

PyCAMA report generated by tropl2-proc

tropl2-proc

2025-07-22 (05:15)

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:

$$\bar{x} = \frac{1}{N} \sum_{i=1}^N x_i \quad (1)$$

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 $\sigma(x) = \sqrt{V(x)}$.

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

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 :

$$P(x \leq m) = P(x \geq m) = \int_{-\infty}^m f(x) dx = \frac{1}{2} \quad (3)$$

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

The median is a special case of a percentile. Instead of 1/2 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} .

$$C_{kl} = C(x_{(k)}, x_{(l)}) = \frac{1}{N-1} \sum_{i=1}^N (x_{(k),i} - \bar{x}_{(k)})(x_{(l),i} - \bar{x}_{(l)}) \quad (4)$$

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

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

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]	0.628 ± 0.371	18588463	0.995	0.650	0.800	0.0	1.000
cloud fraction [1]	0.591 ± 0.346	18588463	0.995	0.731	0.596	5.831×10^{-3}	1.000
cloud top height [m]	$(0.381 \pm 0.255) \times 10^4$	18588463	1.425×10^3	3.594×10^3	3.302×10^3	0.0	2.000×10^4
cloud optical thickness [1]	21.6 ± 36.6	18588463	9.77	12.5	10.5	1.000	250
cloud fraction crb [1]	0.589 ± 0.346	18588463	0.995	0.732	0.593	7.906×10^{-3}	1.000
cloud height crb [m]	$(0.302 \pm 0.223) \times 10^4$	18588463	75.0	3.231×10^3	2.592×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.558 ± 0.193	18588463	0.495	0.228	0.549	0.0	1.000
surface albedo fitted [1]	0.160 ± 0.195	18588463	1.500×10^{-2}	0.221	5.565×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.154 ± 0.197	18588463	1.500×10^{-2}	0.226	4.034×10^{-2}	0.0	1.000
fitted root mean square [1]	$(6.973 \pm 11.070) \times 10^{-4}$	18588463	5.000×10^{-5}	8.174×10^{-4}	3.232×10^{-4}	9.019×10^{-7}	0.559
fitted root mean square crb [1]	$(6.238 \pm 9.581) \times 10^{-4}$	18588463	5.000×10^{-5}	7.909×10^{-4}	2.634×10^{-4}	8.904×10^{-7}	0.627
wavelength shift [nm]	$(6.826 \pm 6.652) \times 10^{-3}$	18588463	-3.000×10^{-4}	9.584×10^{-3}	6.173×10^{-3}	-4.339×10^{-2}	0.291
cloud fraction apriori [1]	0.594 ± 0.351	18588463	0.995	0.742	0.603	0.0	1.000
reflectance blue ocra [1]	0.514 ± 0.193	18588463	0.315	0.295	0.490	0.132	1.95
reflectance green ocra [1]	0.458 ± 0.218	18588463	0.185	0.353	0.434	7.810×10^{-2}	2.00
reflectance continuum aband [1]	0.416 ± 0.249	18588463	4.500×10^{-2}	0.368	0.397	9.956×10^{-3}	4.68

Table 2: Percentile ranges

Variable	1 %	5 %	10 %	15.9 %	25 %	75 %	84.1 %	90 %	95 %	99 %
qa value [1]	0.0	0.0	0.0	5.000×10^{-2}	0.300	0.950	1.000	1.000	1.000	1.000
cloud fraction [1]	2.660×10^{-2}	6.900×10^{-2}	0.108	0.162	0.263	0.994	1.000	1.000	1.000	1.000
cloud top height [m]	136	602	981	1.302×10^3	1.772×10^3	5.366×10^3	6.443×10^3	7.456×10^3	8.743×10^3	1.094×10^4
cloud optical thickness [1]	1.07	2.91	4.08	5.10	6.56	19.1	29.3	43.7	76.7	250
cloud fraction crb [1]	2.599×10^{-2}	6.793×10^{-2}	0.107	0.161	0.261	0.993	1.000	1.000	1.000	1.000
cloud height crb [m]	0.0	189	517	792	1.204×10^3	4.435×10^3	5.360×10^3	6.185×10^3	7.301×10^3	9.211×10^3
cloud albedo crb [1]	4.272×10^{-2}	0.223	0.322	0.392	0.448	0.676	0.748	0.813	0.895	1.000
surface albedo fitted [1]	0.0	8.568×10^{-3}	1.313×10^{-2}	1.777×10^{-2}	2.511×10^{-2}	0.246	0.326	0.435	0.581	0.872
surface albedo fitted crb [1]	0.0	5.909×10^{-3}	8.969×10^{-3}	1.218×10^{-2}	1.727×10^{-2}	0.244	0.328	0.442	0.571	0.857
fitted root mean square [1]	9.383×10^{-6}	2.192×10^{-5}	3.632×10^{-5}	5.661×10^{-5}	9.982×10^{-5}	9.172×10^{-4}	1.377×10^{-3}	1.867×10^{-3}	2.562×10^{-3}	4.139×10^{-3}
fitted root mean square crb [1]	5.374×10^{-6}	1.179×10^{-5}	2.098×10^{-5}	3.335×10^{-5}	6.052×10^{-5}	8.515×10^{-4}	1.311×10^{-3}	1.779×10^{-3}	2.435×10^{-3}	3.740×10^{-3}
wavelength shift [nm]	-7.582×10^{-3}	-1.135×10^{-3}	-2.095×10^{-4}	3.119×10^{-4}	1.567×10^{-3}	1.115×10^{-2}	1.351×10^{-2}	1.558×10^{-2}	1.836×10^{-2}	2.441×10^{-2}
cloud fraction apriori [1]	2.751×10^{-2}	6.500×10^{-2}	0.101	0.154	0.258	1.000	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.230	0.258	0.282	0.310	0.353	0.648	0.721	0.779	0.849	0.998
reflectance green ocra [1]	0.150	0.173	0.194	0.219	0.265	0.618	0.696	0.758	0.835	0.983
reflectance continuum aband [1]	3.021×10^{-2}	5.674×10^{-2}	9.238×10^{-2}	0.139	0.220	0.588	0.675	0.748	0.839	1.00

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]	0.637 ± 0.361	12515246	0.580	0.800	0.0	1.000	0.340	0.920
cloud fraction [1]	0.641 ± 0.345	12515246	0.682	0.705	5.831×10^{-3}	1.000	0.318	1.000
cloud top height [m]	$(0.387 \pm 0.265) \times 10^4$	12515246	3.814×10^3	3.403×10^3	0.0	2.000×10^4	1.730×10^3	5.544×10^3
cloud optical thickness [1]	20.0 ± 34.2	12515246	11.7	10.1	1.000	250	6.27	18.0
cloud fraction crb [1]	0.640 ± 0.345	12515246	0.683	0.704	7.906×10^{-3}	1.000	0.317	1.000
cloud height crb [m]	$(0.307 \pm 0.232) \times 10^4$	12515246	3.465×10^3	2.678×10^3	0.0	2.000×10^4	1.134×10^3	4.599×10^3
cloud albedo crb [1]	0.548 ± 0.203	12515246	0.249	0.540	0.0	1.000	0.431	0.679
surface albedo fitted [1]	0.201 ± 0.209	12515246	0.273	0.157	0.0	1.000	2.749×10^{-2}	0.300
surface albedo fitted crb [1]	0.198 ± 0.210	12515246	0.279	0.157	0.0	1.000	2.157×10^{-2}	0.300
fitted root mean square [1]	$(8.714 \pm 12.673) \times 10^{-4}$	12515246	1.067×10^{-3}	4.966×10^{-4}	1.306×10^{-6}	0.559	1.364×10^{-4}	1.204×10^{-3}
fitted root mean square crb [1]	$(7.877 \pm 10.840) \times 10^{-4}$	12515246	1.041×10^{-3}	4.337×10^{-4}	8.904×10^{-7}	0.627	1.019×10^{-4}	1.143×10^{-3}
wavelength shift [nm]	$(7.622 \pm 6.667) \times 10^{-3}$	12515246	9.539×10^{-3}	7.326×10^{-3}	-4.339×10^{-2}	0.291	2.477×10^{-3}	1.202×10^{-2}
cloud fraction apriori [1]	0.646 ± 0.349	12515246	0.681	0.718	0.0	1.000	0.319	1.000
reflectance blue oca [1]	0.528 ± 0.198	12515246	0.320	0.516	0.132	1.88	0.354	0.674
reflectance green oca [1]	0.479 ± 0.222	12515246	0.374	0.471	8.618×10^{-2}	1.92	0.275	0.650
reflectance continuum aband [1]	0.453 ± 0.245	12515246	0.354	0.442	1.355×10^{-2}	4.68	0.270	0.624

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]	0.610 ± 0.389	6073217	0.700	0.810	0.0	1.000	0.290	0.990
cloud fraction [1]	0.486 ± 0.323	6073217	0.579	0.436	8.098×10^{-3}	1.000	0.192	0.771
cloud top height [m]	$(0.368 \pm 0.233) \times 10^4$	6073217	3.087×10^3	3.137×10^3	0.0	2.000×10^4	1.838×10^3	4.925×10^3
cloud optical thickness [1]	24.9 ± 40.9	6073217	14.6	11.5	1.000	250	7.14	21.7
cloud fraction crb [1]	0.483 ± 0.323	6073217	0.576	0.432	8.394×10^{-3}	1.000	0.190	0.766
cloud height crb [m]	$(0.292 \pm 0.202) \times 10^4$	6073217	2.724×10^3	2.441×10^3	0.0	1.767×10^4	1.307×10^3	4.031×10^3
cloud albedo crb [1]	0.578 ± 0.167	6073217	0.192	0.562	0.0	1.000	0.479	0.672
surface albedo fitted [1]	$(7.517 \pm 12.584) \times 10^{-2}$	6073217	3.906×10^{-2}	3.749×10^{-2}	0.0	1.000	2.256×10^{-2}	6.162×10^{-2}
surface albedo fitted crb [1]	$(6.246 \pm 12.493) \times 10^{-2}$	6073217	2.689×10^{-2}	2.324×10^{-2}	0.0	1.000	1.365×10^{-2}	4.054×10^{-2}
fitted root mean square [1]	$(3.386 \pm 5.003) \times 10^{-4}$	6073217	3.271×10^{-4}	1.655×10^{-4}	9.019×10^{-7}	2.790×10^{-2}	6.173×10^{-5}	3.888×10^{-4}
fitted root mean square crb [1]	$(2.858 \pm 4.673) \times 10^{-4}$	6073217	2.860×10^{-4}	9.873×10^{-5}	1.166×10^{-6}	2.880×10^{-2}	3.550×10^{-5}	3.215×10^{-4}
wavelength shift [nm]	$(5.187 \pm 6.311) \times 10^{-3}$	6073217	8.038×10^{-3}	3.790×10^{-3}	-4.123×10^{-2}	6.750×10^{-2}	7.181×10^{-4}	8.756×10^{-3}
cloud fraction apriori [1]	0.485 ± 0.330	6073217	0.597	0.433	0.0	1.000	0.181	0.778
reflectance blue oca [1]	0.485 ± 0.177	6073217	0.236	0.450	0.133	1.95	0.350	0.586
reflectance green oca [1]	0.414 ± 0.201	6073217	0.287	0.374	7.810×10^{-2}	2.00	0.251	0.539
reflectance continuum aband [1]	0.338 ± 0.238	6073217	0.349	0.301	9.956×10^{-3}	4.50	0.141	0.490

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]	0.624 ± 0.367	12725770	0.650	0.800	0.0	1.000	0.300	0.950
cloud fraction [1]	0.563 ± 0.342	12725770	0.714	0.546	5.831×10^{-3}	1.000	0.240	0.954
cloud top height [m]	$(0.361 \pm 0.256) \times 10^4$	12725770	3.421×10^3	3.009×10^3	0.0	2.000×10^4	1.593×10^3	5.013×10^3
cloud optical thickness [1]	22.9 ± 38.4	12725770	12.9	11.0	1.000	250	7.03	20.0
cloud fraction crb [1]	0.561 ± 0.342	12725770	0.714	0.543	8.163×10^{-3}	1.000	0.238	0.952
cloud height crb [m]	$(0.286 \pm 0.226) \times 10^4$	12725770	3.074×10^3	2.342×10^3	0.0	2.000×10^4	1.047×10^3	4.120×10^3
cloud albedo crb [1]	0.554 ± 0.184	12725770	0.214	0.540	0.0	1.000	0.449	0.664
surface albedo fitted [1]	0.102 ± 0.173	12725770	4.218×10^{-2}	3.396×10^{-2}	0.0	1.000	1.892×10^{-2}	6.109×10^{-2}
surface albedo fitted crb [1]	$(9.378 \pm 17.306) \times 10^{-2}$	12725770	3.162×10^{-2}	2.347×10^{-2}	0.0	1.000	1.294×10^{-2}	4.455×10^{-2}
fitted root mean square [1]	$(5.535 \pm 10.557) \times 10^{-4}$	12725770	5.826×10^{-4}	2.281×10^{-4}	9.019×10^{-7}	0.559	8.099×10^{-5}	6.636×10^{-4}
fitted root mean square crb [1]	$(4.732 \pm 8.891) \times 10^{-4}$	12725770	5.268×10^{-4}	1.728×10^{-4}	8.904×10^{-7}	0.627	5.176×10^{-5}	5.786×10^{-4}
wavelength shift [nm]	$(6.578 \pm 6.679) \times 10^{-3}$	12725770	9.338×10^{-3}	5.729×10^{-3}	-4.153×10^{-2}	0.291	1.474×10^{-3}	1.081×10^{-2}
cloud fraction apriori [1]	0.564 ± 0.346	12725770	0.748	0.550	0.0	1.000	0.235	0.983
reflectance blue oca [1]	0.510 ± 0.184	12725770	0.278	0.489	0.139	1.85	0.357	0.635
reflectance green oca [1]	0.450 ± 0.209	12725770	0.339	0.432	7.810×10^{-2}	1.92	0.264	0.603
reflectance continuum aband [1]	0.378 ± 0.248	12725770	0.401	0.362	9.956×10^{-3}	4.68	0.156	0.557

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]	0.663 ± 0.362	3494467	0.530	0.830	0.0	1.000	0.420	0.950
cloud fraction [1]	0.616 ± 0.350	3494467	0.714	0.650	7.376×10^{-3}	1.000	0.286	1.000
cloud top height [m]	$(0.453 \pm 0.253) \times 10^4$	3494467	3.610×10^3	4.242×10^3	0.0	2.000×10^4	2.536×10^3	6.145×10^3
cloud optical thickness [1]	17.5 ± 29.6	3494467	10.1	9.18	1.000	250	5.93	16.0
cloud fraction crb [1]	0.615 ± 0.350	3494467	0.714	0.650	7.906×10^{-3}	1.000	0.284	0.999
cloud height crb [m]	$(0.353 \pm 0.213) \times 10^4$	3494467	3.245×10^3	3.227×10^3	0.0	2.000×10^4	1.795×10^3	5.040×10^3
cloud albedo crb [1]	0.584 ± 0.211	3494467	0.257	0.586	0.0	1.000	0.470	0.727
surface albedo fitted [1]	0.338 ± 0.203	3494467	0.126	0.271	0.0	1.000	0.220	0.347
surface albedo fitted crb [1]	0.335 ± 0.203	3494467	0.128	0.267	3.807×10^{-3}	1.000	0.217	0.345
fitted root mean square [1]	$(1.145 \pm 1.146) \times 10^{-3}$	3494467	1.262×10^{-3}	8.410×10^{-4}	2.225×10^{-6}	0.170	3.559×10^{-4}	1.618×10^{-3}
fitted root mean square crb [1]	$(1.097 \pm 1.043) \times 10^{-3}$	3494467	1.300×10^{-3}	8.260×10^{-4}	1.057×10^{-6}	9.030×10^{-2}	2.985×10^{-4}	1.599×10^{-3}
wavelength shift [nm]	$(7.609 \pm 6.316) \times 10^{-3}$	3494467	8.924×10^{-3}	7.475×10^{-3}	-3.166×10^{-2}	5.041×10^{-2}	2.850×10^{-3}	1.177×10^{-2}
cloud fraction apriori [1]	0.624 ± 0.358	3494467	0.721	0.676	0.0	1.000	0.279	1.000
reflectance blue ocra [1]	0.524 ± 0.224	3494467	0.377	0.481	0.132	1.95	0.330	0.707
reflectance green ocra [1]	0.479 ± 0.248	3494467	0.424	0.429	8.618×10^{-2}	2.00	0.257	0.681
reflectance continuum aband [1]	0.515 ± 0.229	3494467	0.350	0.470	1.351×10^{-2}	3.81	0.331	0.681

3 Granule outlines

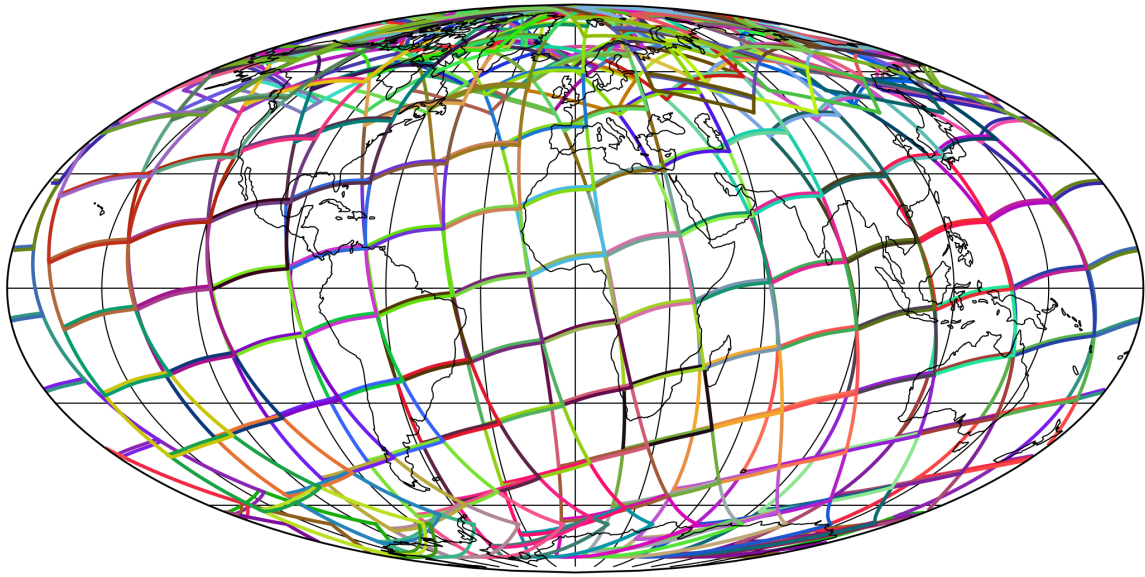


Figure 1: Outline of the granules.

4 Input data monitoring

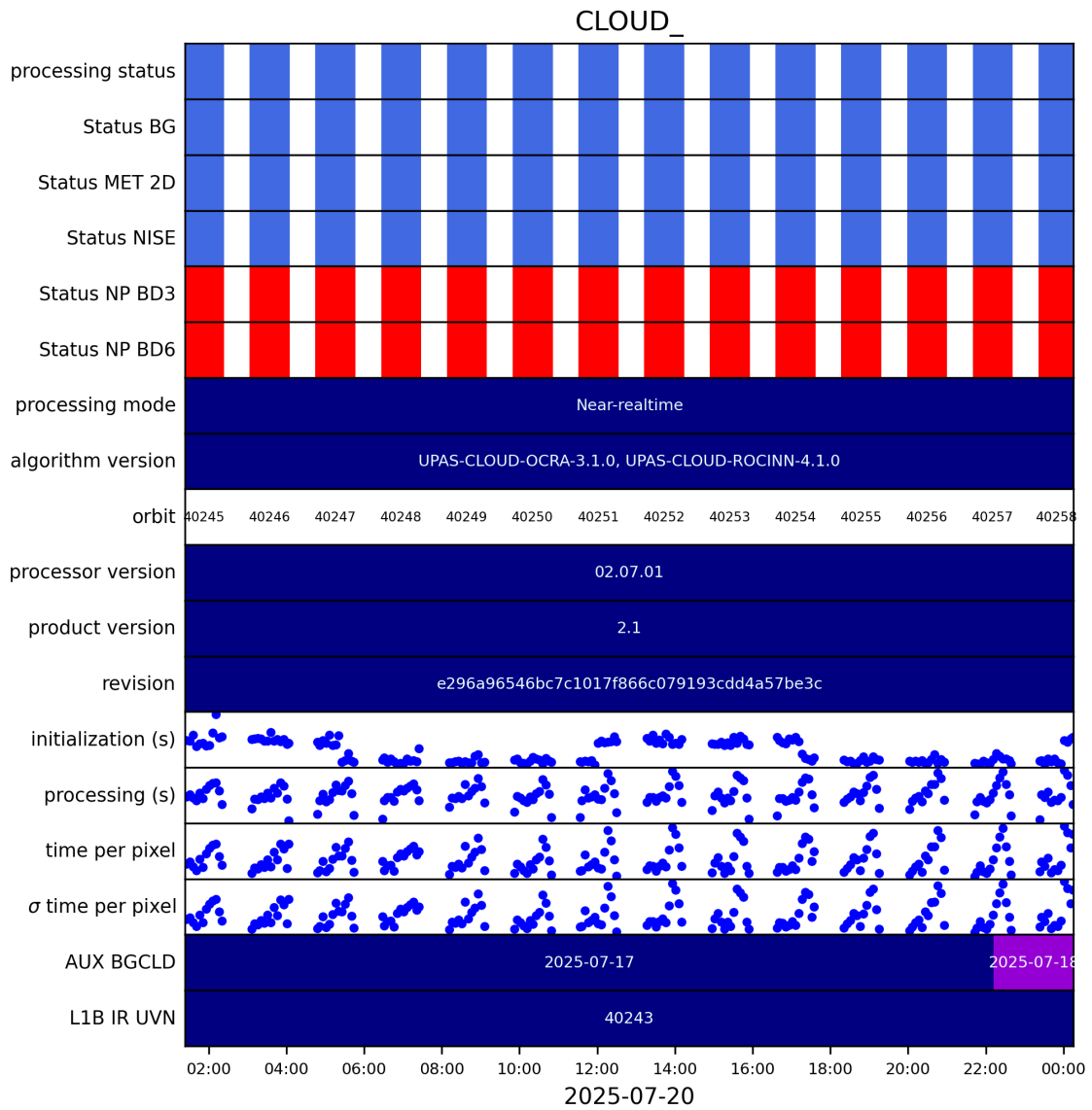


Figure 2: Input data per granule

5 Warnings and errors

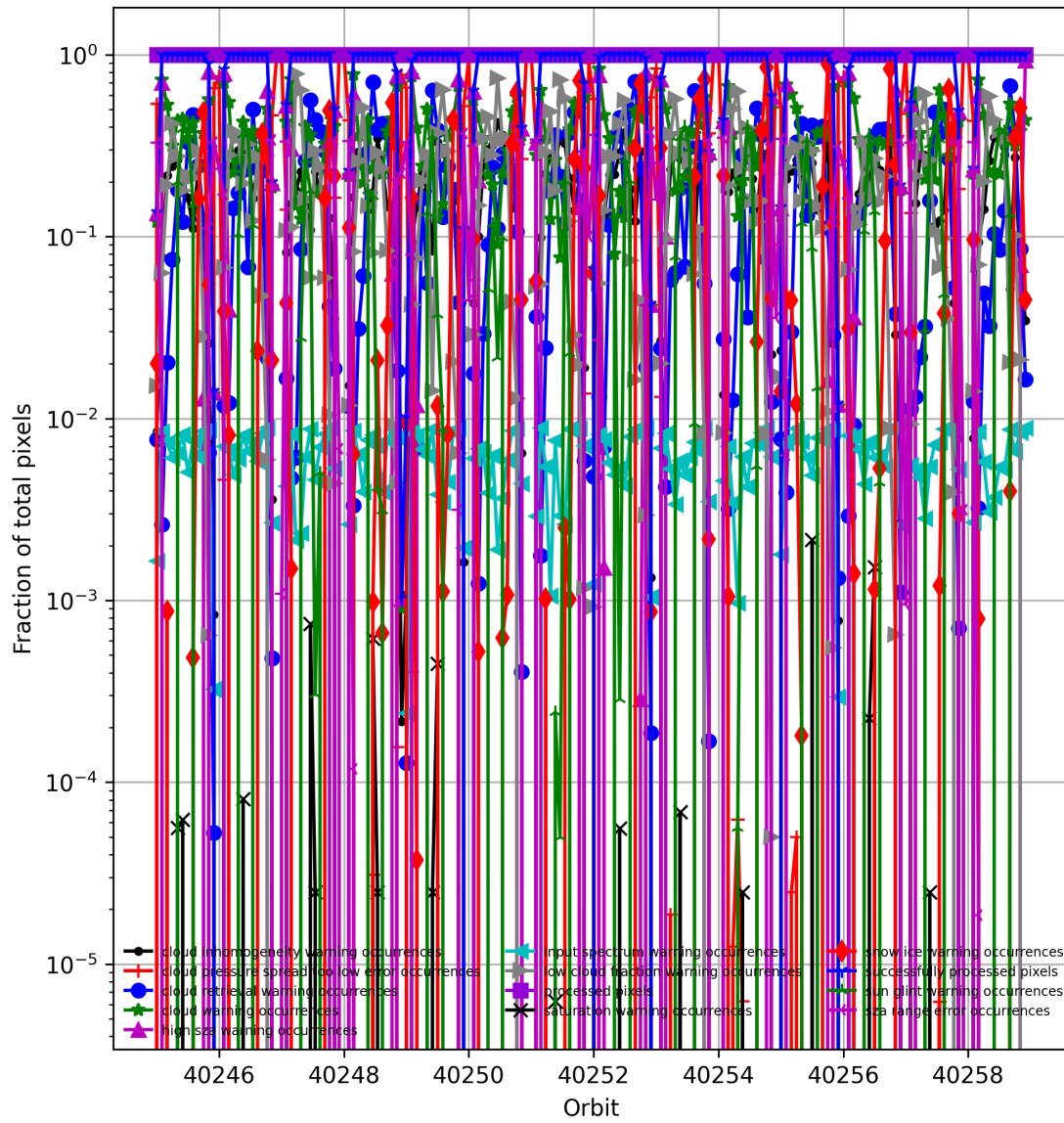


Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

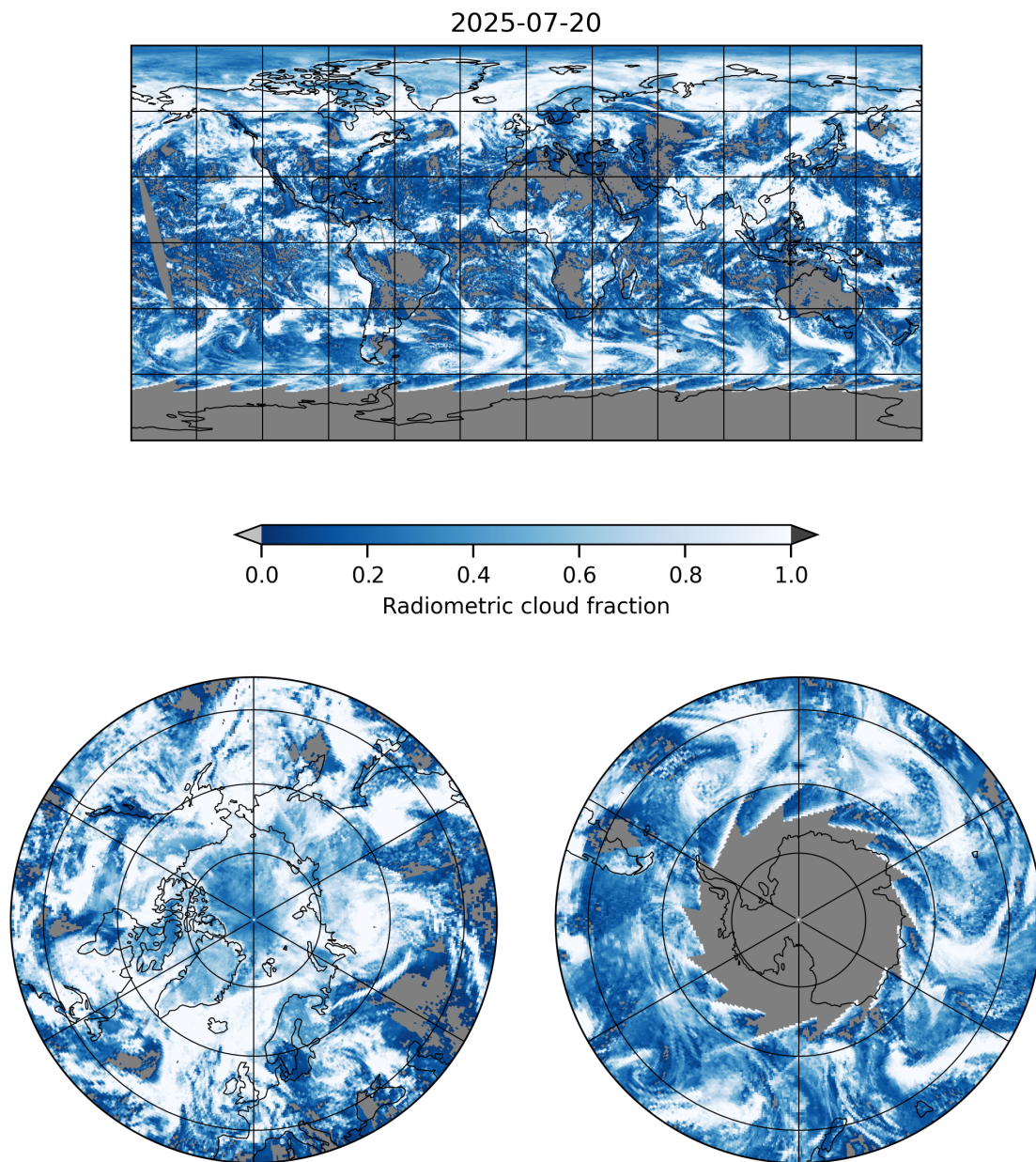


Figure 4: Map of “Radiometric cloud fraction” for 2025-07-20 to 2025-07-21

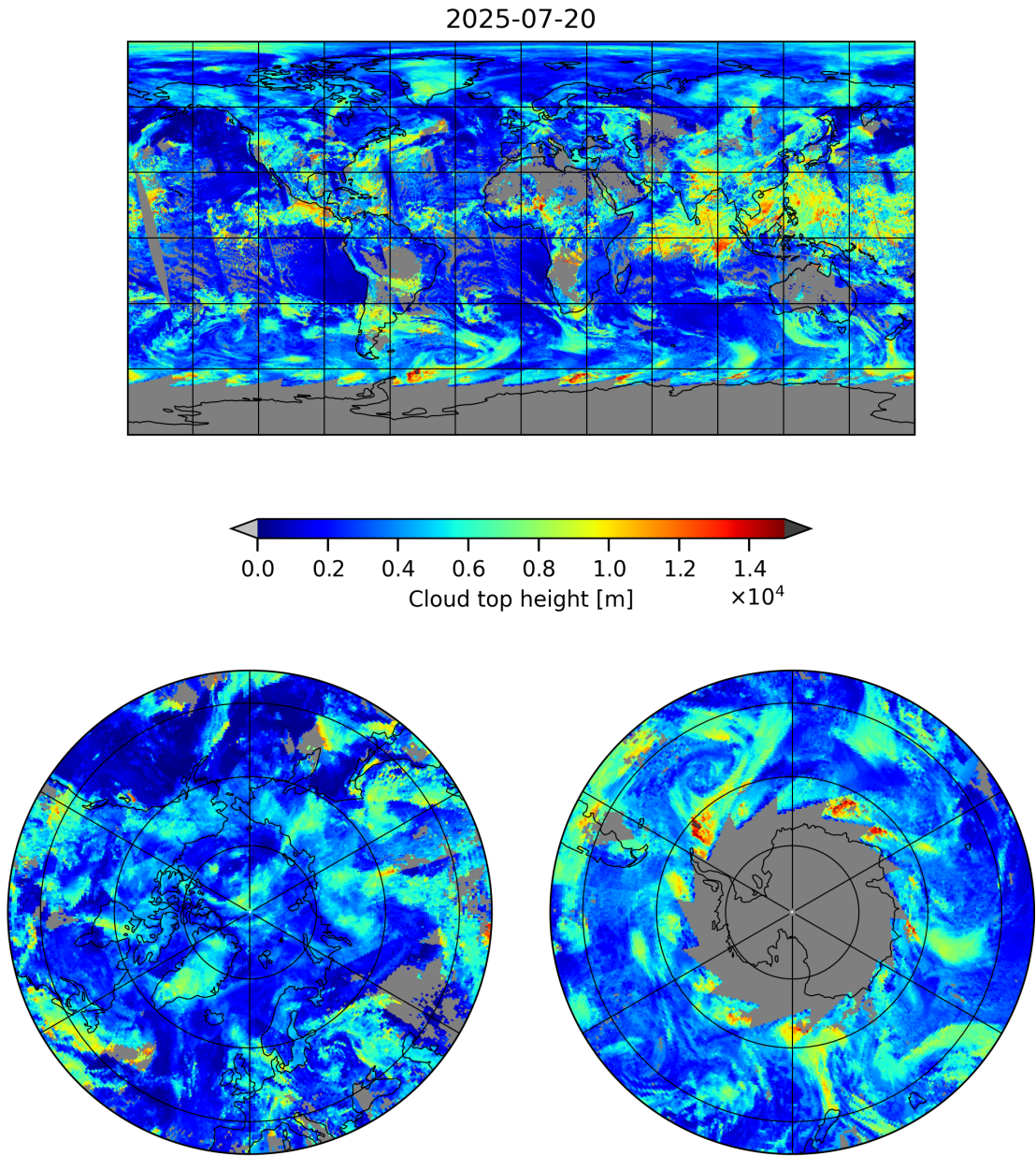


Figure 5: Map of “Cloud top height” for 2025-07-20 to 2025-07-21

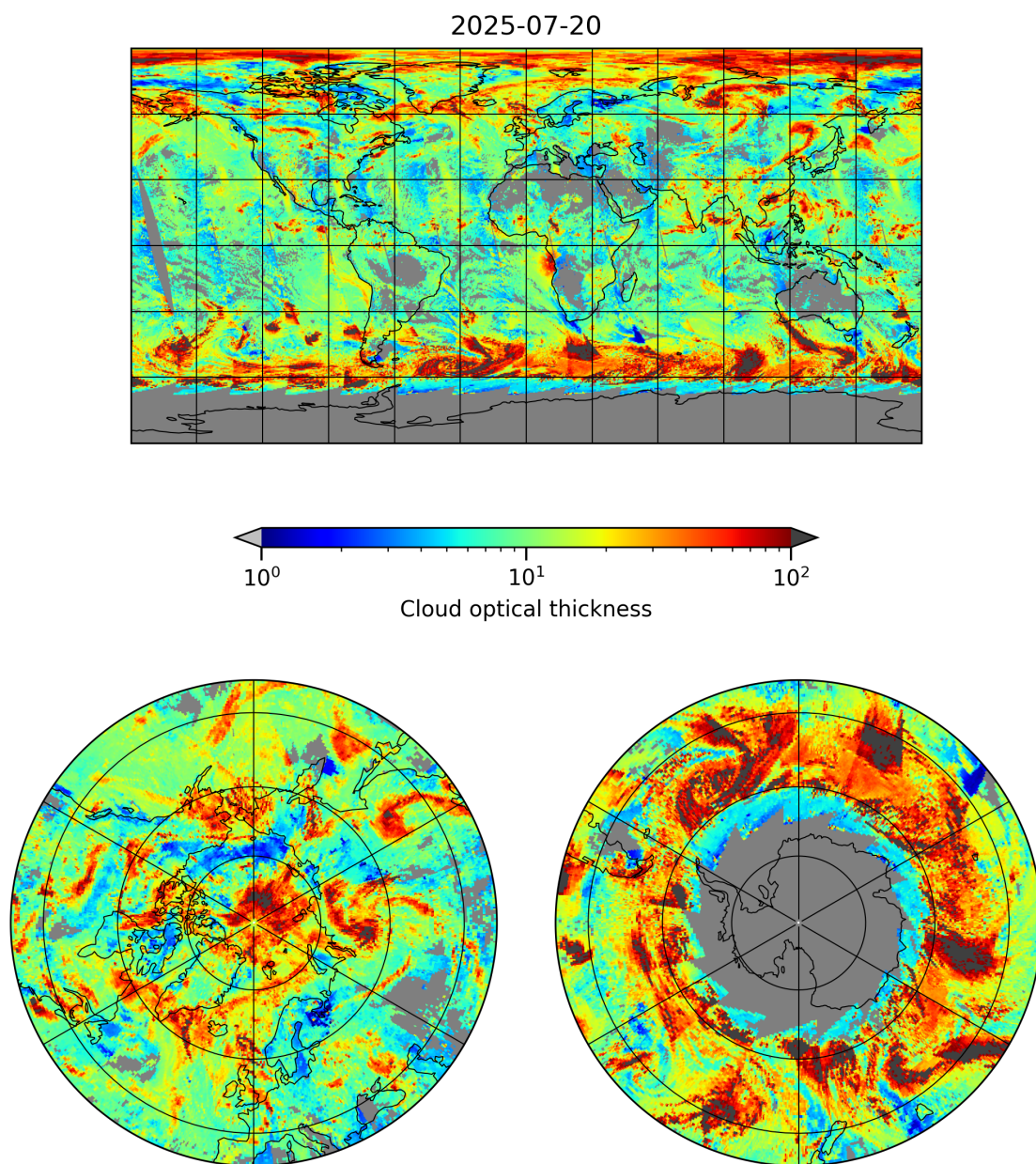


Figure 6: Map of “Cloud optical thickness” for 2025-07-20 to 2025-07-21

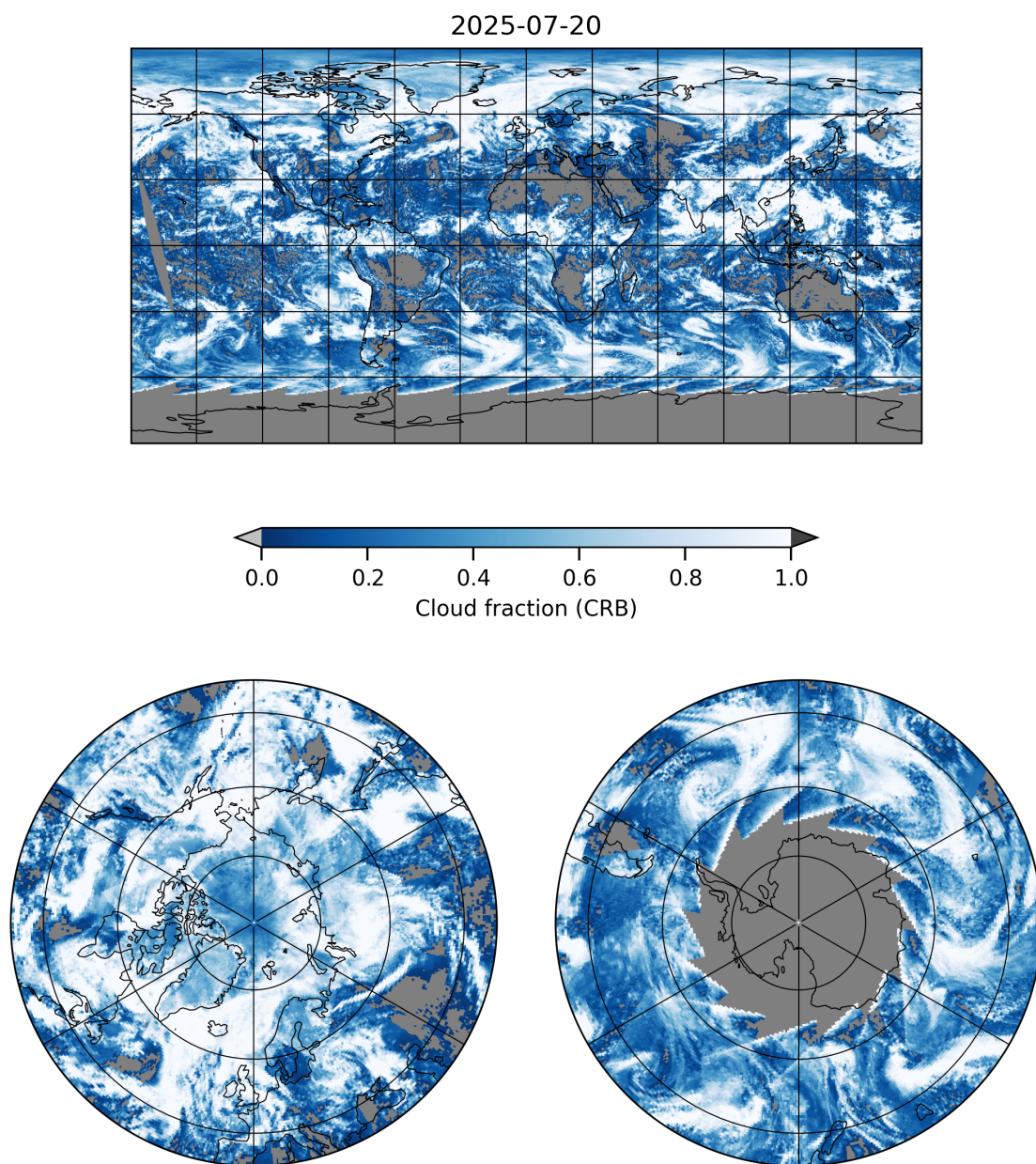


Figure 7: Map of “Cloud fraction (CRB)” for 2025-07-20 to 2025-07-21

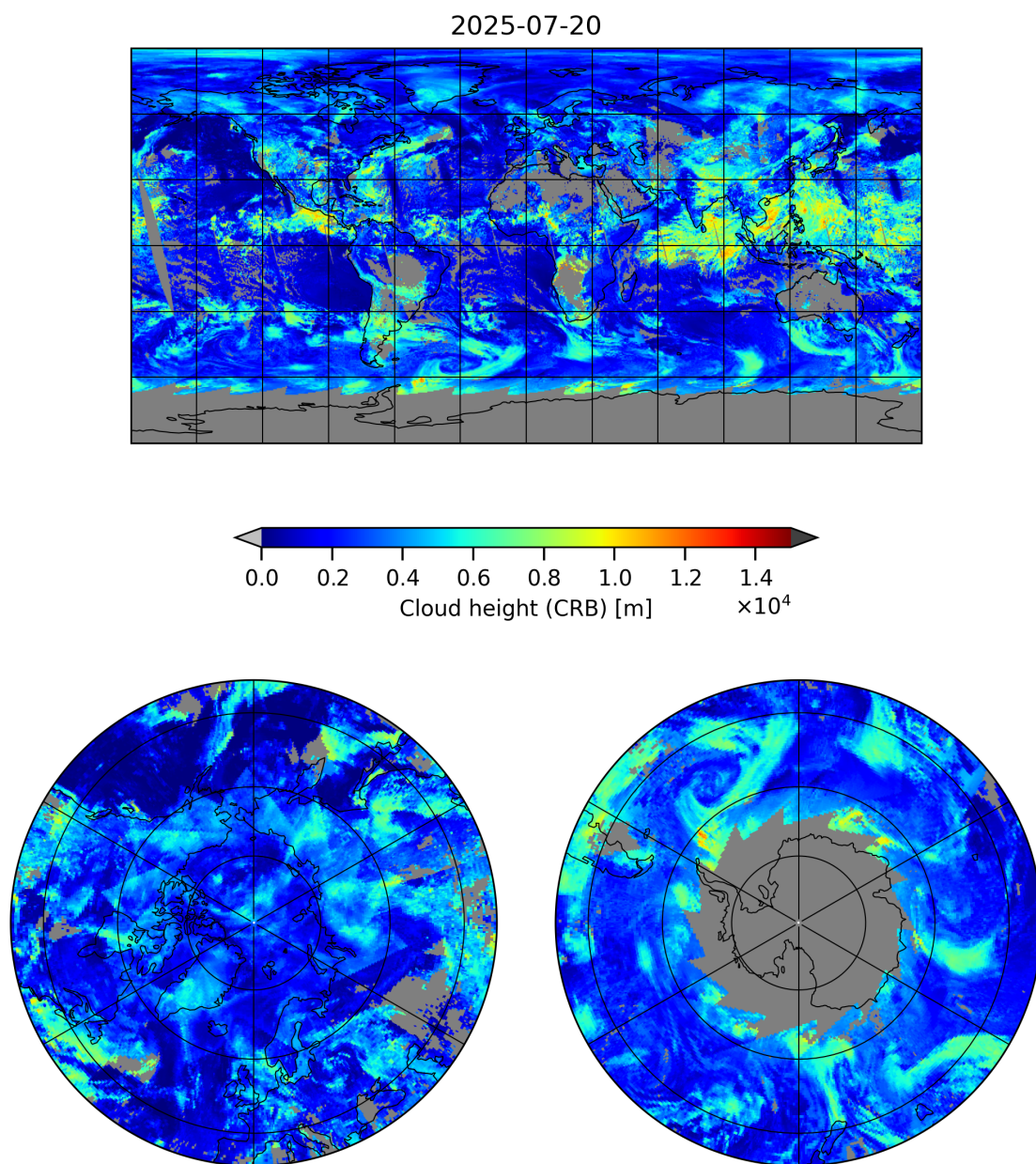


Figure 8: Map of “Cloud height (CRB)” for 2025-07-20 to 2025-07-21

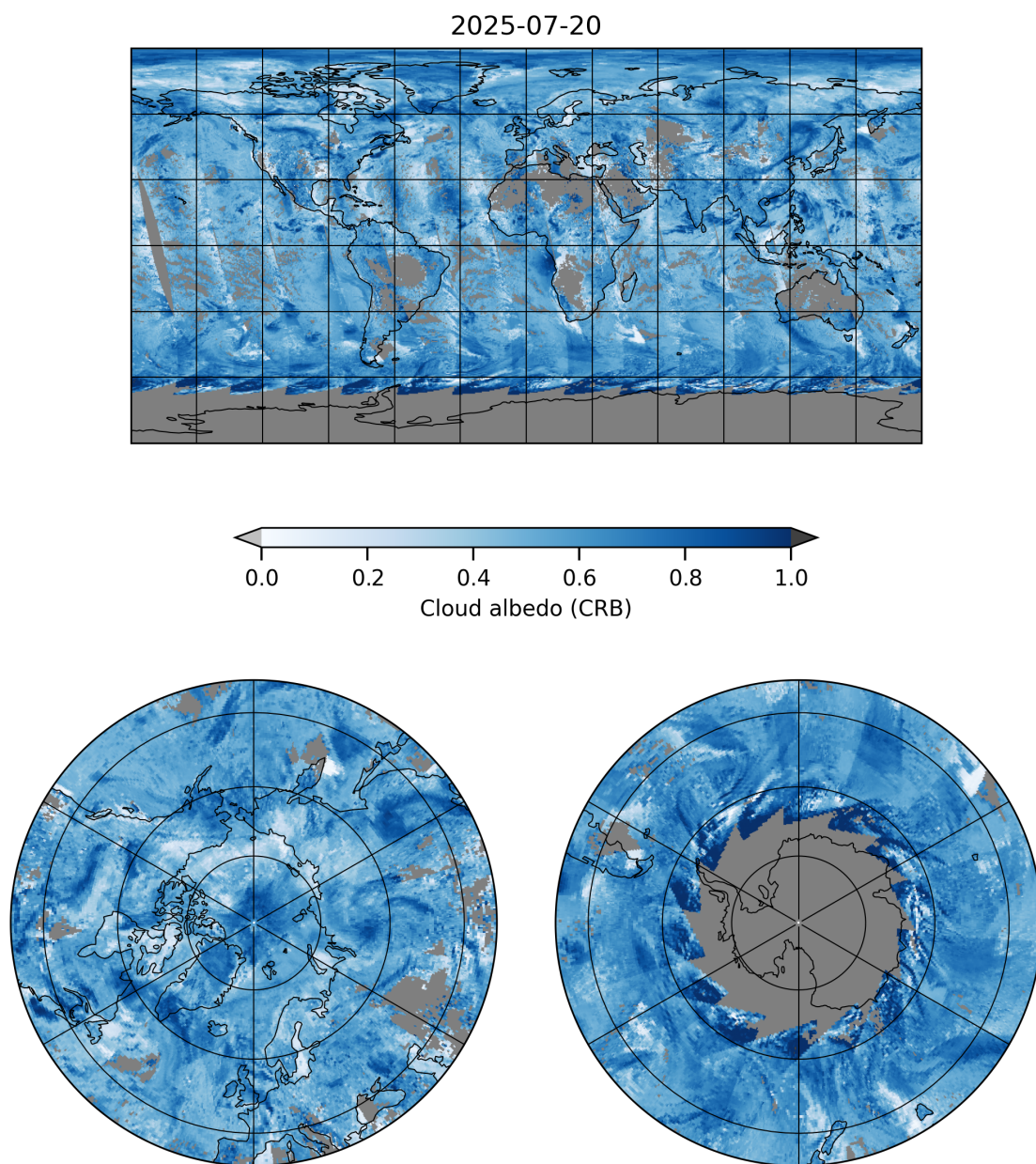


Figure 9: Map of “Cloud albedo (CRB)” for 2025-07-20 to 2025-07-21

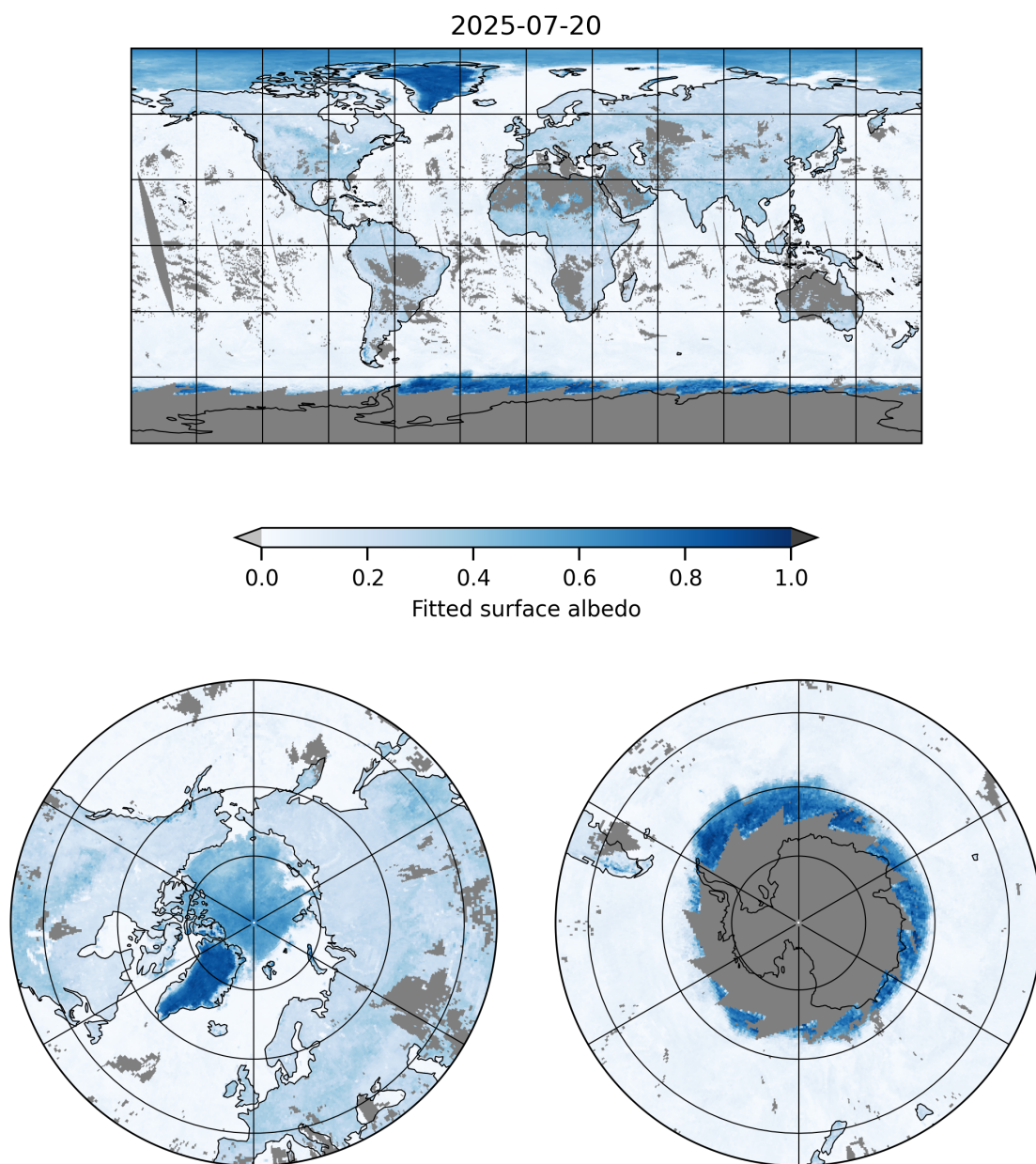


Figure 10: Map of “Fitted surface albedo” for 2025-07-20 to 2025-07-21

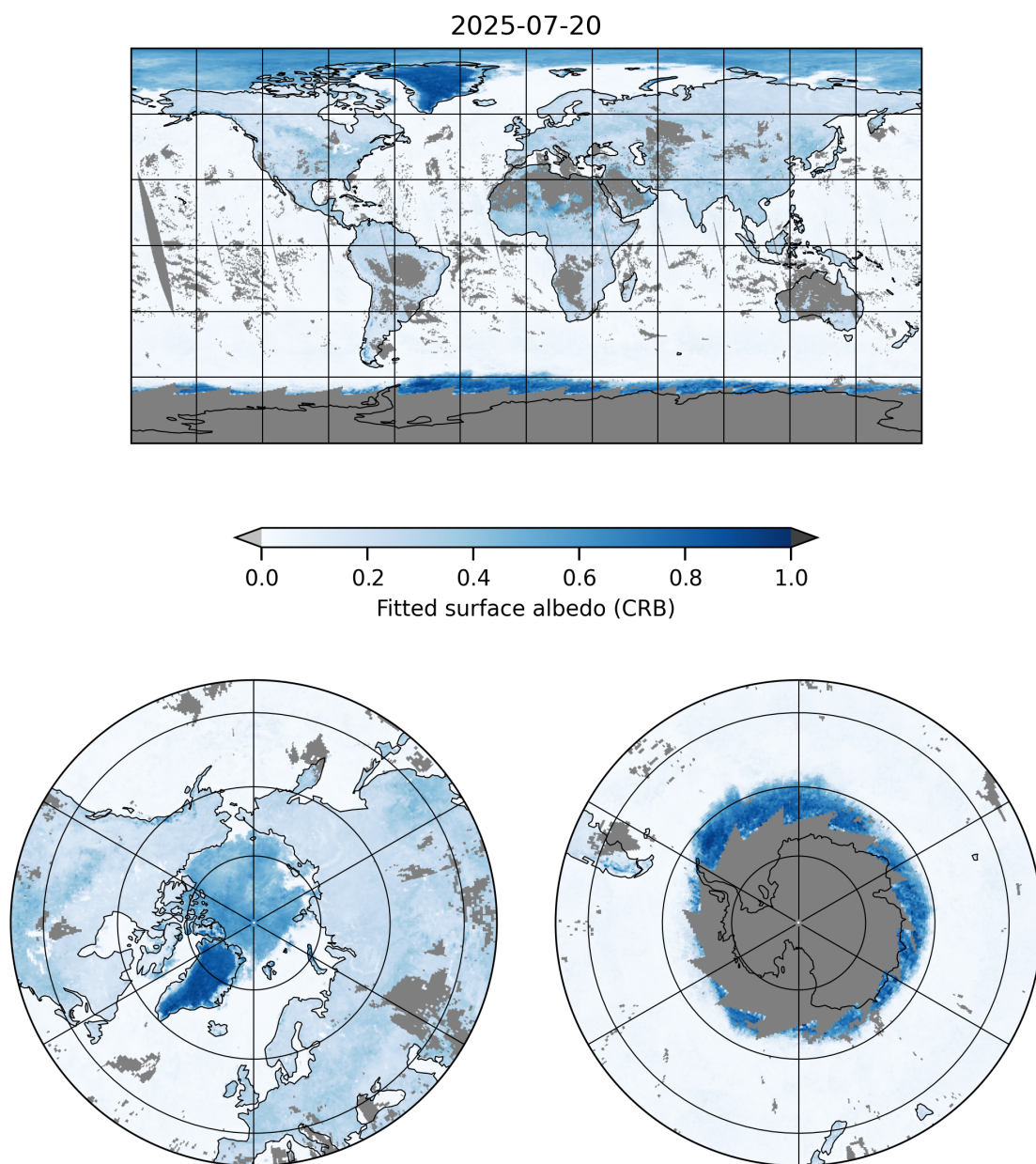


Figure 11: Map of “Fitted surface albedo (CRB)” for 2025-07-20 to 2025-07-21

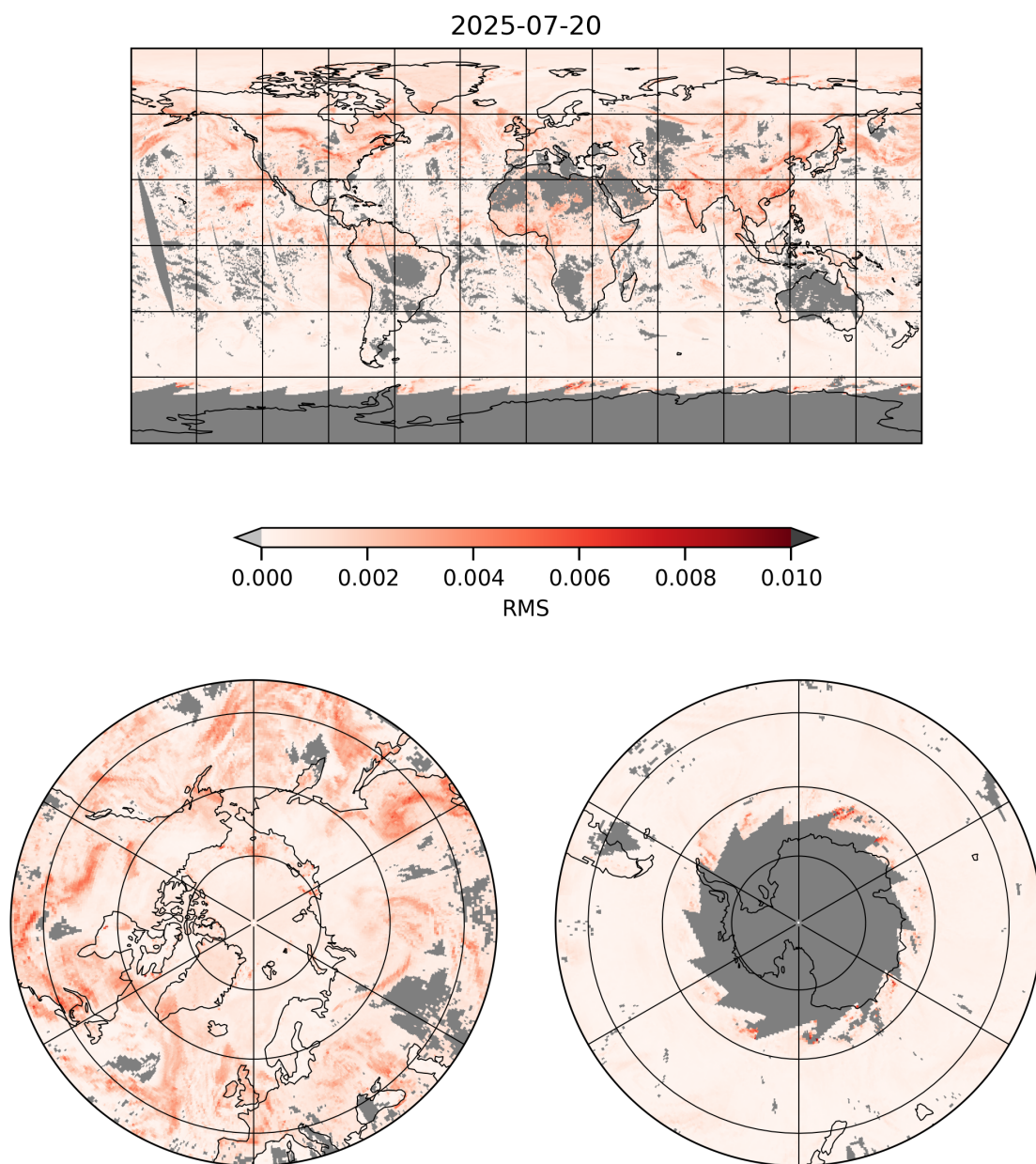


Figure 12: Map of “RMS” for 2025-07-20 to 2025-07-21

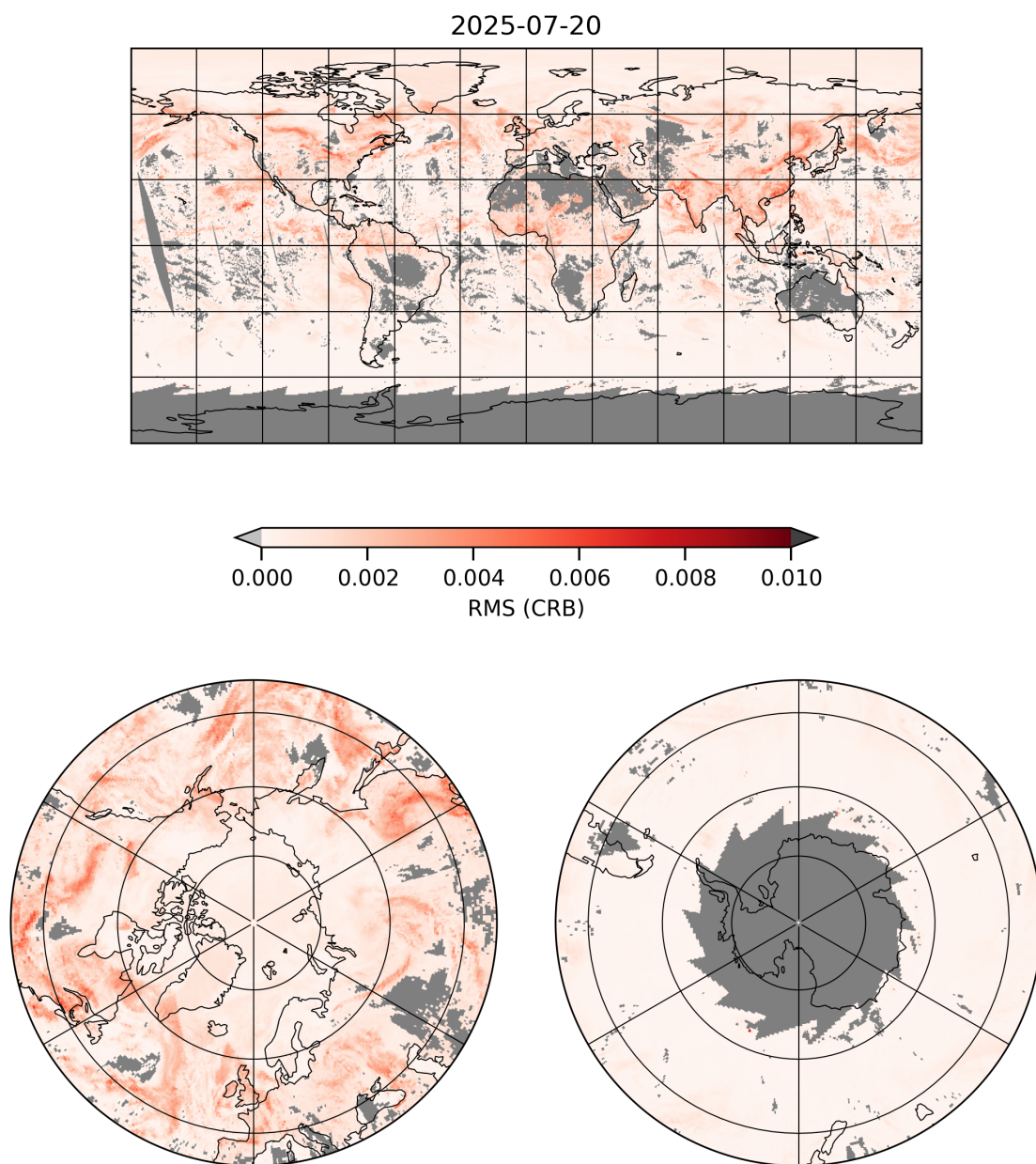


Figure 13: Map of “RMS (CRB)” for 2025-07-20 to 2025-07-21

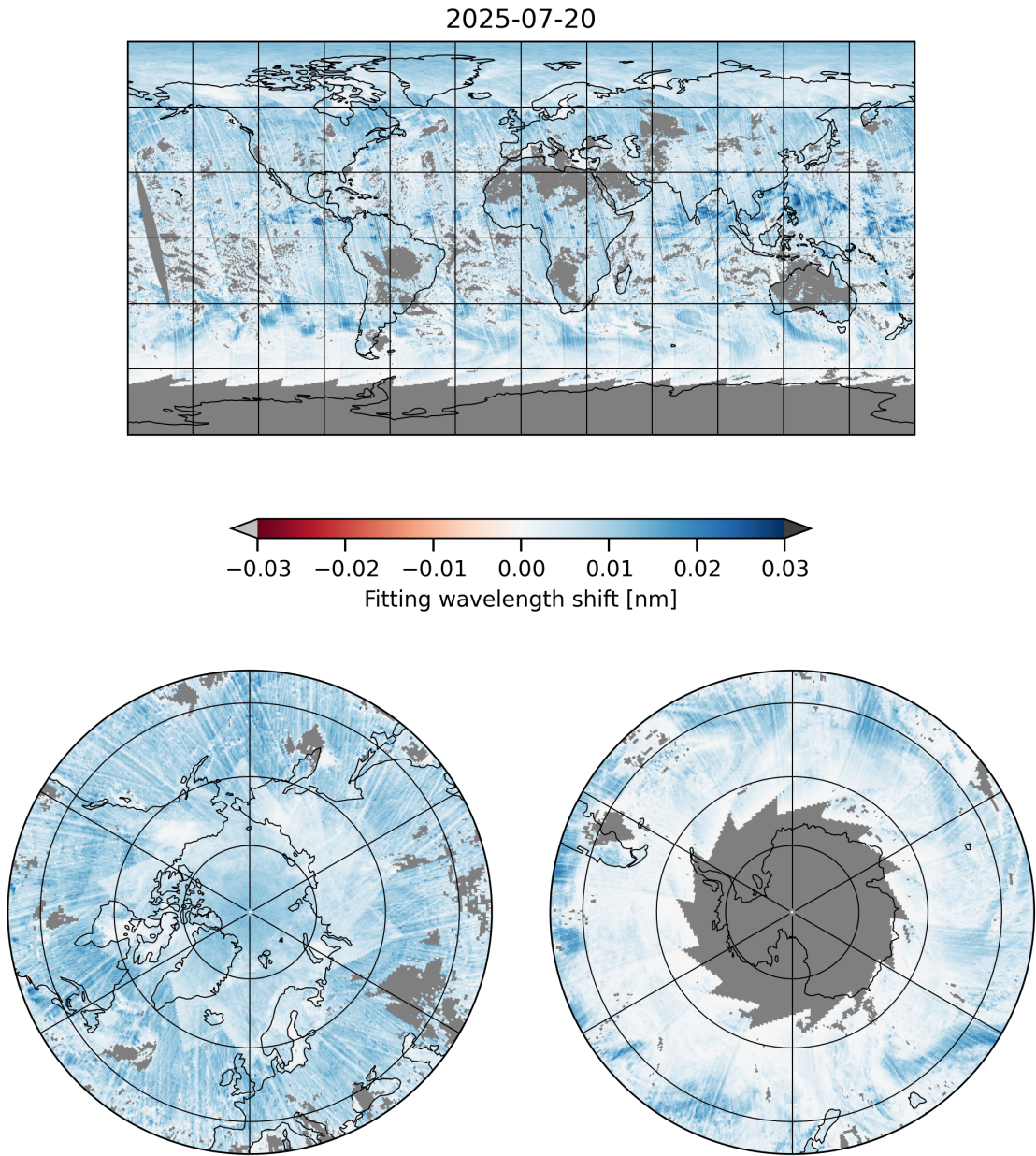


Figure 14: Map of “Fitting wavelength shift” for 2025-07-20 to 2025-07-21

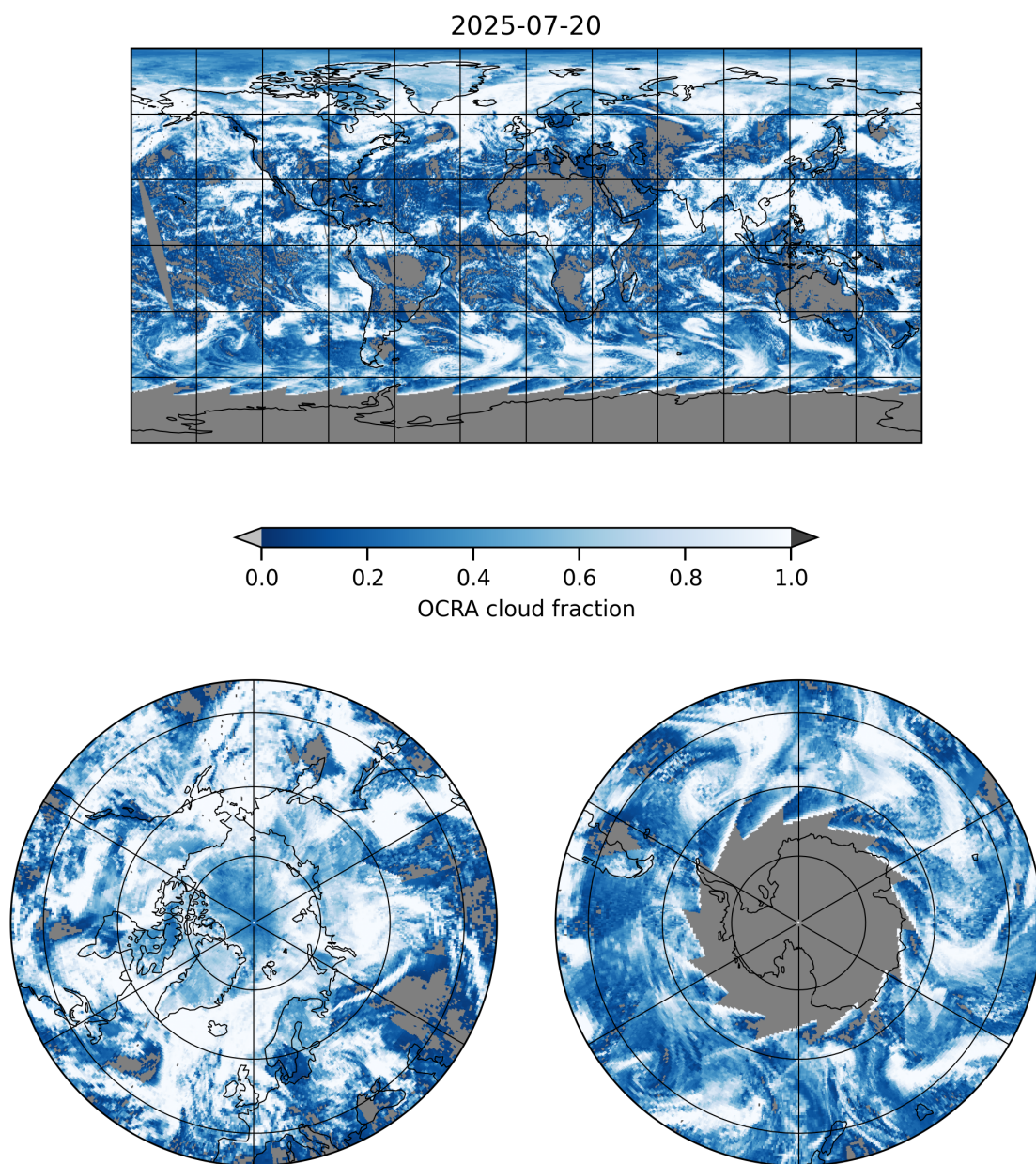


Figure 15: Map of “OCRA cloud fraction” for 2025-07-20 to 2025-07-21

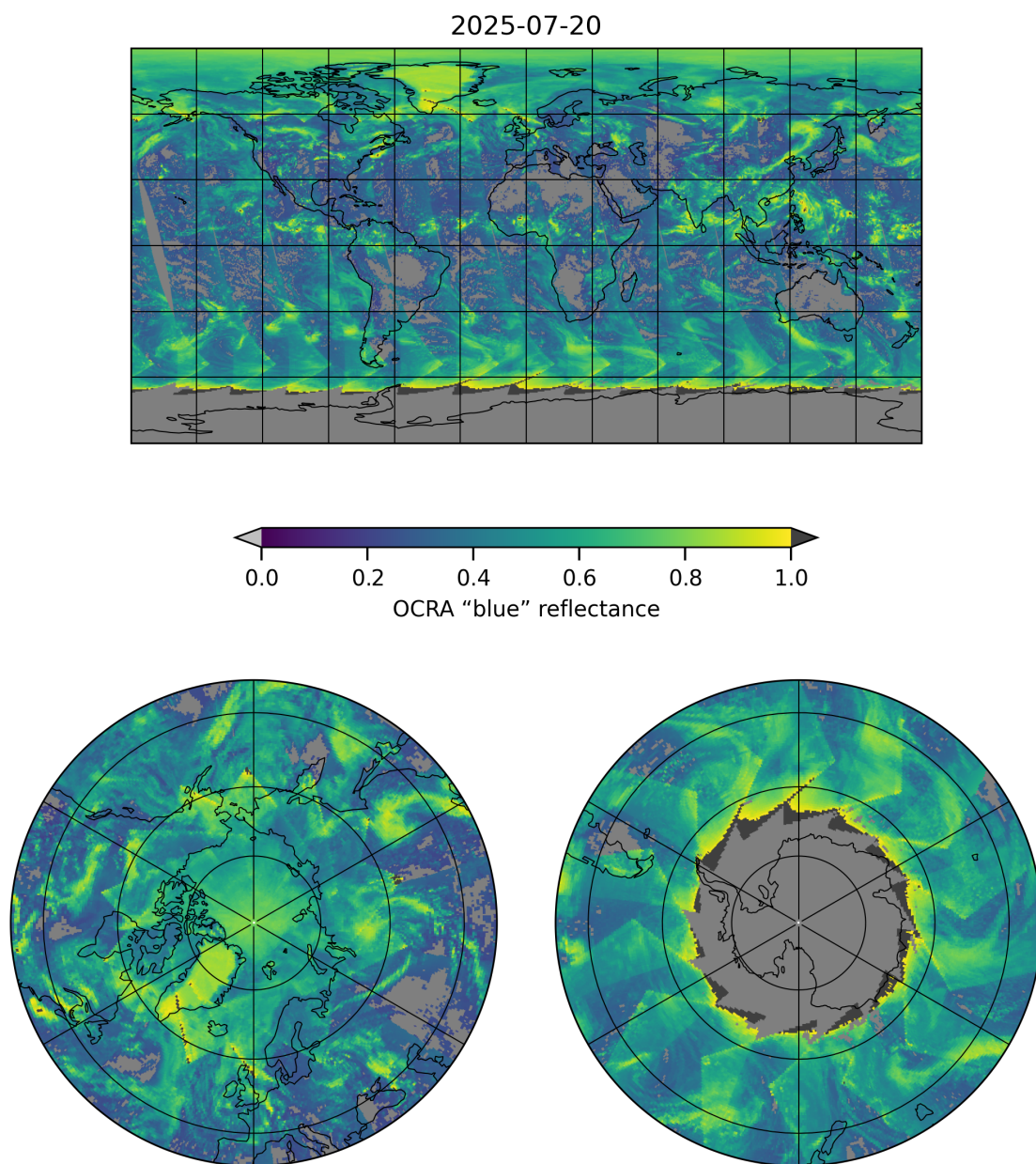


Figure 16: Map of "OCRA "blue" reflectance" for 2025-07-20 to 2025-07-21

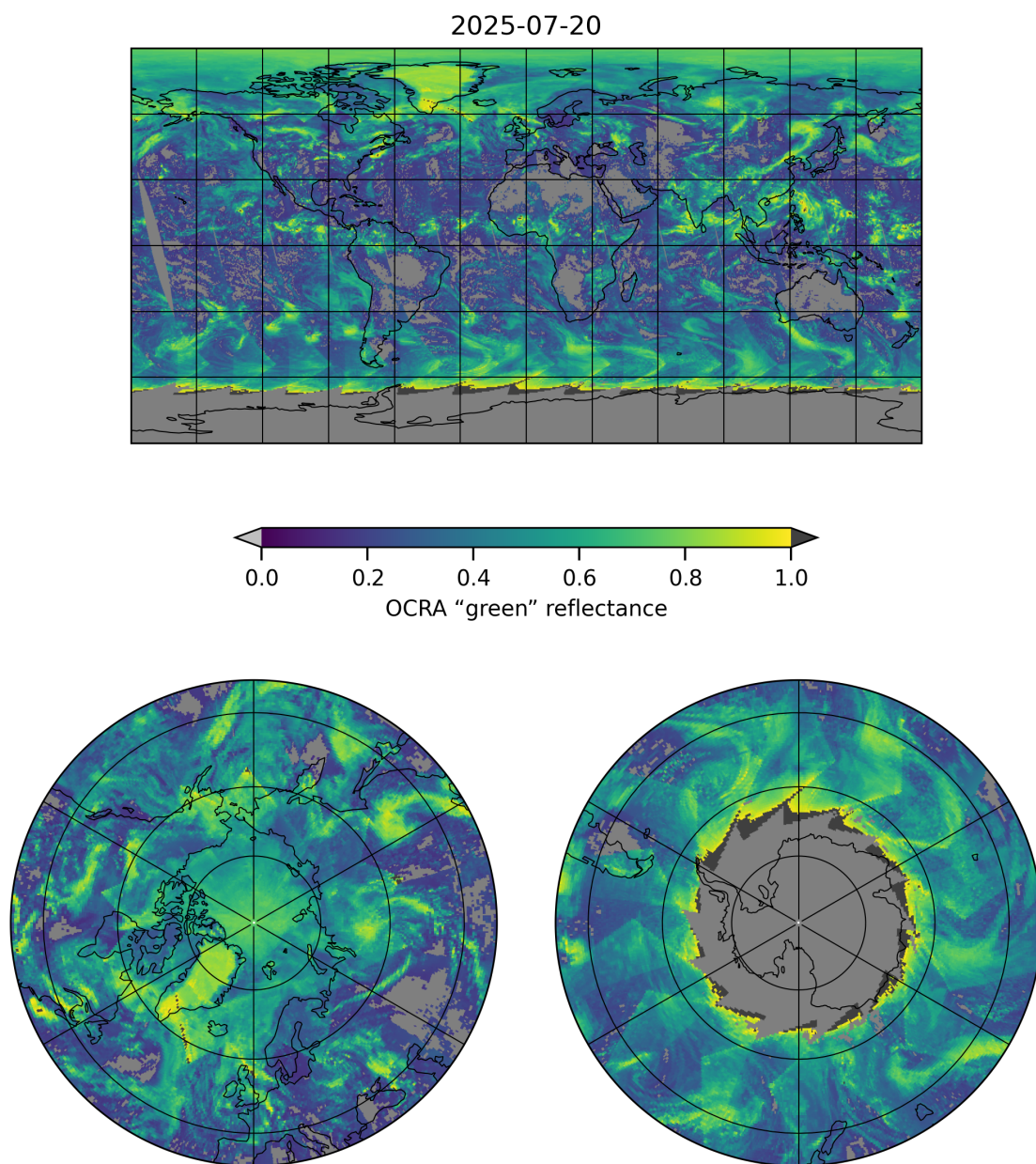


Figure 17: Map of "OCRA "green" reflectance" for 2025-07-20 to 2025-07-21

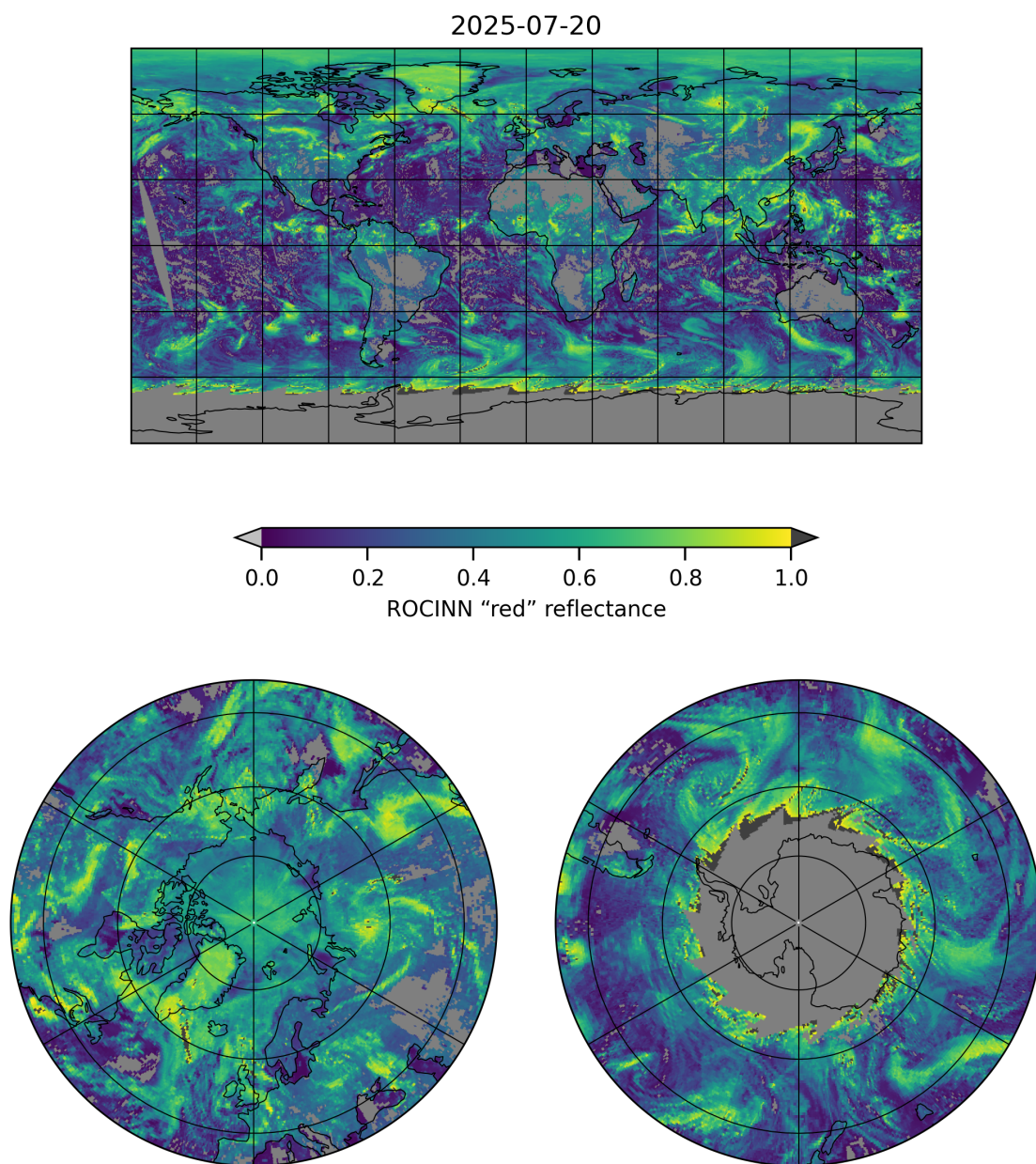


Figure 18: Map of "ROCINN "red" reflectance" for 2025-07-20 to 2025-07-21

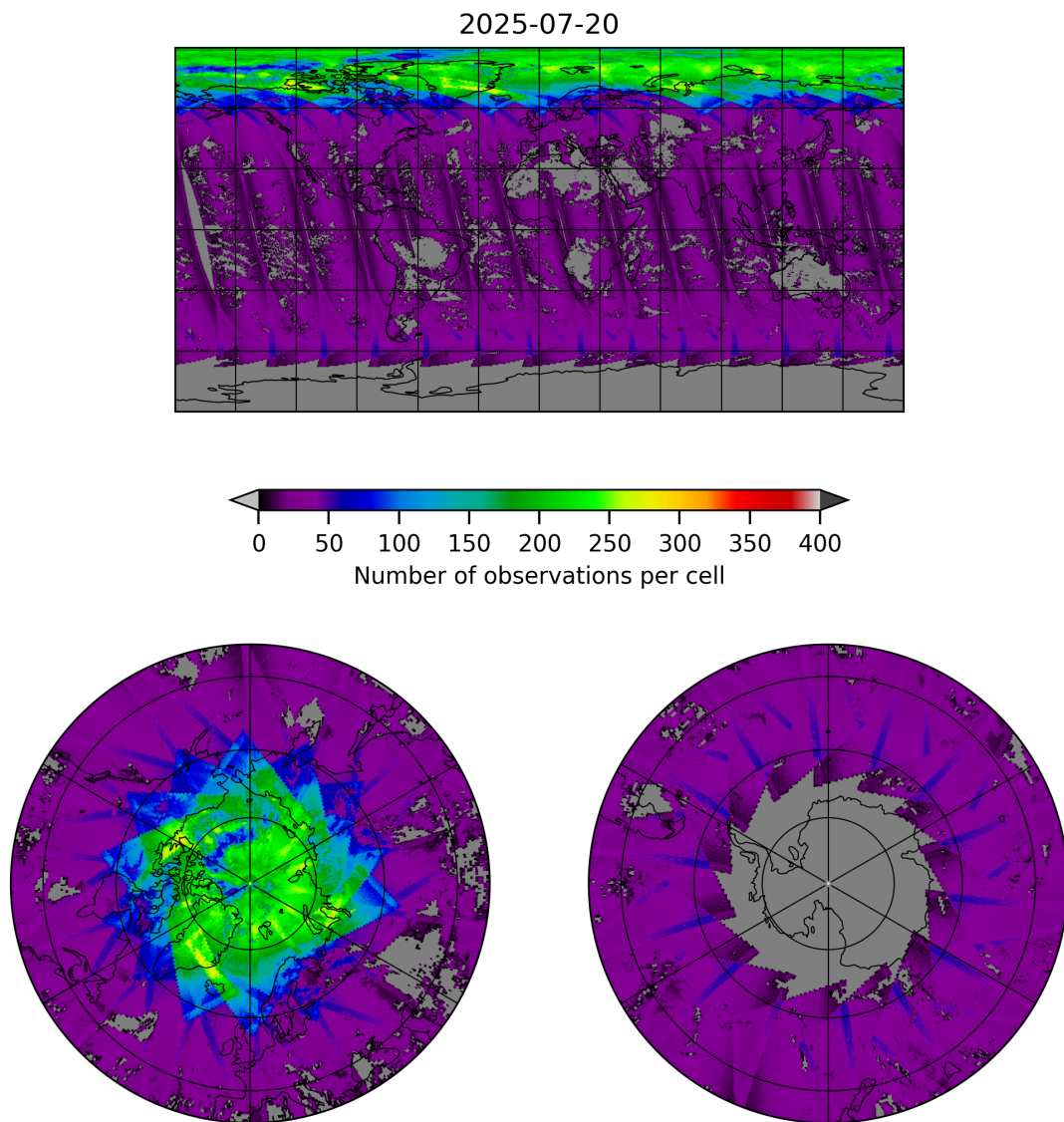


Figure 19: Map of the number of observations for 2025-07-20 to 2025-07-21

7 Zonal average

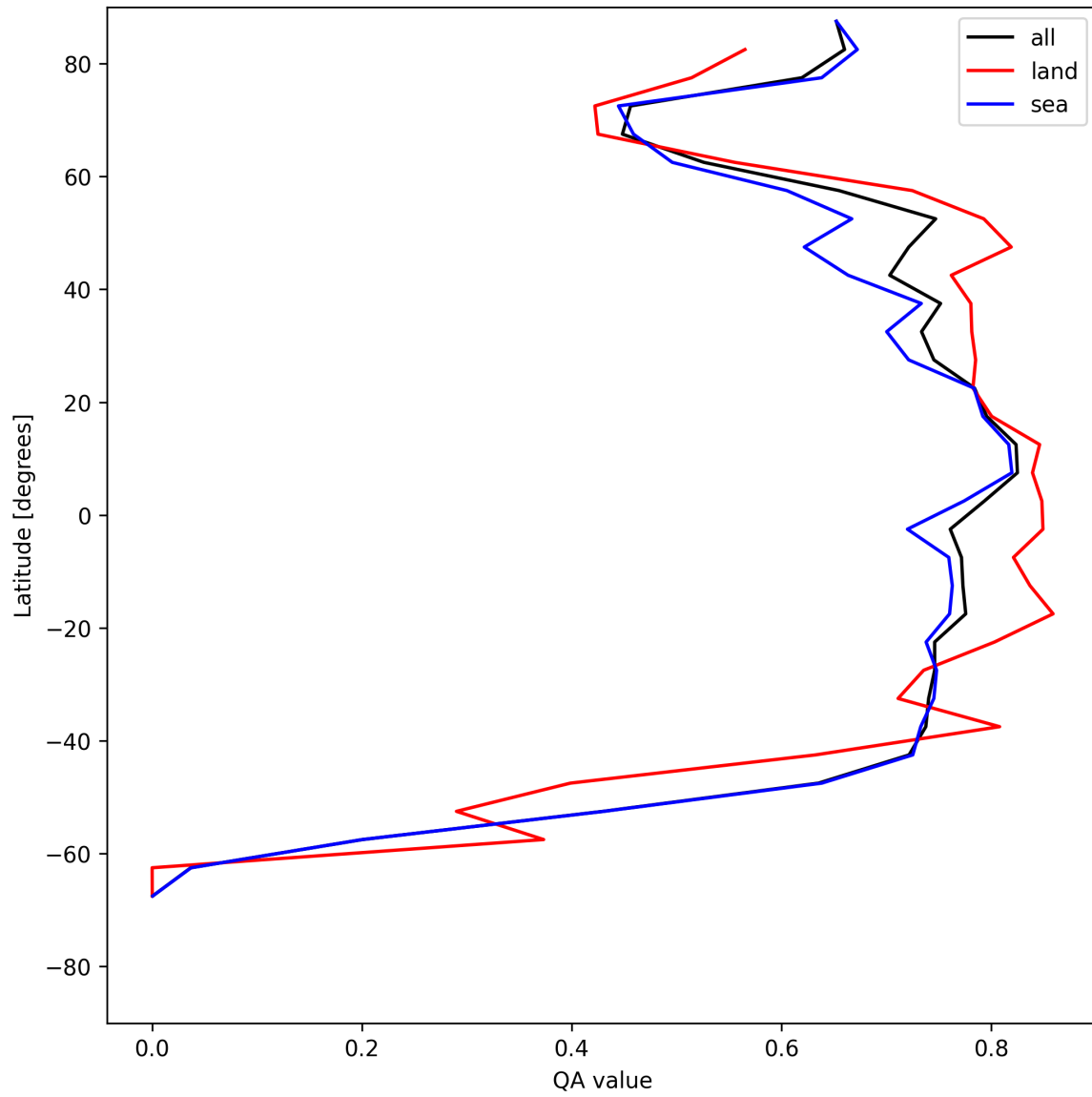


Figure 20: Zonal average of “QA value” for 2025-07-20 to 2025-07-21.

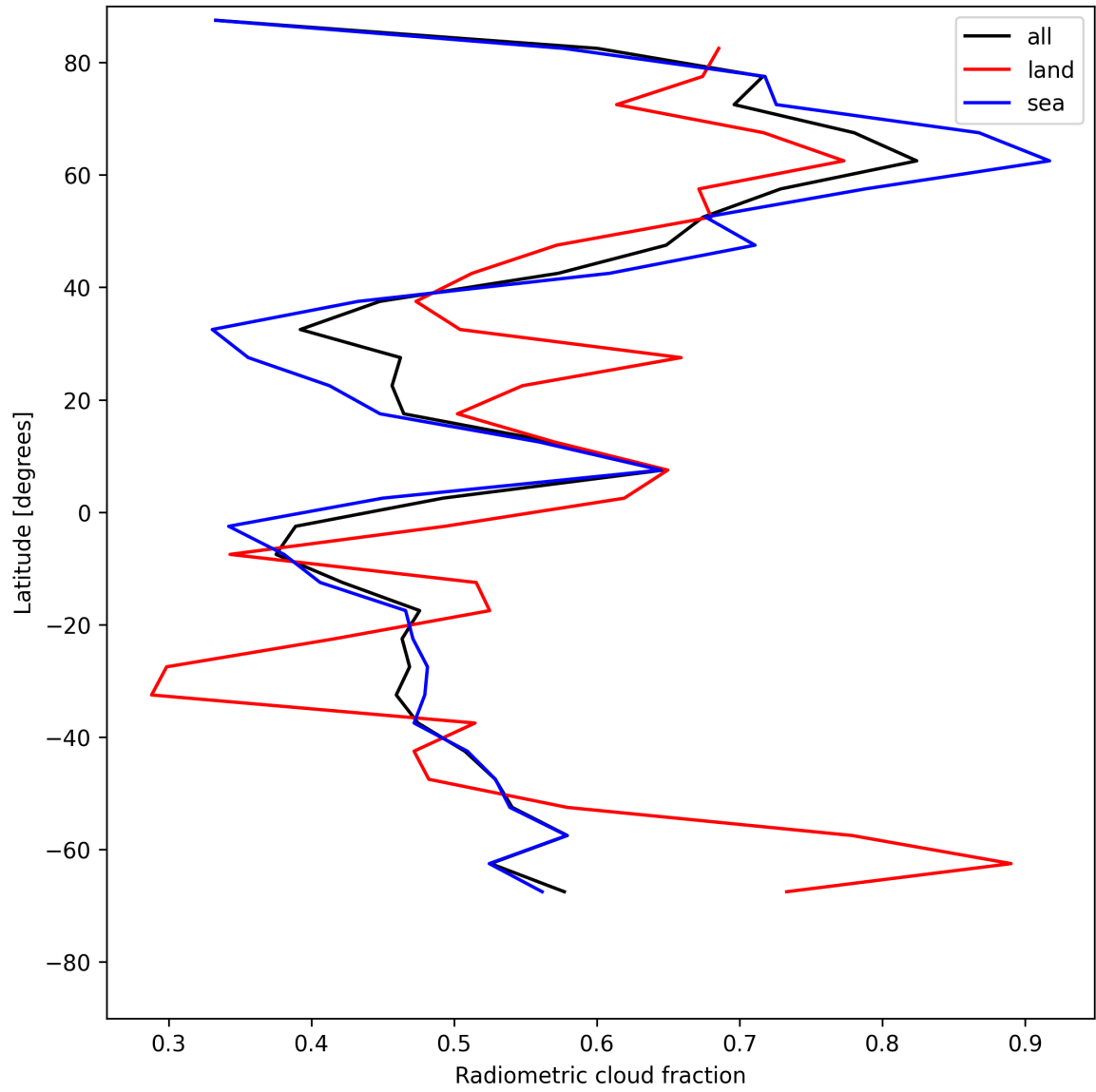


Figure 21: Zonal average of “Radiometric cloud fraction” for 2025-07-20 to 2025-07-21.

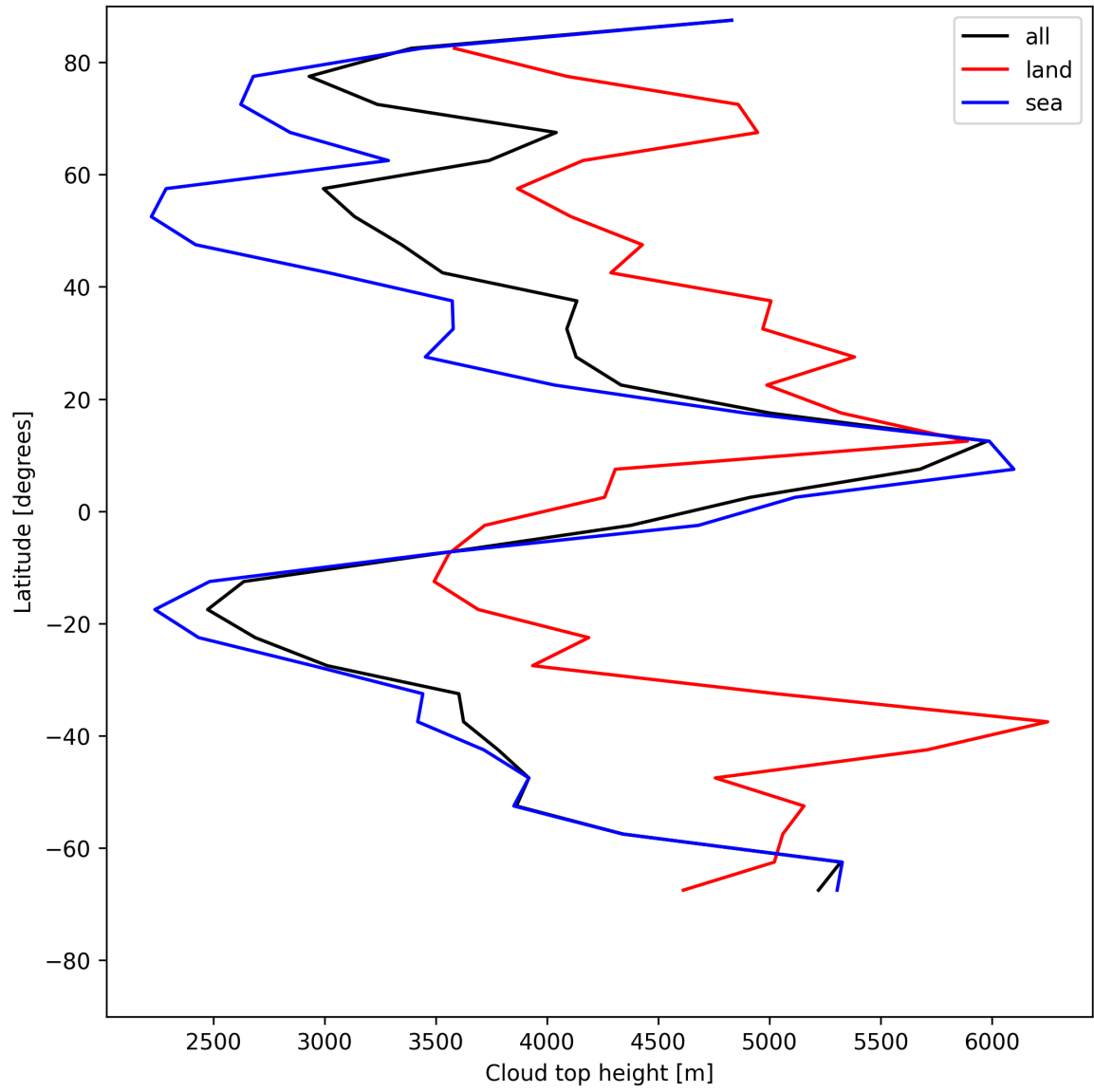


Figure 22: Zonal average of “Cloud top height” for 2025-07-20 to 2025-07-21.

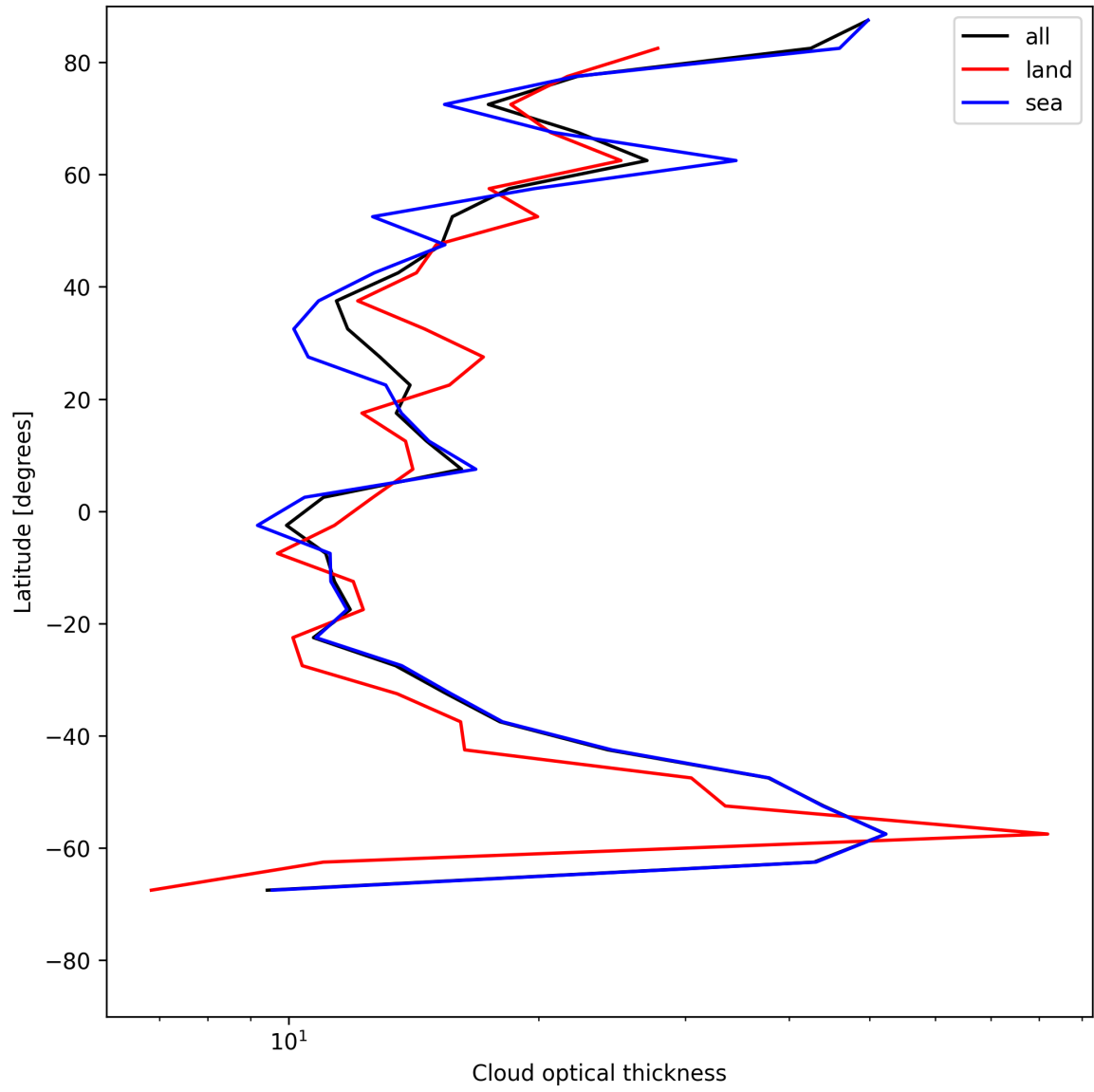


Figure 23: Zonal average of “Cloud optical thickness” for 2025-07-20 to 2025-07-21.

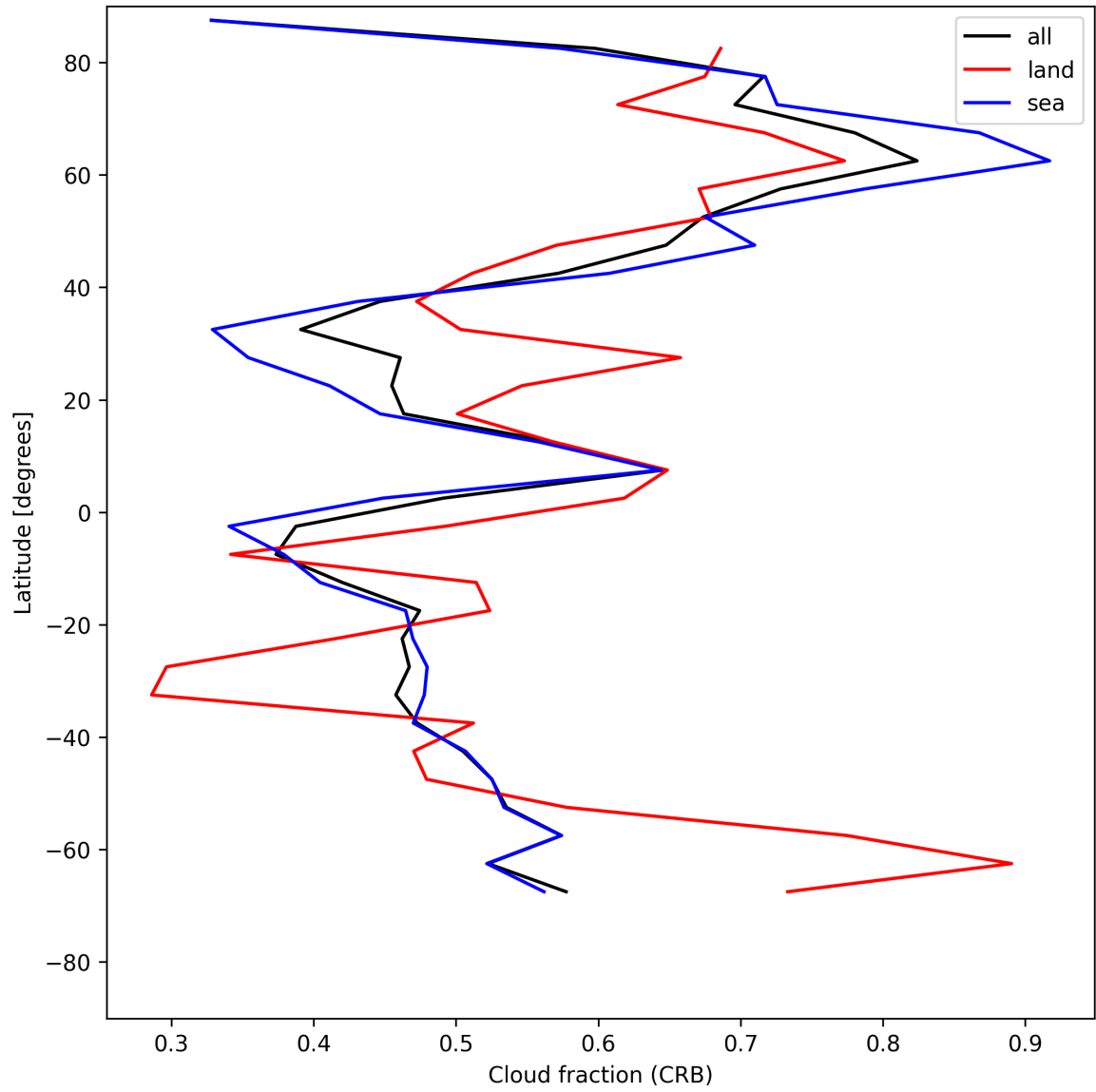


Figure 24: Zonal average of “Cloud fraction (CRB)” for 2025-07-20 to 2025-07-21.

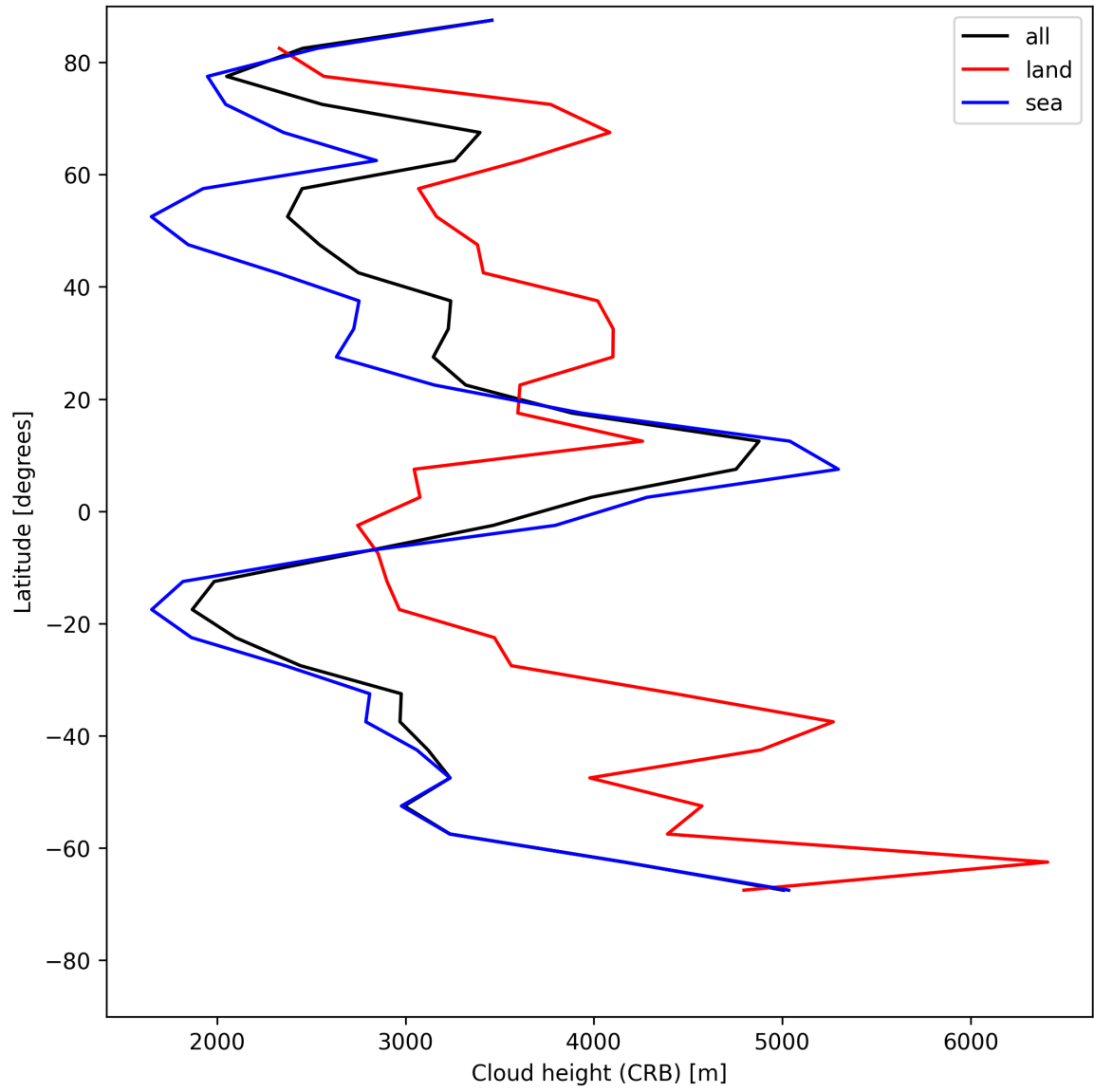


Figure 25: Zonal average of “Cloud height (CRB)” for 2025-07-20 to 2025-07-21.

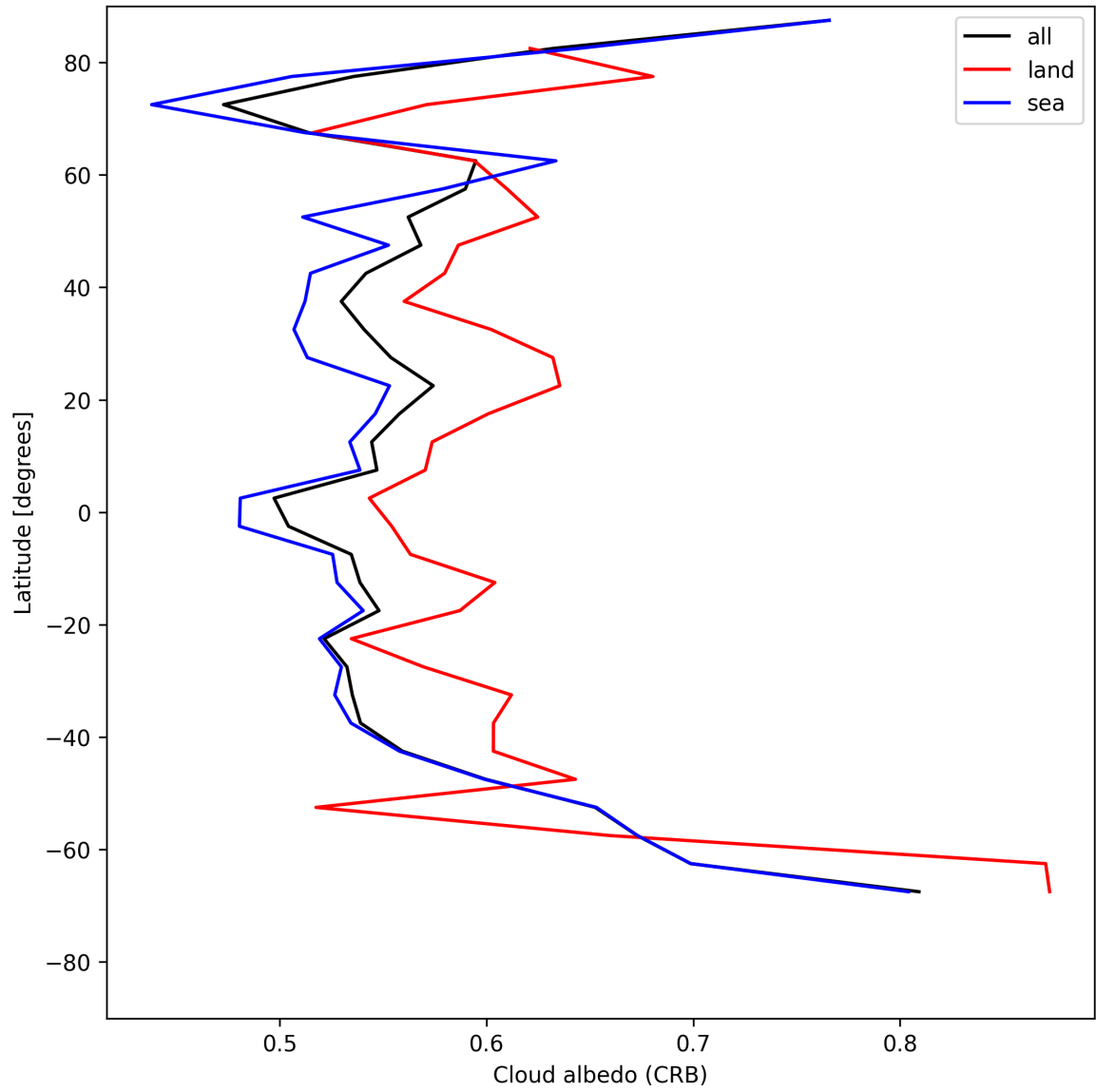


Figure 26: Zonal average of “Cloud albedo (CRB)” for 2025-07-20 to 2025-07-21.

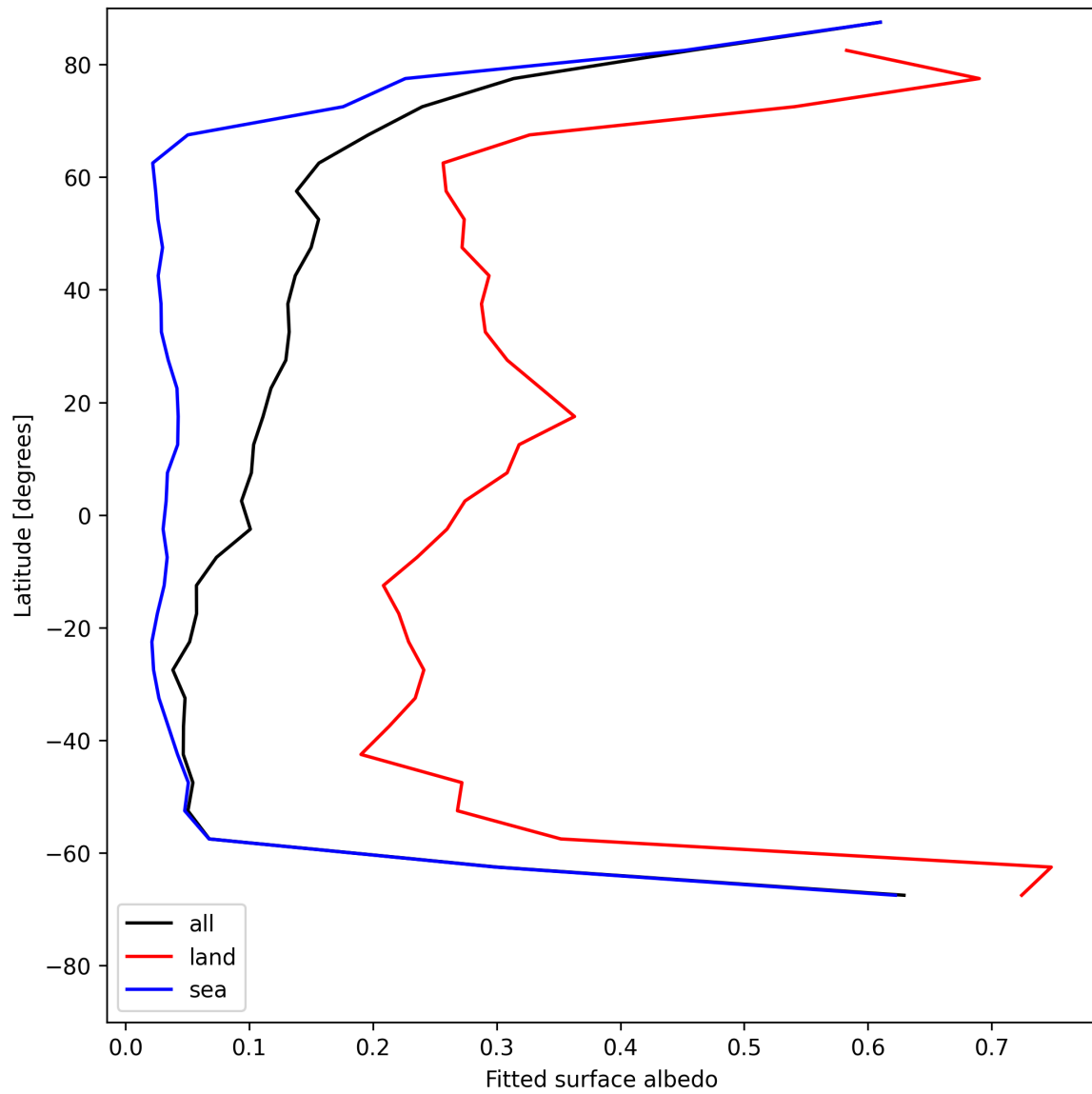


Figure 27: Zonal average of “Fitted surface albedo” for 2025-07-20 to 2025-07-21.

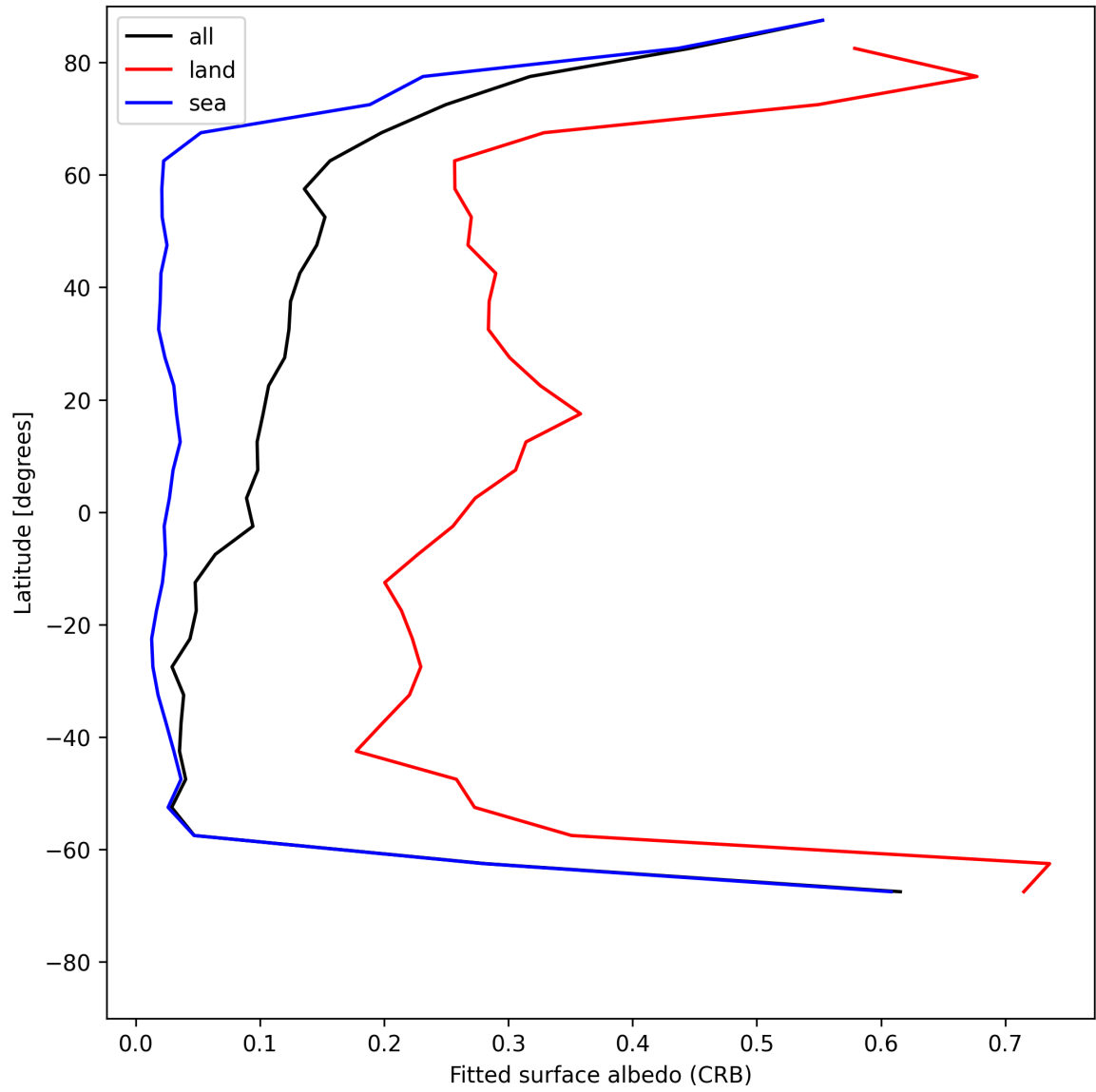


Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2025-07-20 to 2025-07-21.

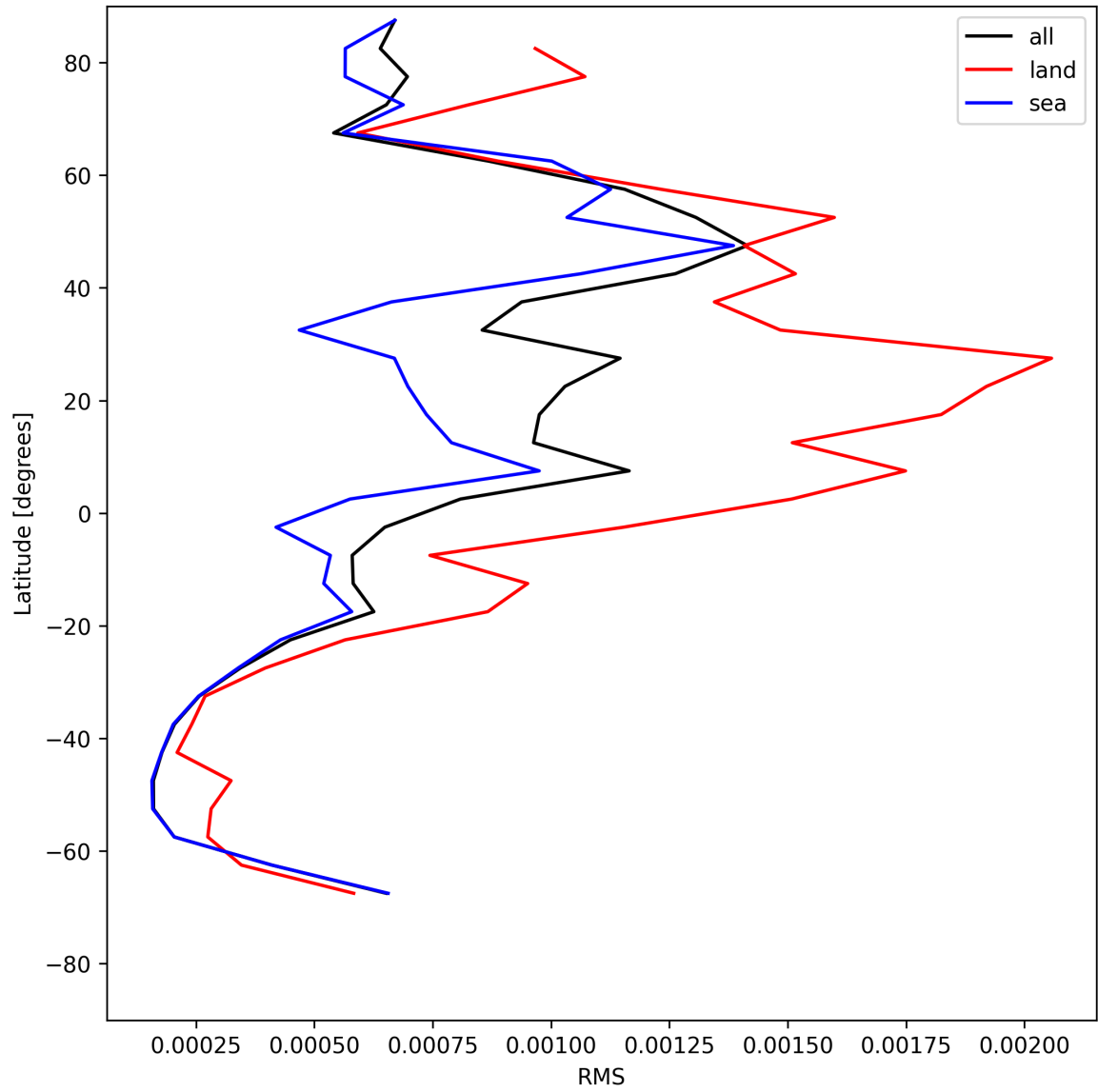


Figure 29: Zonal average of “RMS” for 2025-07-20 to 2025-07-21.

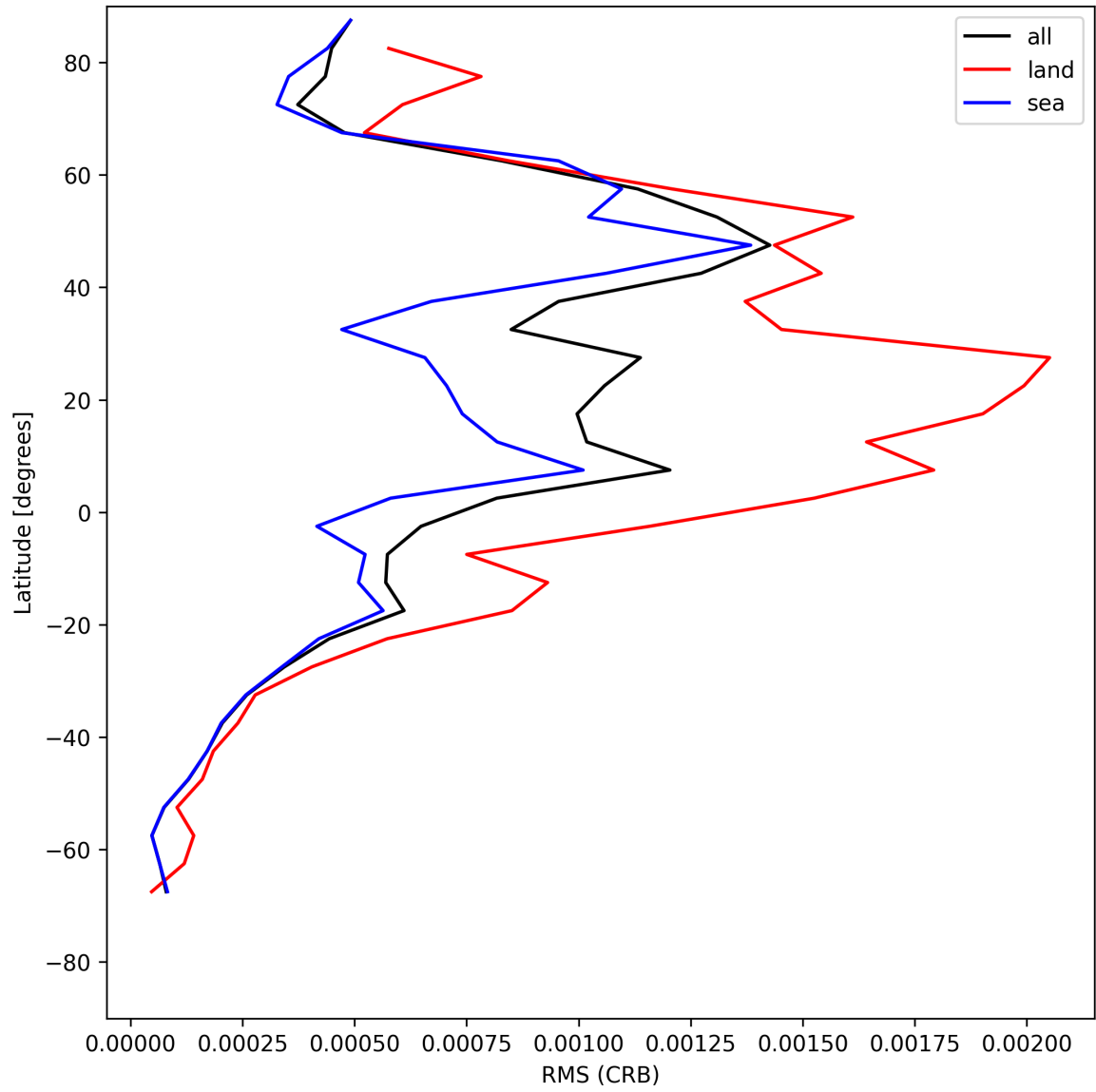


Figure 30: Zonal average of “RMS (CRB)” for 2025-07-20 to 2025-07-21.

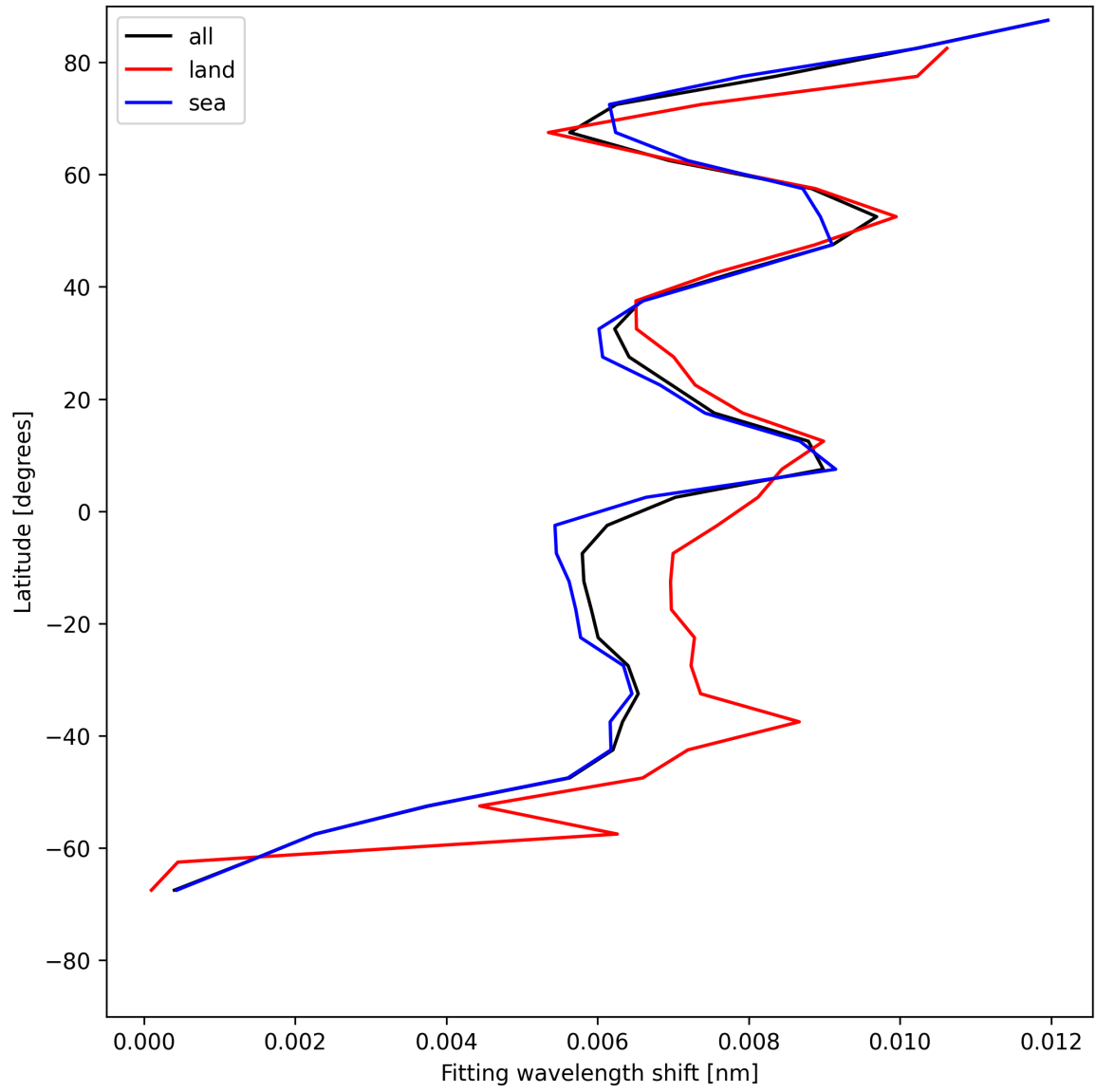


Figure 31: Zonal average of “Fitting wavelength shift” for 2025-07-20 to 2025-07-21.

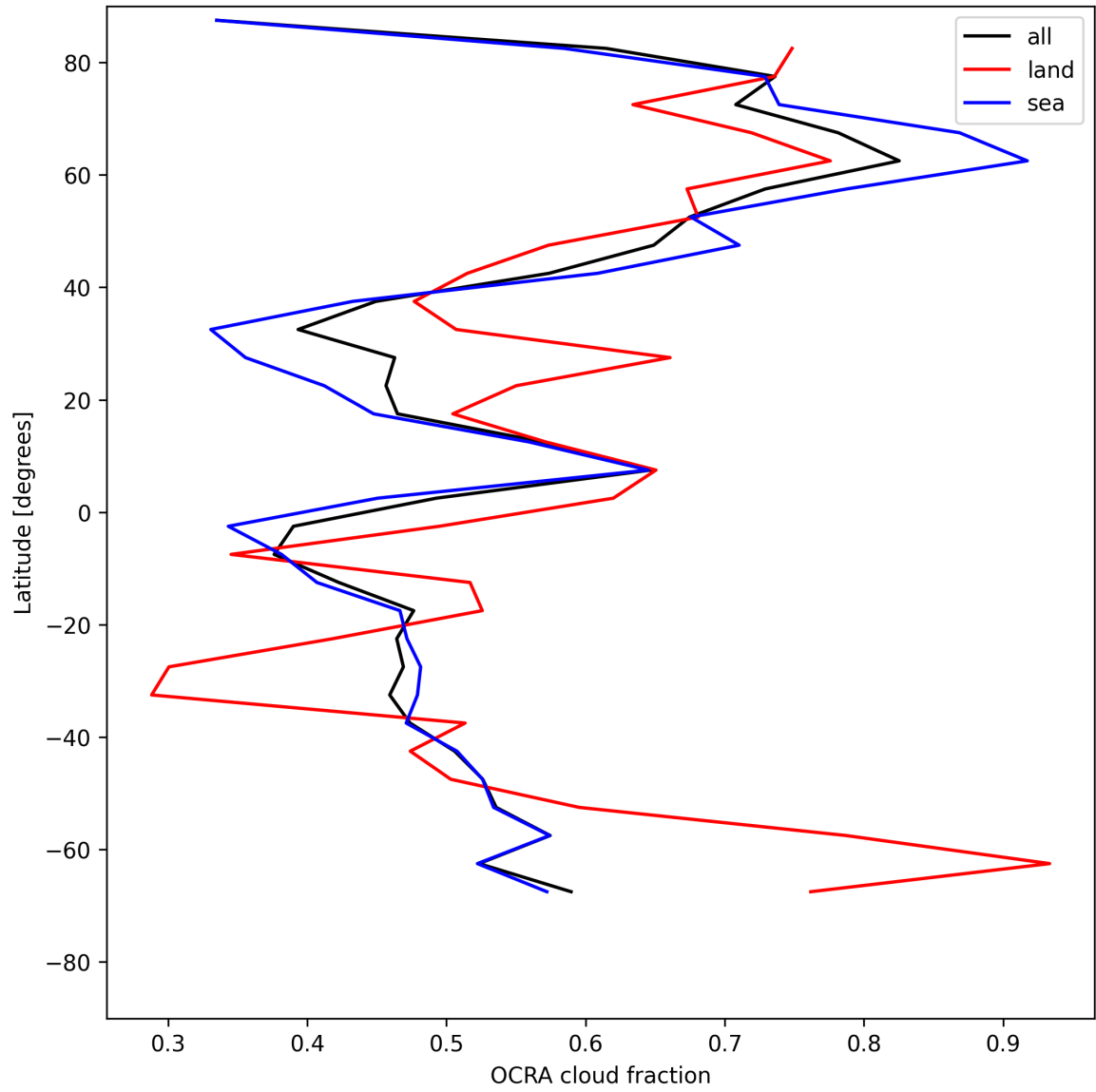


Figure 32: Zonal average of “OCRA cloud fraction” for 2025-07-20 to 2025-07-21.

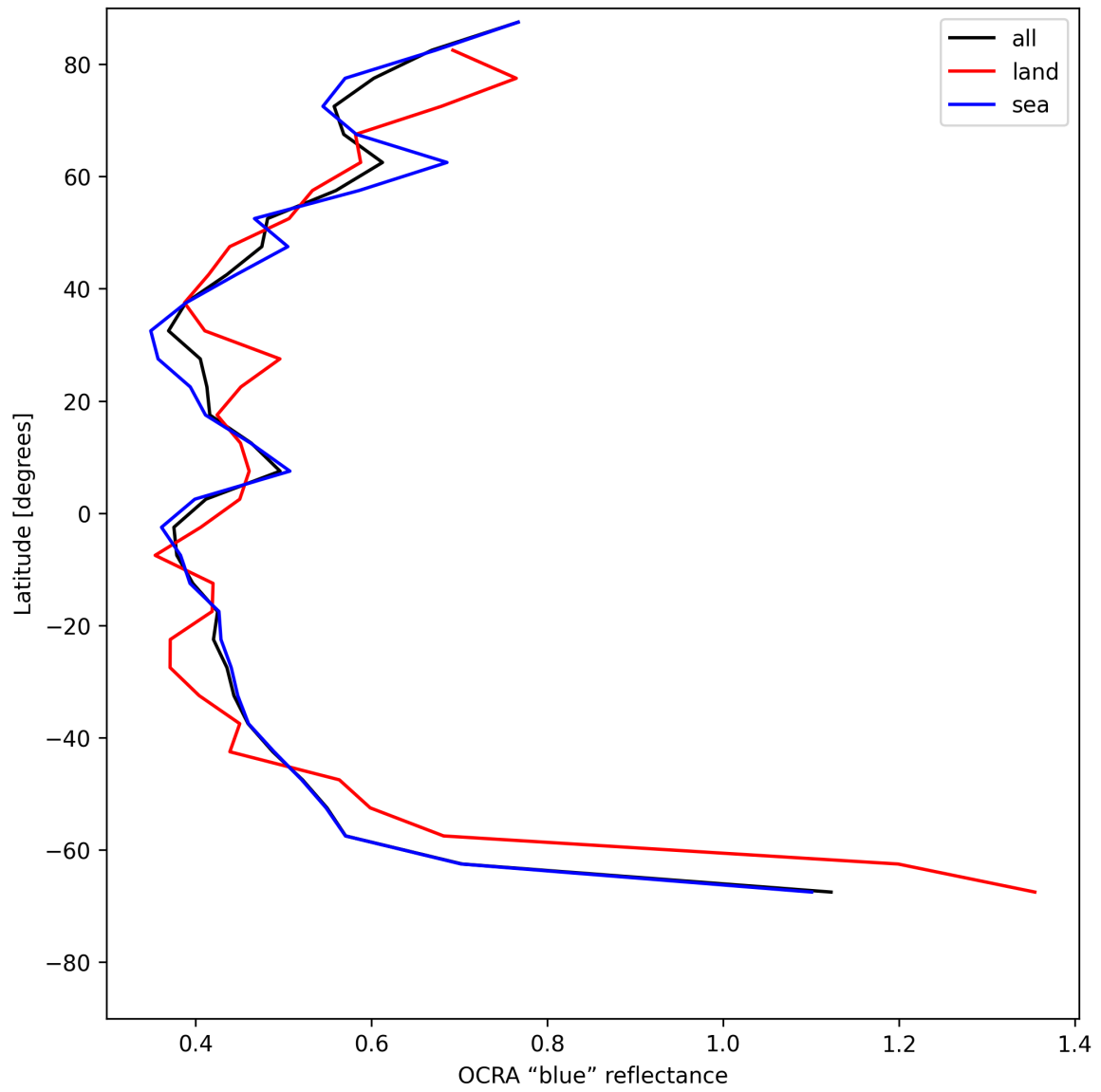


Figure 33: Zonal average of “OCRA “blue” reflectance” for 2025-07-20 to 2025-07-21.

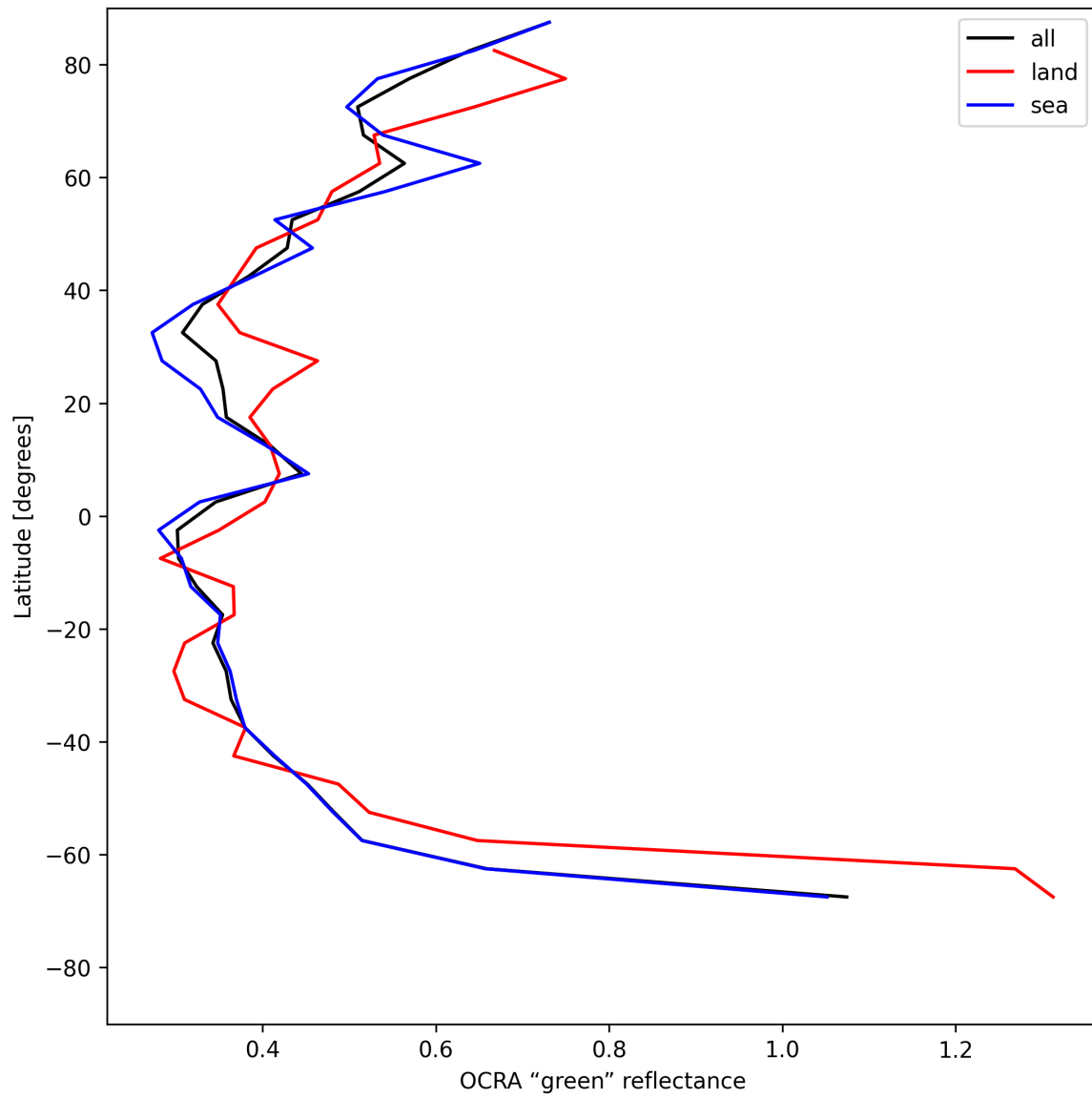


Figure 34: Zonal average of “OCRA “green” reflectance” for 2025-07-20 to 2025-07-21.

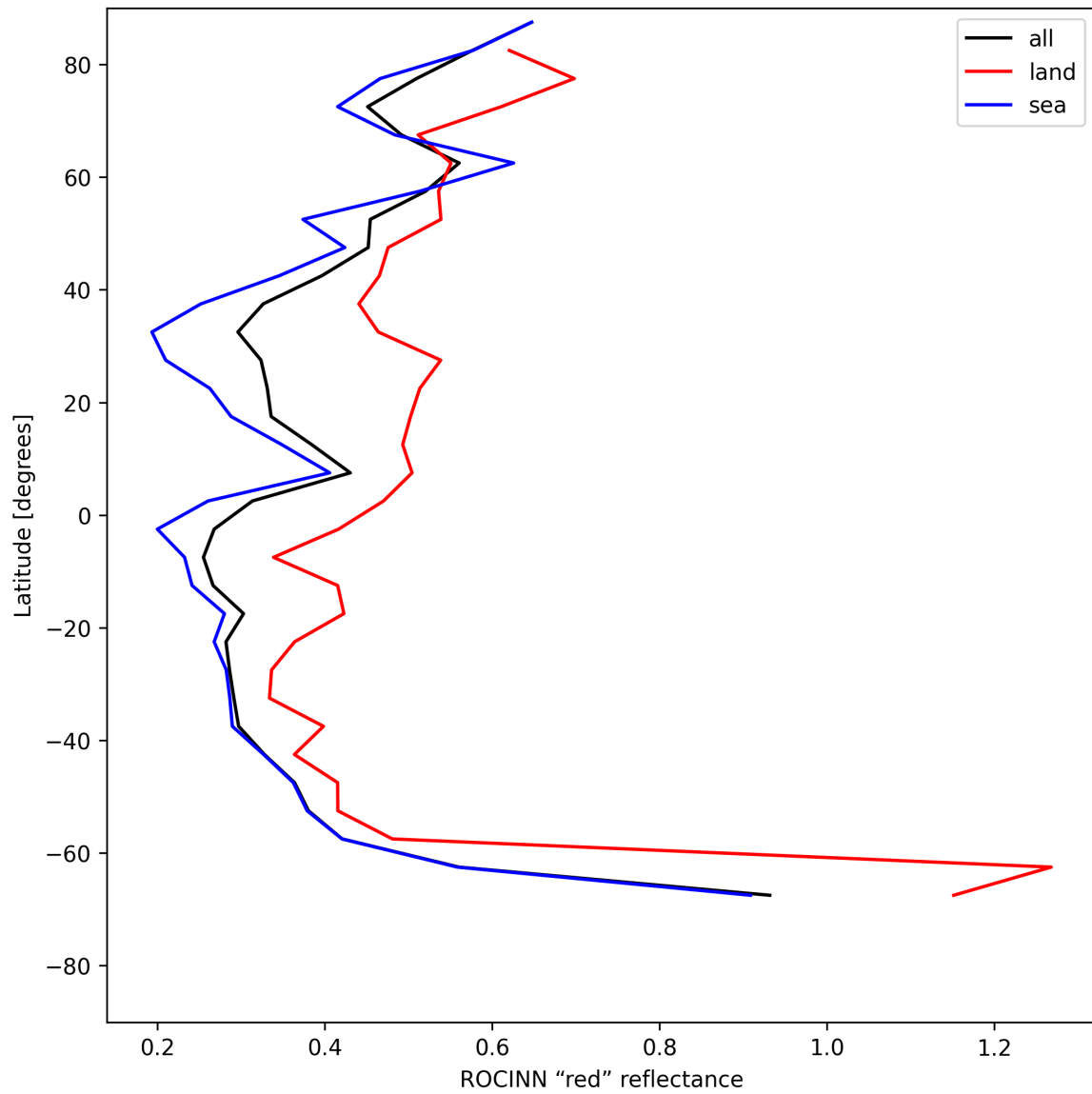


Figure 35: Zonal average of “ROCINN “red” reflectance” for 2025-07-20 to 2025-07-21.

8 Histograms

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

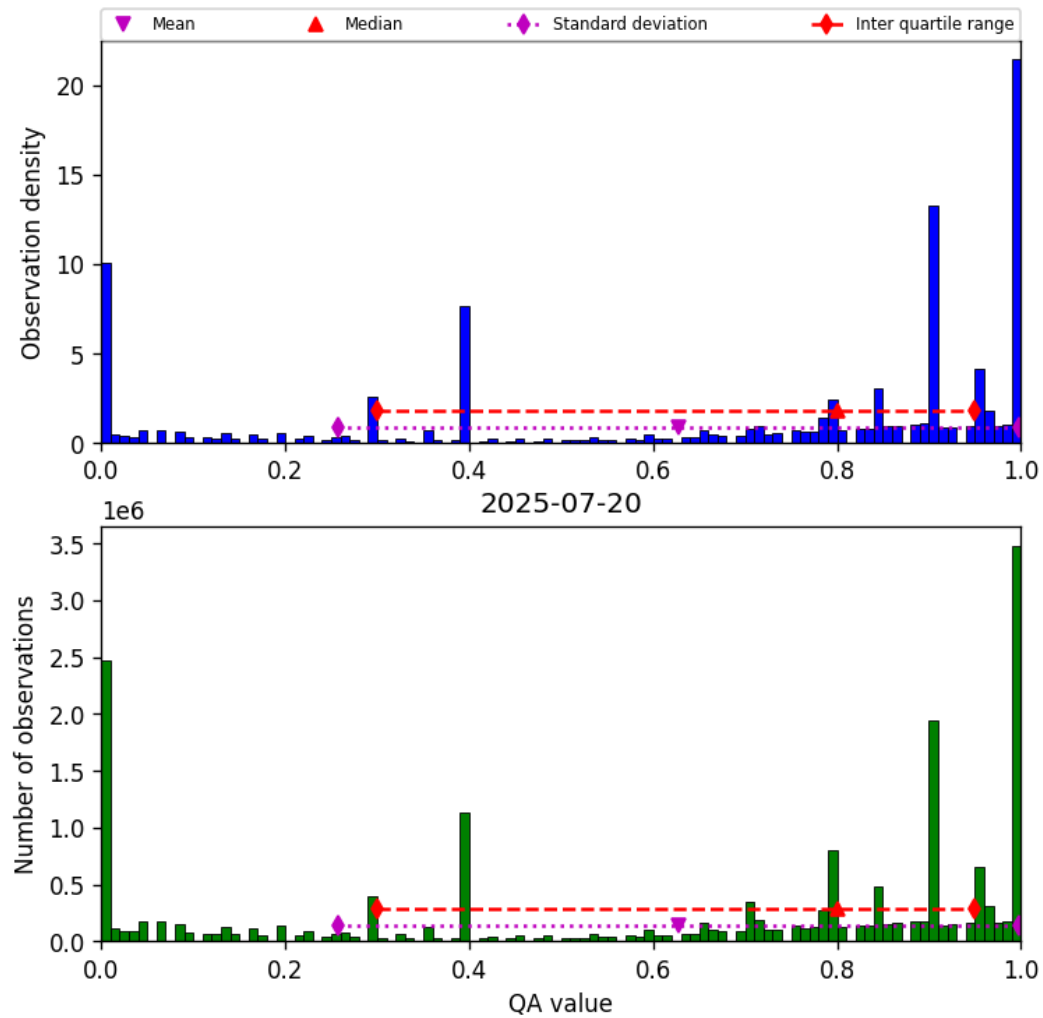


Figure 36: Histogram of “QA value” for 2025-07-20 to 2025-07-21

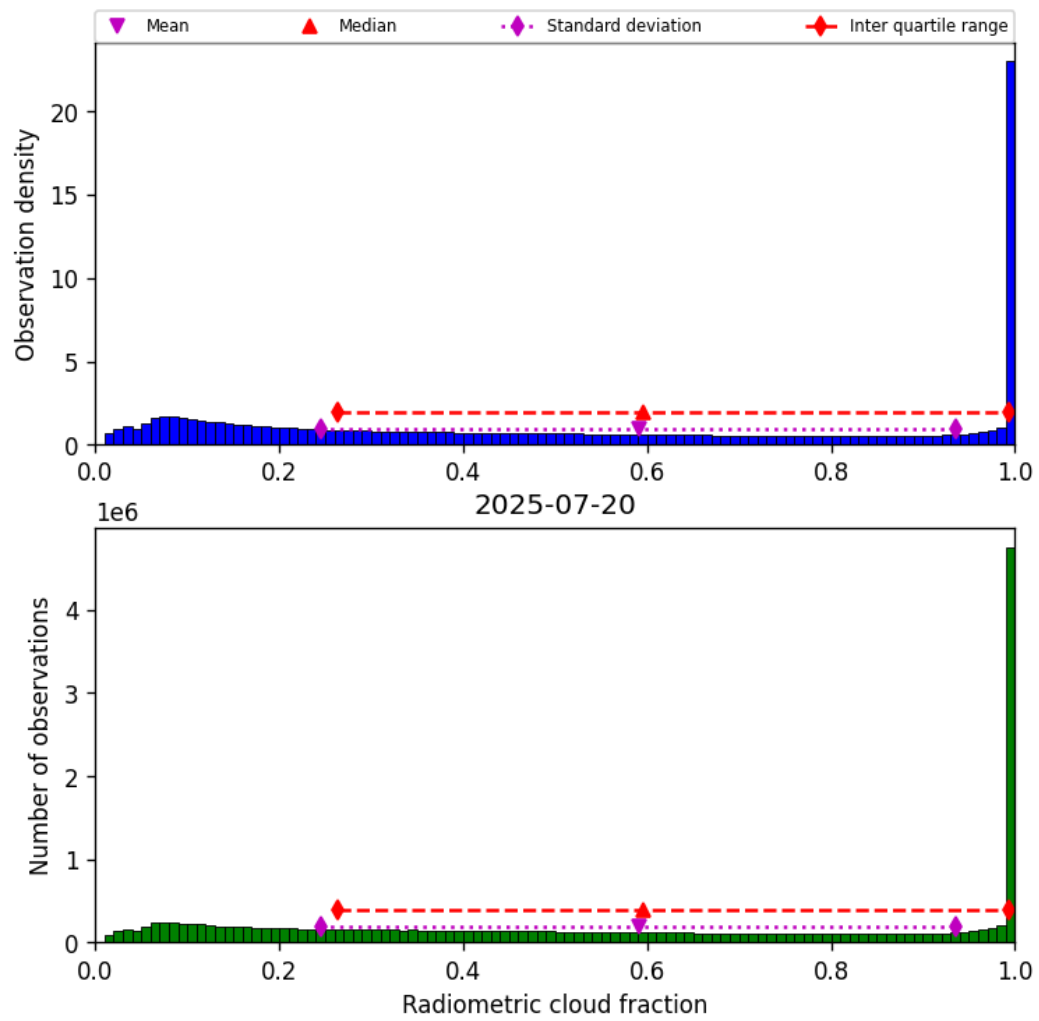


Figure 37: Histogram of “Radiometric cloud fraction” for 2025-07-20 to 2025-07-21

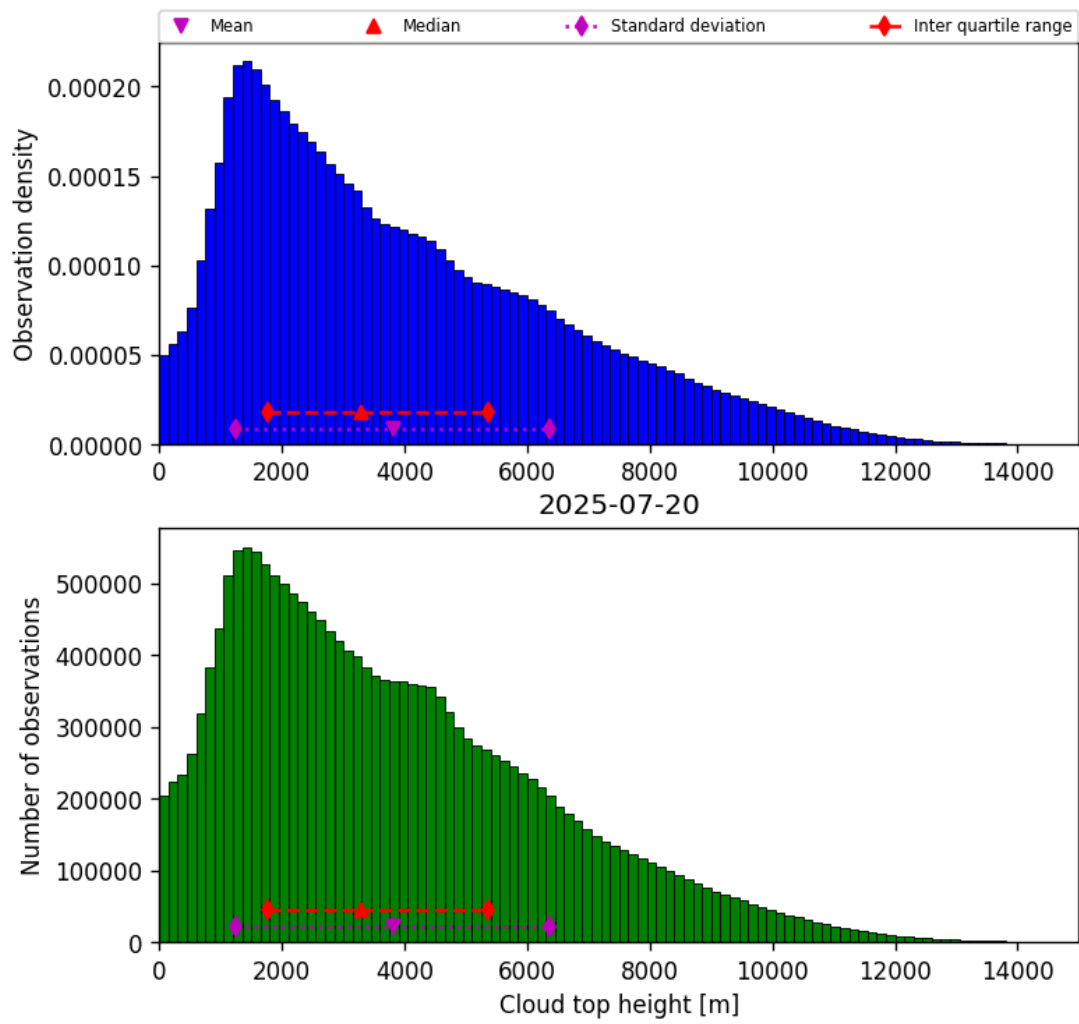


Figure 38: Histogram of “Cloud top height” for 2025-07-20 to 2025-07-21

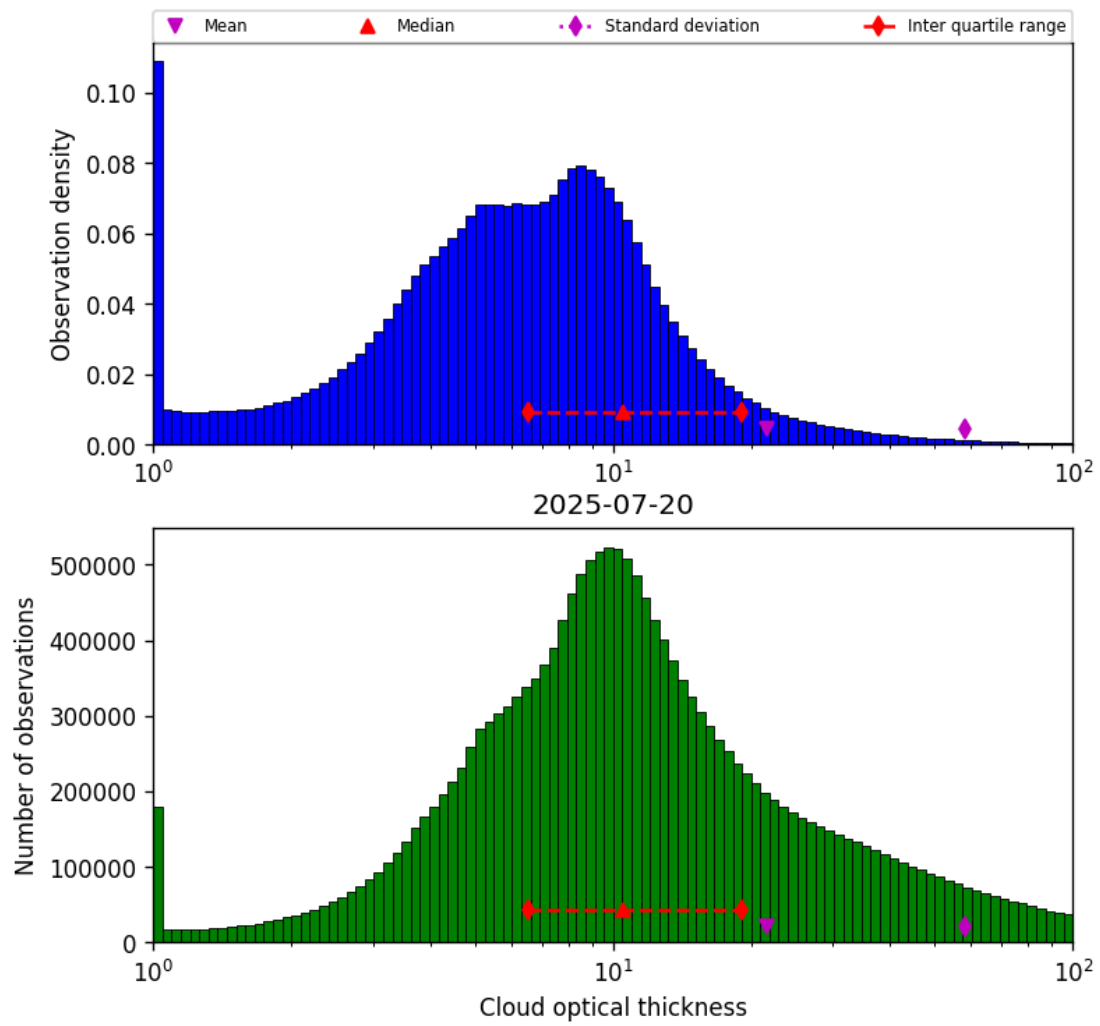


Figure 39: Histogram of “Cloud optical thickness” for 2025-07-20 to 2025-07-21

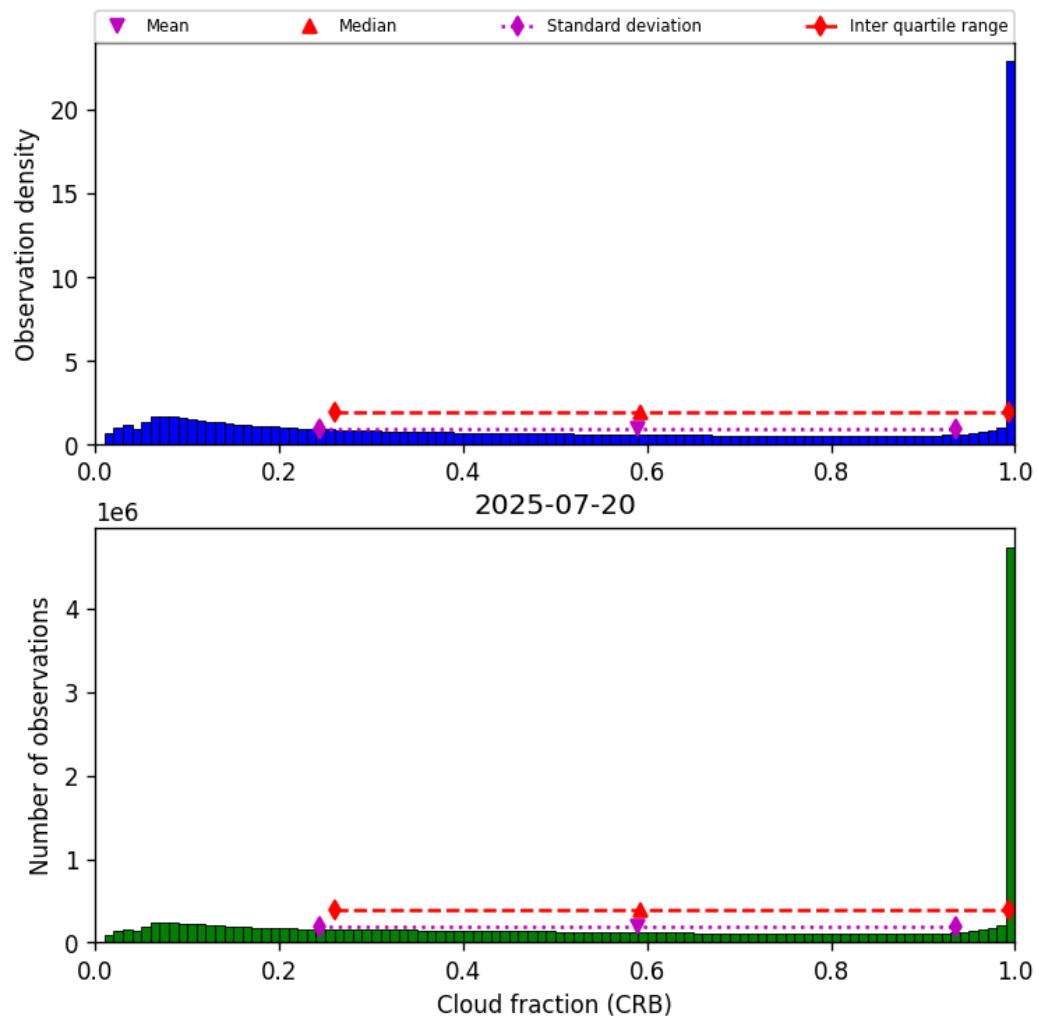


Figure 40: Histogram of “Cloud fraction (CRB)” for 2025-07-20 to 2025-07-21

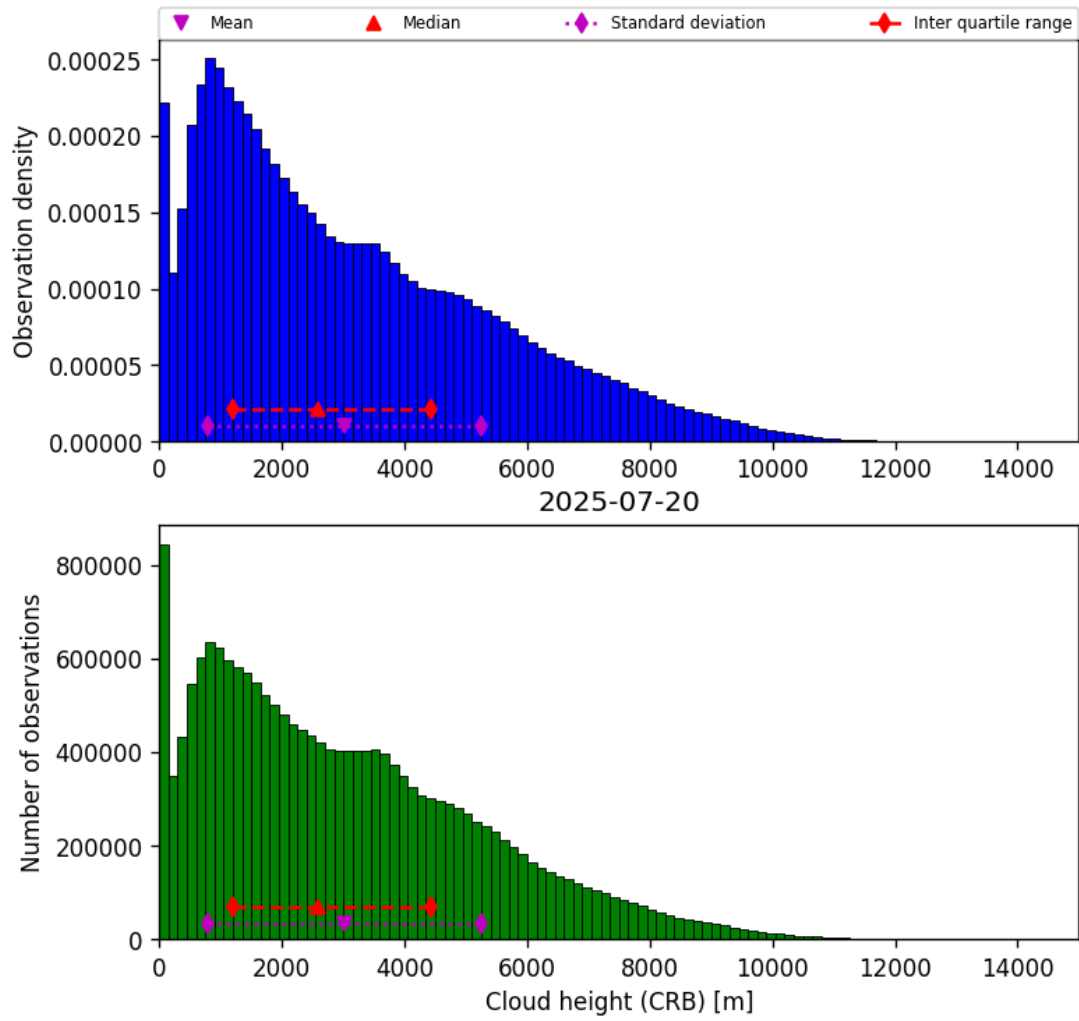


Figure 41: Histogram of “Cloud height (CRB)” for 2025-07-20 to 2025-07-21

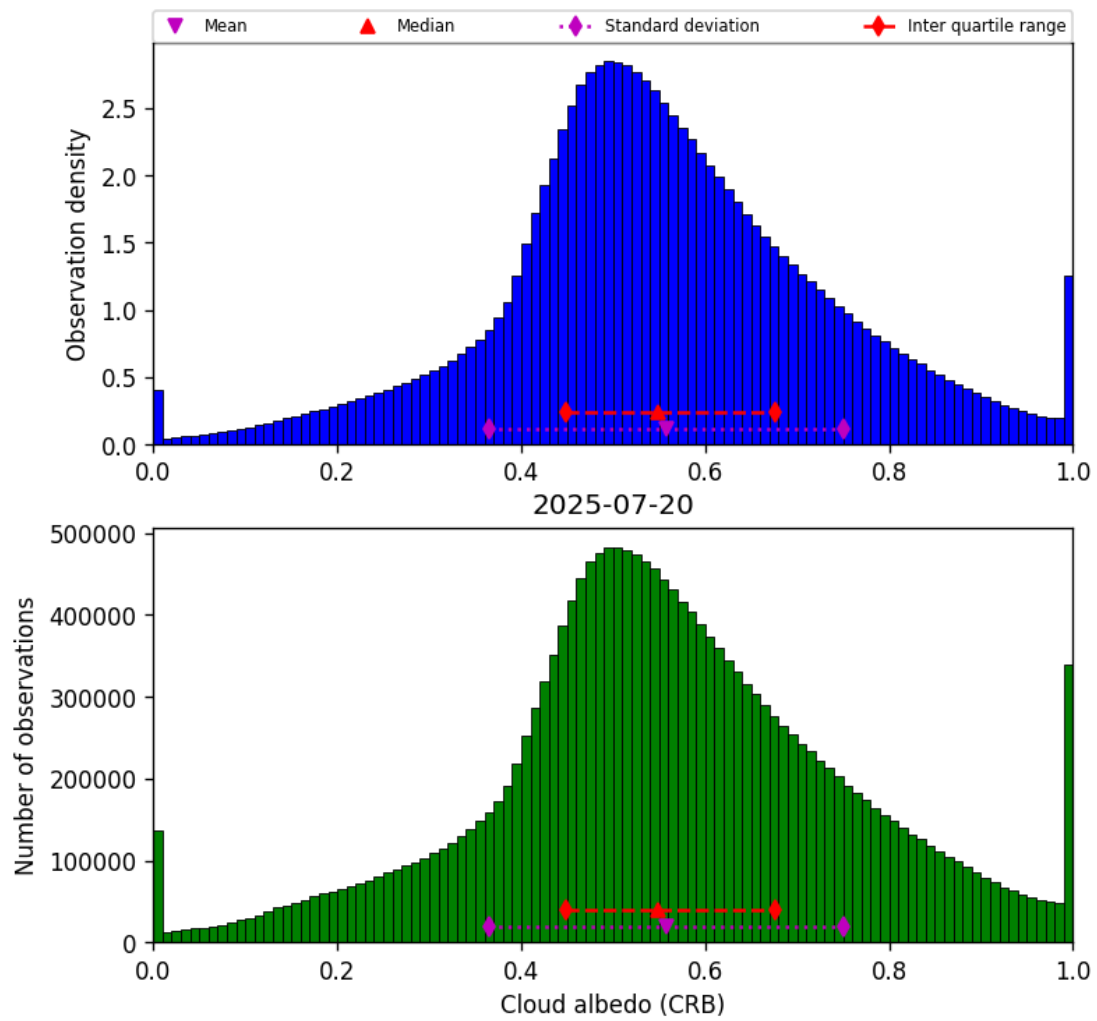


Figure 42: Histogram of “Cloud albedo (CRB)” for 2025-07-20 to 2025-07-21

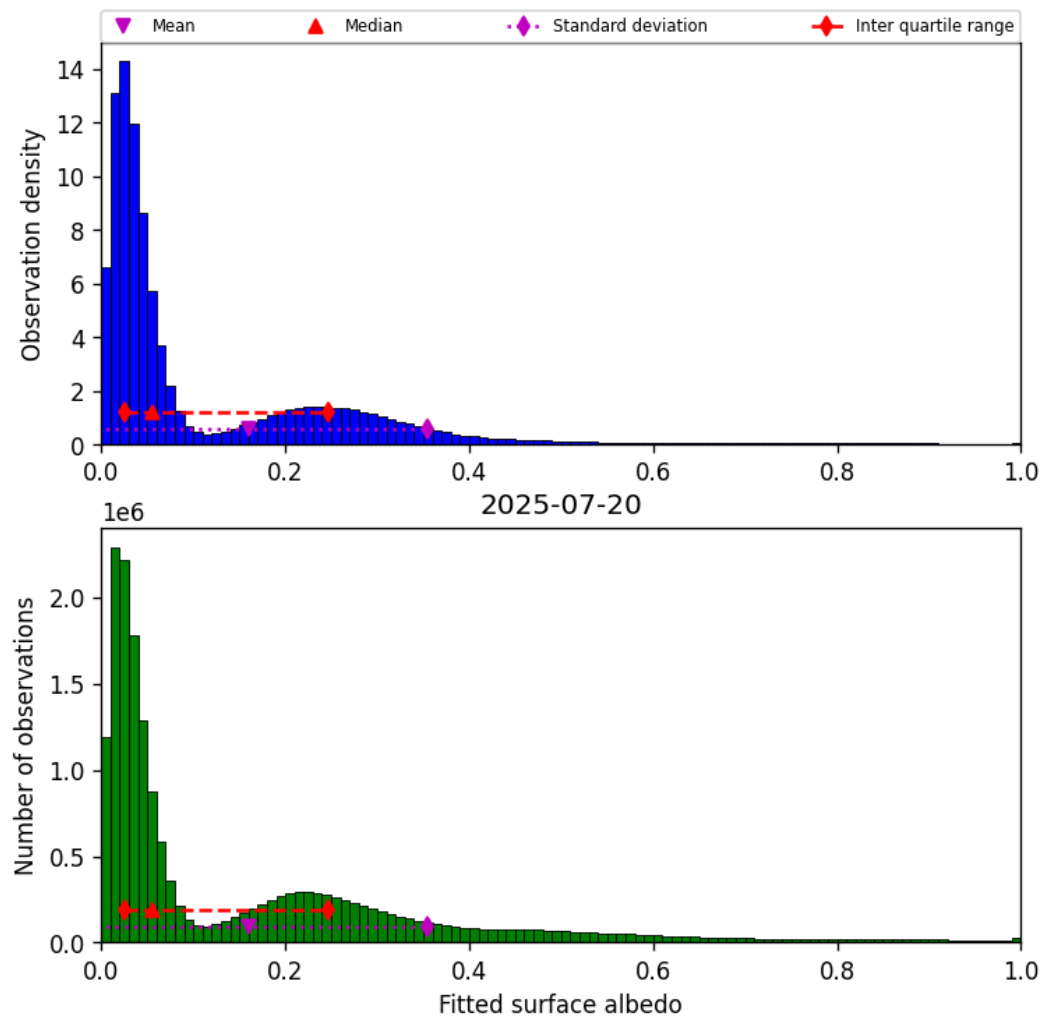


Figure 43: Histogram of “Fitted surface albedo” for 2025-07-20 to 2025-07-21

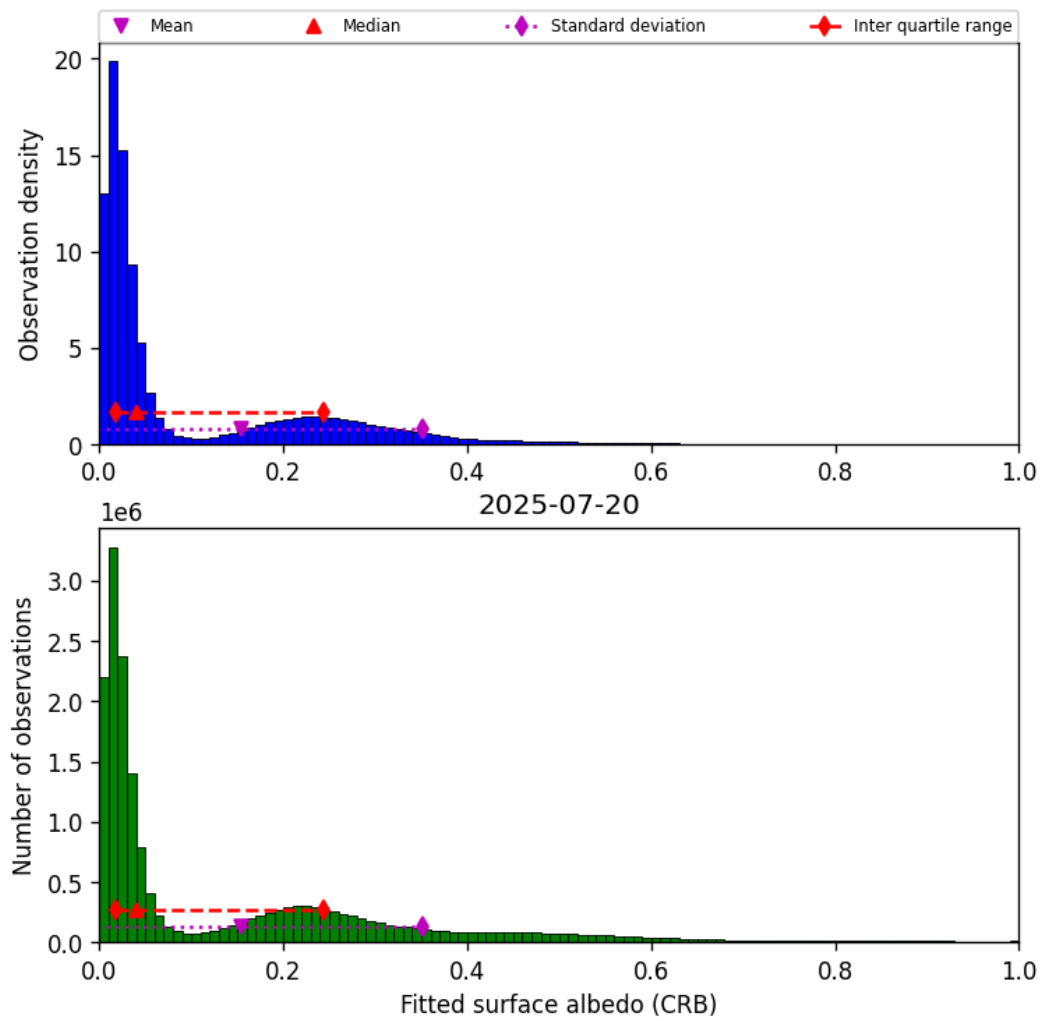


Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2025-07-20 to 2025-07-21

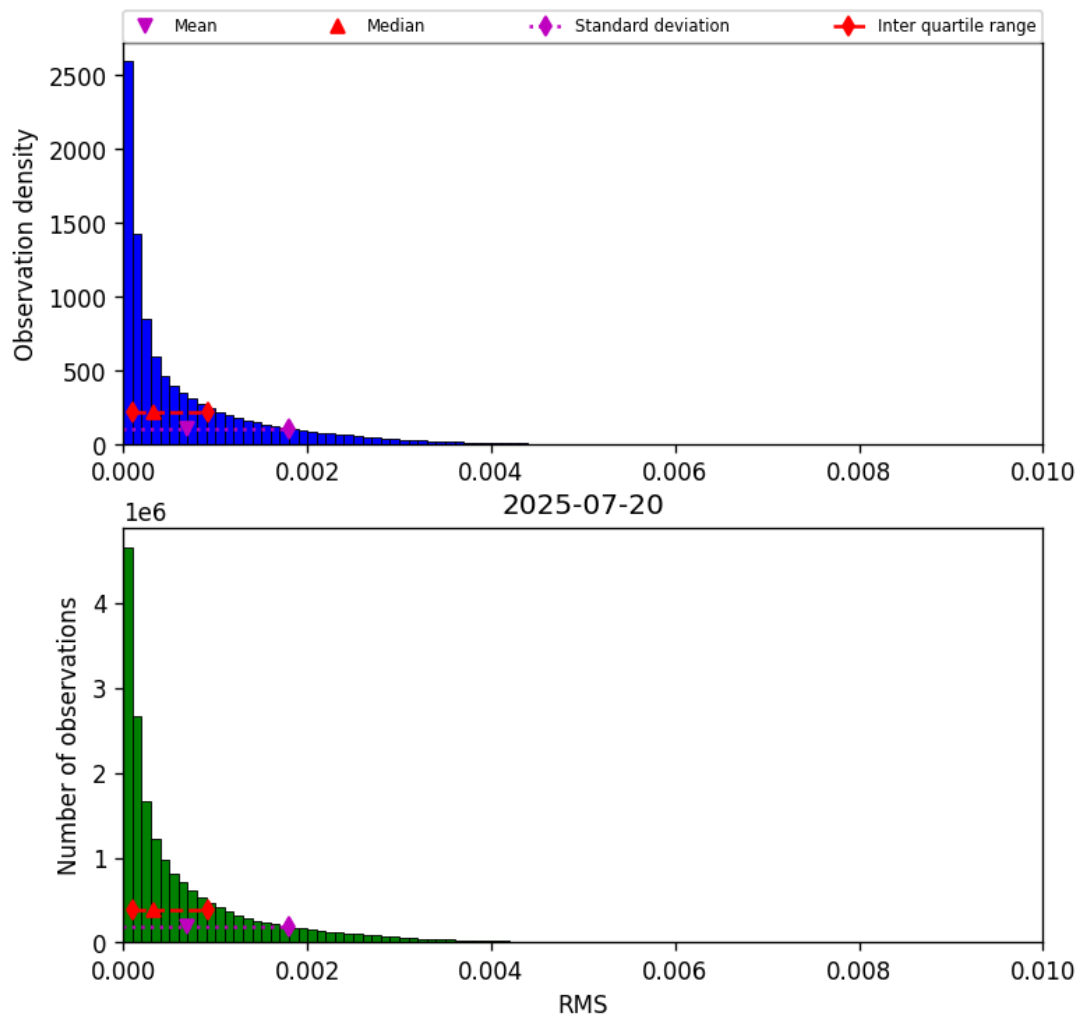


Figure 45: Histogram of “RMS” for 2025-07-20 to 2025-07-21

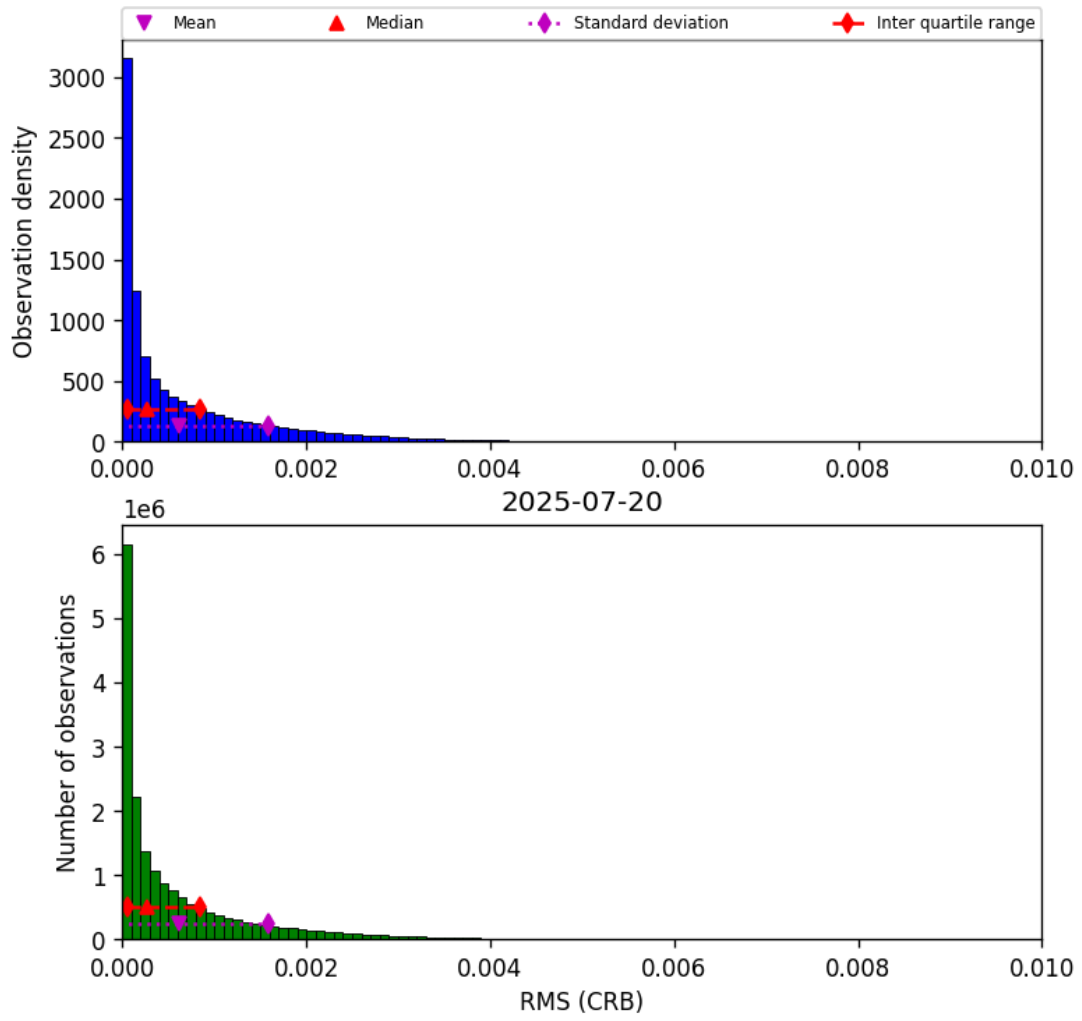


Figure 46: Histogram of “RMS (CRB)” for 2025-07-20 to 2025-07-21

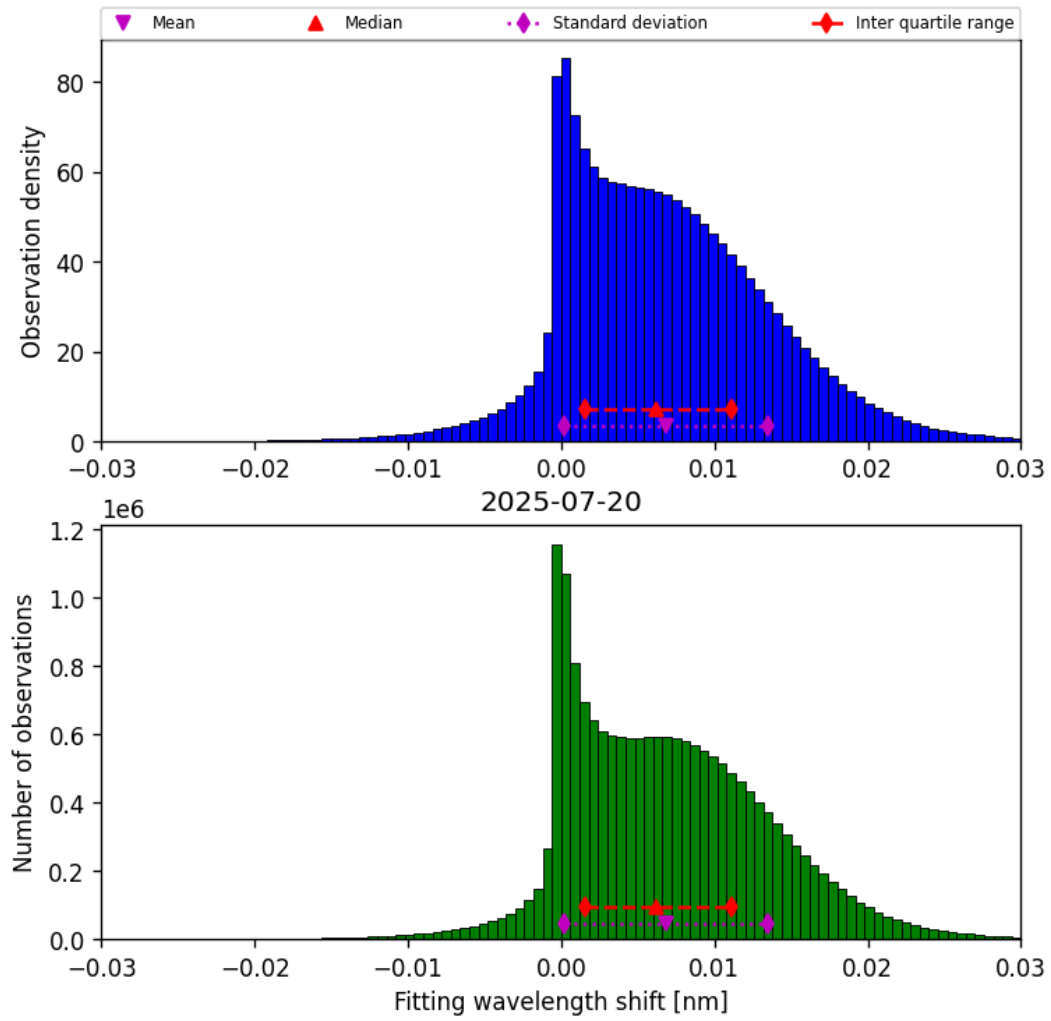


Figure 47: Histogram of “Fitting wavelength shift” for 2025-07-20 to 2025-07-21

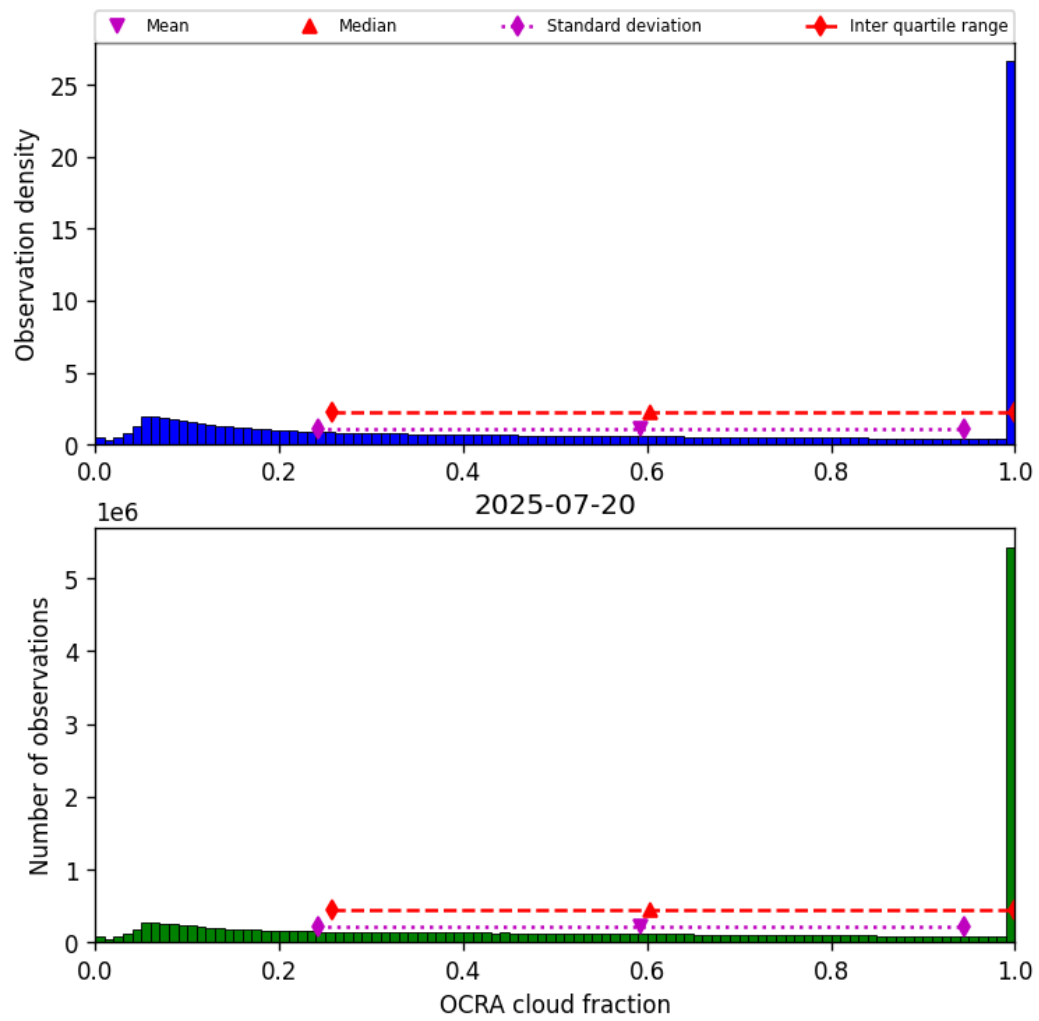


Figure 48: Histogram of “OCRA cloud fraction” for 2025-07-20 to 2025-07-21

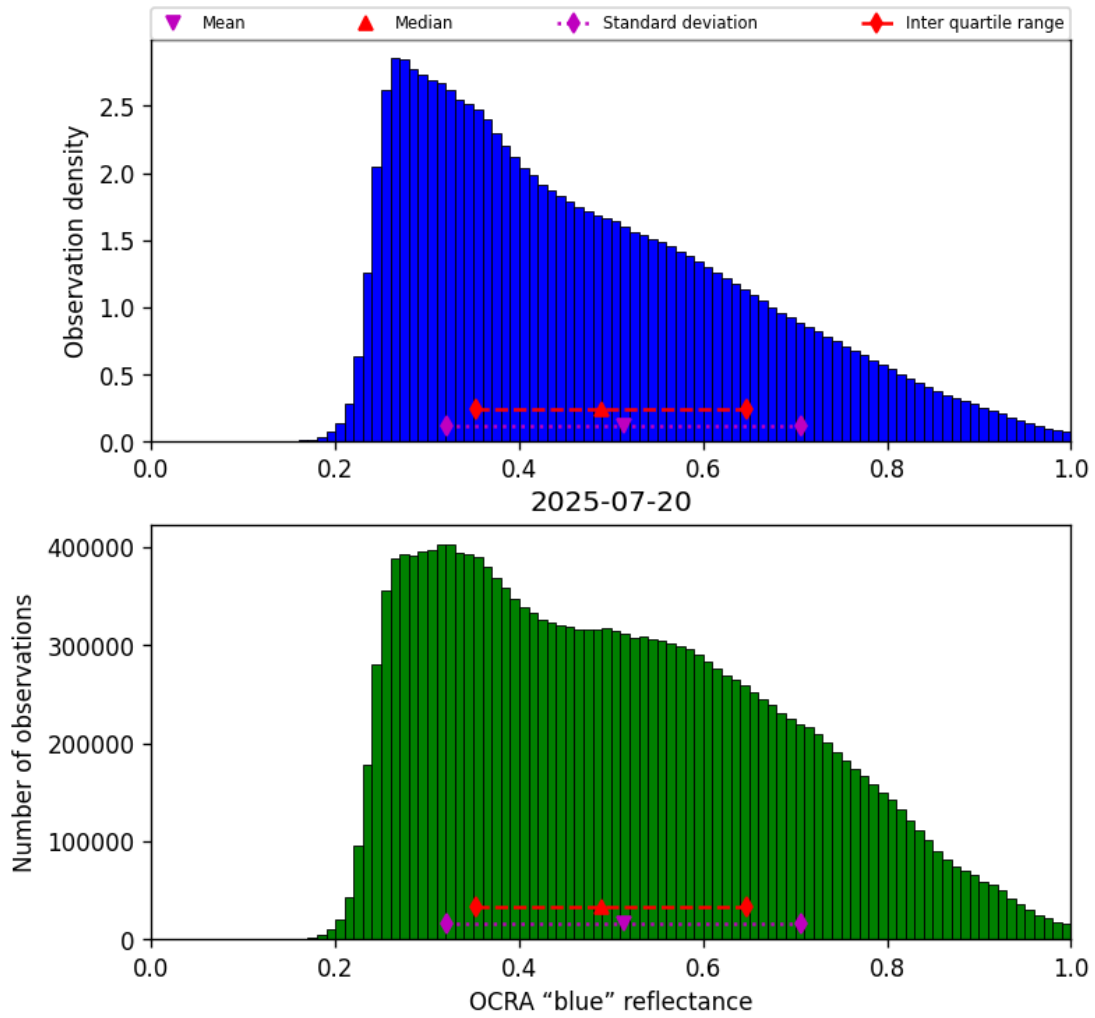


Figure 49: Histogram of “OCRA “blue” reflectance” for 2025-07-20 to 2025-07-21

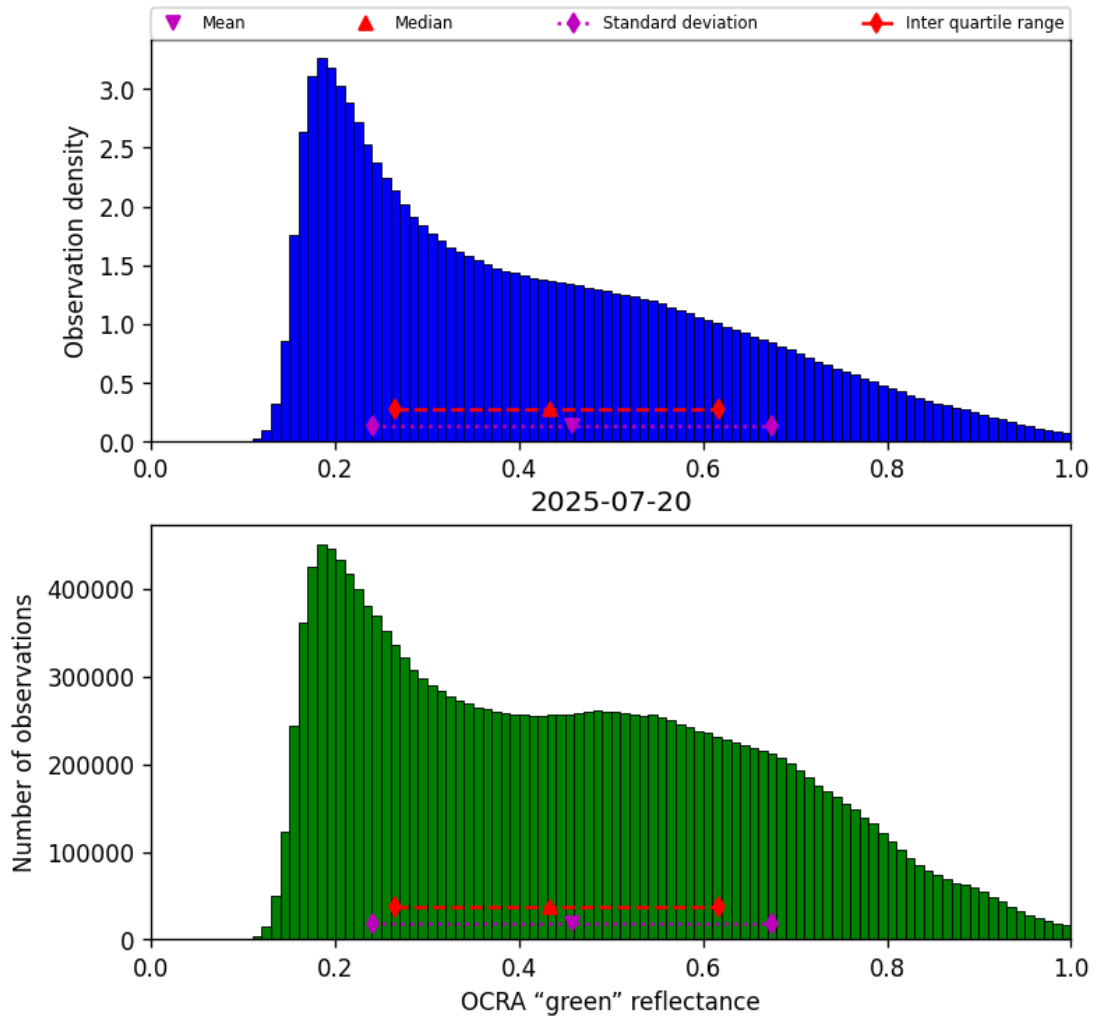


Figure 50: Histogram of “OCRA “green” reflectance” for 2025-07-20 to 2025-07-21

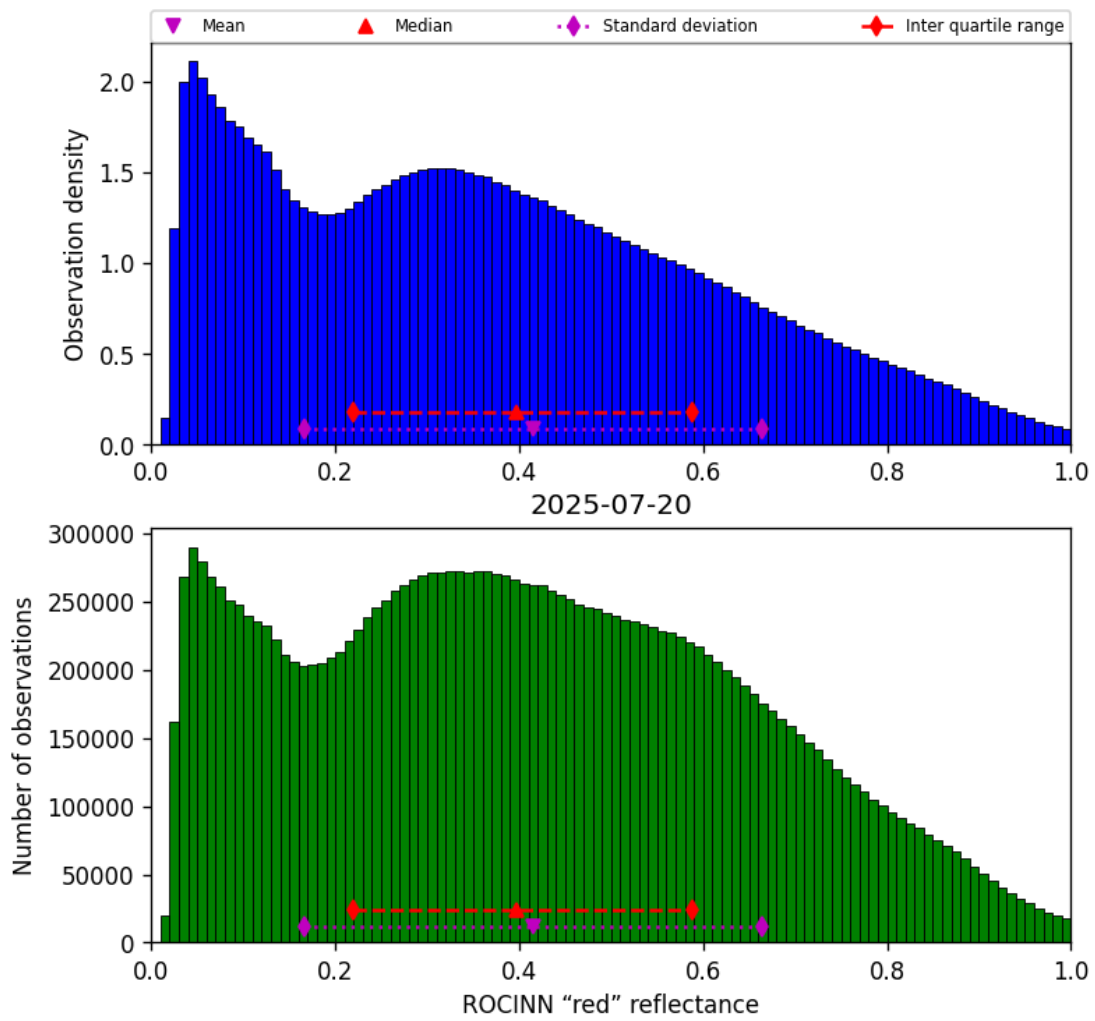


Figure 51: Histogram of “ROCINN “red” reflectance” for 2025-07-20 to 2025-07-21

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.

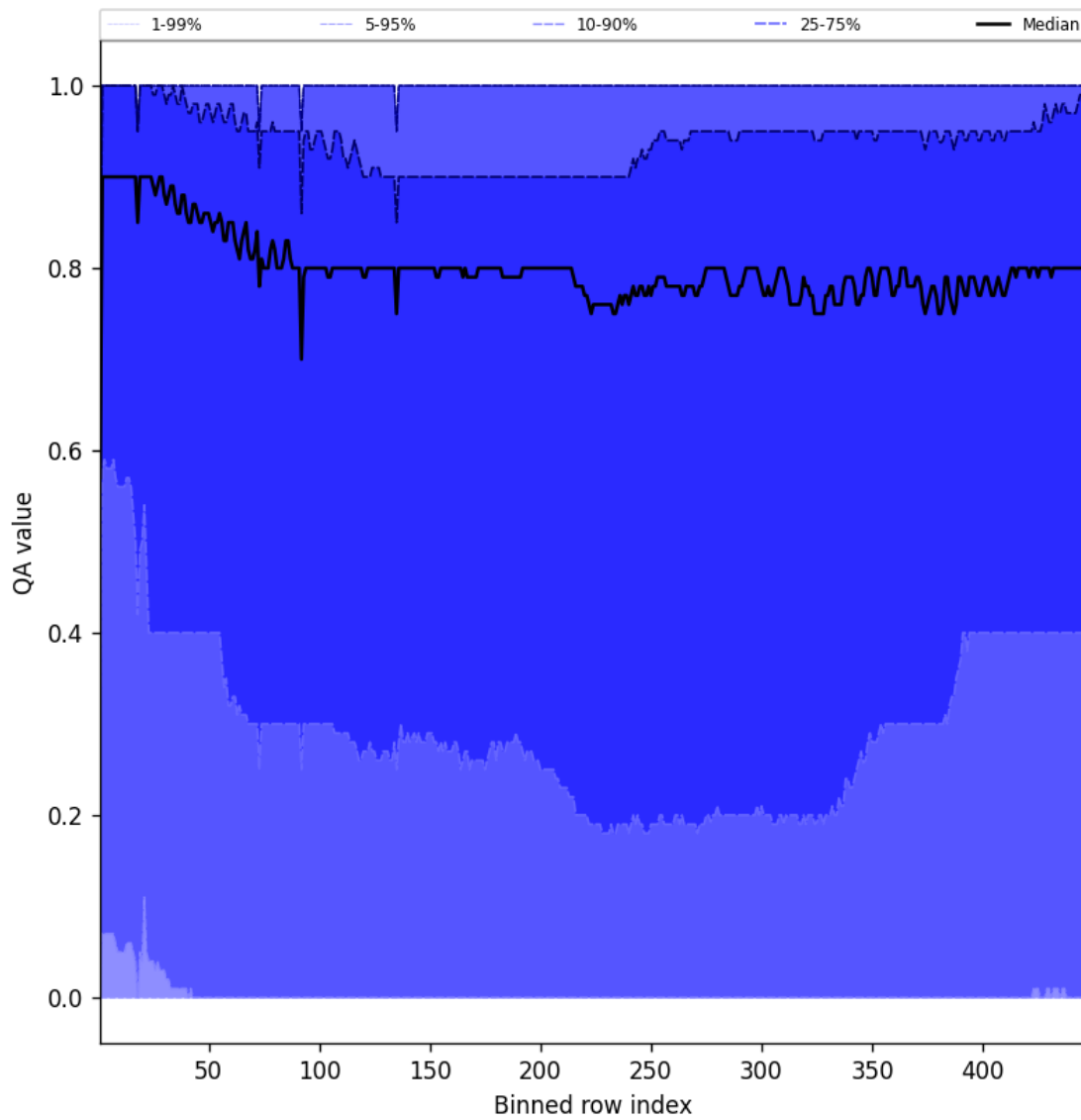


Figure 52: Along track statistics of “QA value” for 2025-07-20 to 2025-07-21

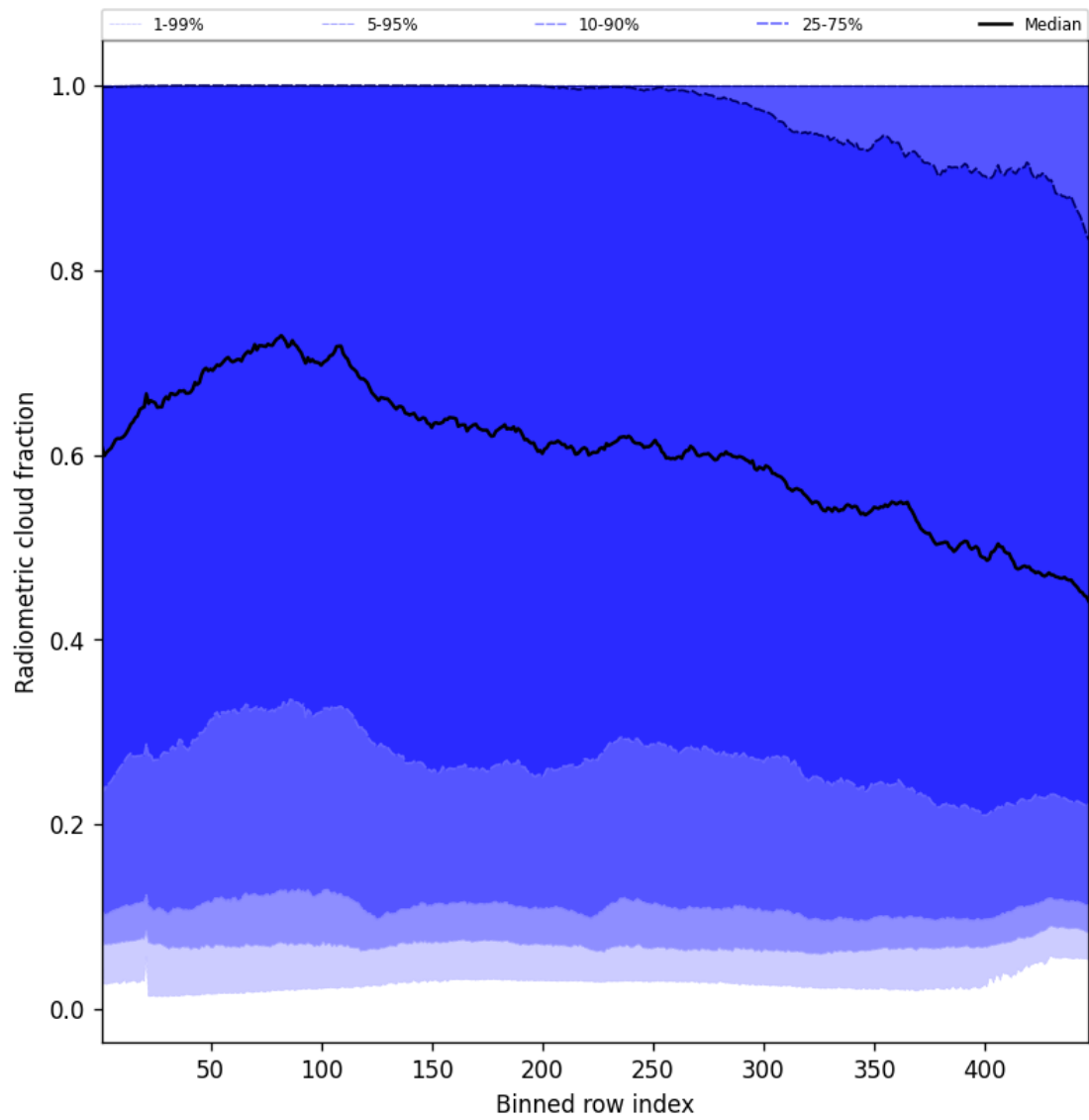


Figure 53: Along track statistics of “Radiometric cloud fraction” for 2025-07-20 to 2025-07-21

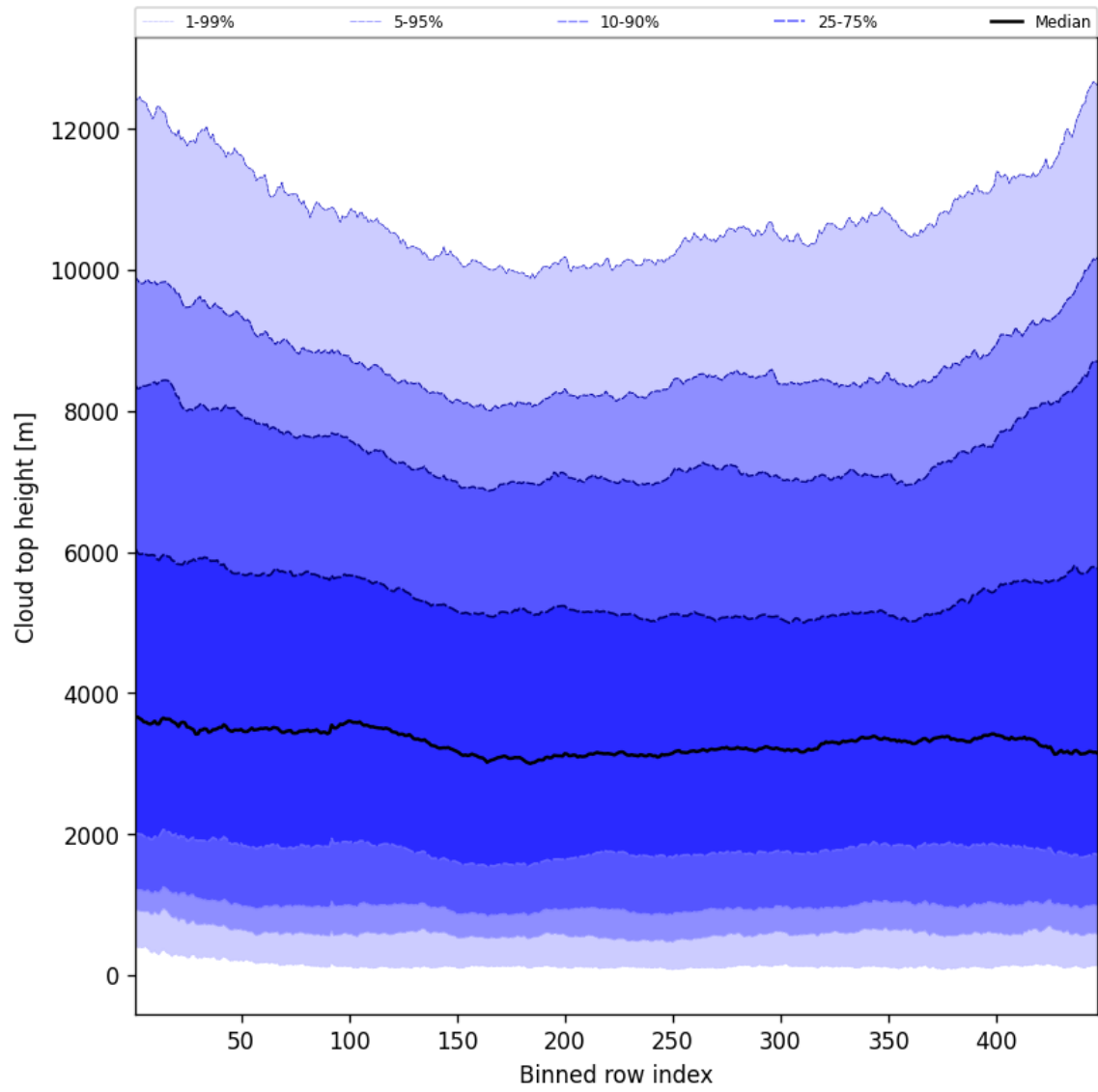


Figure 54: Along track statistics of “Cloud top height” for 2025-07-20 to 2025-07-21

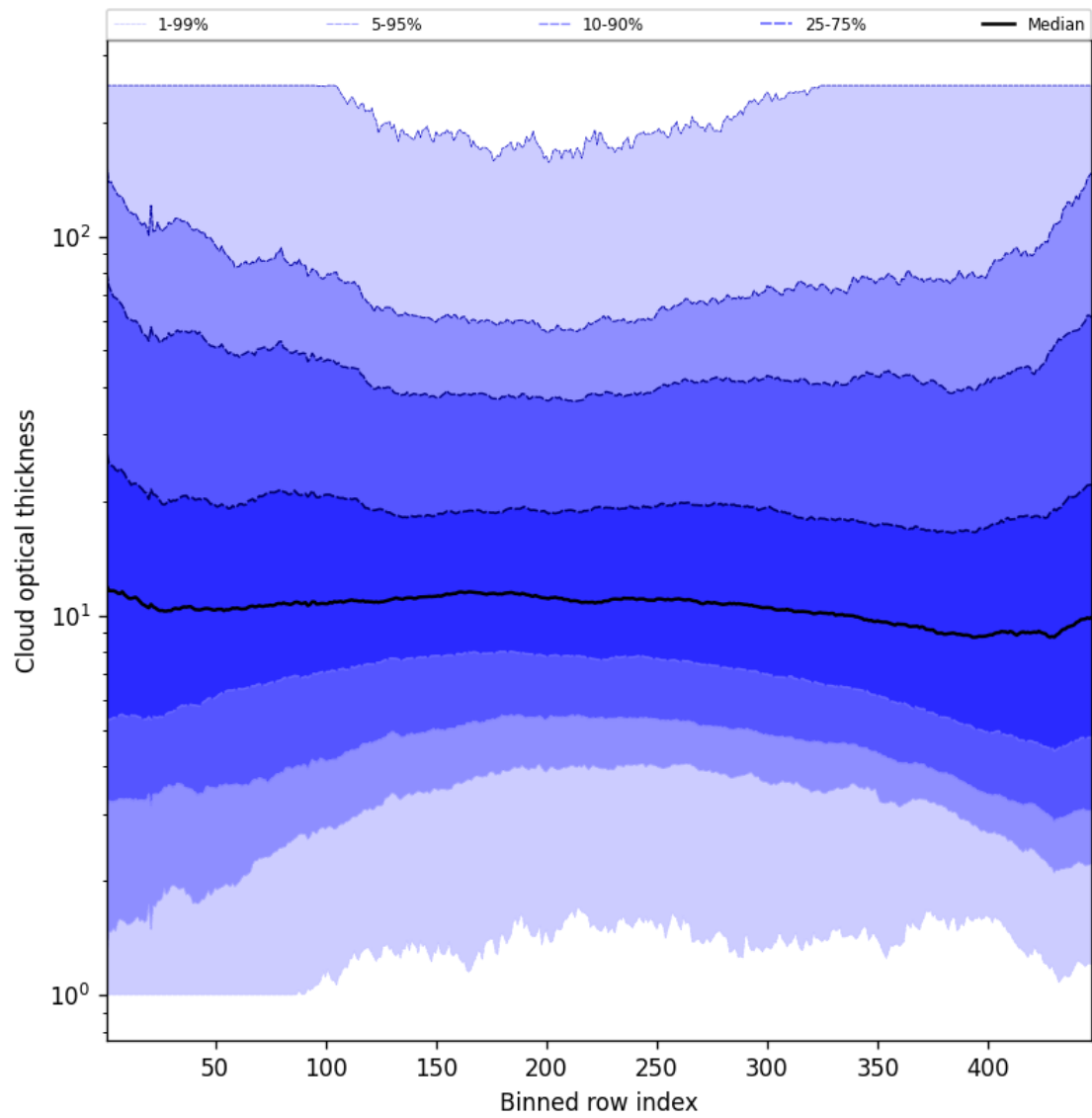


Figure 55: Along track statistics of “Cloud optical thickness” for 2025-07-20 to 2025-07-21

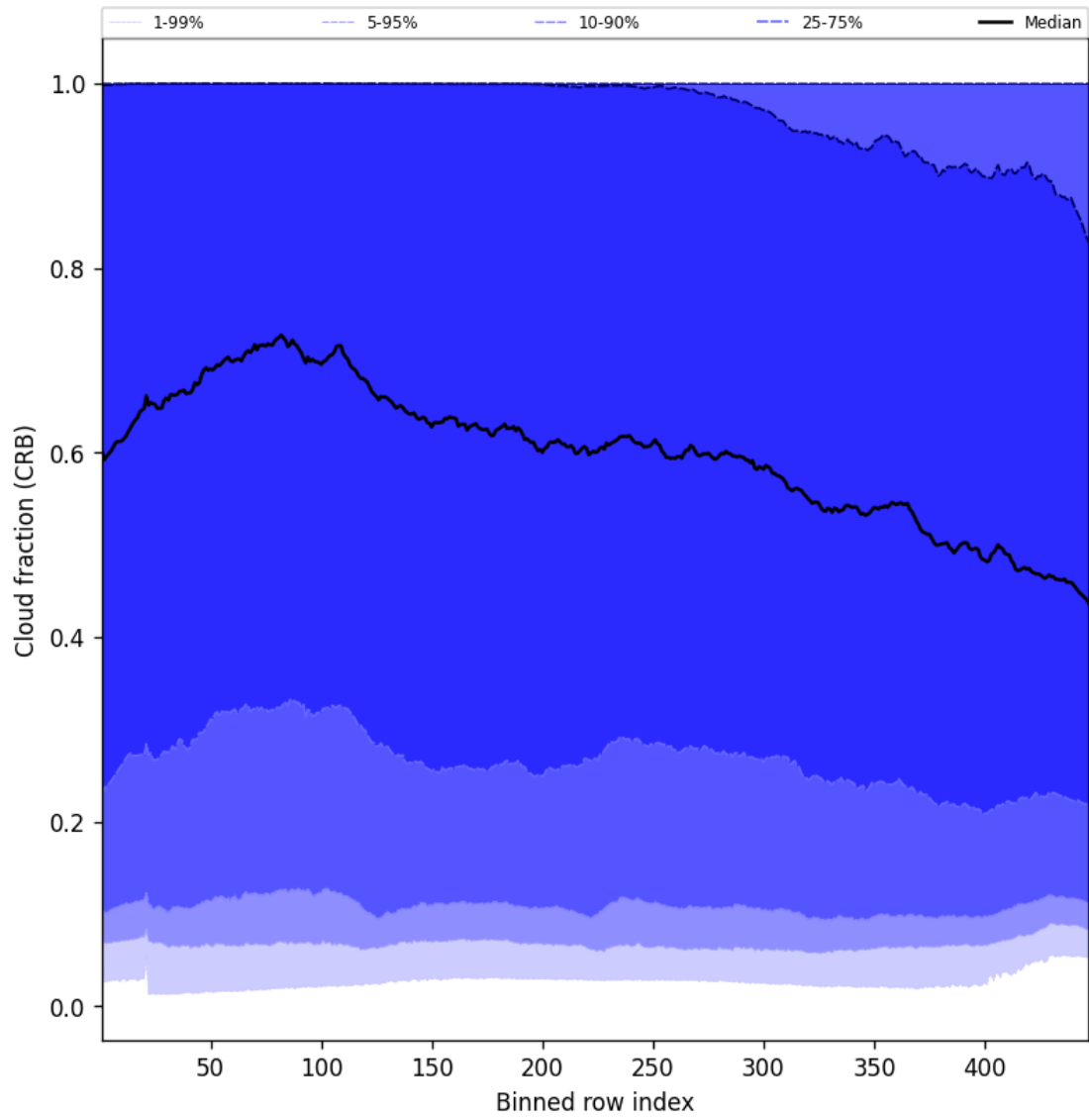


Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2025-07-20 to 2025-07-21

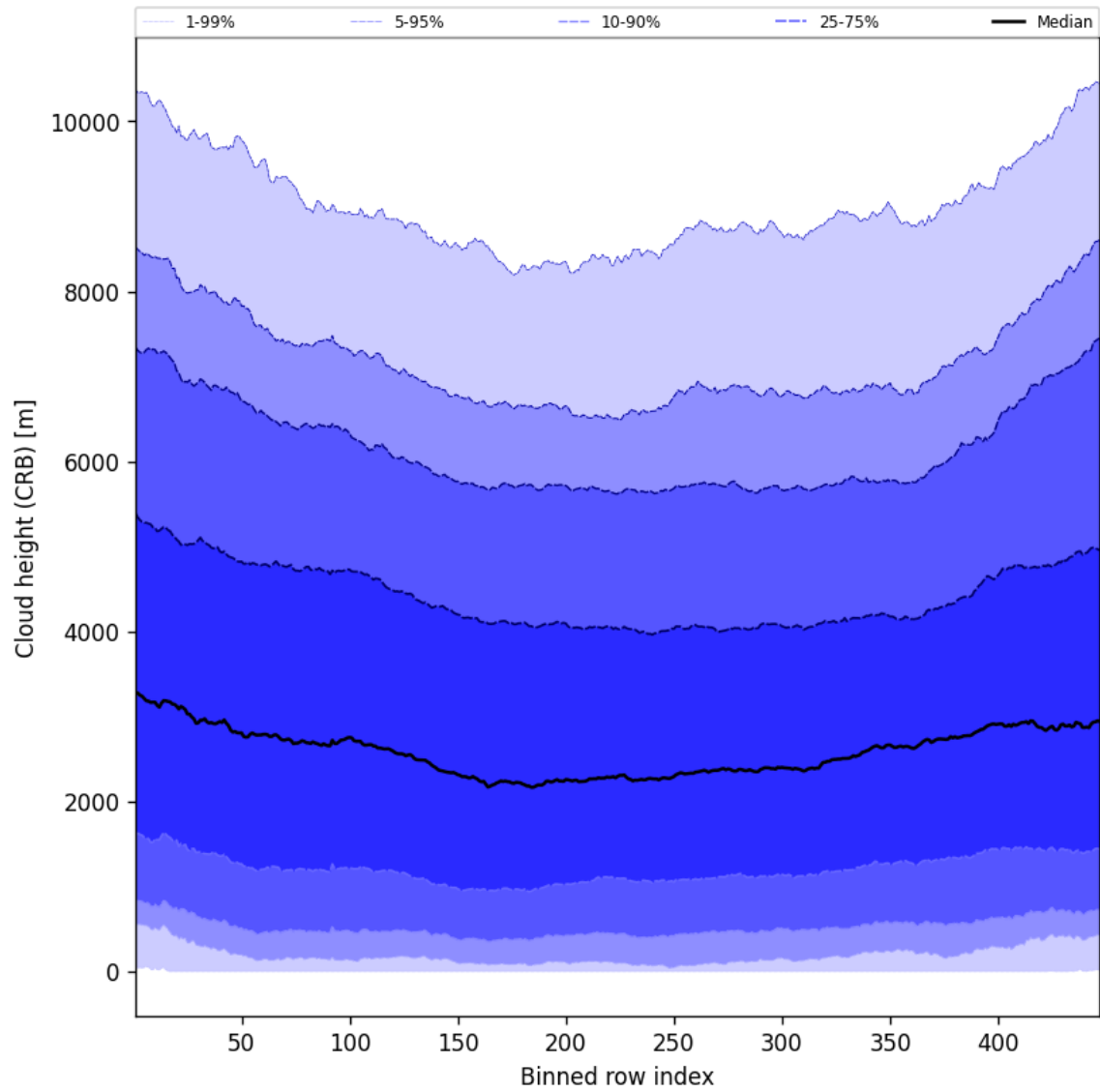


Figure 57: Along track statistics of “Cloud height (CRB)” for 2025-07-20 to 2025-07-21

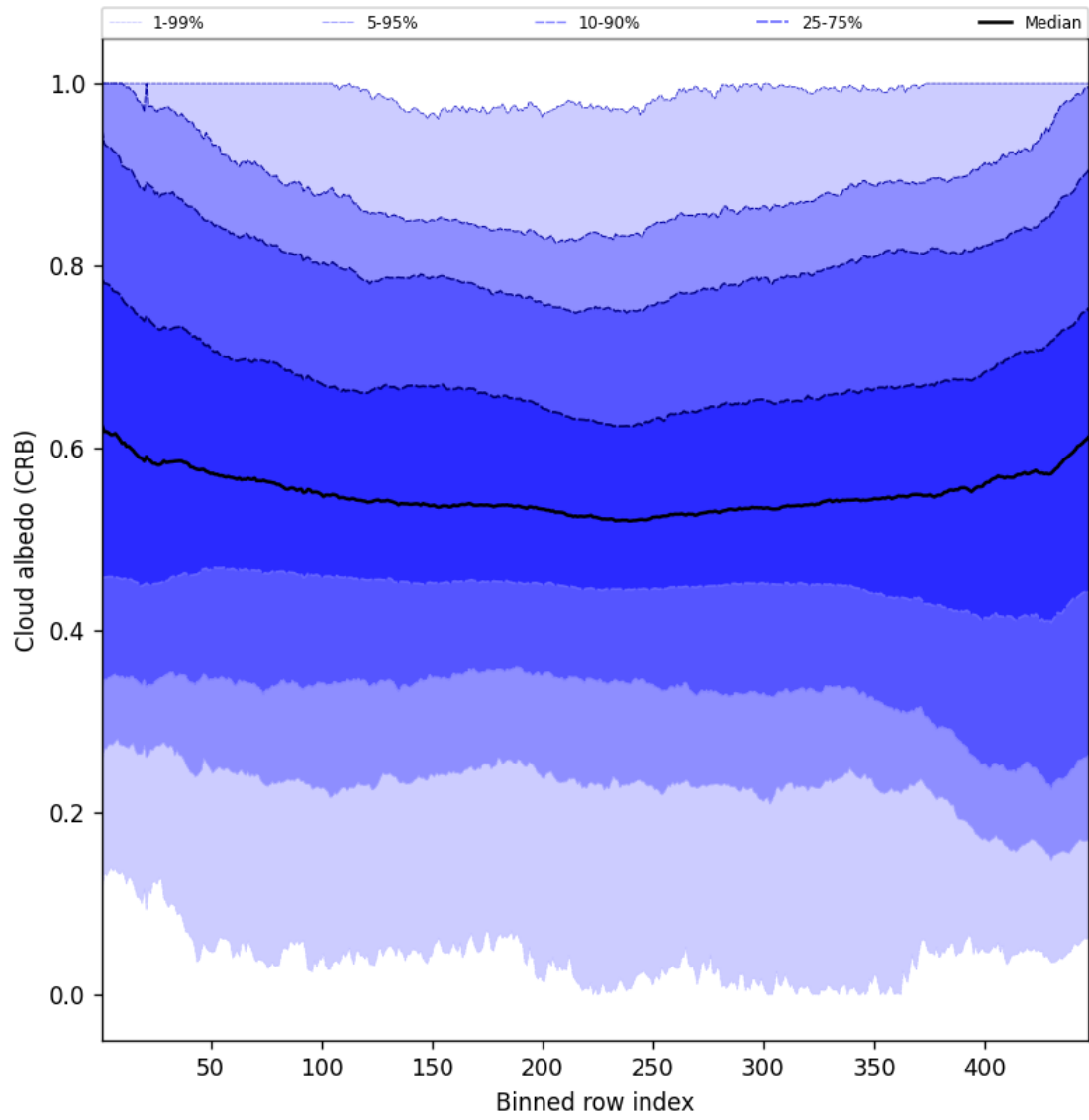


Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2025-07-20 to 2025-07-21

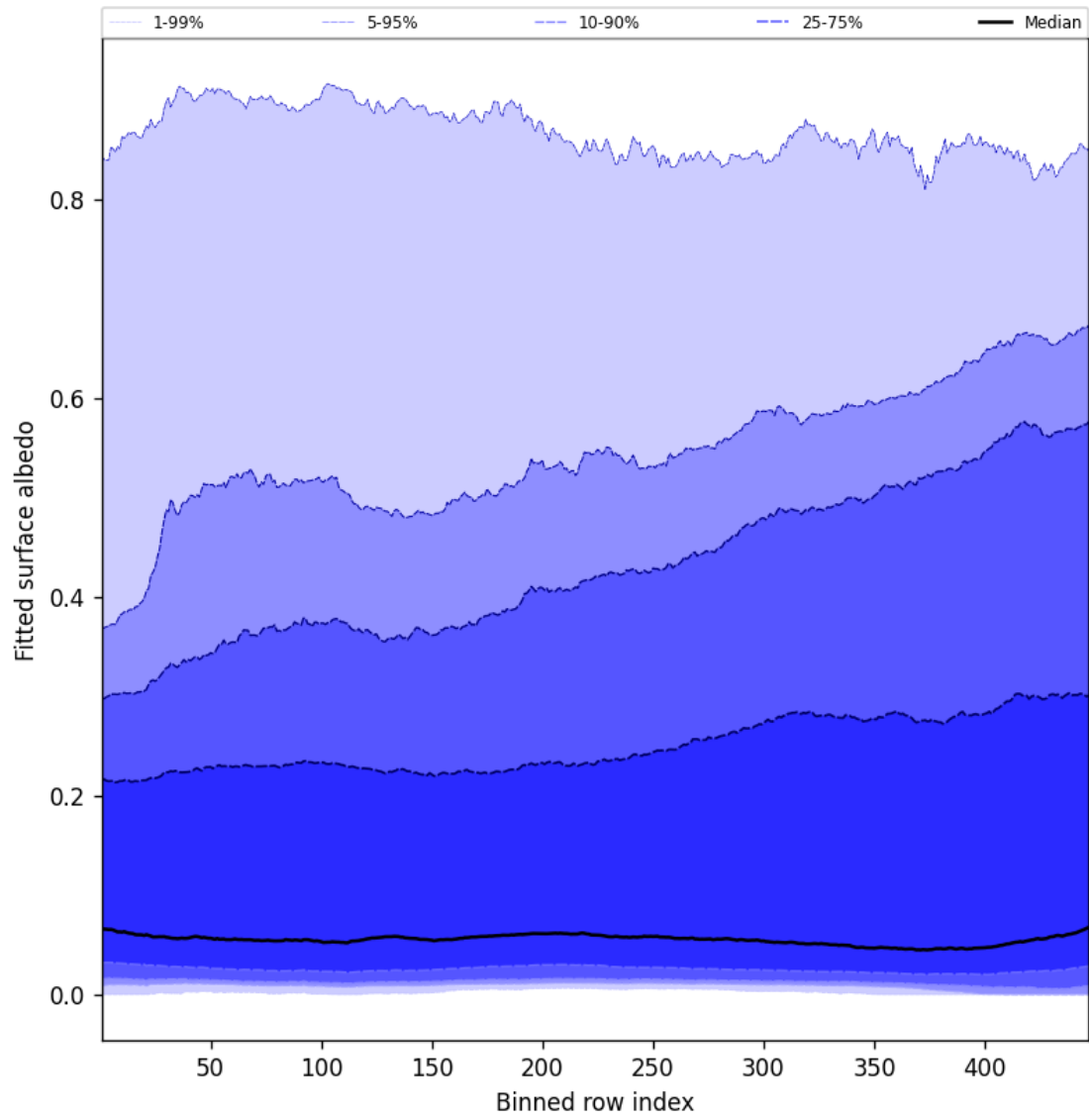


Figure 59: Along track statistics of “Fitted surface albedo” for 2025-07-20 to 2025-07-21

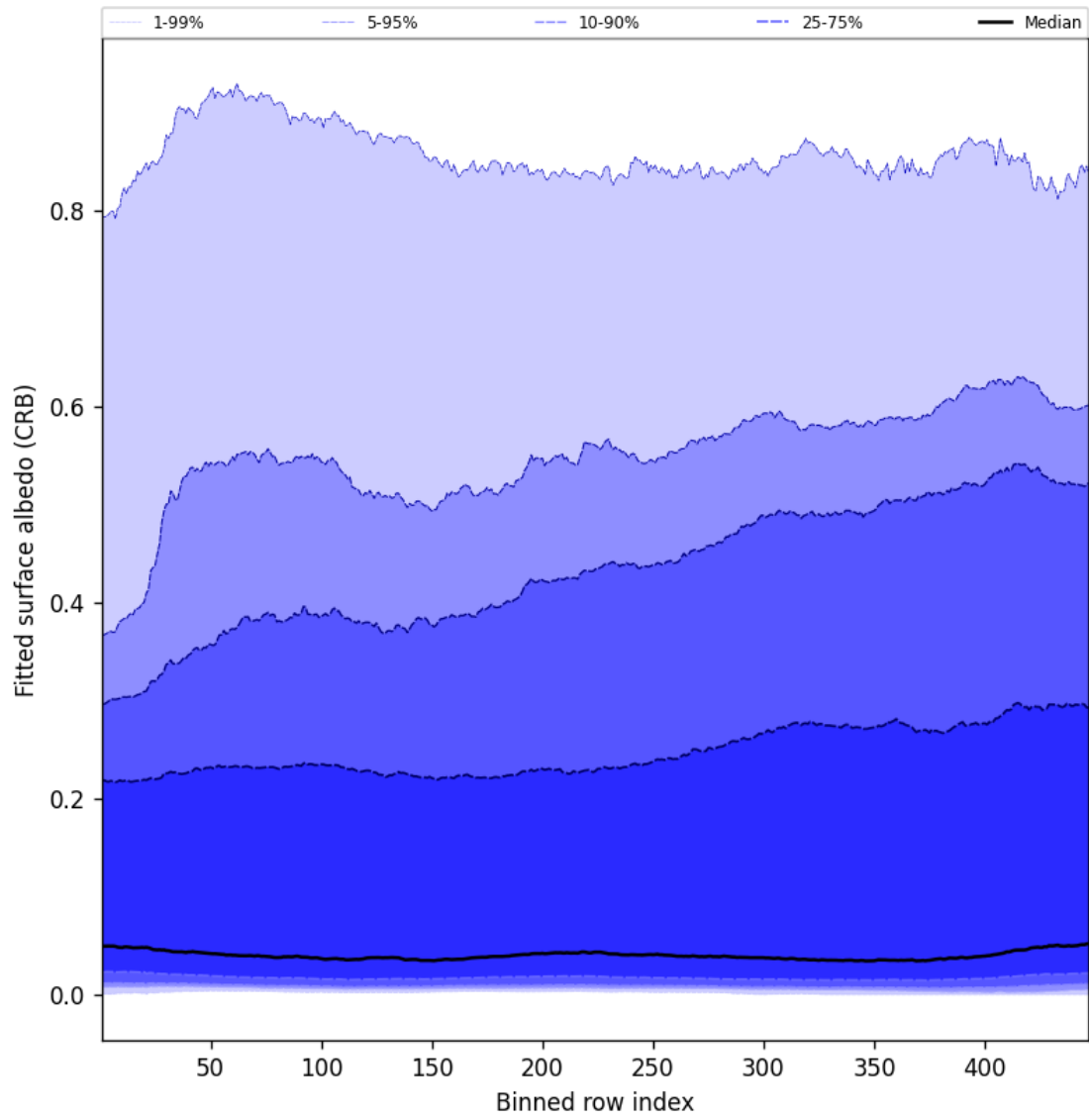


Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2025-07-20 to 2025-07-21

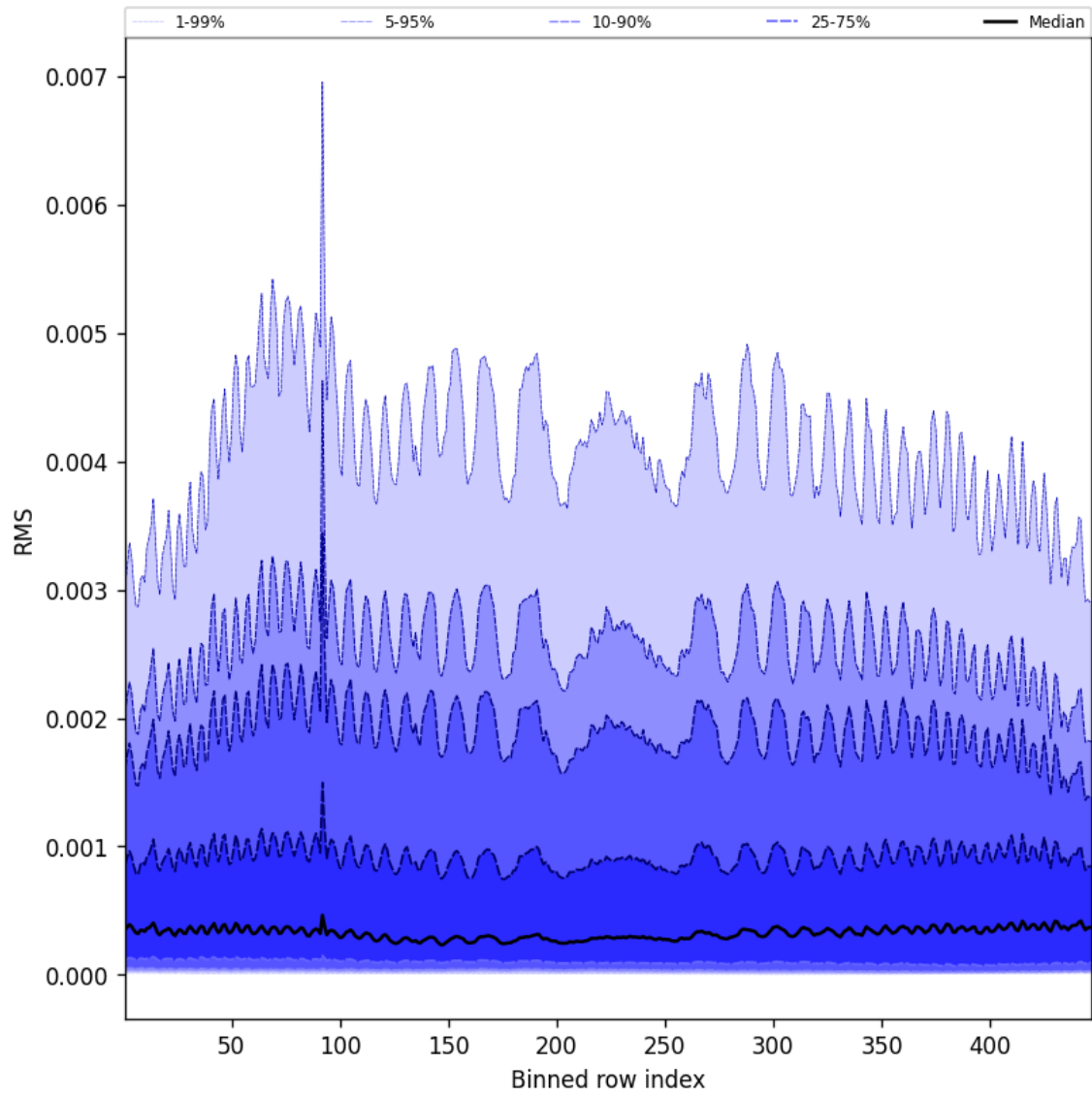


Figure 61: Along track statistics of “RMS” for 2025-07-20 to 2025-07-21

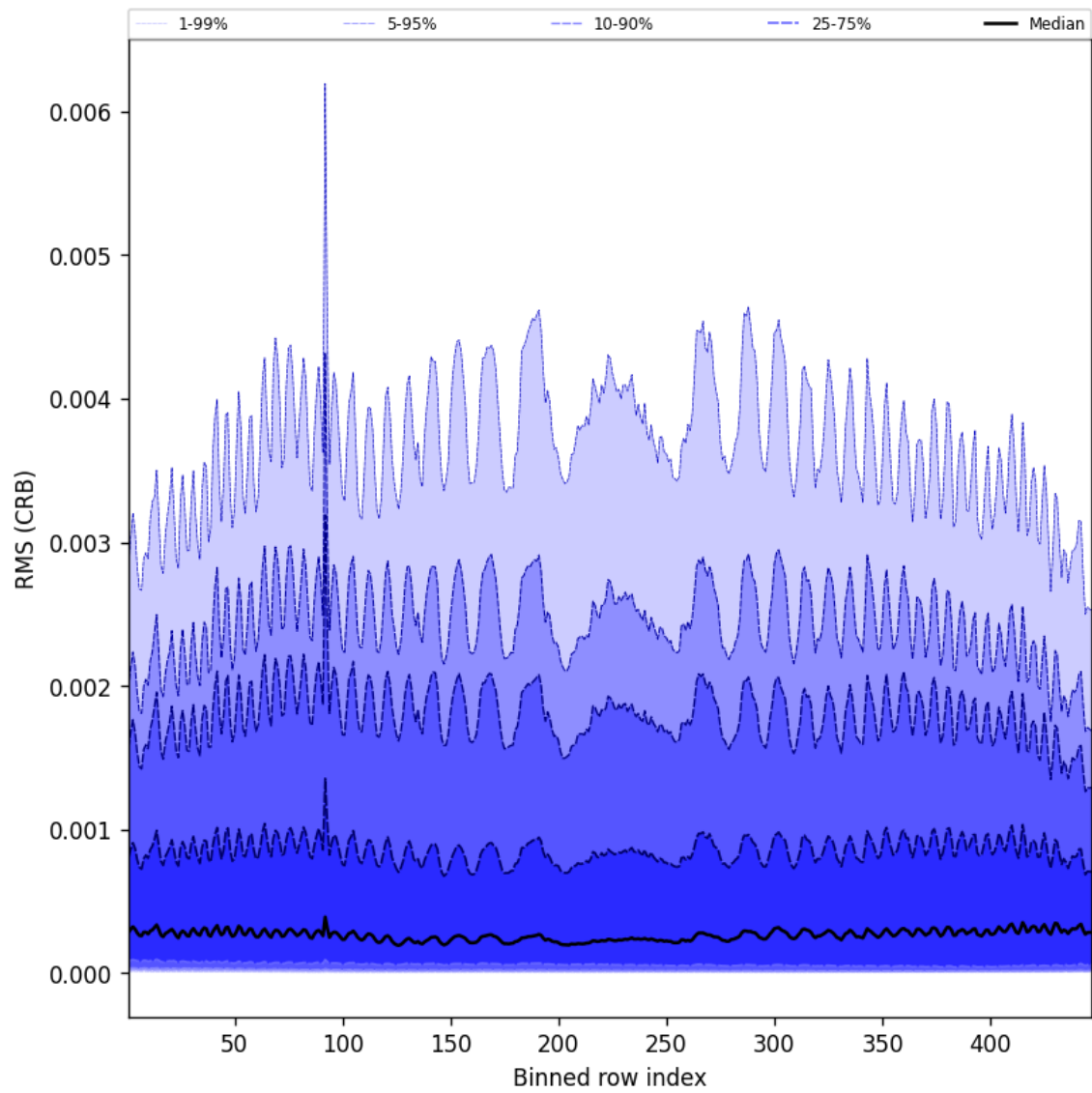


Figure 62: Along track statistics of “RMS (CRB)” for 2025-07-20 to 2025-07-21

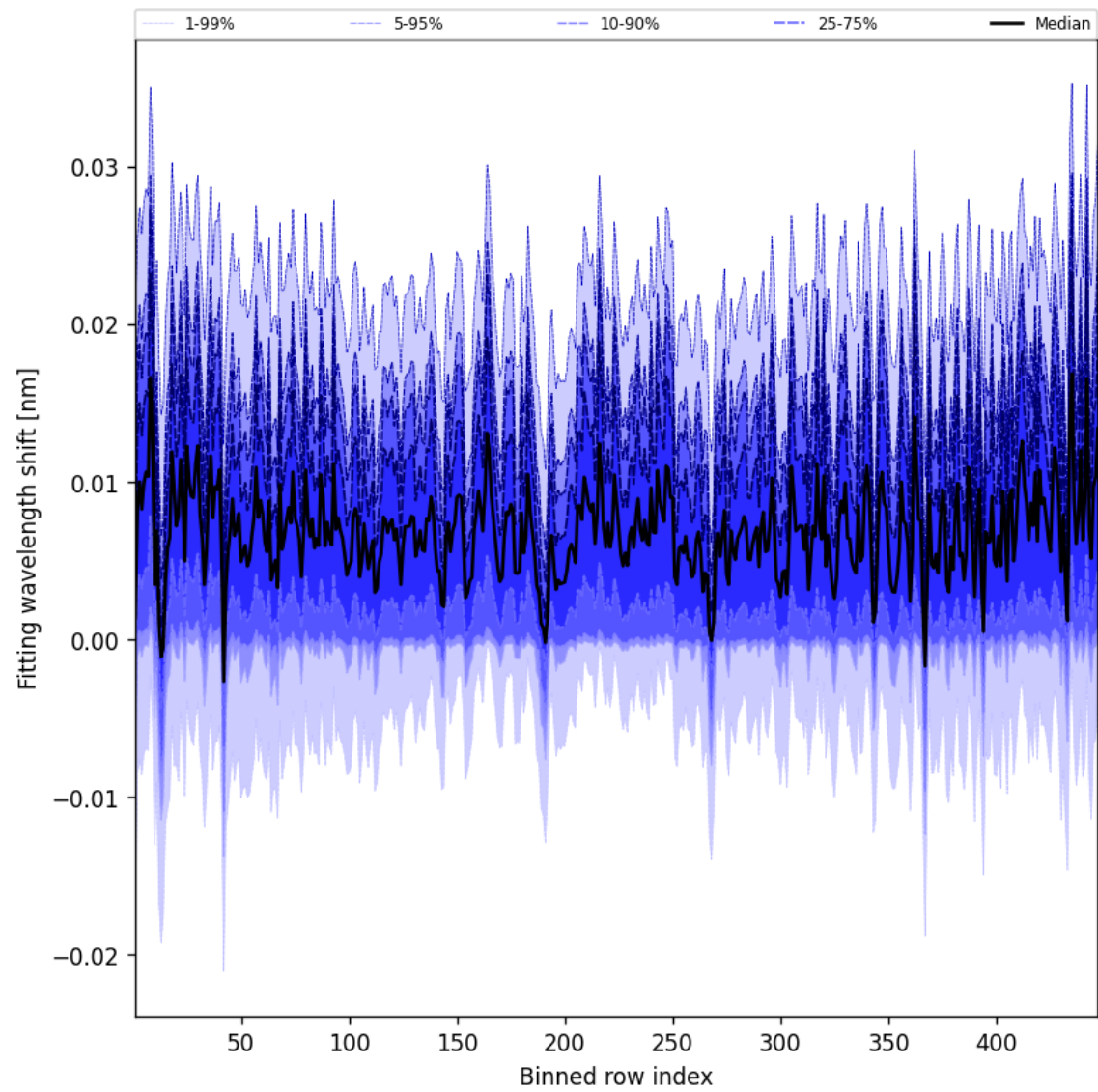


Figure 63: Along track statistics of “Fitting wavelength shift” for 2025-07-20 to 2025-07-21

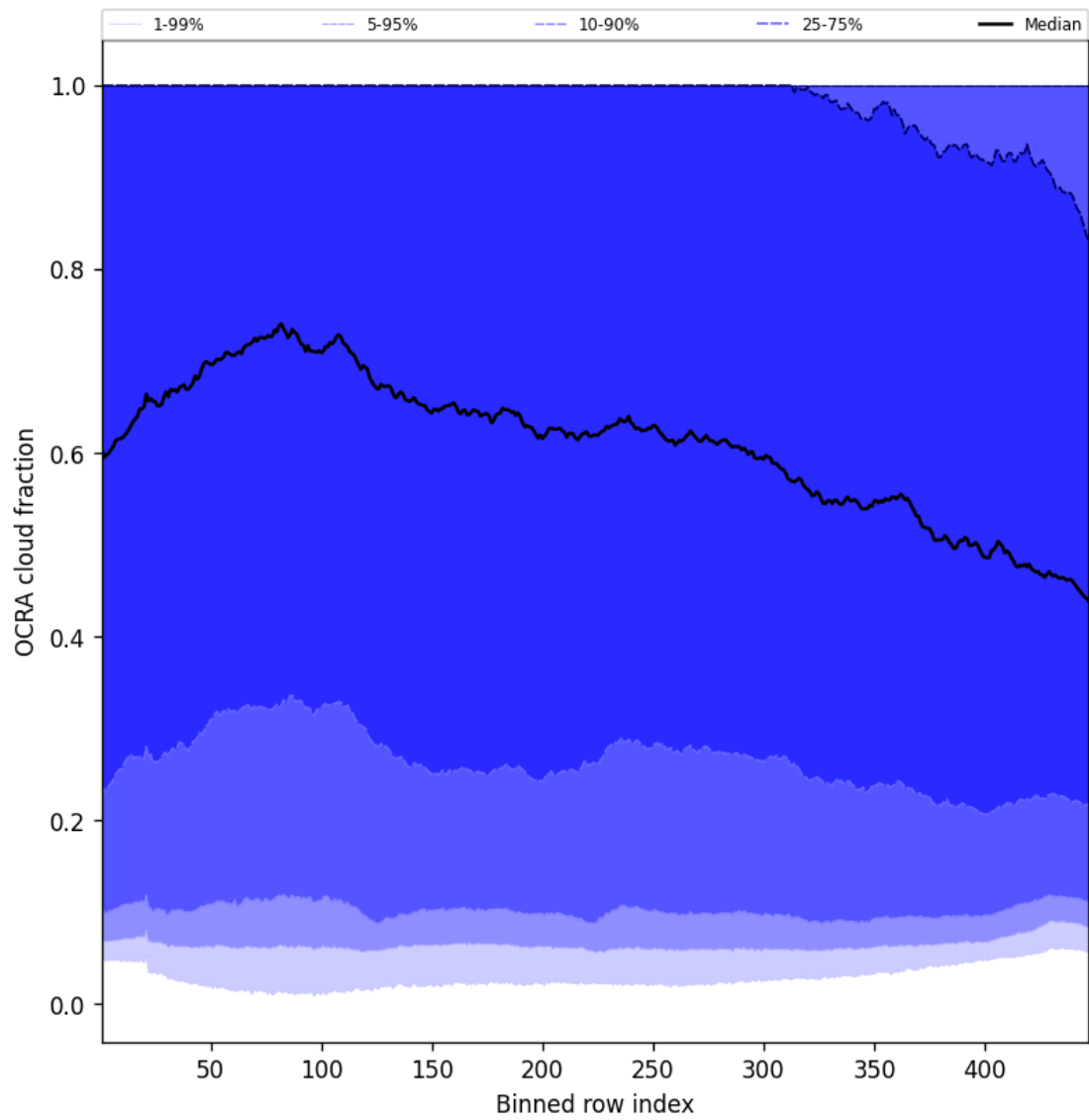


Figure 64: Along track statistics of “OCRA cloud fraction” for 2025-07-20 to 2025-07-21

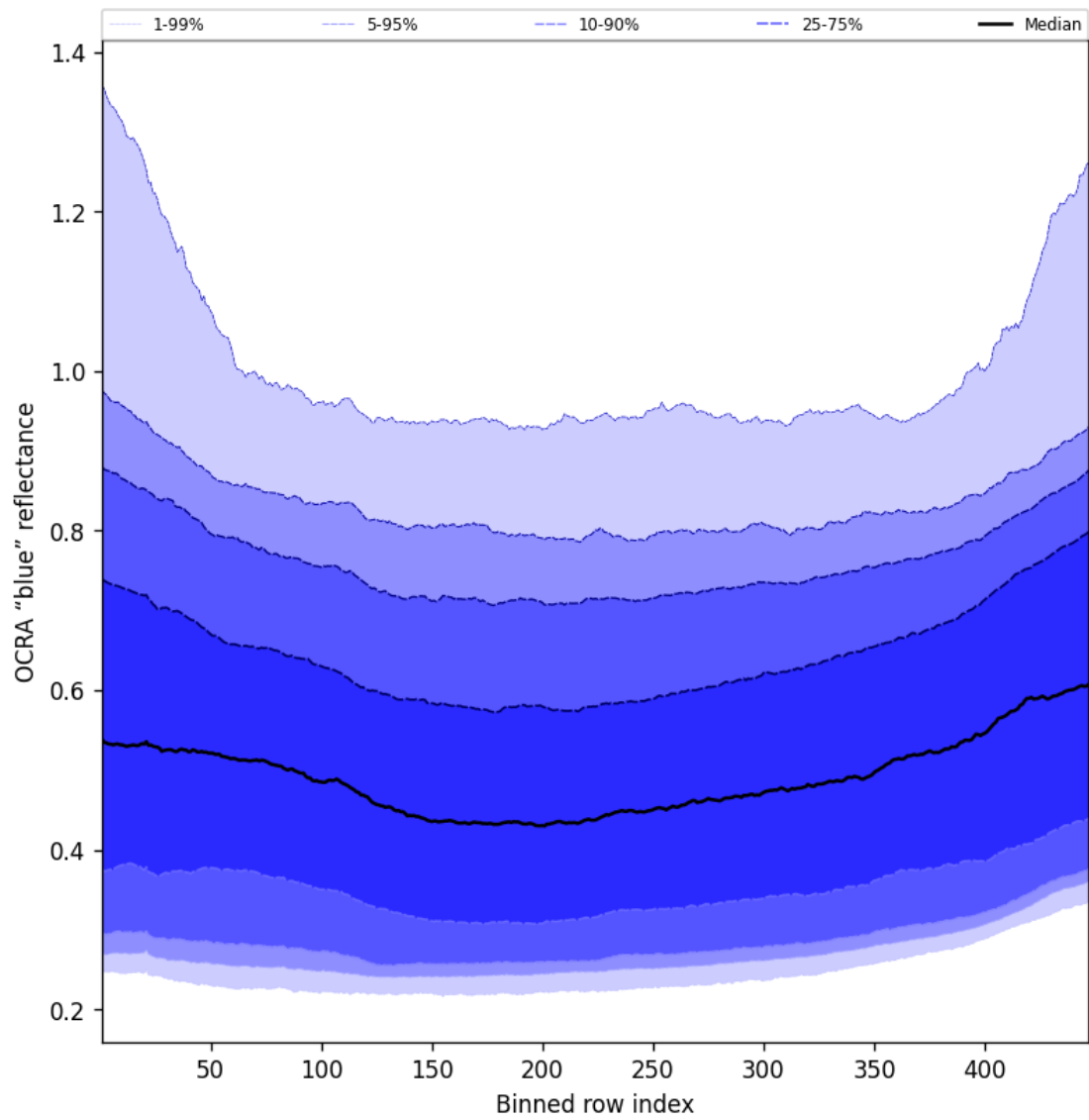


Figure 65: Along track statistics of “OCRA “blue” reflectance” for 2025-07-20 to 2025-07-21

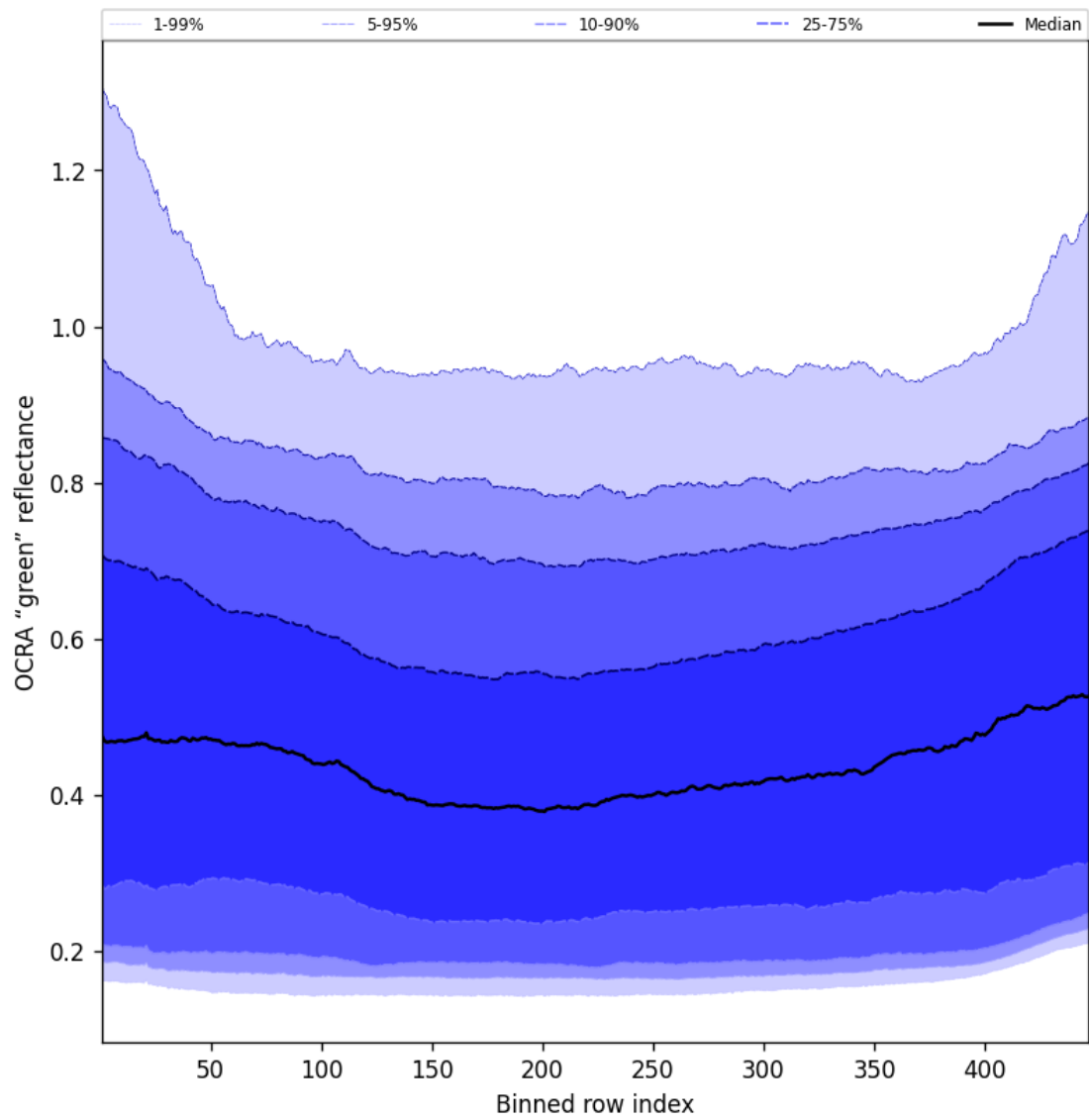


Figure 66: Along track statistics of “OCRA “green” reflectance” for 2025-07-20 to 2025-07-21

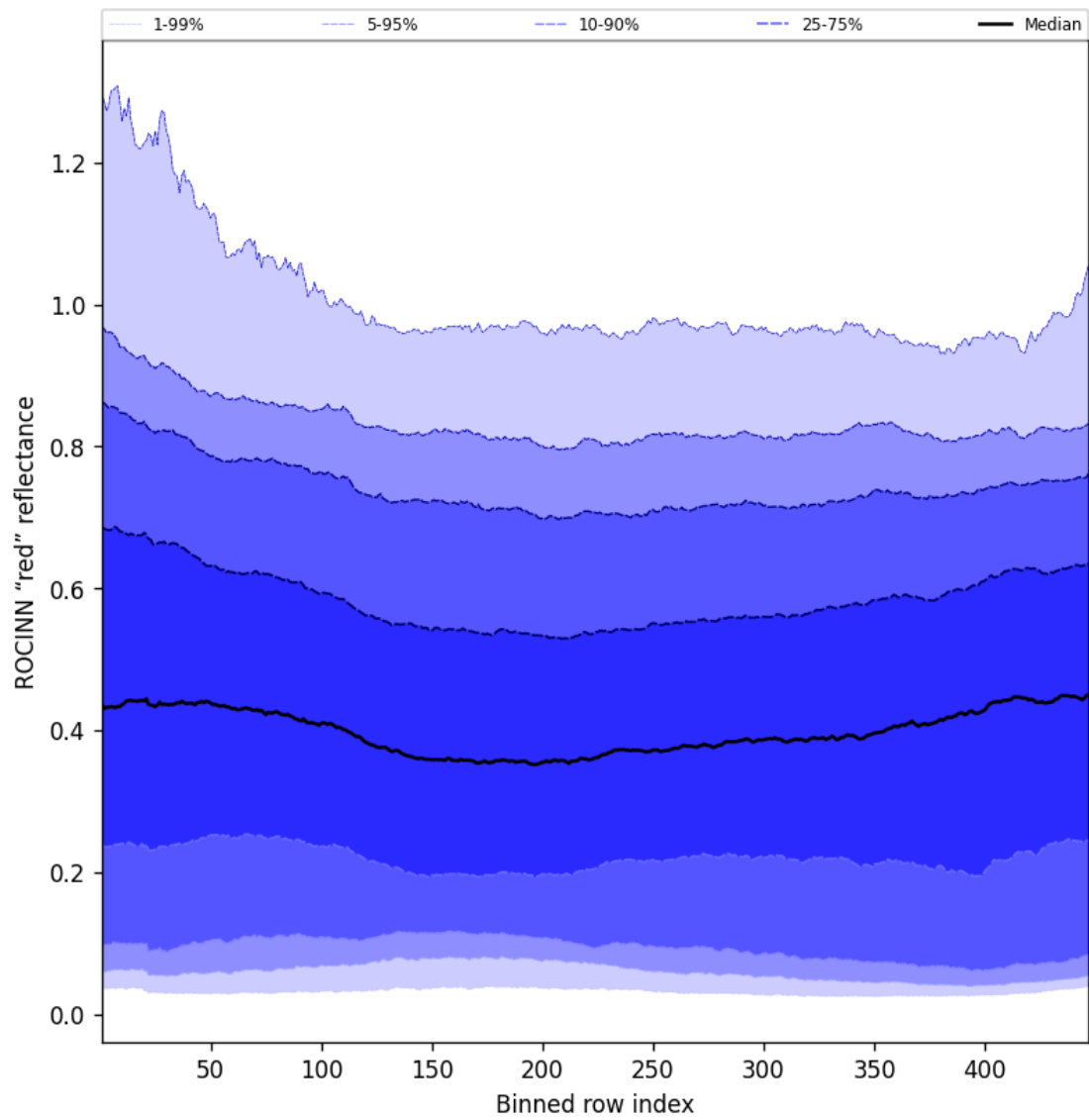


Figure 67: Along track statistics of "ROCINN "red" reflectance" for 2025-07-20 to 2025-07-21

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.

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