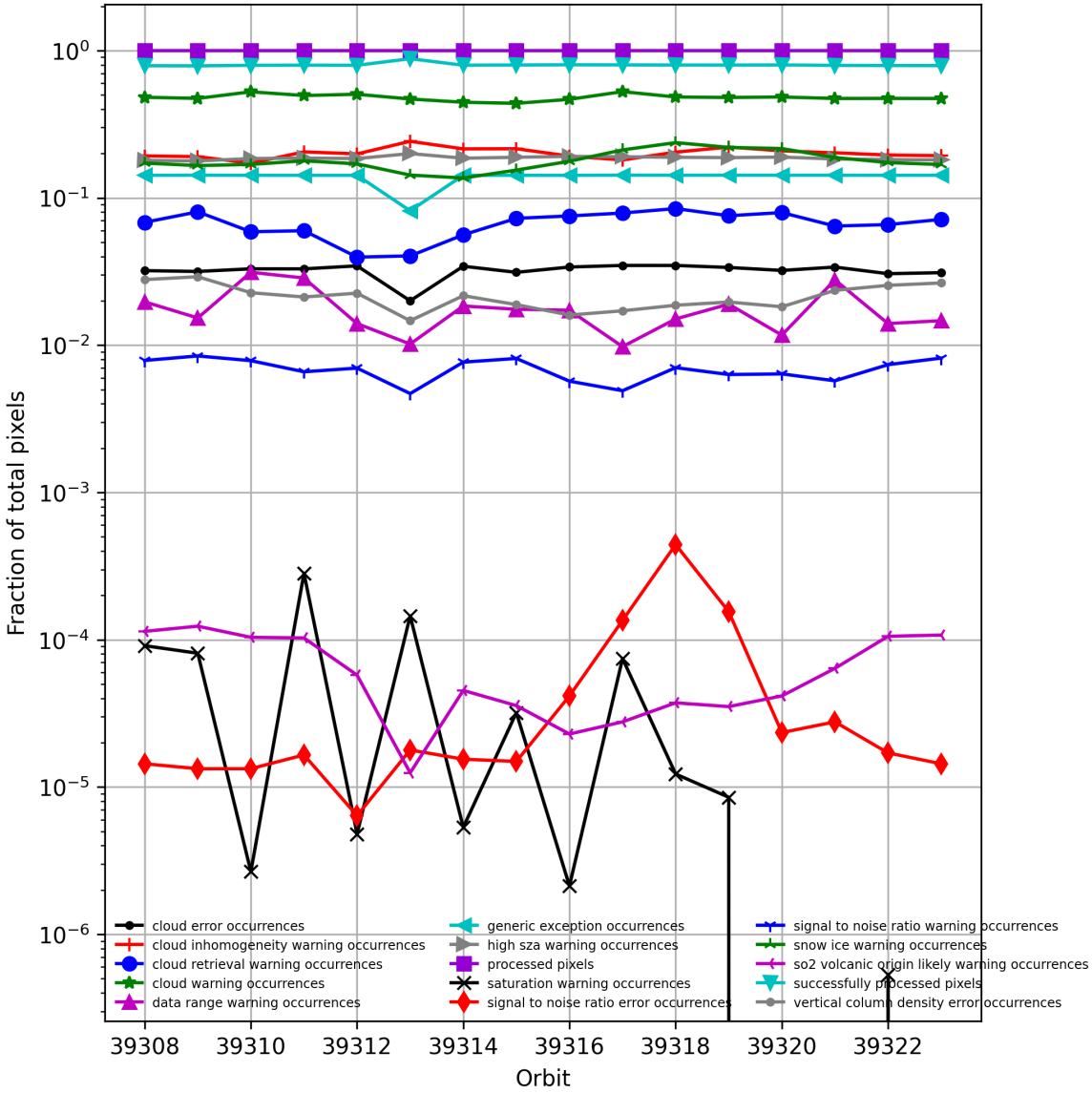


Figure 5: Fraction of pixels with specific warnings and errors during processing

6 World maps

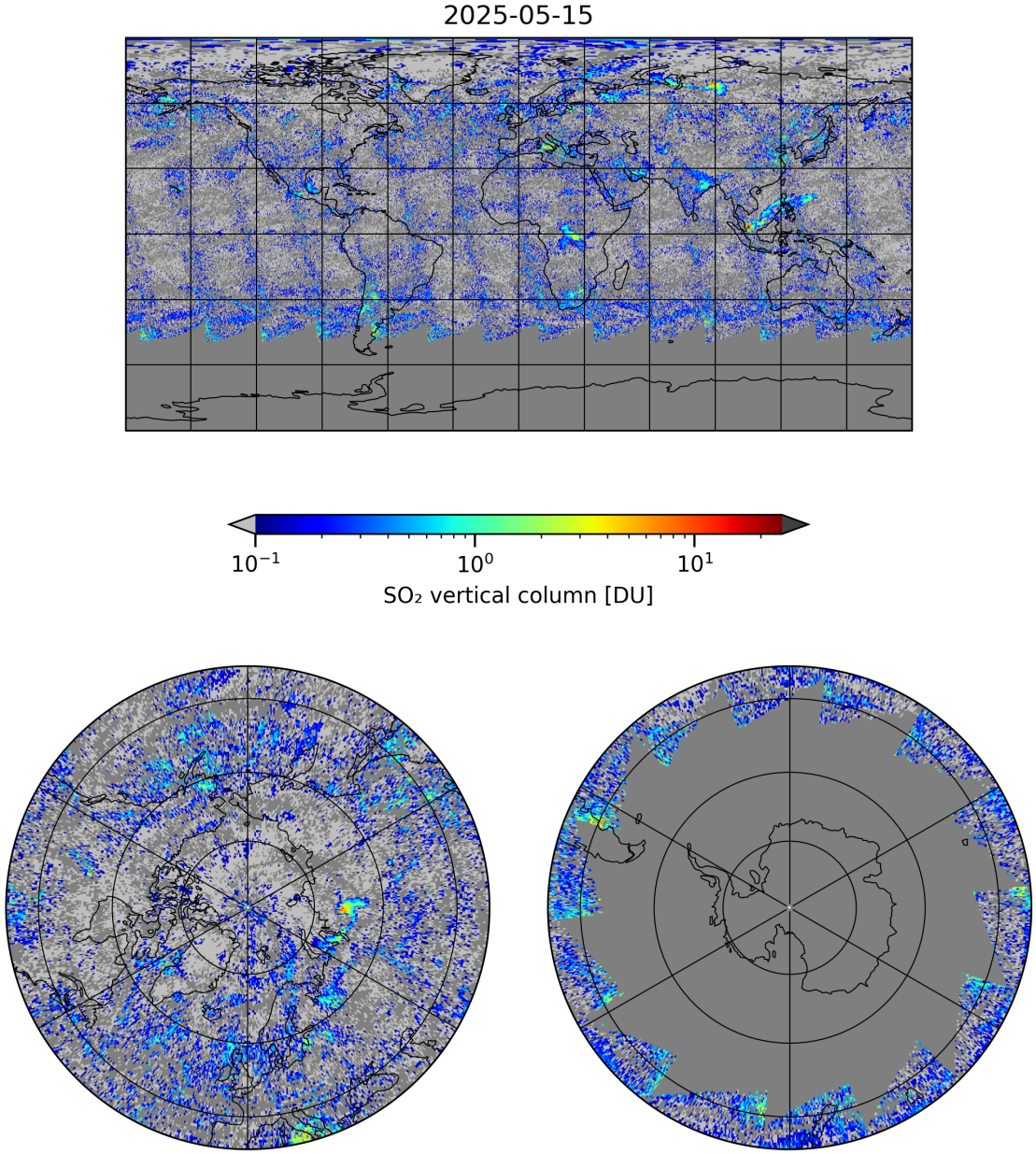


Figure 6: Map of "SO_2 vertical column" for 2025-05-15 to 2025-05-16

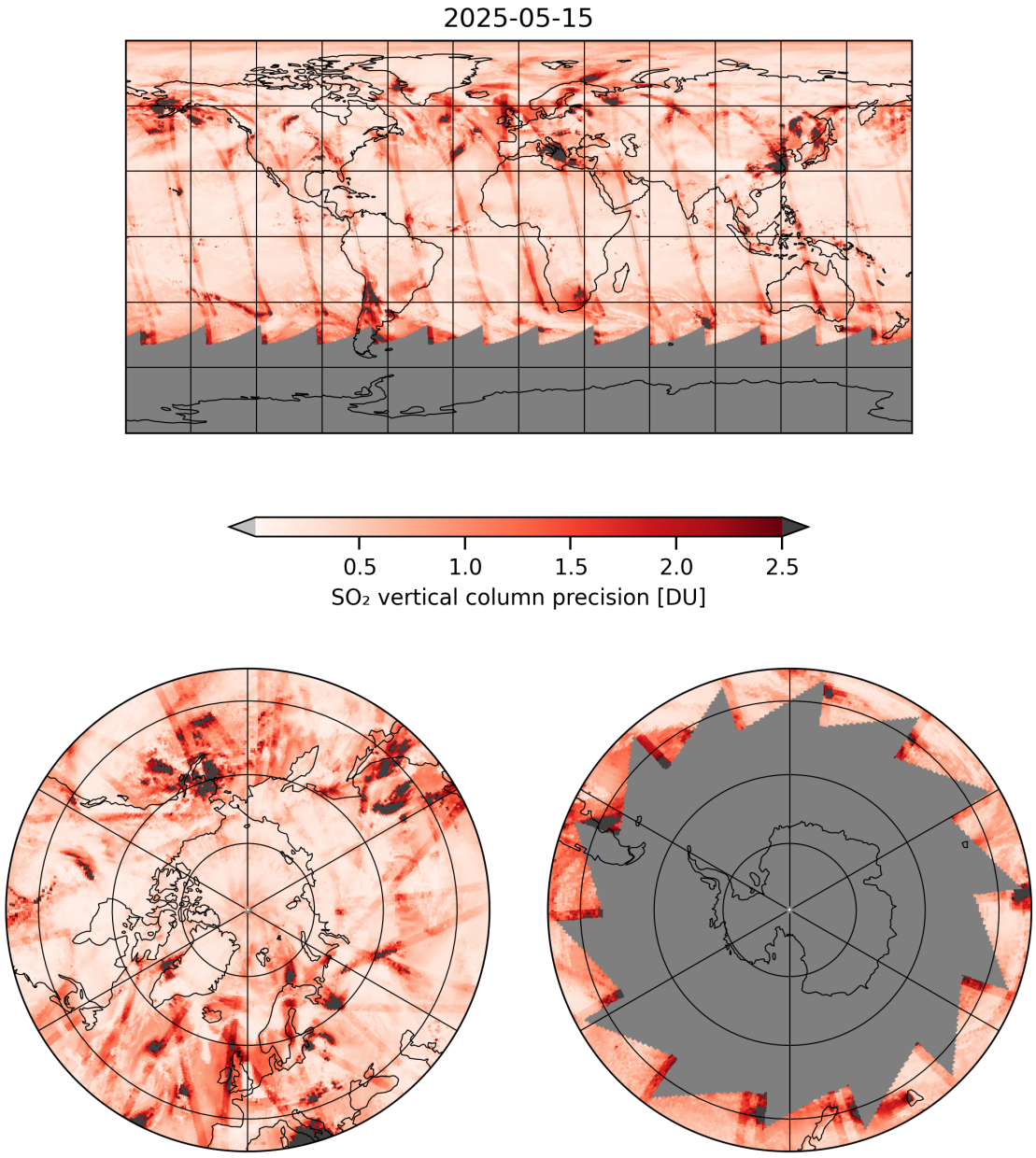


Figure 7: Map of "SO_2 vertical column precision" for 2025-05-15 to 2025-05-16

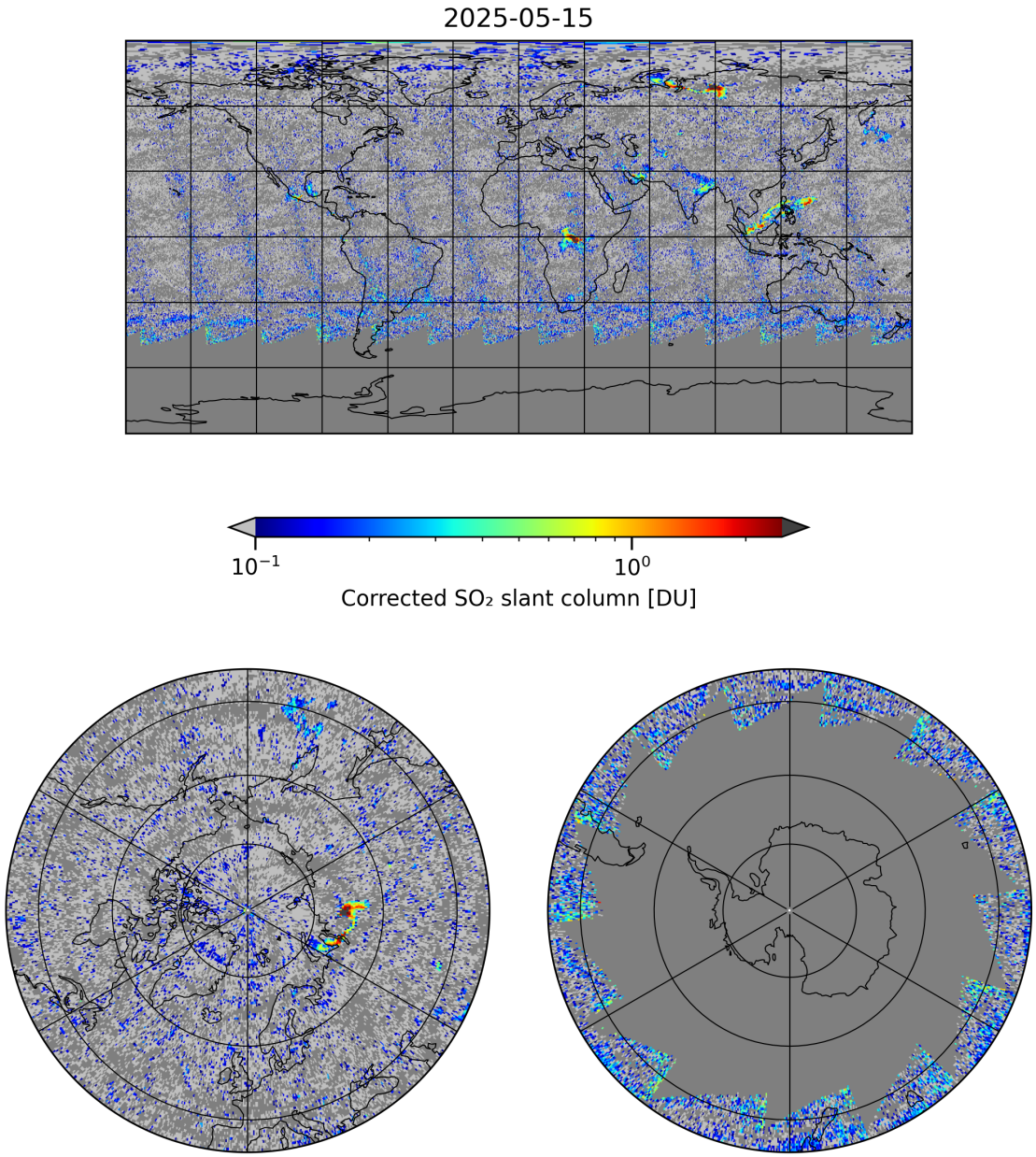


Figure 8: Map of "Corrected SO_2 slant column" for 2025-05-15 to 2025-05-16

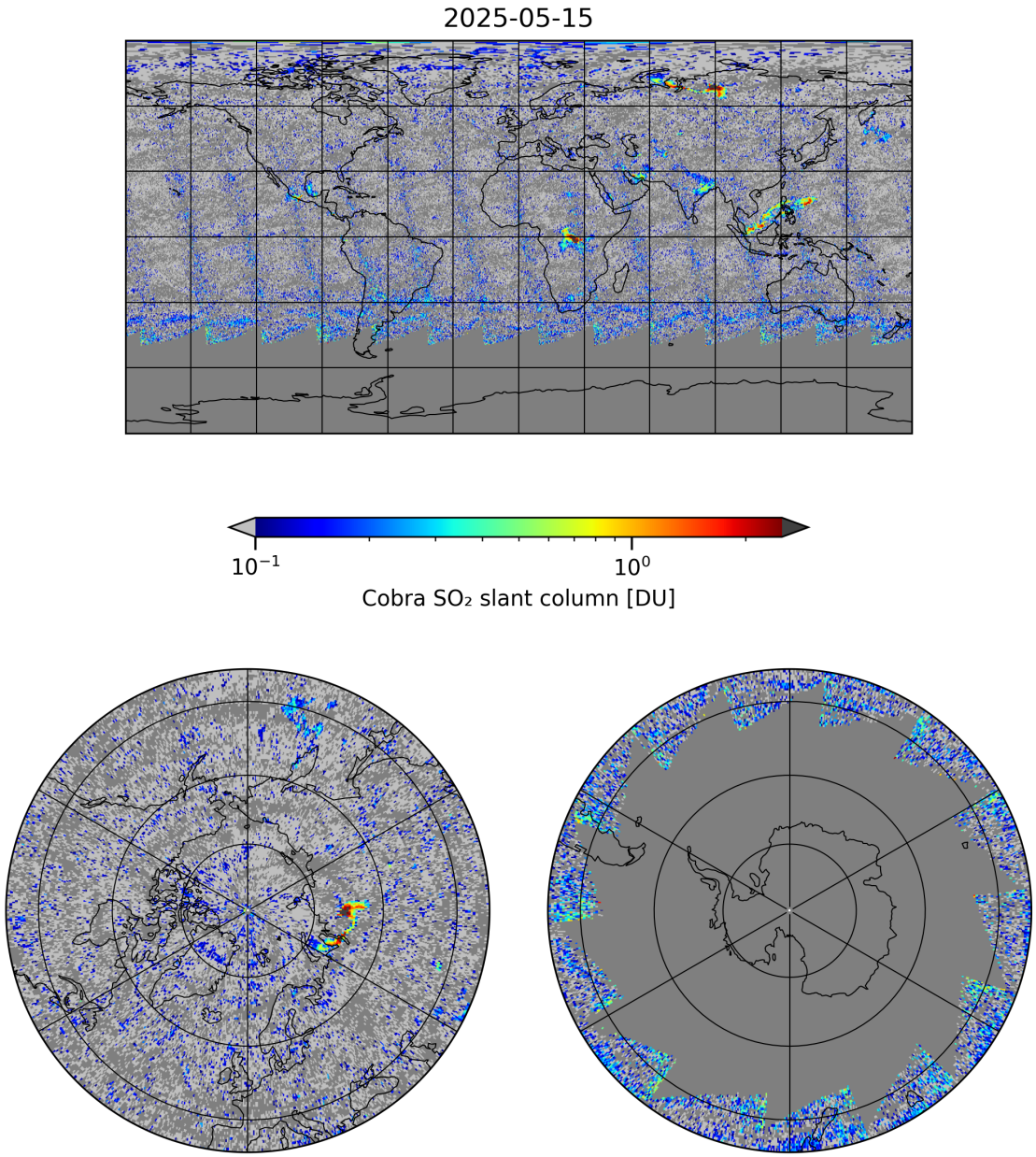


Figure 9: Map of "Cobra SO_2 slant column" for 2025-05-15 to 2025-05-16

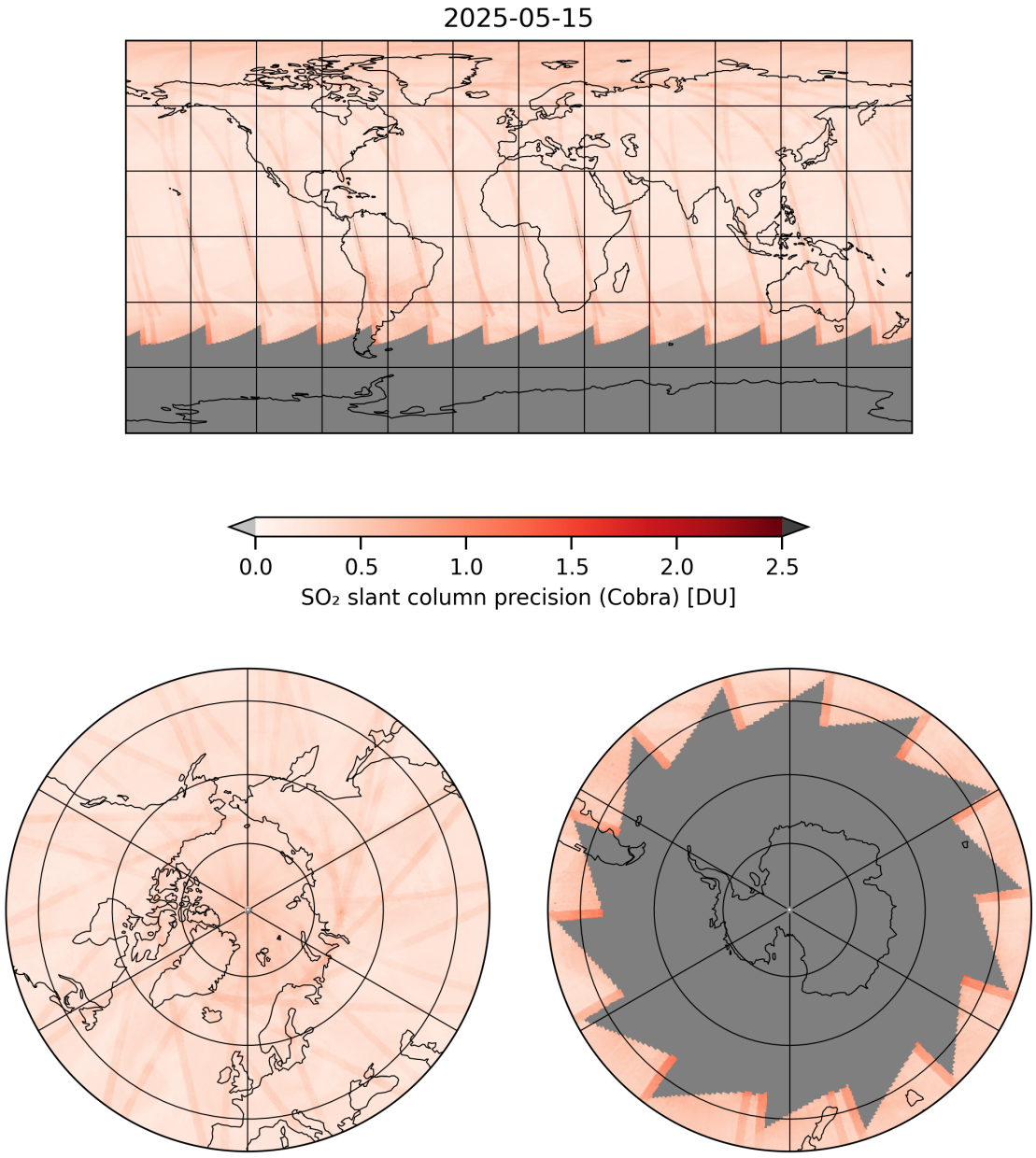


Figure 10: Map of "SO_2 slant column precision (Cobra)" for 2025-05-15 to 2025-05-16

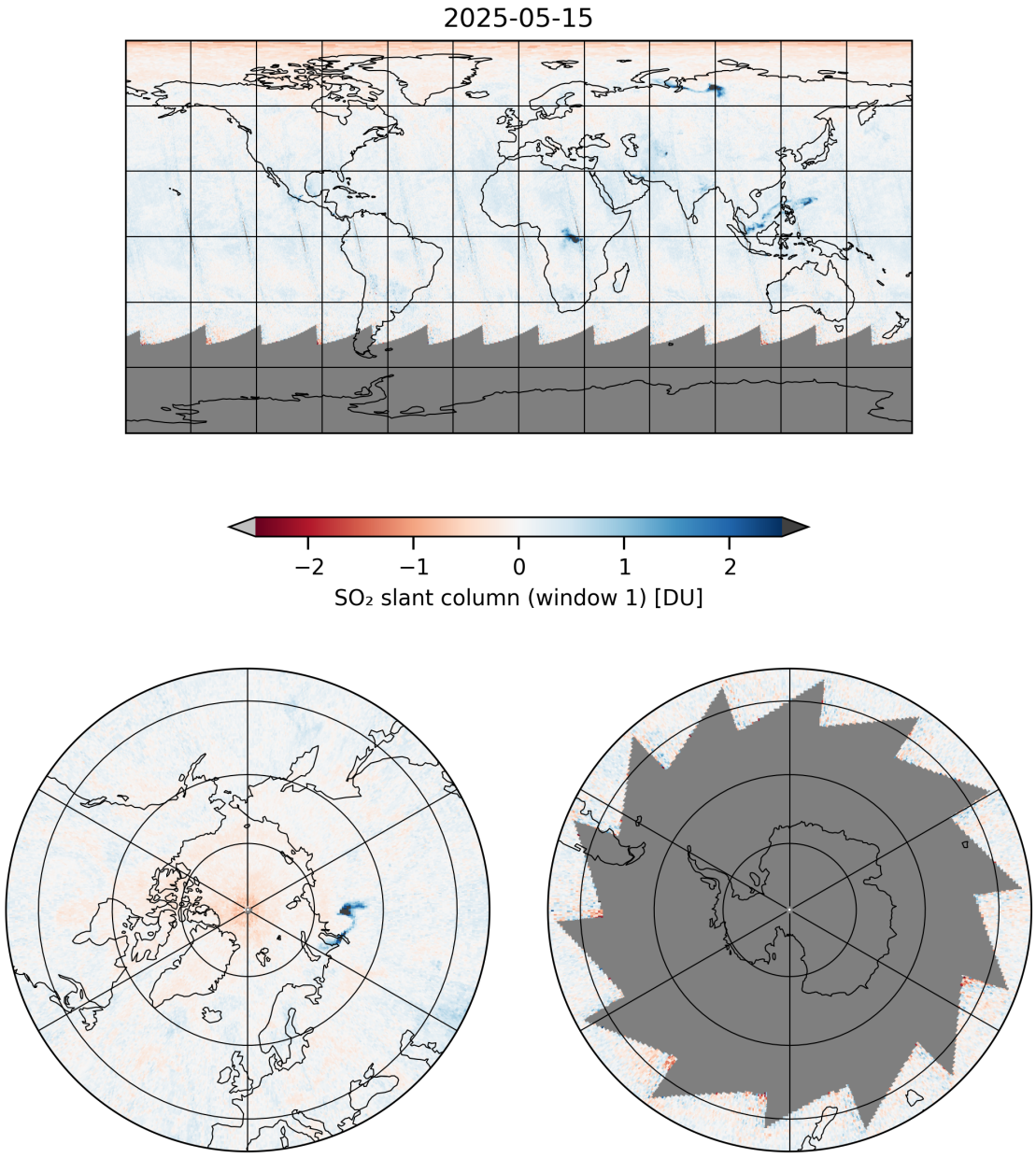


Figure 11: Map of "SO_2 slant column (window 1)" for 2025-05-15 to 2025-05-16

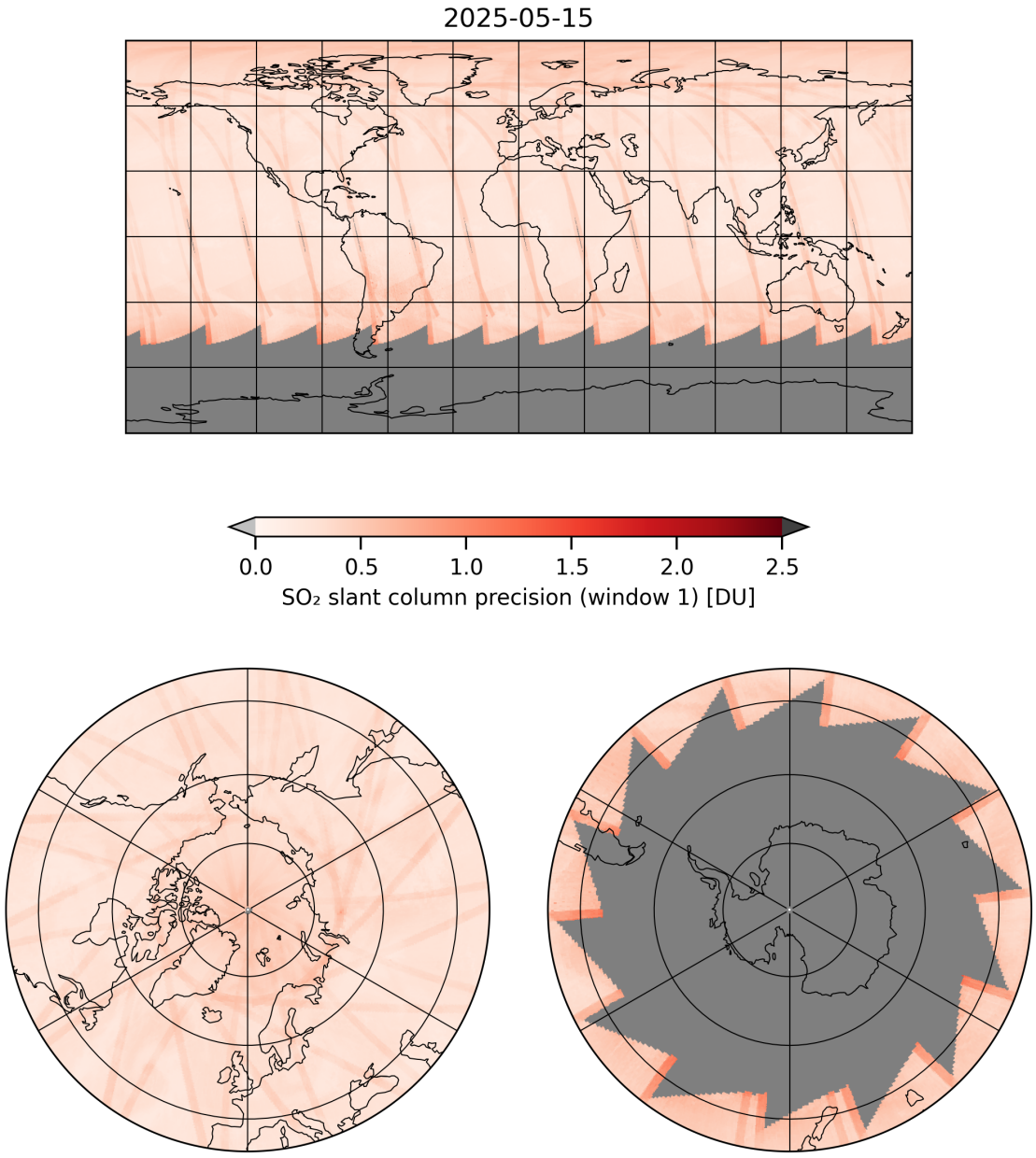


Figure 12: Map of "SO_2 slant column precision (window 1)" for 2025-05-15 to 2025-05-16

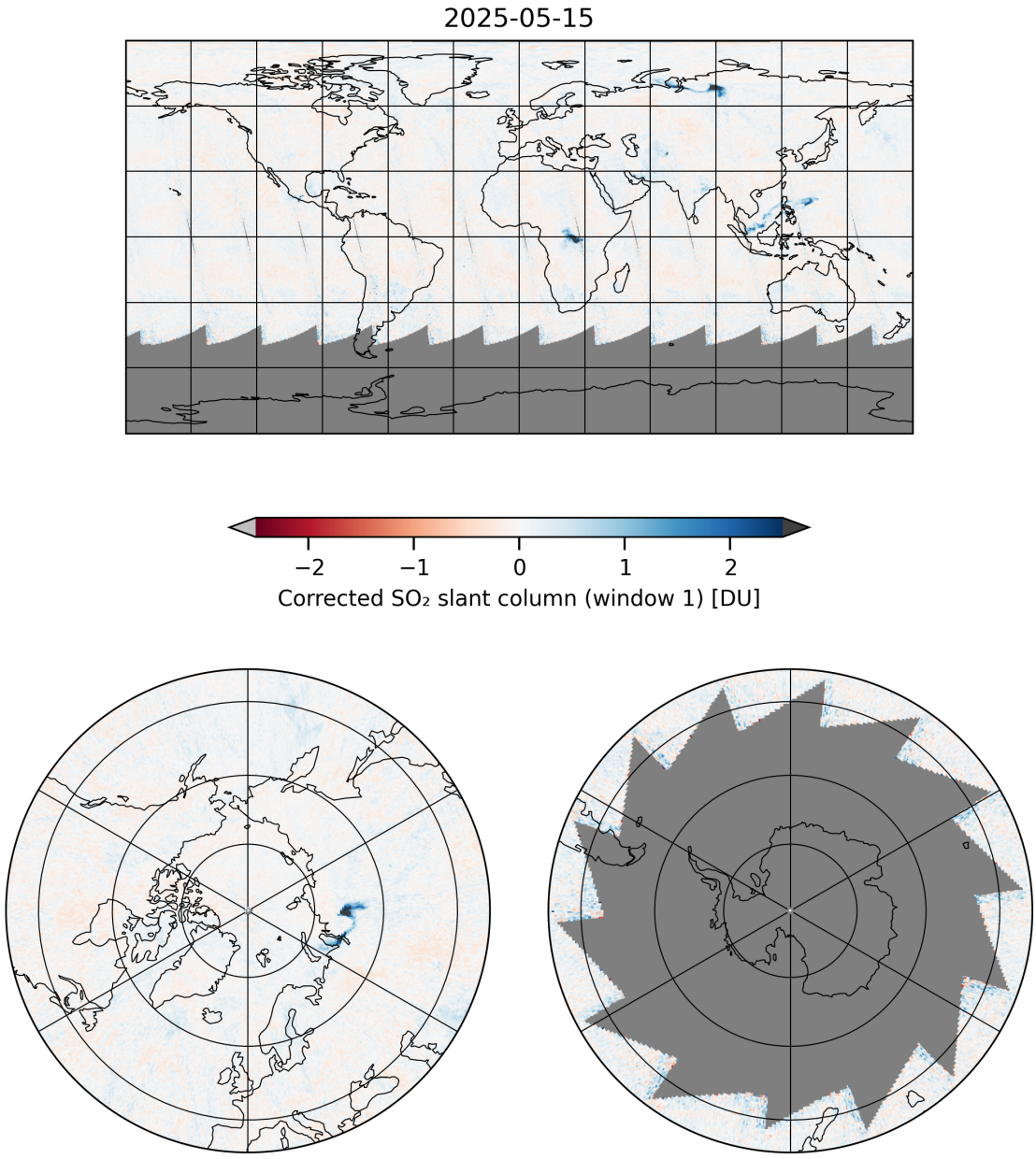


Figure 13: Map of “Corrected SO_2 slant column (window 1)” for 2025-05-15 to 2025-05-16

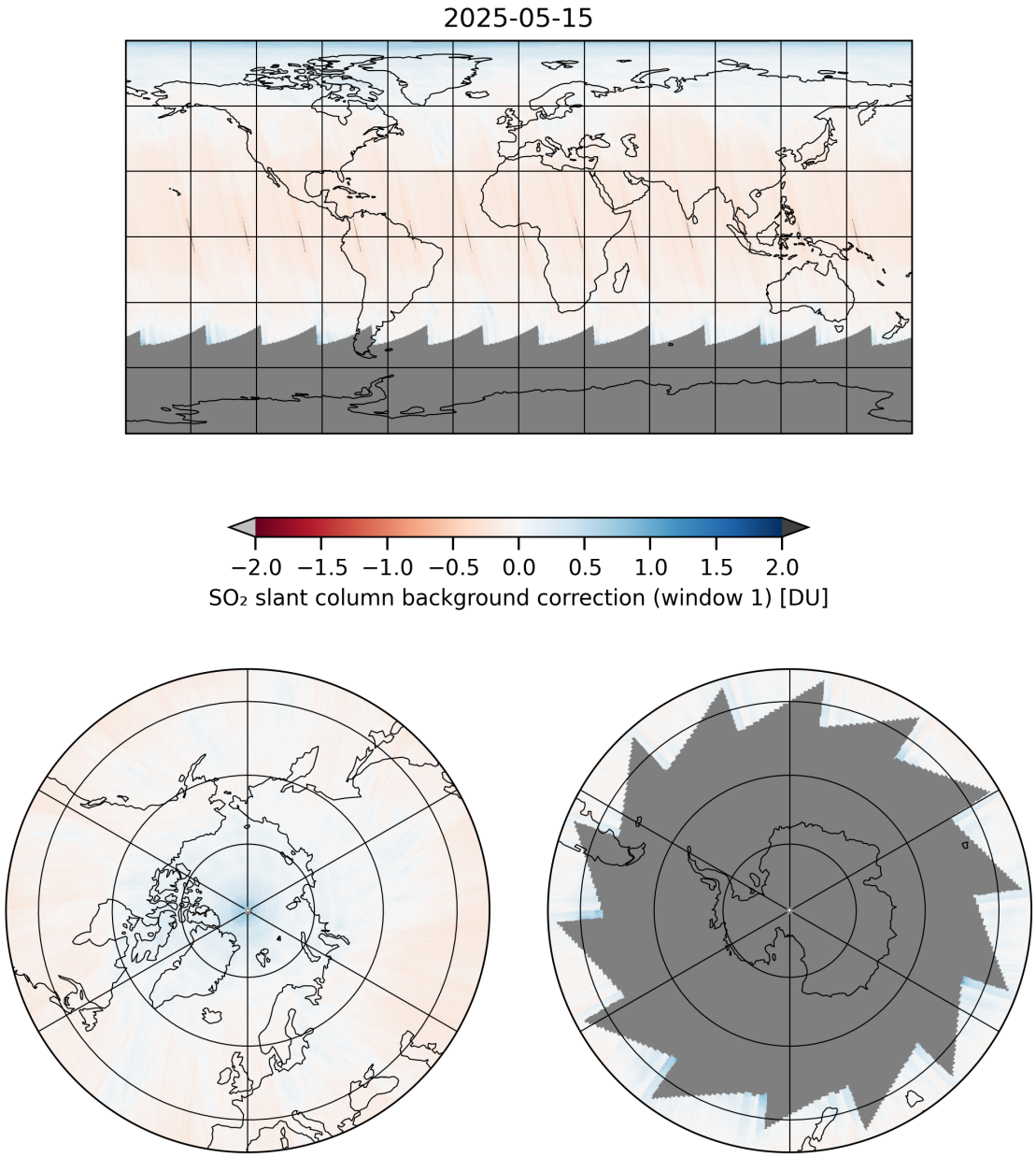


Figure 14: Map of "SO_2 slant column background correction (window 1)" for 2025-05-15 to 2025-05-16

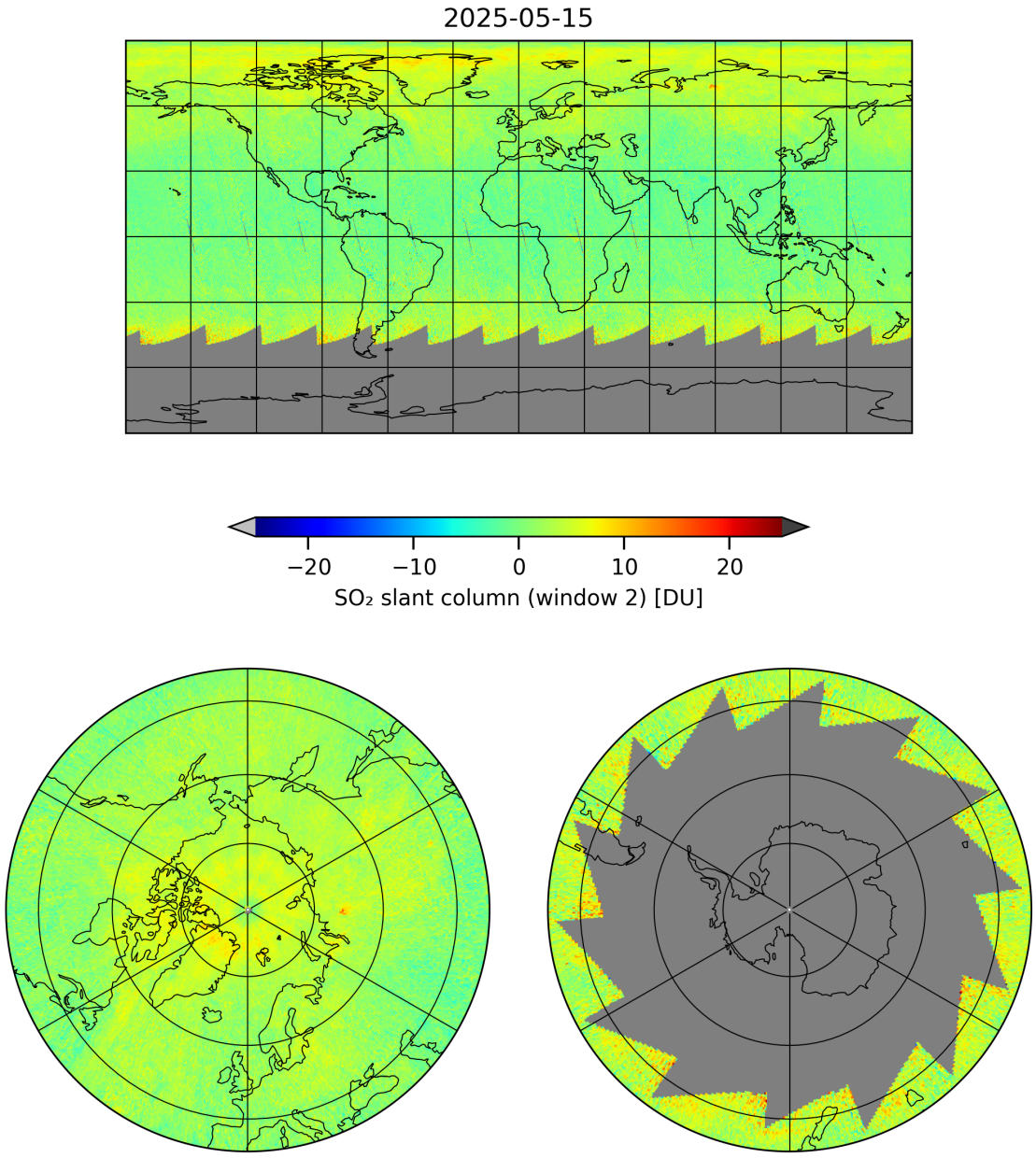


Figure 15: Map of "SO_2 slant column (window 2)" for 2025-05-15 to 2025-05-16

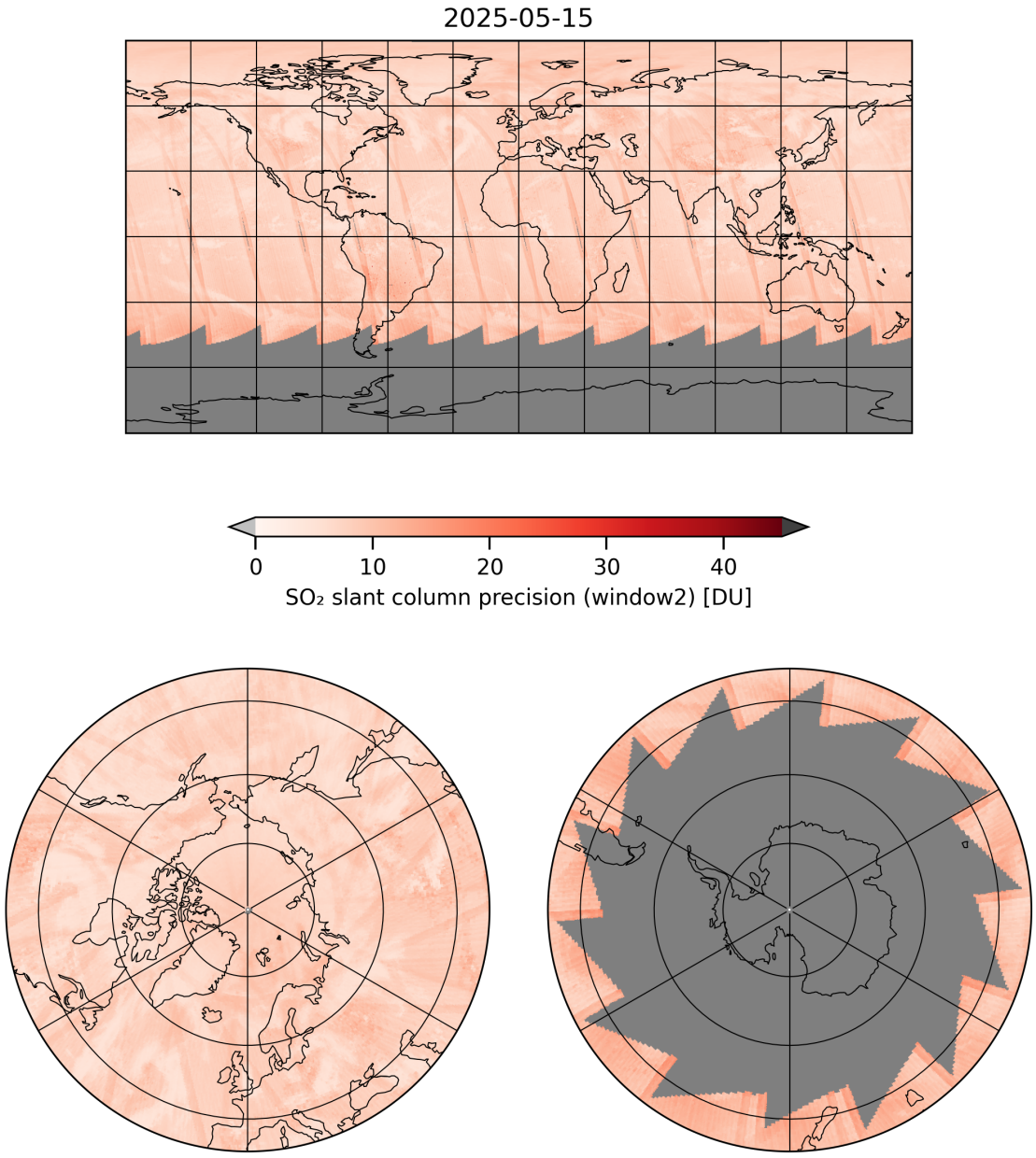


Figure 16: Map of "SO_2 slant column precision (window2)" for 2025-05-15 to 2025-05-16

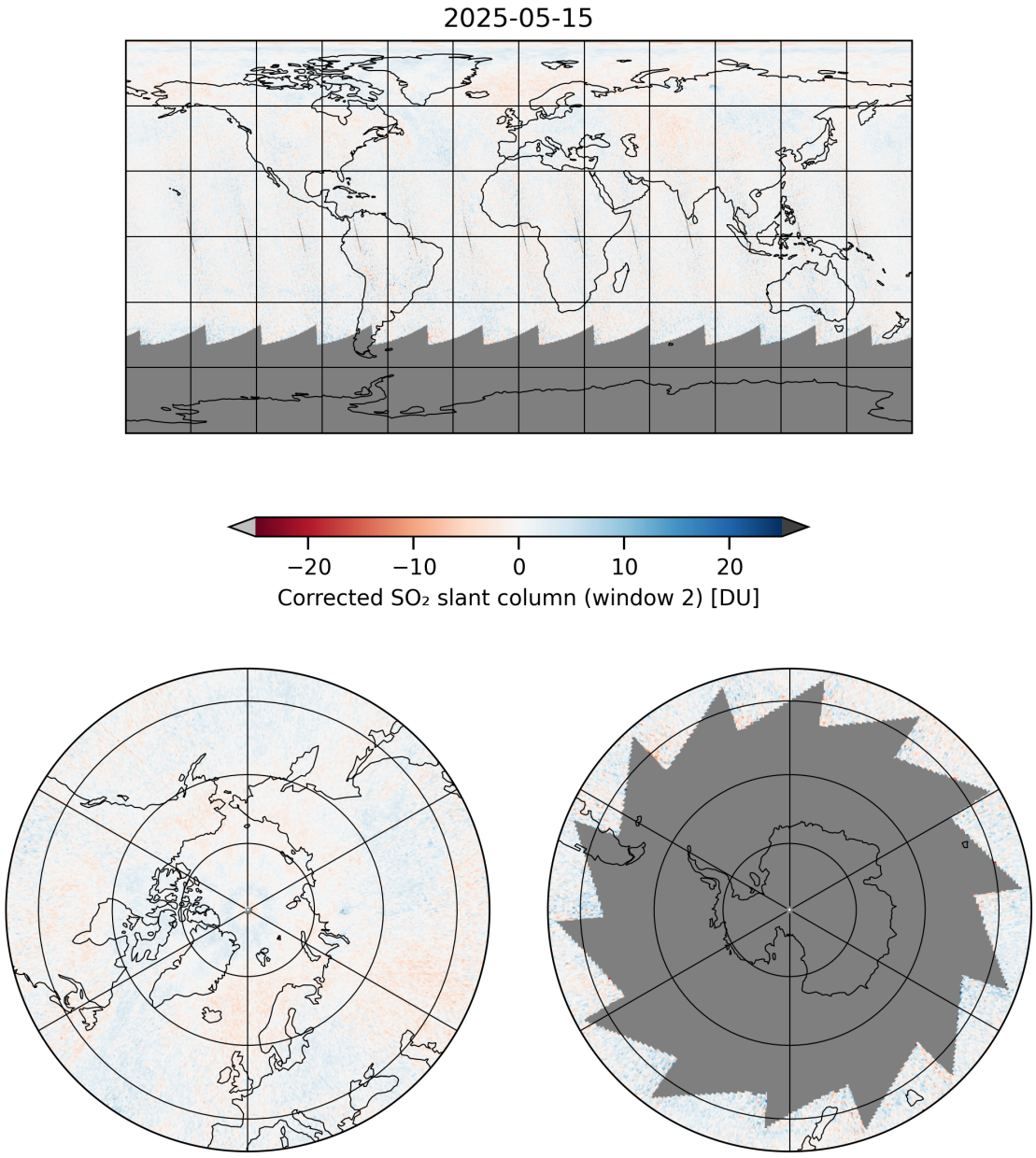


Figure 17: Map of "Corrected SO_2 slant column (window 2)" for 2025-05-15 to 2025-05-16

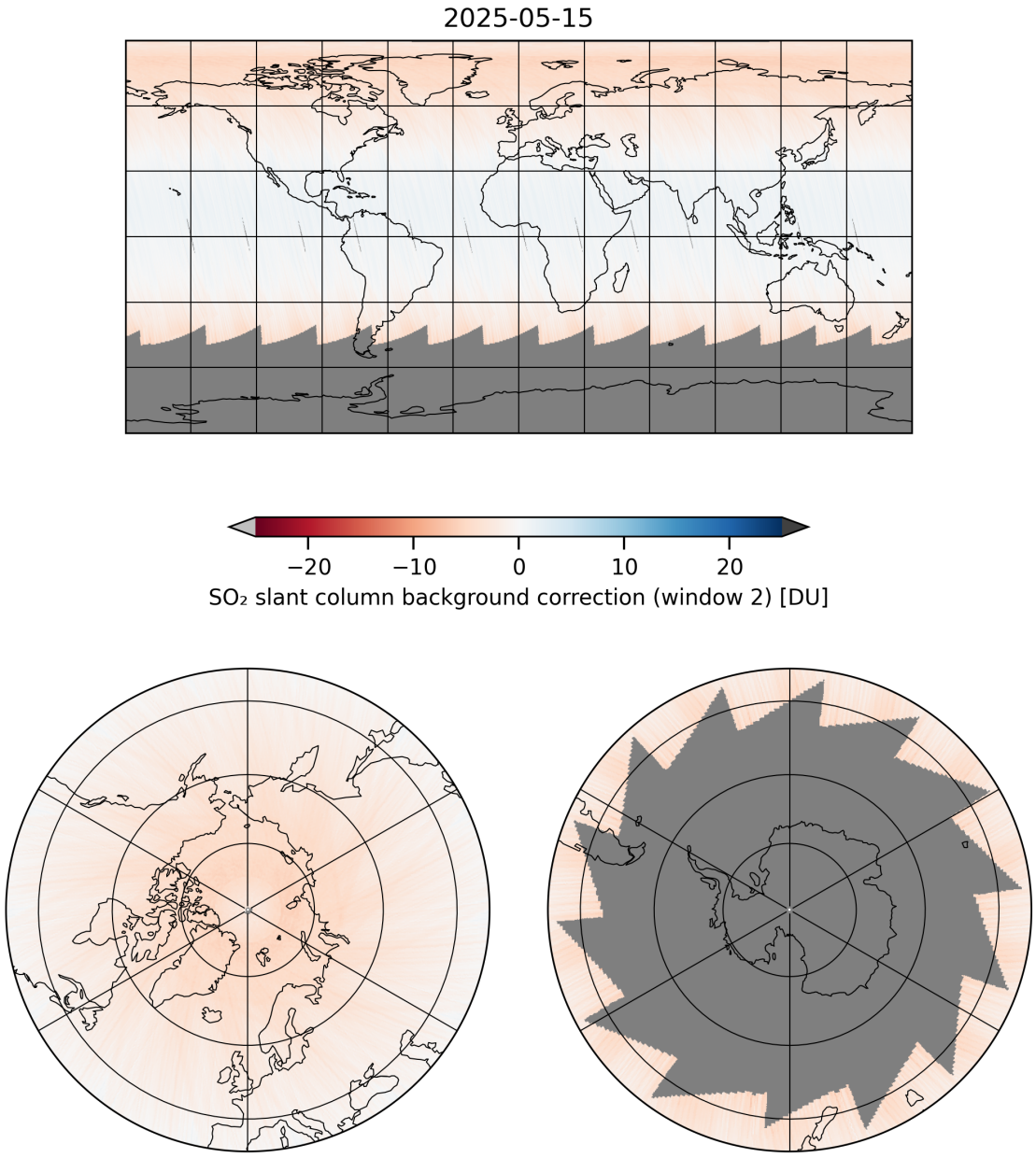


Figure 18: Map of "SO_2 slant column background correction (window 2)" for 2025-05-15 to 2025-05-16

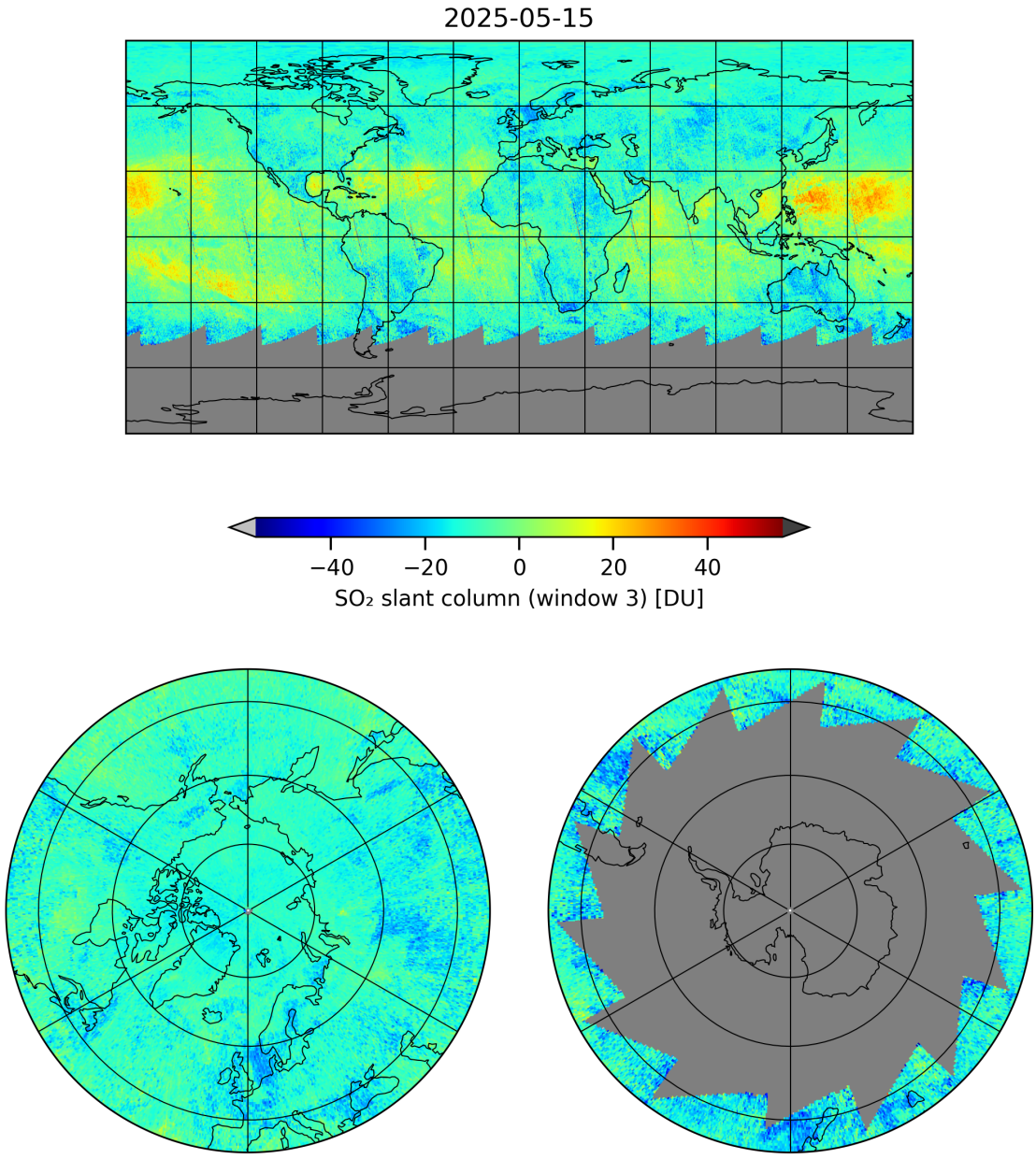


Figure 19: Map of "SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16

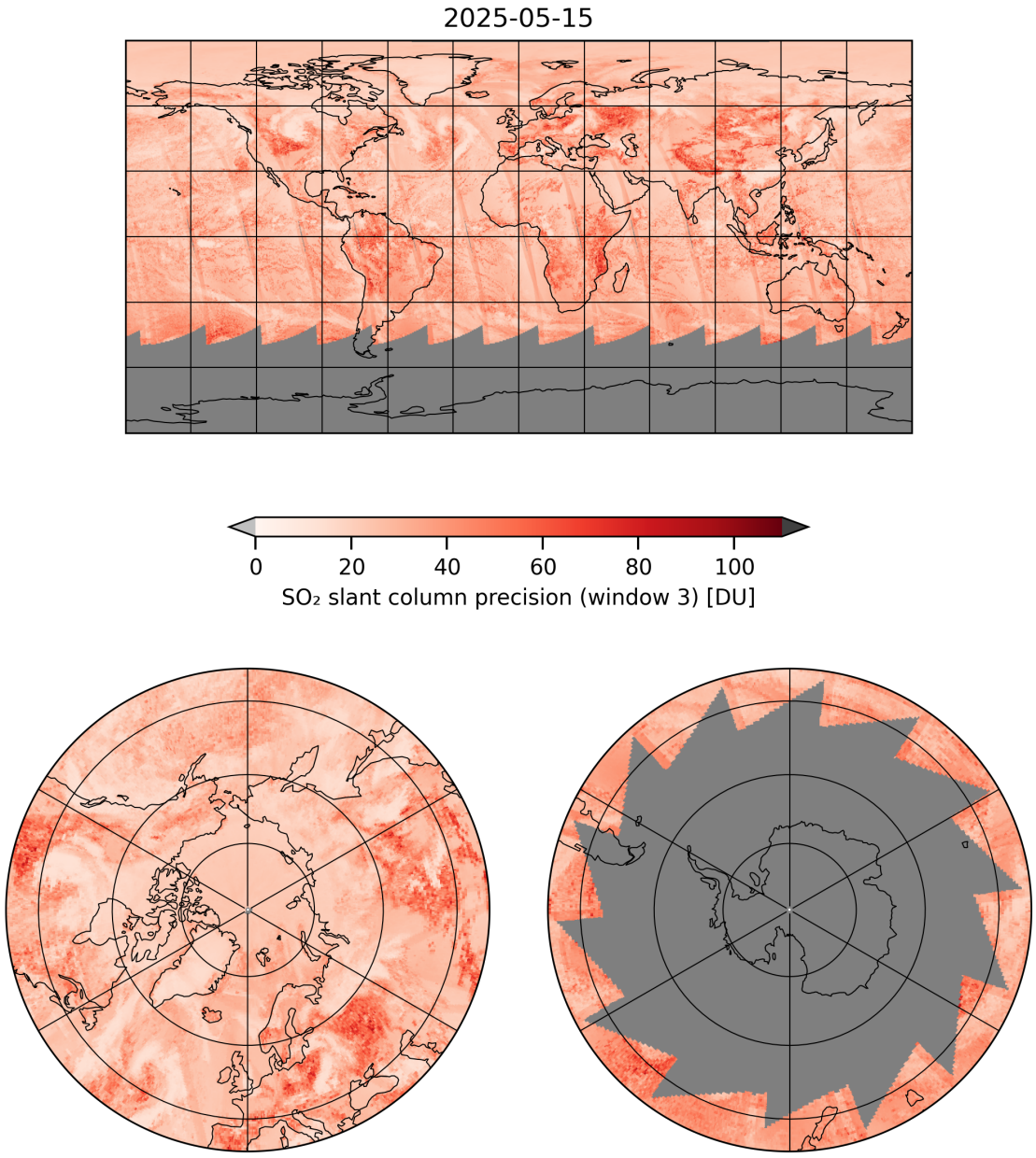


Figure 20: Map of "SO_2 slant column precision (window 3)" for 2025-05-15 to 2025-05-16

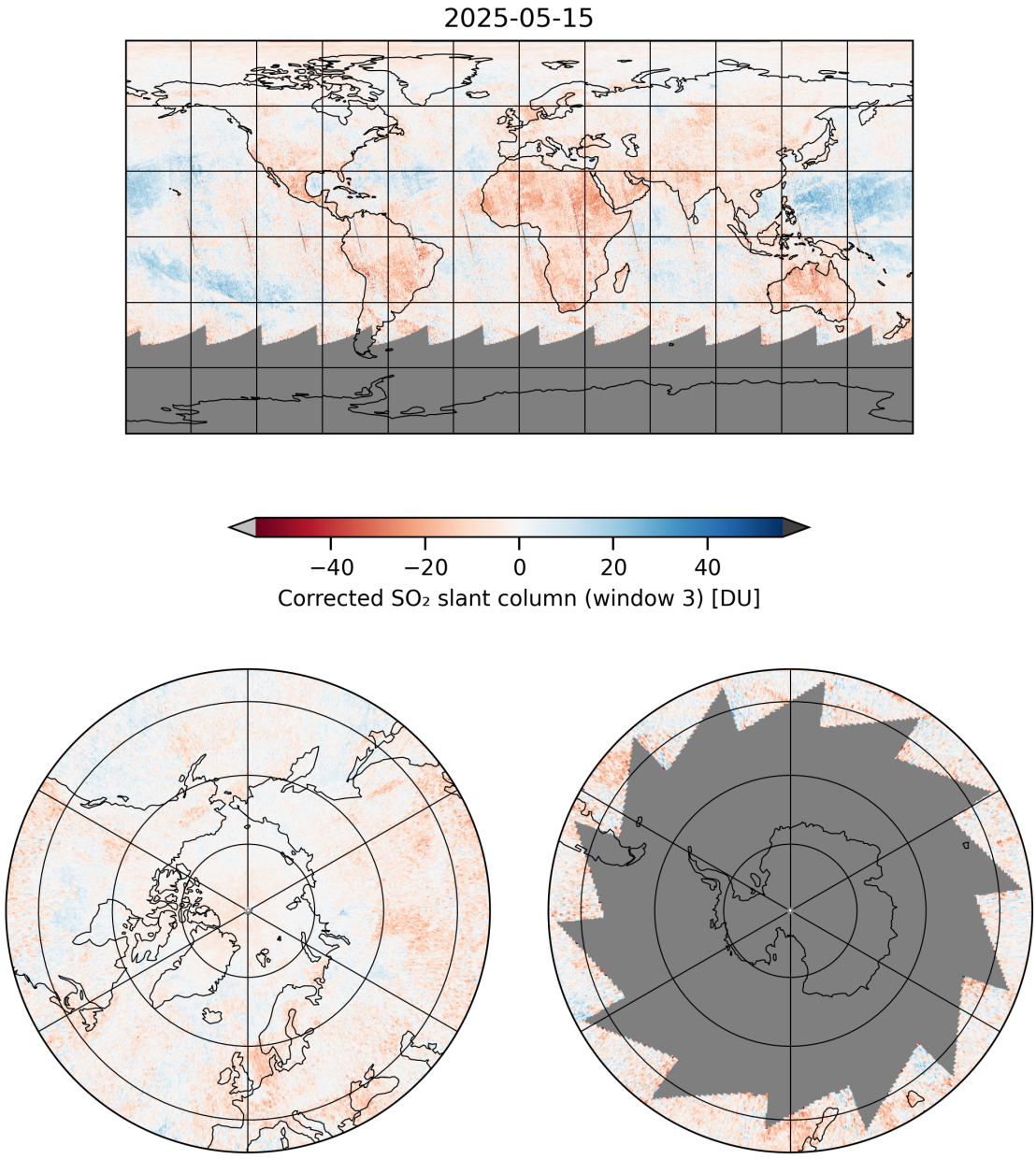


Figure 21: Map of "Corrected SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16

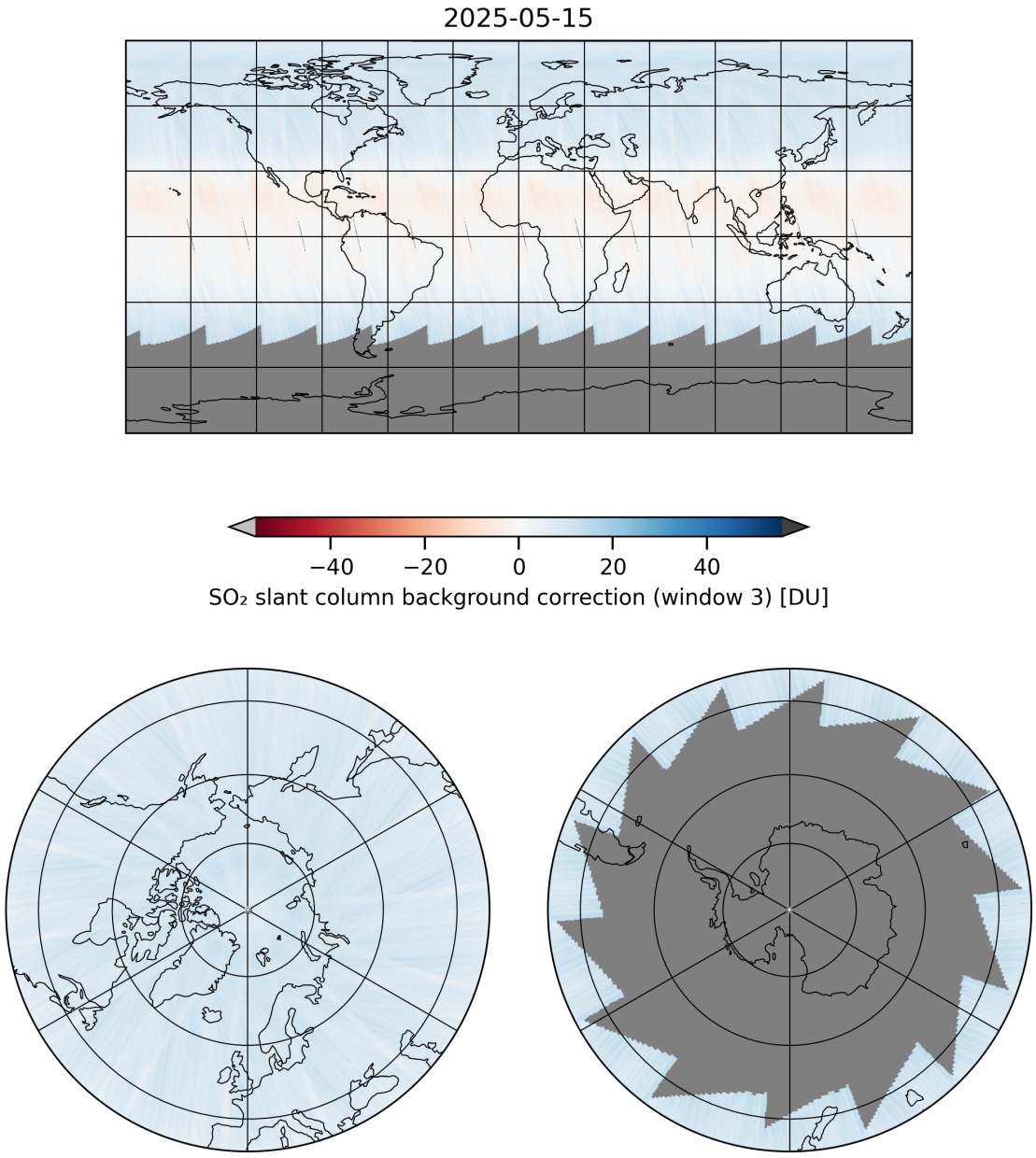


Figure 22: Map of "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16

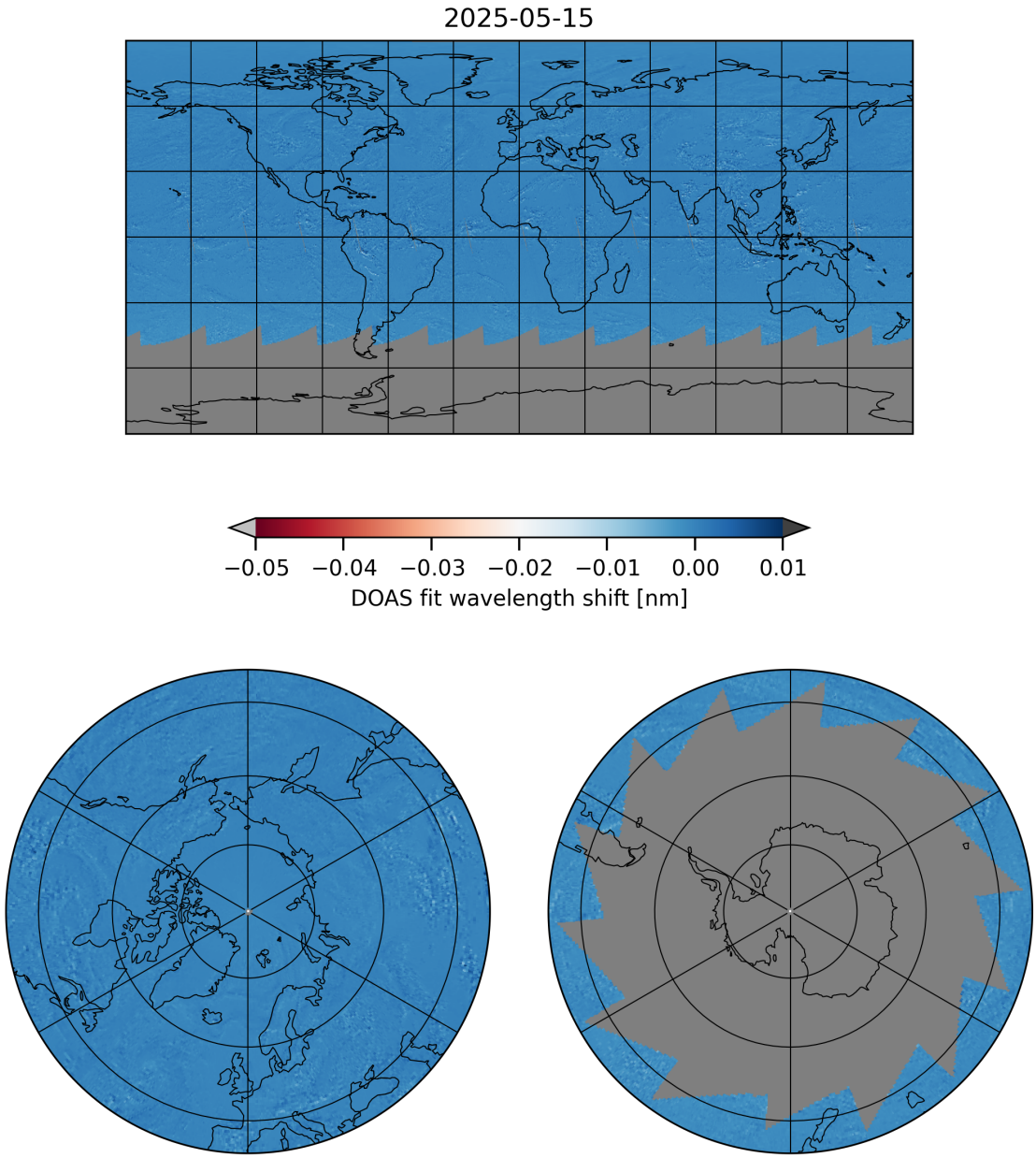


Figure 23: Map of “DOAS fit wavelength shift” for 2025-05-15 to 2025-05-16

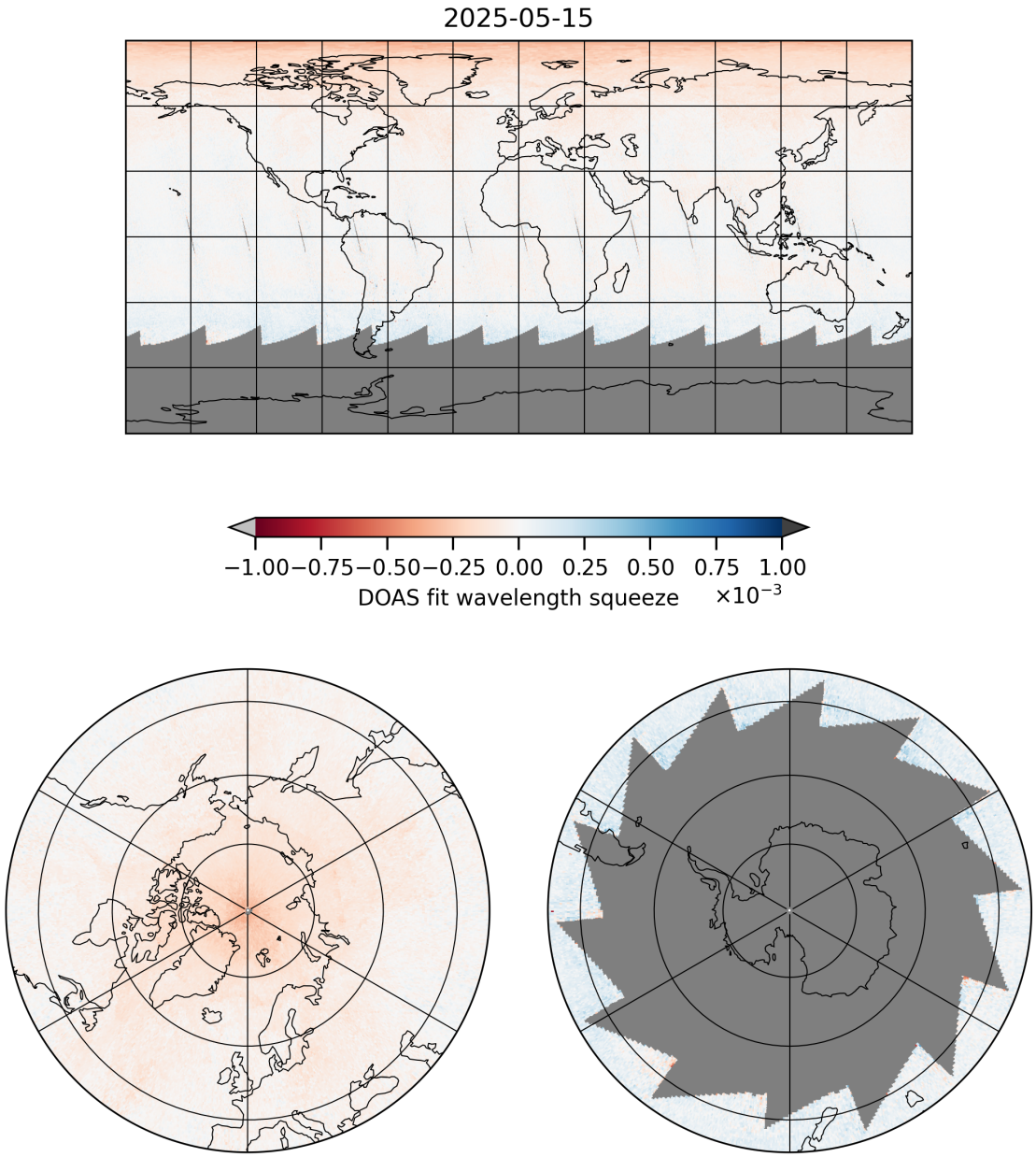


Figure 24: Map of “DOAS fit wavelength squeeze” for 2025-05-15 to 2025-05-16

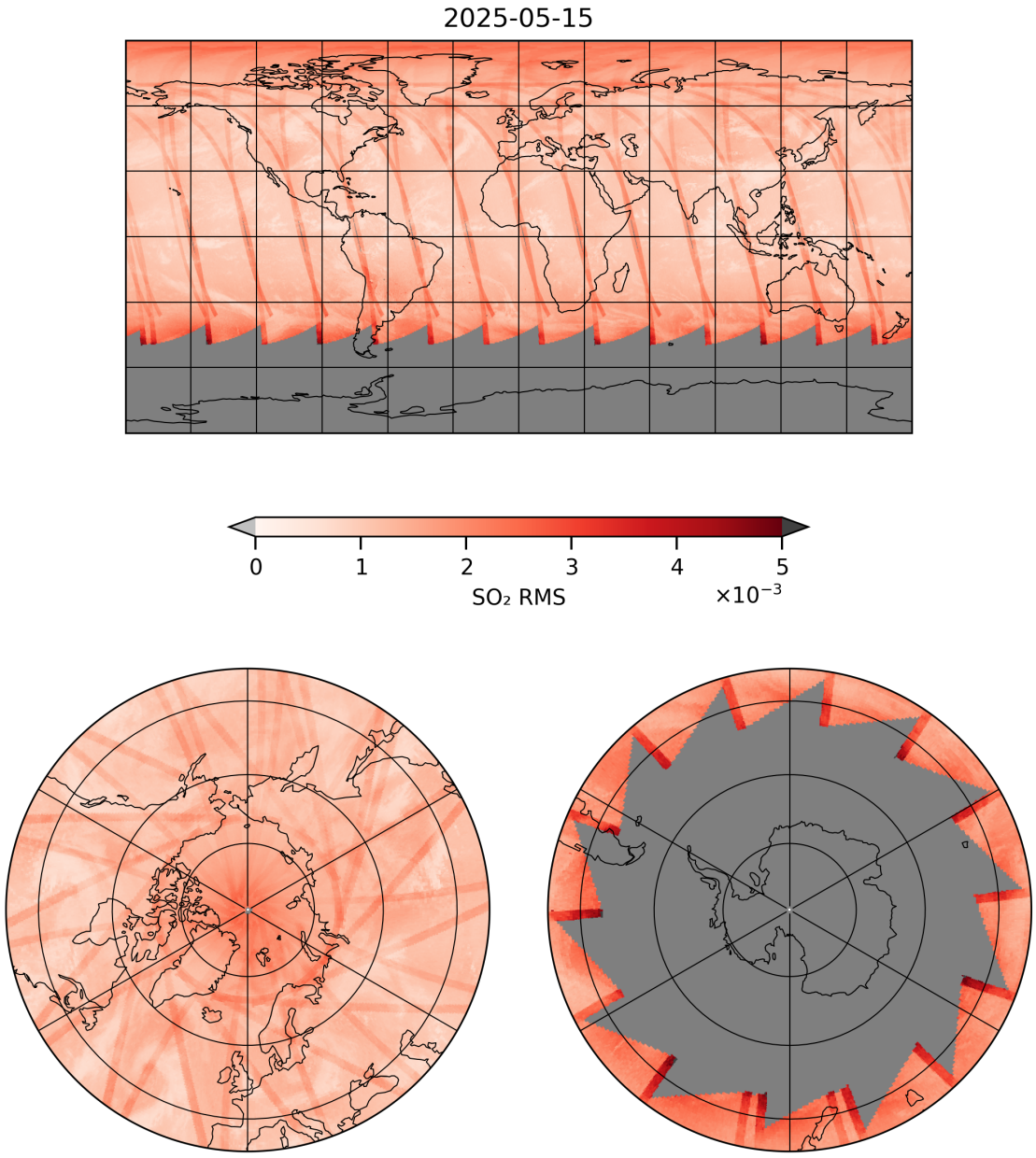


Figure 25: Map of "SO_2 RMS" for 2025-05-15 to 2025-05-16

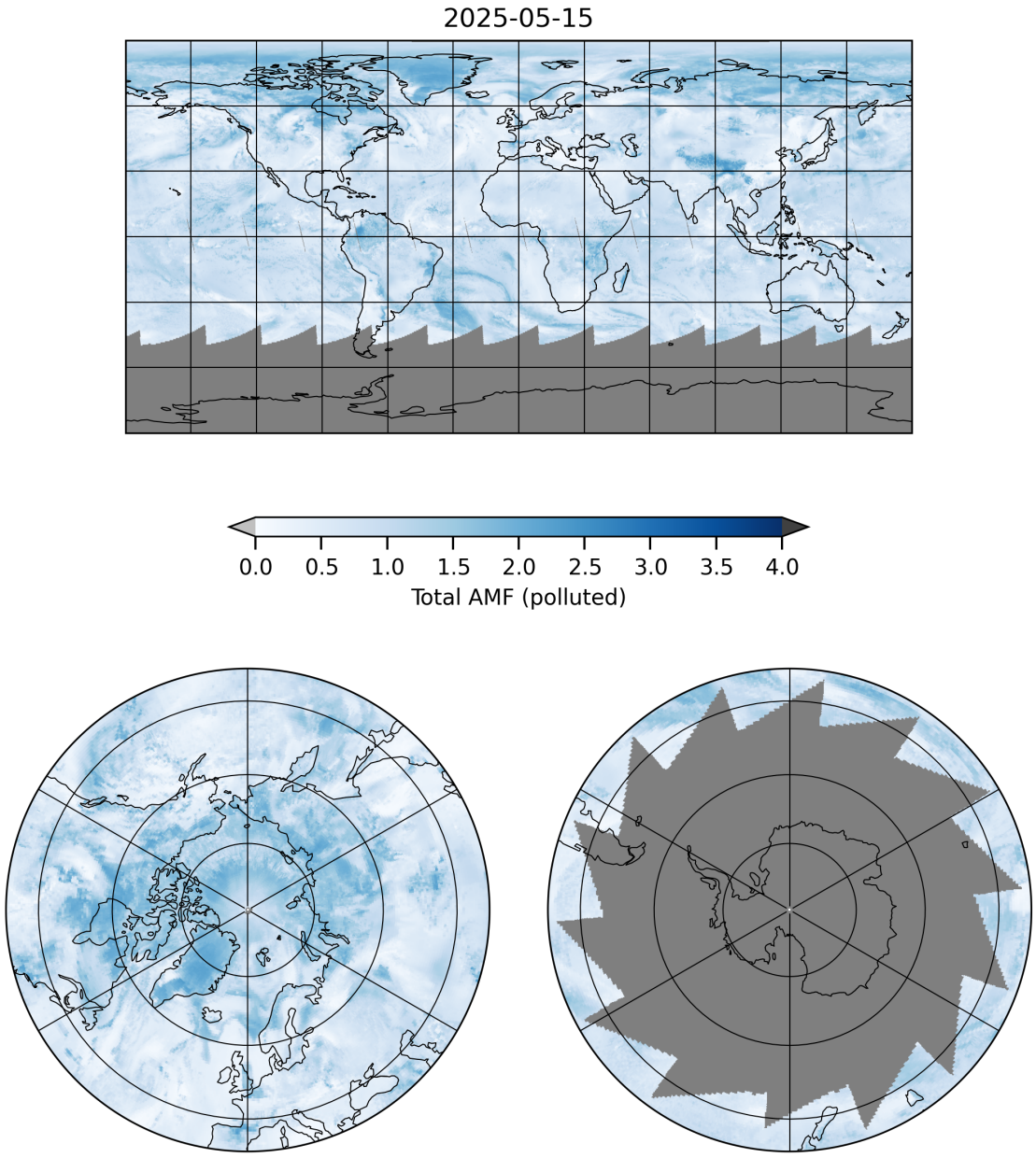


Figure 26: Map of “Total AMF (polluted)” for 2025-05-15 to 2025-05-16

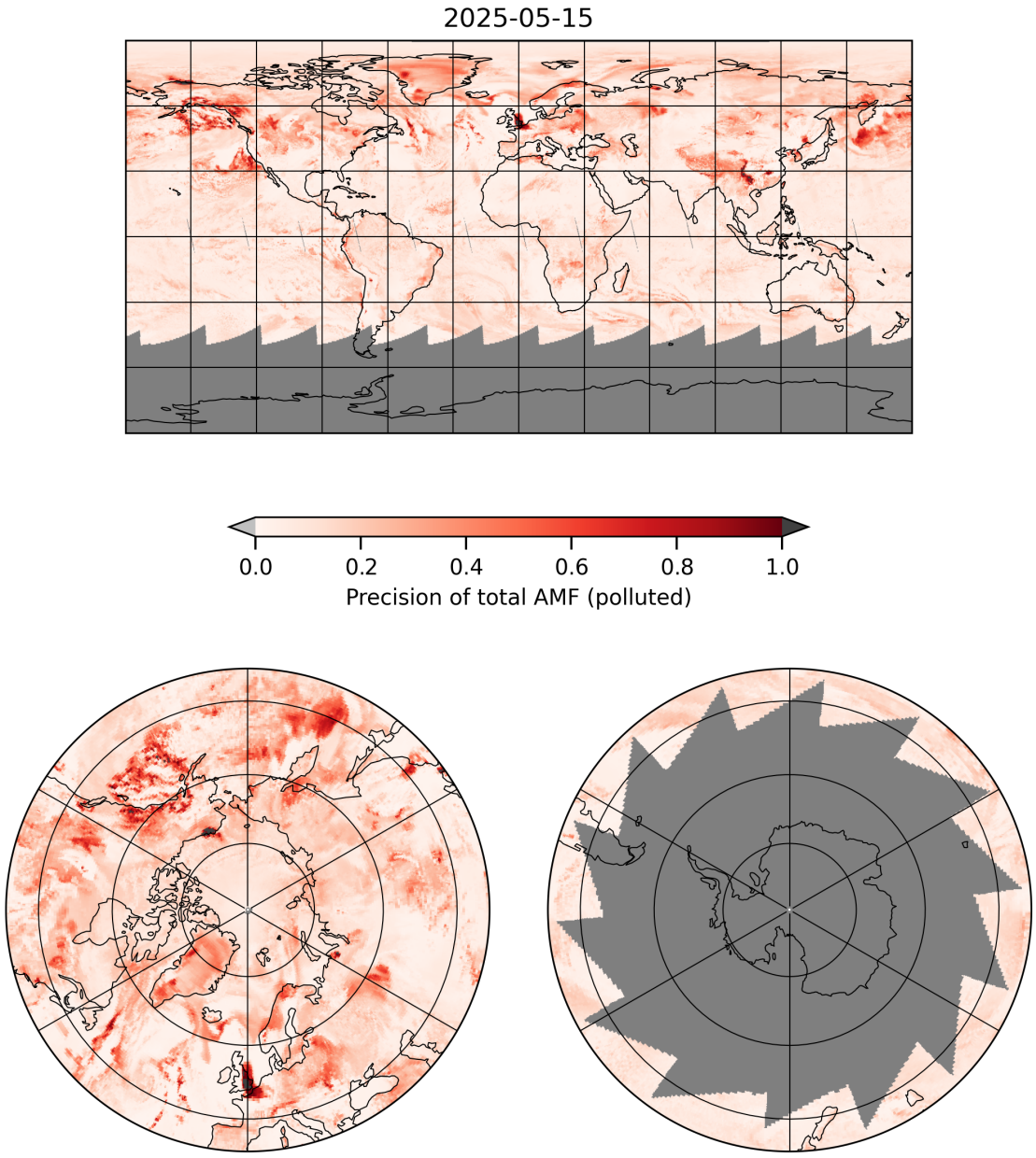


Figure 27: Map of “Precision of total AMF (polluted)” for 2025-05-15 to 2025-05-16

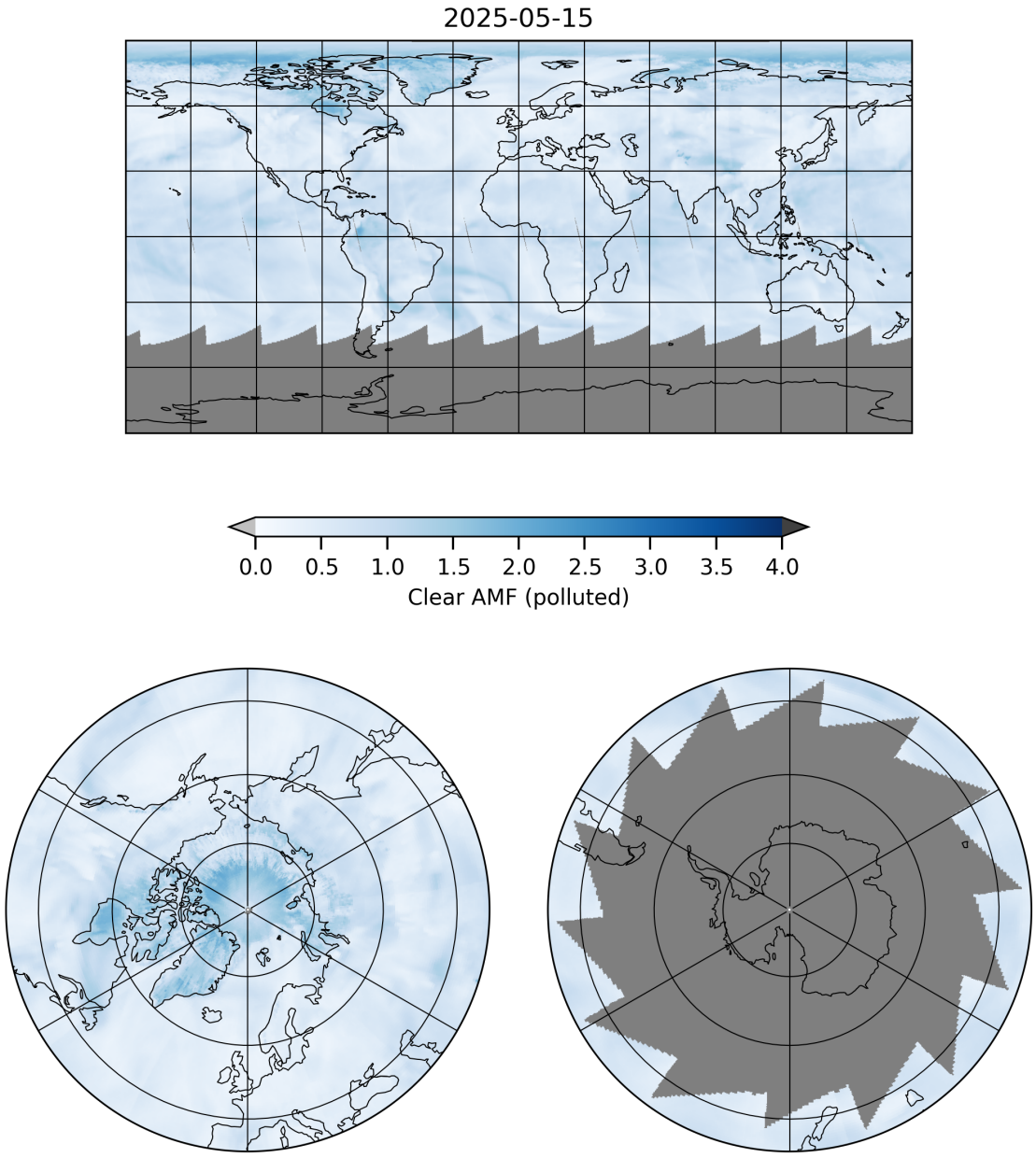


Figure 28: Map of “Clear AMF (polluted)” for 2025-05-15 to 2025-05-16

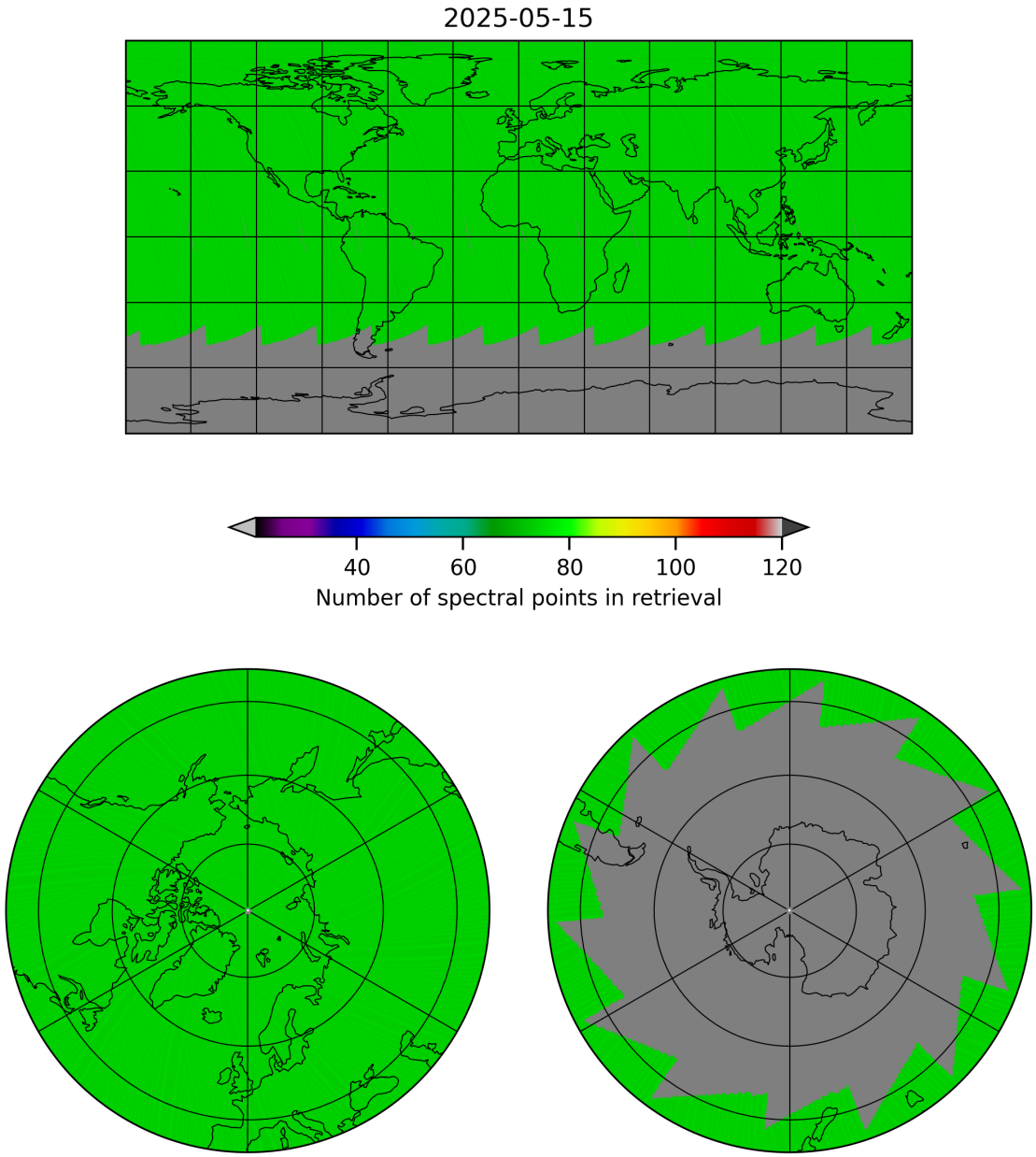


Figure 29: Map of “Number of spectral points in retrieval” for 2025-05-15 to 2025-05-16

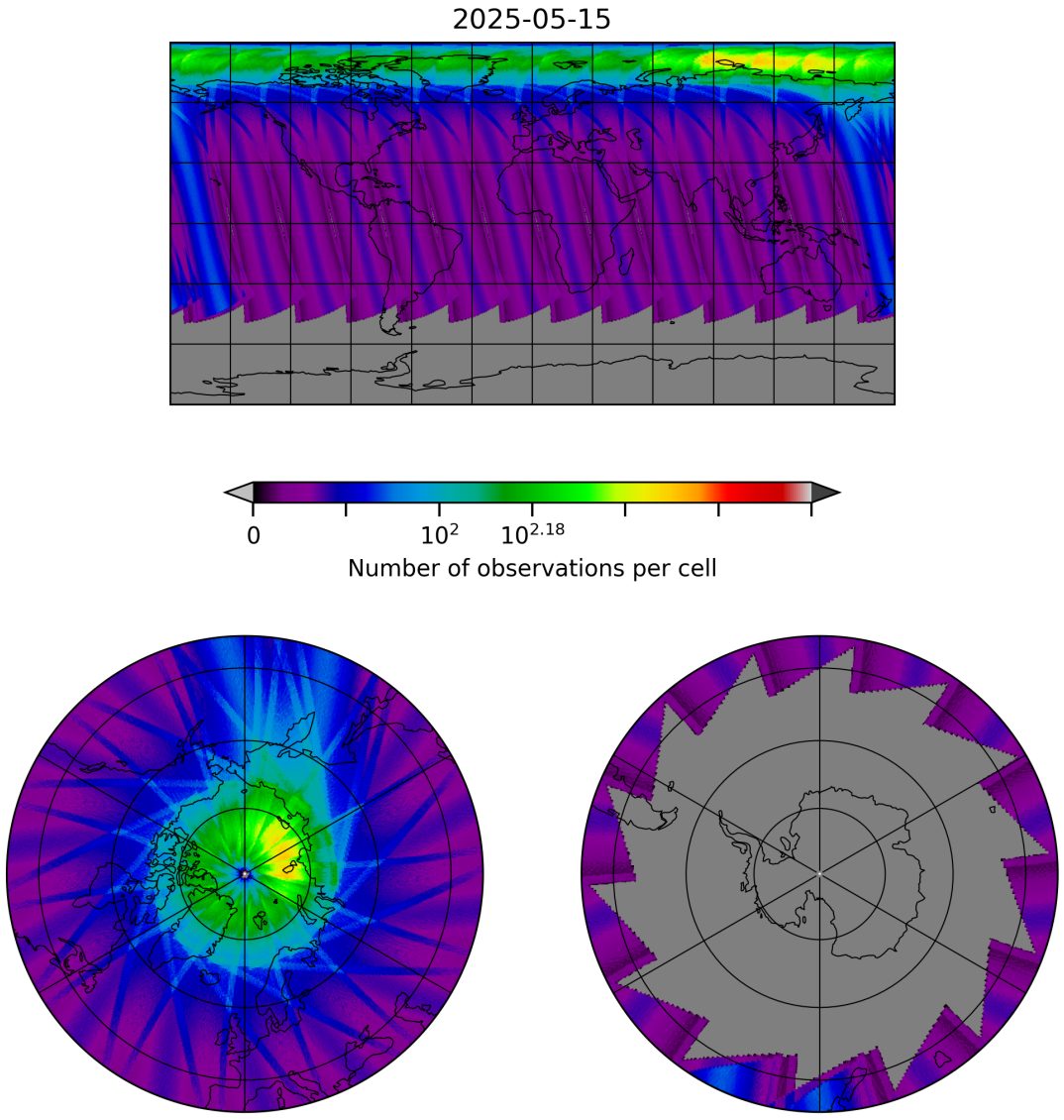


Figure 30: Map of the number of observations for 2025-05-15 to 2025-05-16

7 Zonal average

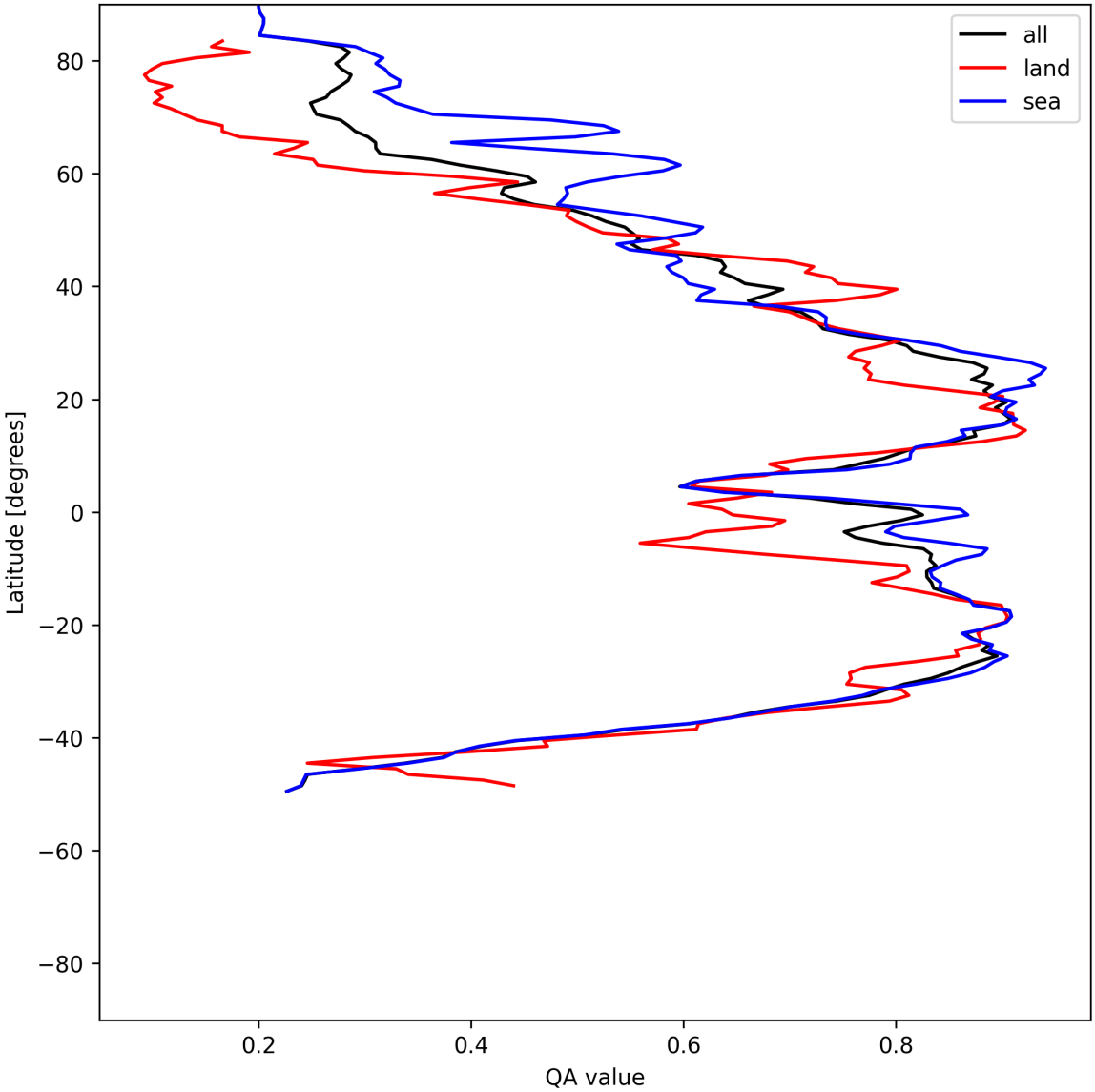


Figure 31: Zonal average of “QA value” for 2025-05-15 to 2025-05-16.

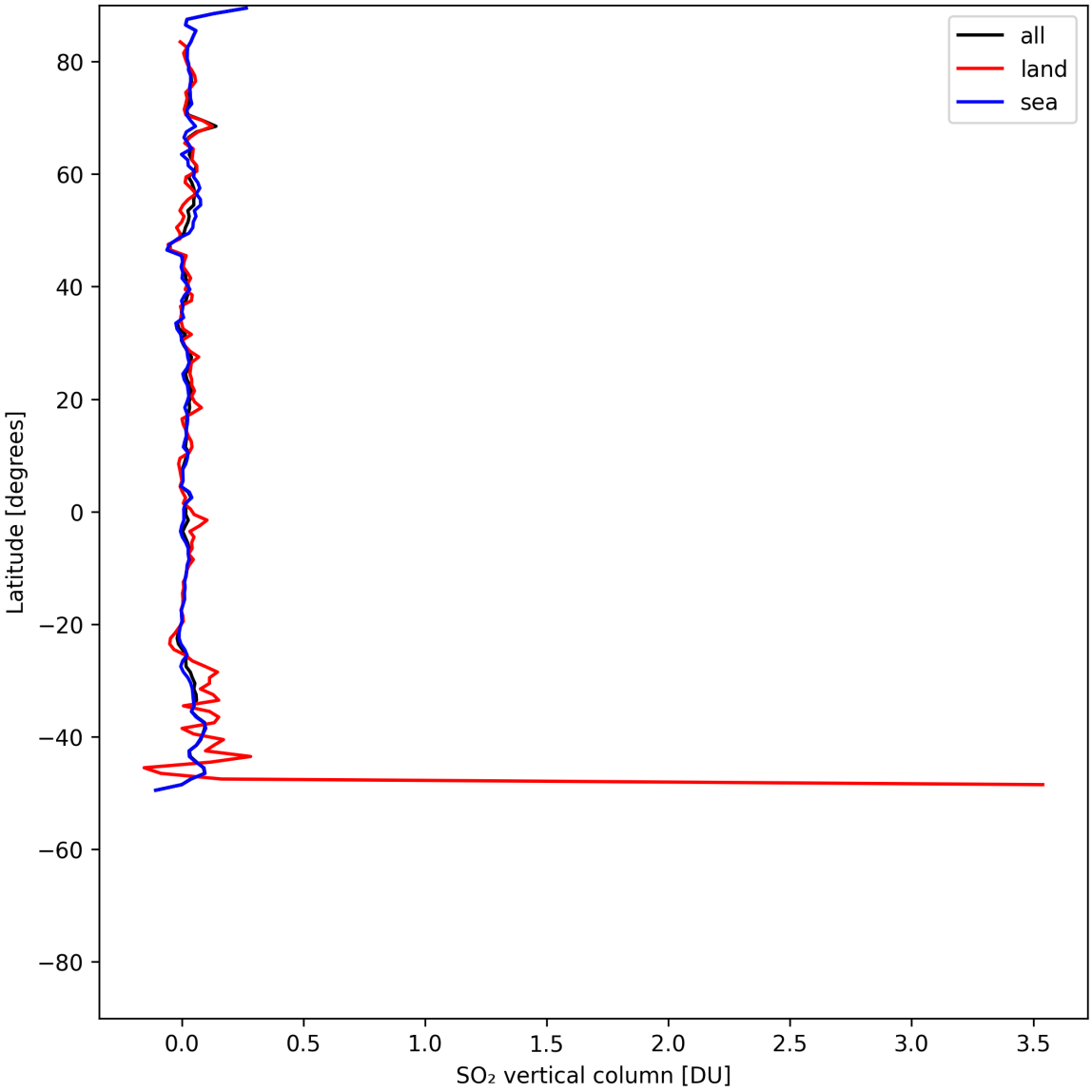


Figure 32: Zonal average of "SO_2 vertical column" for 2025-05-15 to 2025-05-16.

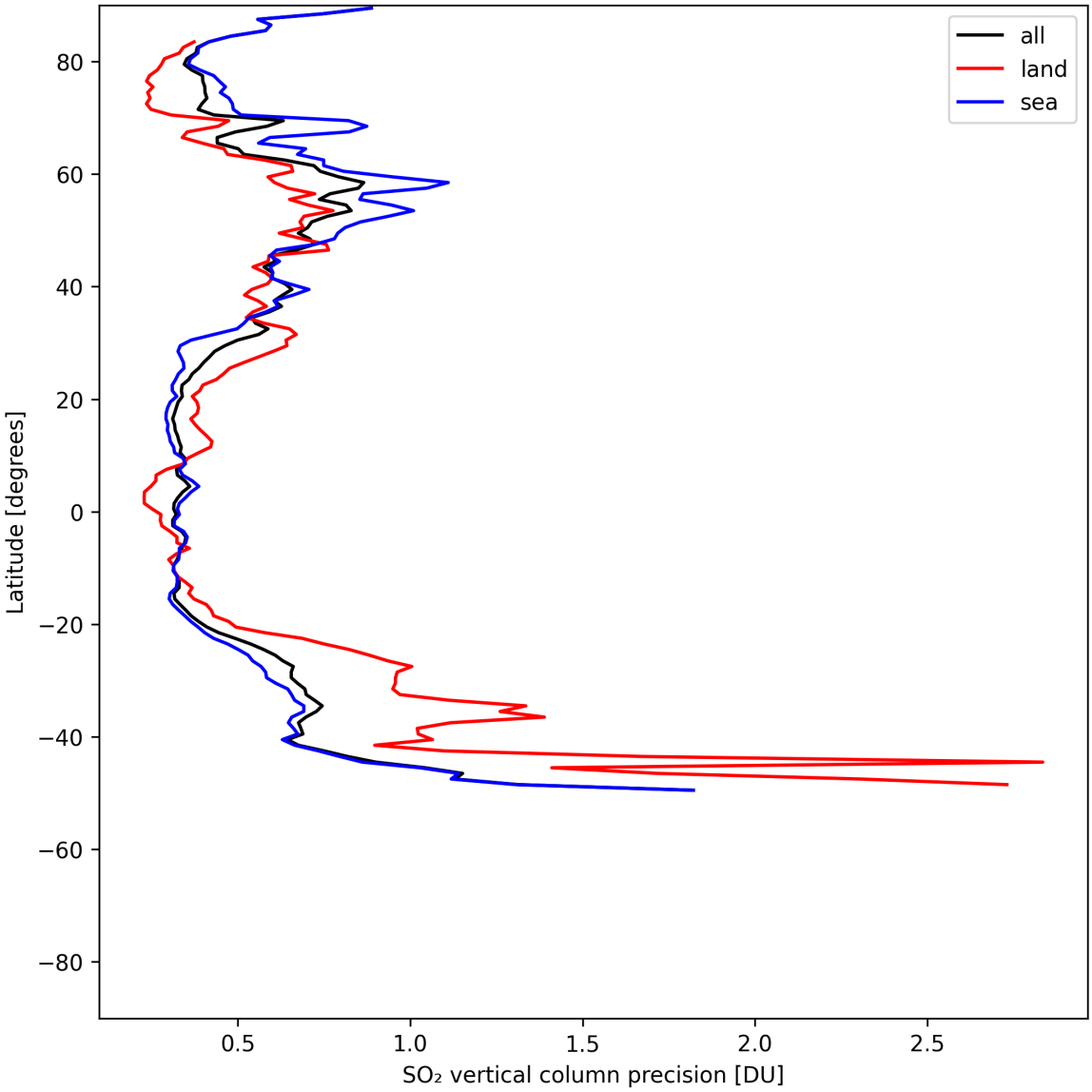


Figure 33: Zonal average of "SO_2 vertical column precision" for 2025-05-15 to 2025-05-16.

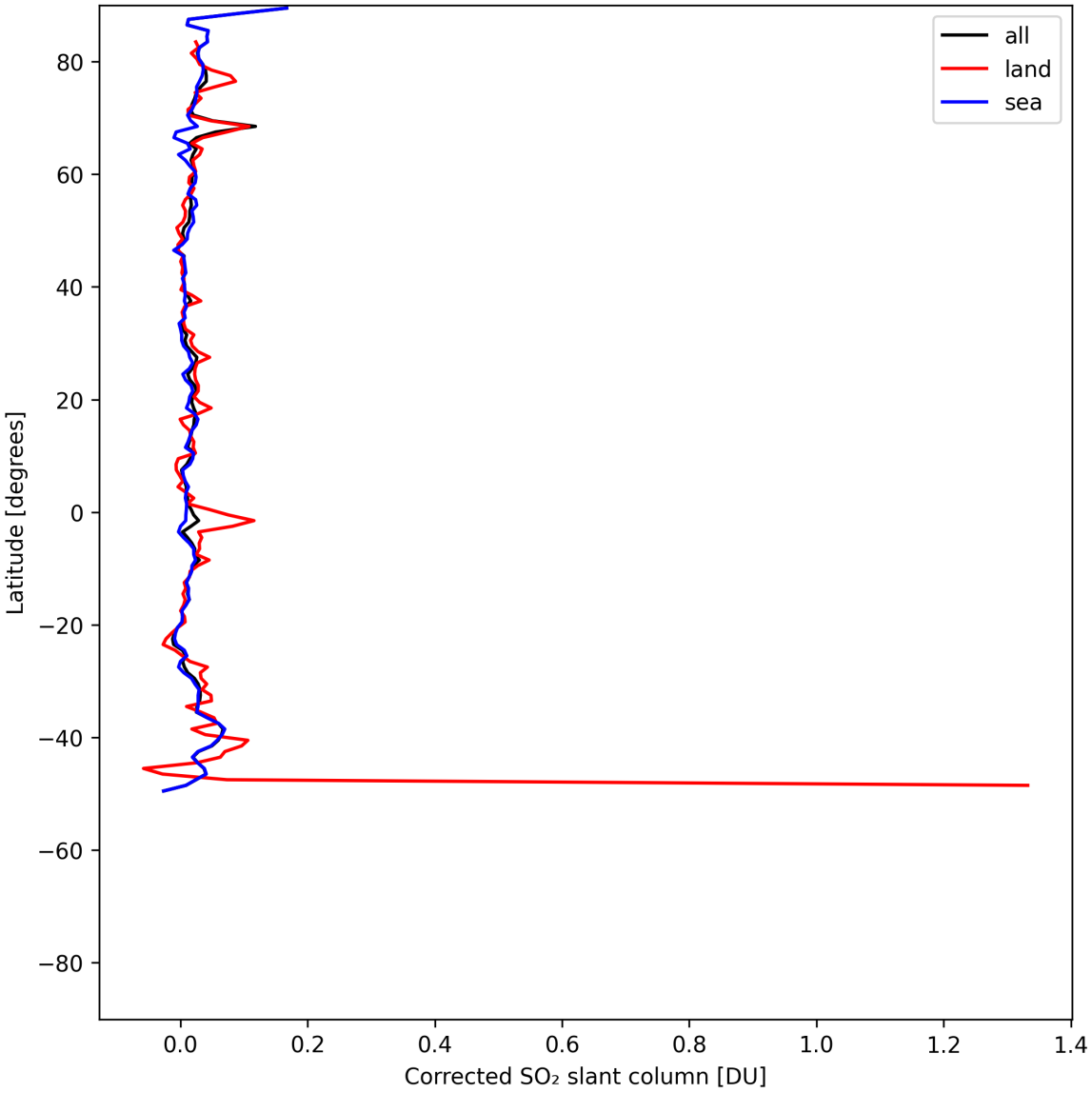


Figure 34: Zonal average of “Corrected SO_2 slant column” for 2025-05-15 to 2025-05-16.

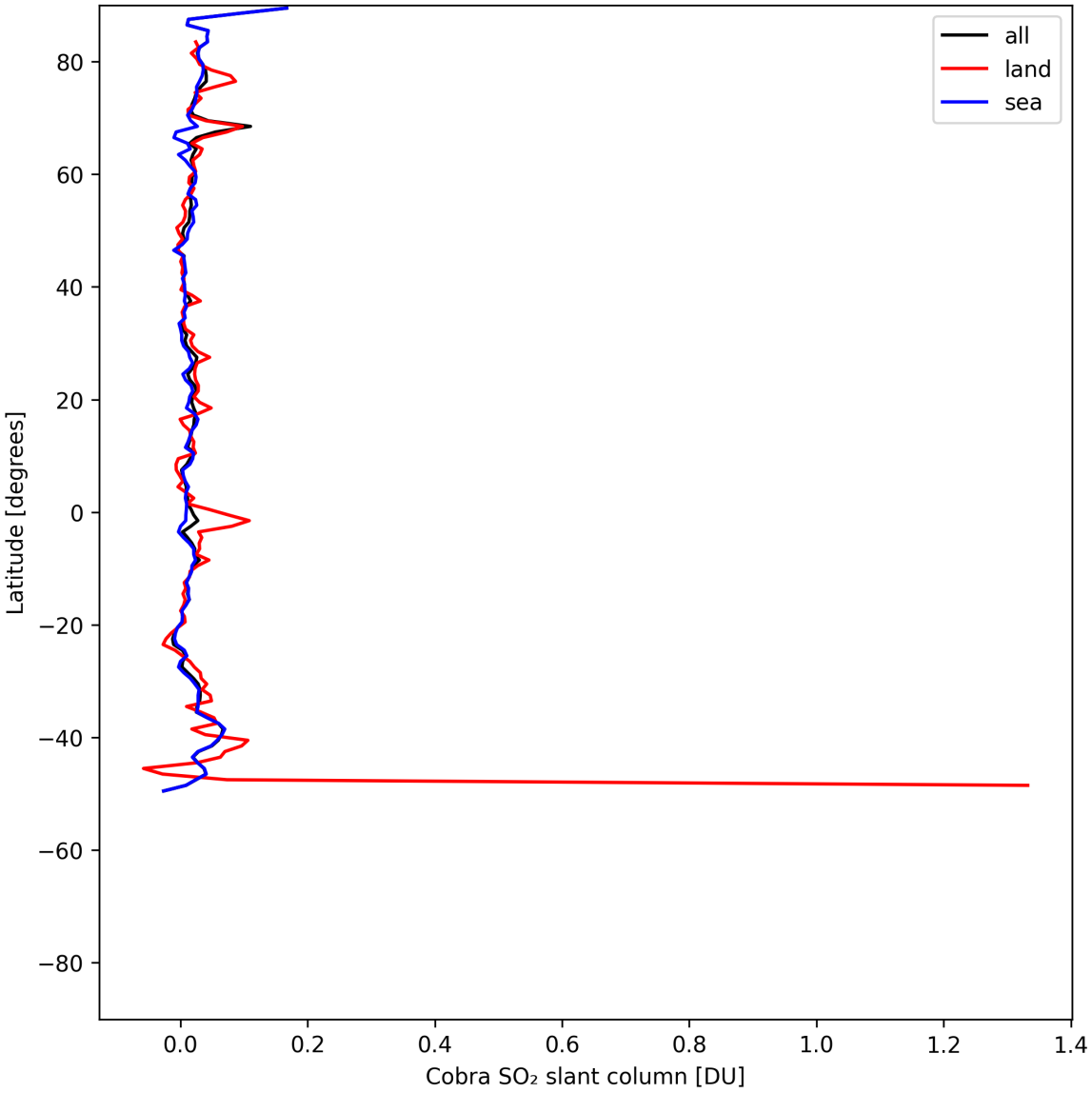


Figure 35: Zonal average of “Cobra SO_2 slant column” for 2025-05-15 to 2025-05-16.

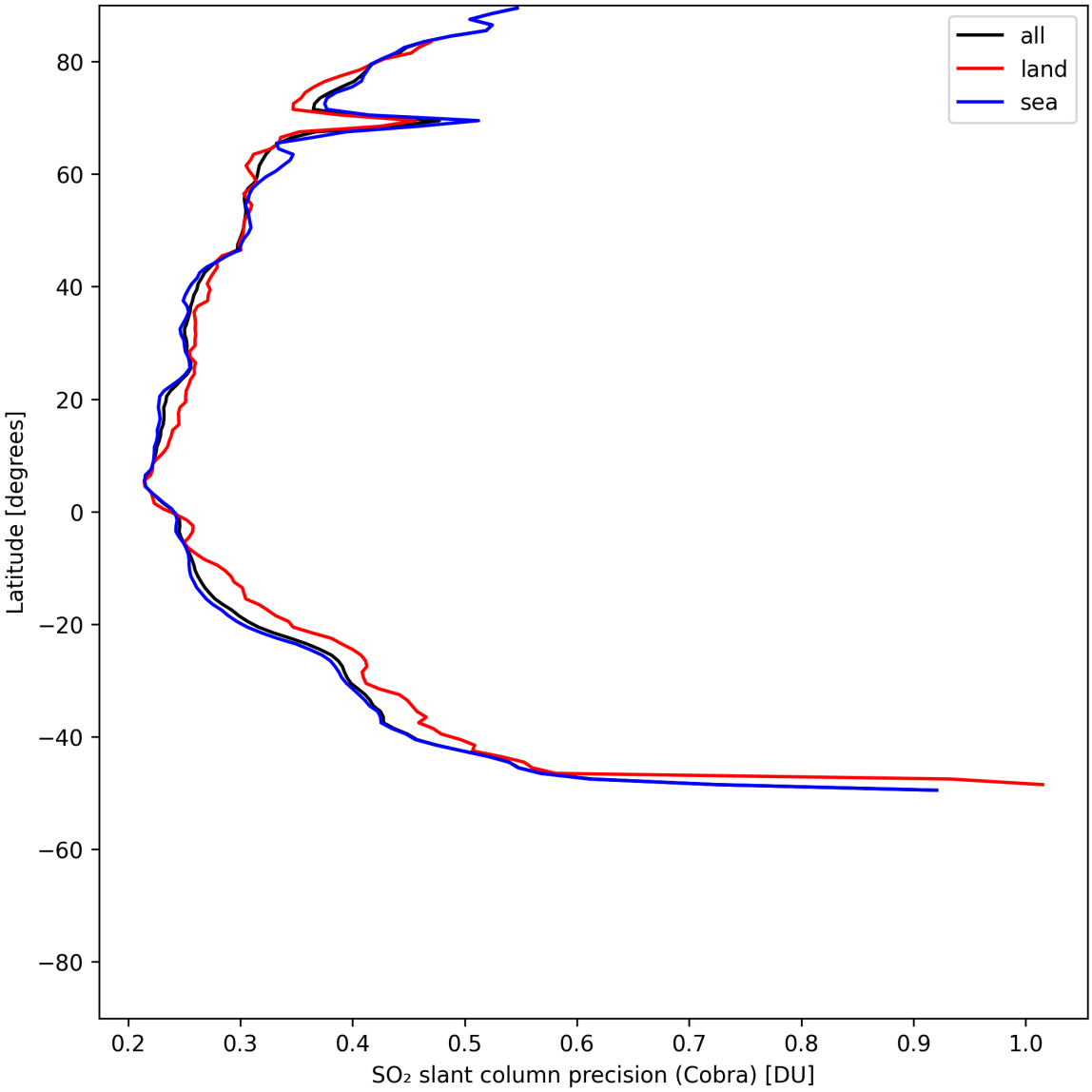


Figure 36: Zonal average of "SO_2 slant column precision (Cobra)" for 2025-05-15 to 2025-05-16.

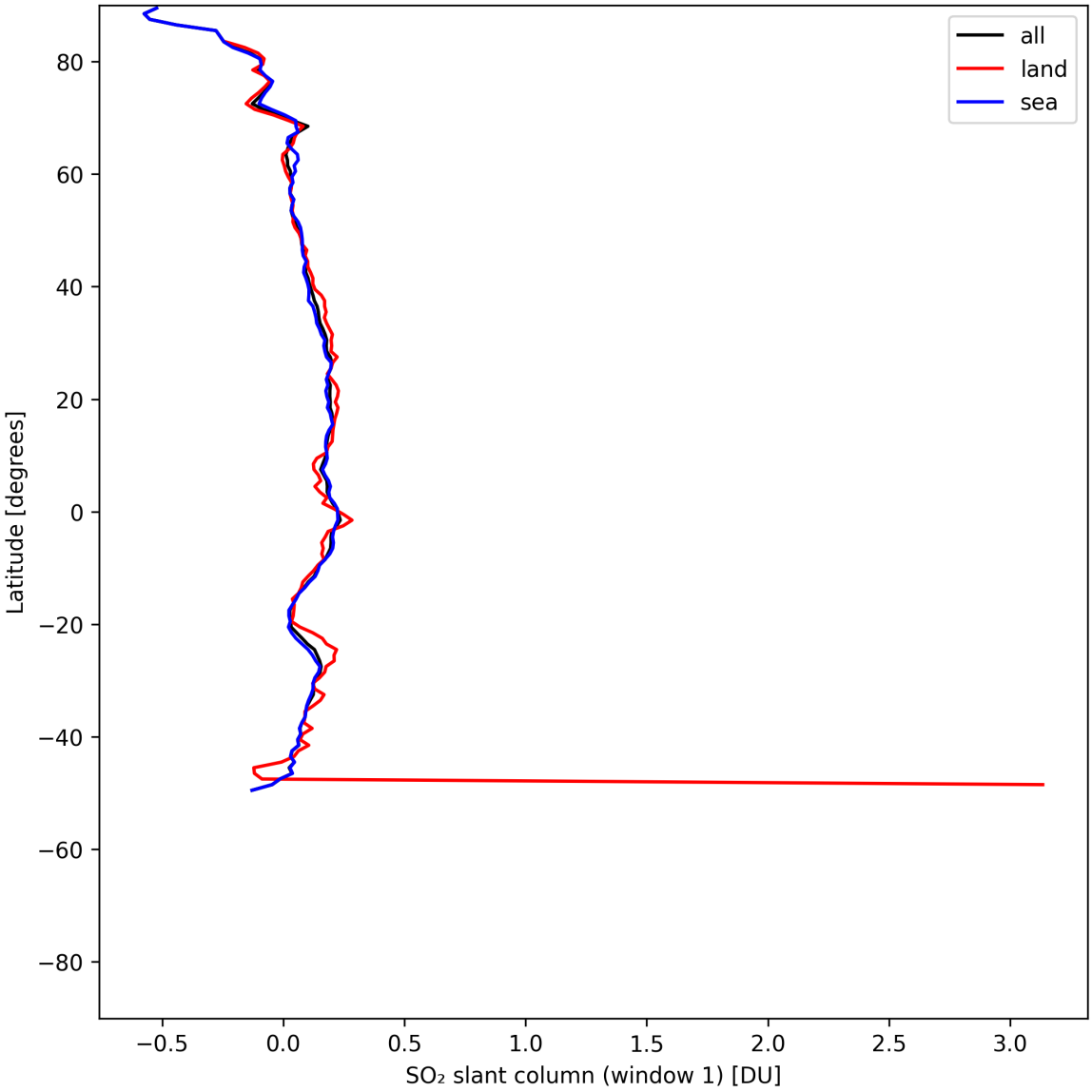


Figure 37: Zonal average of "SO_2 slant column (window 1)" for 2025-05-15 to 2025-05-16.

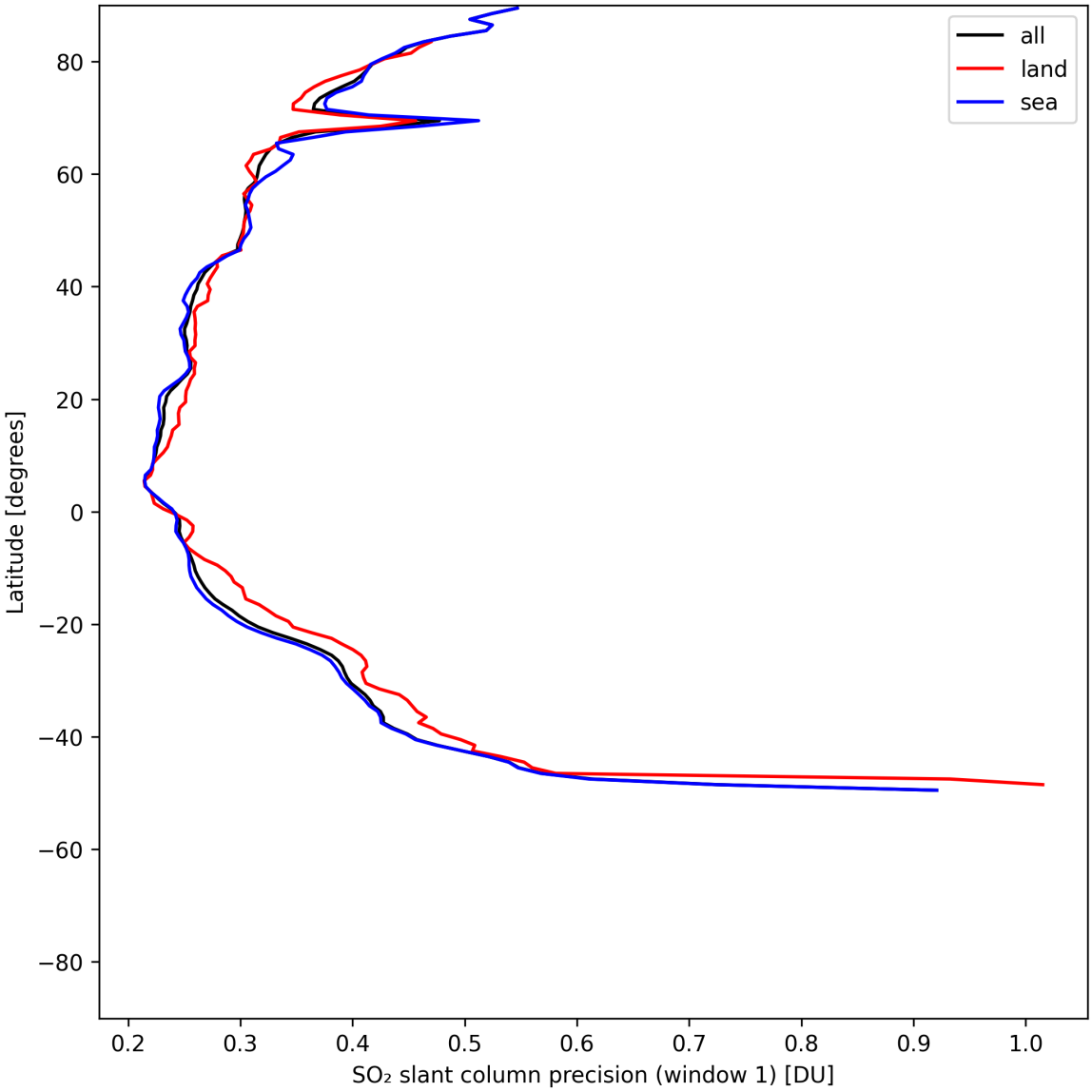


Figure 38: Zonal average of "SO_2 slant column precision (window 1)" for 2025-05-15 to 2025-05-16.

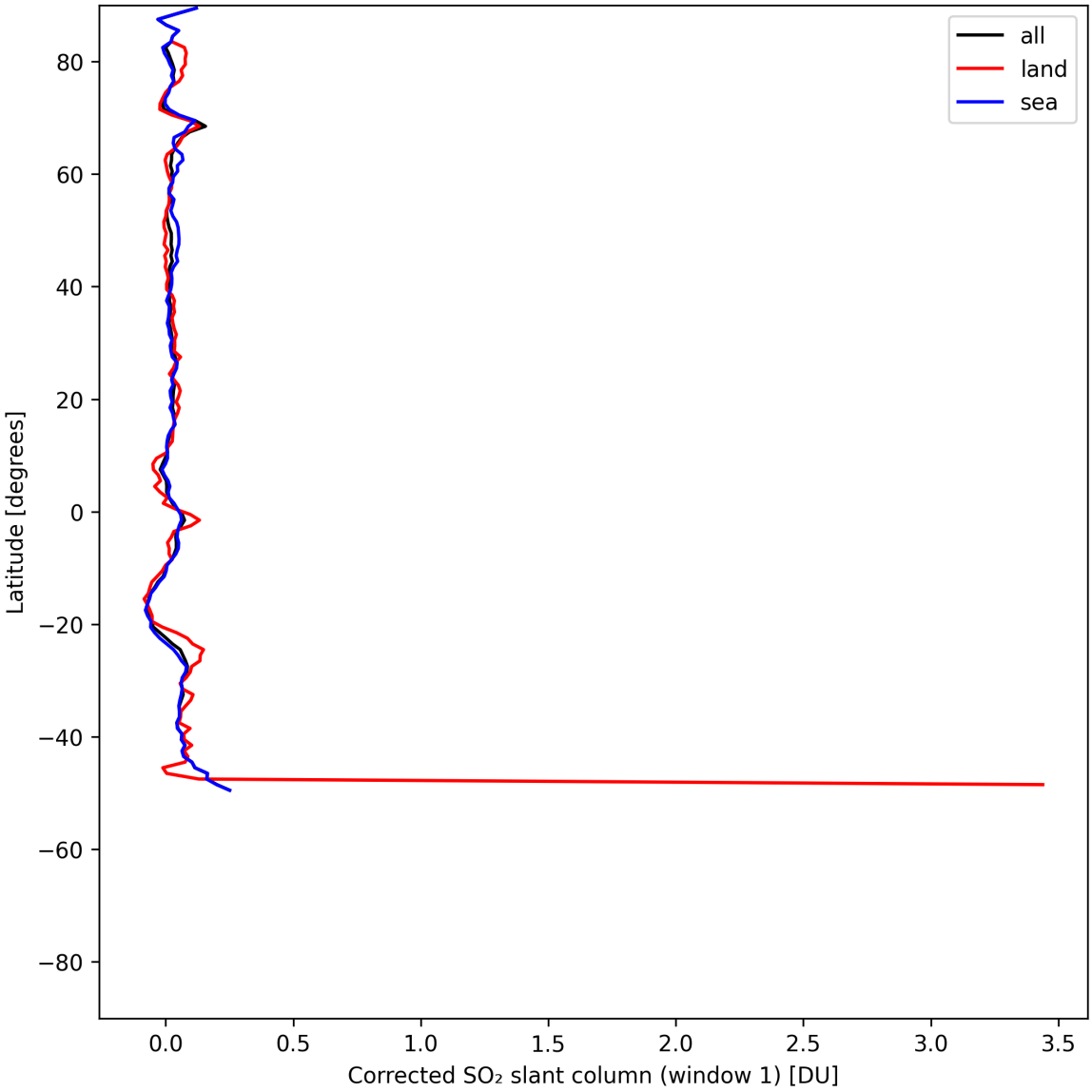


Figure 39: Zonal average of "Corrected SO_2 slant column (window 1)" for 2025-05-15 to 2025-05-16.

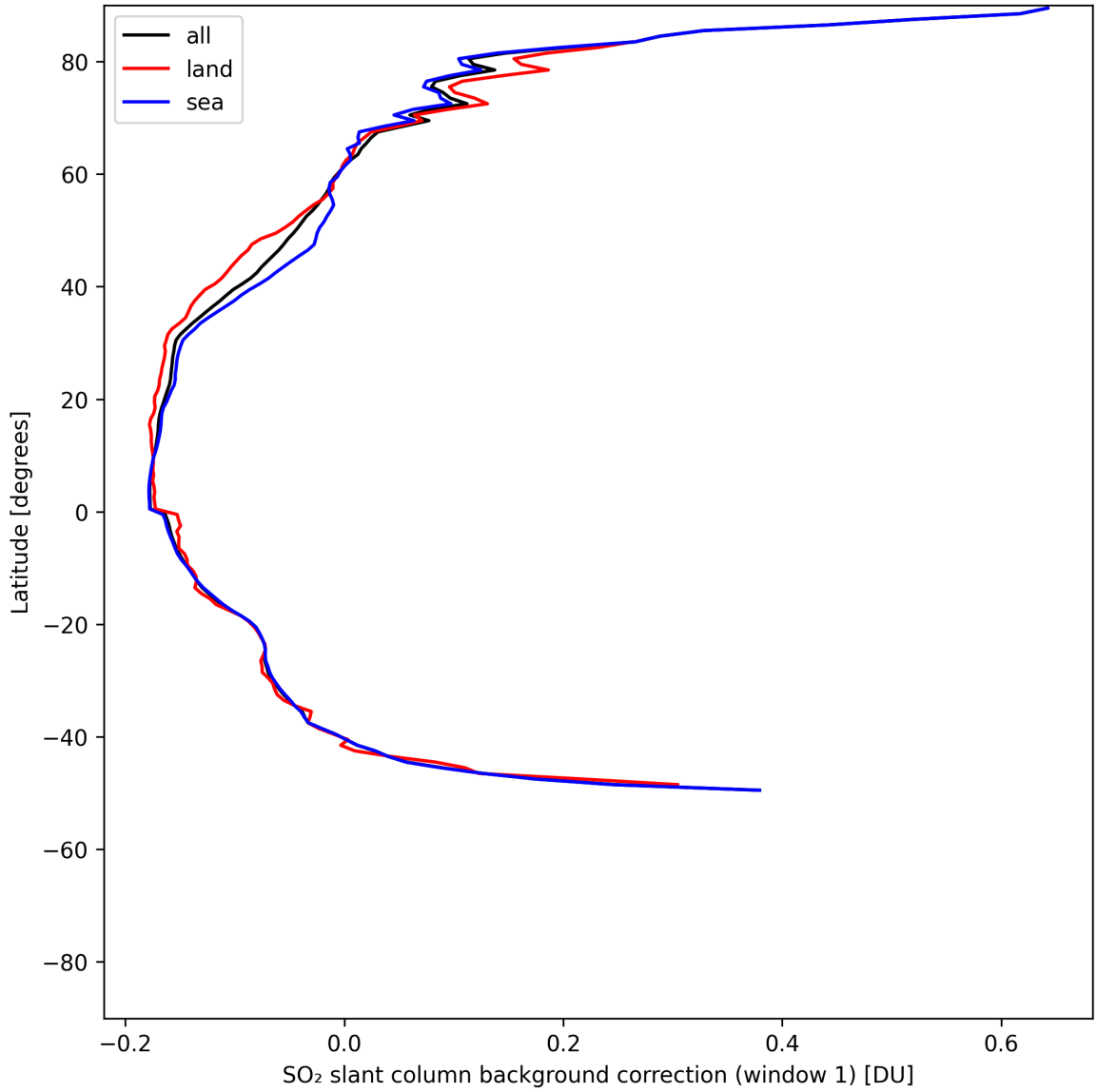


Figure 40: Zonal average of "SO_2 slant column background correction (window 1)" for 2025-05-15 to 2025-05-16.

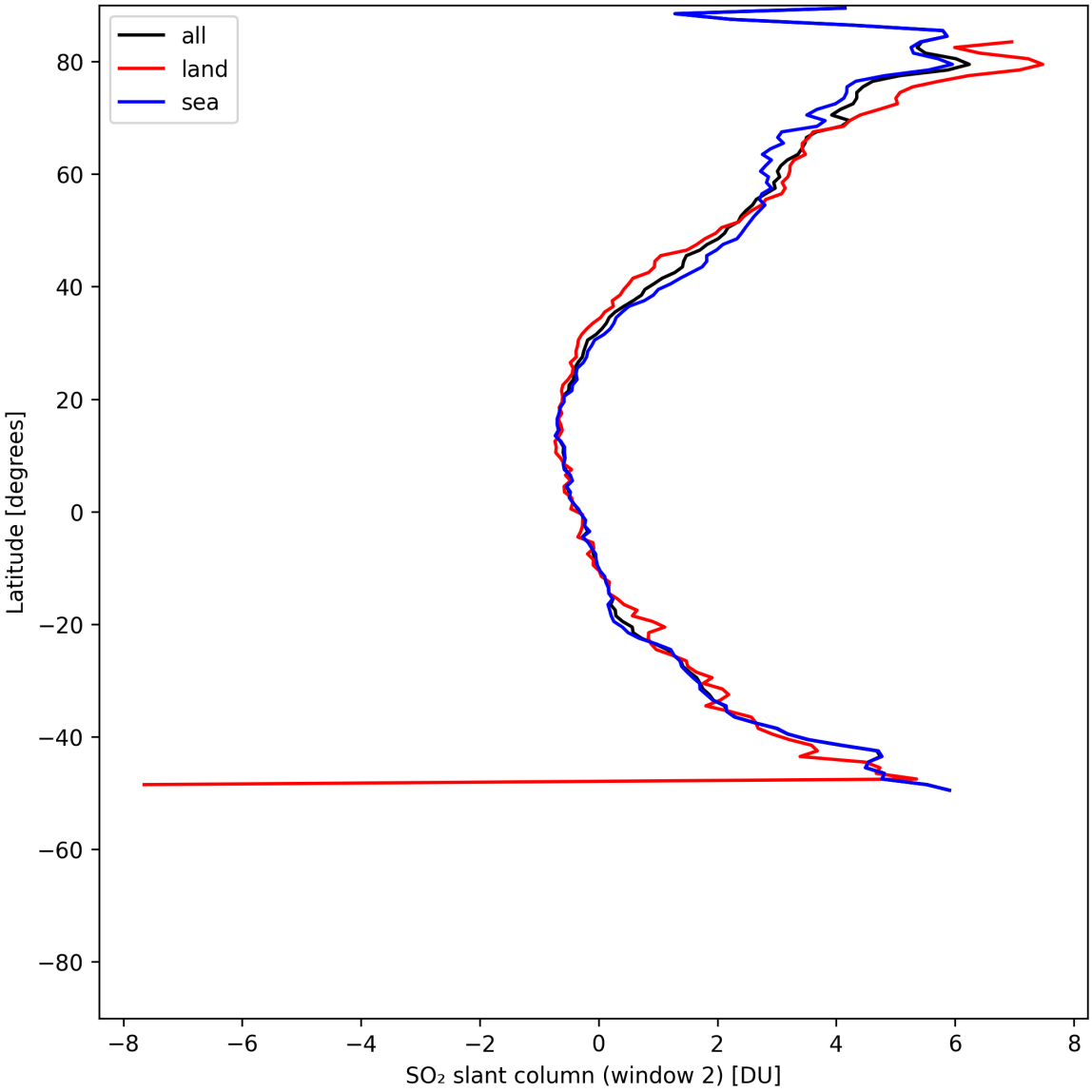


Figure 41: Zonal average of "SO_2 slant column (window 2)" for 2025-05-15 to 2025-05-16.

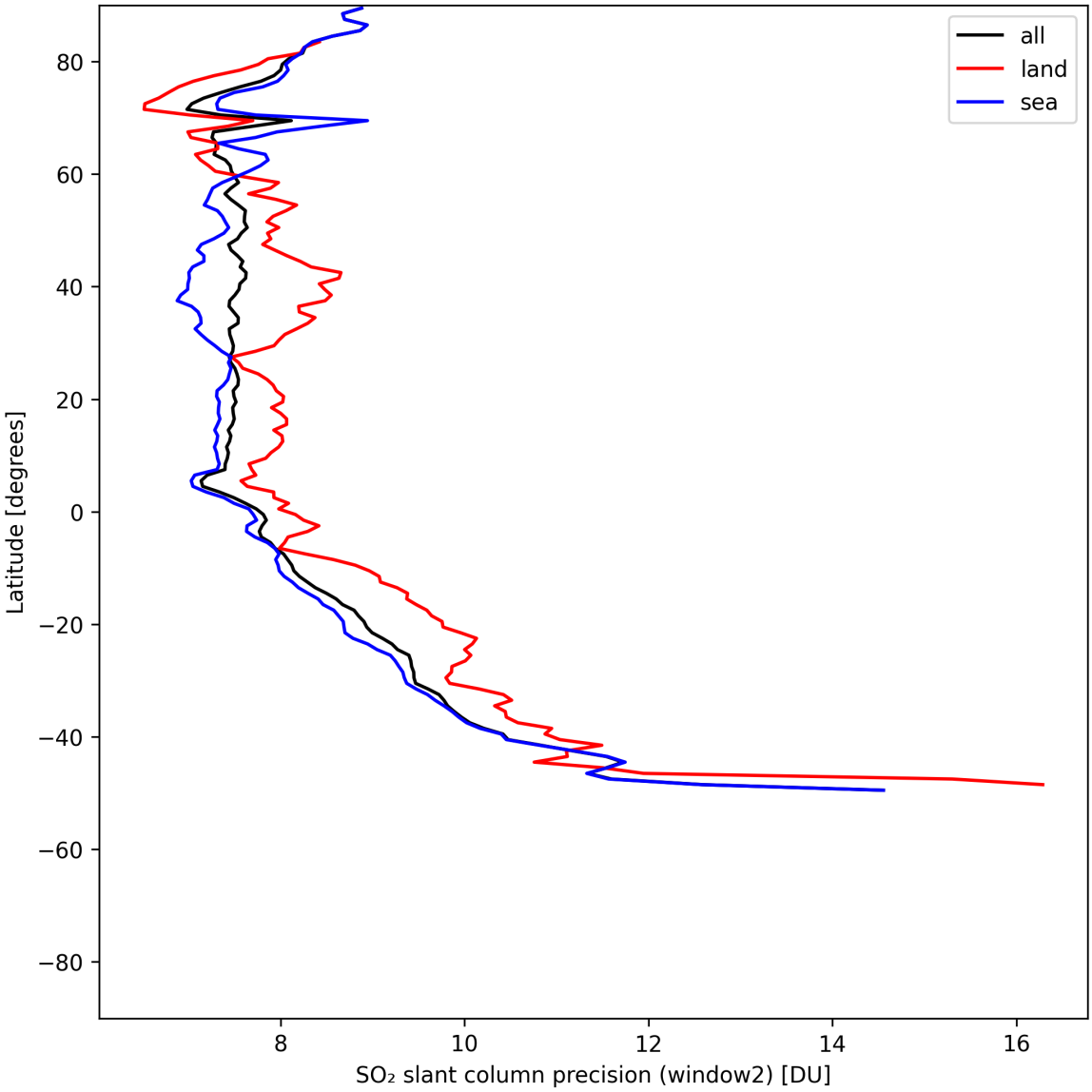


Figure 42: Zonal average of "SO_2 slant column precision (window2)" for 2025-05-15 to 2025-05-16.

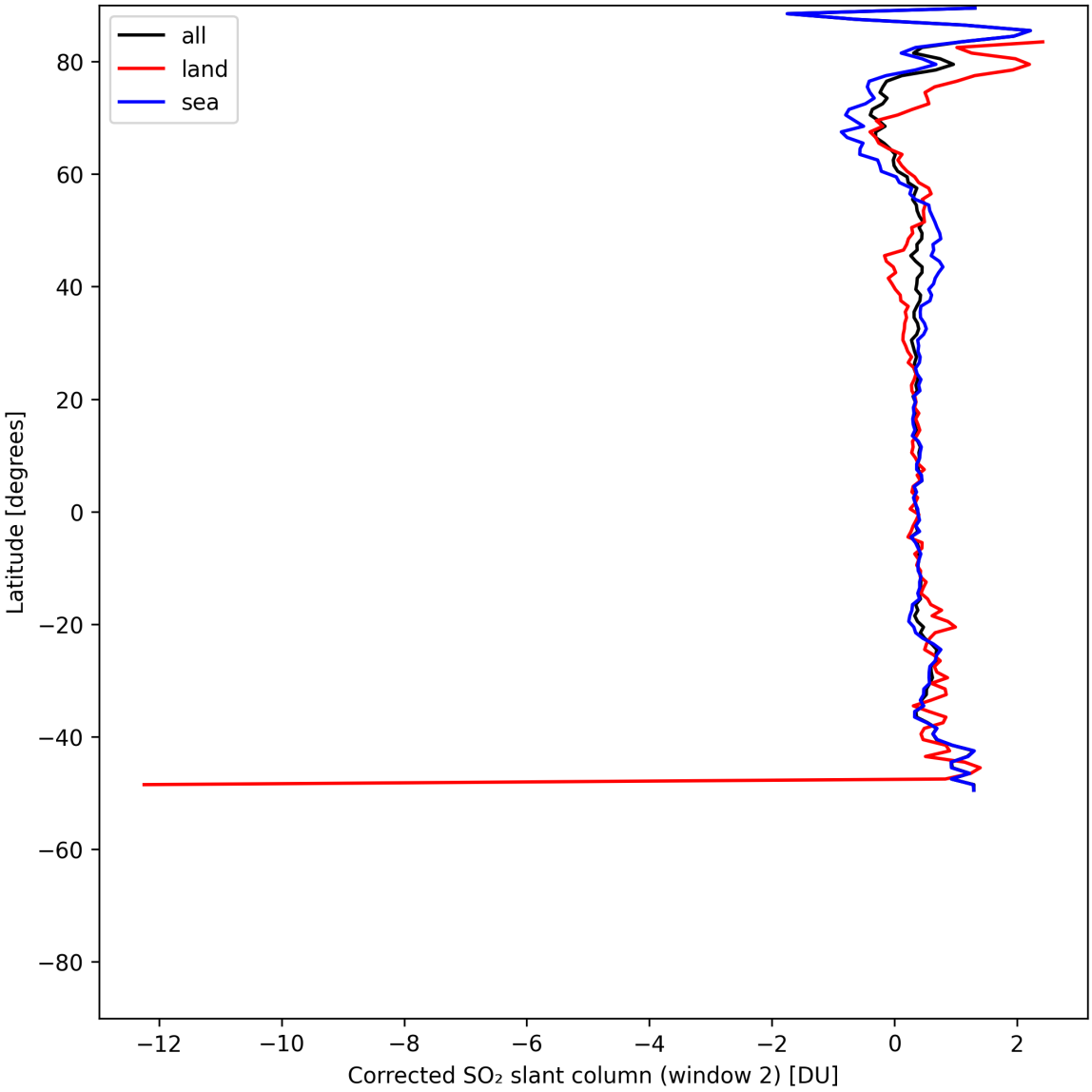


Figure 43: Zonal average of "Corrected SO_2 slant column (window 2)" for 2025-05-15 to 2025-05-16.

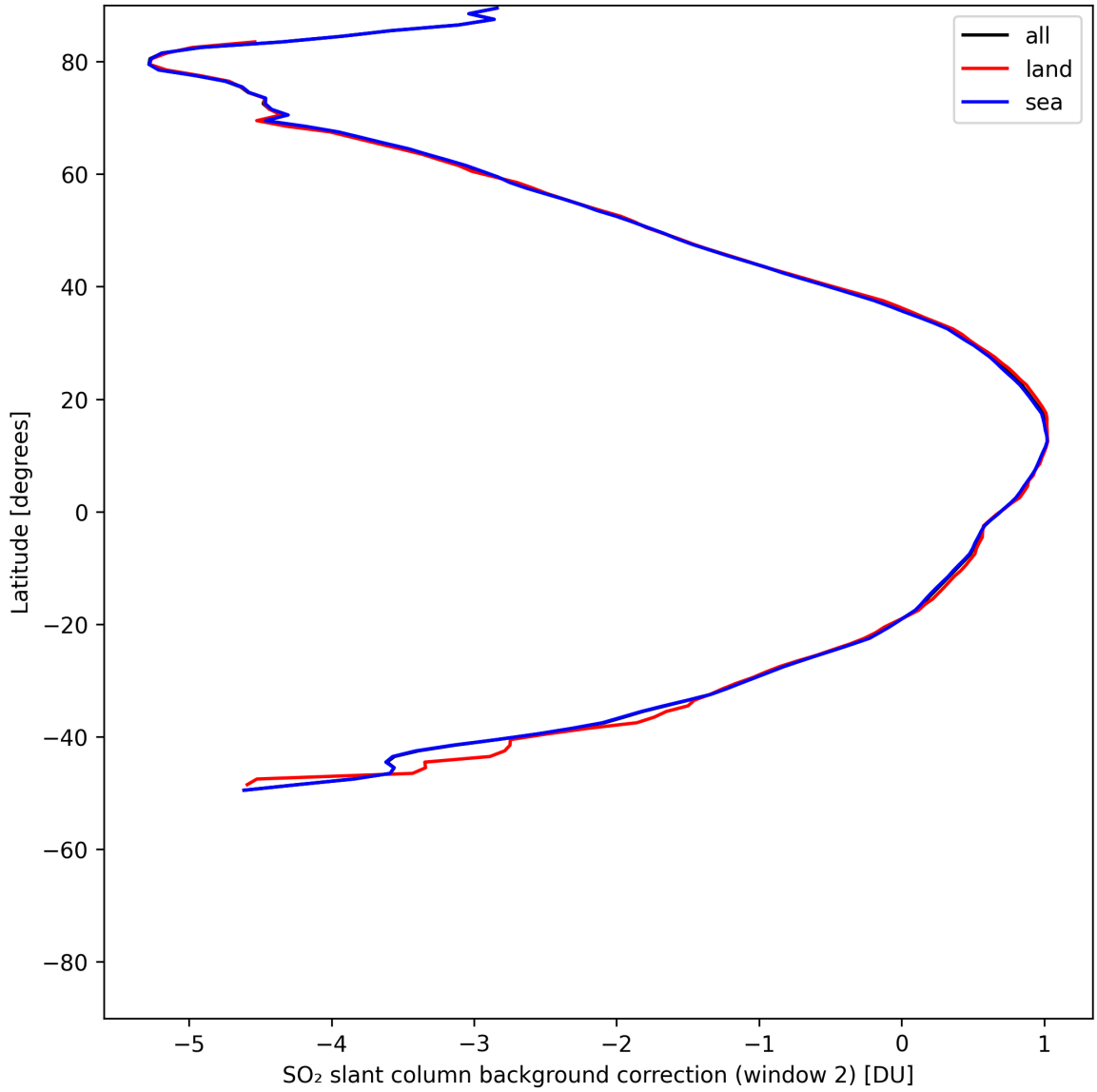


Figure 44: Zonal average of "SO_2 slant column background correction (window 2)" for 2025-05-15 to 2025-05-16.

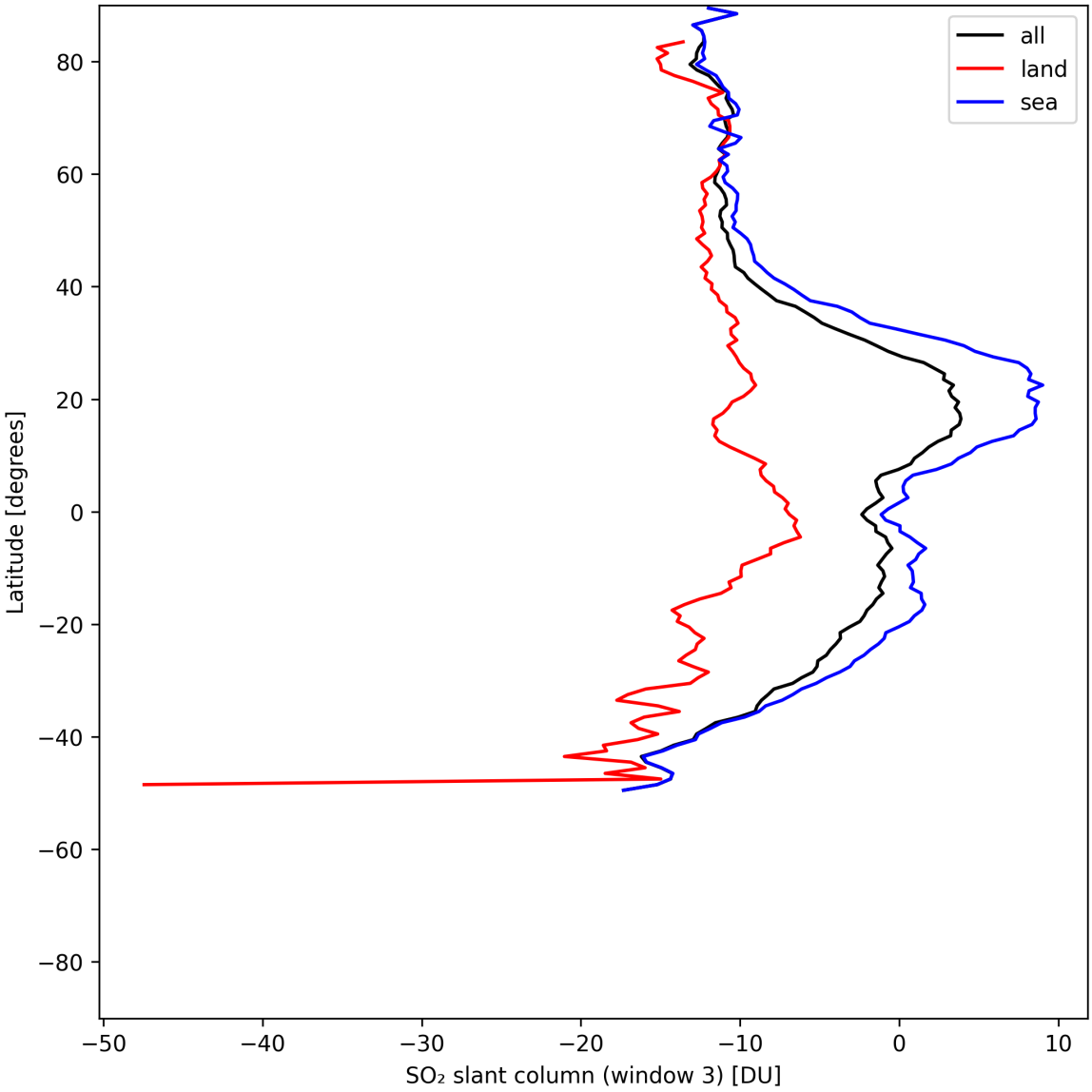


Figure 45: Zonal average of "SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

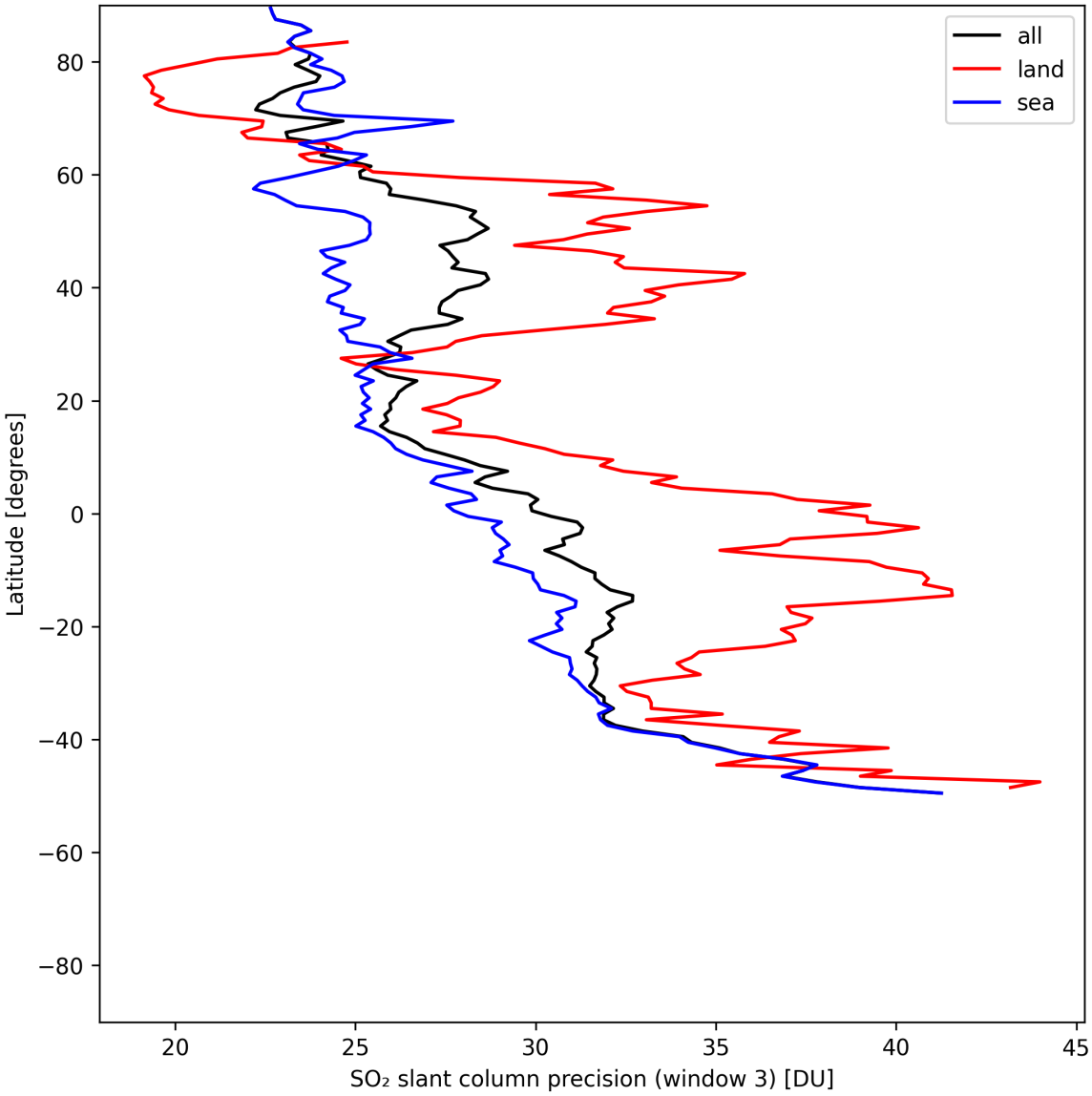


Figure 46: Zonal average of "SO_2 slant column precision (window 3)" for 2025-05-15 to 2025-05-16.

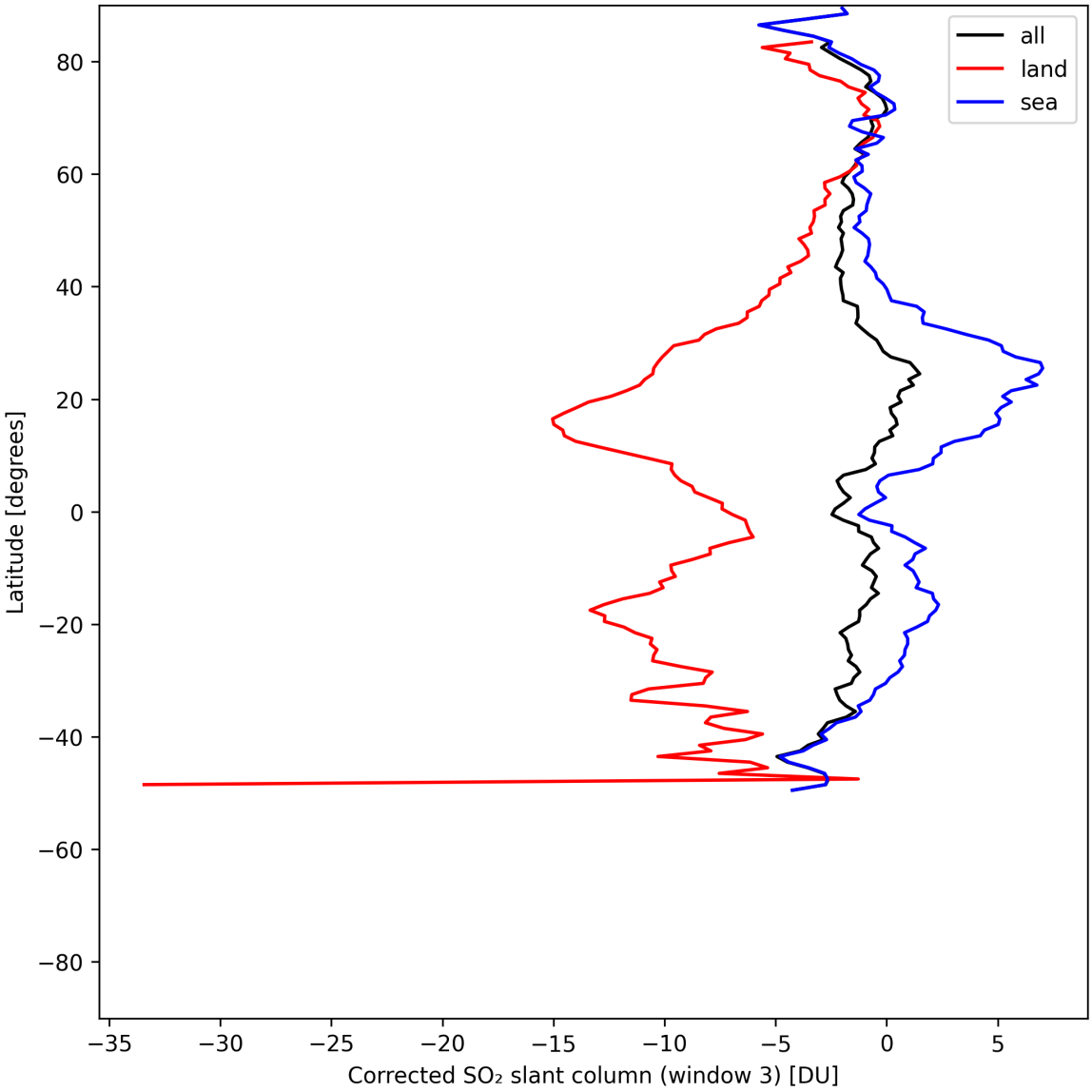


Figure 47: Zonal average of "Corrected SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

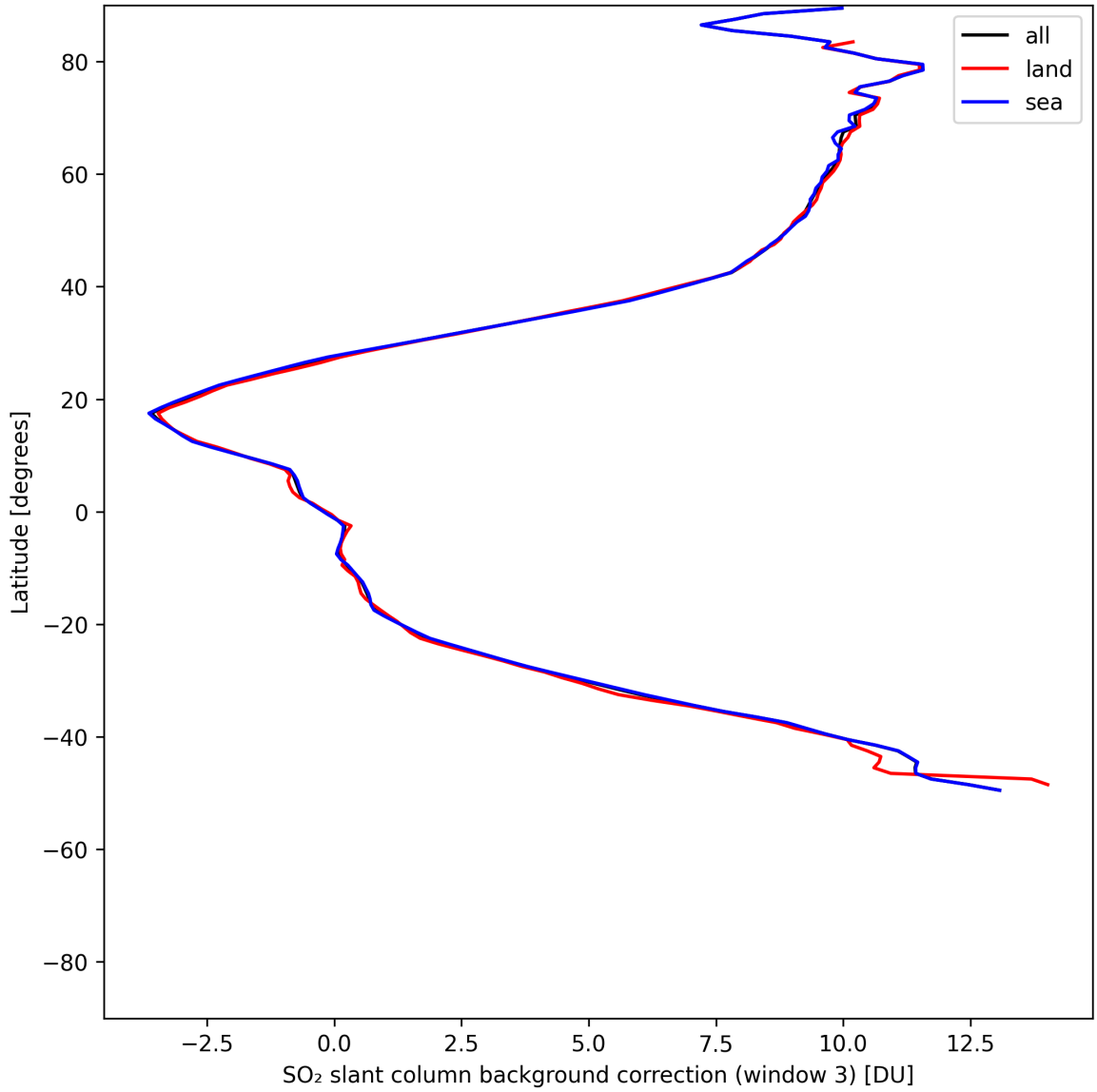


Figure 48: Zonal average of "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16.

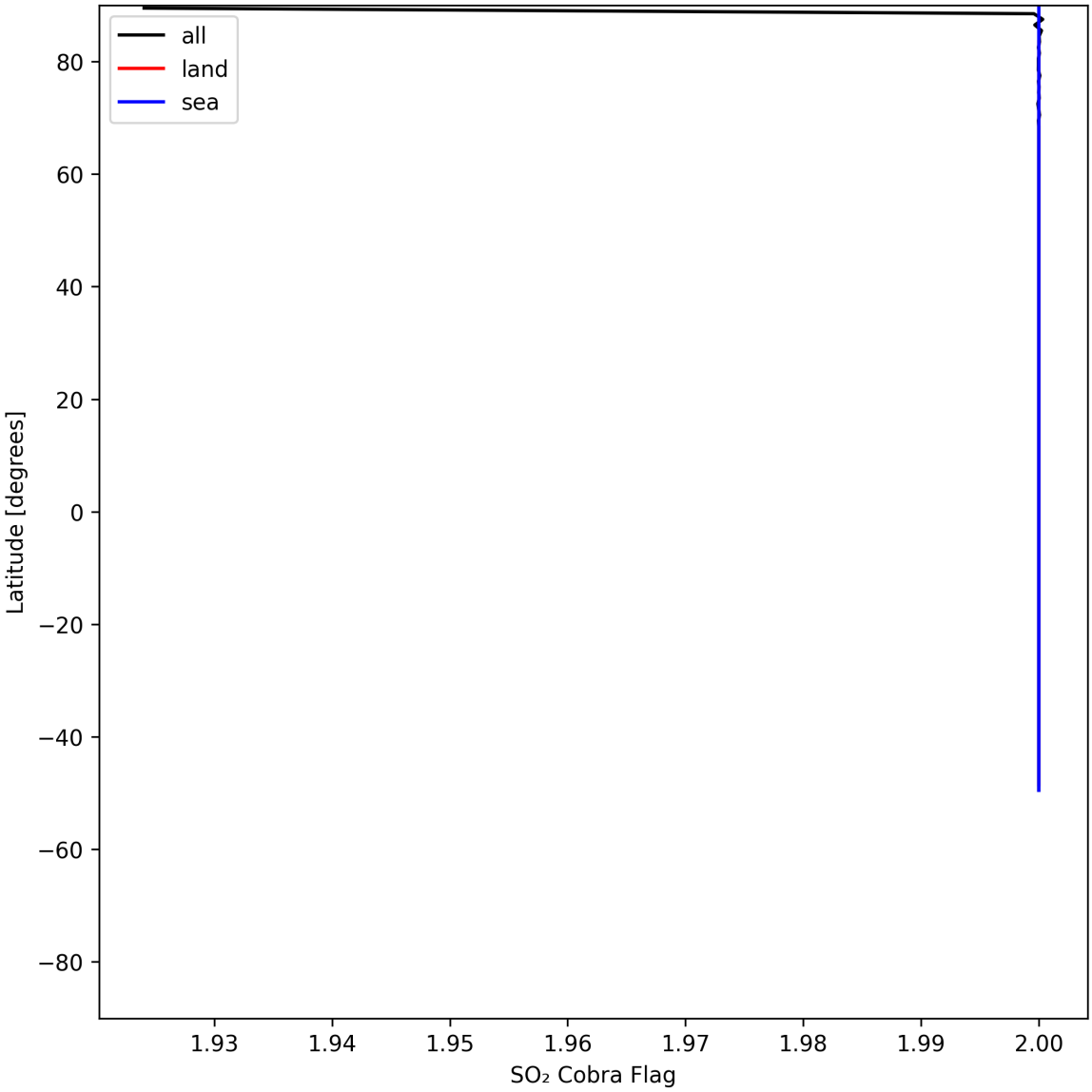


Figure 49: Zonal average of "SO_2 Cobra Flag" for 2025-05-15 to 2025-05-16.

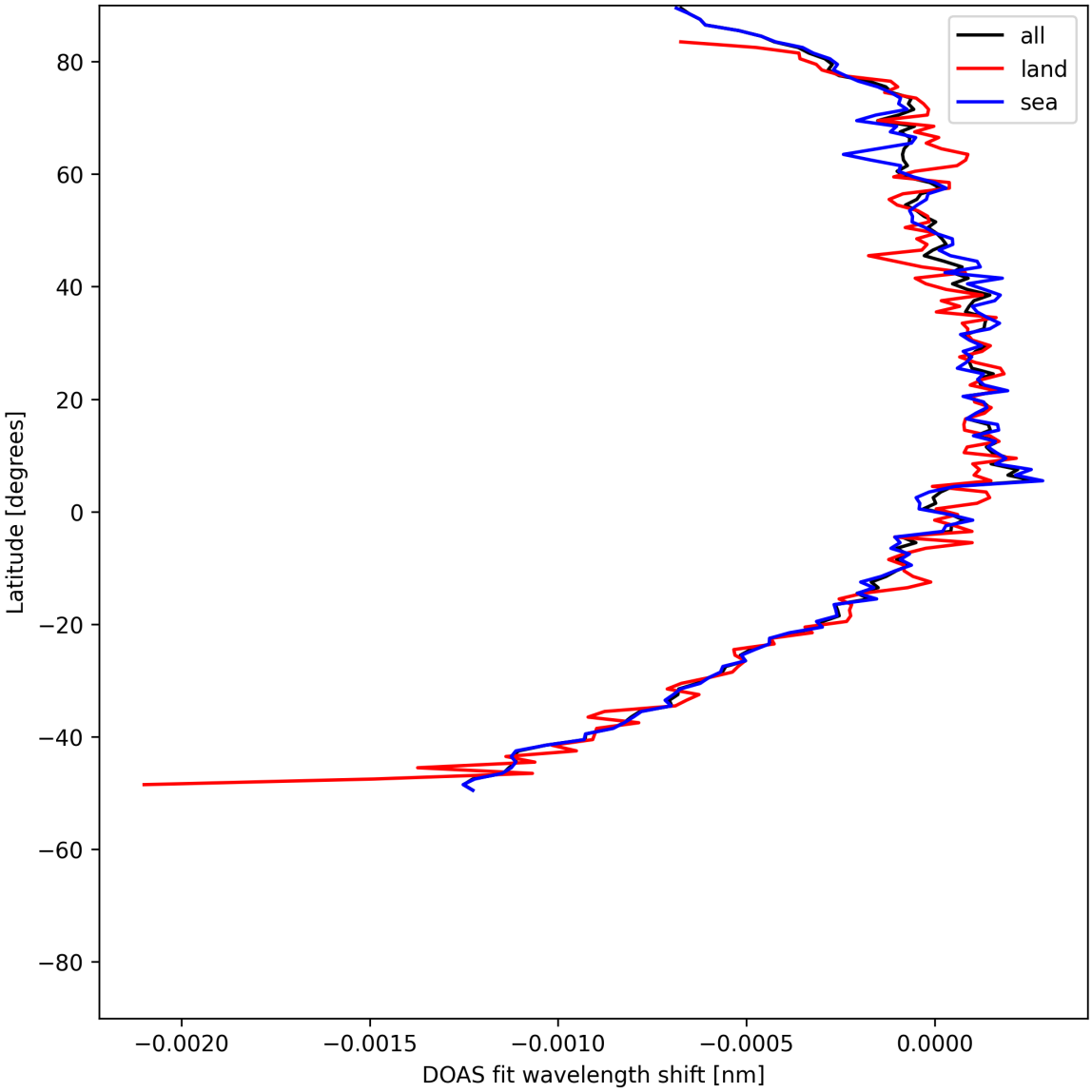


Figure 50: Zonal average of “DOAS fit wavelength shift” for 2025-05-15 to 2025-05-16.

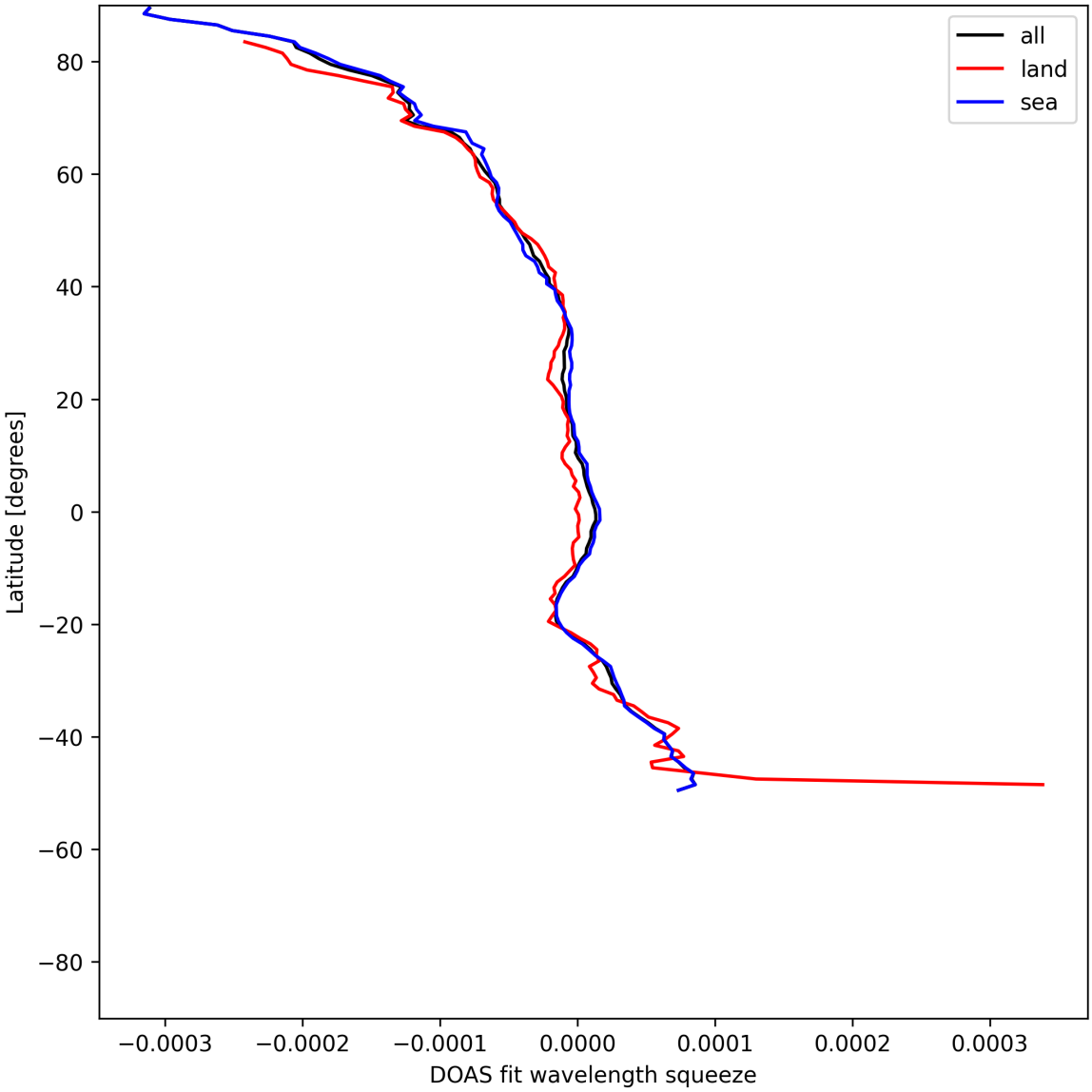


Figure 51: Zonal average of “DOAS fit wavelength squeeze” for 2025-05-15 to 2025-05-16.

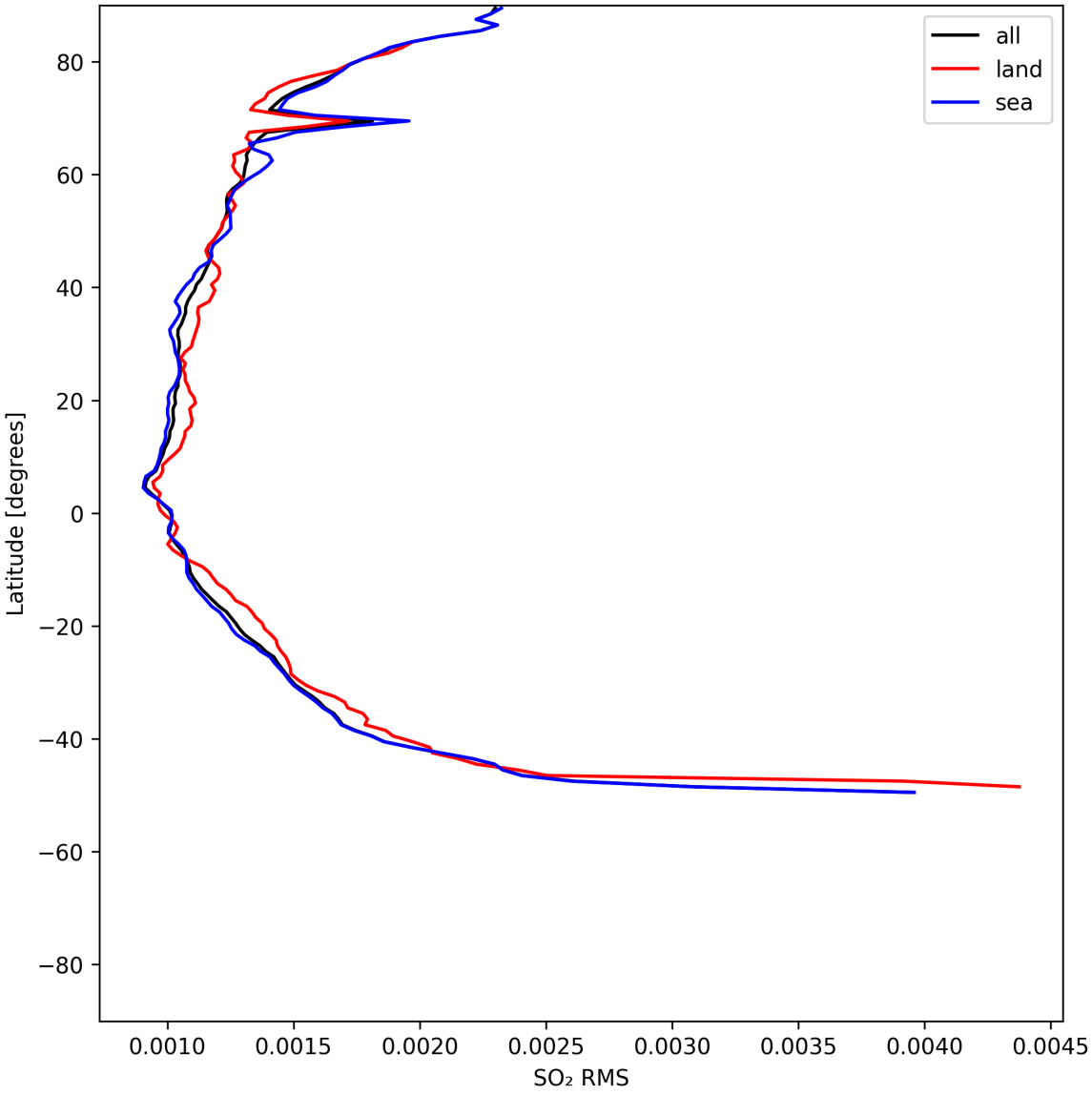


Figure 52: Zonal average of "SO_2 RMS" for 2025-05-15 to 2025-05-16.

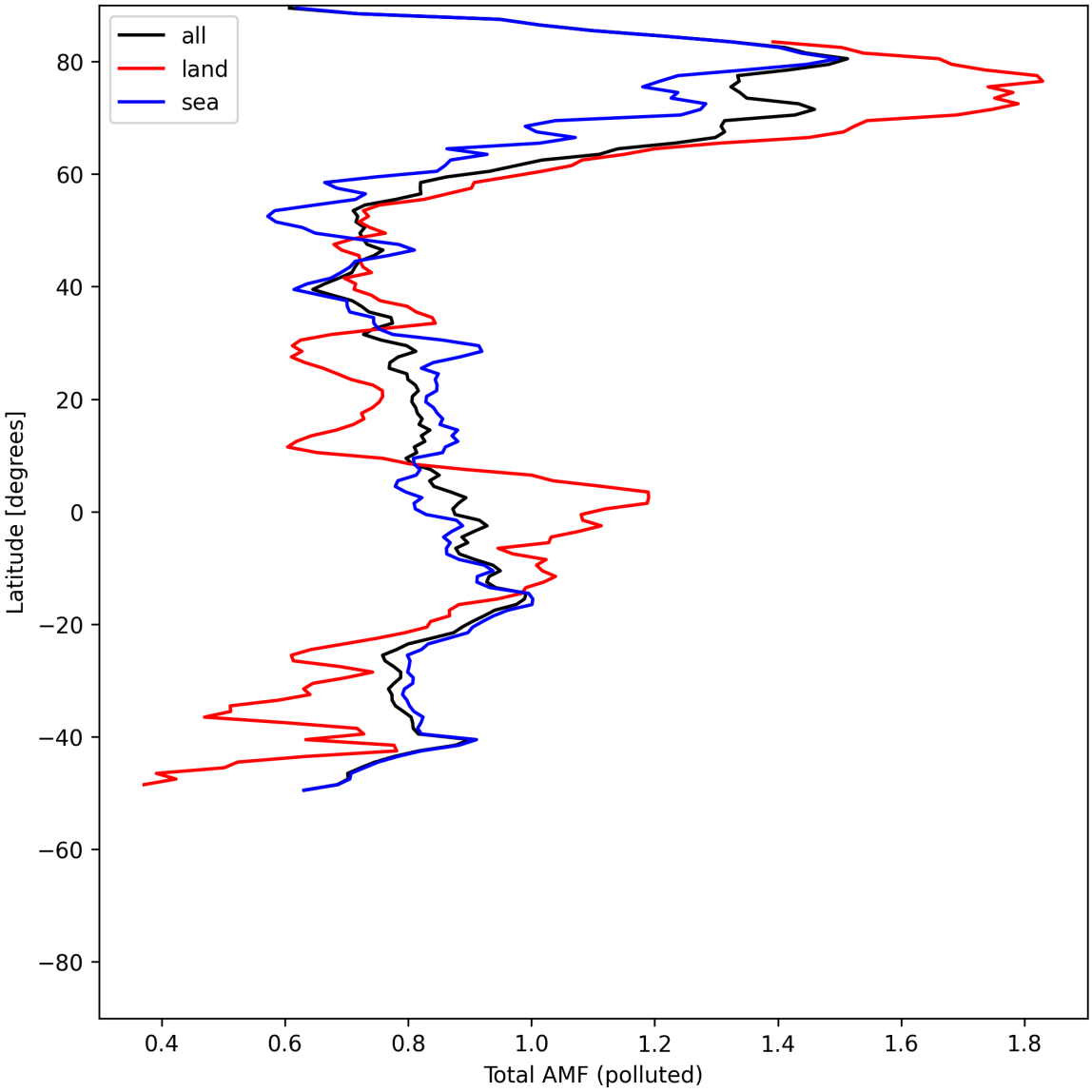


Figure 53: Zonal average of “Total AMF (polluted)” for 2025-05-15 to 2025-05-16.

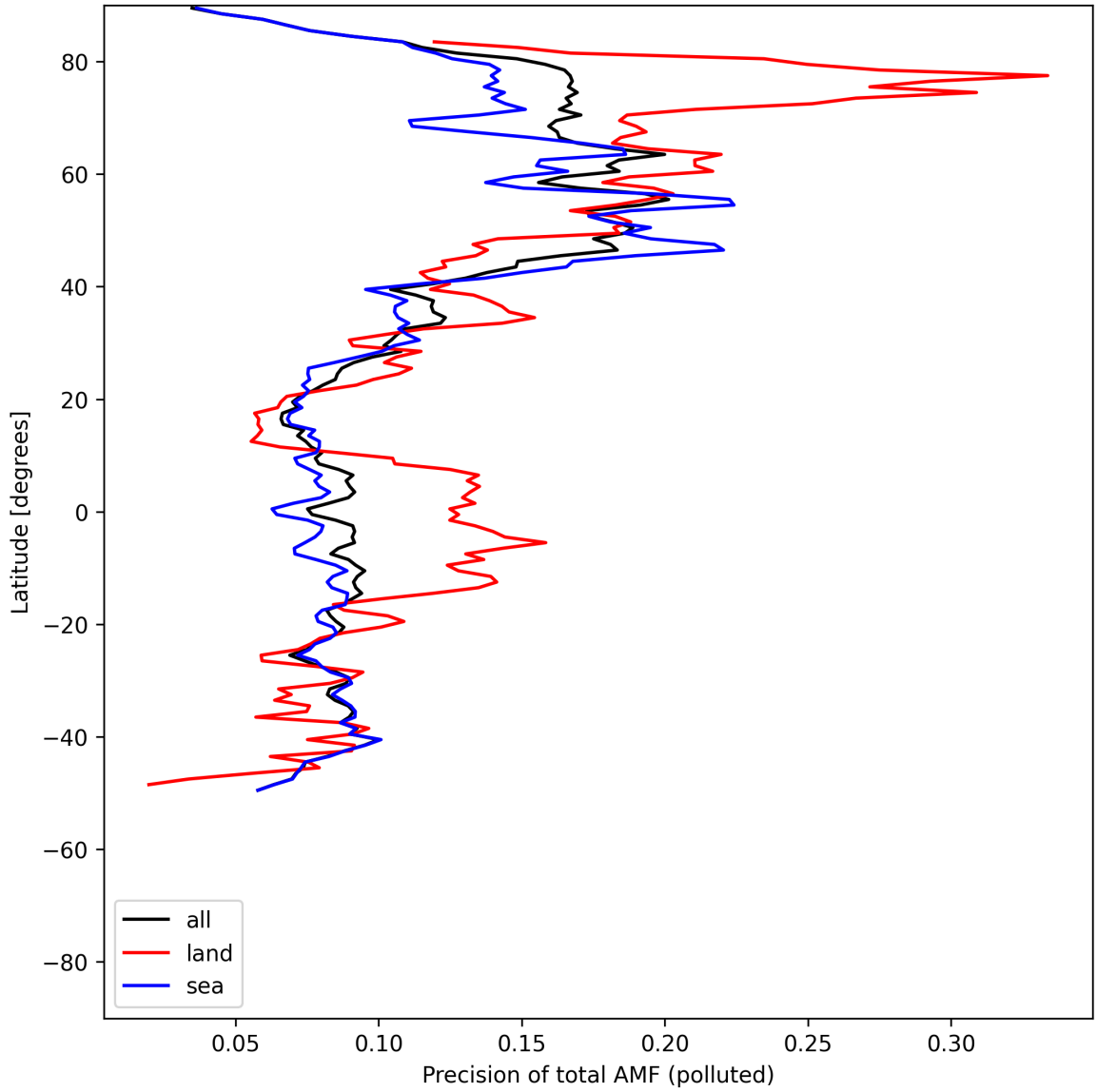


Figure 54: Zonal average of “Precision of total AMF (polluted)” for 2025-05-15 to 2025-05-16.

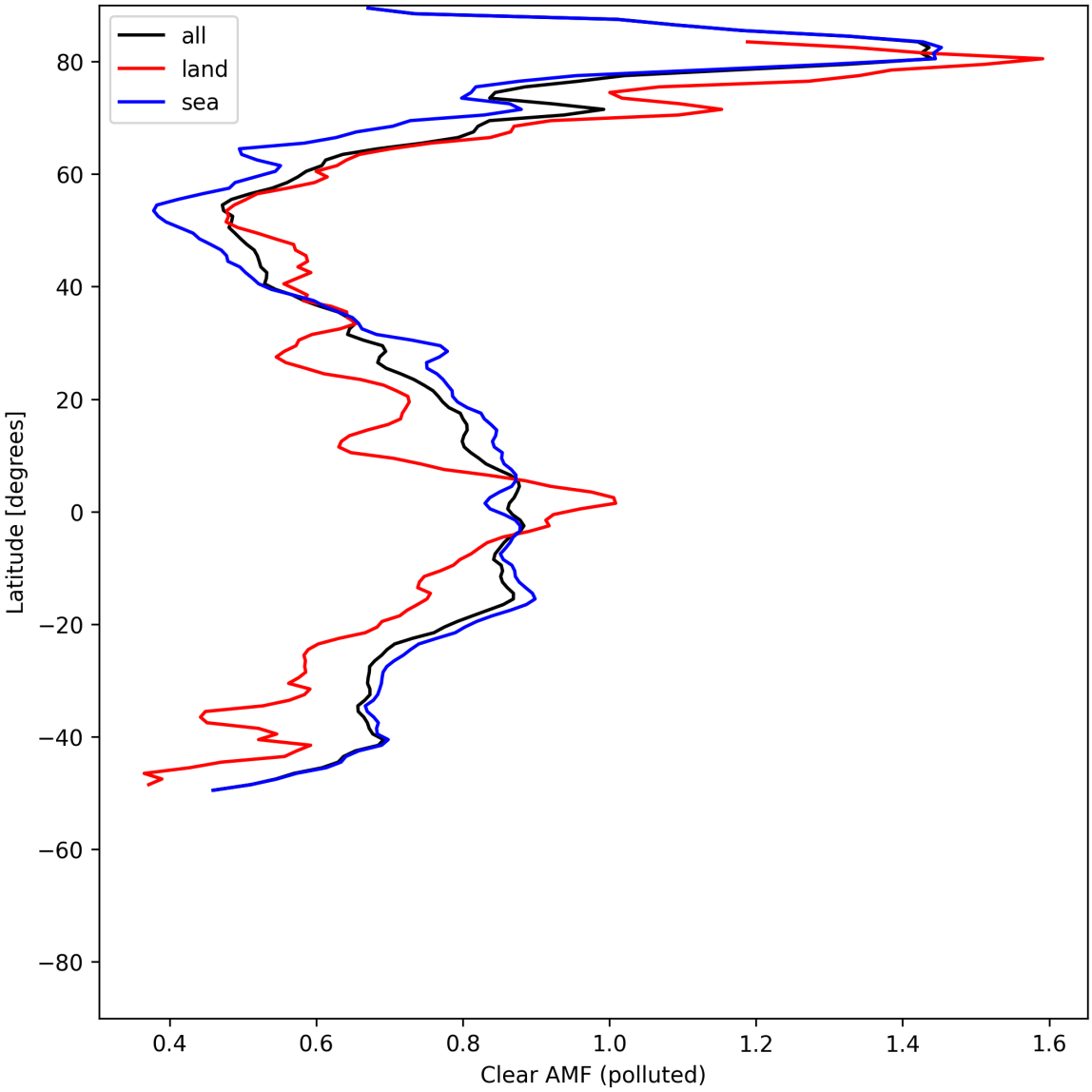


Figure 55: Zonal average of “Clear AMF (polluted)” for 2025-05-15 to 2025-05-16.

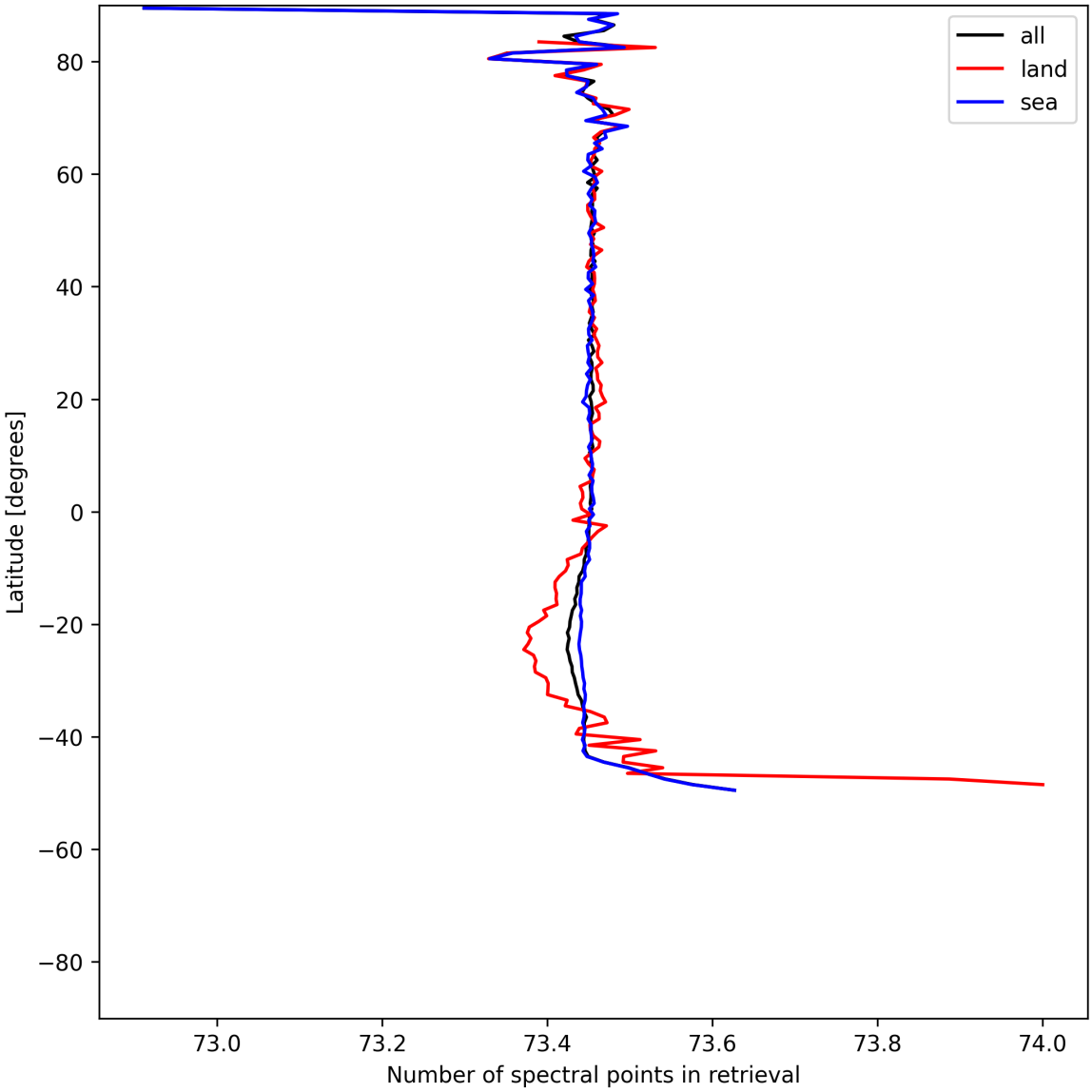


Figure 56: Zonal average of “Number of spectral points in retrieval” for 2025-05-15 to 2025-05-16.

8 Histograms

The definitions of the parameters given in this section can be found in section 2.

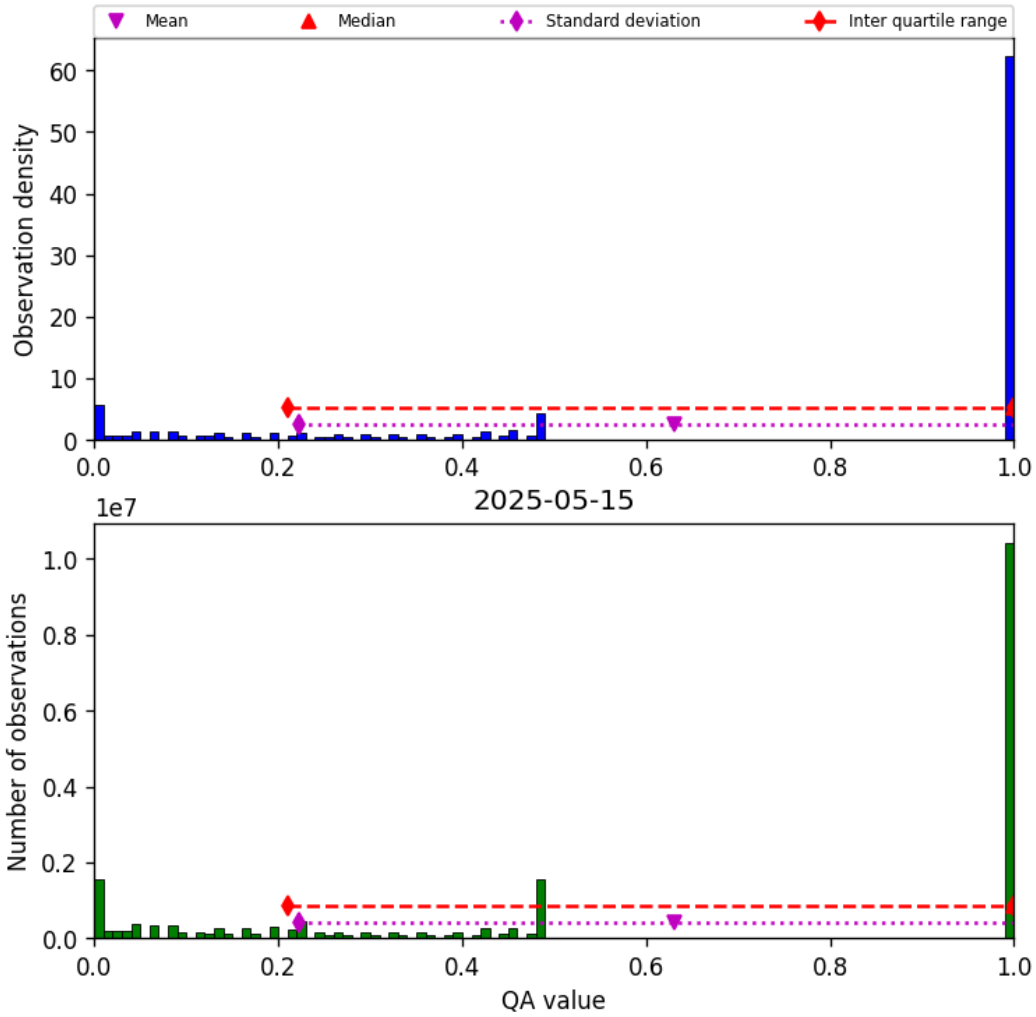


Figure 57: Histogram of “QA value” for 2025-05-15 to 2025-05-16

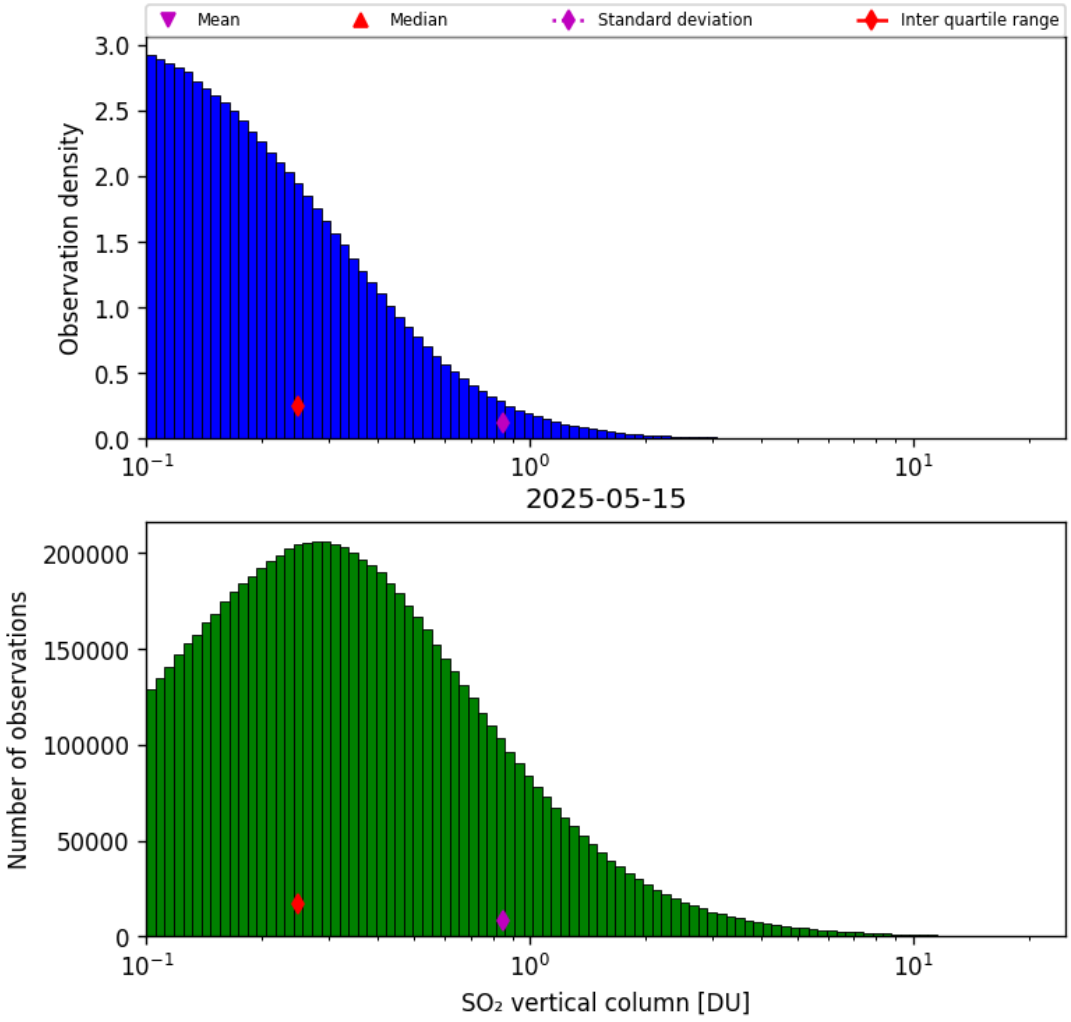


Figure 58: Histogram of "SO_2 vertical column" for 2025-05-15 to 2025-05-16

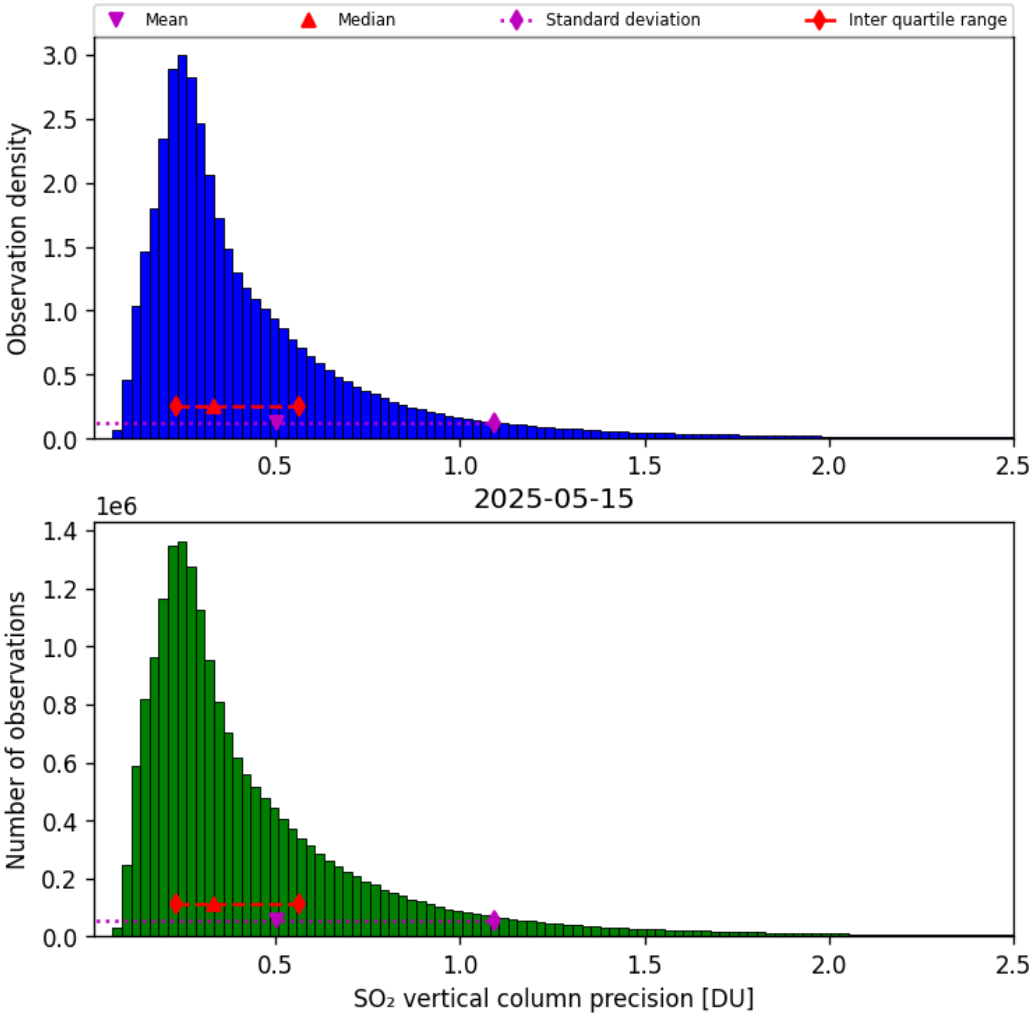


Figure 59: Histogram of "SO_2 vertical column precision" for 2025-05-15 to 2025-05-16

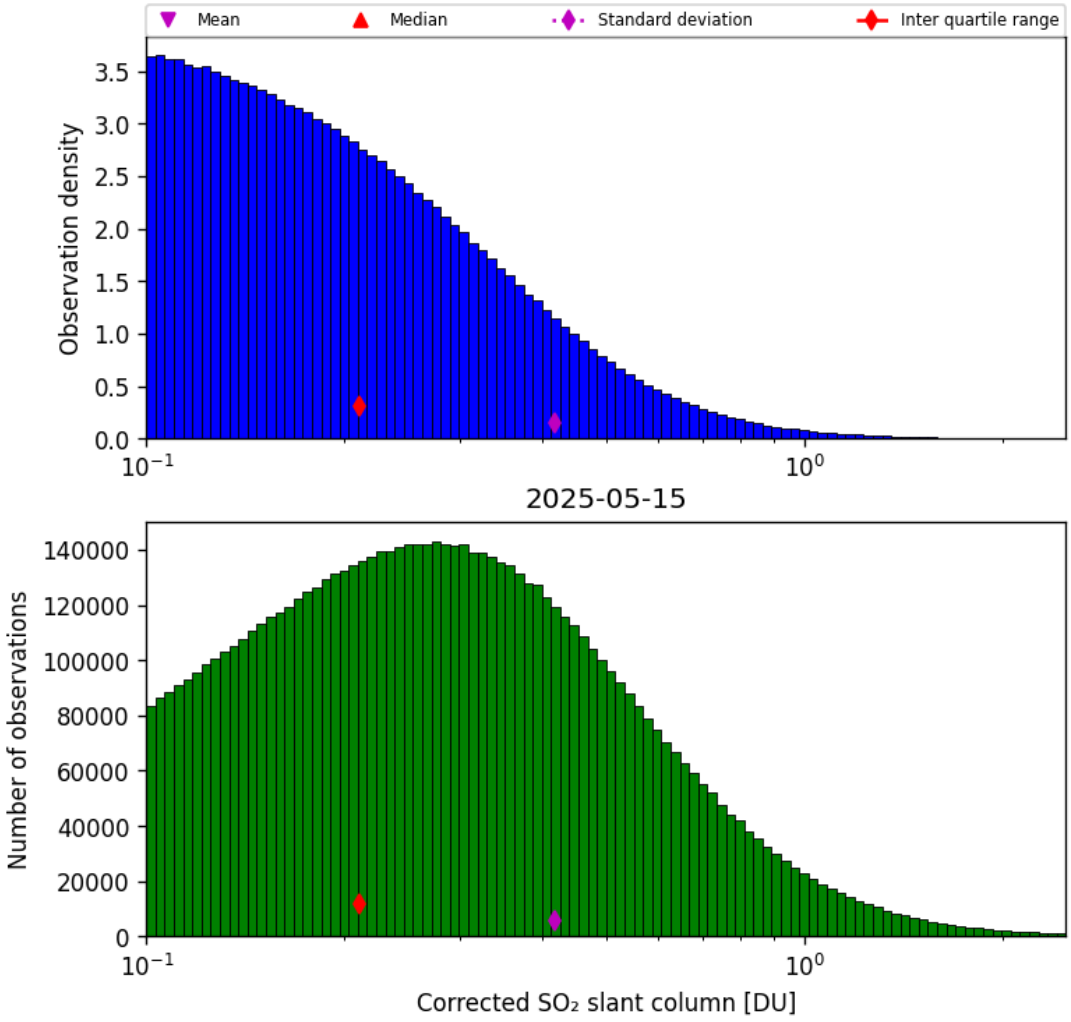


Figure 60: Histogram of "Corrected SO_2 slant column" for 2025-05-15 to 2025-05-16

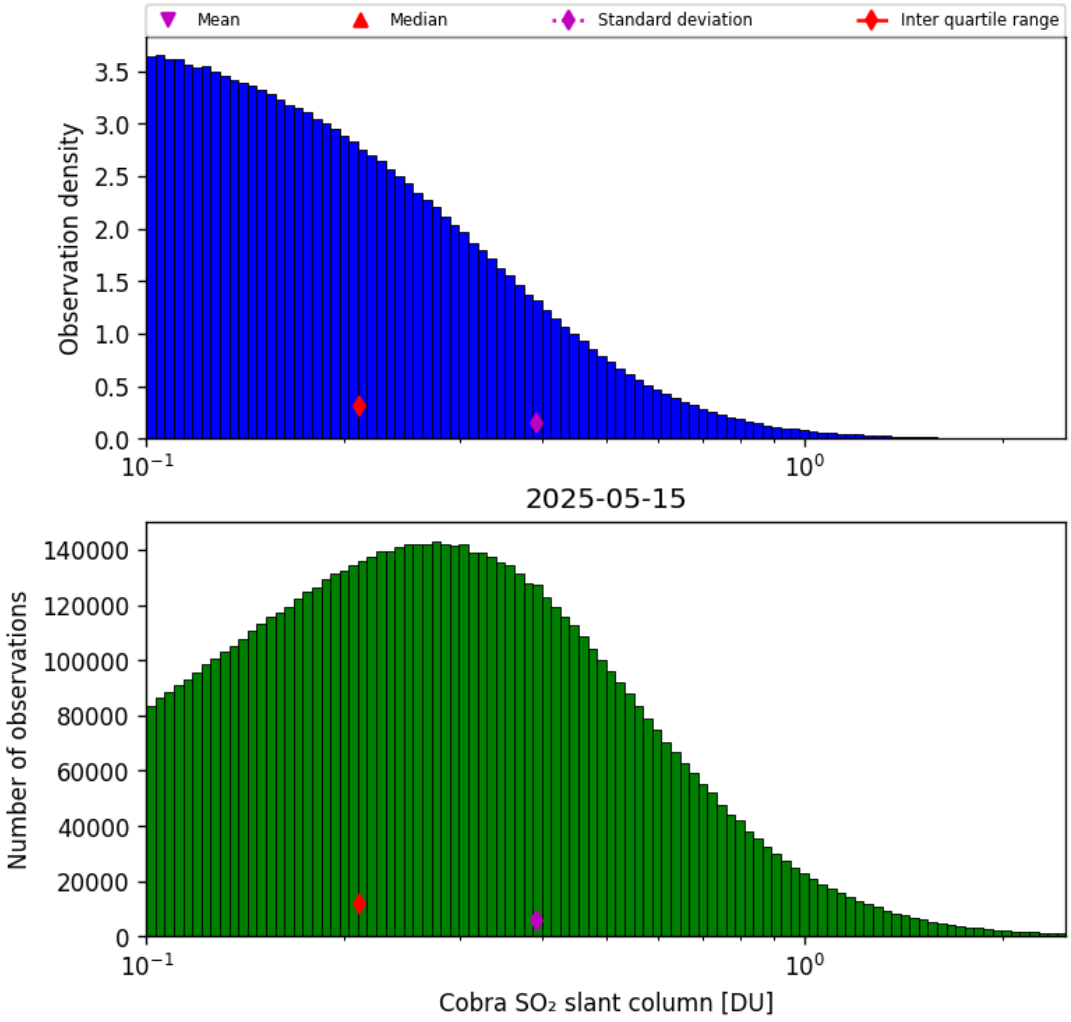


Figure 61: Histogram of "Cobra SO_2 slant column" for 2025-05-15 to 2025-05-16

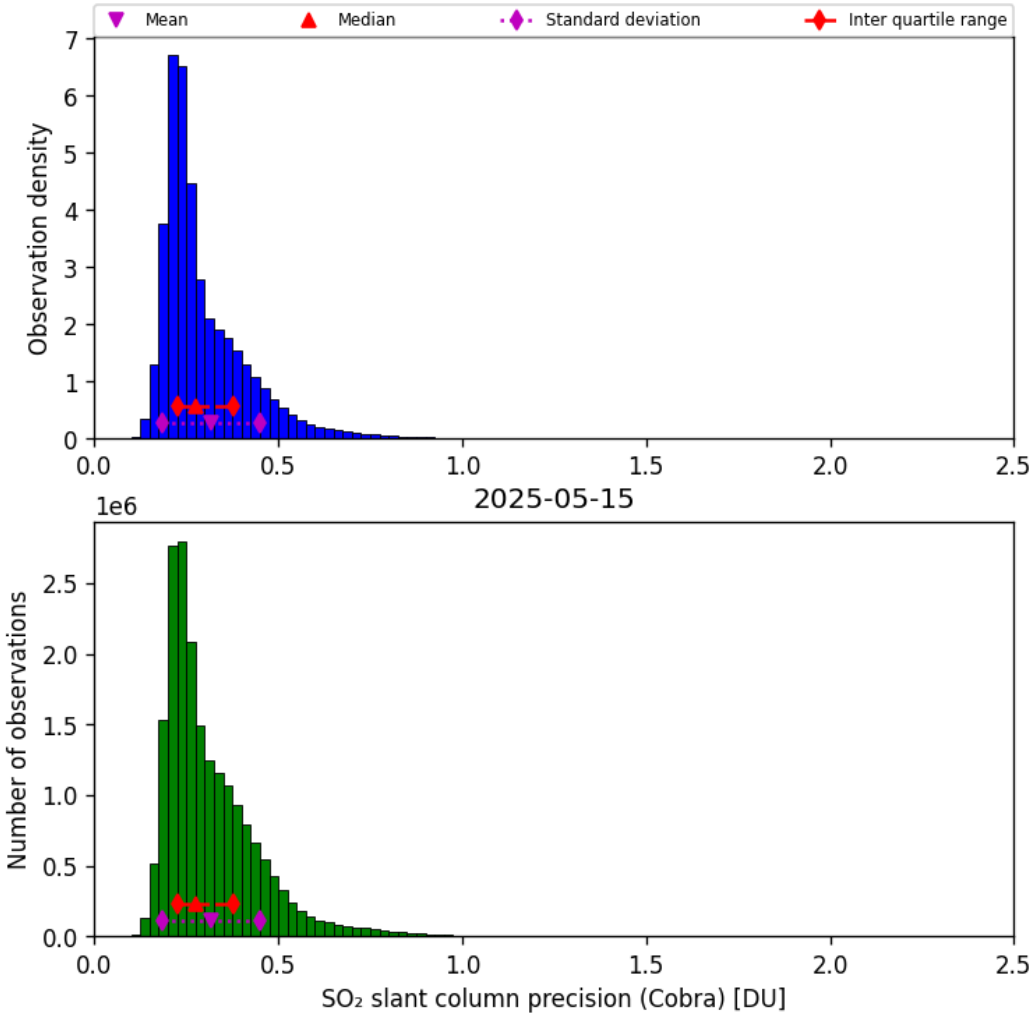


Figure 62: Histogram of "SO_2 slant column precision (Cobra)" for 2025-05-15 to 2025-05-16

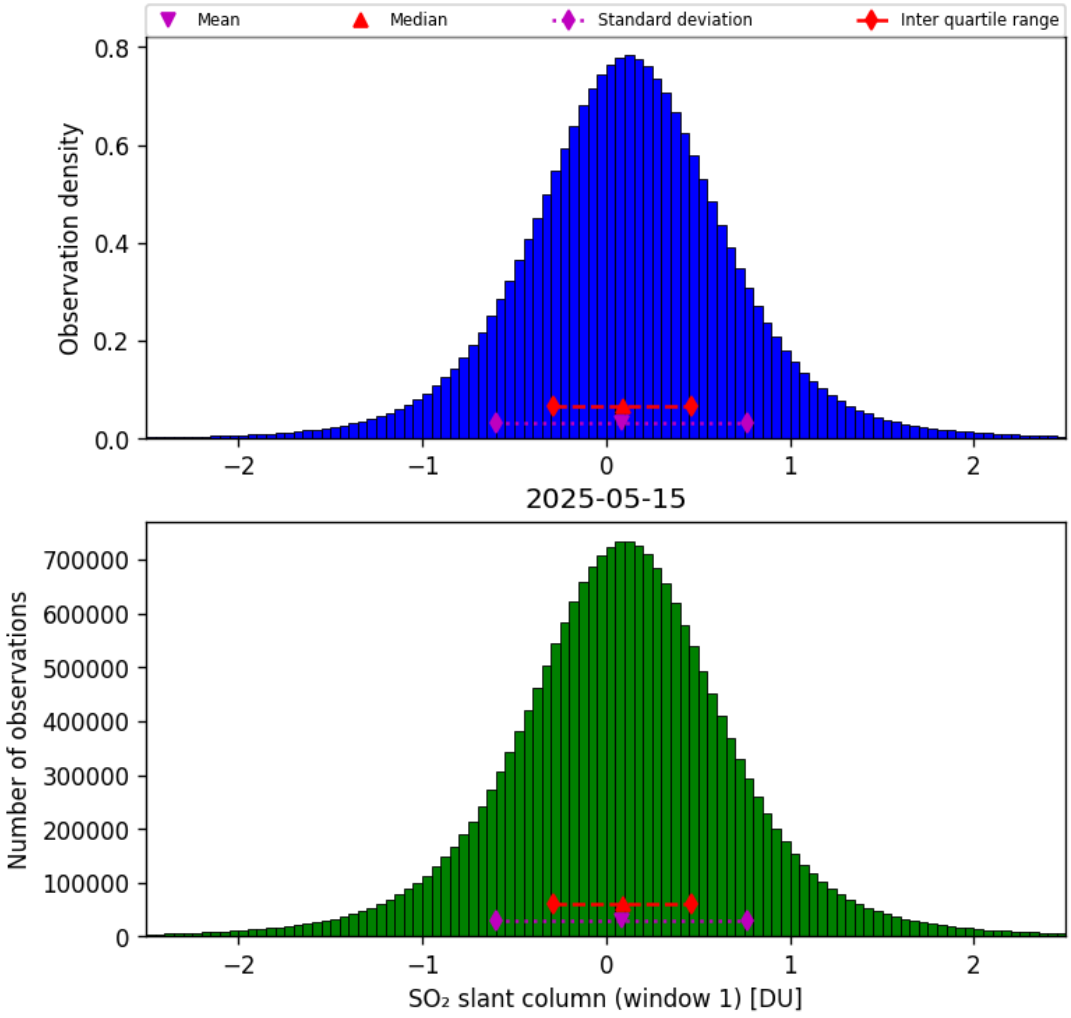


Figure 63: Histogram of "SO_2 slant column (window 1)" for 2025-05-15 to 2025-05-16

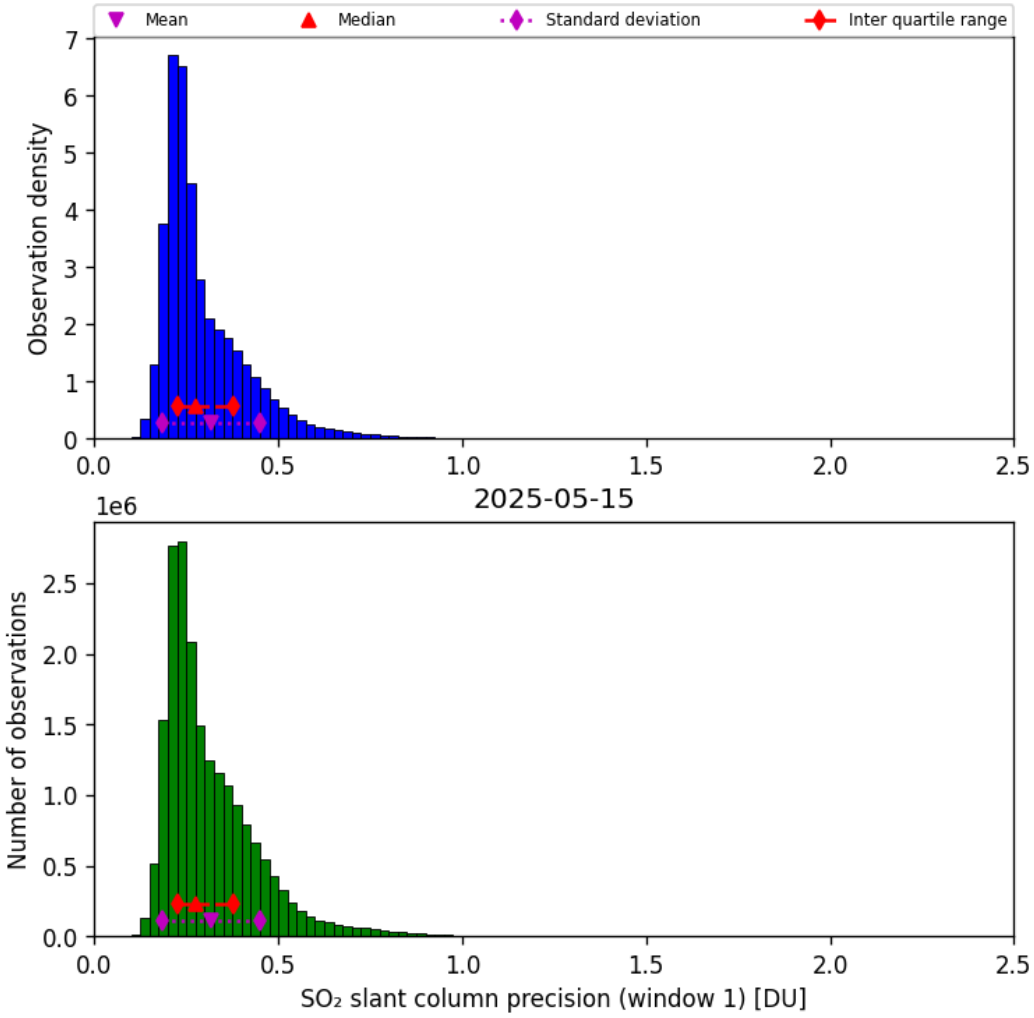


Figure 64: Histogram of "SO_2 slant column precision (window 1)" for 2025-05-15 to 2025-05-16

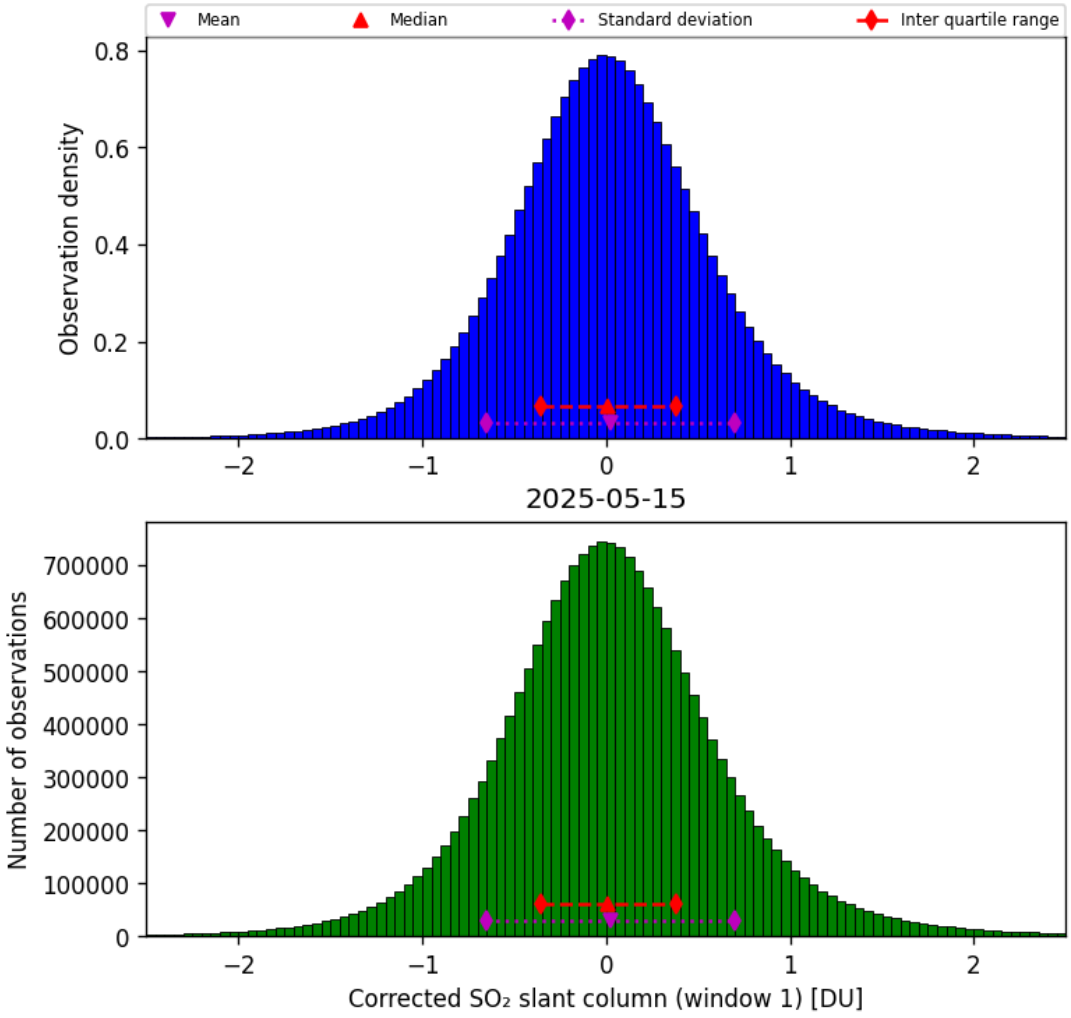


Figure 65: Histogram of "Corrected SO_2 slant column (window 1)" for 2025-05-15 to 2025-05-16

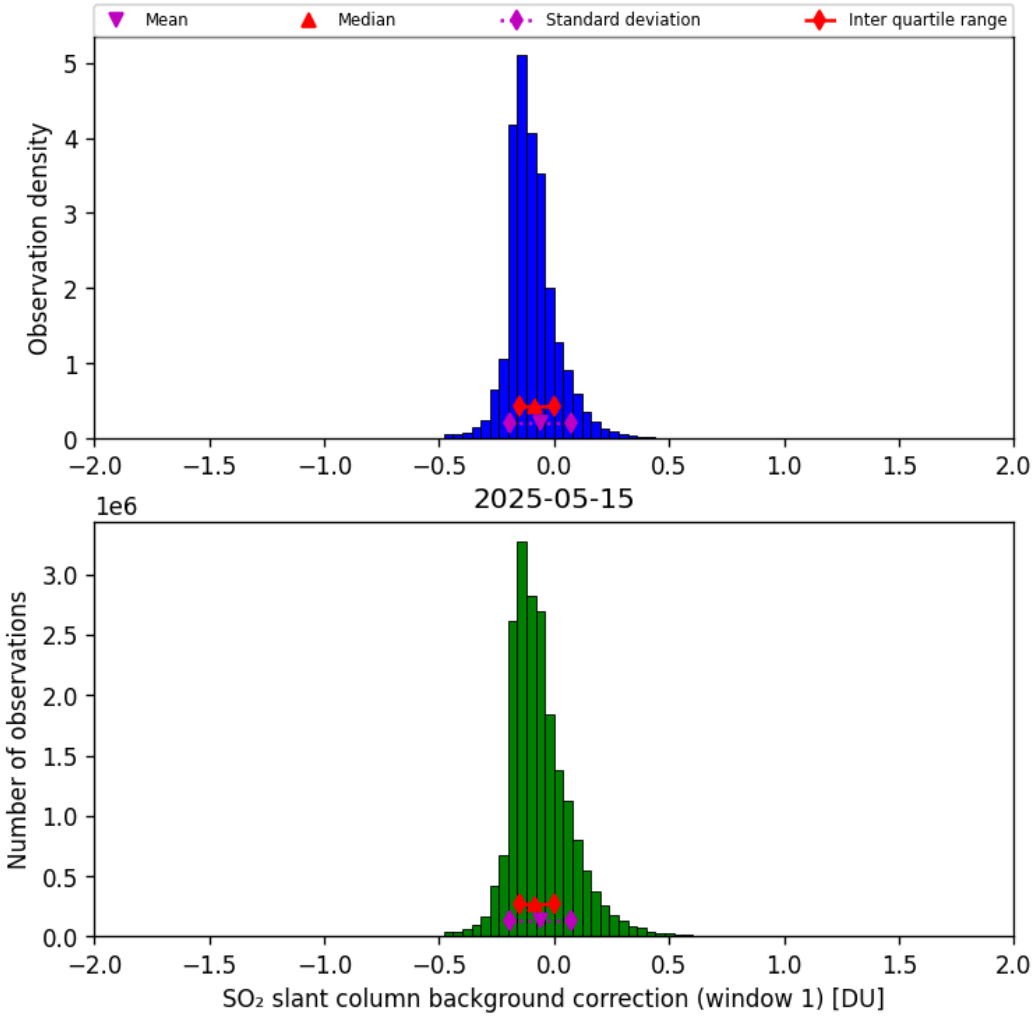


Figure 66: Histogram of "SO_2 slant column background correction (window 1)" for 2025-05-15 to 2025-05-16

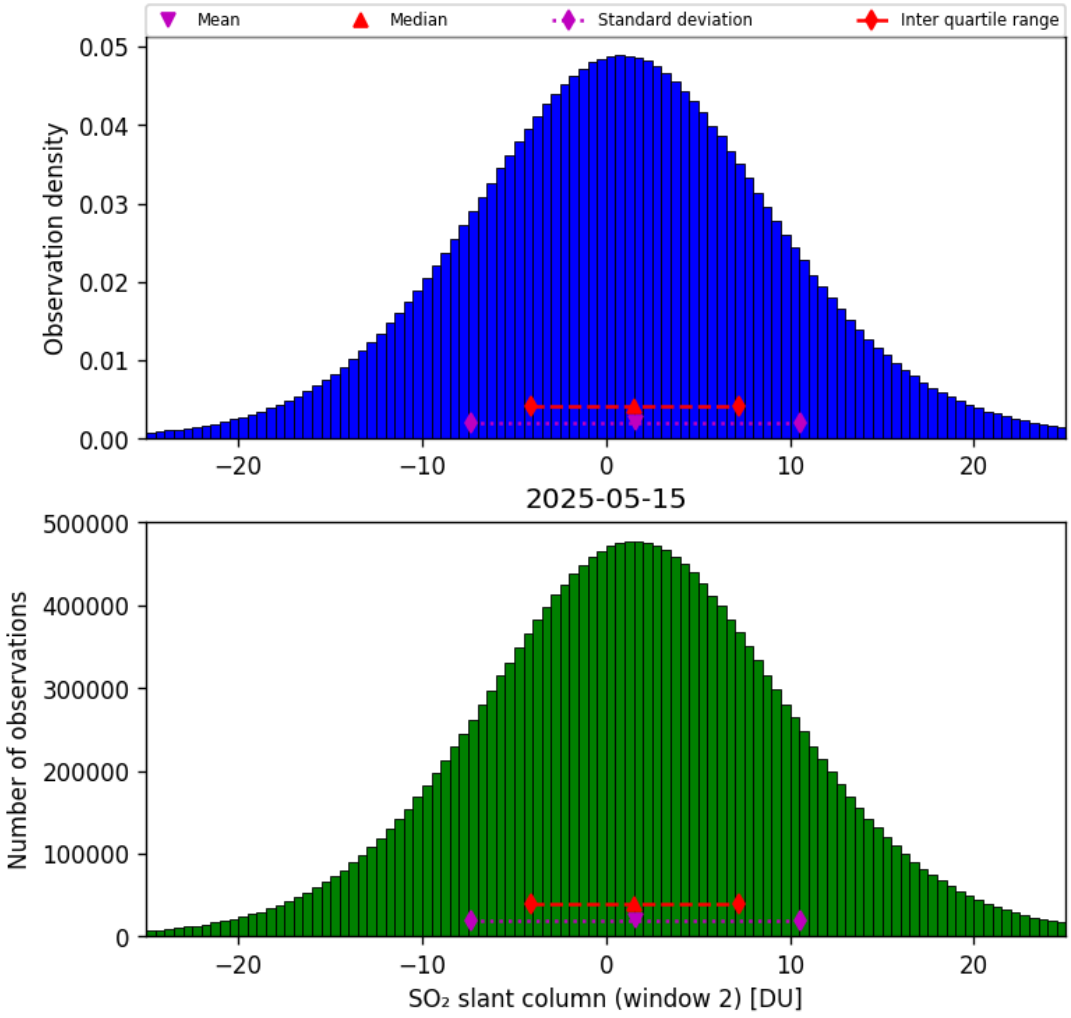


Figure 67: Histogram of "SO_2 slant column (window 2)" for 2025-05-15 to 2025-05-16

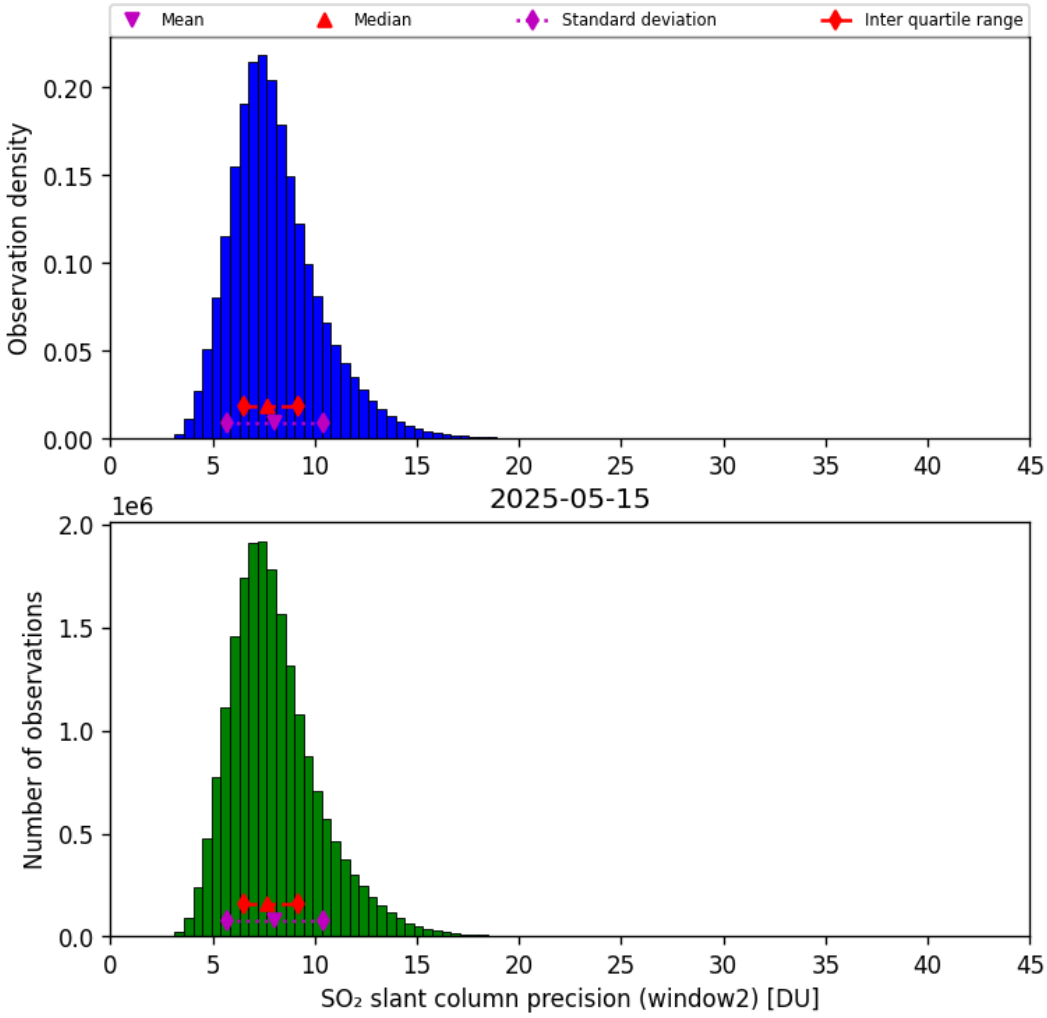


Figure 68: Histogram of "SO_2 slant column precision (window2)" for 2025-05-15 to 2025-05-16

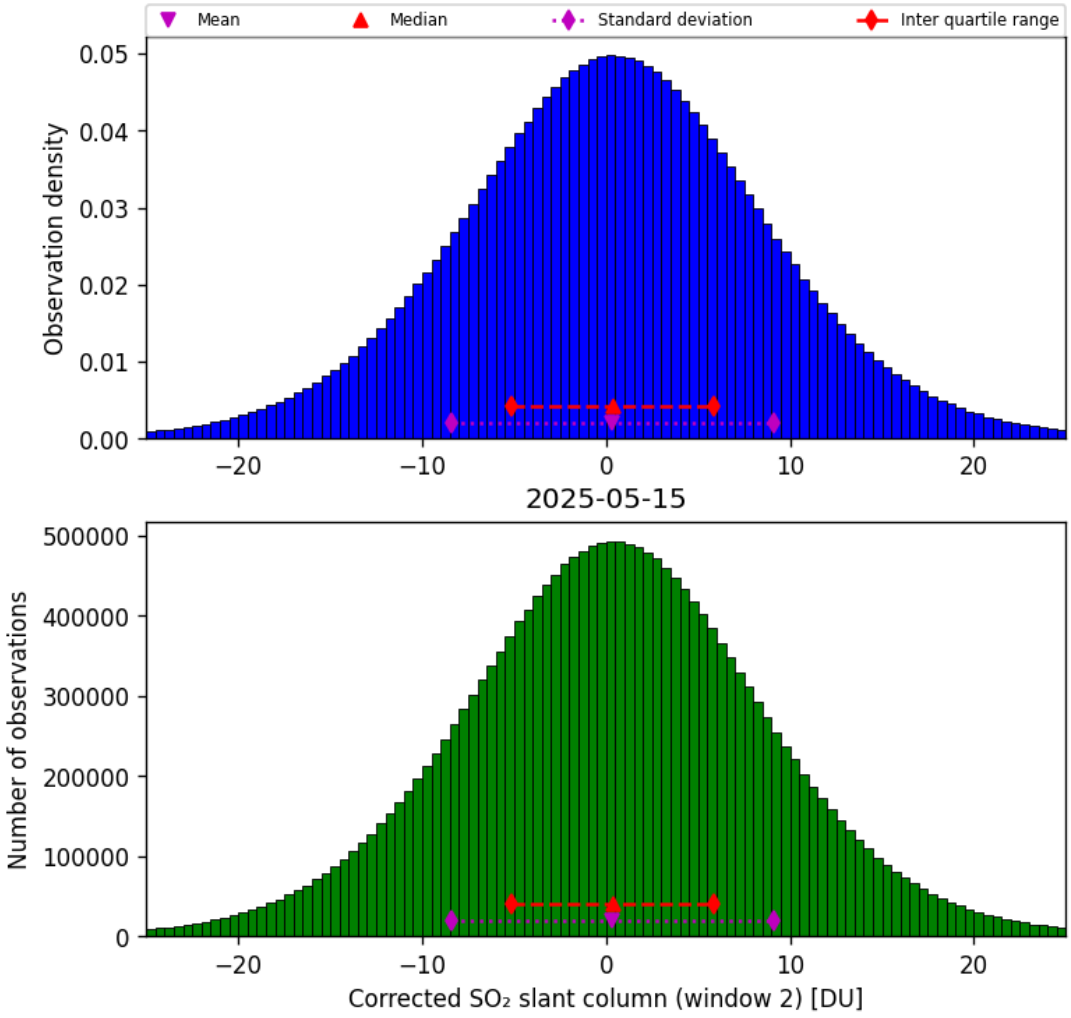


Figure 69: Histogram of "Corrected SO_2 slant column (window 2)" for 2025-05-15 to 2025-05-16

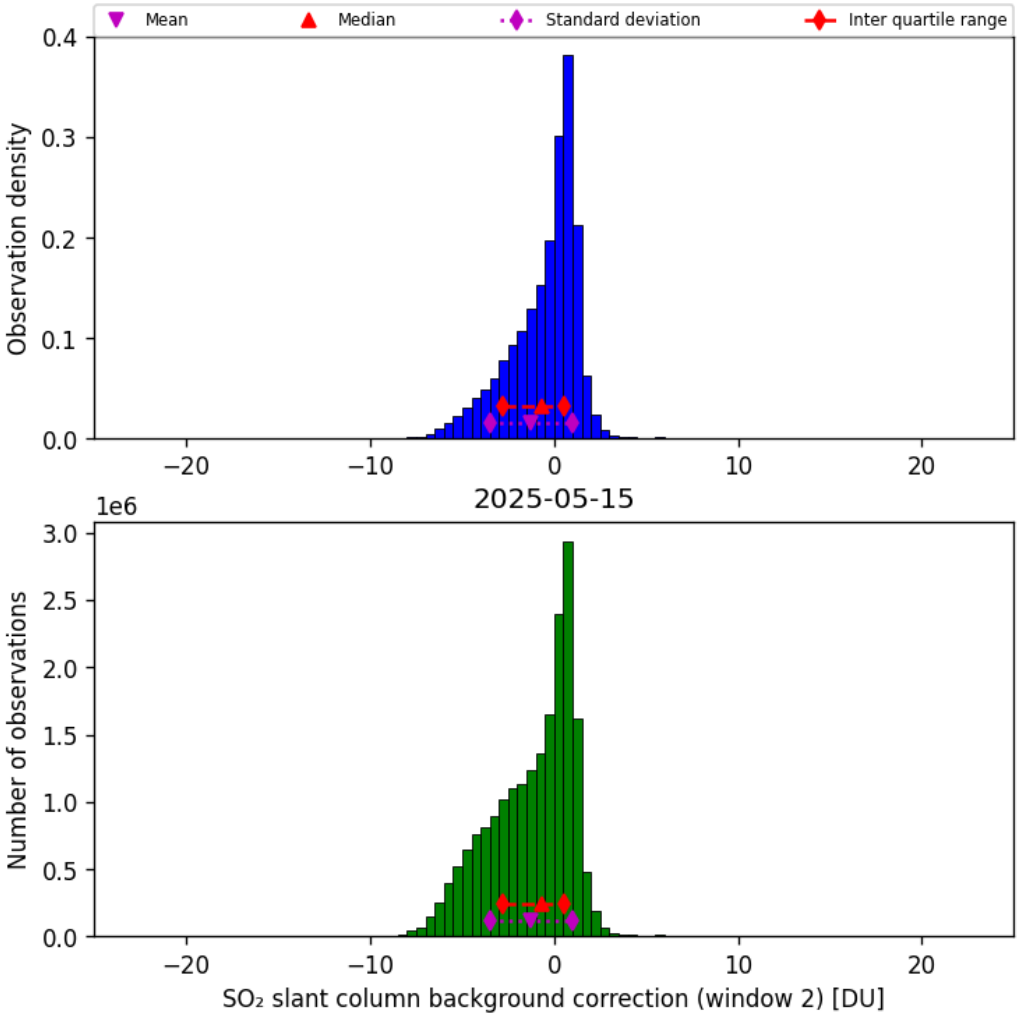


Figure 70: Histogram of "SO_2 slant column background correction (window 2)" for 2025-05-15 to 2025-05-16

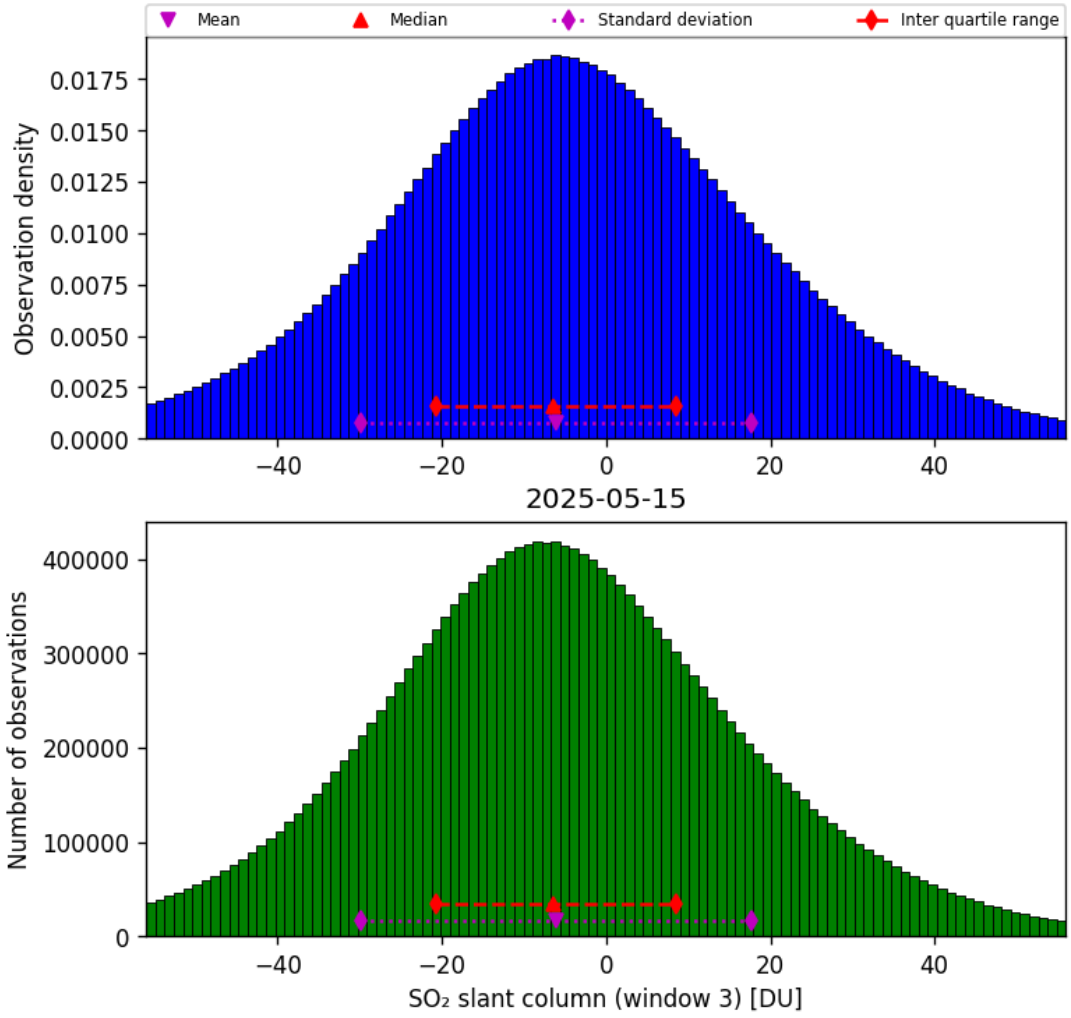


Figure 71: Histogram of "SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16

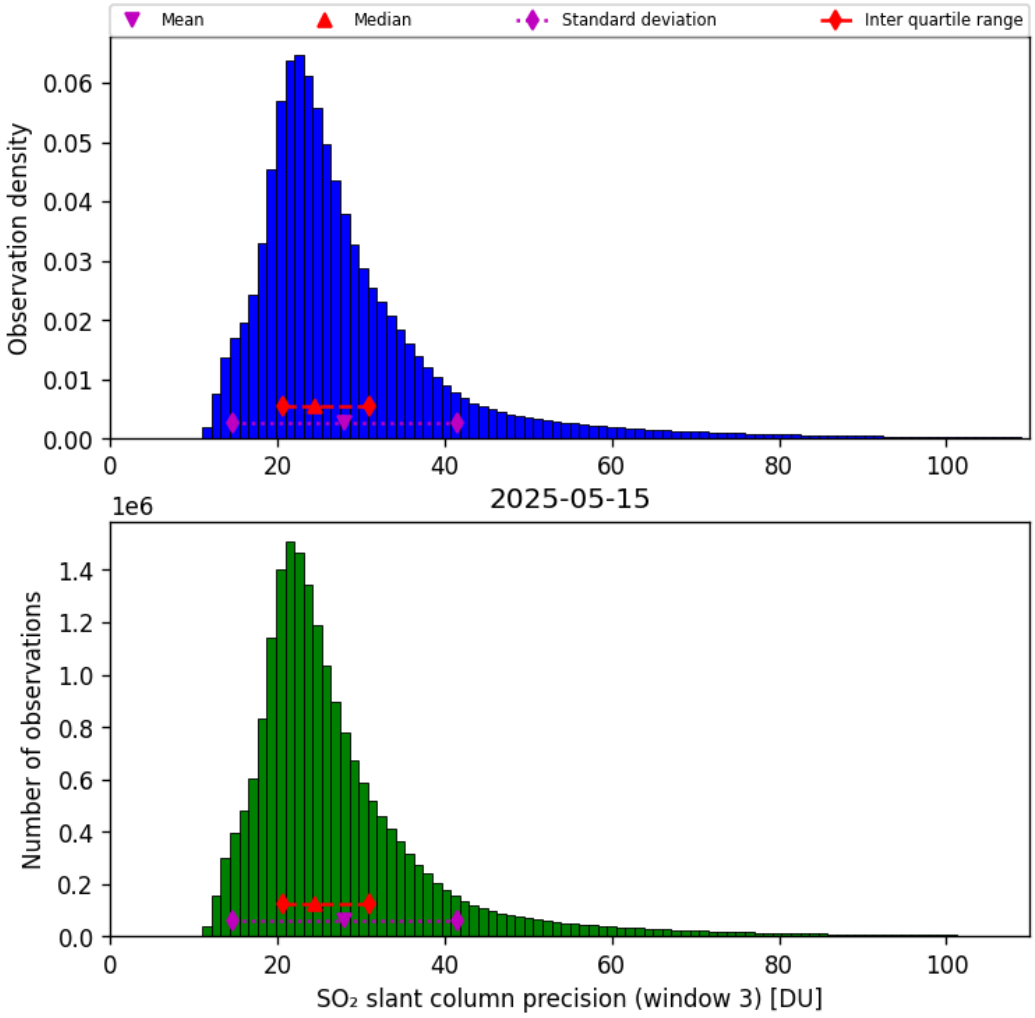


Figure 72: Histogram of "SO_2 slant column precision (window 3)" for 2025-05-15 to 2025-05-16

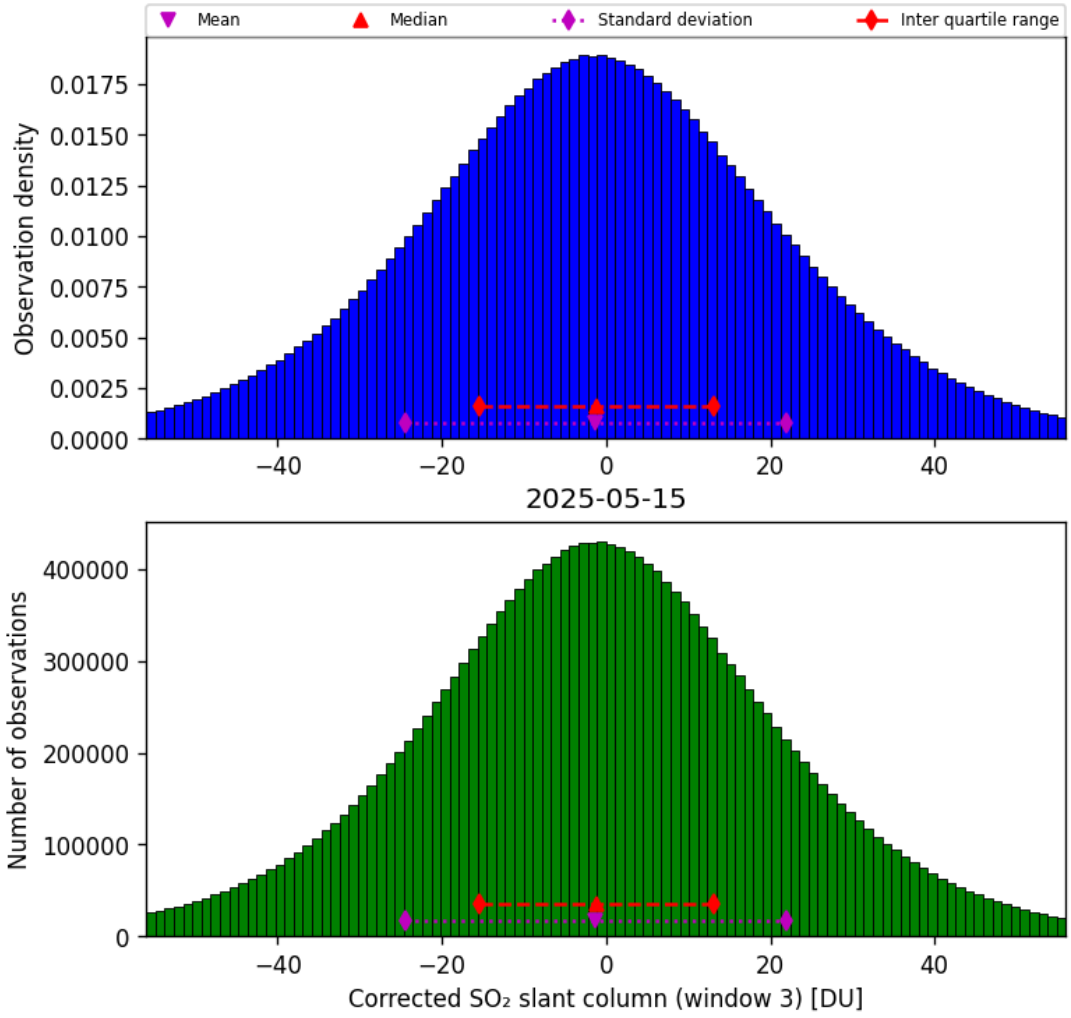


Figure 73: Histogram of "Corrected SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16

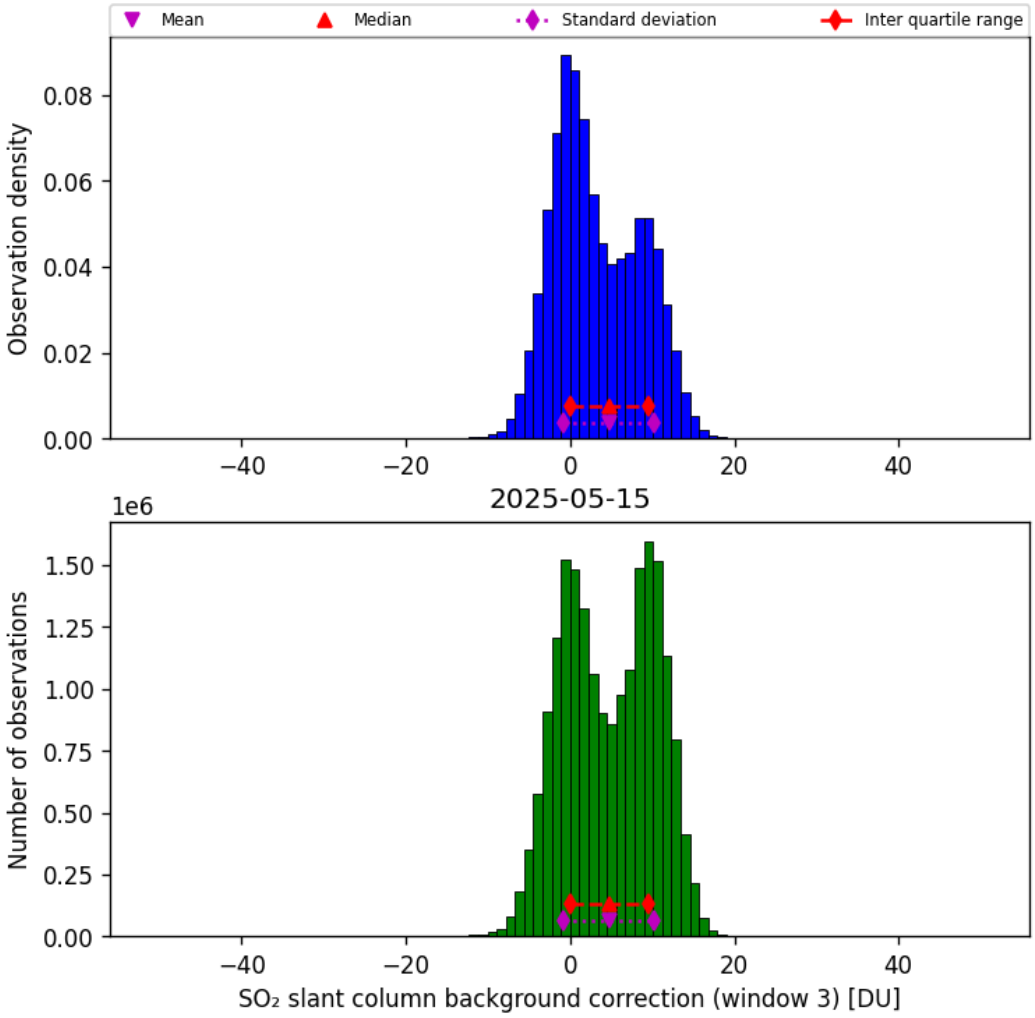


Figure 74: Histogram of "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16

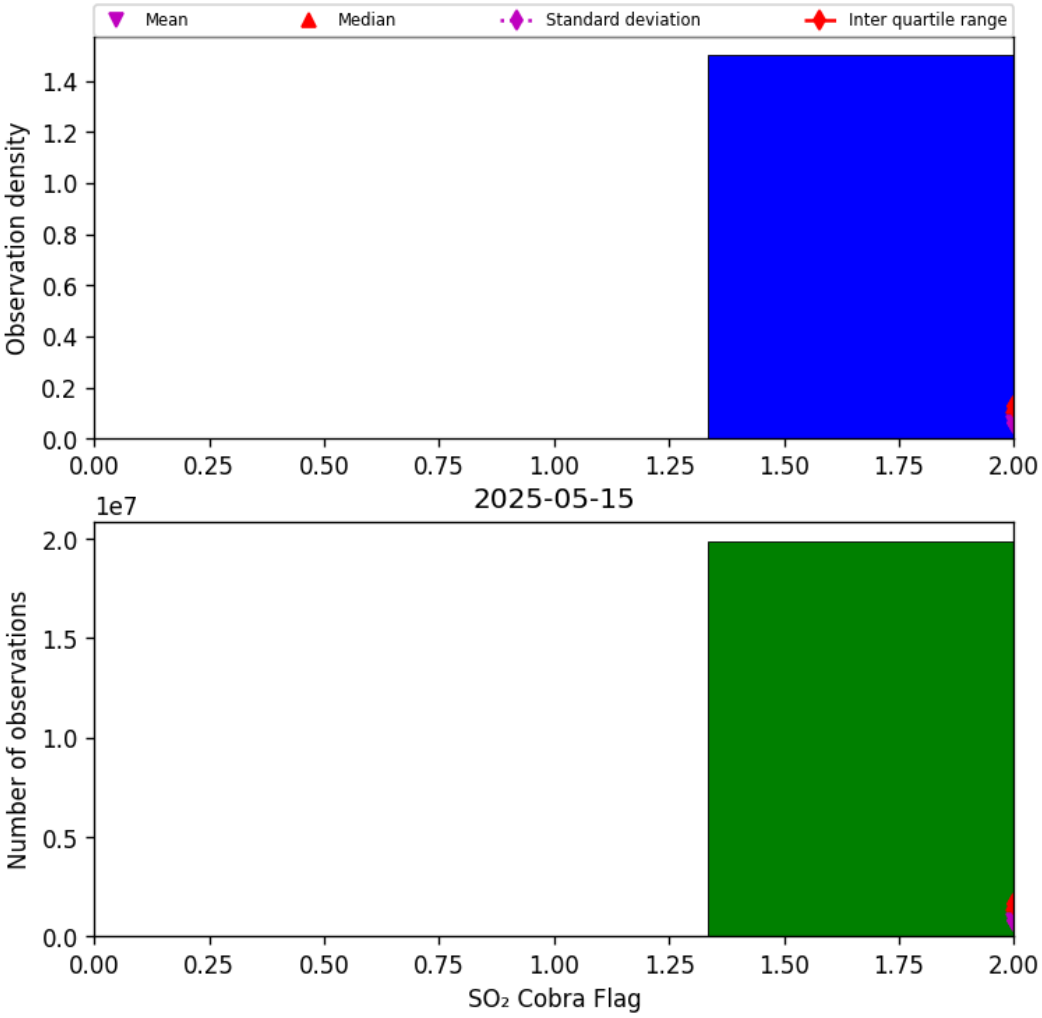


Figure 75: Histogram of "SO_2 Cobra Flag" for 2025-05-15 to 2025-05-16

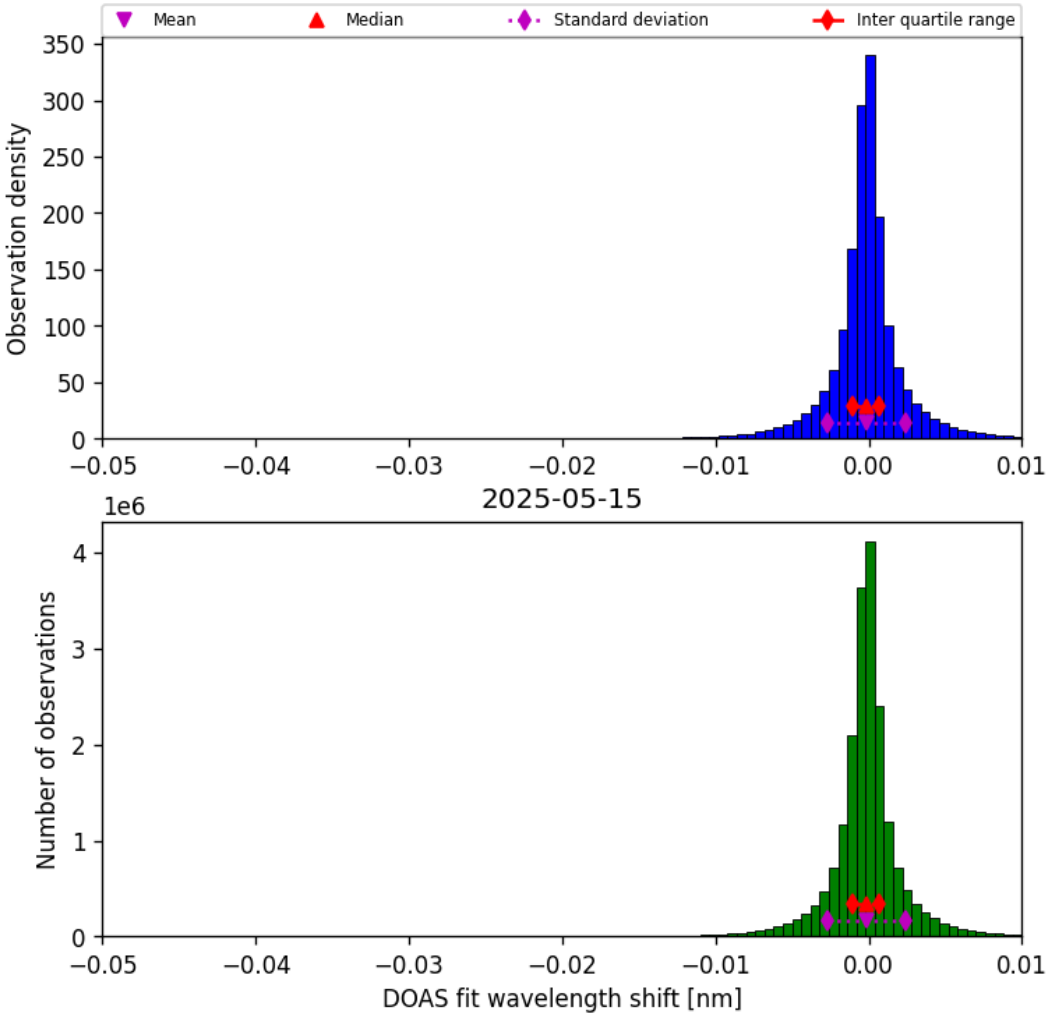


Figure 76: Histogram of “DOAS fit wavelength shift” for 2025-05-15 to 2025-05-16

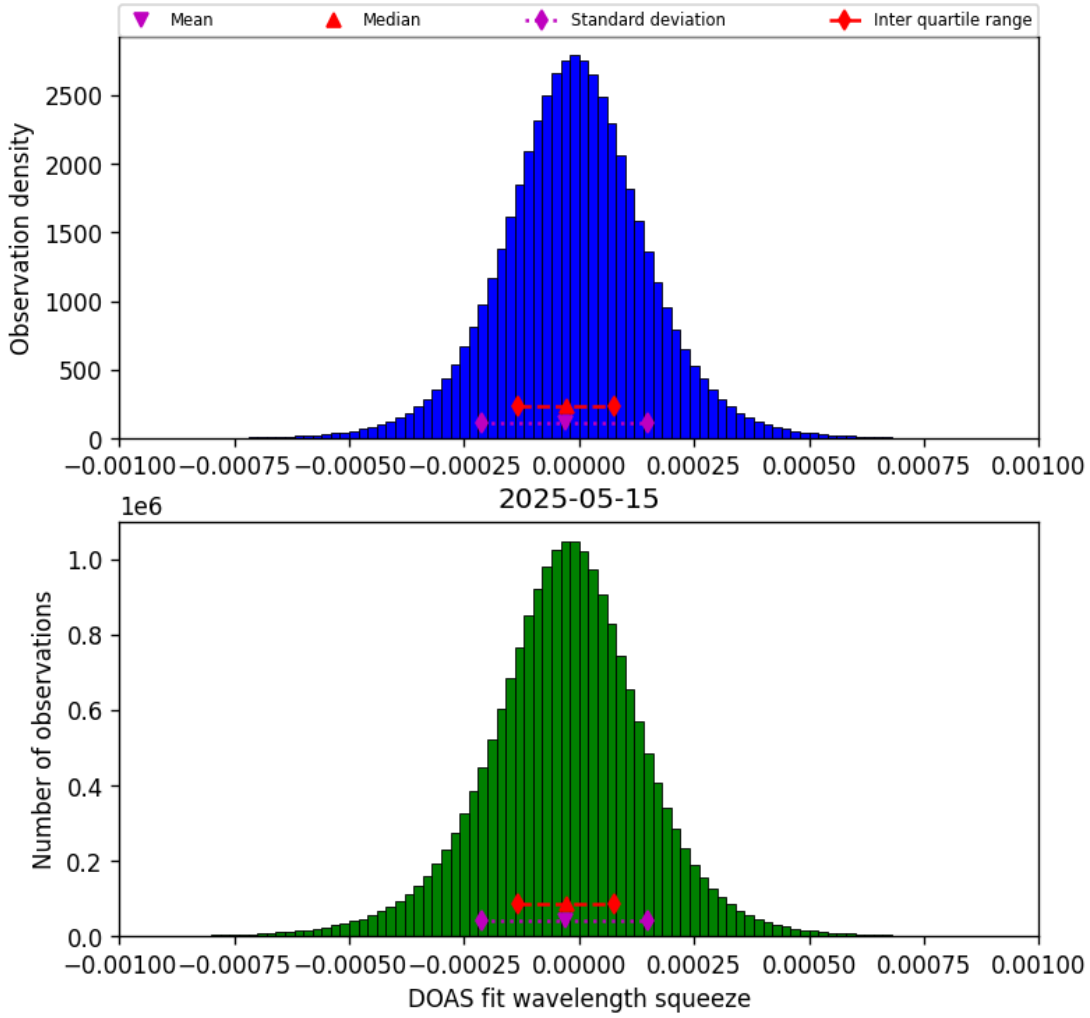


Figure 77: Histogram of “DOAS fit wavelength squeeze” for 2025-05-15 to 2025-05-16

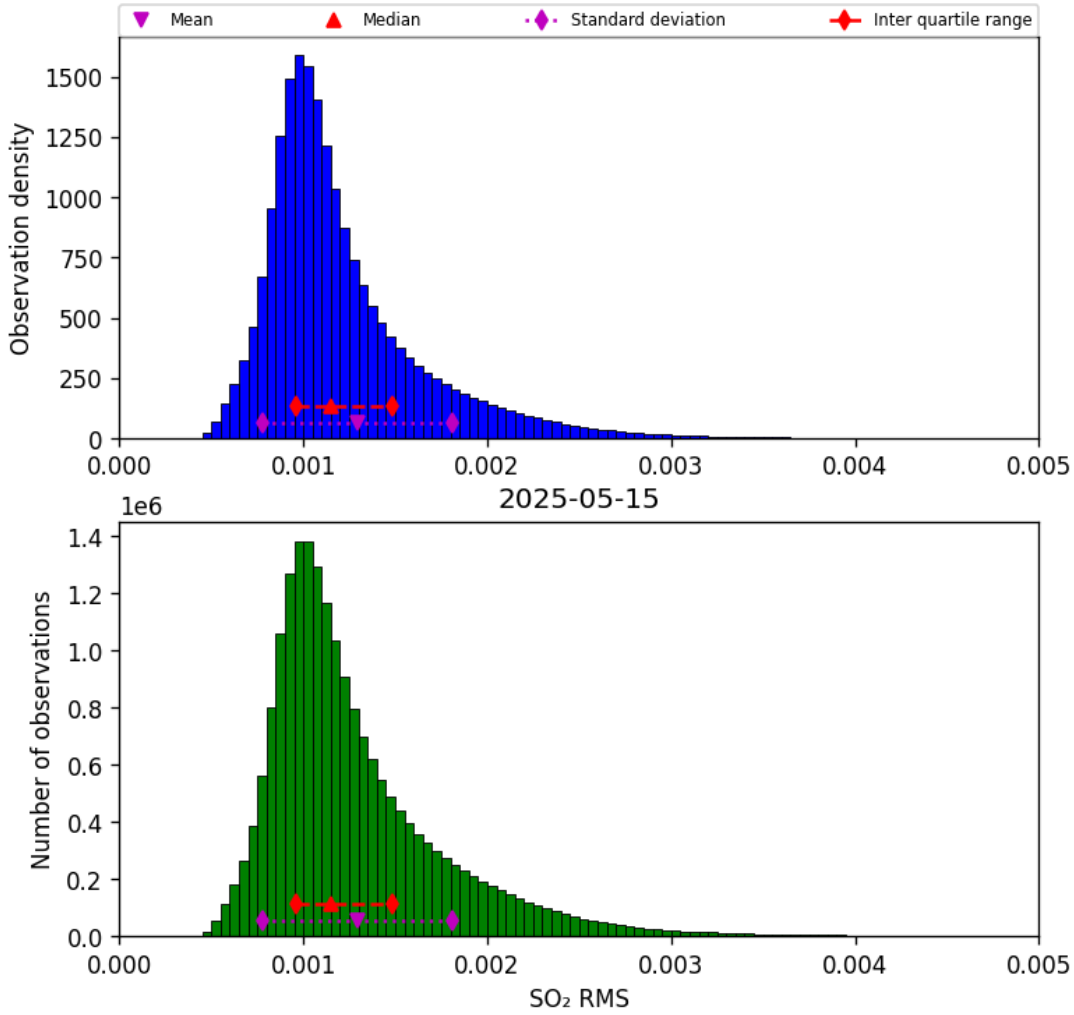


Figure 78: Histogram of "SO_2 RMS" for 2025-05-15 to 2025-05-16

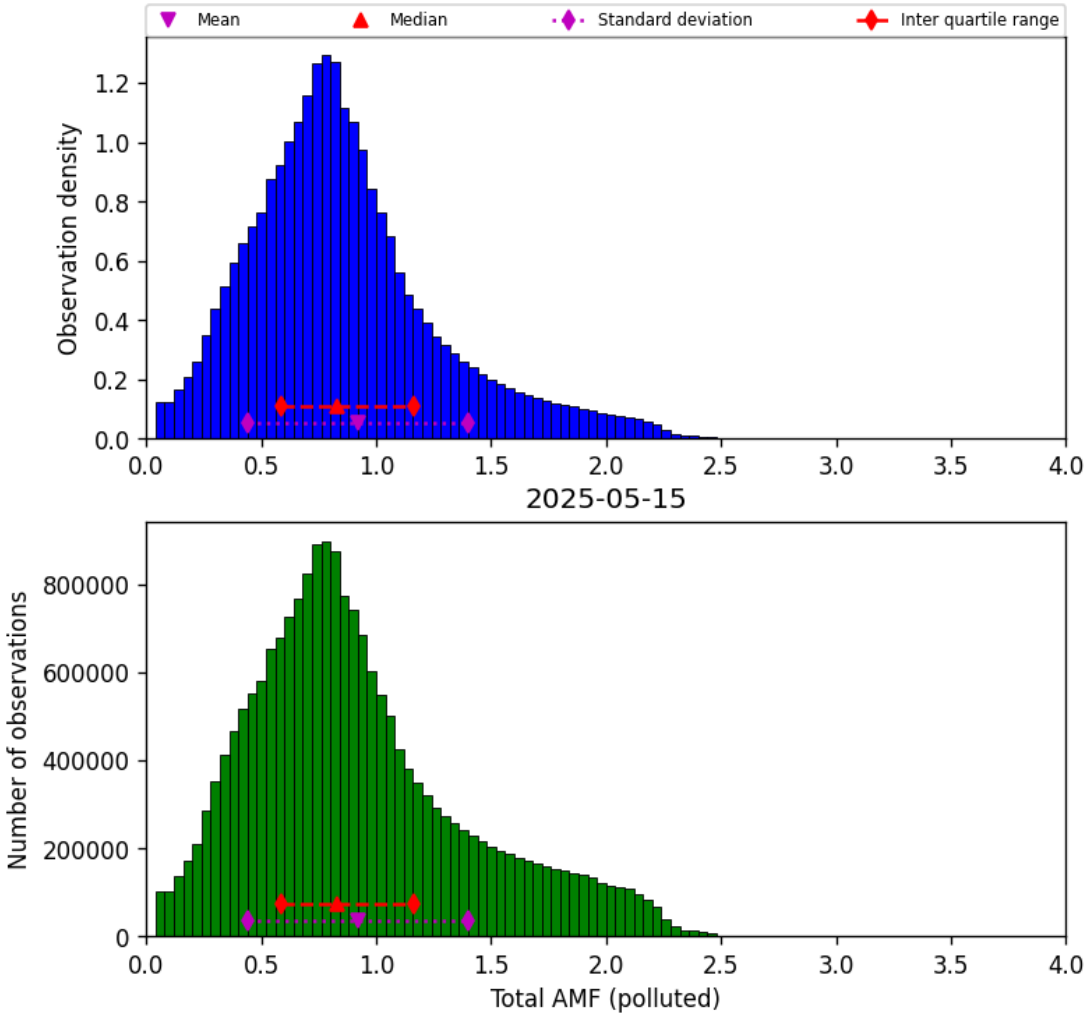


Figure 79: Histogram of “Total AMF (polluted)” for 2025-05-15 to 2025-05-16

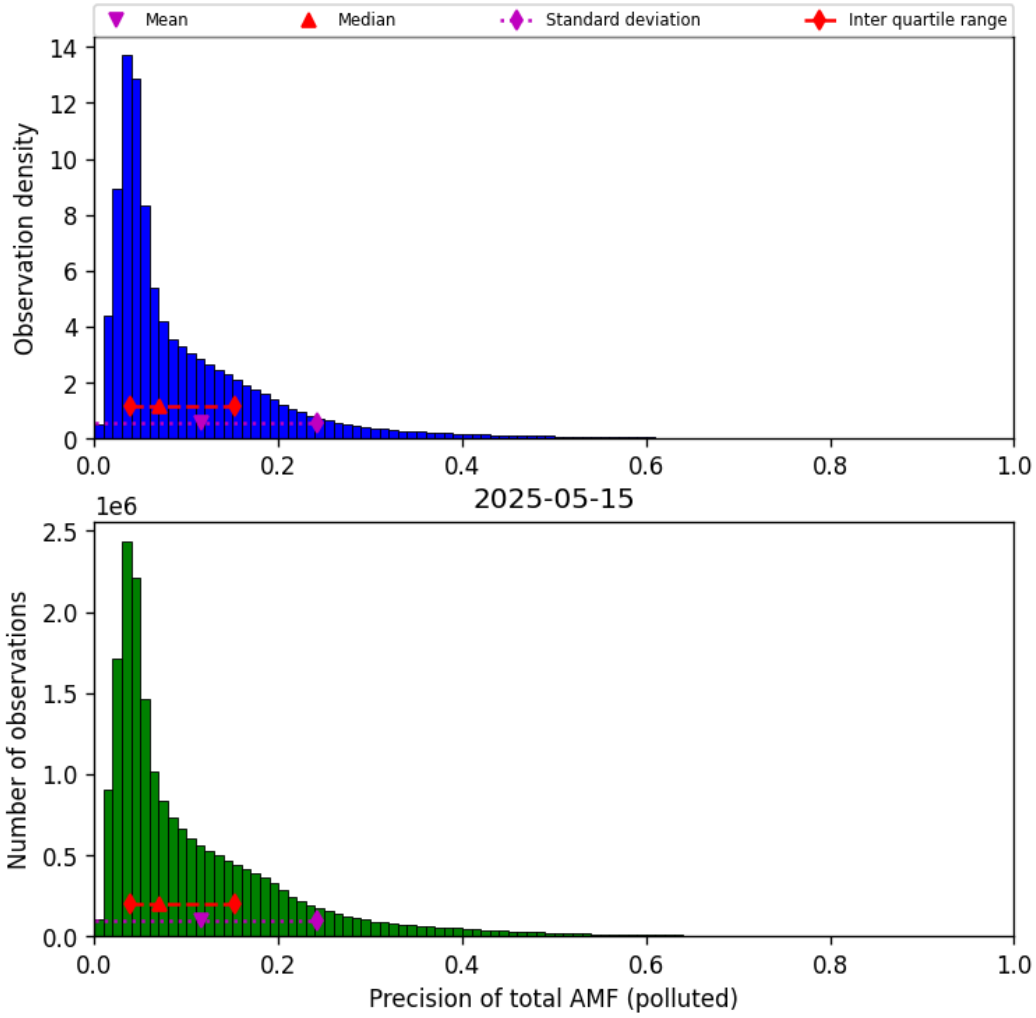


Figure 80: Histogram of “Precision of total AMF (polluted)” for 2025-05-15 to 2025-05-16

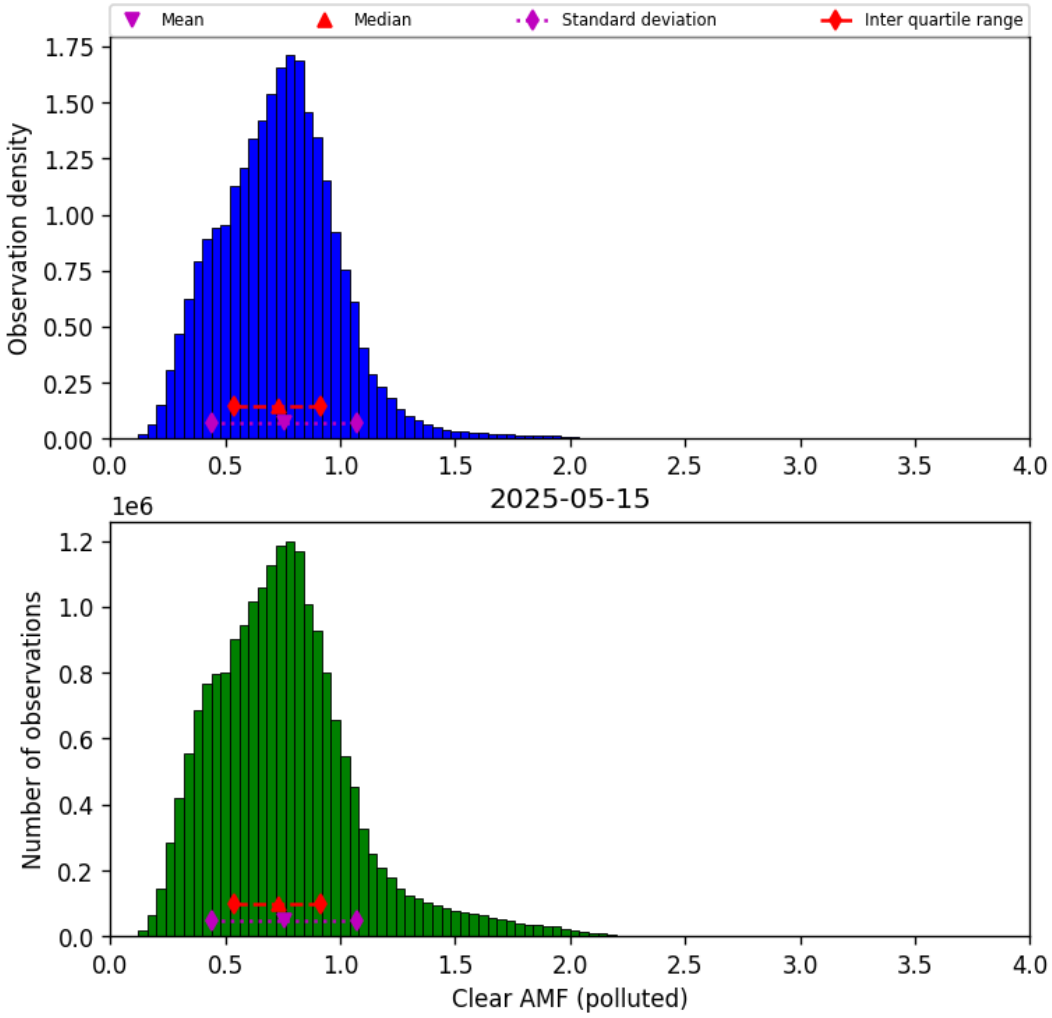


Figure 81: Histogram of “Clear AMF (polluted)” for 2025-05-15 to 2025-05-16

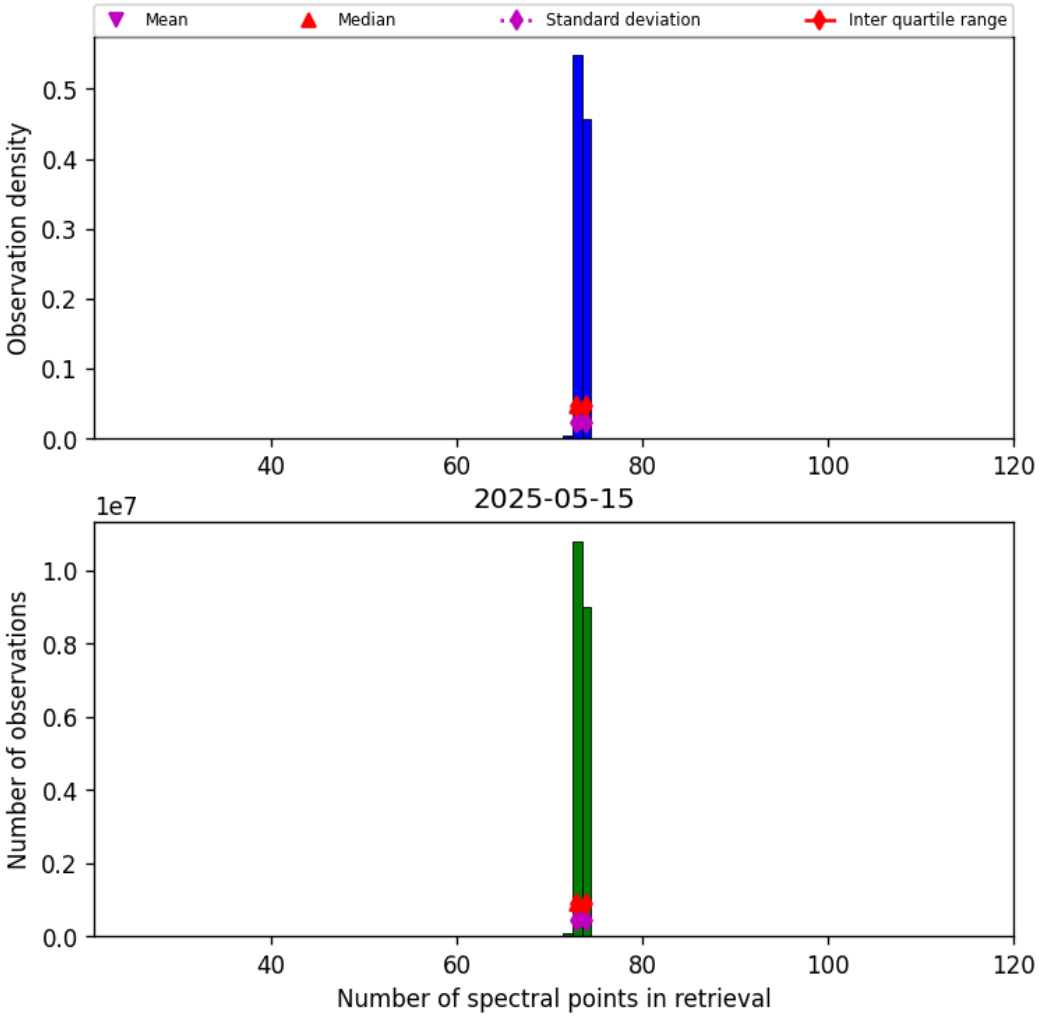


Figure 82: Histogram of “Number of spectral points in retrieval” for 2025-05-15 to 2025-05-16

9 Along track statistics

The TROPOMI instrument uses different binned detector rows for different viewing directions. In this section statistics are presented for each of the binned rows in the instrument.

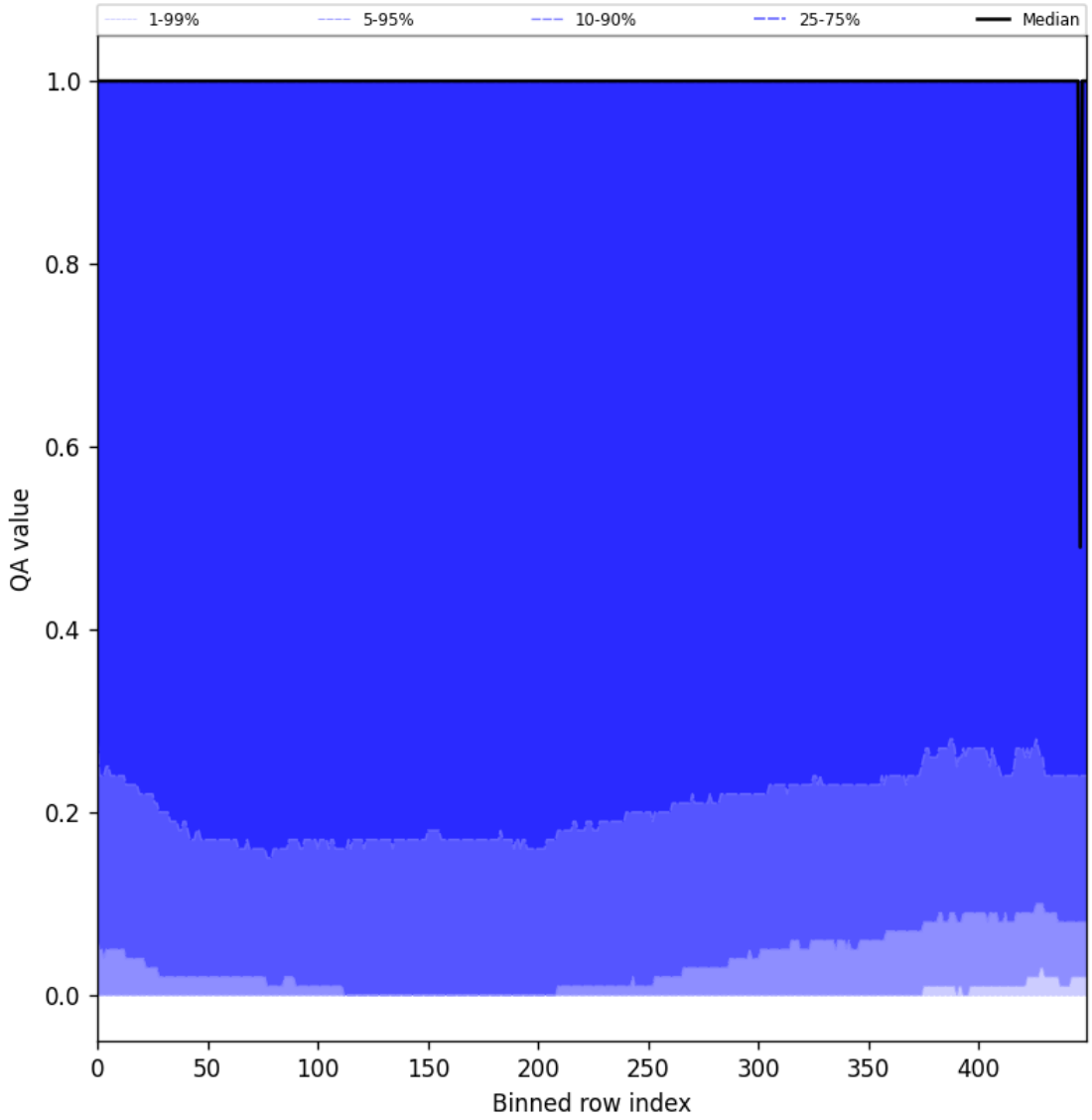


Figure 83: Along track statistics of “QA value” for 2025-05-15 to 2025-05-16

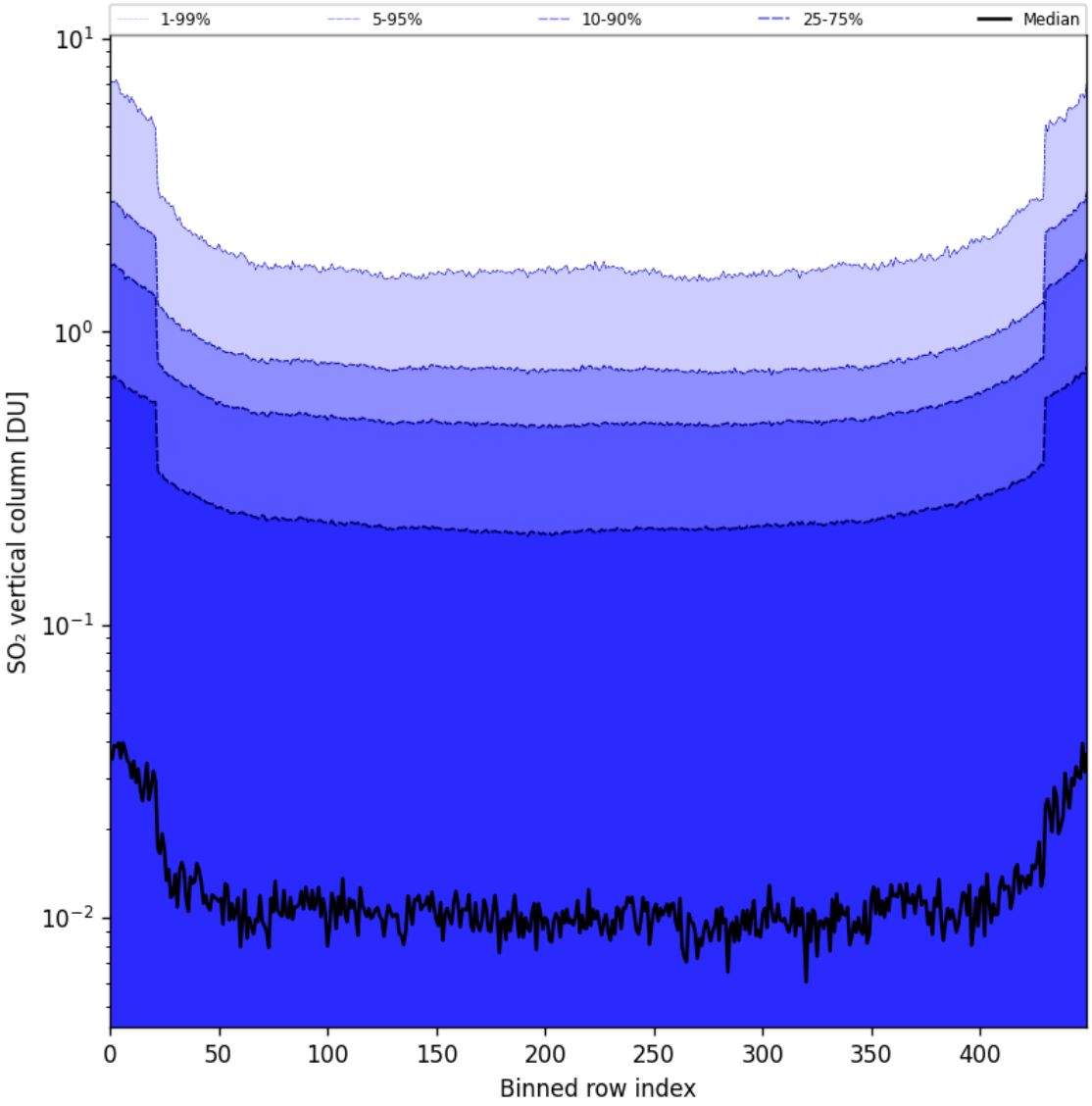


Figure 84: Along track statistics of "SO_2 vertical column" for 2025-05-15 to 2025-05-16

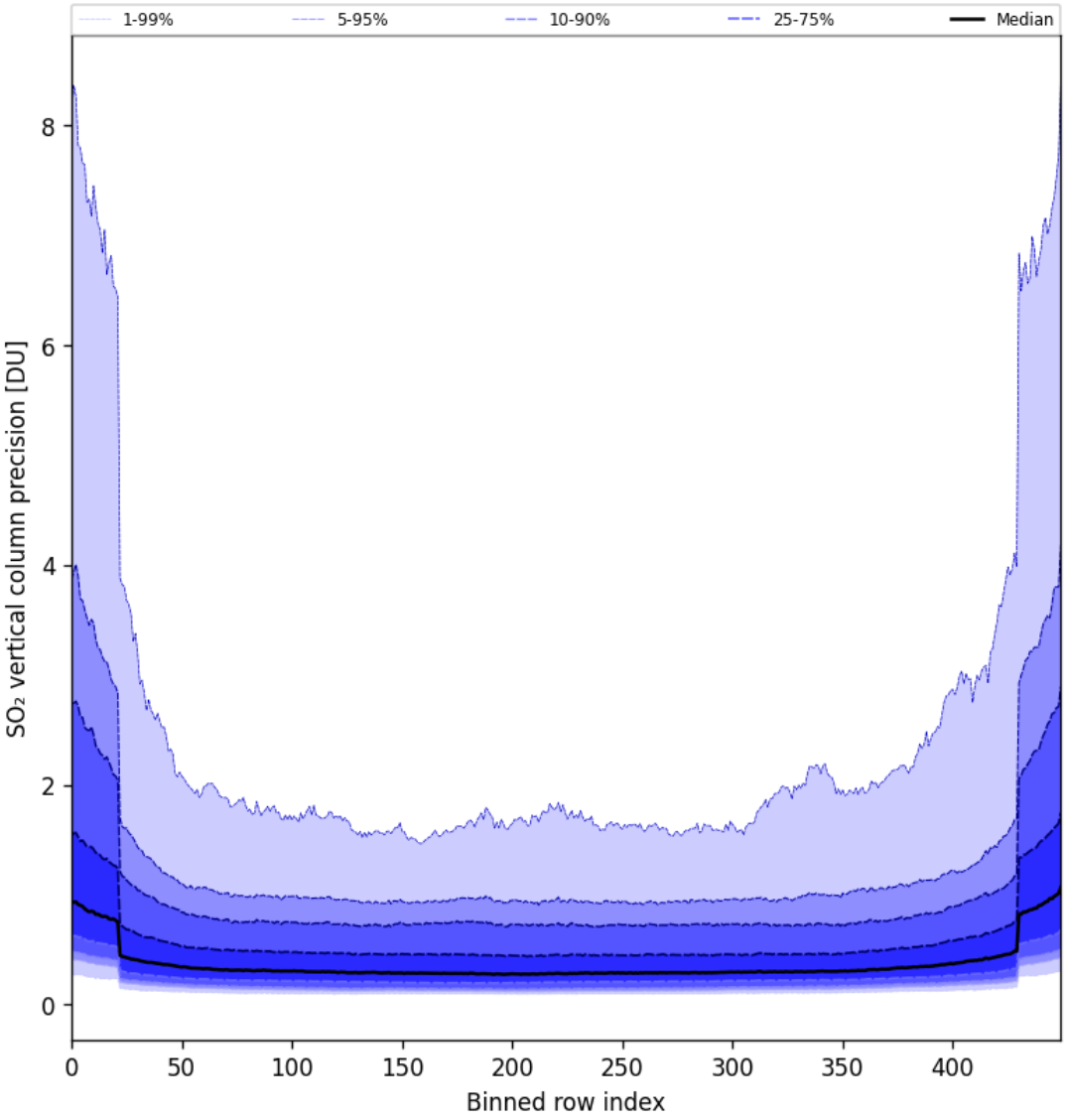


Figure 85: Along track statistics of "SO_2 vertical column precision" for 2025-05-15 to 2025-05-16

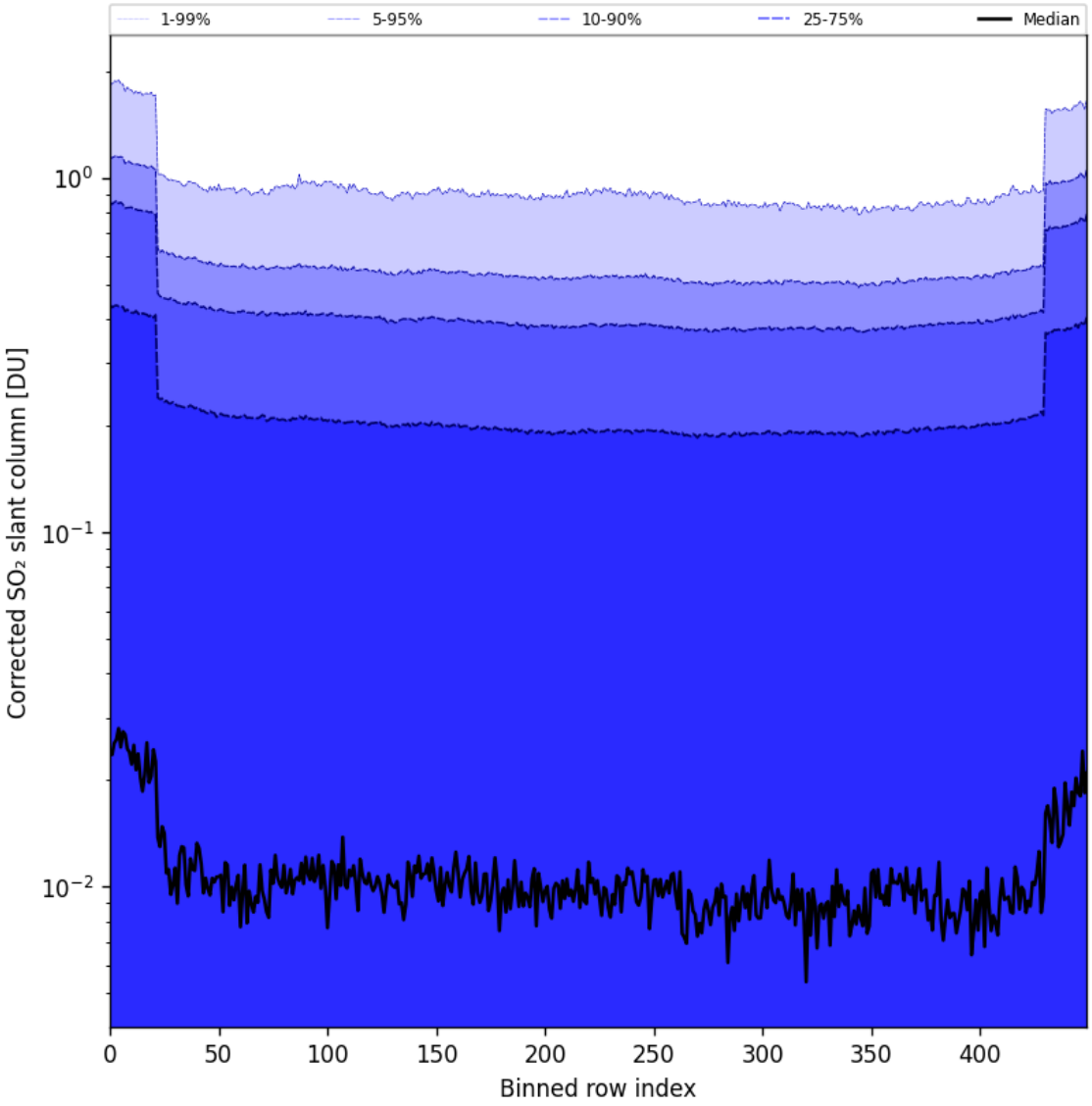


Figure 86: Along track statistics of "Corrected SO_2 slant column" for 2025-05-15 to 2025-05-16

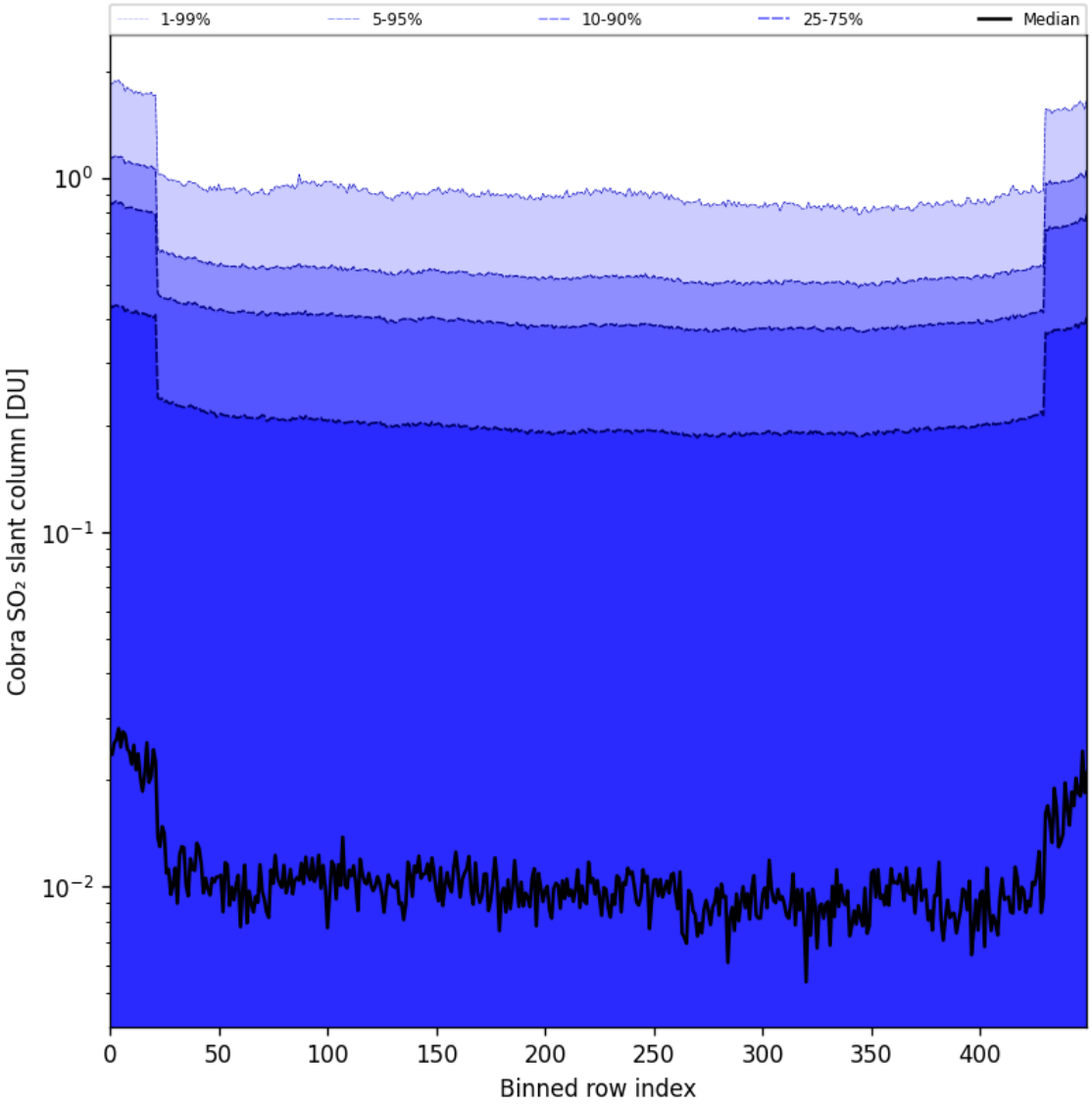


Figure 87: Along track statistics of “Cobra SO_2 slant column” for 2025-05-15 to 2025-05-16

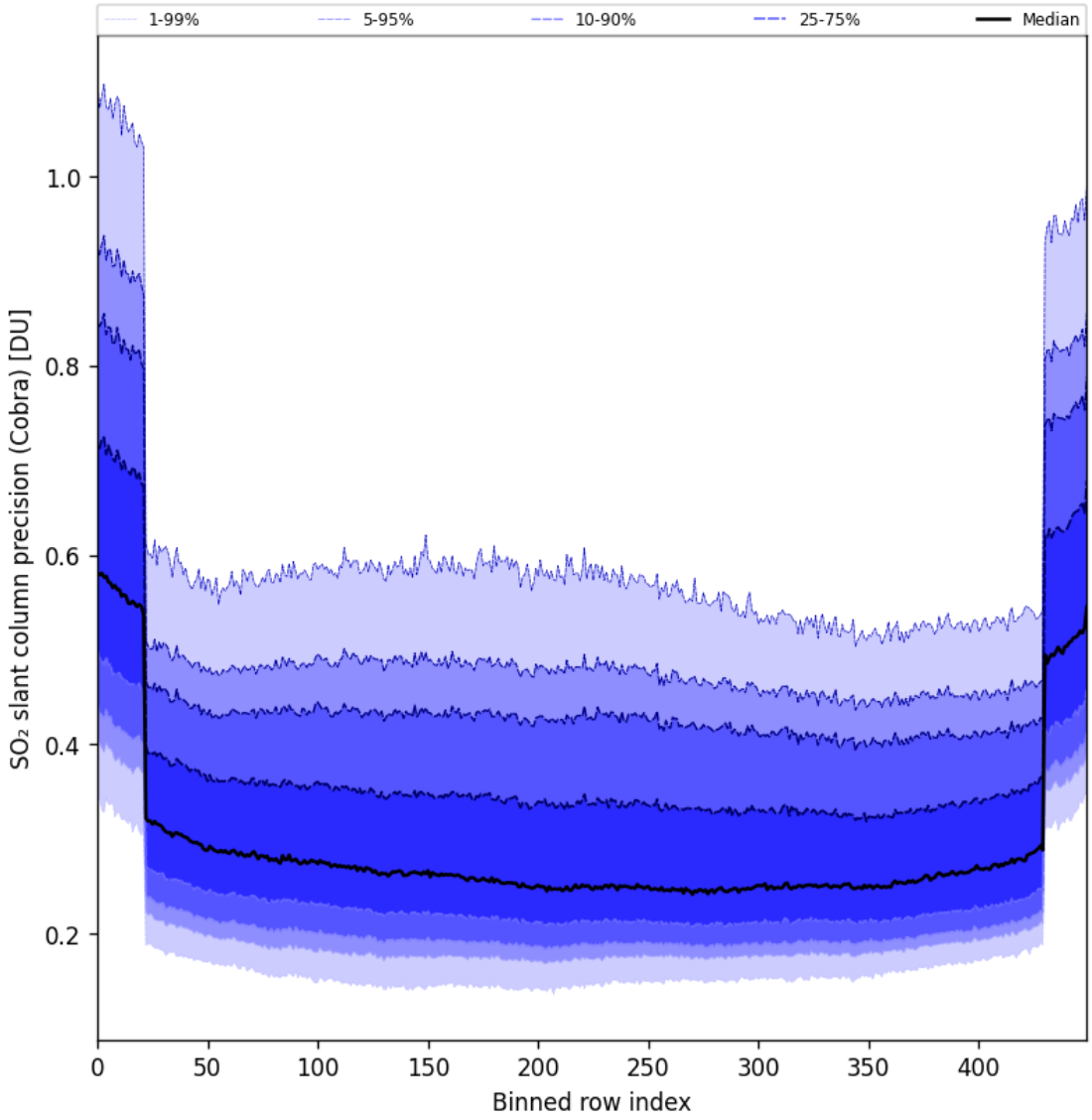


Figure 88: Along track statistics of "SO_2 slant column precision (Cobra)" for 2025-05-15 to 2025-05-16

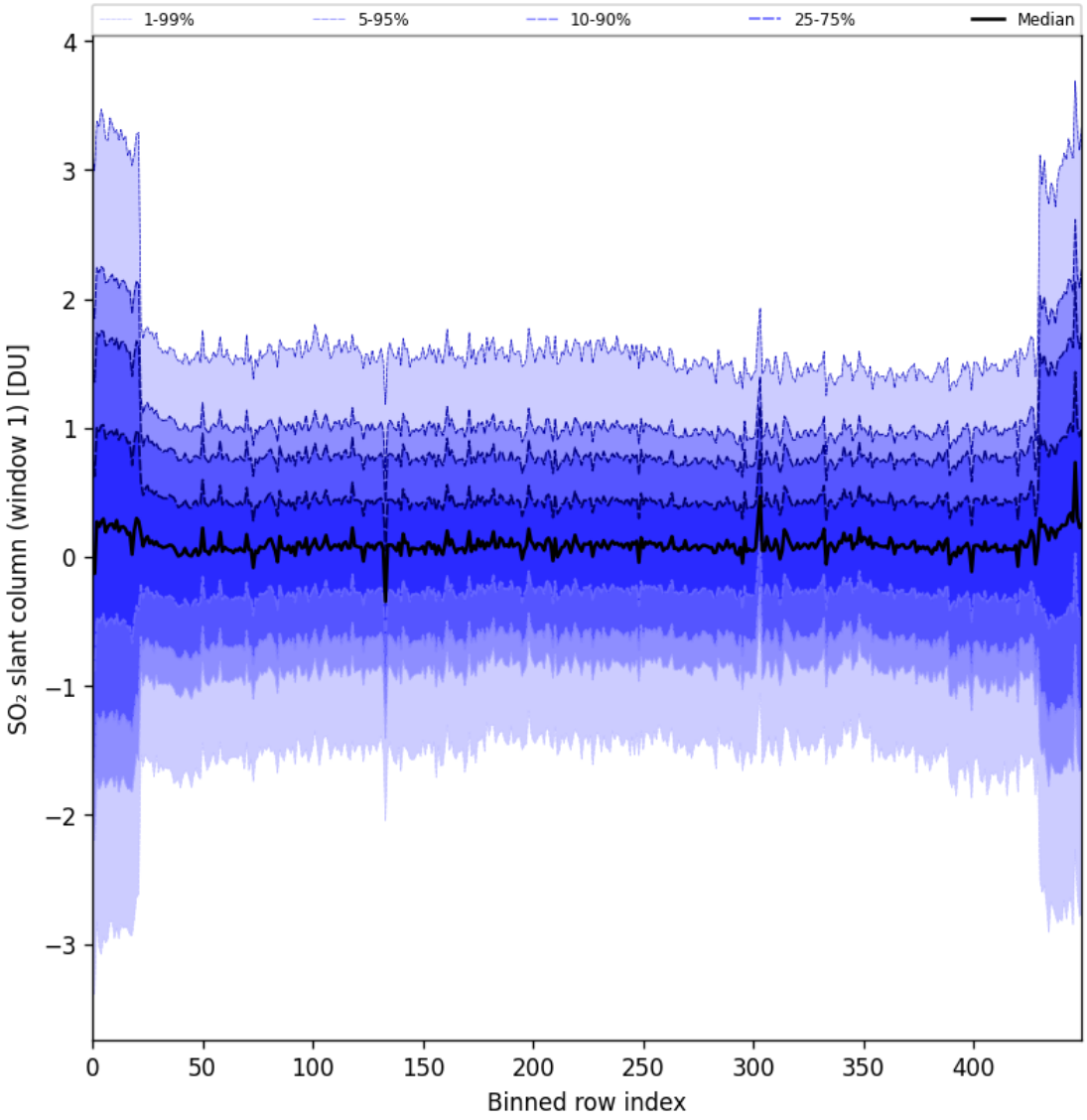


Figure 89: Along track statistics of "SO_2 slant column (window 1)" for 2025-05-15 to 2025-05-16

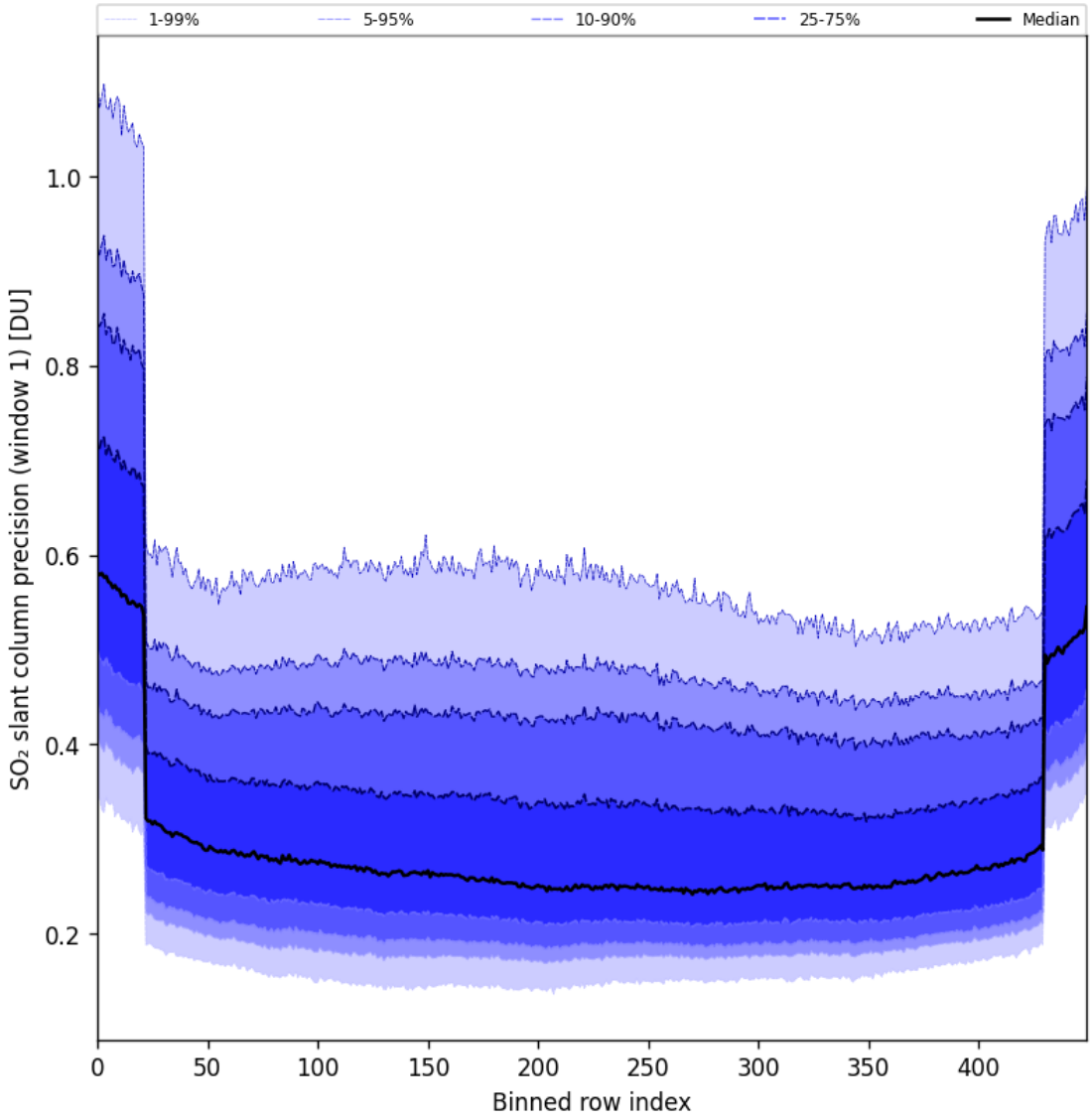


Figure 90: Along track statistics of "SO_2 slant column precision (window 1)" for 2025-05-15 to 2025-05-16

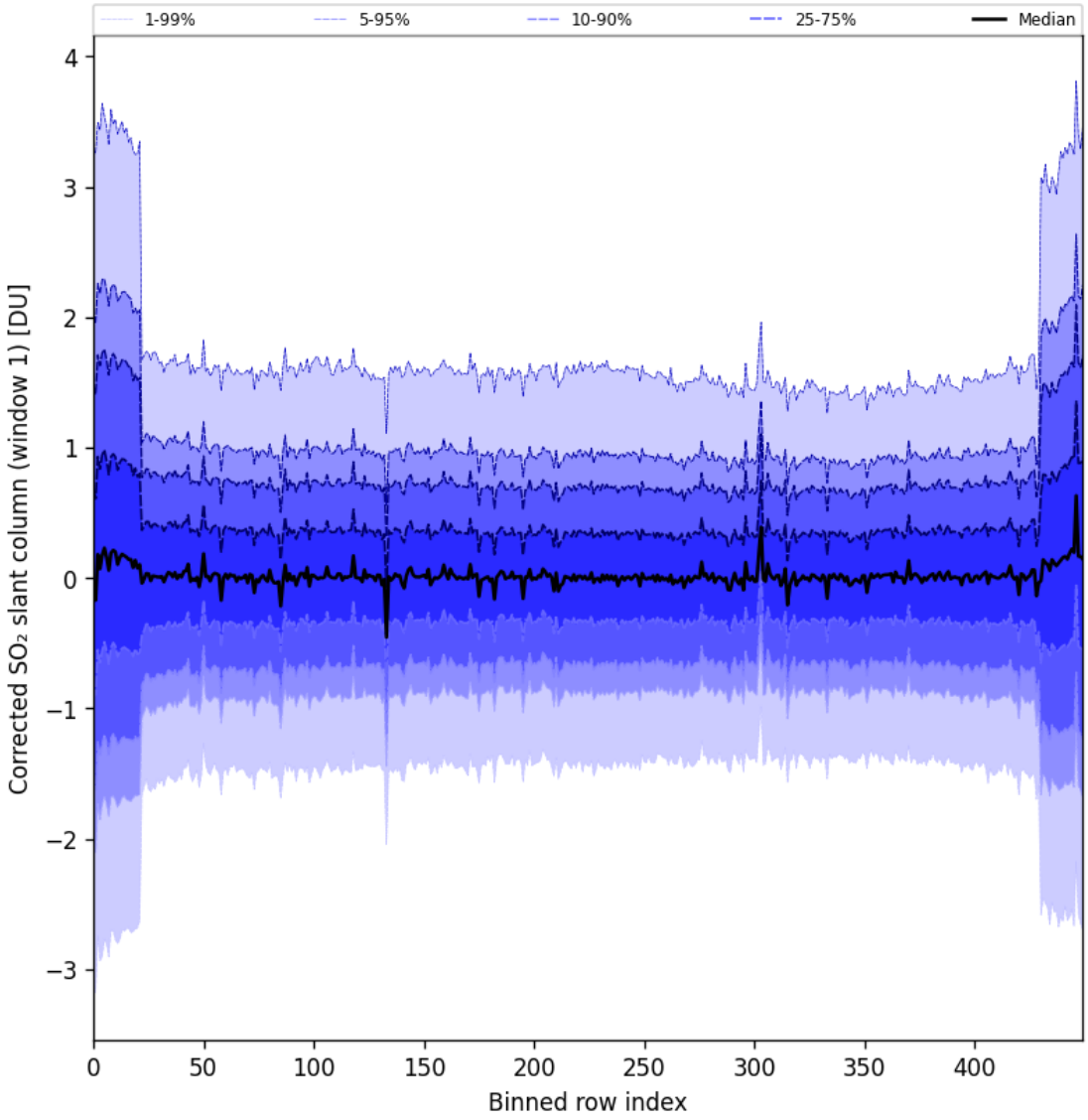


Figure 91: Along track statistics of “Corrected SO_2 slant column (window 1)” for 2025-05-15 to 2025-05-16

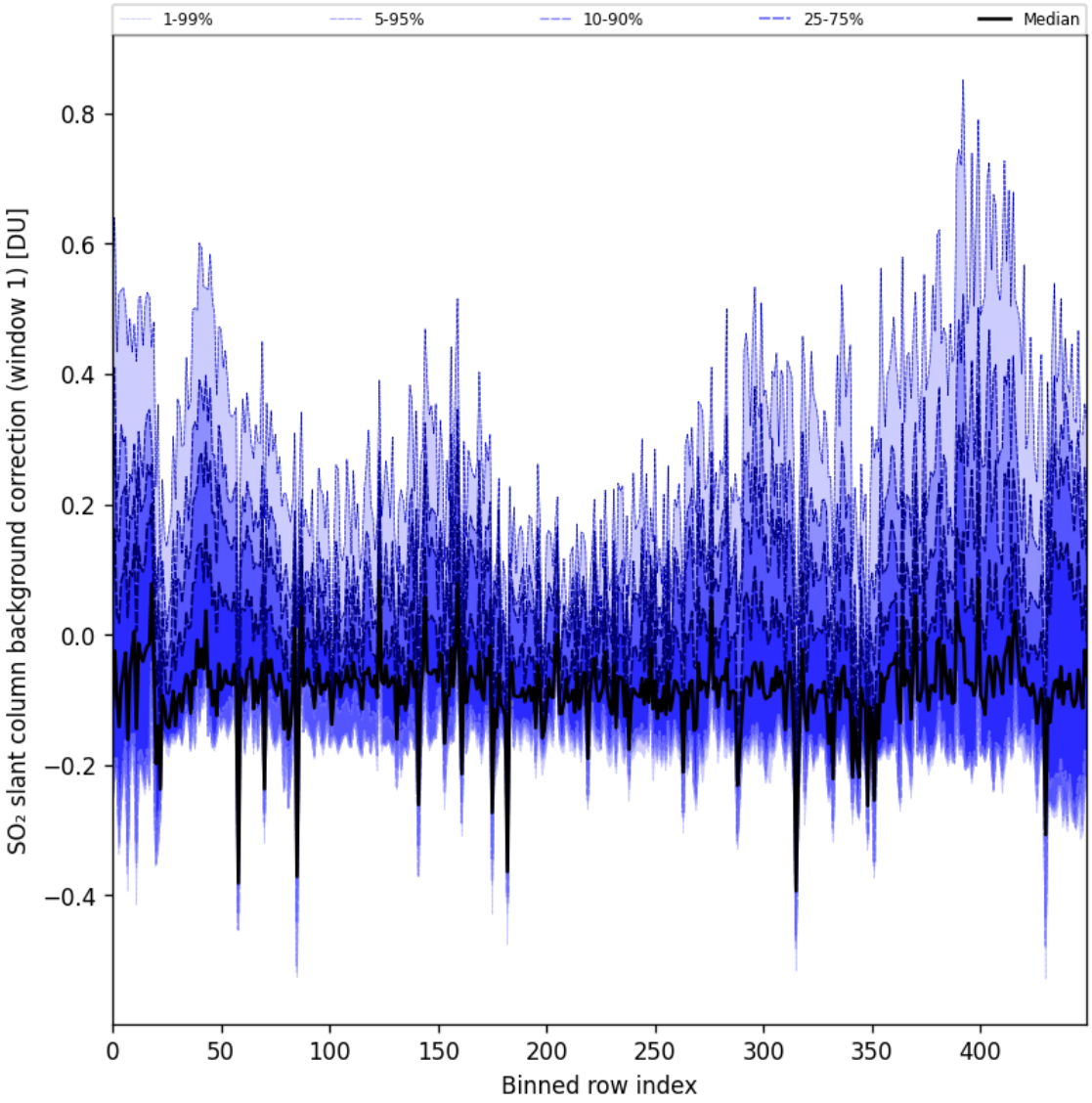


Figure 92: Along track statistics of "SO_2 slant column background correction (window 1)" for 2025-05-15 to 2025-05-16

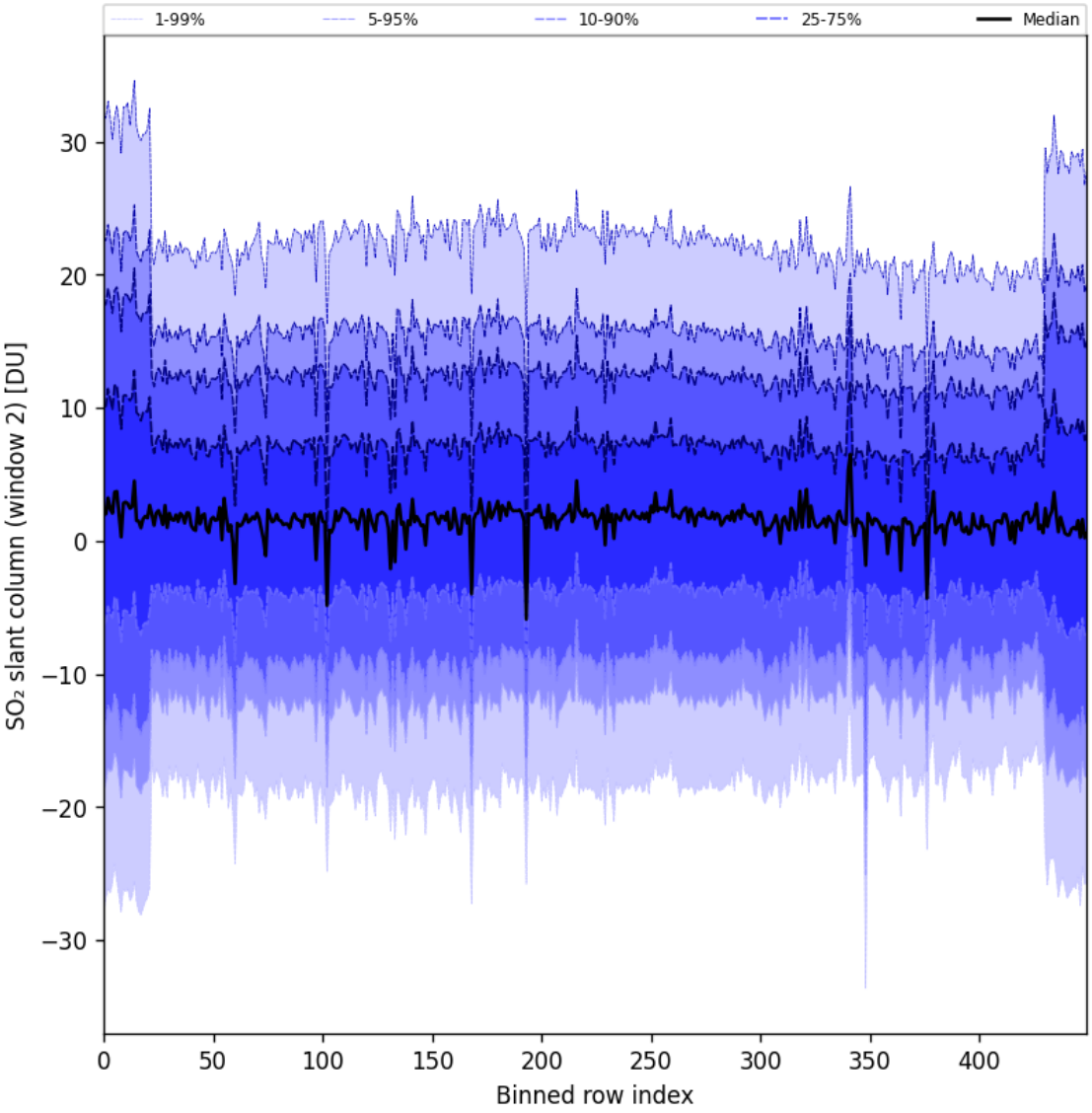


Figure 93: Along track statistics of "SO_2 slant column (window 2)" for 2025-05-15 to 2025-05-16

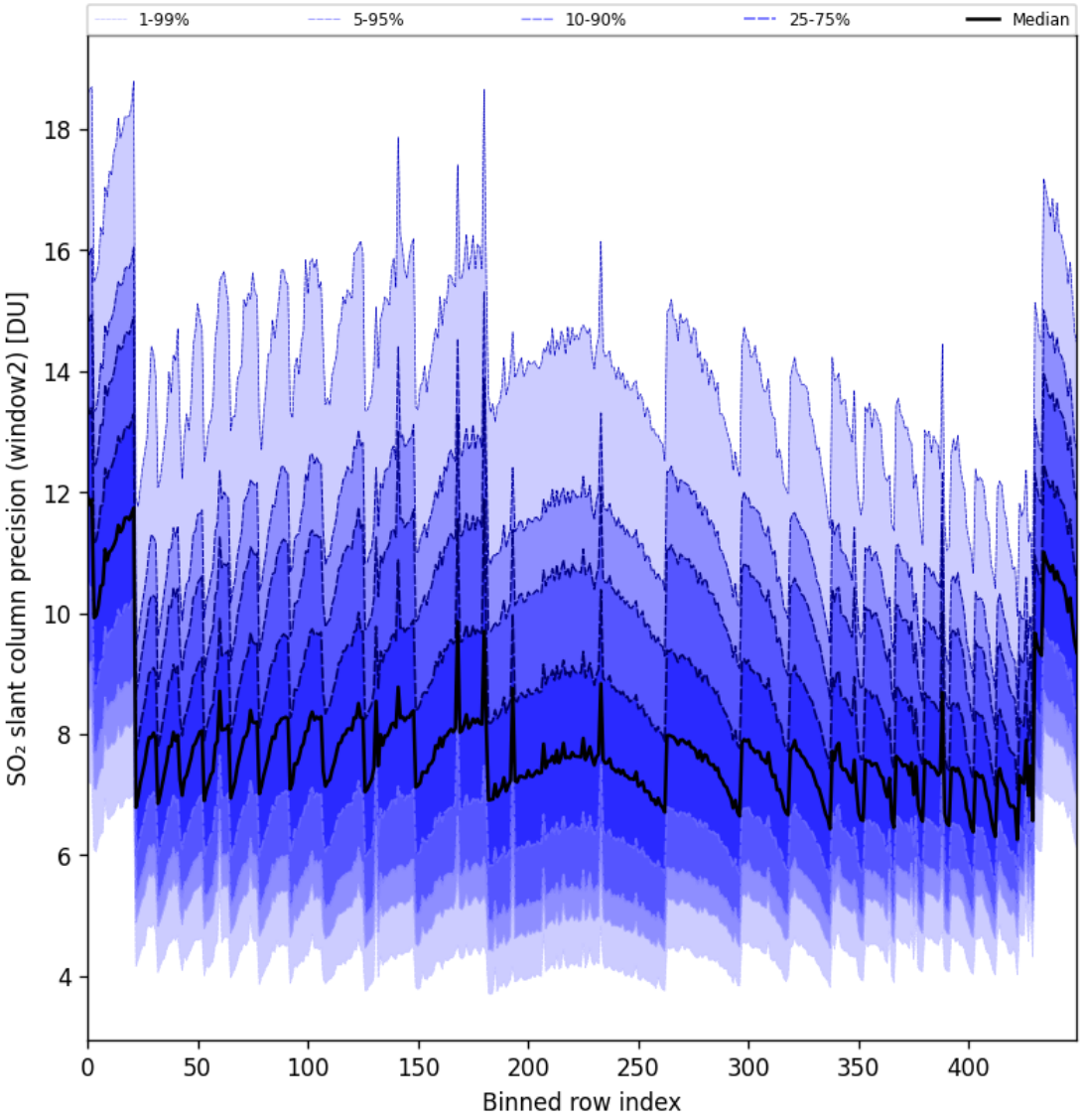


Figure 94: Along track statistics of "SO_2 slant column precision (window2)" for 2025-05-15 to 2025-05-16

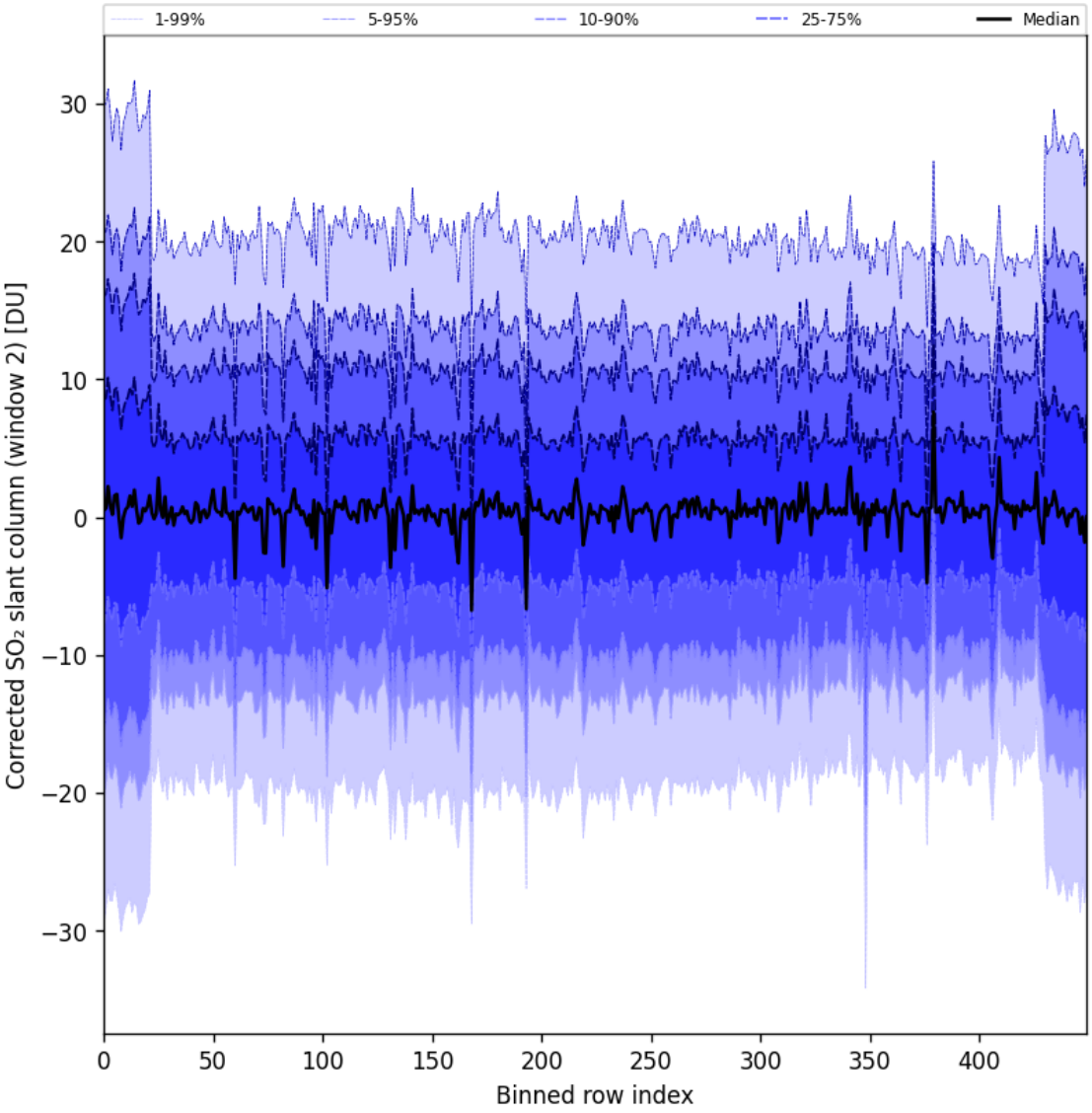


Figure 95: Along track statistics of “Corrected SO_2 slant column (window 2)” for 2025-05-15 to 2025-05-16

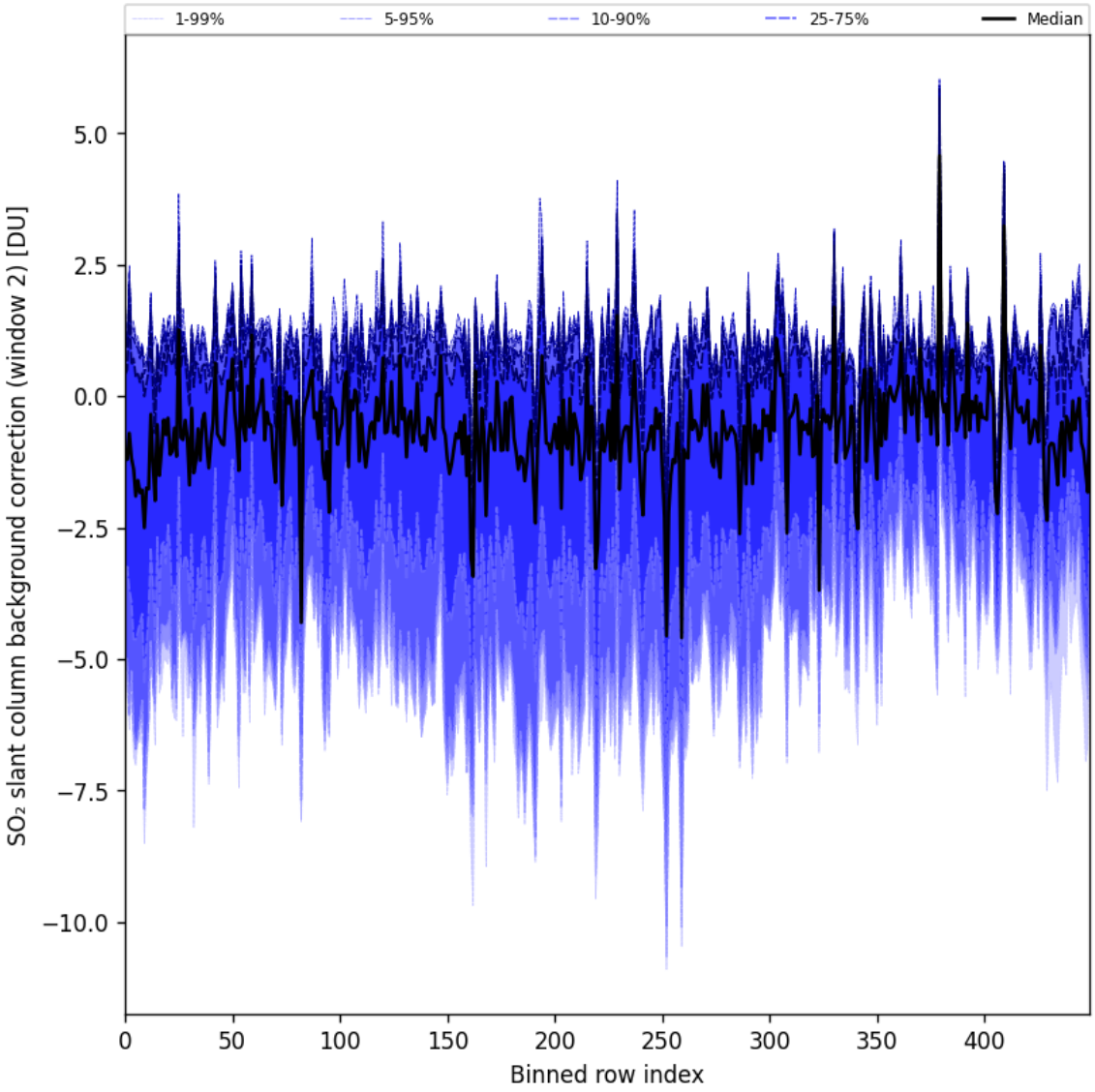


Figure 96: Along track statistics of "SO_2 slant column background correction (window 2)" for 2025-05-15 to 2025-05-16

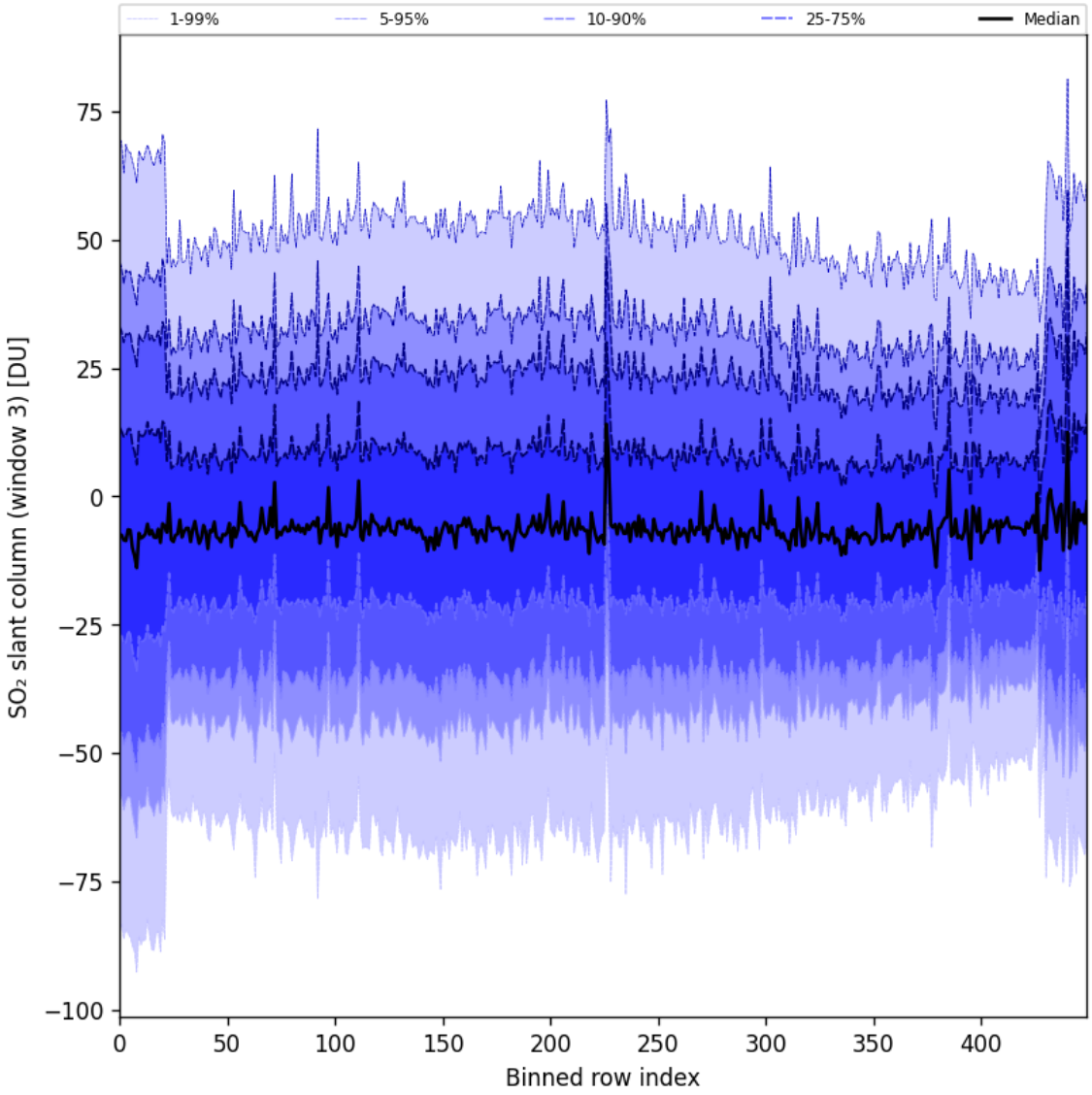


Figure 97: Along track statistics of "SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16

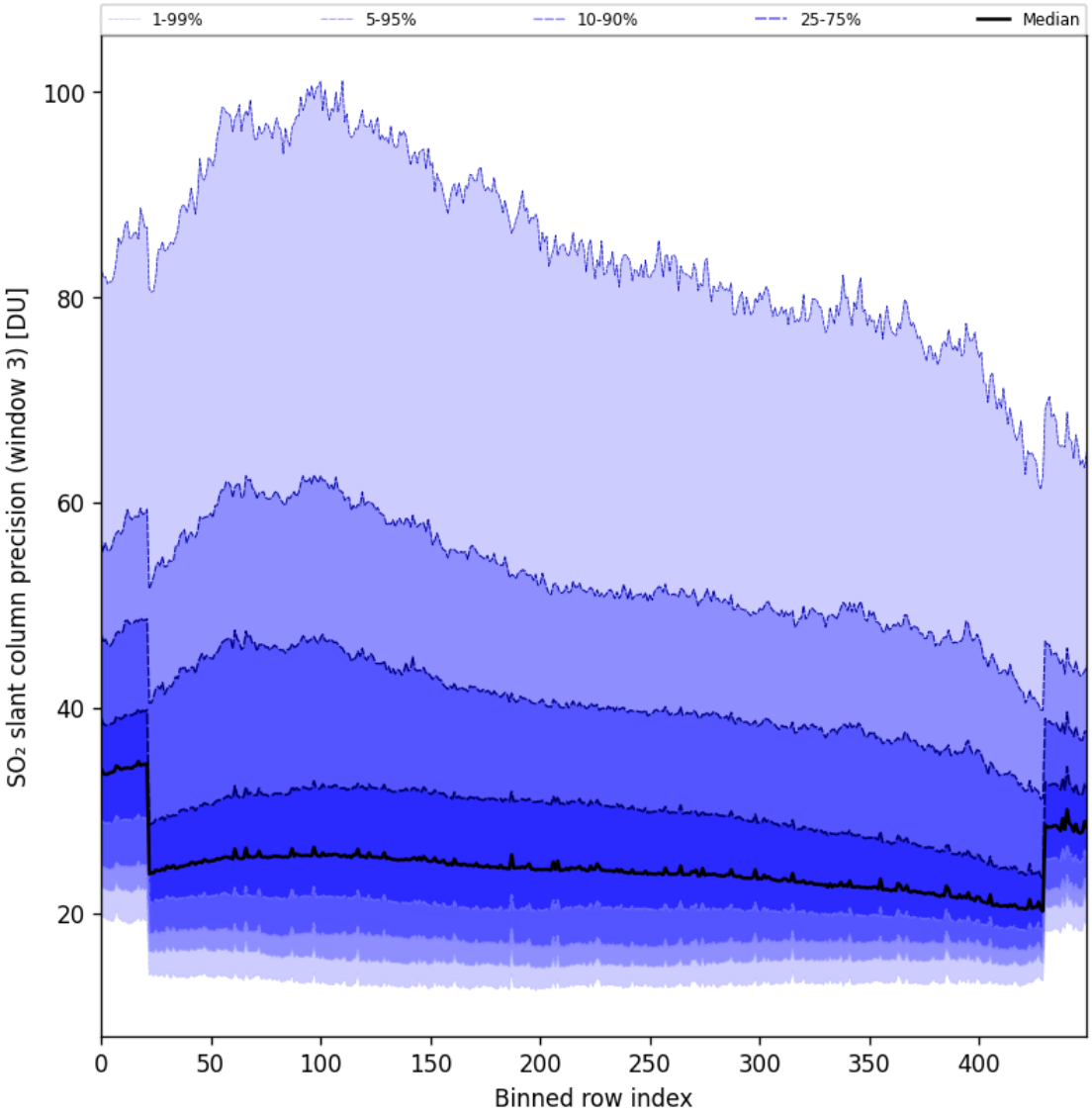


Figure 98: Along track statistics of "SO_2 slant column precision (window 3)" for 2025-05-15 to 2025-05-16

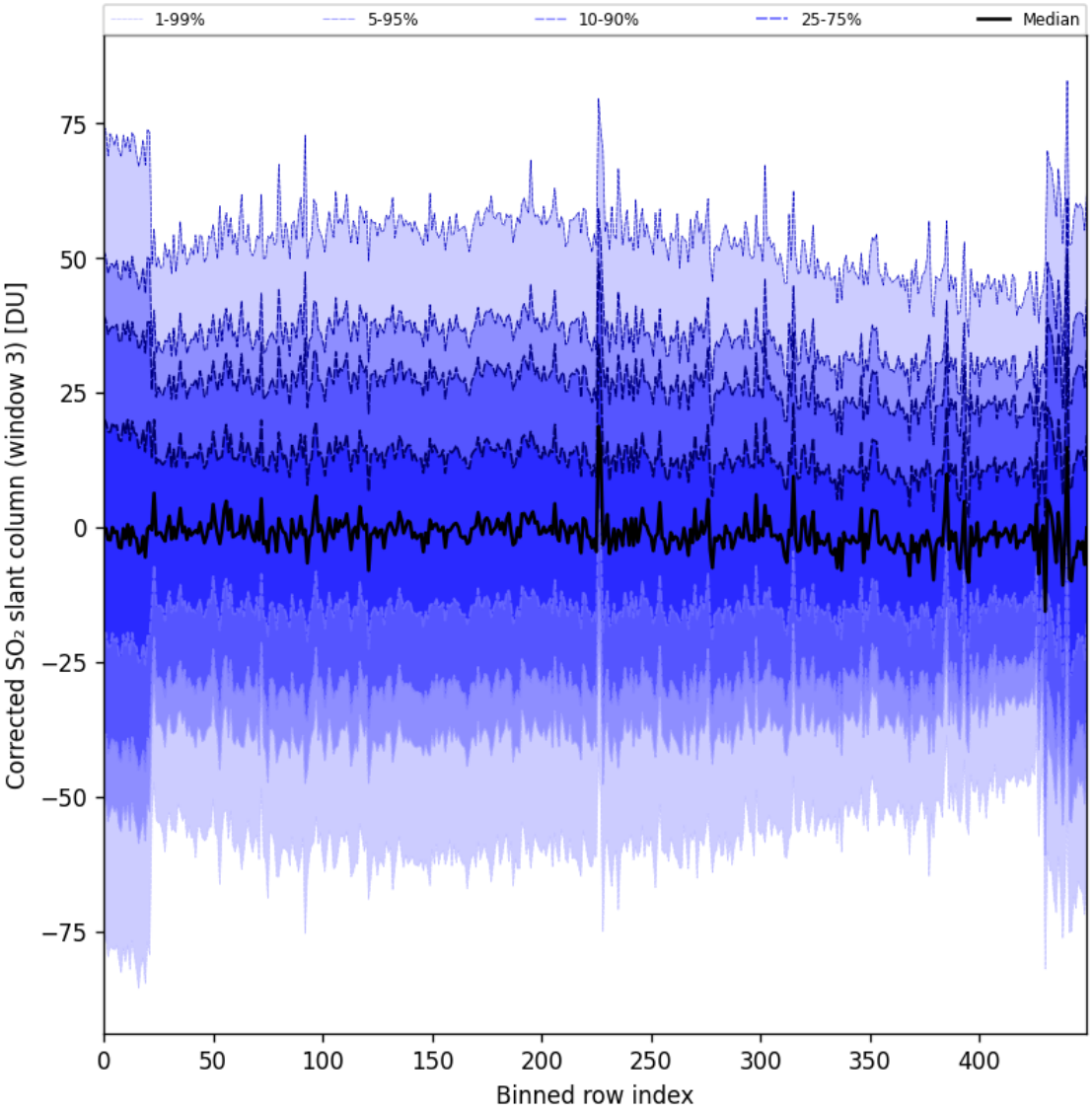


Figure 99: Along track statistics of “Corrected SO_2 slant column (window 3)” for 2025-05-15 to 2025-05-16

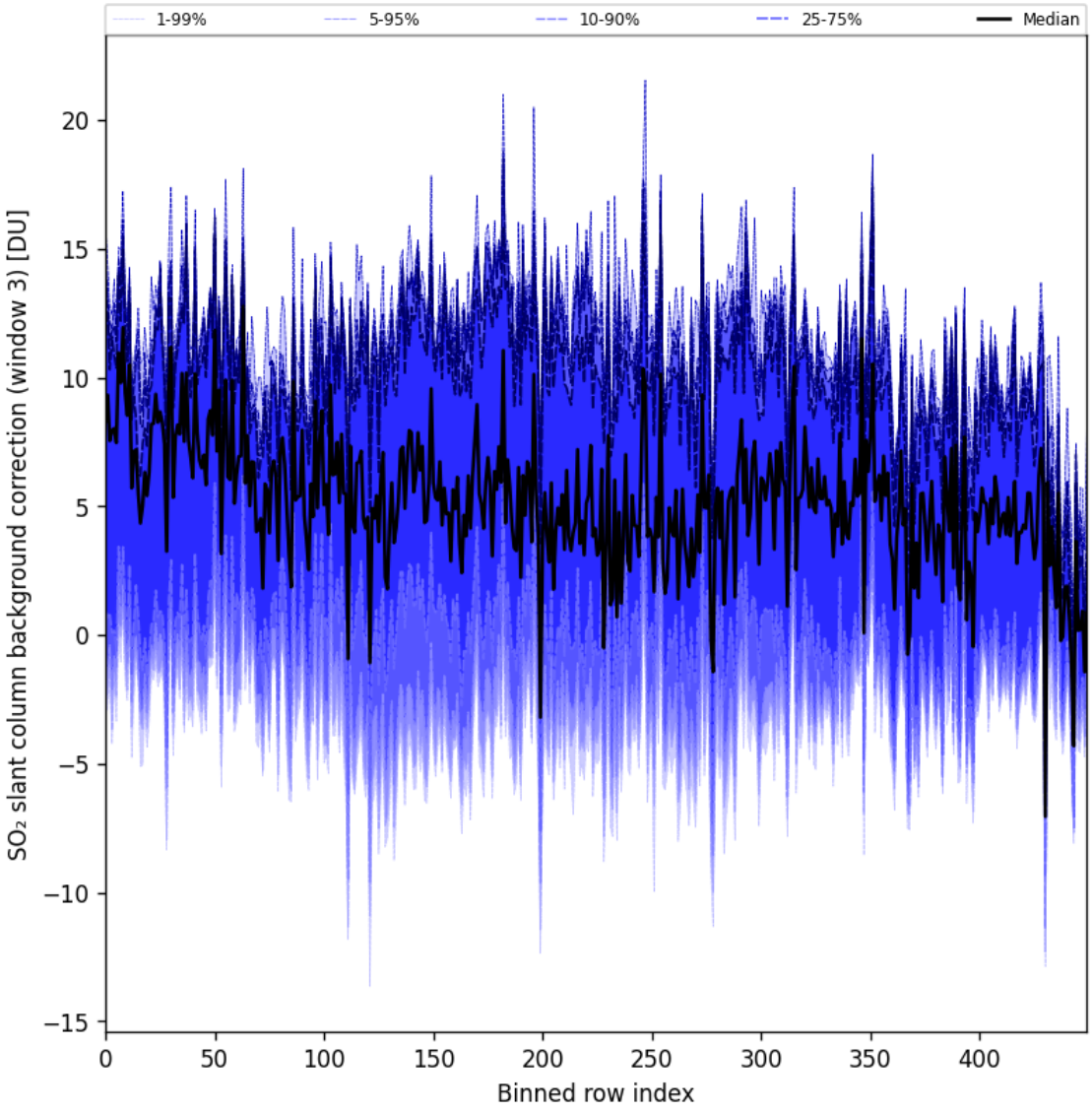


Figure 100: Along track statistics of "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16

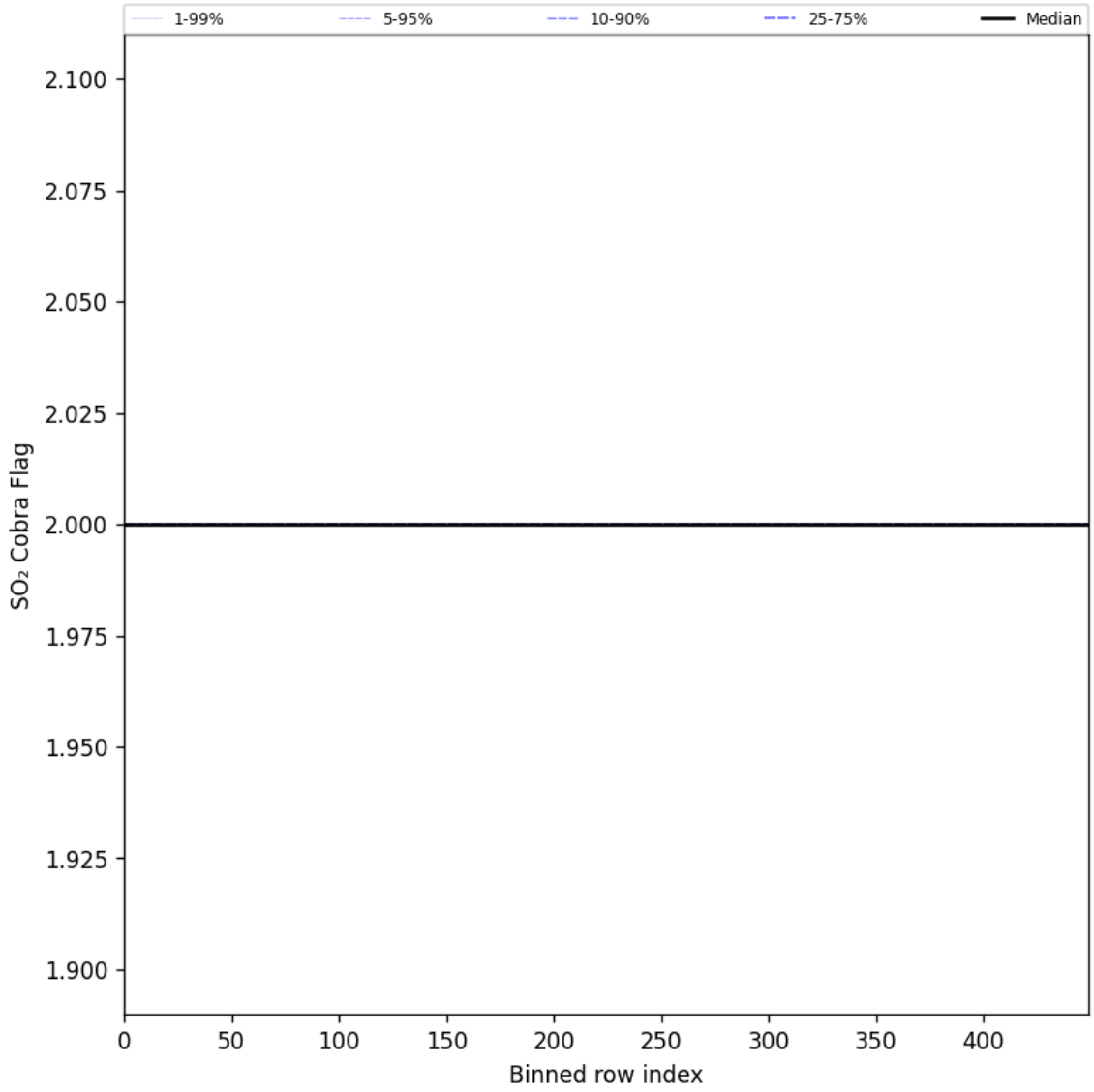


Figure 101: Along track statistics of "SO_2 Cobra Flag" for 2025-05-15 to 2025-05-16

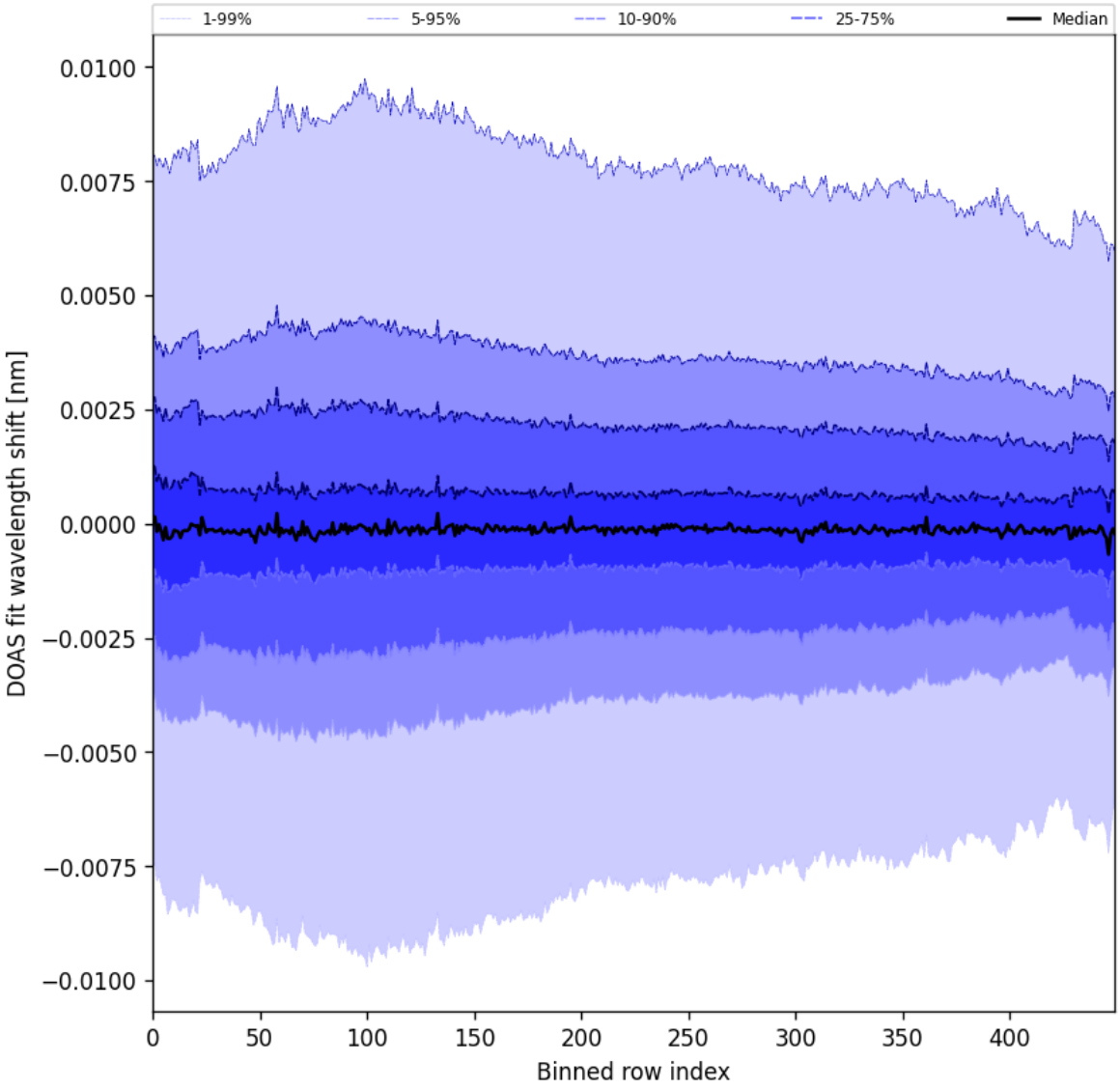


Figure 102: Along track statistics of “DOAS fit wavelength shift” for 2025-05-15 to 2025-05-16

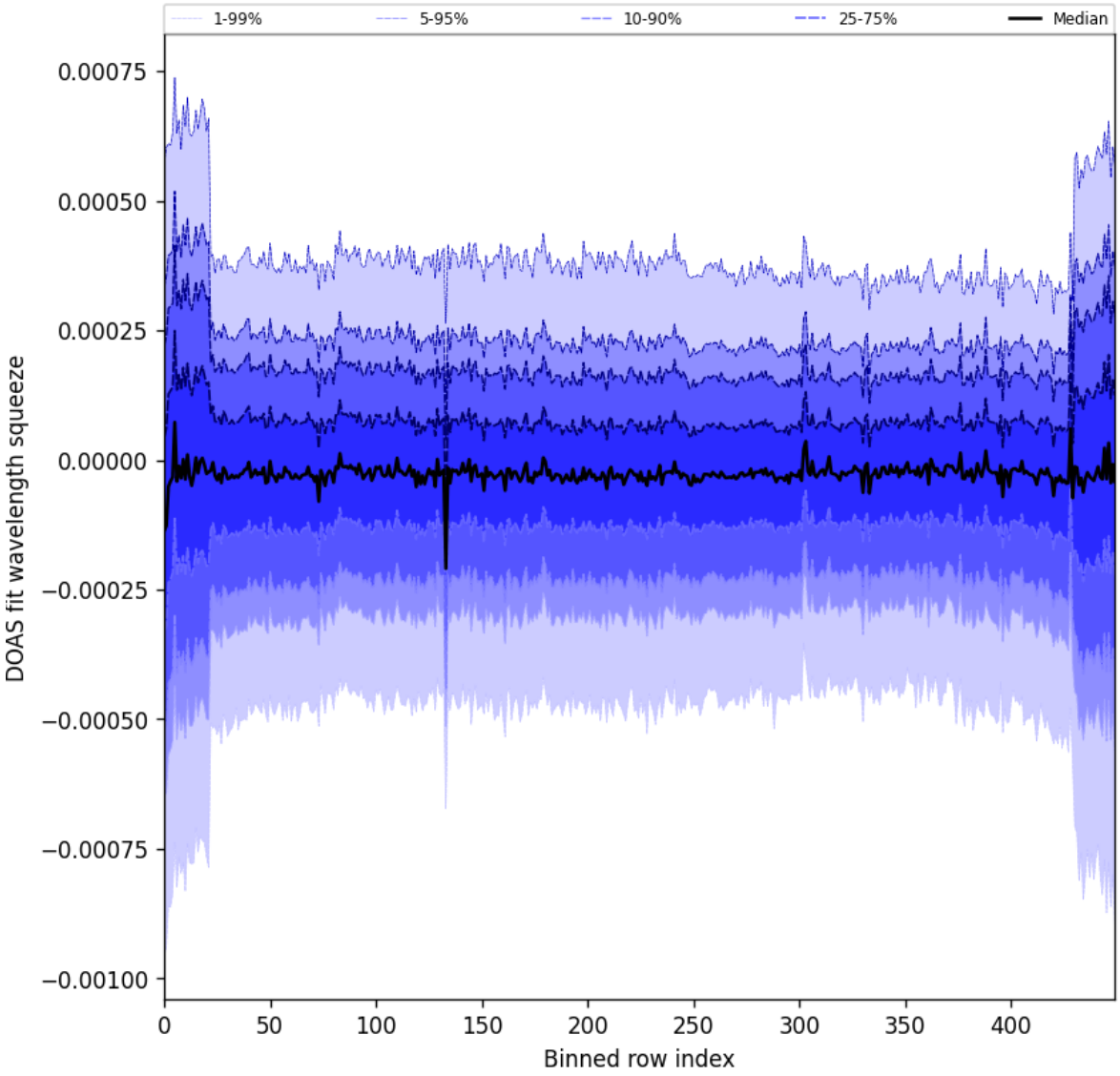


Figure 103: Along track statistics of “DOAS fit wavelength squeeze” for 2025-05-15 to 2025-05-16

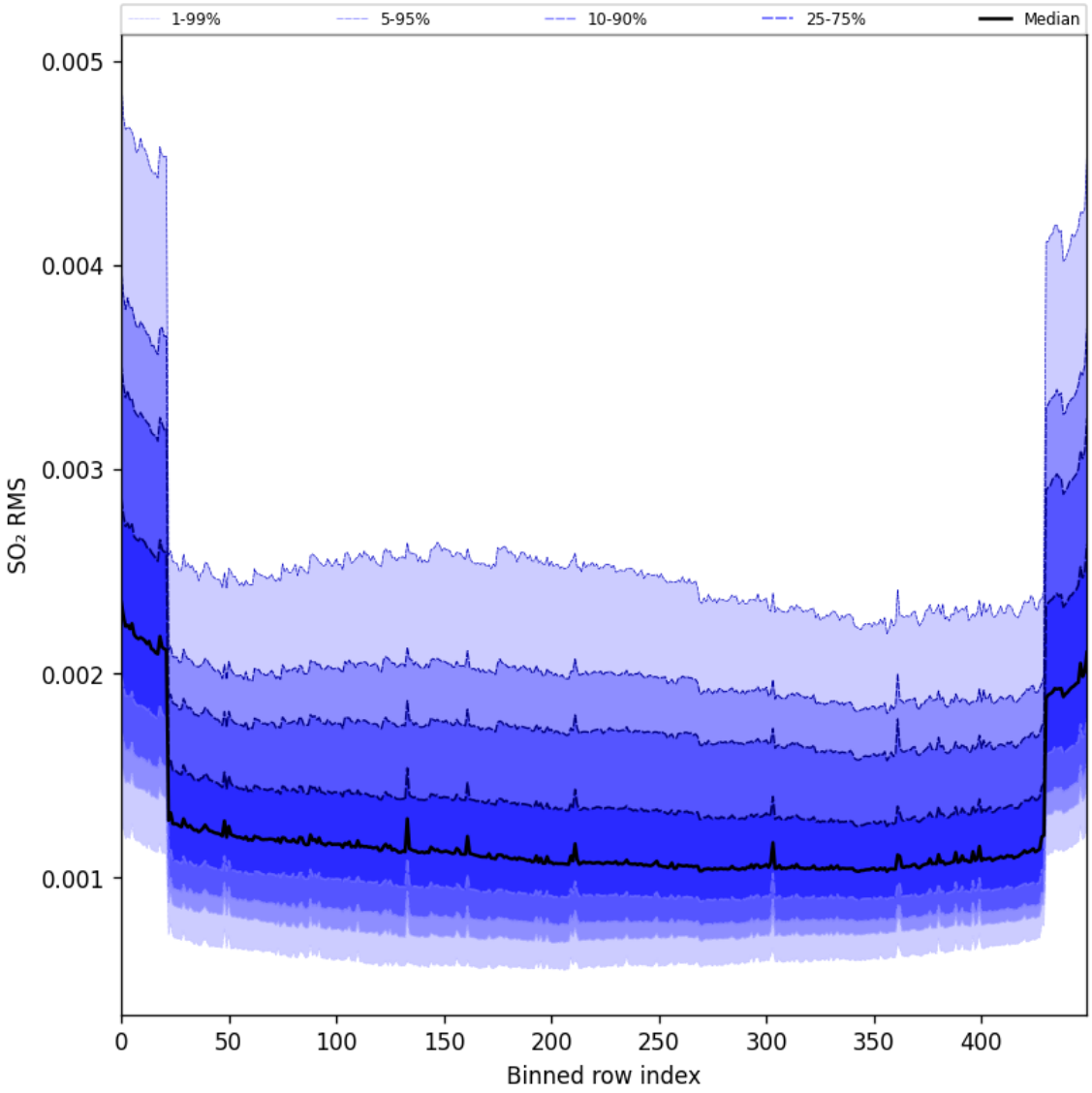


Figure 104: Along track statistics of "SO_2 RMS" for 2025-05-15 to 2025-05-16

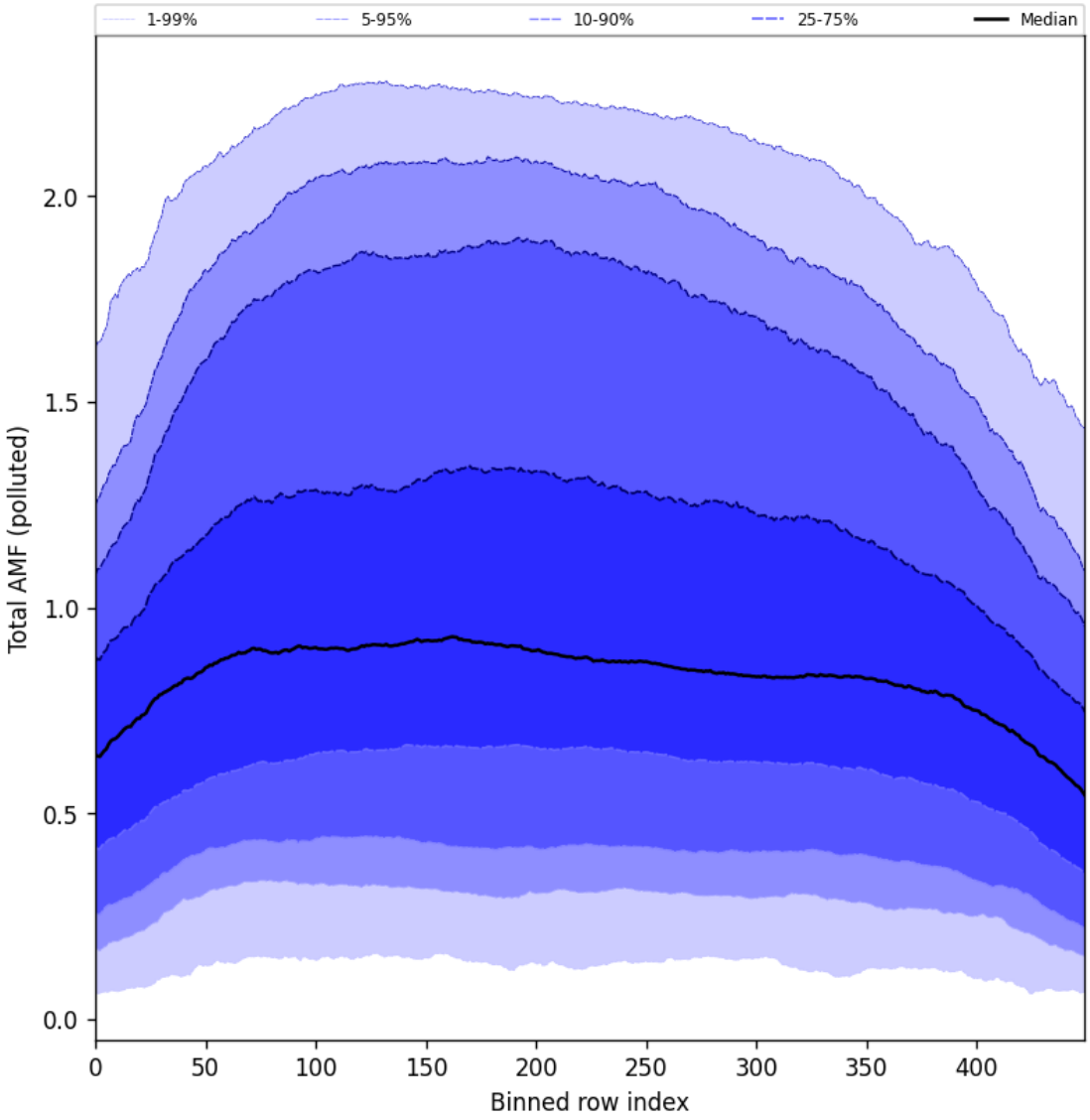


Figure 105: Along track statistics of “Total AMF (polluted)” for 2025-05-15 to 2025-05-16

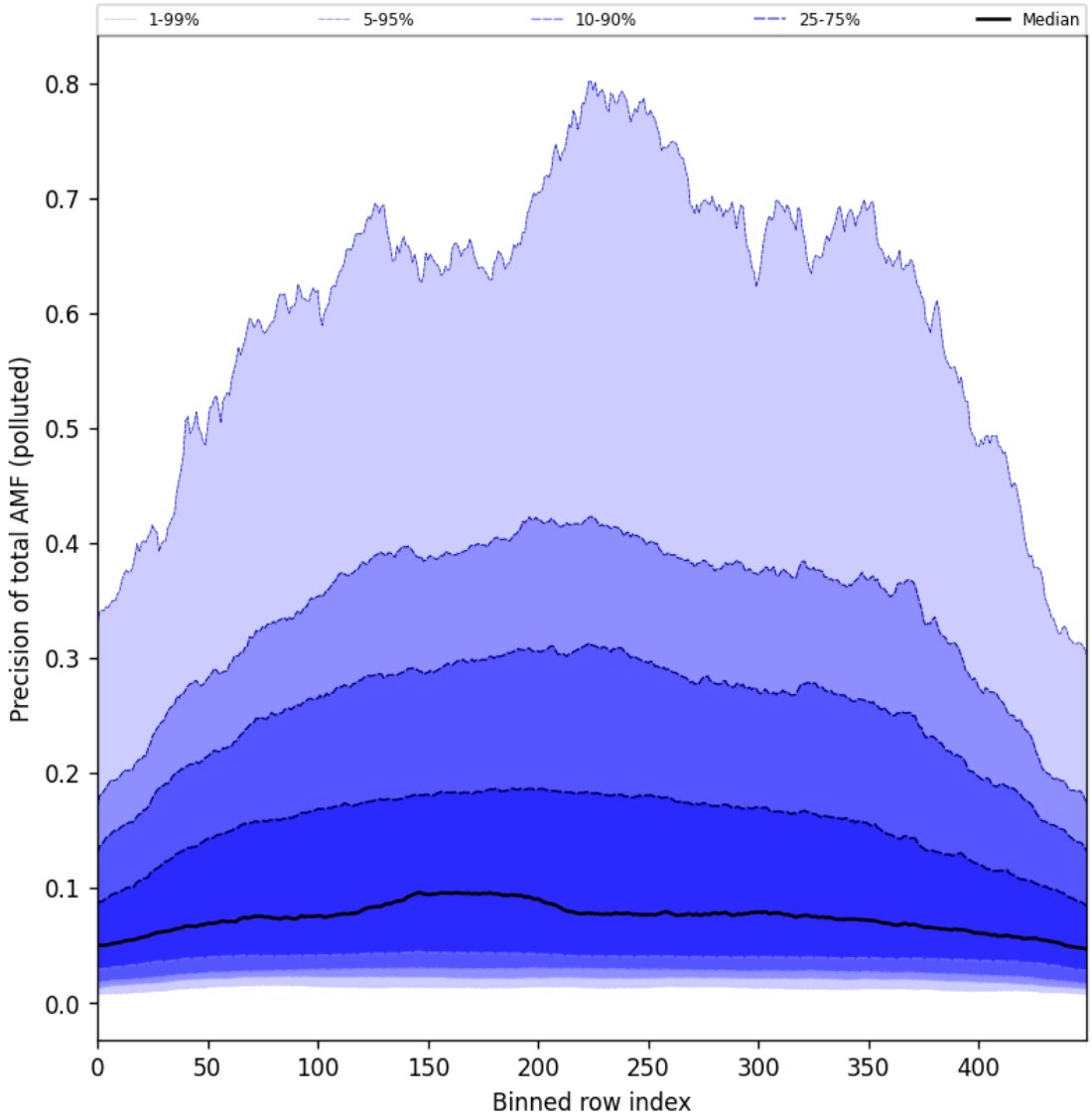


Figure 106: Along track statistics of “Precision of total AMF (polluted)” for 2025-05-15 to 2025-05-16

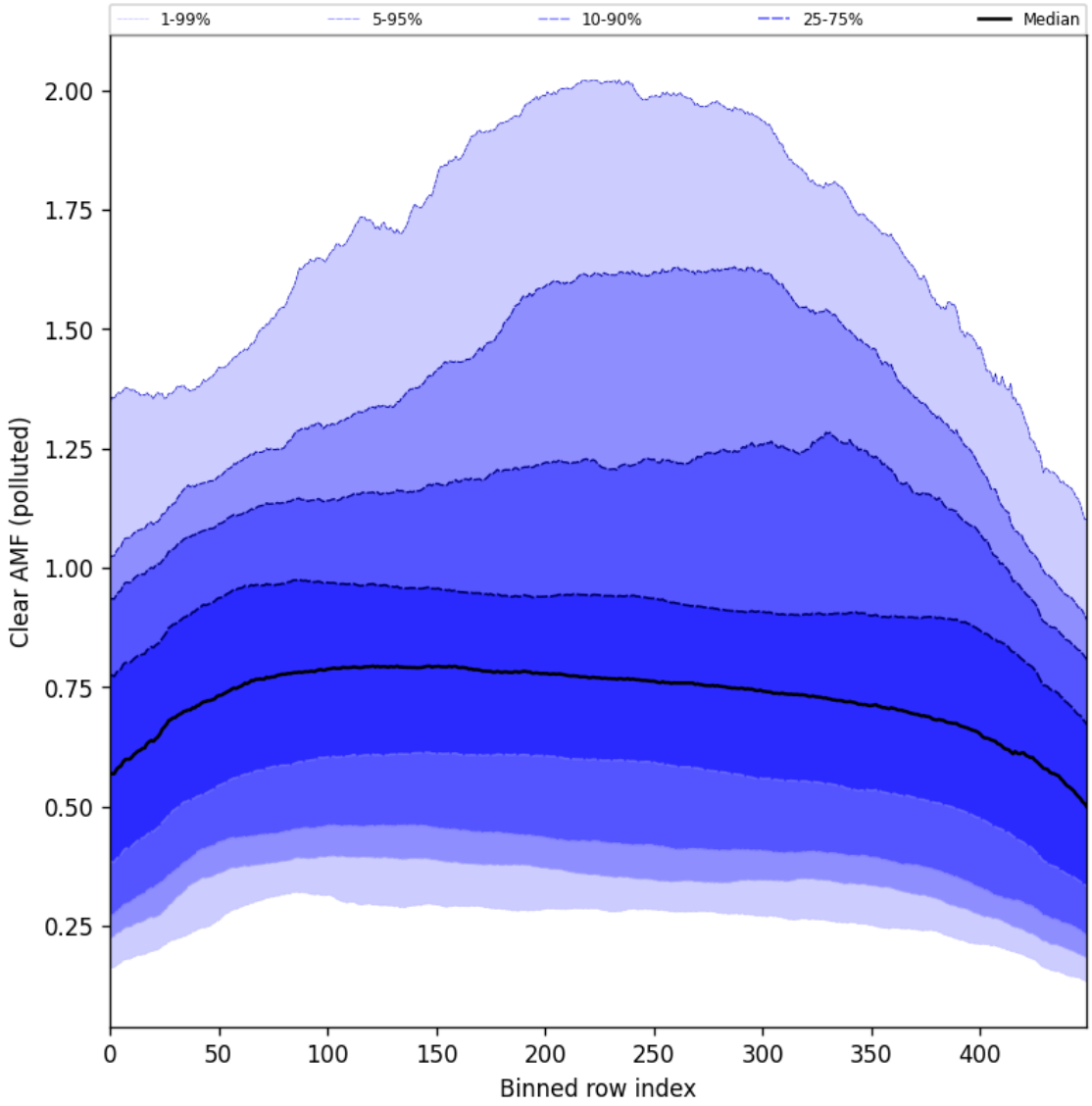


Figure 107: Along track statistics of “Clear AMF (polluted)” for 2025-05-15 to 2025-05-16

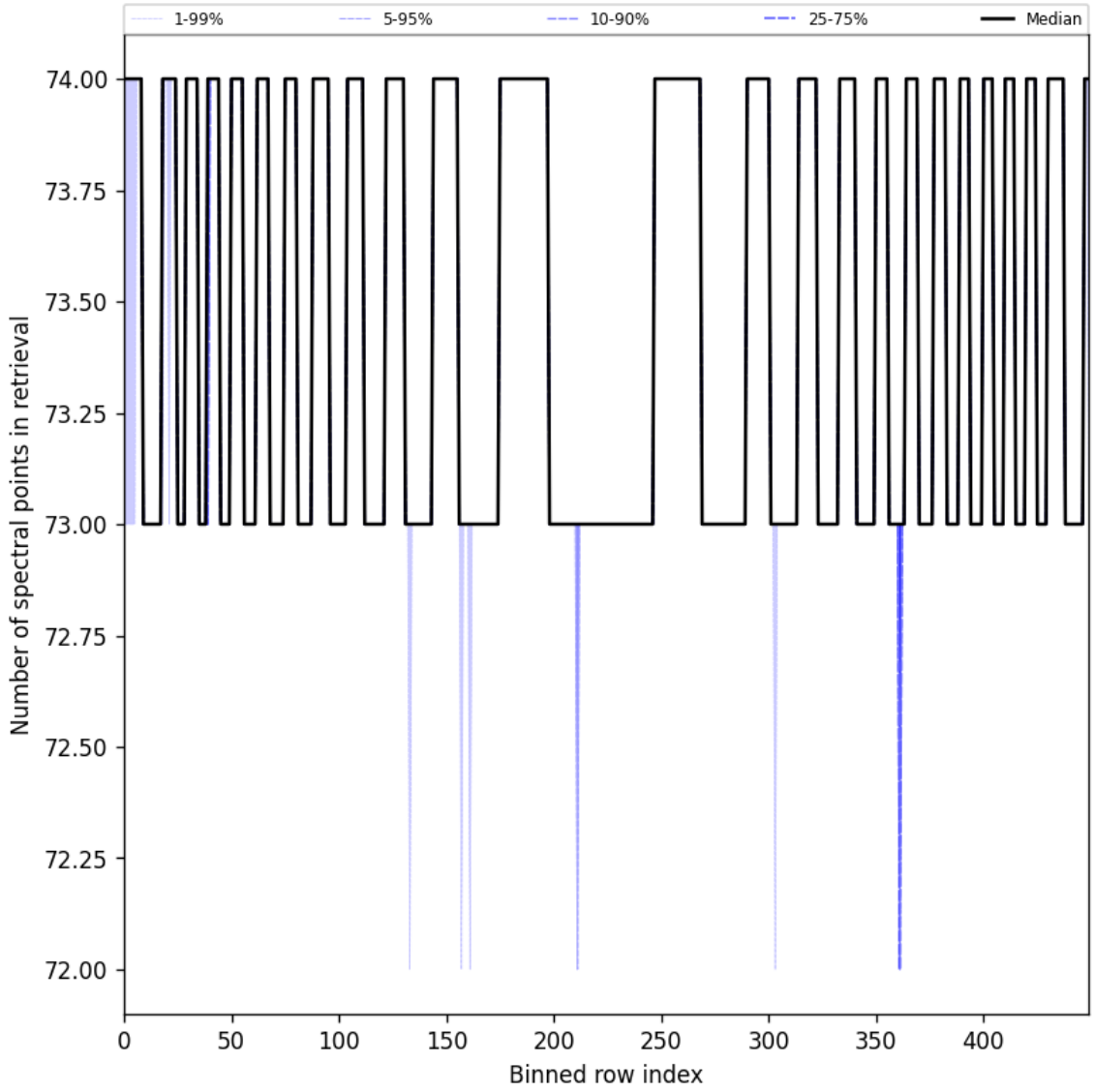


Figure 108: Along track statistics of “Number of spectral points in retrieval” for 2025-05-15 to 2025-05-16

10 Coincidence density

To investigate the relation between parameters scatter density plots are produced. These include some 'hidden' parameters, latitude and the solar- and viewing geometries, in addition to all configured parameters. All combinations of pairs of parameters are included *once*, in one direction alone.

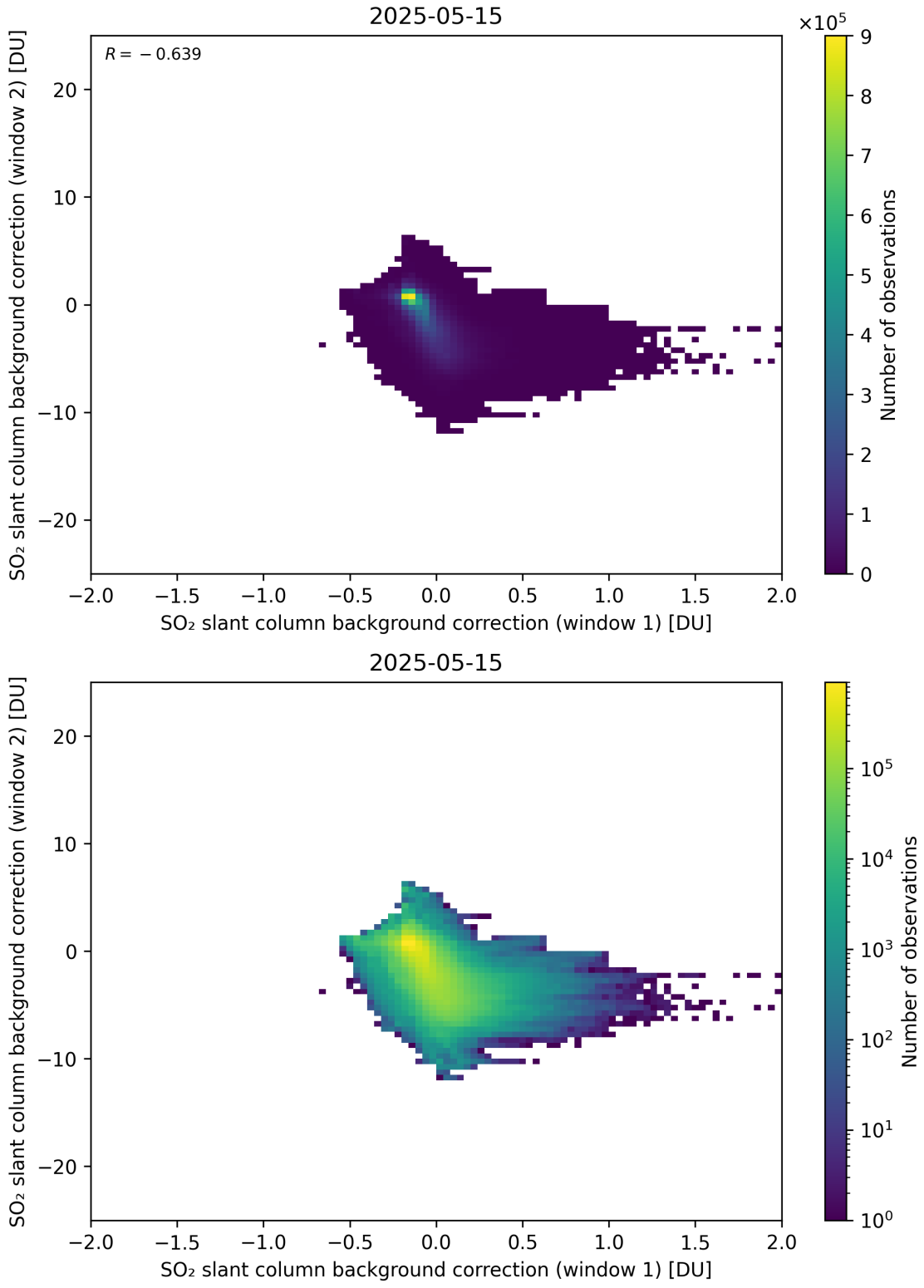


Figure 109: Scatter density plot of "SO_2 slant column background correction (window 1)" against "SO_2 slant column background correction (window 2)" for 2025-05-15 to 2025-05-16.

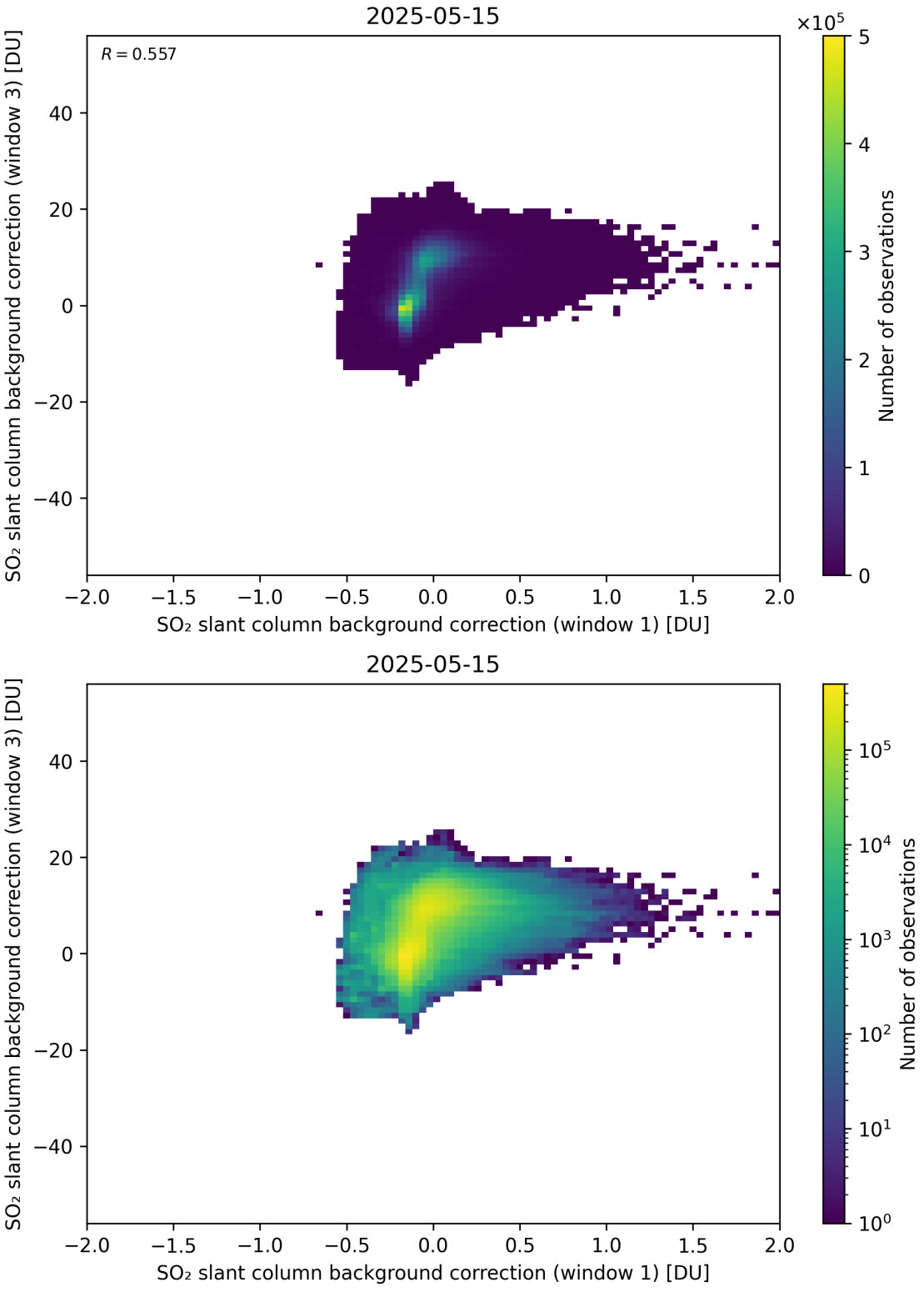


Figure 110: Scatter density plot of "SO_2 slant column background correction (window 1)" against "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16.

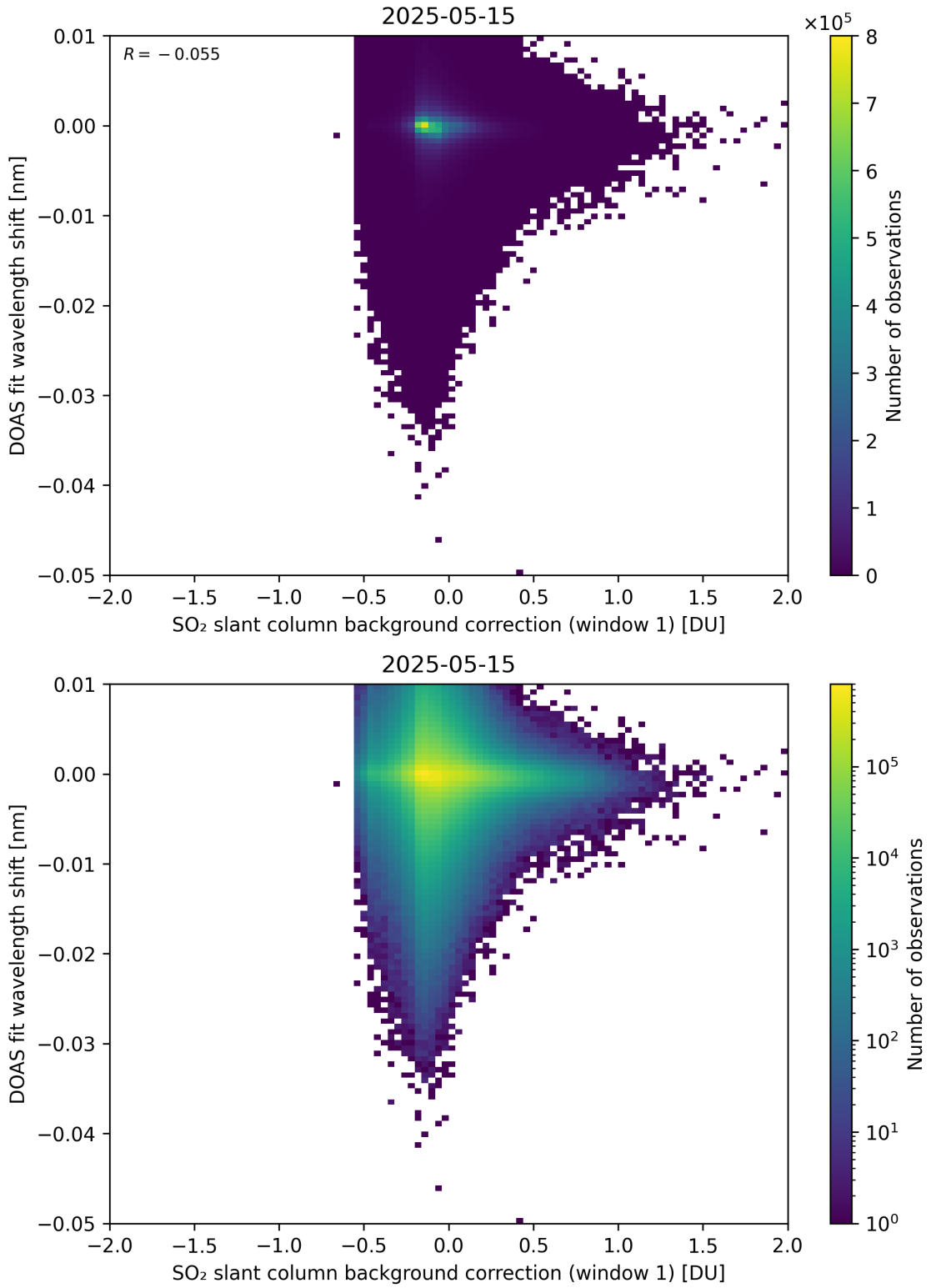


Figure 111: Scatter density plot of "SO_2 slant column background correction (window 1)" against "DOAS fit wavelength shift" for 2025-05-15 to 2025-05-16.

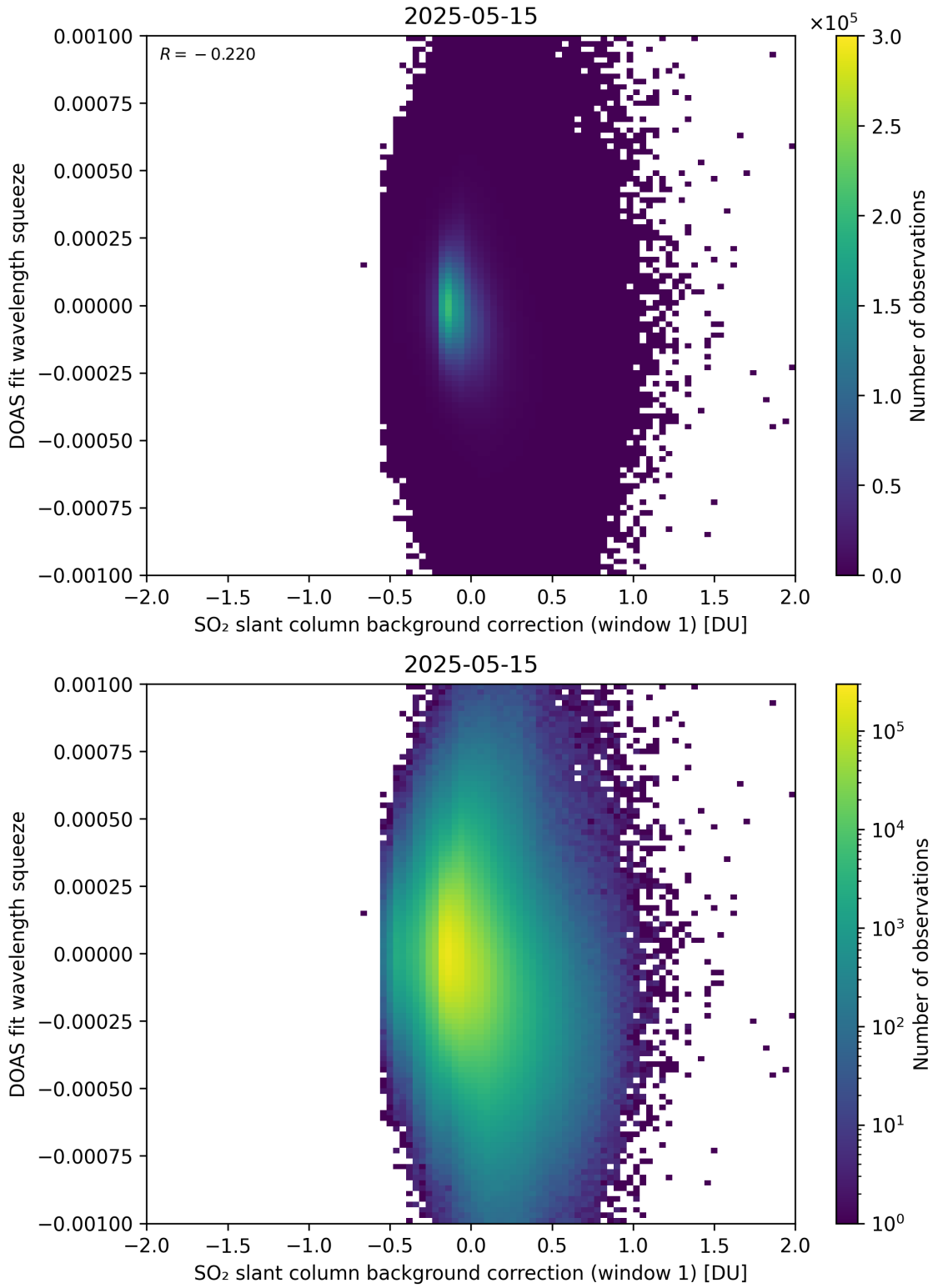


Figure 112: Scatter density plot of "SO_2 slant column background correction (window 1)" against "DOAS fit wavelength squeeze" for 2025-05-15 to 2025-05-16.

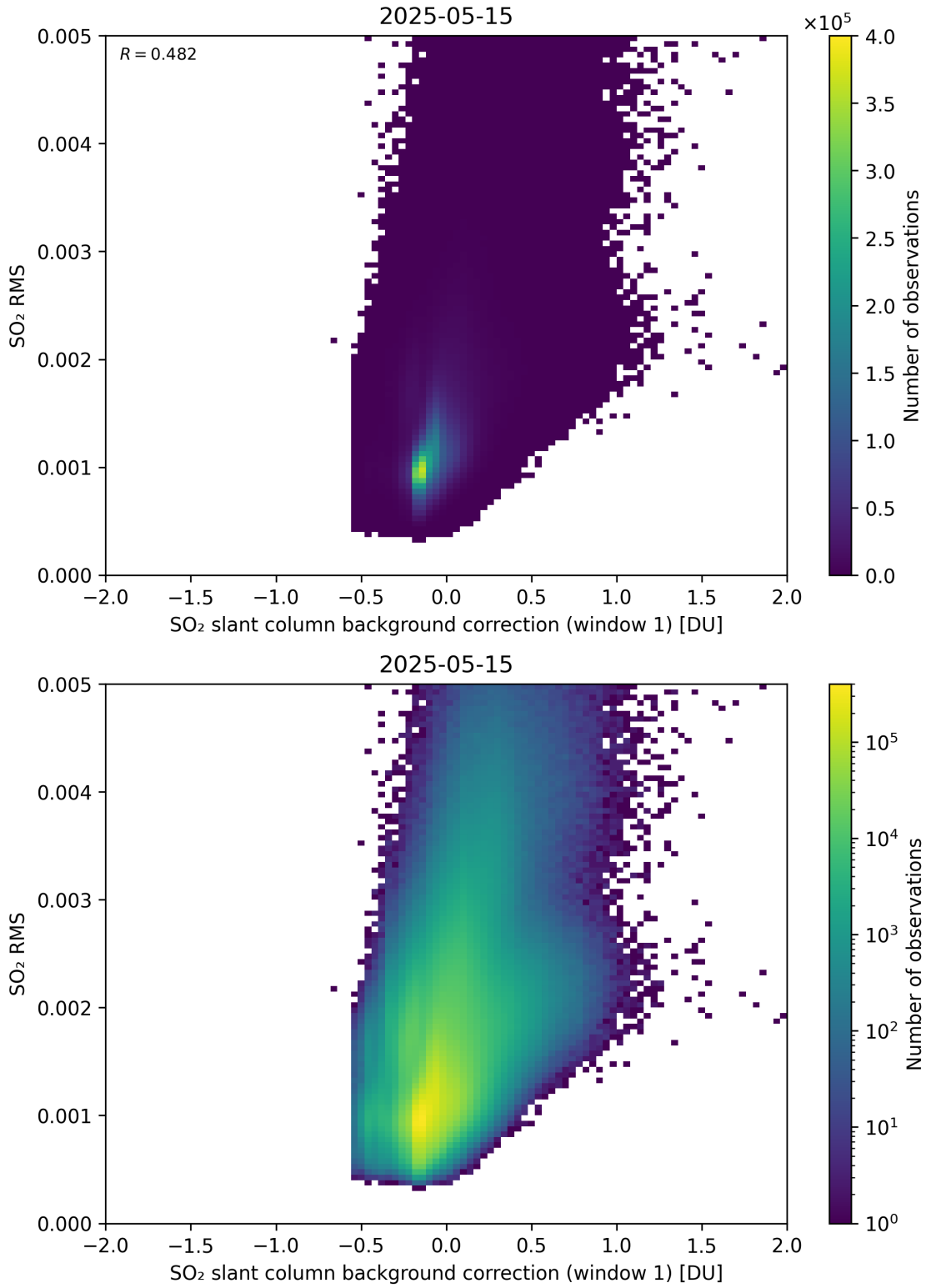


Figure 113: Scatter density plot of "SO_2 slant column background correction (window 1)" against "SO_2 RMS" for 2025-05-15 to 2025-05-16.

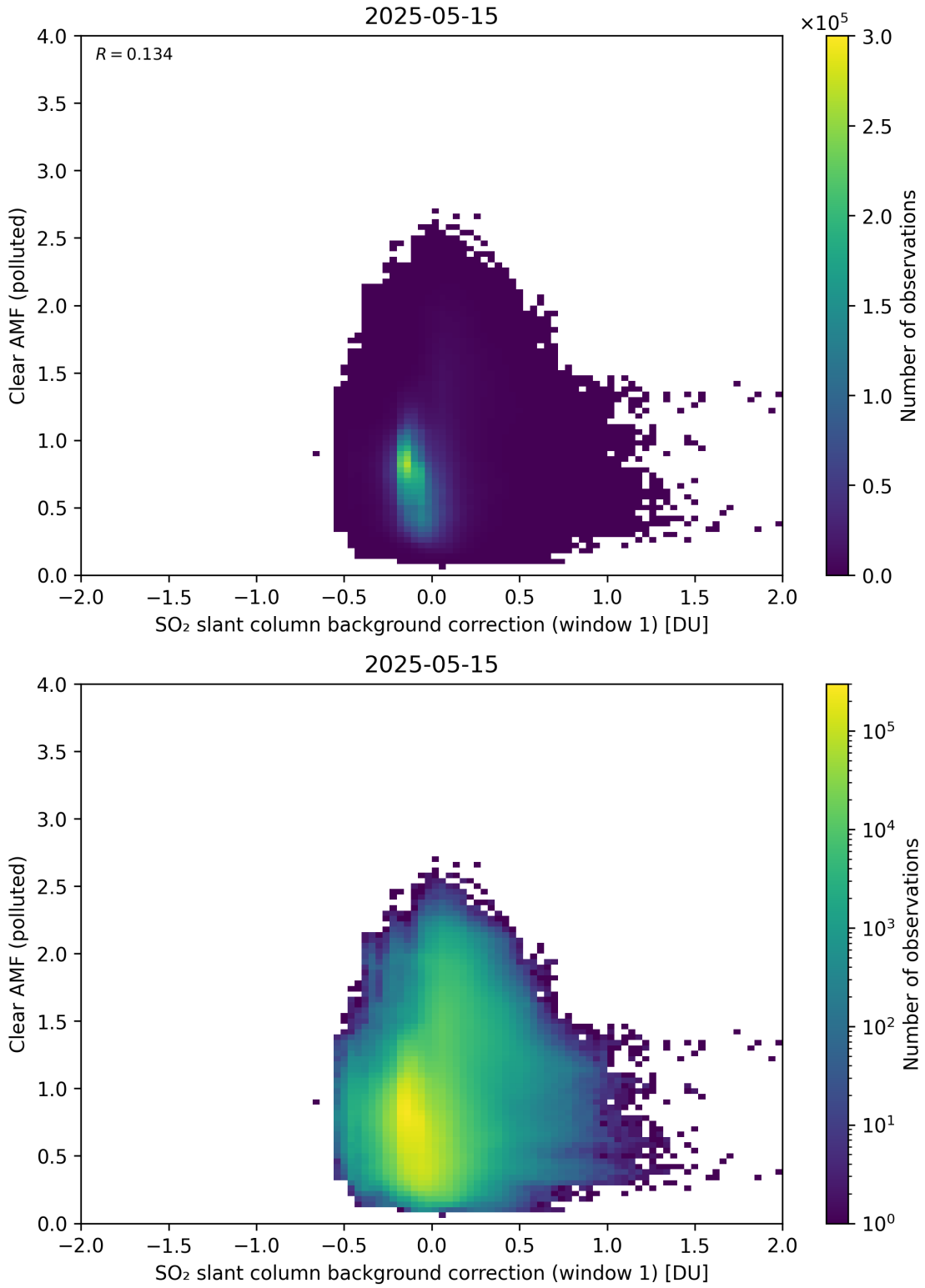


Figure 114: Scatter density plot of "SO_2 slant column background correction (window 1)" against "Clear AMF (polluted)" for 2025-05-15 to 2025-05-16.

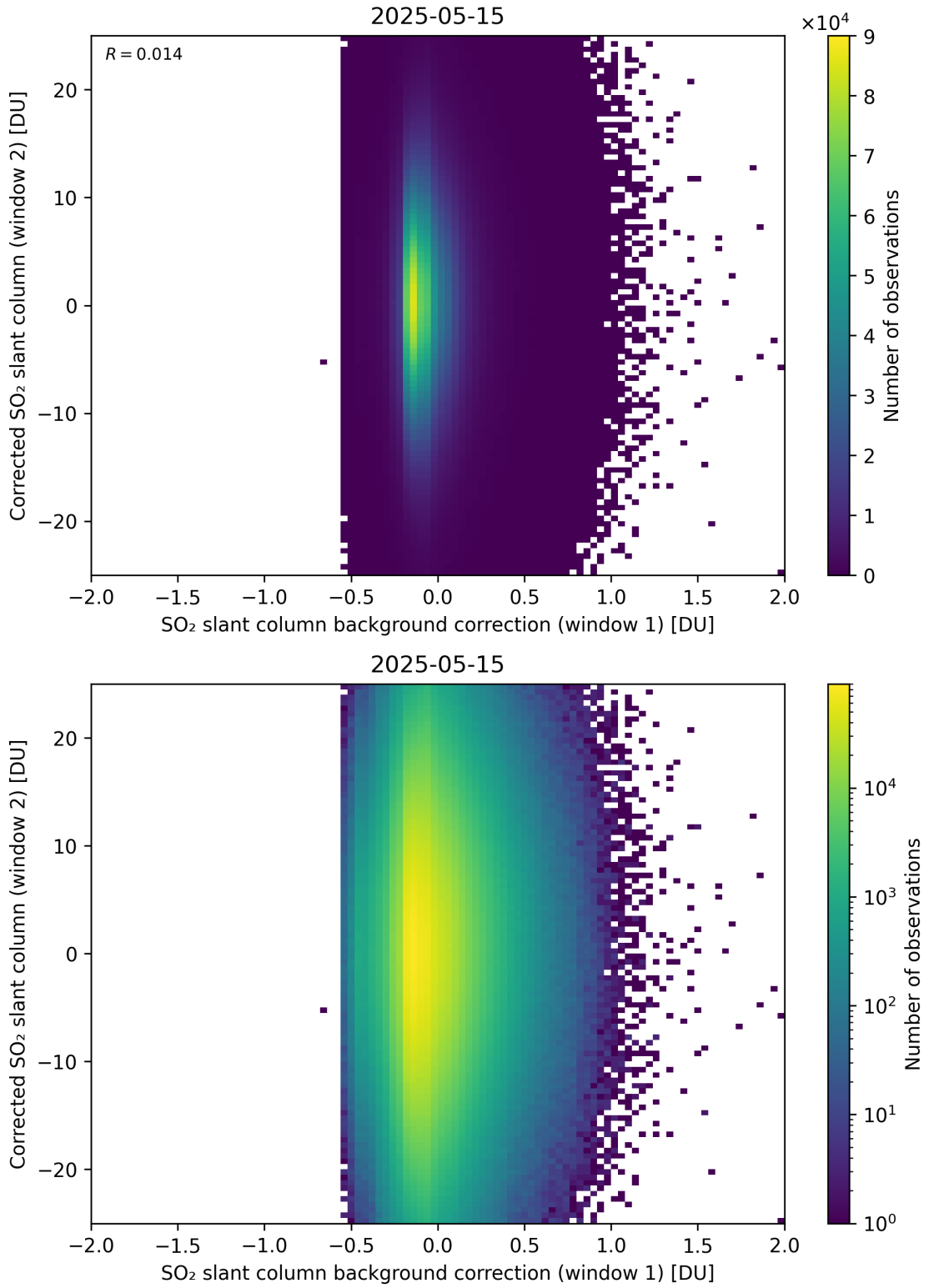


Figure 115: Scatter density plot of "SO_2 slant column background correction (window 1)" against "Corrected SO_2 slant column (window 2)" for 2025-05-15 to 2025-05-16.

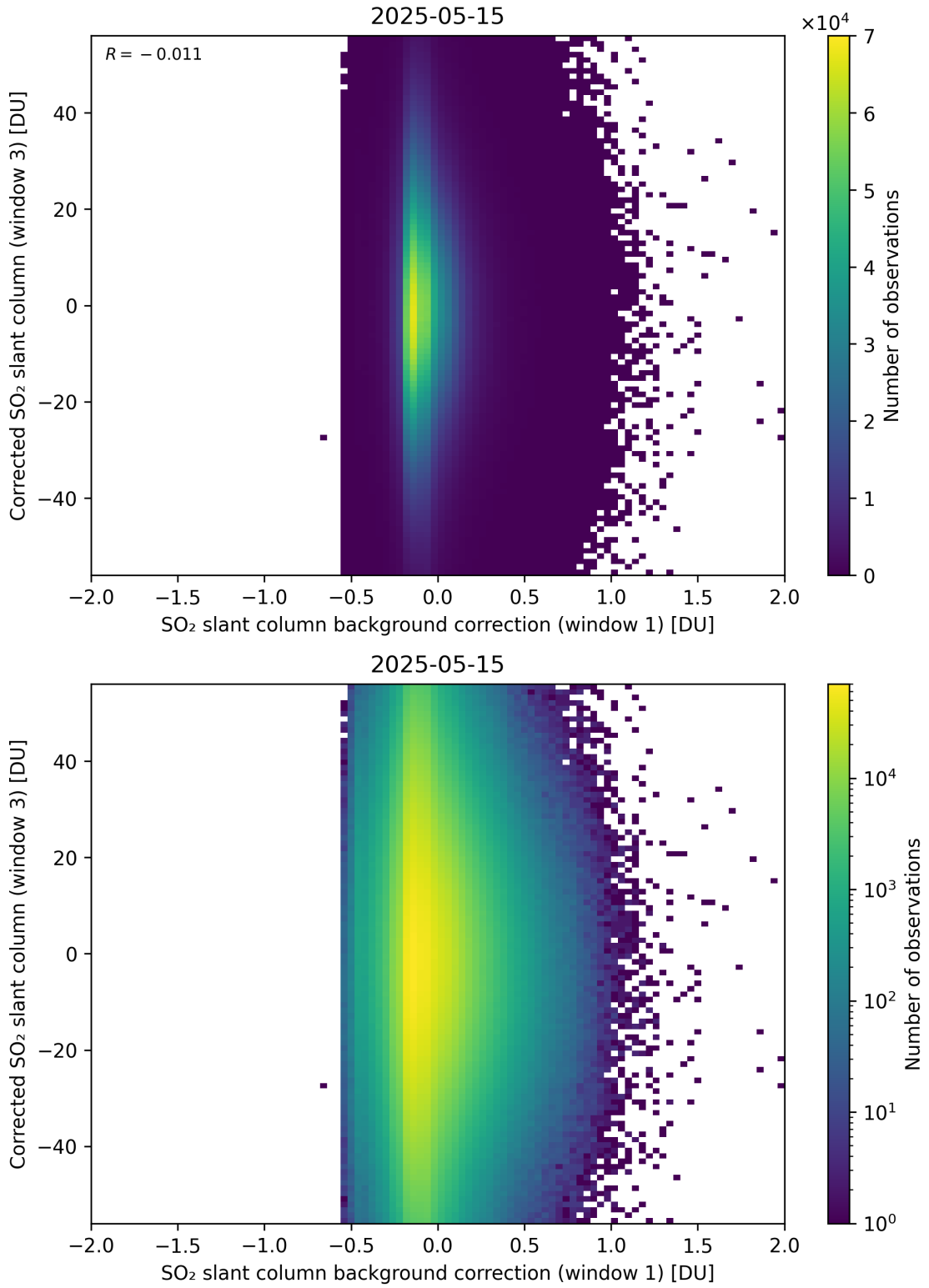


Figure 116: Scatter density plot of "SO_2 slant column background correction (window 1)" against "Corrected SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

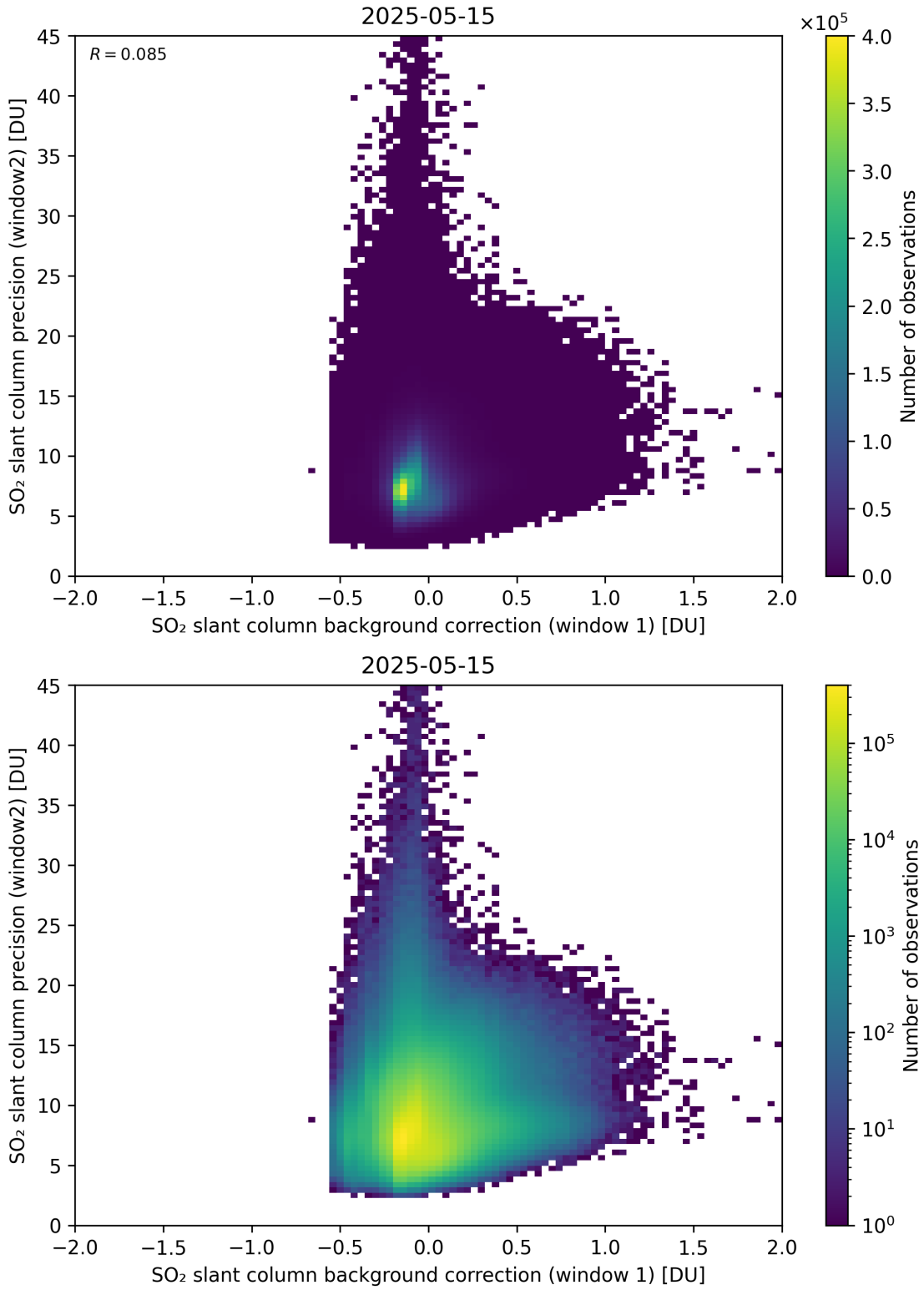


Figure 117: Scatter density plot of "SO_2 slant column background correction (window 1)" against "SO_2 slant column precision (window2)" for 2025-05-15 to 2025-05-16.

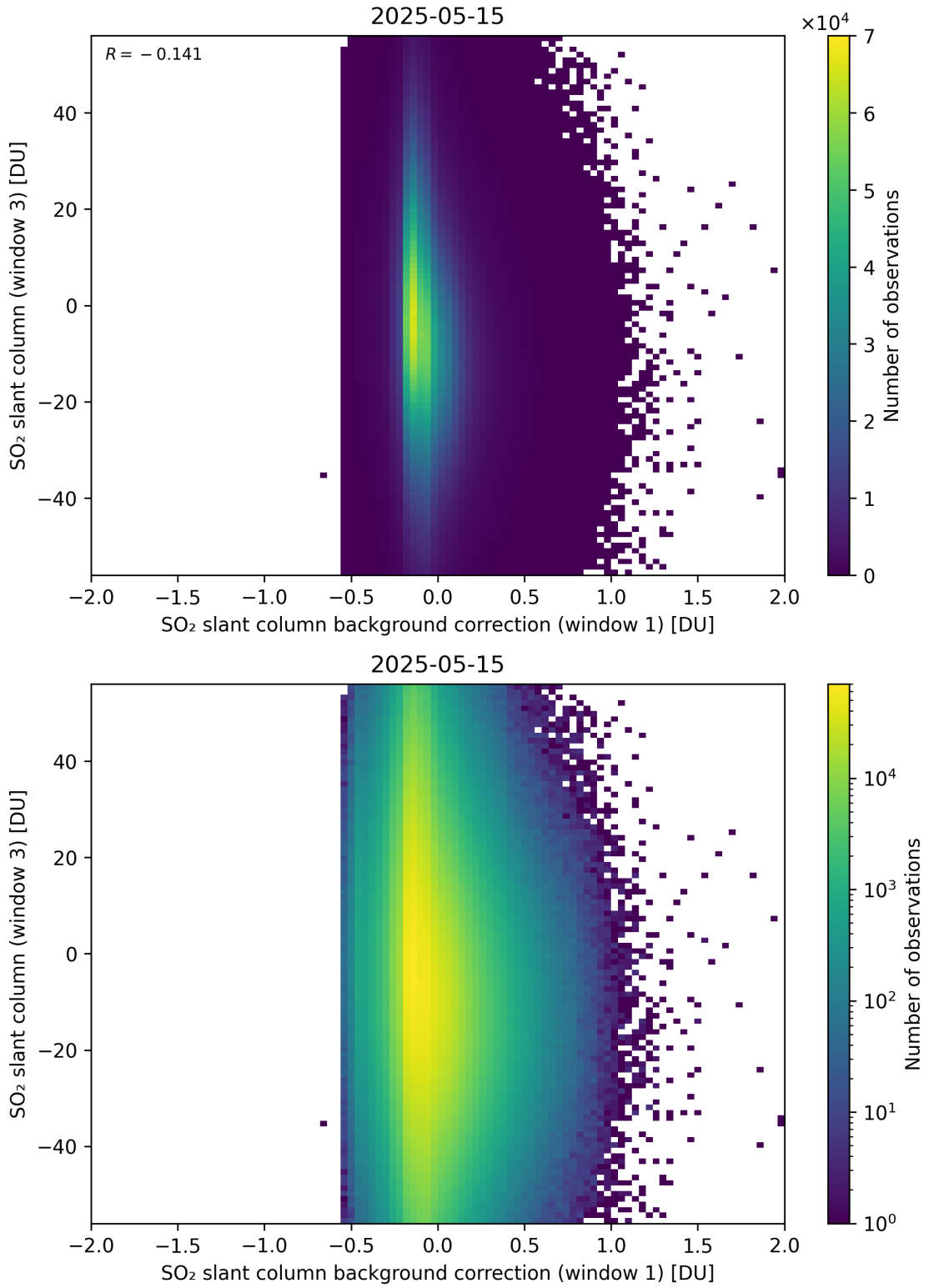


Figure 118: Scatter density plot of "SO_2 slant column background correction (window 1)" against "SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

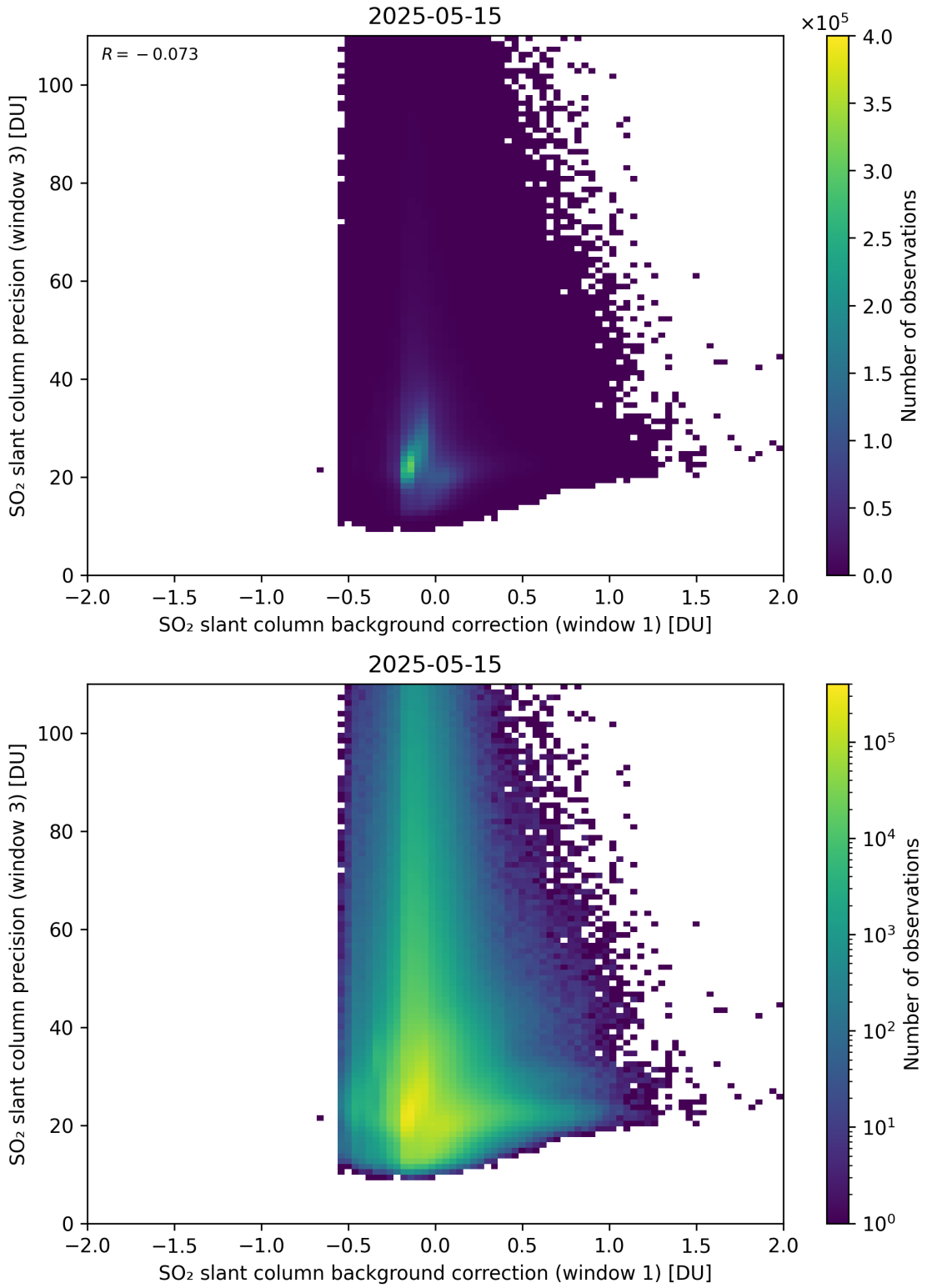


Figure 119: Scatter density plot of "SO_2 slant column background correction (window 1)" against "SO_2 slant column precision (window 3)" for 2025-05-15 to 2025-05-16.

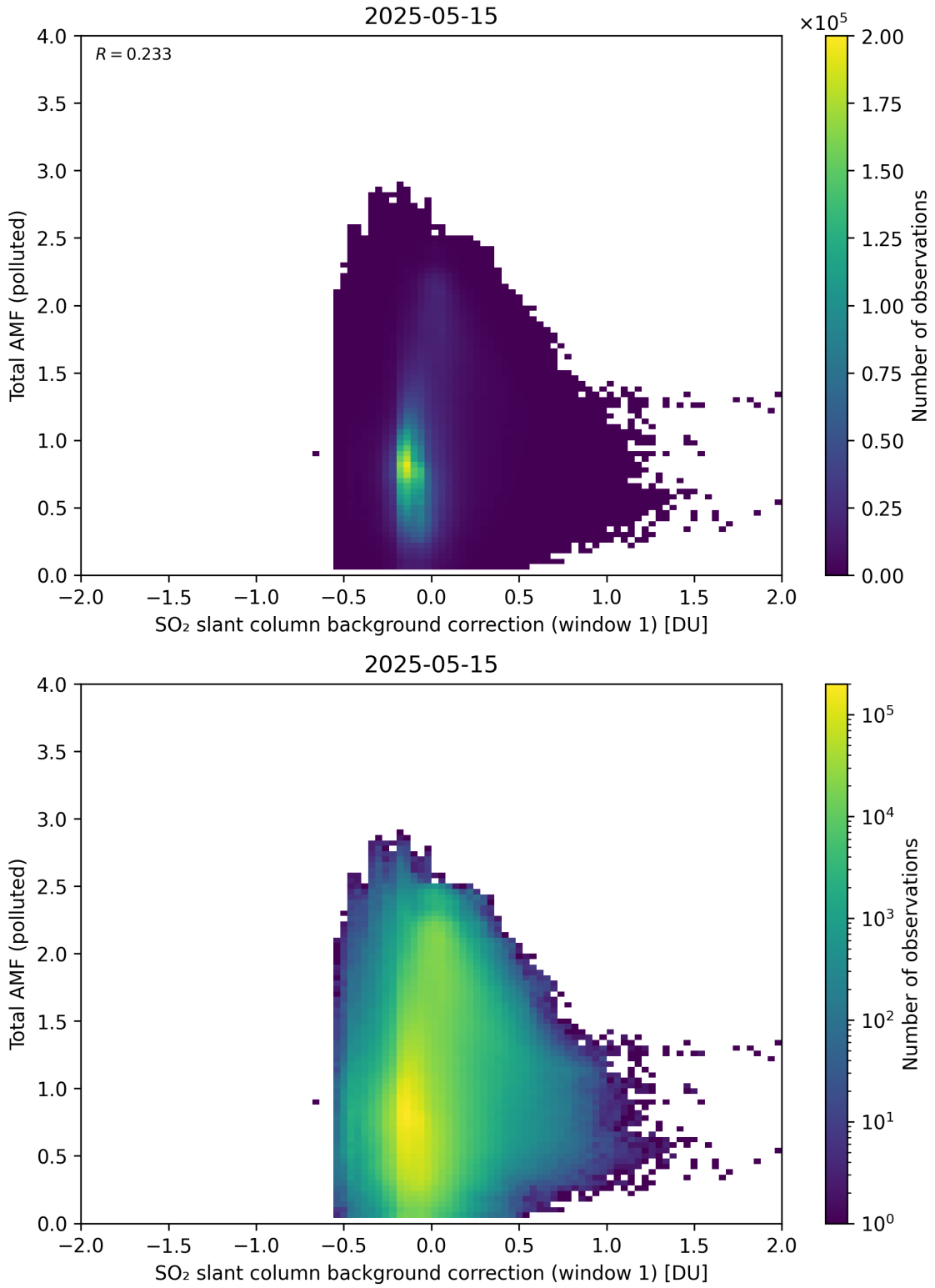


Figure 120: Scatter density plot of "SO_2 slant column background correction (window 1)" against "Total AMF (polluted)" for 2025-05-15 to 2025-05-16.

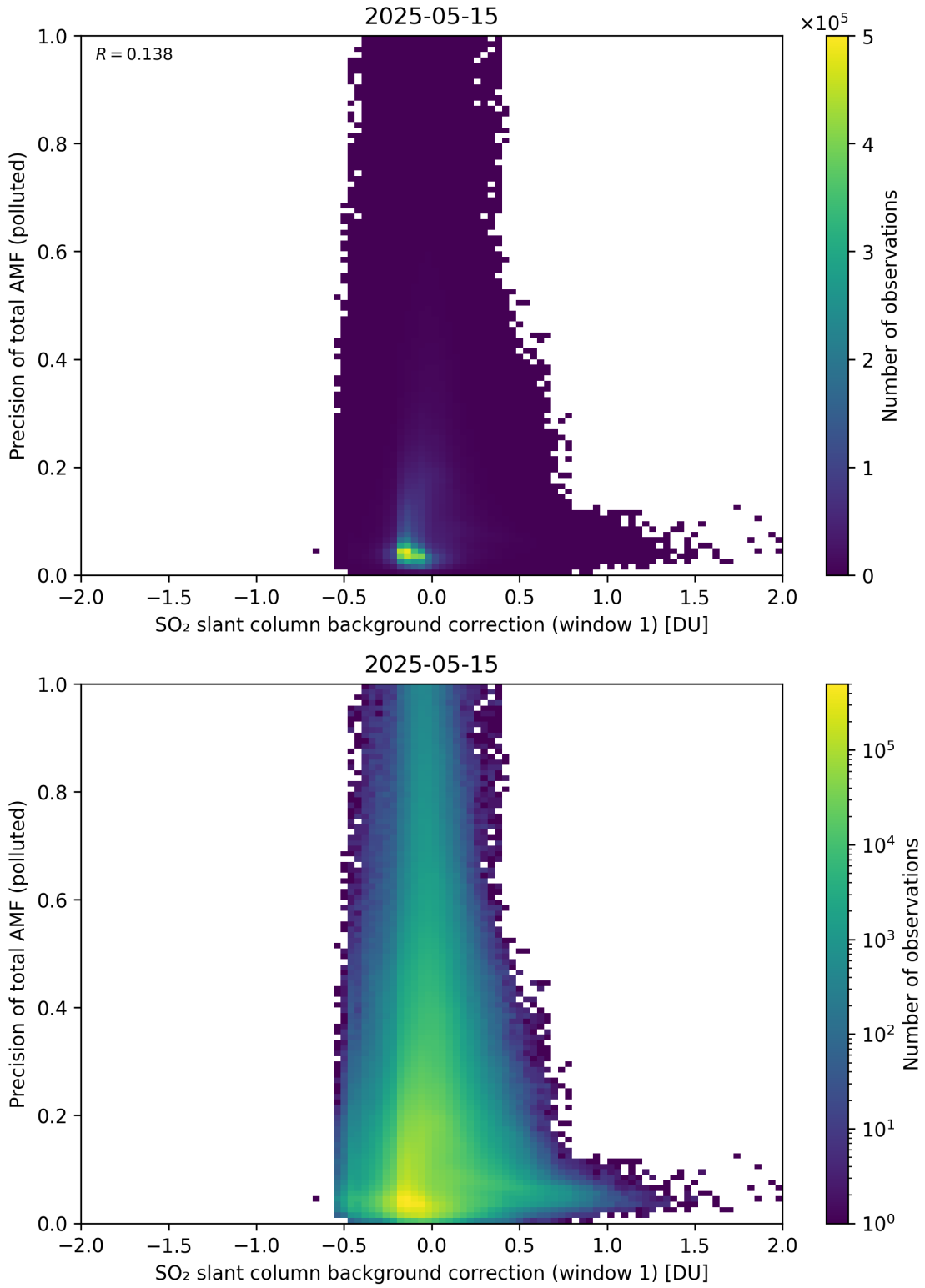


Figure 121: Scatter density plot of "SO_2 slant column background correction (window 1)" against "Precision of total AMF (polluted)" for 2025-05-15 to 2025-05-16.

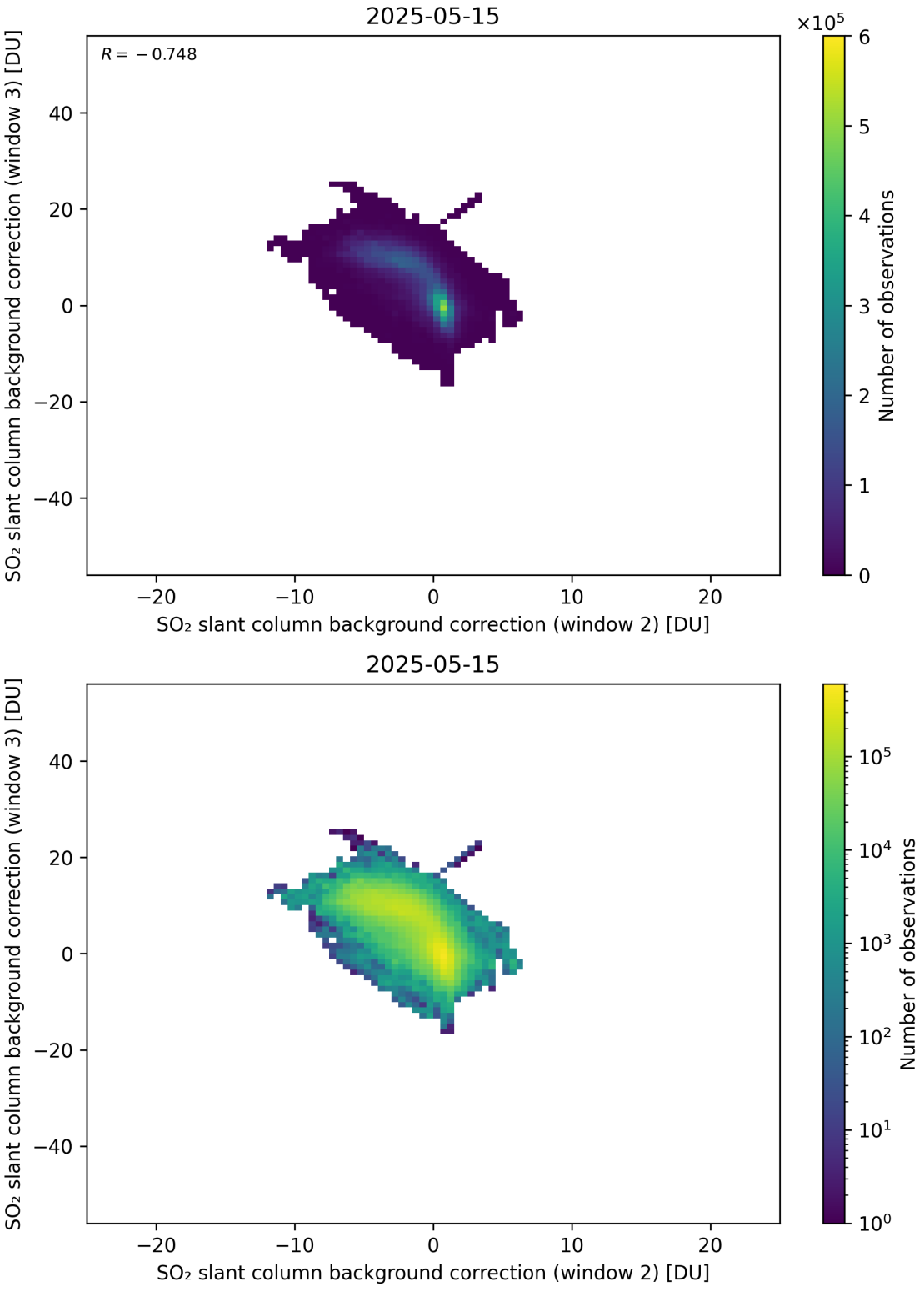


Figure 122: Scatter density plot of "SO_2 slant column background correction (window 2)" against "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16.

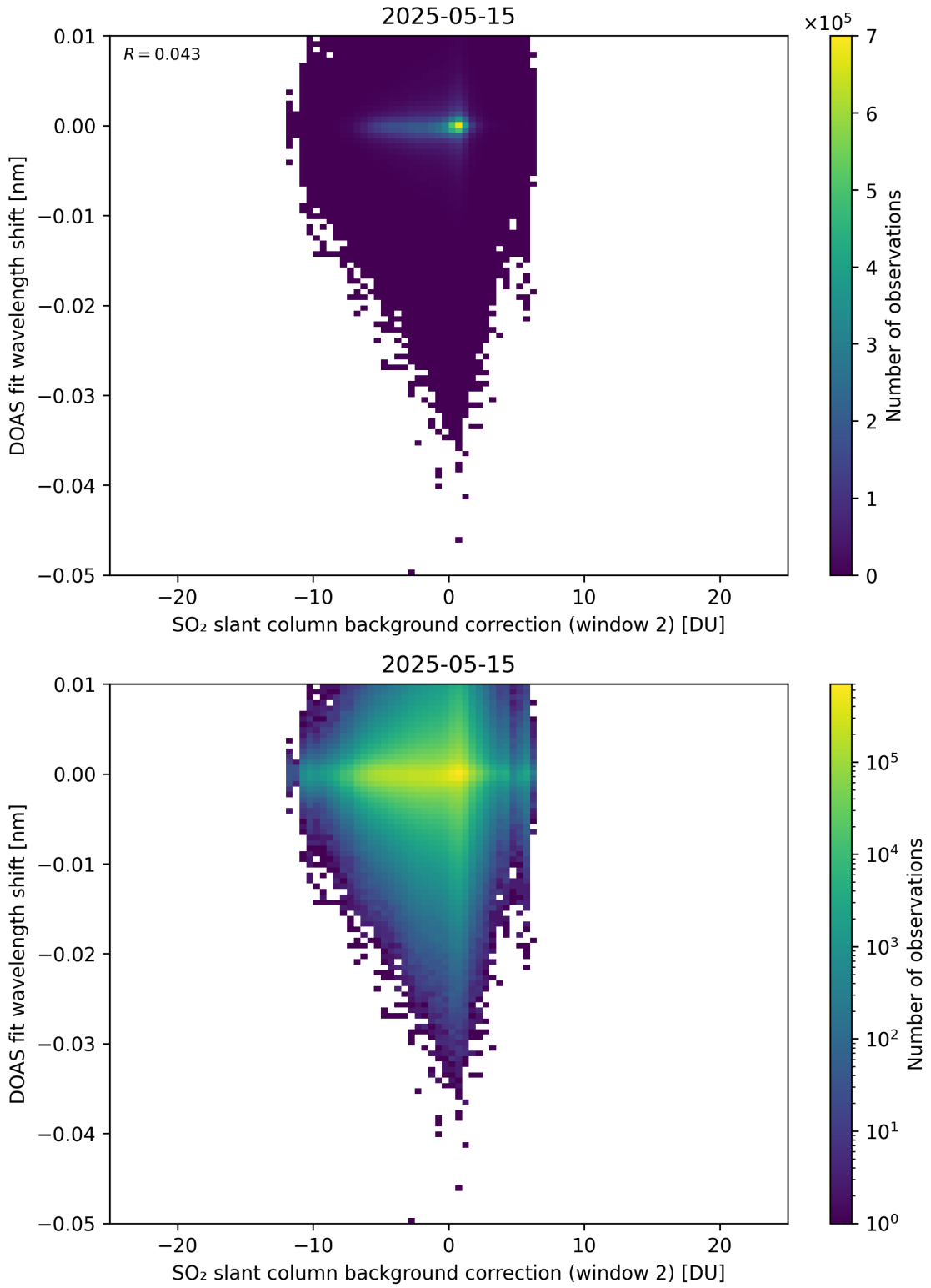


Figure 123: Scatter density plot of "SO_2 slant column background correction (window 2)" against "DOAS fit wavelength shift" for 2025-05-15 to 2025-05-16.

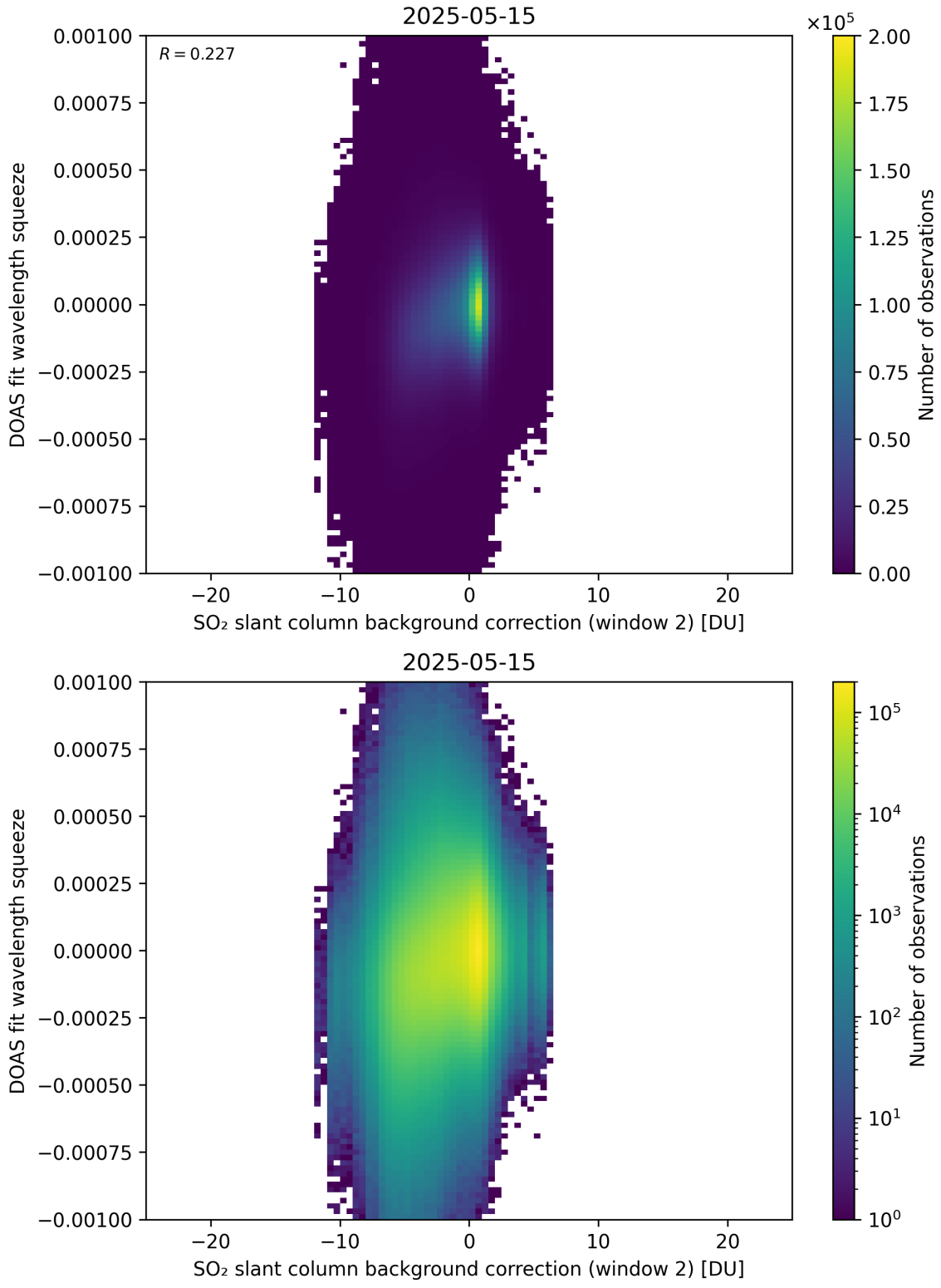


Figure 124: Scatter density plot of "SO_2 slant column background correction (window 2)" against "DOAS fit wavelength squeeze" for 2025-05-15 to 2025-05-16.

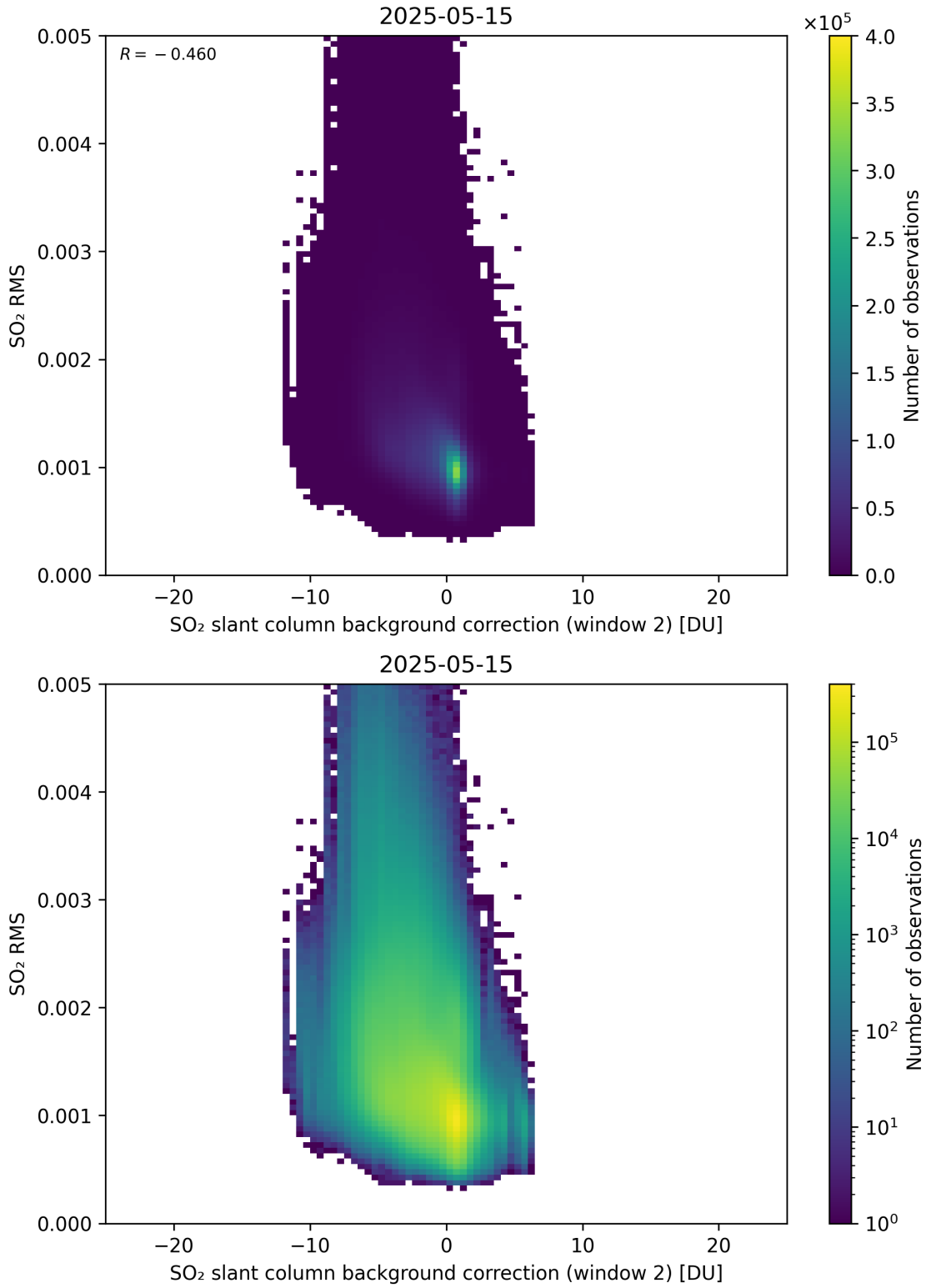


Figure 125: Scatter density plot of "SO_2 slant column background correction (window 2)" against "SO_2 RMS" for 2025-05-15 to 2025-05-16.

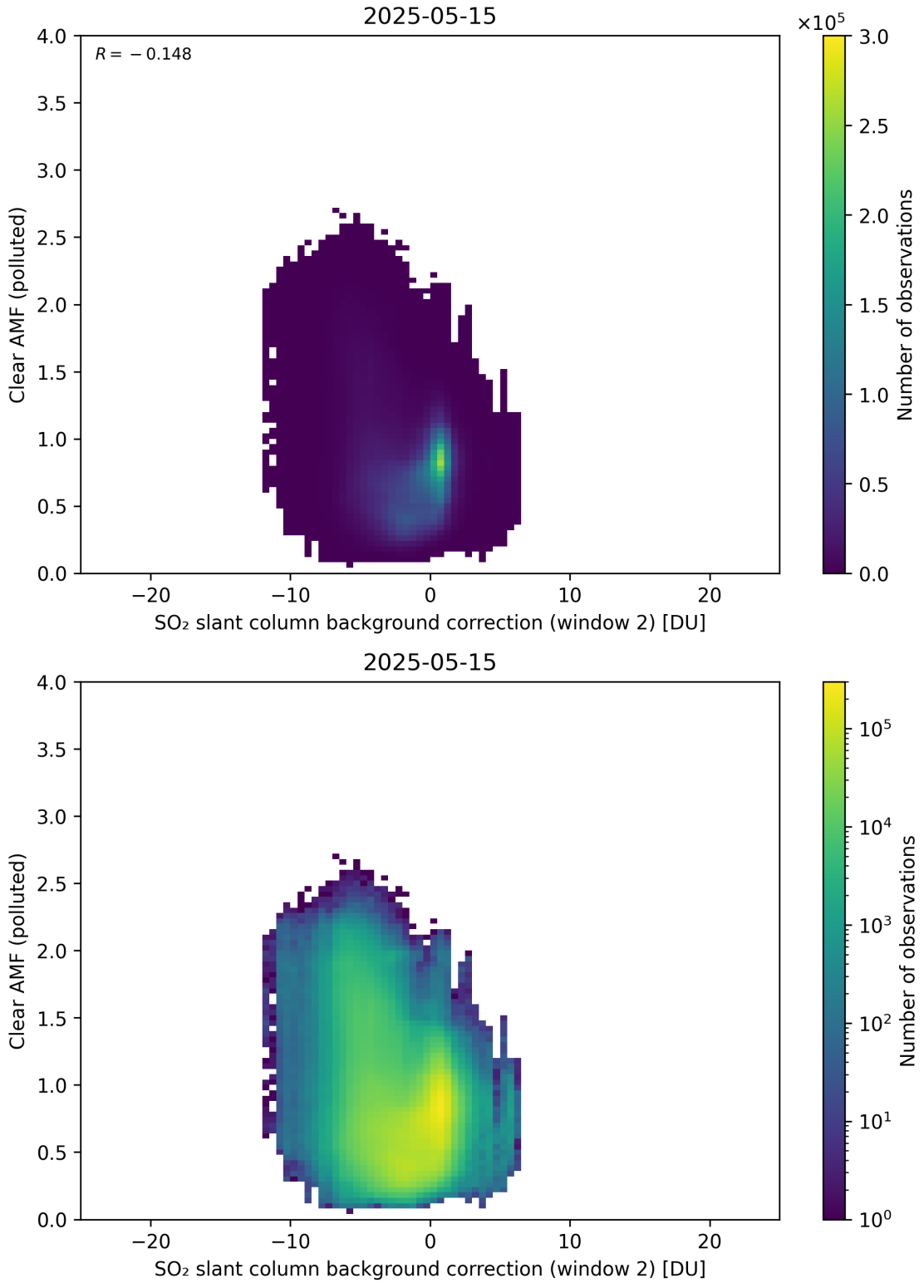


Figure 126: Scatter density plot of "SO_2 slant column background correction (window 2)" against "Clear AMF (polluted)" for 2025-05-15 to 2025-05-16.

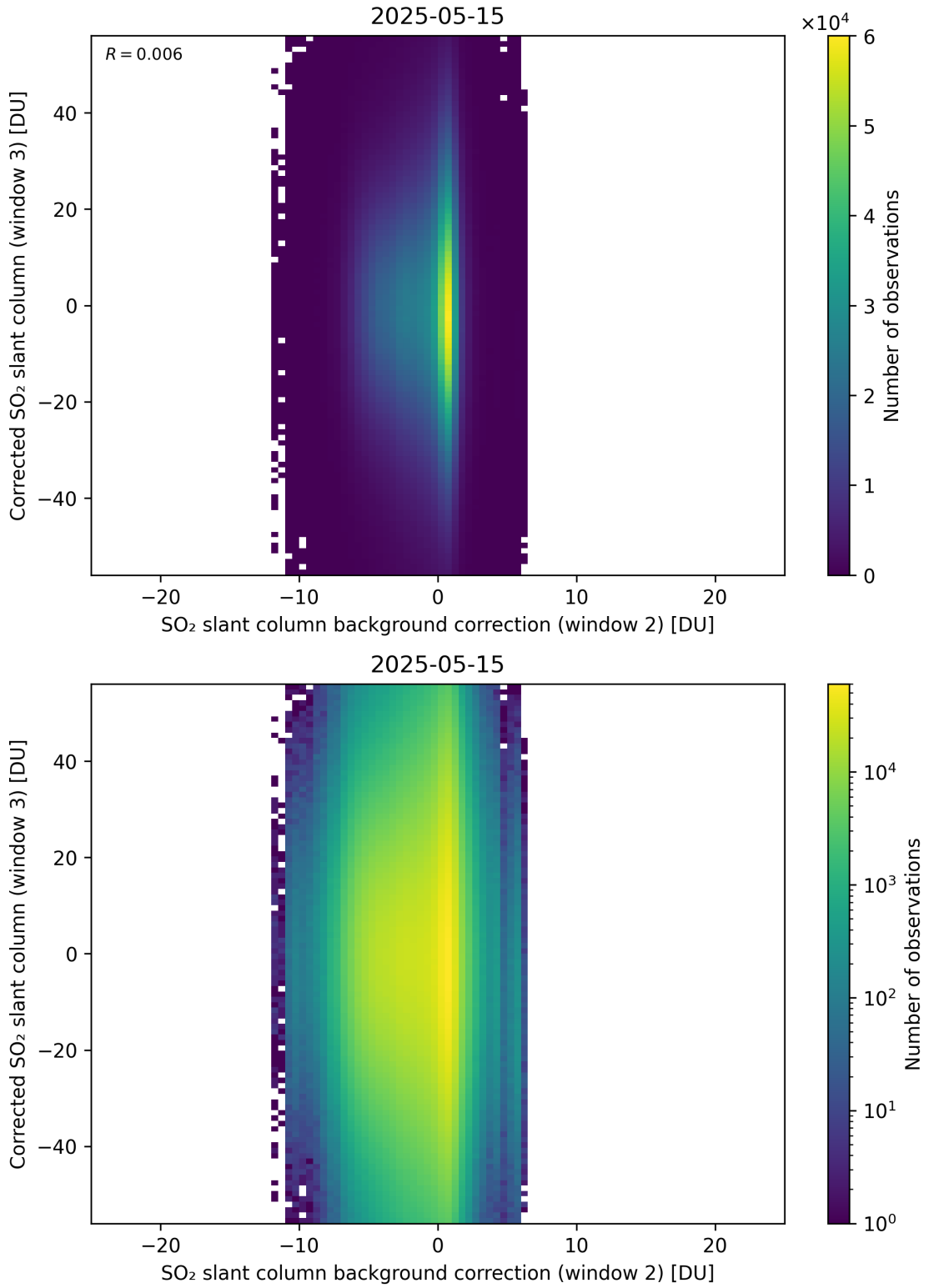


Figure 127: Scatter density plot of "SO_2 slant column background correction (window 2)" against "Corrected SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

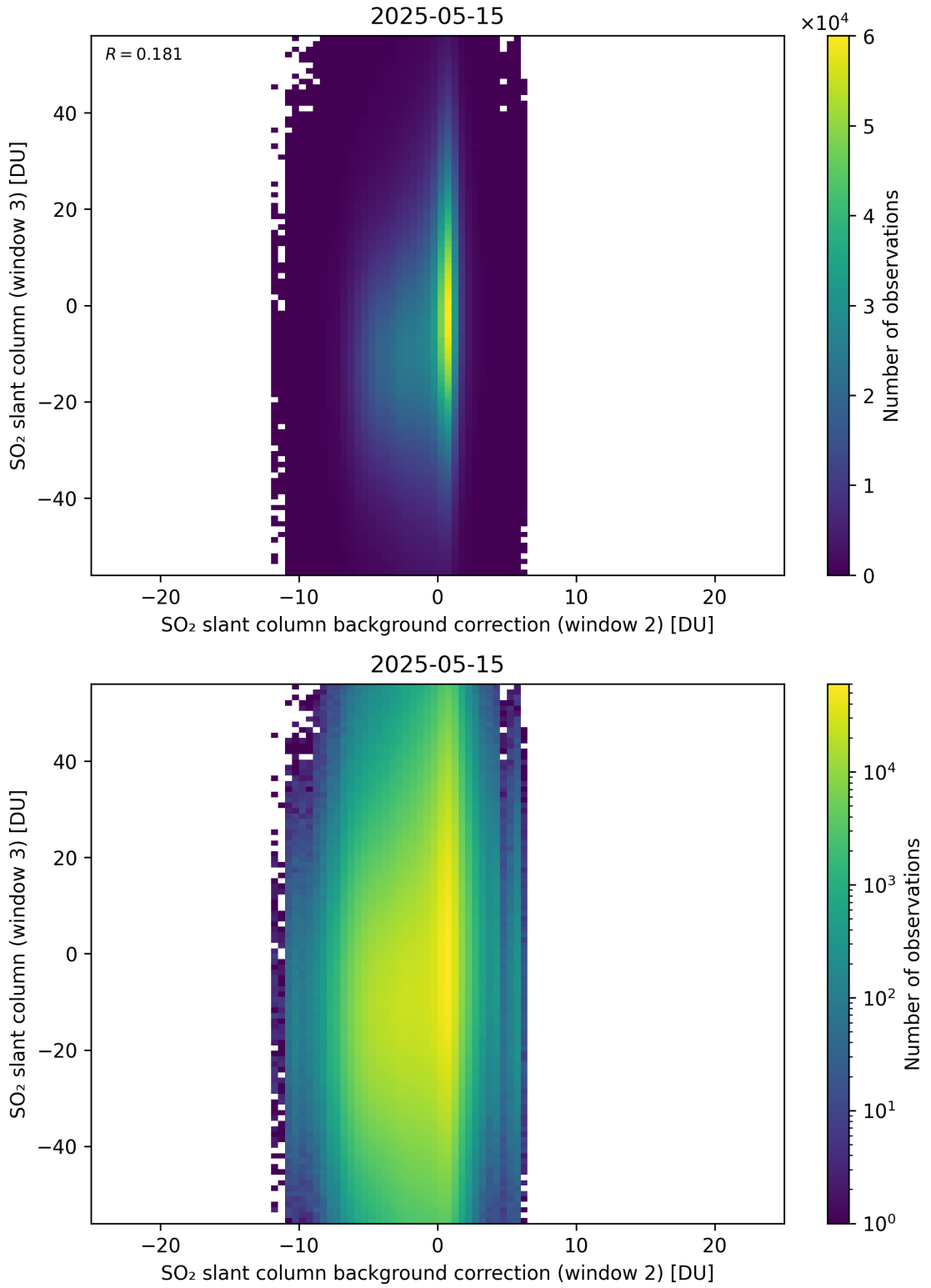


Figure 128: Scatter density plot of "SO_2 slant column background correction (window 2)" against "SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

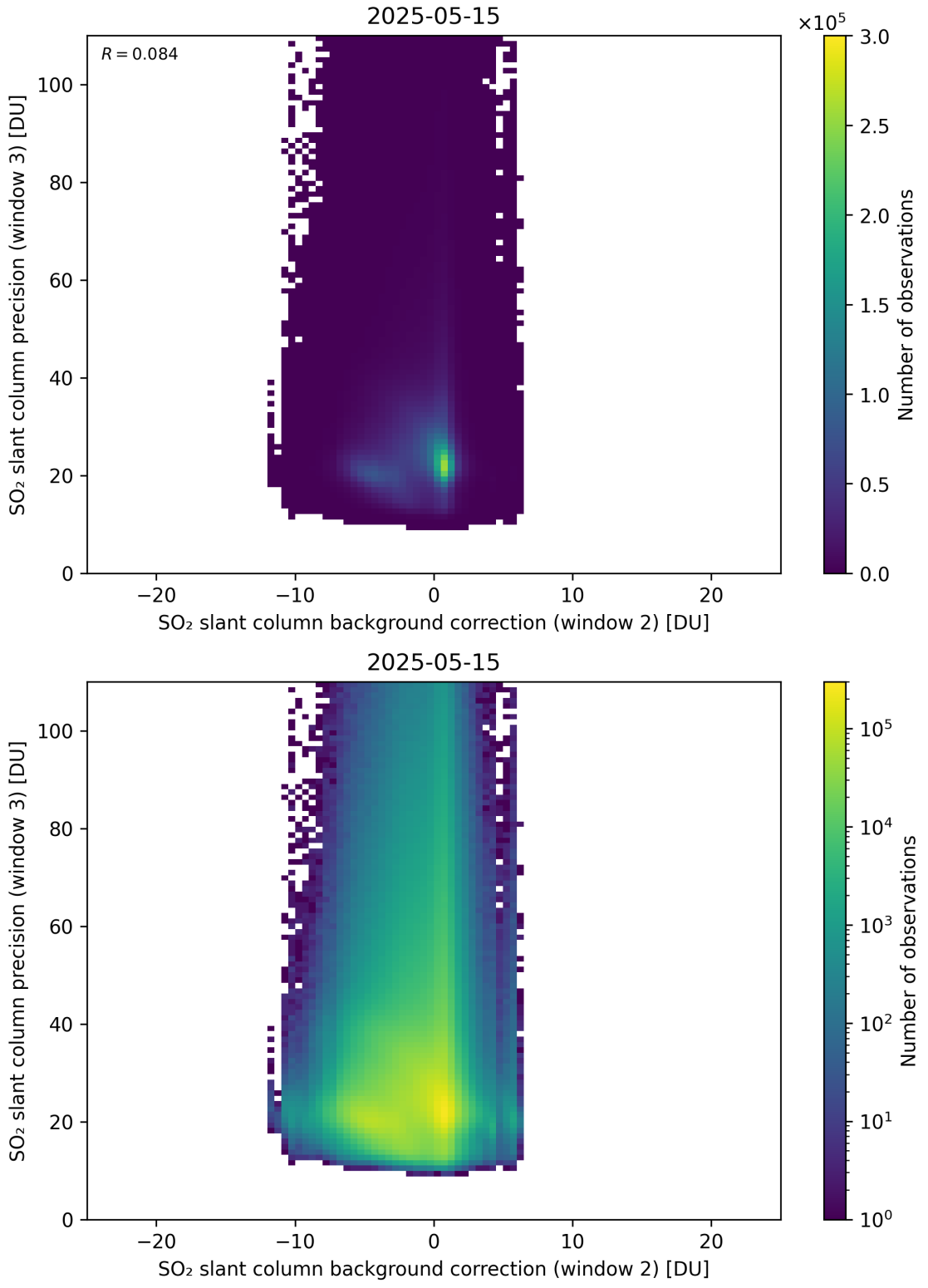


Figure 129: Scatter density plot of "SO_2 slant column background correction (window 2)" against "SO_2 slant column precision (window 3)" for 2025-05-15 to 2025-05-16.

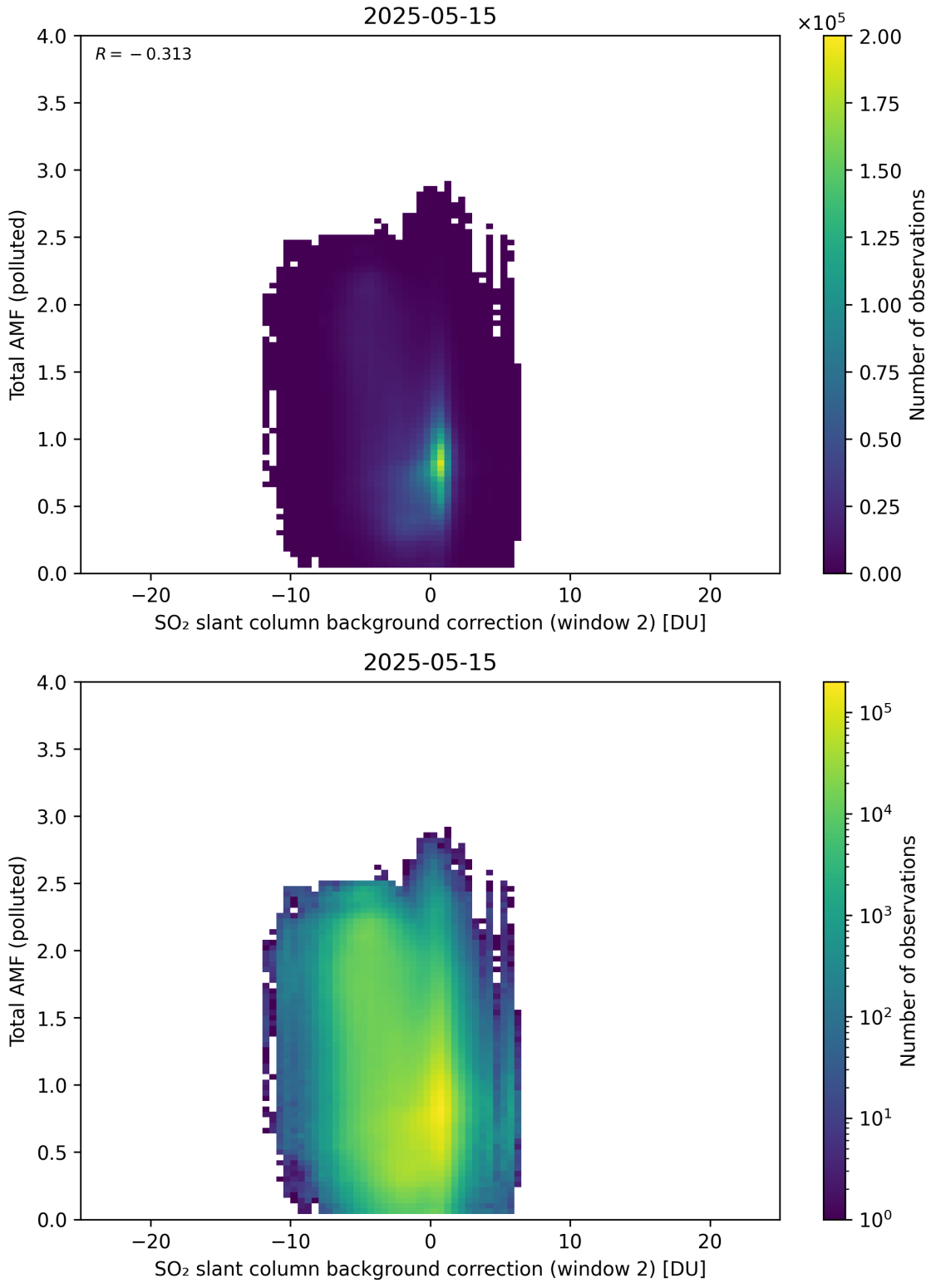


Figure 130: Scatter density plot of "SO_2 slant column background correction (window 2)" against "Total AMF (polluted)" for 2025-05-15 to 2025-05-16.

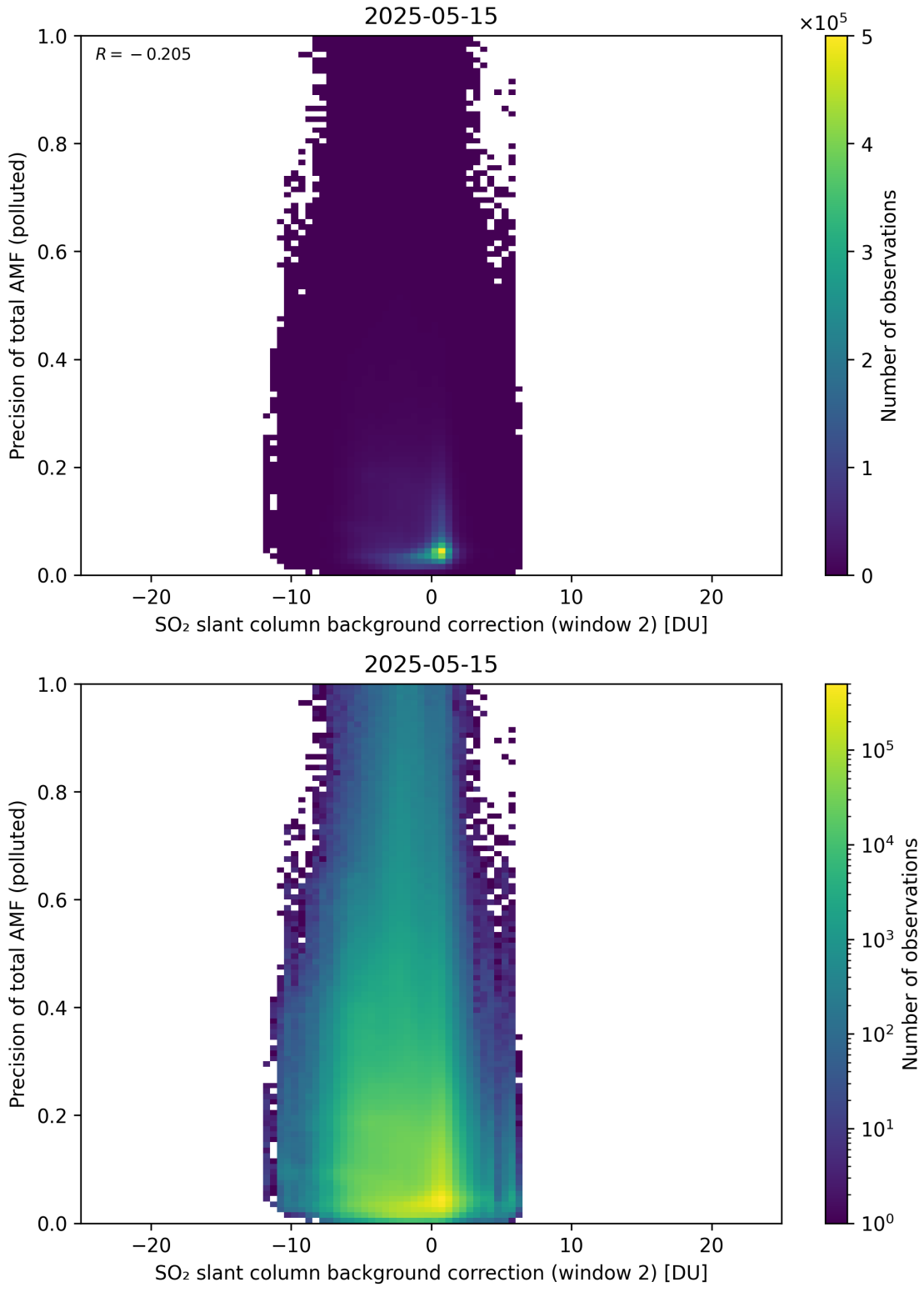


Figure 131: Scatter density plot of "SO_2 slant column background correction (window 2)" against "Precision of total AMF (polluted)" for 2025-05-15 to 2025-05-16.

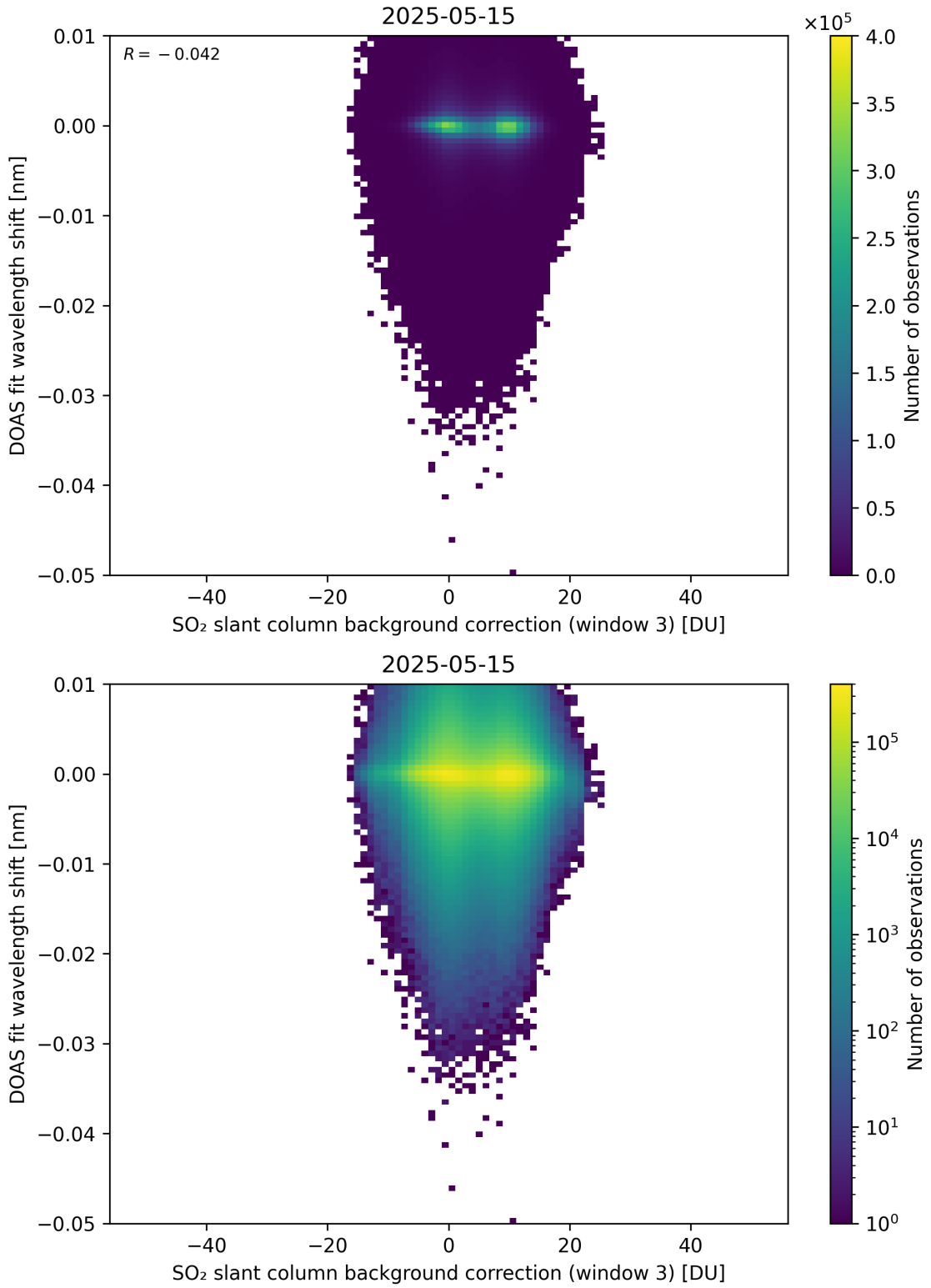


Figure 132: Scatter density plot of "SO_2 slant column background correction (window 3)" against "DOAS fit wavelength shift" for 2025-05-15 to 2025-05-16.

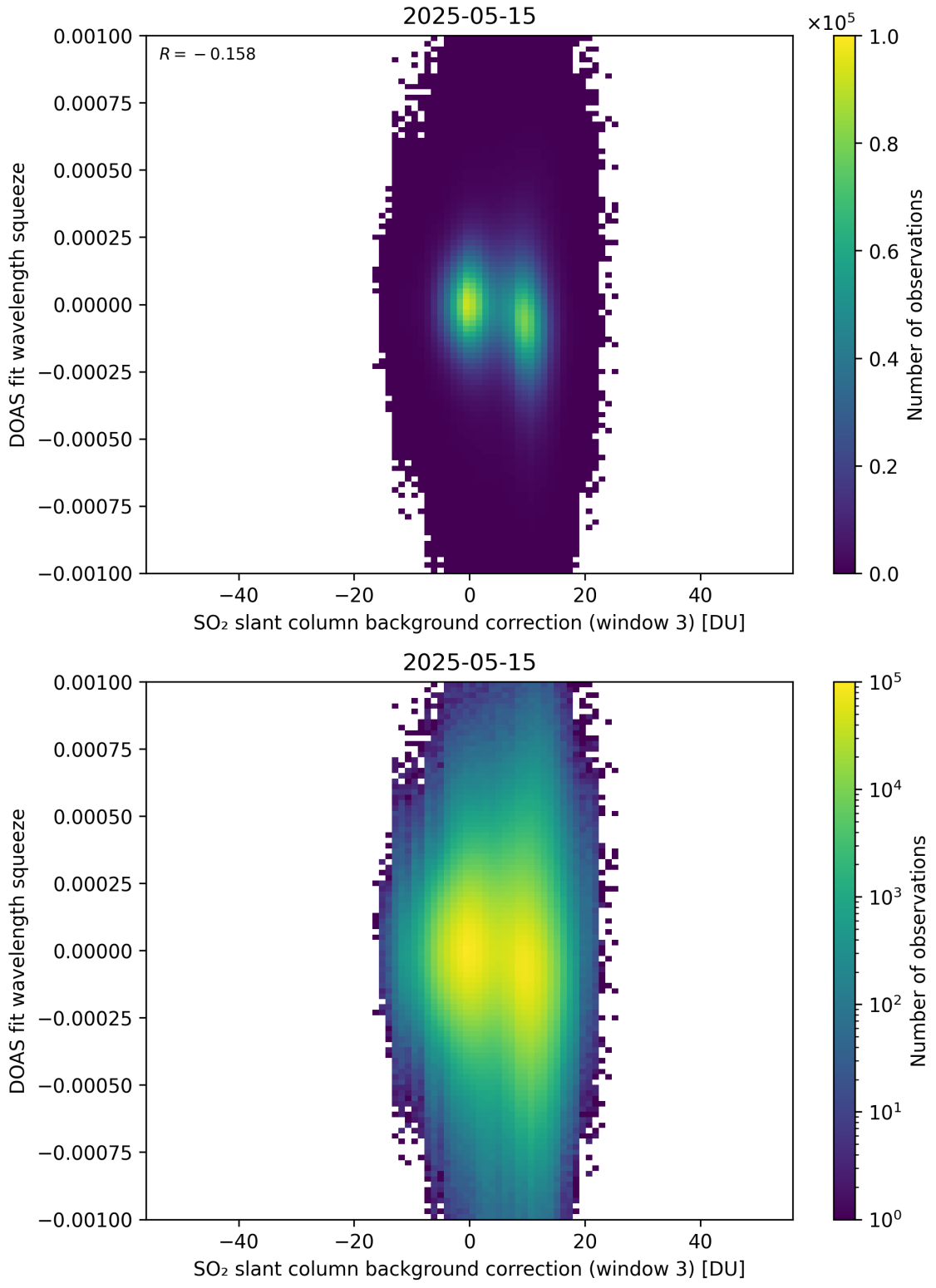


Figure 133: Scatter density plot of "SO_2 slant column background correction (window 3)" against "DOAS fit wavelength squeeze" for 2025-05-15 to 2025-05-16.

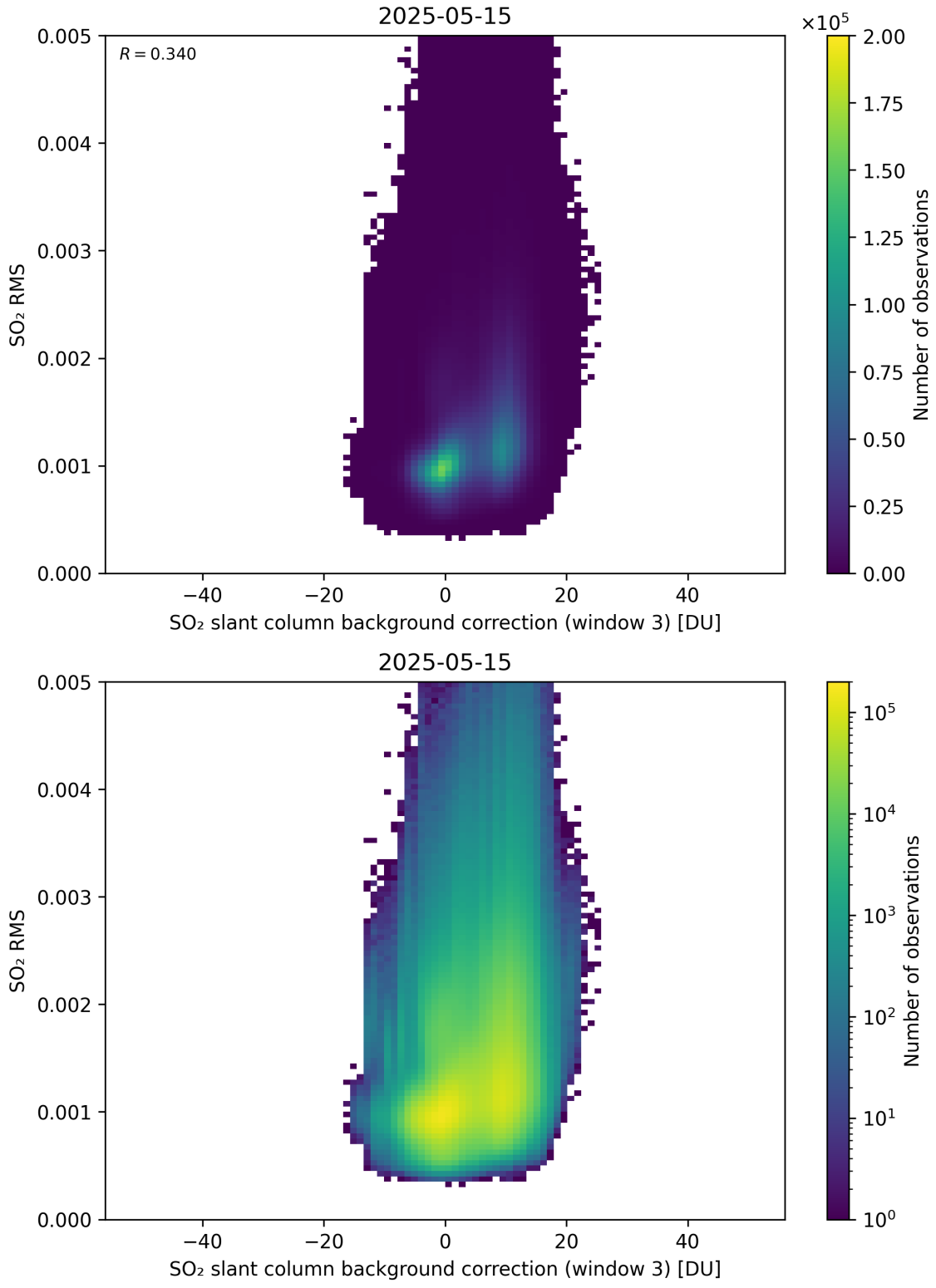


Figure 134: Scatter density plot of "SO_2 slant column background correction (window 3)" against "SO_2 RMS" for 2025-05-15 to 2025-05-16.

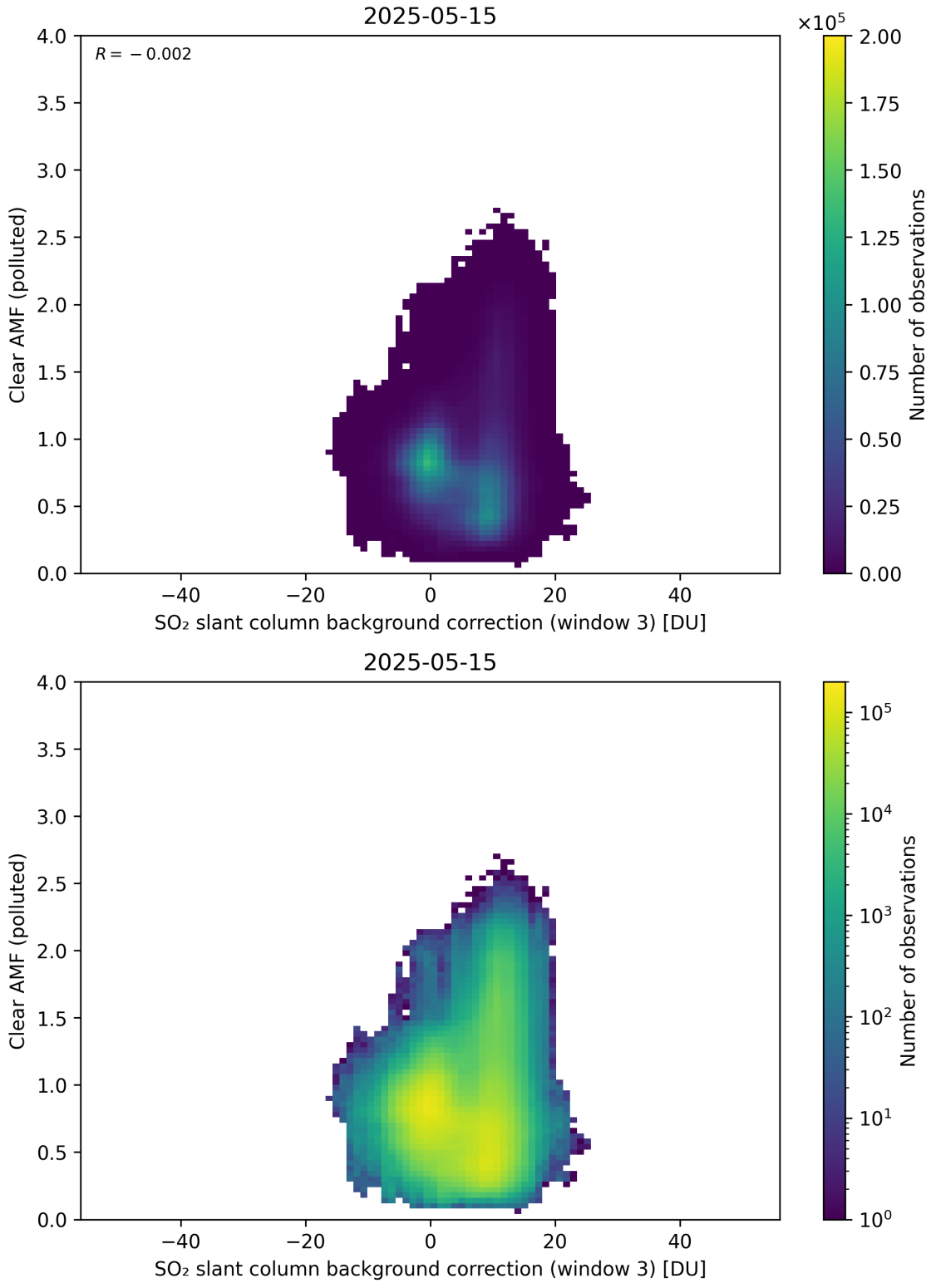


Figure 135: Scatter density plot of "SO_2 slant column background correction (window 3)" against "Clear AMF (polluted)" for 2025-05-15 to 2025-05-16.

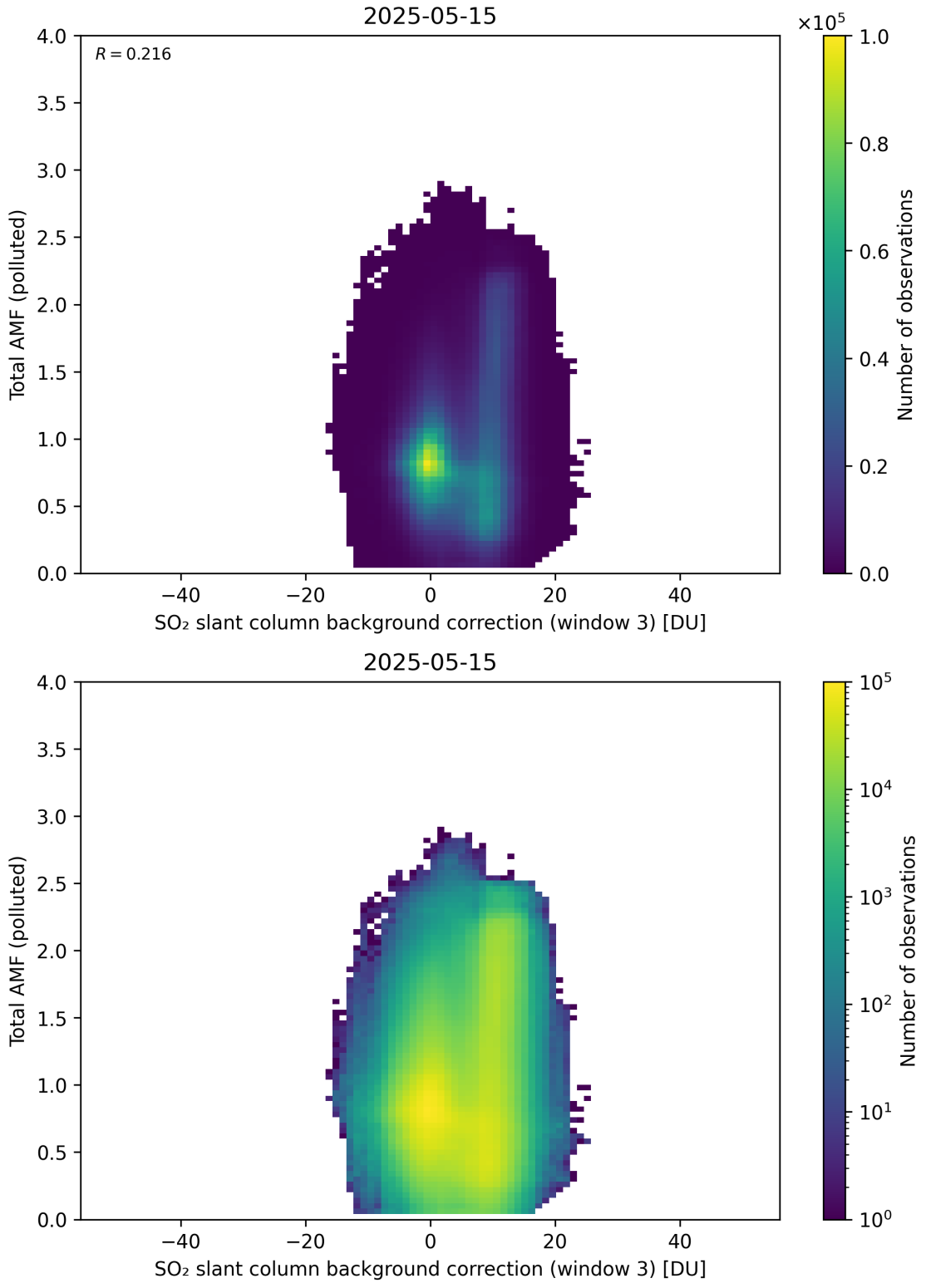


Figure 136: Scatter density plot of "SO_2 slant column background correction (window 3)" against "Total AMF (polluted)" for 2025-05-15 to 2025-05-16.

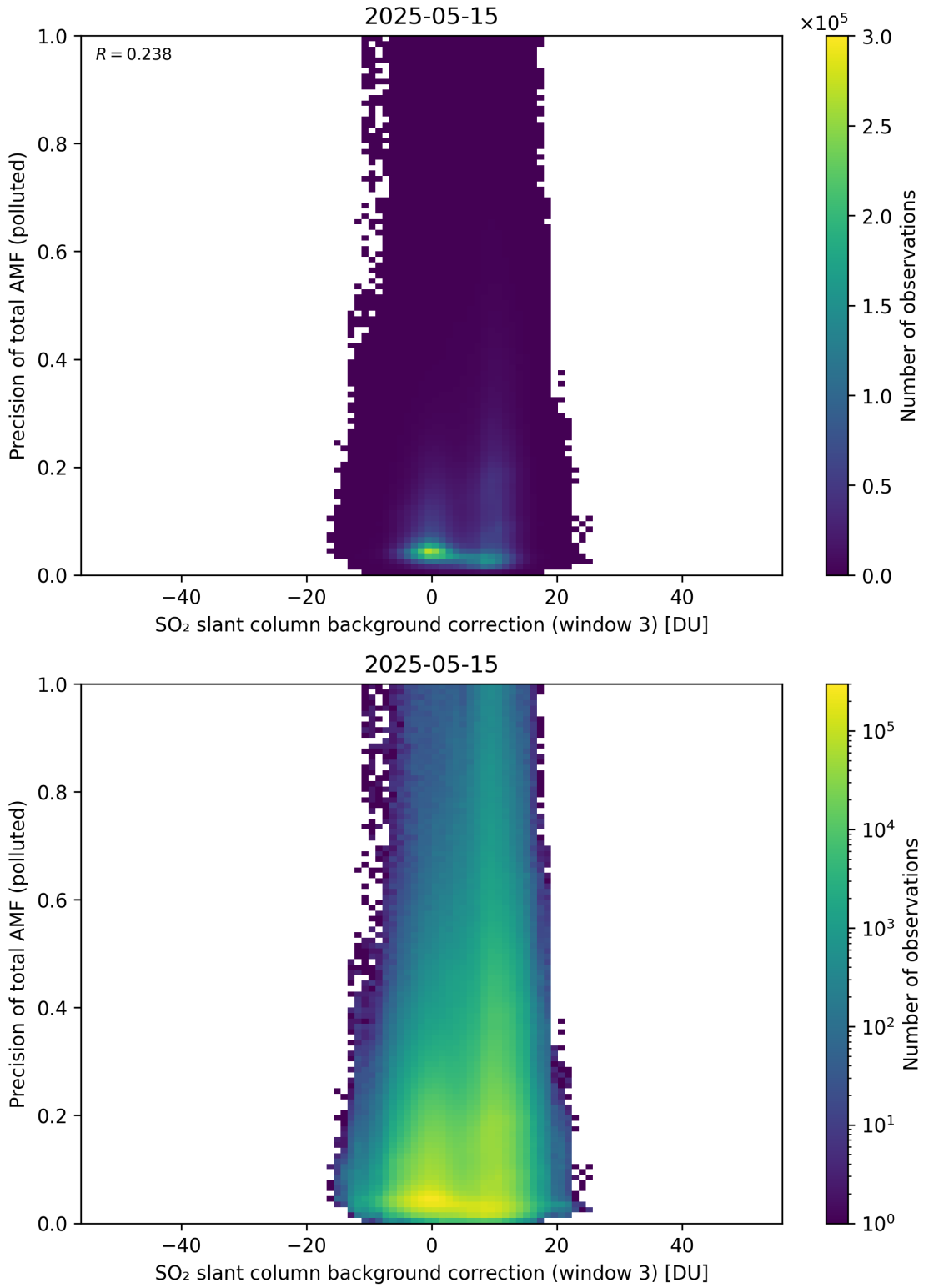


Figure 137: Scatter density plot of "SO_2 slant column background correction (window 3)" against "Precision of total AMF (polluted)" for 2025-05-15 to 2025-05-16.

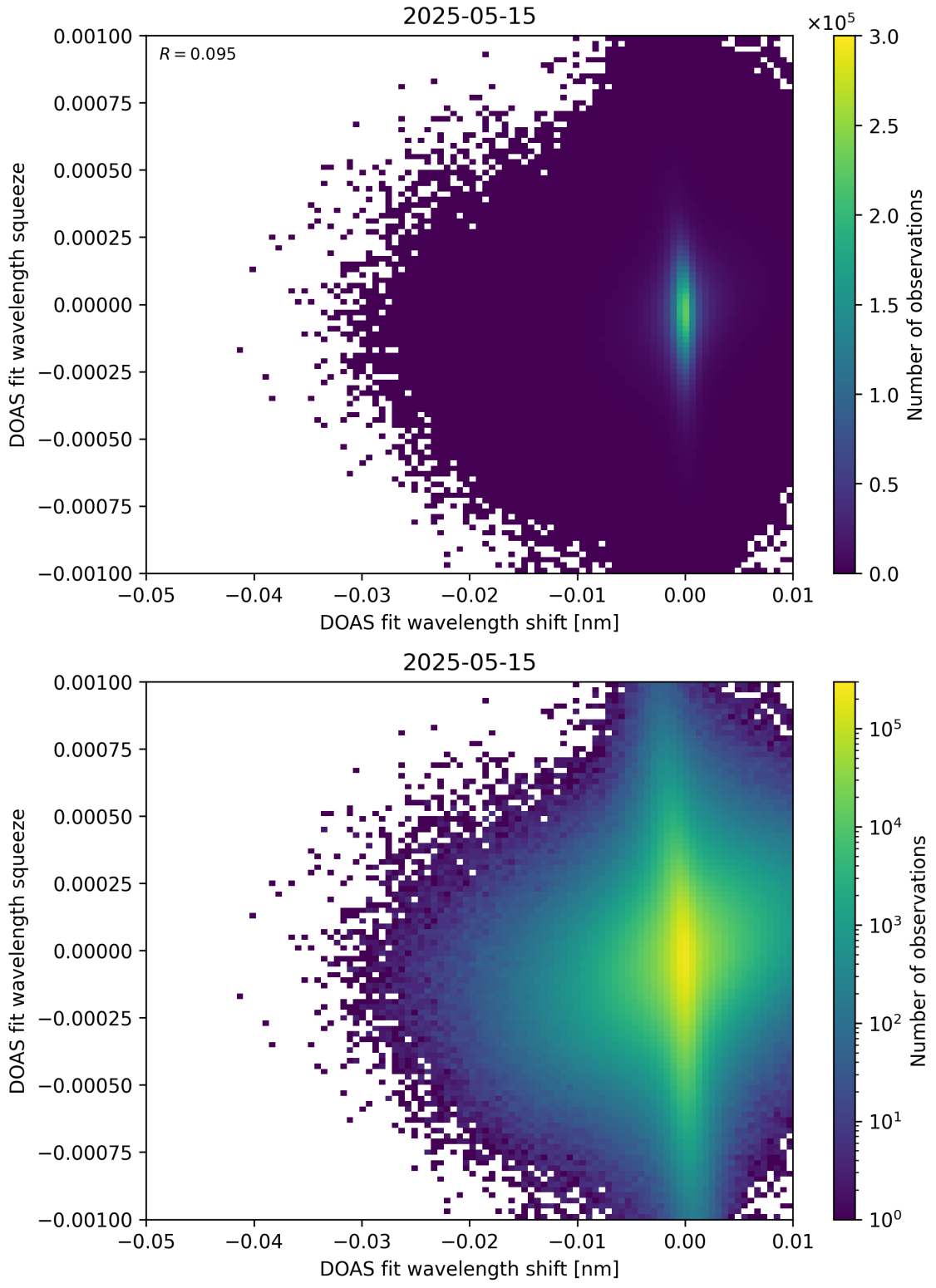


Figure 138: Scatter density plot of “DOAS fit wavelength shift” against “DOAS fit wavelength squeeze” for 2025-05-15 to 2025-05-16.

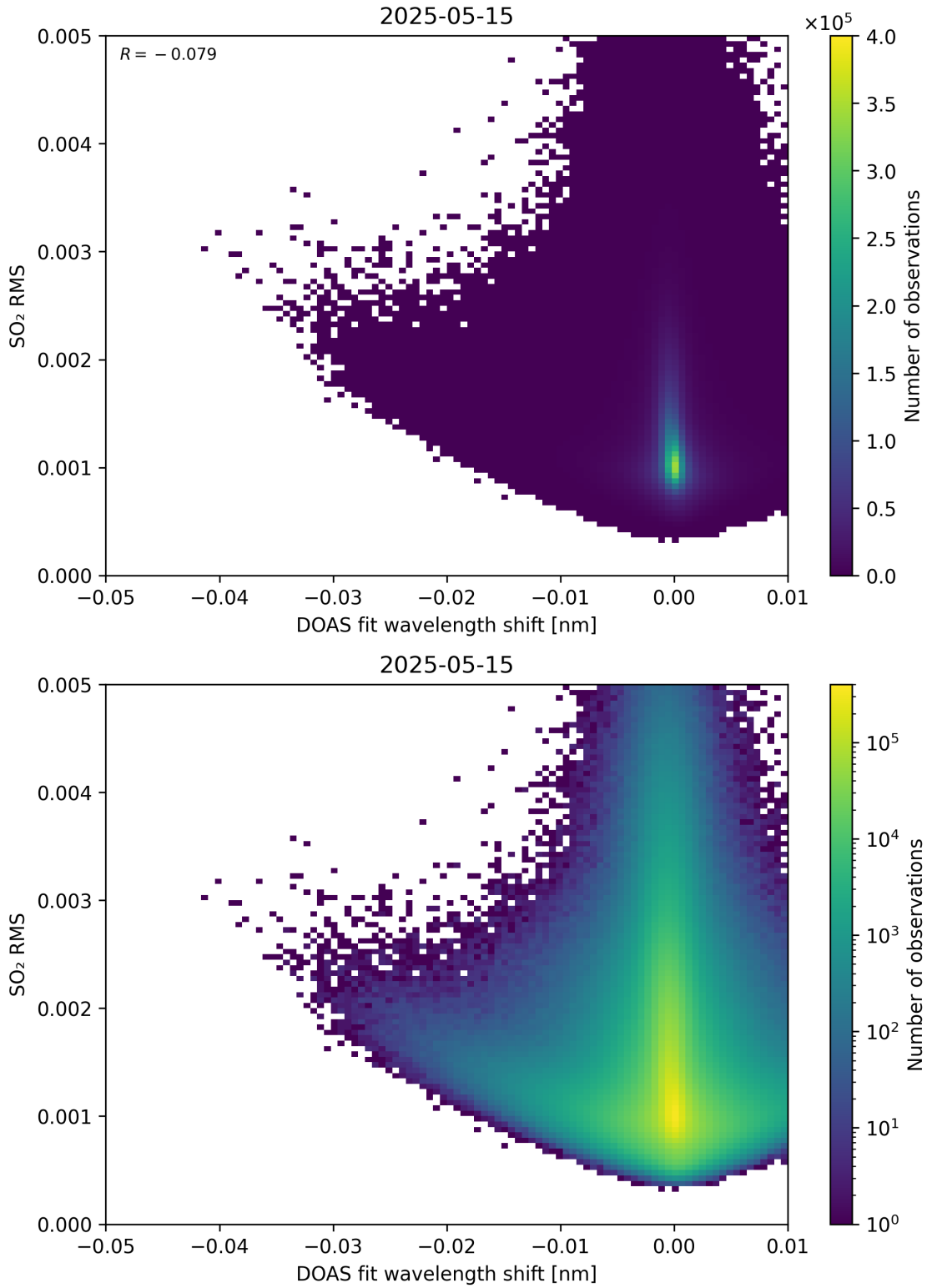


Figure 139: Scatter density plot of “DOAS fit wavelength shift” against “SO_2 RMS” for 2025-05-15 to 2025-05-16.

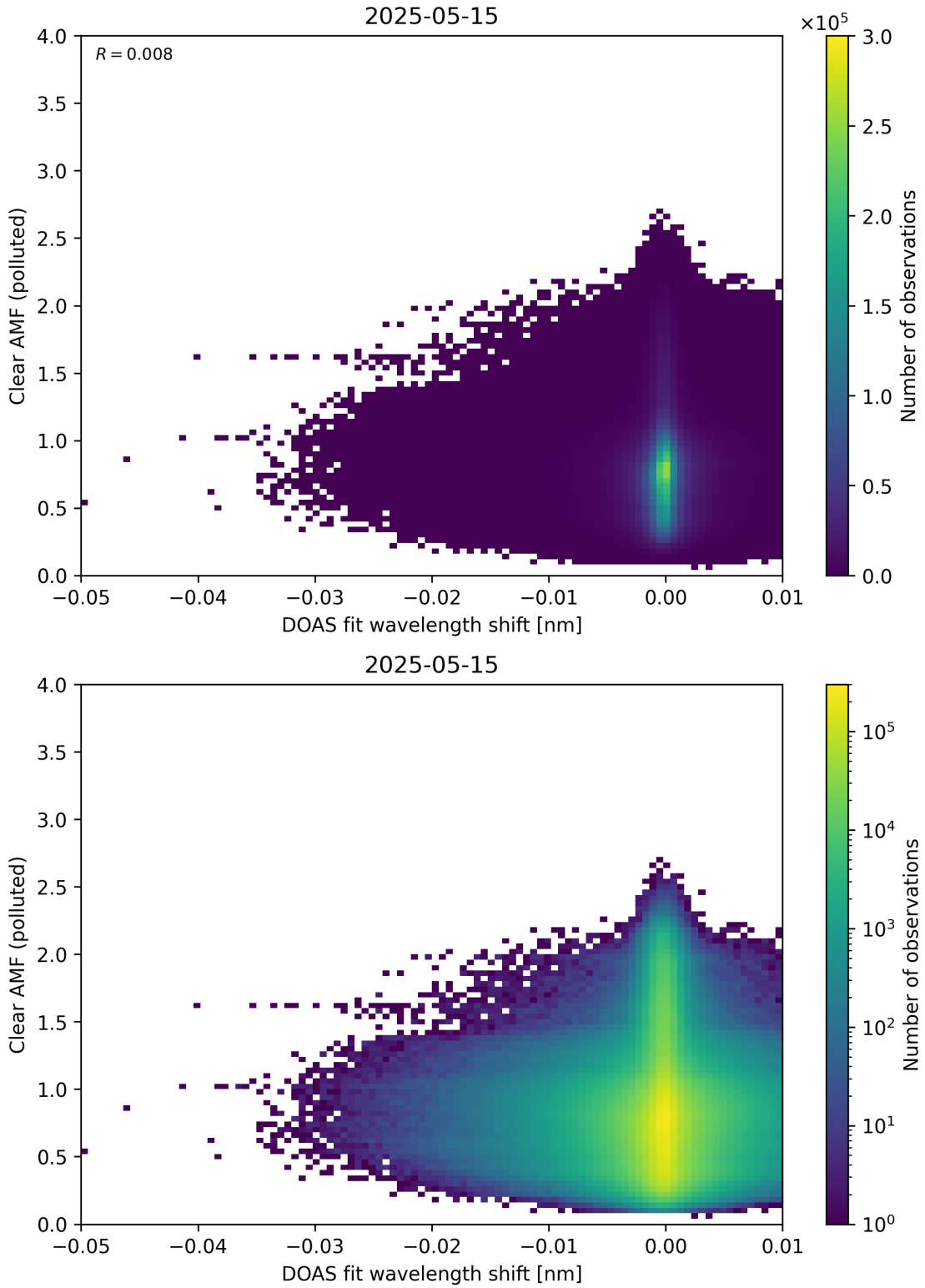


Figure 140: Scatter density plot of “DOAS fit wavelength shift” against “Clear AMF (polluted)” for 2025-05-15 to 2025-05-16.

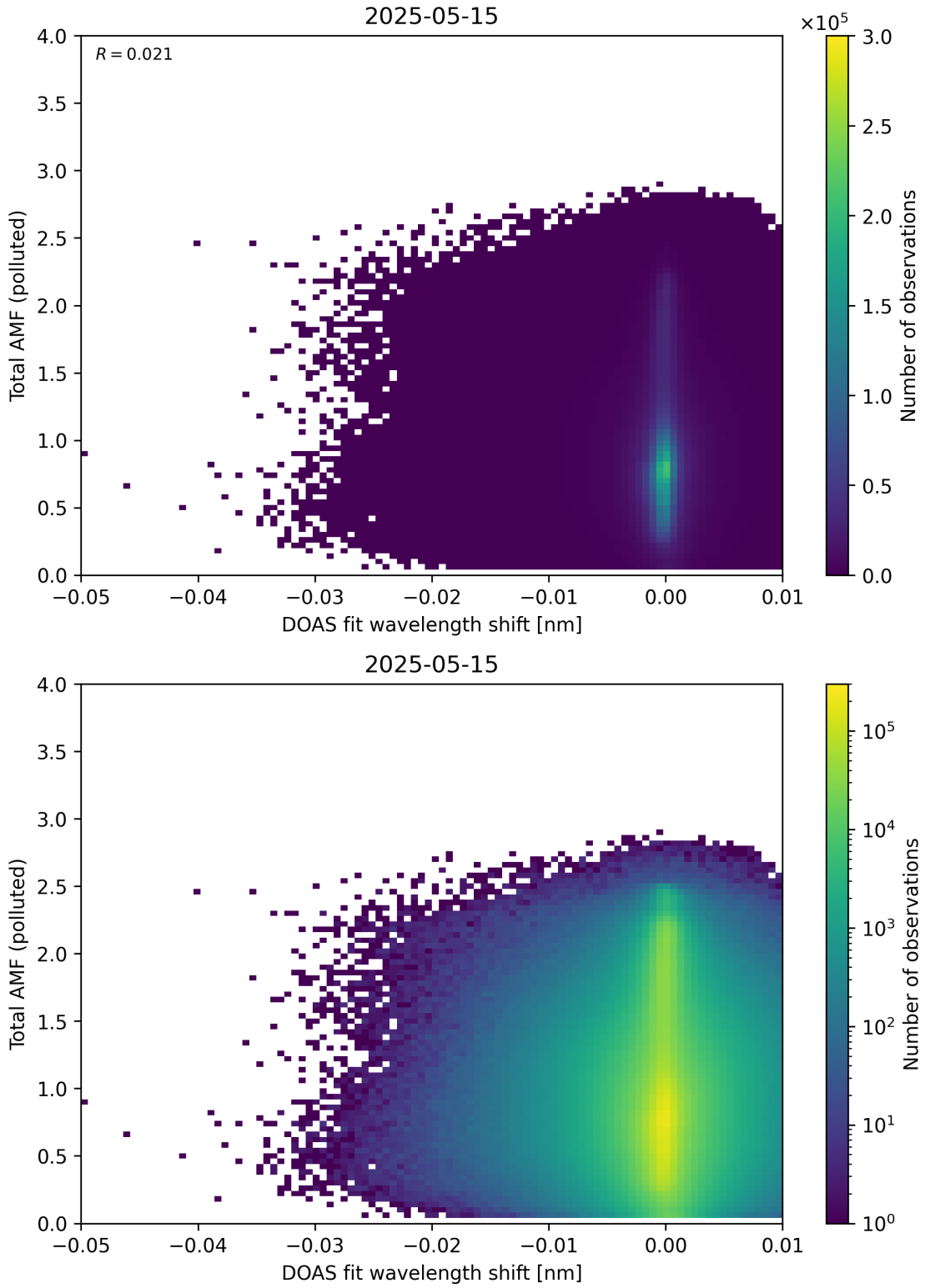


Figure 141: Scatter density plot of “DOAS fit wavelength shift” against “Total AMF (polluted)” for 2025-05-15 to 2025-05-16.

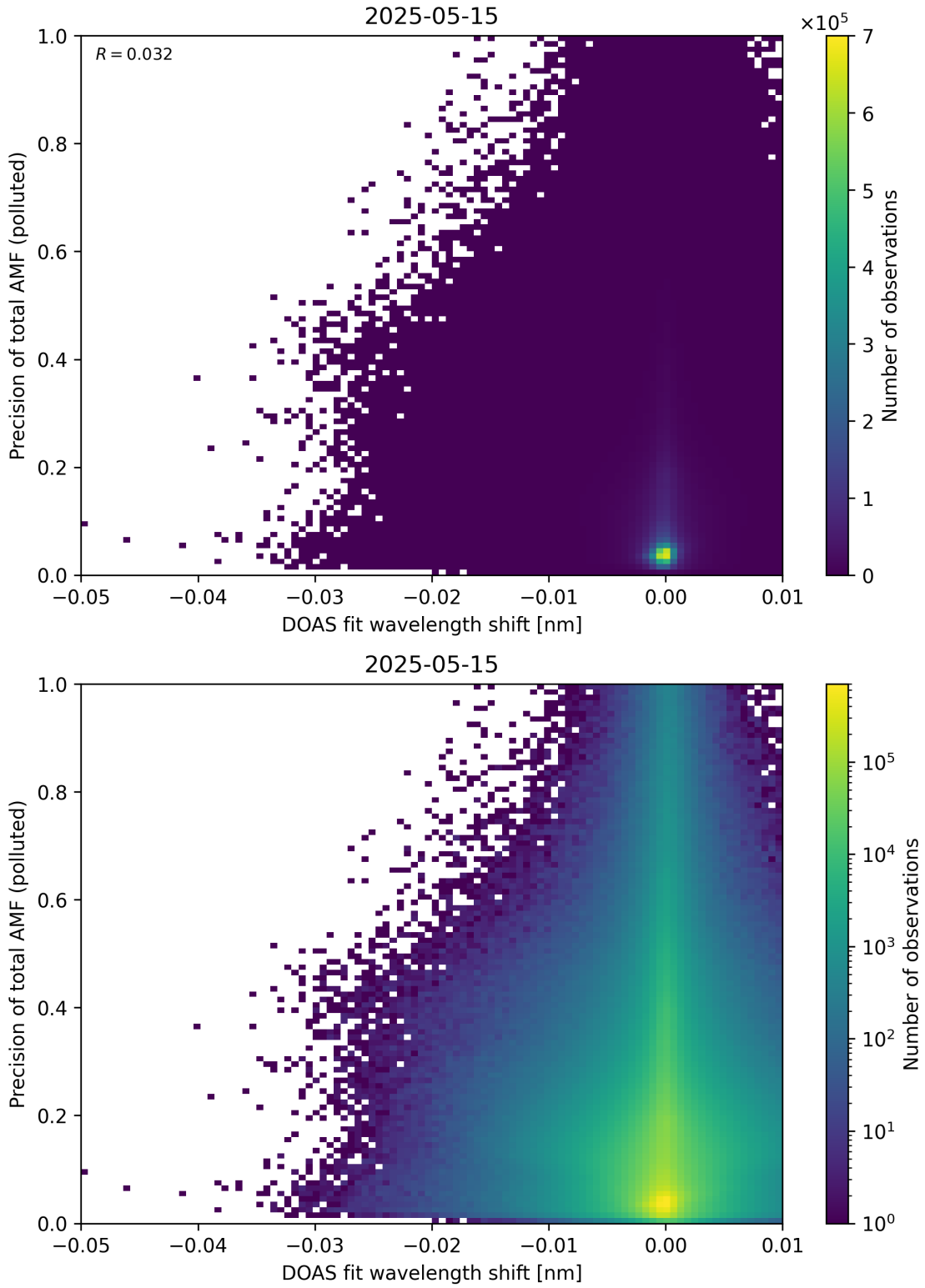


Figure 142: Scatter density plot of “DOAS fit wavelength shift” against “Precision of total AMF (polluted)” for 2025-05-15 to 2025-05-16.

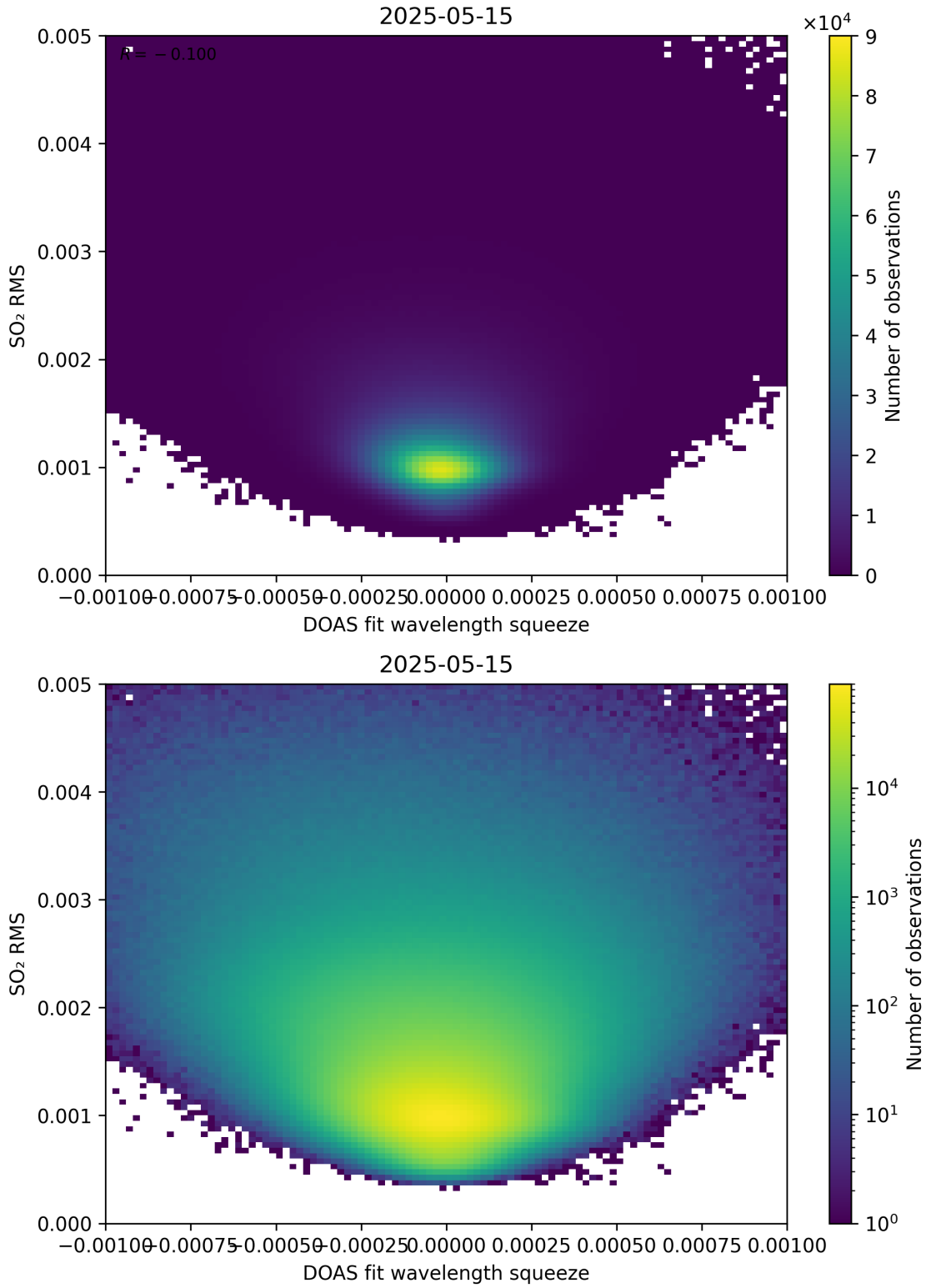


Figure 143: Scatter density plot of “DOAS fit wavelength squeeze” against “SO_2 RMS” for 2025-05-15 to 2025-05-16.

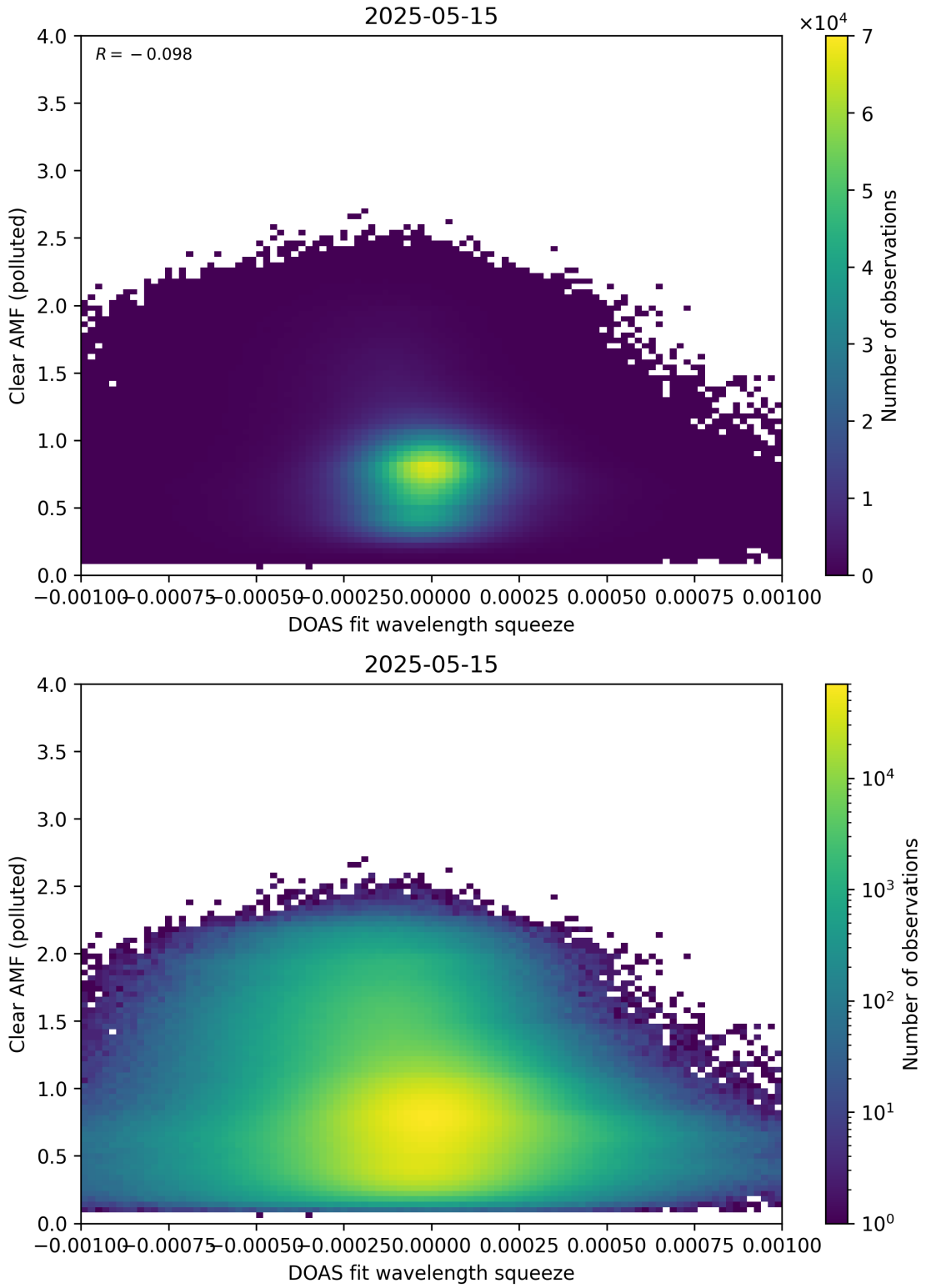


Figure 144: Scatter density plot of “DOAS fit wavelength squeeze” against “Clear AMF (polluted)” for 2025-05-15 to 2025-05-16.

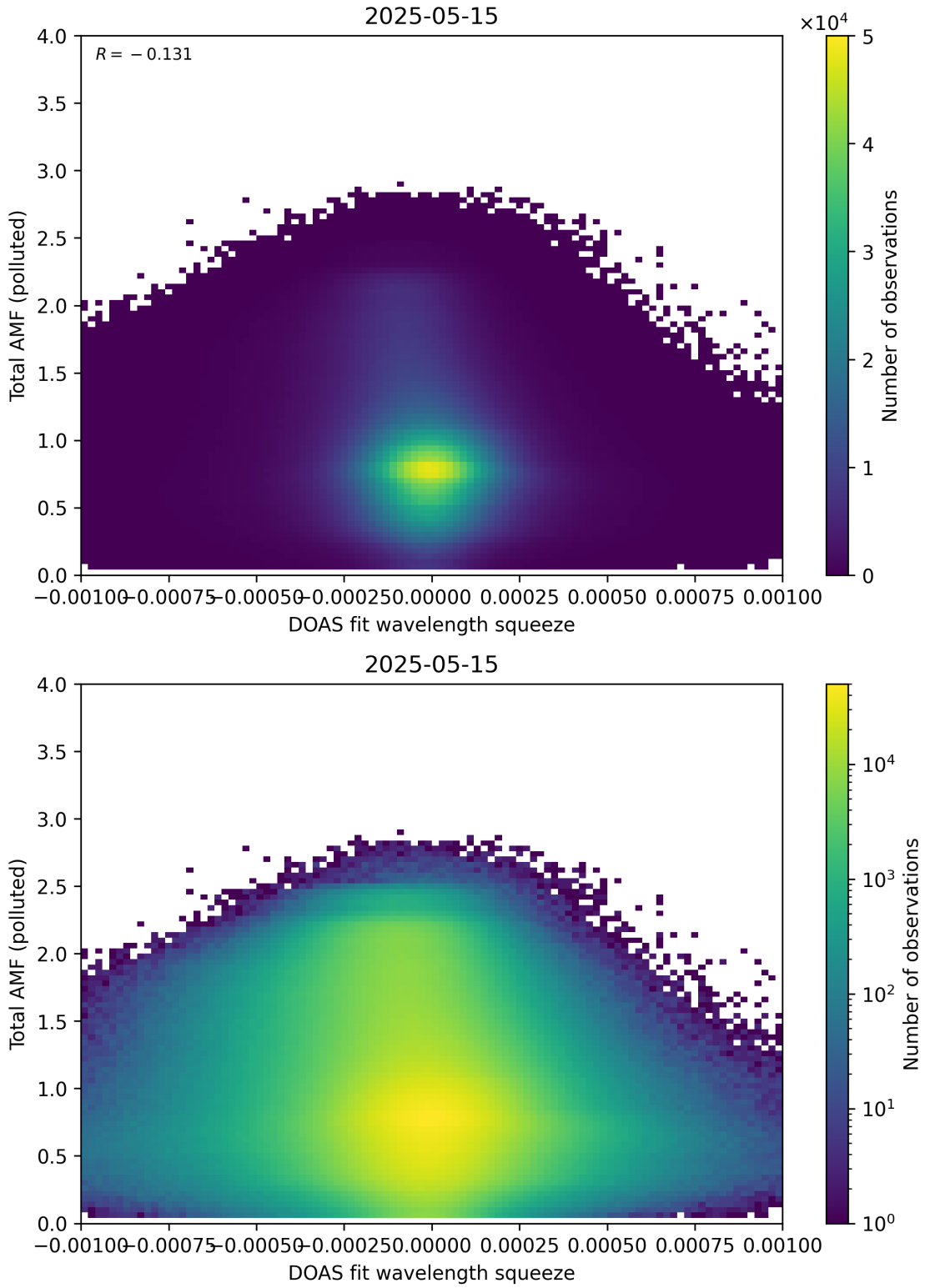


Figure 145: Scatter density plot of “DOAS fit wavelength squeeze” against “Total AMF (polluted)” for 2025-05-15 to 2025-05-16.

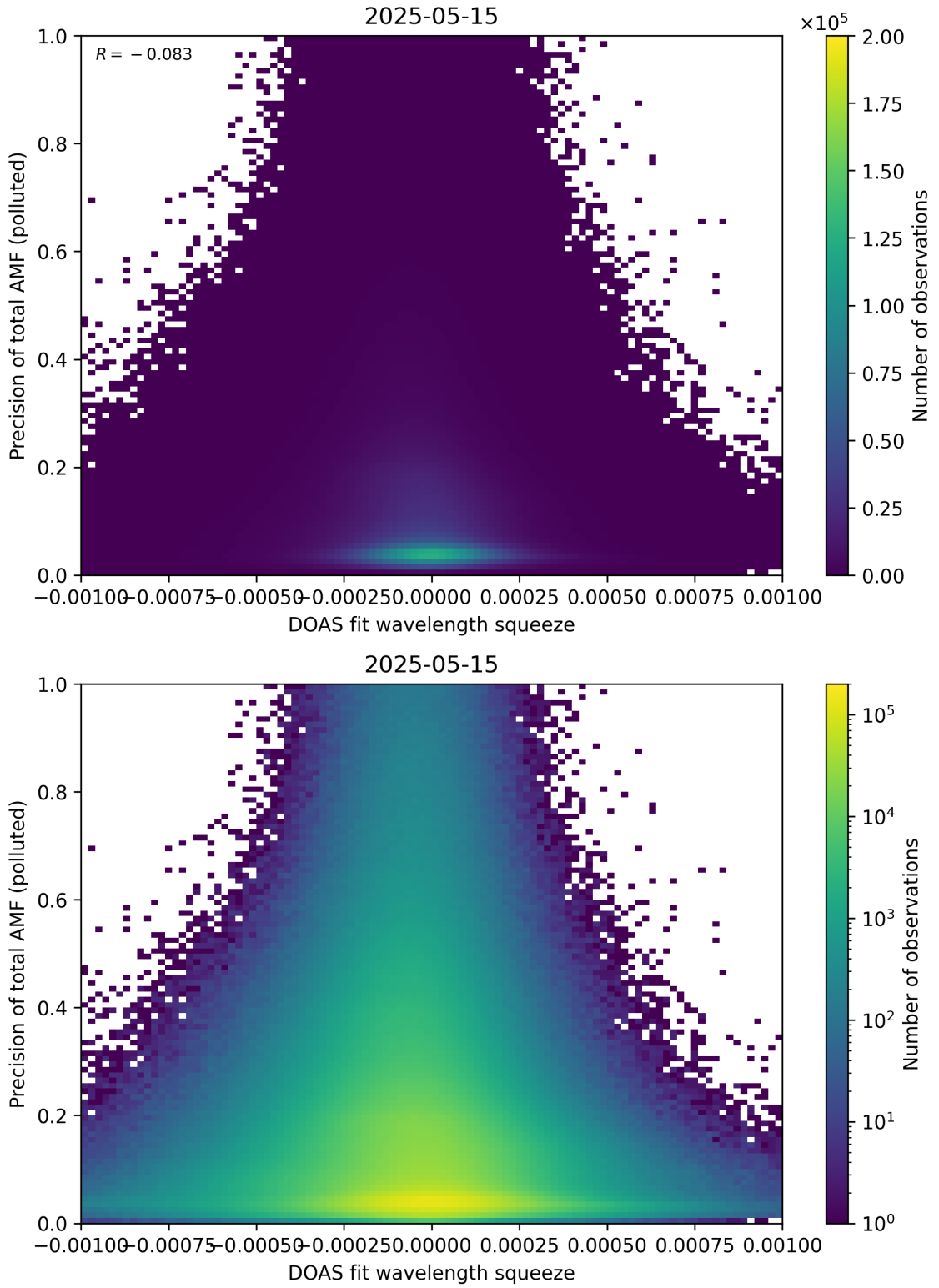


Figure 146: Scatter density plot of “DOAS fit wavelength squeeze” against “Precision of total AMF (polluted)” for 2025-05-15 to 2025-05-16.

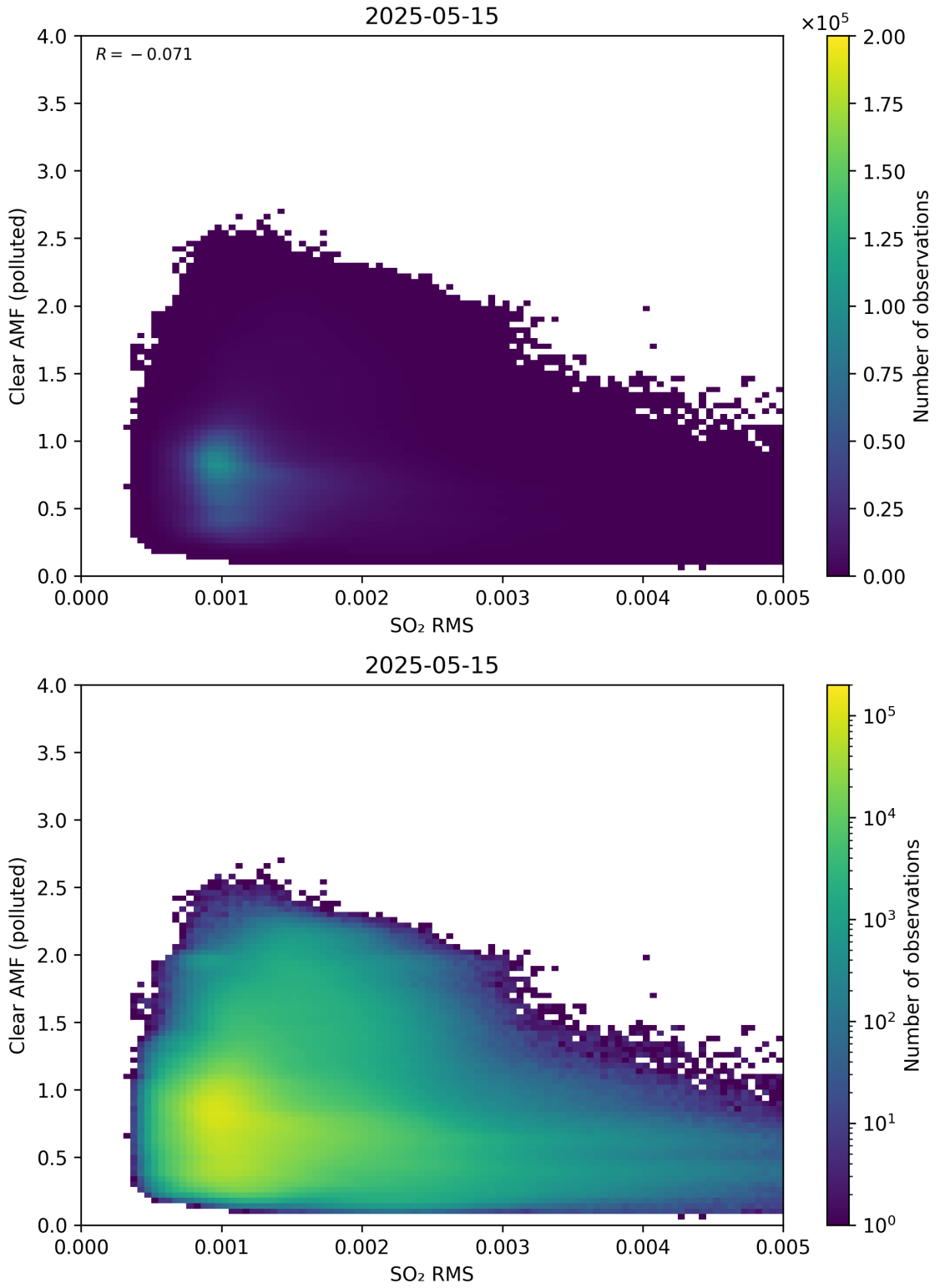


Figure 147: Scatter density plot of "SO_2 RMS" against "Clear AMF (polluted)" for 2025-05-15 to 2025-05-16.

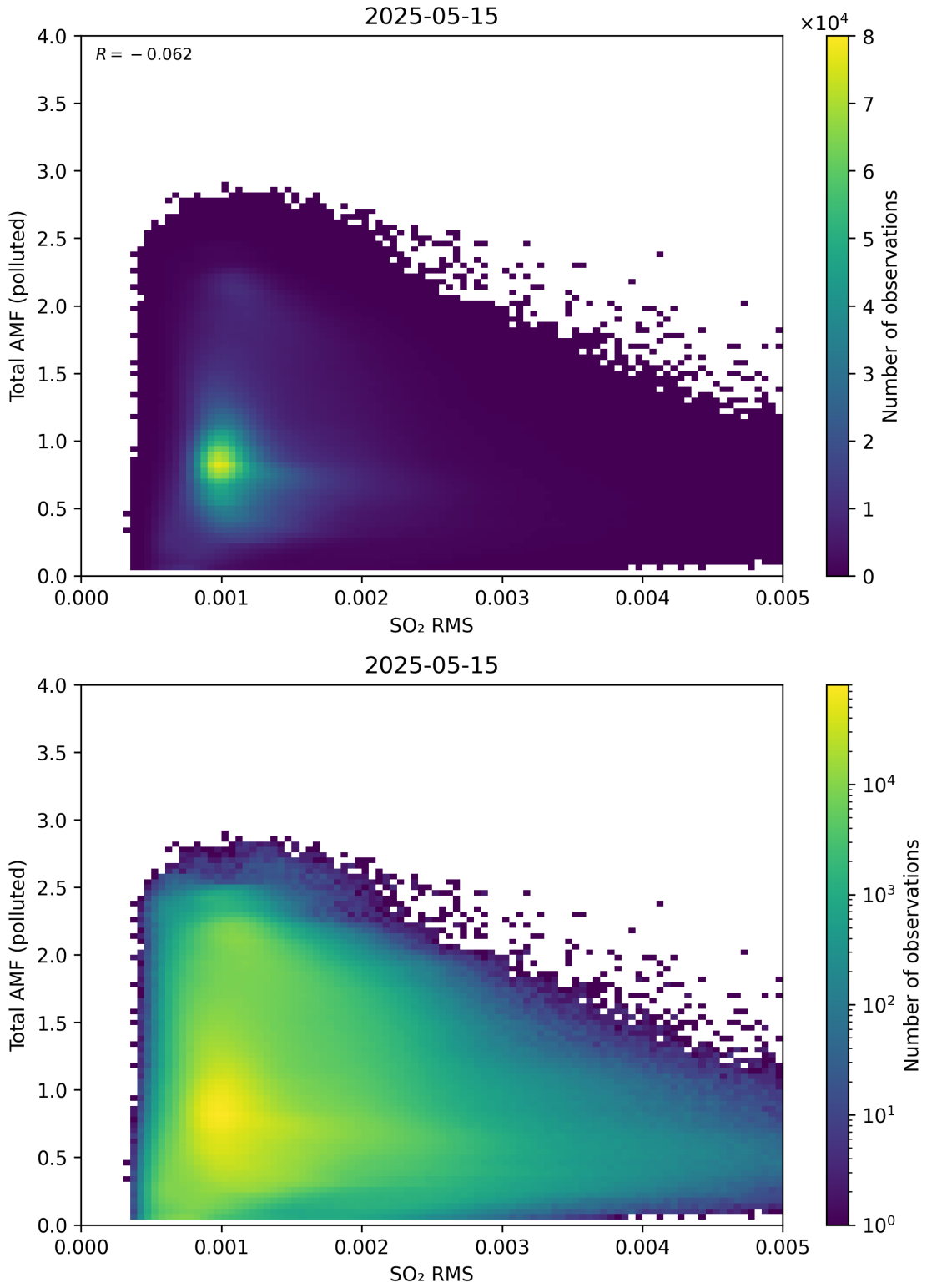


Figure 148: Scatter density plot of "SO_2 RMS" against "Total AMF (polluted)" for 2025-05-15 to 2025-05-16.

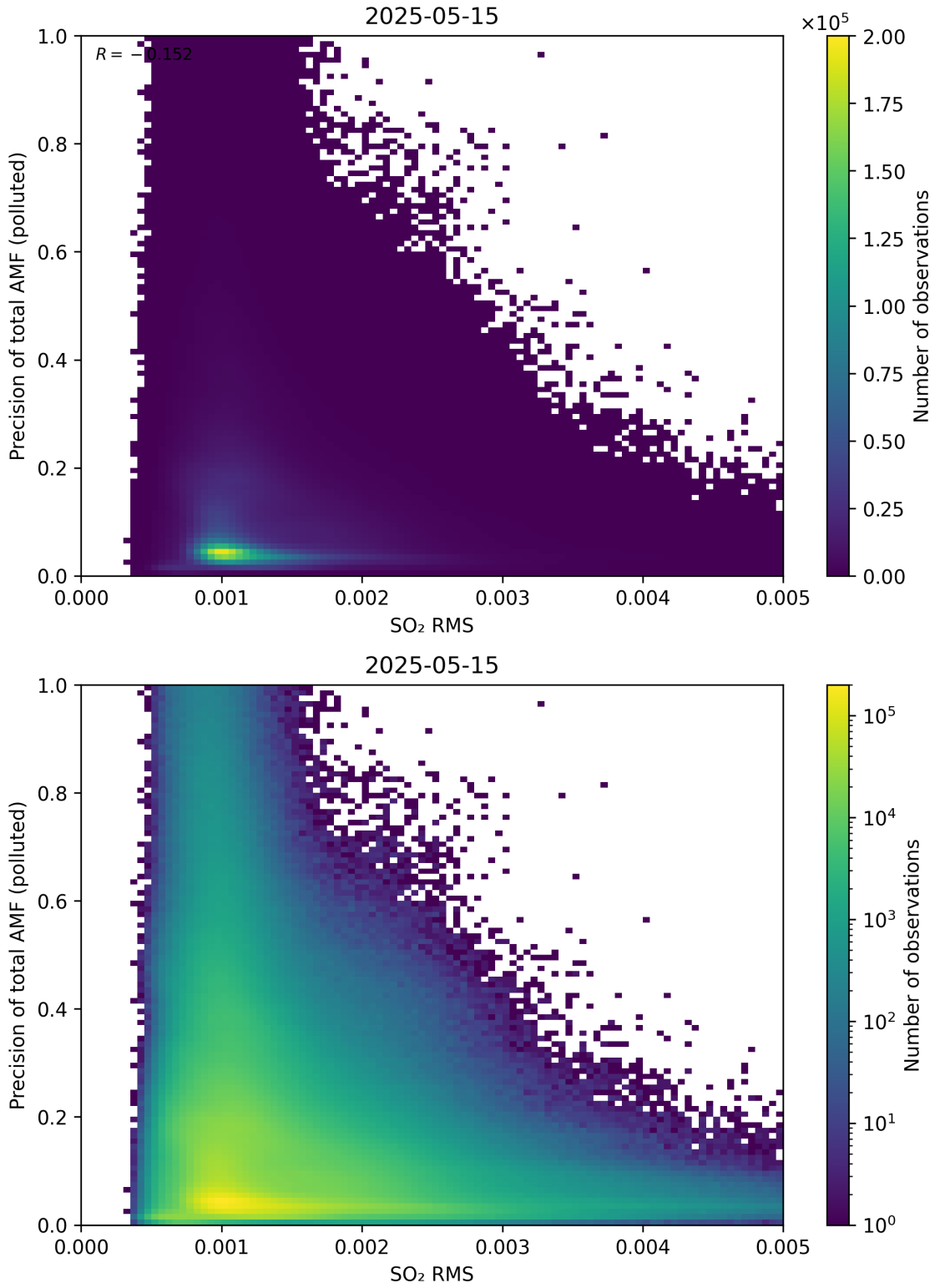


Figure 149: Scatter density plot of "SO_2 RMS" against "Precision of total AMF (polluted)" for 2025-05-15 to 2025-05-16.

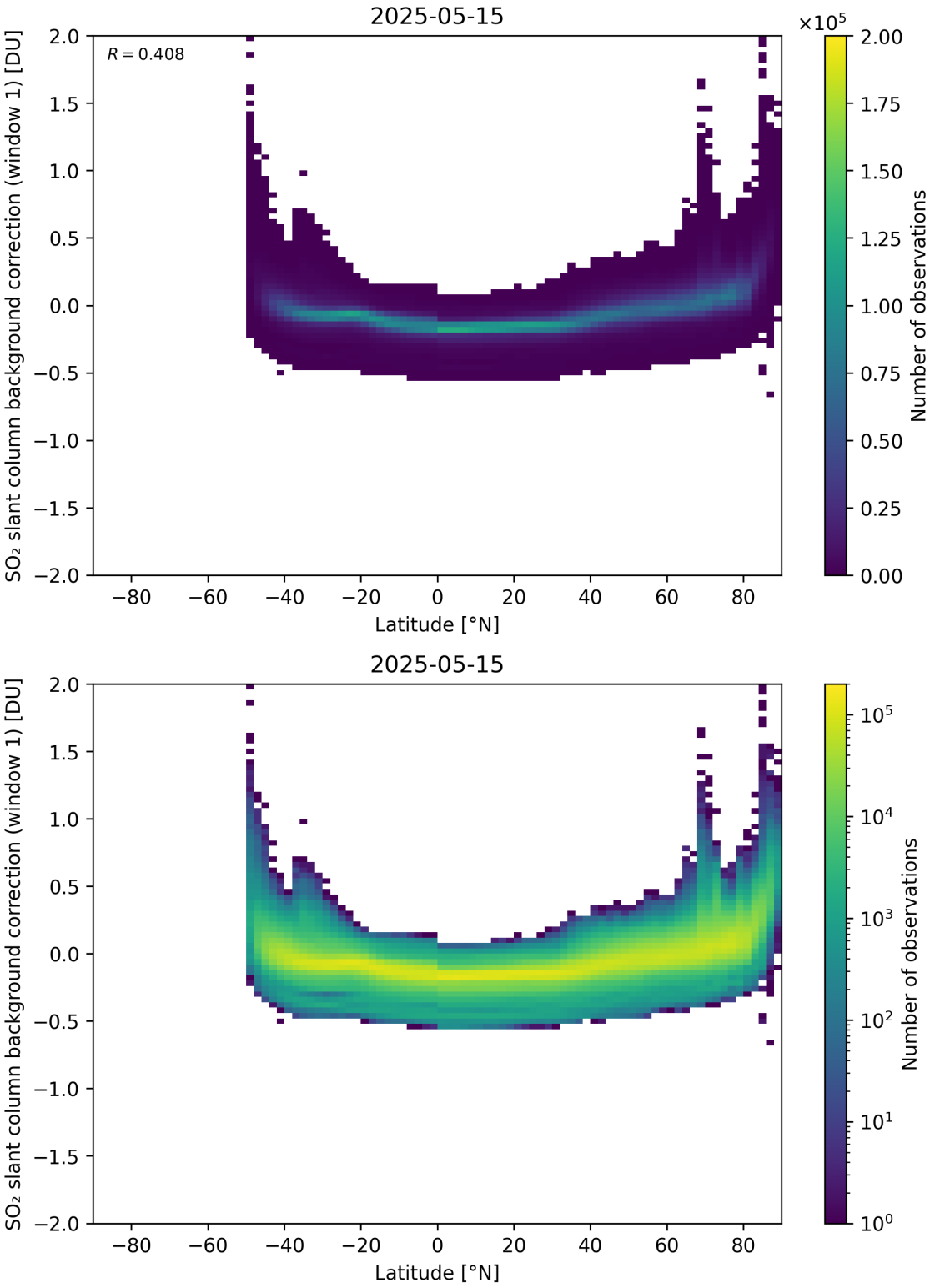


Figure 150: Scatter density plot of "Latitude" against "SO_2 slant column background correction (window 1)" for 2025-05-15 to 2025-05-16.

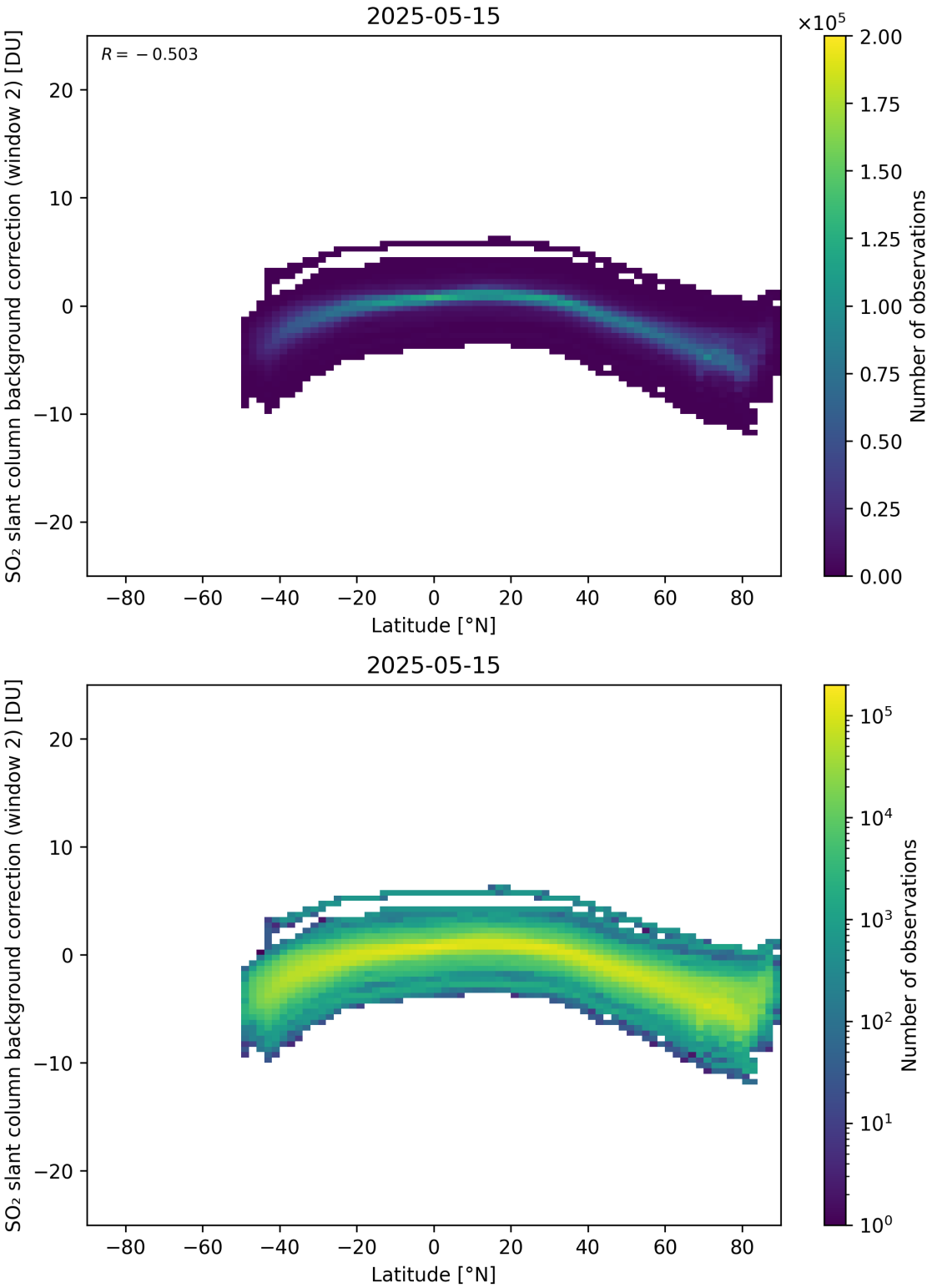


Figure 151: Scatter density plot of “Latitude” against “SO_2 slant column background correction (window 2)” for 2025-05-15 to 2025-05-16.

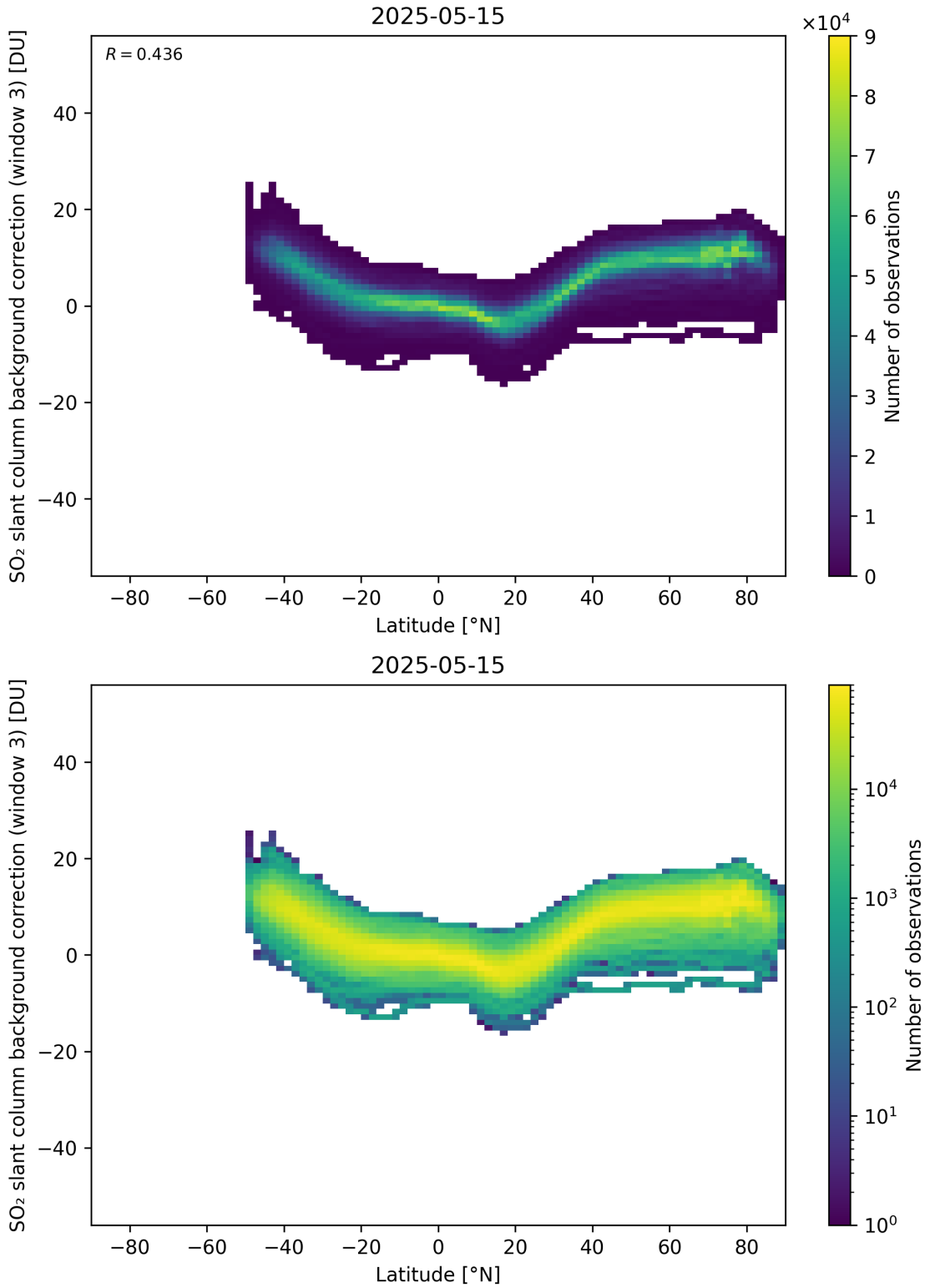


Figure 152: Scatter density plot of “Latitude” against “SO_2 slant column background correction (window 3)” for 2025-05-15 to 2025-05-16.

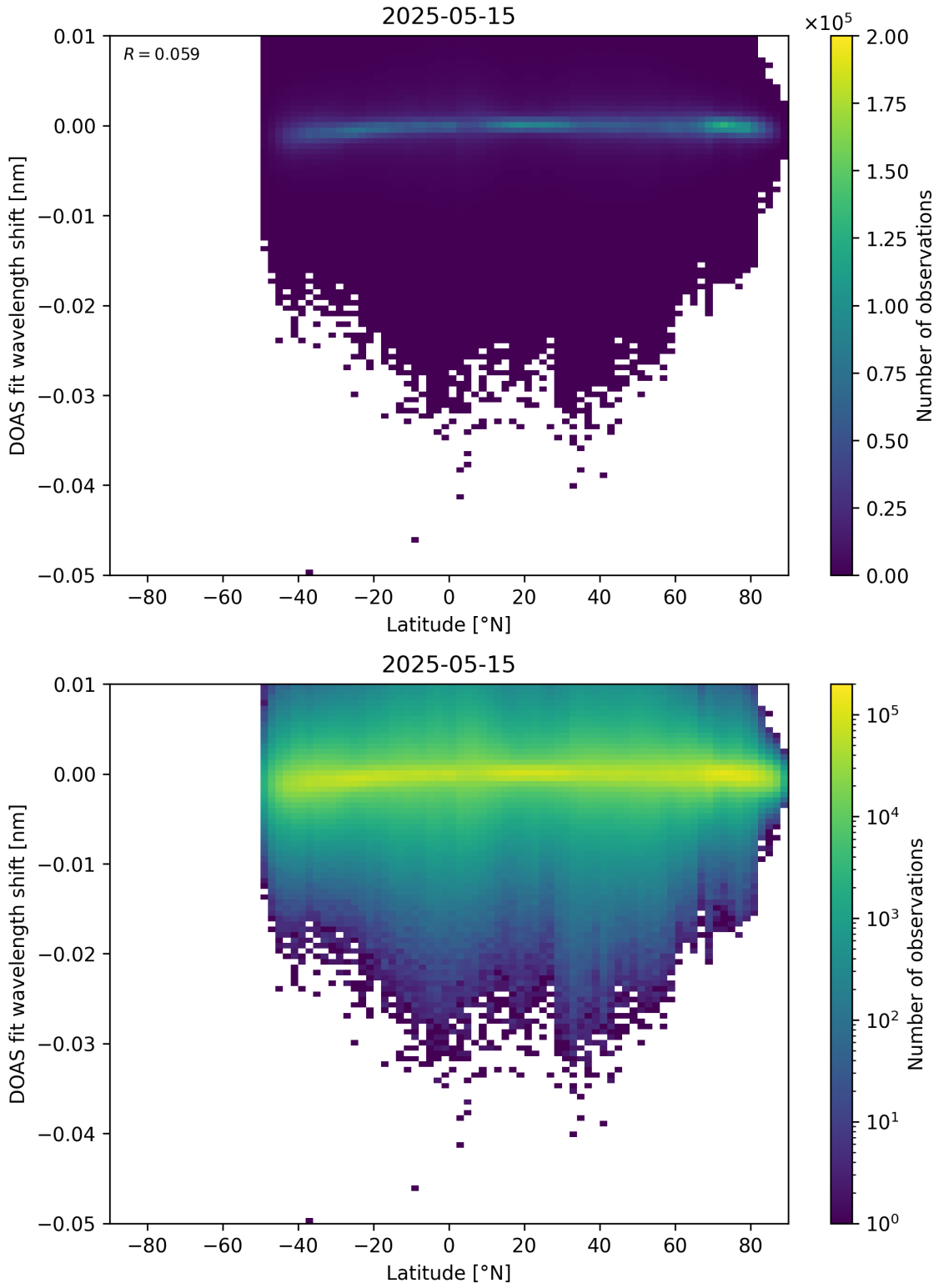


Figure 153: Scatter density plot of “Latitude” against “DOAS fit wavelength shift” for 2025-05-15 to 2025-05-16.

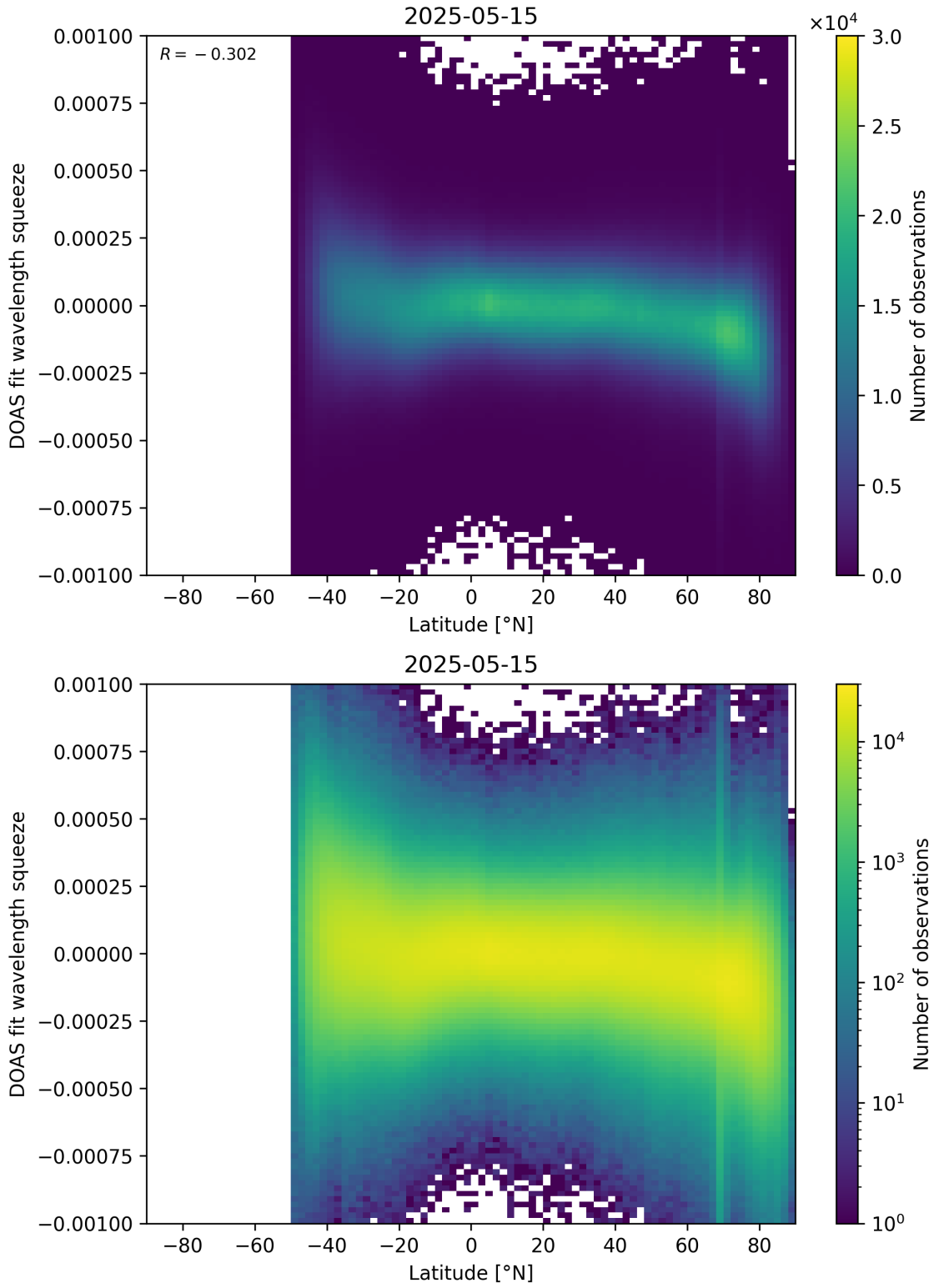


Figure 154: Scatter density plot of “Latitude” against “DOAS fit wavelength squeeze” for 2025-05-15 to 2025-05-16.

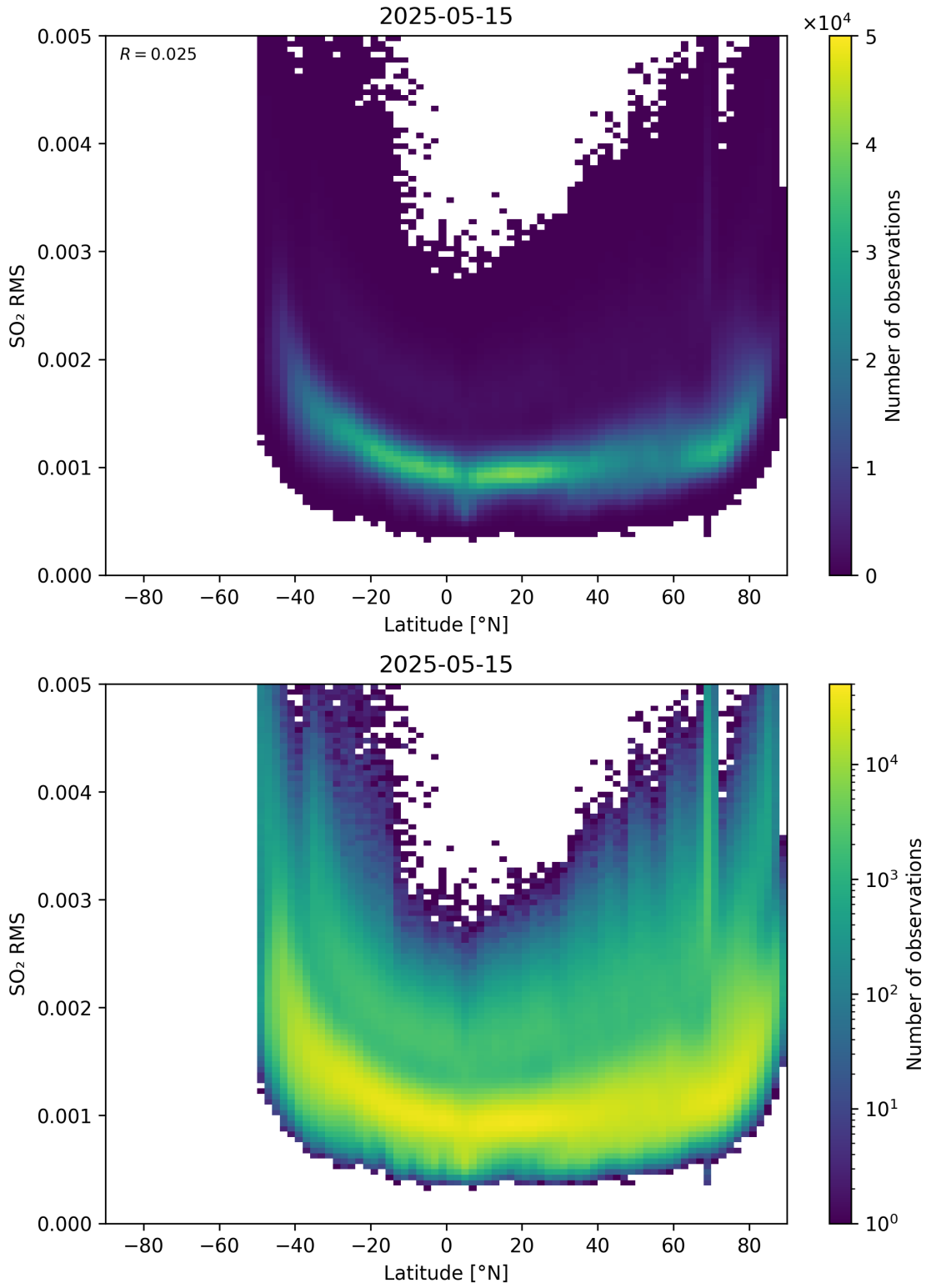


Figure 155: Scatter density plot of “Latitude” against “SO_2 RMS” for 2025-05-15 to 2025-05-16.

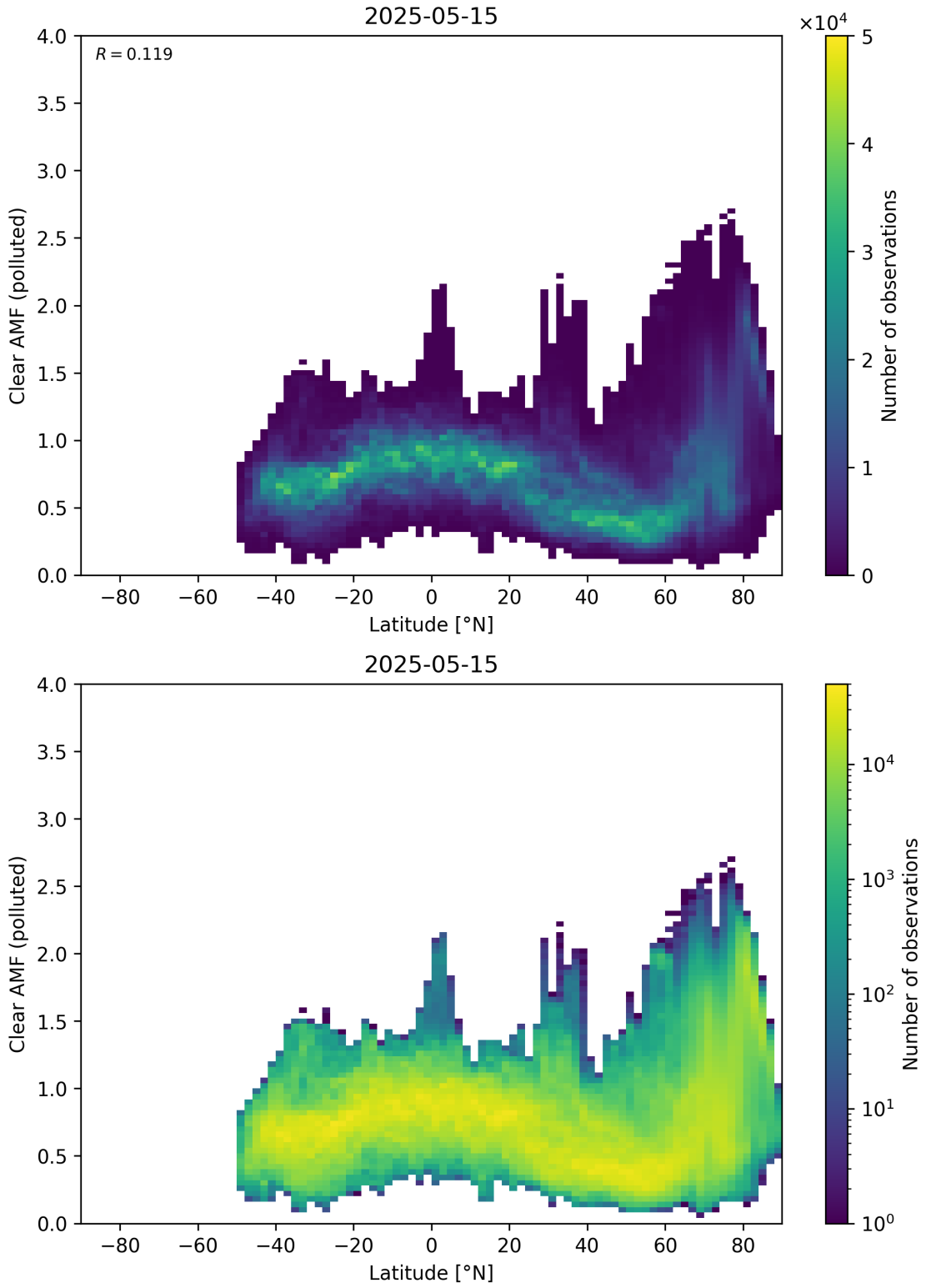


Figure 156: Scatter density plot of “Latitude” against “Clear AMF (polluted)” for 2025-05-15 to 2025-05-16.

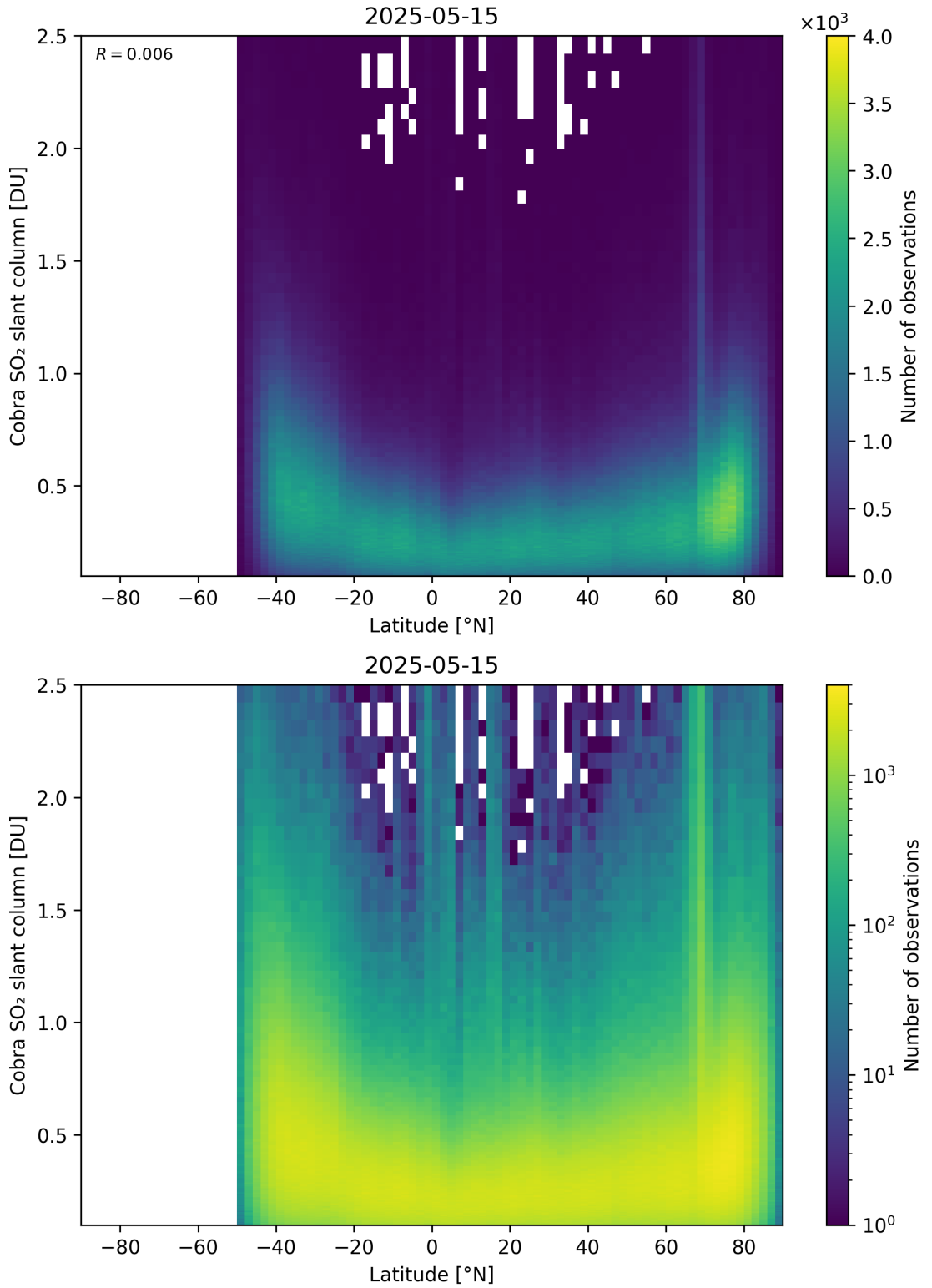


Figure 157: Scatter density plot of “Latitude” against “Cobra SO_2 slant column” for 2025-05-15 to 2025-05-16.

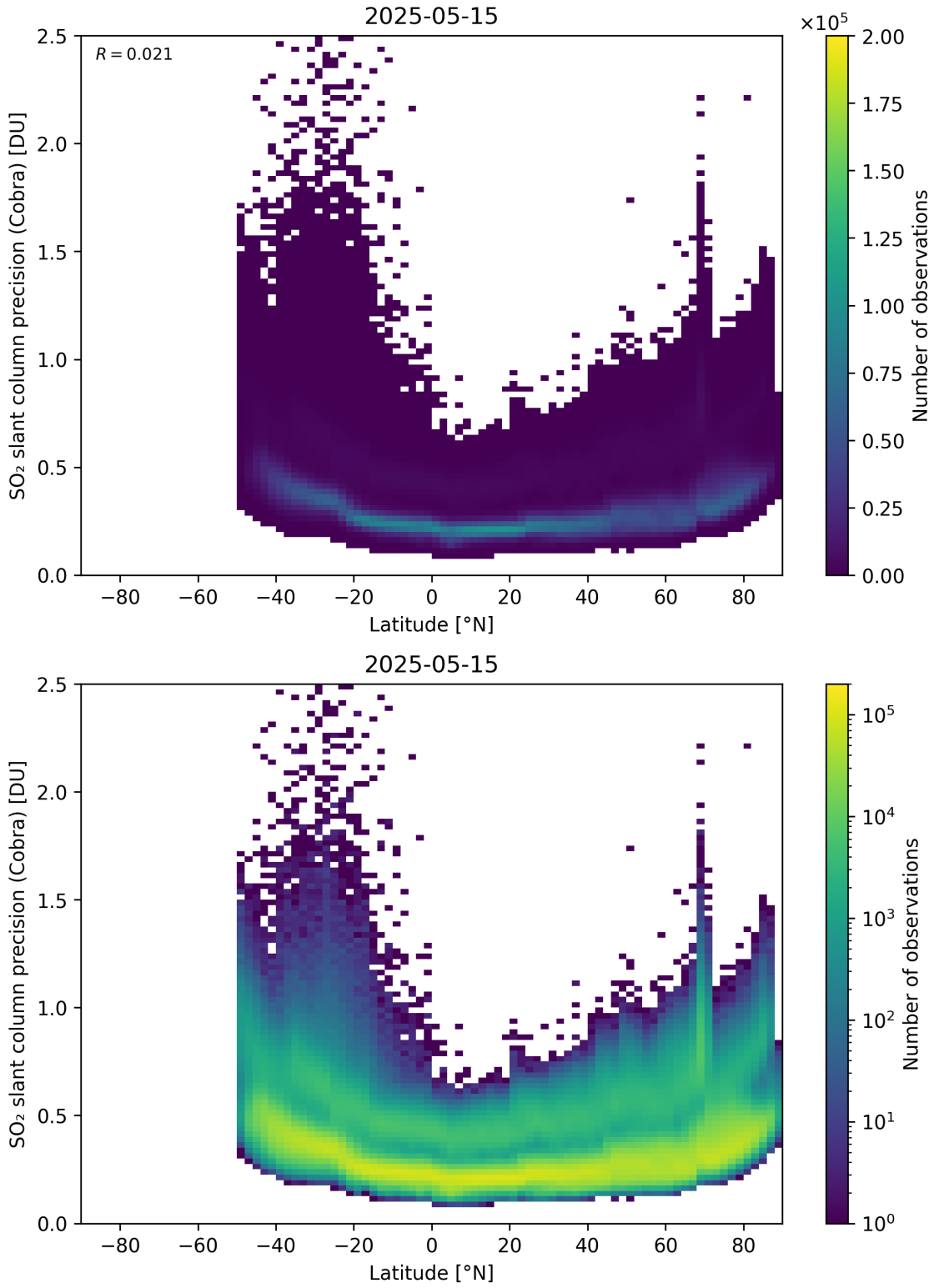


Figure 158: Scatter density plot of “Latitude” against “SO_2 slant column precision (Cobra)” for 2025-05-15 to 2025-05-16.

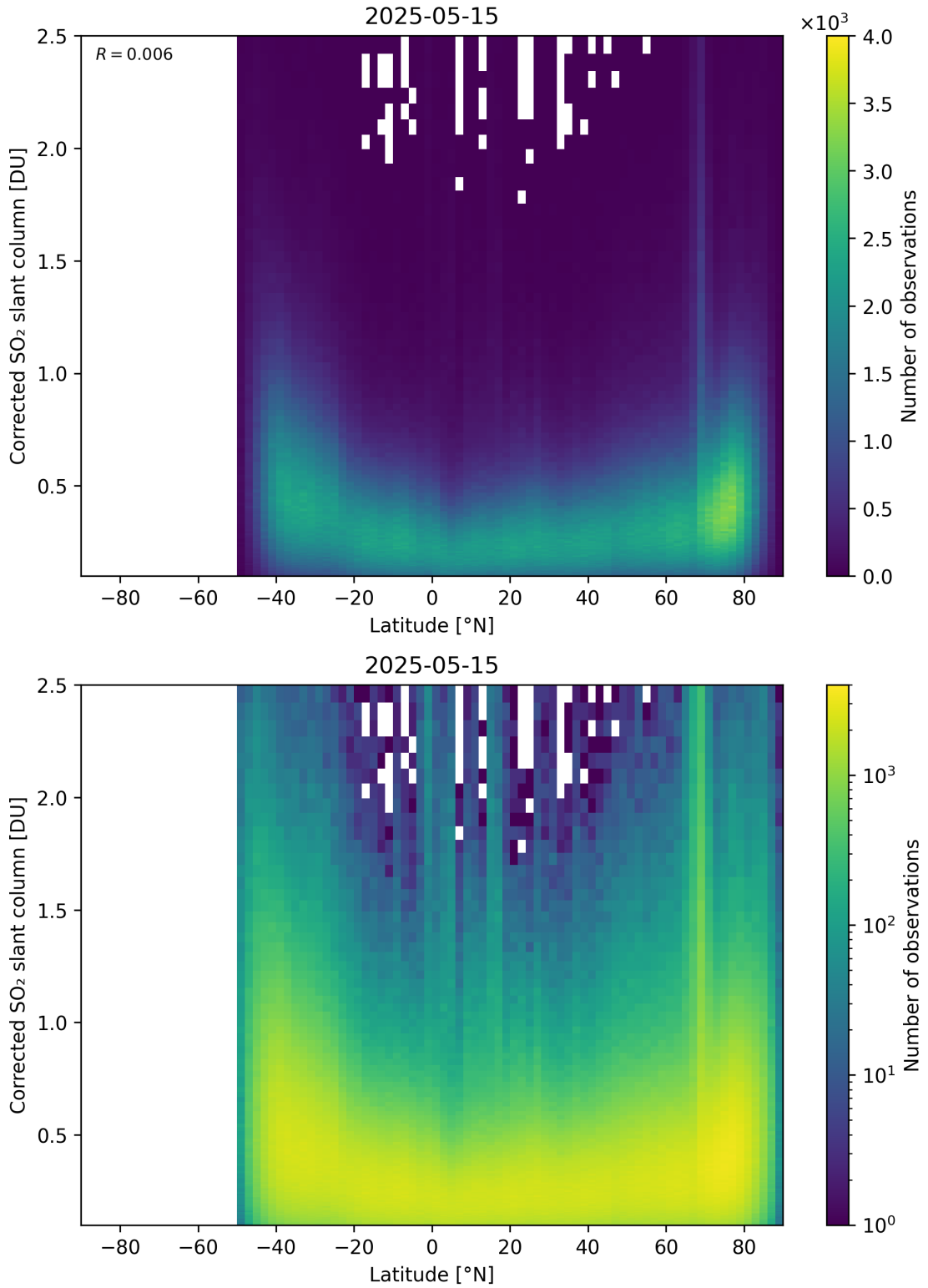


Figure 159: Scatter density plot of “Latitude” against “Corrected SO_2 slant column” for 2025-05-15 to 2025-05-16.

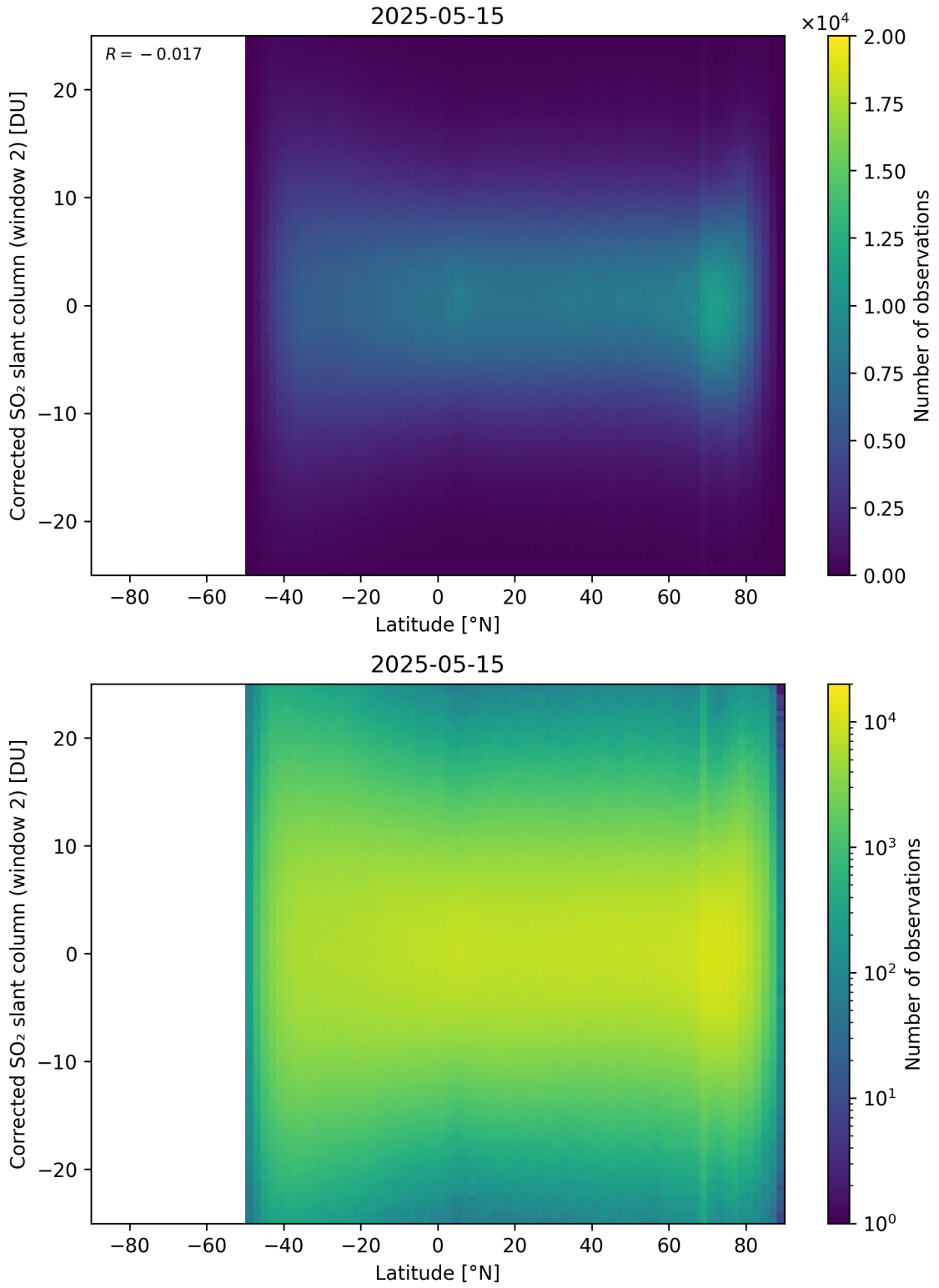


Figure 160: Scatter density plot of “Latitude” against “Corrected SO_2 slant column (window 2)” for 2025-05-15 to 2025-05-16.

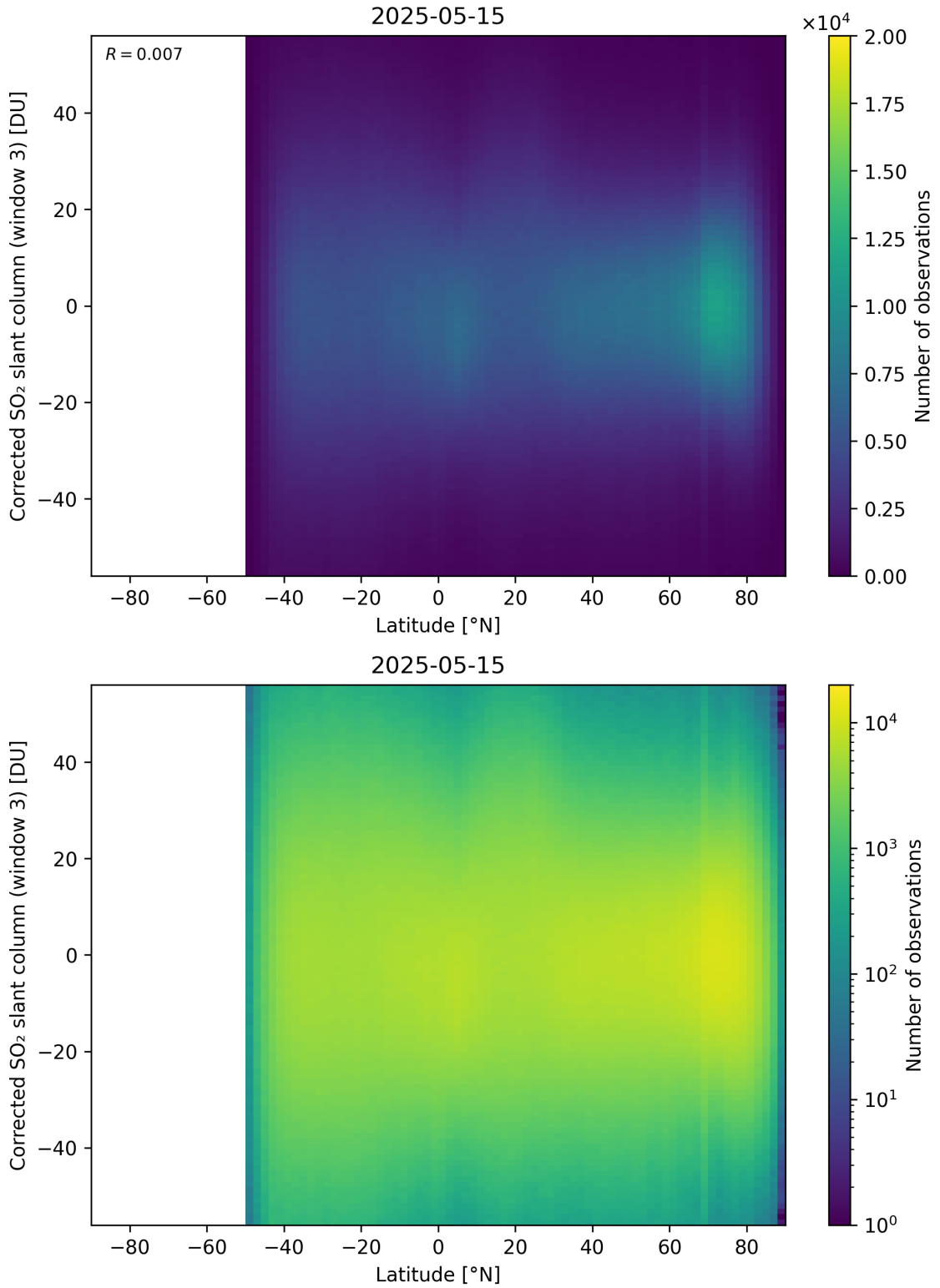


Figure 161: Scatter density plot of “Latitude” against “Corrected SO_2 slant column (window 3)” for 2025-05-15 to 2025-05-16.

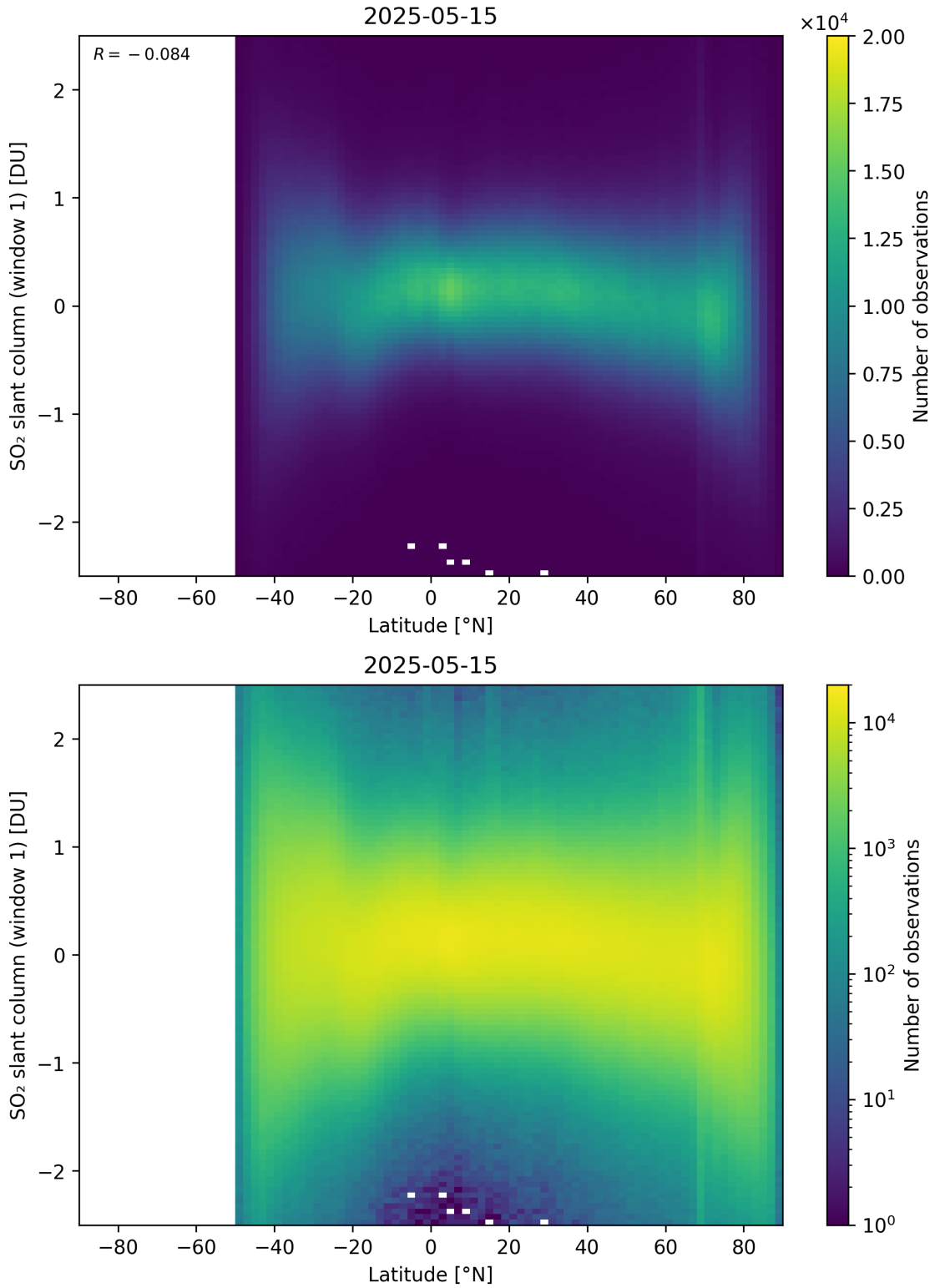


Figure 162: Scatter density plot of “Latitude” against “SO_2 slant column (window 1)” for 2025-05-15 to 2025-05-16.

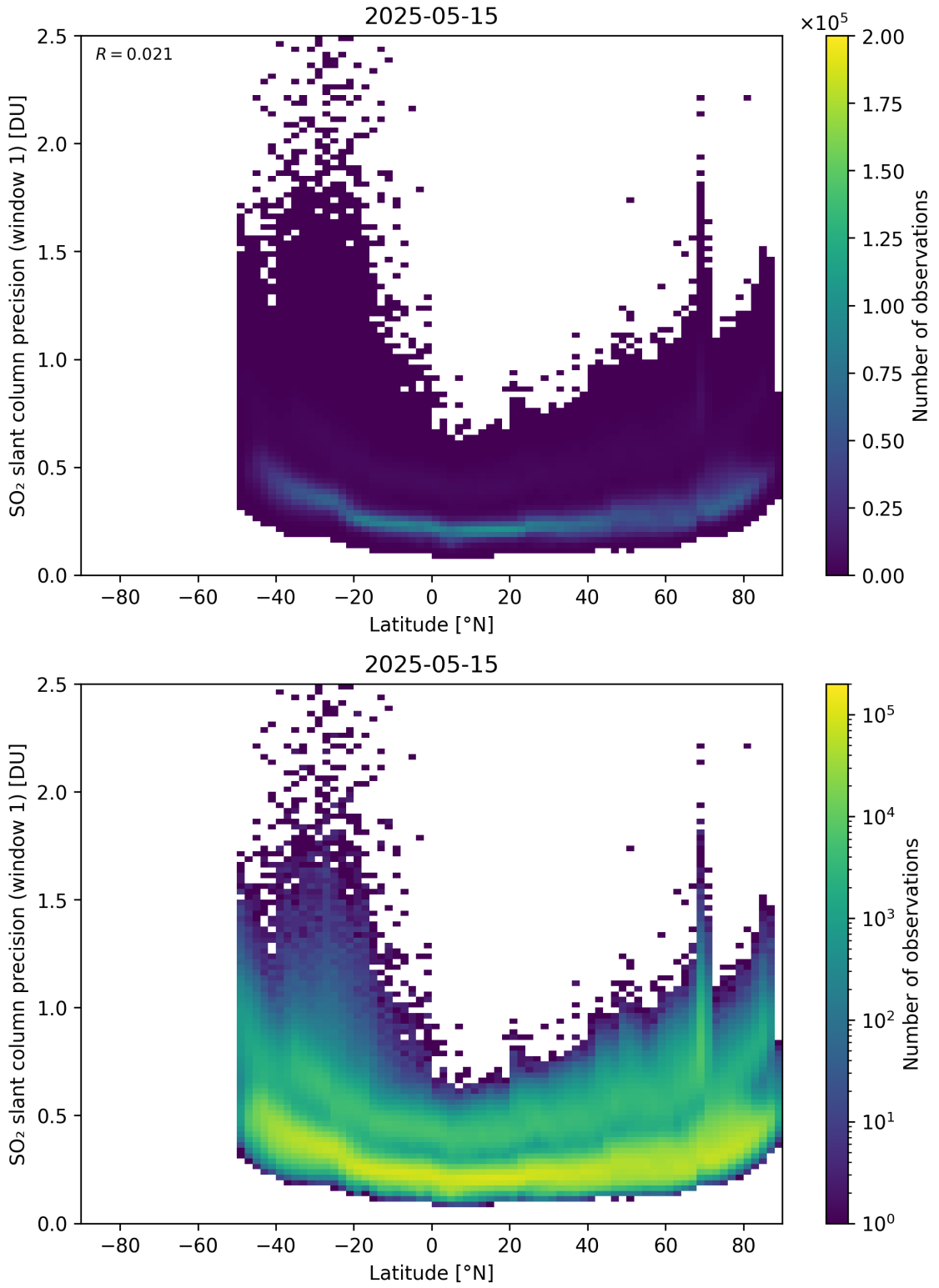


Figure 163: Scatter density plot of “Latitude” against “SO_2 slant column precision (window 1)” for 2025-05-15 to 2025-05-16.

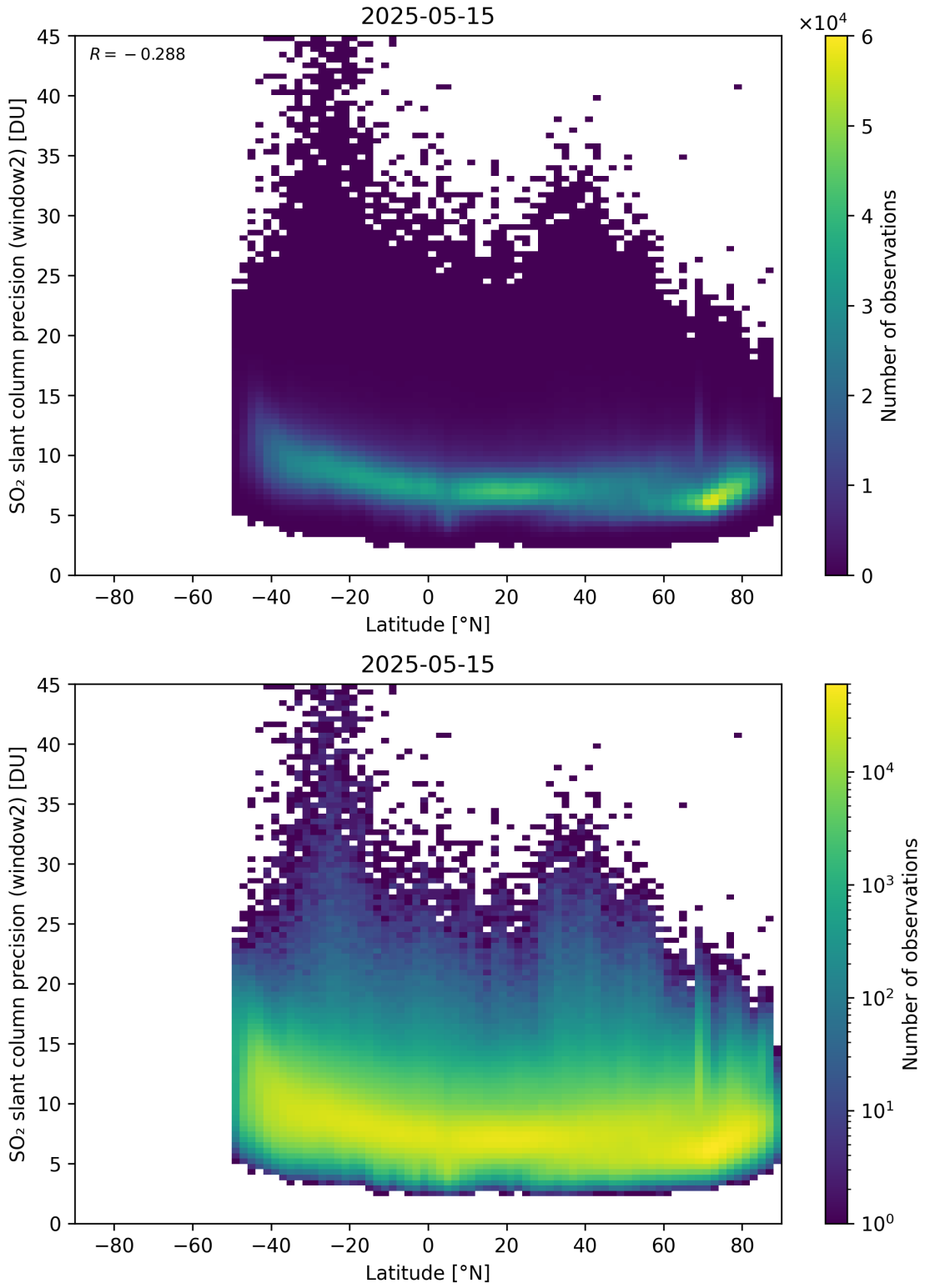


Figure 164: Scatter density plot of “Latitude” against “SO_2 slant column precision (window2)” for 2025-05-15 to 2025-05-16.

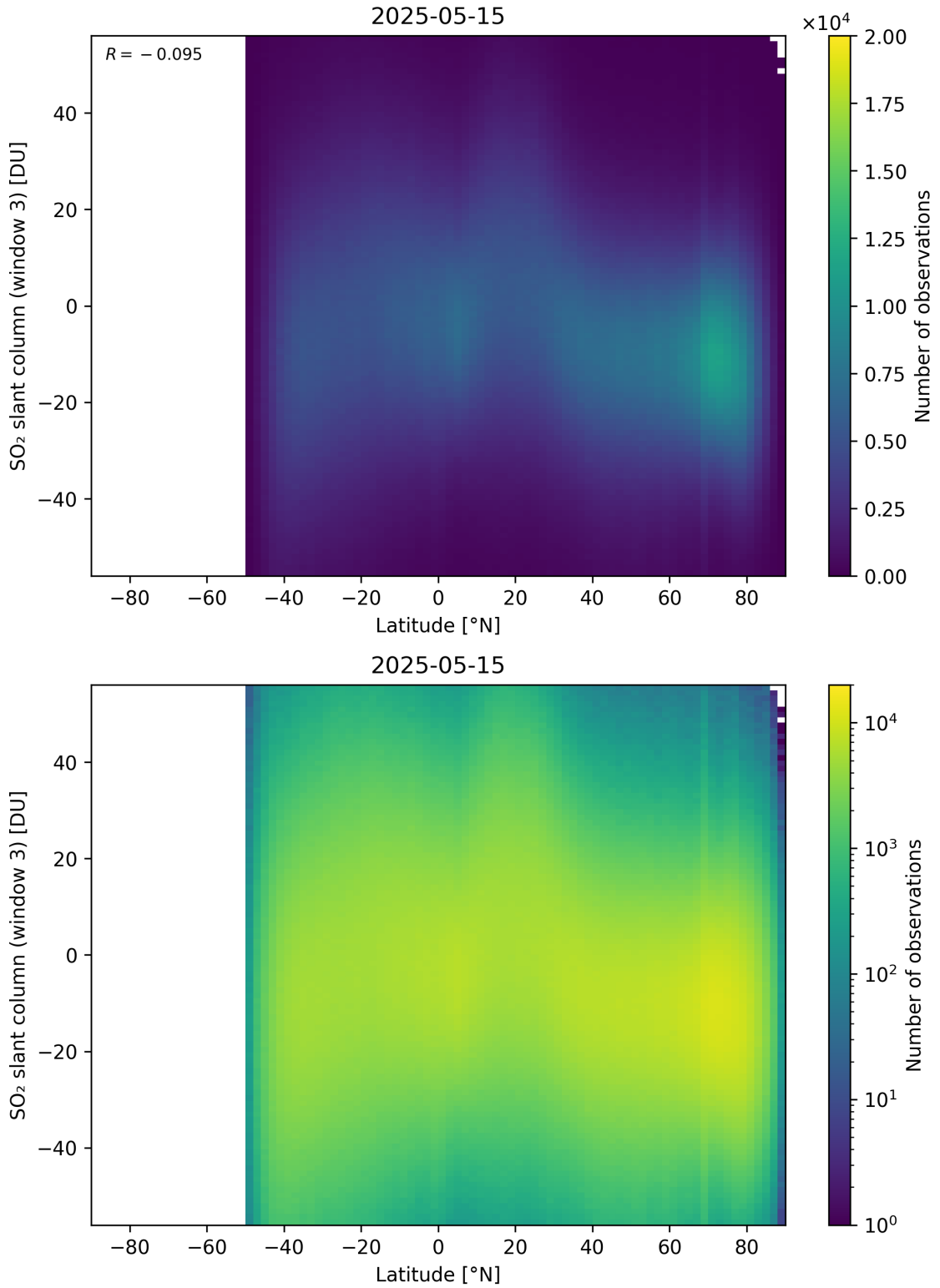


Figure 165: Scatter density plot of “Latitude” against “SO_2 slant column (window 3)” for 2025-05-15 to 2025-05-16.

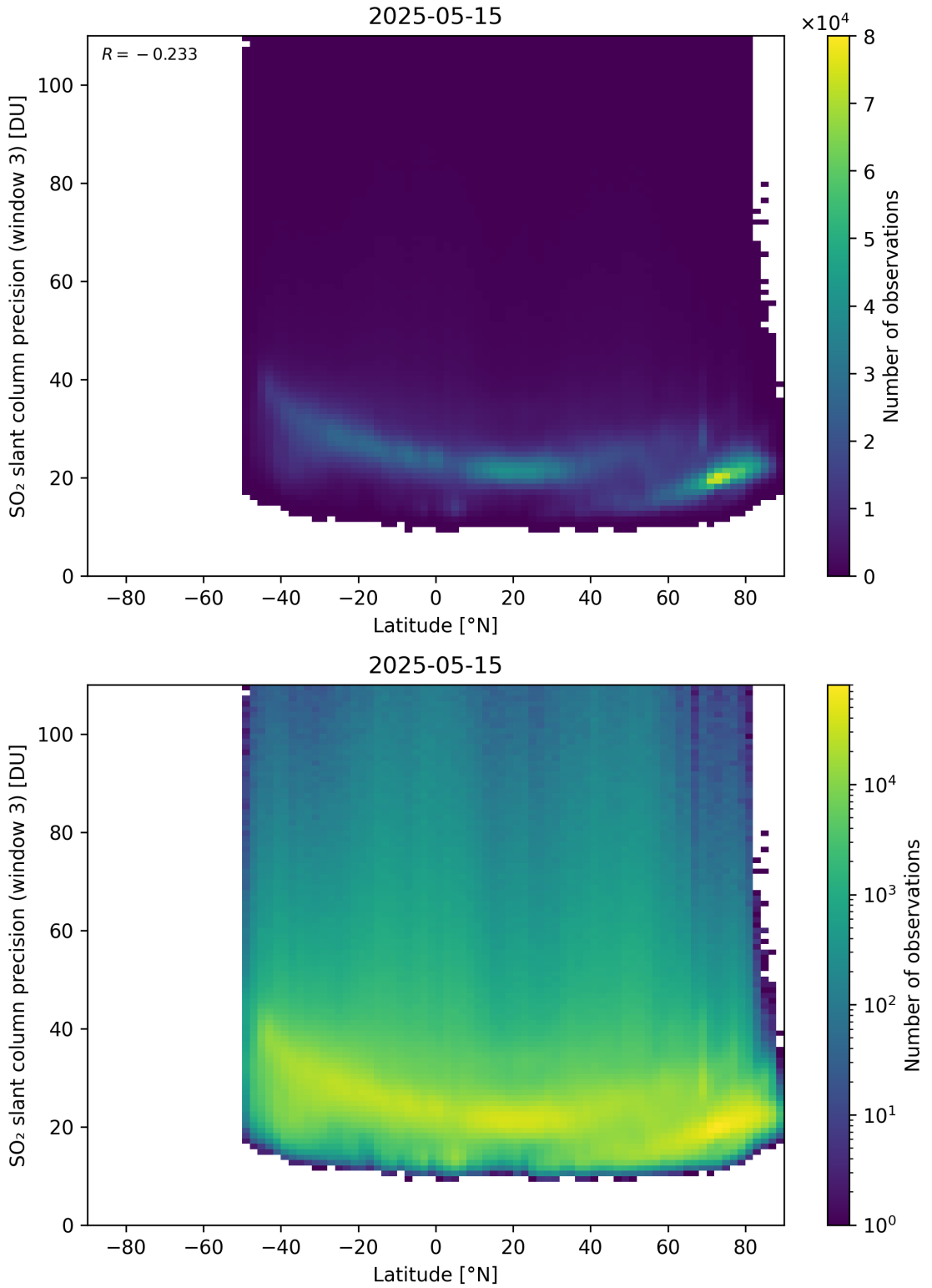


Figure 166: Scatter density plot of “Latitude” against “SO_2 slant column precision (window 3)” for 2025-05-15 to 2025-05-16.

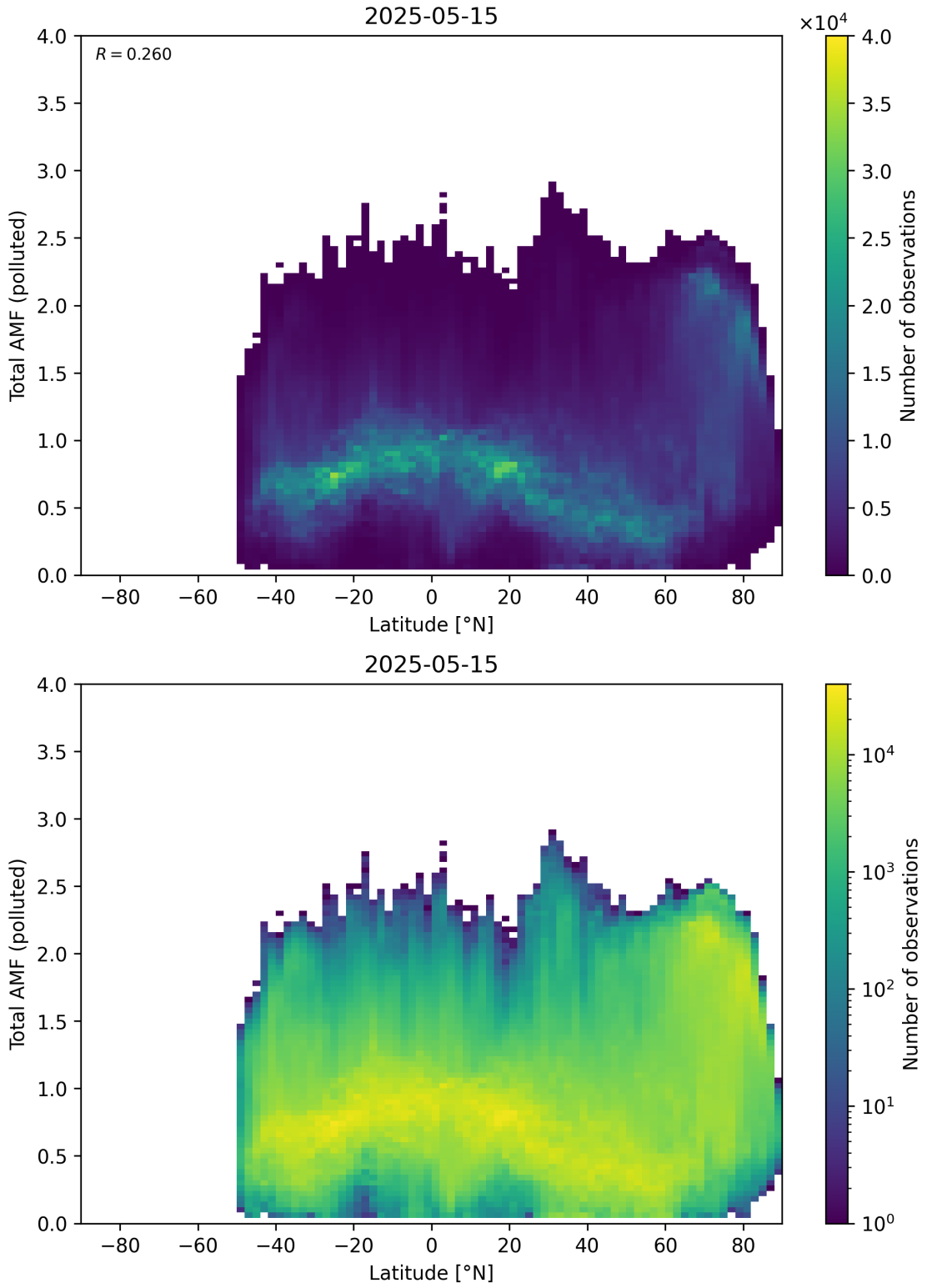


Figure 167: Scatter density plot of “Latitude” against “Total AMF (polluted)” for 2025-05-15 to 2025-05-16.

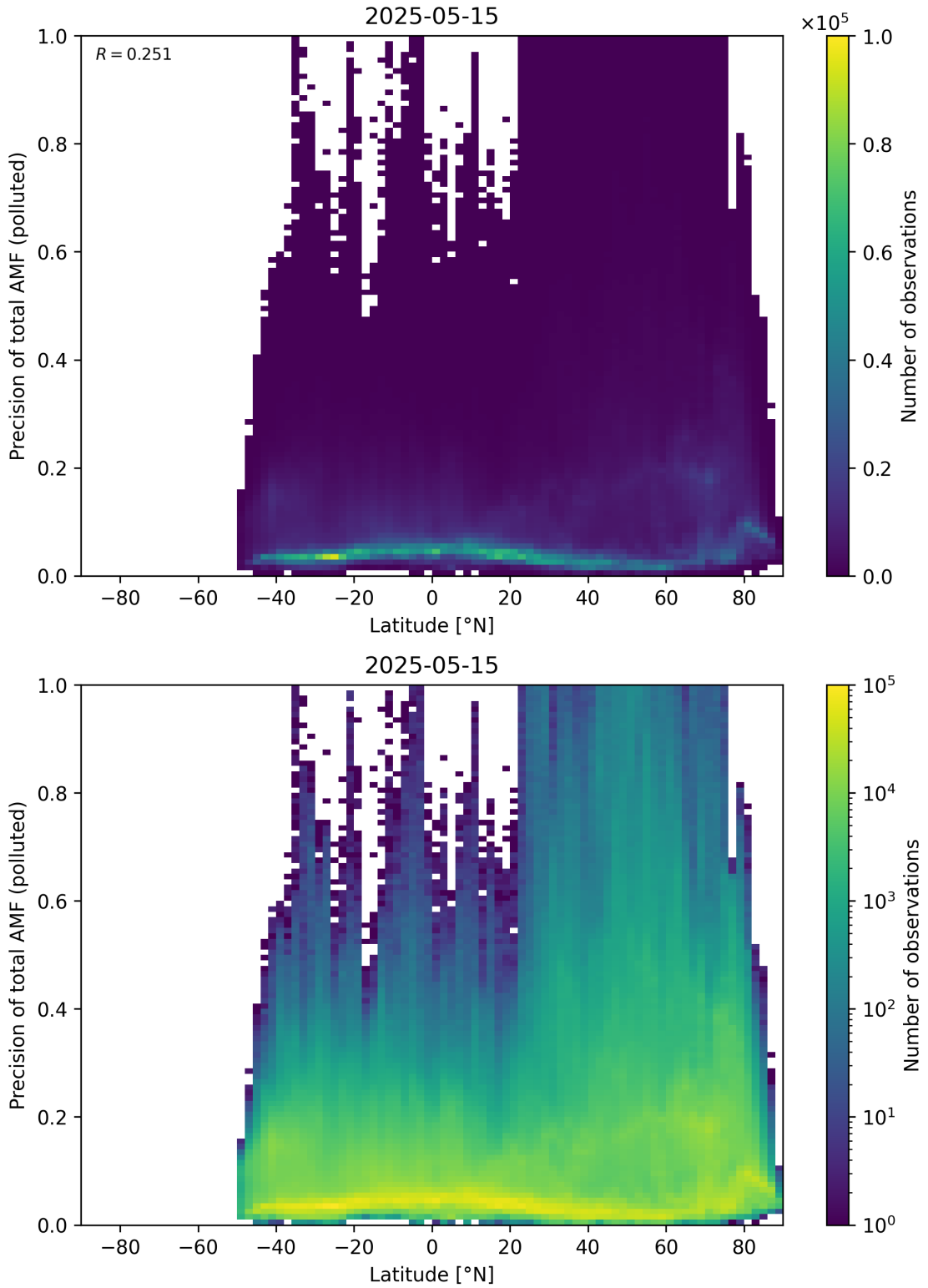


Figure 168: Scatter density plot of “Latitude” against “Precision of total AMF (polluted)” for 2025-05-15 to 2025-05-16.

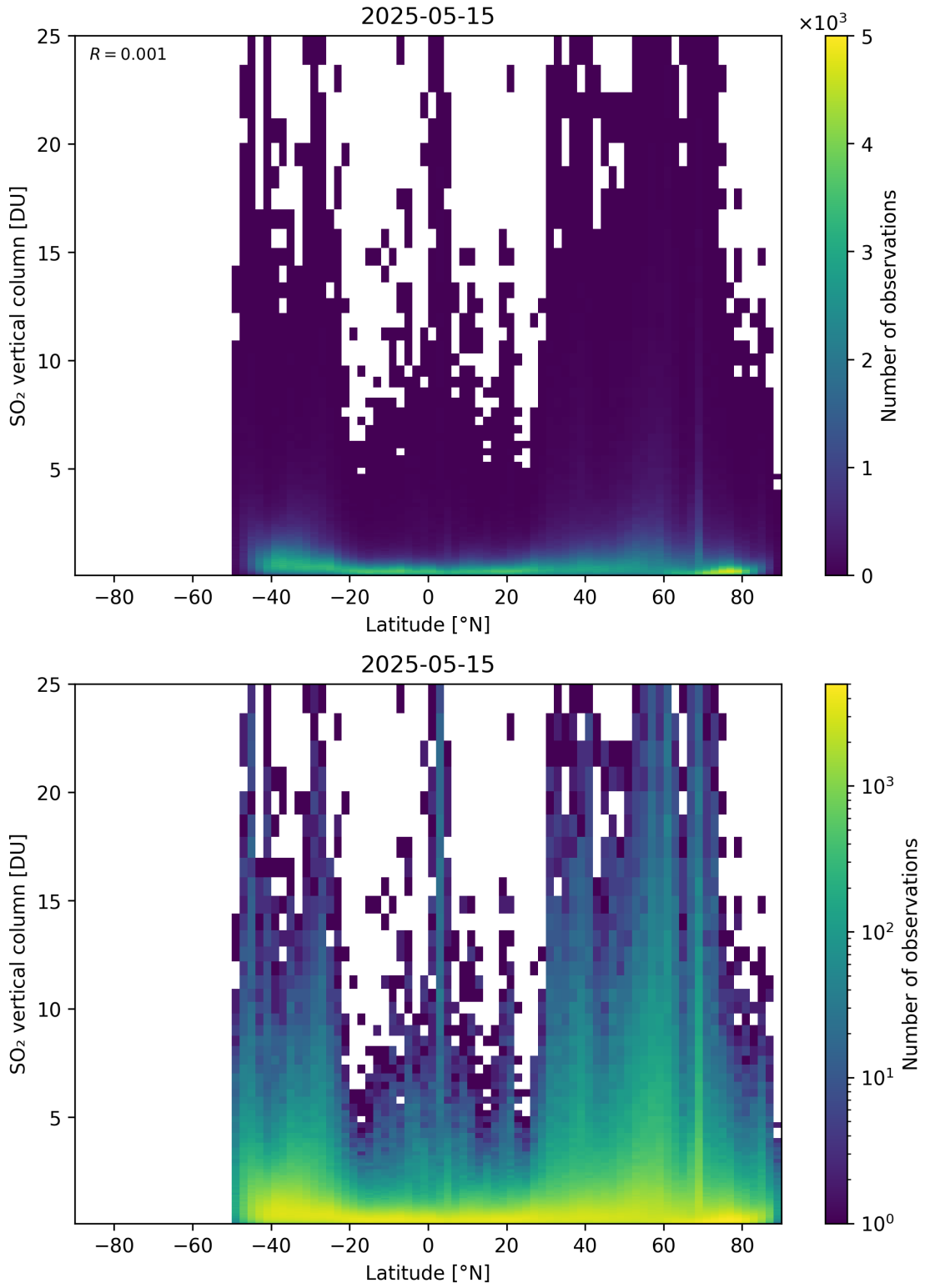


Figure 169: Scatter density plot of “Latitude” against “SO_2 vertical column” for 2025-05-15 to 2025-05-16.

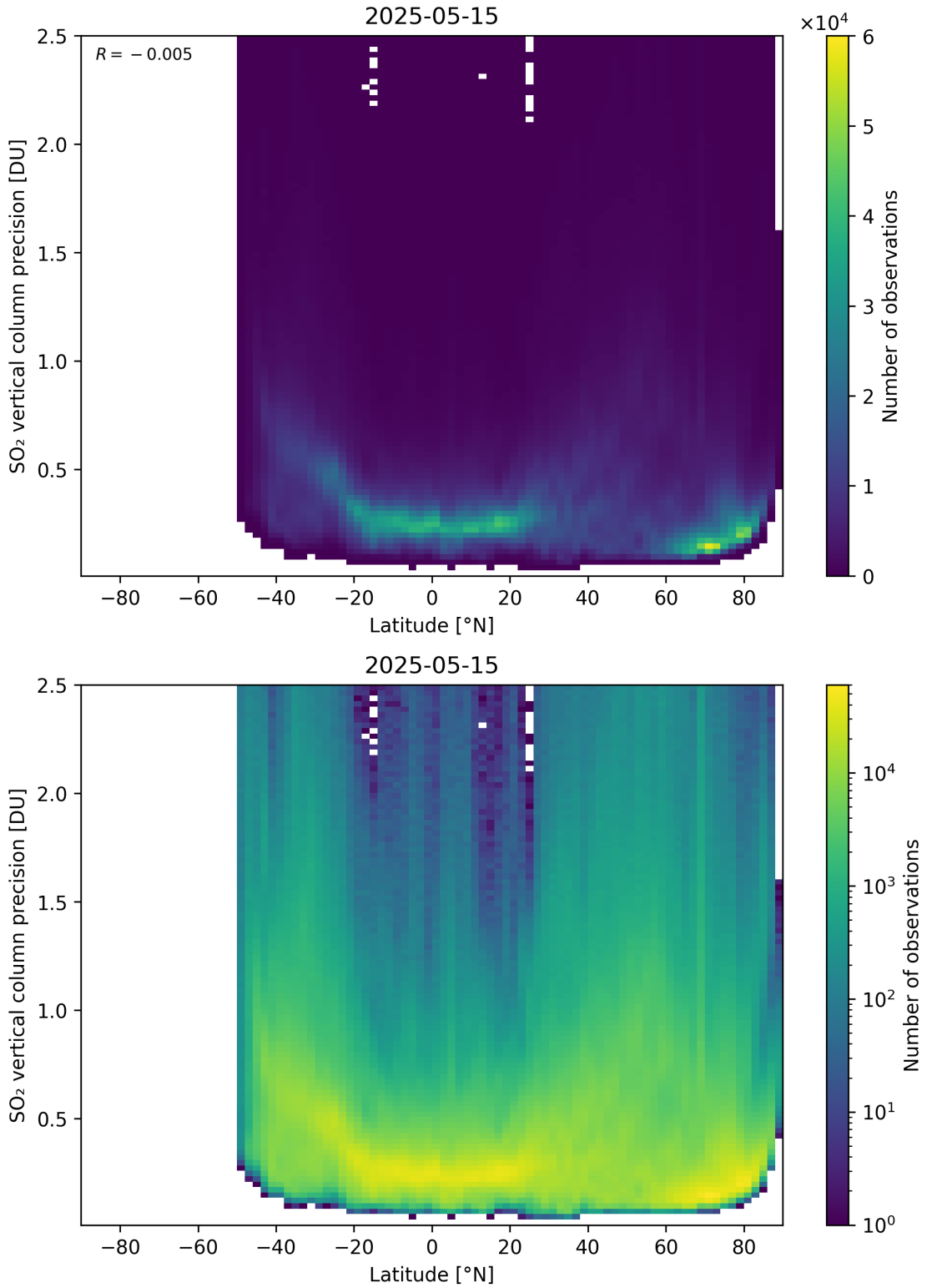


Figure 170: Scatter density plot of “Latitude” against “SO_2 vertical column precision” for 2025-05-15 to 2025-05-16.

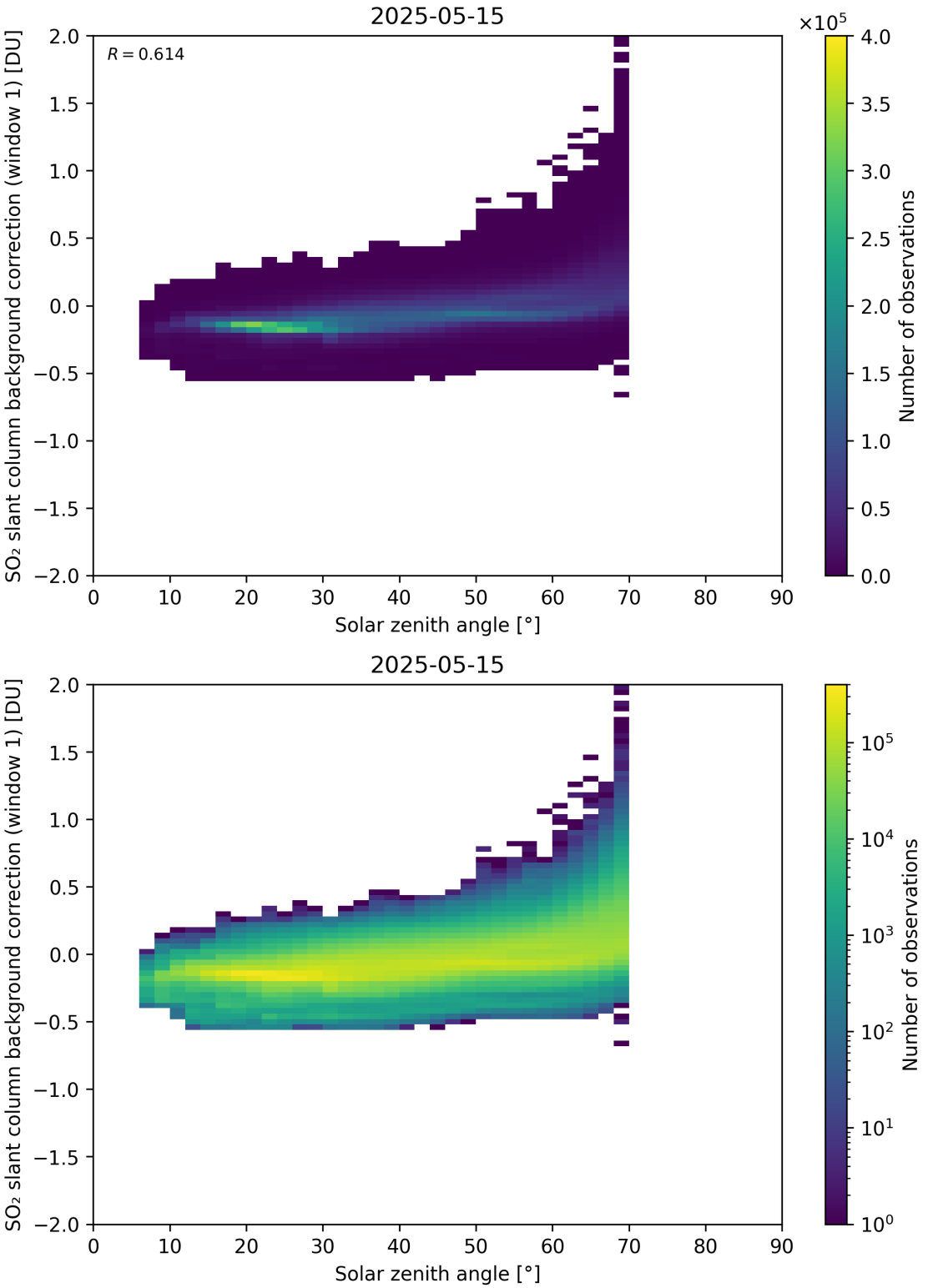


Figure 171: Scatter density plot of “Solar zenith angle” against “SO_2 slant column background correction (window 1)” for 2025-05-15 to 2025-05-16.

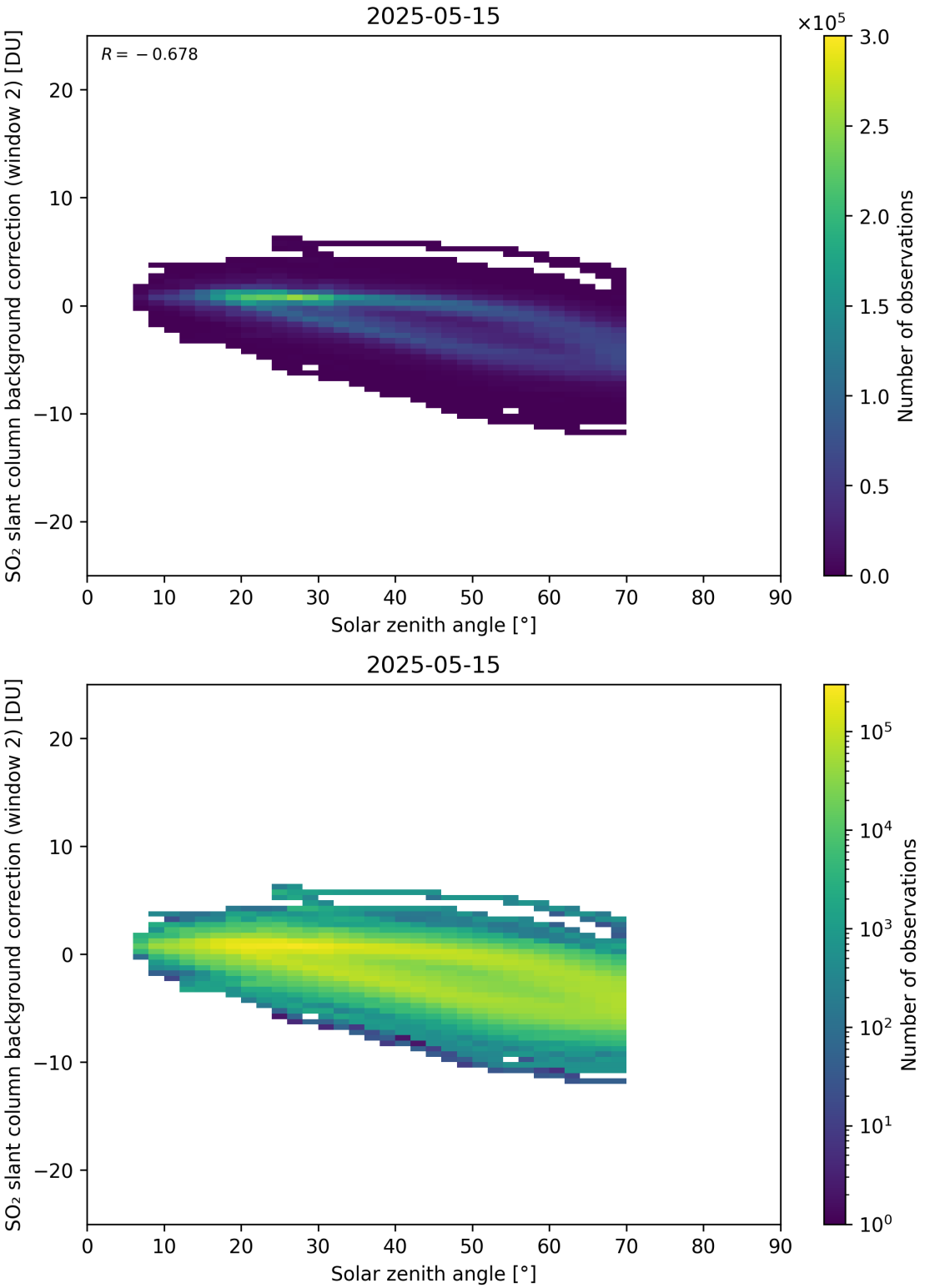


Figure 172: Scatter density plot of “Solar zenith angle” against “SO_2 slant column background correction (window 2)” for 2025-05-15 to 2025-05-16.

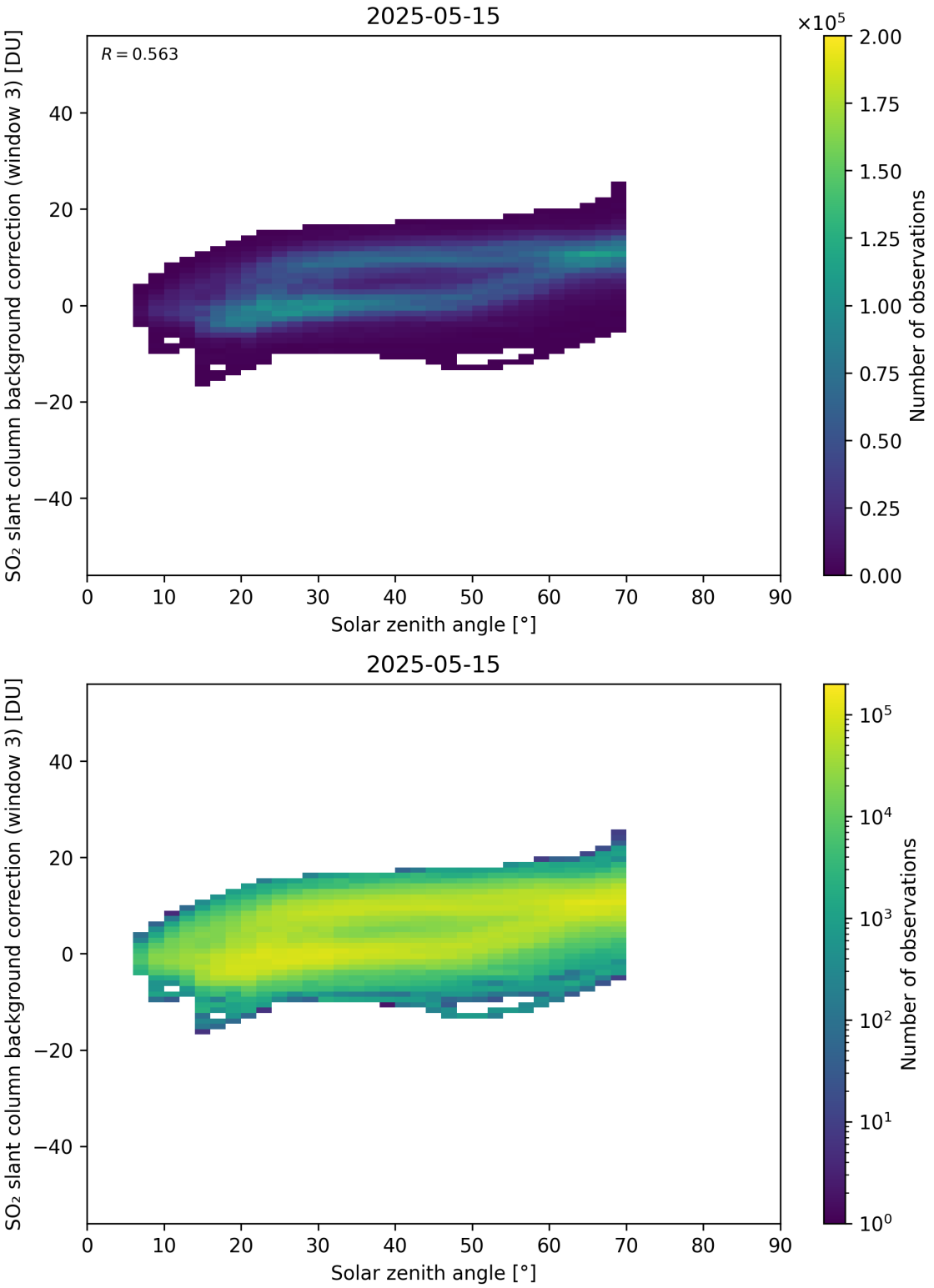


Figure 173: Scatter density plot of “Solar zenith angle” against “SO_2 slant column background correction (window 3)” for 2025-05-15 to 2025-05-16.

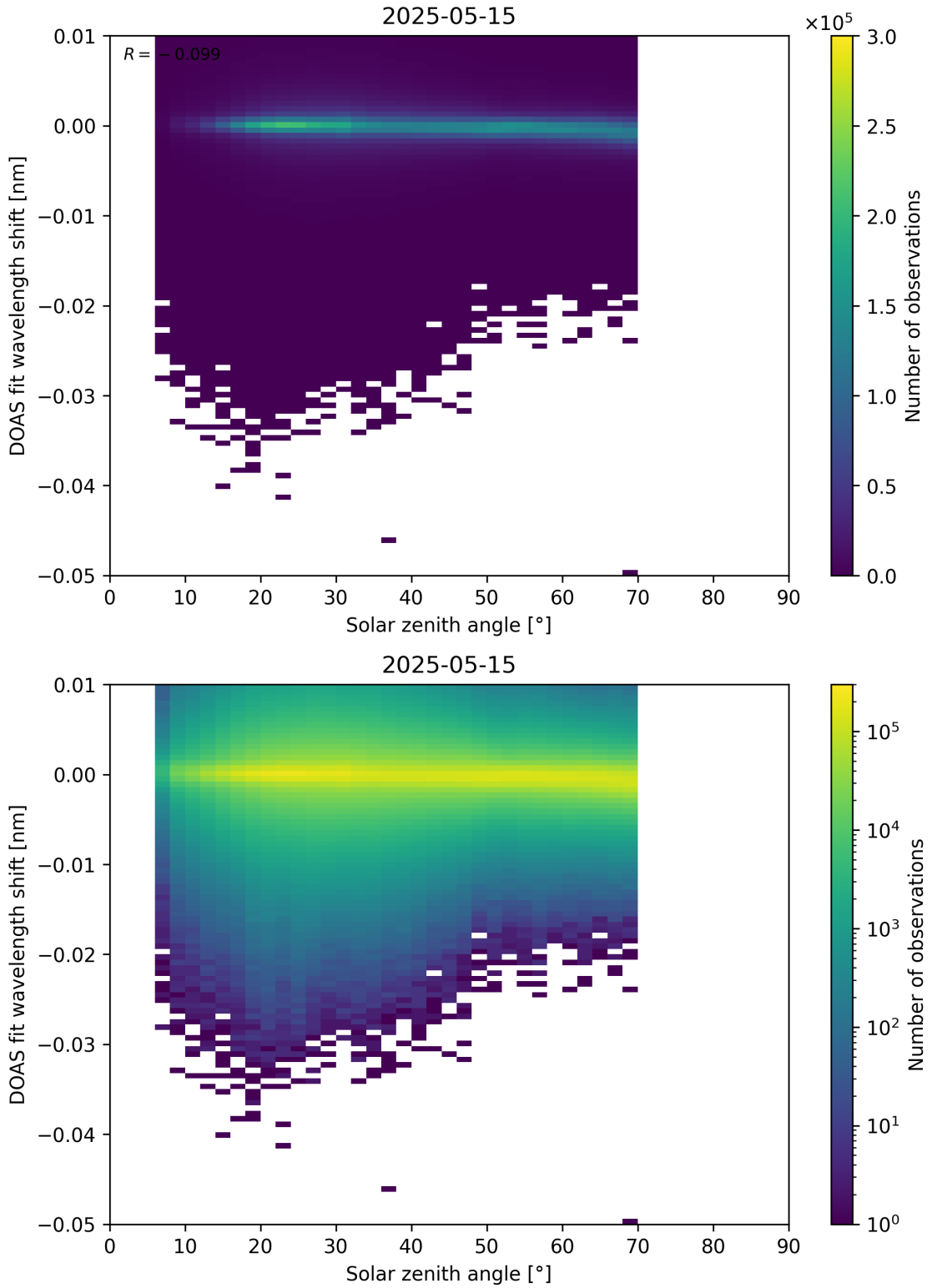


Figure 174: Scatter density plot of “Solar zenith angle” against “DOAS fit wavelength shift” for 2025-05-15 to 2025-05-16.

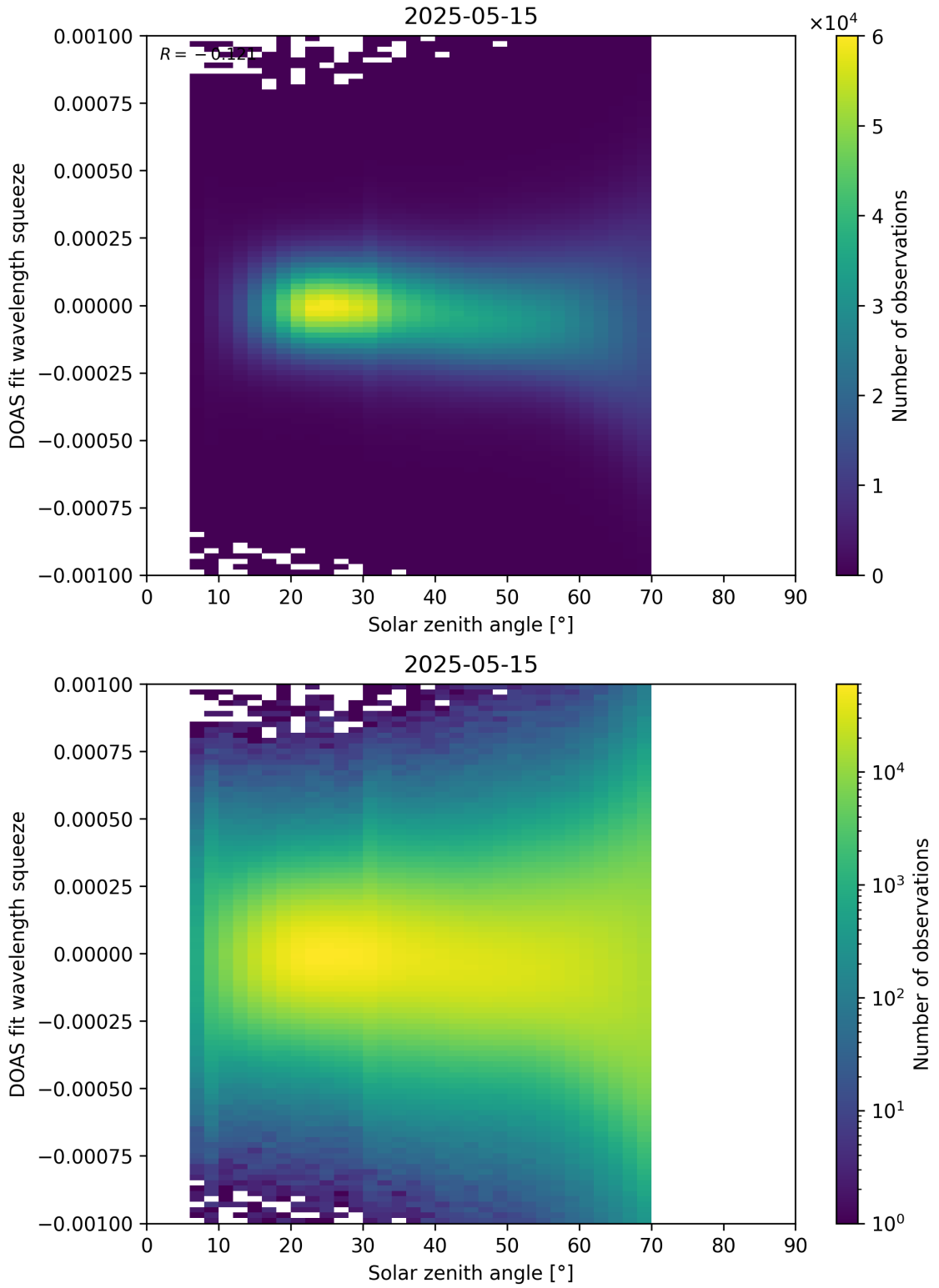


Figure 175: Scatter density plot of “Solar zenith angle” against “DOAS fit wavelength squeeze” for 2025-05-15 to 2025-05-16.

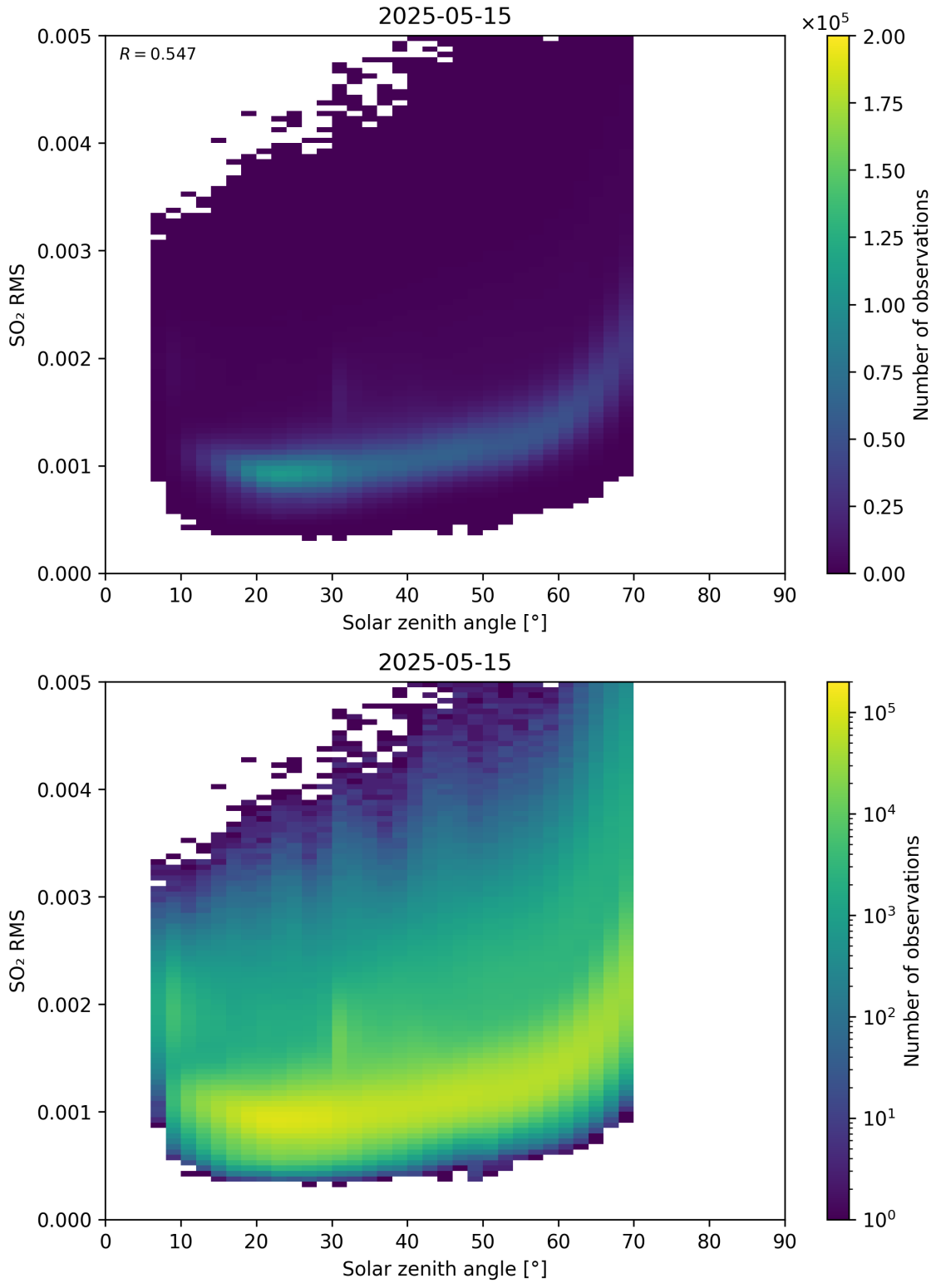


Figure 176: Scatter density plot of “Solar zenith angle” against “SO_2 RMS” for 2025-05-15 to 2025-05-16.

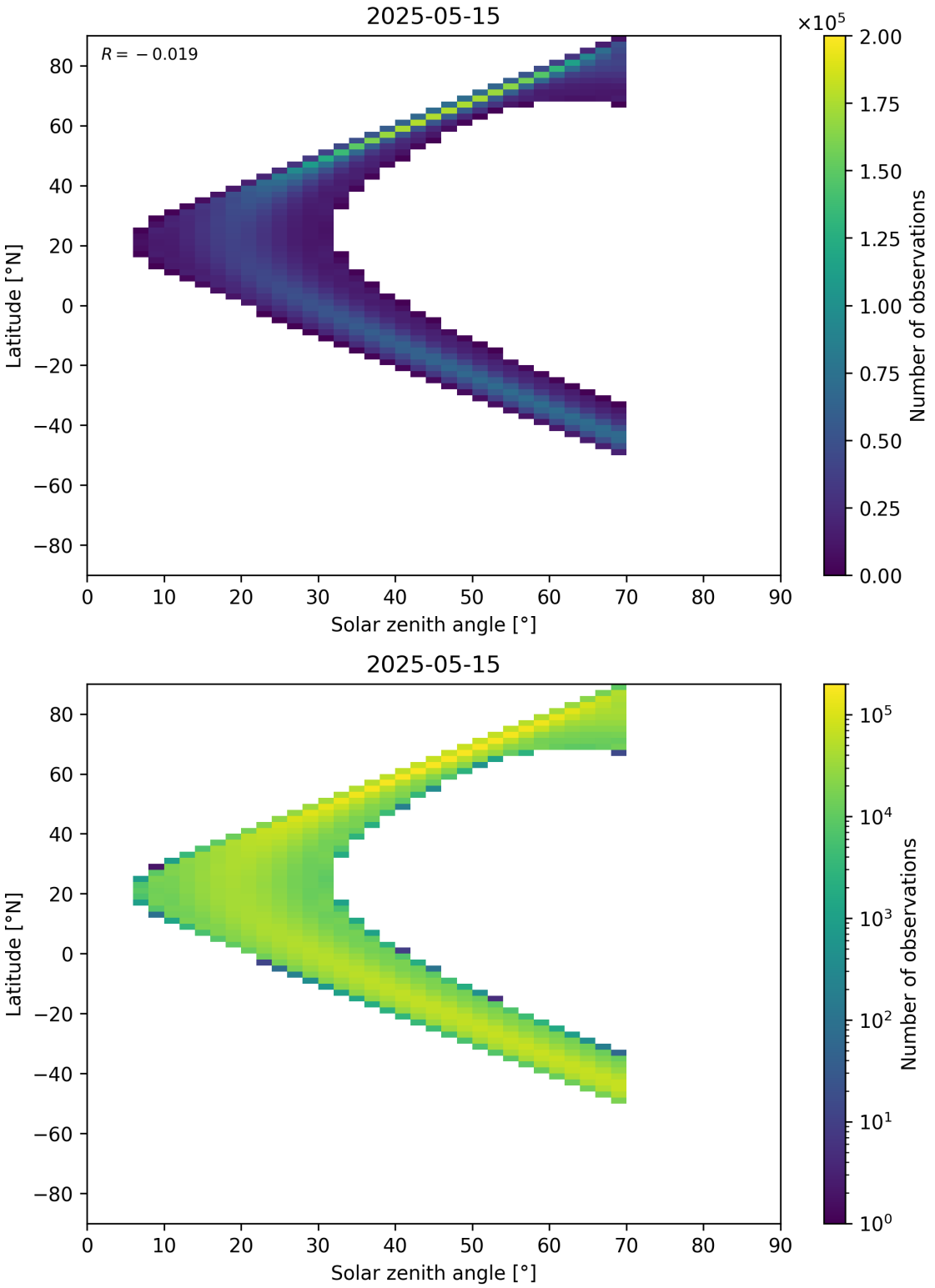


Figure 177: Scatter density plot of “Solar zenith angle” against “Latitude” for 2025-05-15 to 2025-05-16.

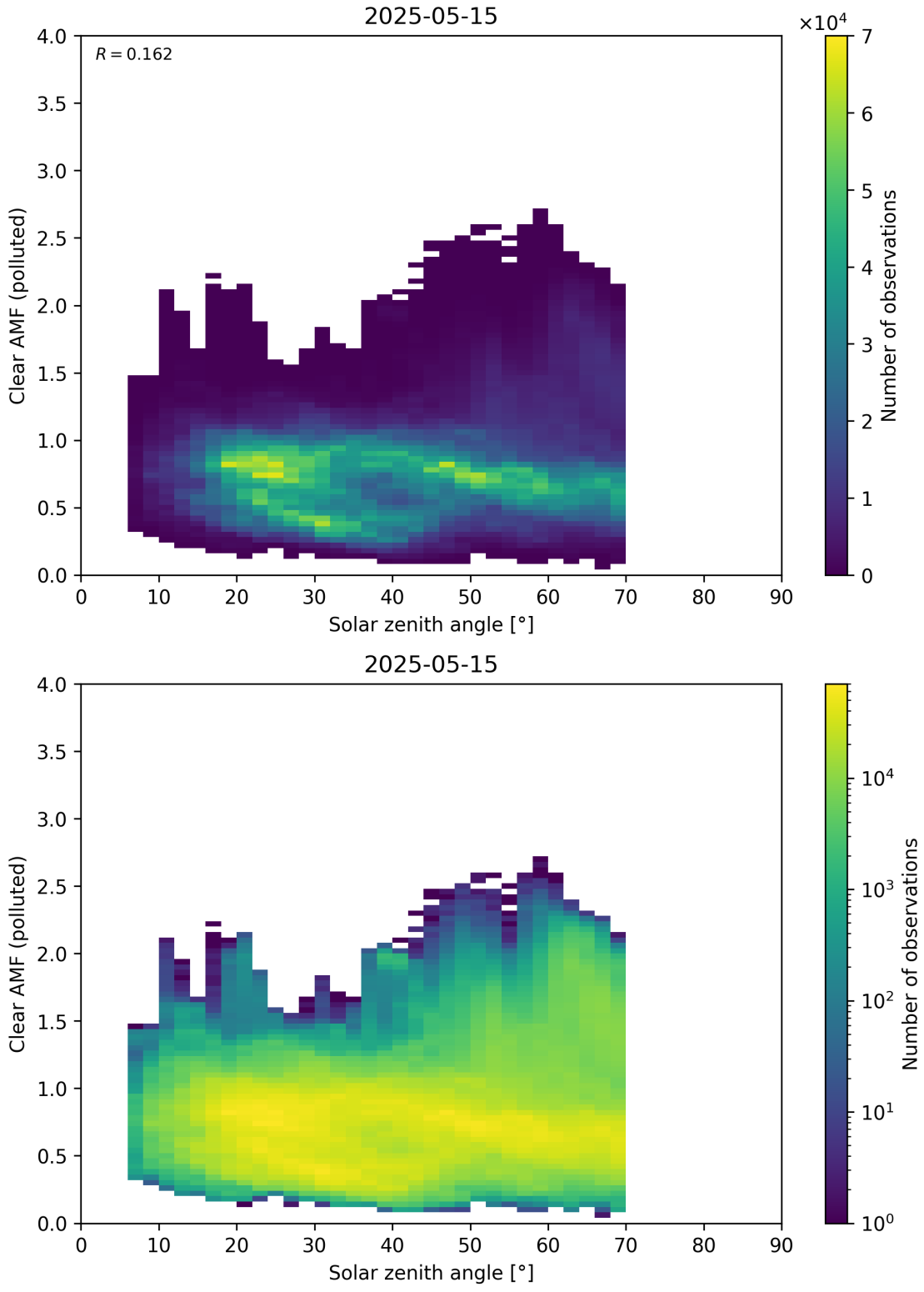


Figure 178: Scatter density plot of “Solar zenith angle” against “Clear AMF (polluted)” for 2025-05-15 to 2025-05-16.

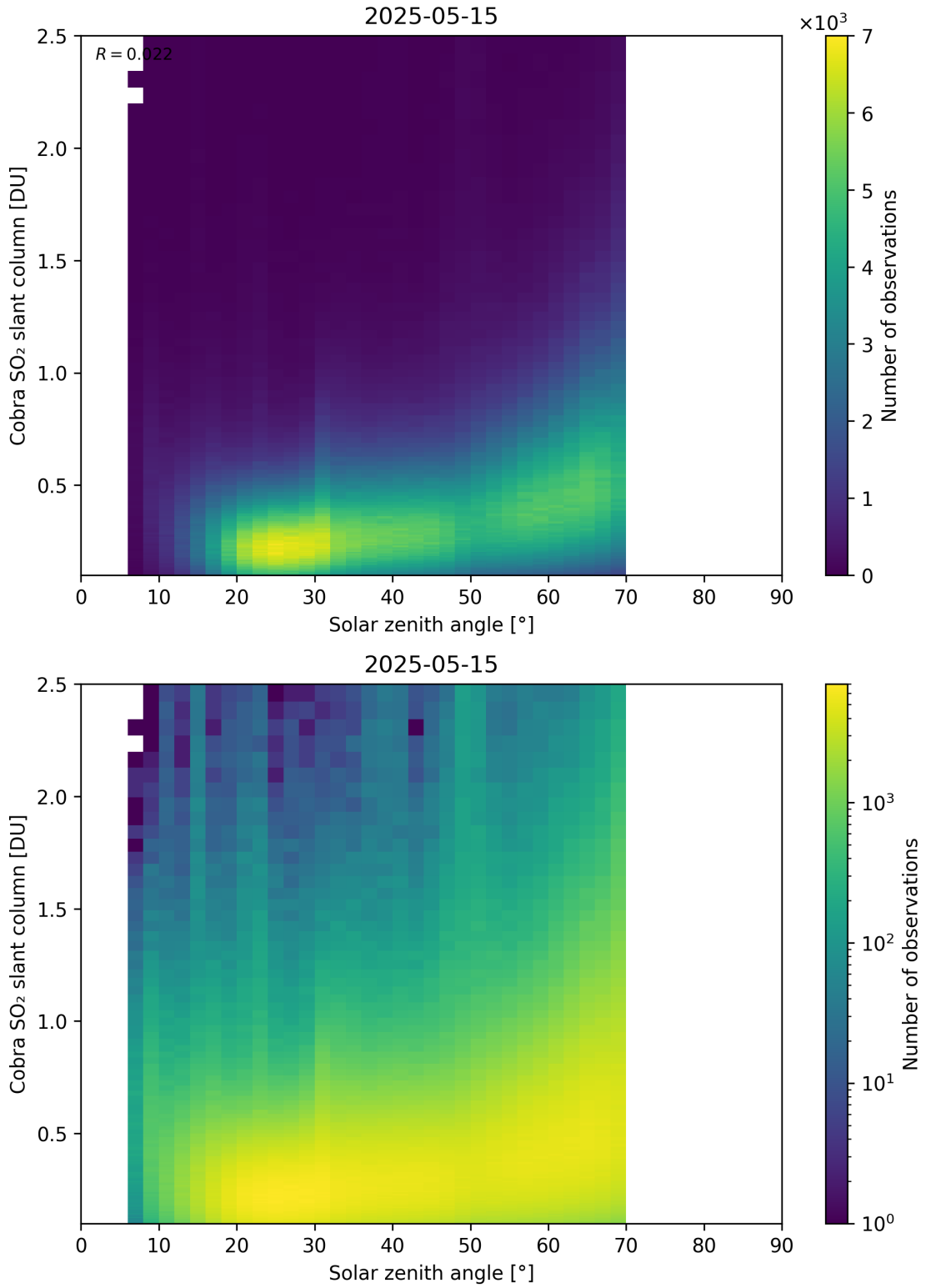


Figure 179: Scatter density plot of “Solar zenith angle” against “Cobra SO_2 slant column” for 2025-05-15 to 2025-05-16.

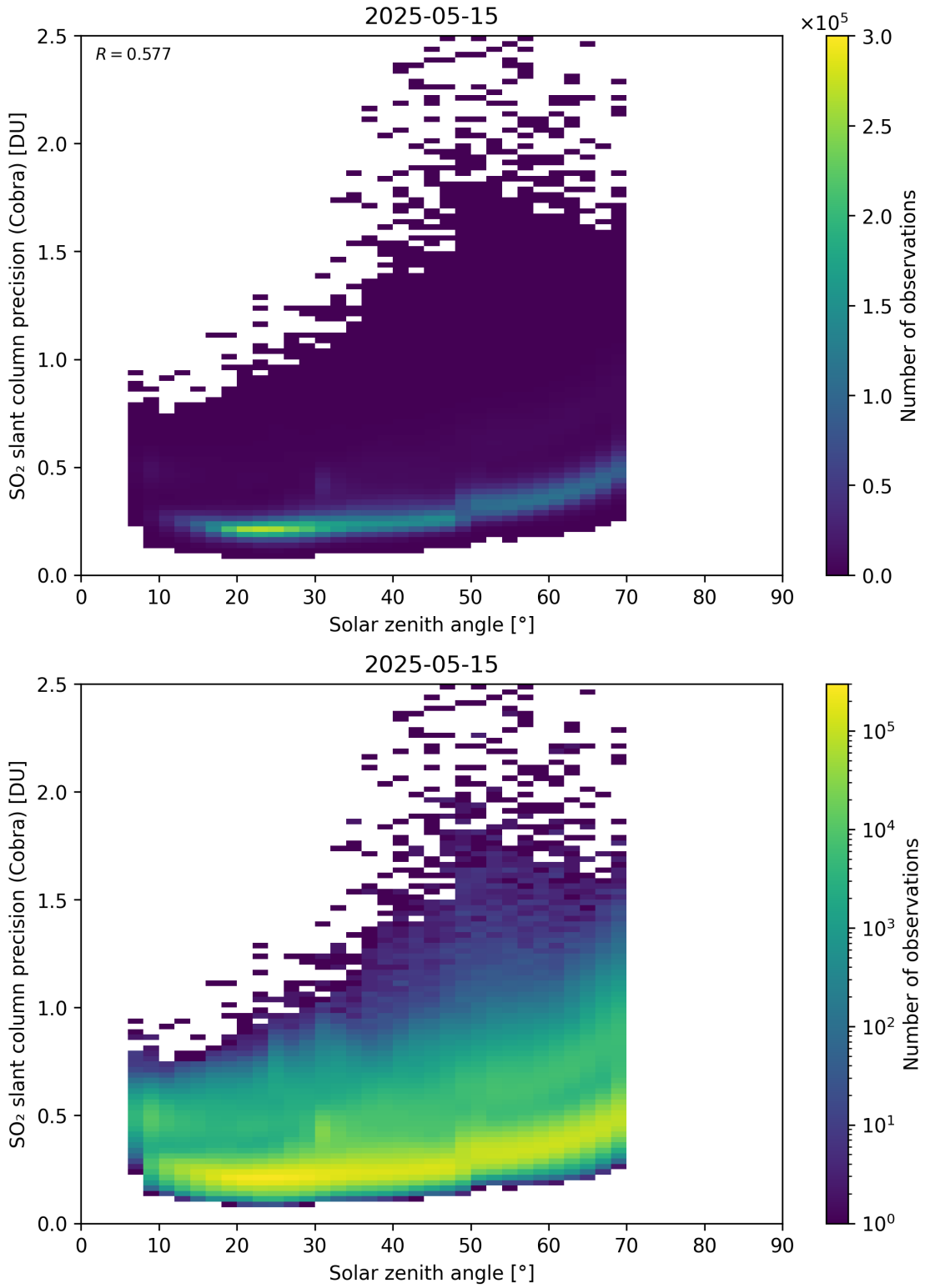


Figure 180: Scatter density plot of “Solar zenith angle” against “SO_2 slant column precision (Cobra)” for 2025-05-15 to 2025-05-16.

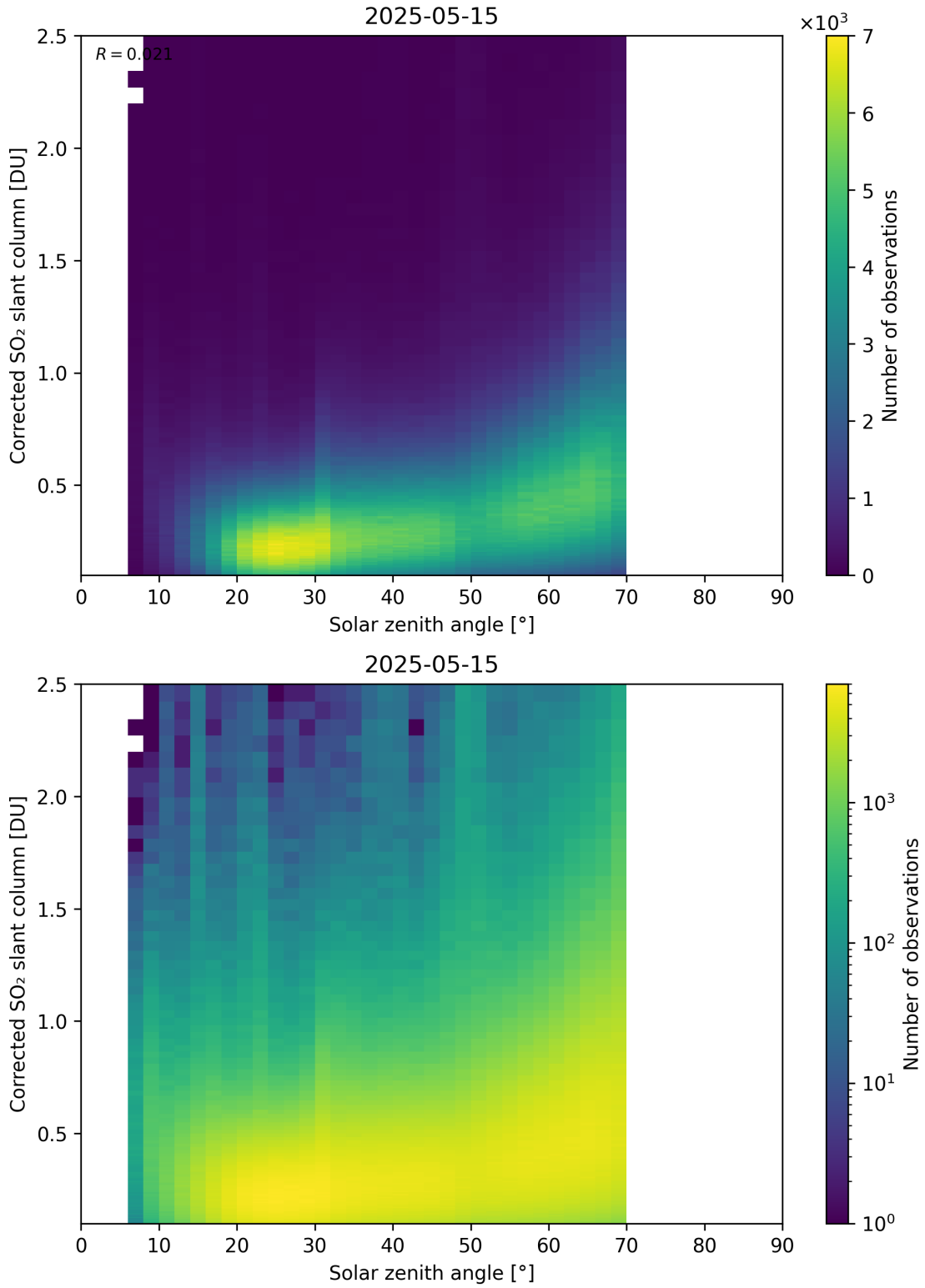


Figure 181: Scatter density plot of “Solar zenith angle” against “Corrected SO_2 slant column” for 2025-05-15 to 2025-05-16.

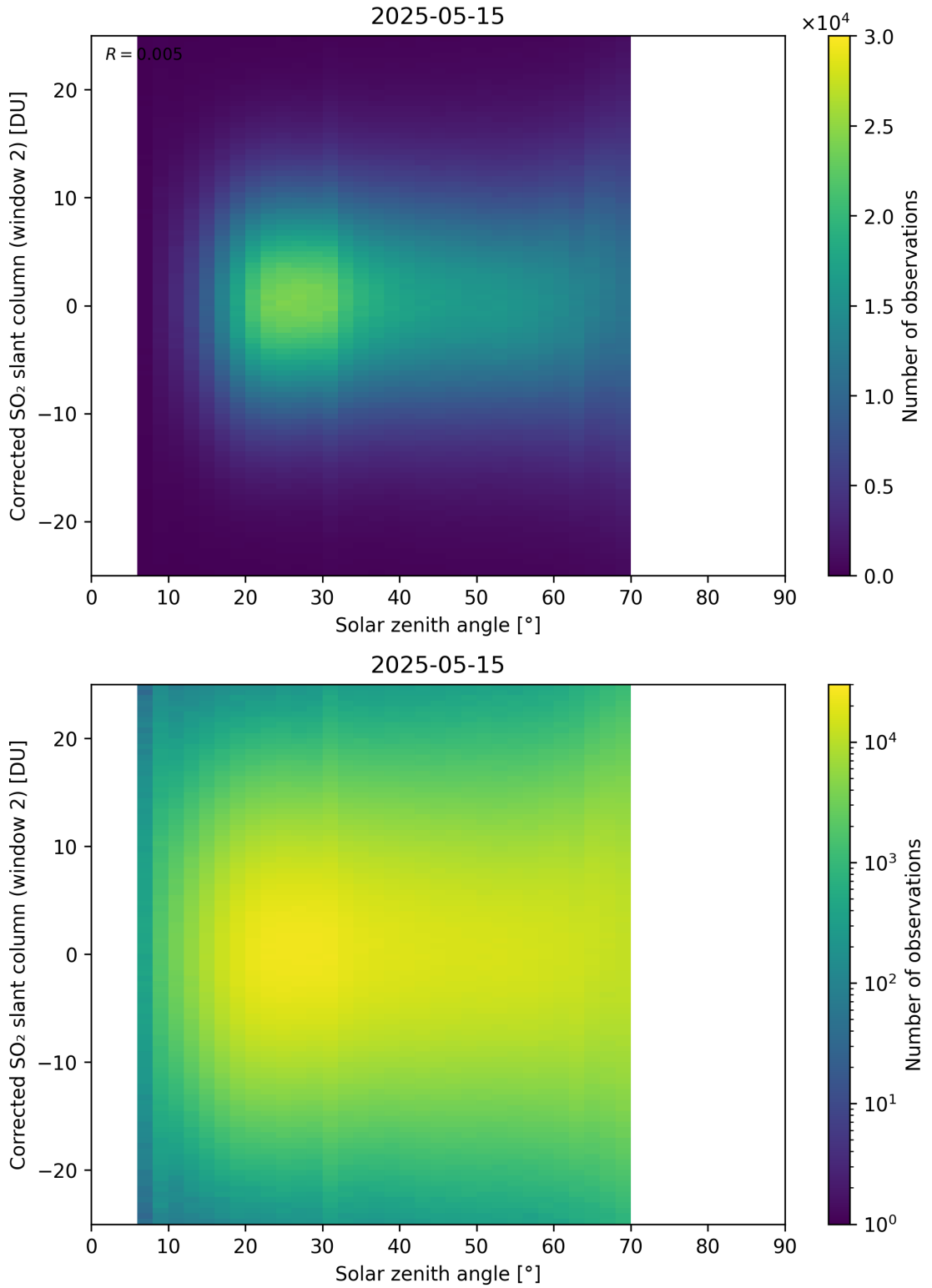


Figure 182: Scatter density plot of “Solar zenith angle” against “Corrected SO_2 slant column (window 2)” for 2025-05-15 to 2025-05-16.

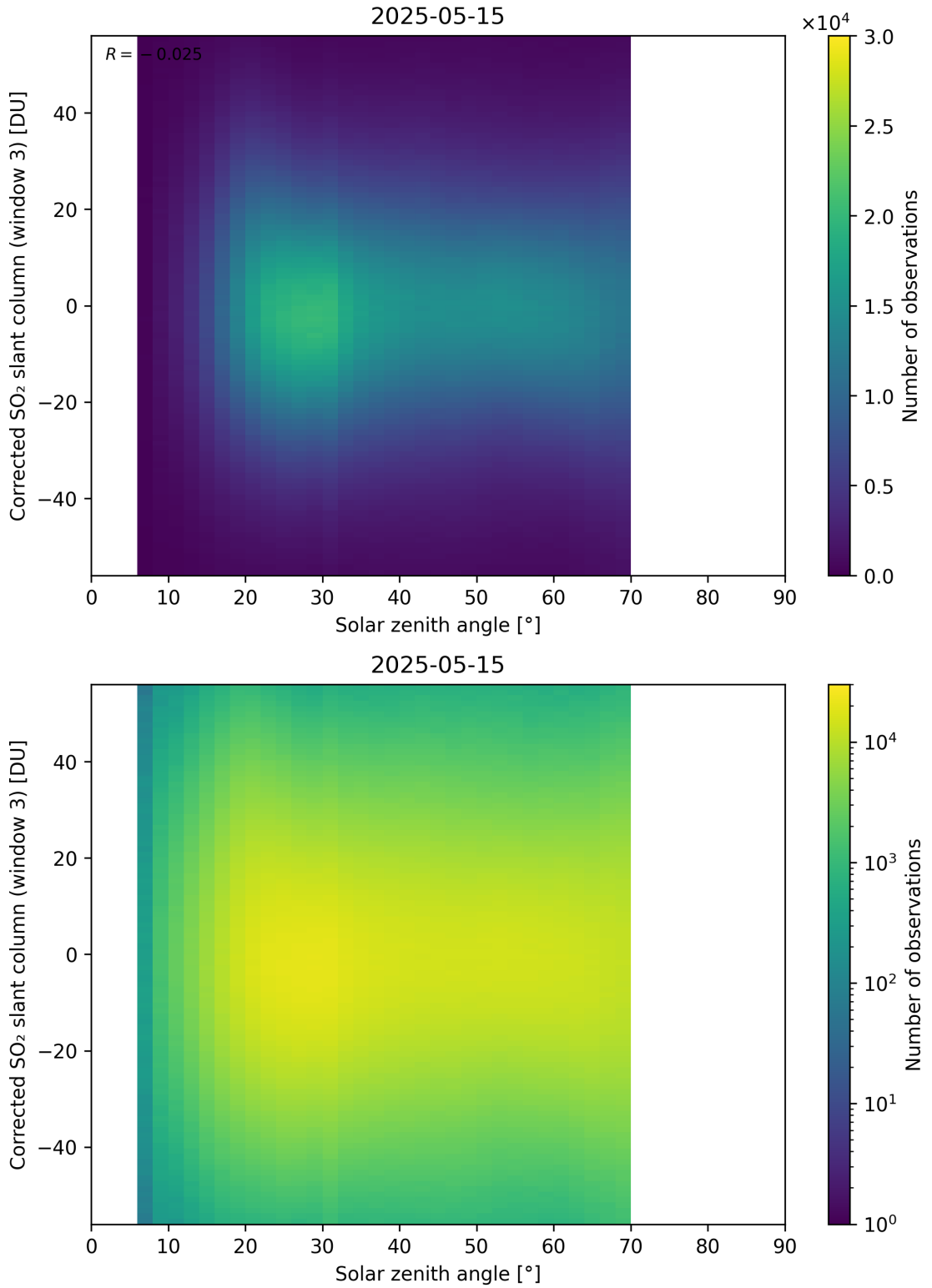


Figure 183: Scatter density plot of “Solar zenith angle” against “Corrected SO_2 slant column (window 3)” for 2025-05-15 to 2025-05-16.

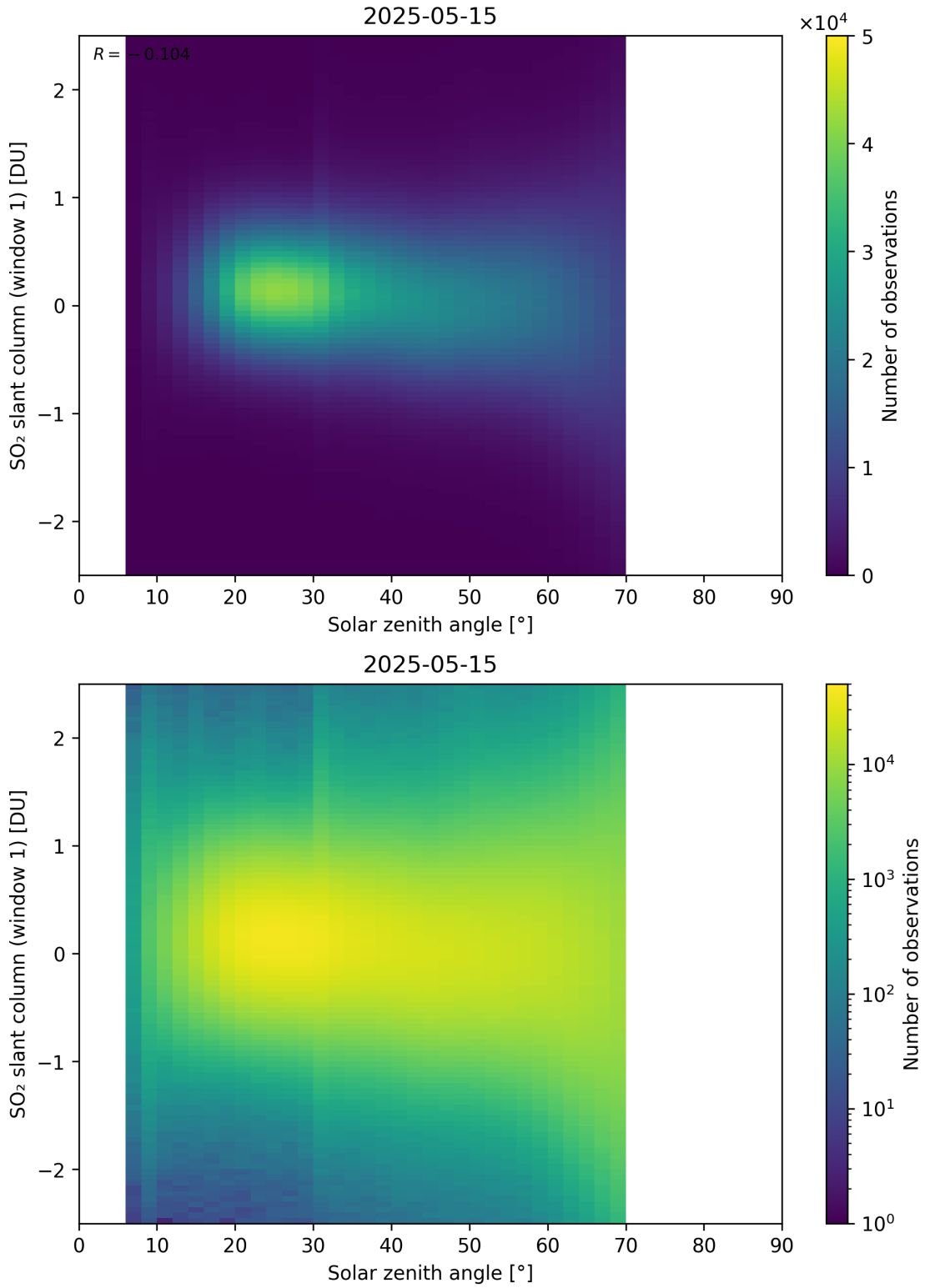


Figure 184: Scatter density plot of “Solar zenith angle” against “SO_2 slant column (window 1)” for 2025-05-15 to 2025-05-16.

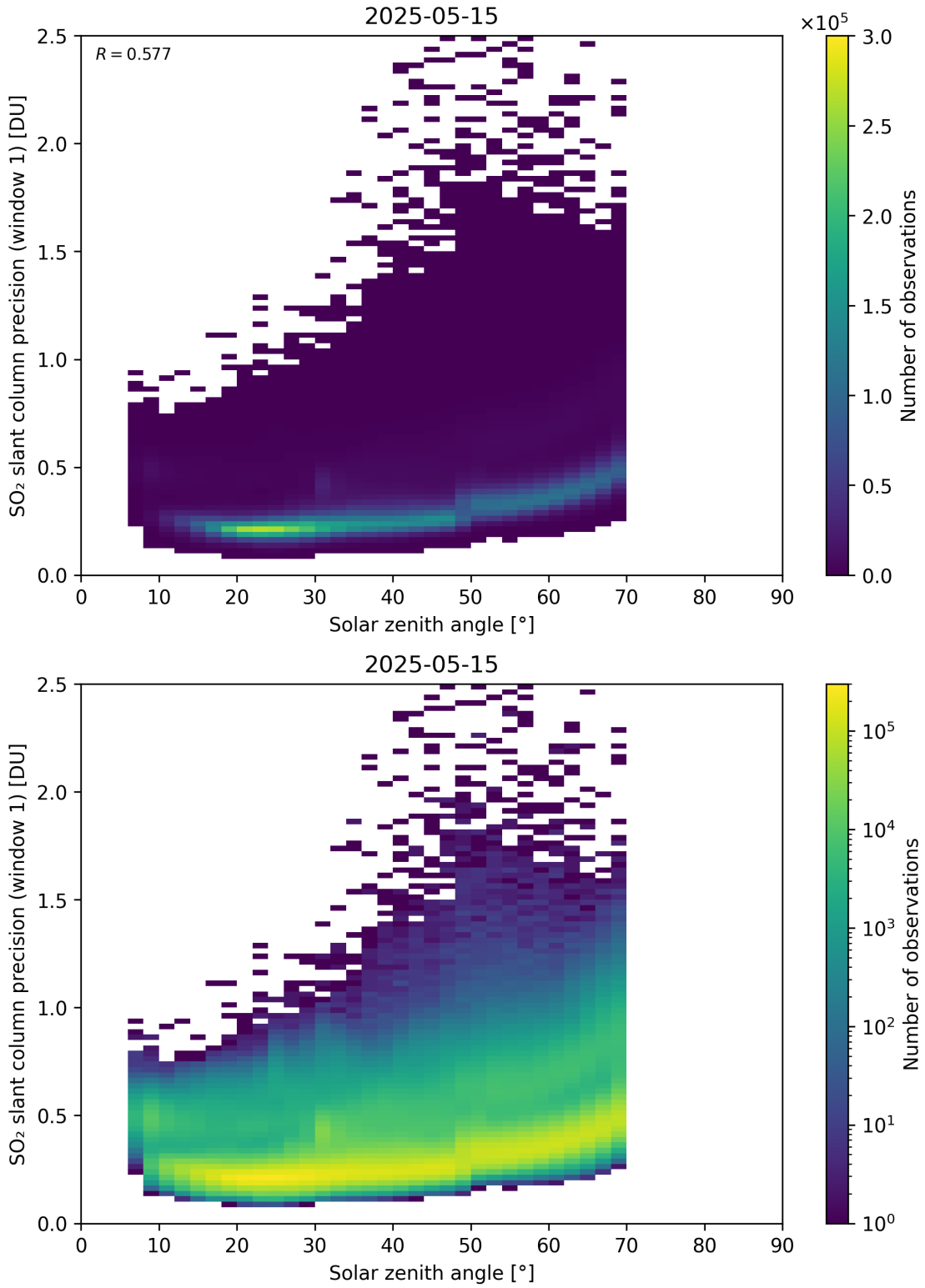


Figure 185: Scatter density plot of "Solar zenith angle" against "SO_2 slant column precision (window 1)" for 2025-05-15 to 2025-05-16.

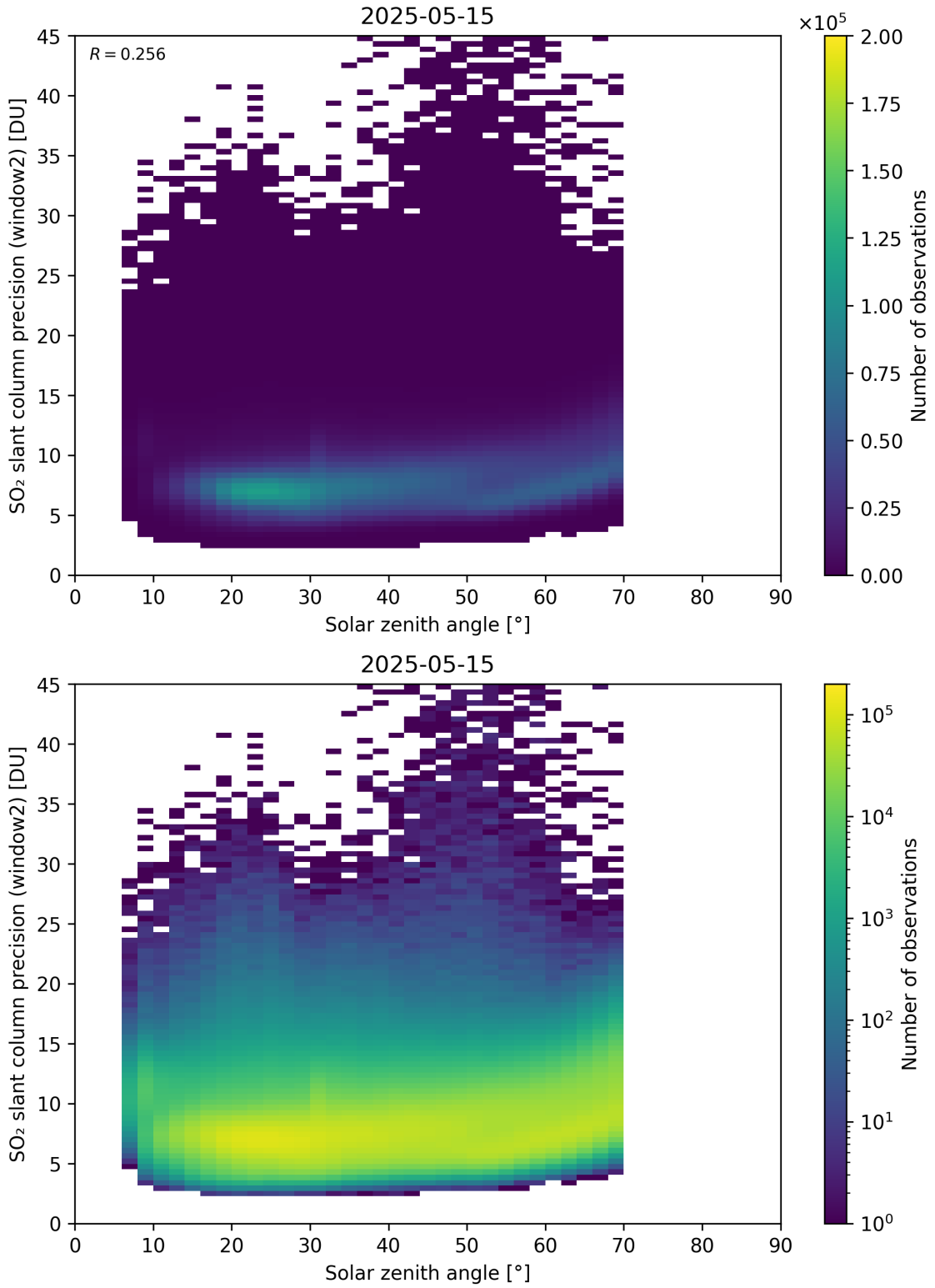


Figure 186: Scatter density plot of “Solar zenith angle” against “SO_2 slant column precision (window2)” for 2025-05-15 to 2025-05-16.

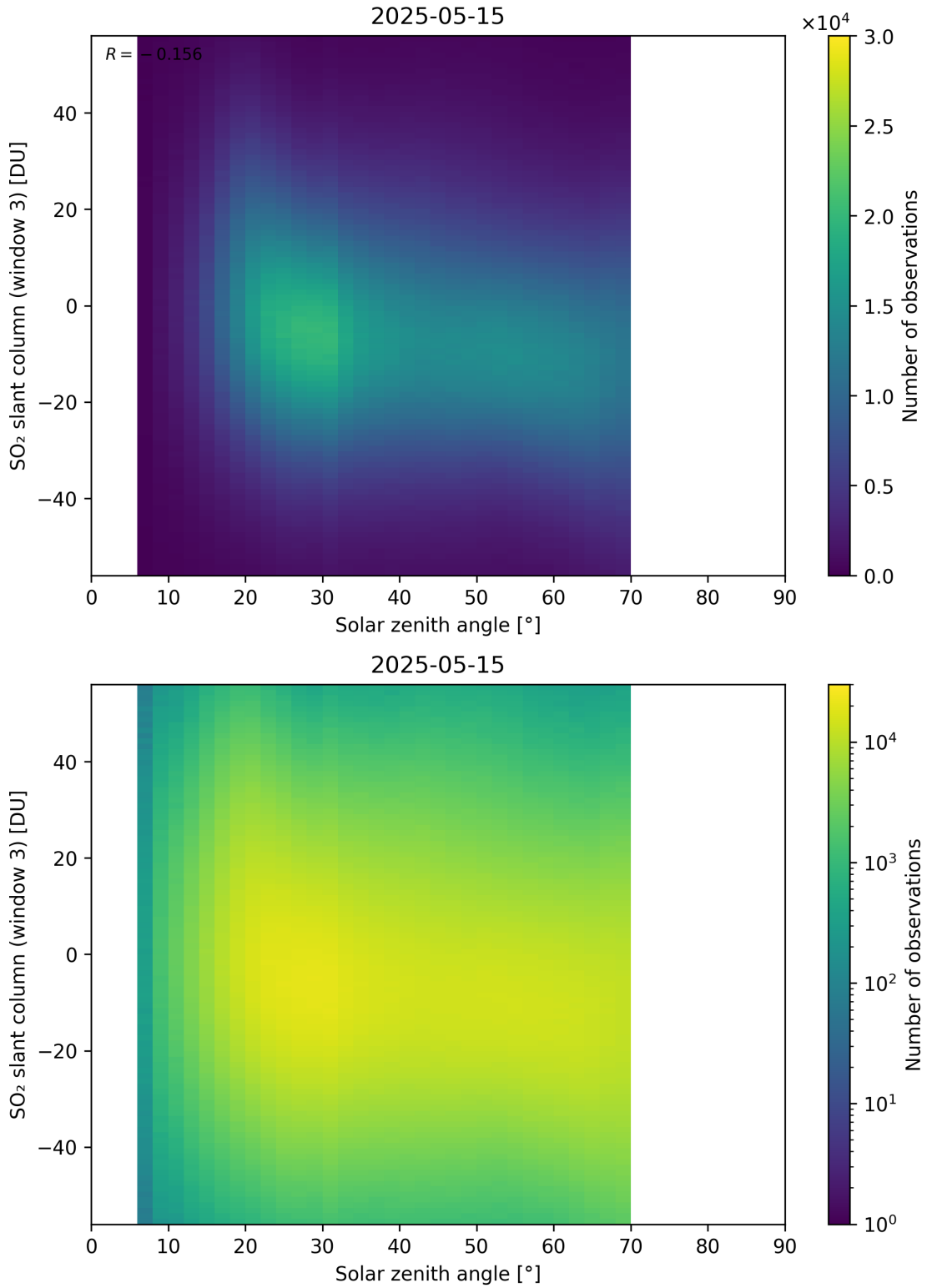


Figure 187: Scatter density plot of “Solar zenith angle” against “SO_2 slant column (window 3)” for 2025-05-15 to 2025-05-16.

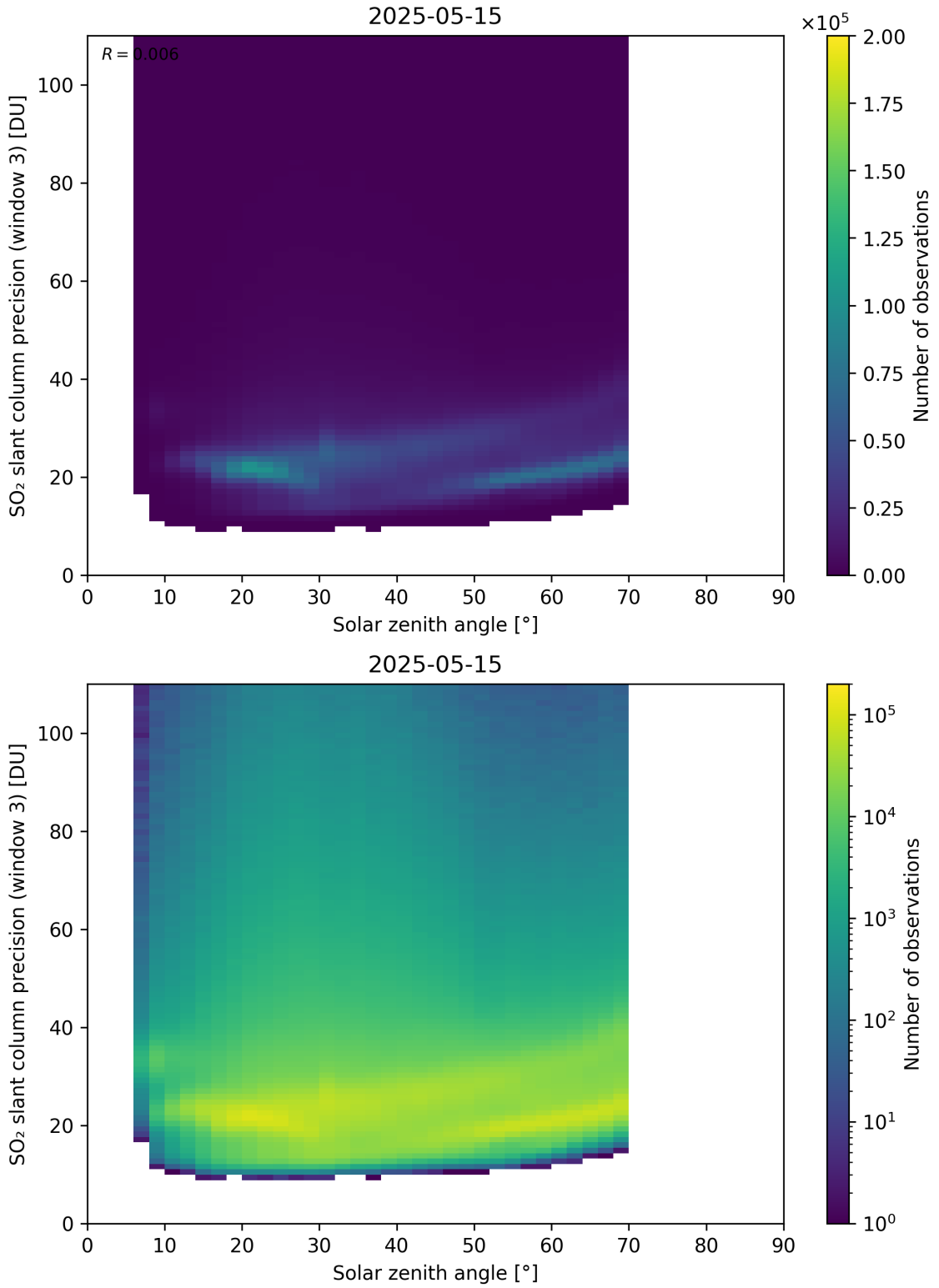


Figure 188: Scatter density plot of “Solar zenith angle” against “SO_2 slant column precision (window 3)” for 2025-05-15 to 2025-05-16.

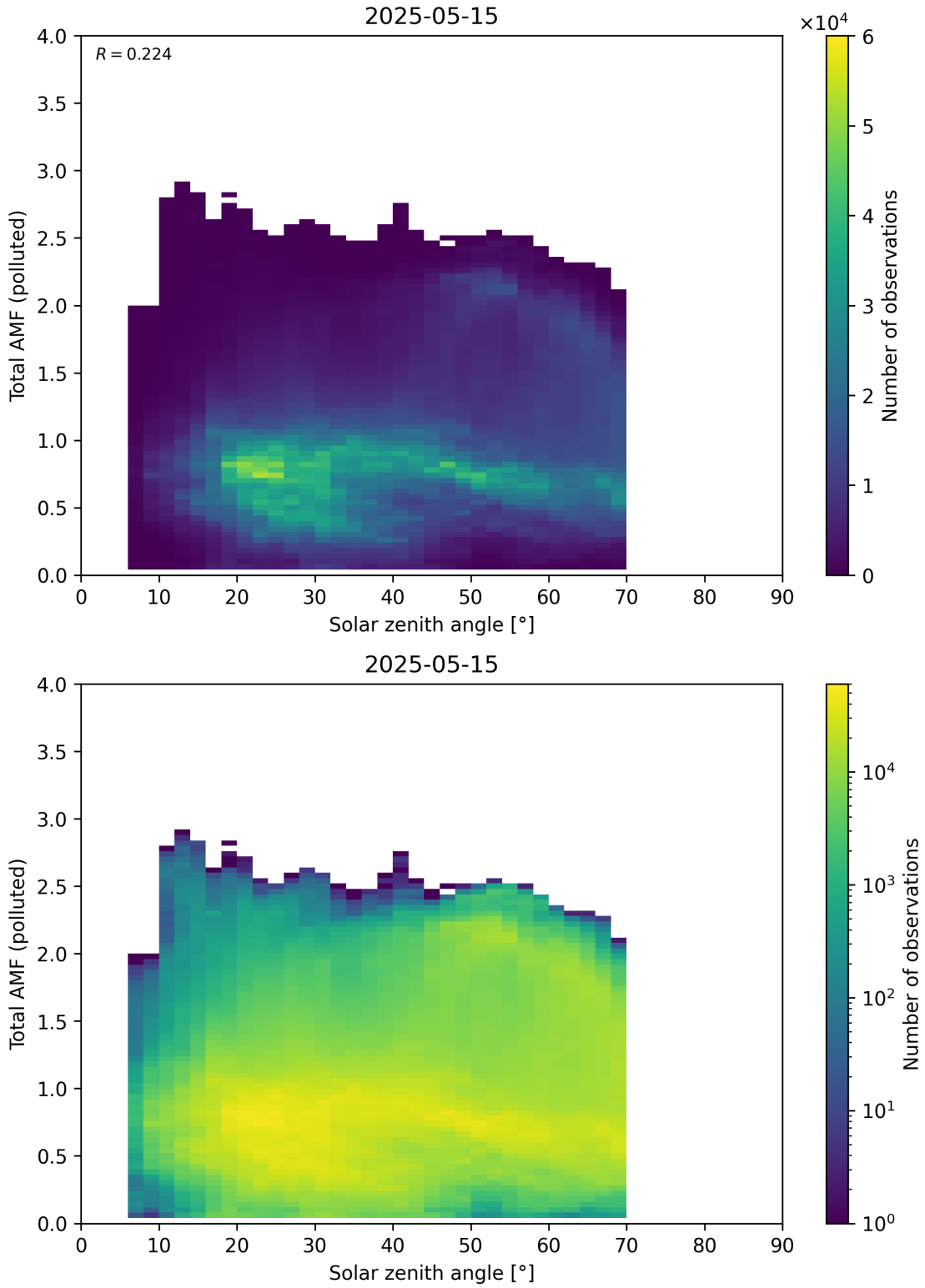


Figure 189: Scatter density plot of “Solar zenith angle” against “Total AMF (polluted)” for 2025-05-15 to 2025-05-16.

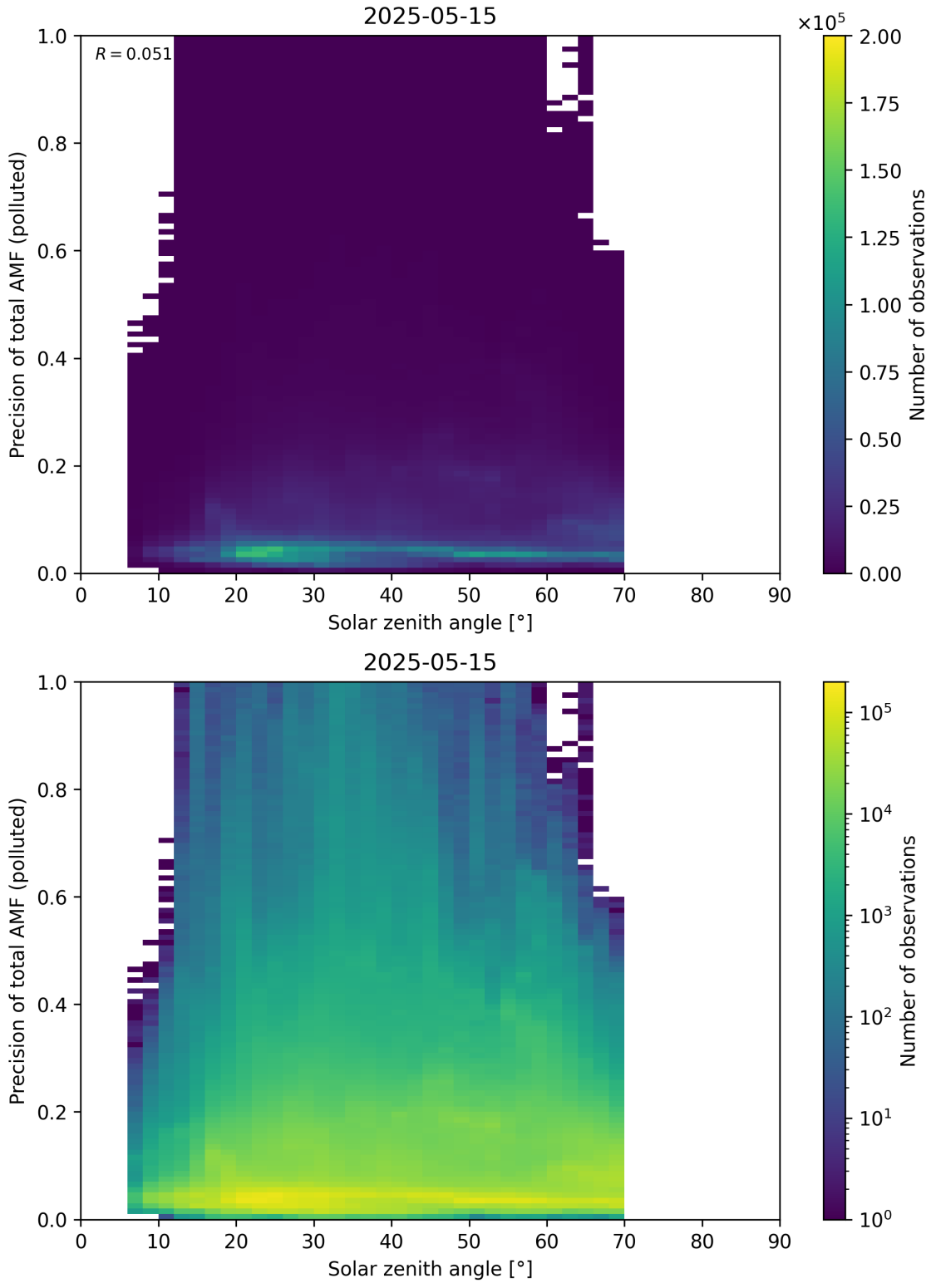


Figure 190: Scatter density plot of “Solar zenith angle” against “Precision of total AMF (polluted)” for 2025-05-15 to 2025-05-16.

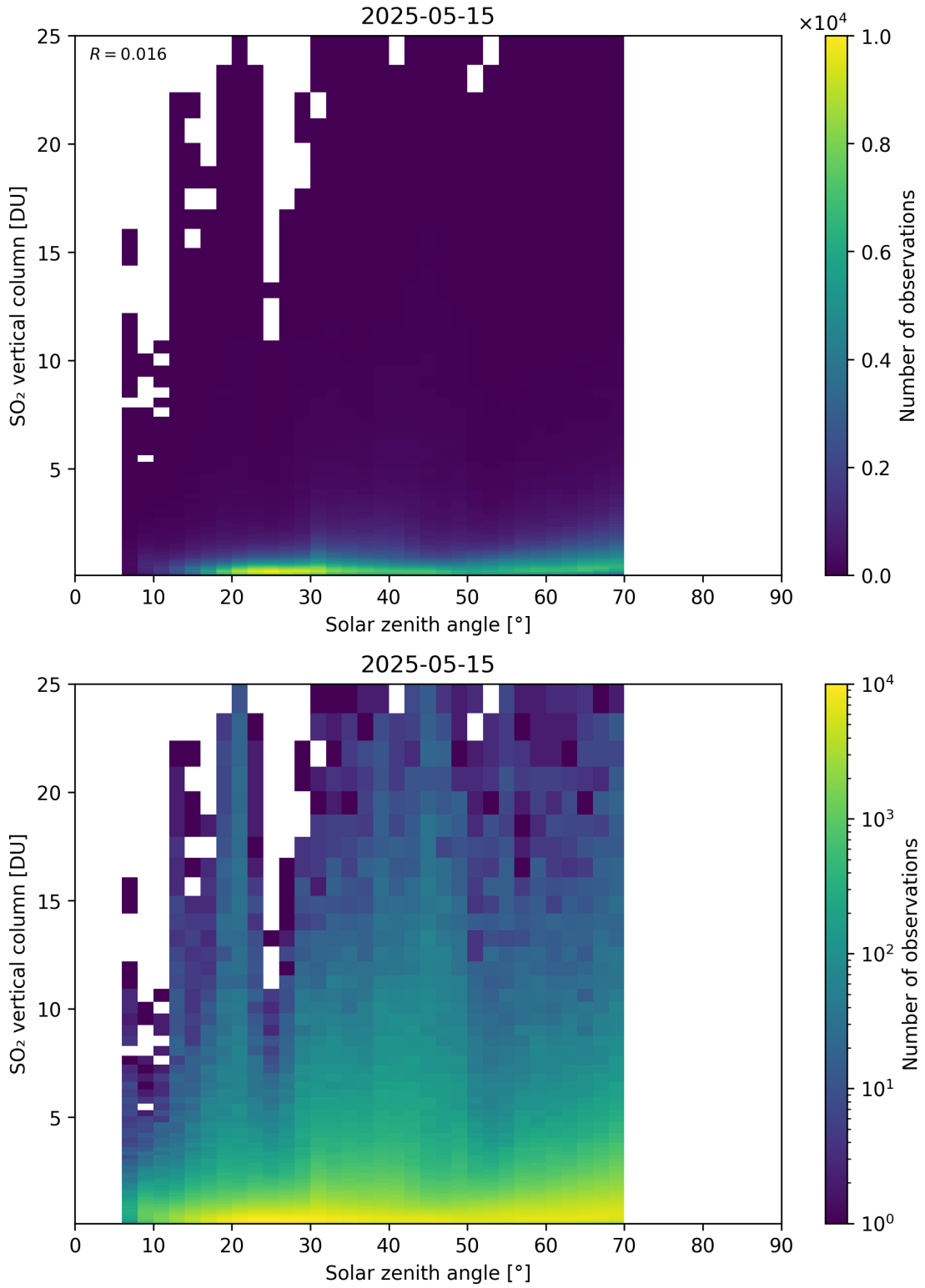


Figure 191: Scatter density plot of “Solar zenith angle” against “SO_2 vertical column” for 2025-05-15 to 2025-05-16.

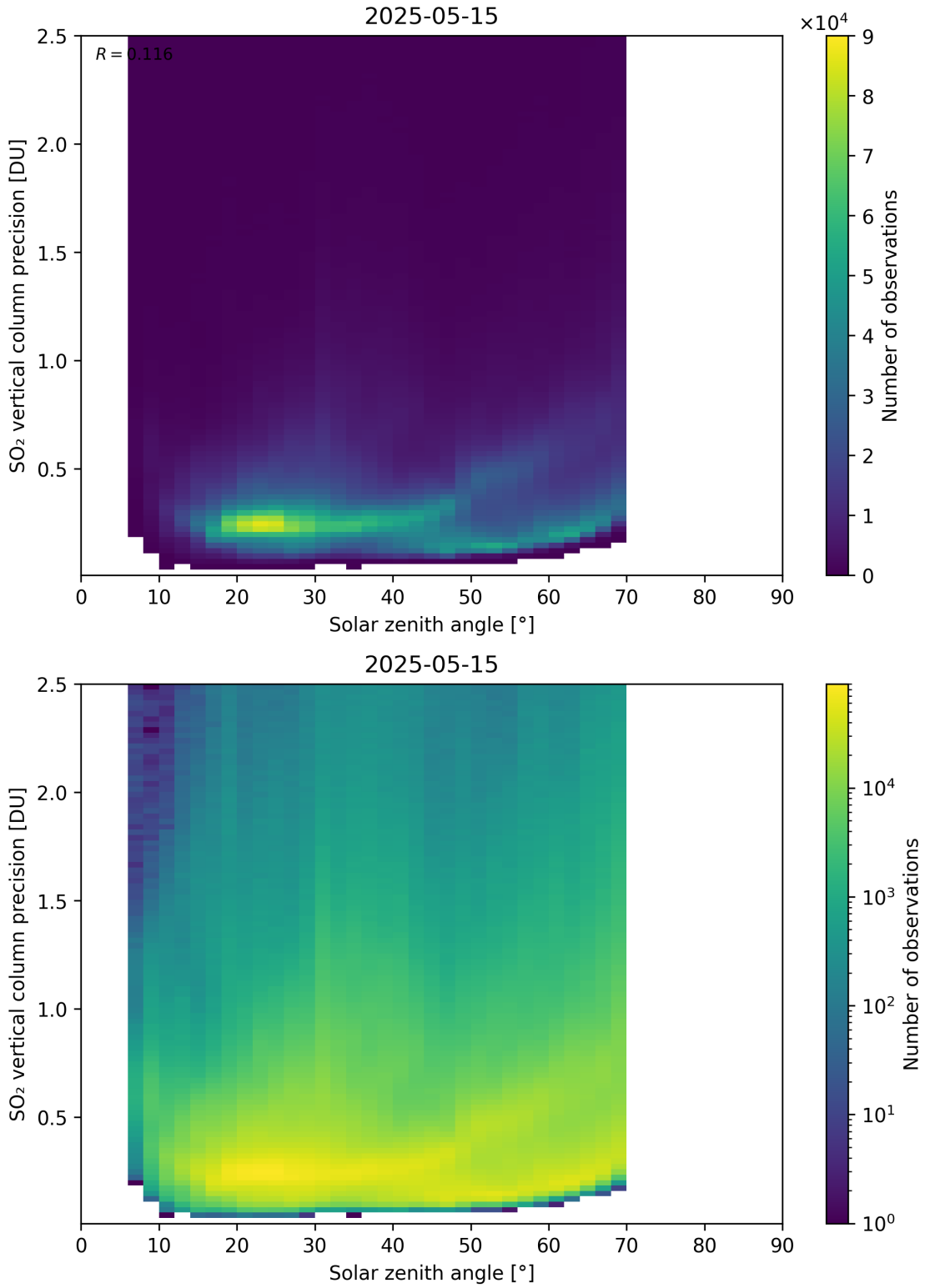


Figure 192: Scatter density plot of "Solar zenith angle" against "SO_2 vertical column precision" for 2025-05-15 to 2025-05-16.

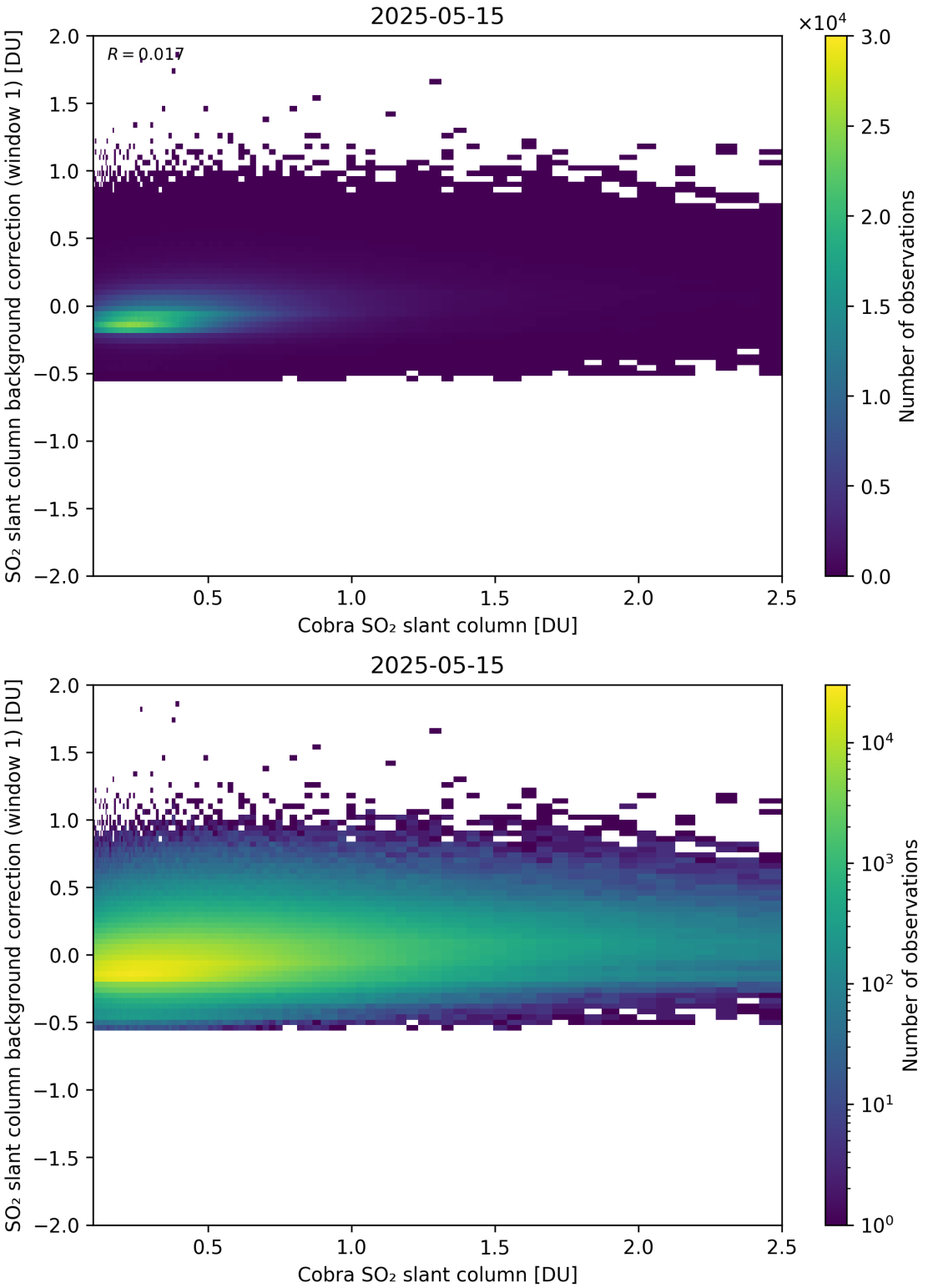


Figure 193: Scatter density plot of "Cobra SO_2 slant column" against "SO_2 slant column background correction (window 1)" for 2025-05-15 to 2025-05-16.

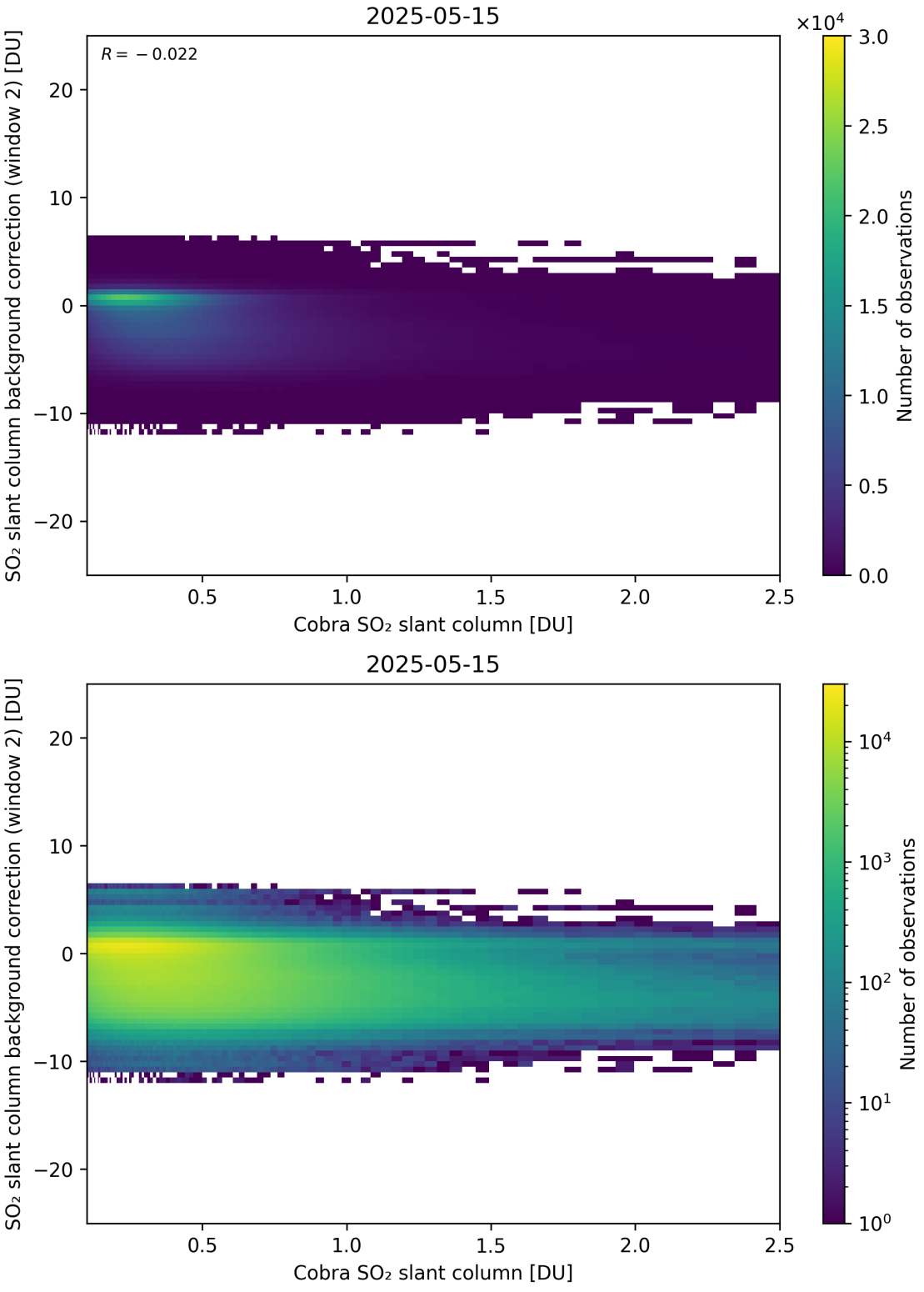


Figure 194: Scatter density plot of "Cobra SO_2 slant column" against "SO_2 slant column background correction (window 2)" for 2025-05-15 to 2025-05-16.

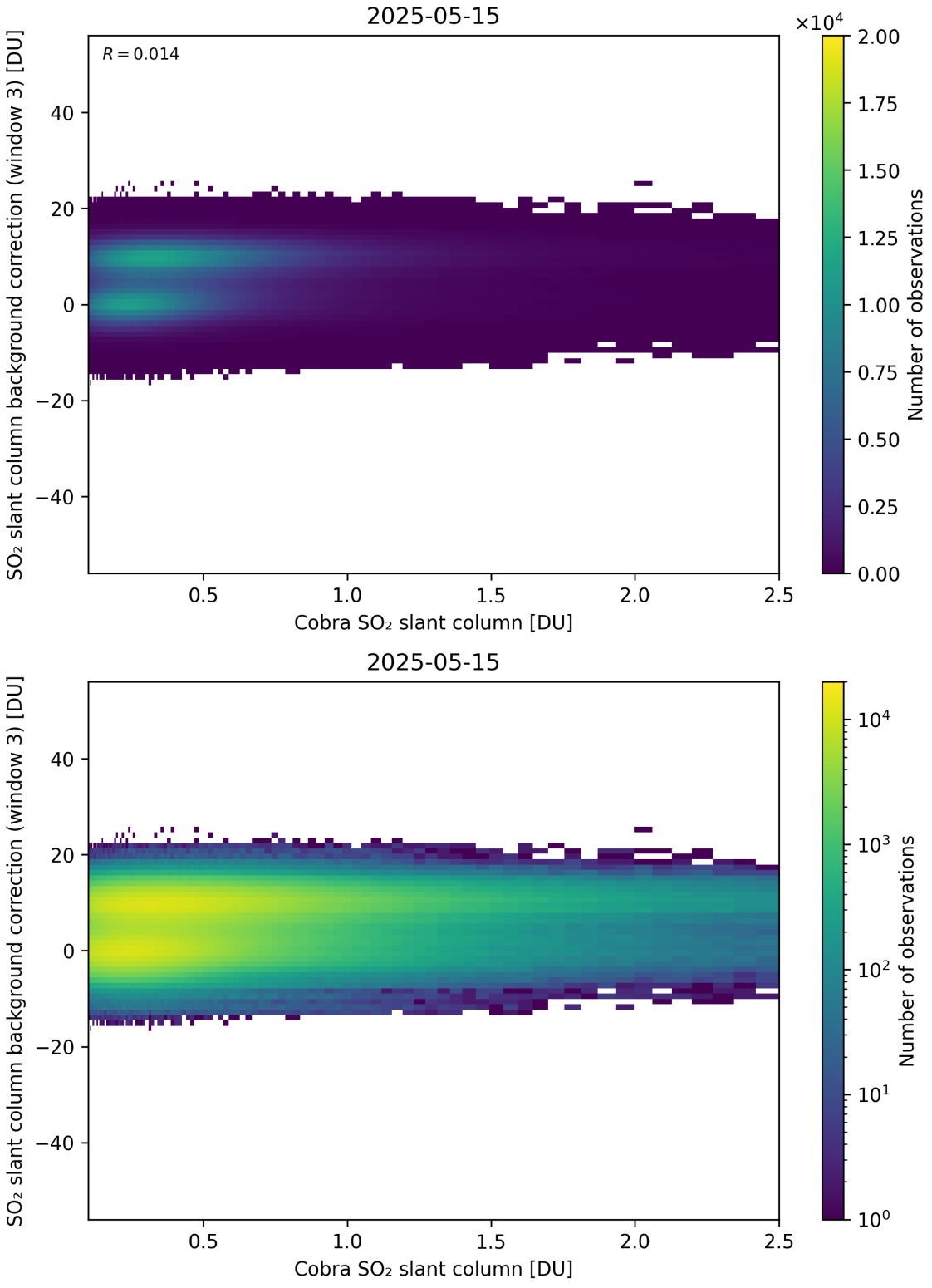


Figure 195: Scatter density plot of "Cobra SO_2 slant column" against "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16.

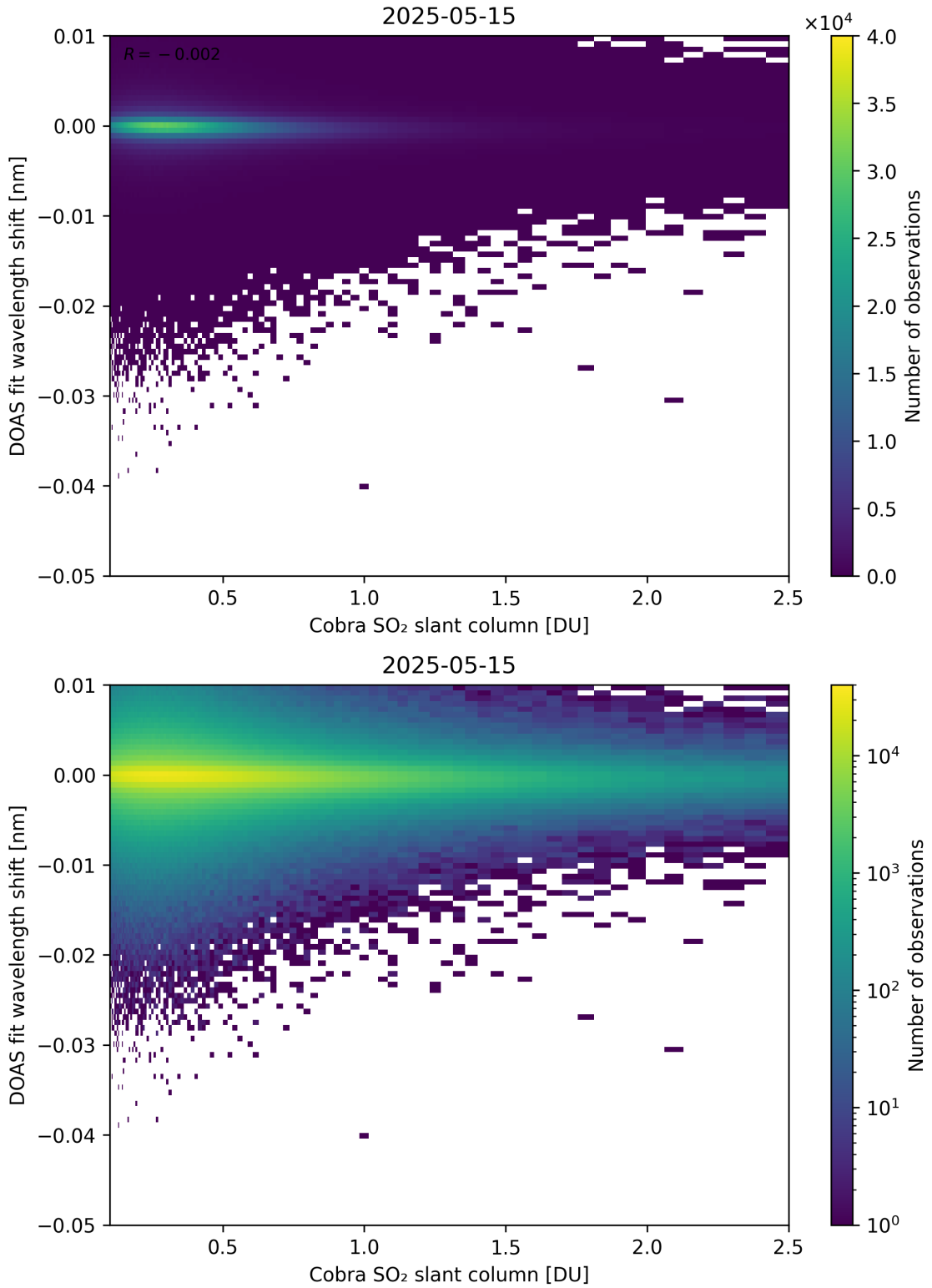


Figure 196: Scatter density plot of “Cobra SO_2 slant column” against “DOAS fit wavelength shift” for 2025-05-15 to 2025-05-16.

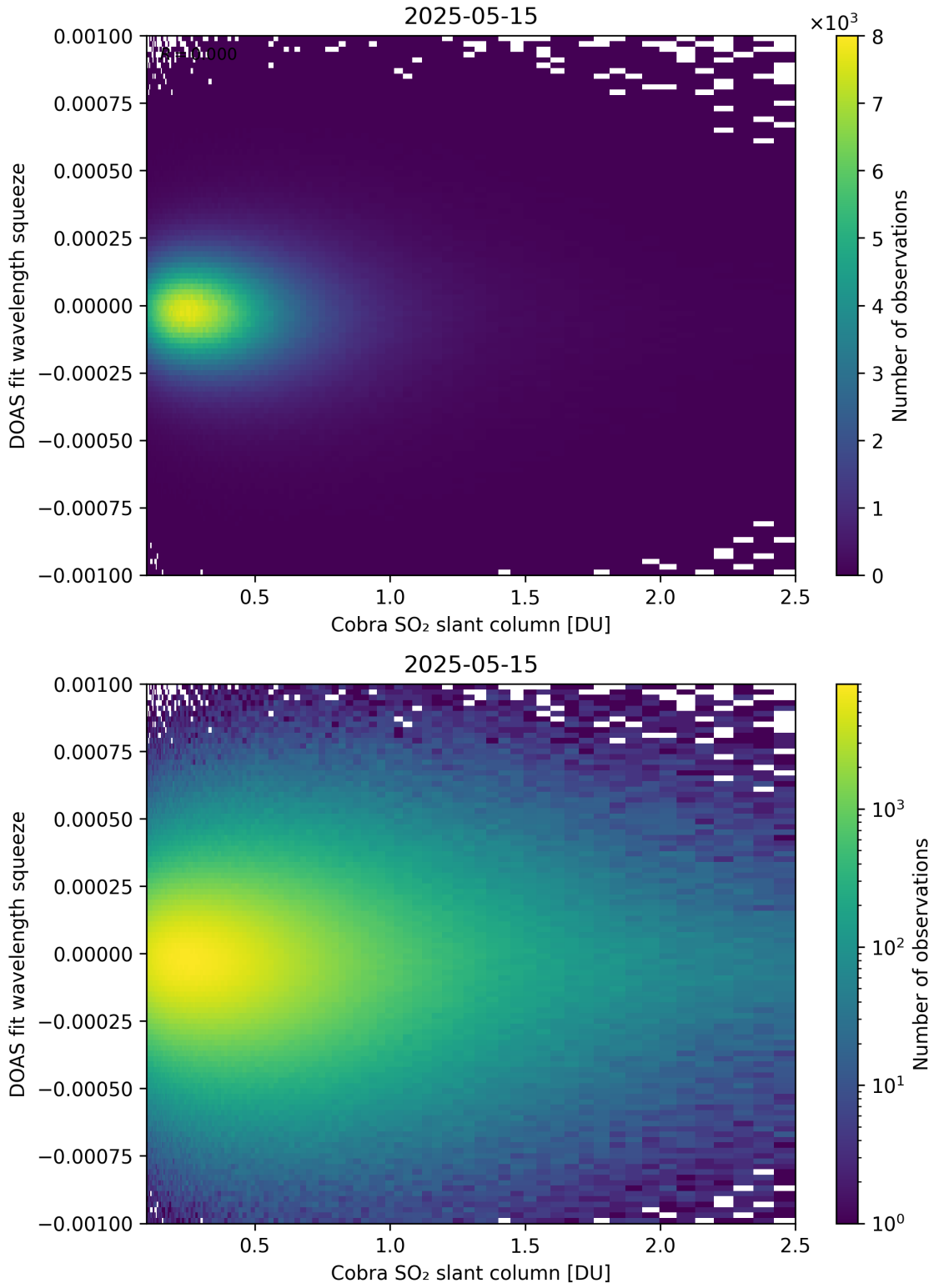


Figure 197: Scatter density plot of “Cobra SO_2 slant column” against “DOAS fit wavelength squeeze” for 2025-05-15 to 2025-05-16.

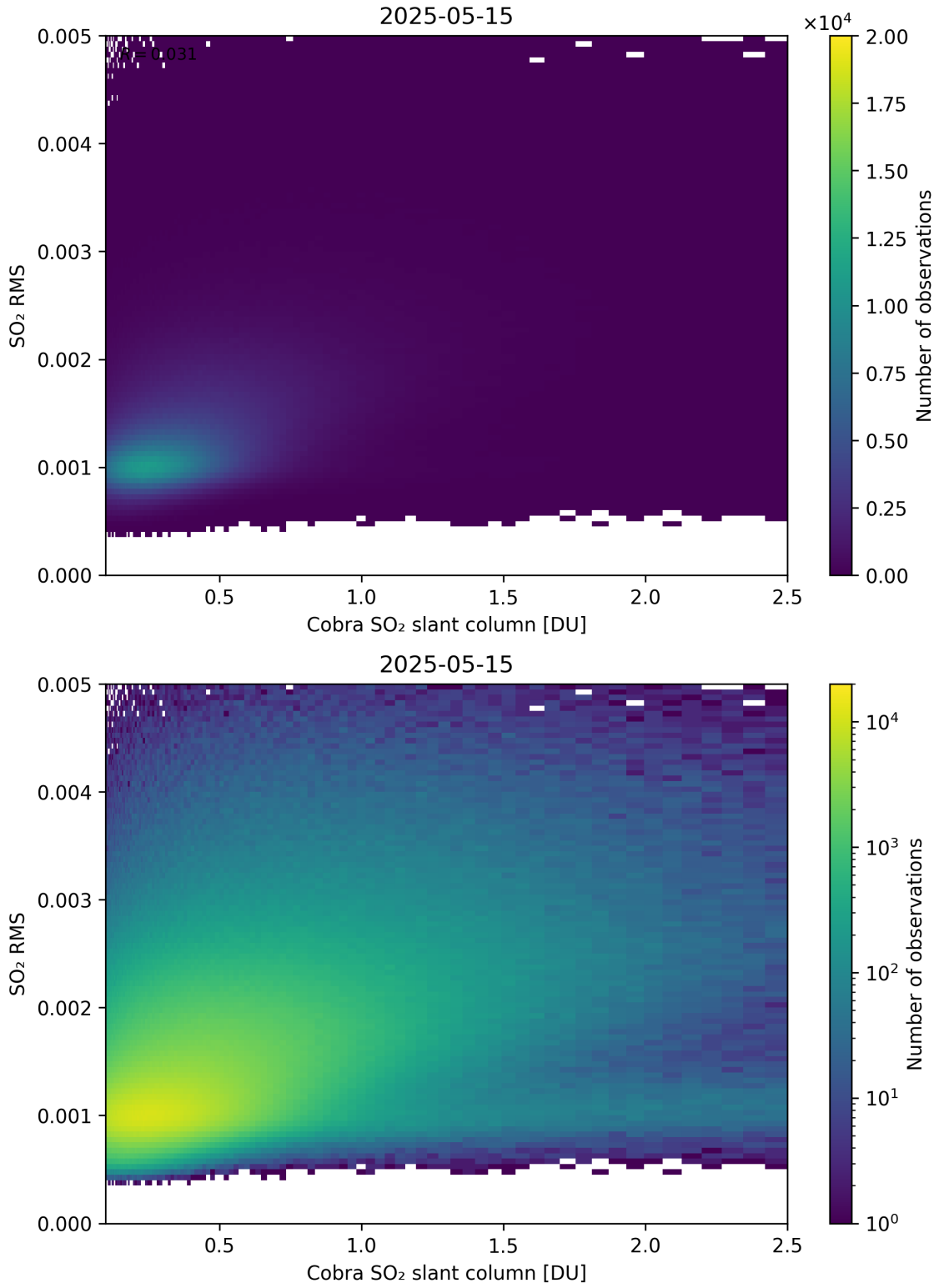


Figure 198: Scatter density plot of "Cobra SO_2 slant column" against "SO_2 RMS" for 2025-05-15 to 2025-05-16.

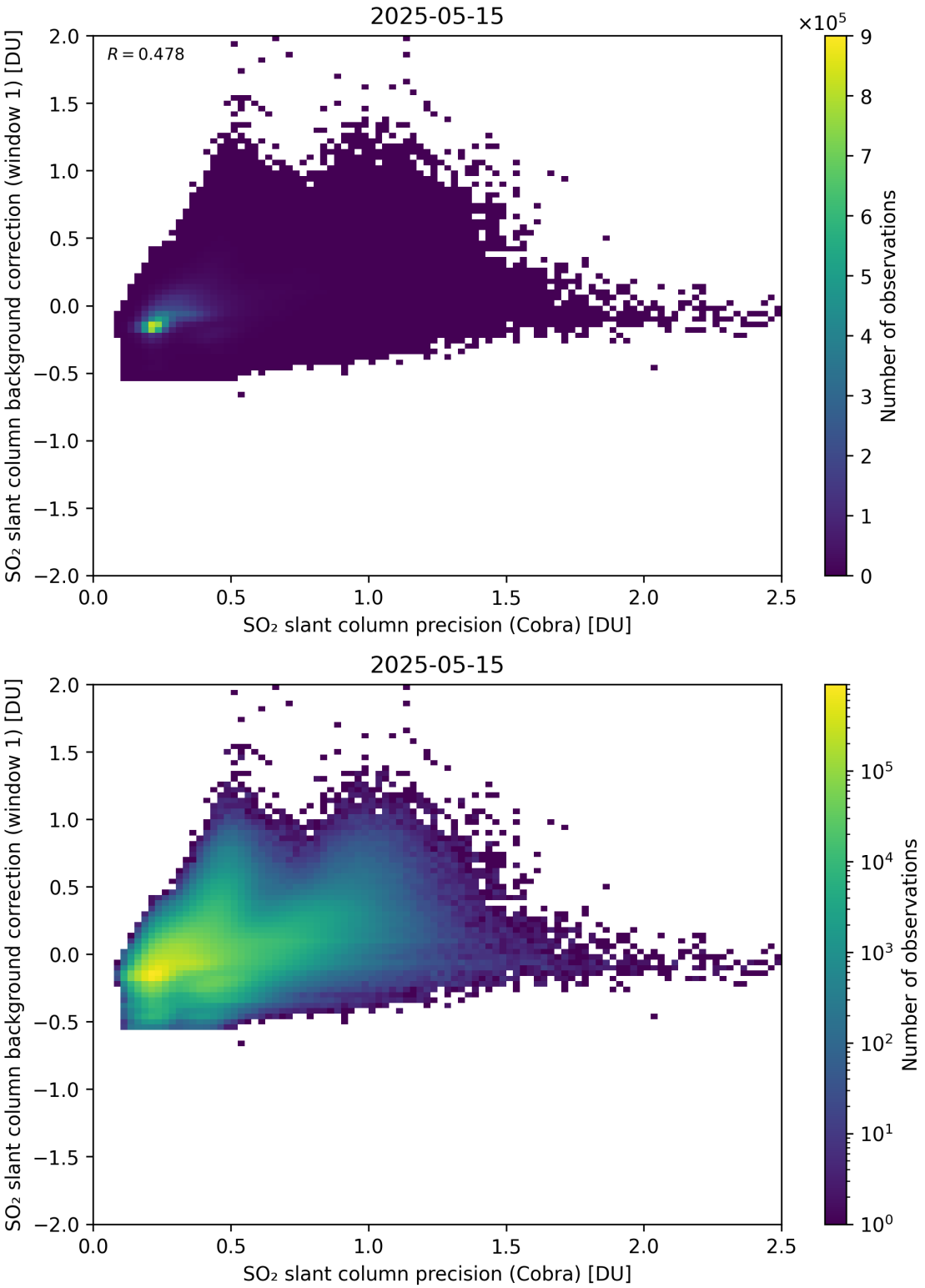


Figure 199: Scatter density plot of "SO_2 slant column precision (Cobra)" against "SO_2 slant column background correction (window 1)" for 2025-05-15 to 2025-05-16.

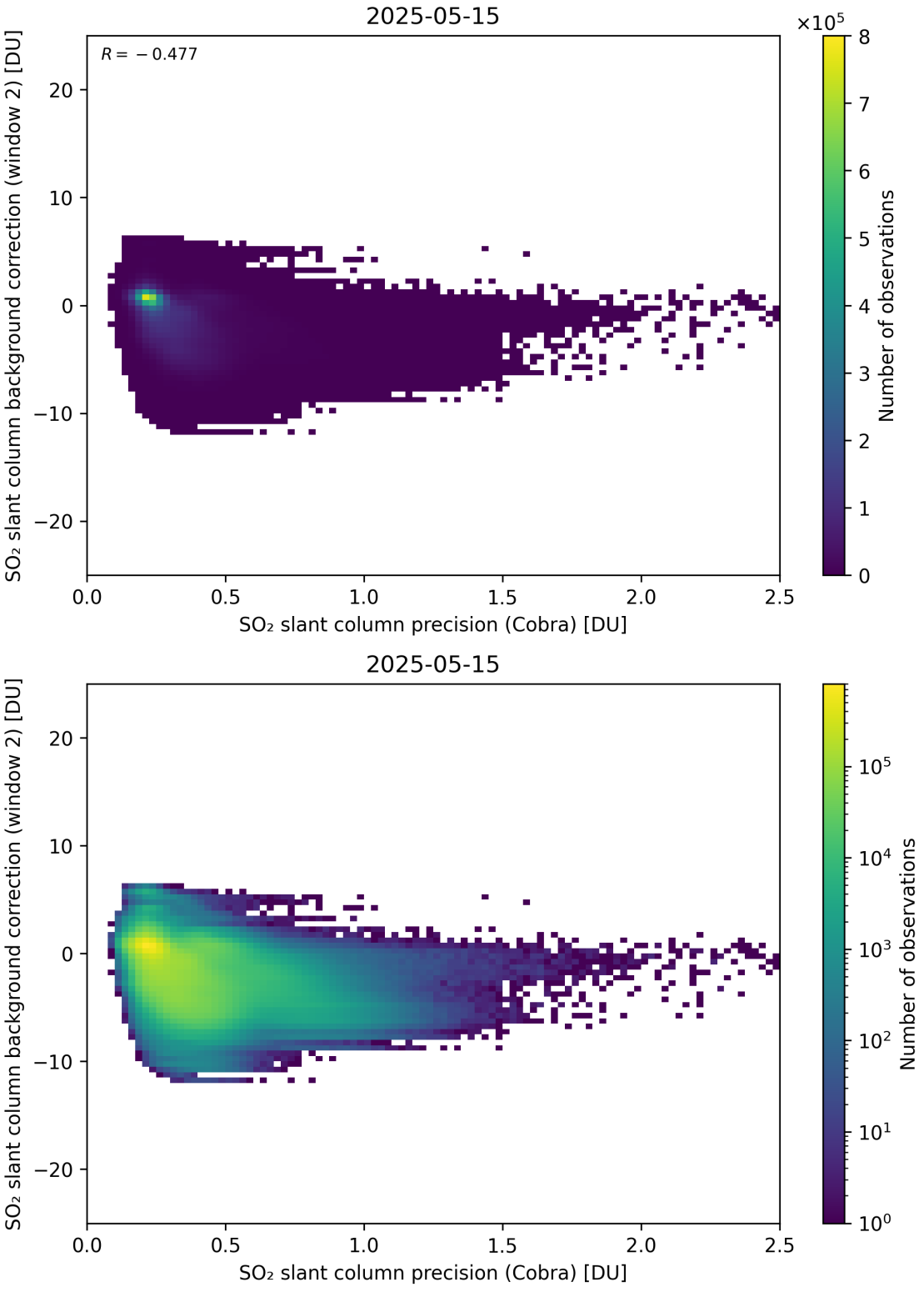


Figure 200: Scatter density plot of "SO_2 slant column precision (Cobra)" against "SO_2 slant column background correction (window 2)" for 2025-05-15 to 2025-05-16.

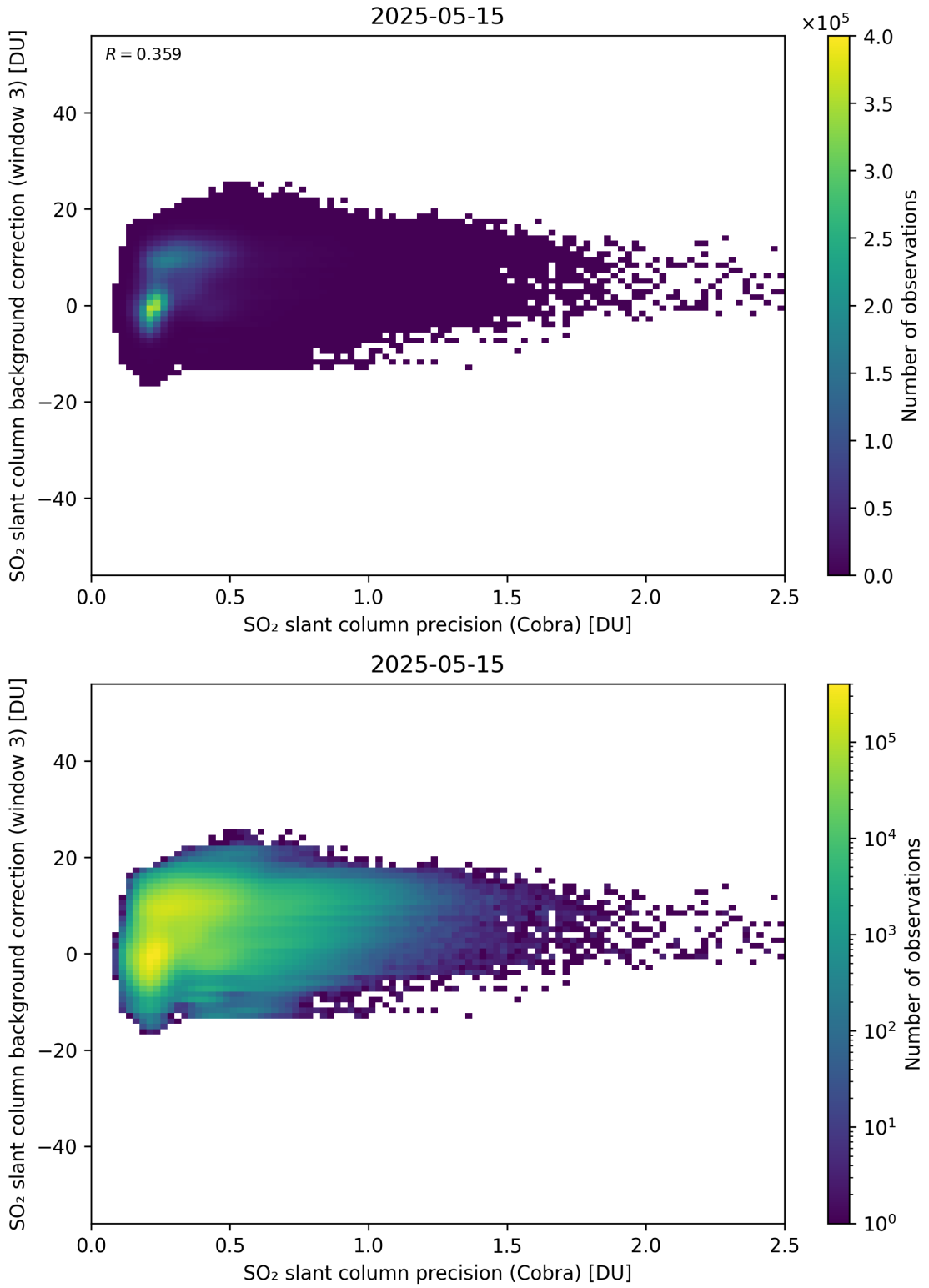


Figure 201: Scatter density plot of "SO_2 slant column precision (Cobra)" against "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16.

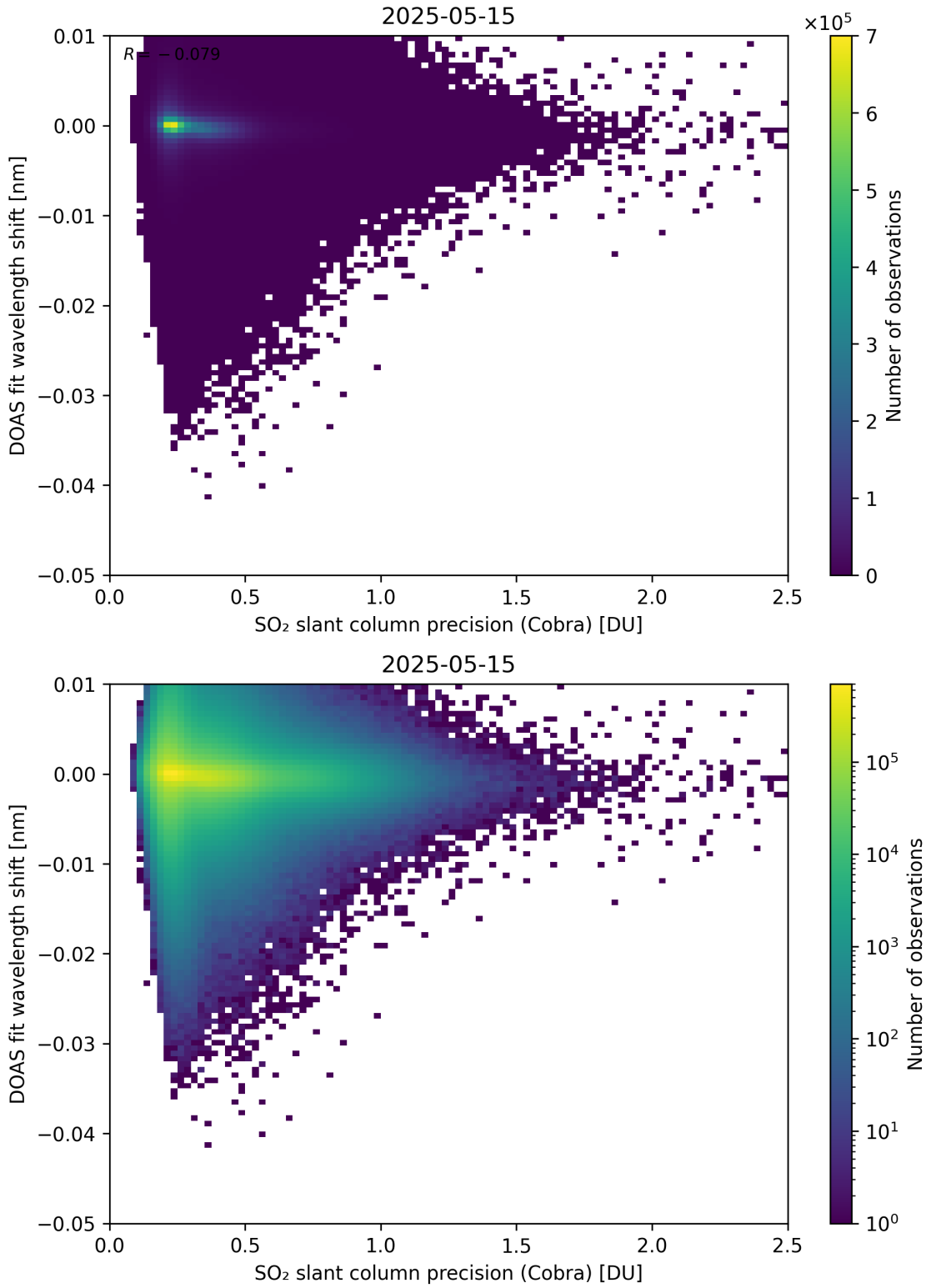


Figure 202: Scatter density plot of "SO_2 slant column precision (Cobra)" against "DOAS fit wavelength shift" for 2025-05-15 to 2025-05-16.

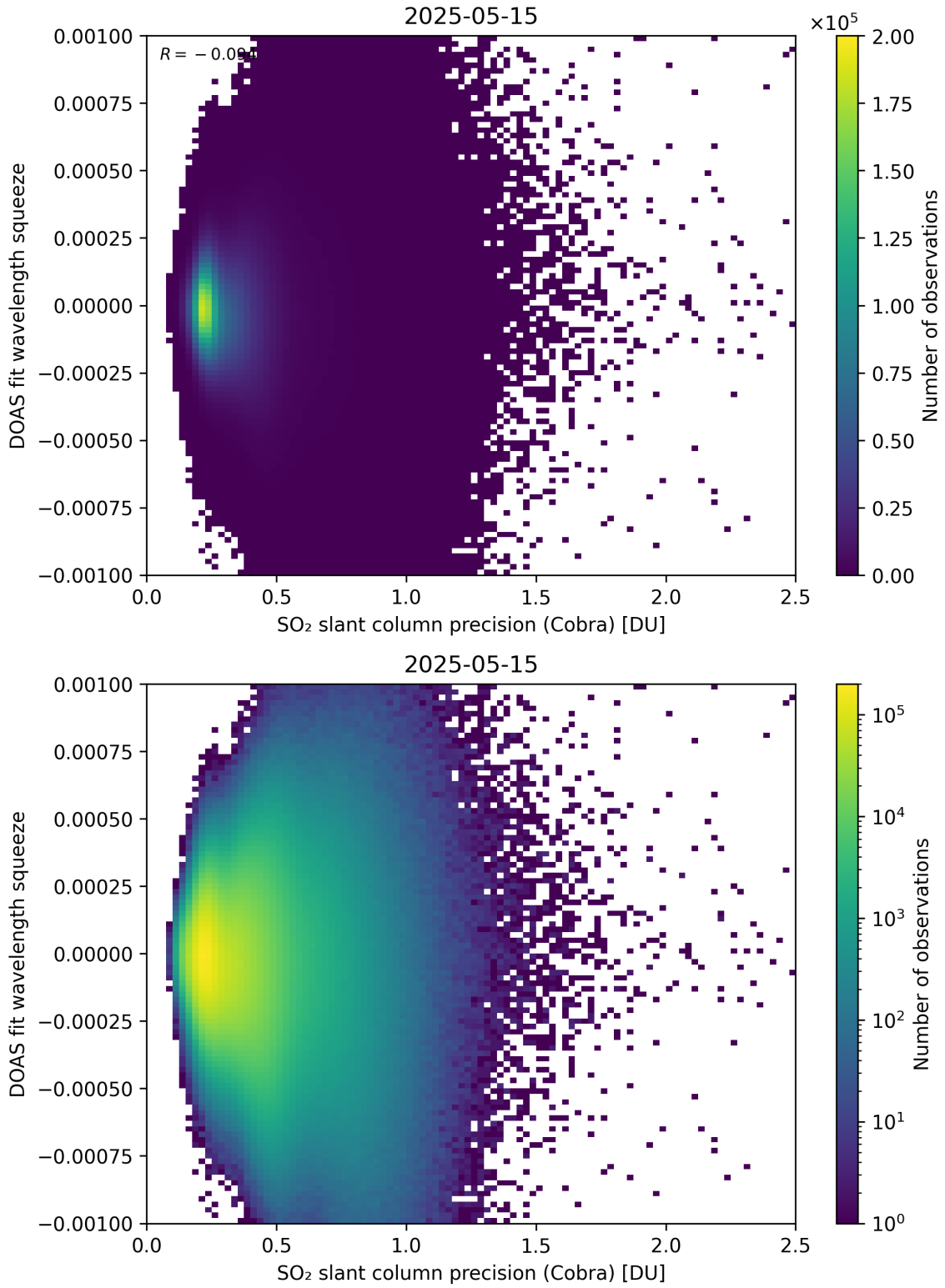


Figure 203: Scatter density plot of "SO_2 slant column precision (Cobra)" against "DOAS fit wavelength squeeze" for 2025-05-15 to 2025-05-16.

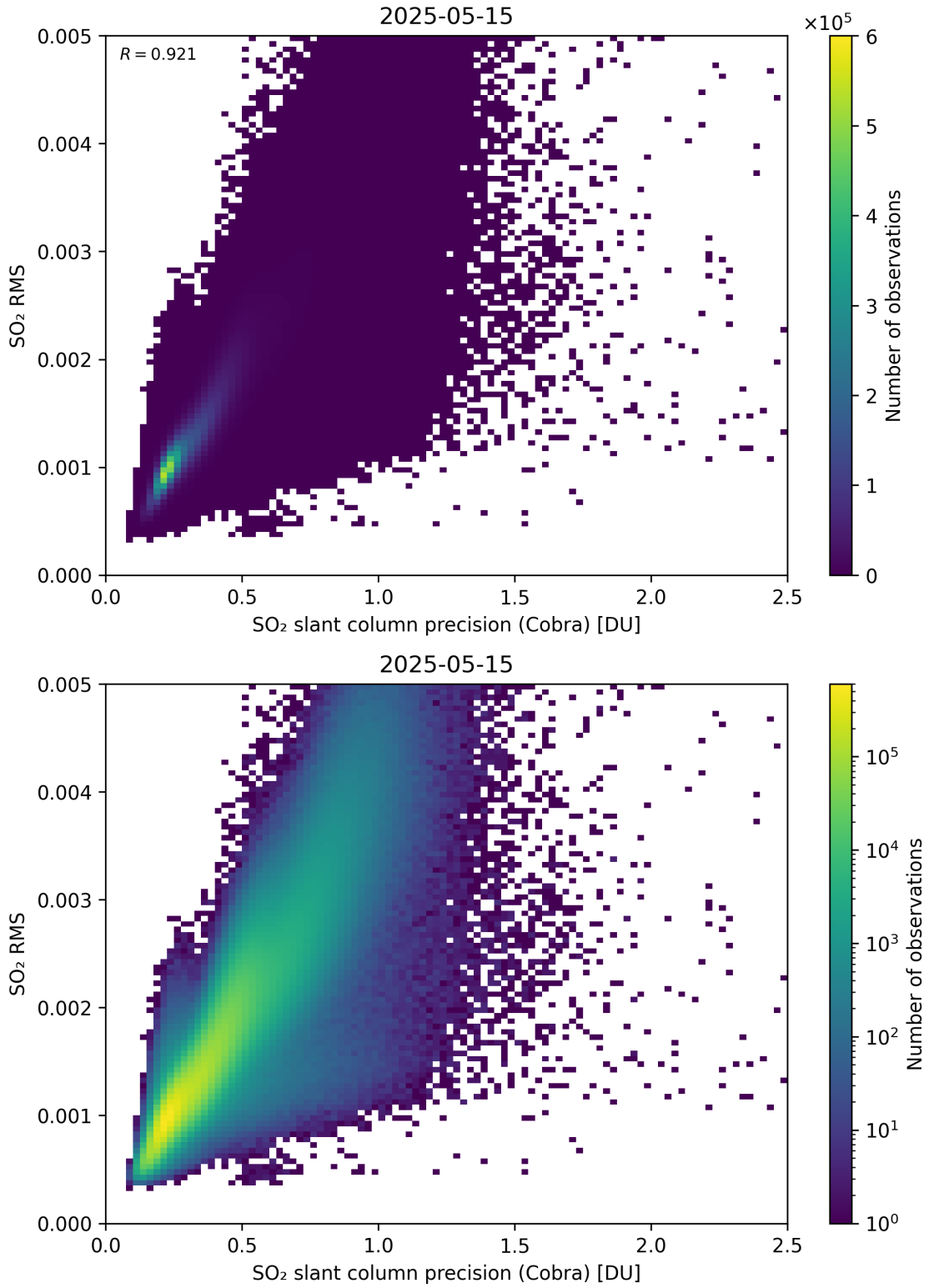


Figure 204: Scatter density plot of "SO_2 slant column precision (Cobra)" against "SO_2 RMS" for 2025-05-15 to 2025-05-16.

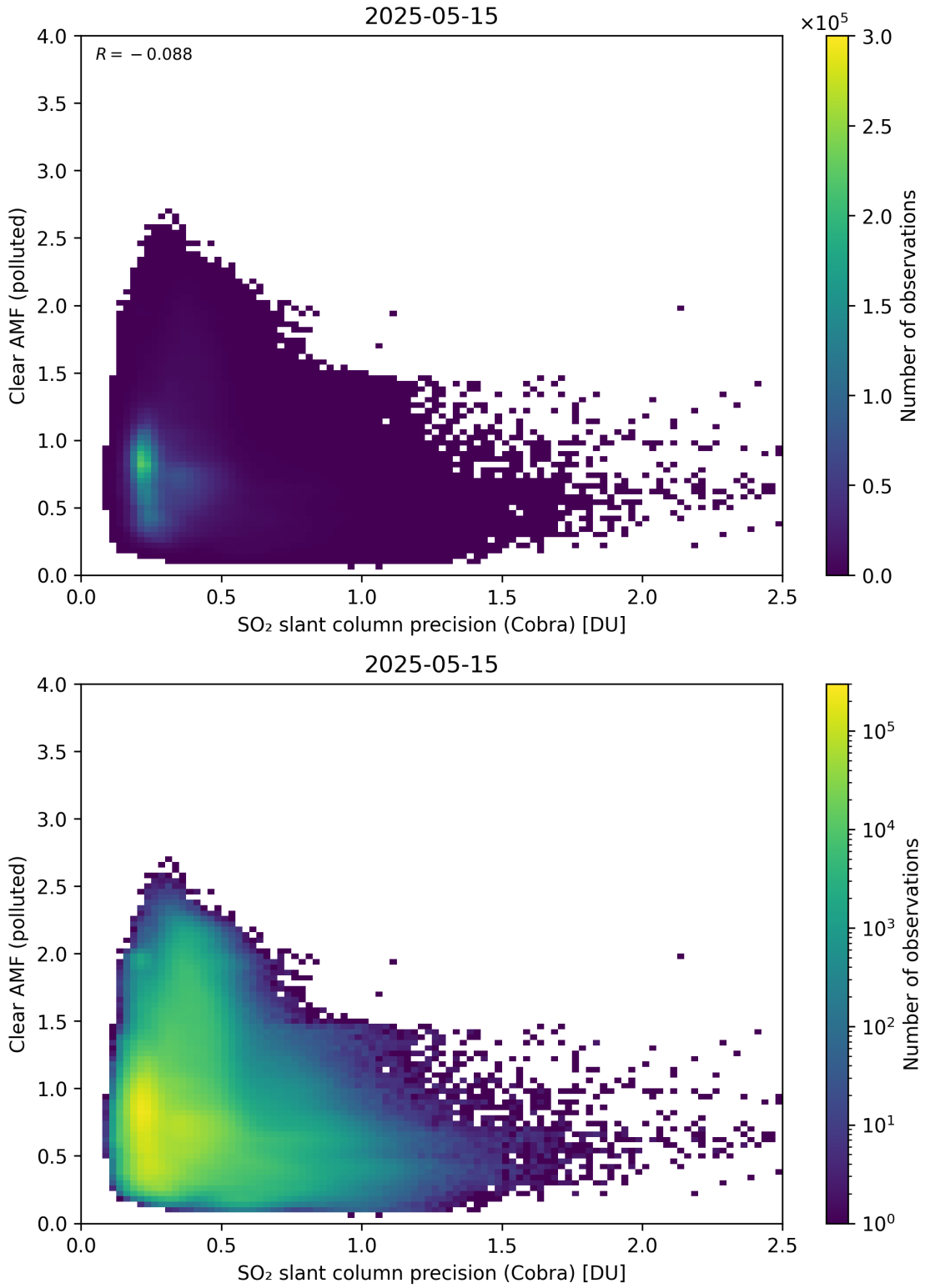


Figure 205: Scatter density plot of "SO_2 slant column precision (Cobra)" against "Clear AMF (polluted)" for 2025-05-15 to 2025-05-16.

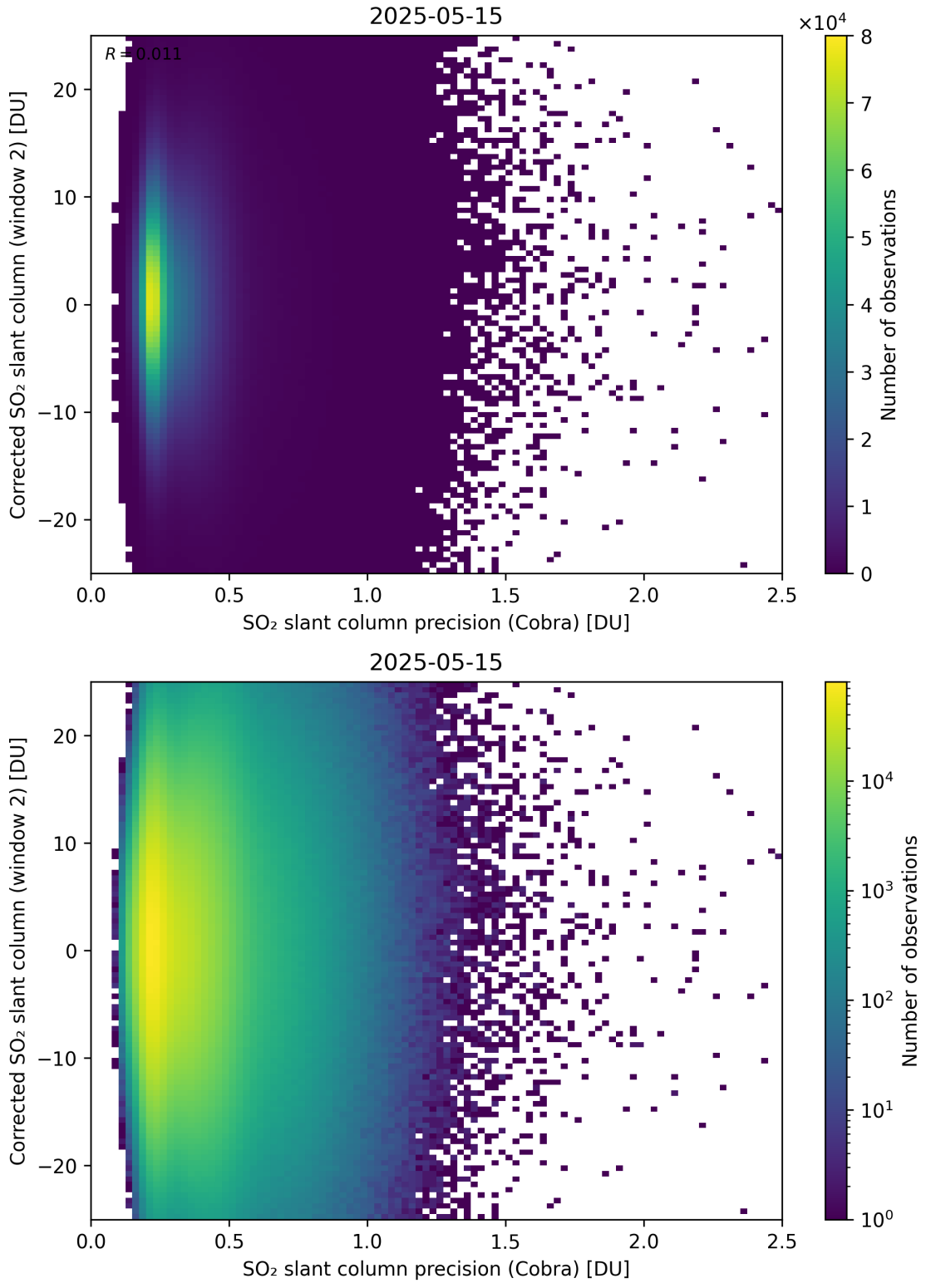


Figure 206: Scatter density plot of "SO_2 slant column precision (Cobra)" against "Corrected SO_2 slant column (window 2)" for 2025-05-15 to 2025-05-16.

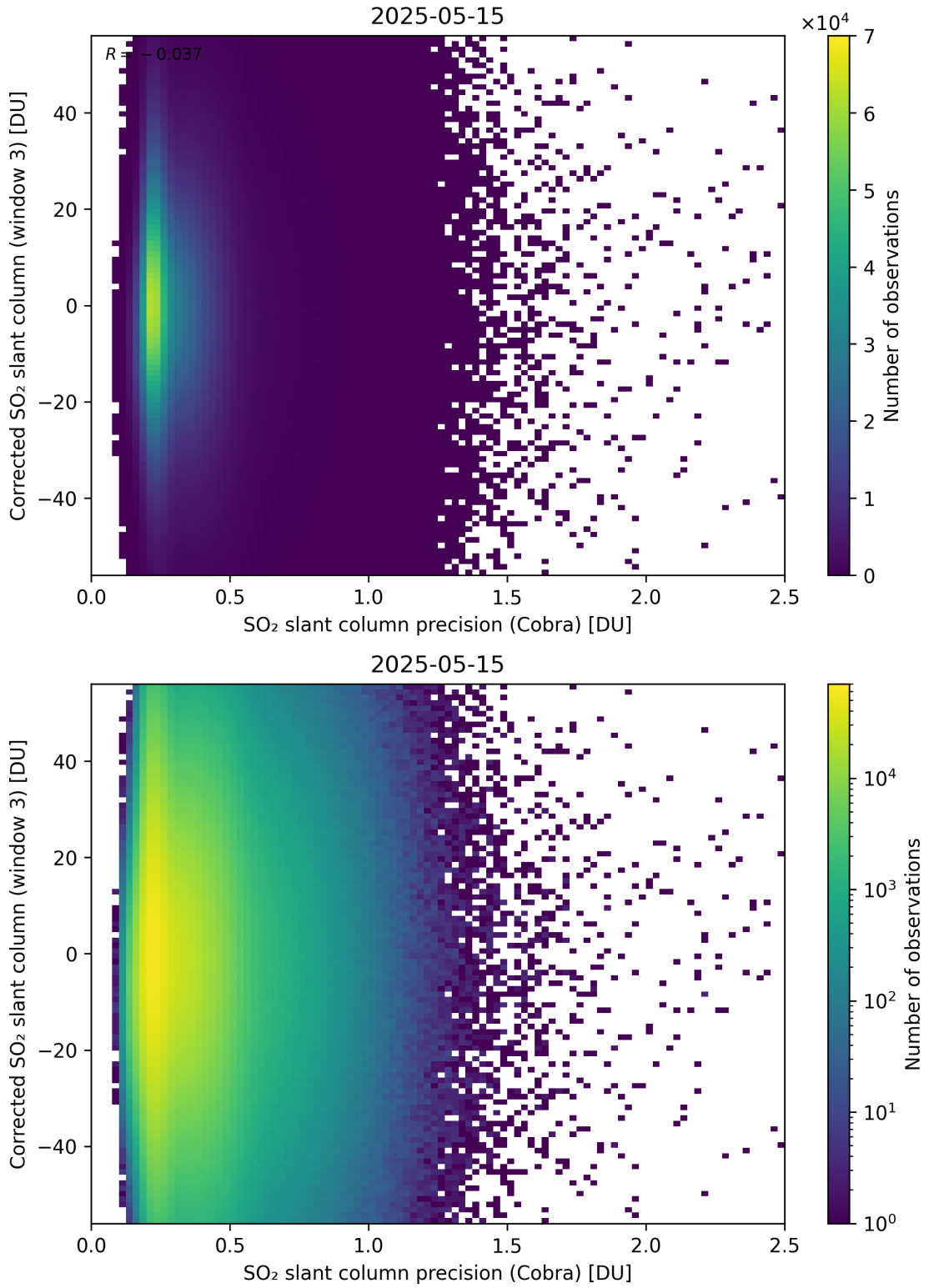


Figure 207: Scatter density plot of "SO_2 slant column precision (Cobra)" against "Corrected SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

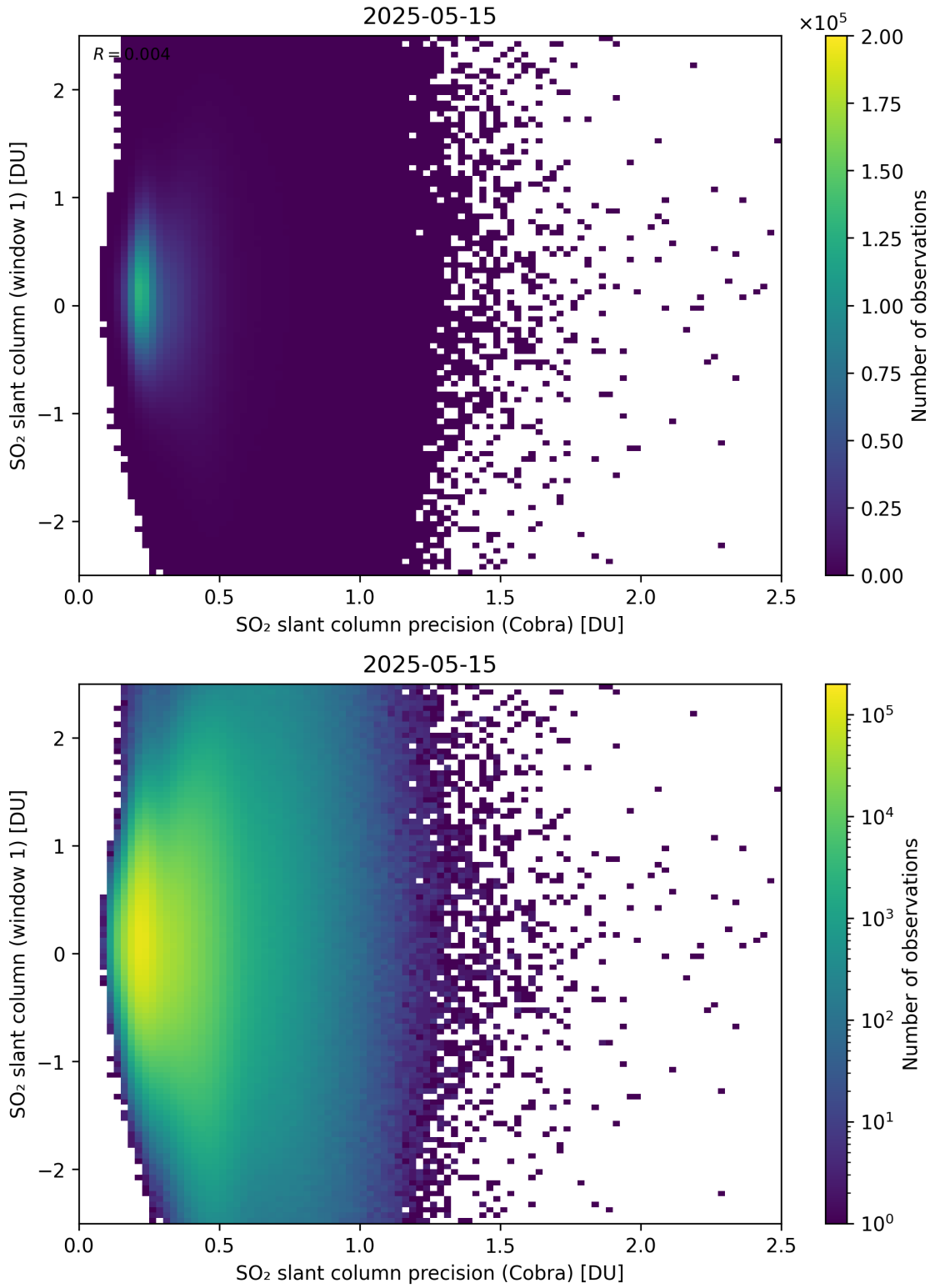


Figure 208: Scatter density plot of "SO_2 slant column precision (Cobra)" against "SO_2 slant column (window 1)" for 2025-05-15 to 2025-05-16.

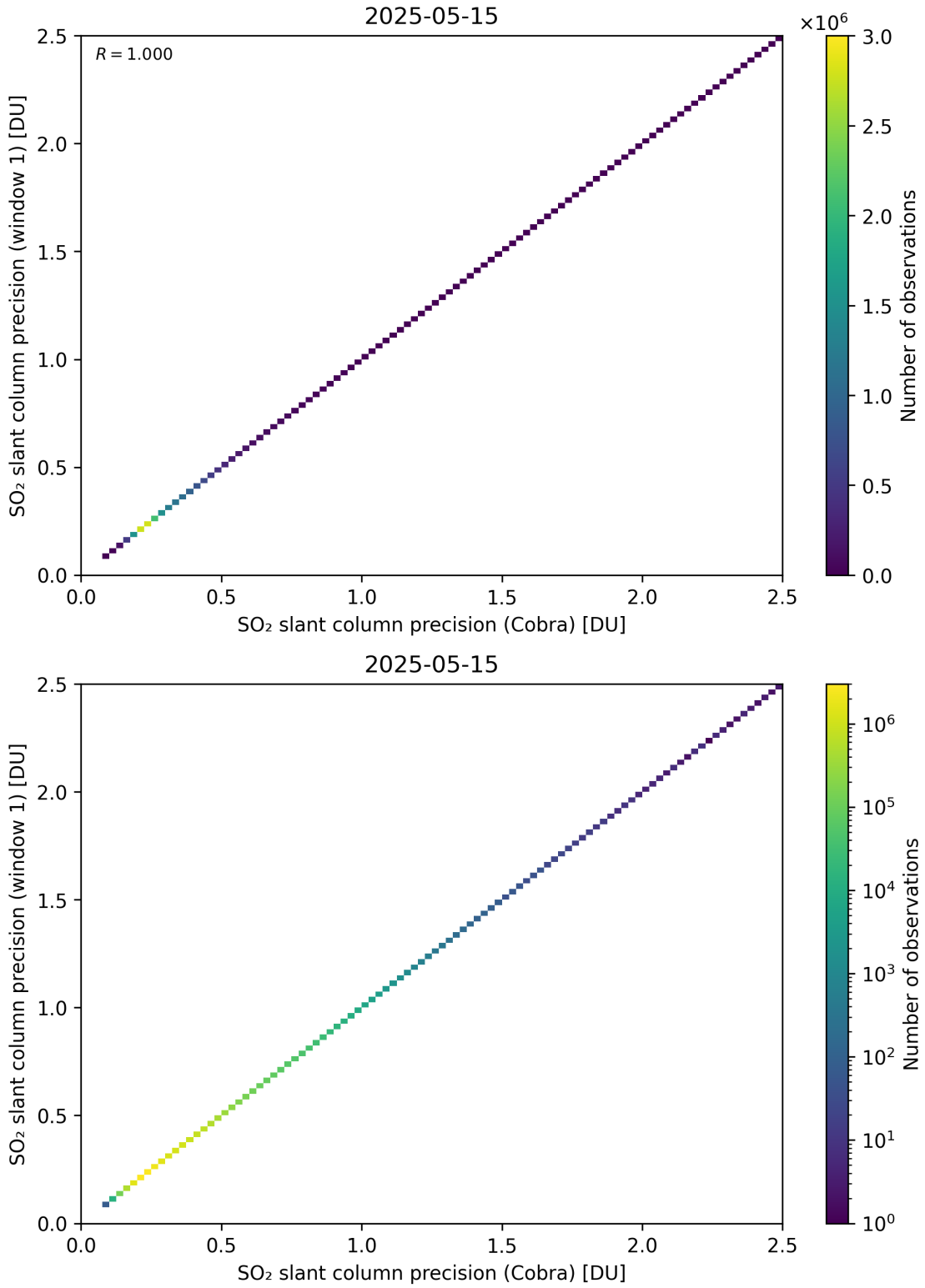


Figure 209: Scatter density plot of "SO_2 slant column precision (Cobra)" against "SO_2 slant column precision (window 1)" for 2025-05-15 to 2025-05-16.

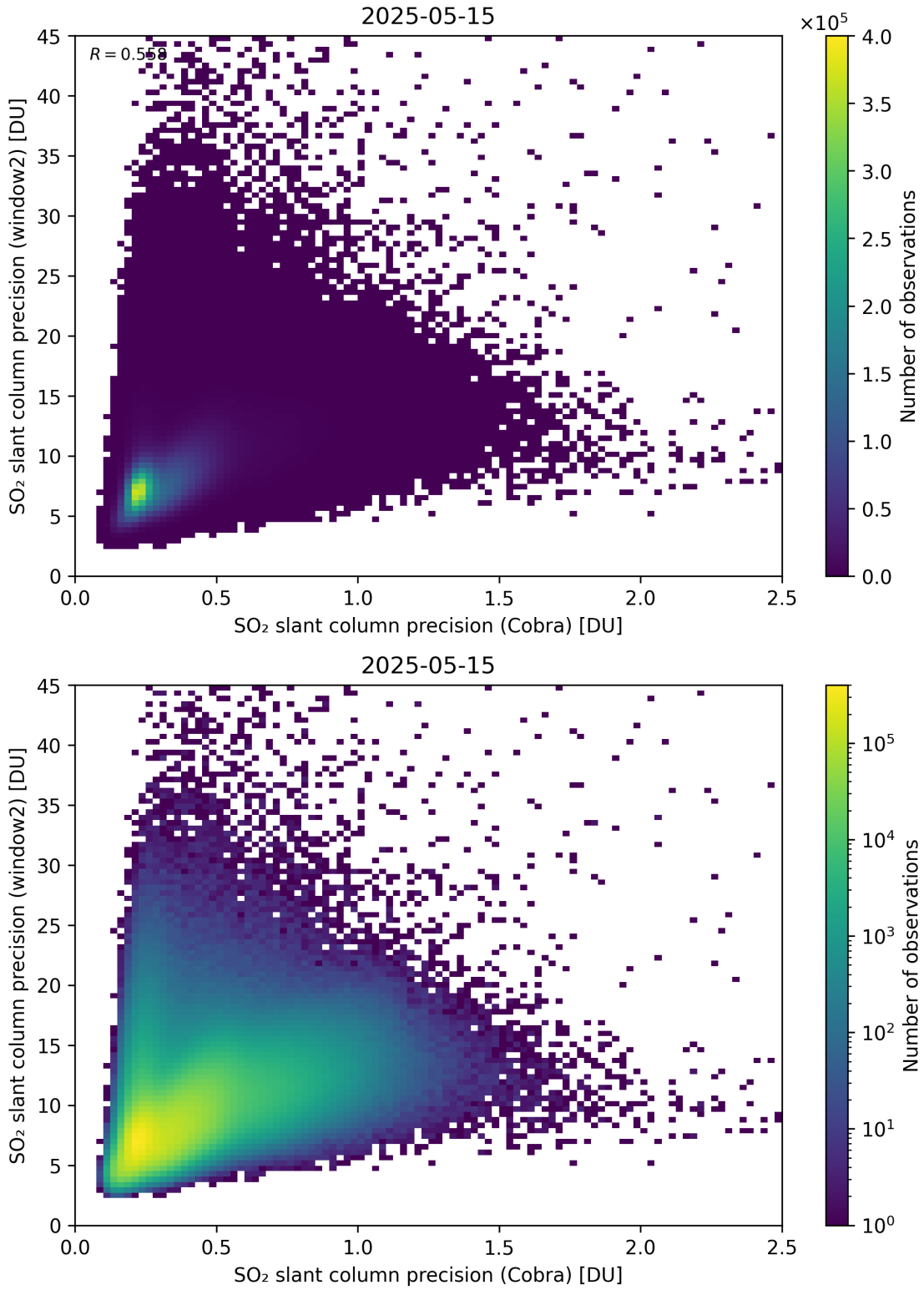


Figure 210: Scatter density plot of "SO_2 slant column precision (Cobra)" against "SO_2 slant column precision (window2)" for 2025-05-15 to 2025-05-16.

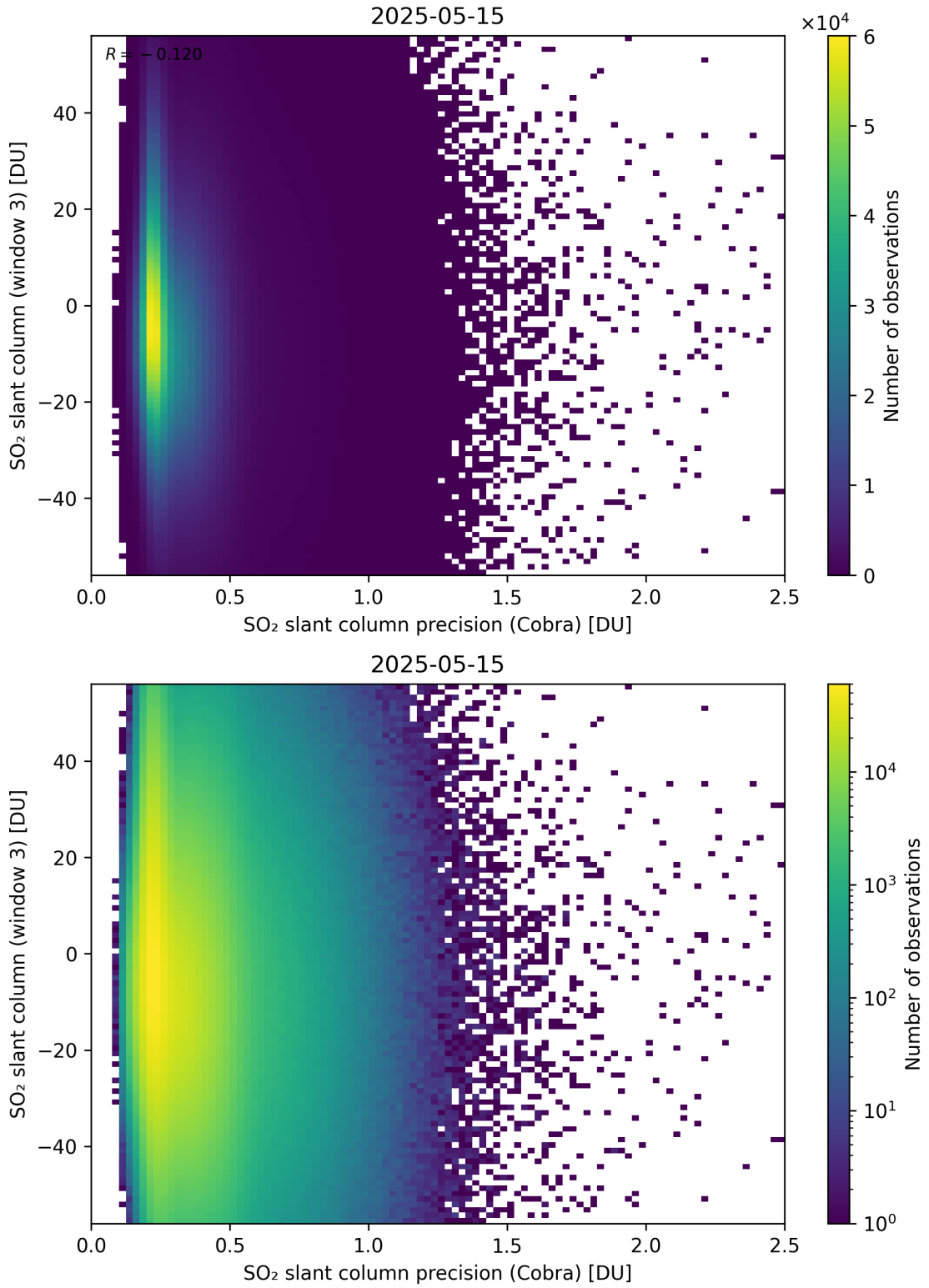


Figure 211: Scatter density plot of "SO_2 slant column precision (Cobra)" against "SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

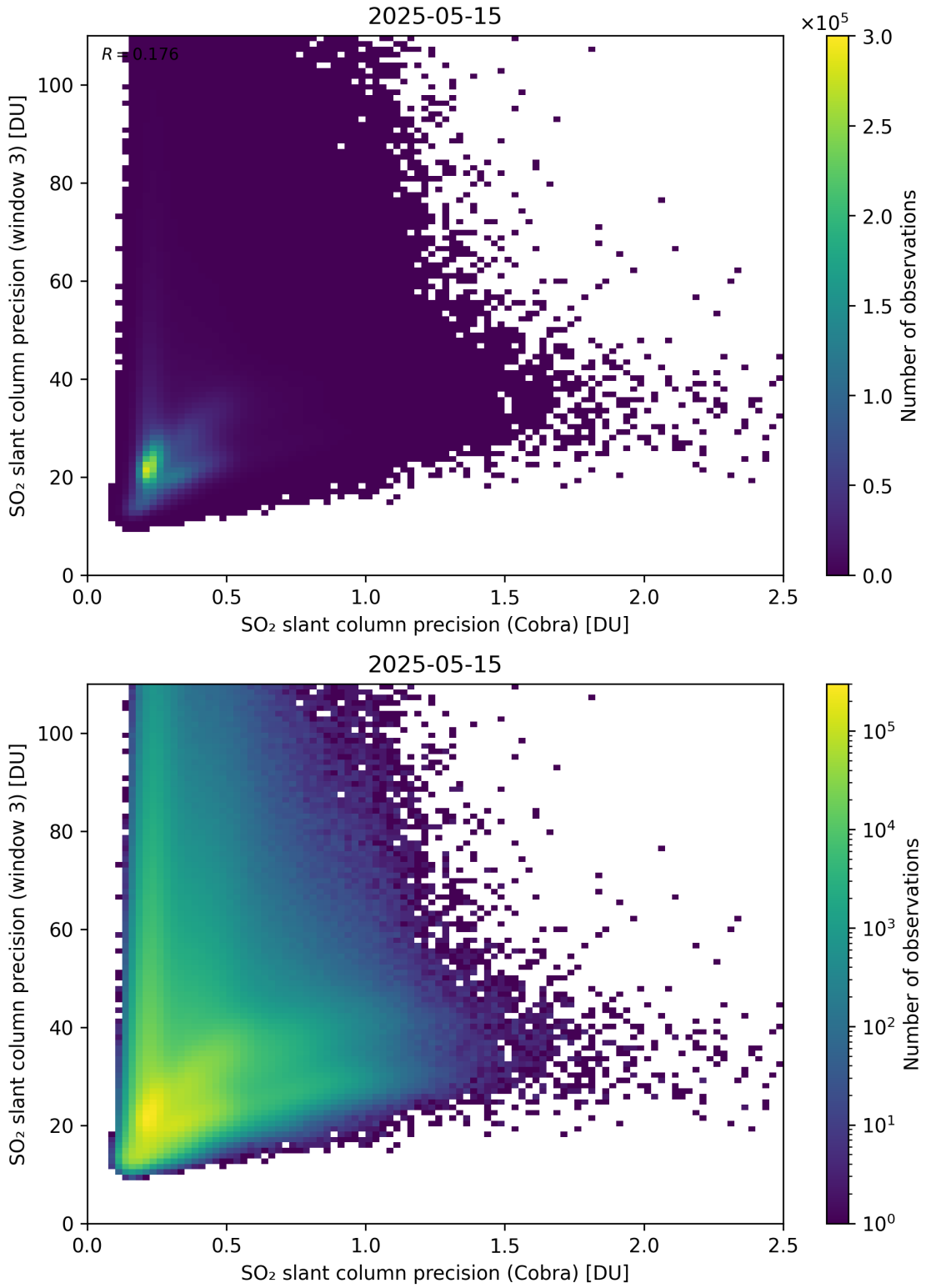


Figure 212: Scatter density plot of "SO_2 slant column precision (Cobra)" against "SO_2 slant column precision (window 3)" for 2025-05-15 to 2025-05-16.

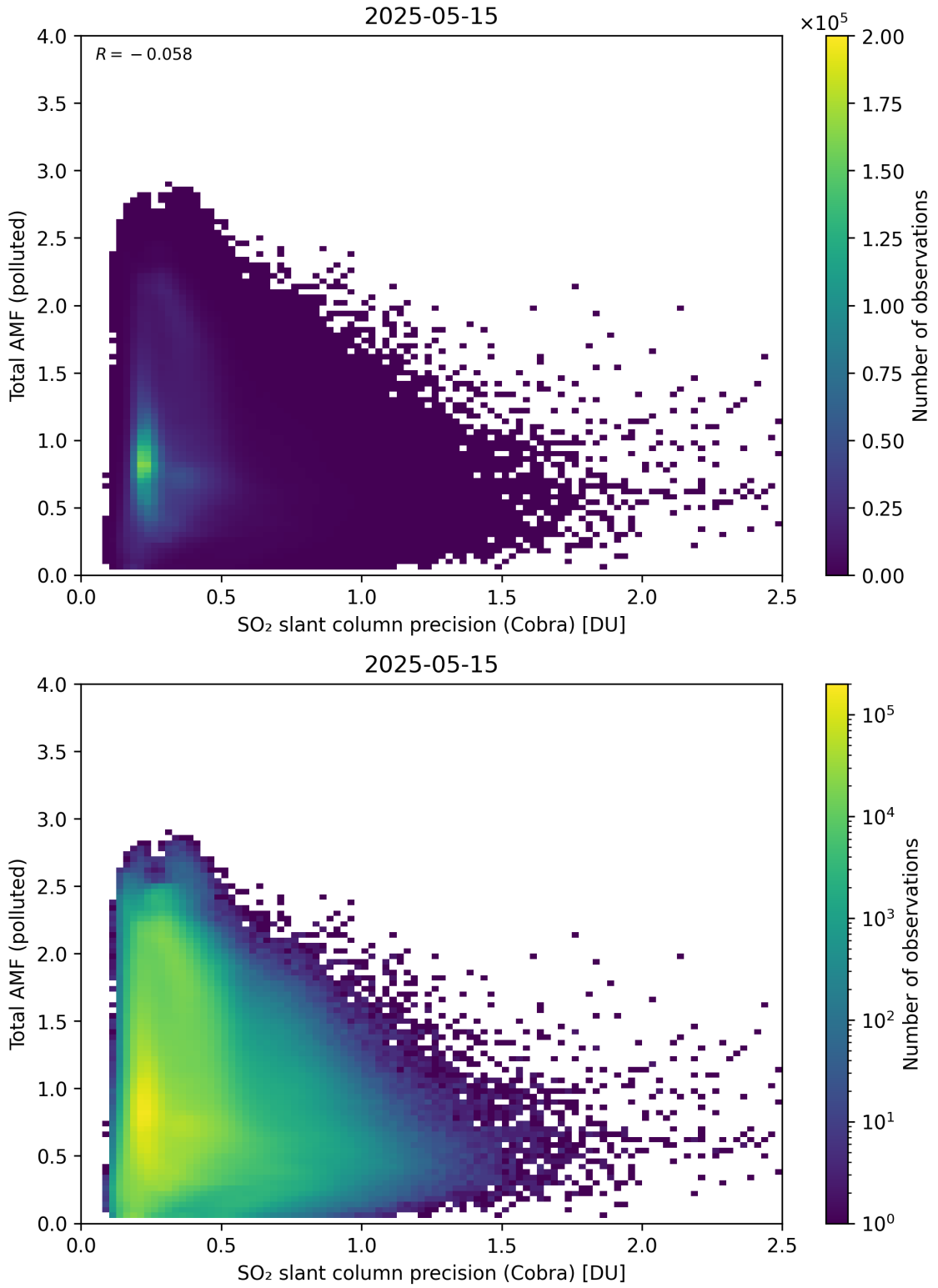


Figure 213: Scatter density plot of "SO_2 slant column precision (Cobra)" against "Total AMF (polluted)" for 2025-05-15 to 2025-05-16.

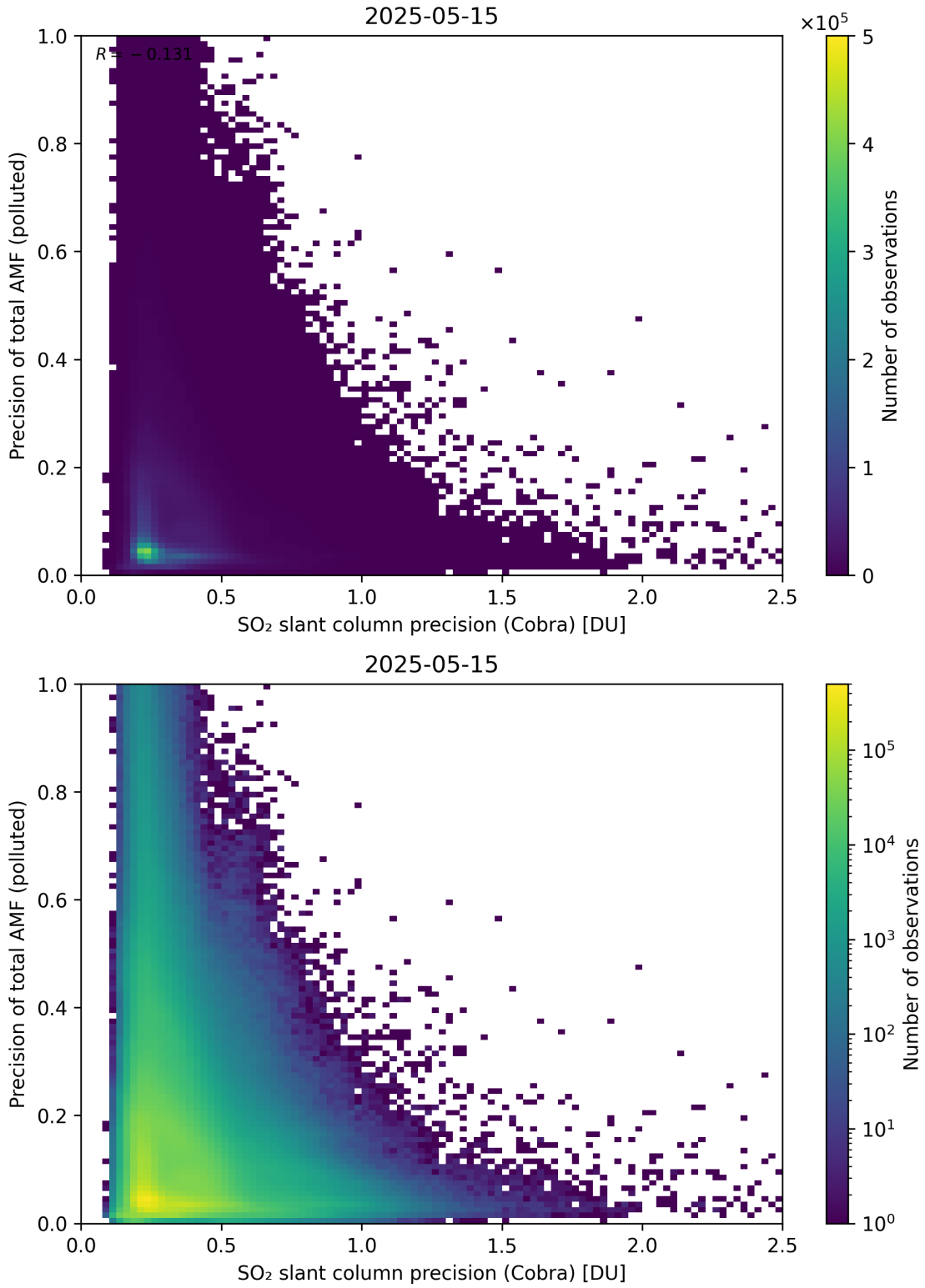


Figure 214: Scatter density plot of "SO_2 slant column precision (Cobra)" against "Precision of total AMF (polluted)" for 2025-05-15 to 2025-05-16.

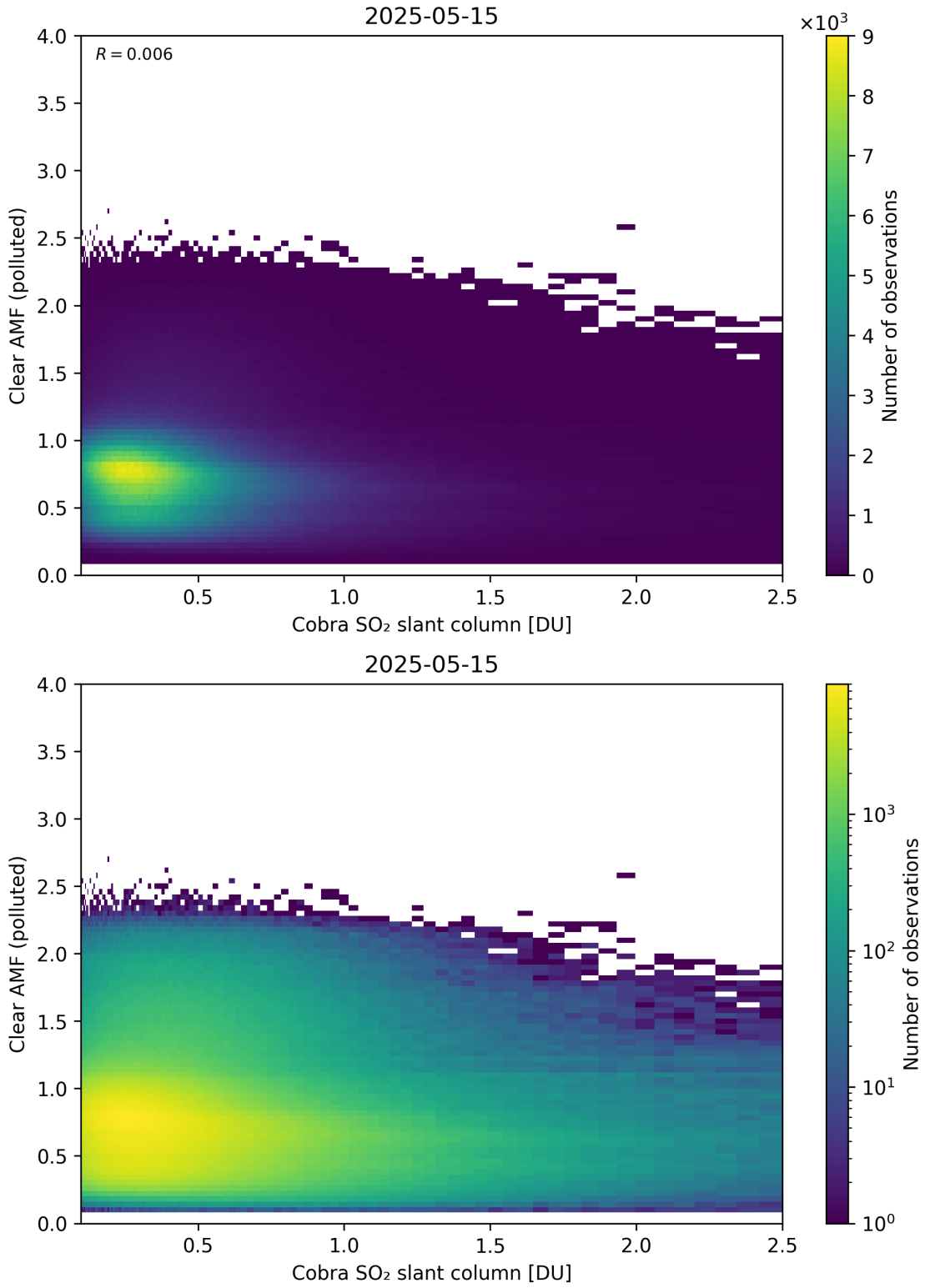


Figure 215: Scatter density plot of “Cobra SO_2 slant column” against “Clear AMF (polluted)” for 2025-05-15 to 2025-05-16.

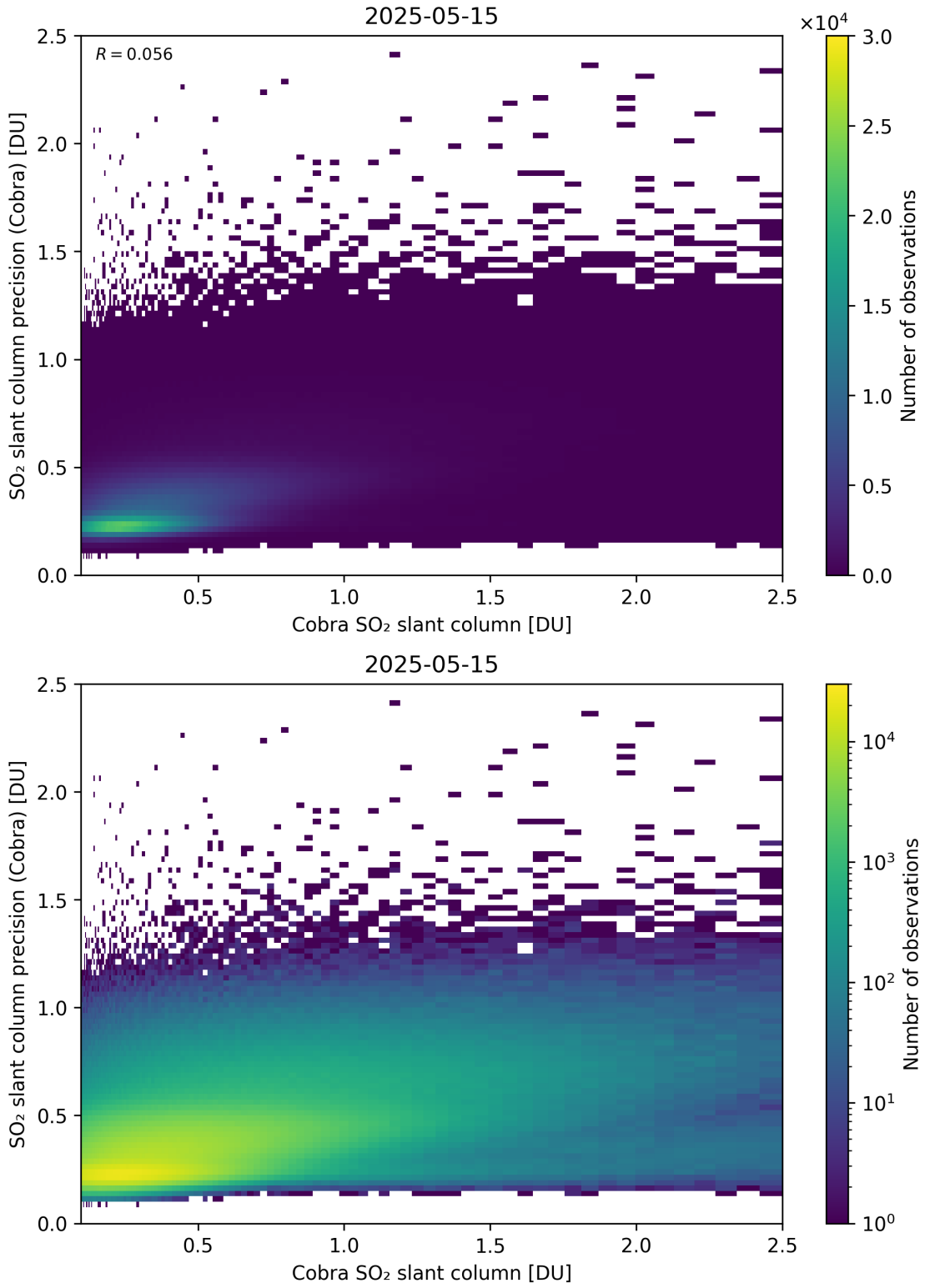


Figure 216: Scatter density plot of "Cobra SO_2 slant column" against "SO_2 slant column precision (Cobra)" for 2025-05-15 to 2025-05-16.

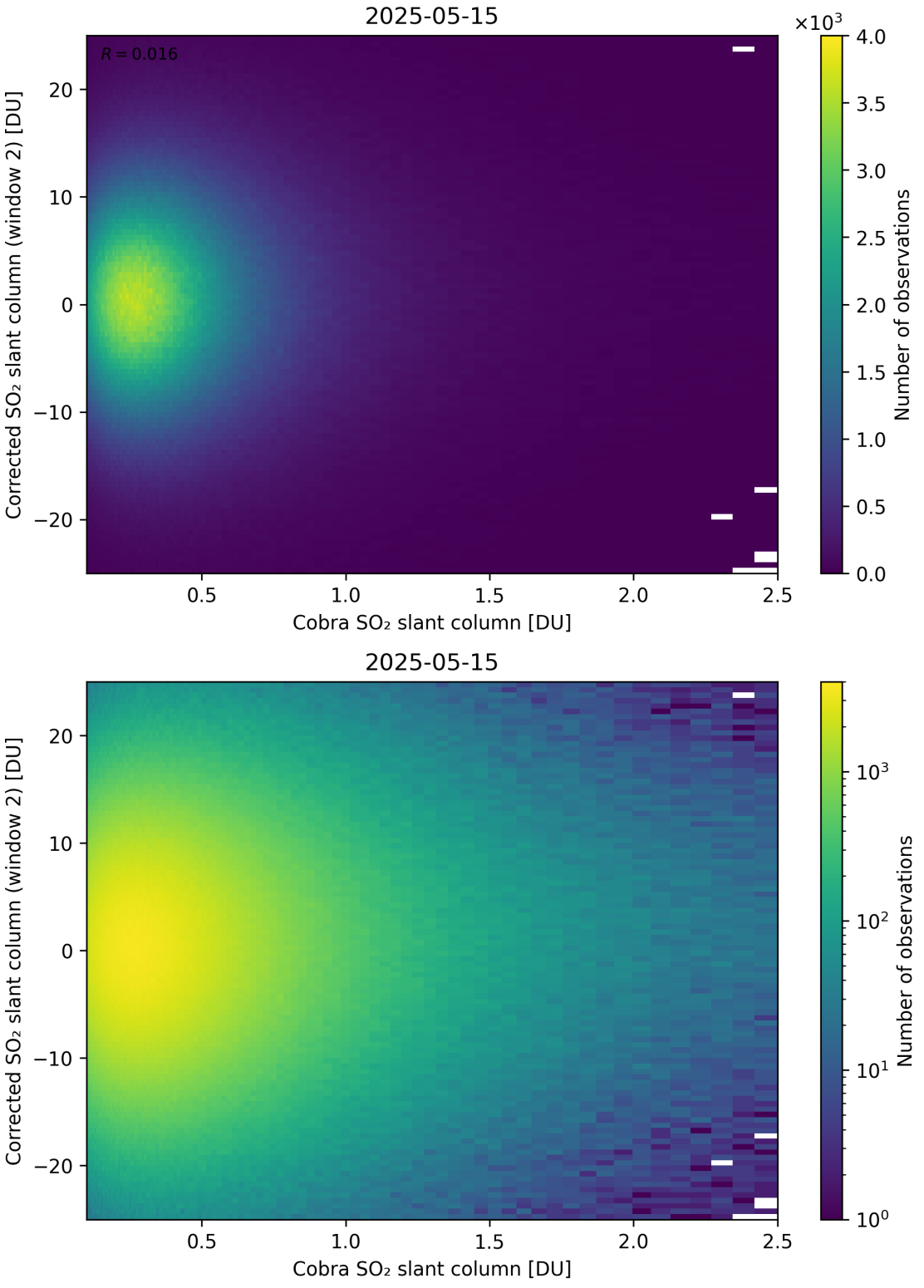


Figure 217: Scatter density plot of "Cobra SO_2 slant column" against "Corrected SO_2 slant column (window 2)" for 2025-05-15 to 2025-05-16.

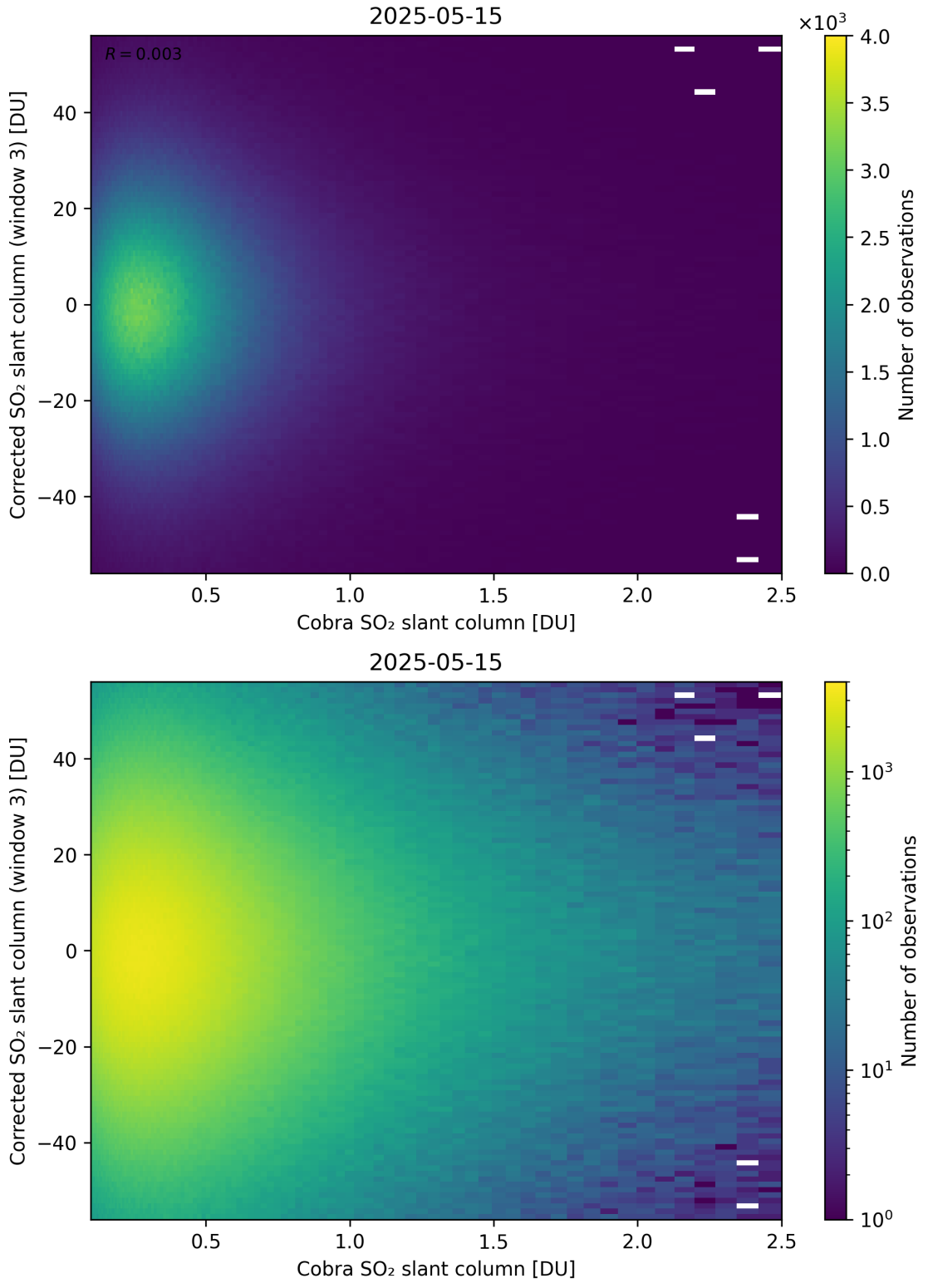


Figure 218: Scatter density plot of "Cobra SO_2 slant column" against "Corrected SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

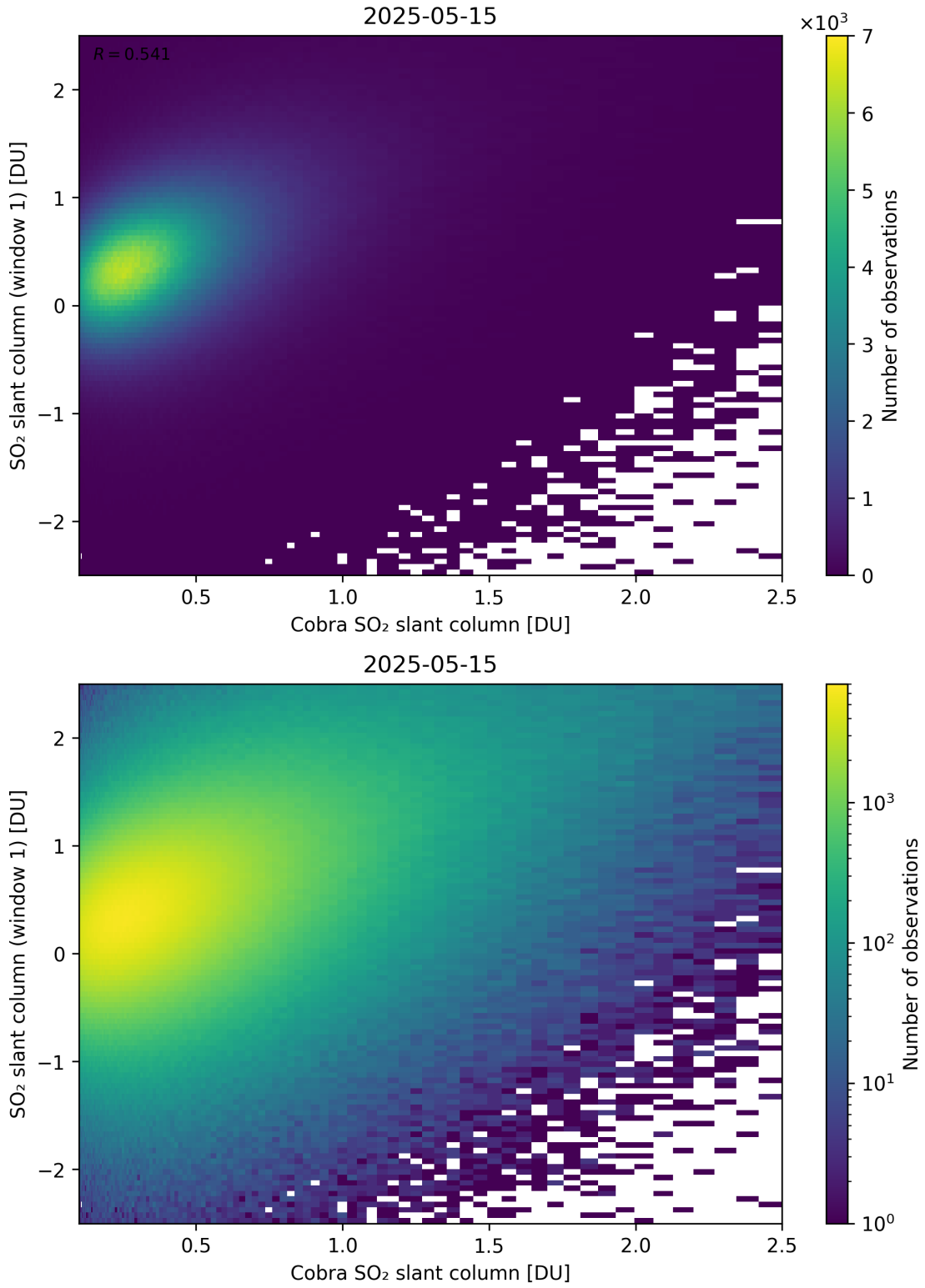


Figure 219: Scatter density plot of “Cobra SO_2 slant column” against “SO_2 slant column (window 1)” for 2025-05-15 to 2025-05-16.

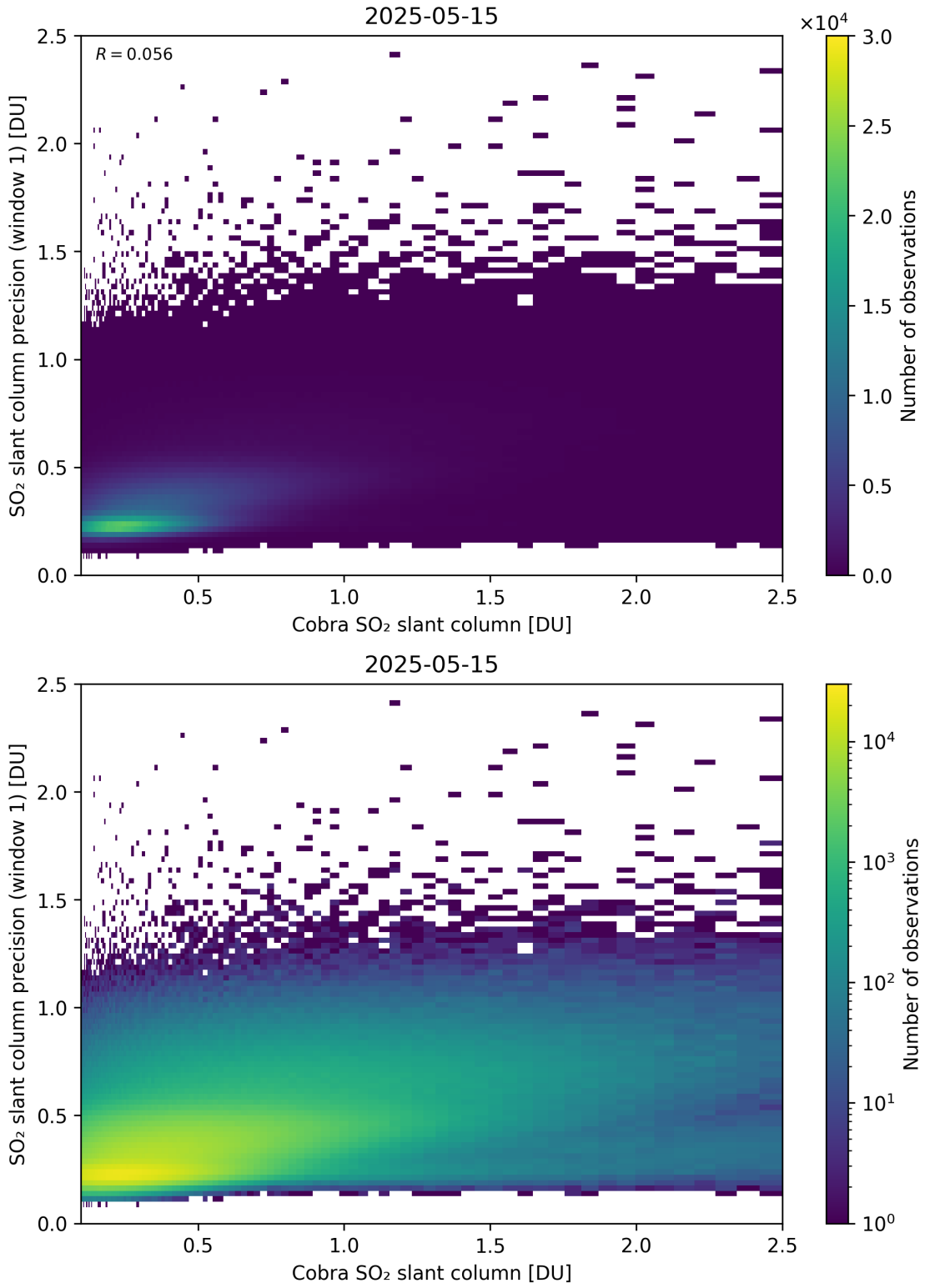


Figure 220: Scatter density plot of "Cobra SO_2 slant column" against "SO_2 slant column precision (window 1)" for 2025-05-15 to 2025-05-16.

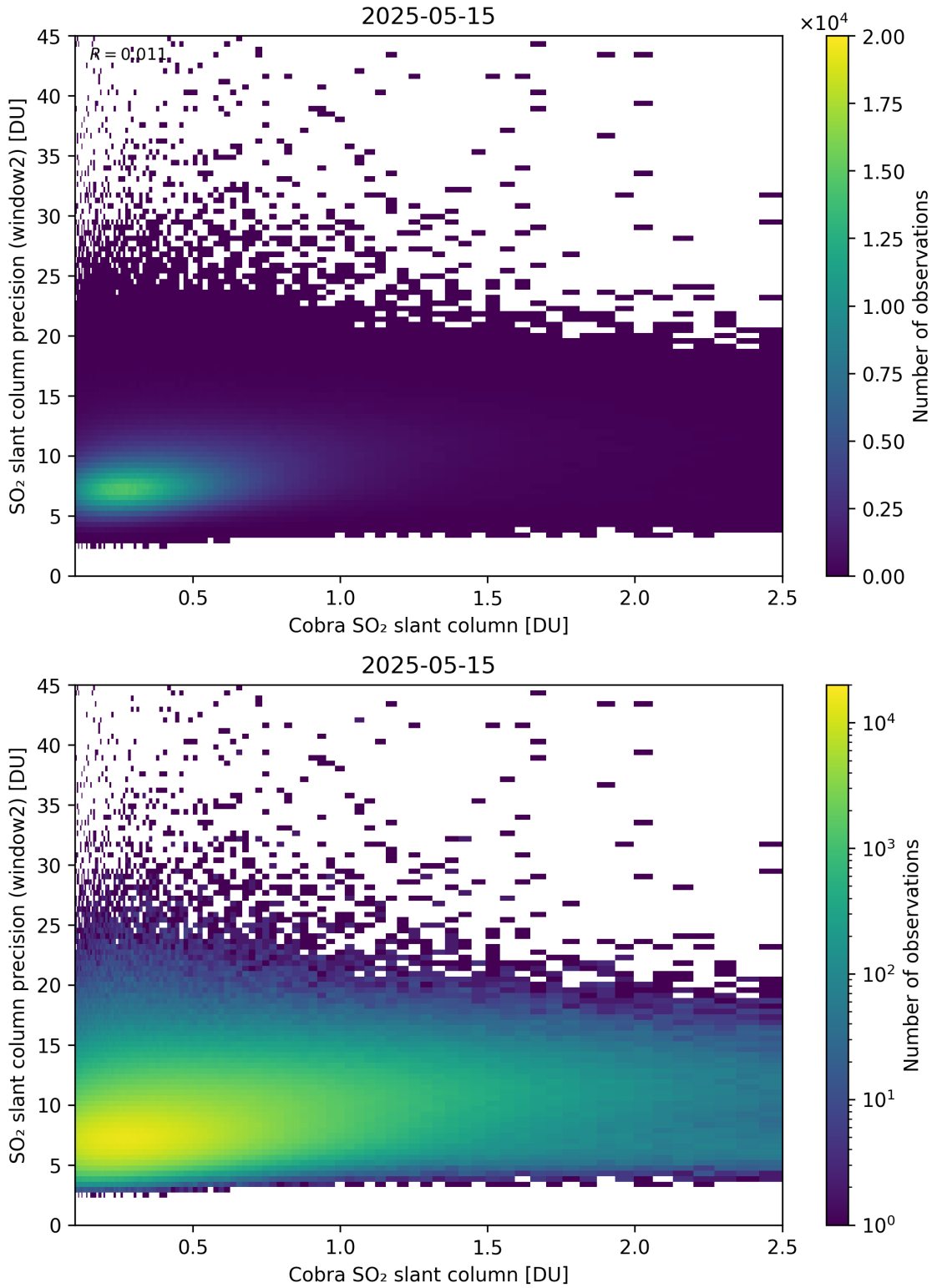


Figure 221: Scatter density plot of “Cobra SO_2 slant column” against “SO_2 slant column precision (window2)” for 2025-05-15 to 2025-05-16.

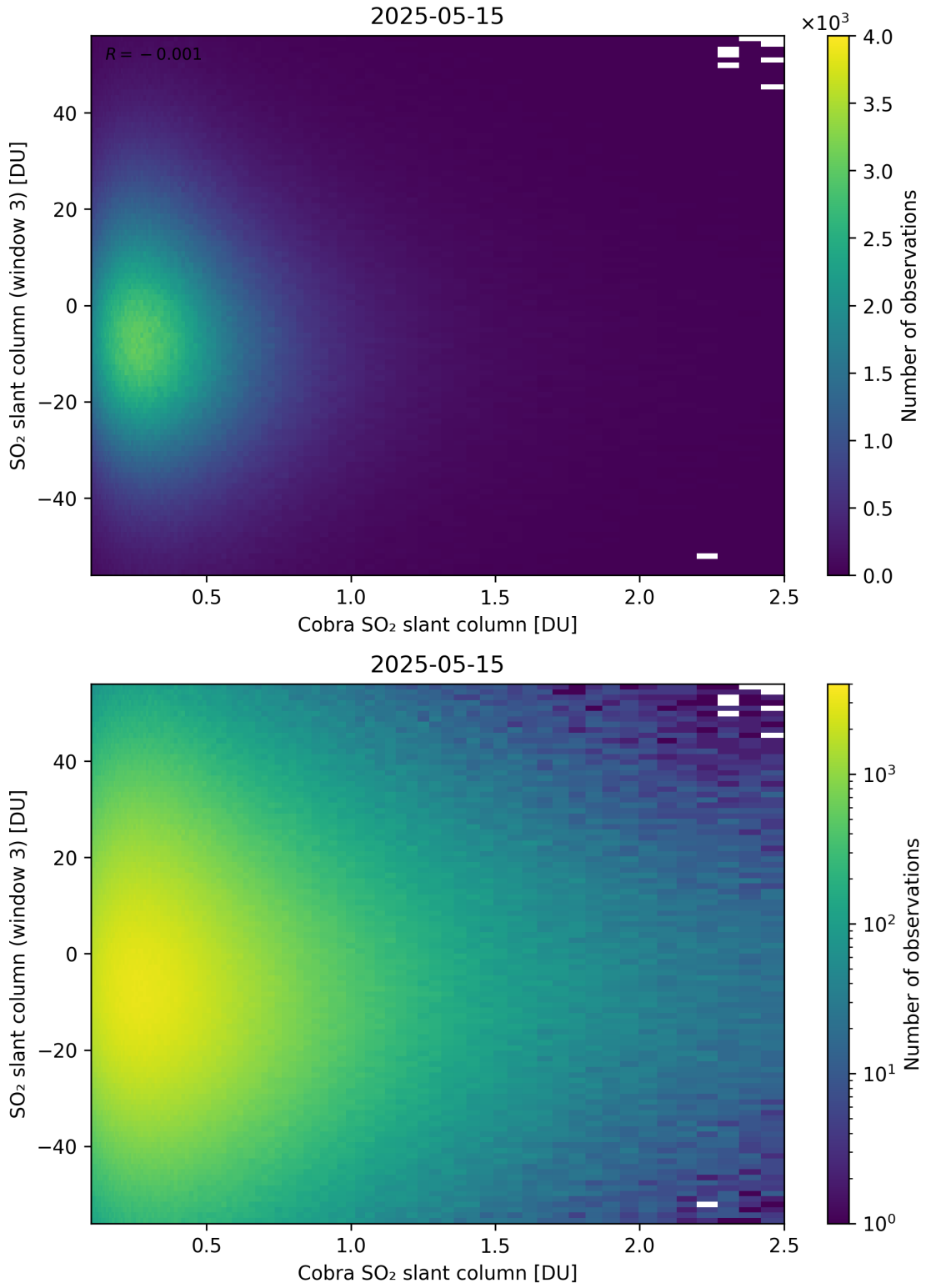


Figure 222: Scatter density plot of “Cobra SO_2 slant column” against “SO_2 slant column (window 3)” for 2025-05-15 to 2025-05-16.

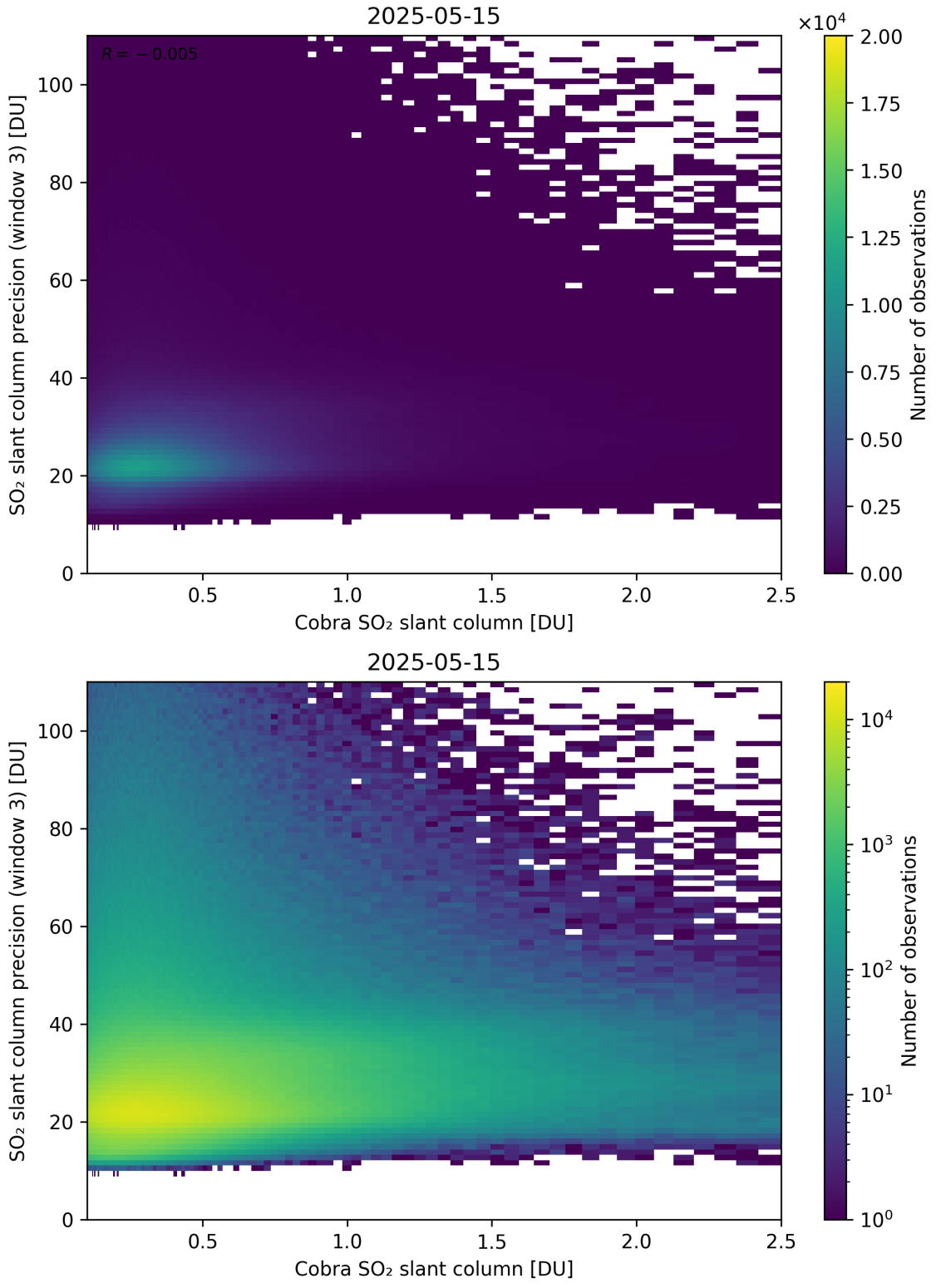


Figure 223: Scatter density plot of "Cobra SO_2 slant column" against "SO_2 slant column precision (window 3)" for 2025-05-15 to 2025-05-16.

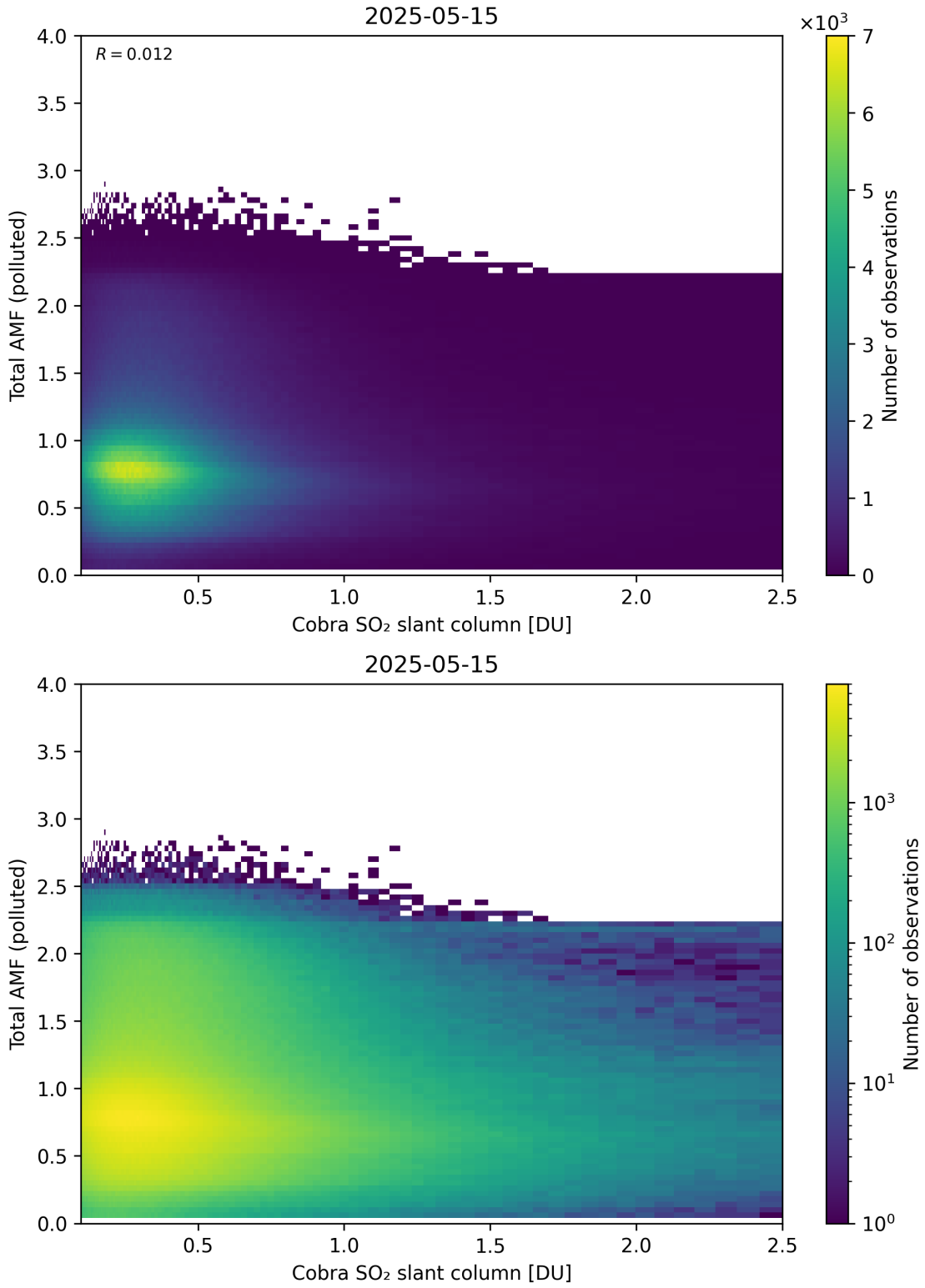


Figure 224: Scatter density plot of "Cobra SO_2 slant column" against "Total AMF (polluted)" for 2025-05-15 to 2025-05-16.

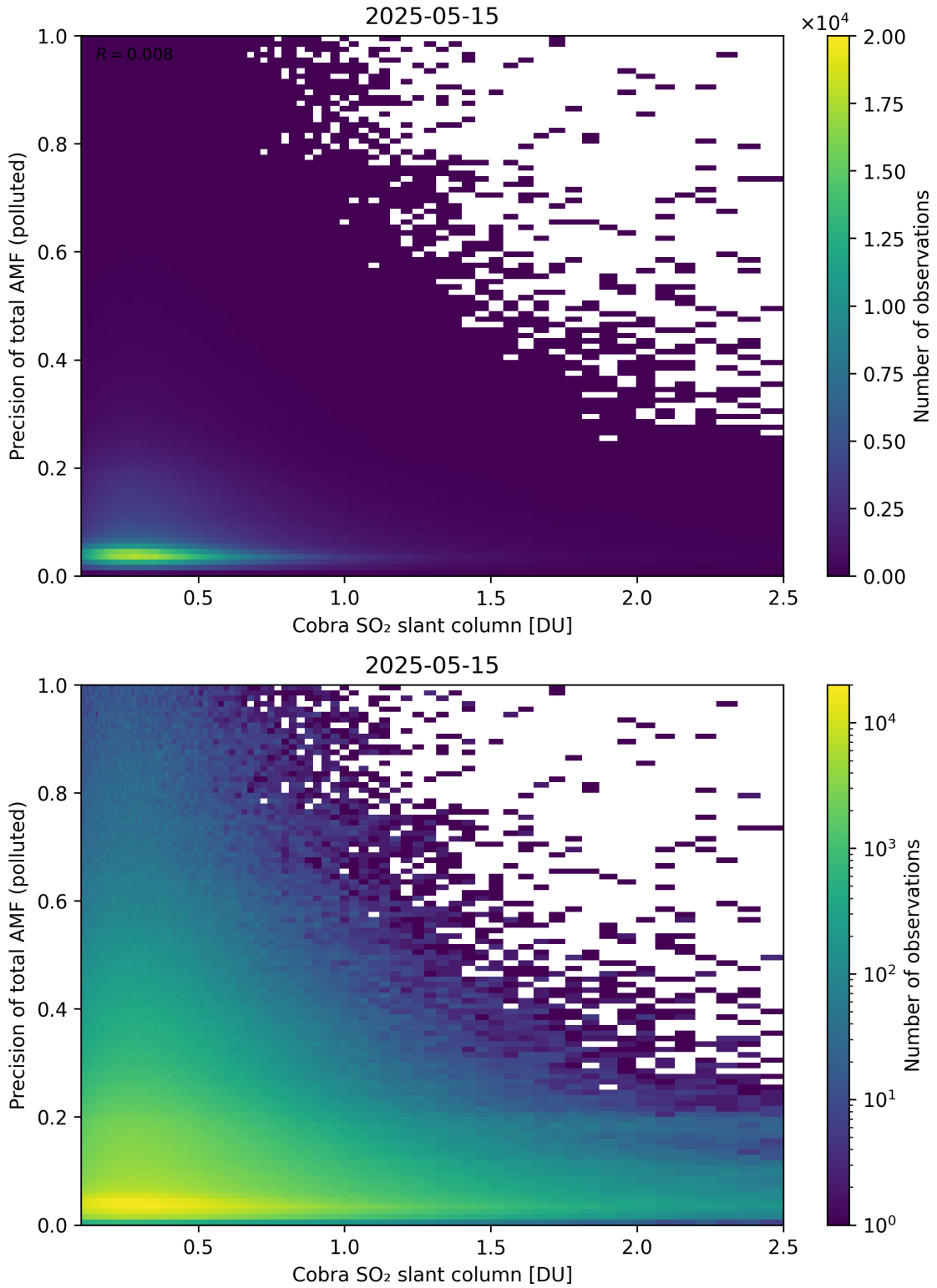


Figure 225: Scatter density plot of "Cobra SO_2 slant column" against "Precision of total AMF (polluted)" for 2025-05-15 to 2025-05-16.

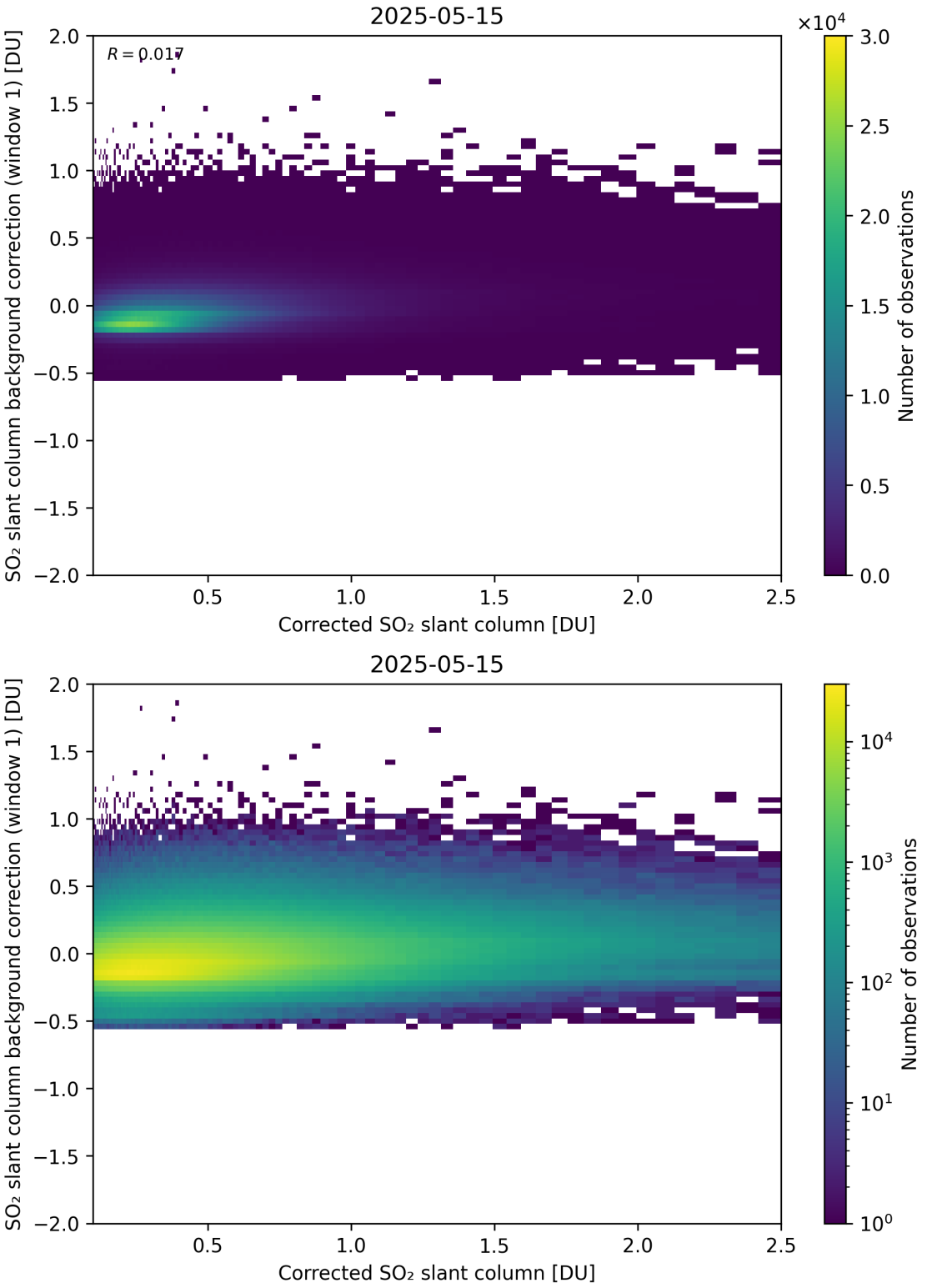


Figure 226: Scatter density plot of "Corrected SO_2 slant column" against "SO_2 slant column background correction (window 1)" for 2025-05-15 to 2025-05-16.

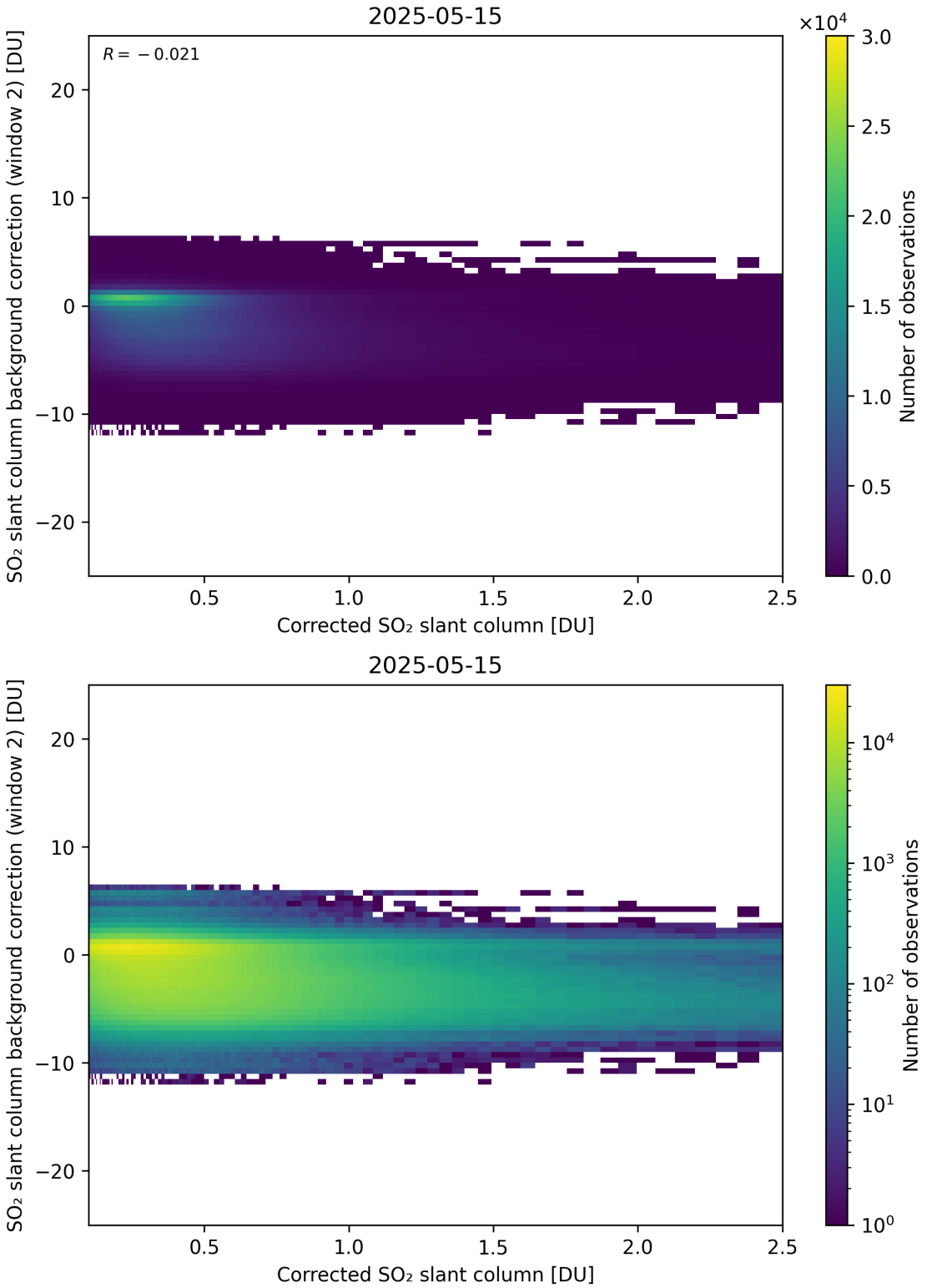


Figure 227: Scatter density plot of “Corrected SO_2 slant column” against “SO_2 slant column background correction (window 2)” for 2025-05-15 to 2025-05-16.

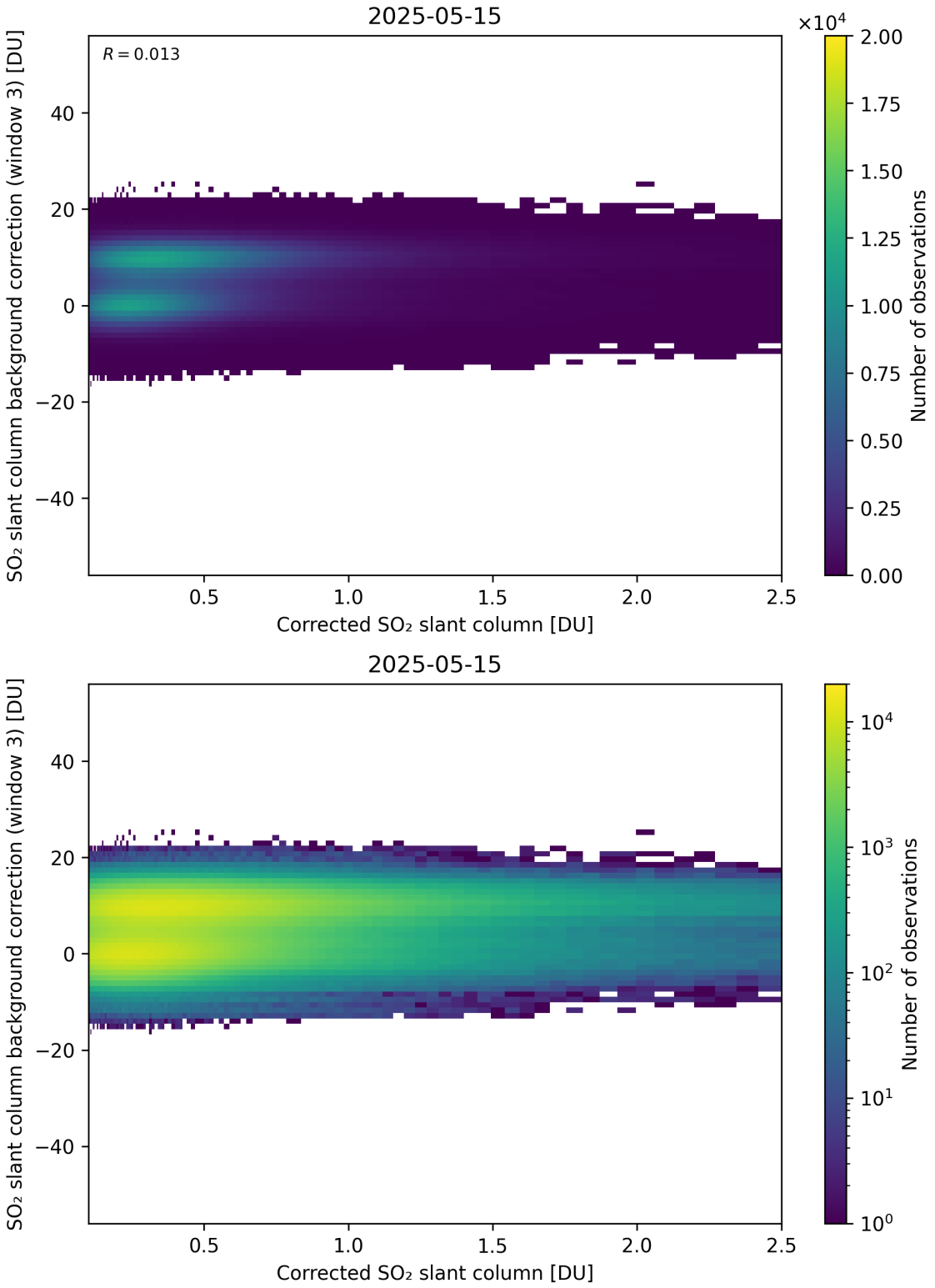


Figure 228: Scatter density plot of "Corrected SO_2 slant column" against "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16.

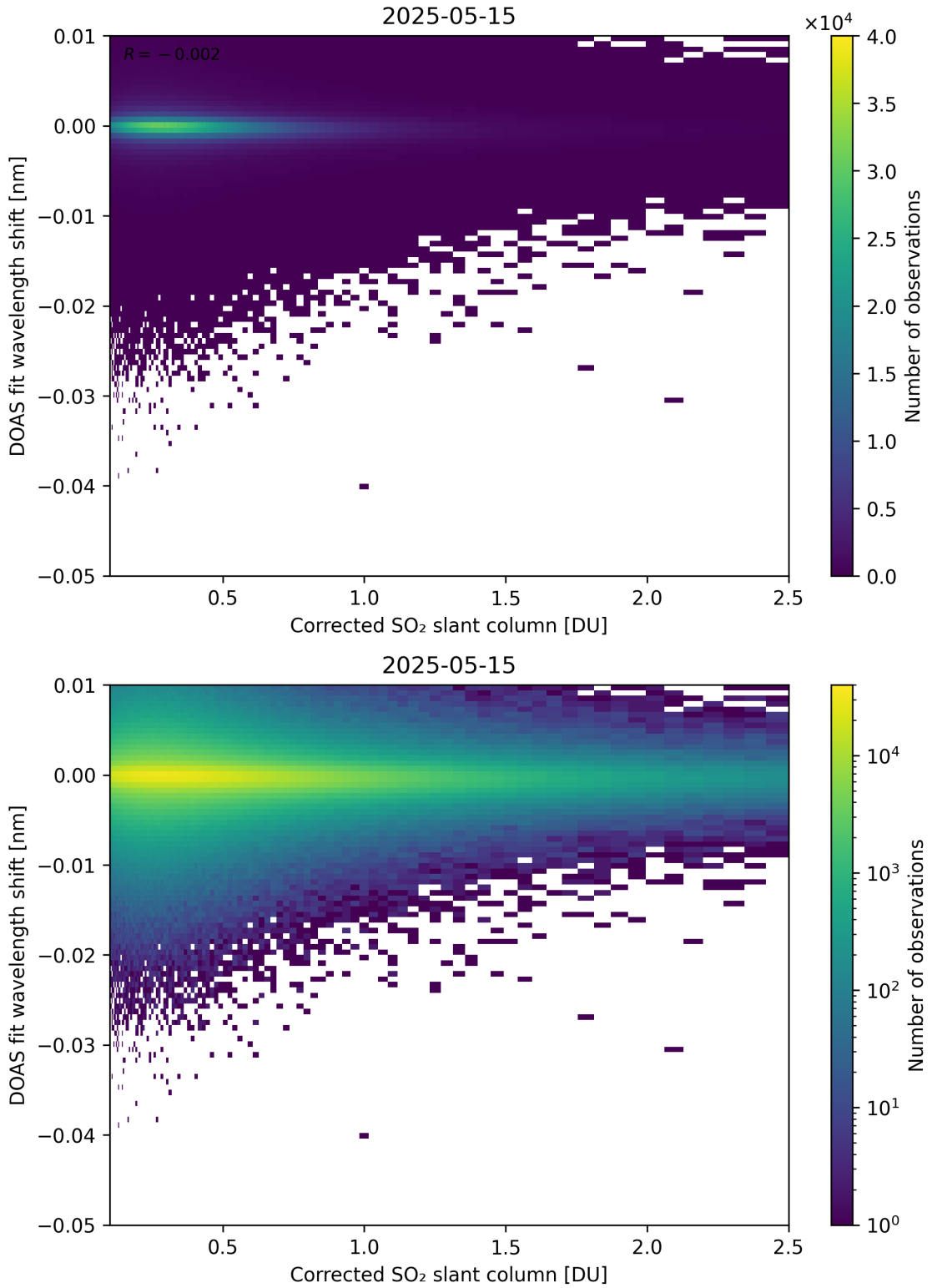


Figure 229: Scatter density plot of "Corrected SO_2 slant column" against "DOAS fit wavelength shift" for 2025-05-15 to 2025-05-16.

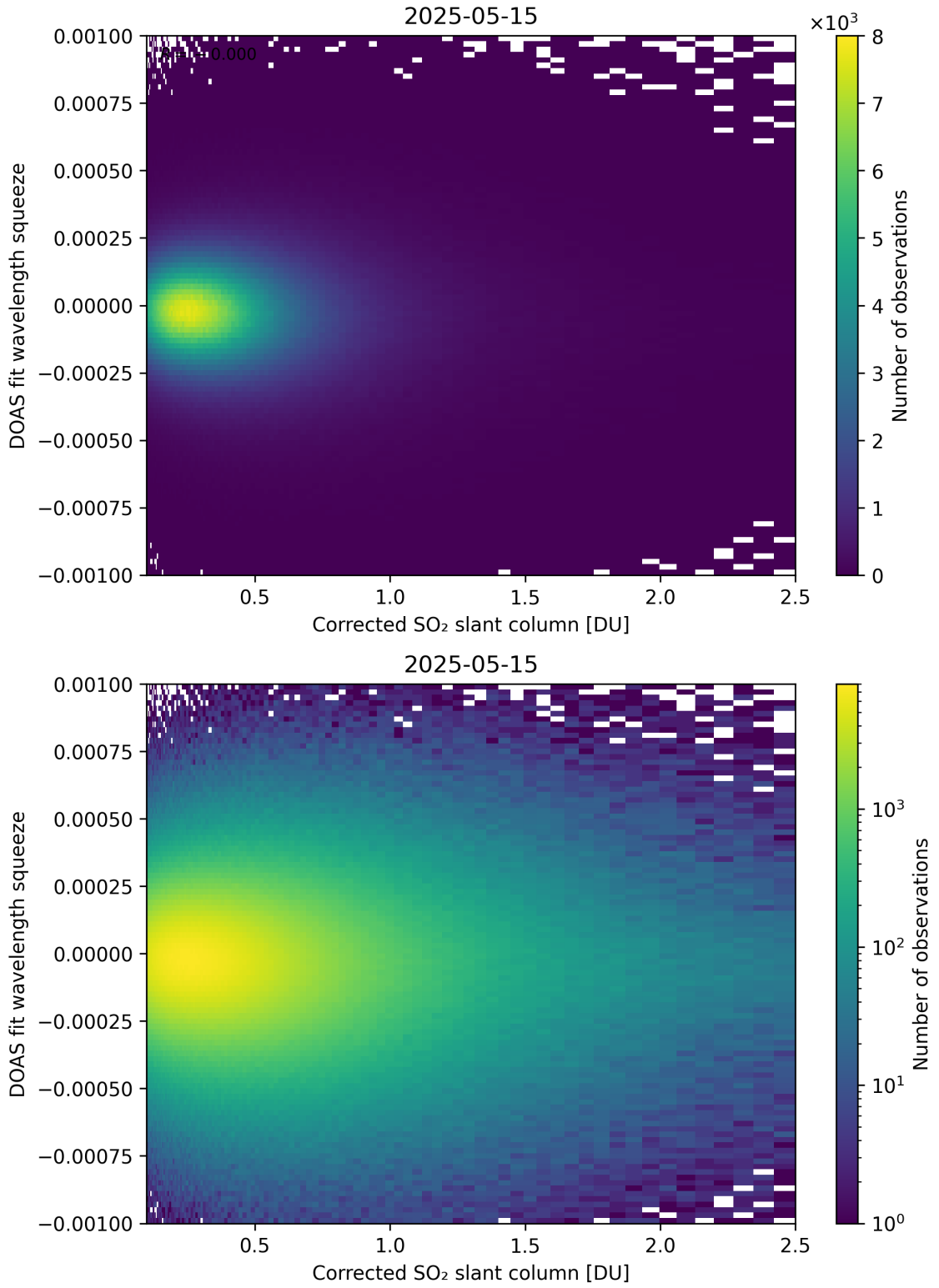


Figure 230: Scatter density plot of "Corrected SO_2 slant column" against "DOAS fit wavelength squeeze" for 2025-05-15 to 2025-05-16.

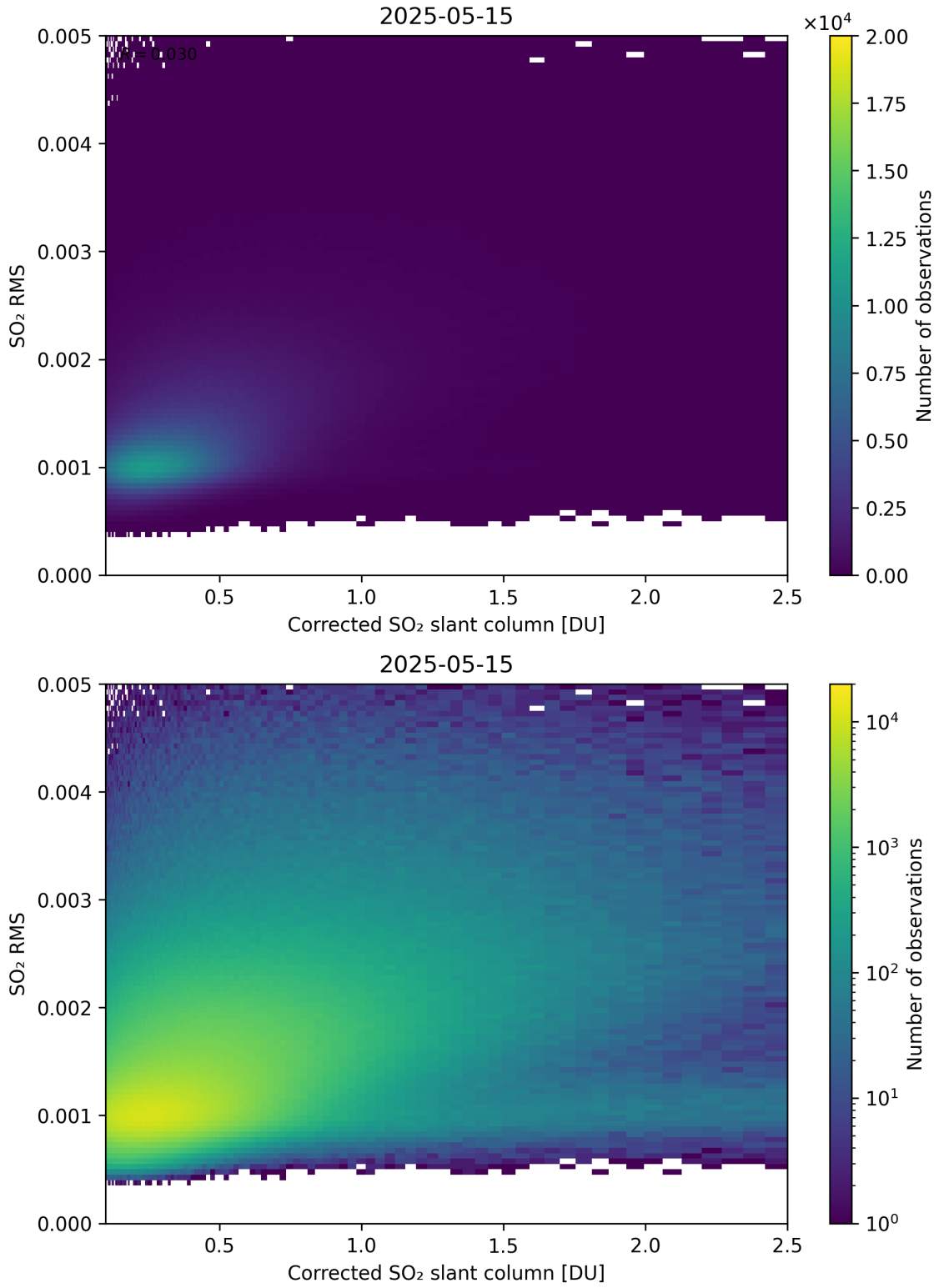


Figure 231: Scatter density plot of “Corrected SO_2 slant column” against “SO_2 RMS” for 2025-05-15 to 2025-05-16.

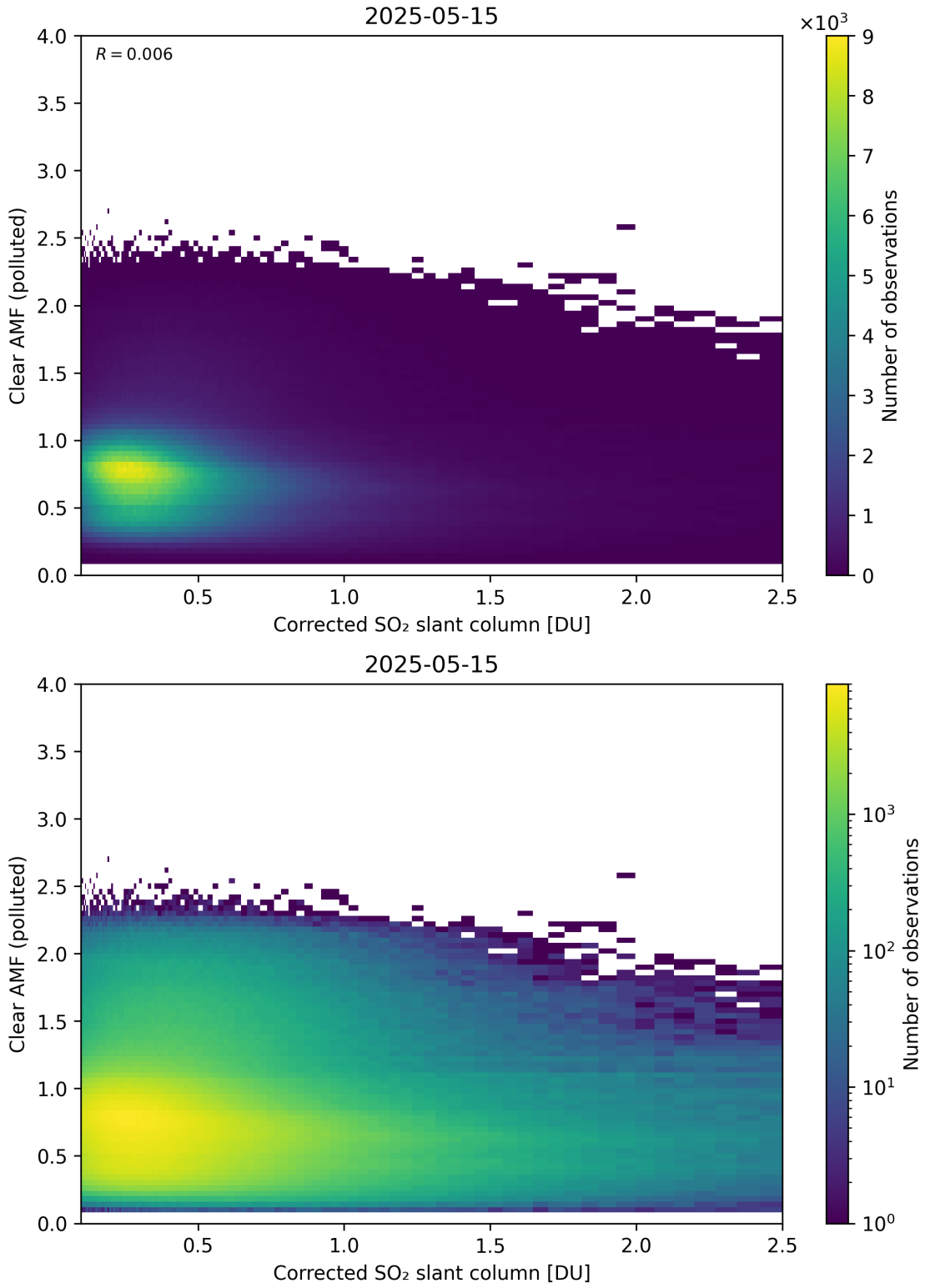


Figure 232: Scatter density plot of "Corrected SO_2 slant column" against "Clear AMF (polluted)" for 2025-05-15 to 2025-05-16.

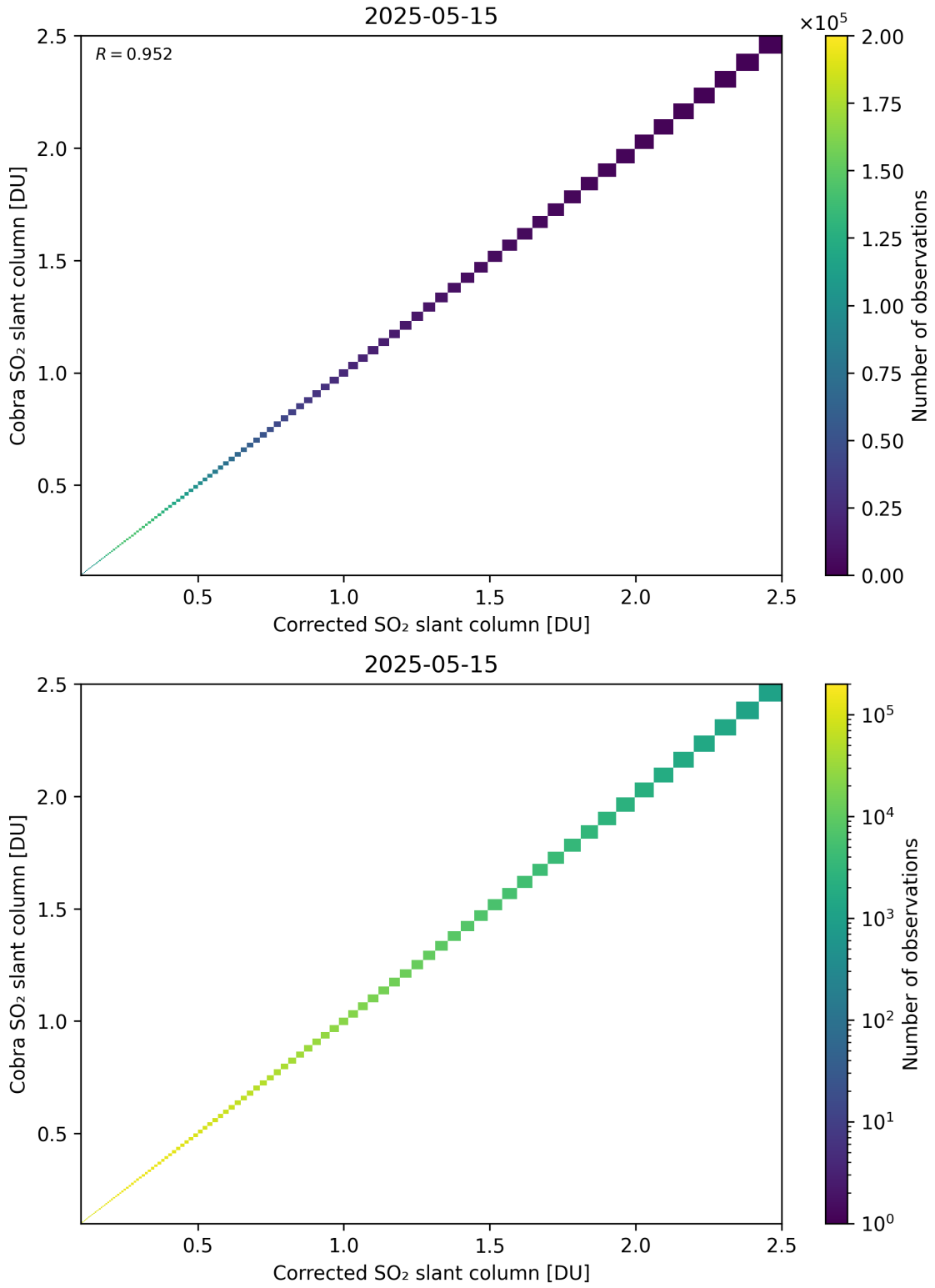


Figure 233: Scatter density plot of "Corrected SO_2 slant column" against "Cobra SO_2 slant column" for 2025-05-15 to 2025-05-16.

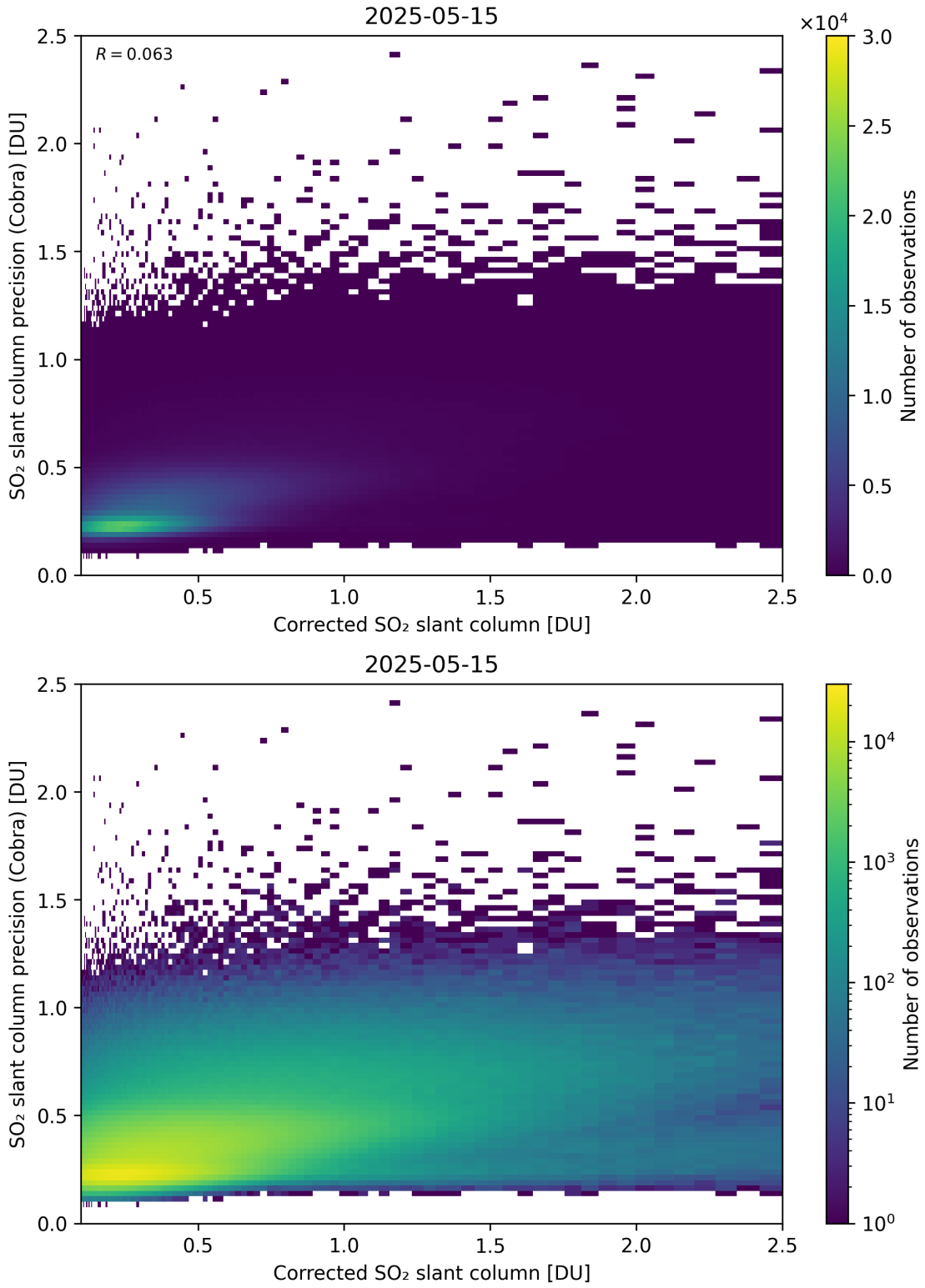


Figure 234: Scatter density plot of "Corrected SO_2 slant column" against "SO_2 slant column precision (Cobra)" for 2025-05-15 to 2025-05-16.

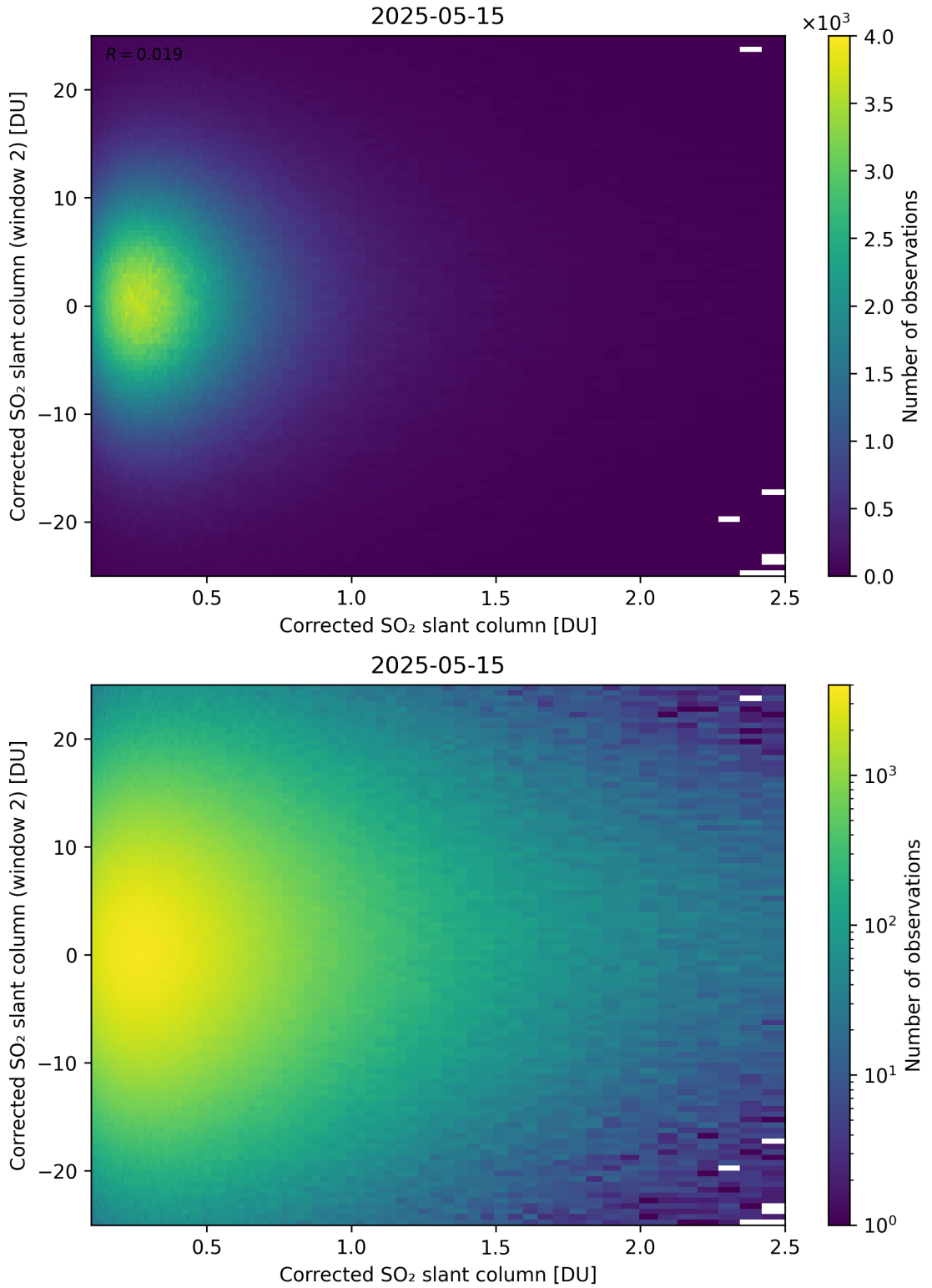


Figure 235: Scatter density plot of “Corrected SO_2 slant column” against “Corrected SO_2 slant column (window 2)” for 2025-05-15 to 2025-05-16.

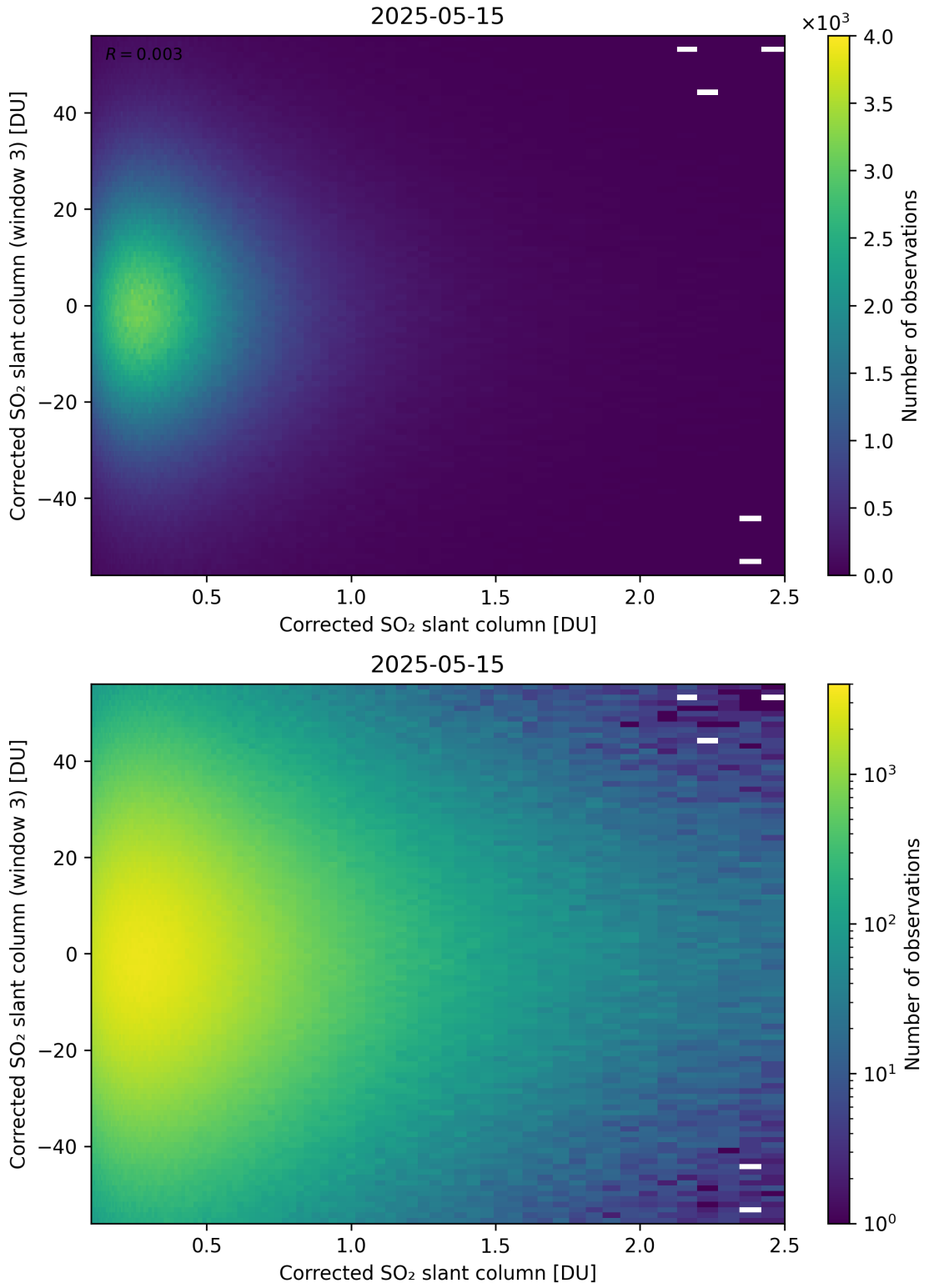


Figure 236: Scatter density plot of “Corrected SO_2 slant column” against “Corrected SO_2 slant column (window 3)” for 2025-05-15 to 2025-05-16.

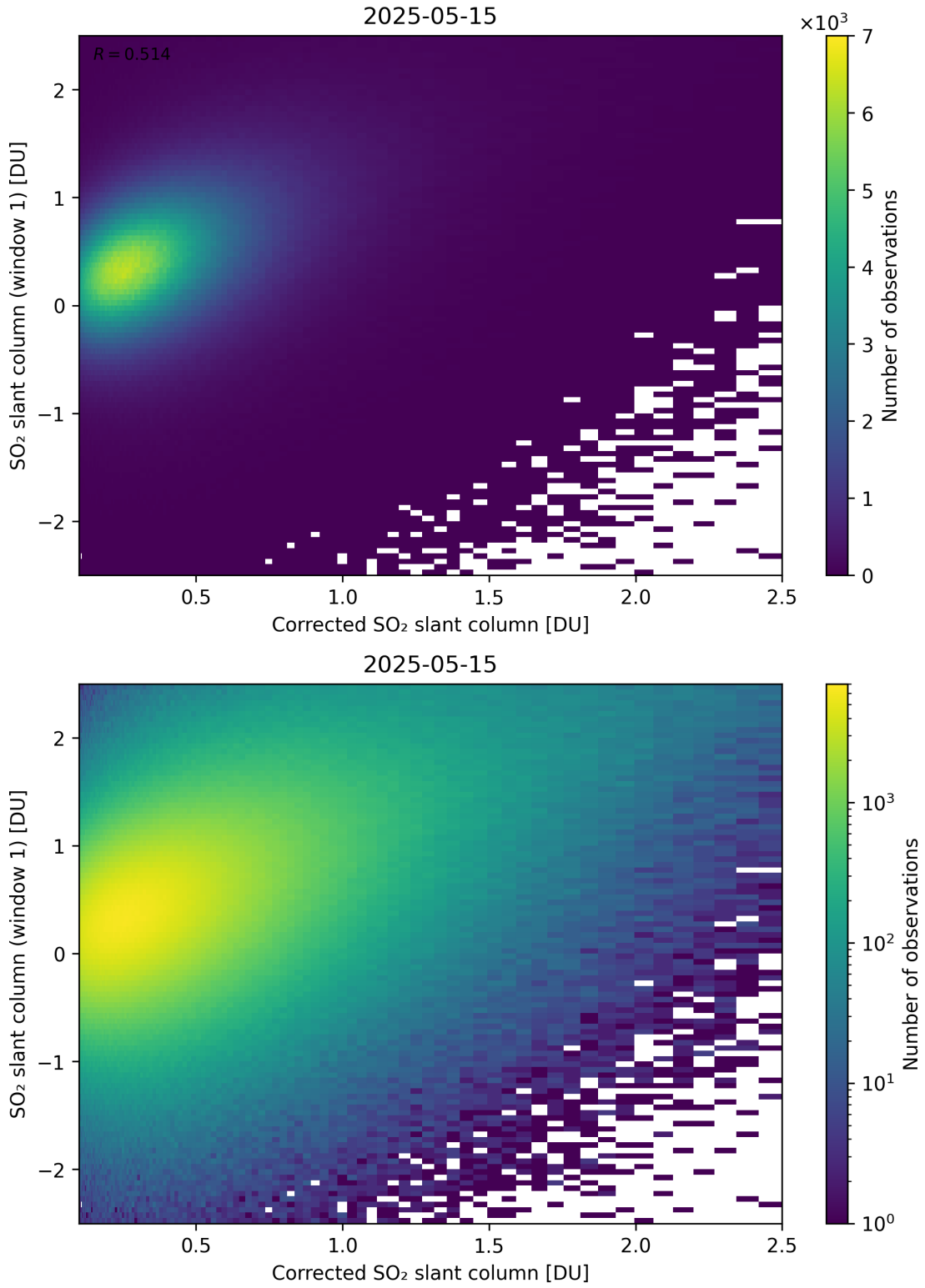


Figure 237: Scatter density plot of "Corrected SO_2 slant column" against "SO_2 slant column (window 1)" for 2025-05-15 to 2025-05-16.

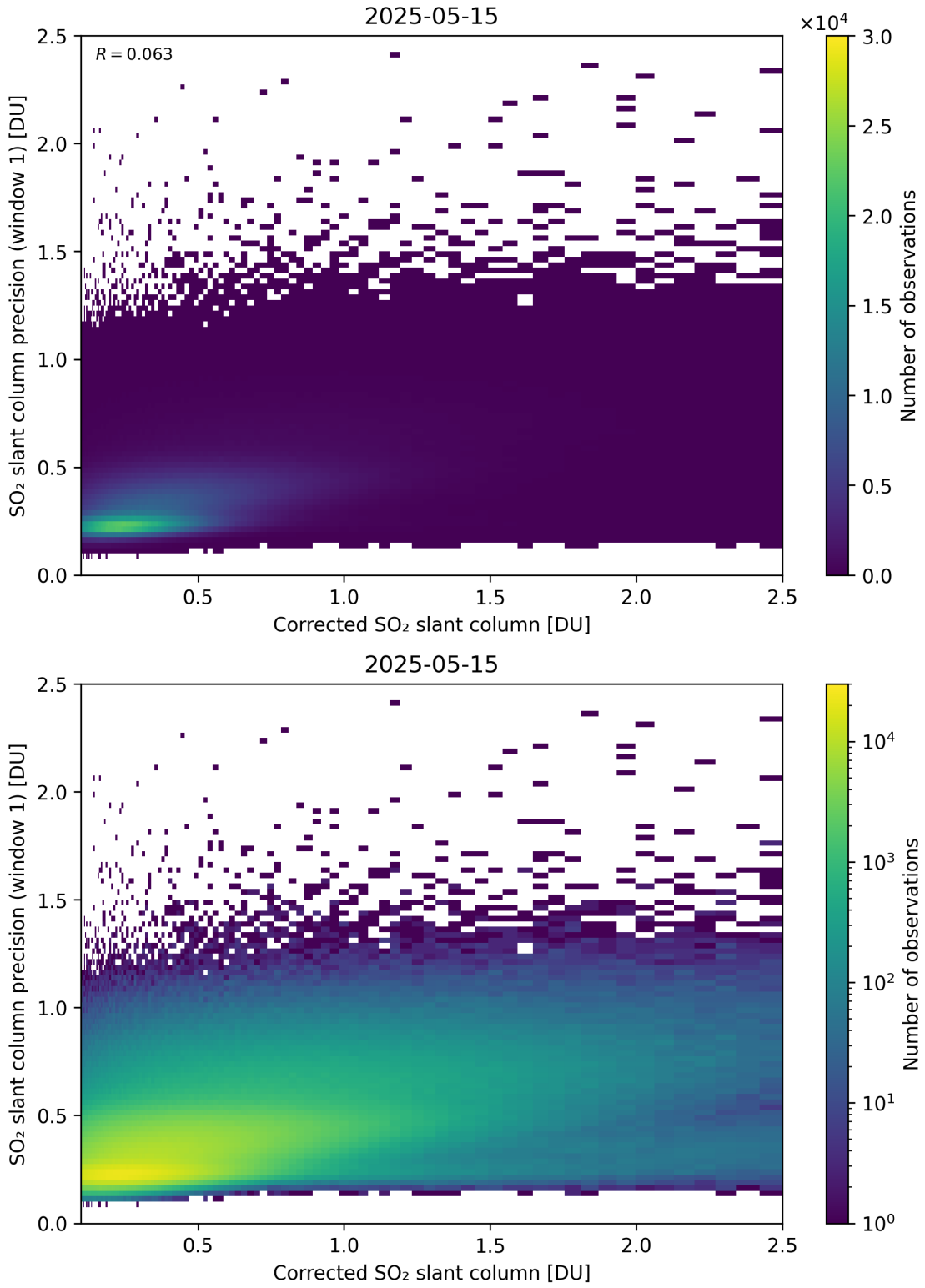


Figure 238: Scatter density plot of "Corrected SO_2 slant column" against "SO_2 slant column precision (window 1)" for 2025-05-15 to 2025-05-16.

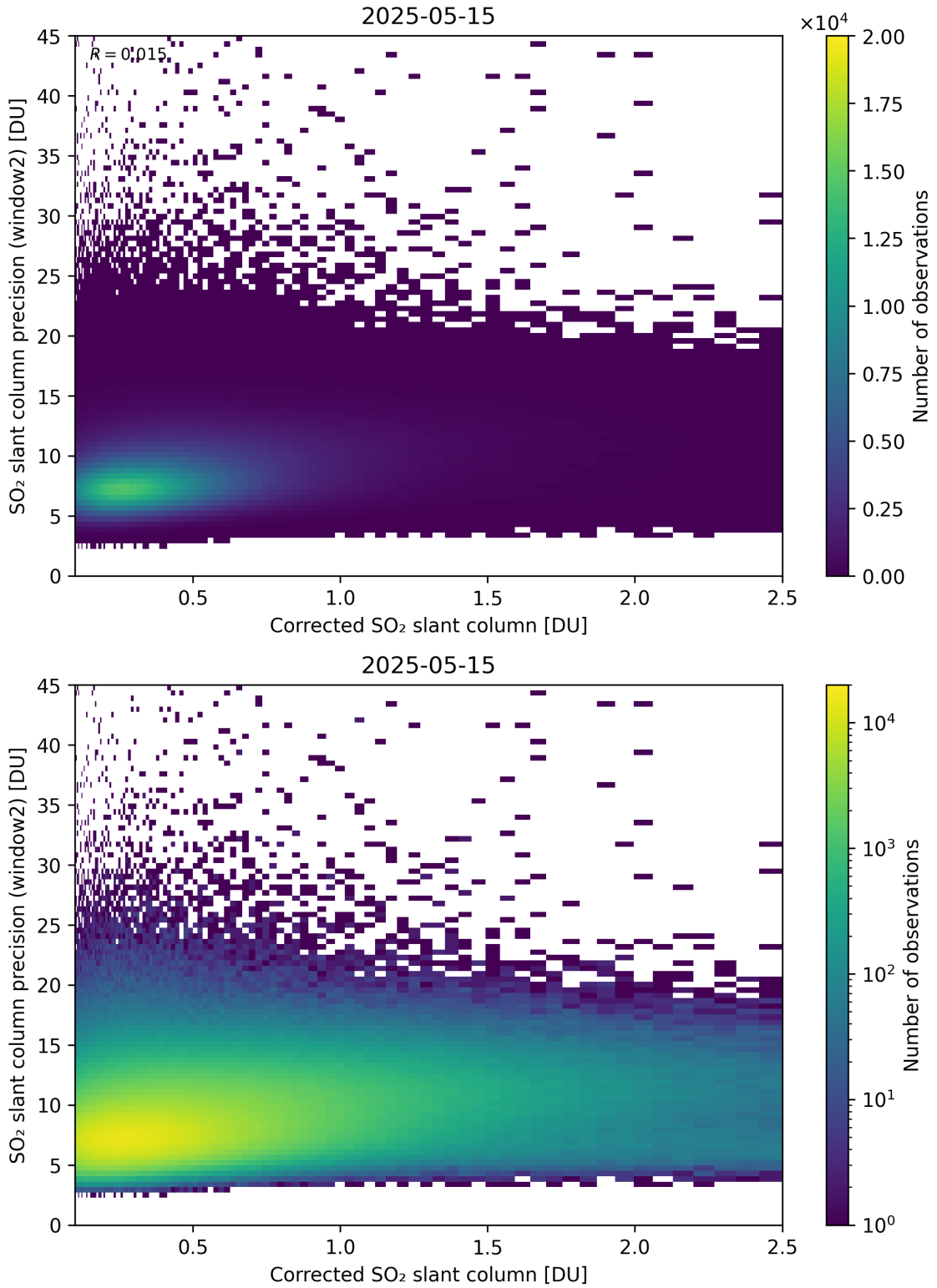


Figure 239: Scatter density plot of "Corrected SO_2 slant column" against "SO_2 slant column precision (window2)" for 2025-05-15 to 2025-05-16.

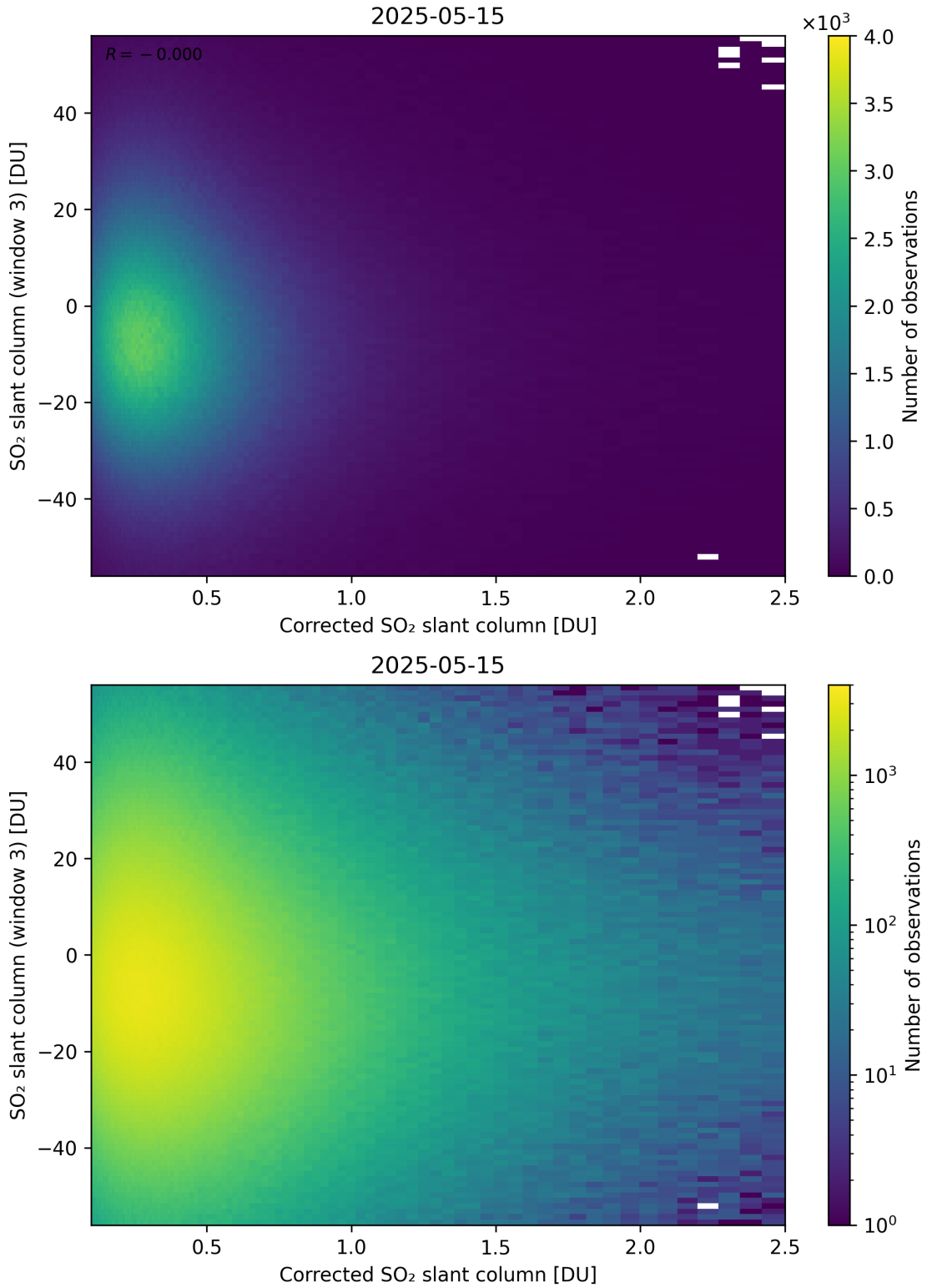


Figure 240: Scatter density plot of "Corrected SO_2 slant column" against "SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

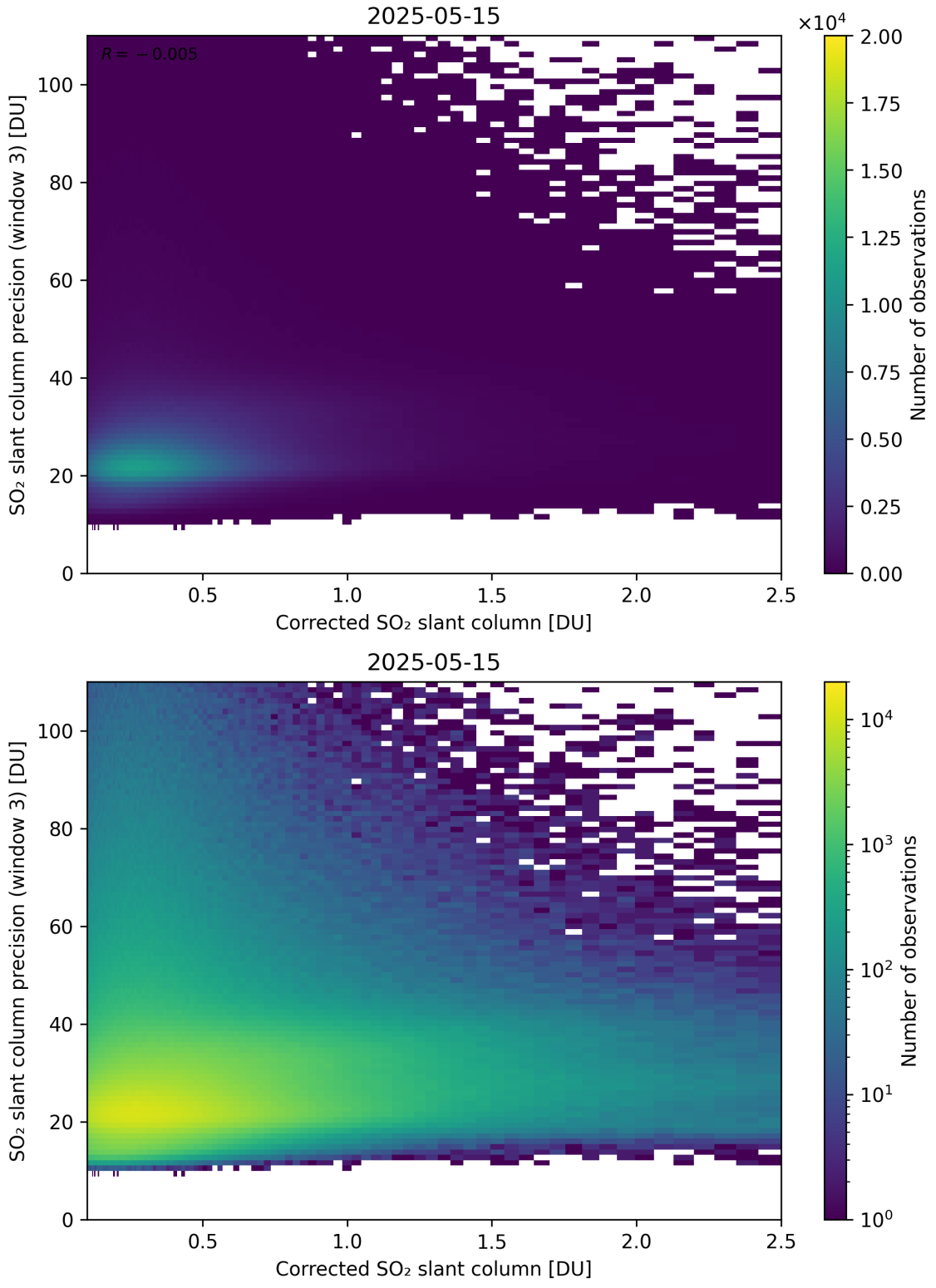


Figure 241: Scatter density plot of "Corrected SO_2 slant column" against "SO_2 slant column precision (window 3)" for 2025-05-15 to 2025-05-16.

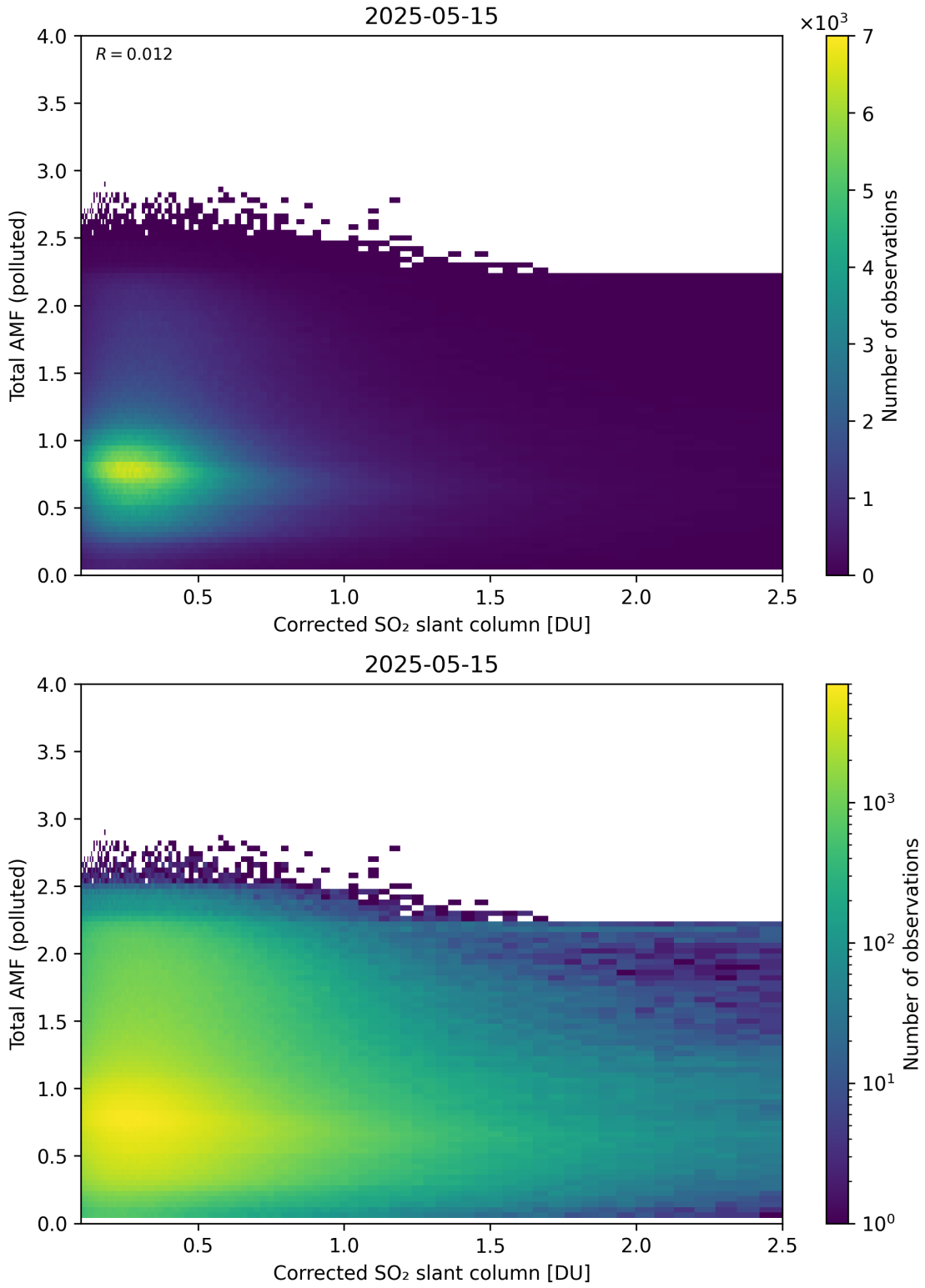


Figure 242: Scatter density plot of “Corrected SO_2 slant column” against “Total AMF (polluted)” for 2025-05-15 to 2025-05-16.

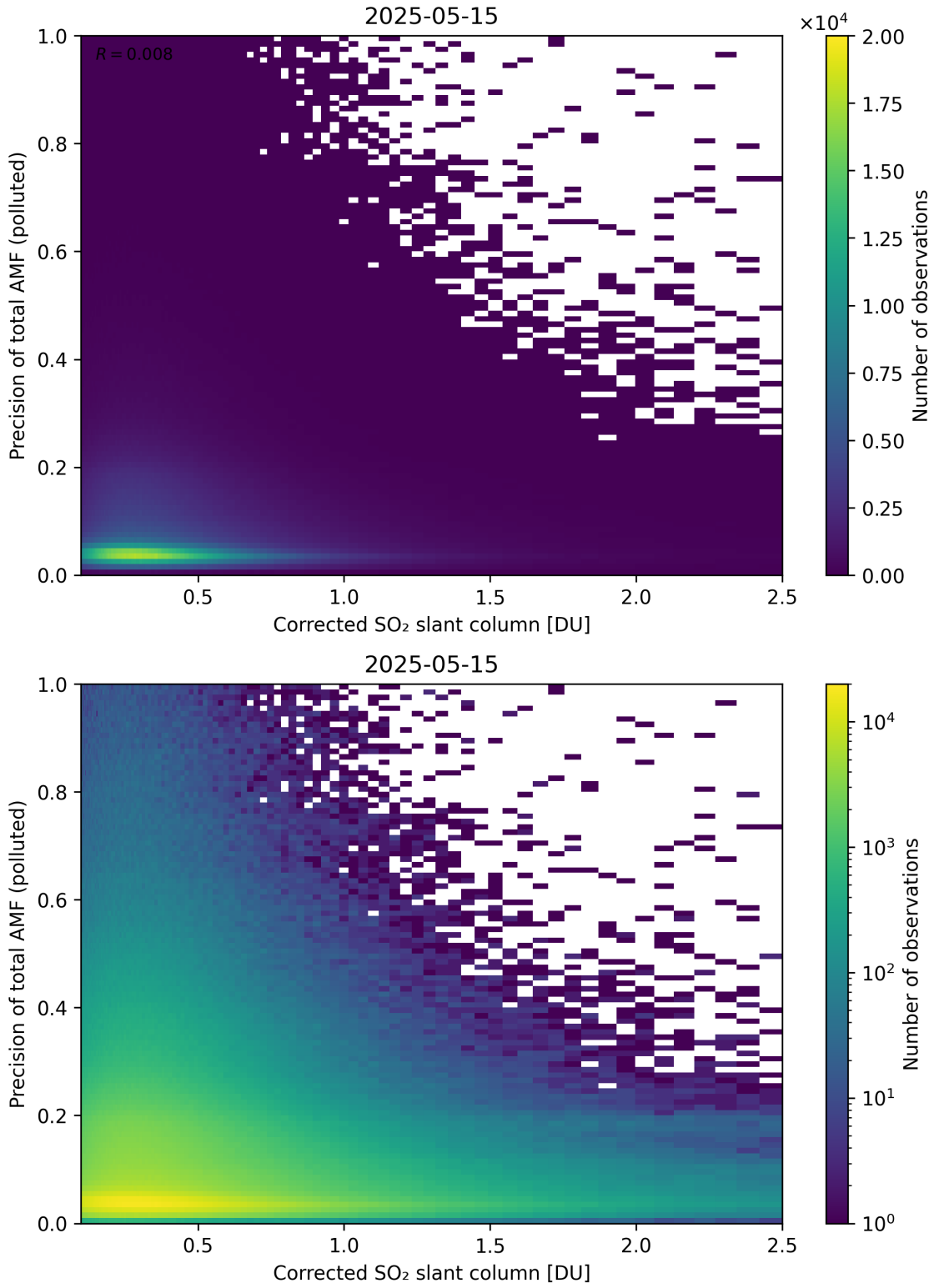


Figure 243: Scatter density plot of "Corrected SO_2 slant column" against "Precision of total AMF (polluted)" for 2025-05-15 to 2025-05-16.

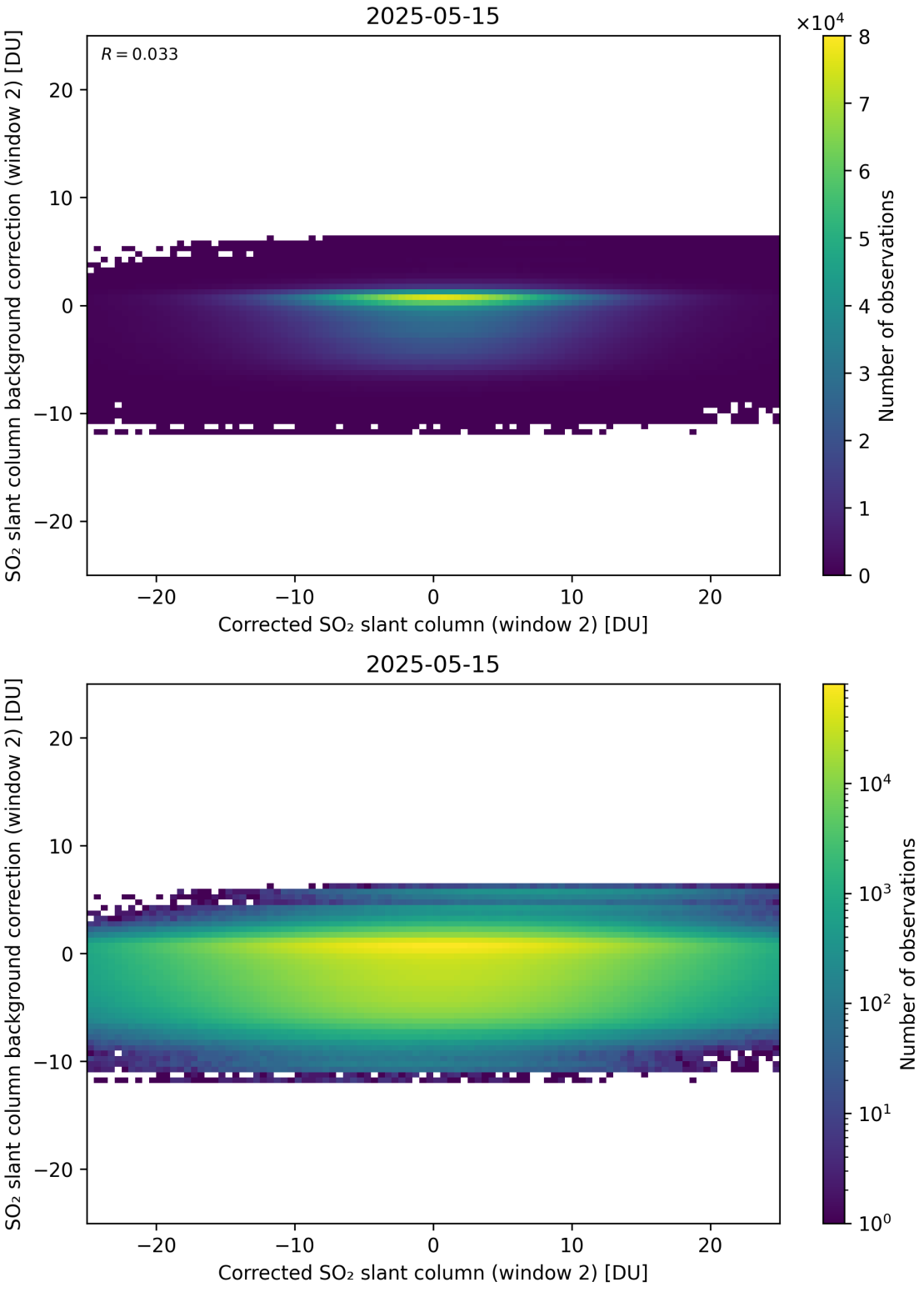


Figure 244: Scatter density plot of "Corrected SO_2 slant column (window 2)" against "SO_2 slant column background correction (window 2)" for 2025-05-15 to 2025-05-16.

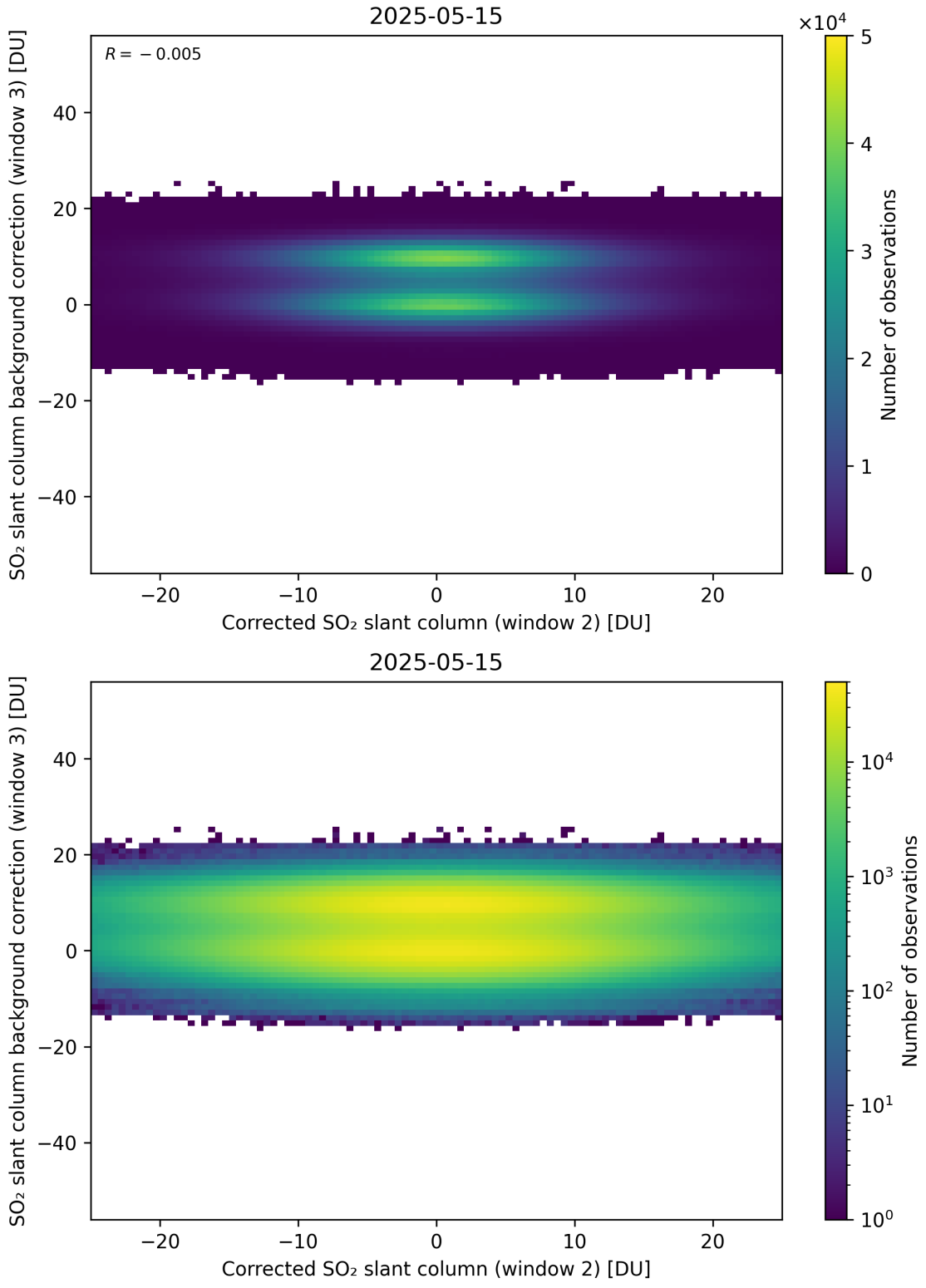


Figure 245: Scatter density plot of "Corrected SO_2 slant column (window 2)" against "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16.

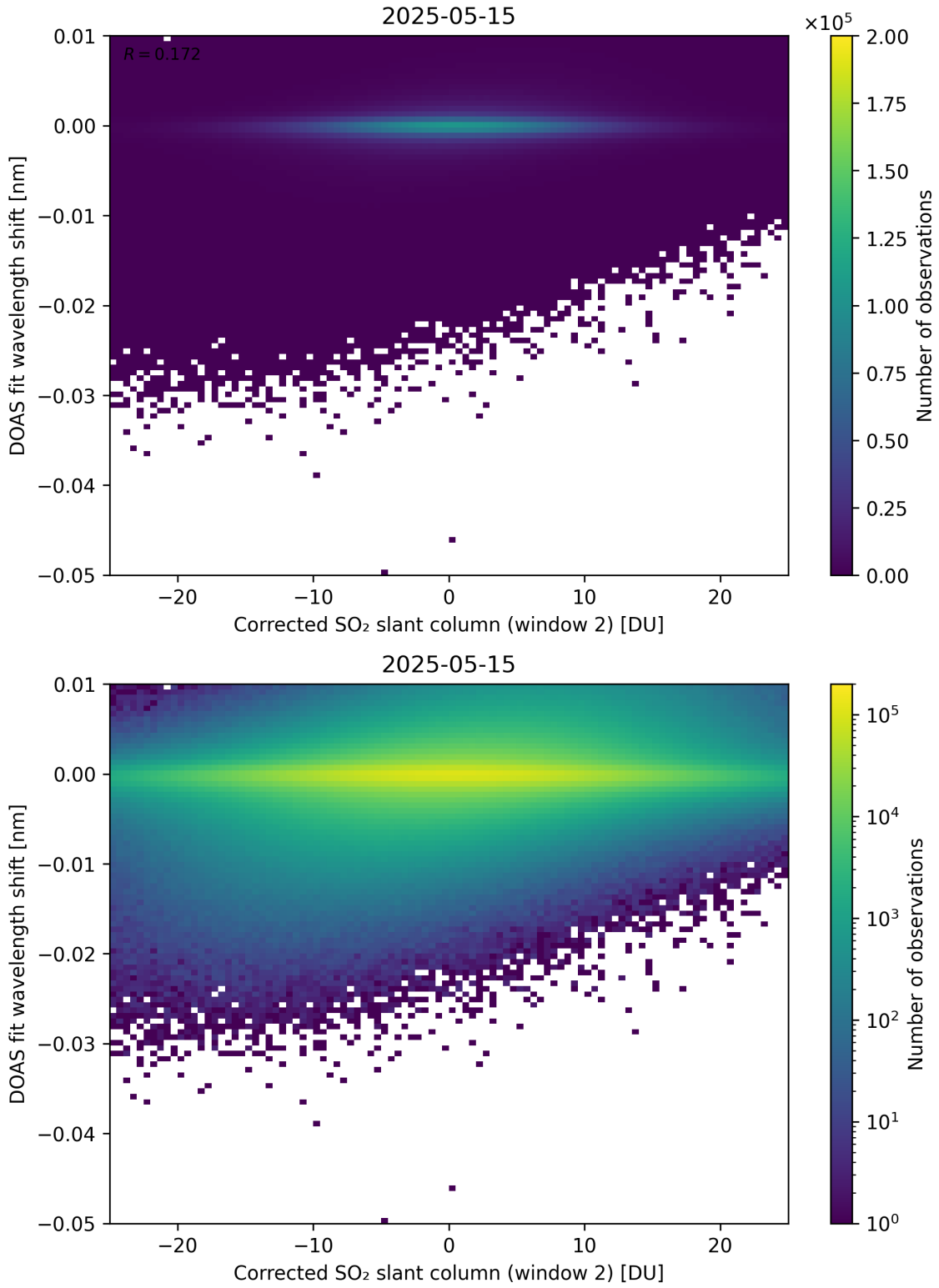


Figure 246: Scatter density plot of "Corrected SO_2 slant column (window 2)" against "DOAS fit wavelength shift" for 2025-05-15 to 2025-05-16.

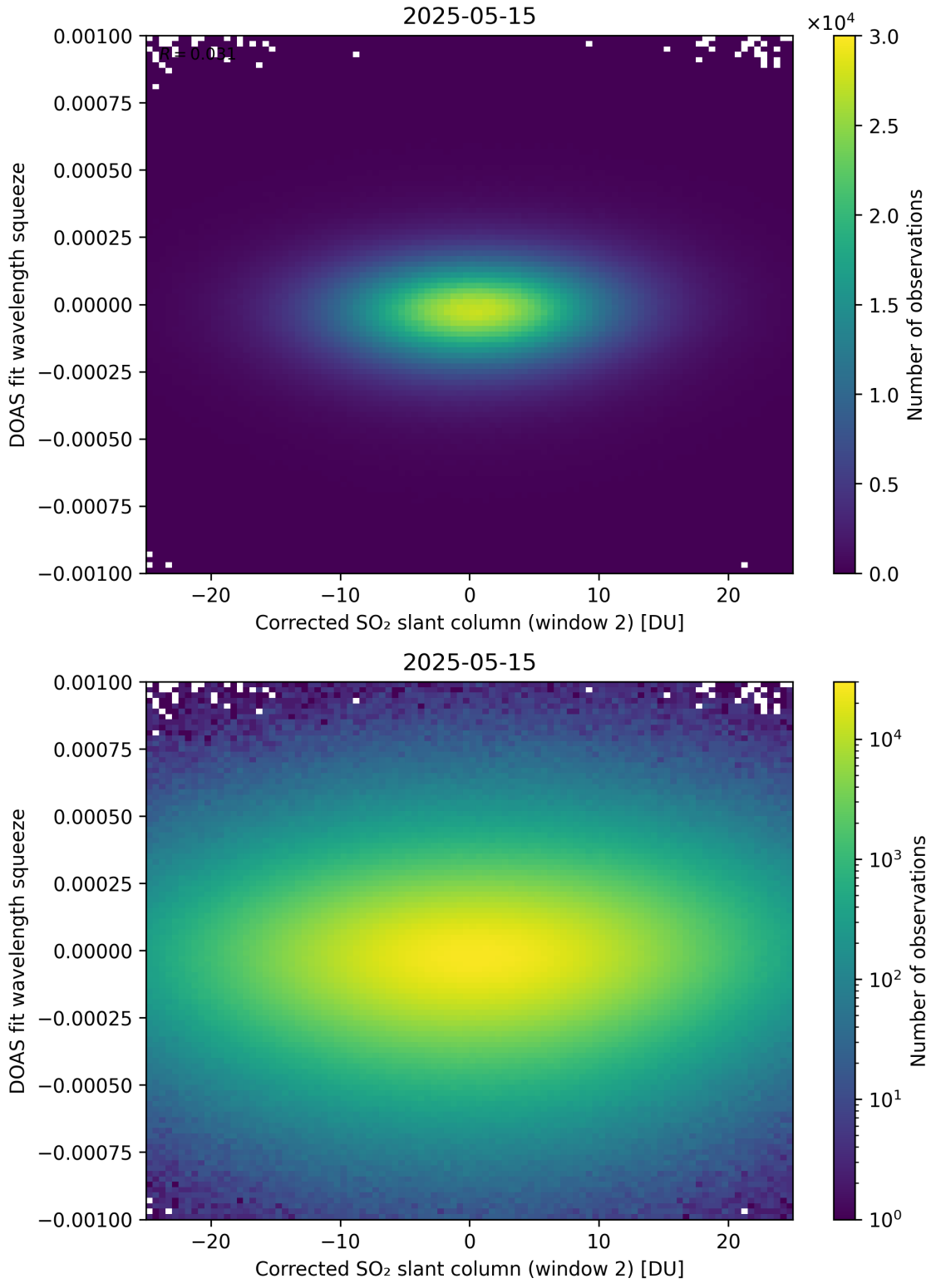


Figure 247: Scatter density plot of "Corrected SO_2 slant column (window 2)" against "DOAS fit wavelength squeeze" for 2025-05-15 to 2025-05-16.

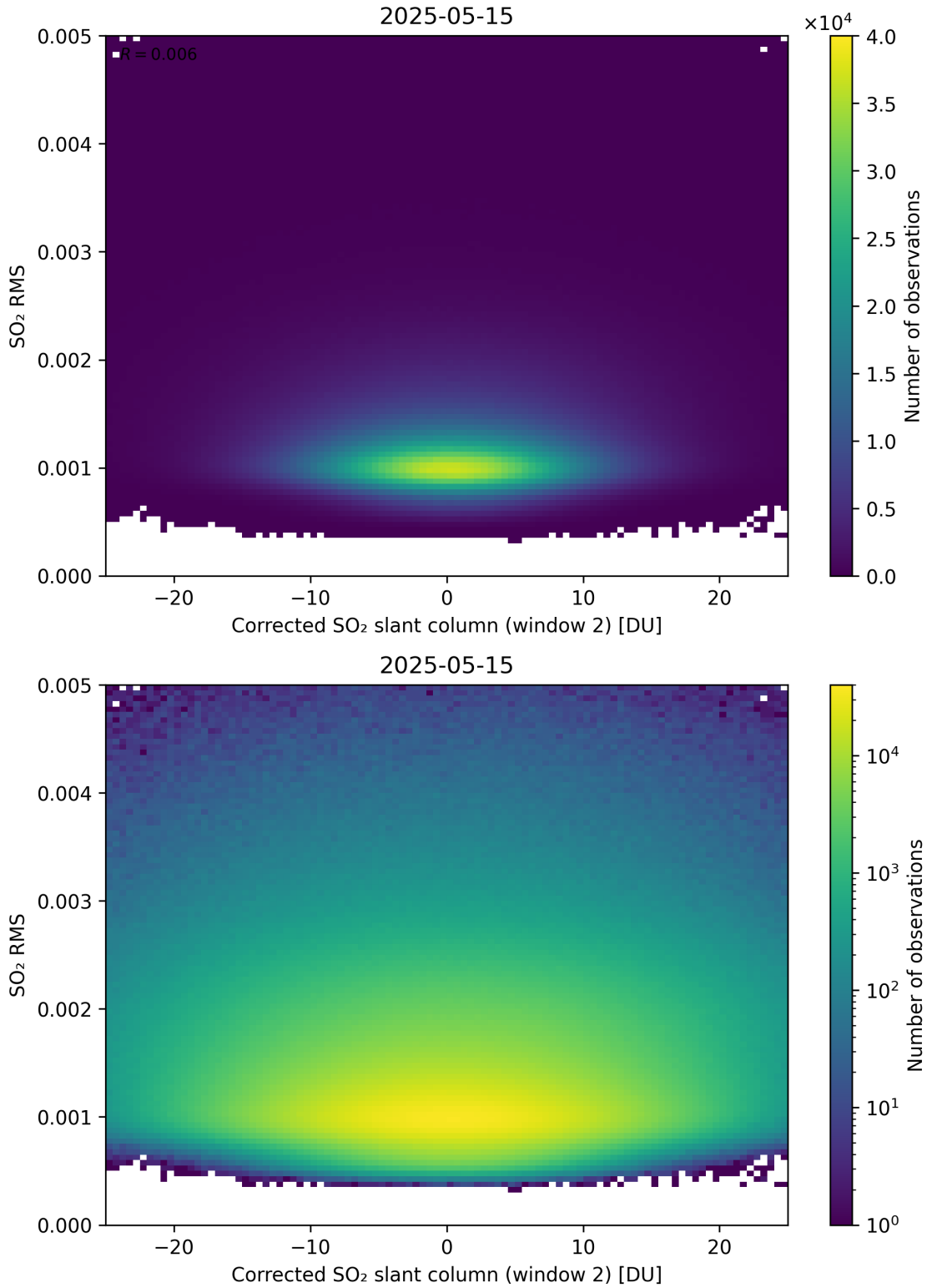


Figure 248: Scatter density plot of "Corrected SO_2 slant column (window 2)" against "SO_2 RMS" for 2025-05-15 to 2025-05-16.

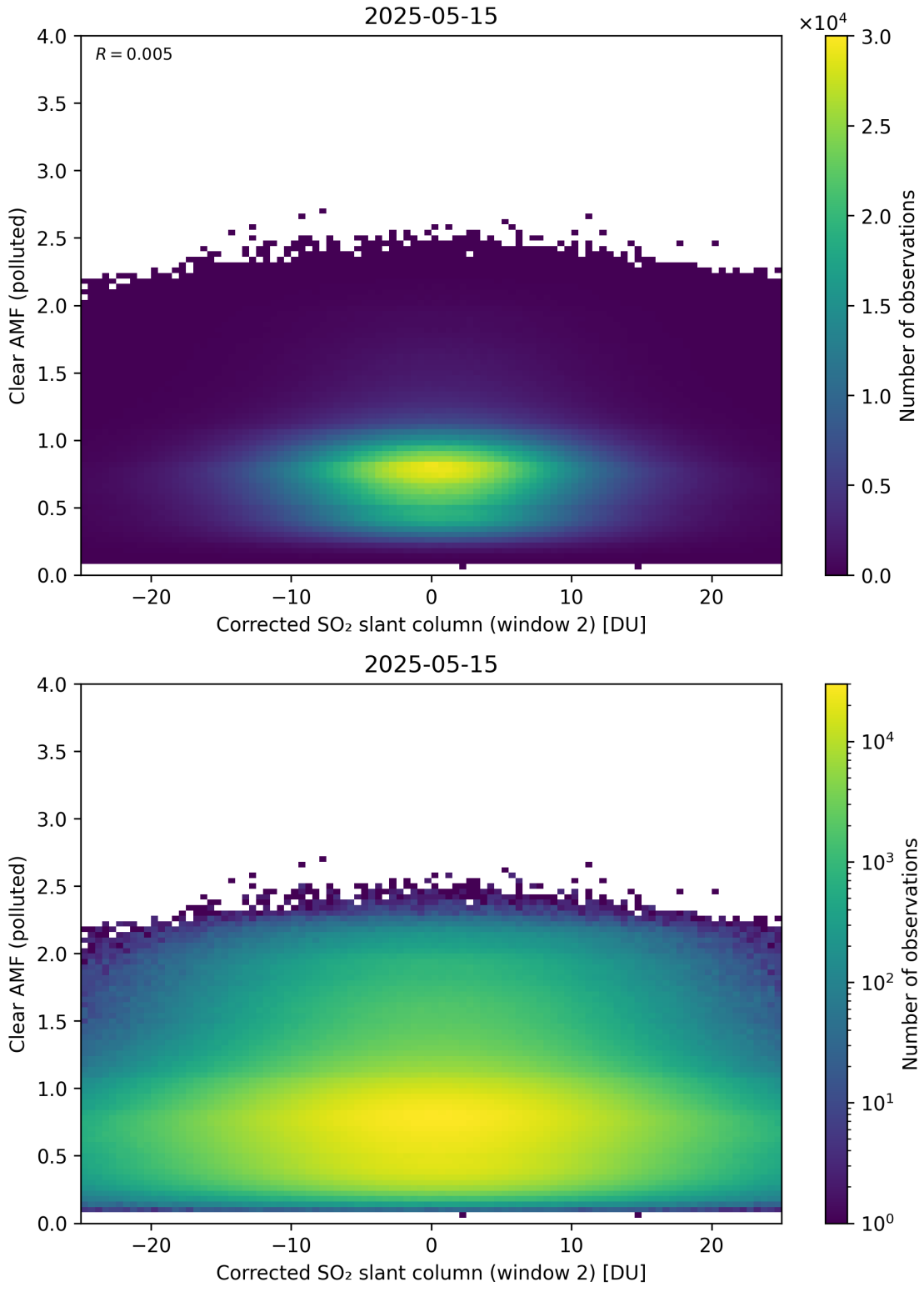


Figure 249: Scatter density plot of “Corrected SO_2 slant column (window 2)” against “Clear AMF (polluted)” for 2025-05-15 to 2025-05-16.

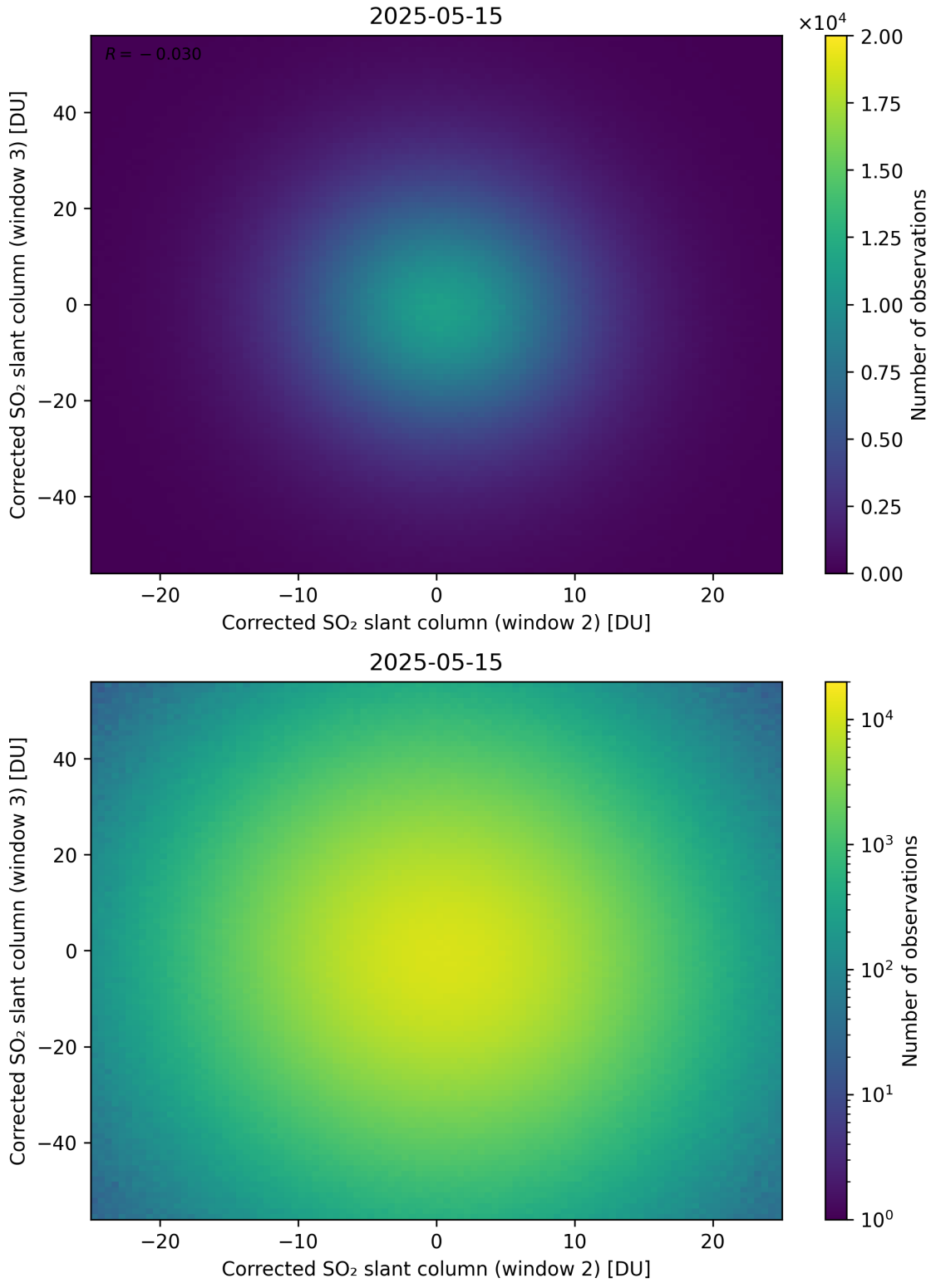


Figure 250: Scatter density plot of “Corrected SO_2 slant column (window 2)” against “Corrected SO_2 slant column (window 3)” for 2025-05-15 to 2025-05-16.

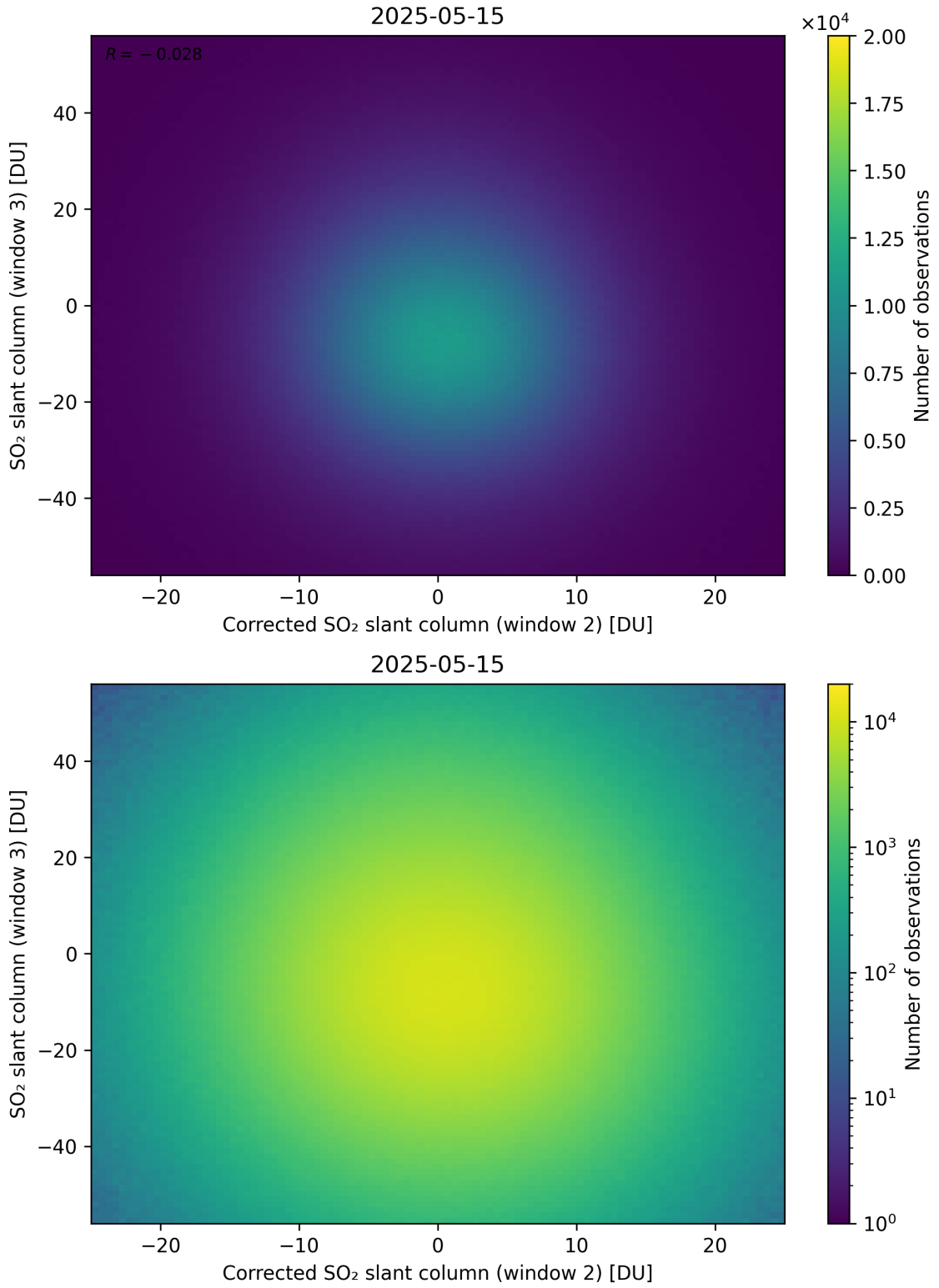


Figure 251: Scatter density plot of "Corrected SO_2 slant column (window 2)" against "SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

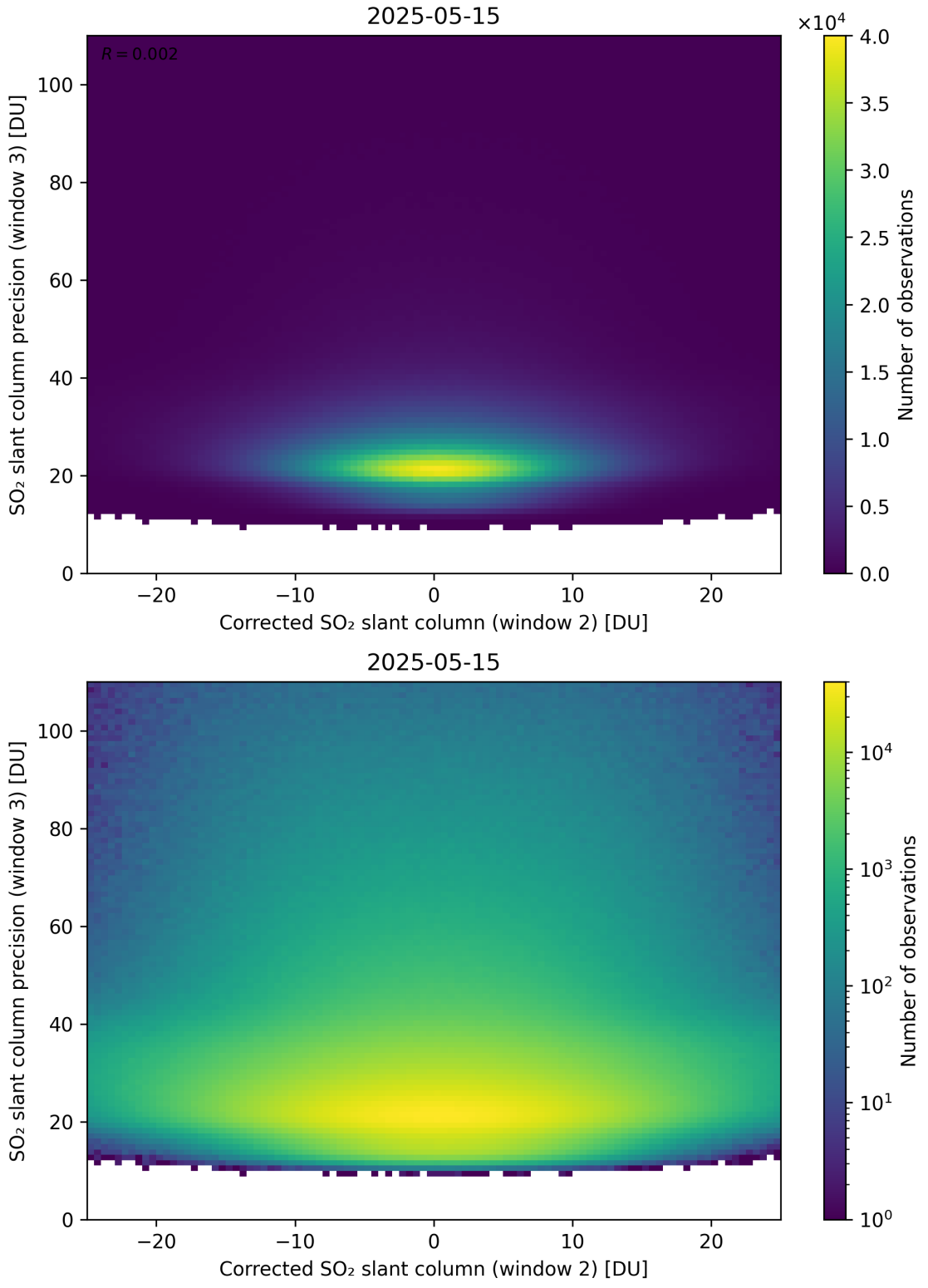


Figure 252: Scatter density plot of “Corrected SO_2 slant column (window 2)” against “SO_2 slant column precision (window 3)” for 2025-05-15 to 2025-05-16.

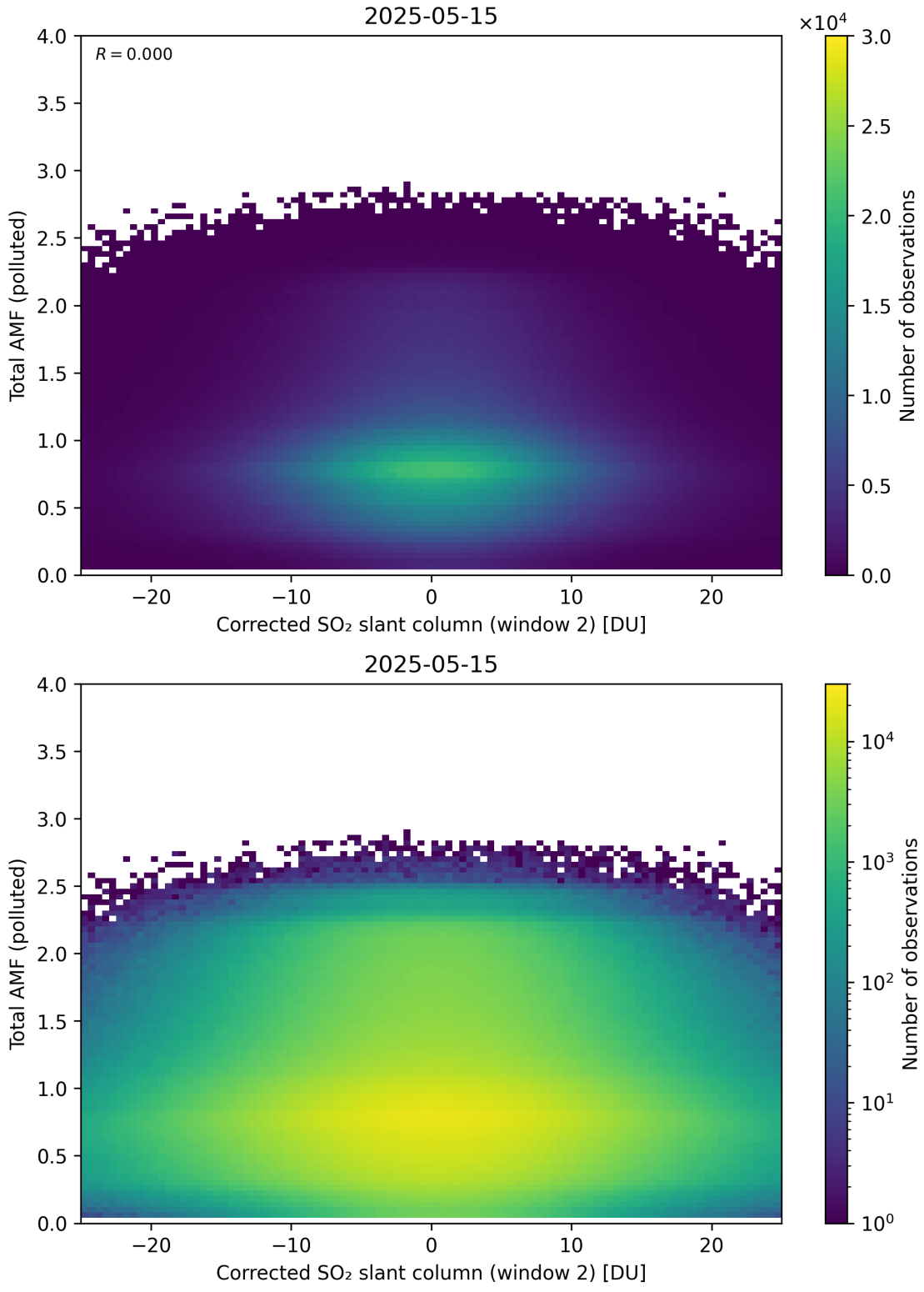


Figure 253: Scatter density plot of "Corrected SO_2 slant column (window 2)" against "Total AMF (polluted)" for 2025-05-15 to 2025-05-16.

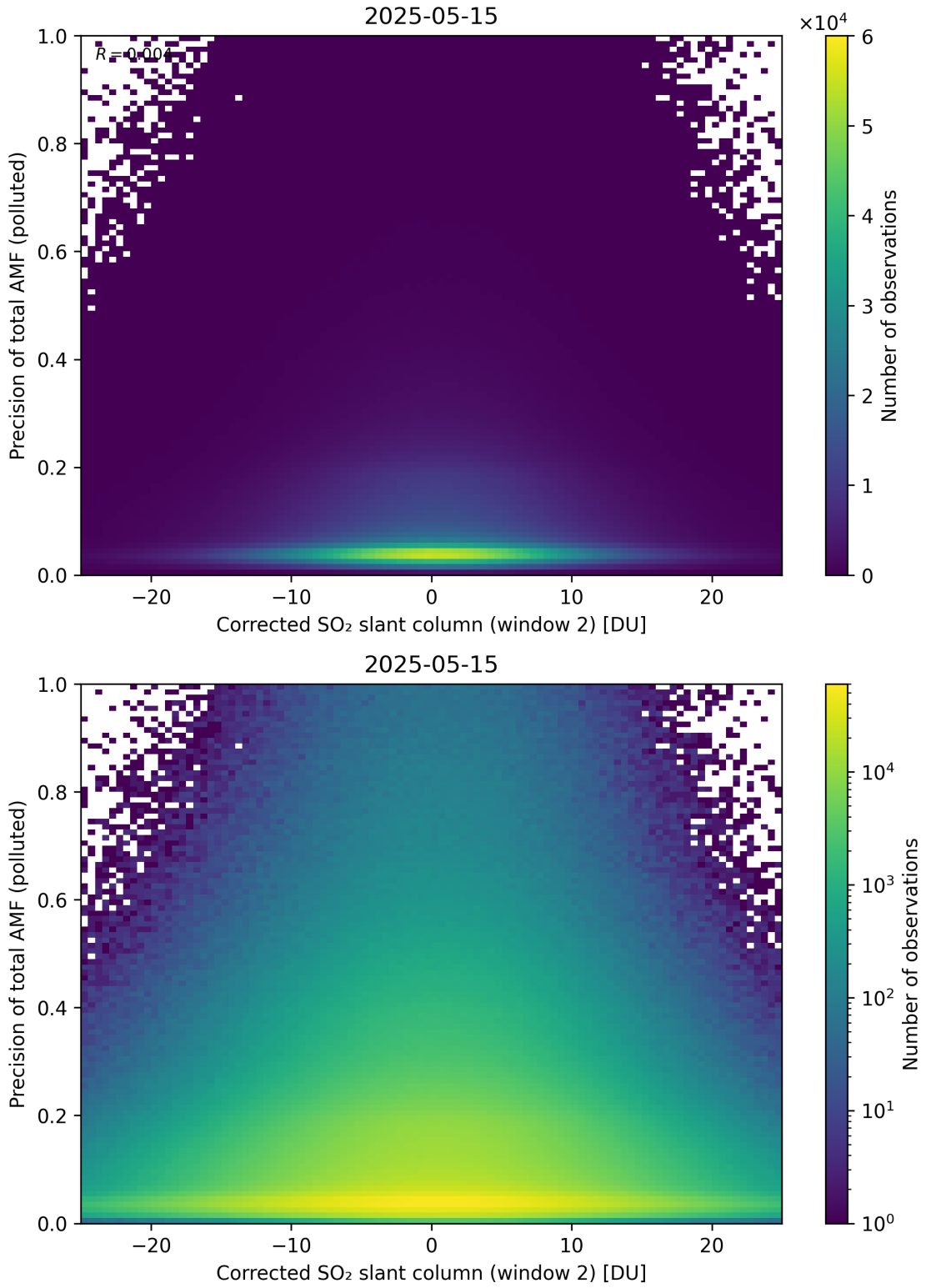


Figure 254: Scatter density plot of "Corrected SO_2 slant column (window 2)" against "Precision of total AMF (polluted)" for 2025-05-15 to 2025-05-16.

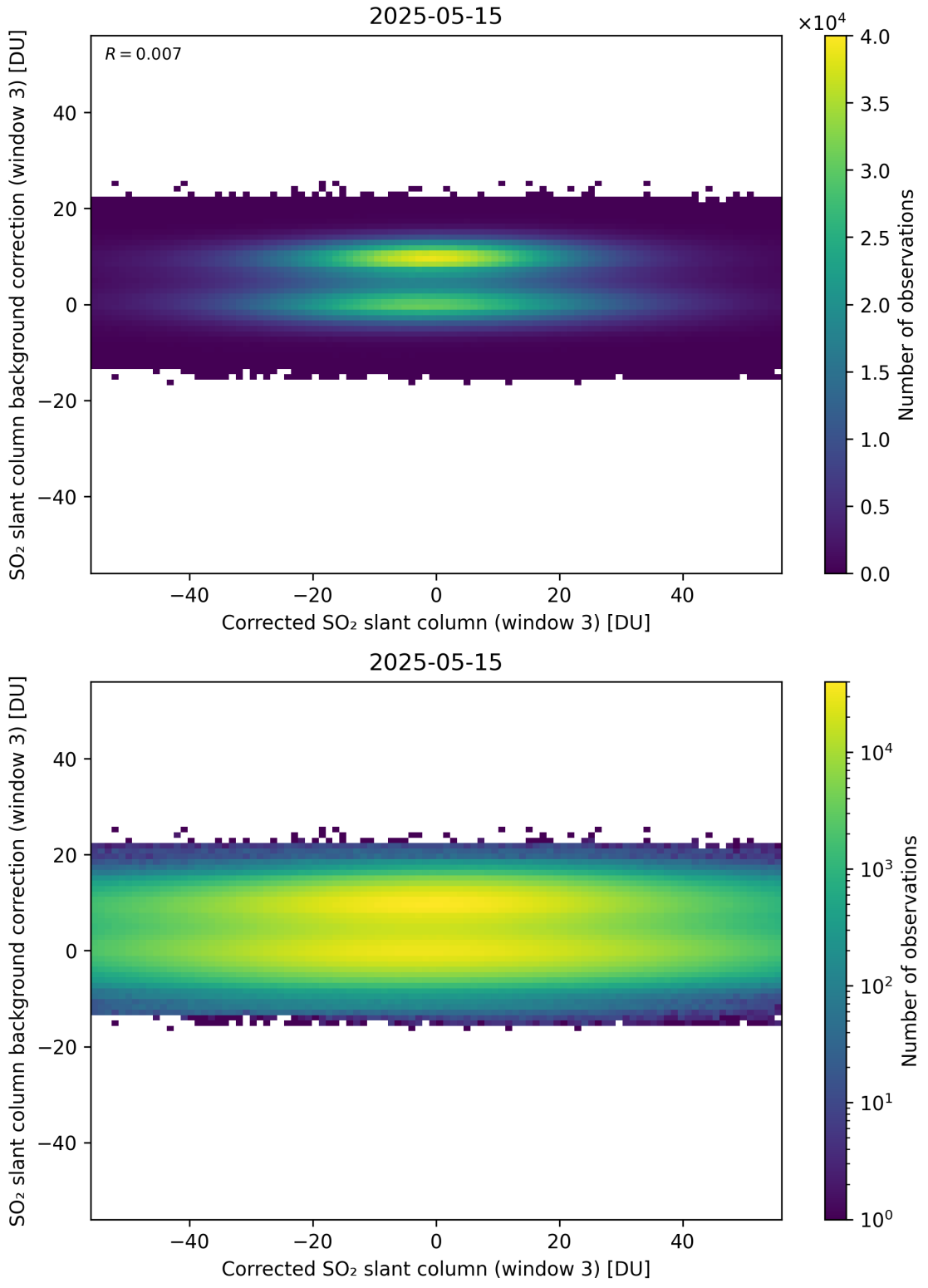


Figure 255: Scatter density plot of "Corrected SO_2 slant column (window 3)" against "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16.

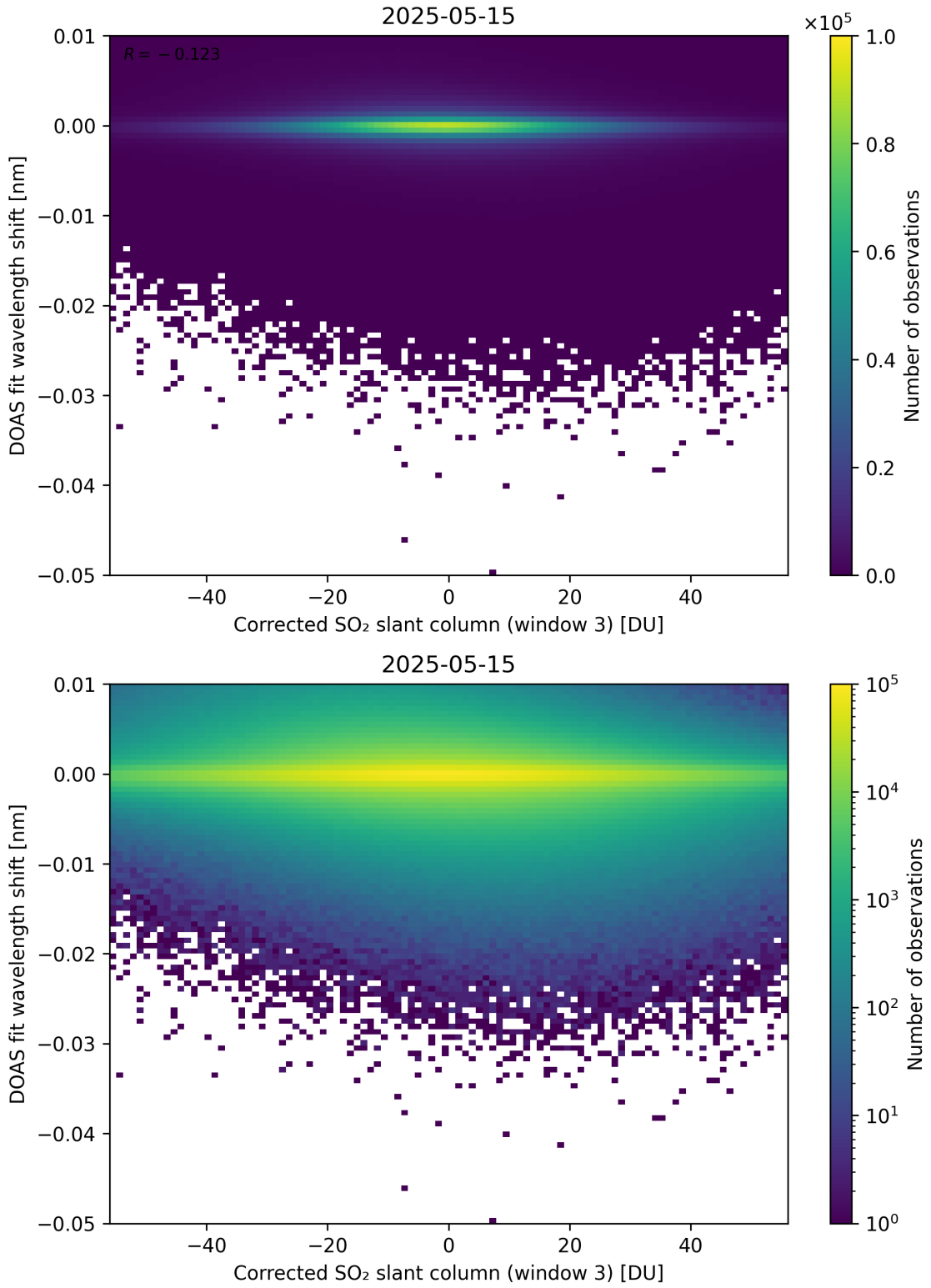


Figure 256: Scatter density plot of “Corrected SO_2 slant column (window 3)” against “DOAS fit wavelength shift” for 2025-05-15 to 2025-05-16.

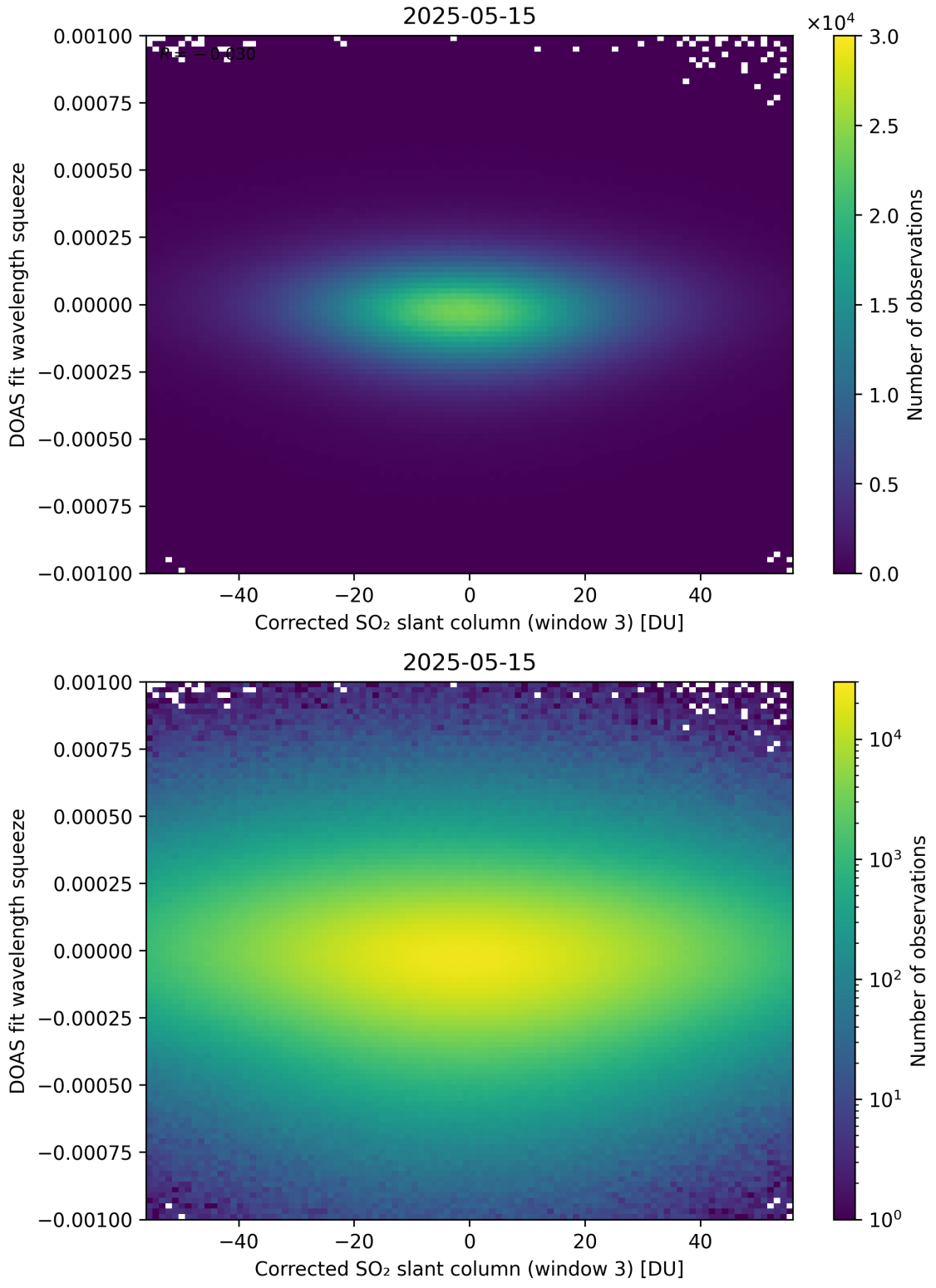


Figure 257: Scatter density plot of “Corrected SO_2 slant column (window 3)” against “DOAS fit wavelength squeeze” for 2025-05-15 to 2025-05-16.

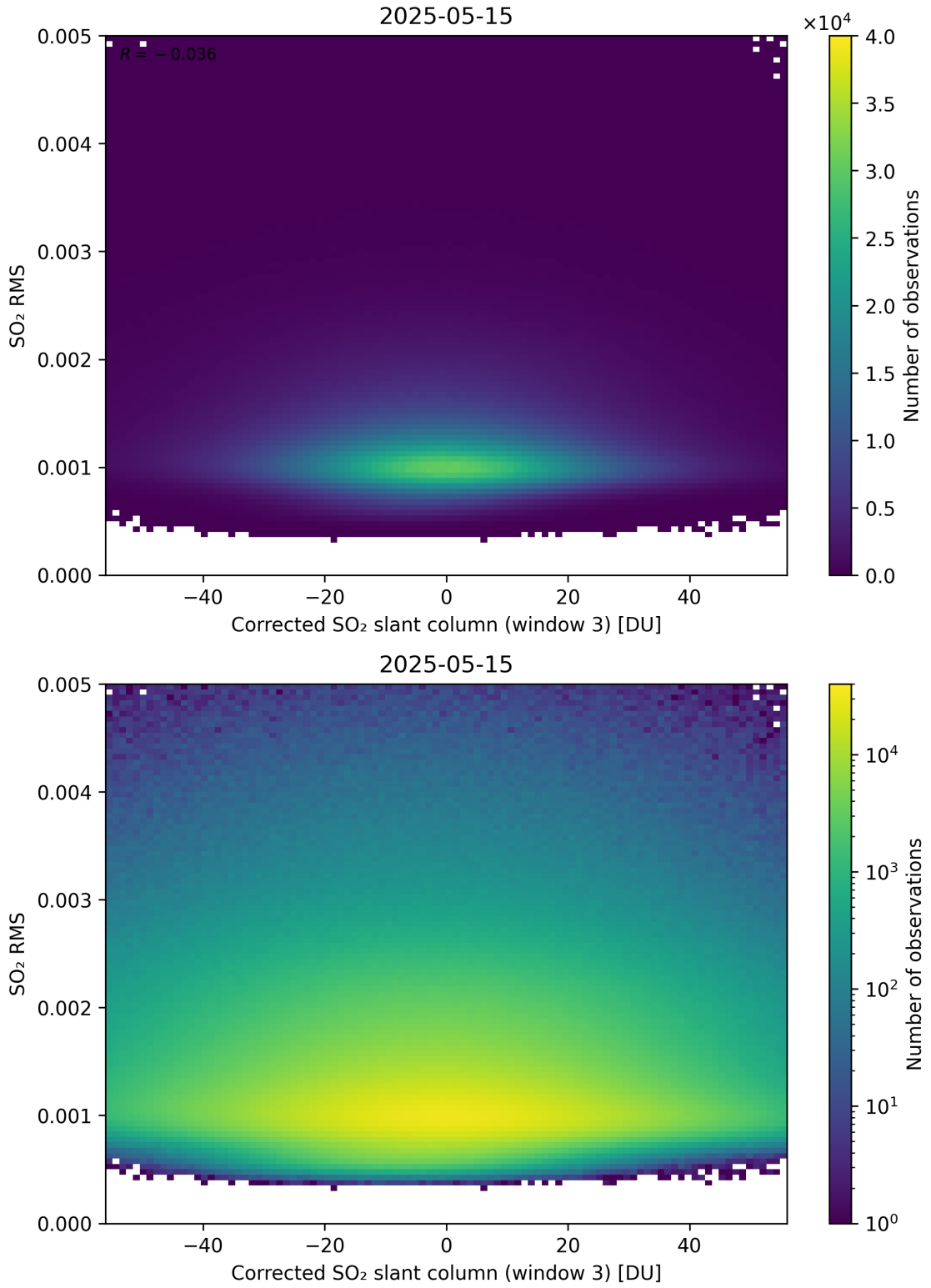


Figure 258: Scatter density plot of "Corrected SO_2 slant column (window 3)" against "SO_2 RMS" for 2025-05-15 to 2025-05-16.

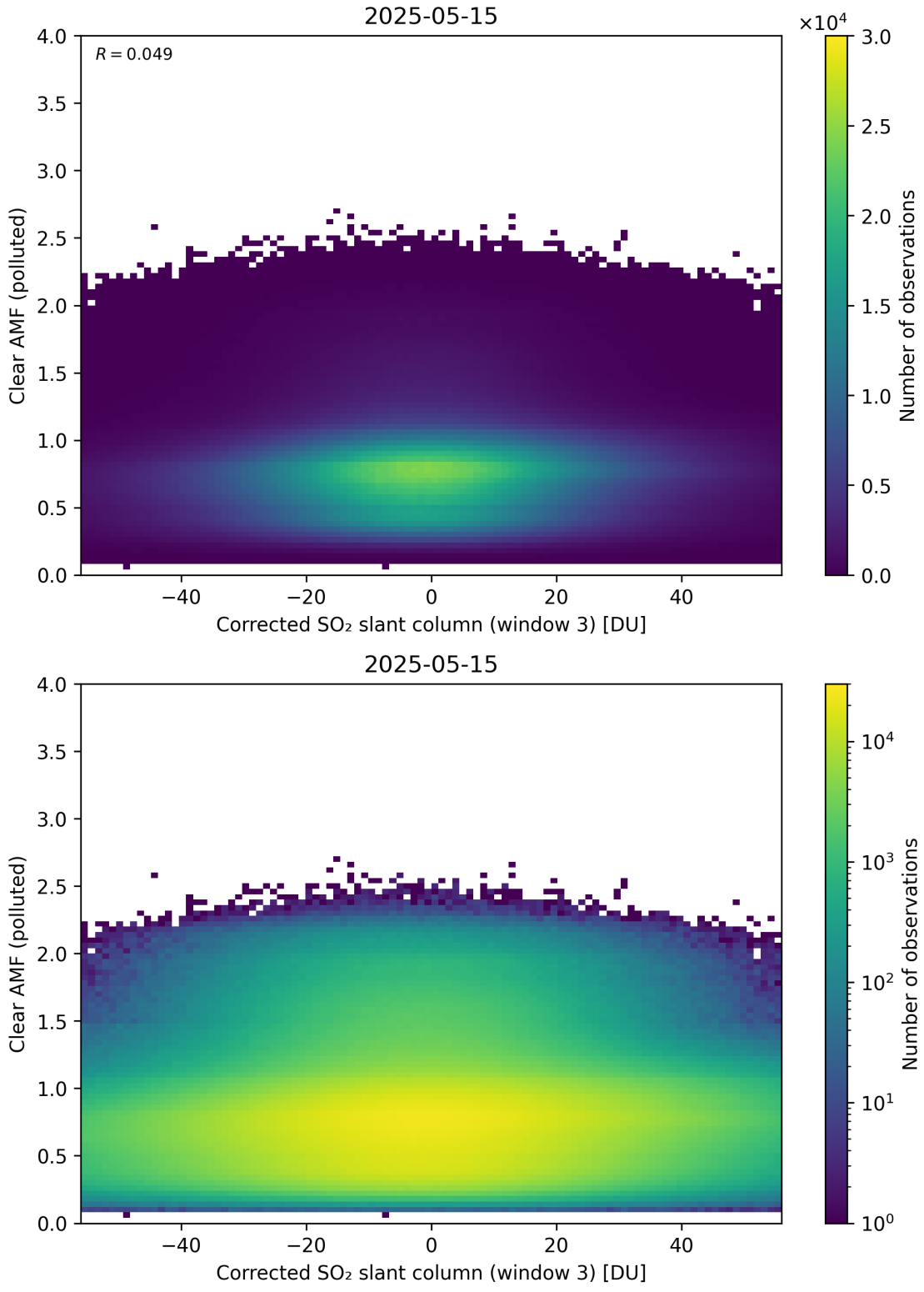


Figure 259: Scatter density plot of “Corrected SO_2 slant column (window 3)” against “Clear AMF (polluted)” for 2025-05-15 to 2025-05-16.

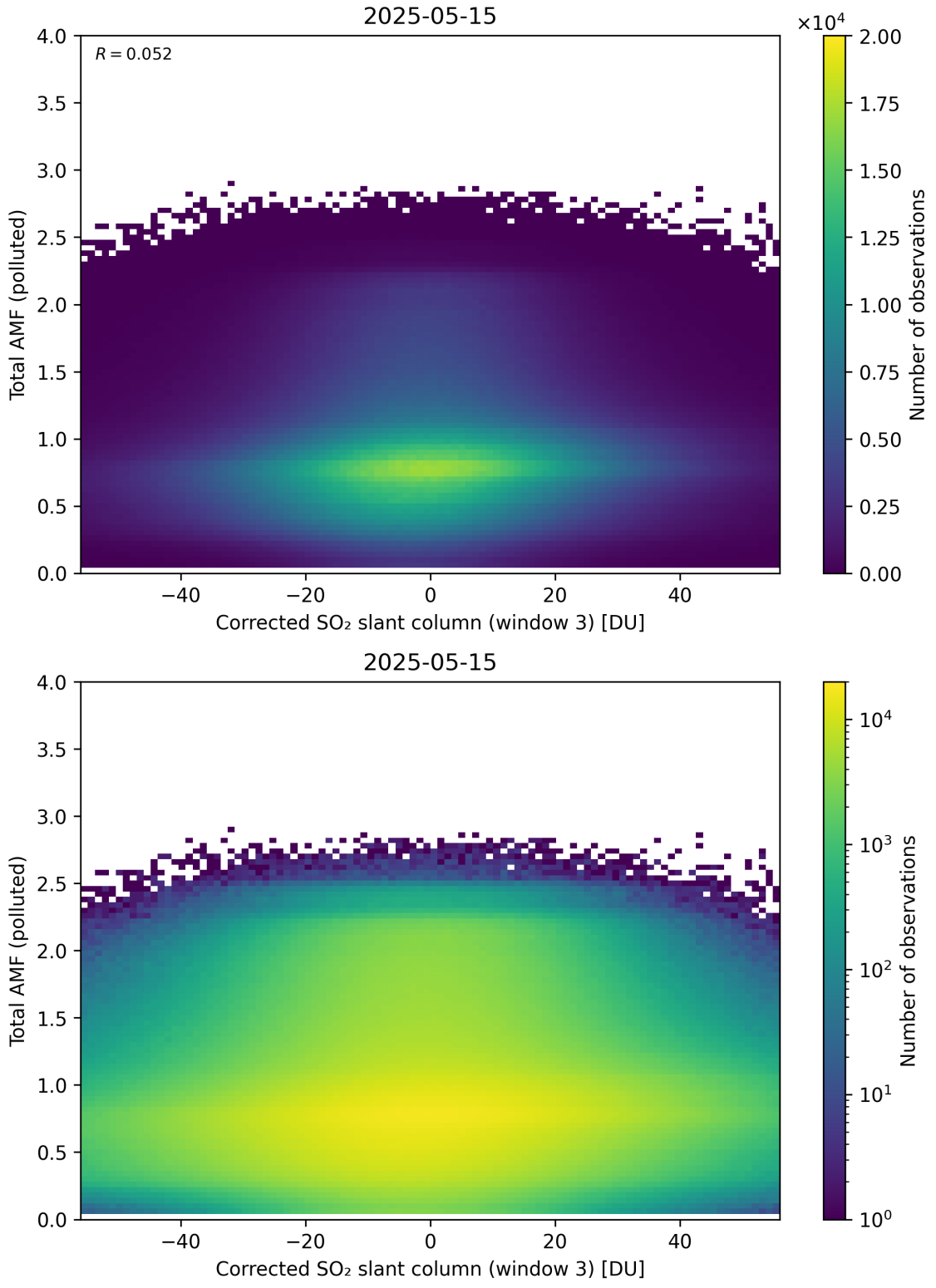


Figure 260: Scatter density plot of "Corrected SO_2 slant column (window 3)" against "Total AMF (polluted)" for 2025-05-15 to 2025-05-16.

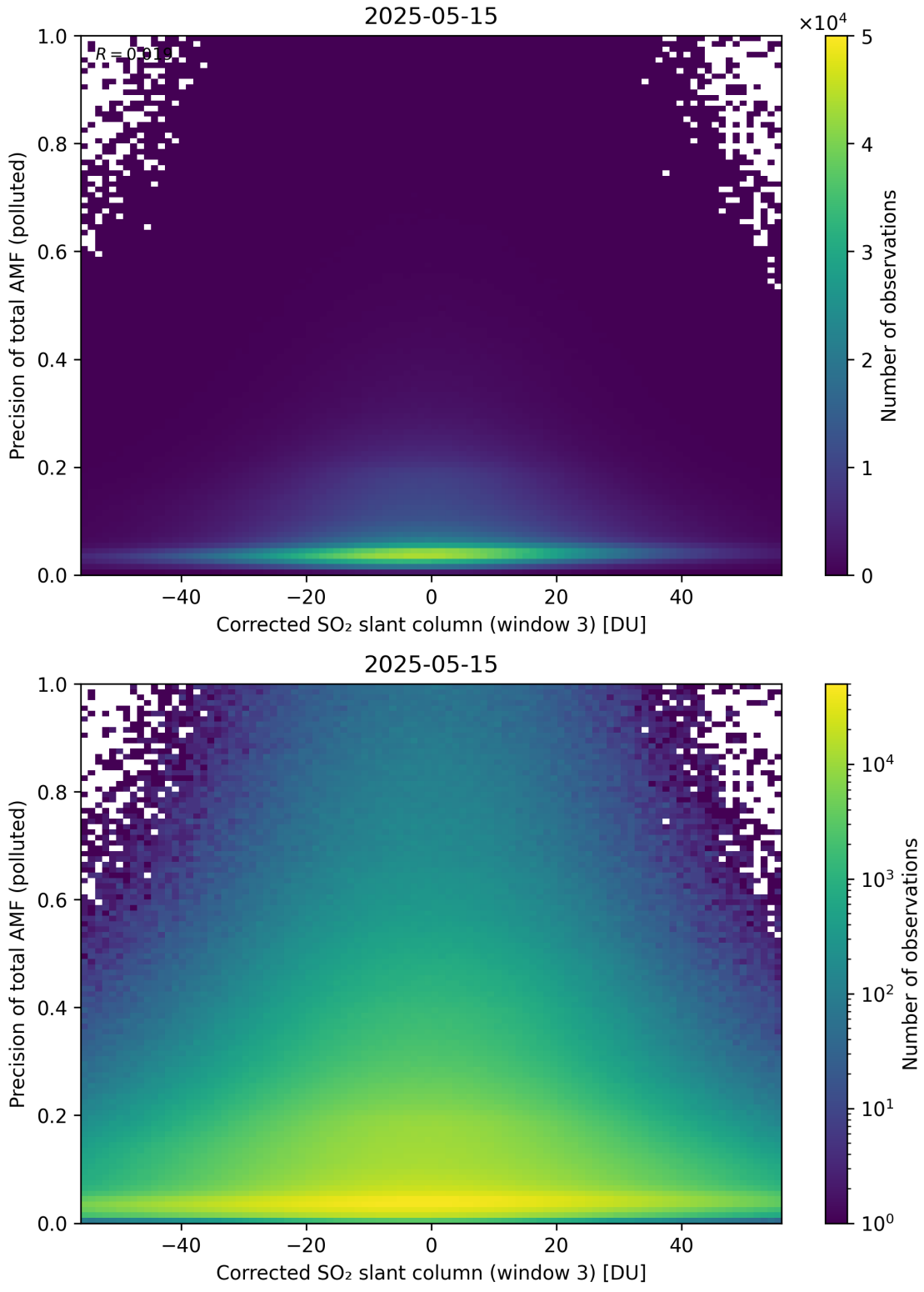


Figure 261: Scatter density plot of "Corrected SO_2 slant column (window 3)" against "Precision of total AMF (polluted)" for 2025-05-15 to 2025-05-16.

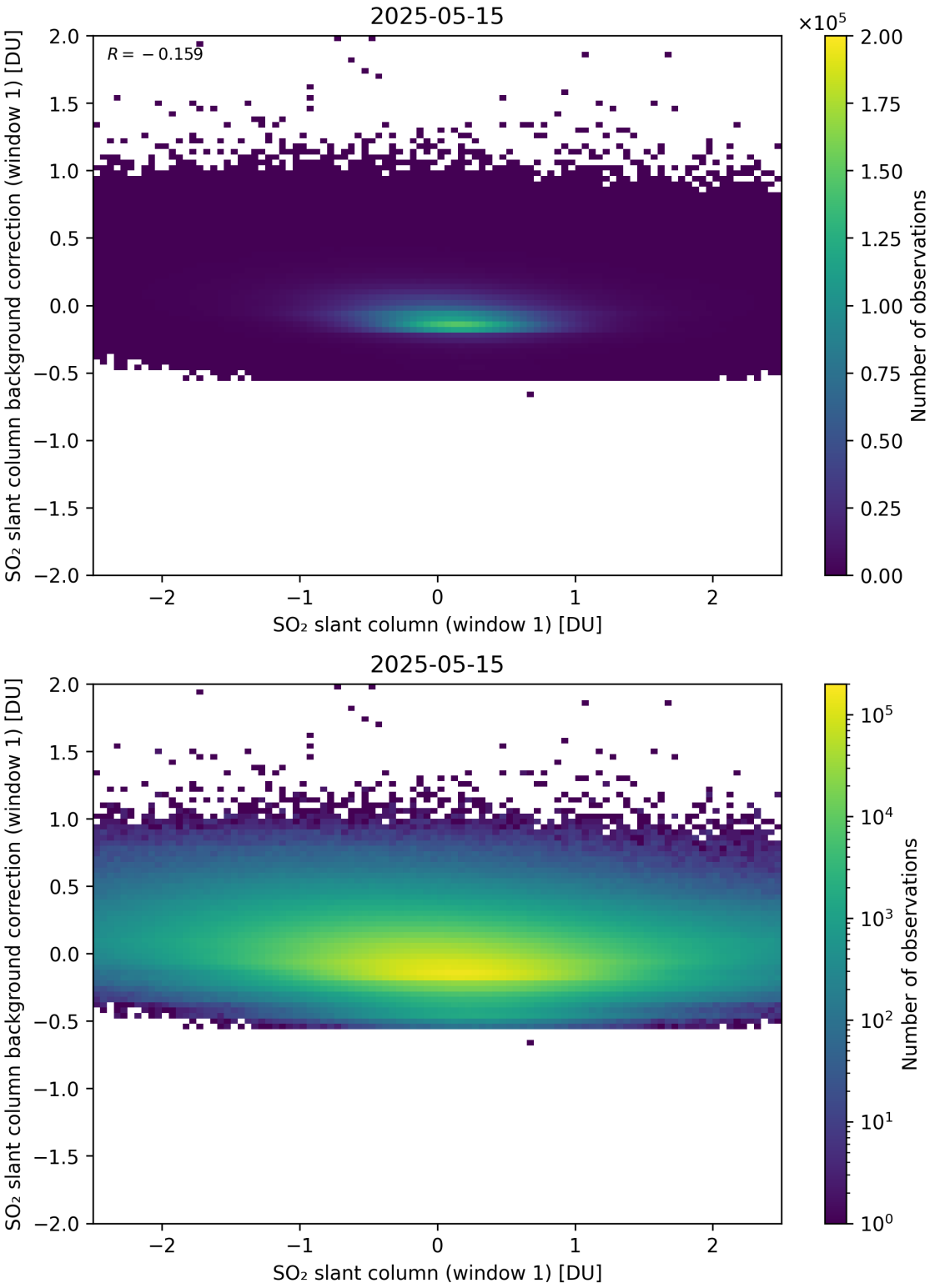


Figure 262: Scatter density plot of "SO_2 slant column (window 1)" against "SO_2 slant column background correction (window 1)" for 2025-05-15 to 2025-05-16.

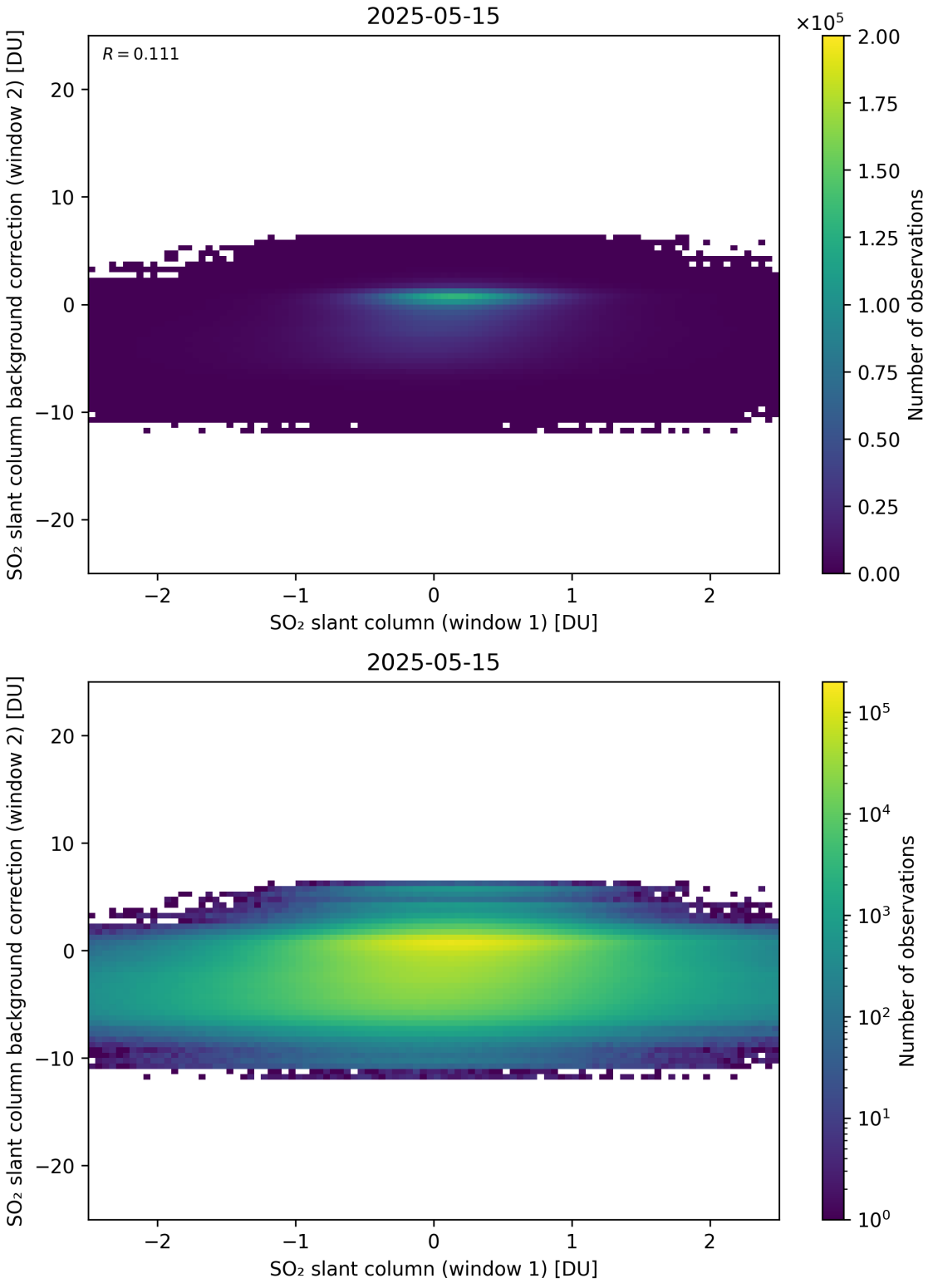


Figure 263: Scatter density plot of "SO_2 slant column (window 1)" against "SO_2 slant column background correction (window 2)" for 2025-05-15 to 2025-05-16.

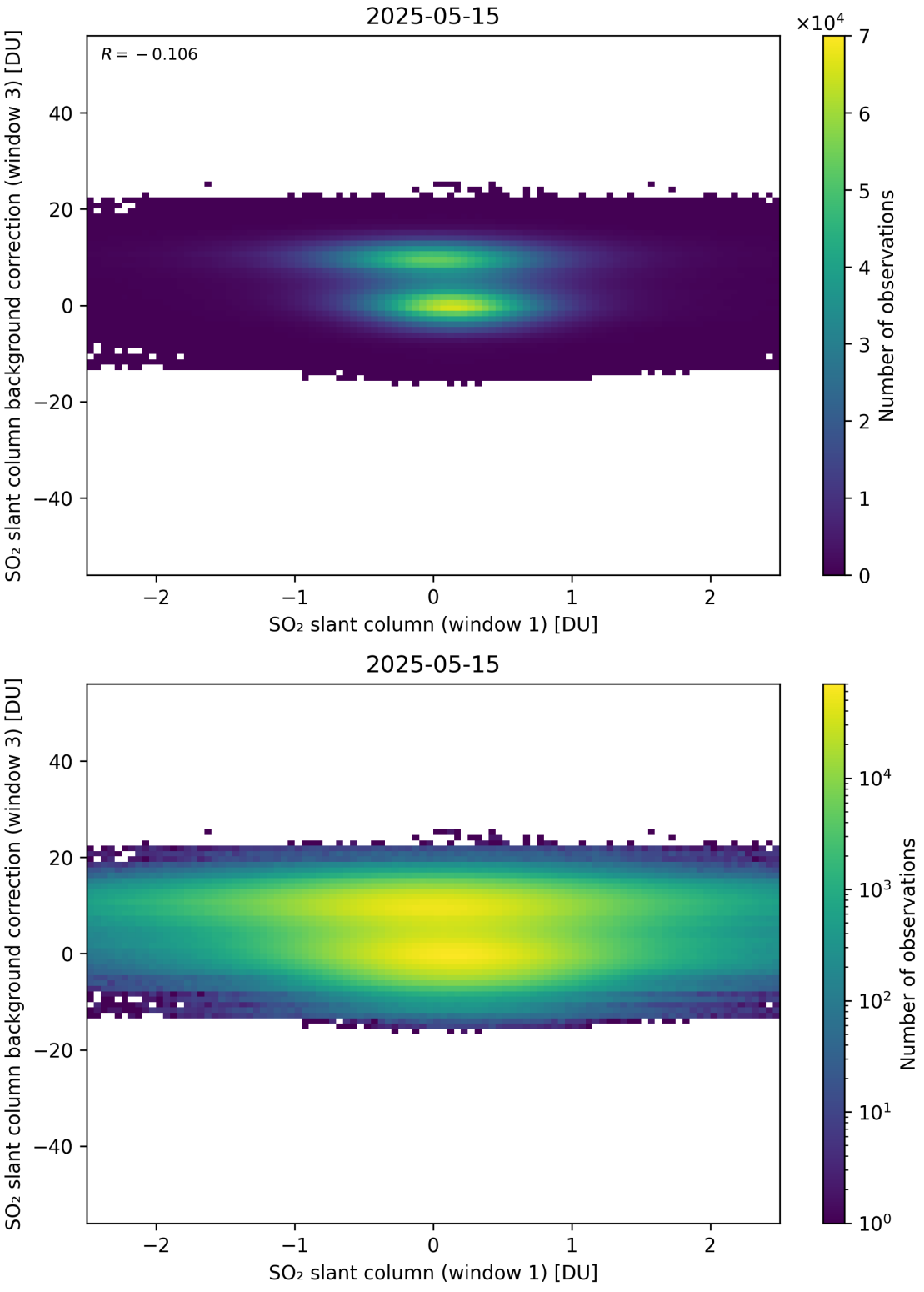


Figure 264: Scatter density plot of "SO_2 slant column (window 1)" against "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16.

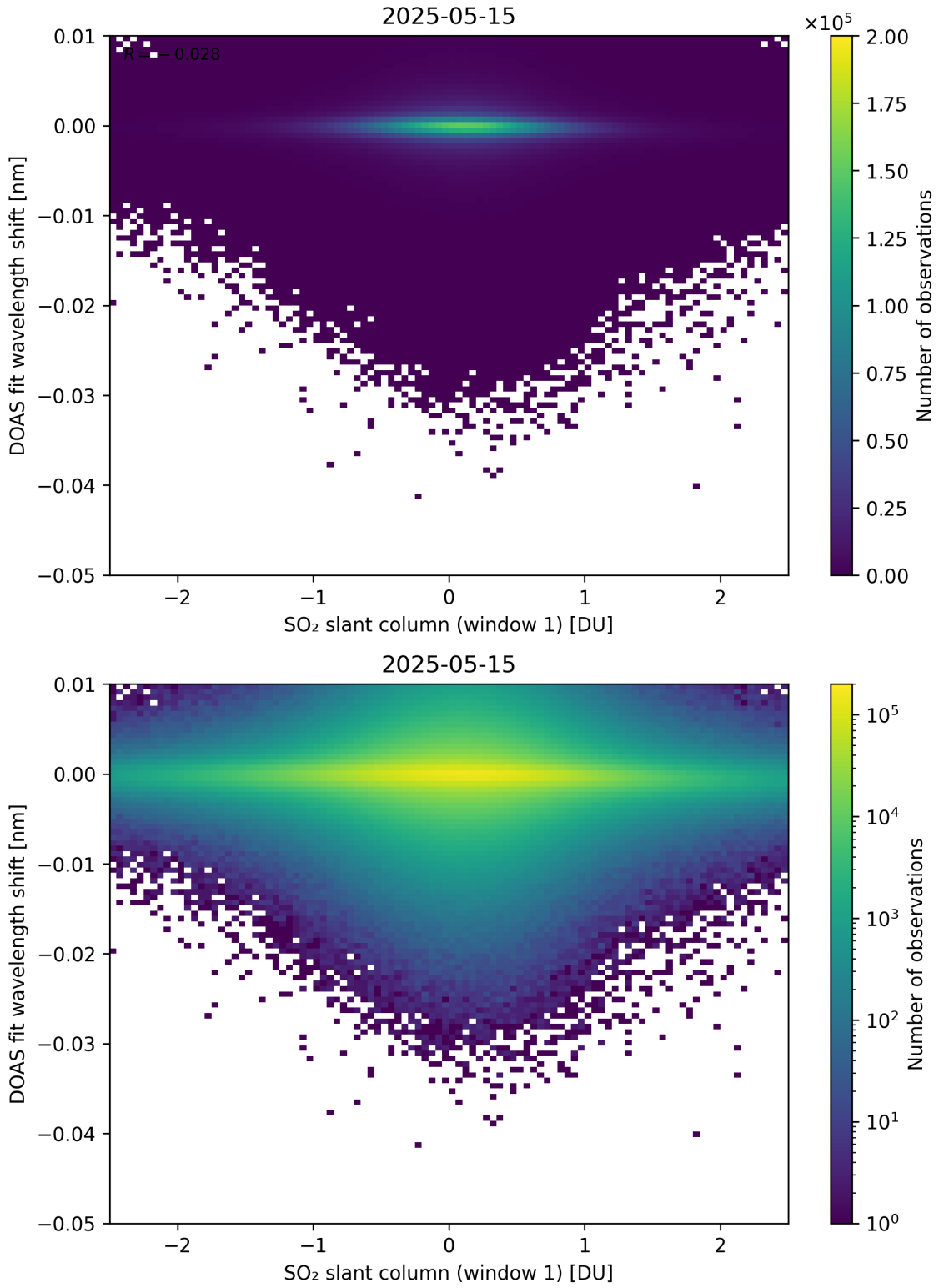


Figure 265: Scatter density plot of "SO_2 slant column (window 1)" against "DOAS fit wavelength shift" for 2025-05-15 to 2025-05-16.

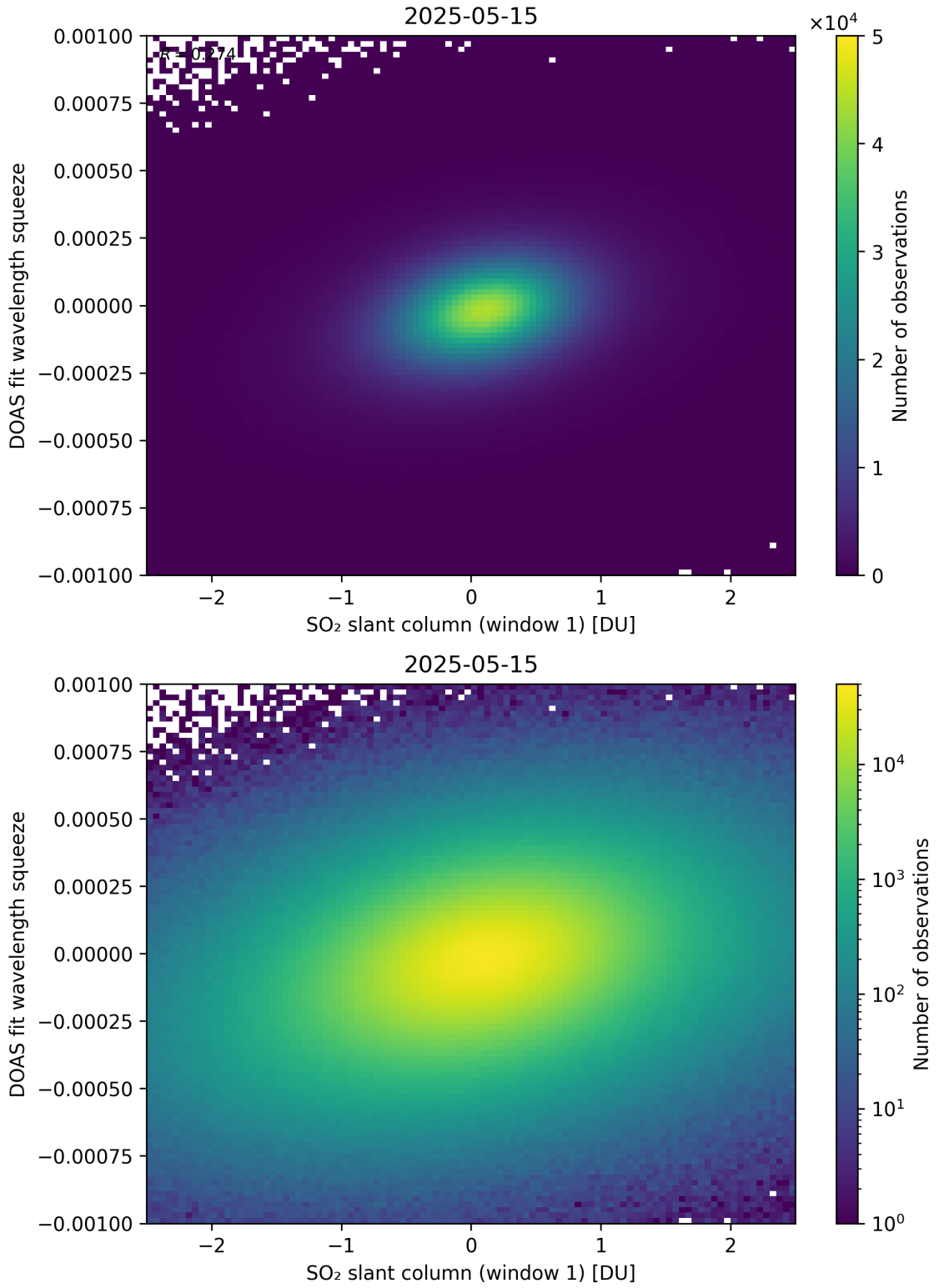


Figure 266: Scatter density plot of "SO_2 slant column (window 1)" against "DOAS fit wavelength squeeze" for 2025-05-15 to 2025-05-16.

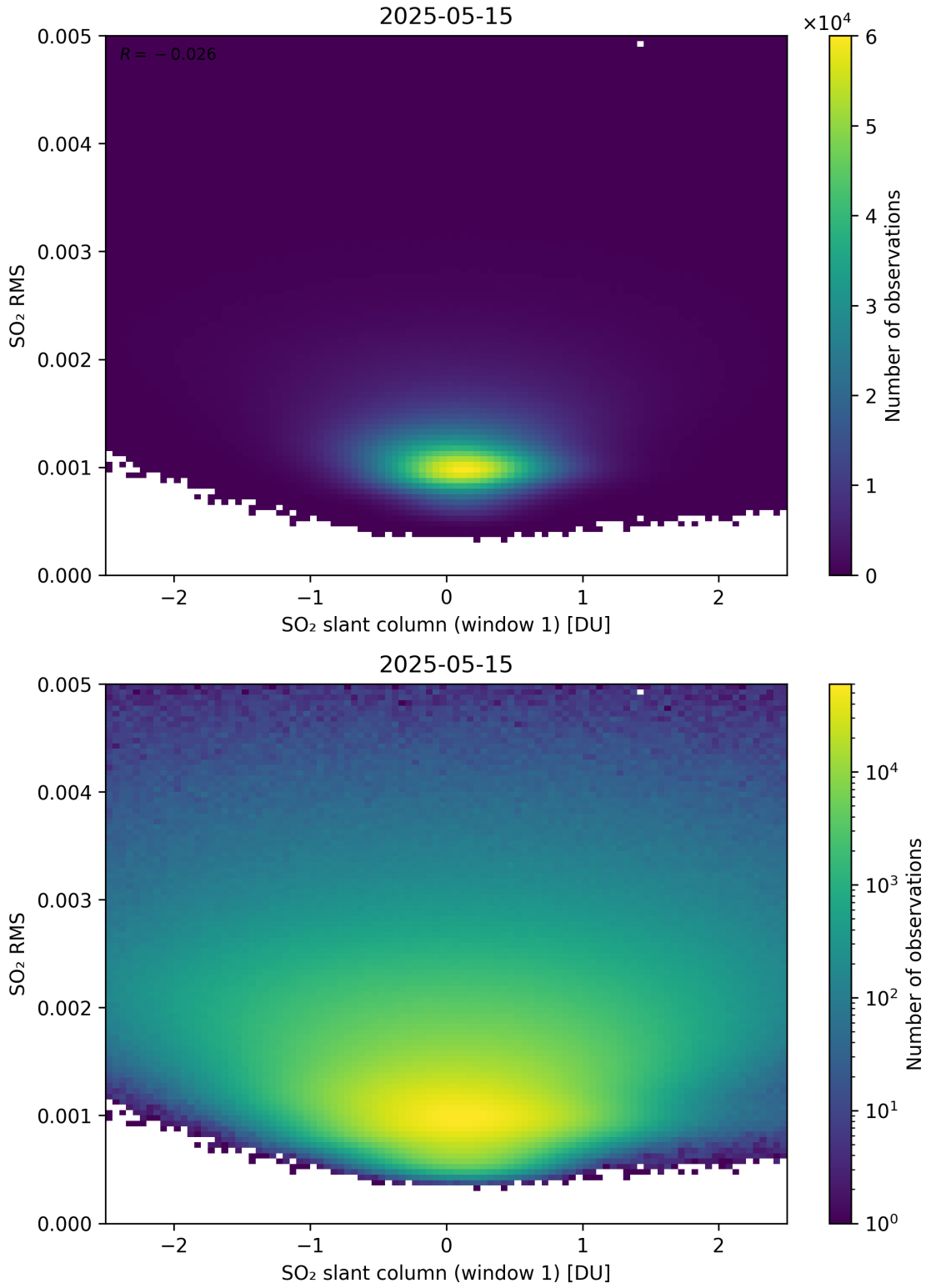


Figure 267: Scatter density plot of "SO_2 slant column (window 1)" against "SO_2 RMS" for 2025-05-15 to 2025-05-16.

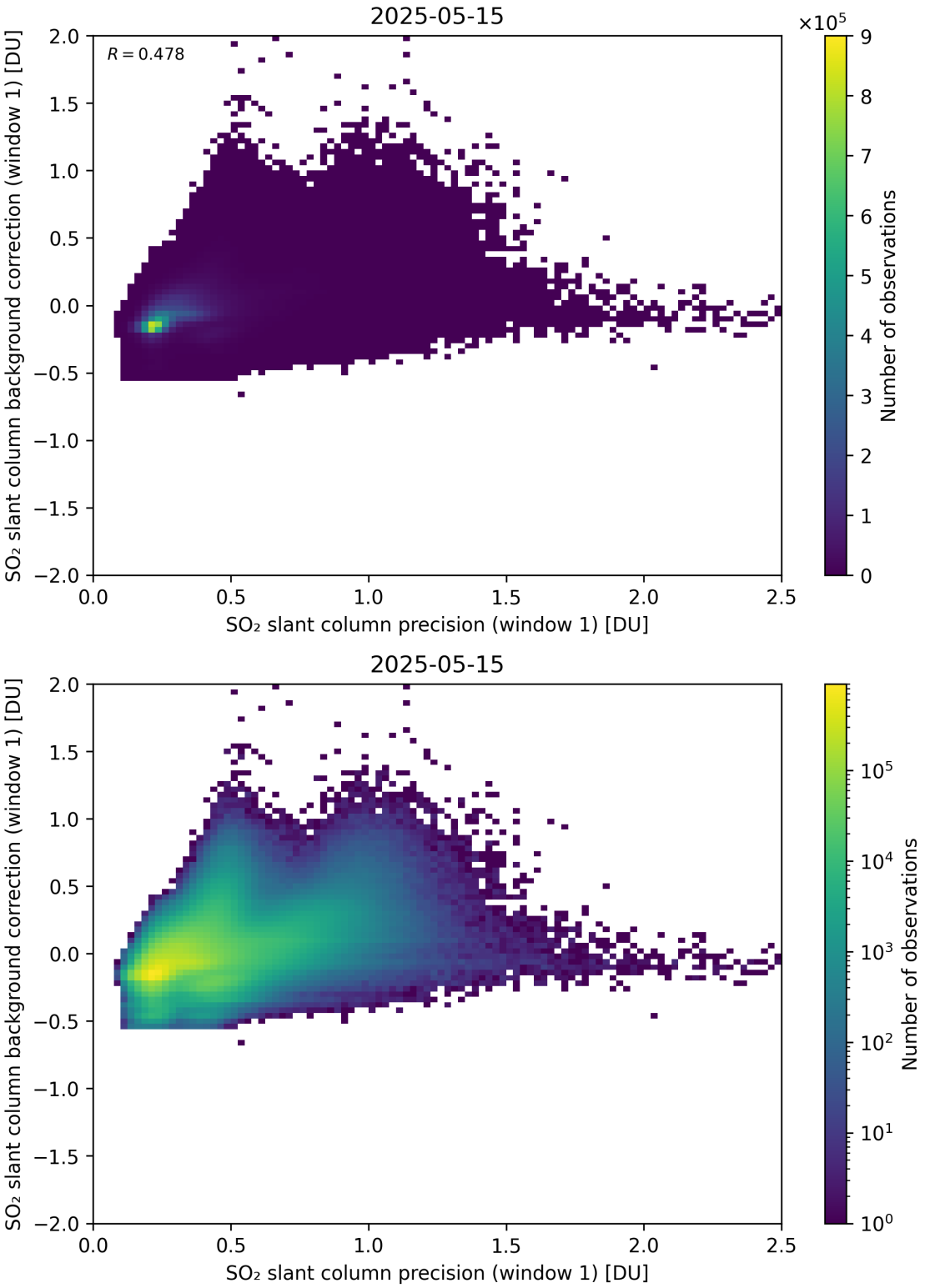


Figure 268: Scatter density plot of "SO_2 slant column precision (window 1)" against "SO_2 slant column background correction (window 1)" for 2025-05-15 to 2025-05-16.

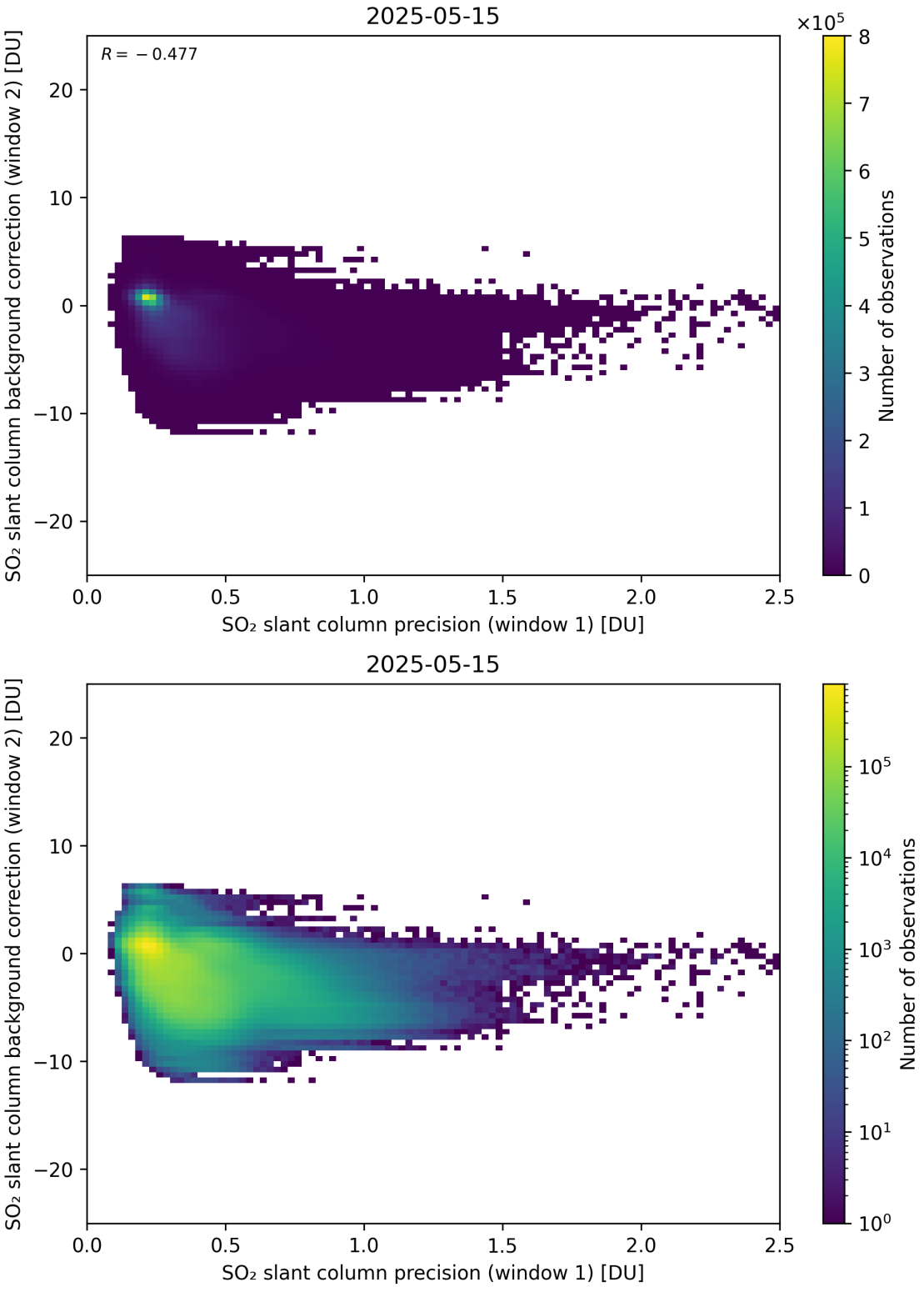


Figure 269: Scatter density plot of "SO_2 slant column precision (window 1)" against "SO_2 slant column background correction (window 2)" for 2025-05-15 to 2025-05-16.

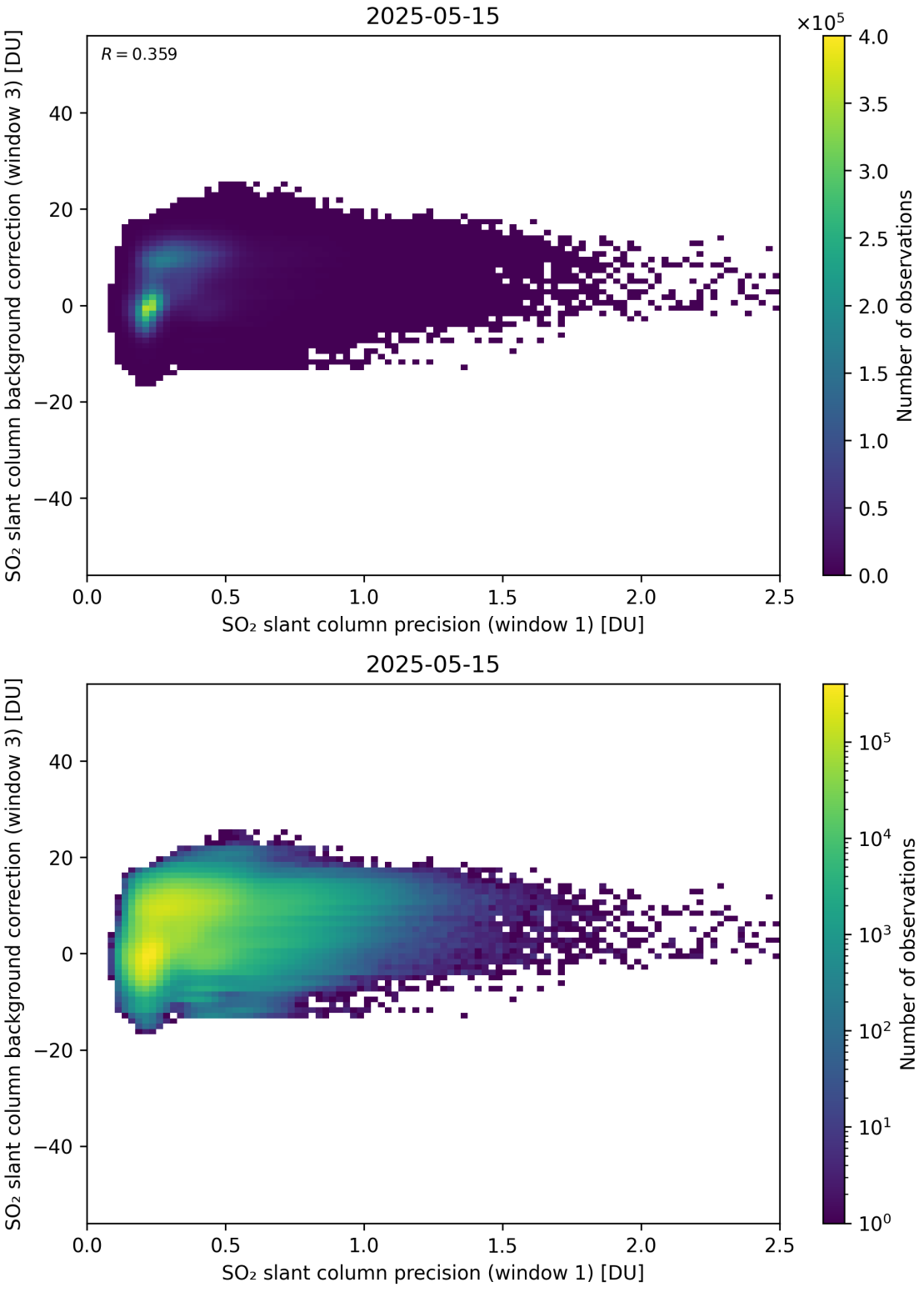


Figure 270: Scatter density plot of "SO_2 slant column precision (window 1)" against "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16.

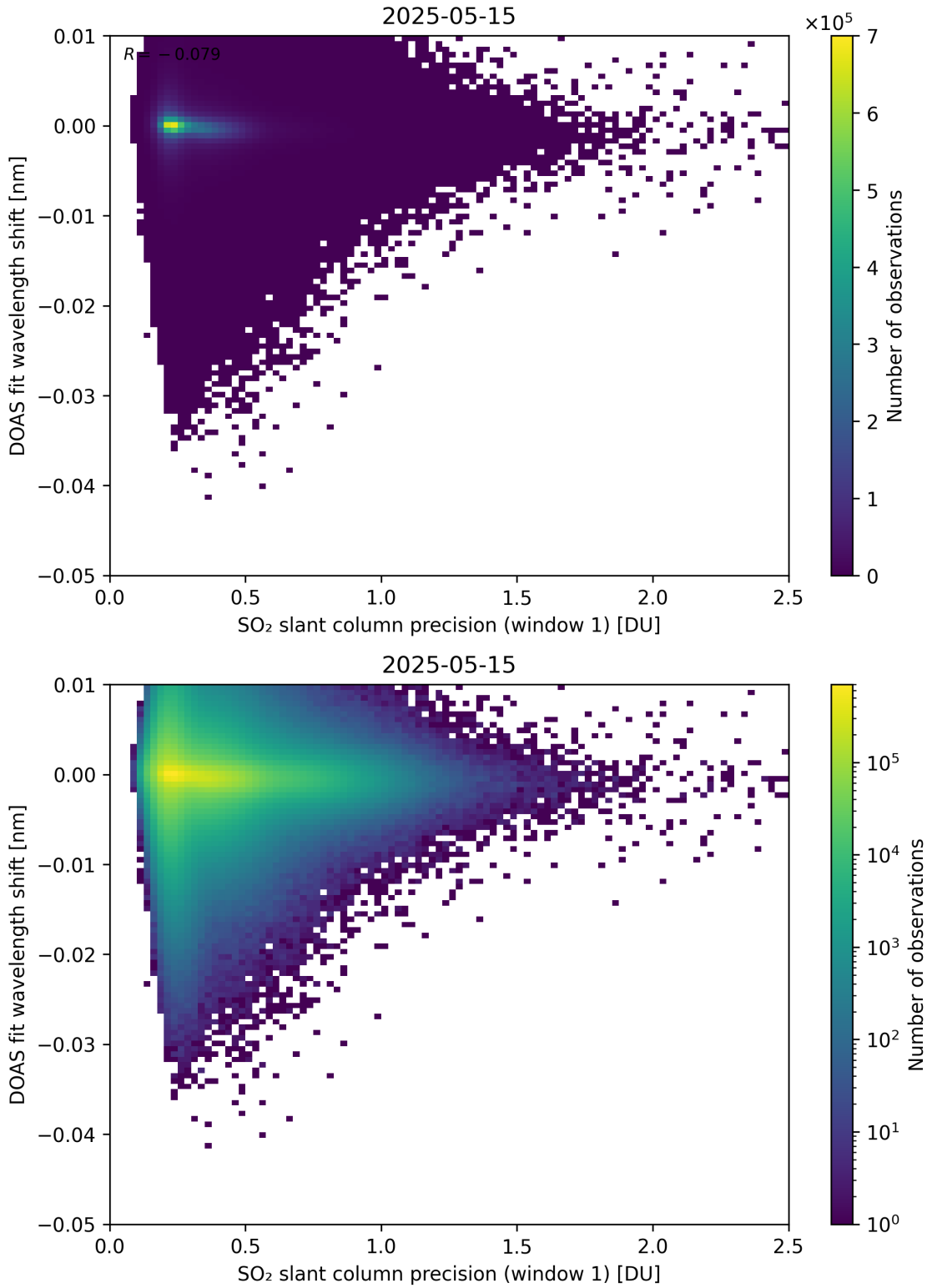


Figure 271: Scatter density plot of "SO_2 slant column precision (window 1)" against "DOAS fit wavelength shift" for 2025-05-15 to 2025-05-16.

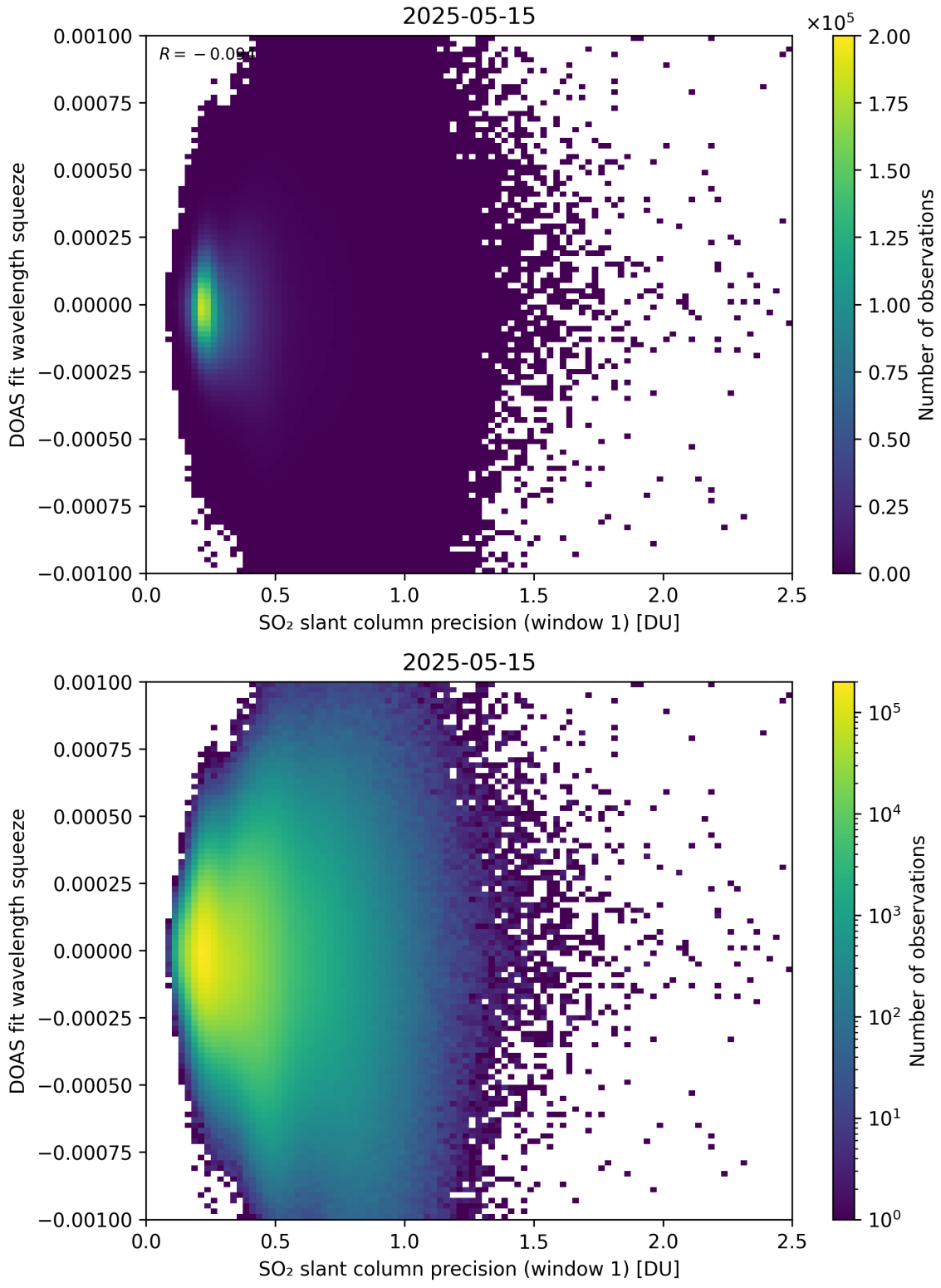


Figure 272: Scatter density plot of "SO_2 slant column precision (window 1)" against "DOAS fit wavelength squeeze" for 2025-05-15 to 2025-05-16.

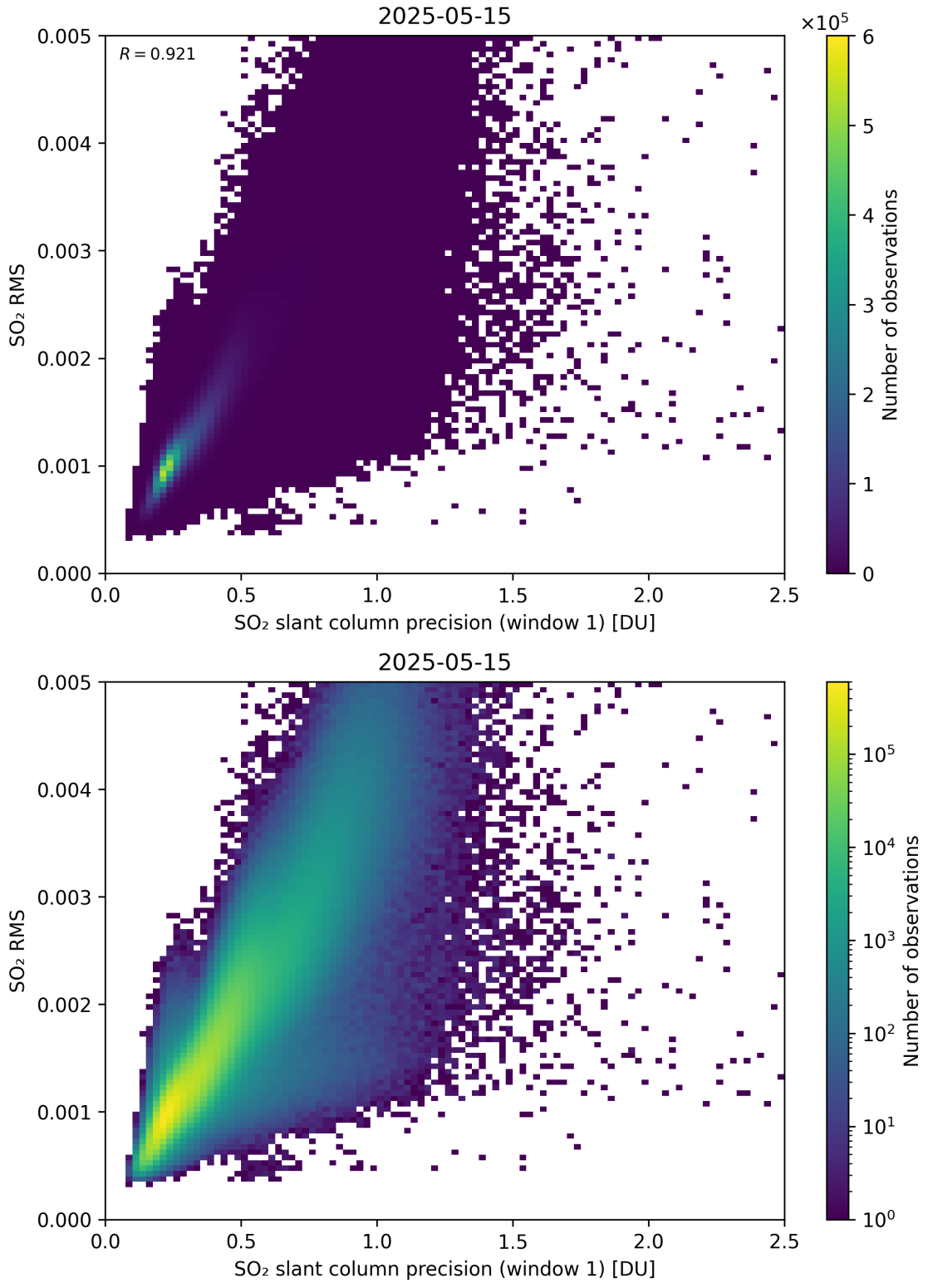


Figure 273: Scatter density plot of "SO_2 slant column precision (window 1)" against "SO_2 RMS" for 2025-05-15 to 2025-05-16.

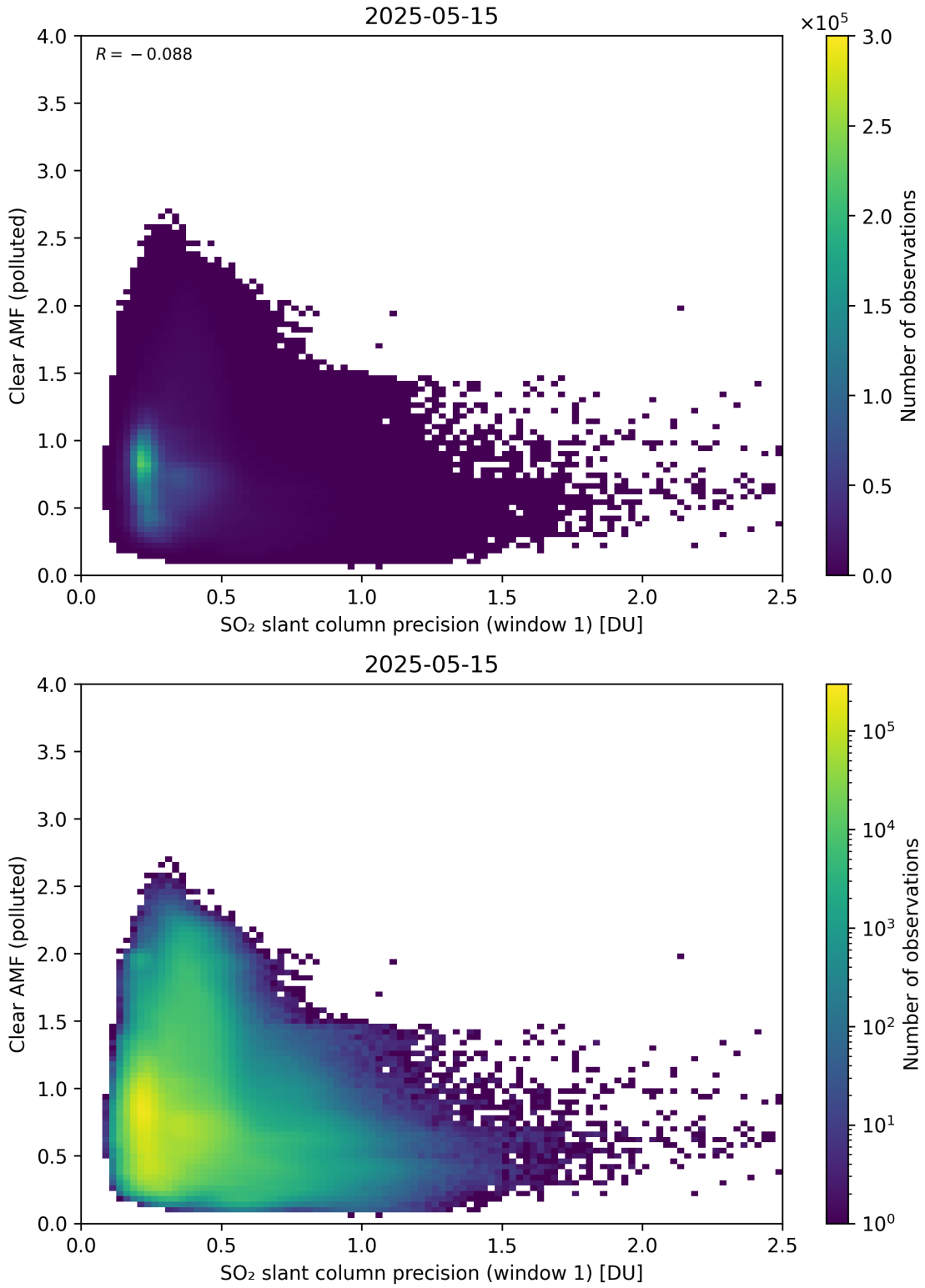


Figure 274: Scatter density plot of "SO_2 slant column precision (window 1)" against "Clear AMF (polluted)" for 2025-05-15 to 2025-05-16.

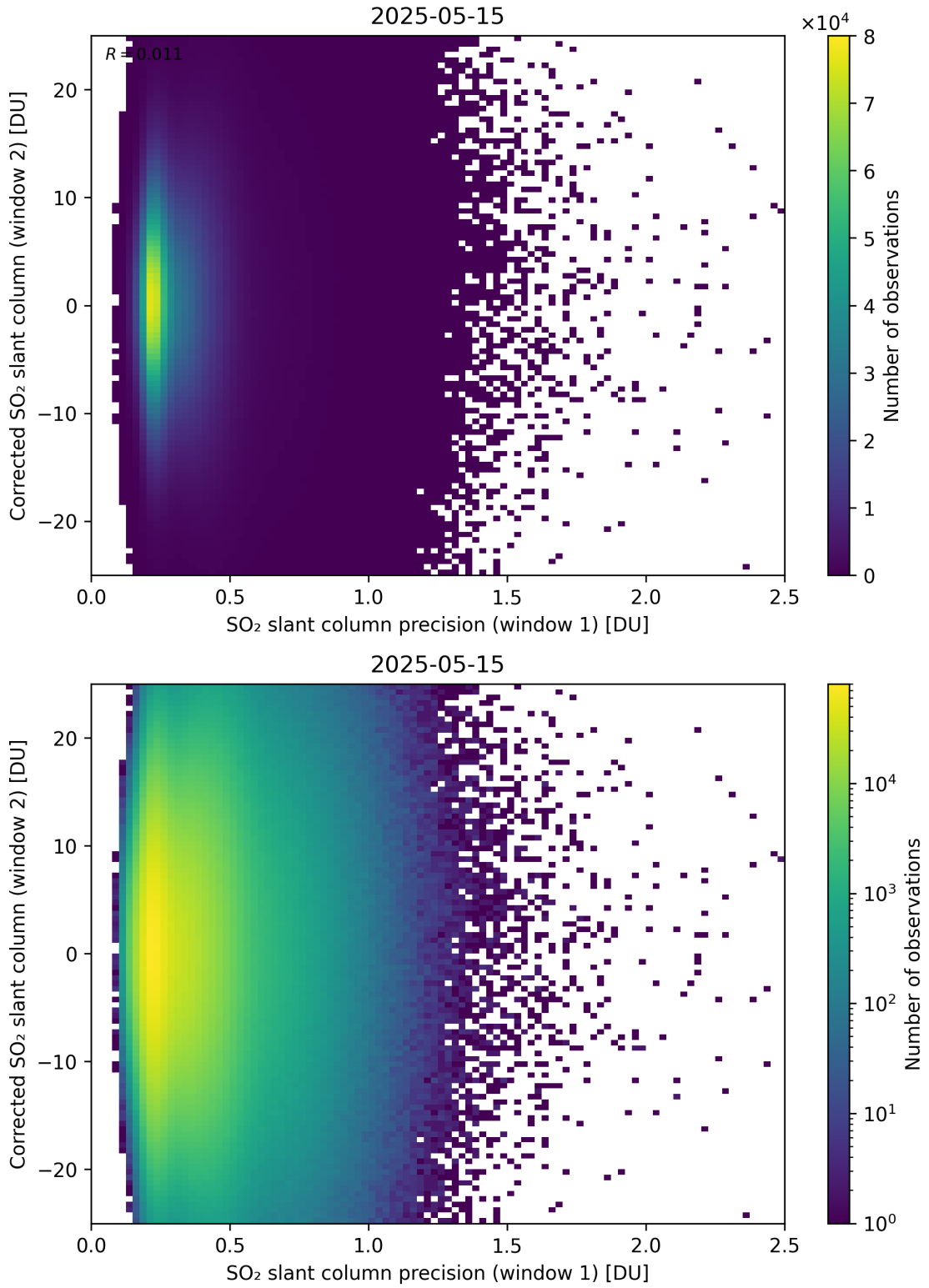


Figure 275: Scatter density plot of "SO_2 slant column precision (window 1)" against "Corrected SO_2 slant column (window 2)" for 2025-05-15 to 2025-05-16.

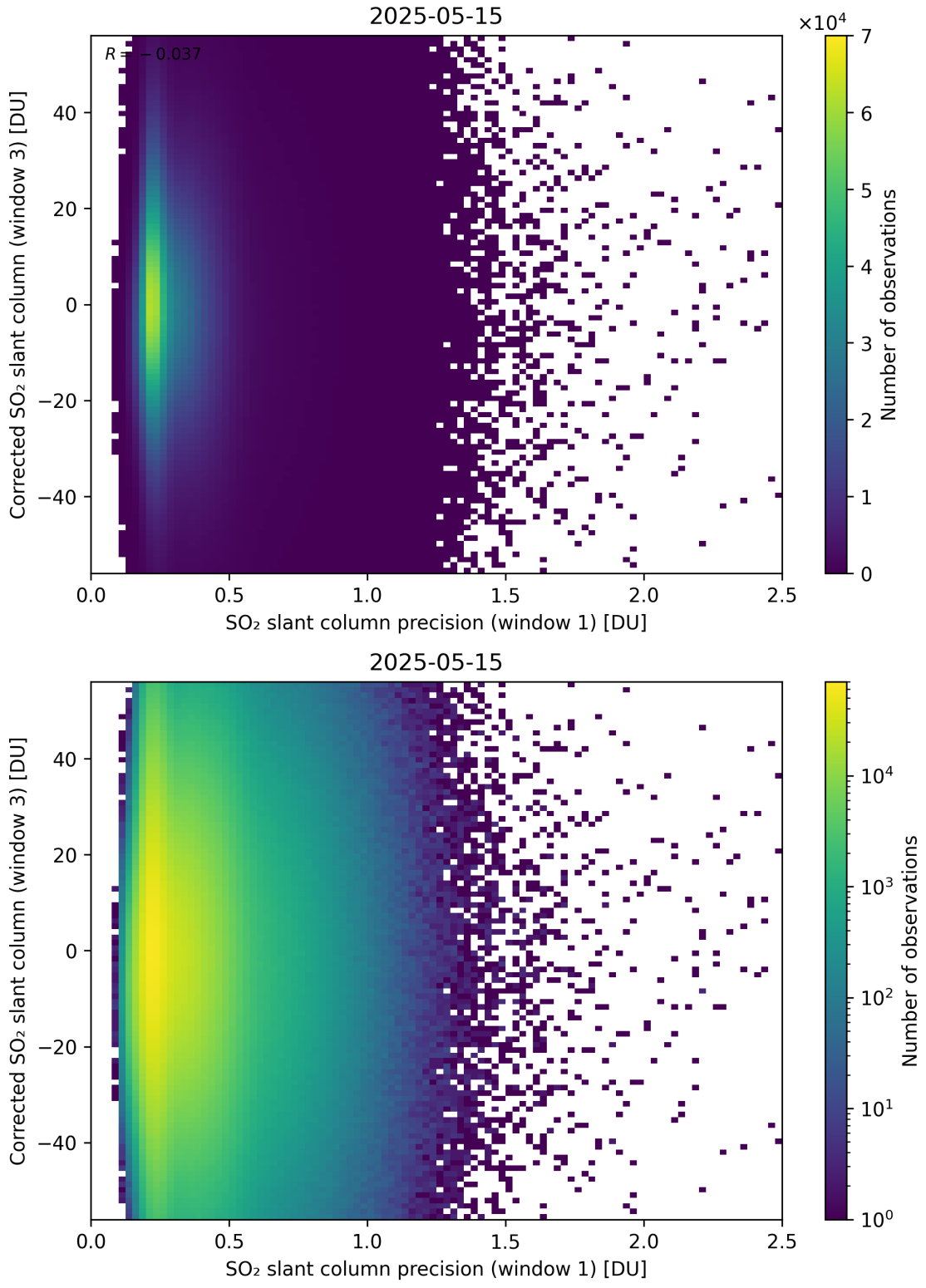


Figure 276: Scatter density plot of "SO_2 slant column precision (window 1)" against "Corrected SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

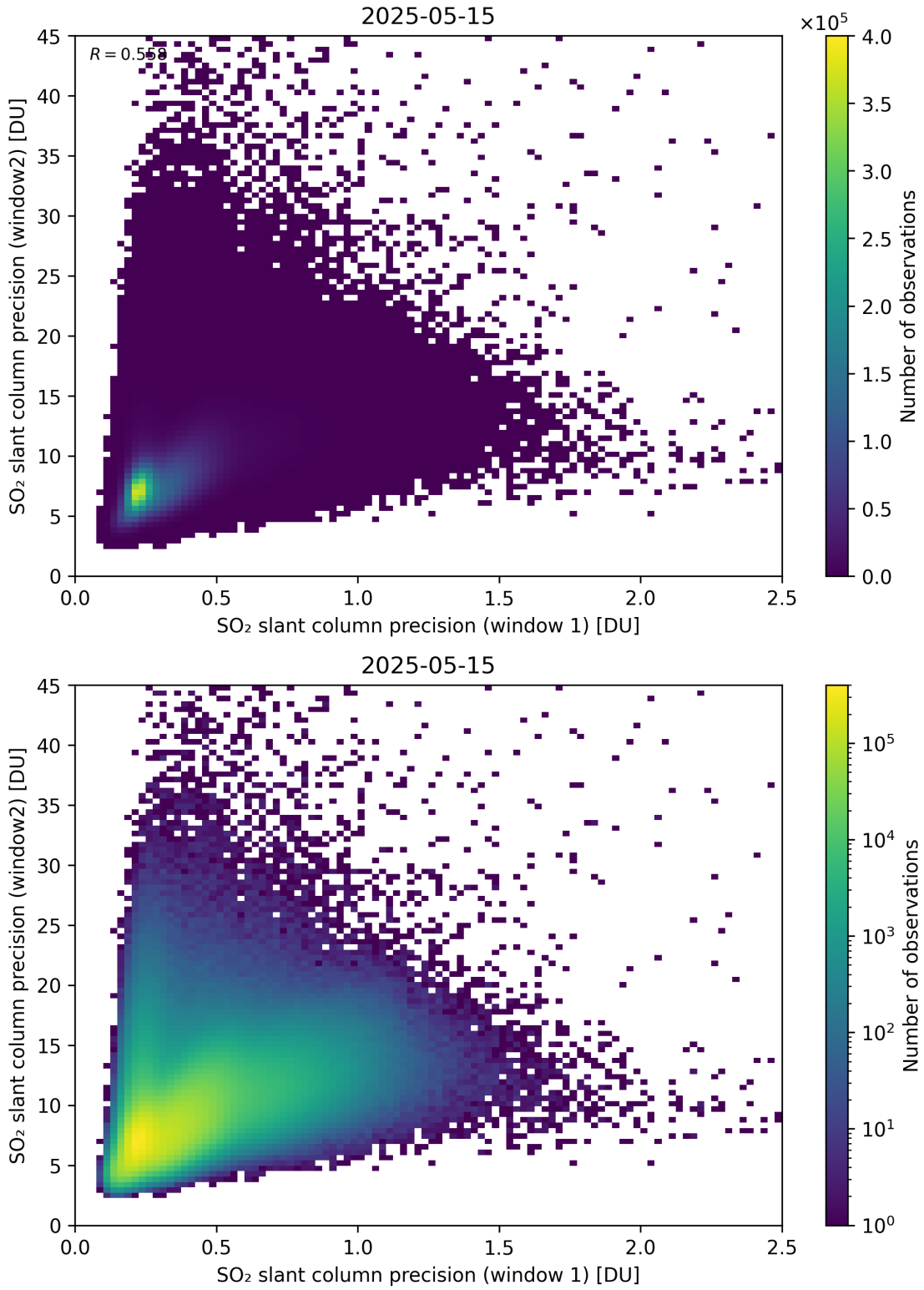


Figure 277: Scatter density plot of "SO_2 slant column precision (window 1)" against "SO_2 slant column precision (window2)" for 2025-05-15 to 2025-05-16.

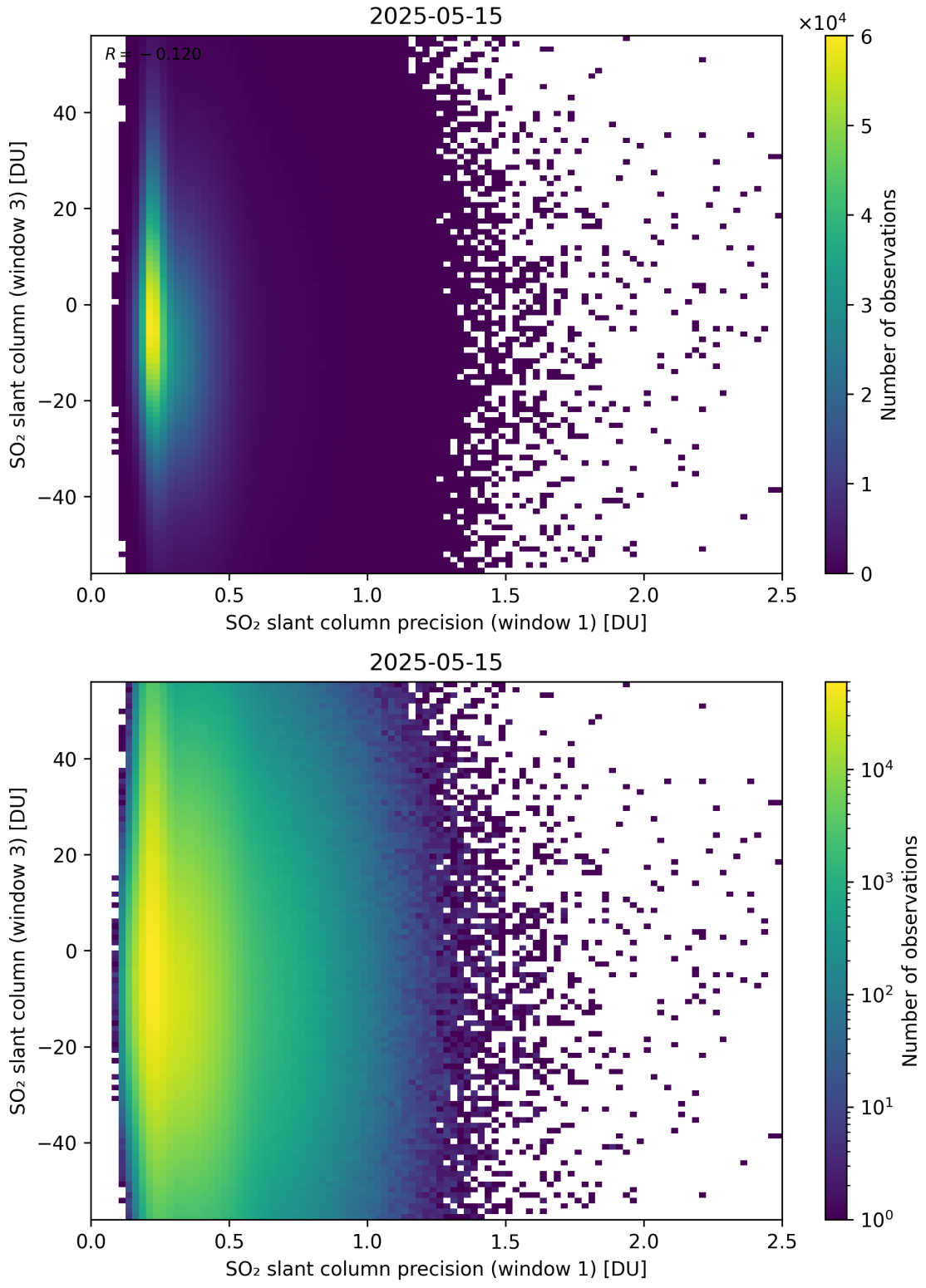


Figure 278: Scatter density plot of "SO_2 slant column precision (window 1)" against "SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

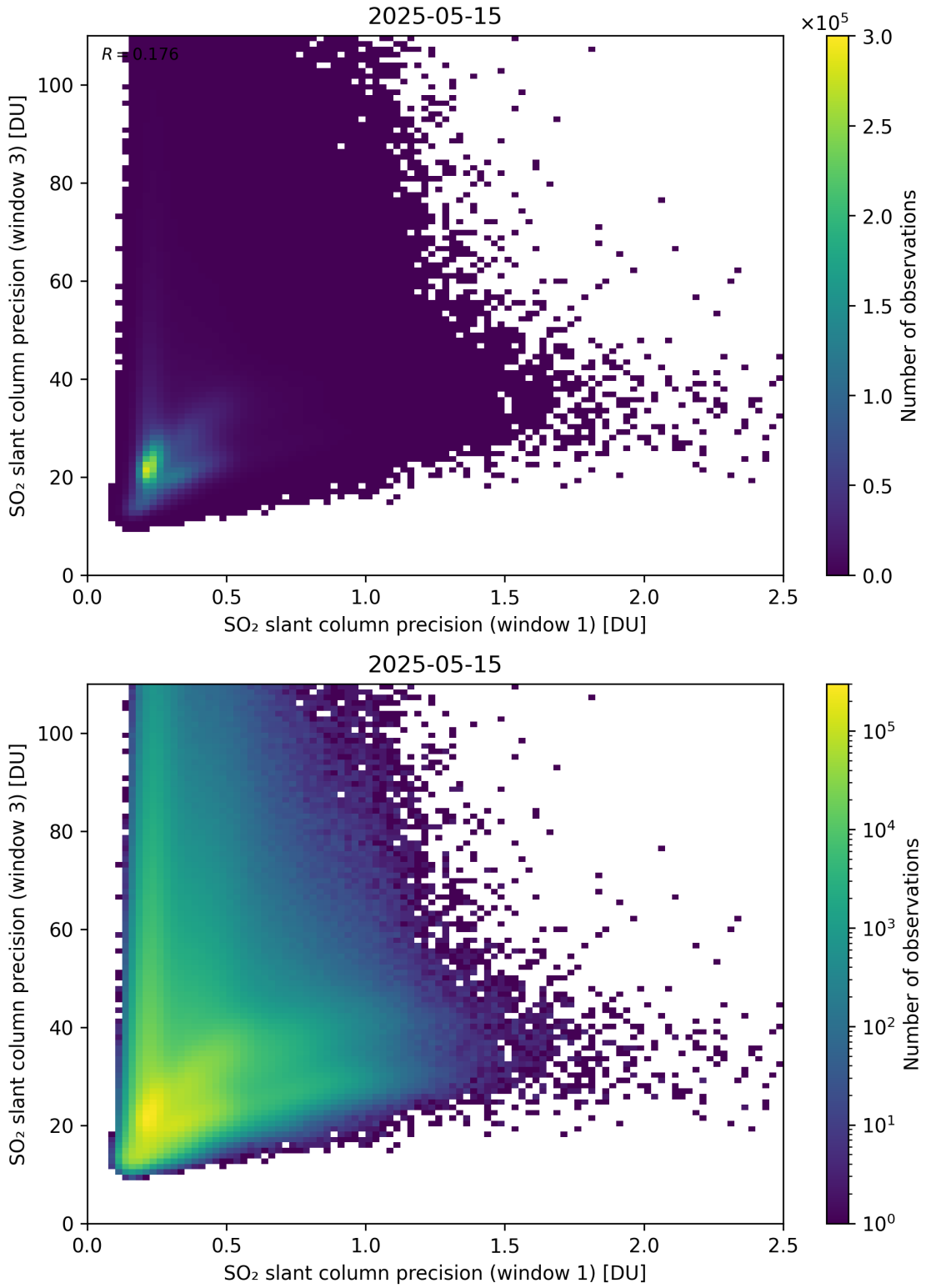


Figure 279: Scatter density plot of "SO_2 slant column precision (window 1)" against "SO_2 slant column precision (window 3)" for 2025-05-15 to 2025-05-16.

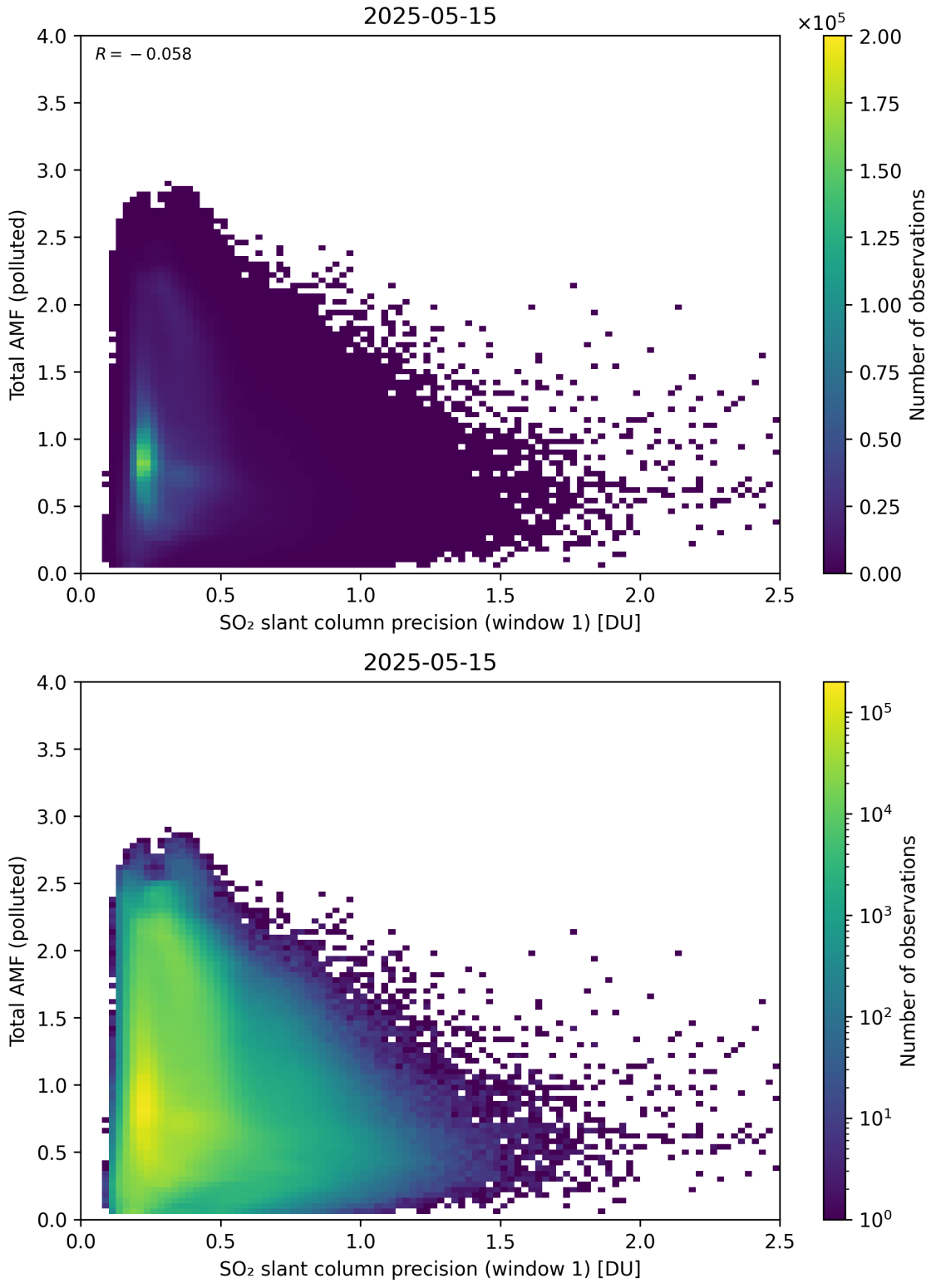


Figure 280: Scatter density plot of "SO_2 slant column precision (window 1)" against "Total AMF (polluted)" for 2025-05-15 to 2025-05-16.

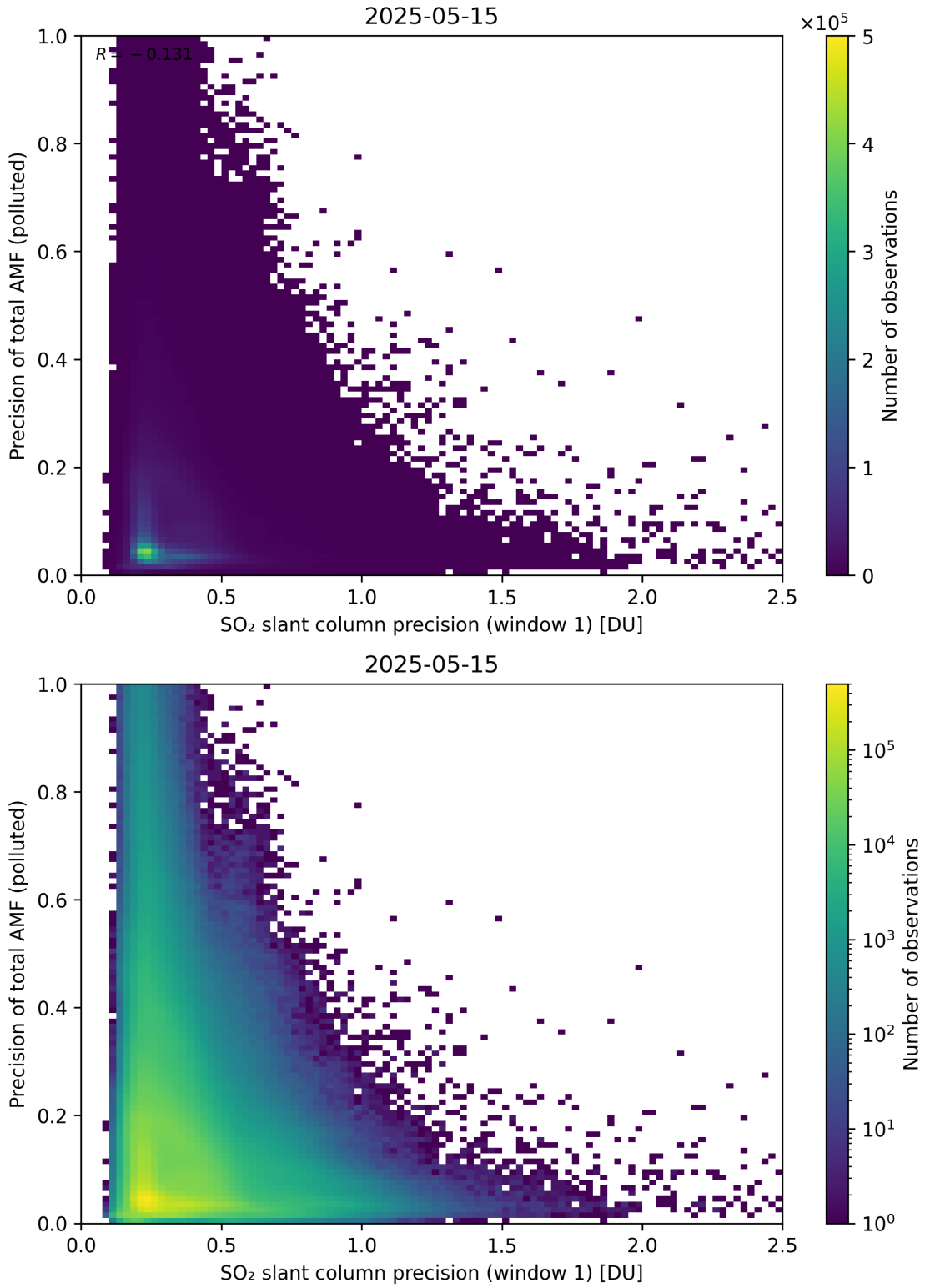


Figure 281: Scatter density plot of "SO_2 slant column precision (window 1)" against "Precision of total AMF (polluted)" for 2025-05-15 to 2025-05-16.

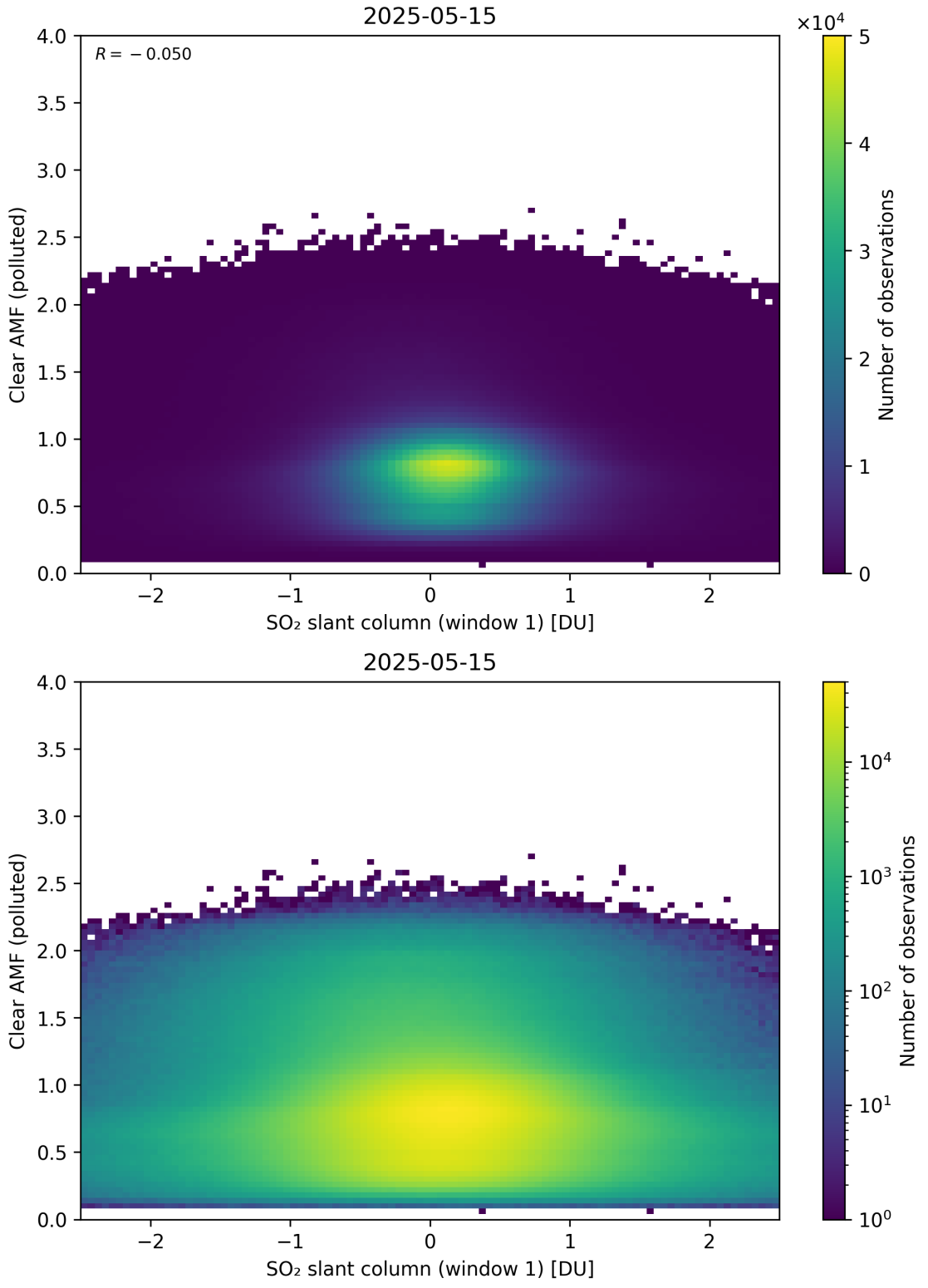


Figure 282: Scatter density plot of "SO_2 slant column (window 1)" against "Clear AMF (polluted)" for 2025-05-15 to 2025-05-16.

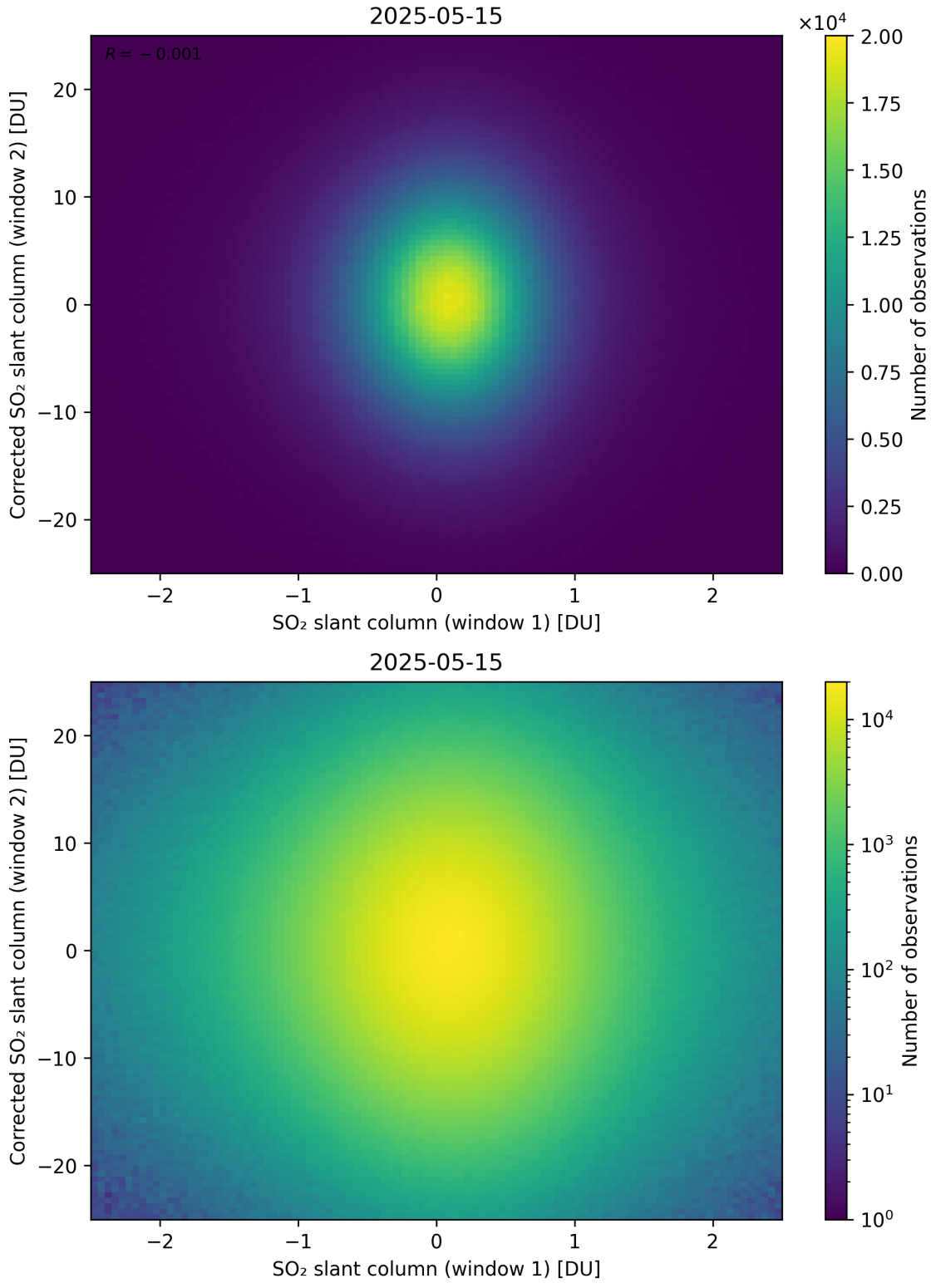


Figure 283: Scatter density plot of "SO_2 slant column (window 1)" against "Corrected SO_2 slant column (window 2)" for 2025-05-15 to 2025-05-16.

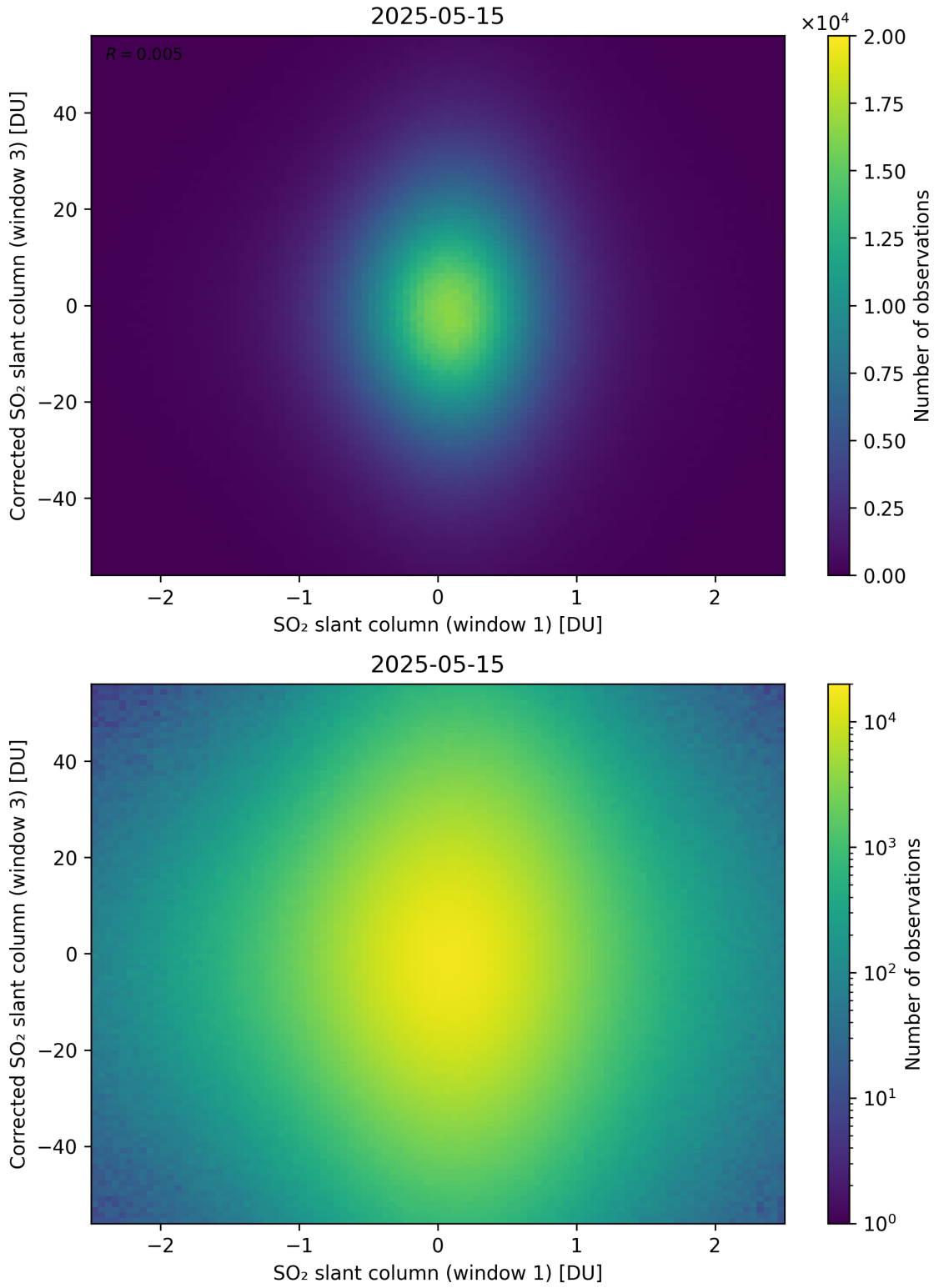


Figure 284: Scatter density plot of "SO_2 slant column (window 1)" against "Corrected SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

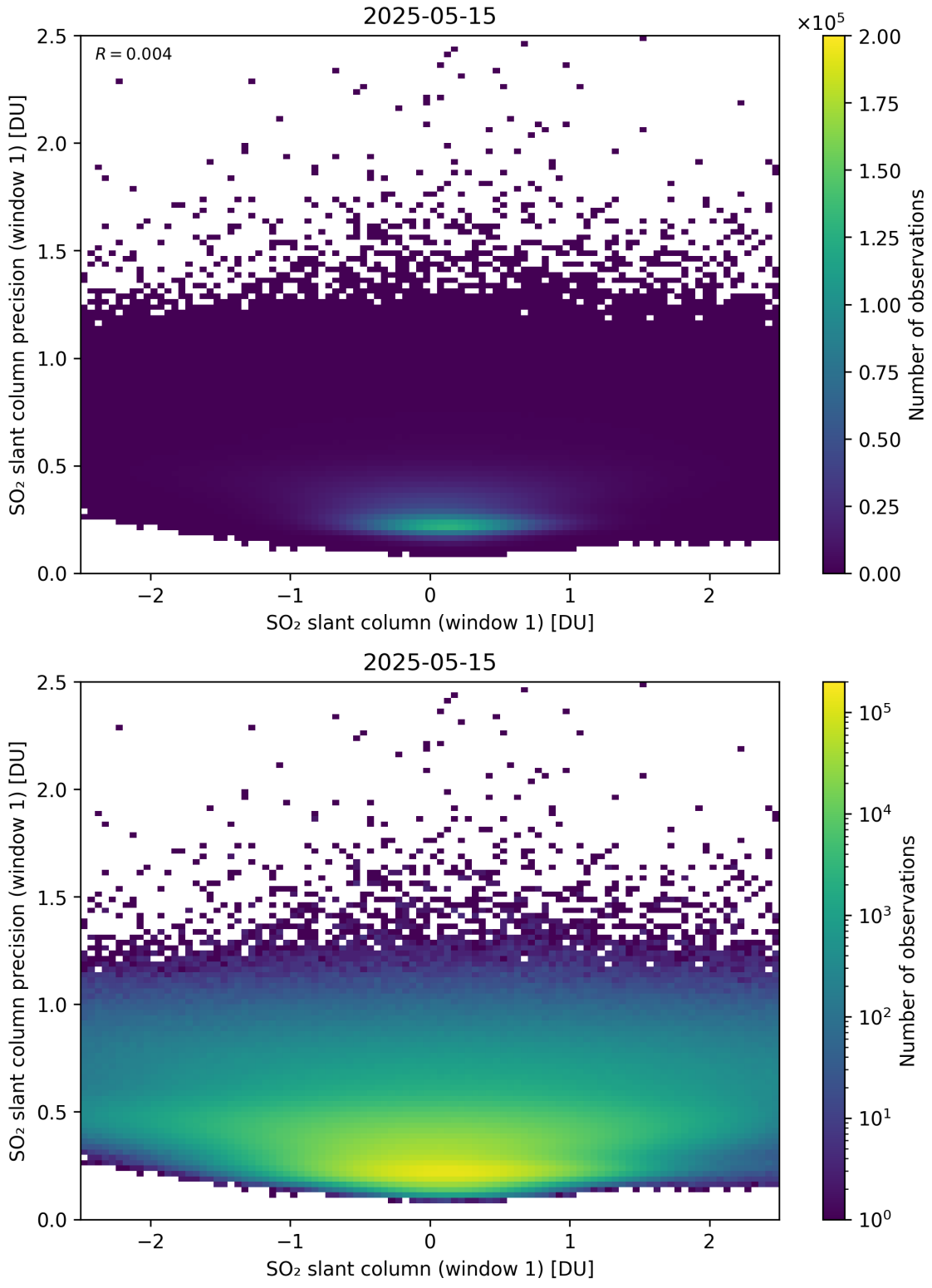


Figure 285: Scatter density plot of "SO_2 slant column (window 1)" against "SO_2 slant column precision (window 1)" for 2025-05-15 to 2025-05-16.

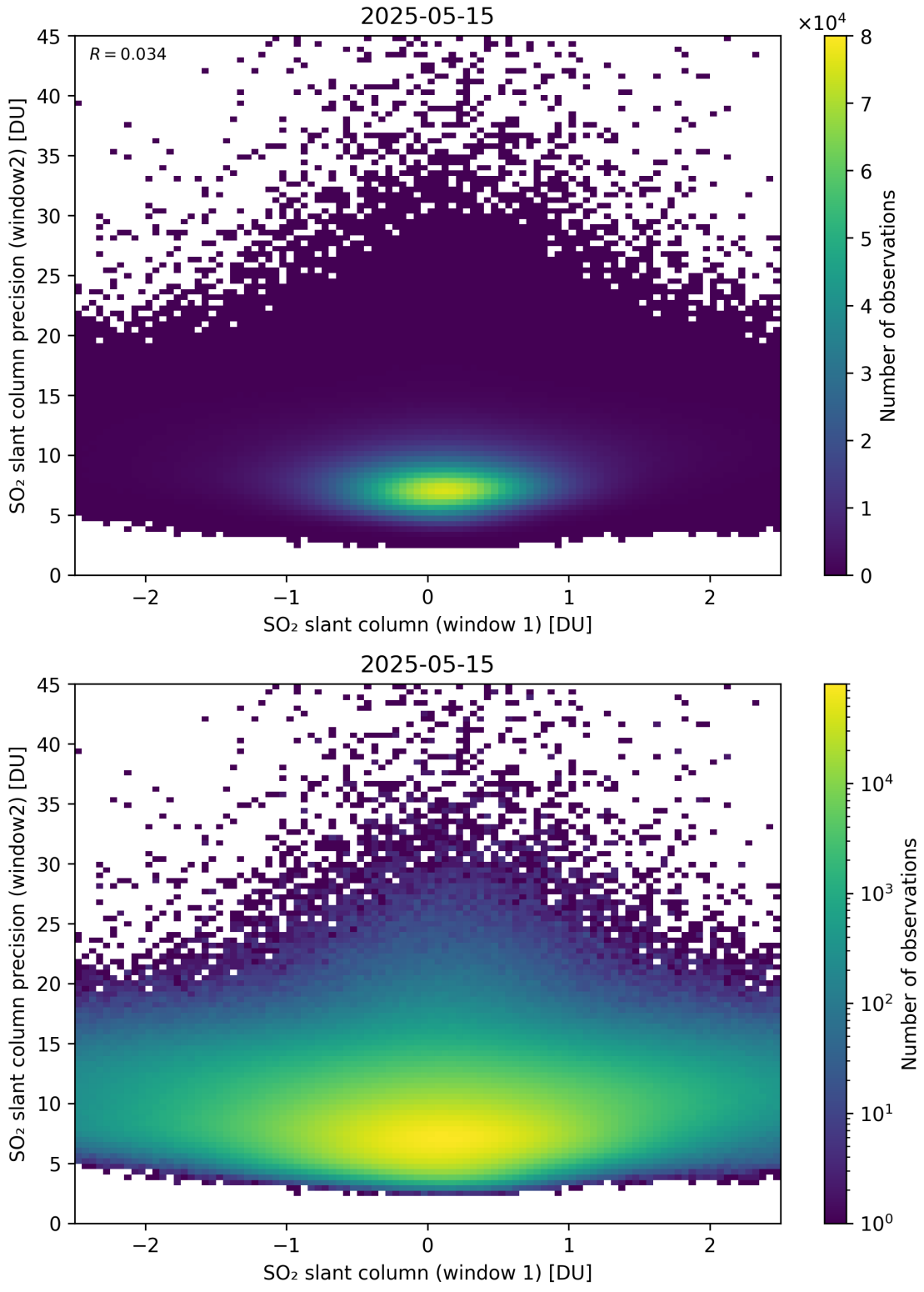


Figure 286: Scatter density plot of "SO_2 slant column (window 1)" against "SO_2 slant column precision (window2)" for 2025-05-15 to 2025-05-16.

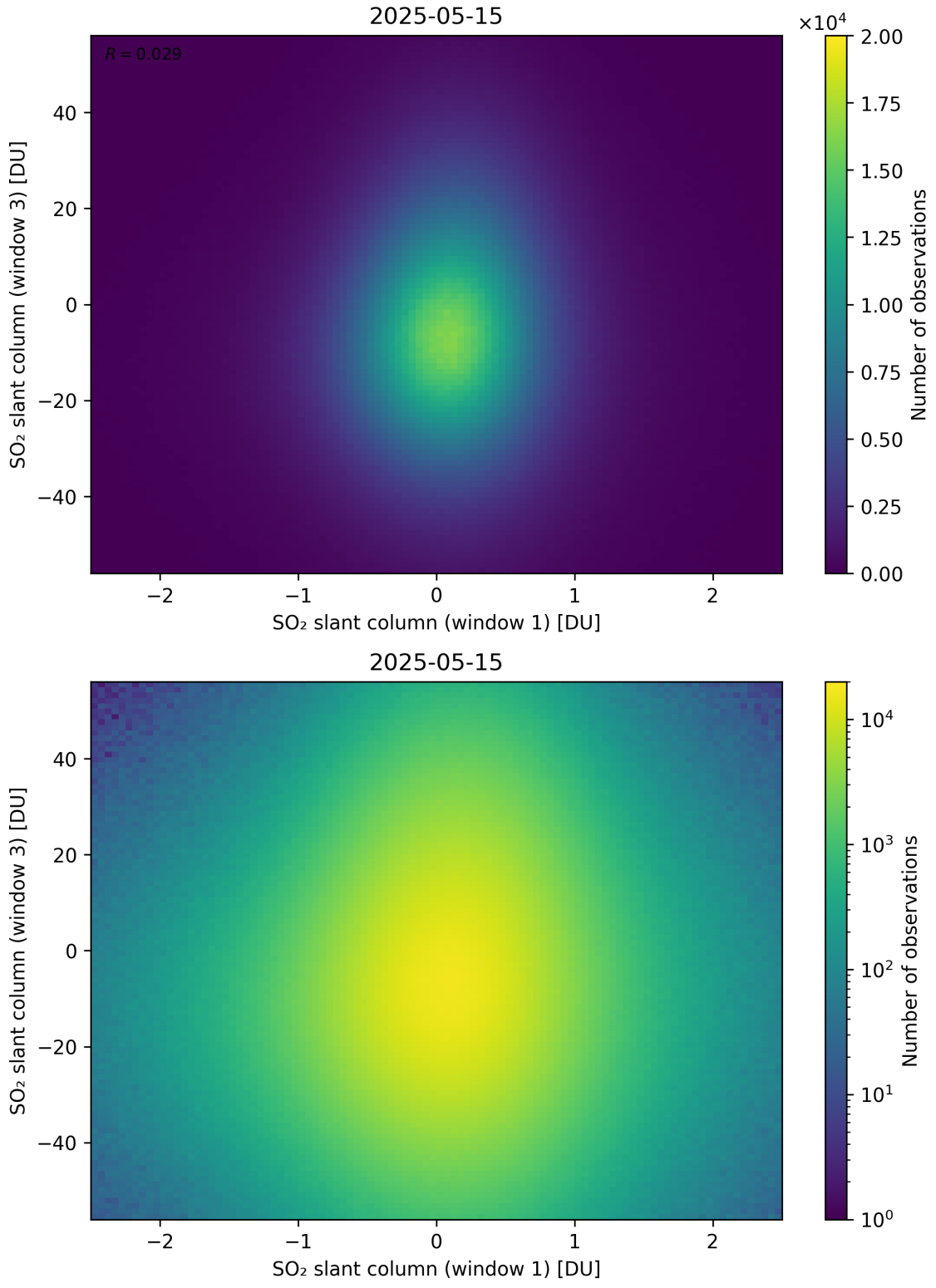


Figure 287: Scatter density plot of "SO_2 slant column (window 1)" against "SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

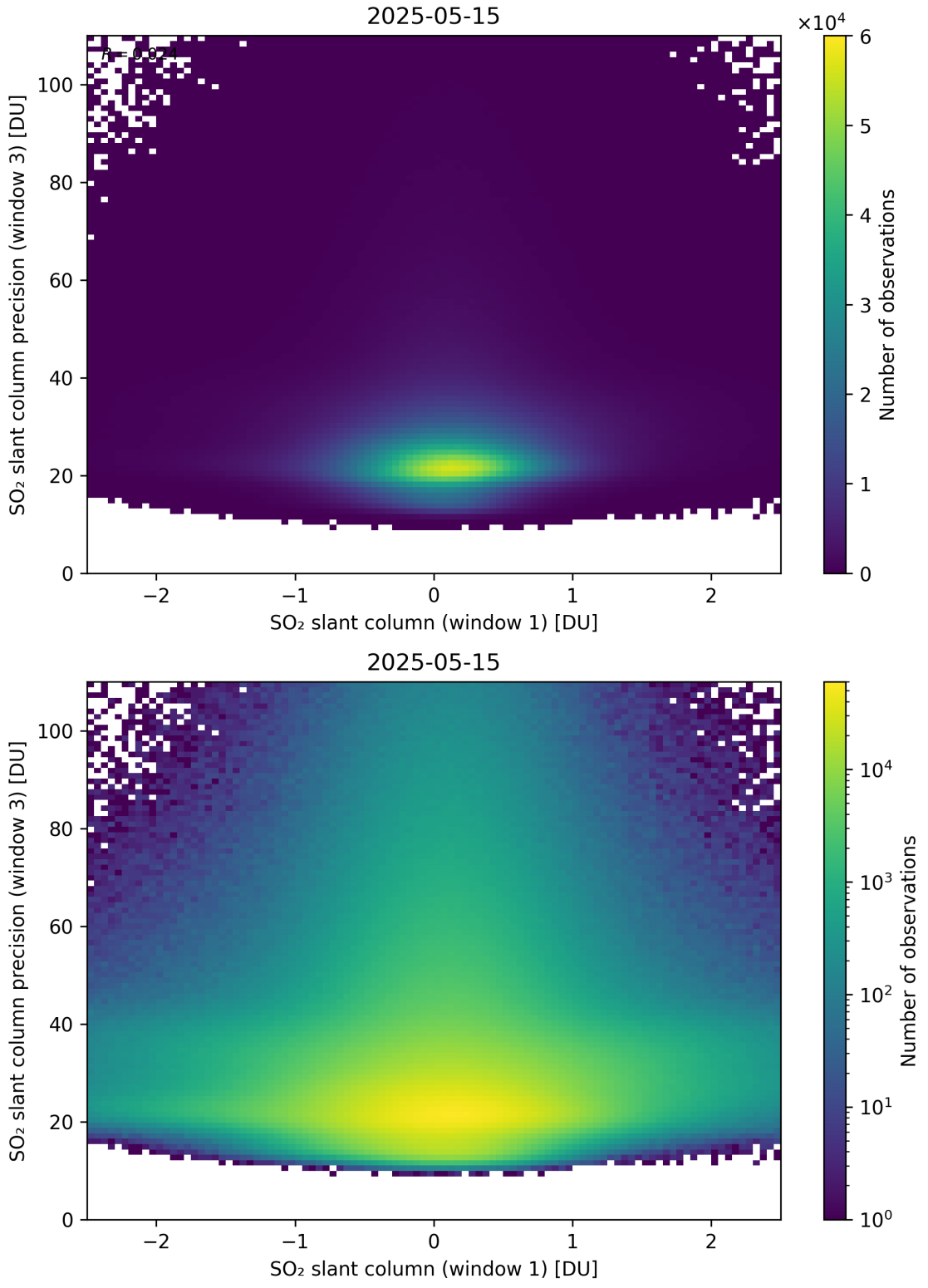


Figure 288: Scatter density plot of "SO_2 slant column (window 1)" against "SO_2 slant column precision (window 3)" for 2025-05-15 to 2025-05-16.

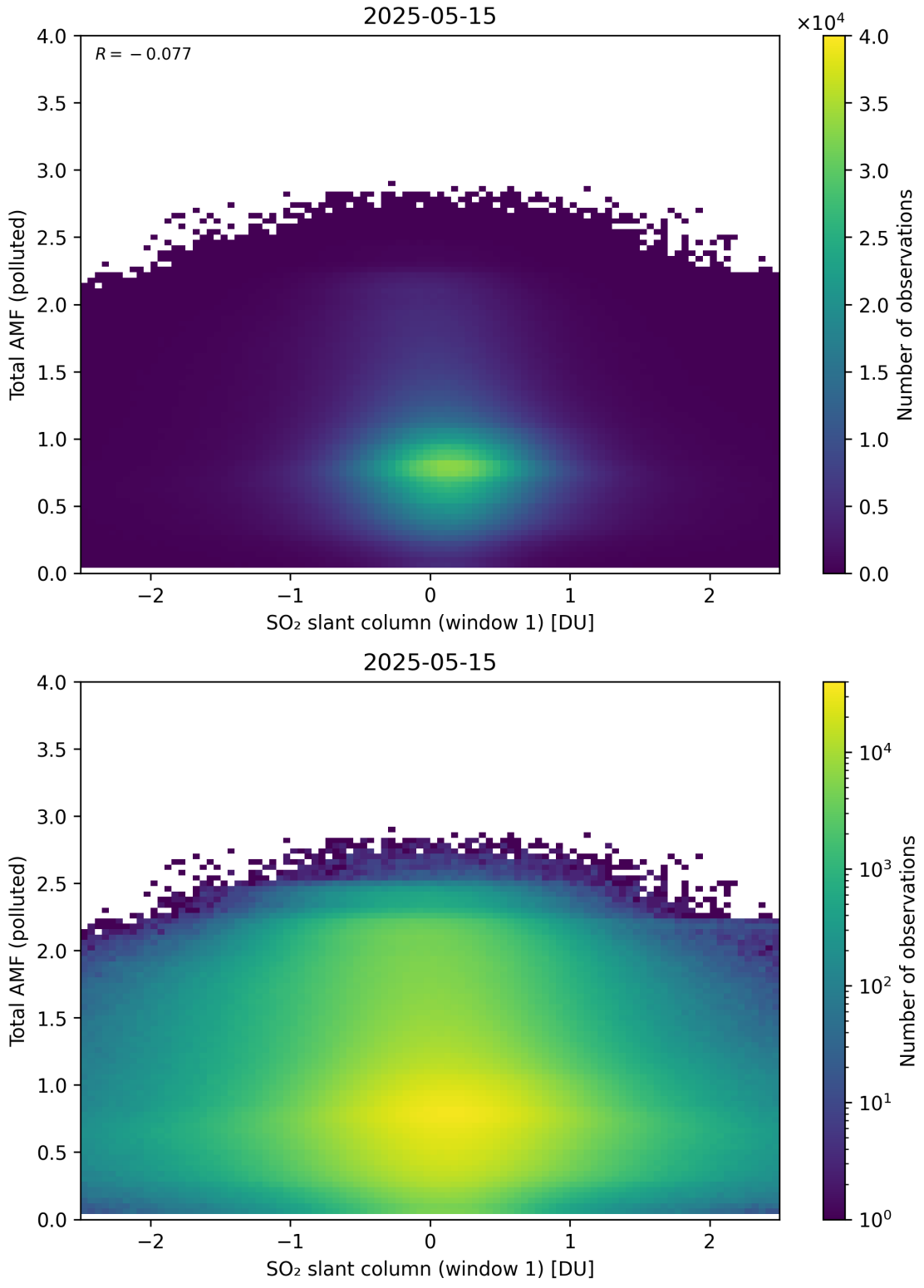


Figure 289: Scatter density plot of "SO_2 slant column (window 1)" against "Total AMF (polluted)" for 2025-05-15 to 2025-05-16.

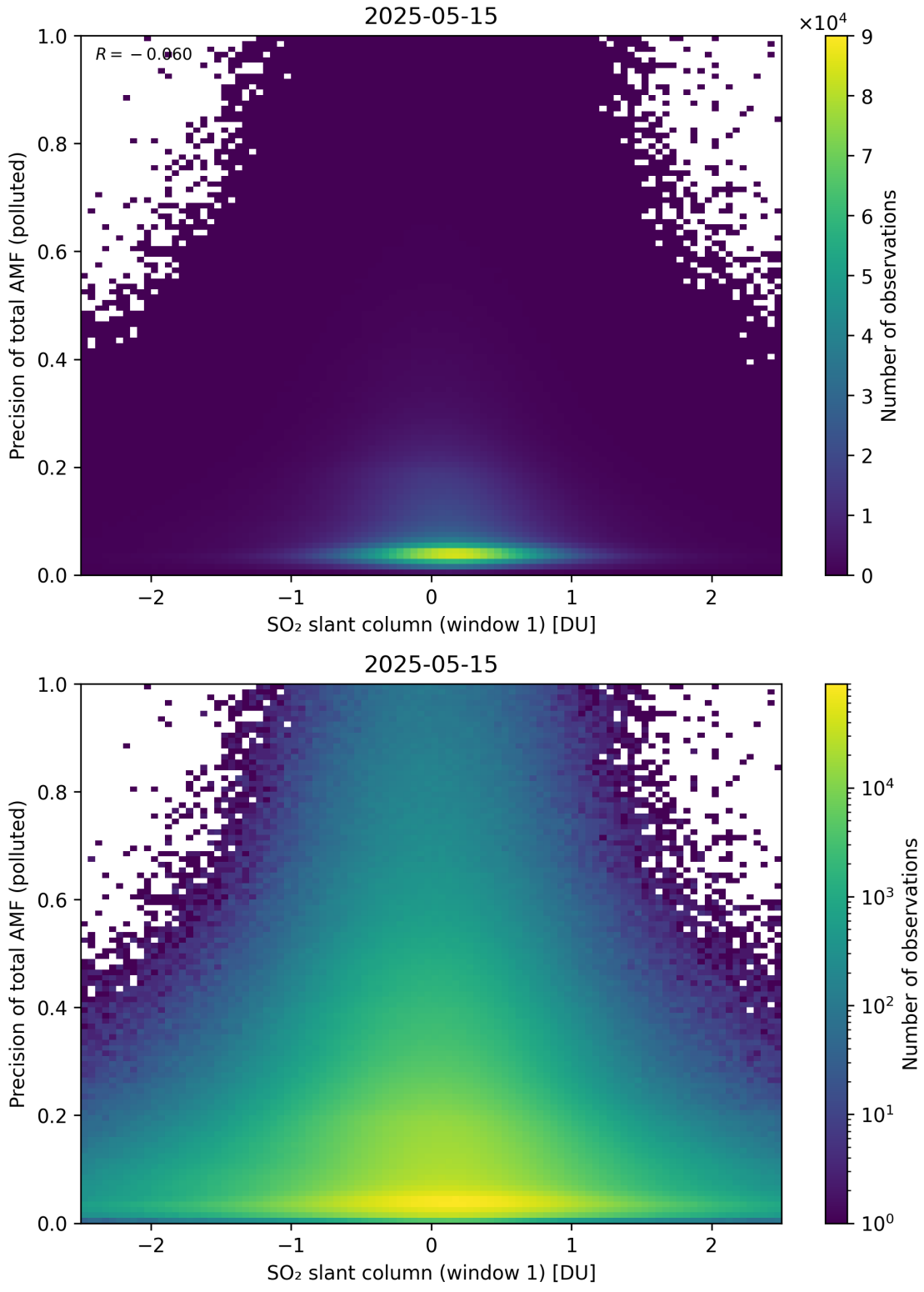


Figure 290: Scatter density plot of "SO_2 slant column (window 1)" against "Precision of total AMF (polluted)" for 2025-05-15 to 2025-05-16.

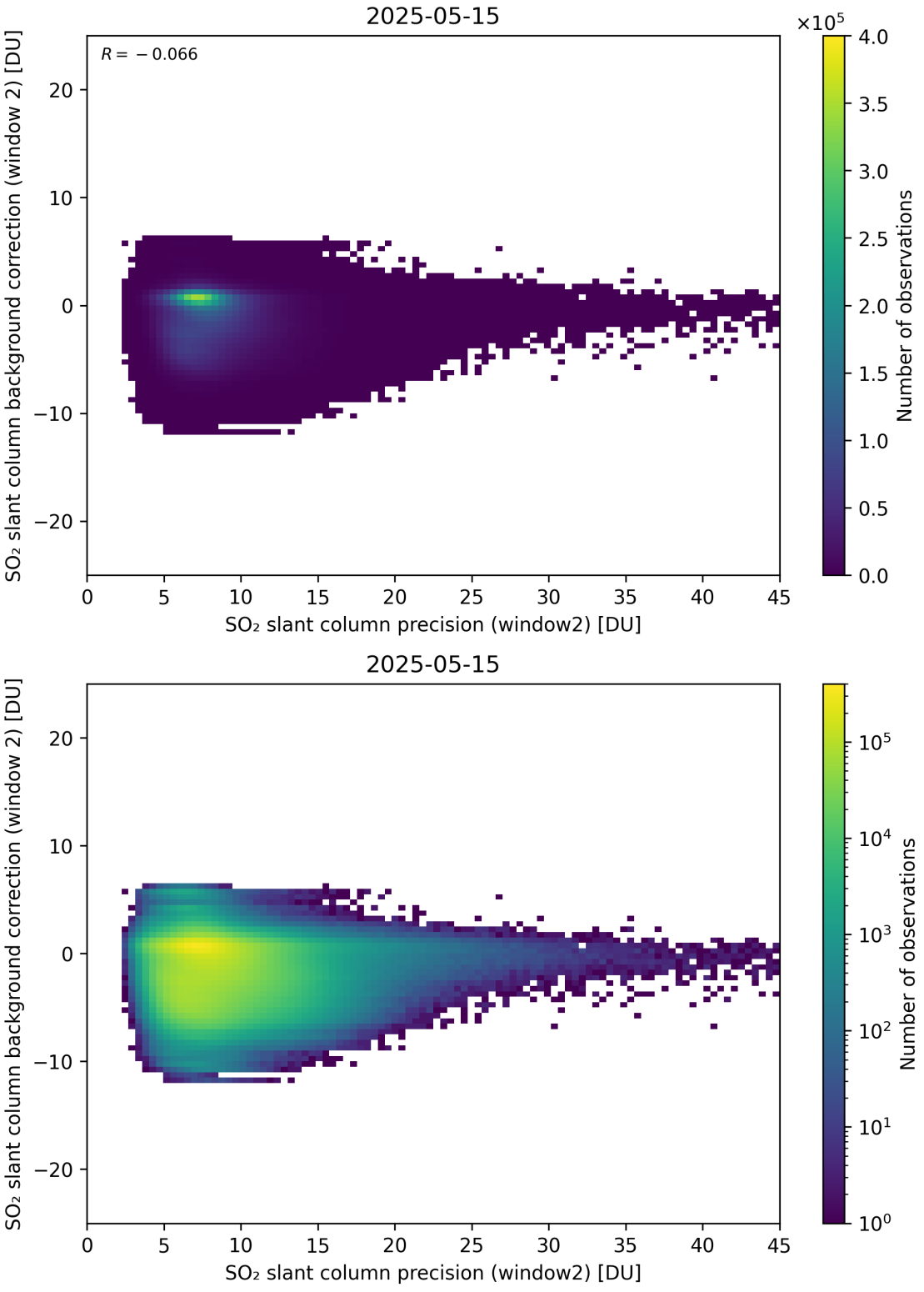


Figure 291: Scatter density plot of "SO_2 slant column precision (window2)" against "SO_2 slant column background correction (window 2)" for 2025-05-15 to 2025-05-16.

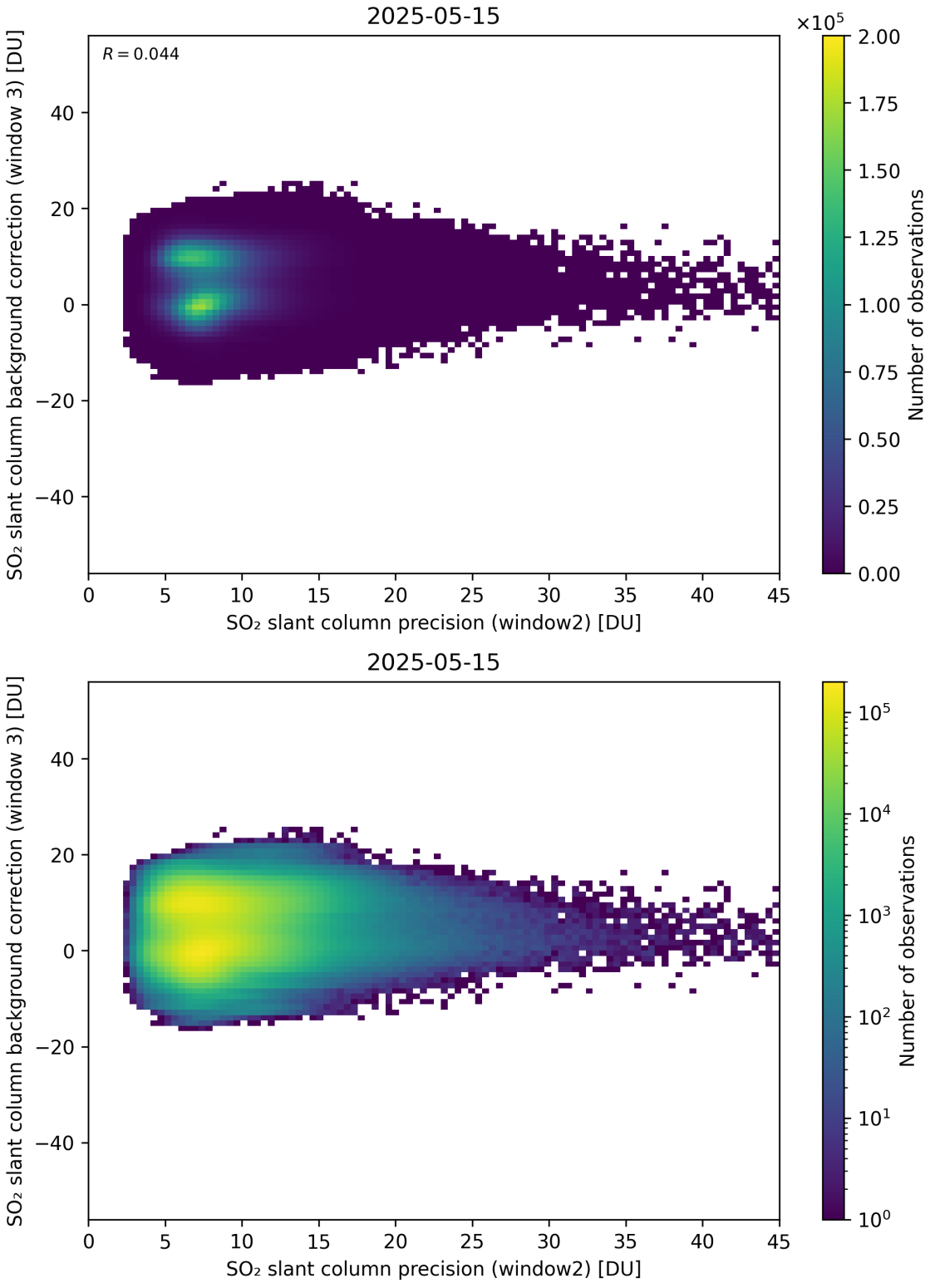


Figure 292: Scatter density plot of "SO_2 slant column precision (window2)" against "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16.

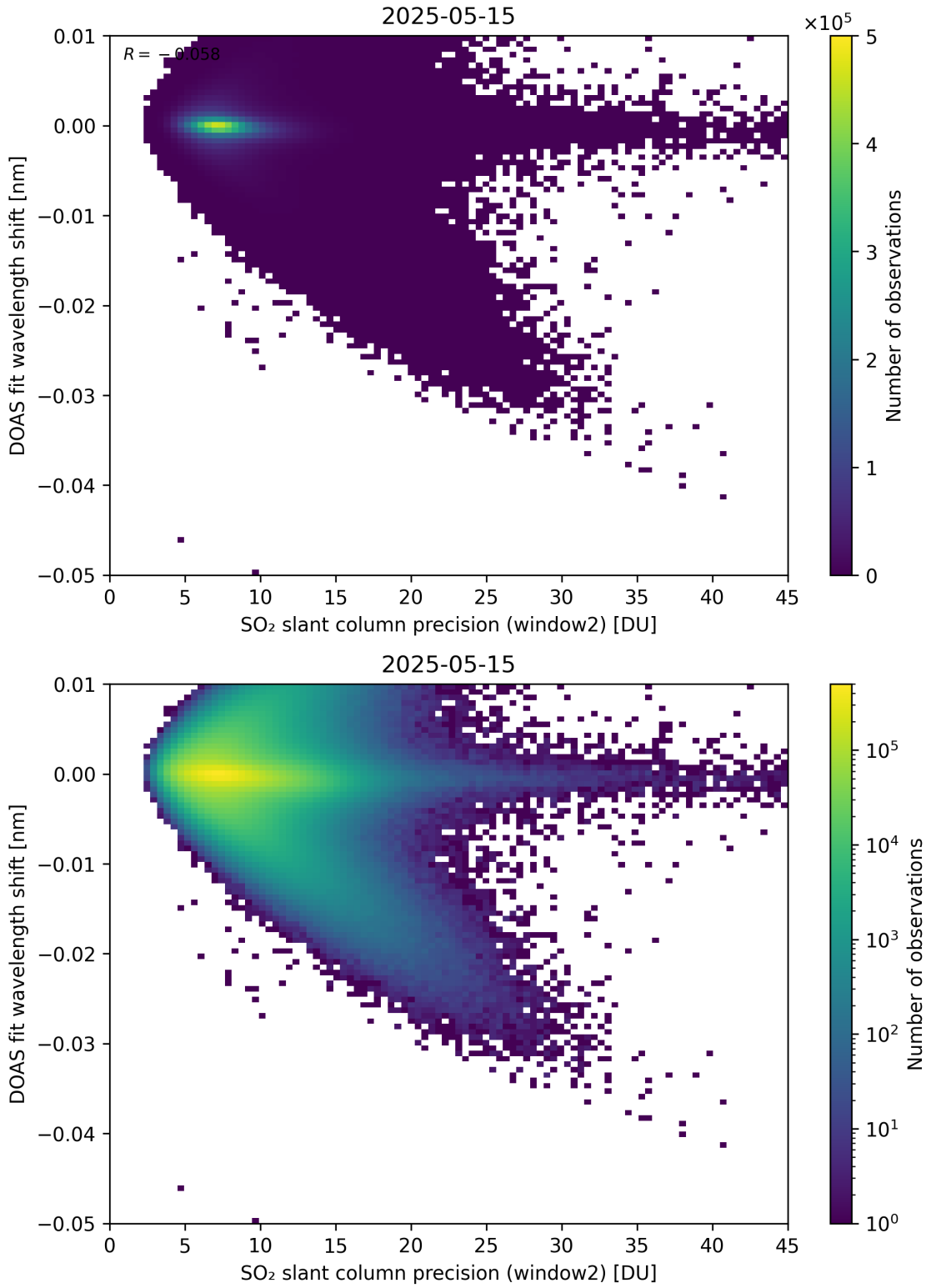


Figure 293: Scatter density plot of "SO_2 slant column precision (window2)" against "DOAS fit wavelength shift" for 2025-05-15 to 2025-05-16.

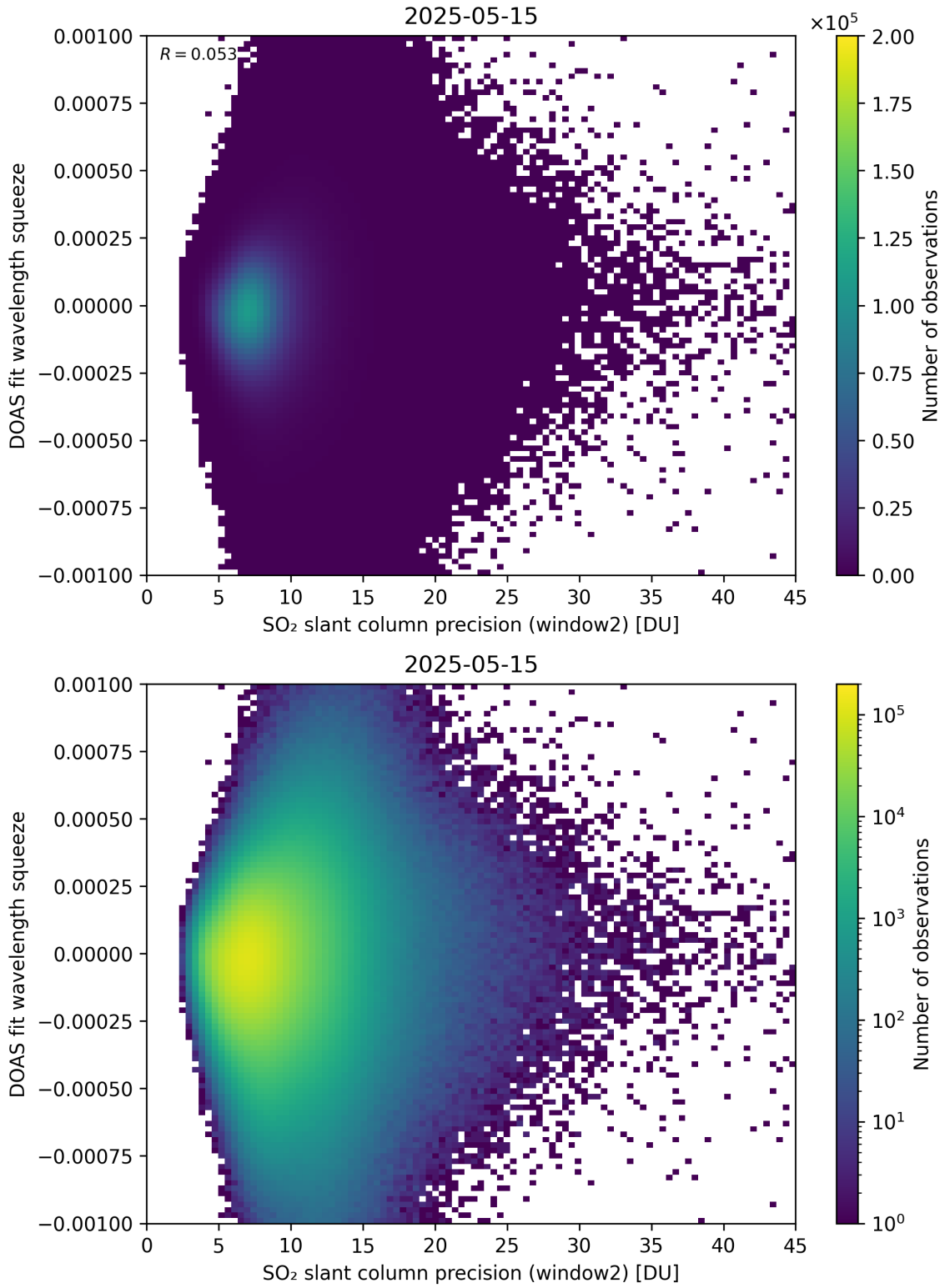


Figure 294: Scatter density plot of "SO_2 slant column precision (window2)" against "DOAS fit wavelength squeeze" for 2025-05-15 to 2025-05-16.

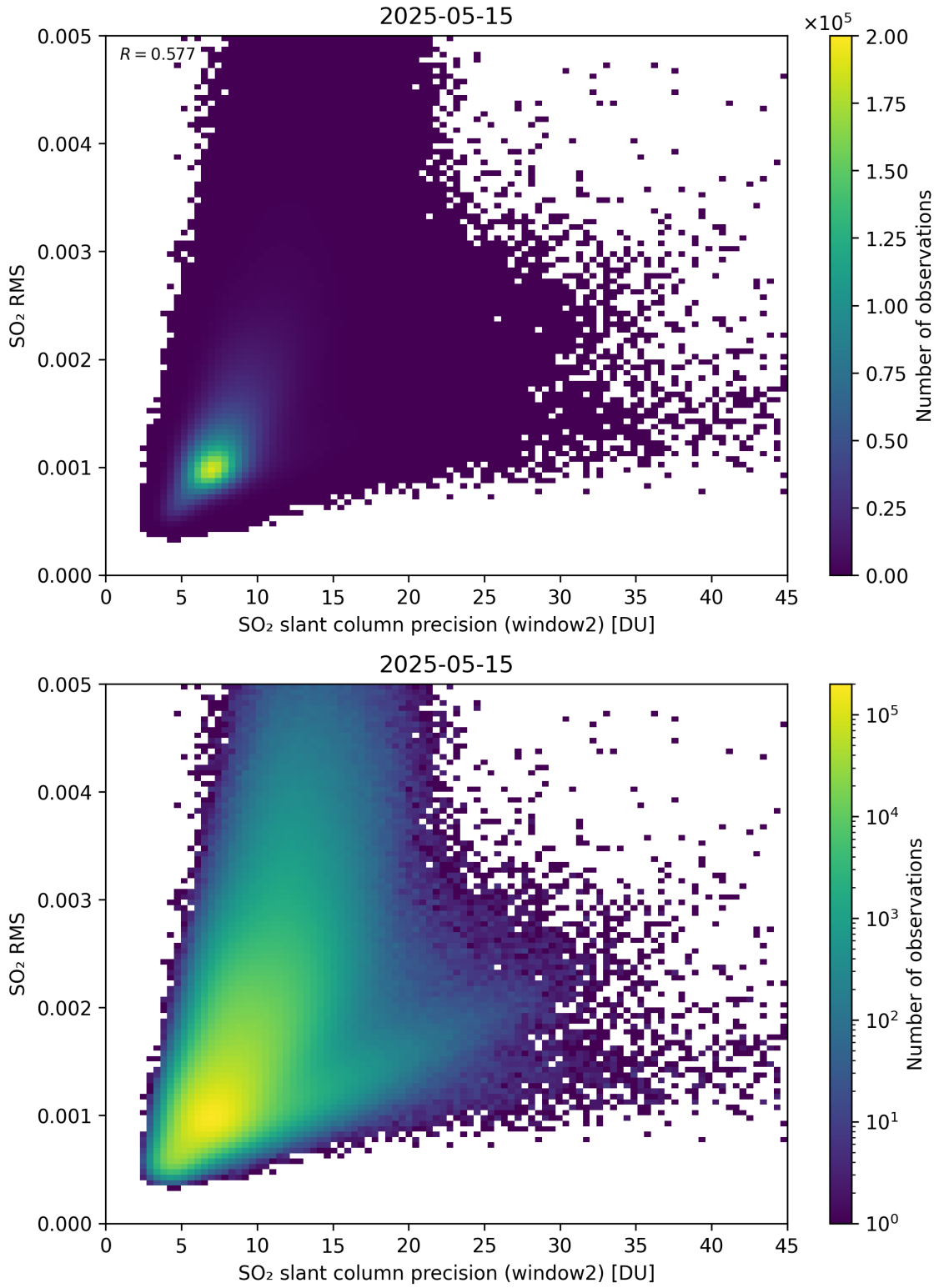


Figure 295: Scatter density plot of "SO_2 slant column precision (window2)" against "SO_2 RMS" for 2025-05-15 to 2025-05-16.

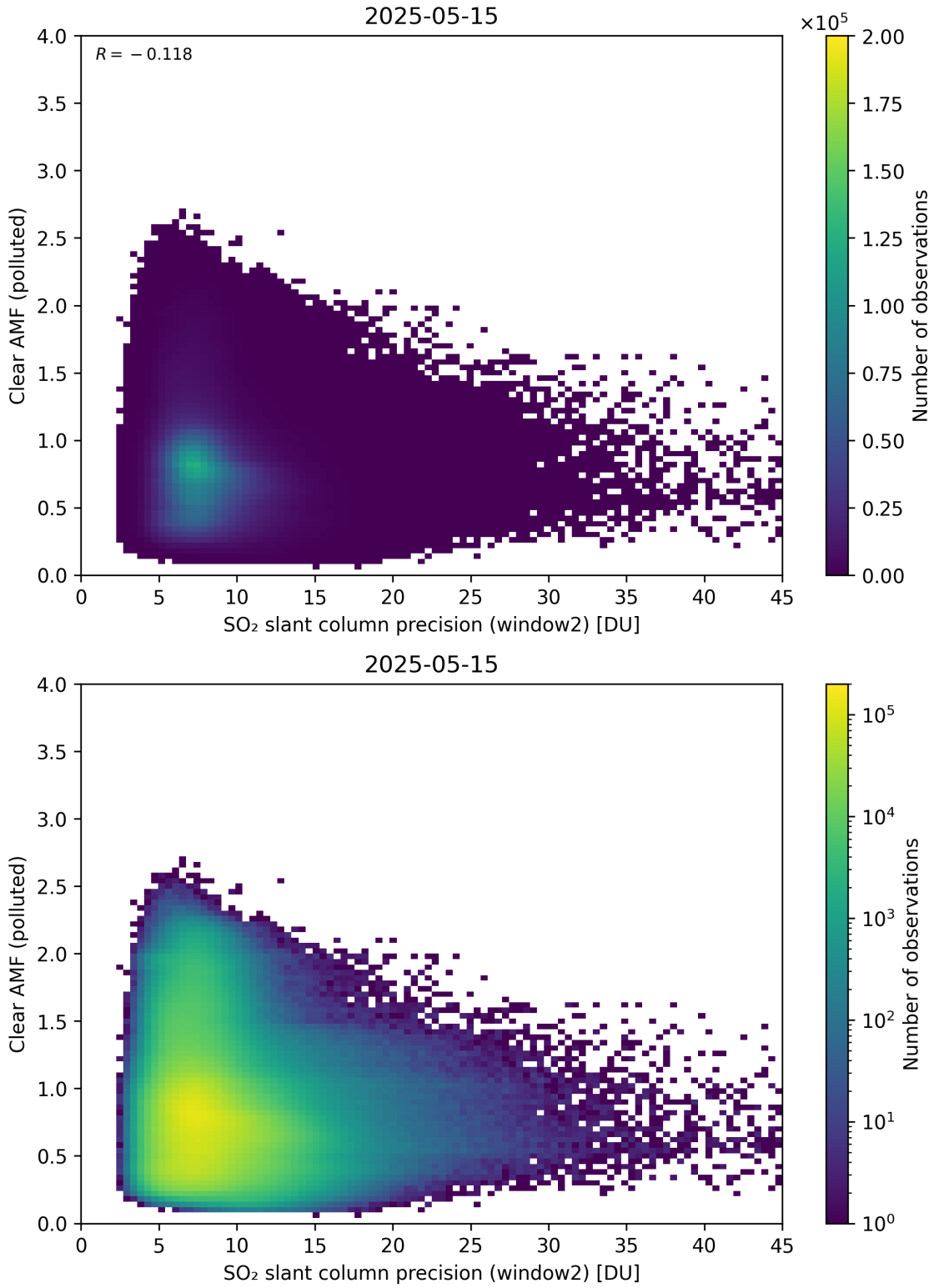


Figure 296: Scatter density plot of "SO_2 slant column precision (window2)" against "Clear AMF (polluted)" for 2025-05-15 to 2025-05-16.

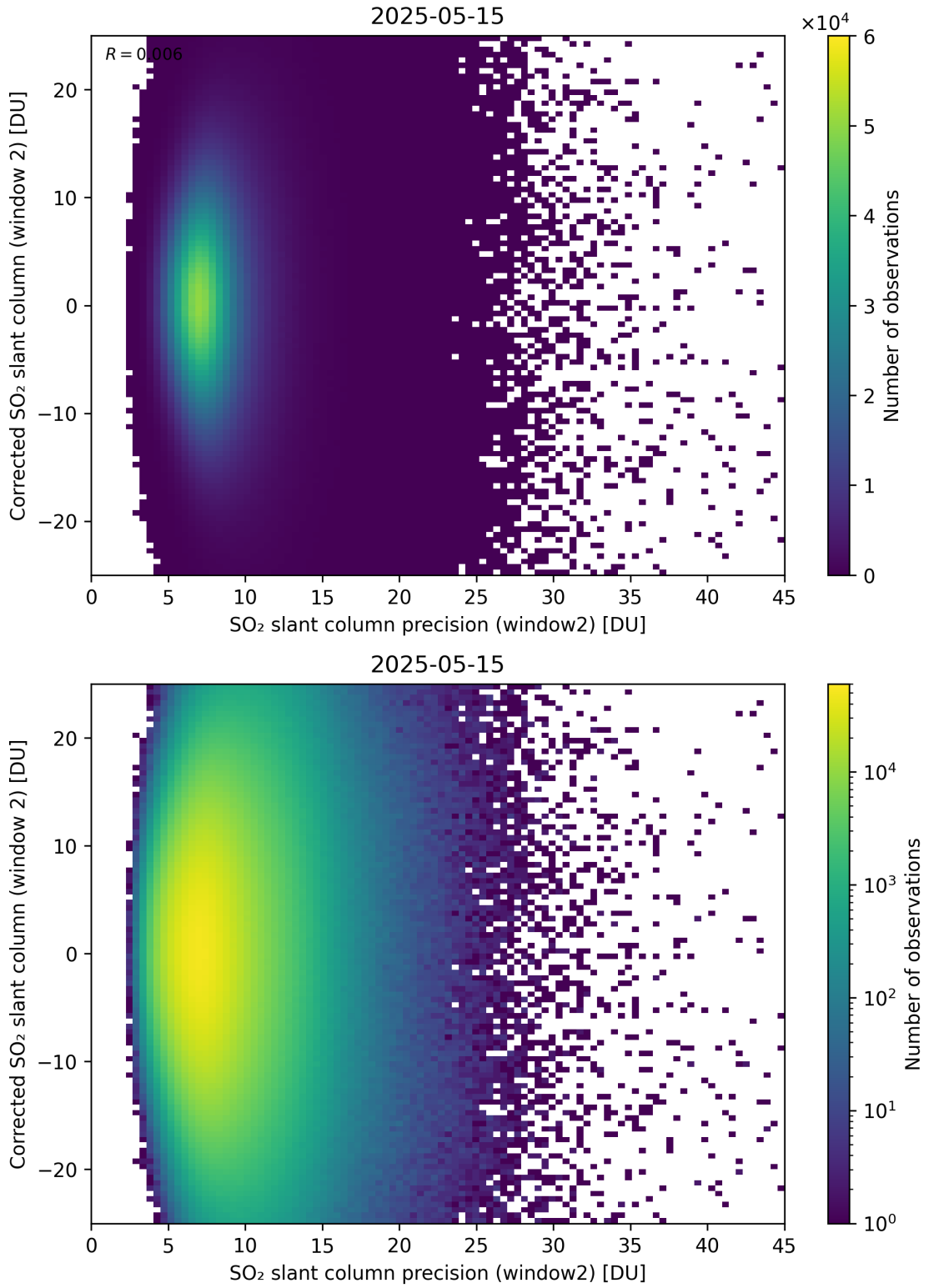


Figure 297: Scatter density plot of "SO_2 slant column precision (window2)" against "Corrected SO_2 slant column (window 2)" for 2025-05-15 to 2025-05-16.

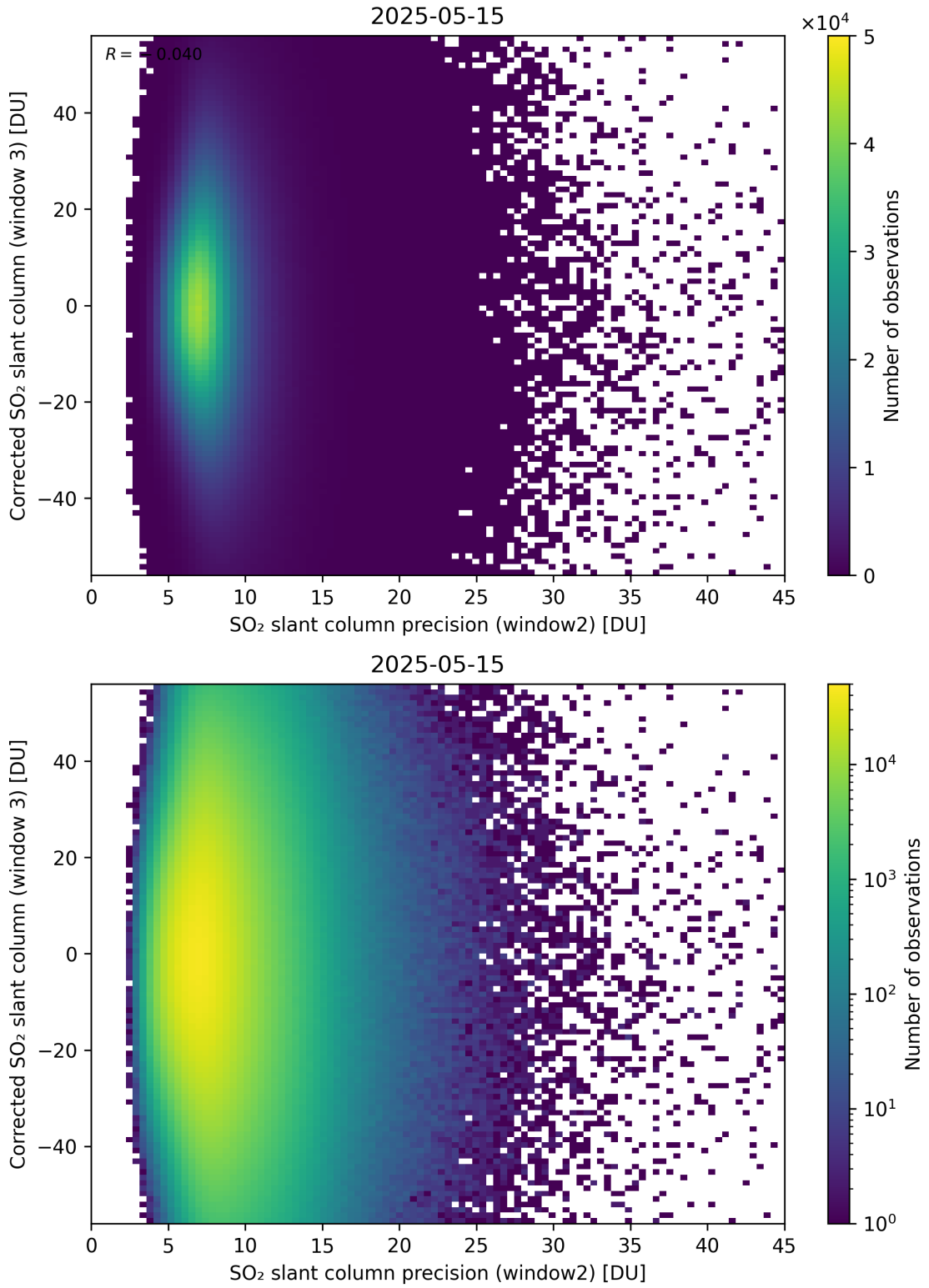


Figure 298: Scatter density plot of "SO_2 slant column precision (window2)" against "Corrected SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

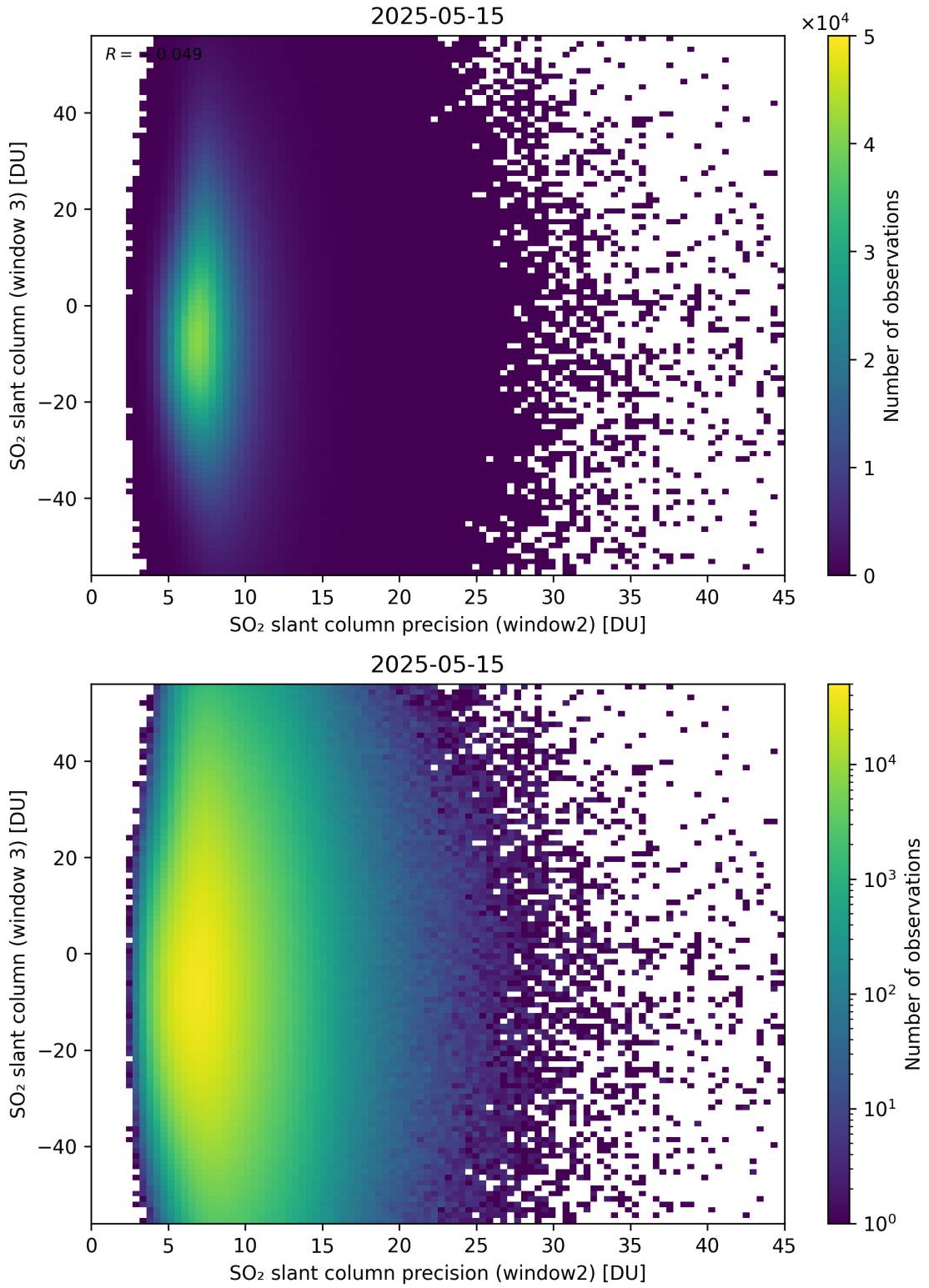


Figure 299: Scatter density plot of "SO_2 slant column precision (window2)" against "SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

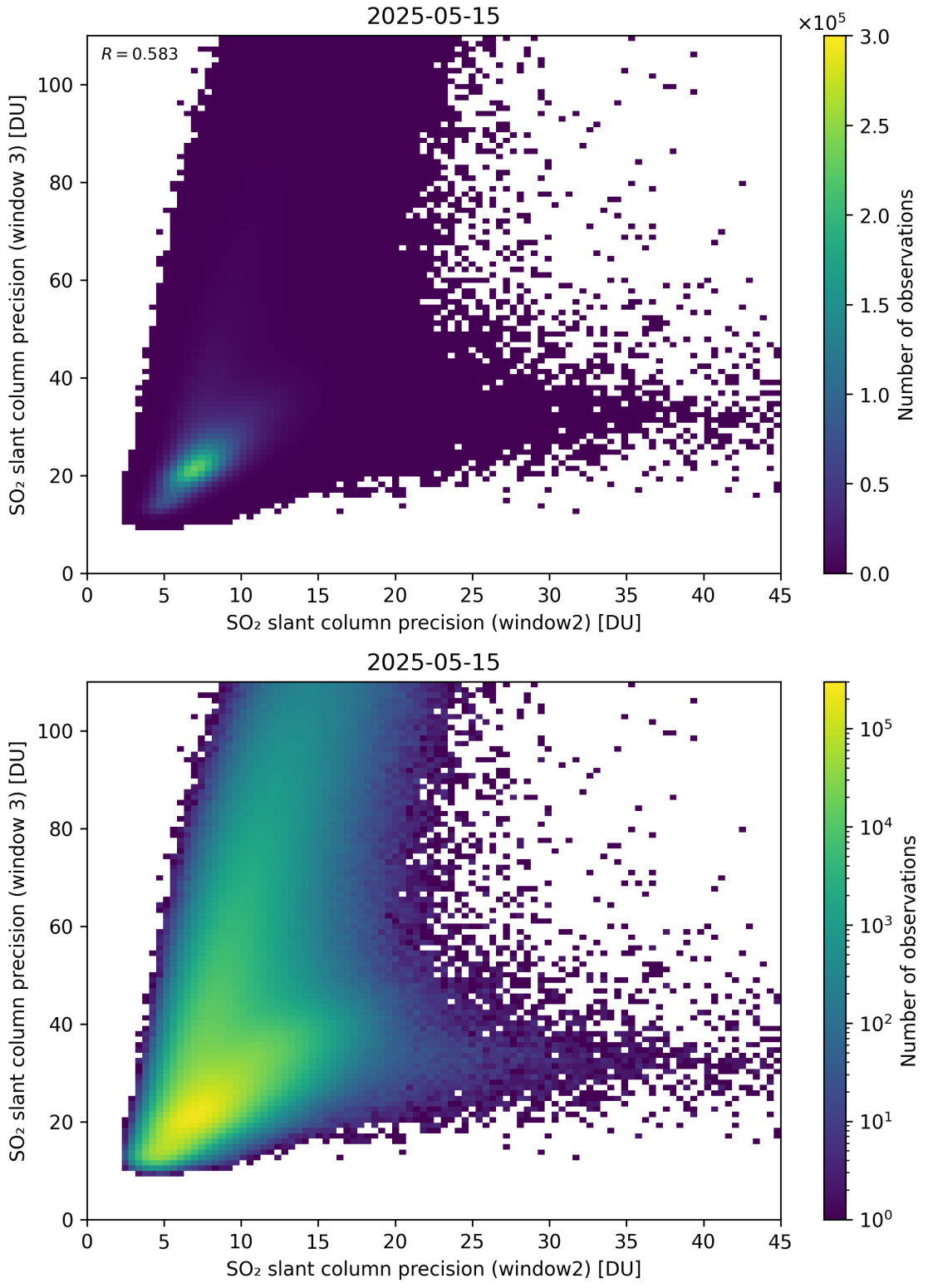


Figure 300: Scatter density plot of "SO_2 slant column precision (window2)" against "SO_2 slant column precision (window 3)" for 2025-05-15 to 2025-05-16.

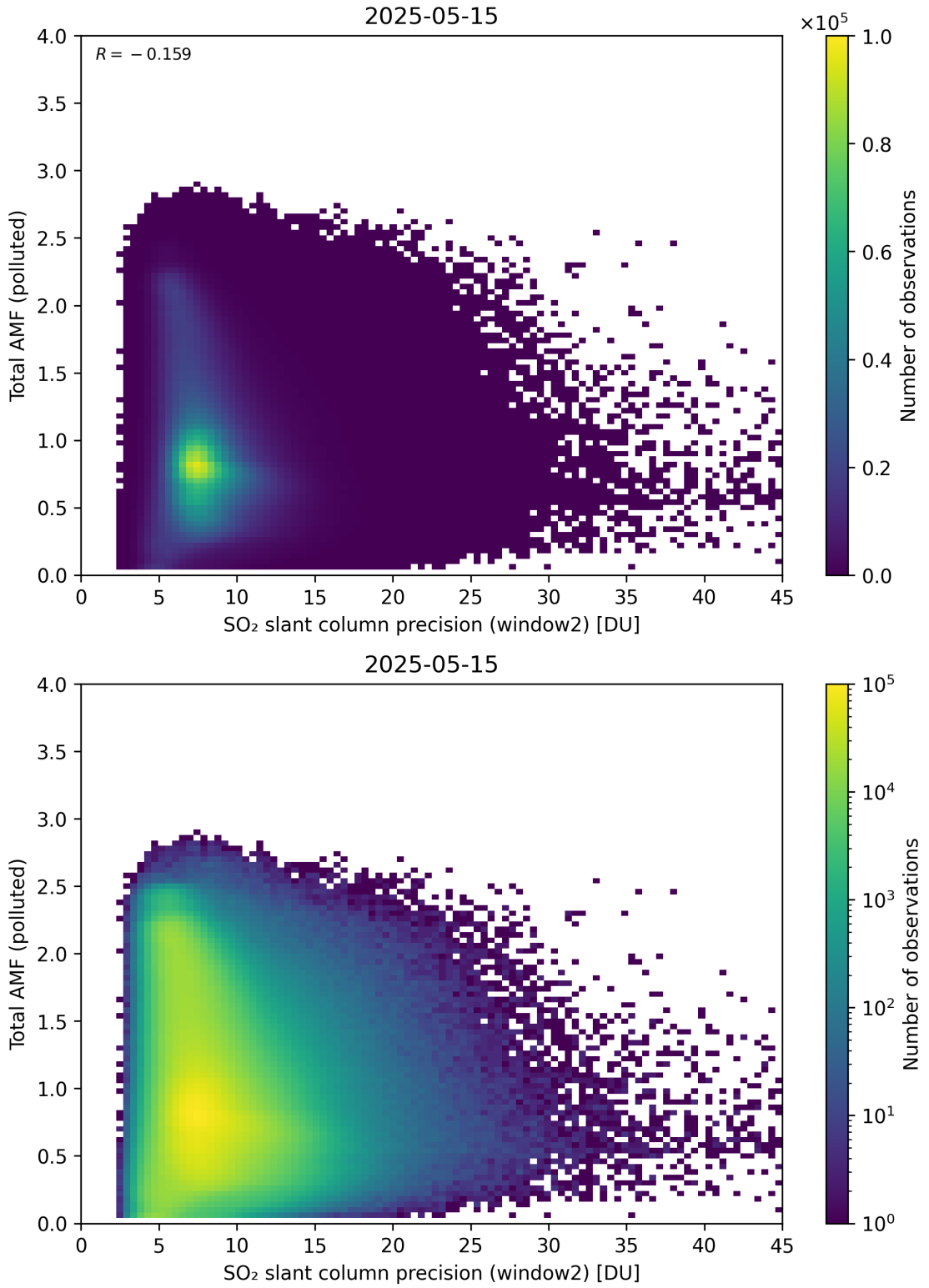


Figure 301: Scatter density plot of "SO_2 slant column precision (window2)" against "Total AMF (polluted)" for 2025-05-15 to 2025-05-16.

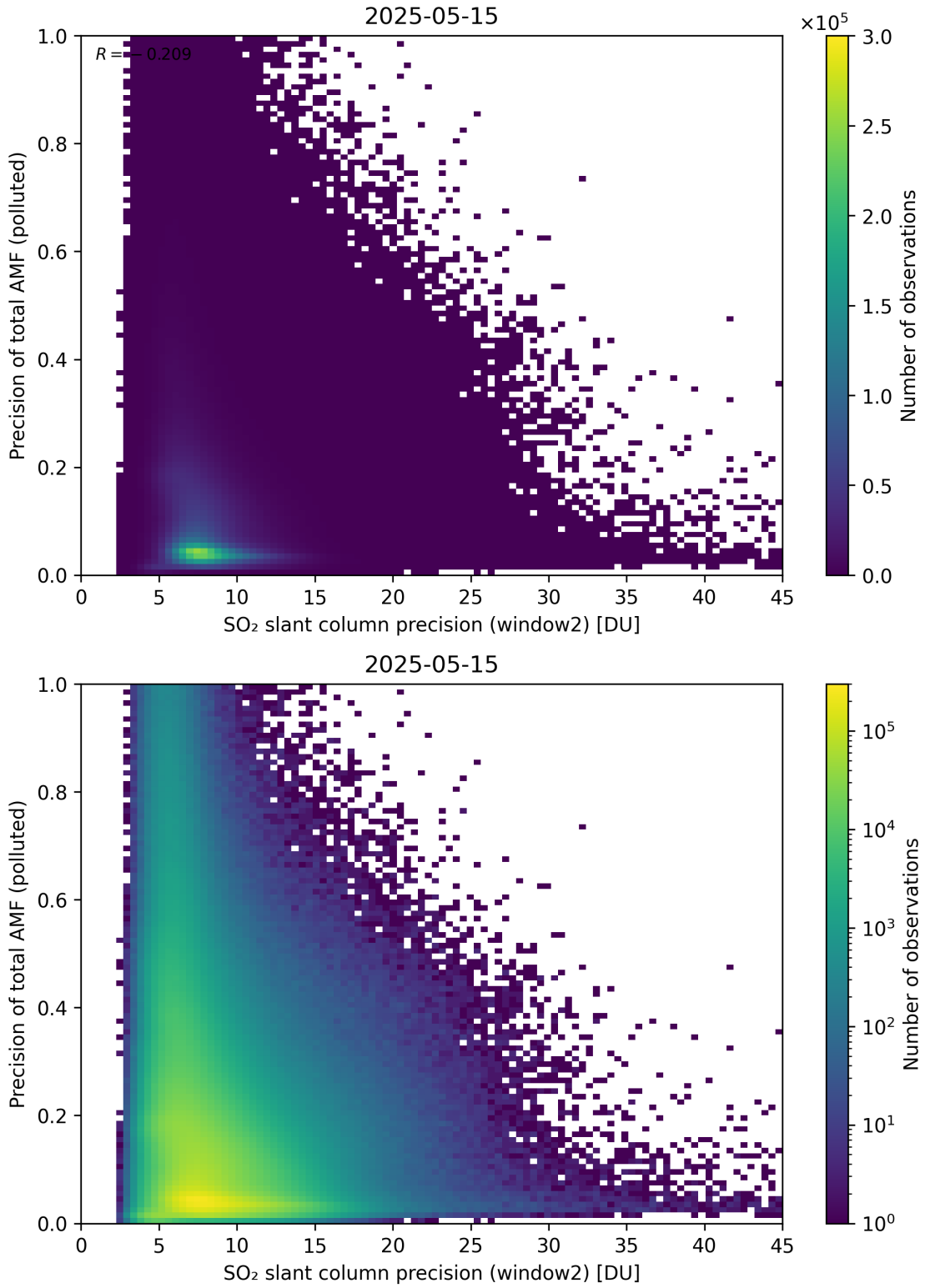


Figure 302: Scatter density plot of "SO_2 slant column precision (window2)" against "Precision of total AMF (polluted)" for 2025-05-15 to 2025-05-16.

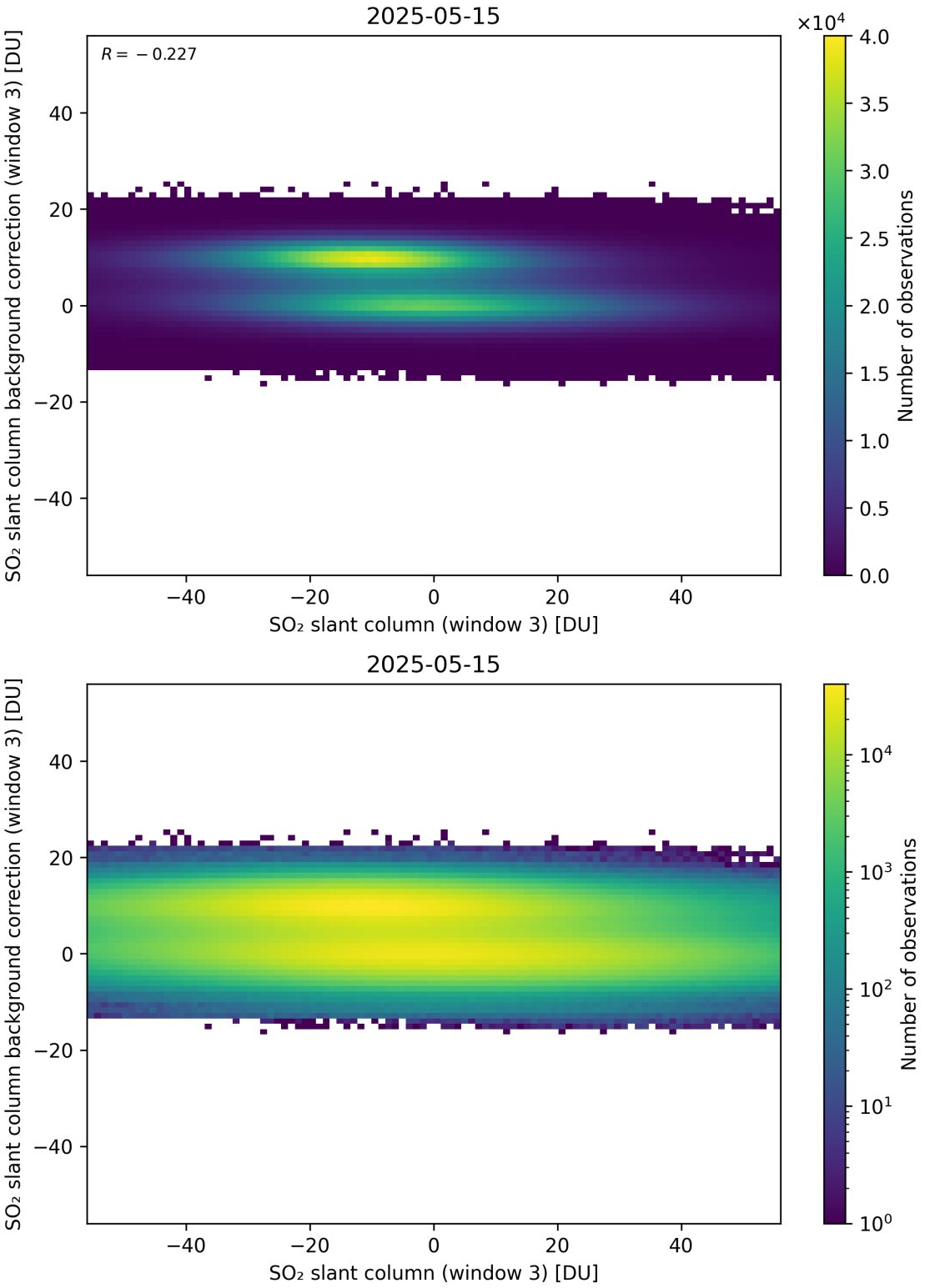


Figure 303: Scatter density plot of "SO_2 slant column (window 3)" against "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16.

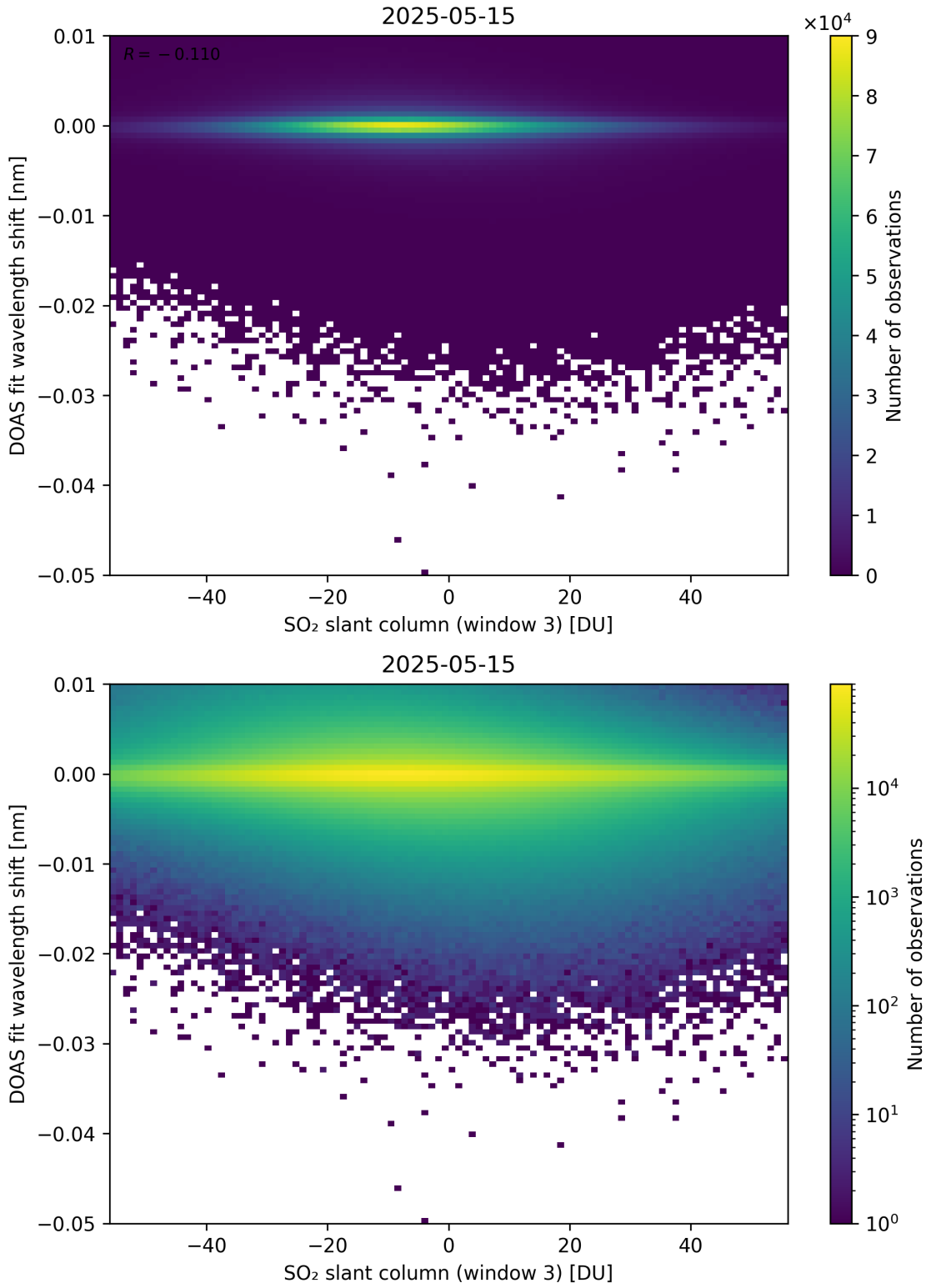


Figure 304: Scatter density plot of "SO_2 slant column (window 3)" against "DOAS fit wavelength shift" for 2025-05-15 to 2025-05-16.

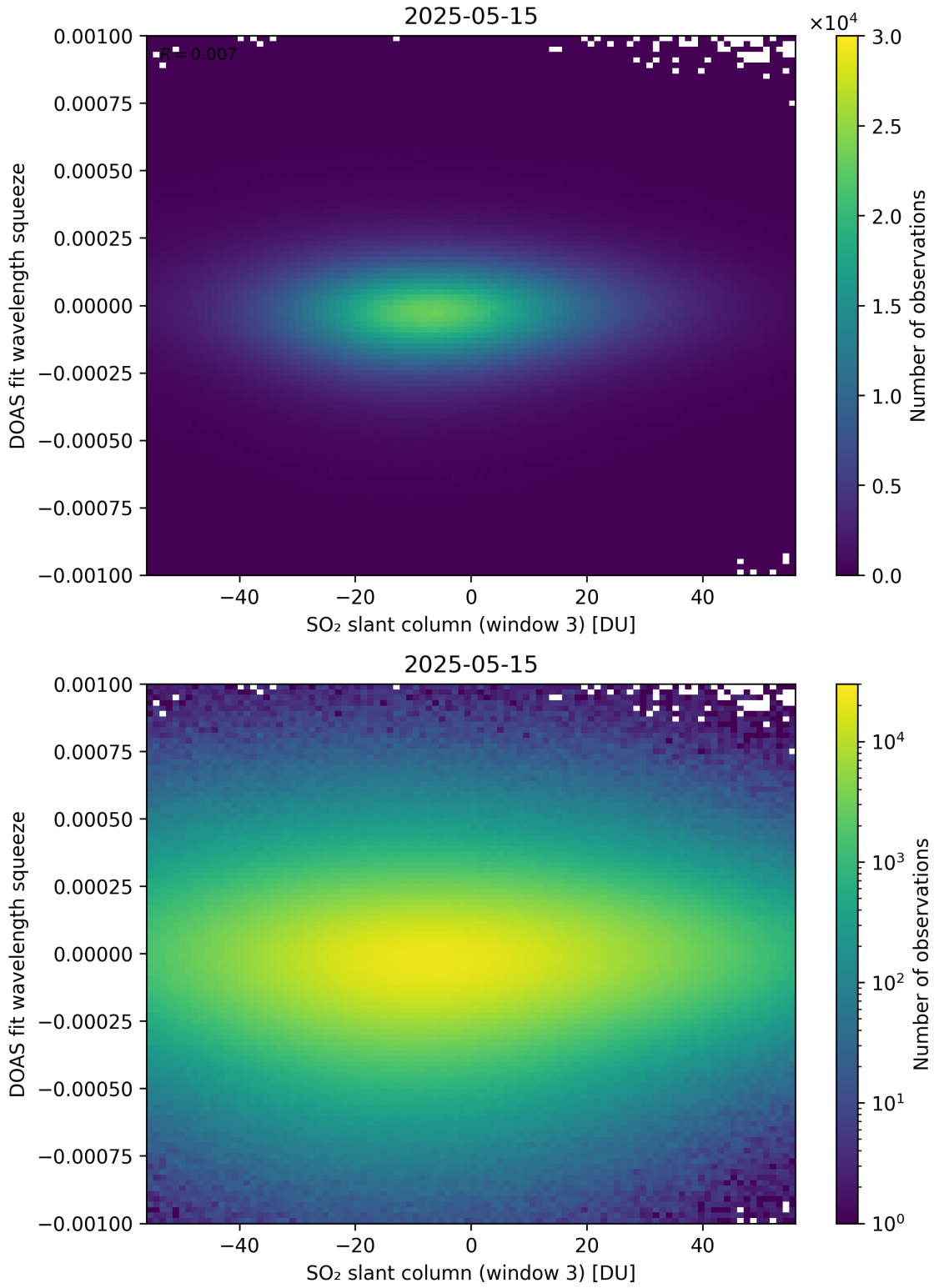


Figure 305: Scatter density plot of "SO_2 slant column (window 3)" against "DOAS fit wavelength squeeze" for 2025-05-15 to 2025-05-16.

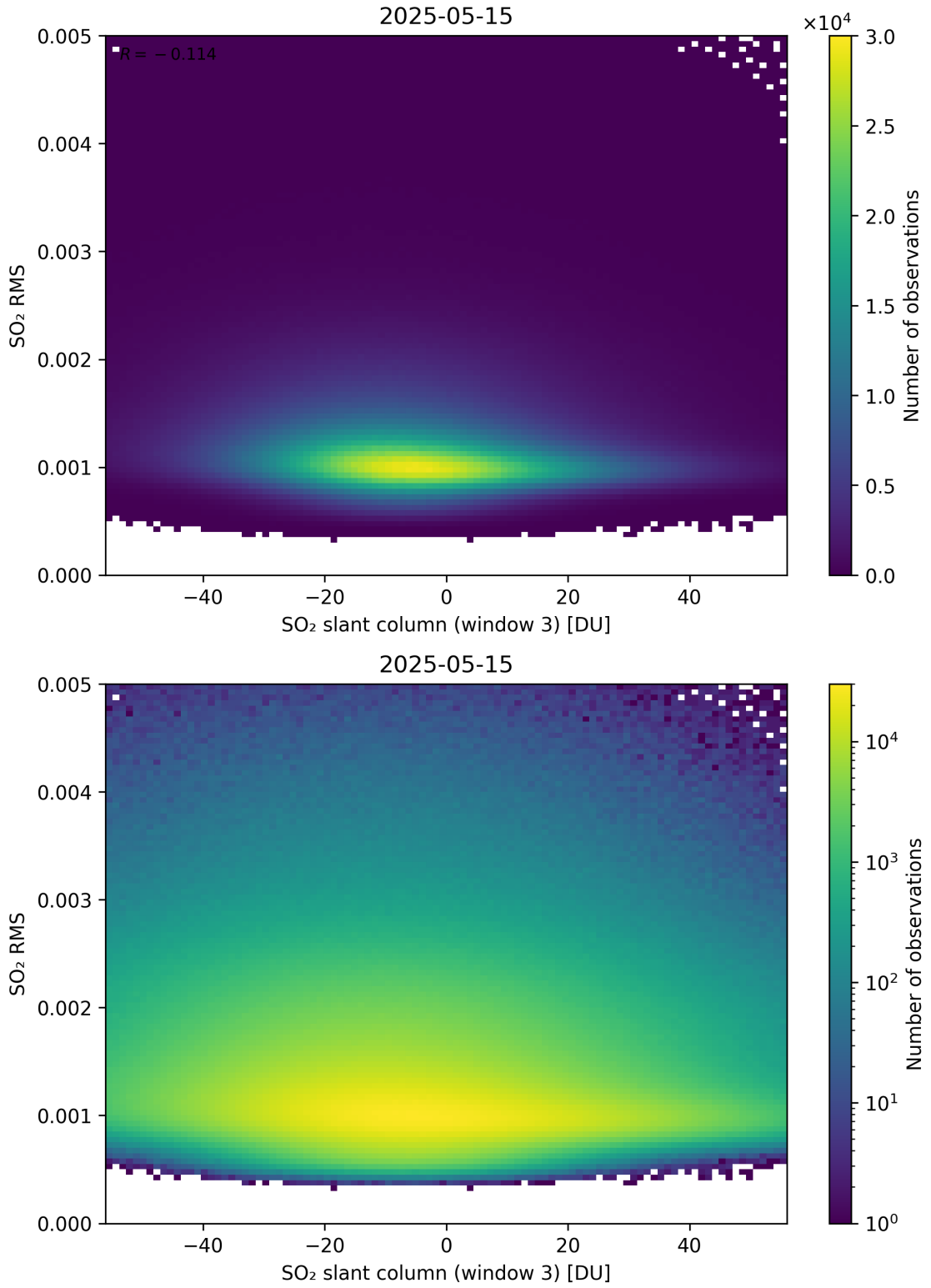


Figure 306: Scatter density plot of "SO_2 slant column (window 3)" against "SO_2 RMS" for 2025-05-15 to 2025-05-16.

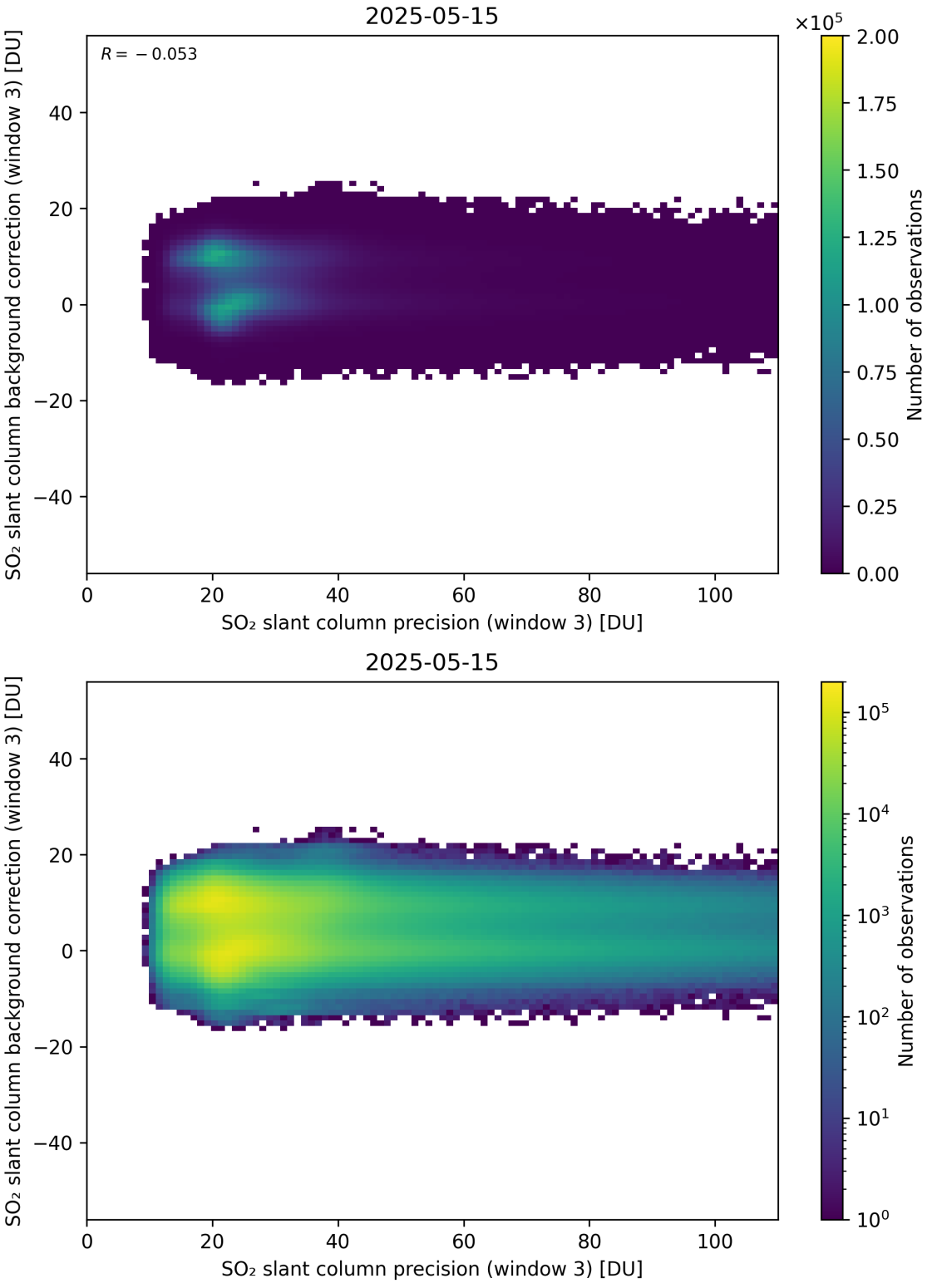


Figure 307: Scatter density plot of "SO_2 slant column precision (window 3)" against "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16.

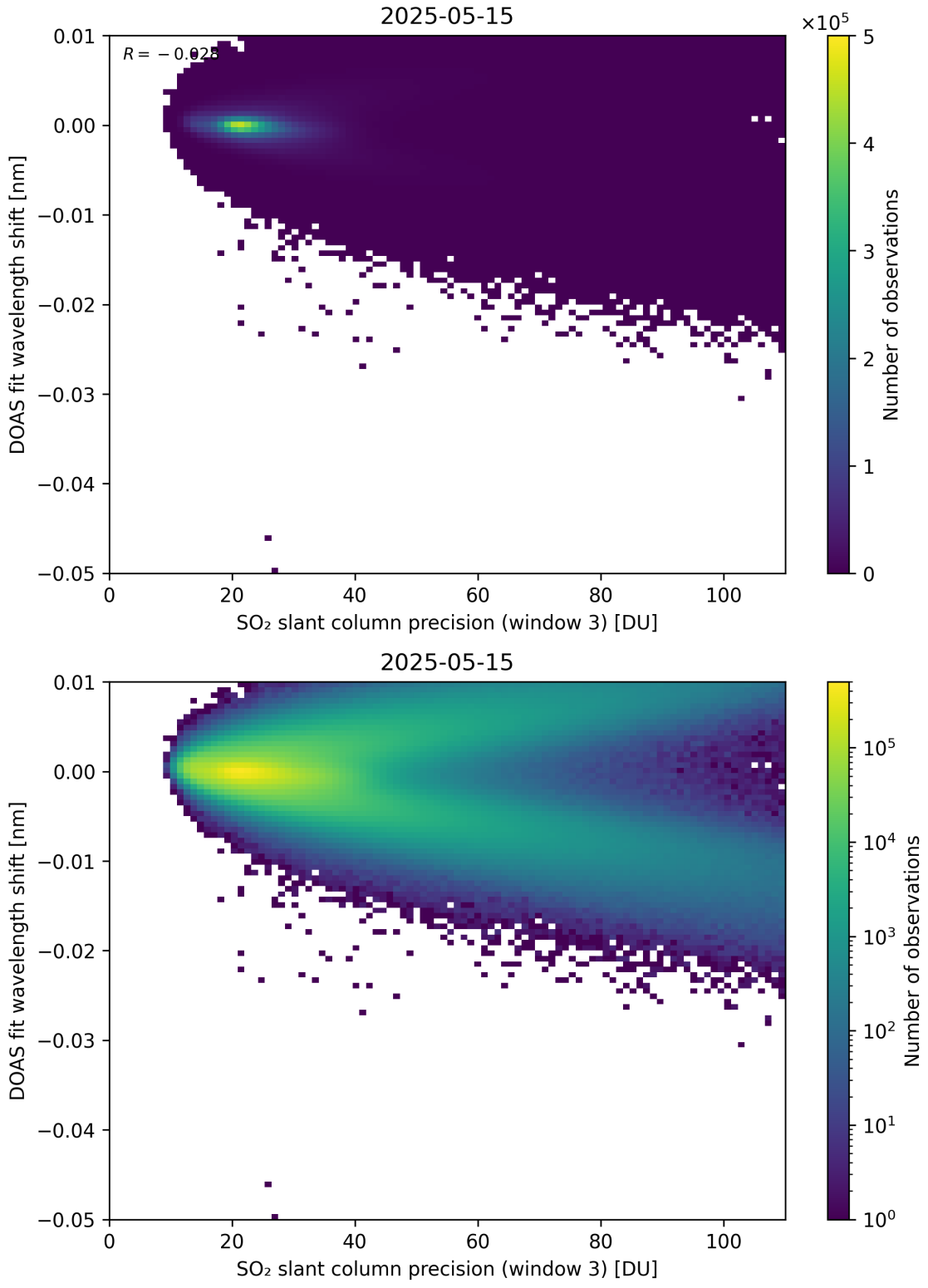


Figure 308: Scatter density plot of "SO_2 slant column precision (window 3)" against "DOAS fit wavelength shift" for 2025-05-15 to 2025-05-16.

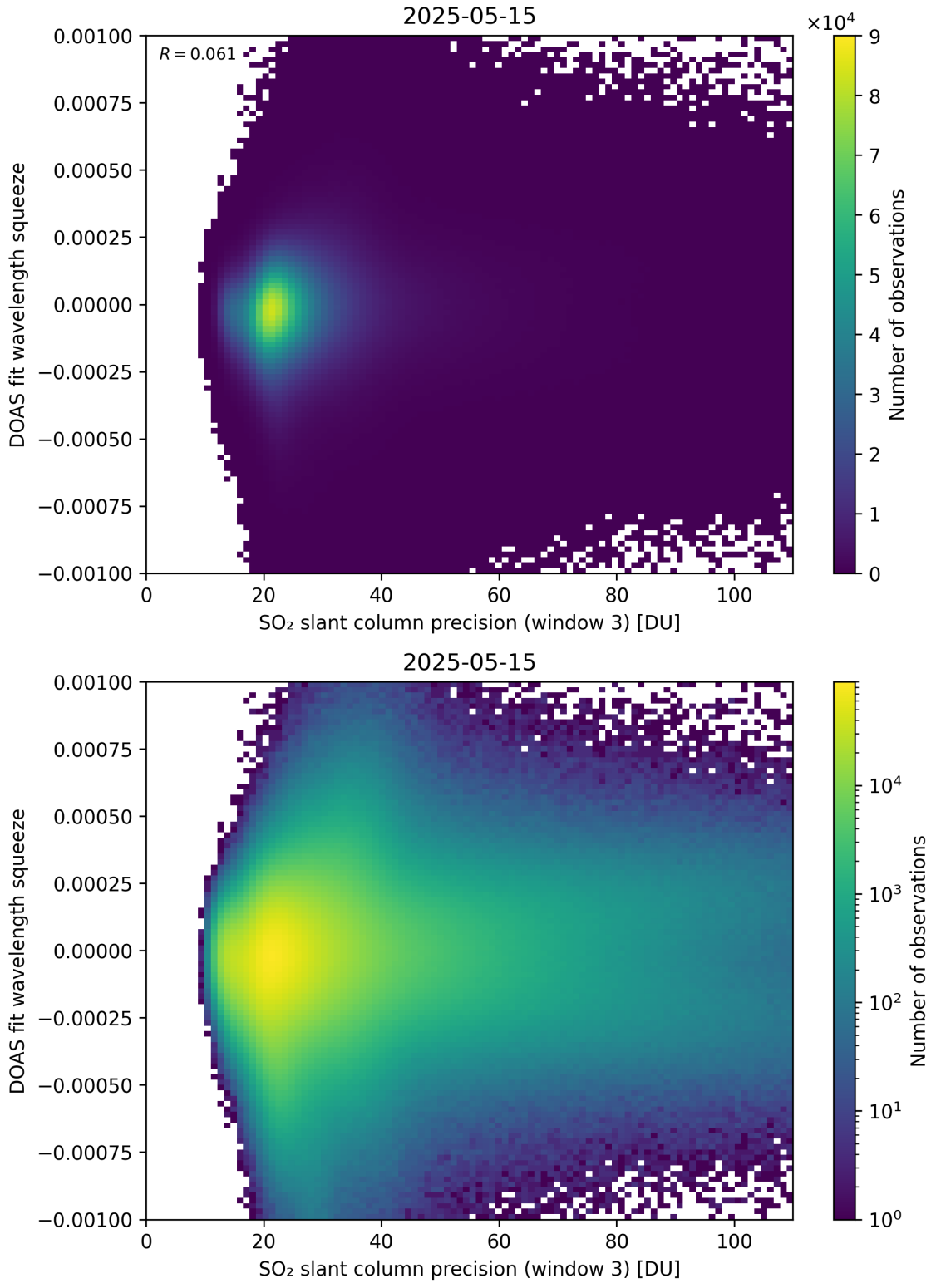


Figure 309: Scatter density plot of "SO_2 slant column precision (window 3)" against "DOAS fit wavelength squeeze" for 2025-05-15 to 2025-05-16.

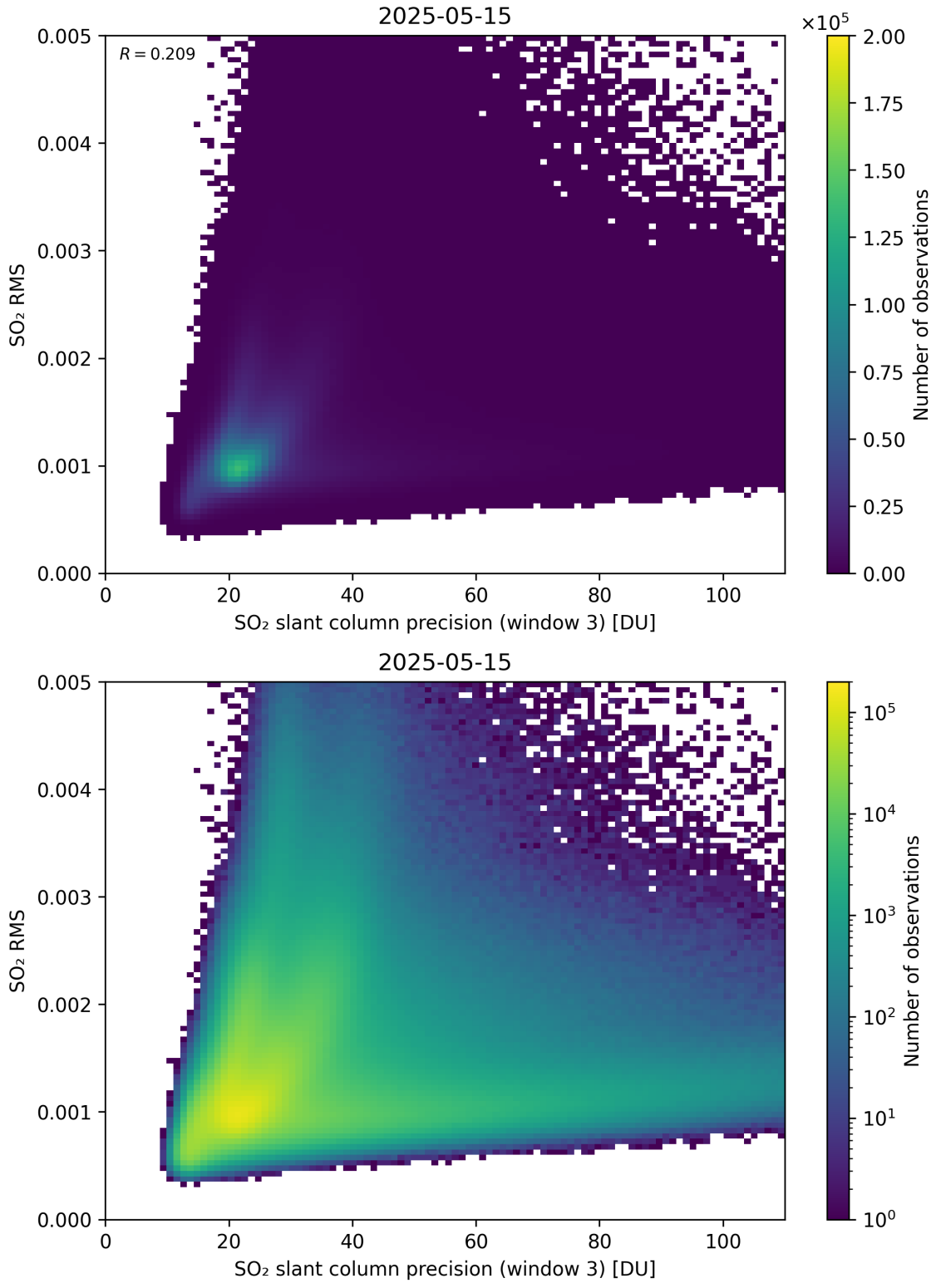


Figure 310: Scatter density plot of "SO_2 slant column precision (window 3)" against "SO_2 RMS" for 2025-05-15 to 2025-05-16.

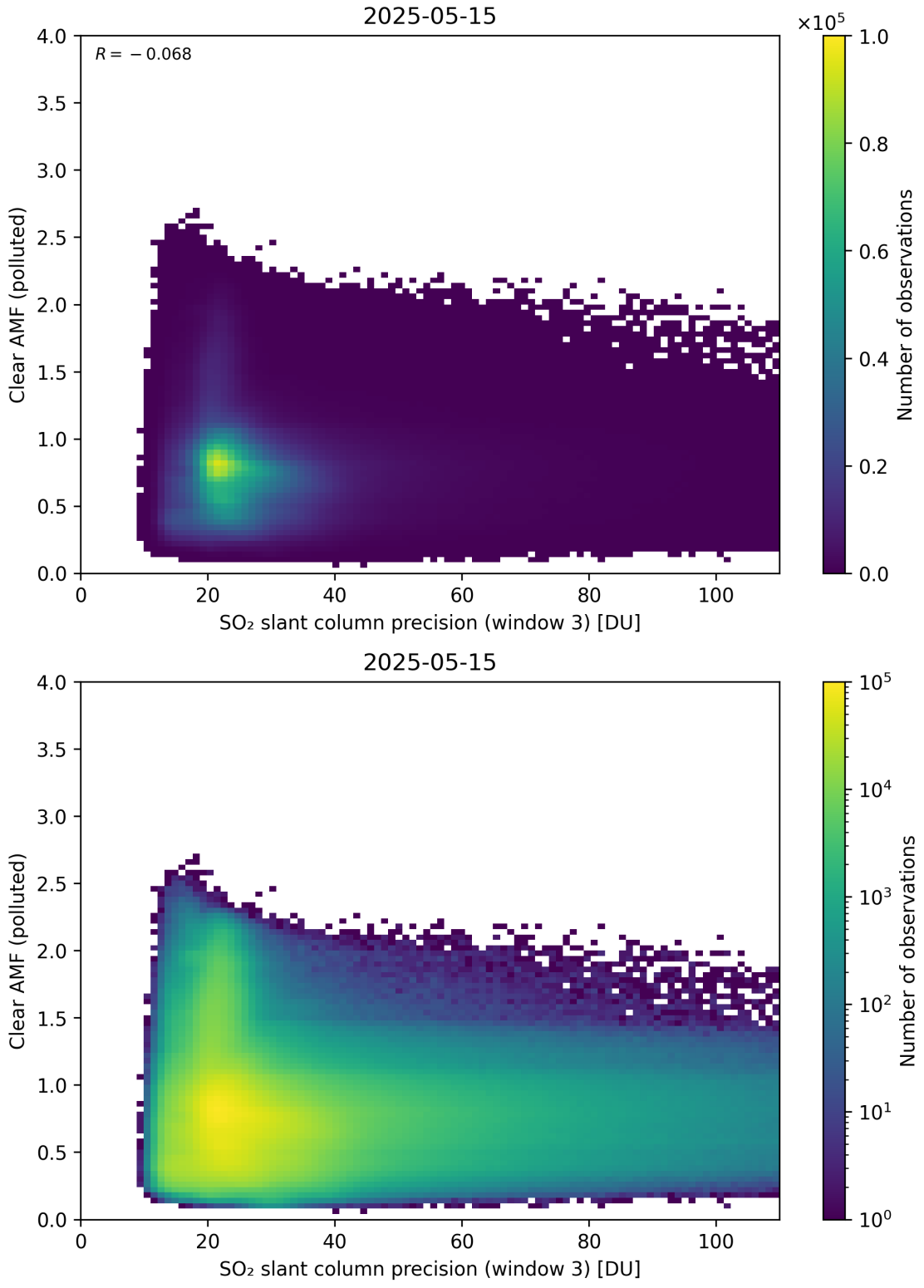


Figure 311: Scatter density plot of "SO_2 slant column precision (window 3)" against "Clear AMF (polluted)" for 2025-05-15 to 2025-05-16.

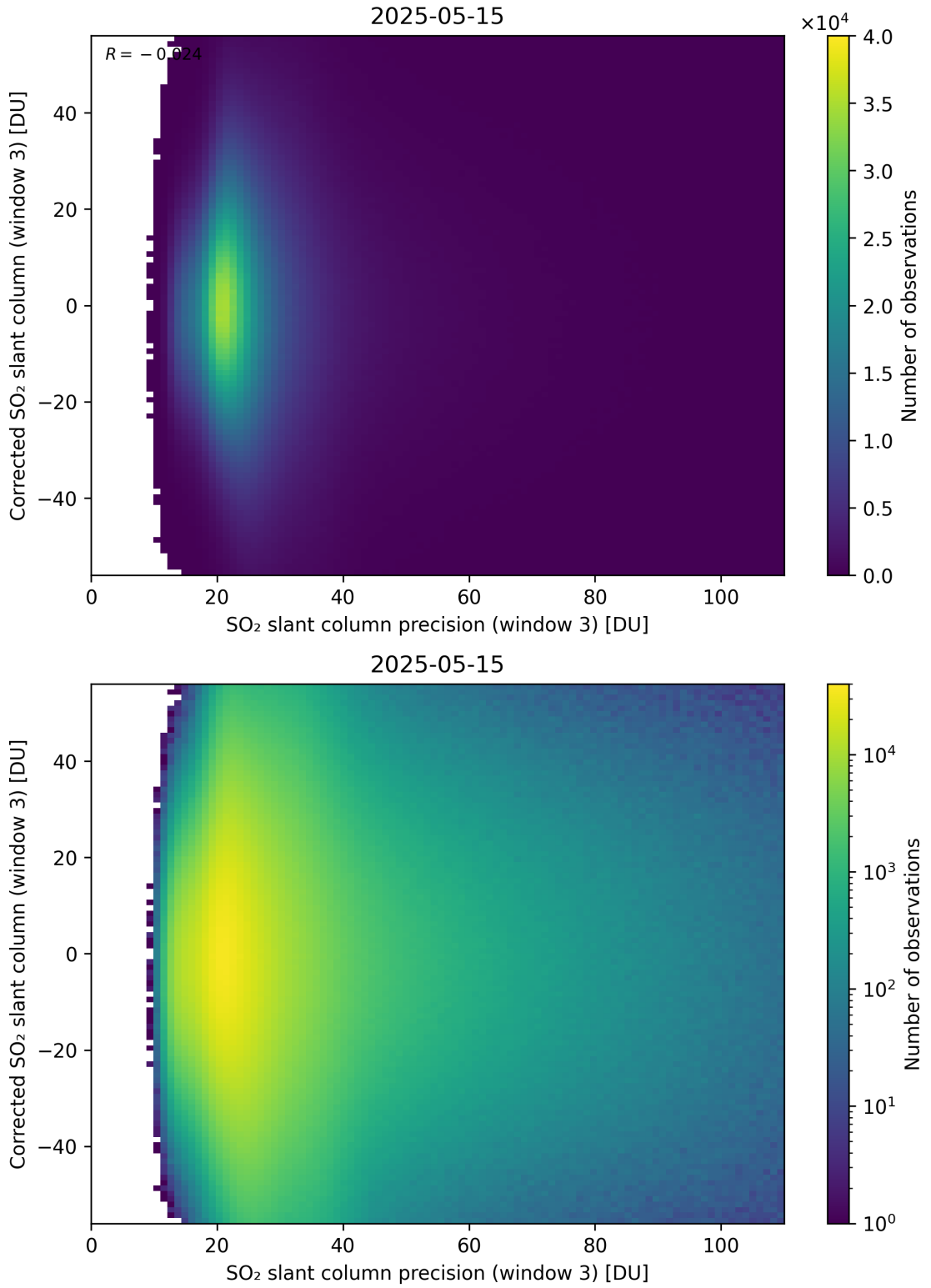


Figure 312: Scatter density plot of "SO_2 slant column precision (window 3)" against "Corrected SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

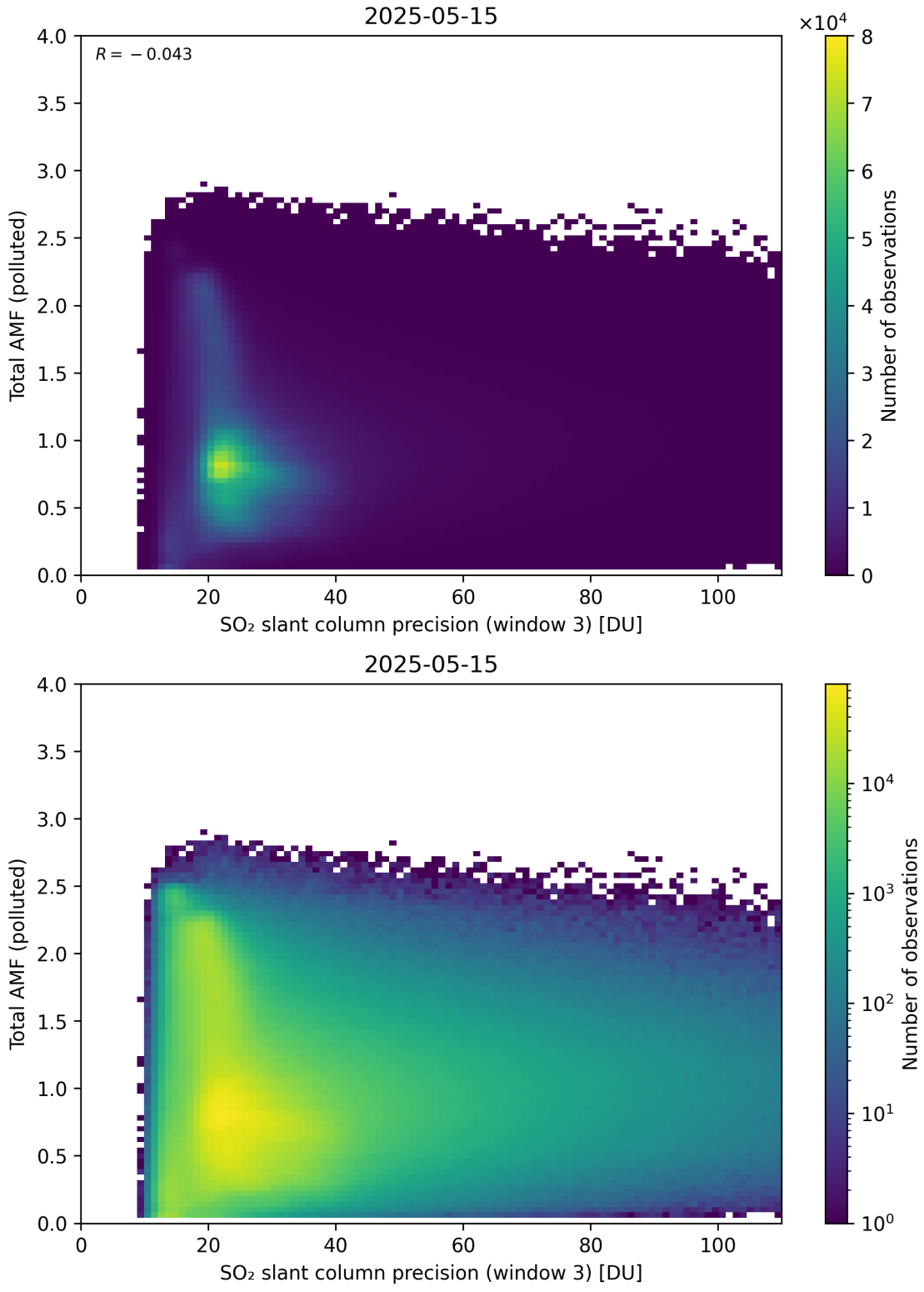


Figure 313: Scatter density plot of "SO_2 slant column precision (window 3)" against "Total AMF (polluted)" for 2025-05-15 to 2025-05-16.

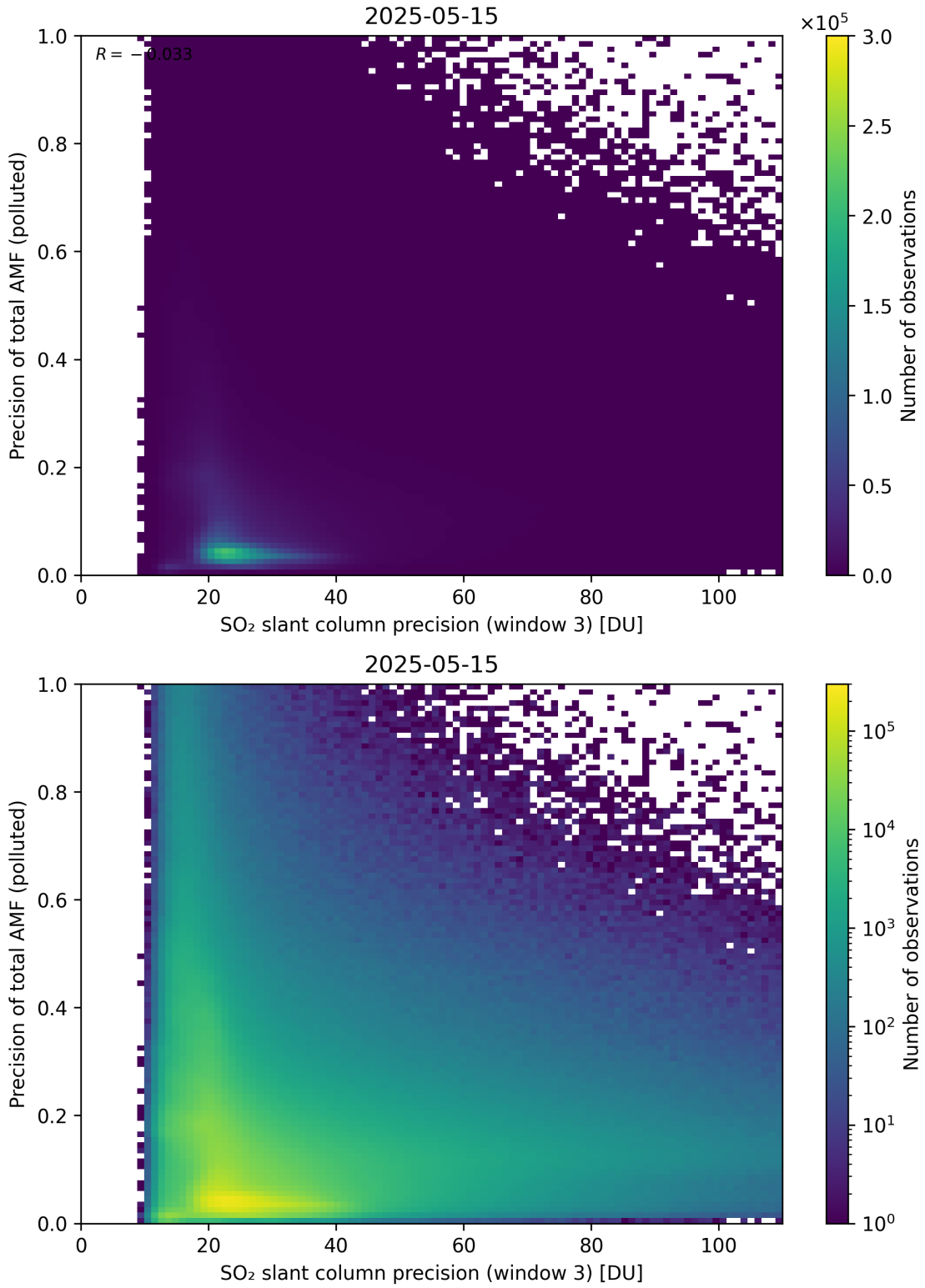


Figure 314: Scatter density plot of "SO_2 slant column precision (window 3)" against "Precision of total AMF (polluted)" for 2025-05-15 to 2025-05-16.

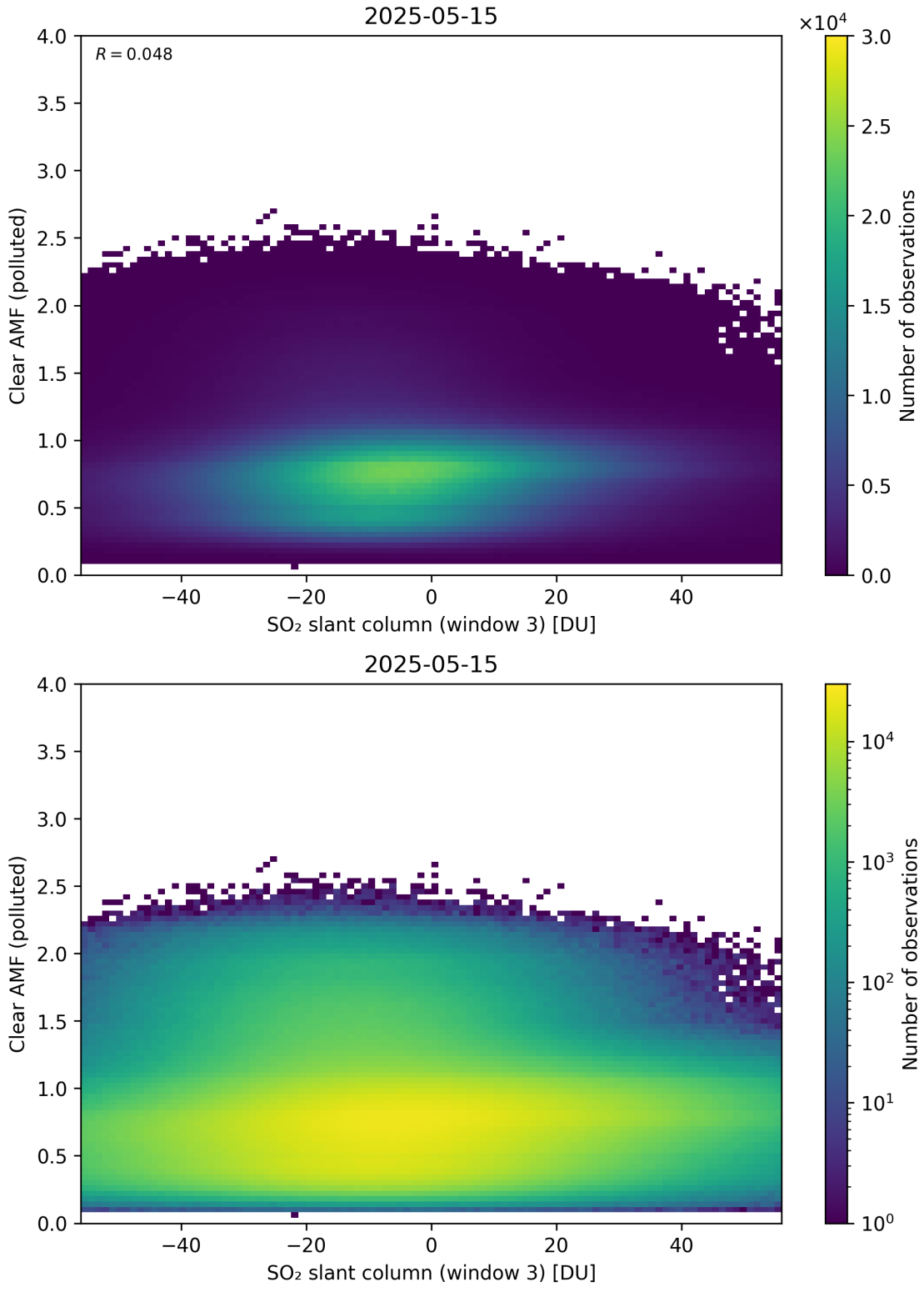


Figure 315: Scatter density plot of "SO_2 slant column (window 3)" against "Clear AMF (polluted)" for 2025-05-15 to 2025-05-16.

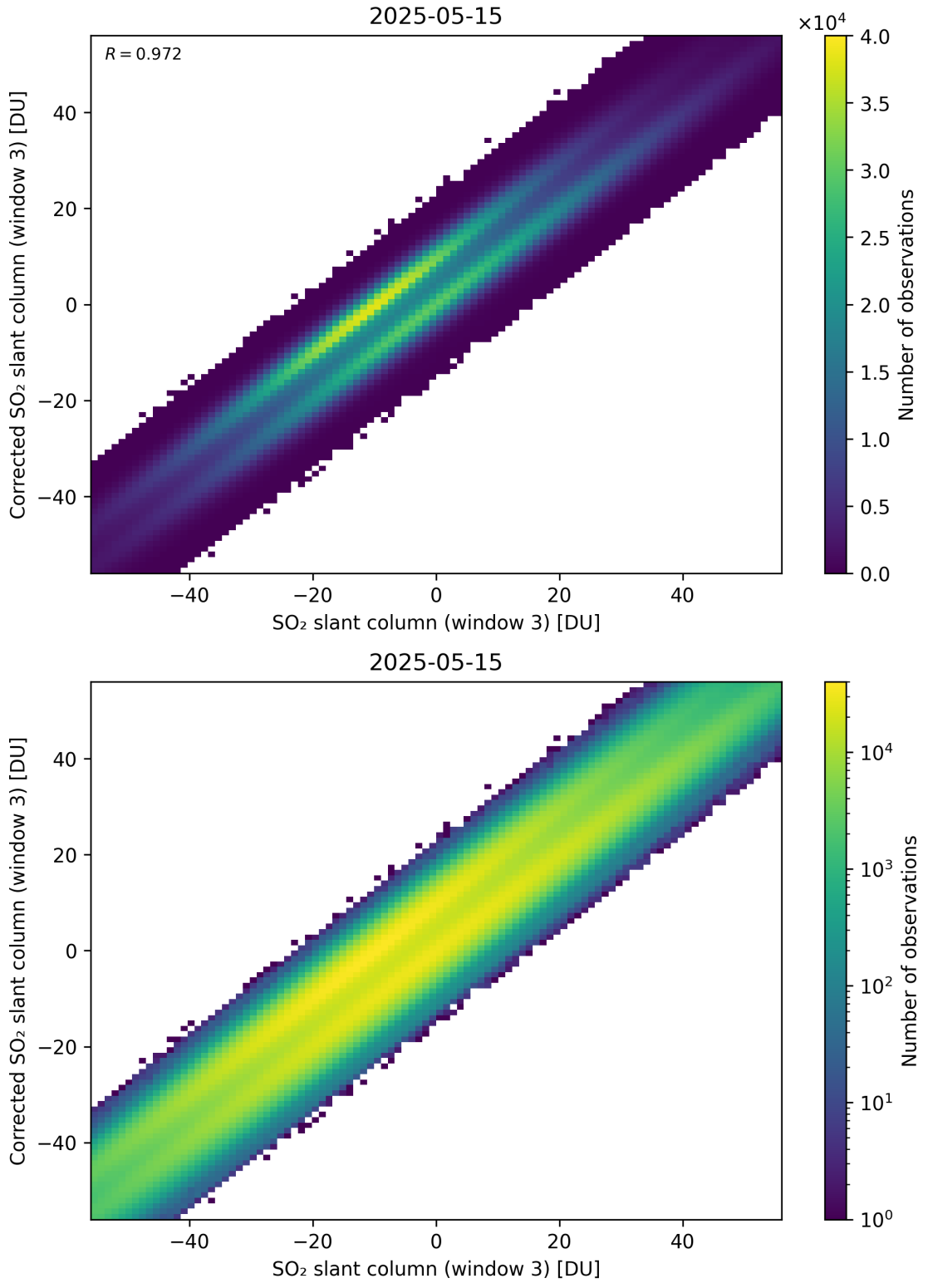


Figure 316: Scatter density plot of "SO_2 slant column (window 3)" against "Corrected SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

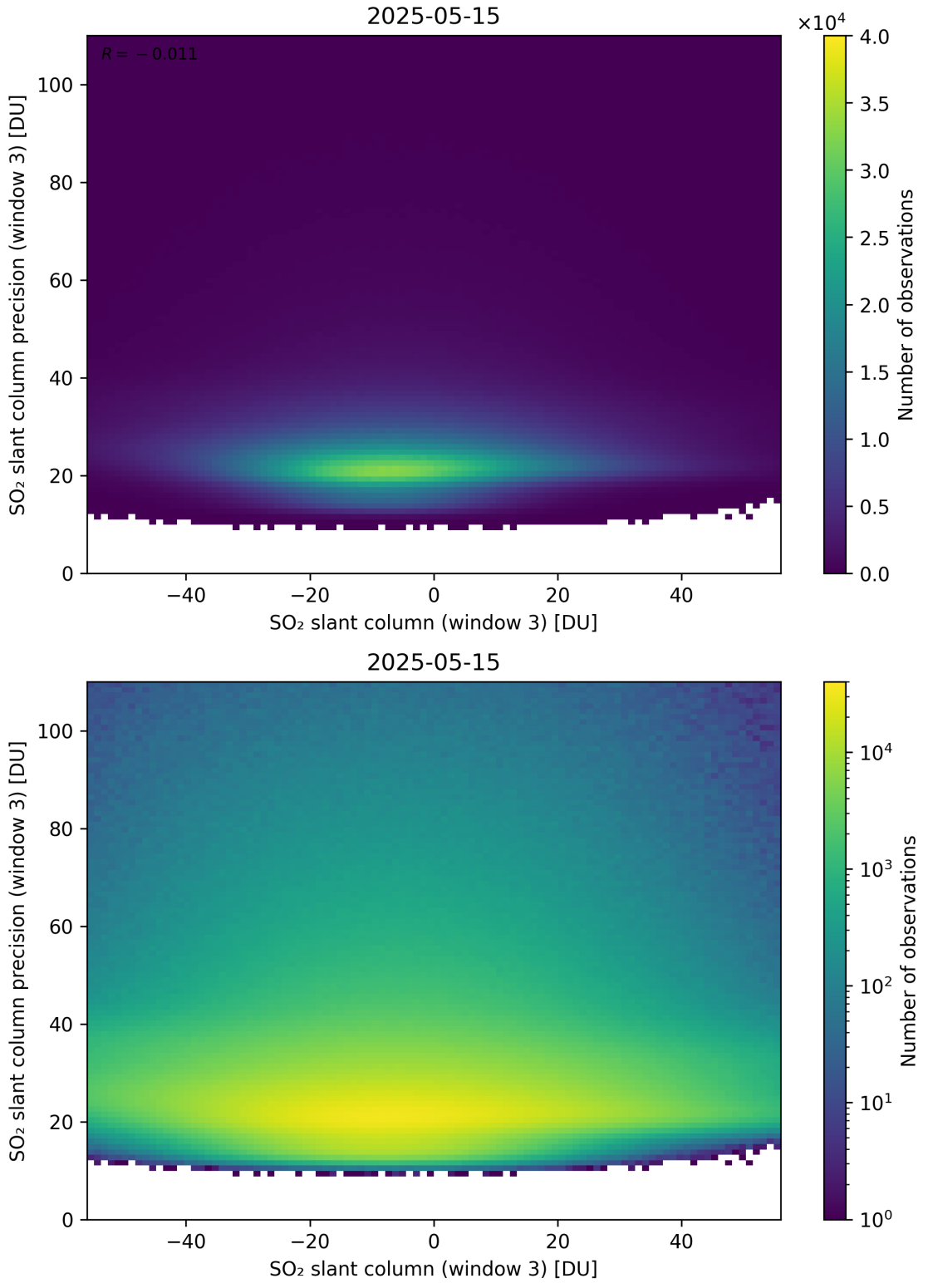


Figure 317: Scatter density plot of "SO_2 slant column (window 3)" against "SO_2 slant column precision (window 3)" for 2025-05-15 to 2025-05-16.

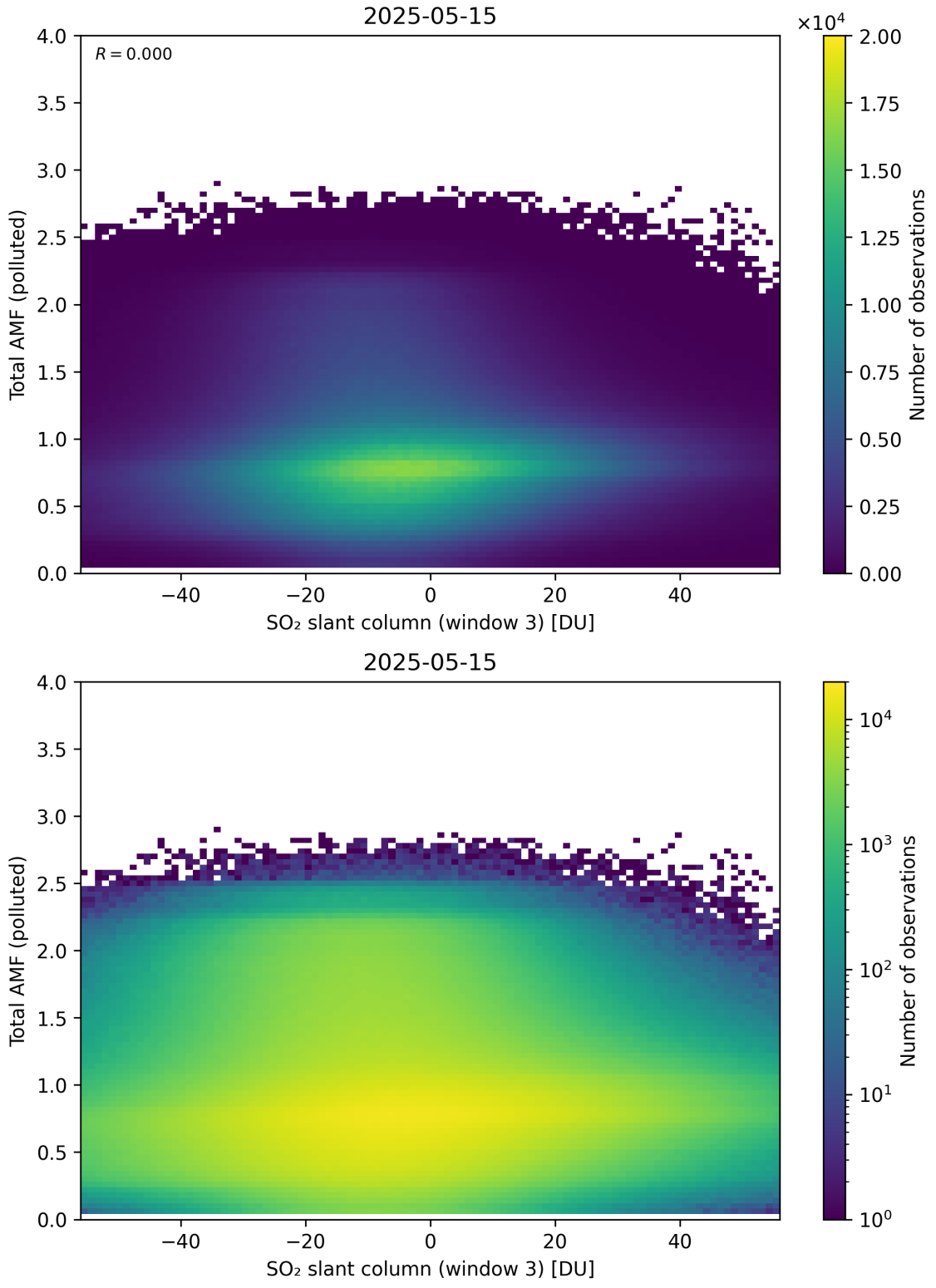


Figure 318: Scatter density plot of "SO_2 slant column (window 3)" against "Total AMF (polluted)" for 2025-05-15 to 2025-05-16.

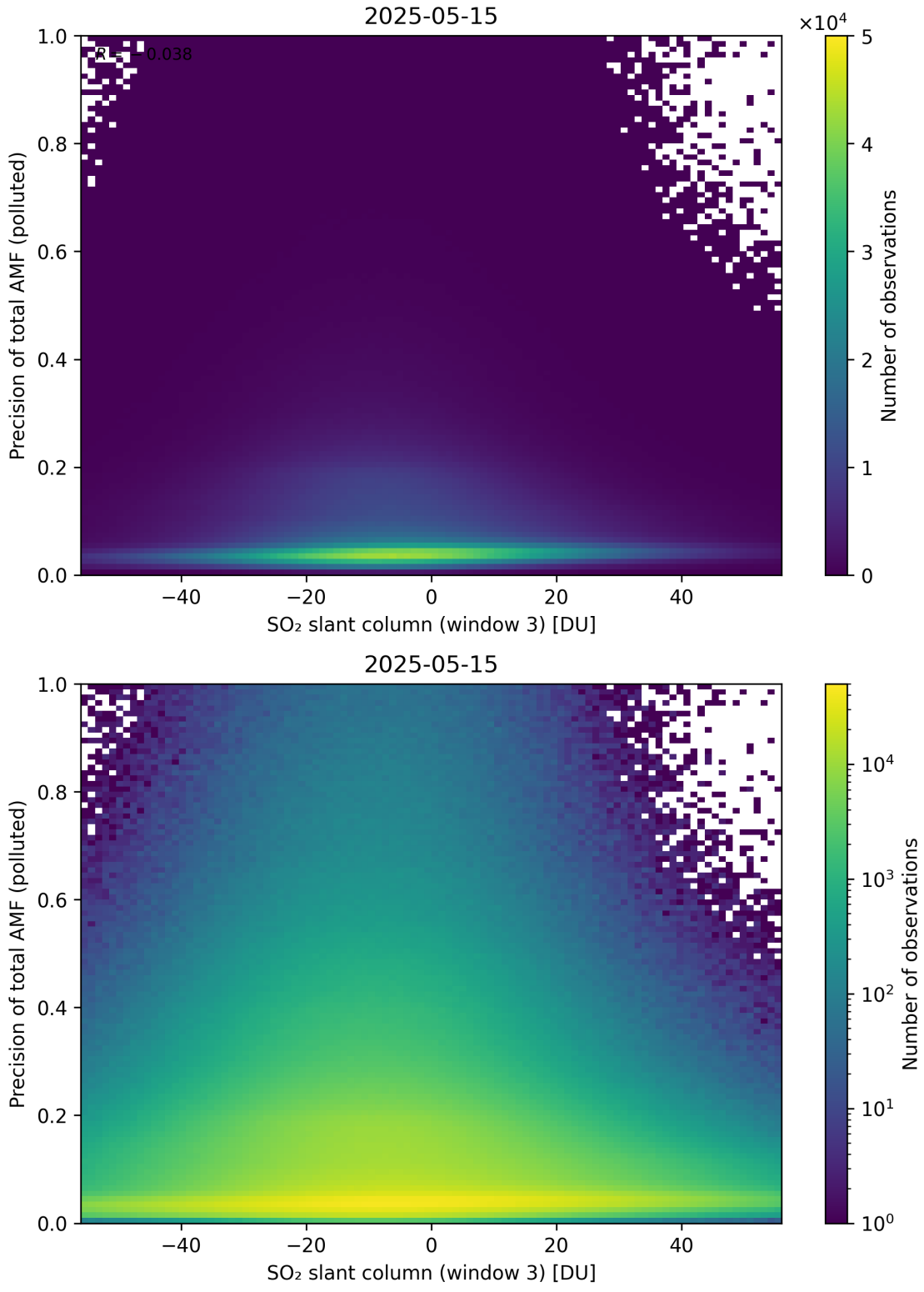


Figure 319: Scatter density plot of "SO_2 slant column (window 3)" against "Precision of total AMF (polluted)" for 2025-05-15 to 2025-05-16.

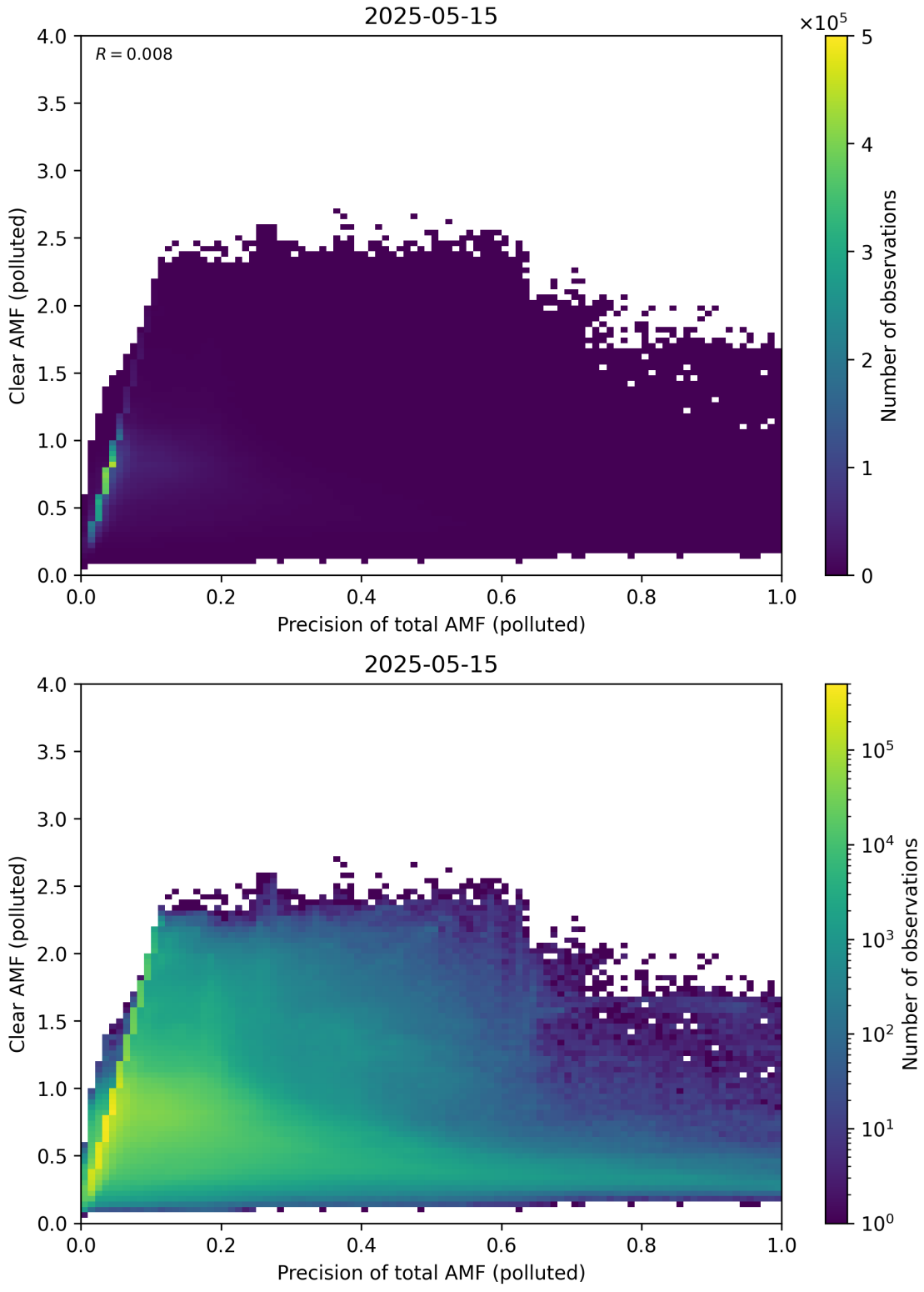


Figure 320: Scatter density plot of “Precision of total AMF (polluted)” against “Clear AMF (polluted)” for 2025-05-15 to 2025-05-16.

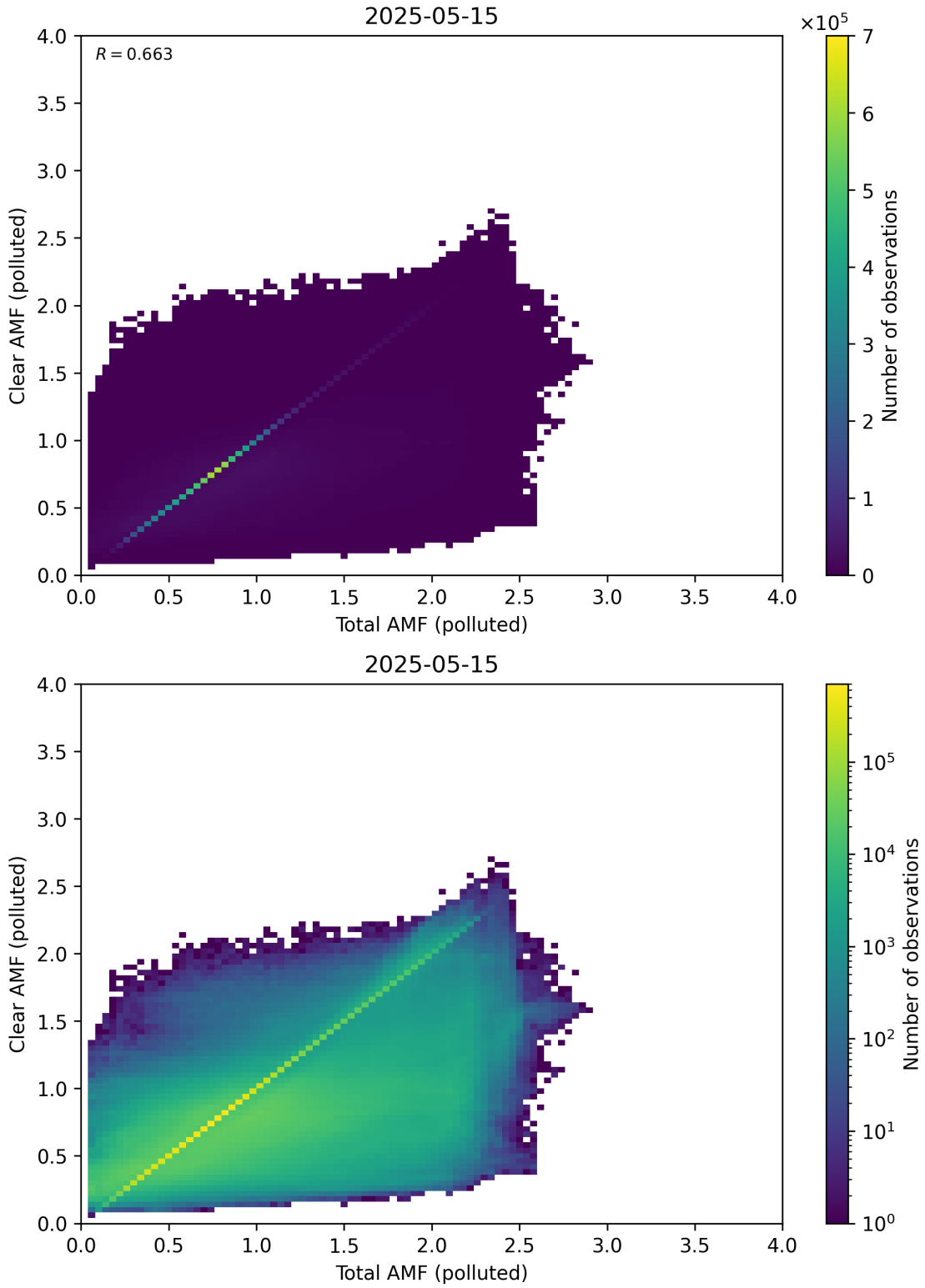


Figure 321: Scatter density plot of “Total AMF (polluted)” against “Clear AMF (polluted)” for 2025-05-15 to 2025-05-16.

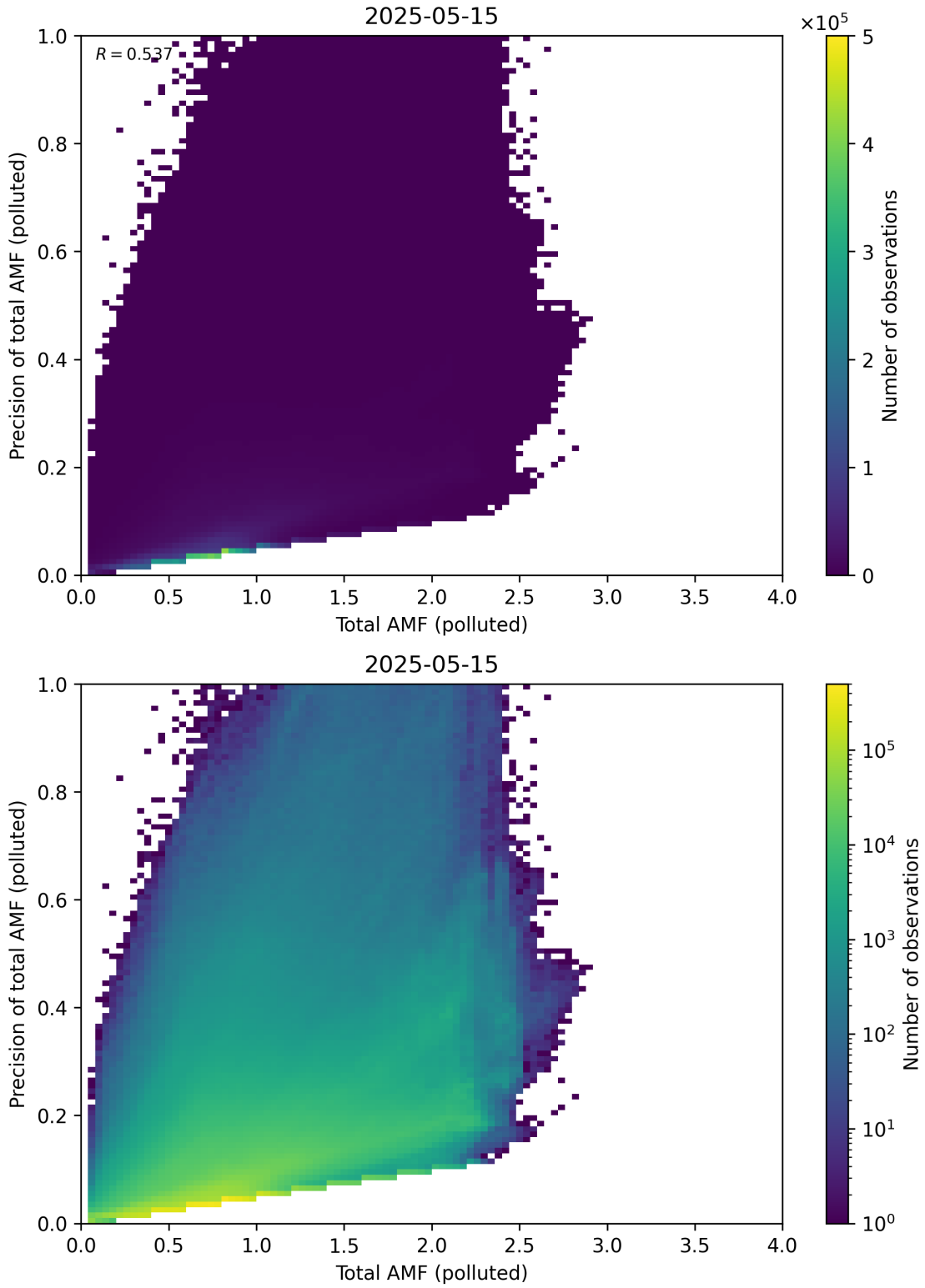


Figure 322: Scatter density plot of “Total AMF (polluted)” against “Precision of total AMF (polluted)” for 2025-05-15 to 2025-05-16.

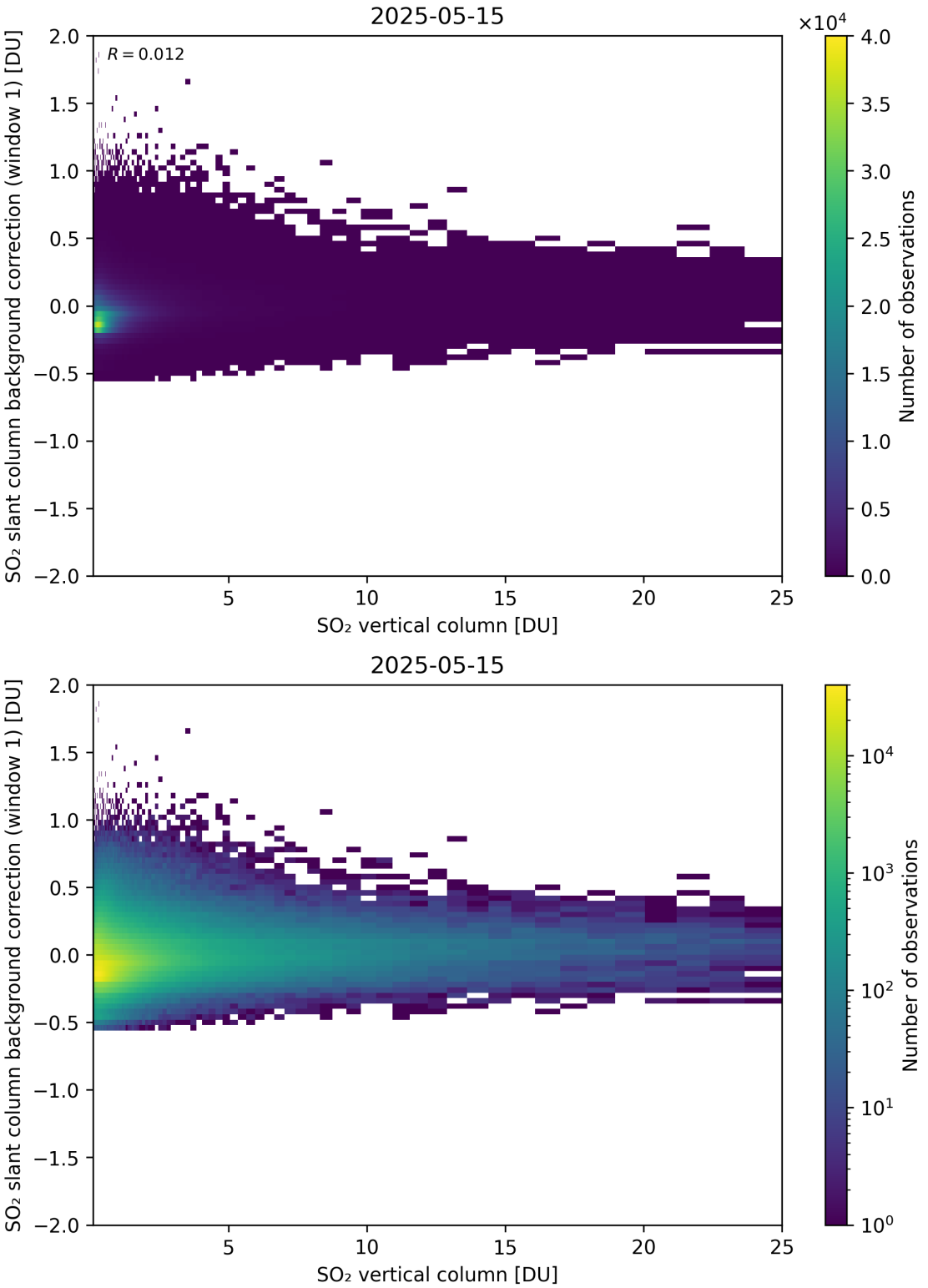


Figure 323: Scatter density plot of "SO_2 vertical column" against "SO_2 slant column background correction (window 1)" for 2025-05-15 to 2025-05-16.

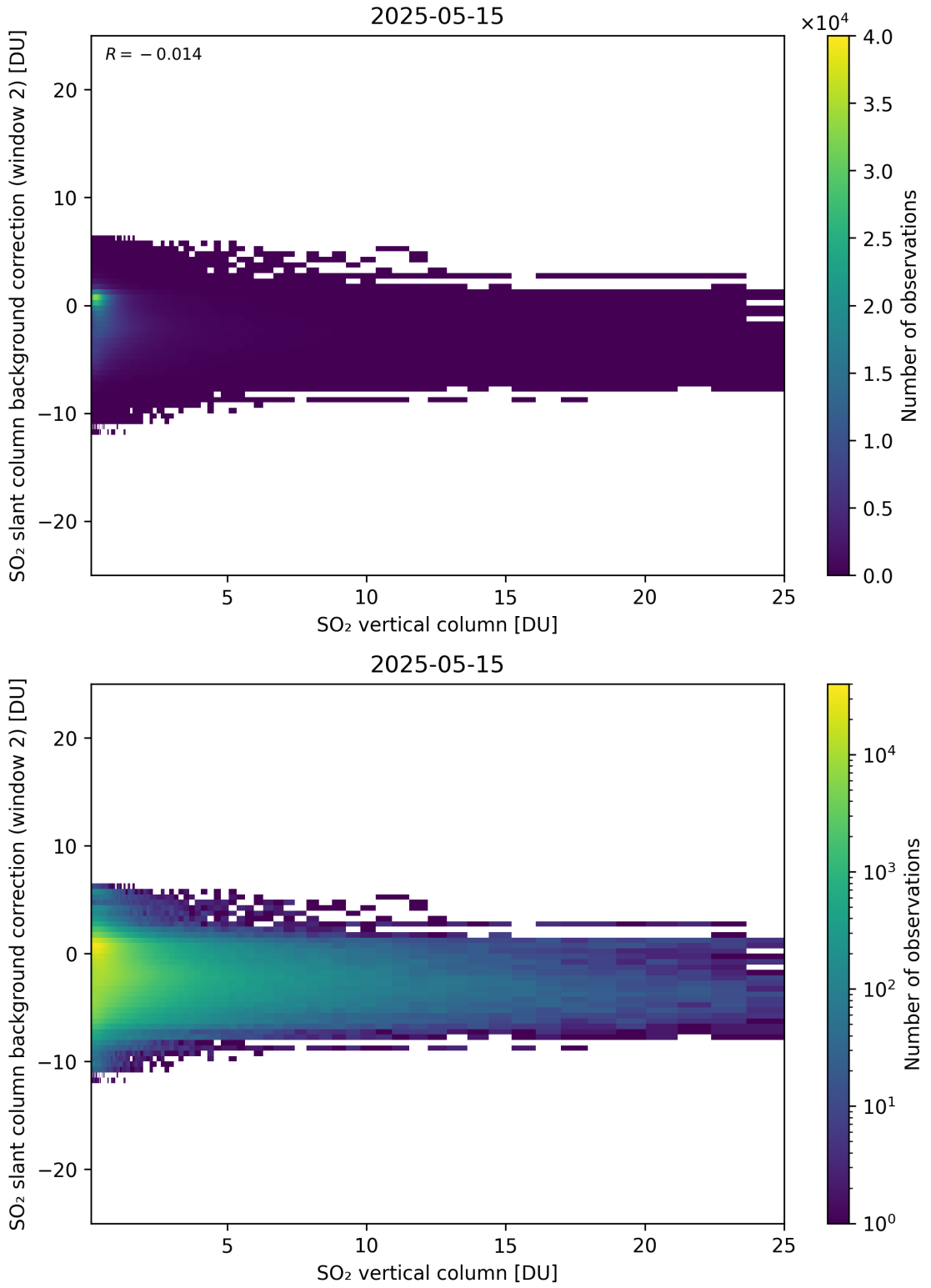


Figure 324: Scatter density plot of "SO_2 vertical column" against "SO_2 slant column background correction (window 2)" for 2025-05-15 to 2025-05-16.

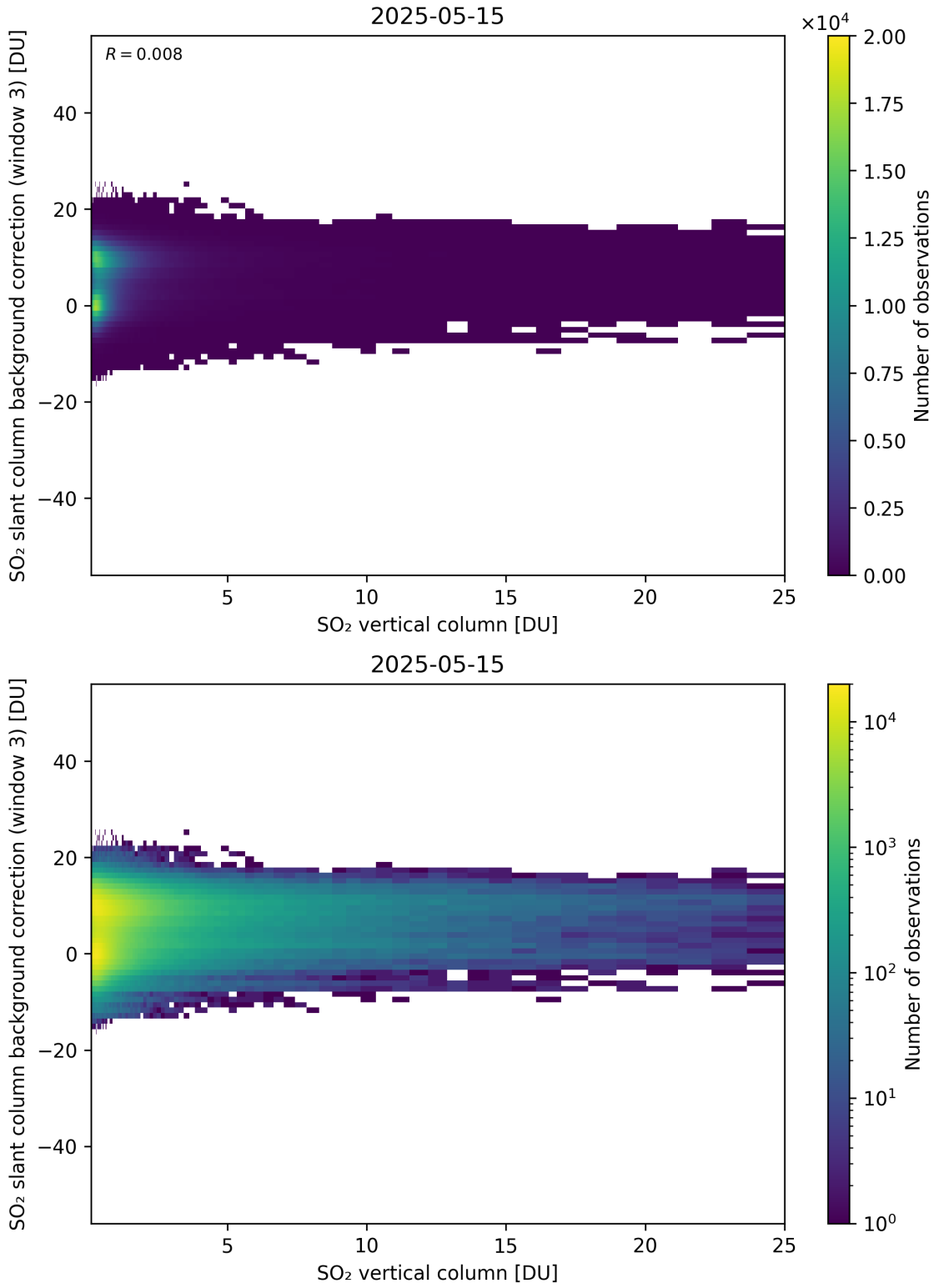


Figure 325: Scatter density plot of "SO_2 vertical column" against "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16.

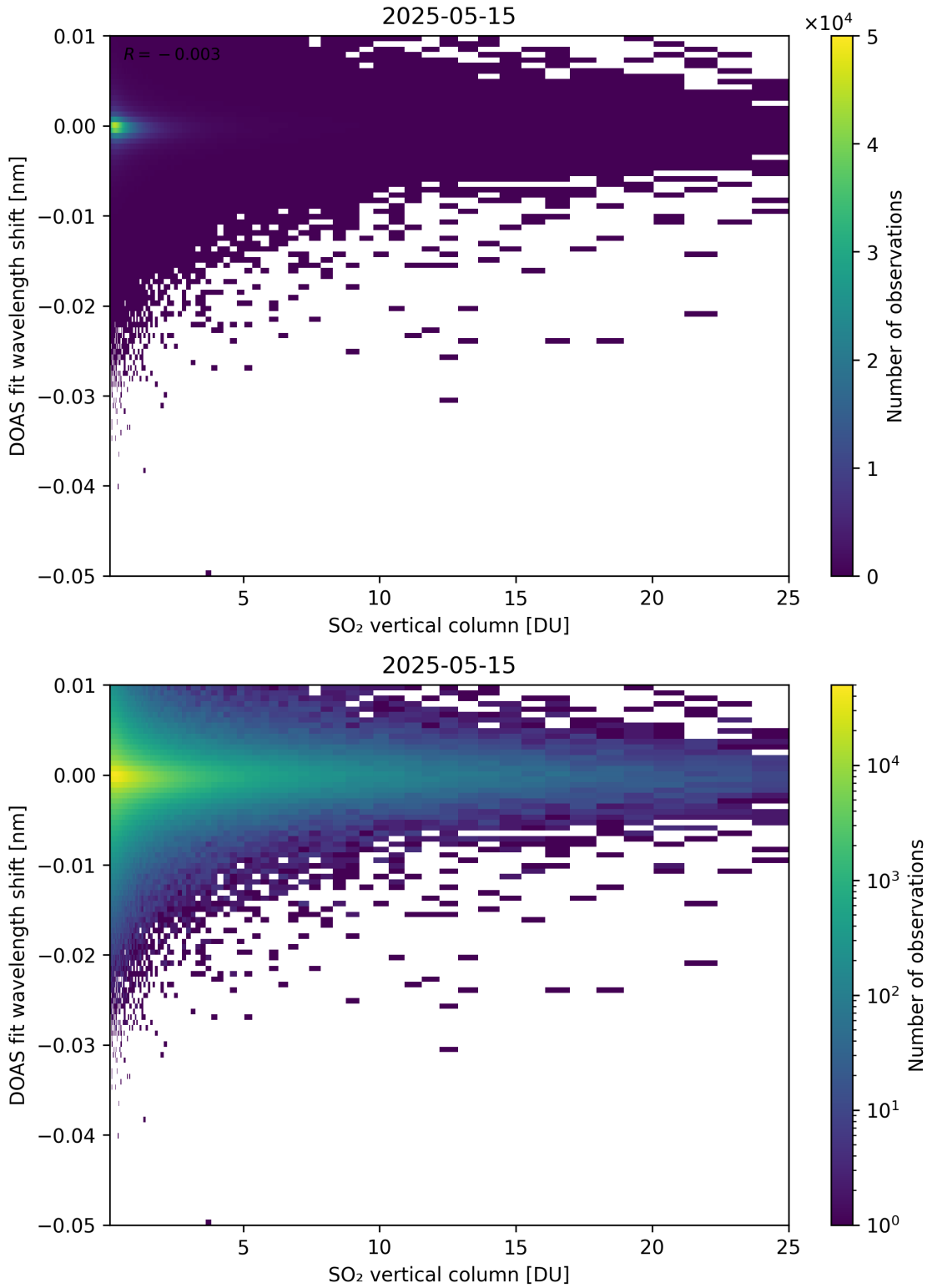


Figure 326: Scatter density plot of "SO_2 vertical column" against "DOAS fit wavelength shift" for 2025-05-15 to 2025-05-16.

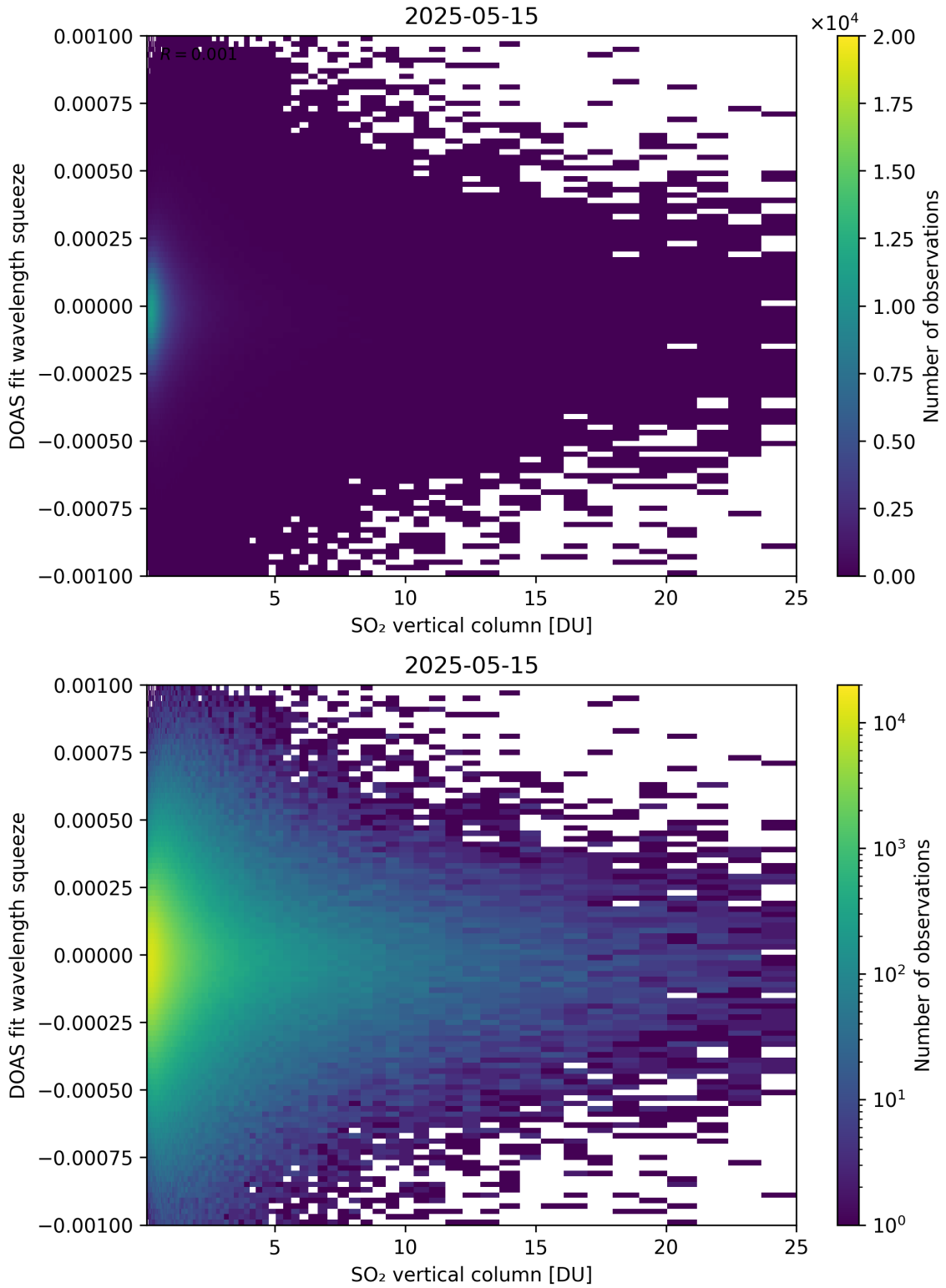


Figure 327: Scatter density plot of "SO_2 vertical column" against "DOAS fit wavelength squeeze" for 2025-05-15 to 2025-05-16.

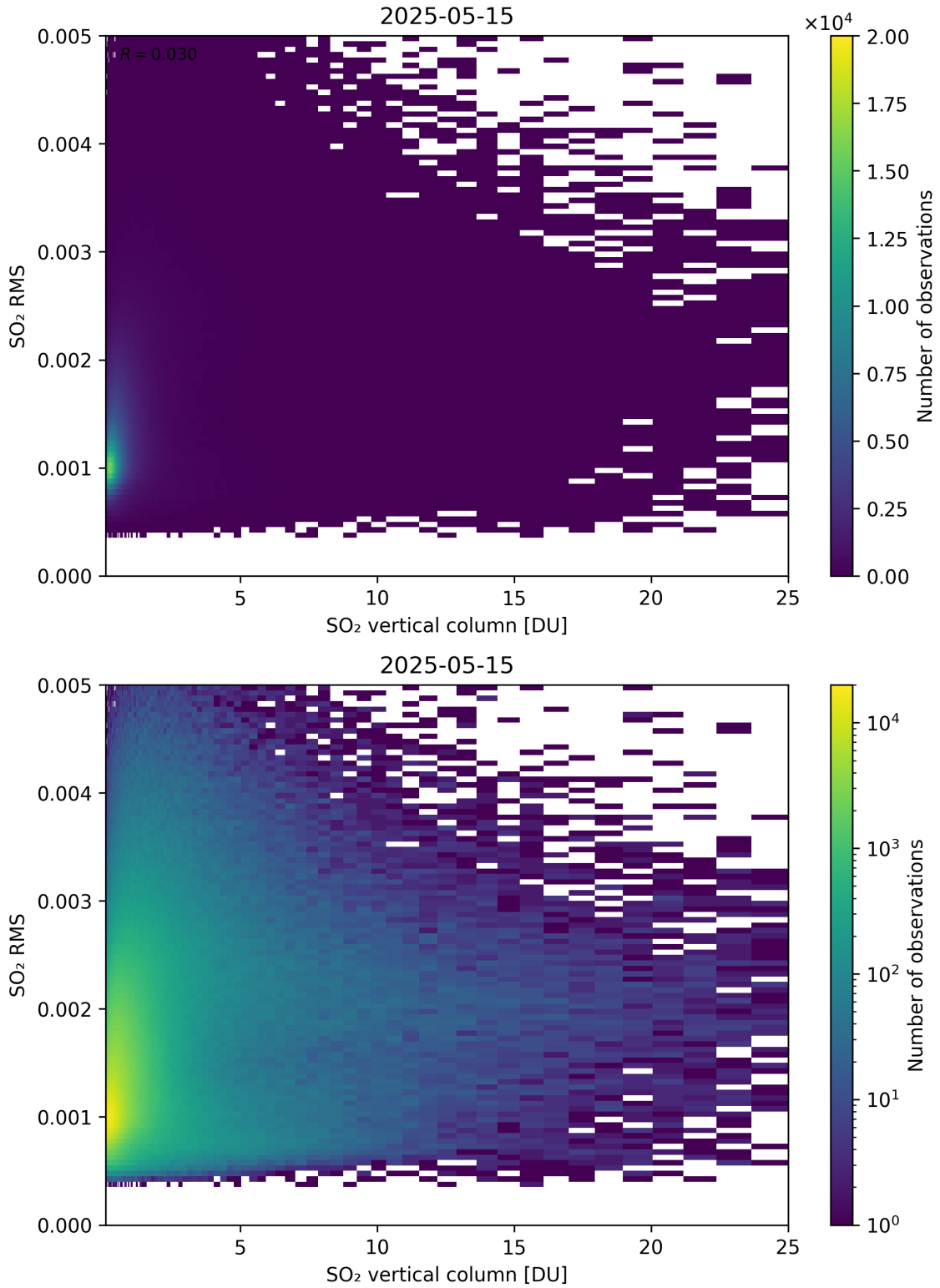


Figure 328: Scatter density plot of "SO_2 vertical column" against "SO_2 RMS" for 2025-05-15 to 2025-05-16.

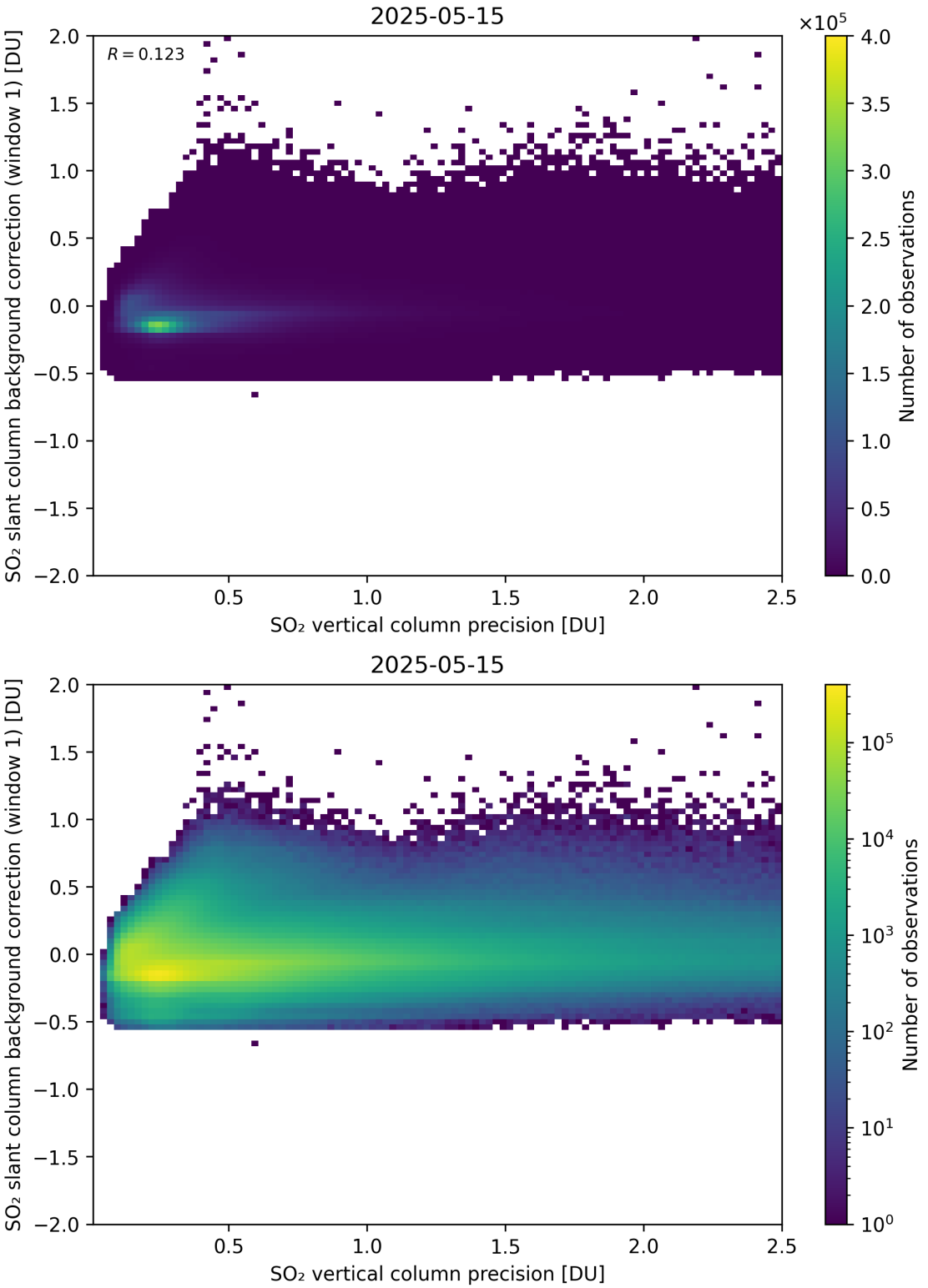


Figure 329: Scatter density plot of "SO_2 vertical column precision" against "SO_2 slant column background correction (window 1)" for 2025-05-15 to 2025-05-16.

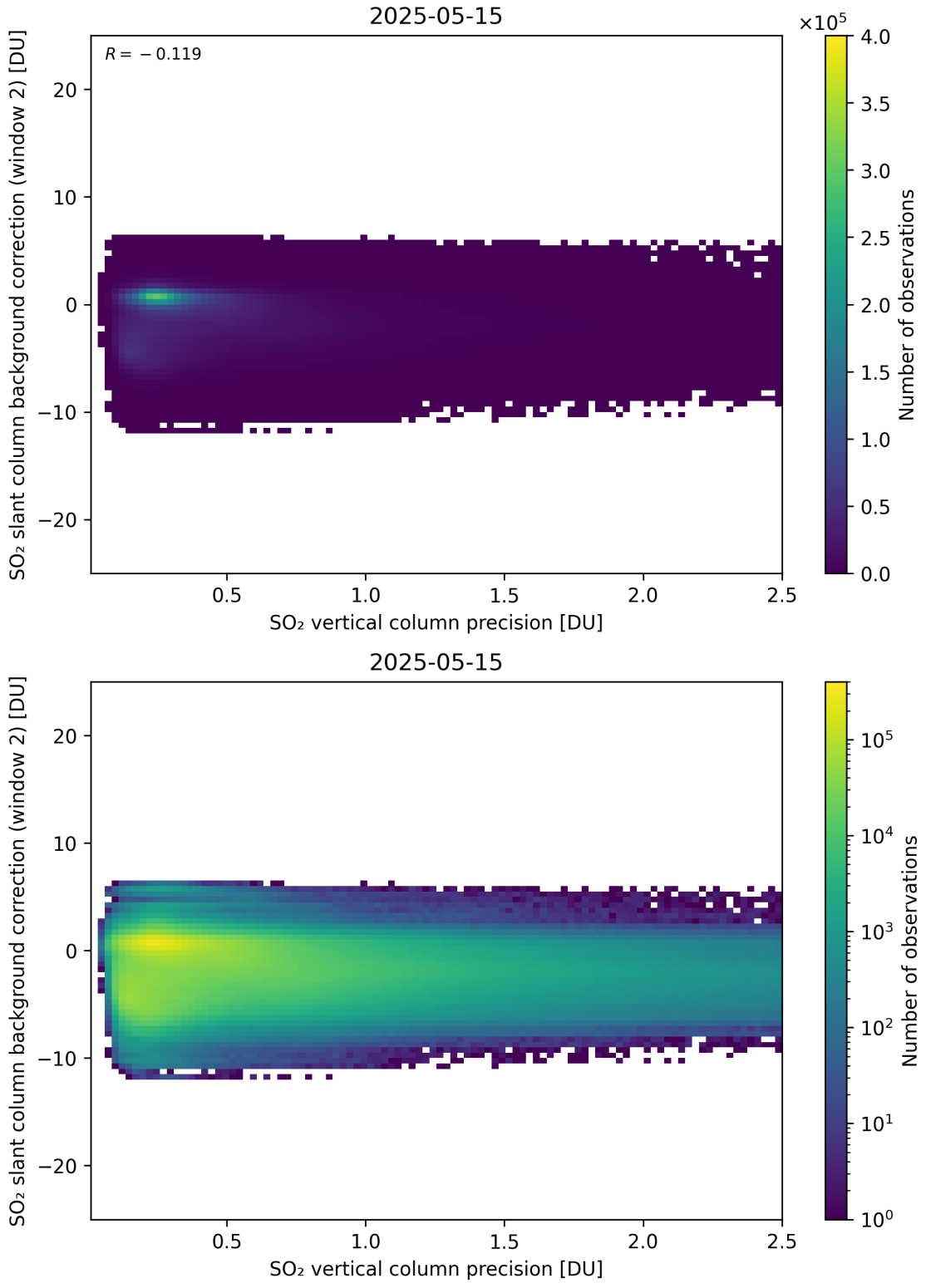


Figure 330: Scatter density plot of "SO_2 vertical column precision" against "SO_2 slant column background correction (window 2)" for 2025-05-15 to 2025-05-16.

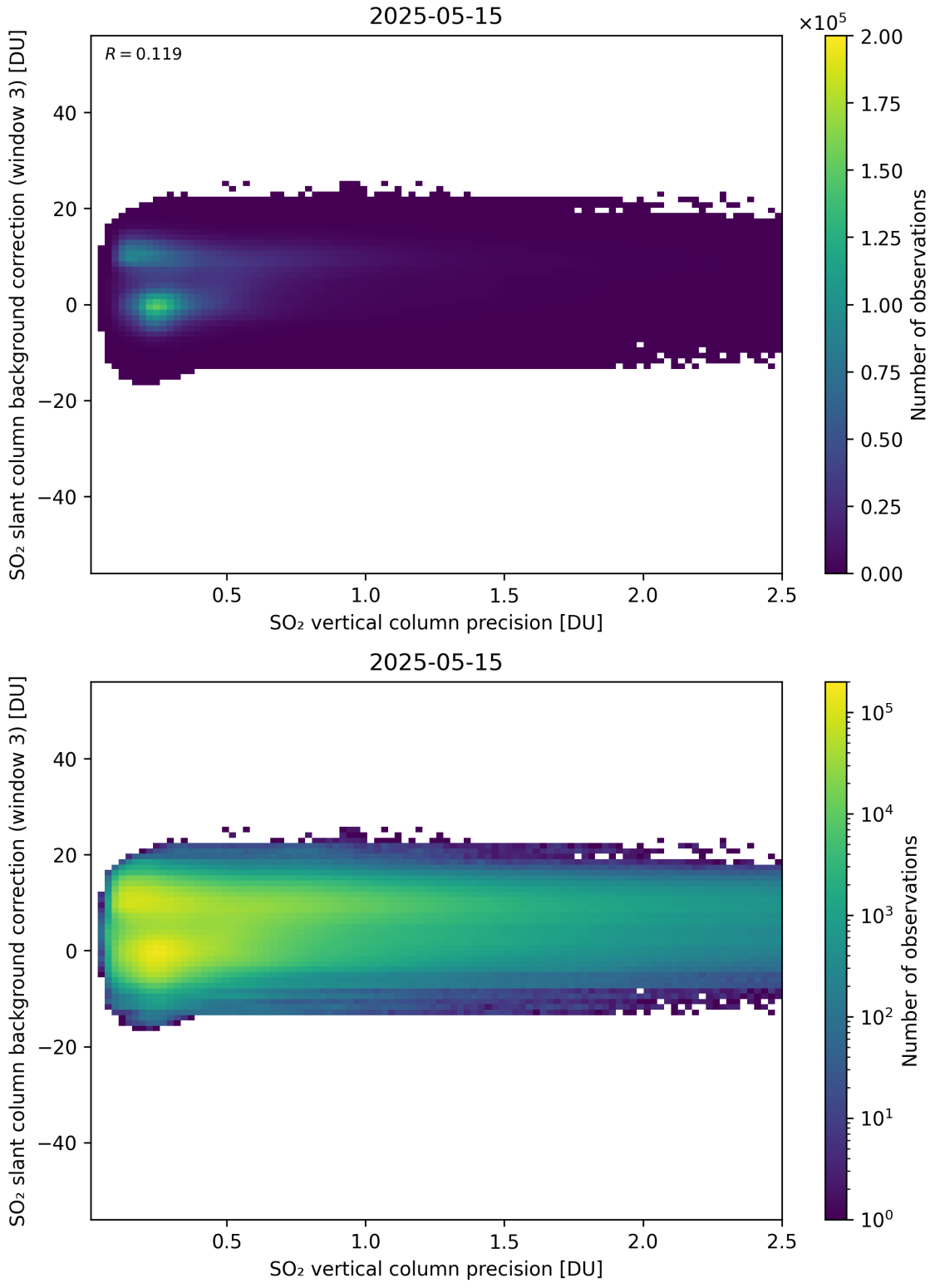


Figure 331: Scatter density plot of "SO_2 vertical column precision" against "SO_2 slant column background correction (window 3)" for 2025-05-15 to 2025-05-16.

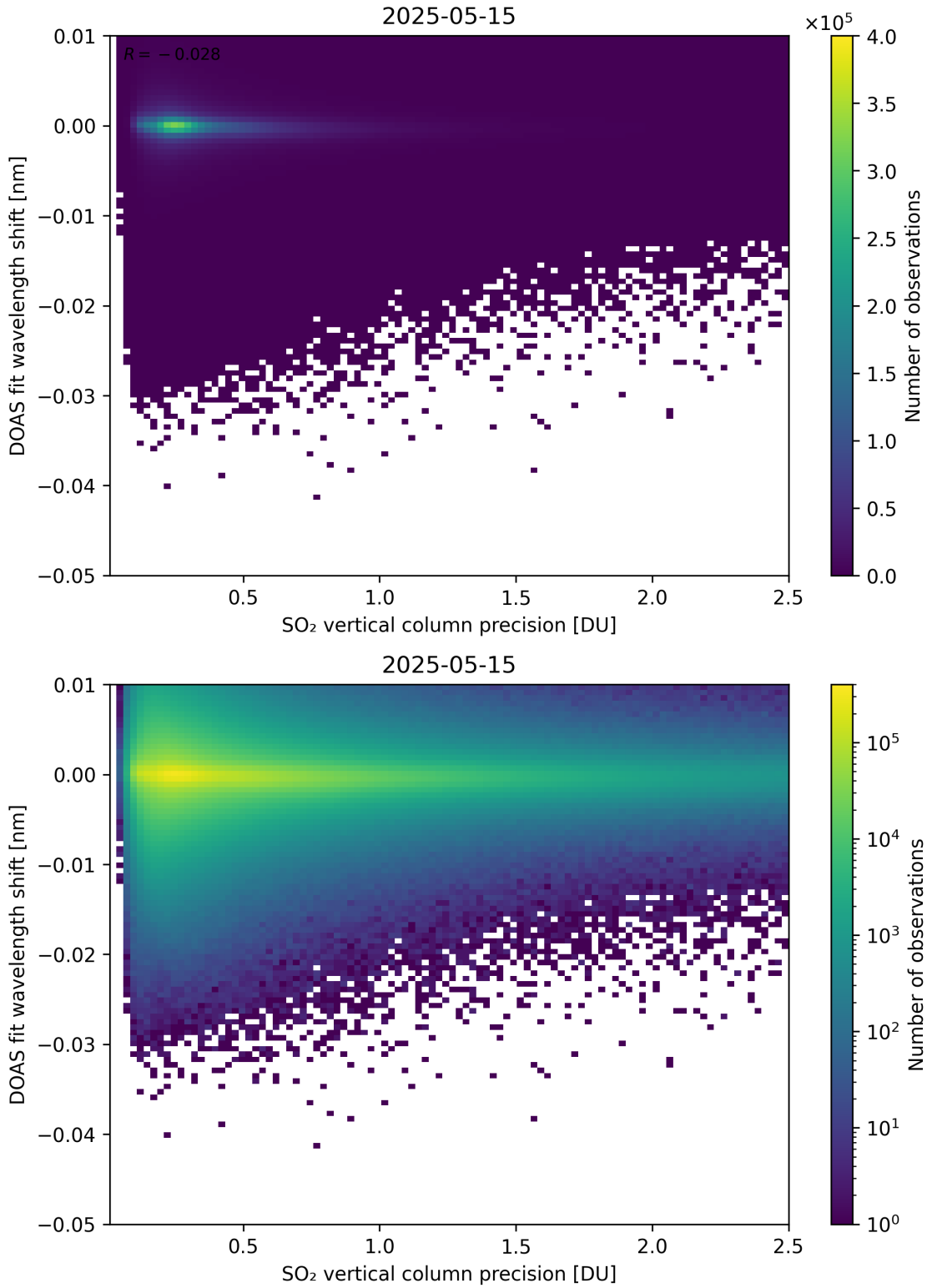


Figure 332: Scatter density plot of "SO_2 vertical column precision" against "DOAS fit wavelength shift" for 2025-05-15 to 2025-05-16.

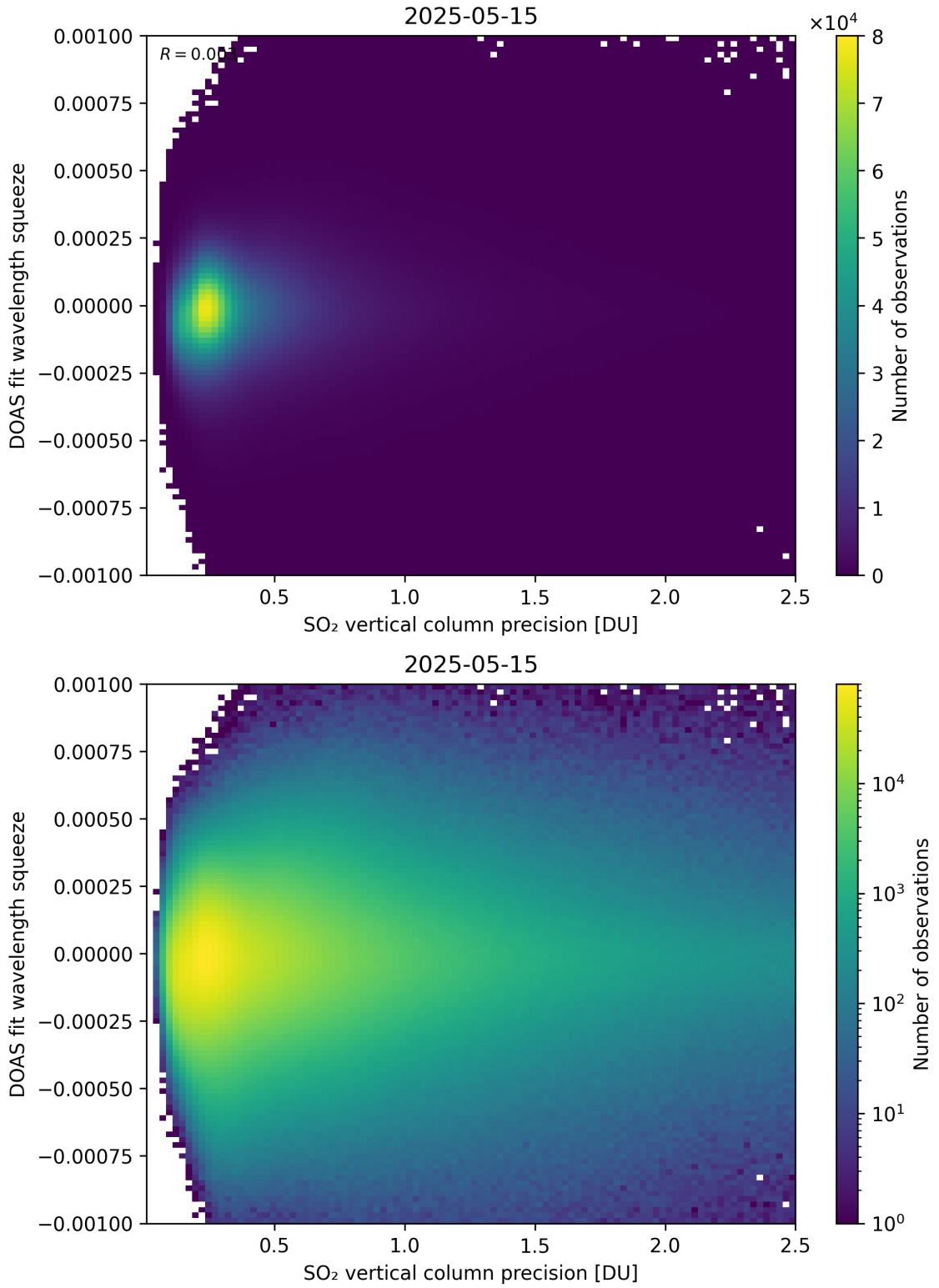


Figure 333: Scatter density plot of "SO_2 vertical column precision" against "DOAS fit wavelength squeeze" for 2025-05-15 to 2025-05-16.

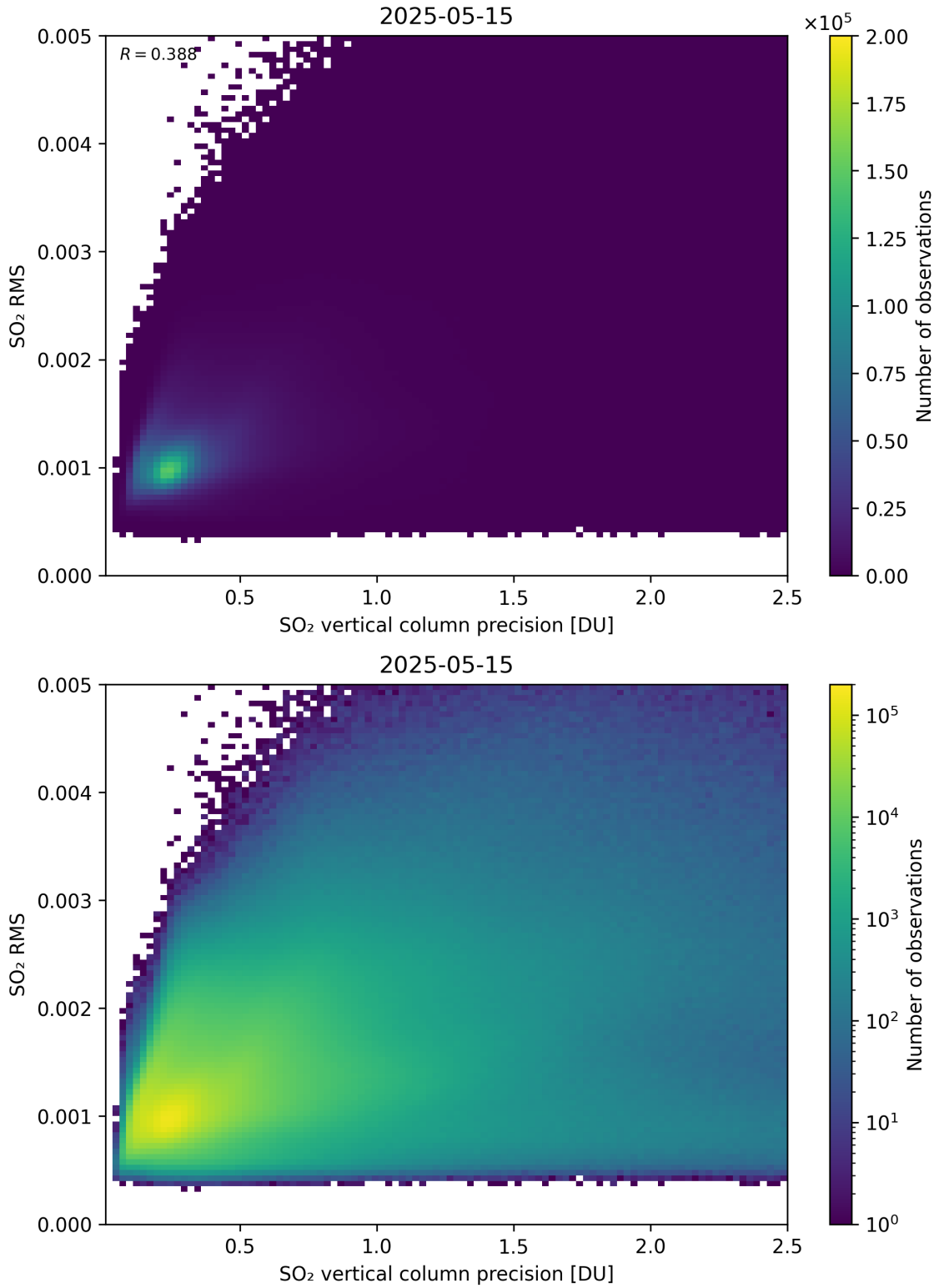


Figure 334: Scatter density plot of "SO_2 vertical column precision" against "SO_2 RMS" for 2025-05-15 to 2025-05-16.

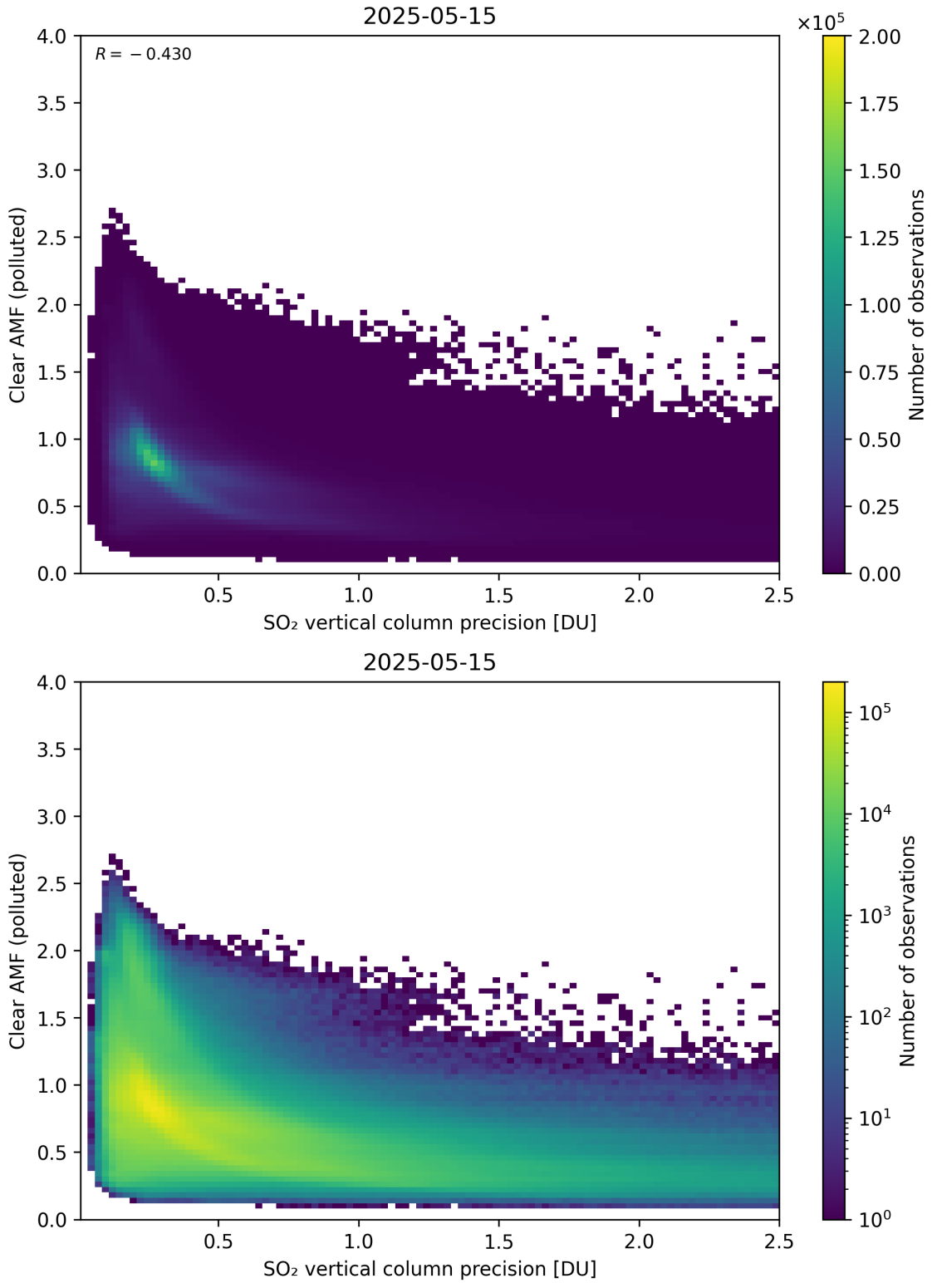


Figure 335: Scatter density plot of "SO_2 vertical column precision" against "Clear AMF (polluted)" for 2025-05-15 to 2025-05-16.

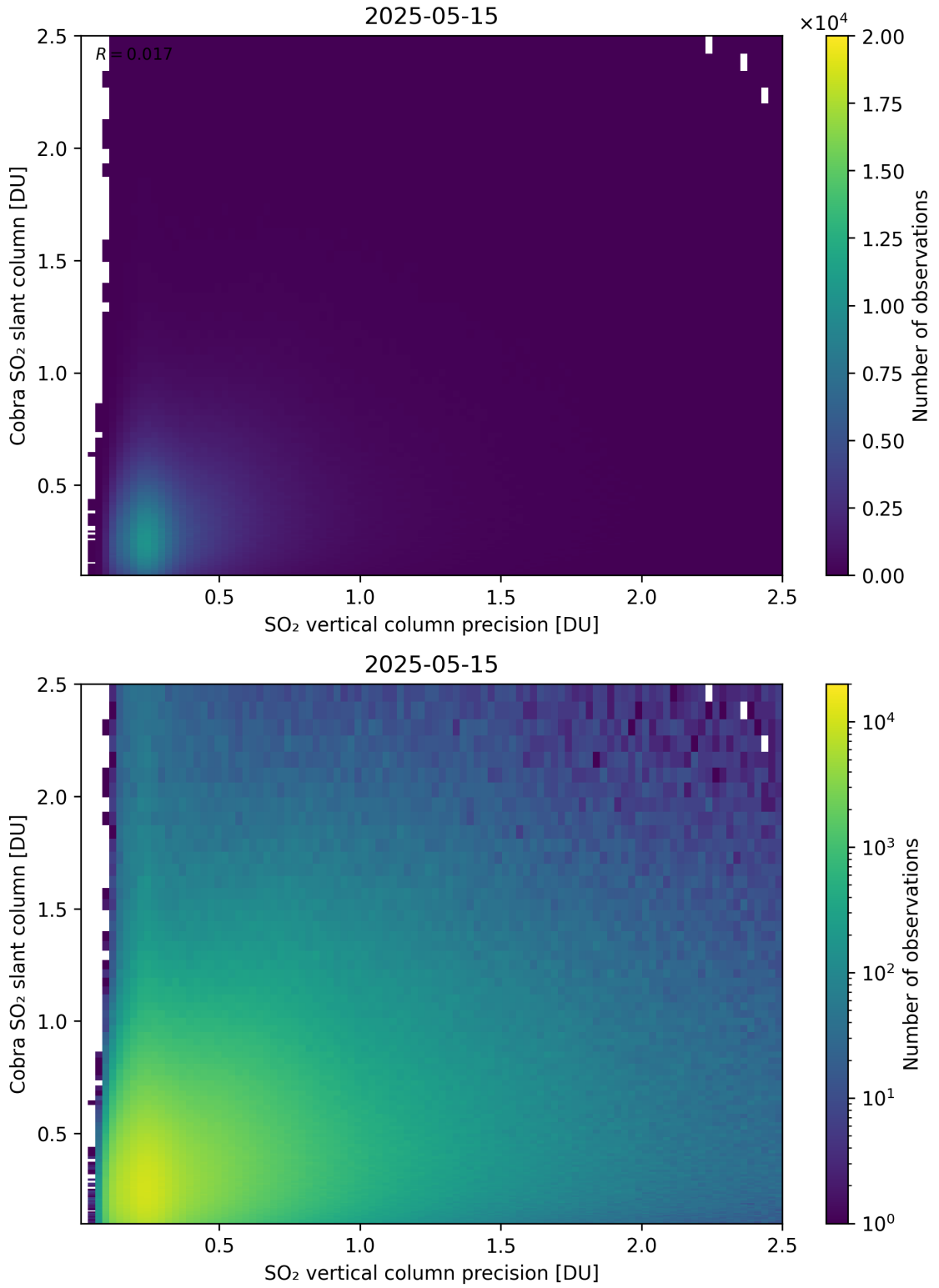


Figure 336: Scatter density plot of "SO_2 vertical column precision" against "Cobra SO_2 slant column" for 2025-05-15 to 2025-05-16.

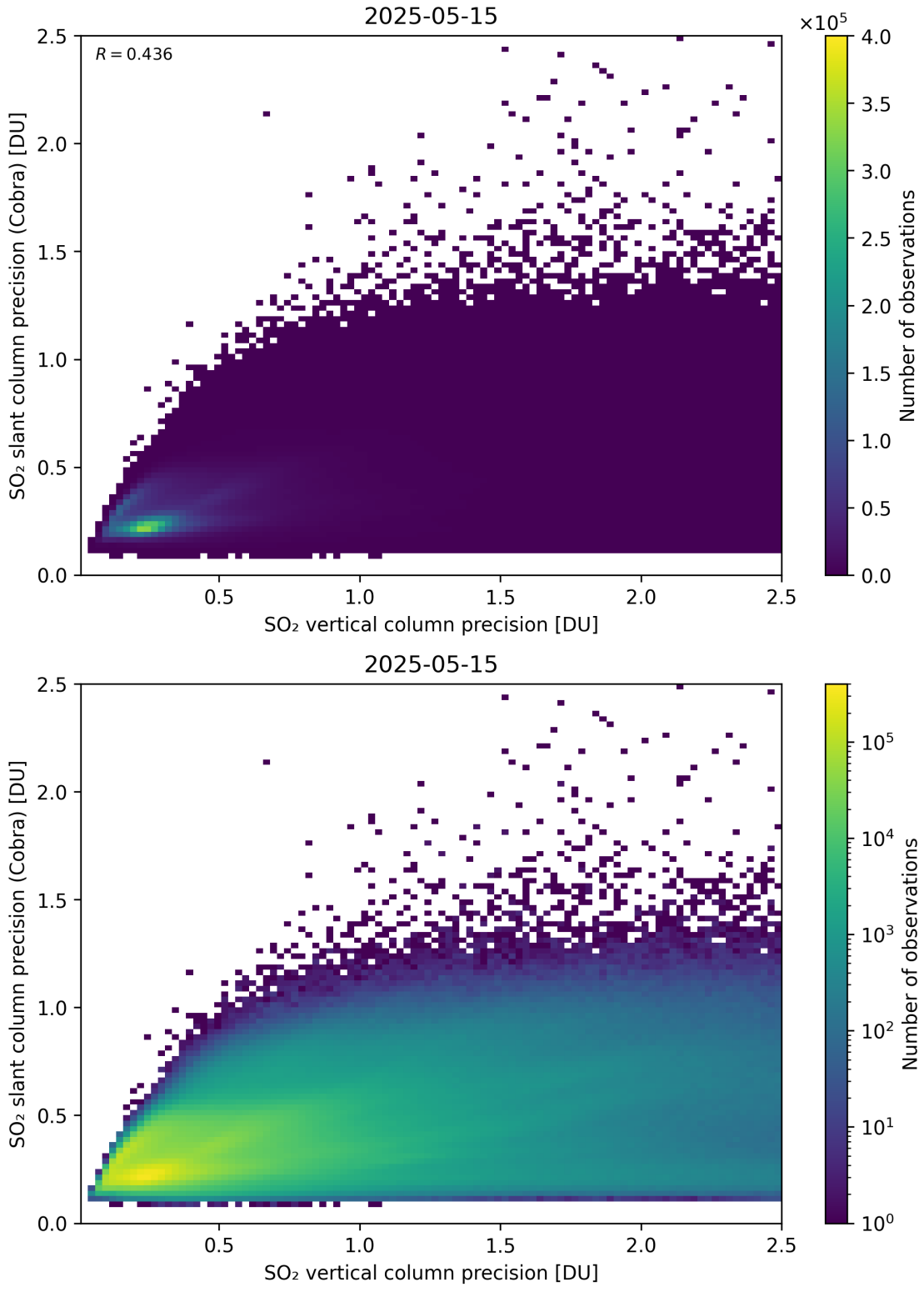


Figure 337: Scatter density plot of "SO_2 vertical column precision" against "SO_2 slant column precision (Cobra)" for 2025-05-15 to 2025-05-16.

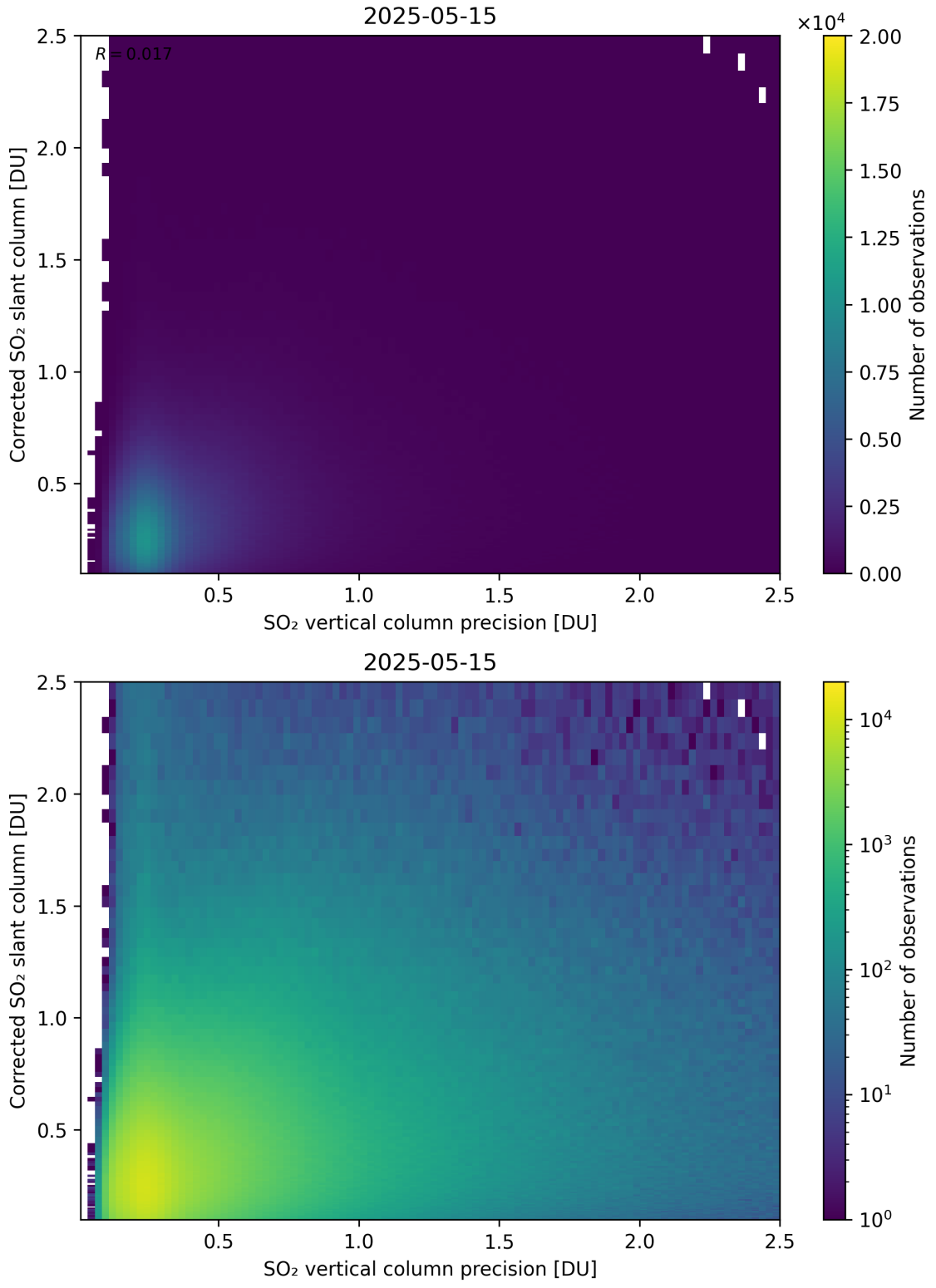


Figure 338: Scatter density plot of "SO_2 vertical column precision" against "Corrected SO_2 slant column" for 2025-05-15 to 2025-05-16.

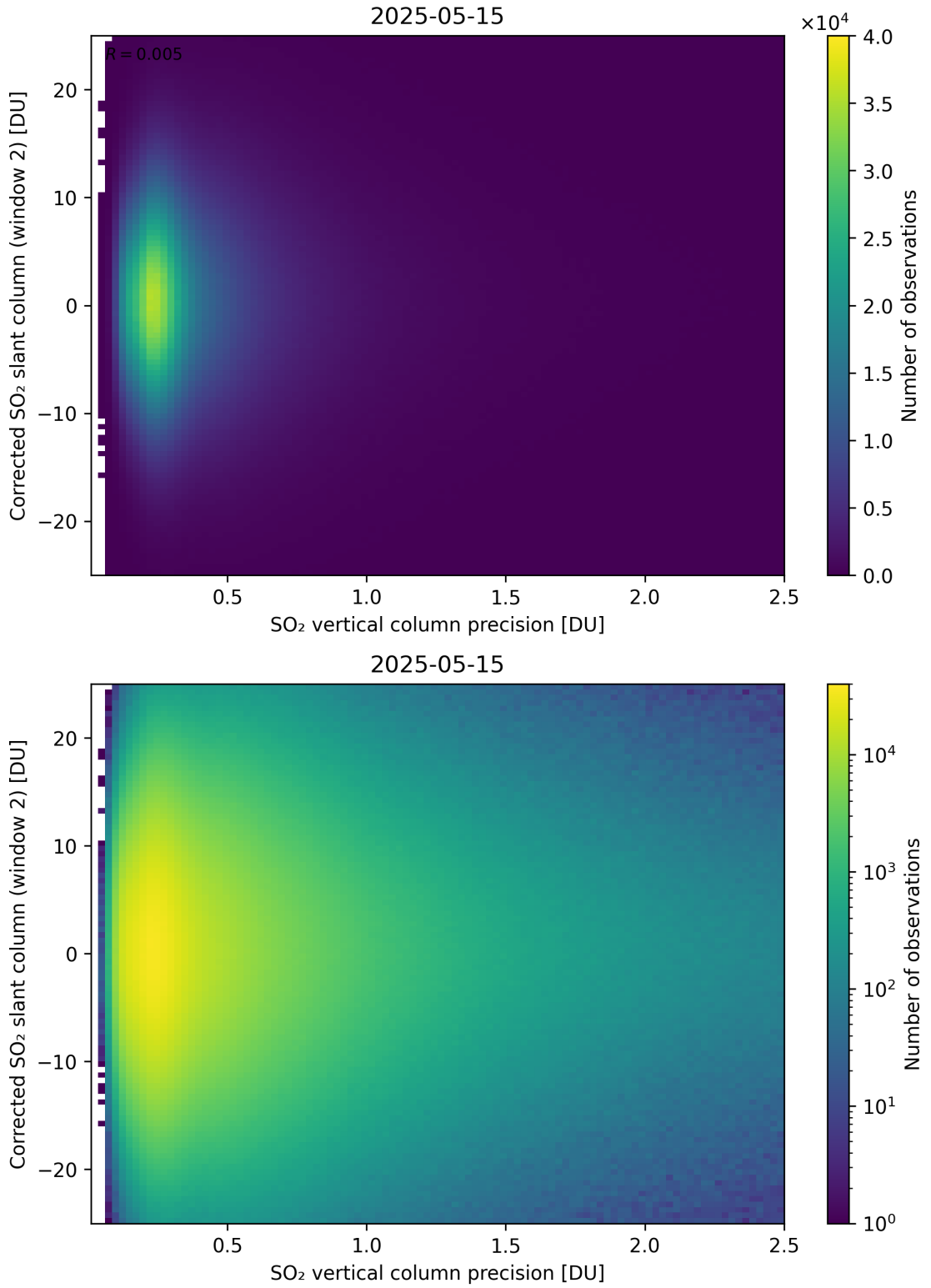


Figure 339: Scatter density plot of "SO_2 vertical column precision" against "Corrected SO_2 slant column (window 2)" for 2025-05-15 to 2025-05-16.

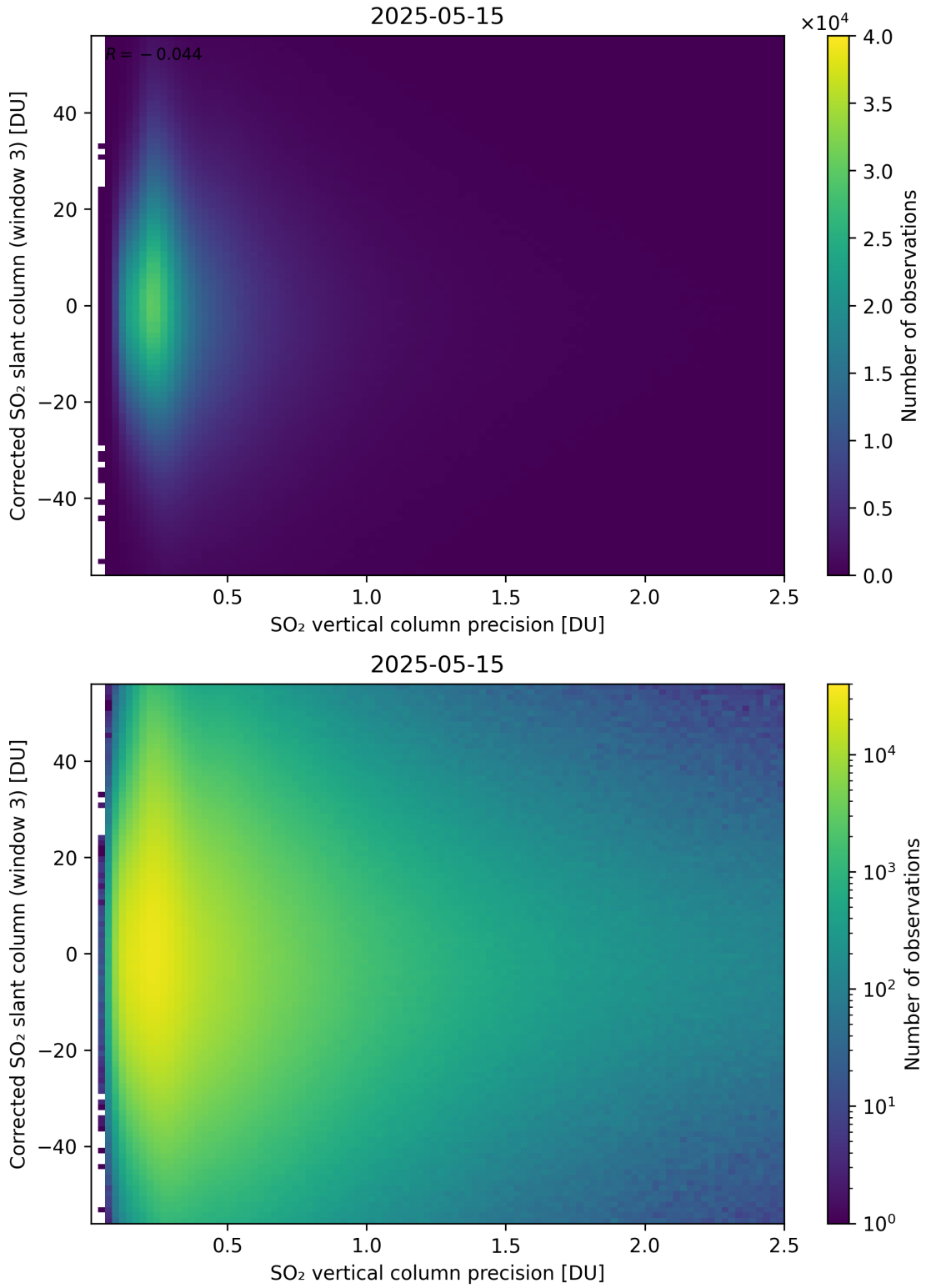


Figure 340: Scatter density plot of "SO_2 vertical column precision" against "Corrected SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

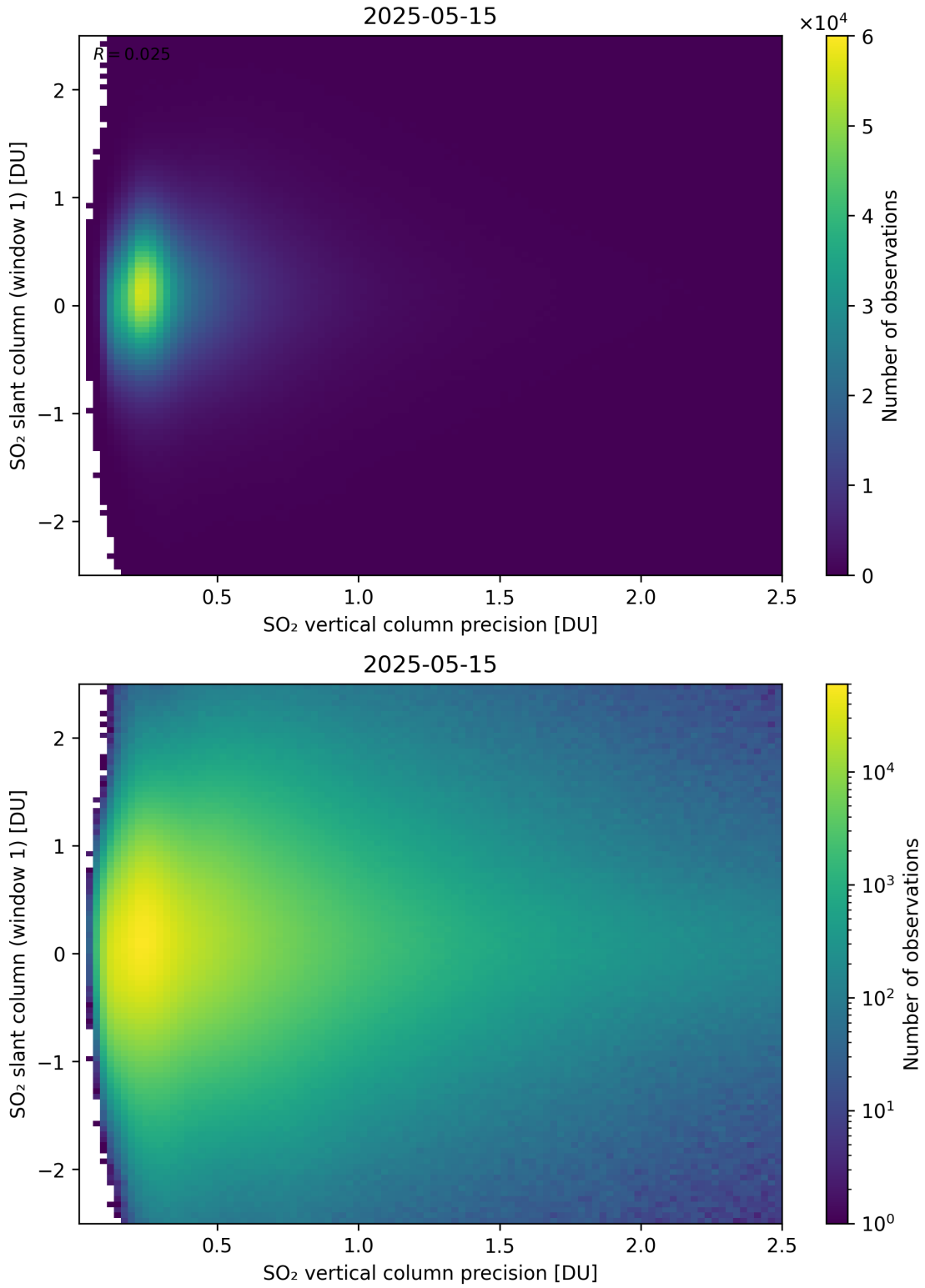


Figure 341: Scatter density plot of "SO_2 vertical column precision" against "SO_2 slant column (window 1)" for 2025-05-15 to 2025-05-16.

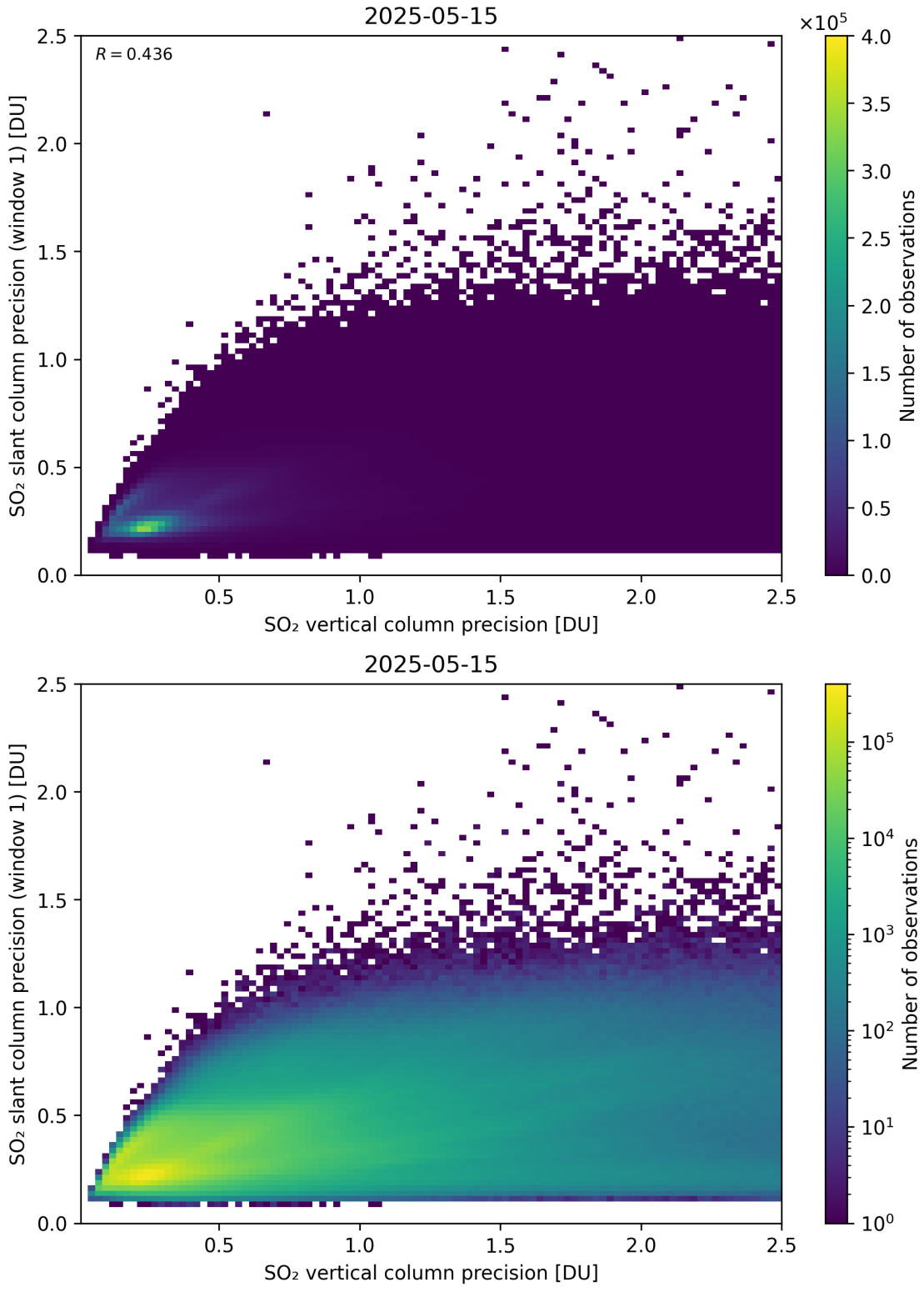


Figure 342: Scatter density plot of "SO_2 vertical column precision" against "SO_2 slant column precision (window 1)" for 2025-05-15 to 2025-05-16.

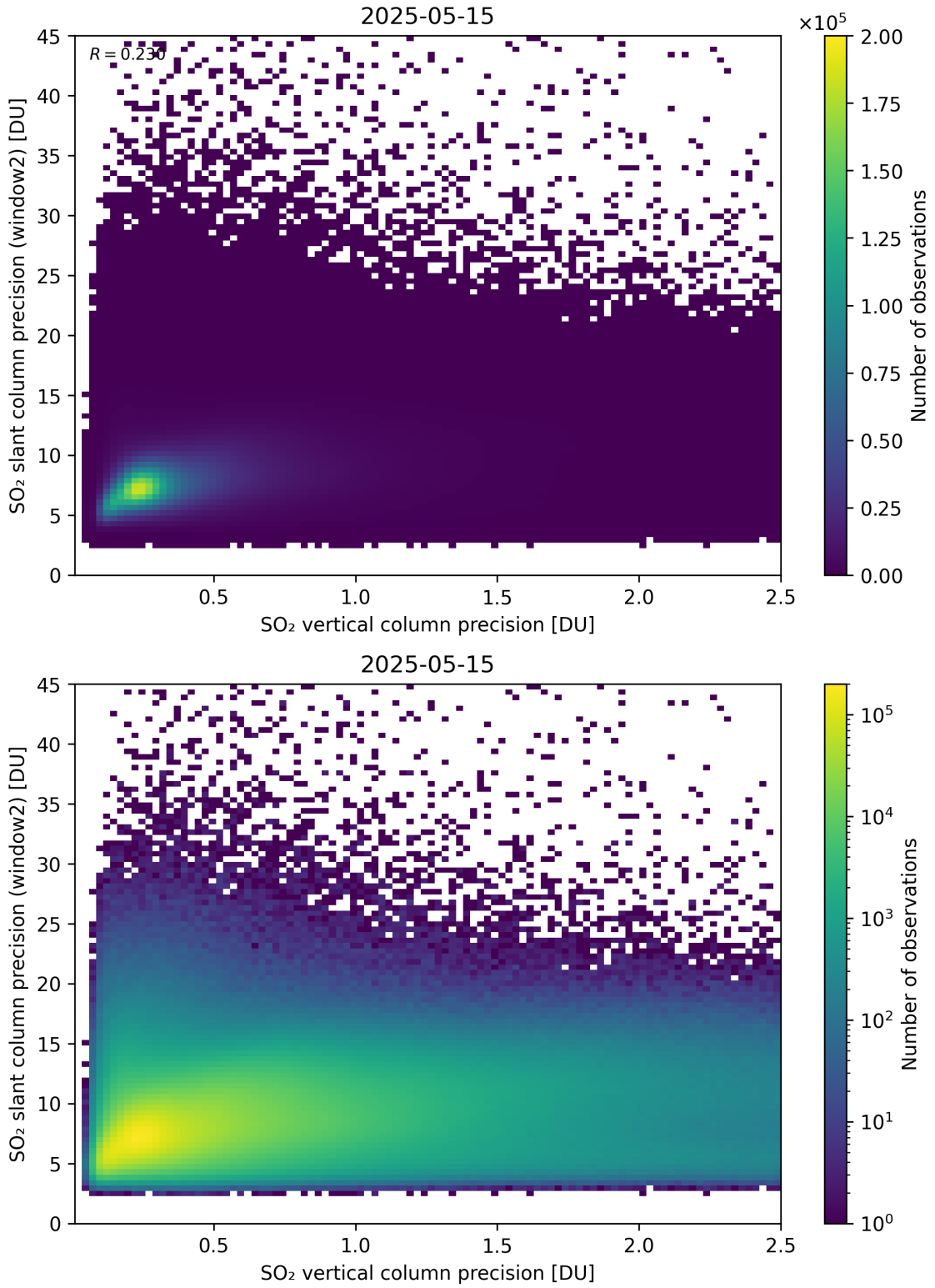


Figure 343: Scatter density plot of "SO_2 vertical column precision" against "SO_2 slant column precision (window2)" for 2025-05-15 to 2025-05-16.

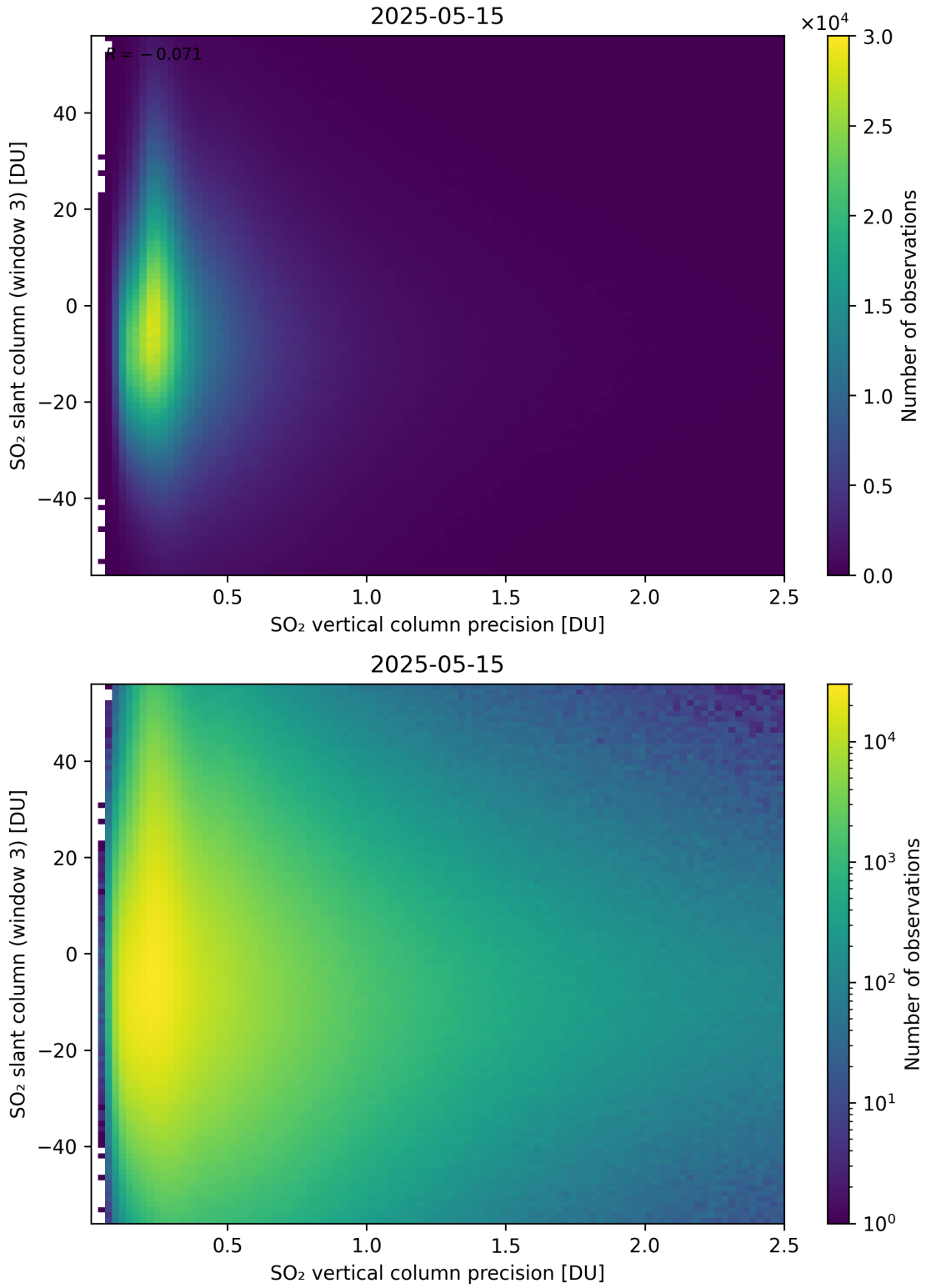


Figure 344: Scatter density plot of "SO_2 vertical column precision" against "SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.

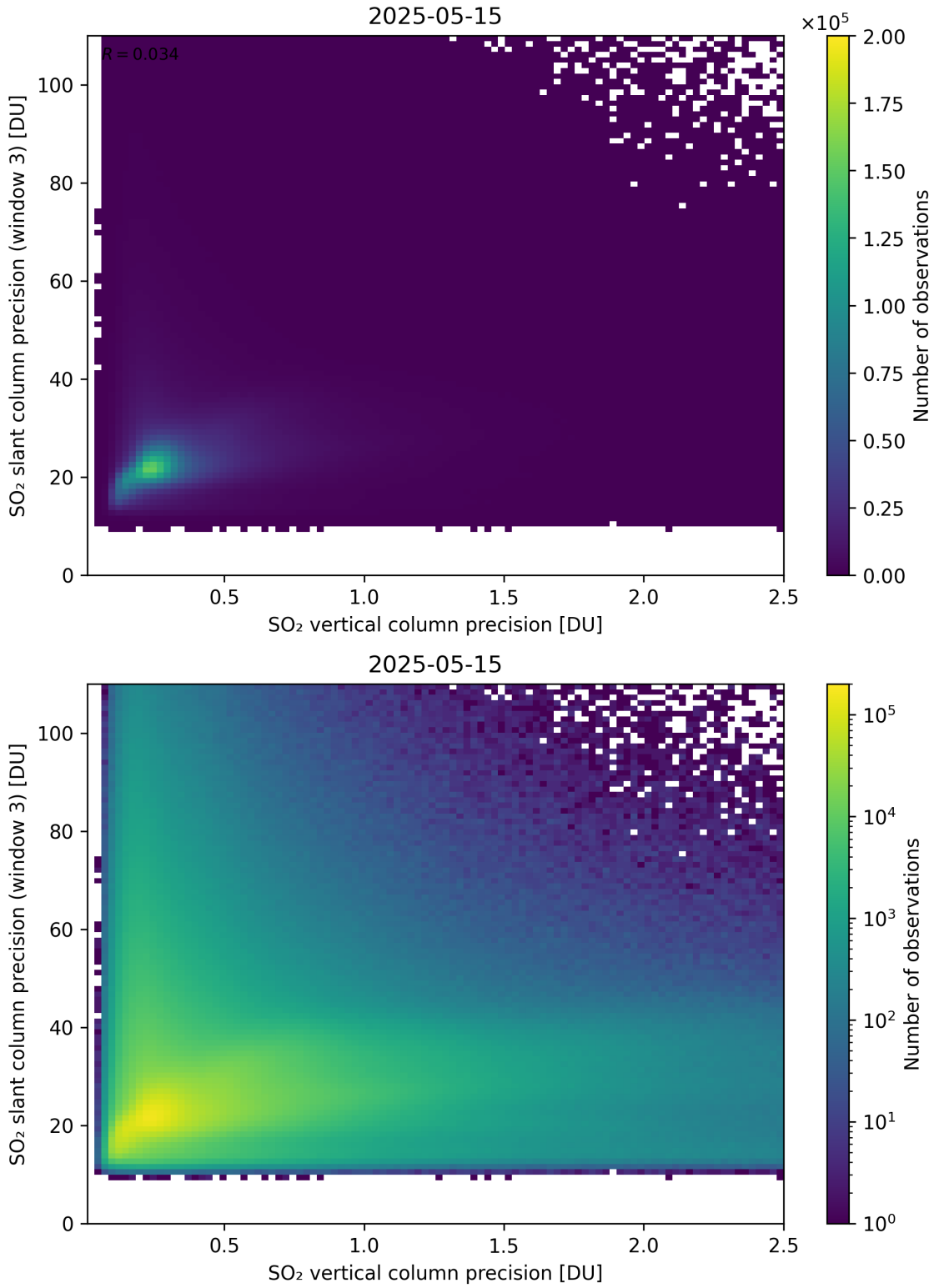


Figure 345: Scatter density plot of "SO_2 vertical column precision" against "SO_2 slant column precision (window 3)" for 2025-05-15 to 2025-05-16.

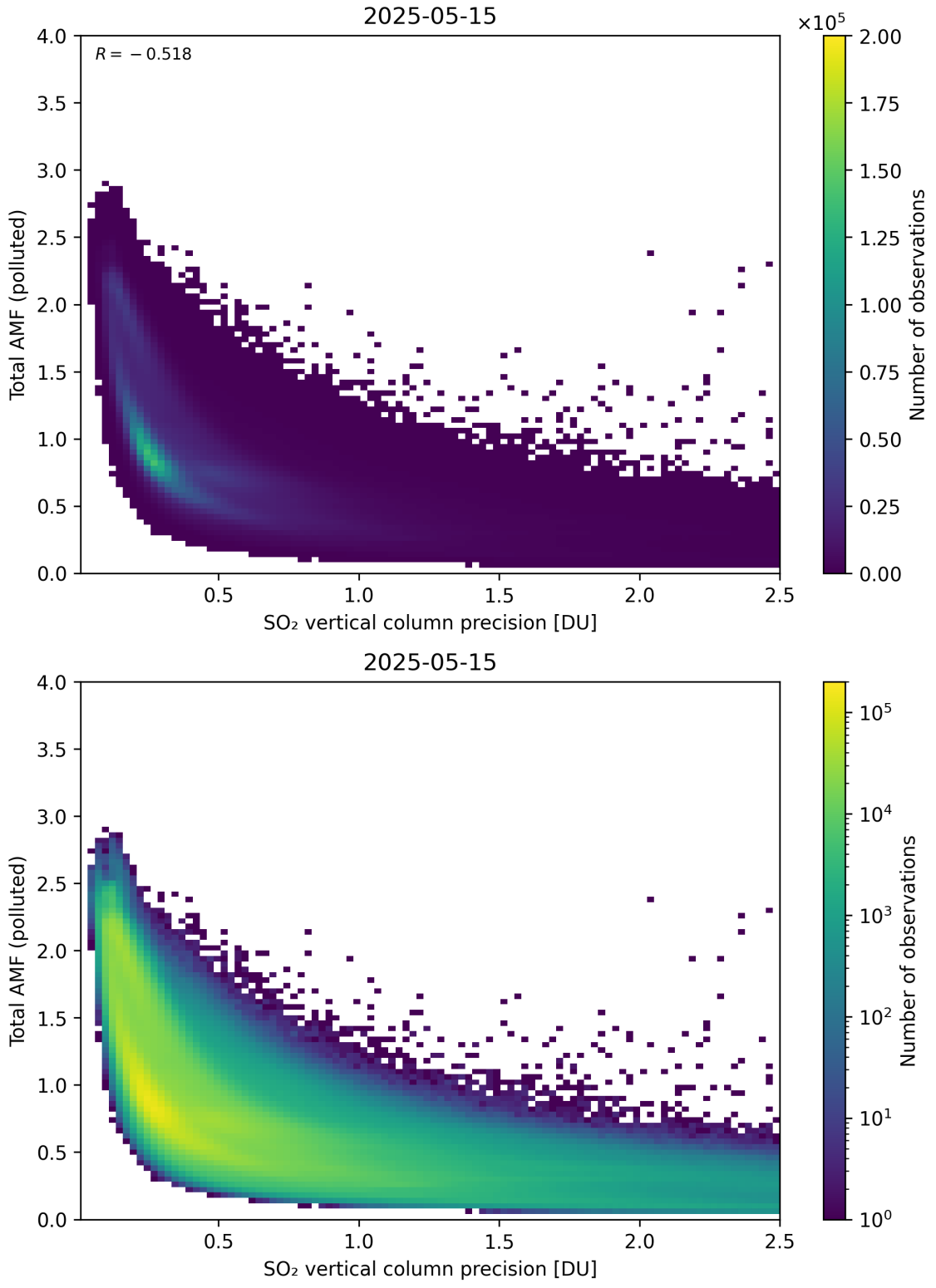


Figure 346: Scatter density plot of "SO_2 vertical column precision" against "Total AMF (polluted)" for 2025-05-15 to 2025-05-16.

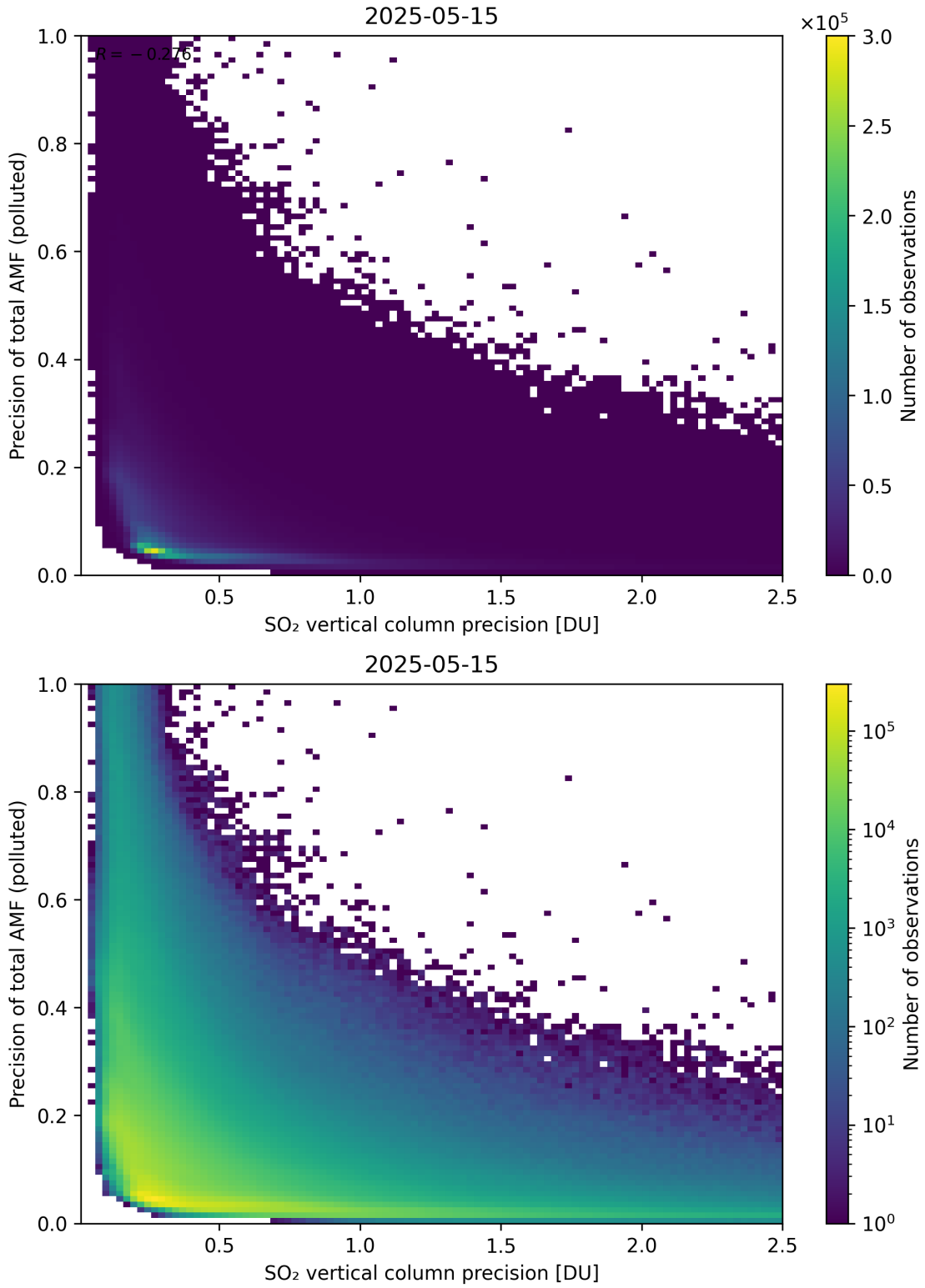


Figure 347: Scatter density plot of "SO_2 vertical column precision" against "Precision of total AMF (polluted)" for 2025-05-15 to 2025-05-16.

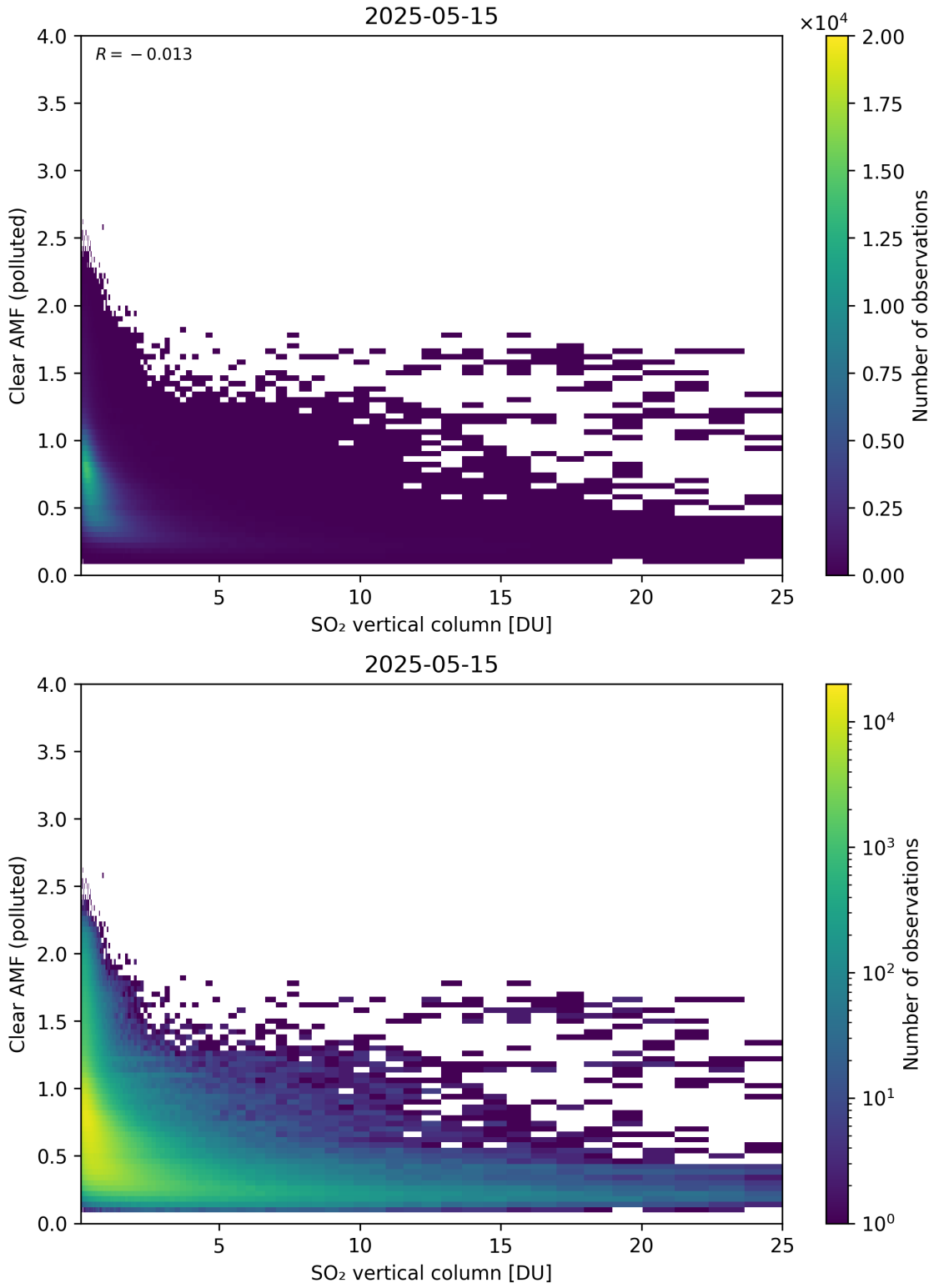


Figure 348: Scatter density plot of "SO_2 vertical column" against "Clear AMF (polluted)" for 2025-05-15 to 2025-05-16.

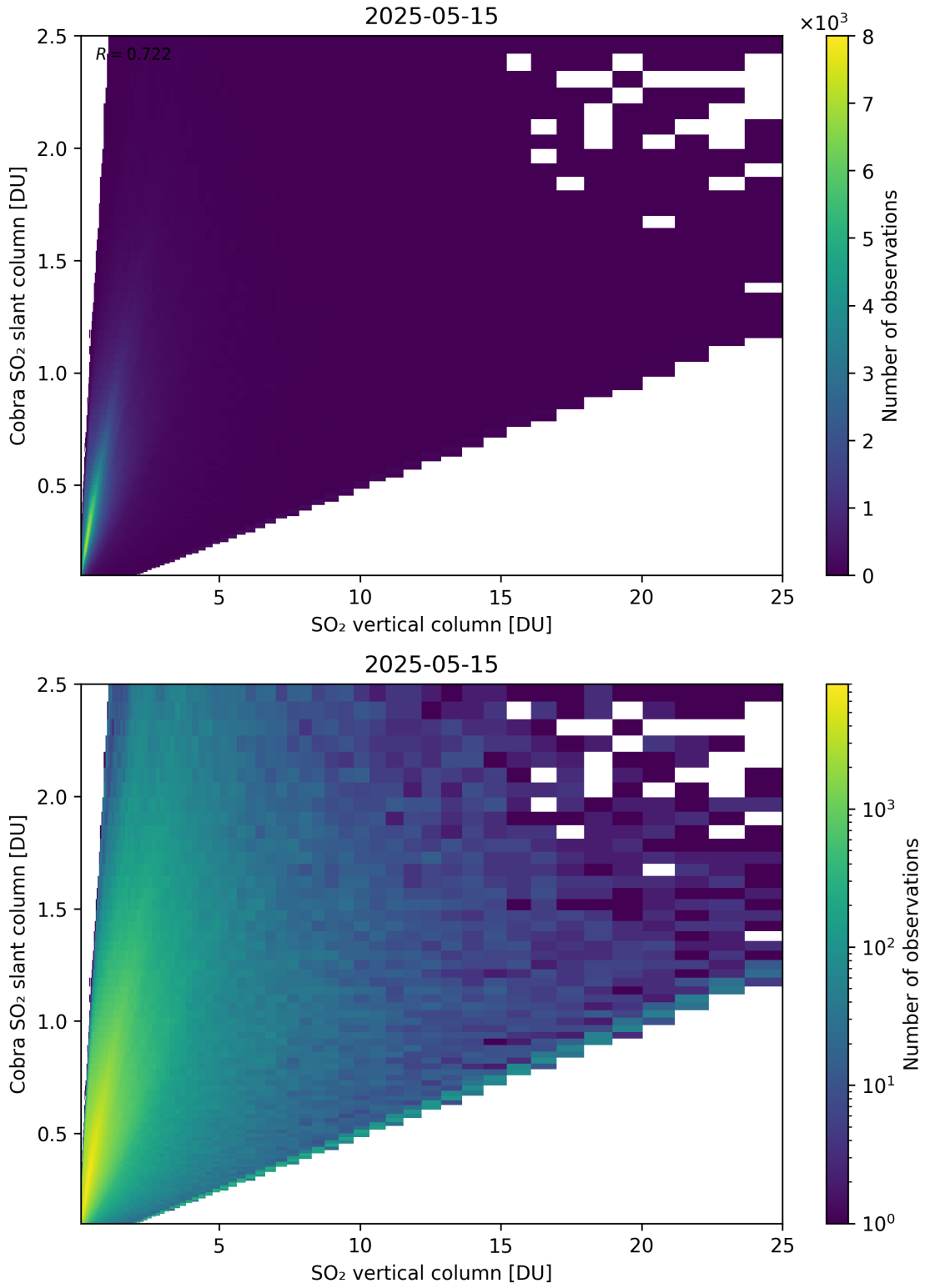


Figure 349: Scatter density plot of "SO_2 vertical column" against "Cobra SO_2 slant column" for 2025-05-15 to 2025-05-16.

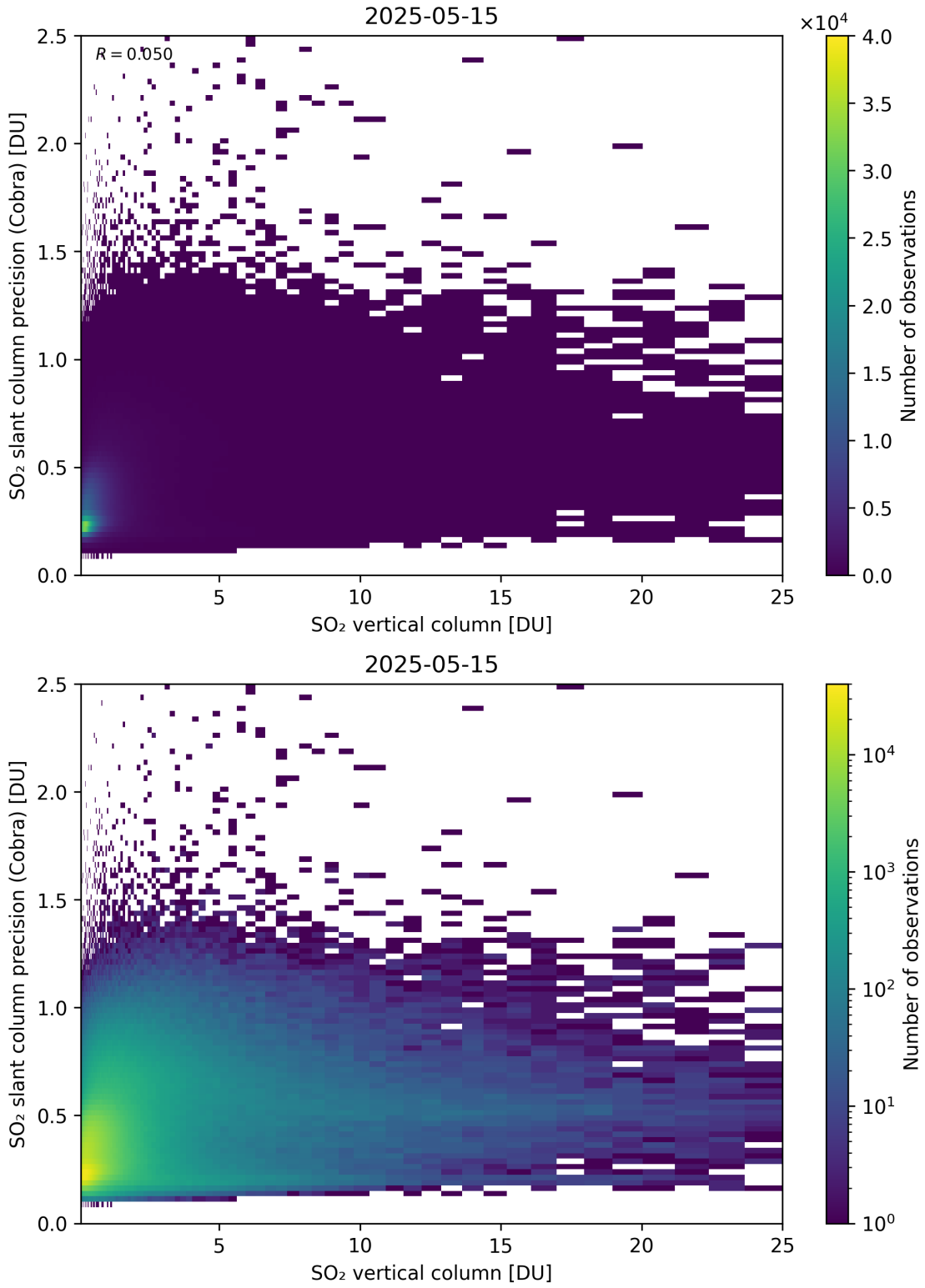


Figure 350: Scatter density plot of "SO_2 vertical column" against "SO_2 slant column precision (Cobra)" for 2025-05-15 to 2025-05-16.

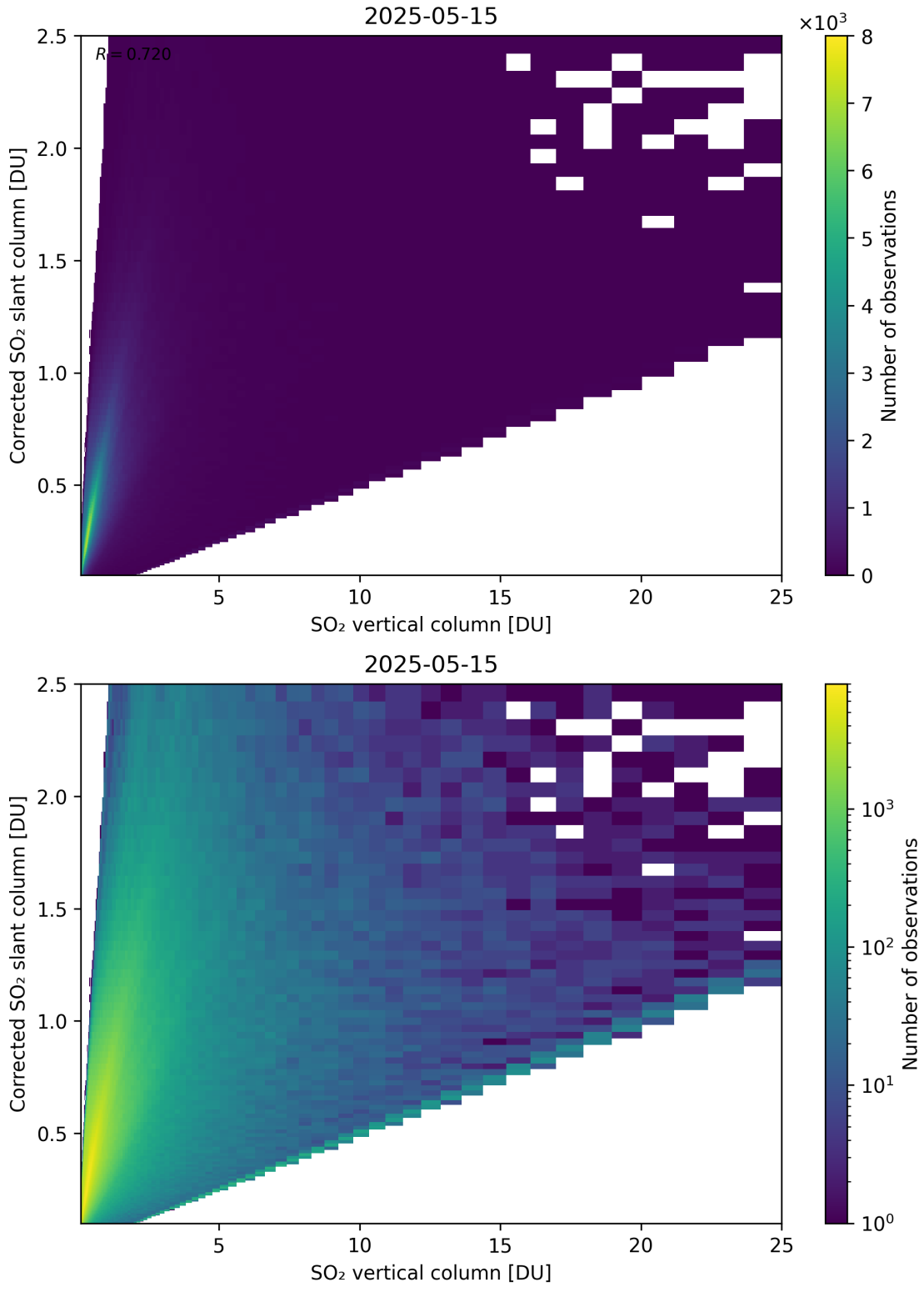


Figure 351: Scatter density plot of "SO_2 vertical column" against "Corrected SO_2 slant column" for 2025-05-15 to 2025-05-16.

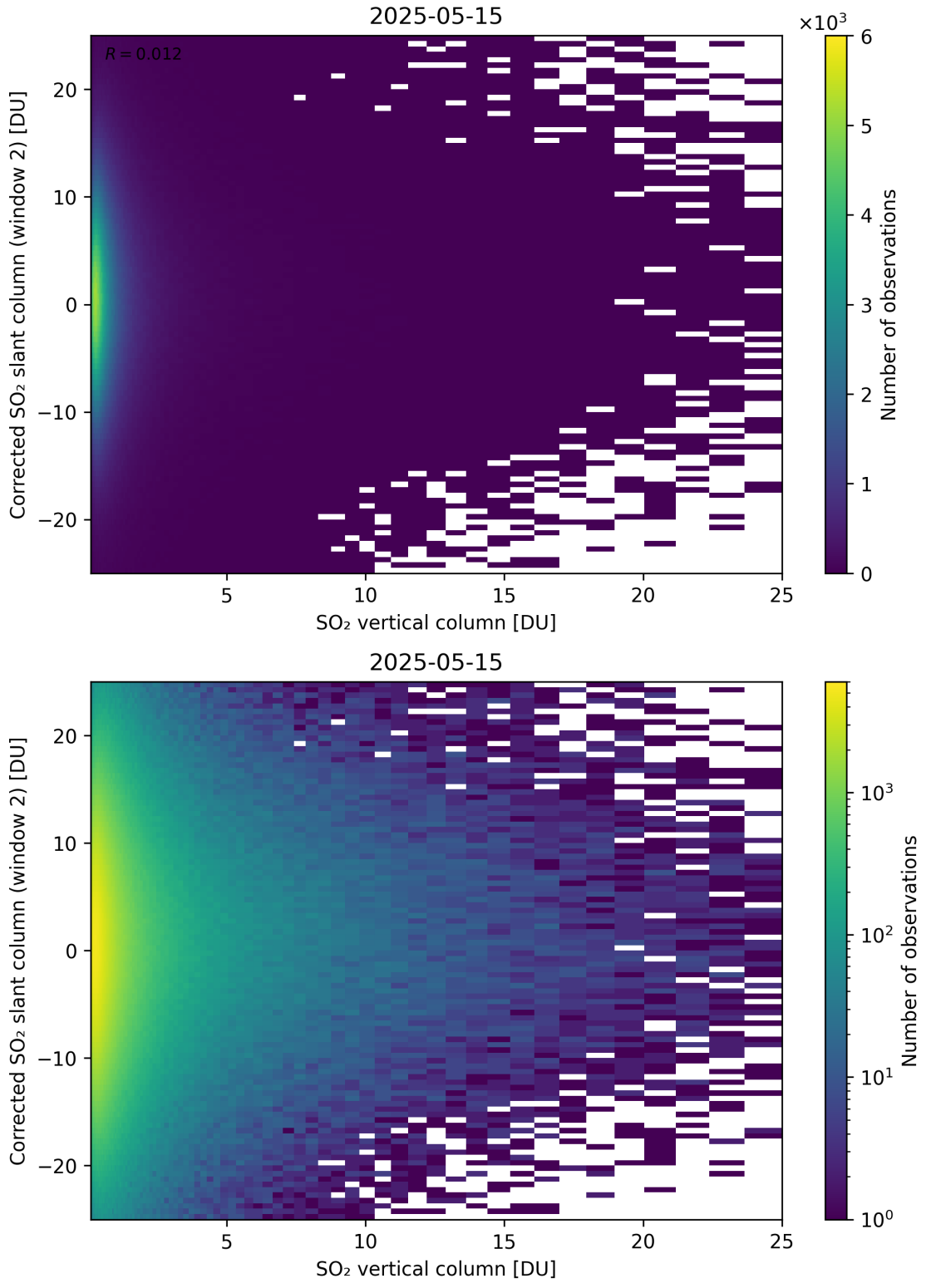


Figure 352: Scatter density plot of "SO_2 vertical column" against "Corrected SO_2 slant column (window 2)" for 2025-05-15 to 2025-05-16.

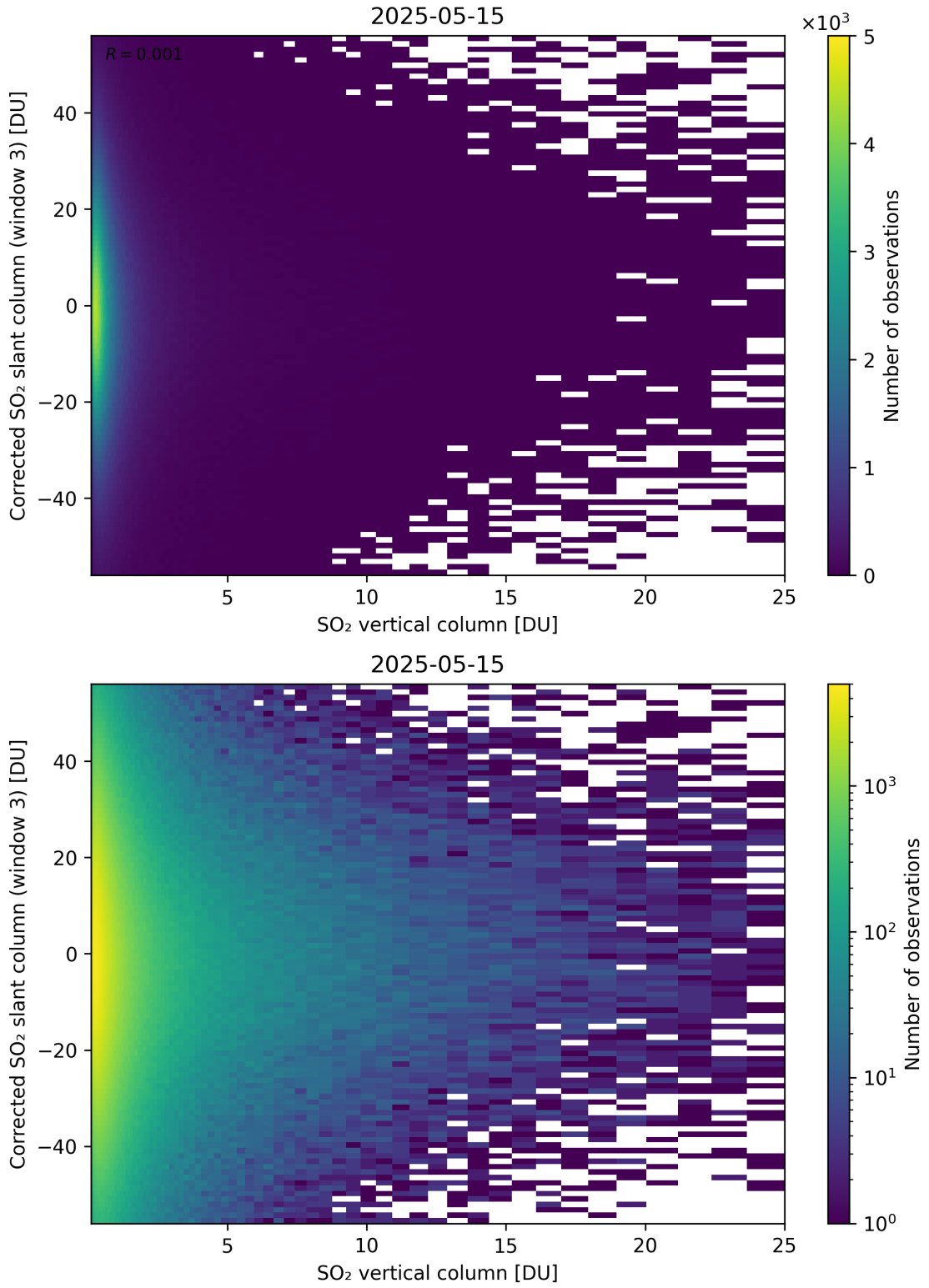
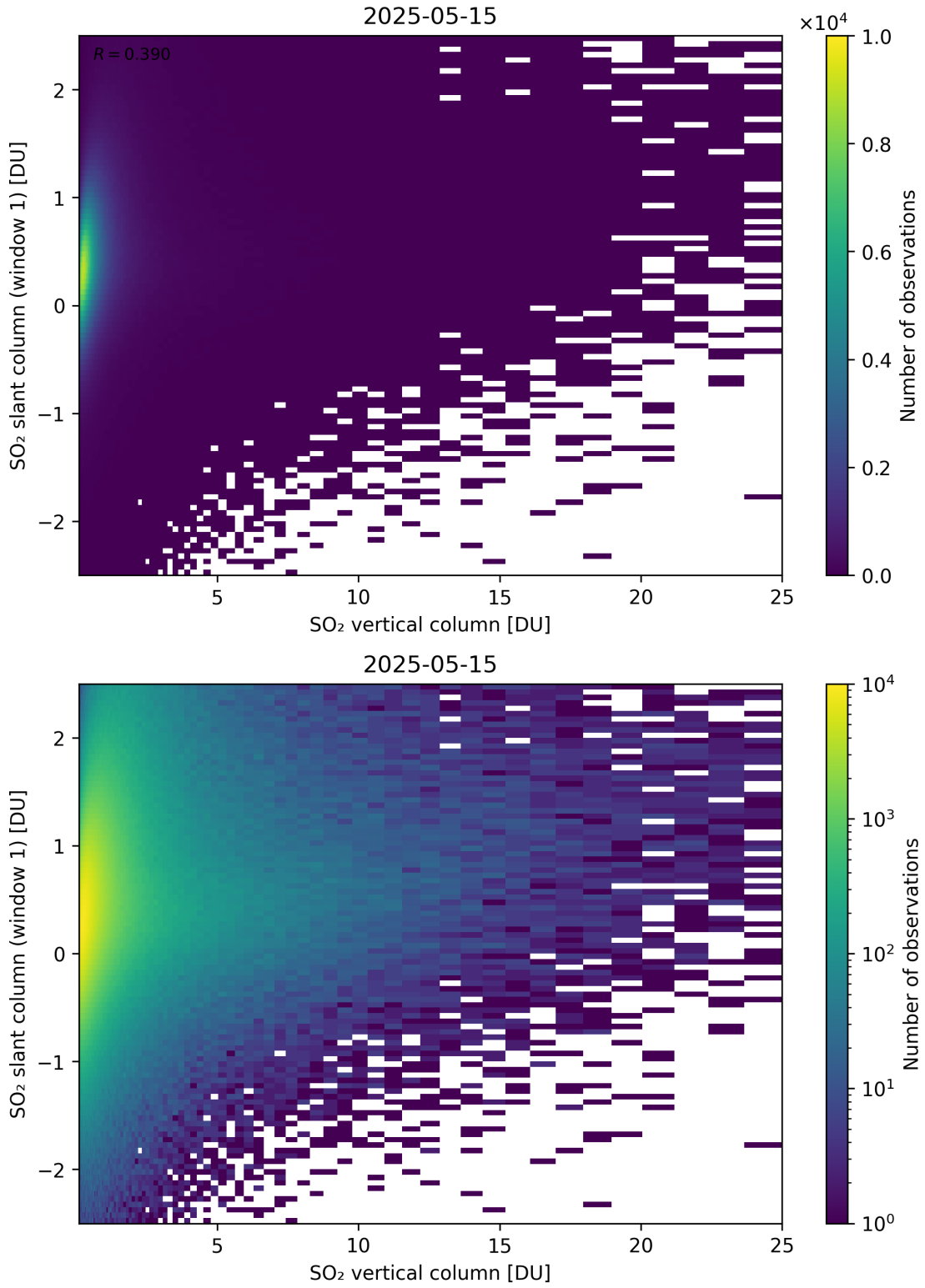


Figure 353: Scatter density plot of "SO_2 vertical column" against "Corrected SO_2 slant column (window 3)" for 2025-05-15 to 2025-05-16.



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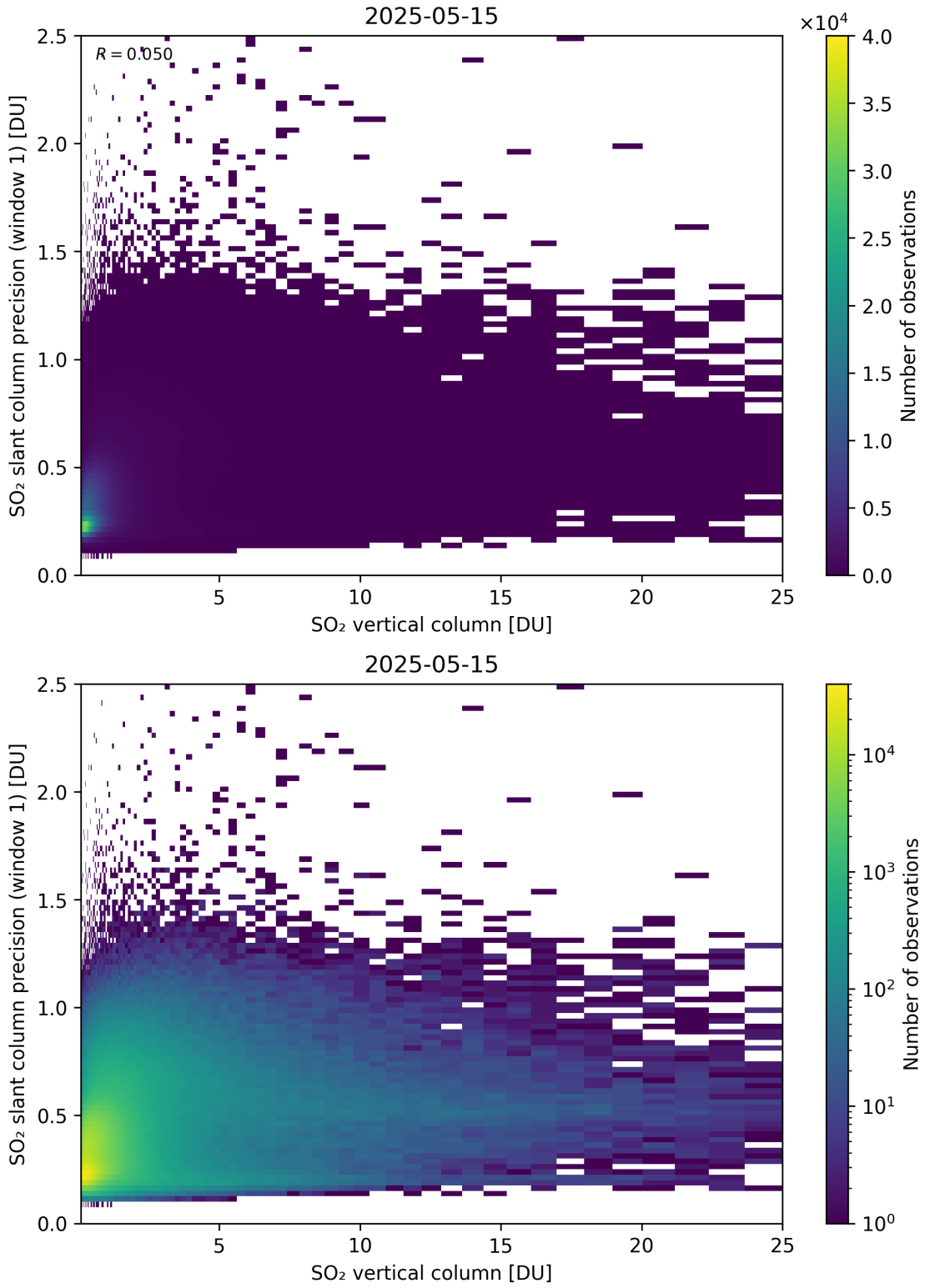


Figure 355: Scatter density plot of "SO_2 vertical column" against "SO_2 slant column precision (window 1)" for 2025-05-15 to 2025-05-16.

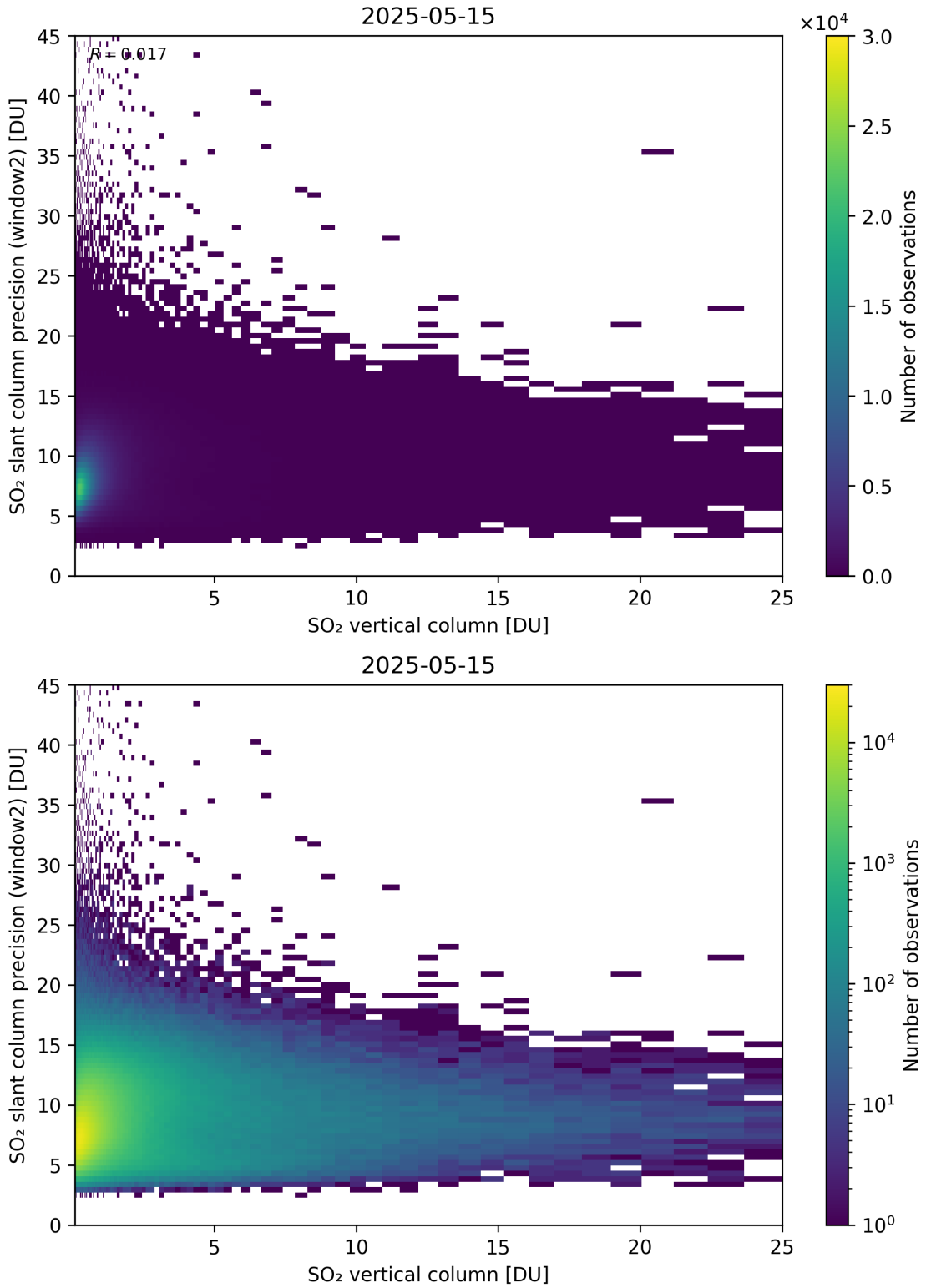
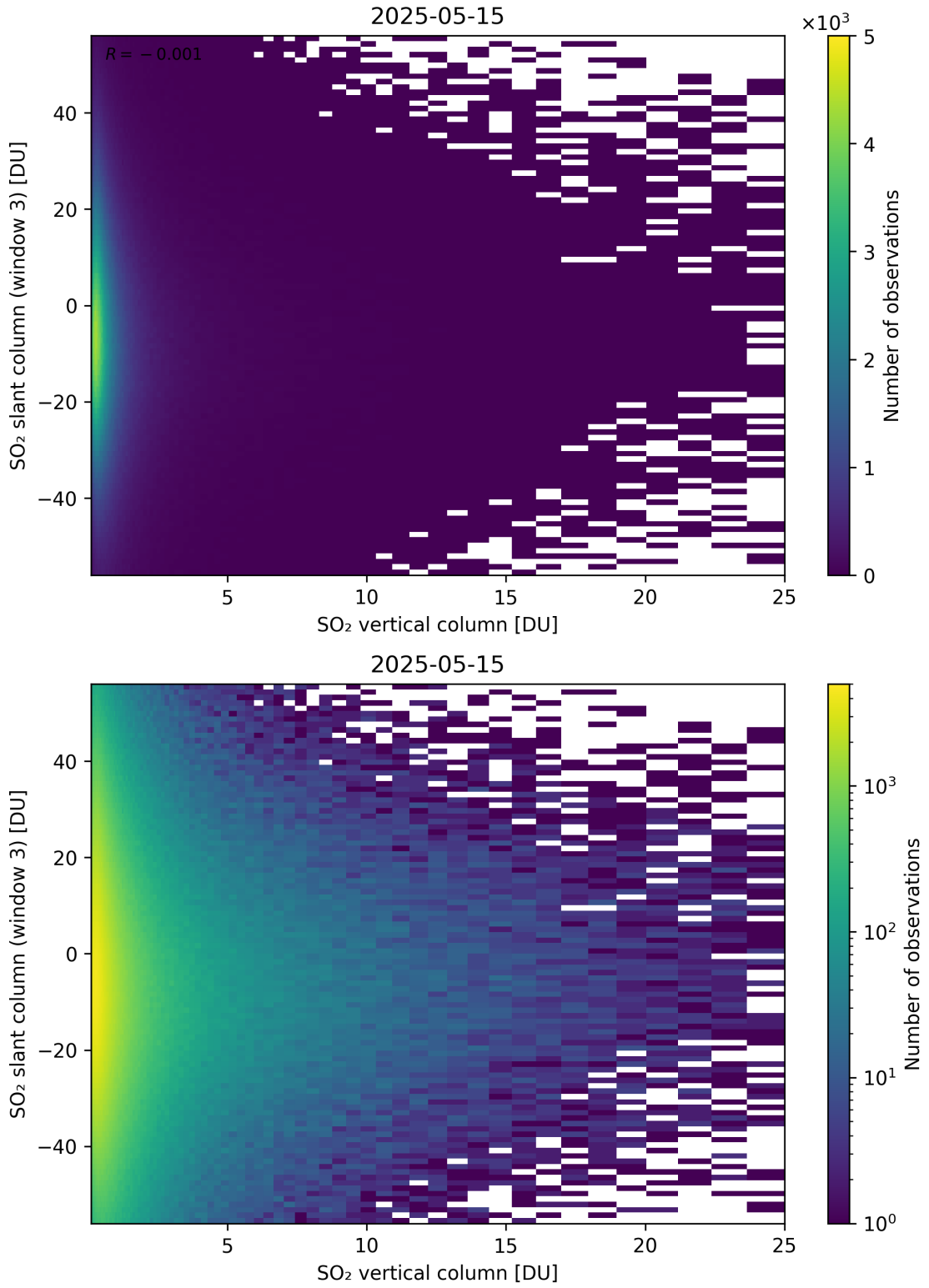


Figure 356: Scatter density plot of "SO_2 vertical column" against "SO_2 slant column precision (window2)" for 2025-05-15 to 2025-05-16.



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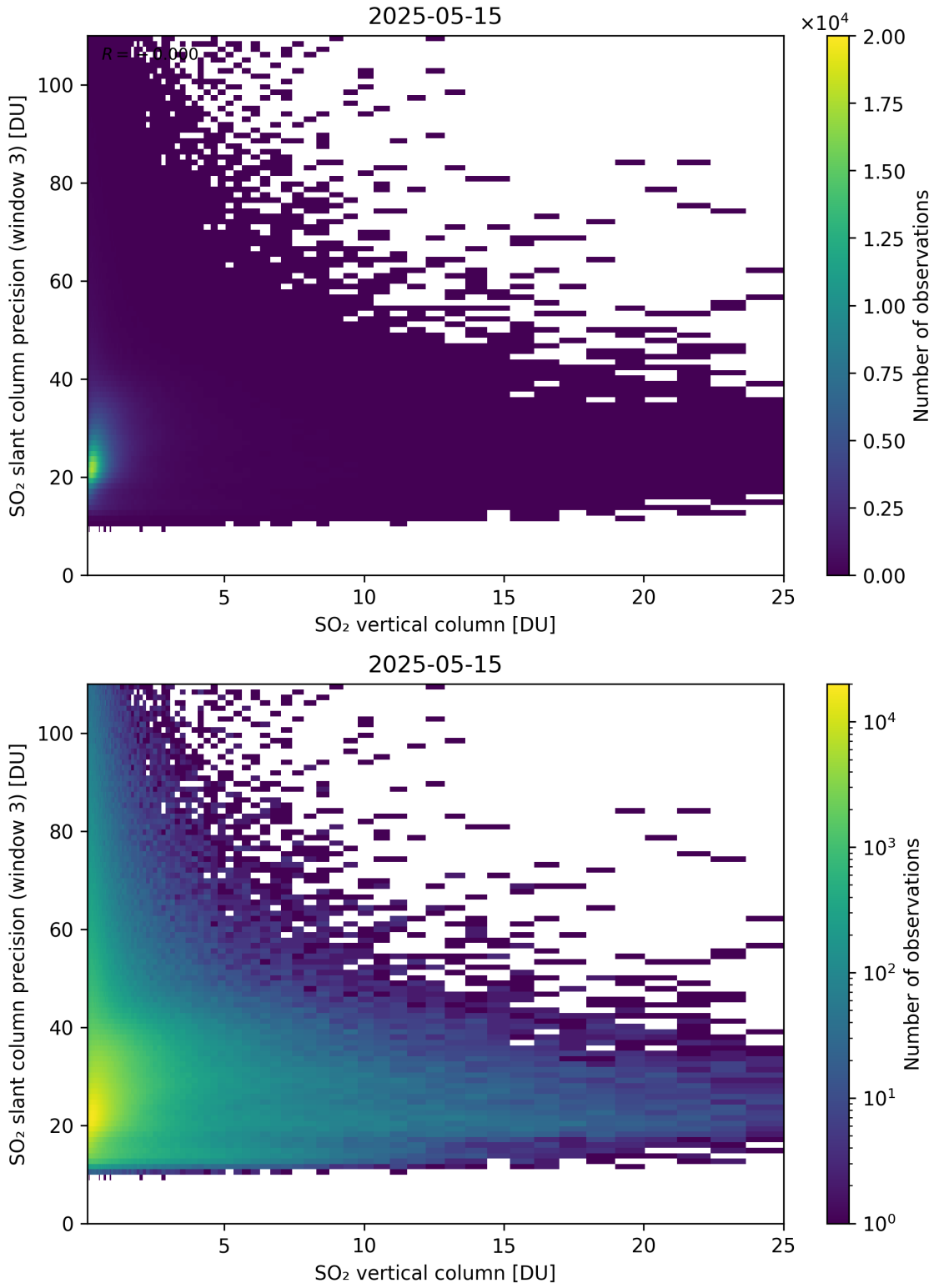
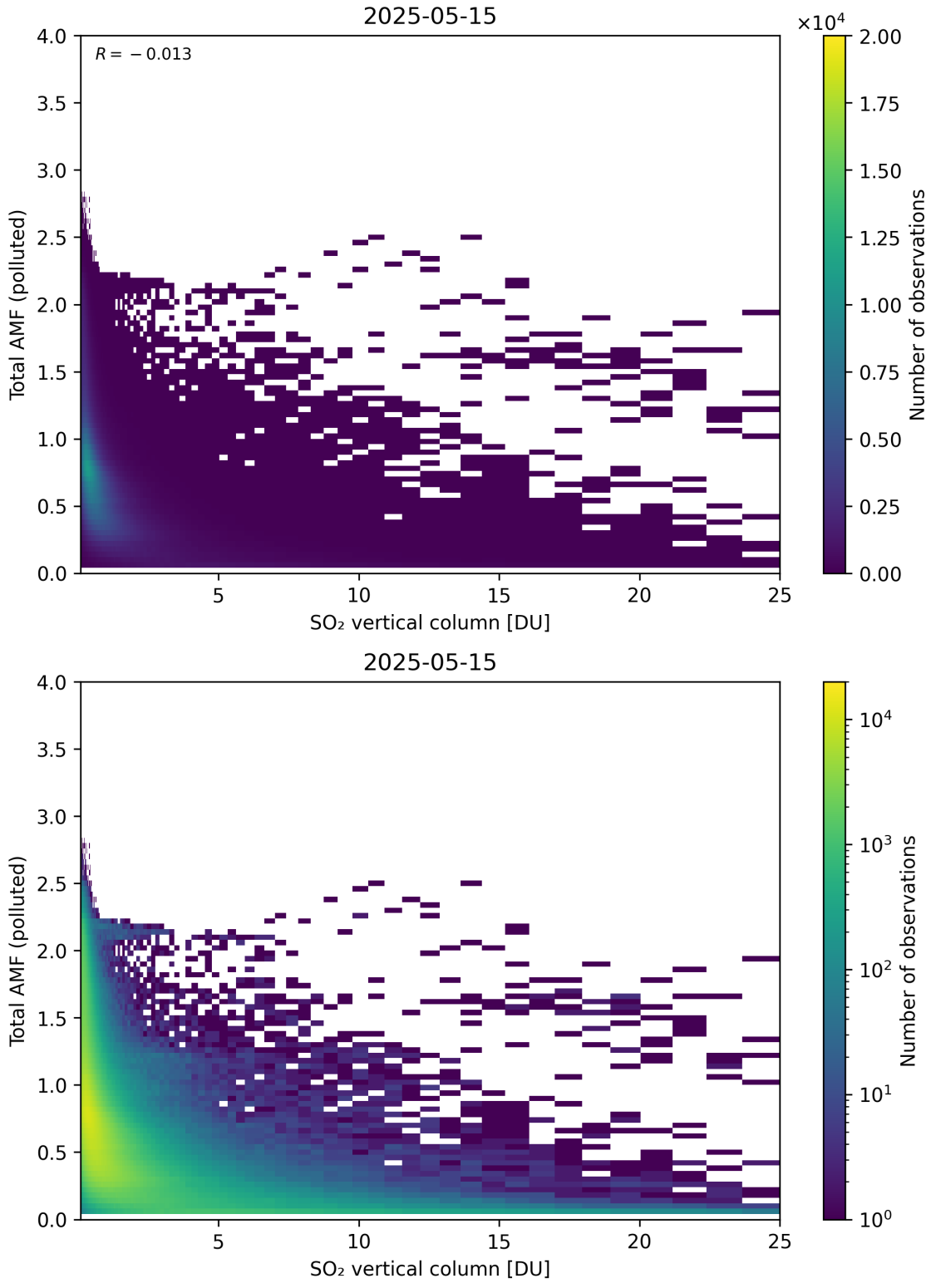


Figure 358: Scatter density plot of "SO_2 vertical column" against "SO_2 slant column precision (window 3)" for 2025-05-15 to 2025-05-16.



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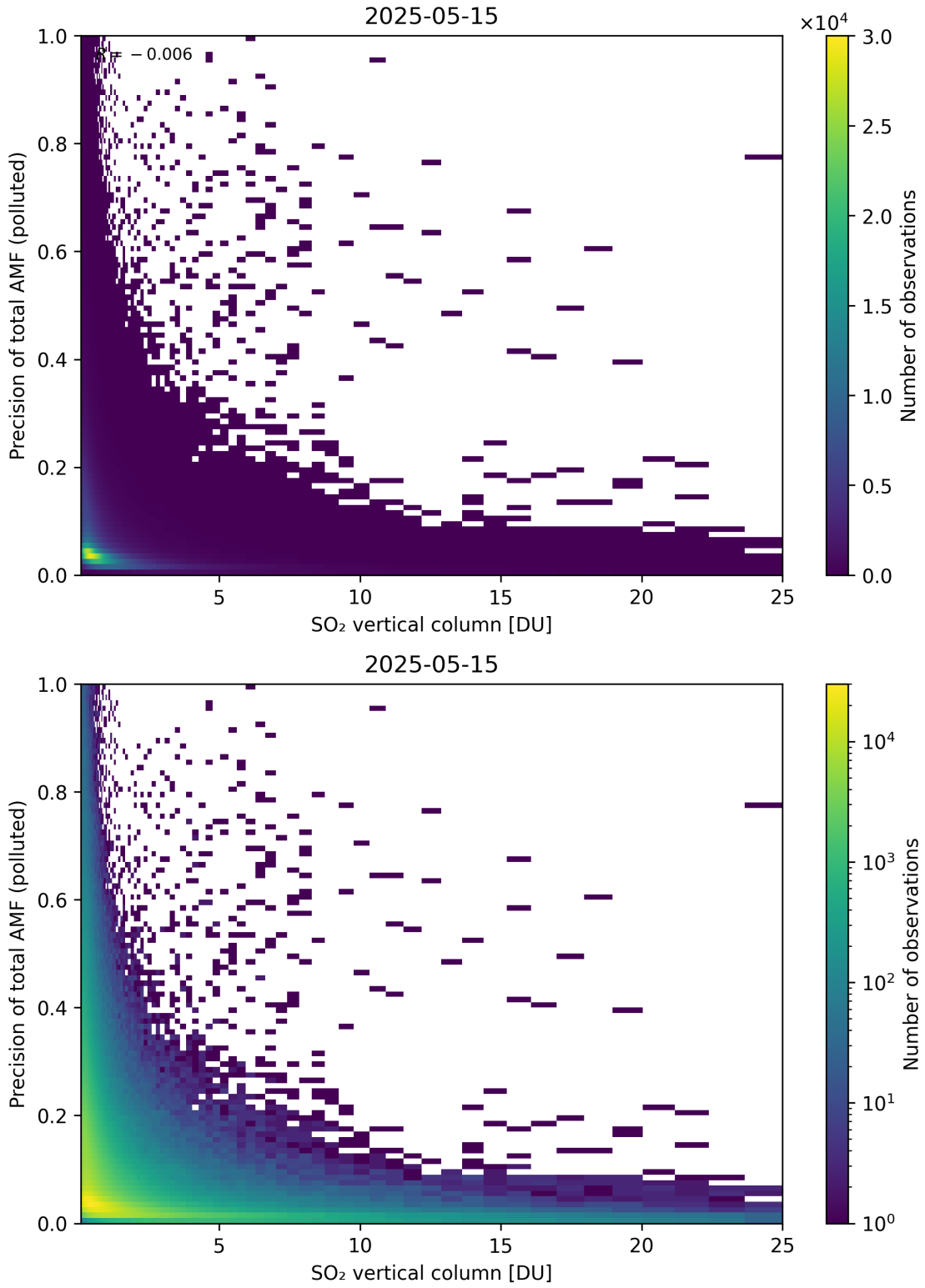

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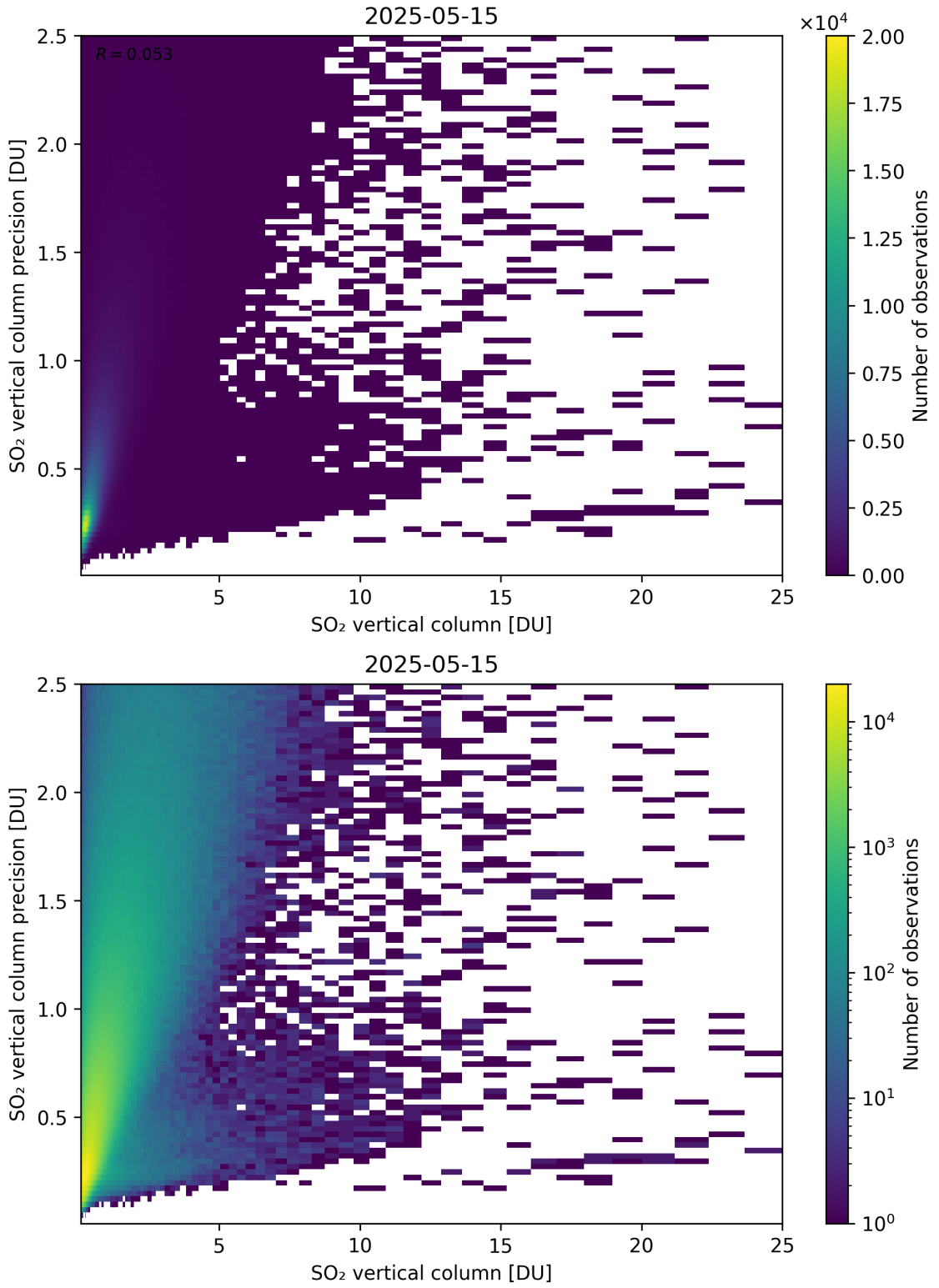

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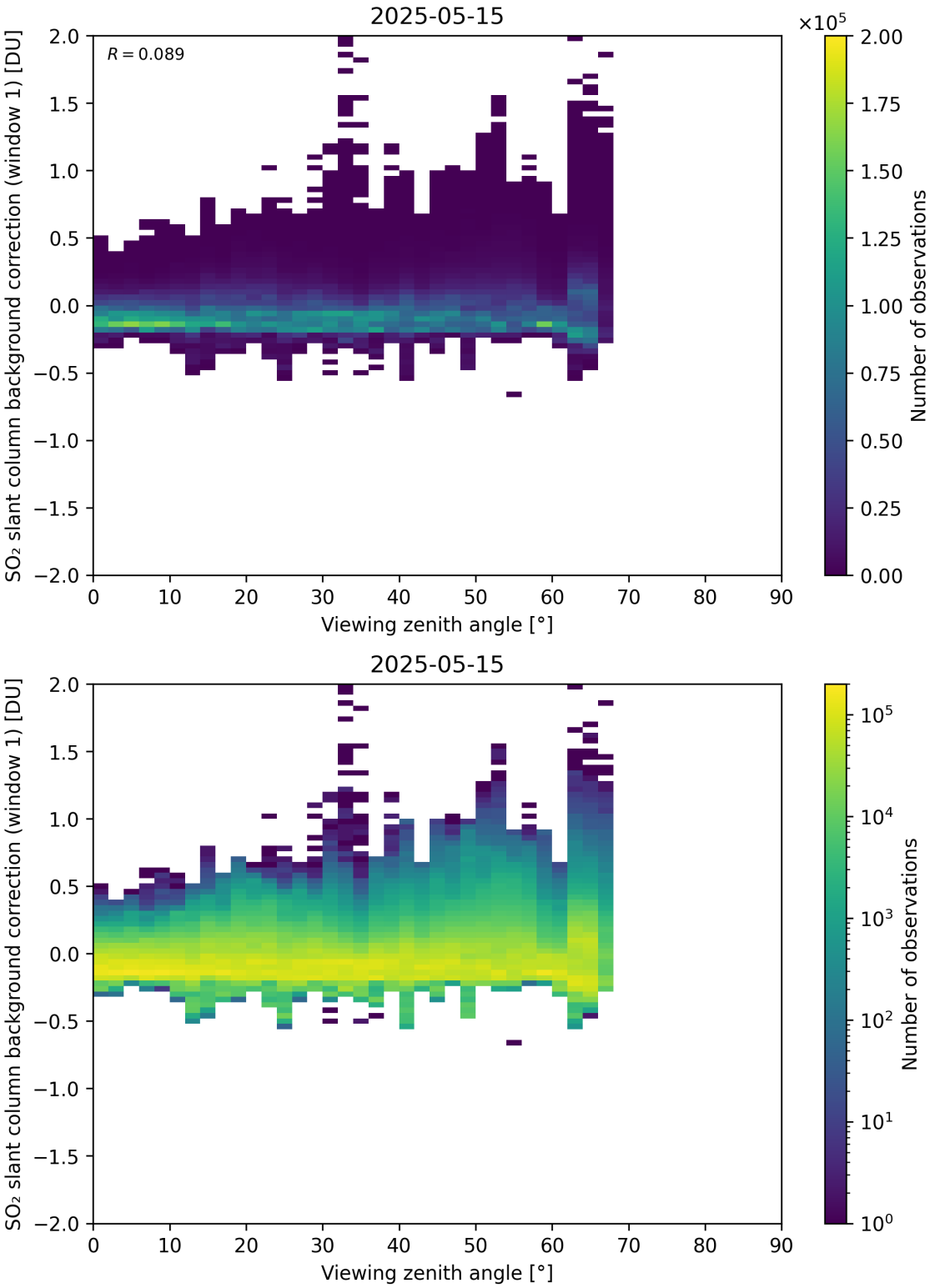

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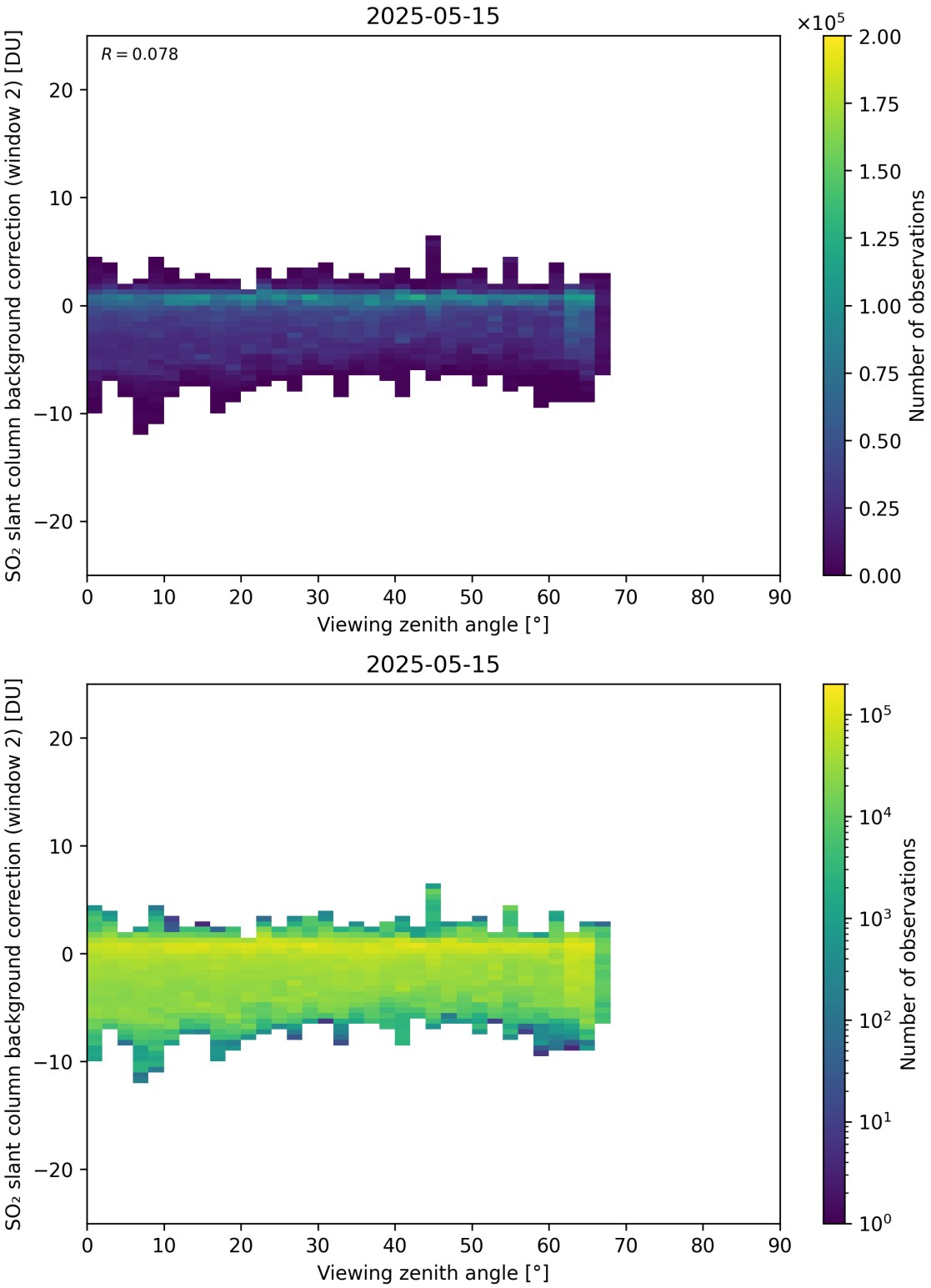

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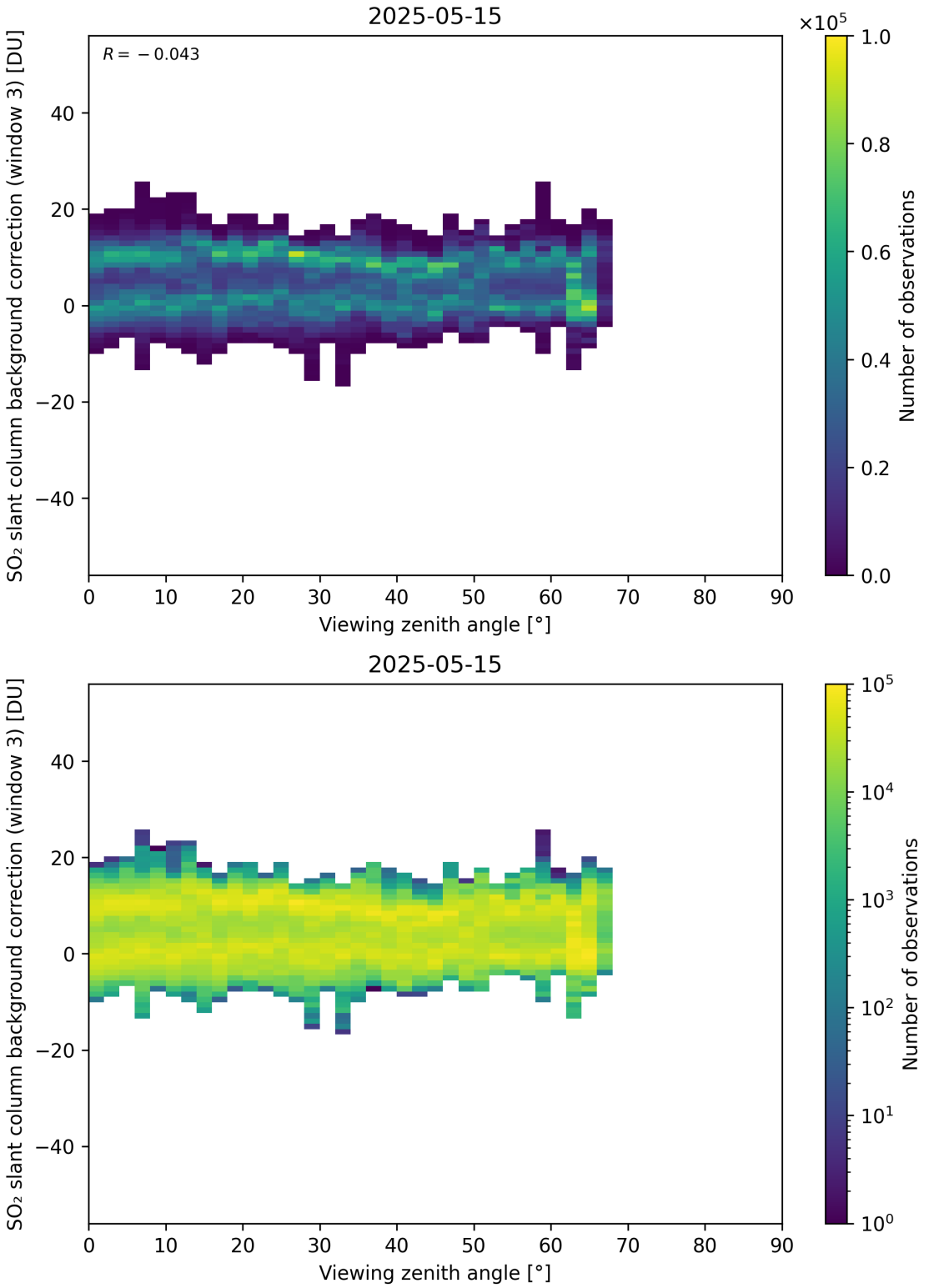

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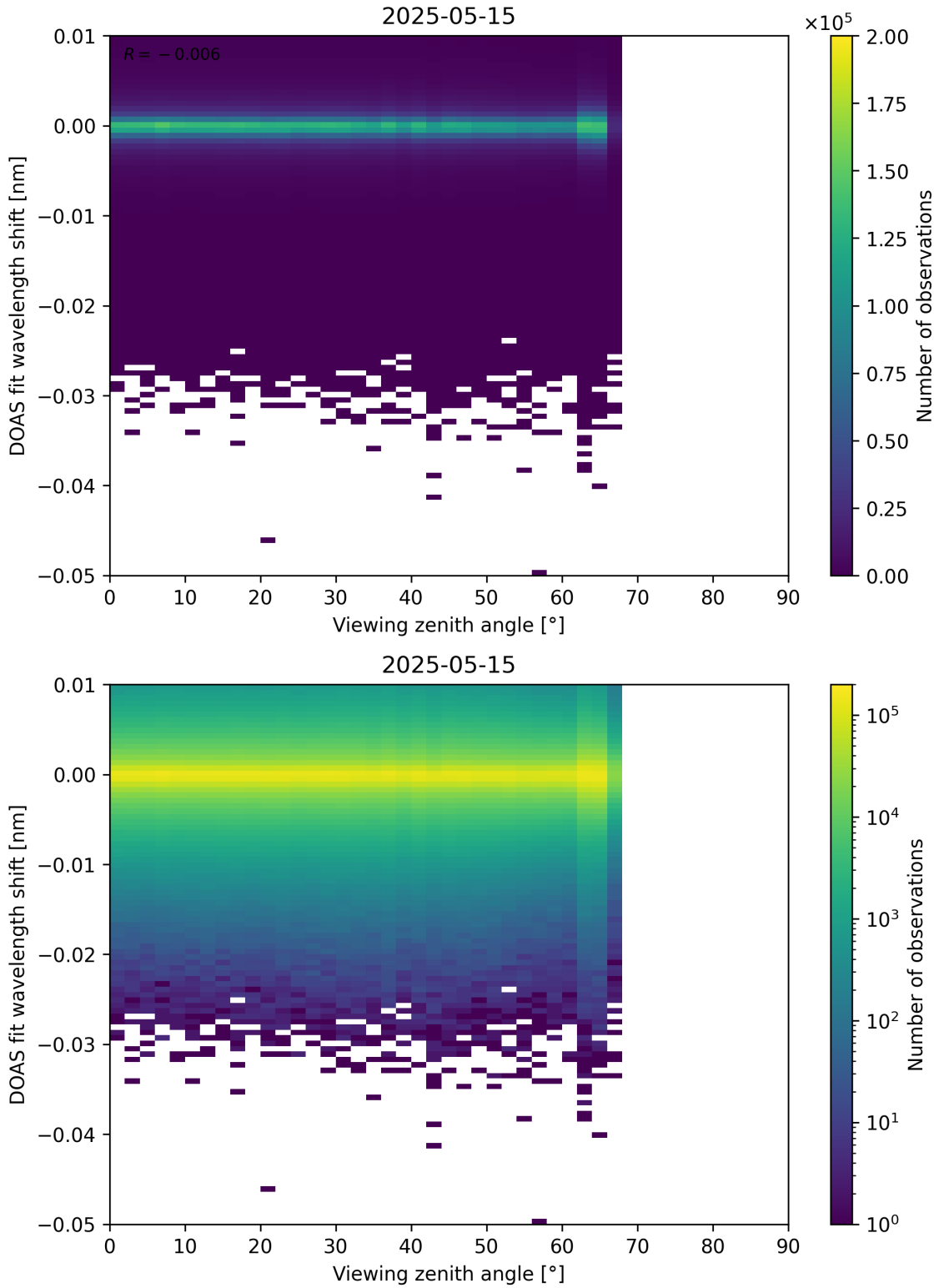

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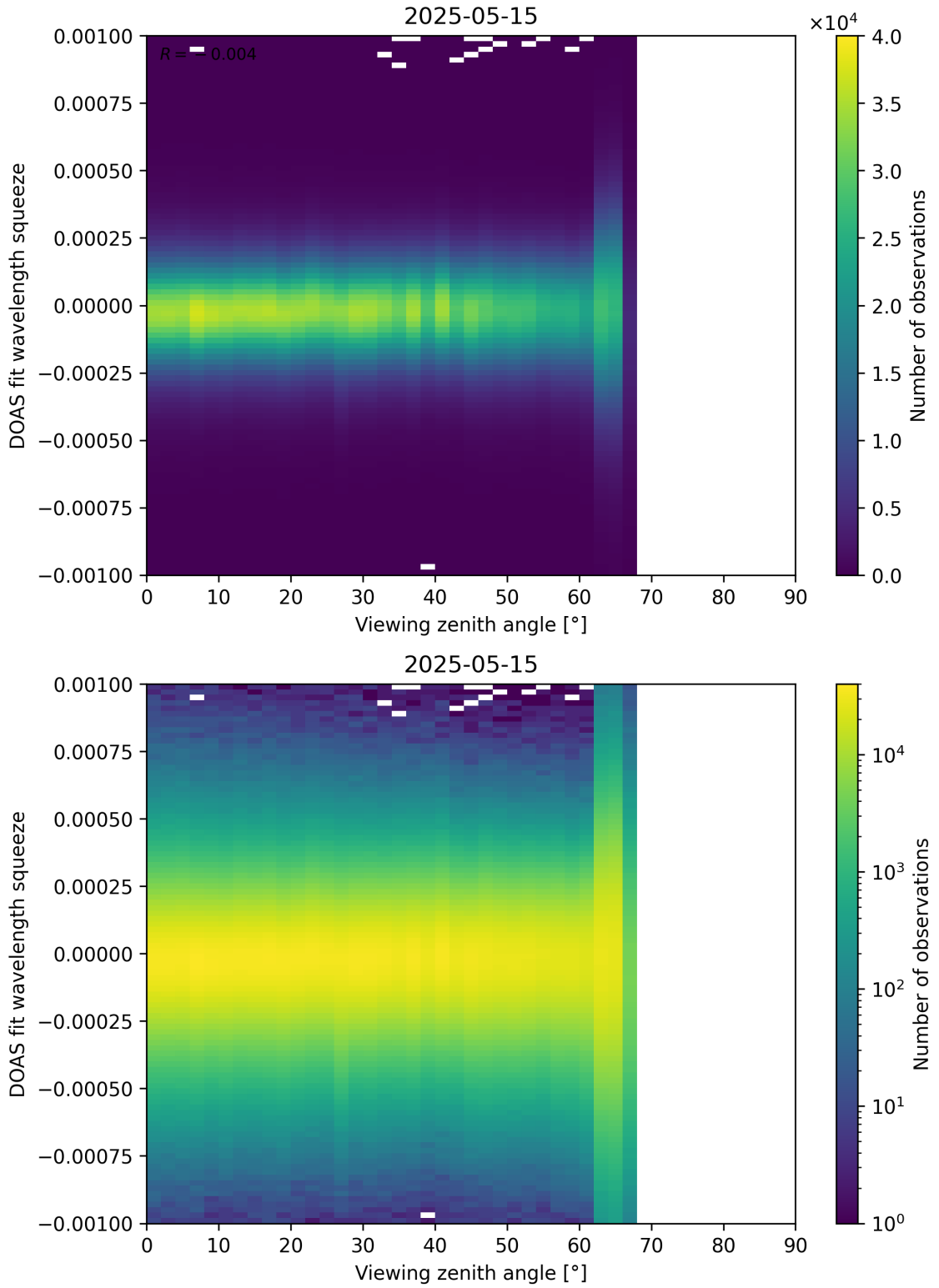

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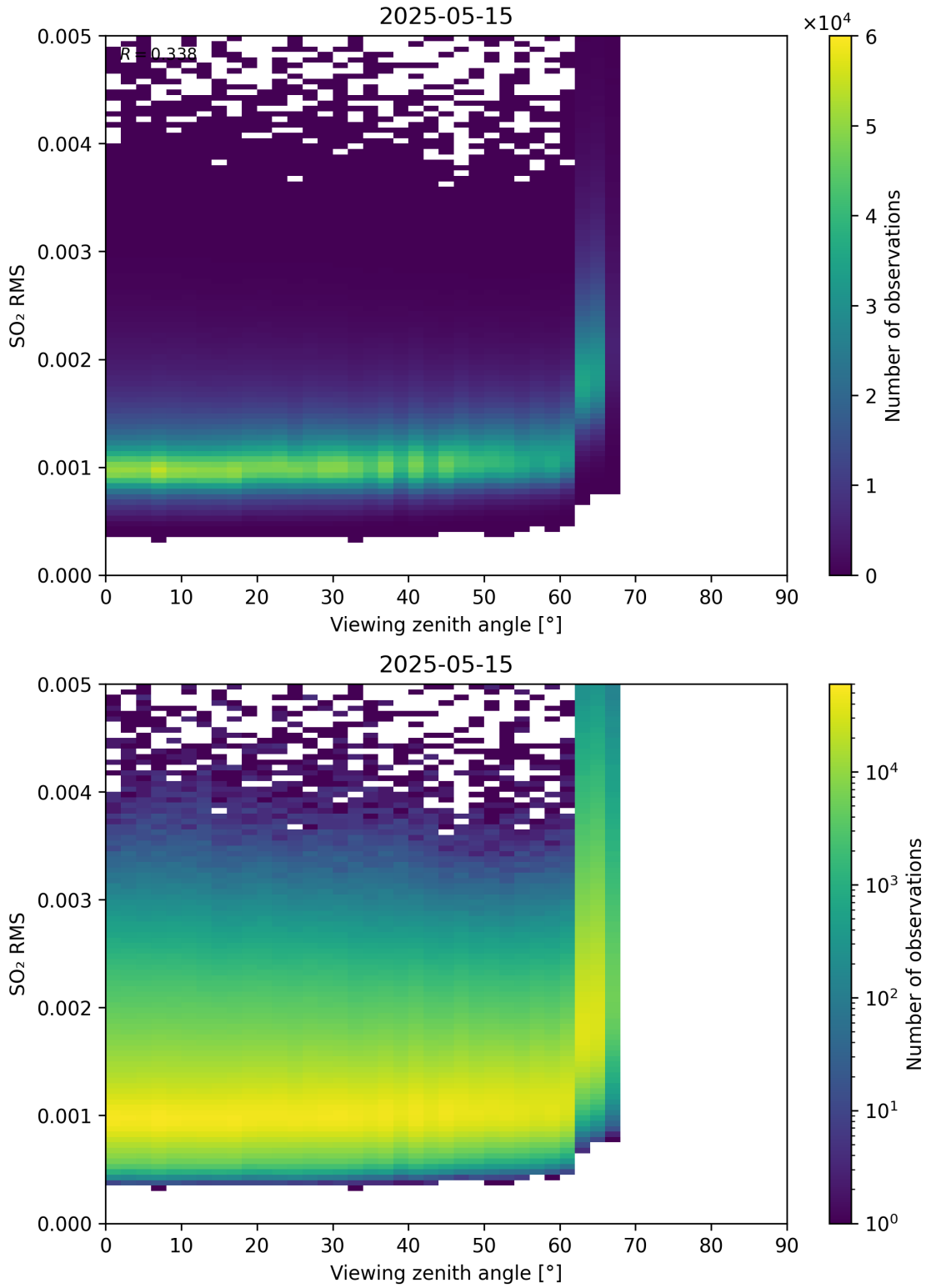

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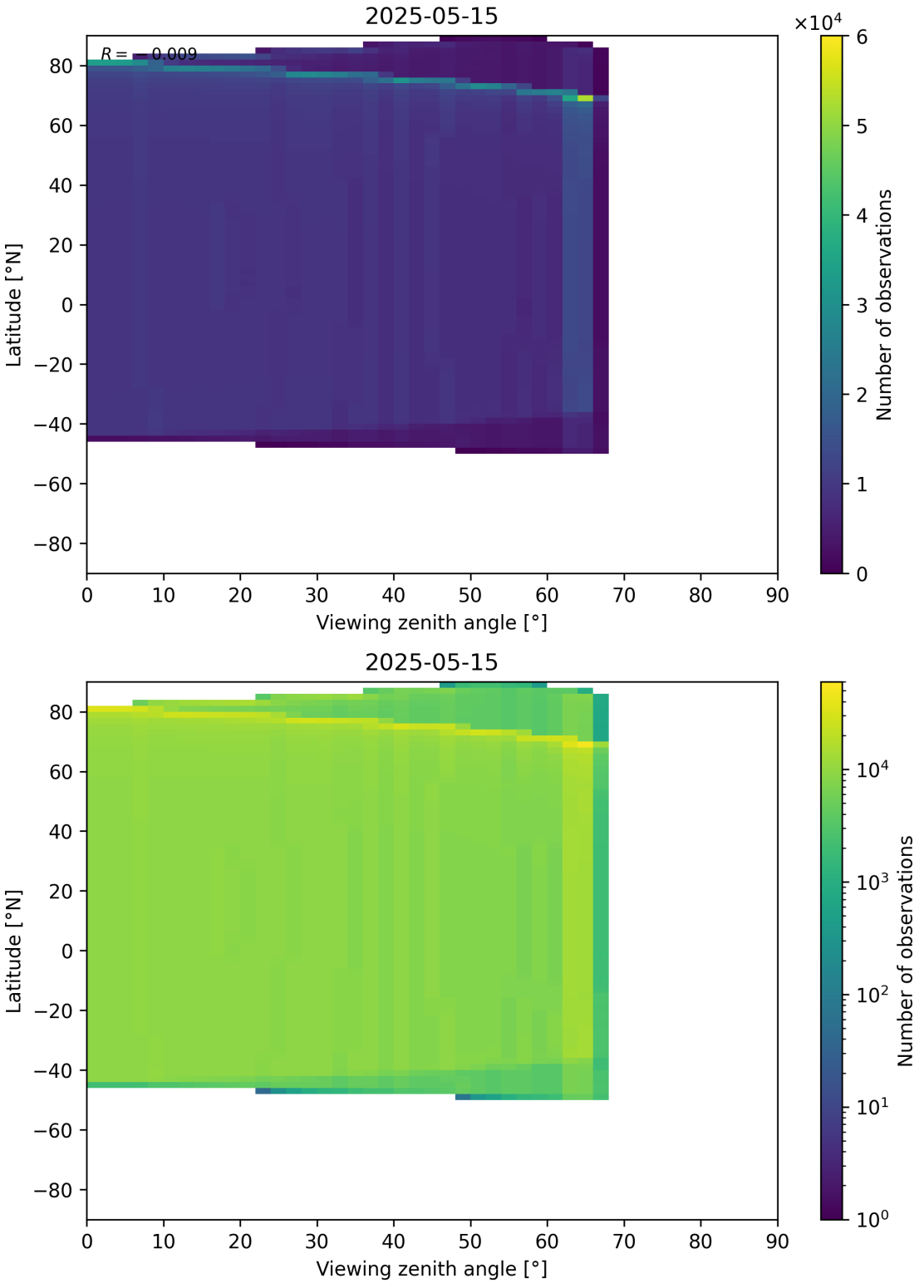

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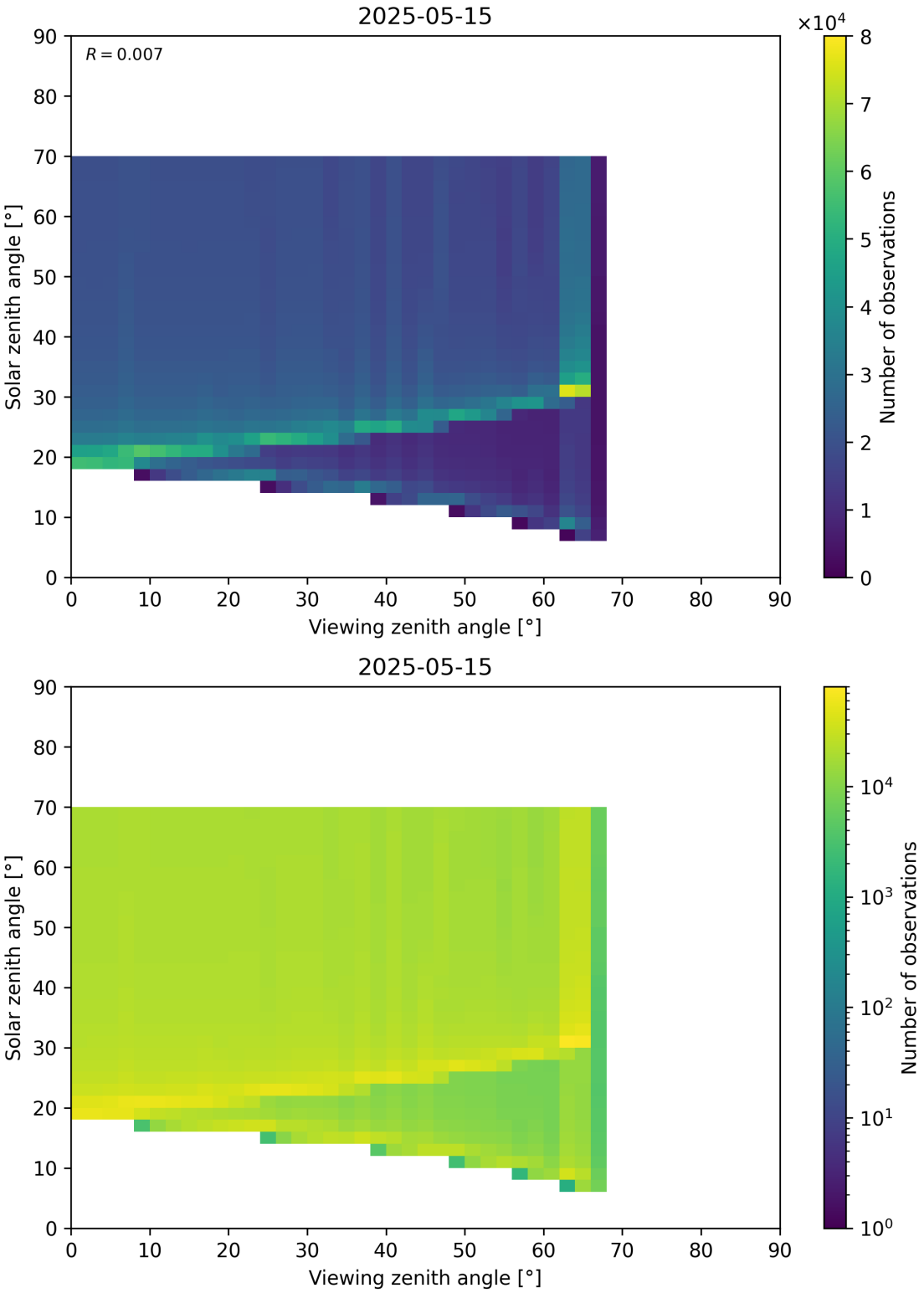

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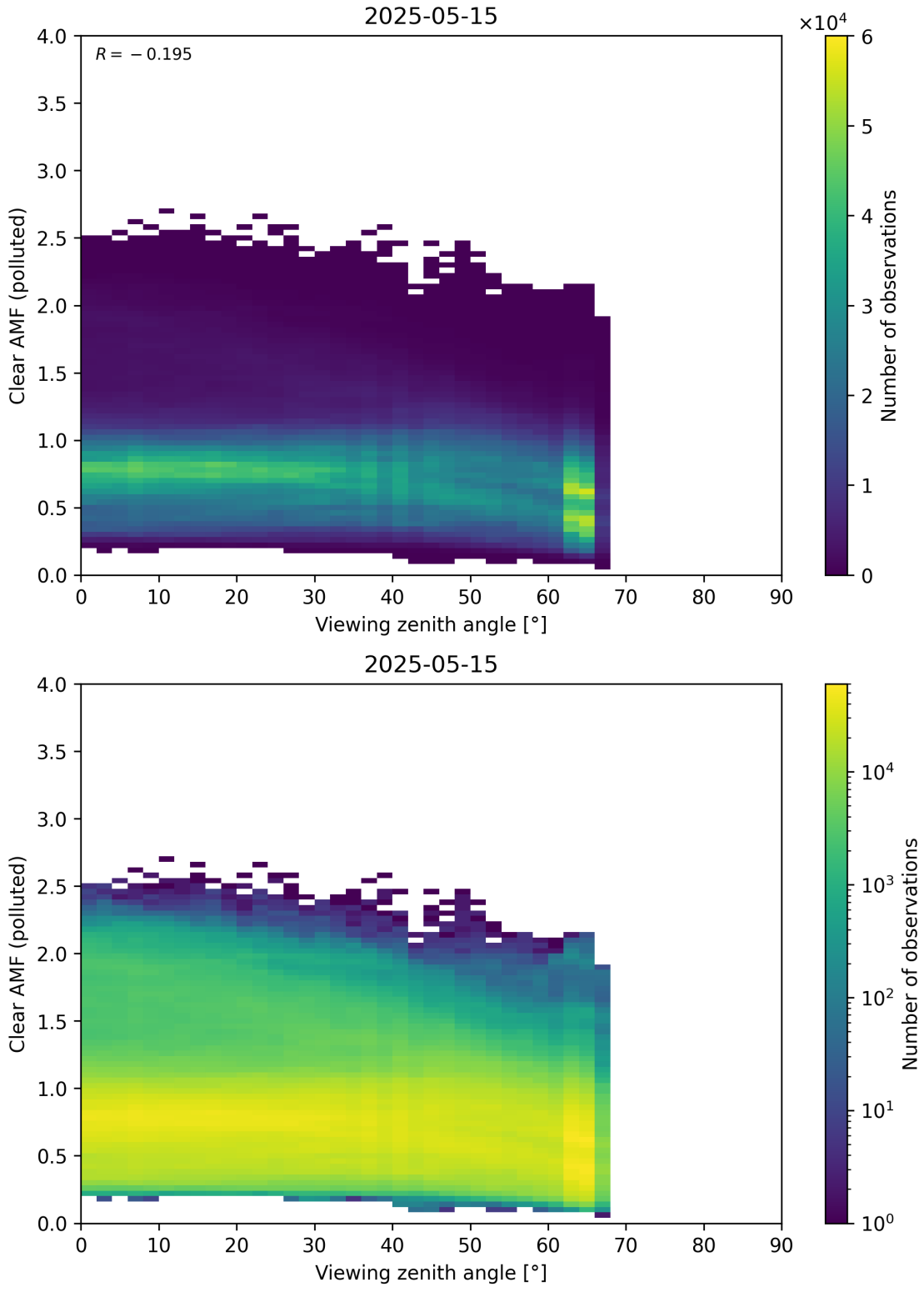

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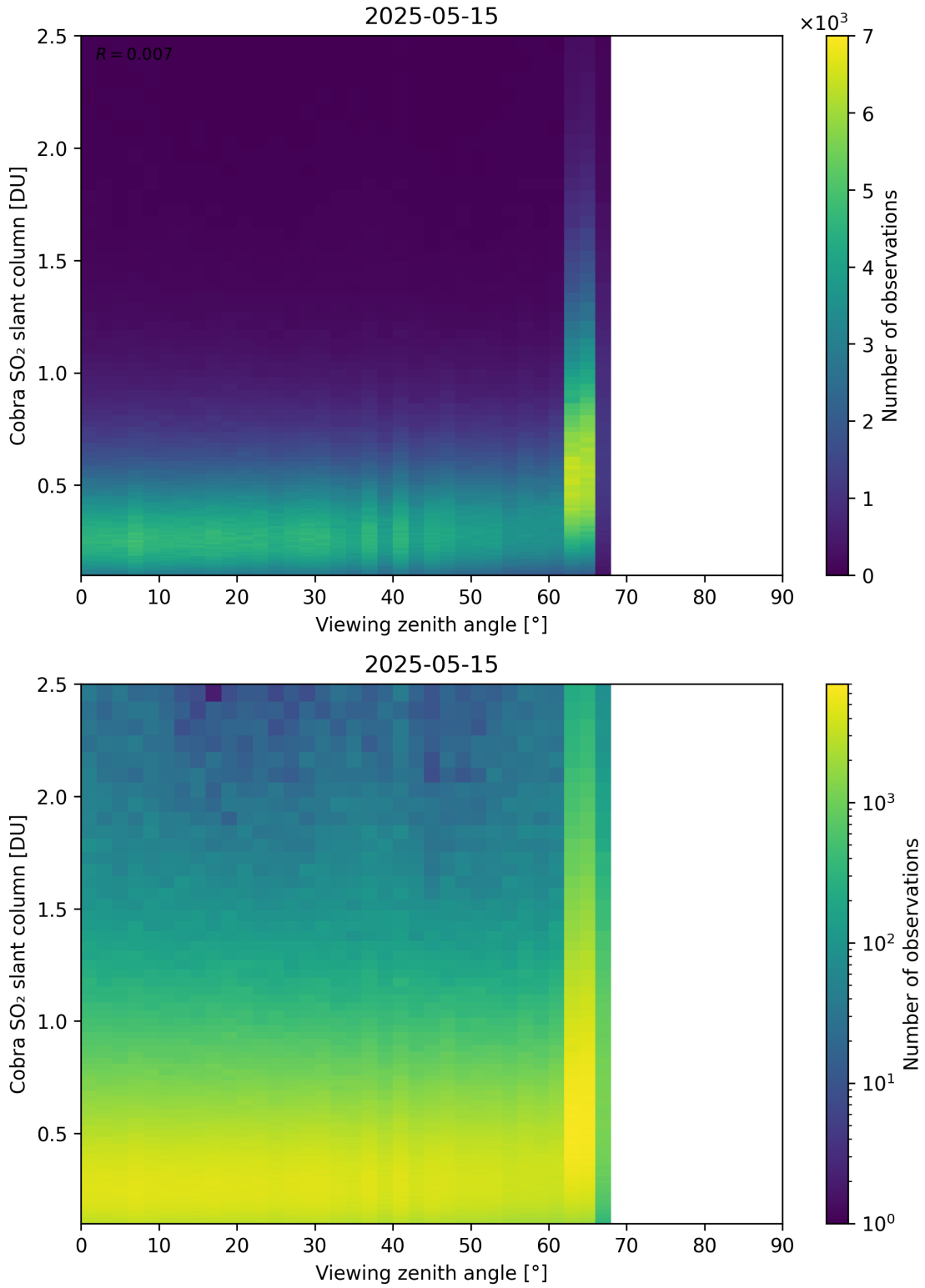

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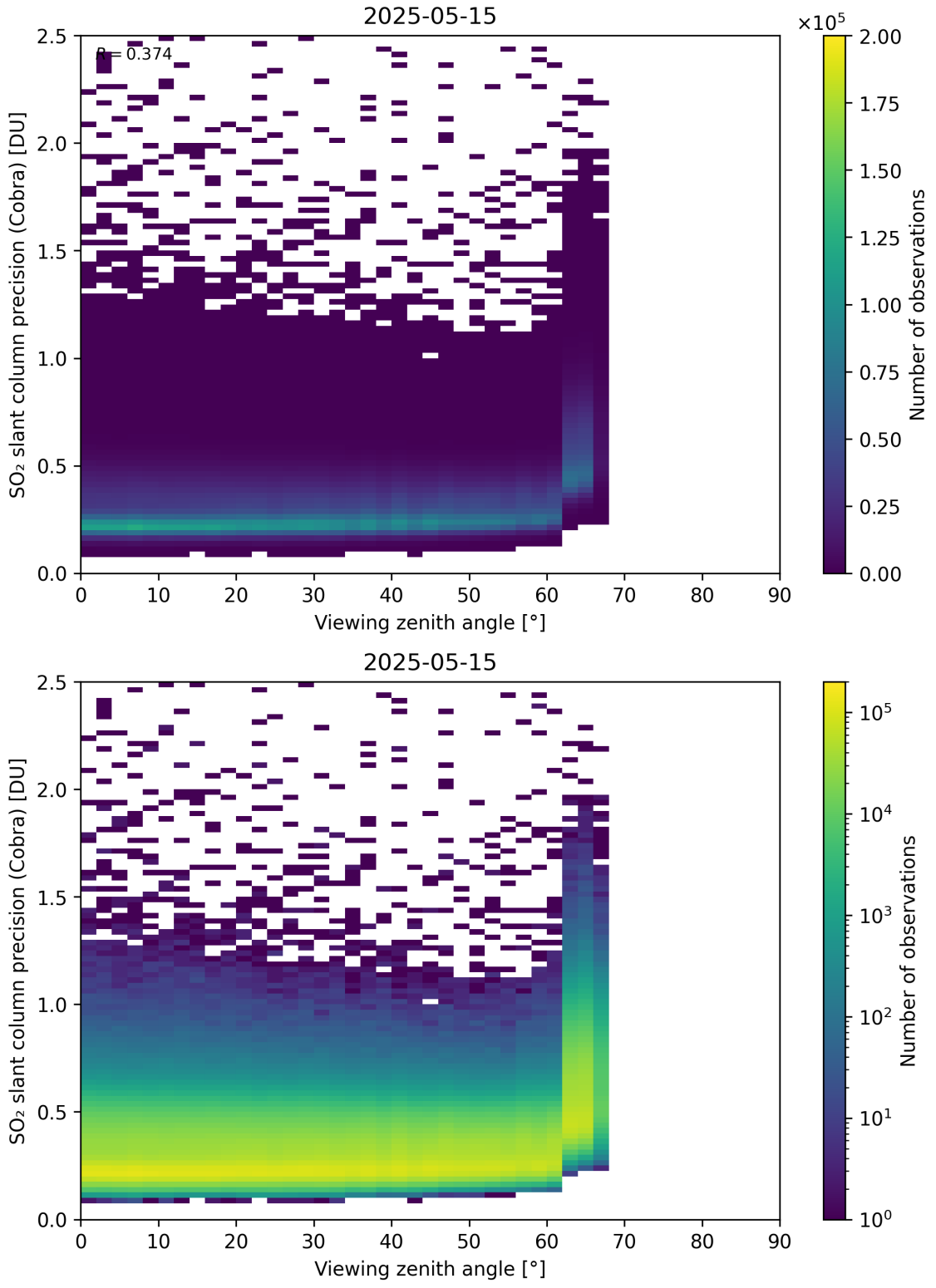

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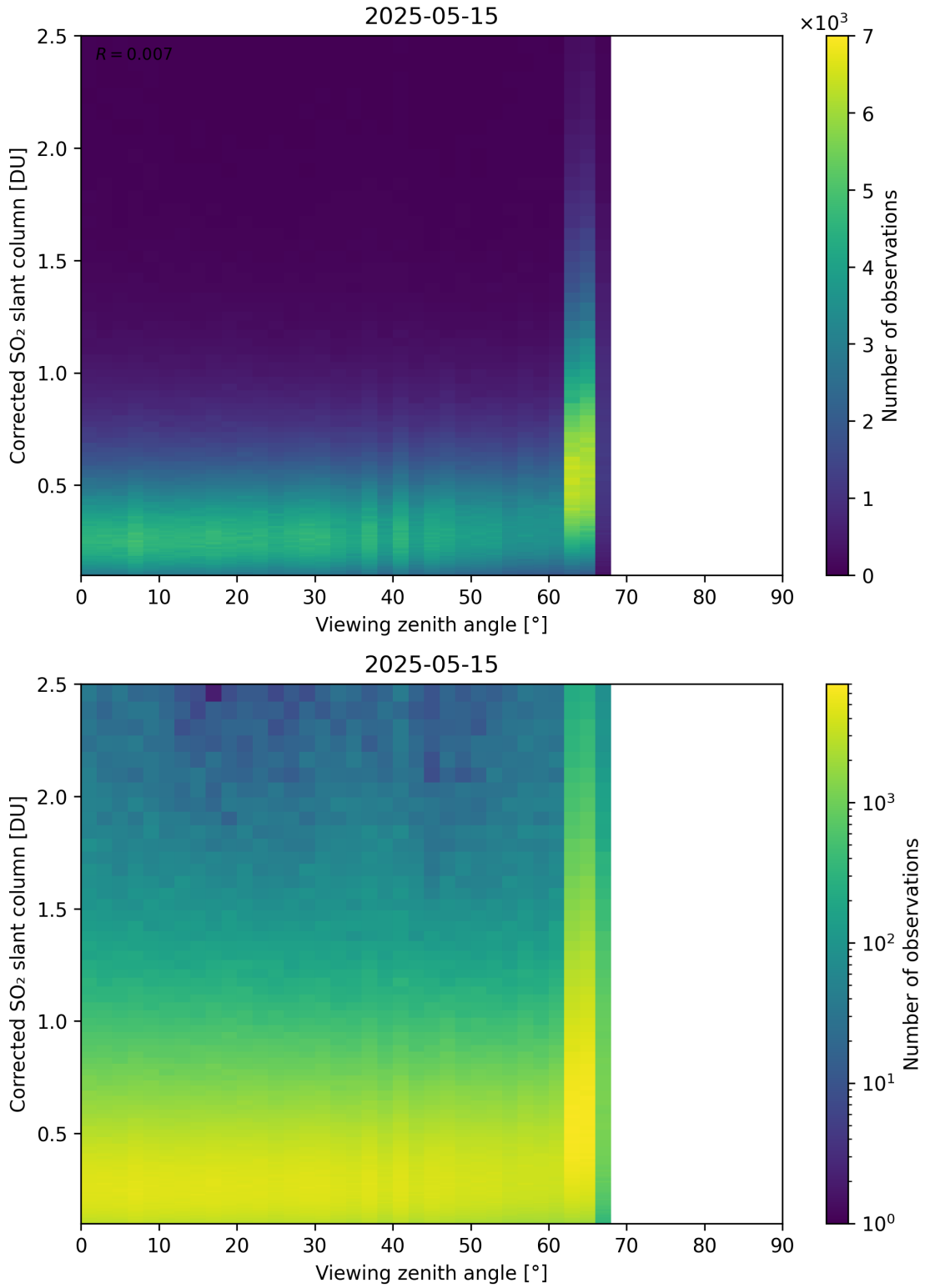

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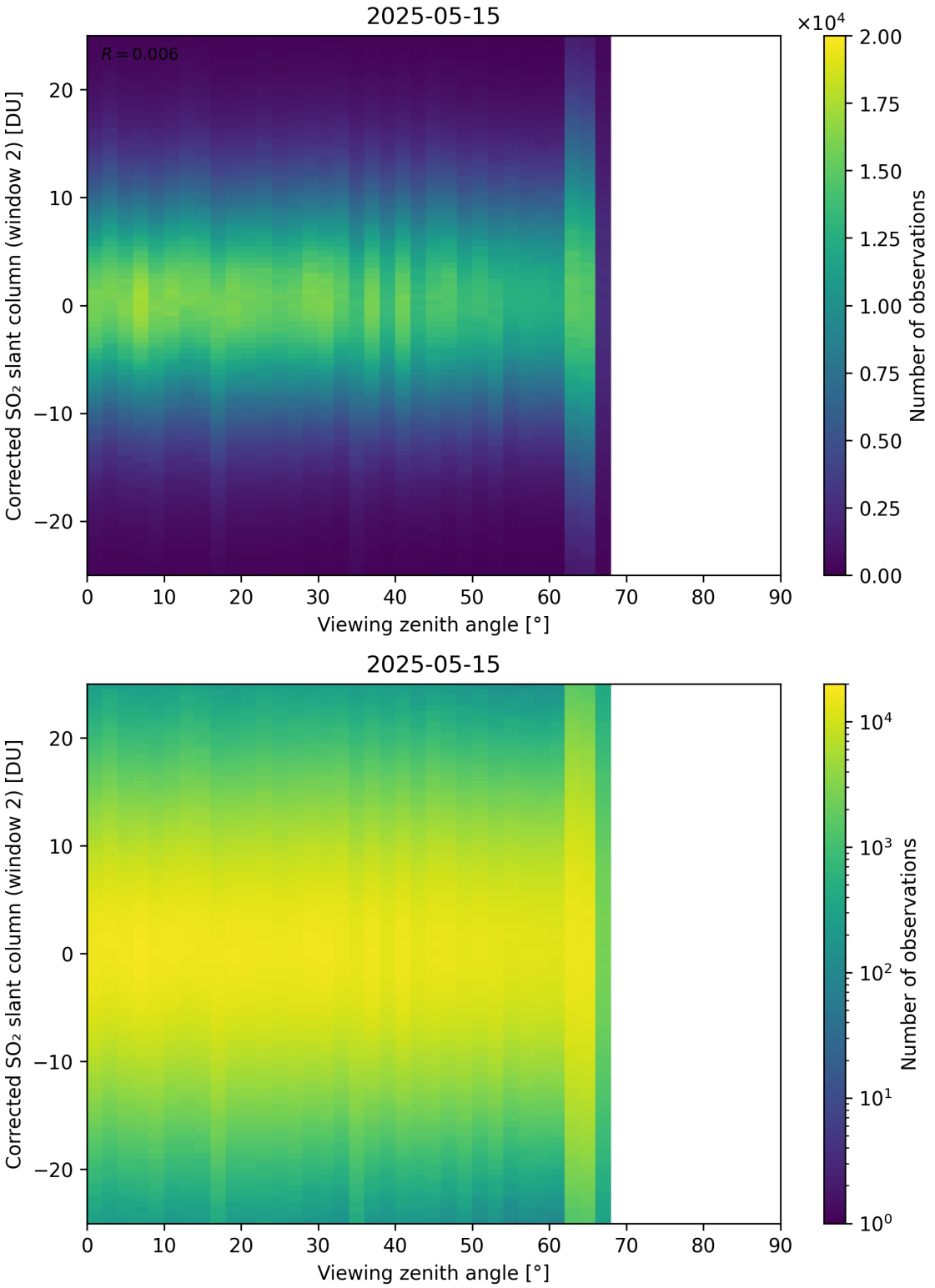

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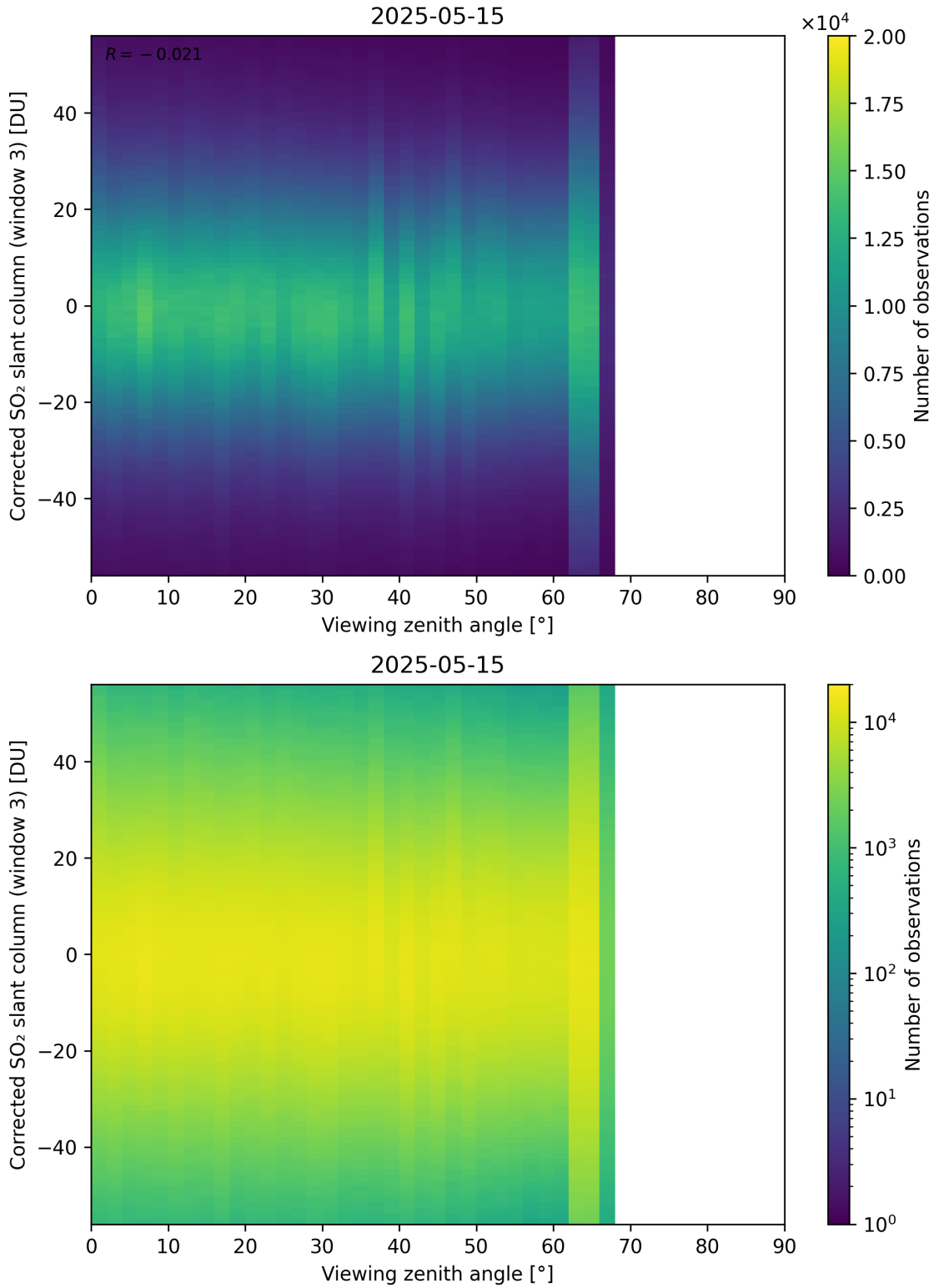

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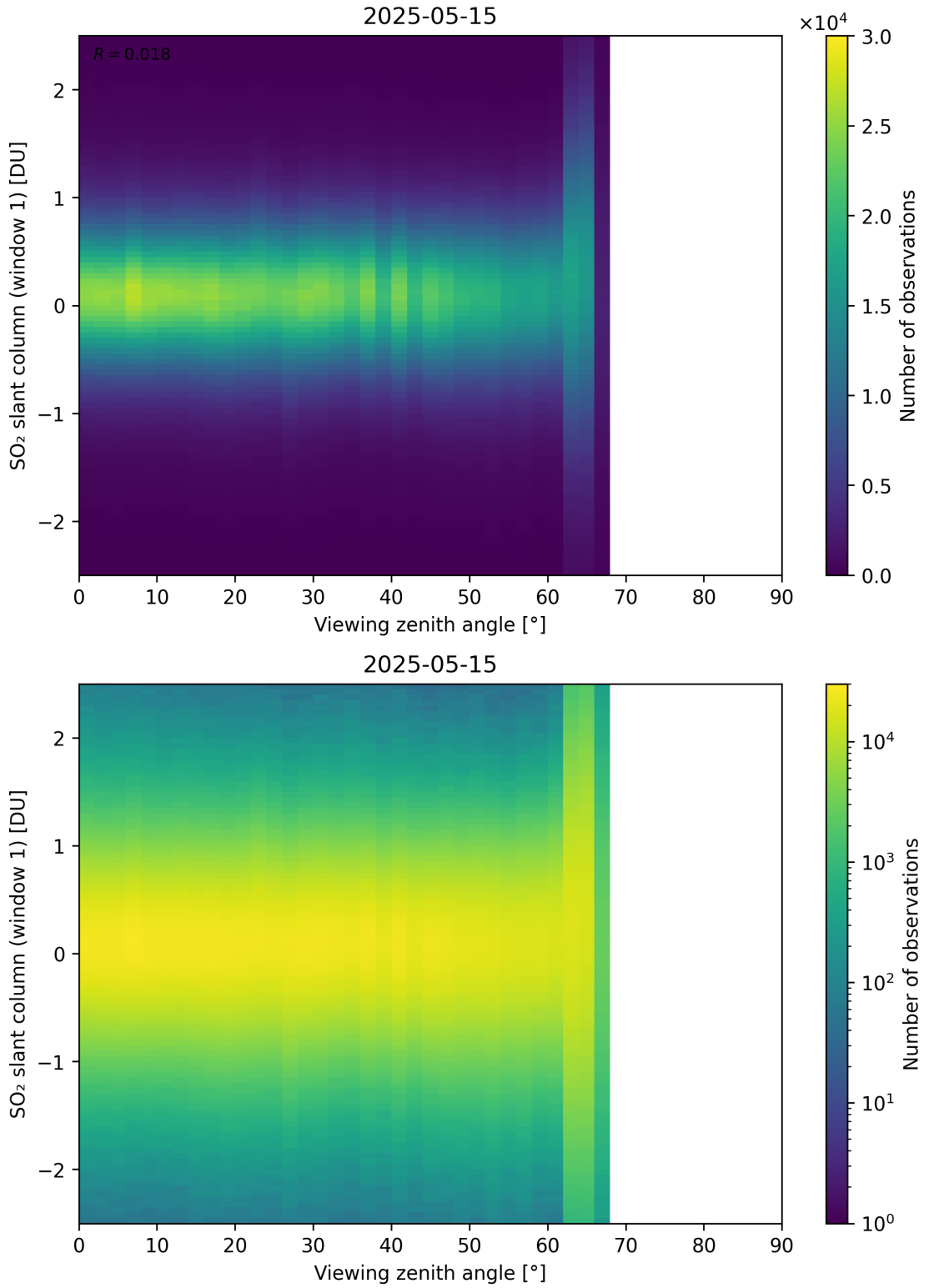

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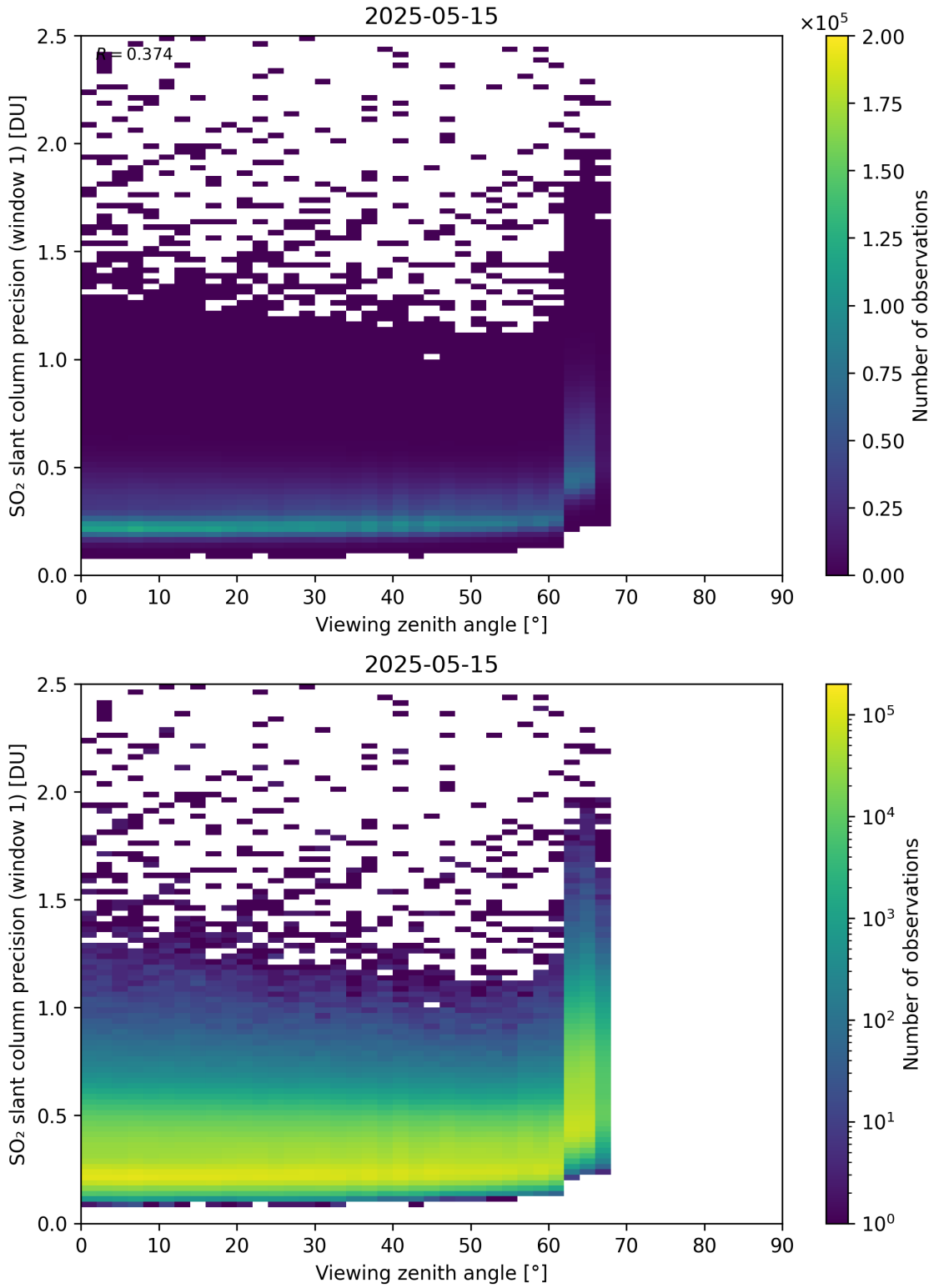

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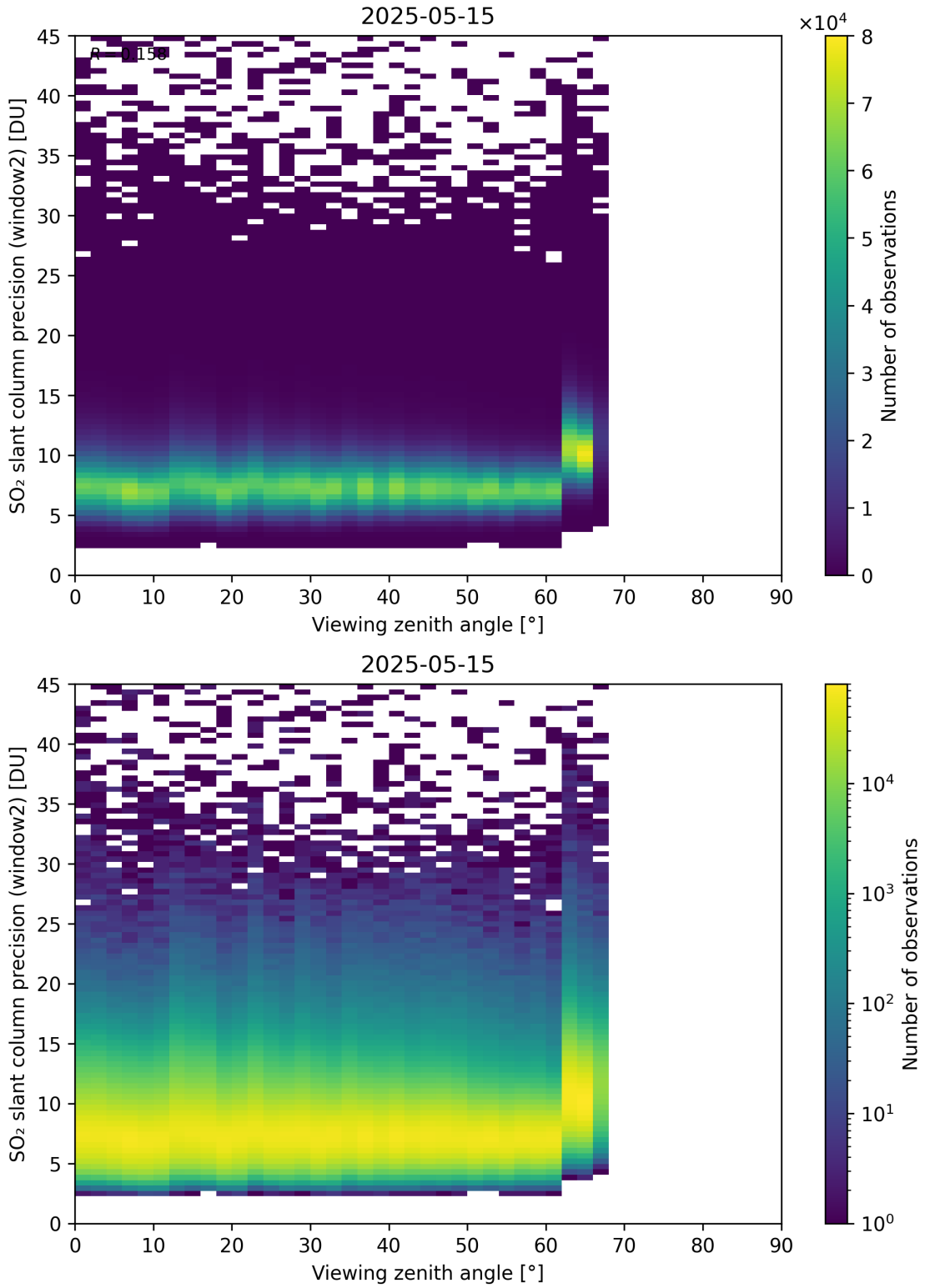

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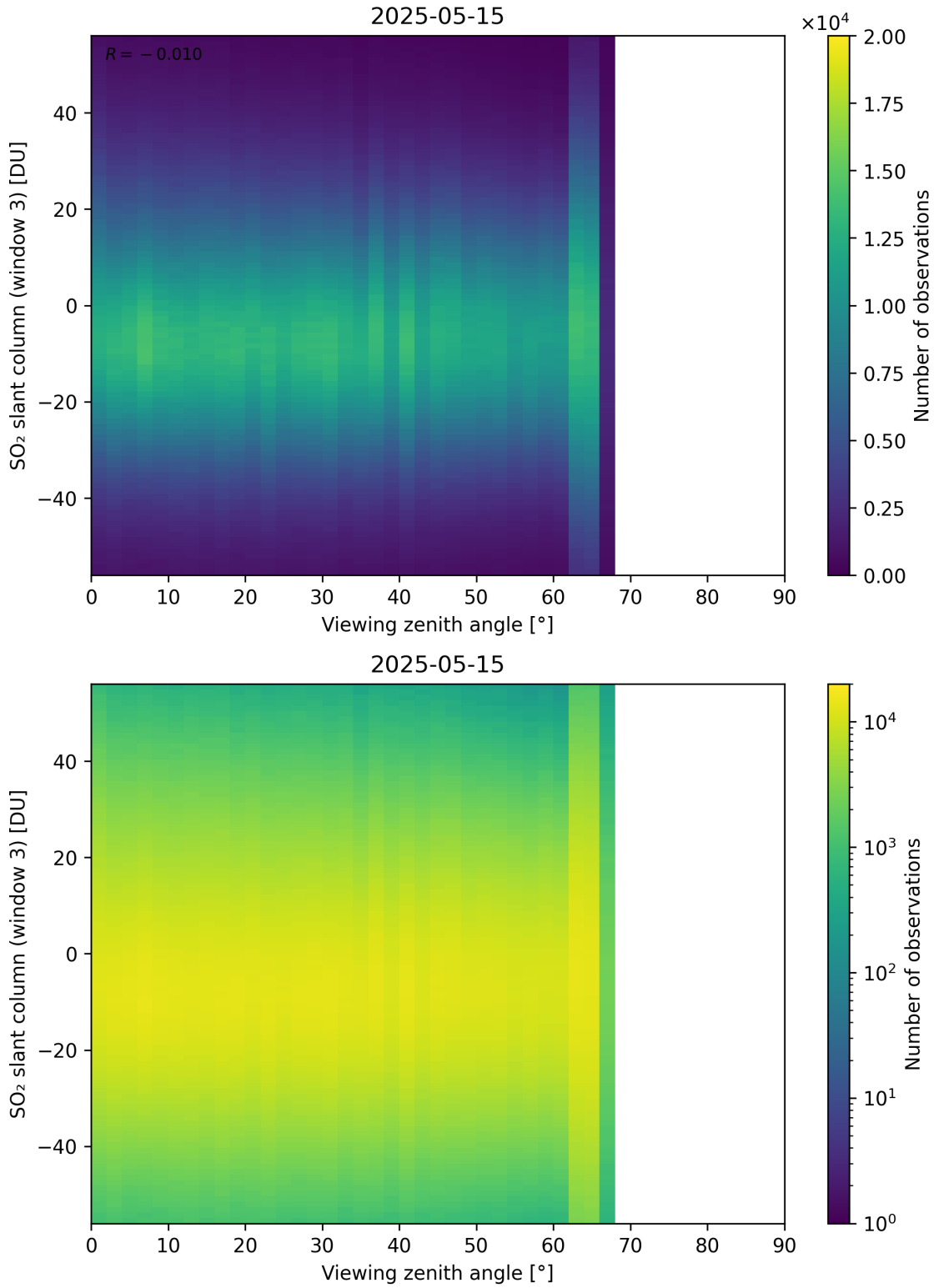

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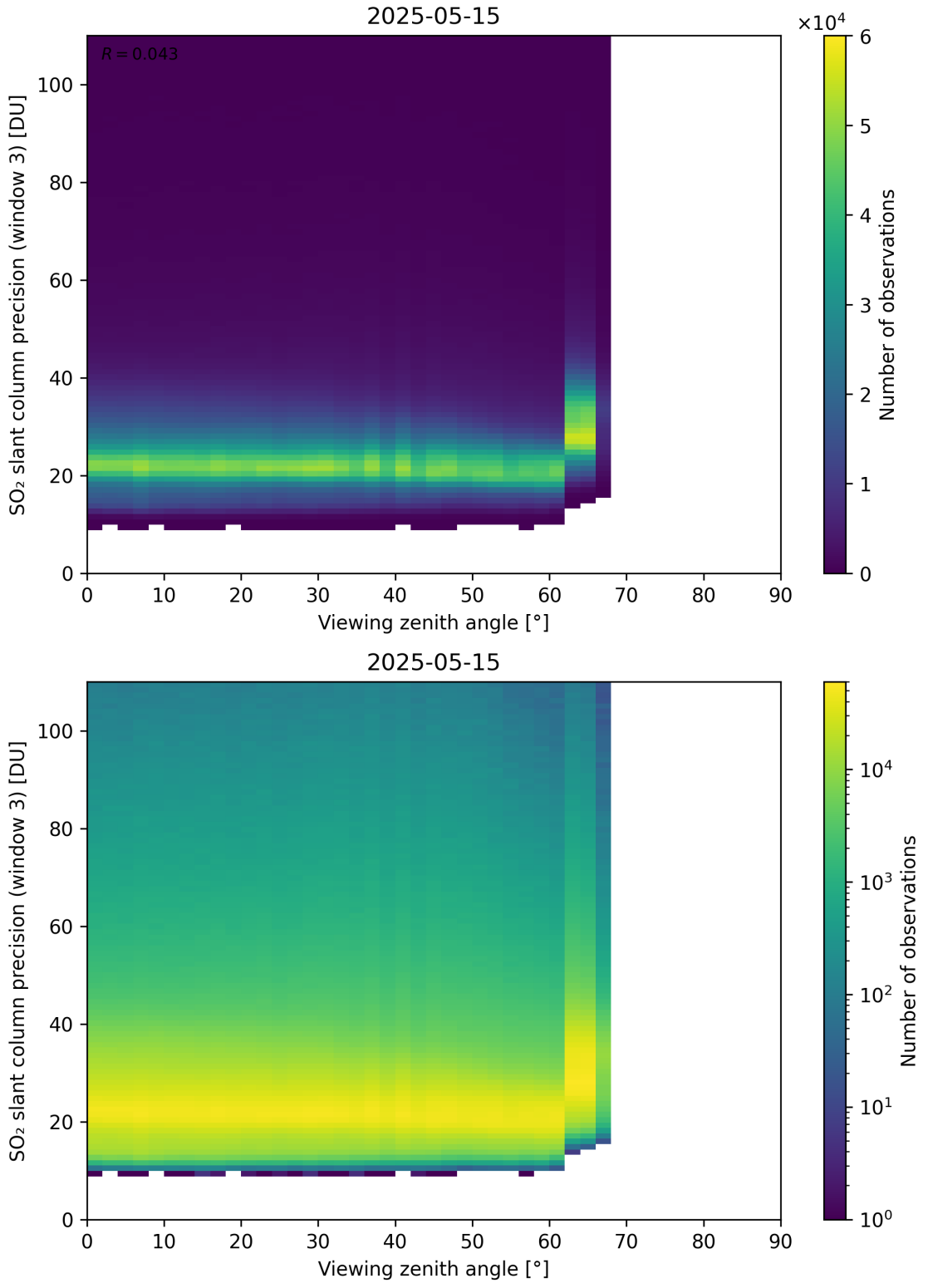

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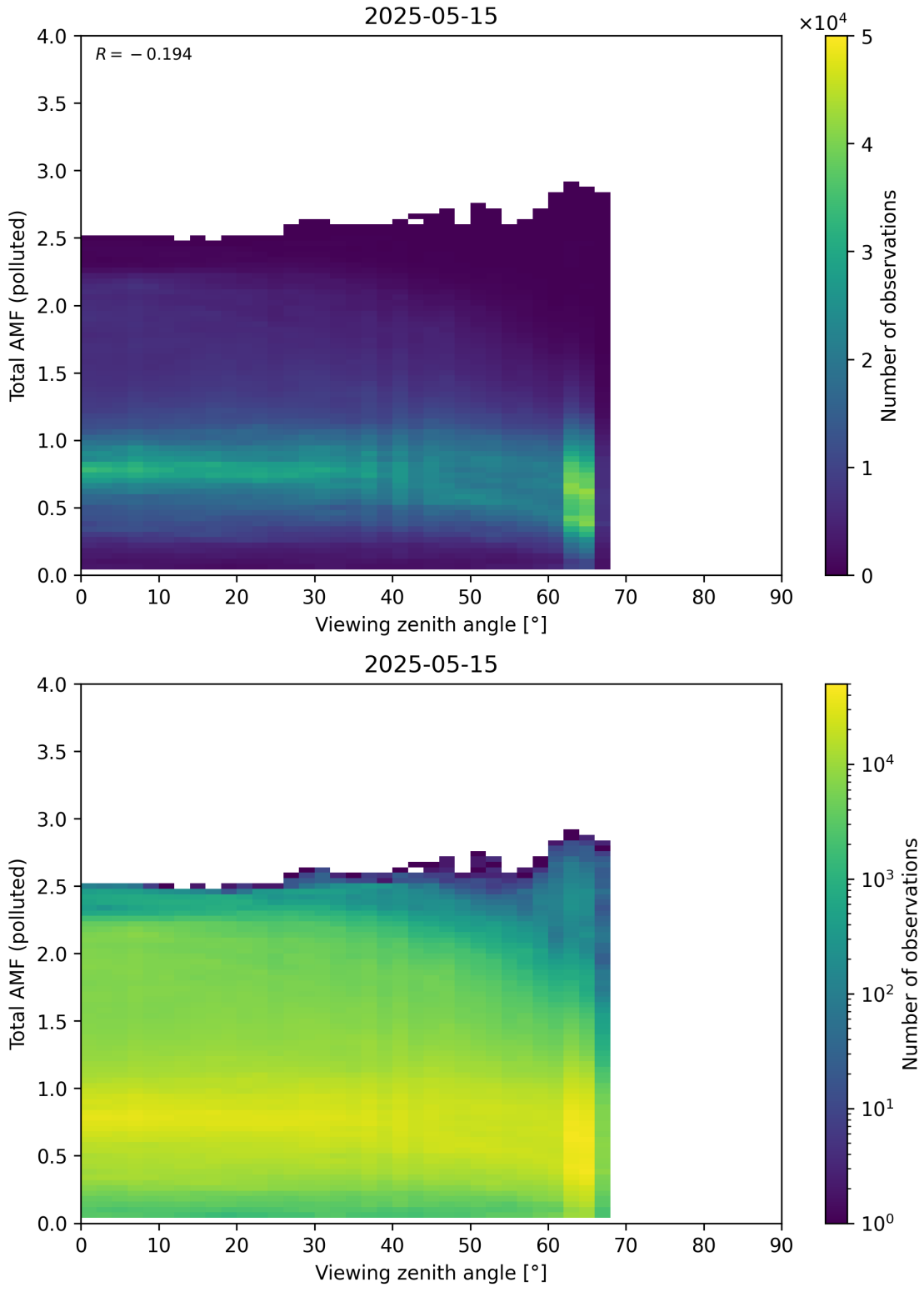

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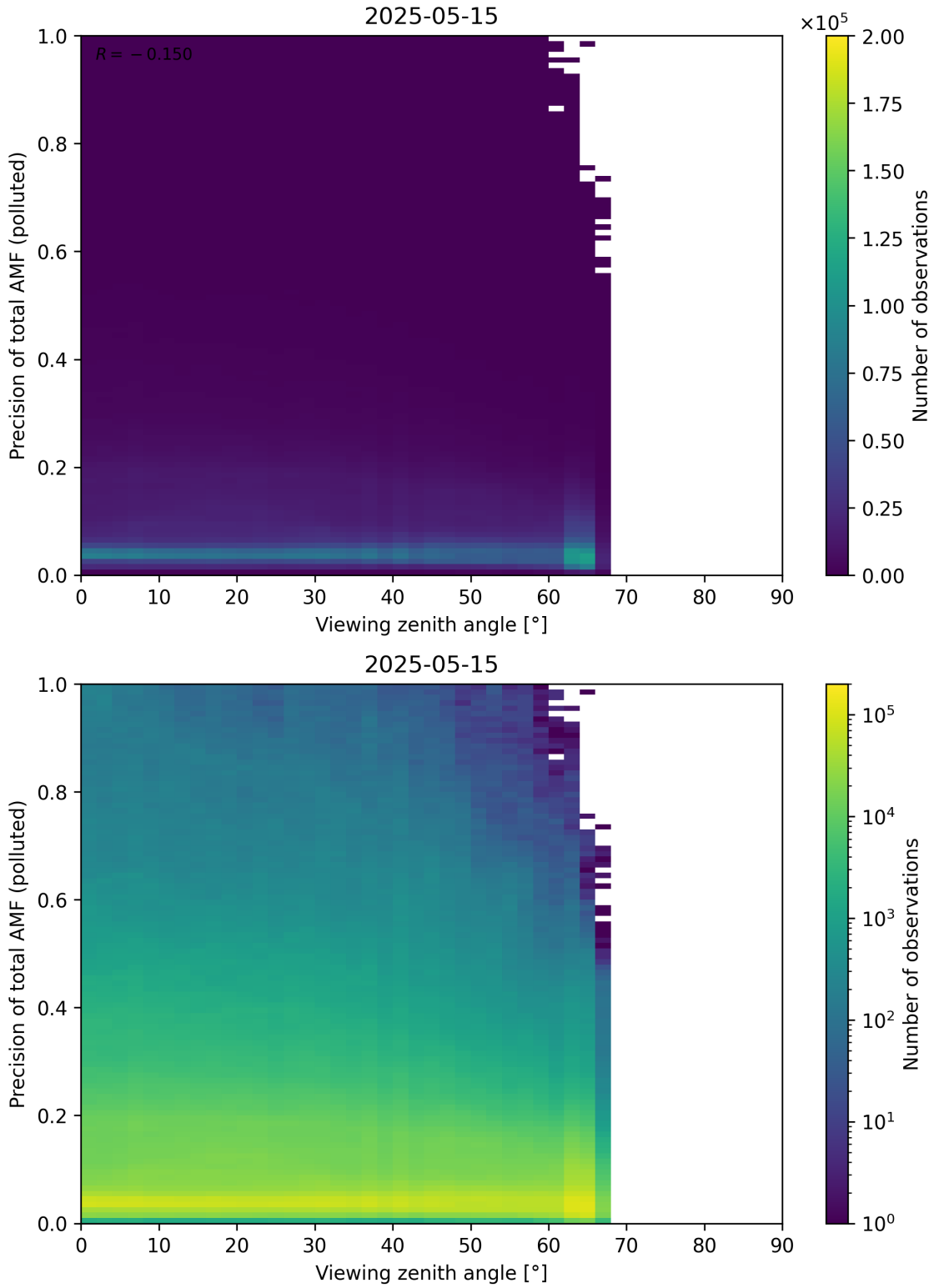

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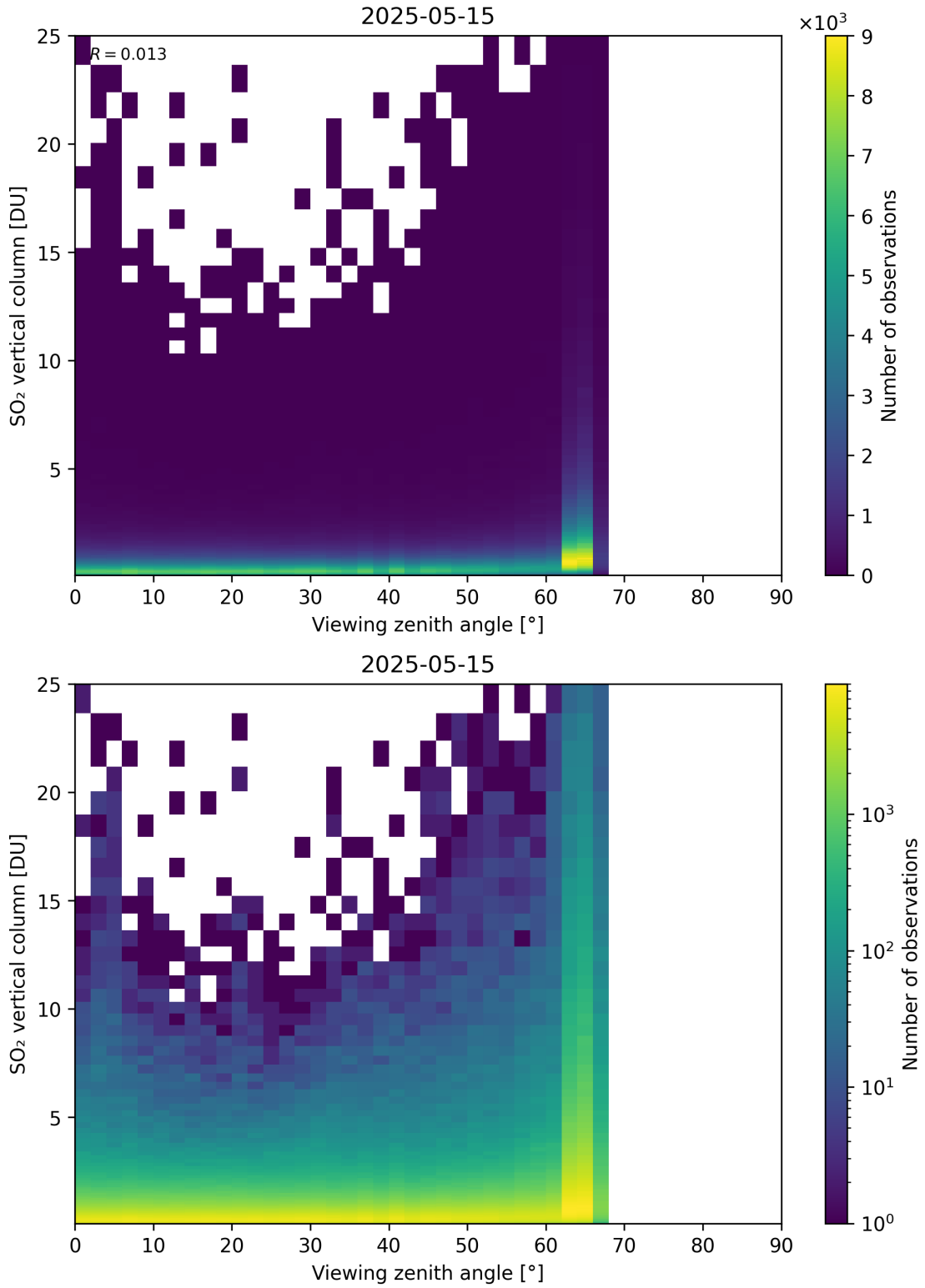

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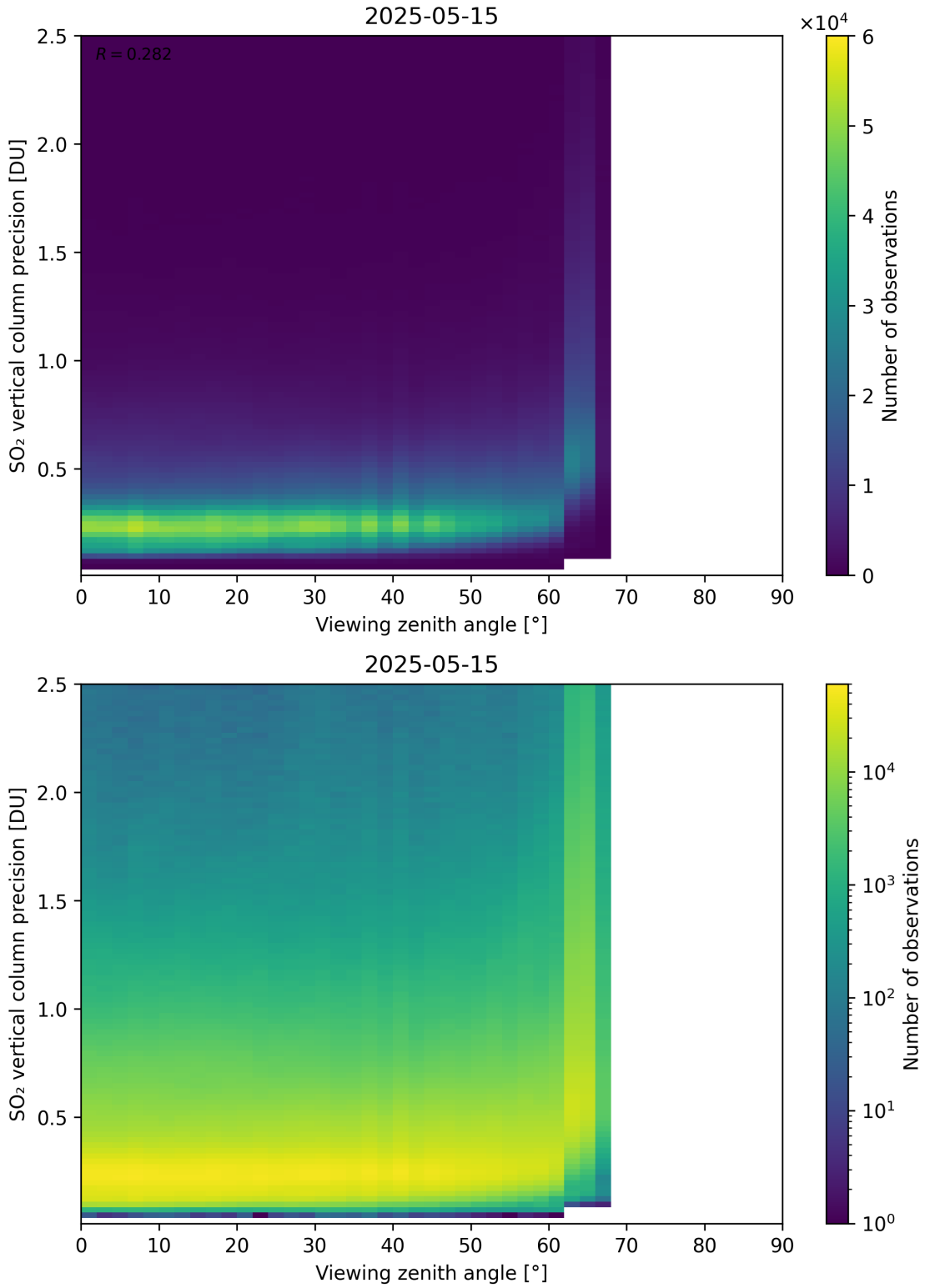

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