

PyCAMA report generated by tropl2-proc

tropl2-proc

2025-07-14 (02:30)

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]	0.621 ± 0.370	20156925	0.995	0.650	0.800	0.0	1.000
cloud fraction [1]	0.589 ± 0.346	20156925	0.995	0.732	0.601	5.057×10^{-3}	1.000
cloud top height [m]	$(0.388 \pm 0.265) \times 10^4$	20156925	1.575×10^3	3.614×10^3	3.344×10^3	0.0	2.000×10^4
cloud optical thickness [1]	21.5 ± 36.8	20156925	9.34	12.8	10.2	1.000	250
cloud fraction crb [1]	0.588 ± 0.347	20156925	0.995	0.733	0.599	8.325×10^{-3}	1.000
cloud height crb [m]	$(0.306 \pm 0.230) \times 10^4$	20156925	75.0	3.252×10^3	2.613×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.552 ± 0.194	20156925	0.515	0.229	0.544	0.0	1.000
surface albedo fitted [1]	0.164 ± 0.202	20156925	2.500×10^{-2}	0.221	5.542×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.159 ± 0.205	20156925	1.500×10^{-2}	0.227	4.032×10^{-2}	0.0	1.000
fitted root mean square [1]	$(6.810 \pm 10.278) \times 10^{-4}$	20156925	5.000×10^{-5}	8.018×10^{-4}	3.155×10^{-4}	8.267×10^{-7}	0.248
fitted root mean square crb [1]	$(6.081 \pm 8.279) \times 10^{-4}$	20156925	5.000×10^{-5}	7.722×10^{-4}	2.597×10^{-4}	7.756×10^{-7}	7.068×10^{-2}
wavelength shift [nm]	$(6.770 \pm 6.666) \times 10^{-3}$	20156925	-3.000×10^{-4}	9.630×10^{-3}	6.105×10^{-3}	-4.926×10^{-2}	6.151×10^{-2}
cloud fraction apriori [1]	0.592 ± 0.352	20156925	0.995	0.749	0.608	0.0	1.000
reflectance blue ocra [1]	0.512 ± 0.189	20156925	0.275	0.294	0.492	0.123	1.91
reflectance green ocra [1]	0.456 ± 0.215	20156925	0.185	0.351	0.434	6.801×10^{-2}	2.12
reflectance continuum aband [1]	0.413 ± 0.247	20156925	4.500×10^{-2}	0.369	0.396	1.112×10^{-2}	6.14

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]	2.595×10^{-2}	6.767×10^{-2}	0.106	0.158	0.257	0.989	1.000	1.000	1.000	1.000
cloud top height [m]	143	567	976	1.324×10^3	1.797×10^3	5.410×10^3	6.513×10^3	7.599×10^3	9.050×10^3	1.148×10^4
cloud optical thickness [1]	1.01	2.75	3.92	4.92	6.31	19.1	29.2	43.5	77.1	250
cloud fraction crb [1]	2.540×10^{-2}	6.668×10^{-2}	0.105	0.157	0.255	0.989	1.000	1.000	1.000	1.000
cloud height crb [m]	0.0	113	465	793	1.220×10^3	4.472×10^3	5.401×10^3	6.277×10^3	7.552×10^3	9.560×10^3
cloud albedo crb [1]	4.051×10^{-2}	0.215	0.314	0.384	0.442	0.671	0.744	0.809	0.893	1.000
surface albedo fitted [1]	0.0	8.598×10^{-3}	1.361×10^{-2}	1.826×10^{-2}	2.530×10^{-2}	0.246	0.337	0.460	0.604	0.906
surface albedo fitted crb [1]	0.0	6.430×10^{-3}	9.767×10^{-3}	1.304×10^{-2}	1.799×10^{-2}	0.245	0.341	0.469	0.597	0.897
fitted root mean square [1]	9.289×10^{-6}	2.088×10^{-5}	3.449×10^{-5}	5.357×10^{-5}	9.381×10^{-5}	8.956×10^{-4}	1.328×10^{-3}	1.811×10^{-3}	2.526×10^{-3}	4.074×10^{-3}
fitted root mean square crb [1]	5.132×10^{-6}	1.200×10^{-5}	2.119×10^{-5}	3.316×10^{-5}	5.826×10^{-5}	8.305×10^{-4}	1.255×10^{-3}	1.719×10^{-3}	2.393×10^{-3}	3.708×10^{-3}
wavelength shift [nm]	-7.737×10^{-3}	-1.195×10^{-3}	-2.152×10^{-4}	2.709×10^{-4}	1.491×10^{-3}	1.112×10^{-2}	1.346×10^{-2}	1.551×10^{-2}	1.829×10^{-2}	2.444×10^{-2}
cloud fraction apriori [1]	2.780×10^{-2}	6.410×10^{-2}	9.915×10^{-2}	0.150	0.251	1.000	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.232	0.259	0.282	0.308	0.351	0.645	0.715	0.770	0.836	0.977
reflectance green ocra [1]	0.149	0.172	0.192	0.218	0.264	0.616	0.694	0.753	0.826	0.967
reflectance continuum aband [1]	2.971×10^{-2}	5.464×10^{-2}	8.909×10^{-2}	0.134	0.217	0.586	0.672	0.746	0.836	0.994

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]	0.623 ± 0.361	13735865	0.600	0.780	0.0	1.000	0.300	0.900
cloud fraction [1]	0.631 ± 0.347	13735865	0.700	0.690	5.057×10^{-3}	1.000	0.300	1.000
cloud top height [m]	$(0.392 \pm 0.276) \times 10^4$	13735865	3.839×10^3	3.438×10^3	0.0	2.000×10^4	1.728×10^3	5.567×10^3
cloud optical thickness [1]	19.2 ± 33.4	13735865	11.2	9.71	1.000	250	5.95	17.2
cloud fraction crb [1]	0.630 ± 0.347	13735865	0.702	0.689	8.325×10^{-3}	1.000	0.298	1.000
cloud height crb [m]	$(0.307 \pm 0.238) \times 10^4$	13735865	3.492×10^3	2.674×10^3	0.0	2.000×10^4	1.114×10^3	4.606×10^3
cloud albedo crb [1]	0.540 ± 0.204	13735865	0.247	0.533	0.0	1.000	0.424	0.671
surface albedo fitted [1]	0.210 ± 0.220	13735865	0.282	0.166	0.0	1.000	2.779×10^{-2}	0.310
surface albedo fitted crb [1]	0.208 ± 0.222	13735865	0.289	0.165	0.0	1.000	2.225×10^{-2}	0.311
fitted root mean square [1]	$(8.461 \pm 11.659) \times 10^{-4}$	13735865	1.040×10^{-3}	4.816×10^{-4}	1.355×10^{-6}	0.248	1.206×10^{-4}	1.161×10^{-3}
fitted root mean square crb [1]	$(7.618 \pm 9.149) \times 10^{-4}$	13735865	9.949×10^{-4}	4.258×10^{-4}	7.756×10^{-7}	7.068×10^{-2}	9.197×10^{-5}	1.087×10^{-3}
wavelength shift [nm]	$(7.487 \pm 6.613) \times 10^{-3}$	13735865	9.562×10^{-3}	7.200×10^{-3}	-4.489×10^{-2}	6.151×10^{-2}	2.307×10^{-3}	1.187×10^{-2}
cloud fraction apriori [1]	0.636 ± 0.350	13735865	0.700	0.702	0.0	1.000	0.300	1.000
reflectance blue ocra [1]	0.522 ± 0.193	13735865	0.316	0.513	0.123	1.80	0.350	0.667
reflectance green ocra [1]	0.473 ± 0.219	13735865	0.372	0.466	6.801×10^{-2}	2.12	0.271	0.643
reflectance continuum aband [1]	0.446 ± 0.242	13735865	0.353	0.436	1.112×10^{-2}	4.67	0.264	0.617

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]	0.617 ± 0.390	6421060	0.700	0.840	0.0	1.000	0.300	1.000
cloud fraction [1]	0.501 ± 0.329	6421060	0.611	0.457	8.032×10^{-3}	1.000	0.196	0.807
cloud top height [m]	$(0.378 \pm 0.239) \times 10^4$	6421060	3.122×10^3	3.182×10^3	0.0	2.000×10^4	1.899×10^3	5.021×10^3
cloud optical thickness [1]	26.3 ± 42.8	6421060	16.6	11.8	1.000	250	7.06	23.7
cloud fraction crb [1]	0.498 ± 0.329	6421060	0.608	0.452	8.375×10^{-3}	1.000	0.194	0.803
cloud height crb [m]	$(0.303 \pm 0.211) \times 10^4$	6421060	2.768×10^3	2.506×10^3	0.0	1.917×10^4	1.362×10^3	4.130×10^3
cloud albedo crb [1]	0.577 ± 0.168	6421060	0.193	0.560	0.0	1.000	0.477	0.670
surface albedo fitted [1]	$(6.522 \pm 10.058) \times 10^{-2}$	6421060	3.581×10^{-2}	3.644×10^{-2}	0.0	1.000	2.267×10^{-2}	5.848×10^{-2}
surface albedo fitted crb [1]	$(5.323 \pm 10.036) \times 10^{-2}$	6421060	2.397×10^{-2}	2.337×10^{-2}	0.0	1.000	1.444×10^{-2}	3.841×10^{-2}
fitted root mean square [1]	$(3.280 \pm 4.747) \times 10^{-4}$	6421060	3.190×10^{-4}	1.666×10^{-4}	8.267×10^{-7}	8.950×10^{-2}	6.372×10^{-5}	3.827×10^{-4}
fitted root mean square crb [1]	$(2.795 \pm 4.499) \times 10^{-4}$	6421060	2.808×10^{-4}	9.922×10^{-5}	1.086×10^{-6}	3.020×10^{-2}	3.672×10^{-5}	3.176×10^{-4}
wavelength shift [nm]	$(5.237 \pm 6.520) \times 10^{-3}$	6421060	8.176×10^{-3}	3.744×10^{-3}	-4.926×10^{-2}	5.954×10^{-2}	6.917×10^{-4}	8.867×10^{-3}
cloud fraction apriori [1]	0.499 ± 0.336	6421060	0.631	0.453	0.0	1.000	0.184	0.816
reflectance blue oca [1]	0.490 ± 0.177	6421060	0.241	0.457	0.153	1.91	0.353	0.594
reflectance green oca [1]	0.419 ± 0.201	6421060	0.292	0.382	9.337×10^{-2}	1.95	0.254	0.546
reflectance continuum aband [1]	0.343 ± 0.244	6421060	0.357	0.303	1.351×10^{-2}	6.14	0.141	0.498

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]	0.619 ± 0.365	13934900	0.640	0.790	0.0	1.000	0.300	0.940
cloud fraction [1]	0.561 ± 0.343	13934900	0.714	0.548	5.057×10^{-3}	1.000	0.233	0.947
cloud top height [m]	$(0.370 \pm 0.266) \times 10^4$	13934900	3.512×10^3	3.069×10^3	0.0	2.000×10^4	1.631×10^3	5.143×10^3
cloud optical thickness [1]	22.5 ± 38.1	13934900	13.1	10.7	1.000	250	6.76	19.8
cloud fraction crb [1]	0.559 ± 0.344	13934900	0.715	0.545	8.460×10^{-3}	1.000	0.231	0.946
cloud height crb [m]	$(0.292 \pm 0.234) \times 10^4$	13934900	3.148×10^3	2.385×10^3	0.0	2.000×10^4	1.072×10^3	4.220×10^3
cloud albedo crb [1]	0.549 ± 0.185	13934900	0.213	0.537	0.0	1.000	0.444	0.657
surface albedo fitted [1]	0.109 ± 0.181	13934900	4.286×10^{-2}	3.403×10^{-2}	0.0	1.000	1.949×10^{-2}	6.234×10^{-2}
surface albedo fitted crb [1]	0.101 ± 0.183	13934900	3.165×10^{-2}	2.418×10^{-2}	0.0	1.000	1.387×10^{-2}	4.552×10^{-2}
fitted root mean square [1]	$(5.430 \pm 9.422) \times 10^{-4}$	13934900	5.757×10^{-4}	2.269×10^{-4}	8.267×10^{-7}	8.693×10^{-2}	7.878×10^{-5}	6.544×10^{-4}
fitted root mean square crb [1]	$(4.665 \pm 7.026) \times 10^{-4}$	13934900	5.292×10^{-4}	1.733×10^{-4}	7.756×10^{-7}	3.020×10^{-2}	5.149×10^{-5}	5.806×10^{-4}
wavelength shift [nm]	$(6.569 \pm 6.735) \times 10^{-3}$	13934900	9.425×10^{-3}	5.713×10^{-3}	-4.926×10^{-2}	6.151×10^{-2}	1.433×10^{-3}	1.086×10^{-2}
cloud fraction apriori [1]	0.563 ± 0.348	13934900	0.747	0.554	0.0	1.000	0.227	0.975
reflectance blue ocr [1]	0.509 ± 0.180	13934900	0.279	0.493	0.157	1.89	0.356	0.636
reflectance green ocr [1]	0.449 ± 0.207	13934900	0.341	0.436	9.557×10^{-2}	1.95	0.263	0.604
reflectance continuum aband [1]	0.375 ± 0.246	13934900	0.404	0.364	1.284×10^{-2}	6.14	0.153	0.556

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]	0.654 ± 0.363	3674704	0.550	0.810	0.0	1.000	0.400	0.950
cloud fraction [1]	0.615 ± 0.351	3674704	0.723	0.656	8.283×10^{-3}	1.000	0.277	1.000
cloud top height [m]	$(0.451 \pm 0.273) \times 10^4$	3674704	3.622×10^3	4.071×10^3	0.0	2.000×10^4	2.466×10^3	6.087×10^3
cloud optical thickness [1]	17.9 ± 31.6	3674704	10.5	8.87	1.000	250	5.52	16.0
cloud fraction crb [1]	0.615 ± 0.352	3674704	0.723	0.655	8.325×10^{-3}	1.000	0.276	0.999
cloud height crb [m]	$(0.349 \pm 0.225) \times 10^4$	3674704	3.250×10^3	3.065×10^3	0.0	2.000×10^4	1.739×10^3	4.989×10^3
cloud albedo crb [1]	0.580 ± 0.215	3674704	0.274	0.580	0.0	1.000	0.455	0.729
surface albedo fitted [1]	0.340 ± 0.214	3674704	0.124	0.266	0.0	1.000	0.218	0.342
surface albedo fitted crb [1]	0.338 ± 0.214	3674704	0.125	0.263	5.060×10^{-3}	1.000	0.215	0.340
fitted root mean square [1]	$(1.135 \pm 1.109) \times 10^{-3}$	3674704	1.268×10^{-3}	8.520×10^{-4}	2.759×10^{-6}	0.248	3.549×10^{-4}	1.622×10^{-3}
fitted root mean square crb [1]	$(1.080 \pm 1.000) \times 10^{-3}$	3674704	1.287×10^{-3}	8.292×10^{-4}	1.244×10^{-6}	4.974×10^{-2}	3.061×10^{-4}	1.593×10^{-3}
wavelength shift [nm]	$(7.596 \pm 6.265) \times 10^{-3}$	3674704	8.966×10^{-3}	7.483×10^{-3}	-4.048×10^{-2}	4.890×10^{-2}	2.799×10^{-3}	1.177×10^{-2}
cloud fraction apriori [1]	0.623 ± 0.359	3674704	0.729	0.677	0.0	1.000	0.271	1.000
reflectance blue ocra [1]	0.517 ± 0.219	3674704	0.369	0.470	0.123	1.91	0.326	0.695
reflectance green ocra [1]	0.473 ± 0.246	3674704	0.423	0.417	6.801×10^{-2}	1.92	0.254	0.677
reflectance continuum aband [1]	0.514 ± 0.230	3674704	0.364	0.461	1.876×10^{-2}	4.67	0.327	0.691

3 Granule outlines

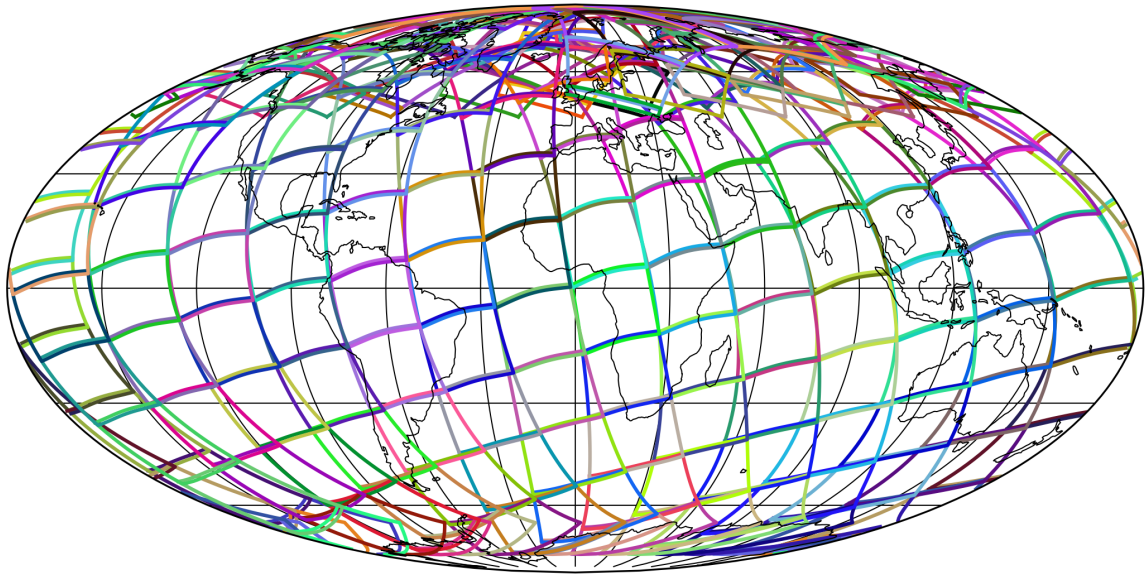


Figure 1: Outline of the granules.

4 Input data monitoring

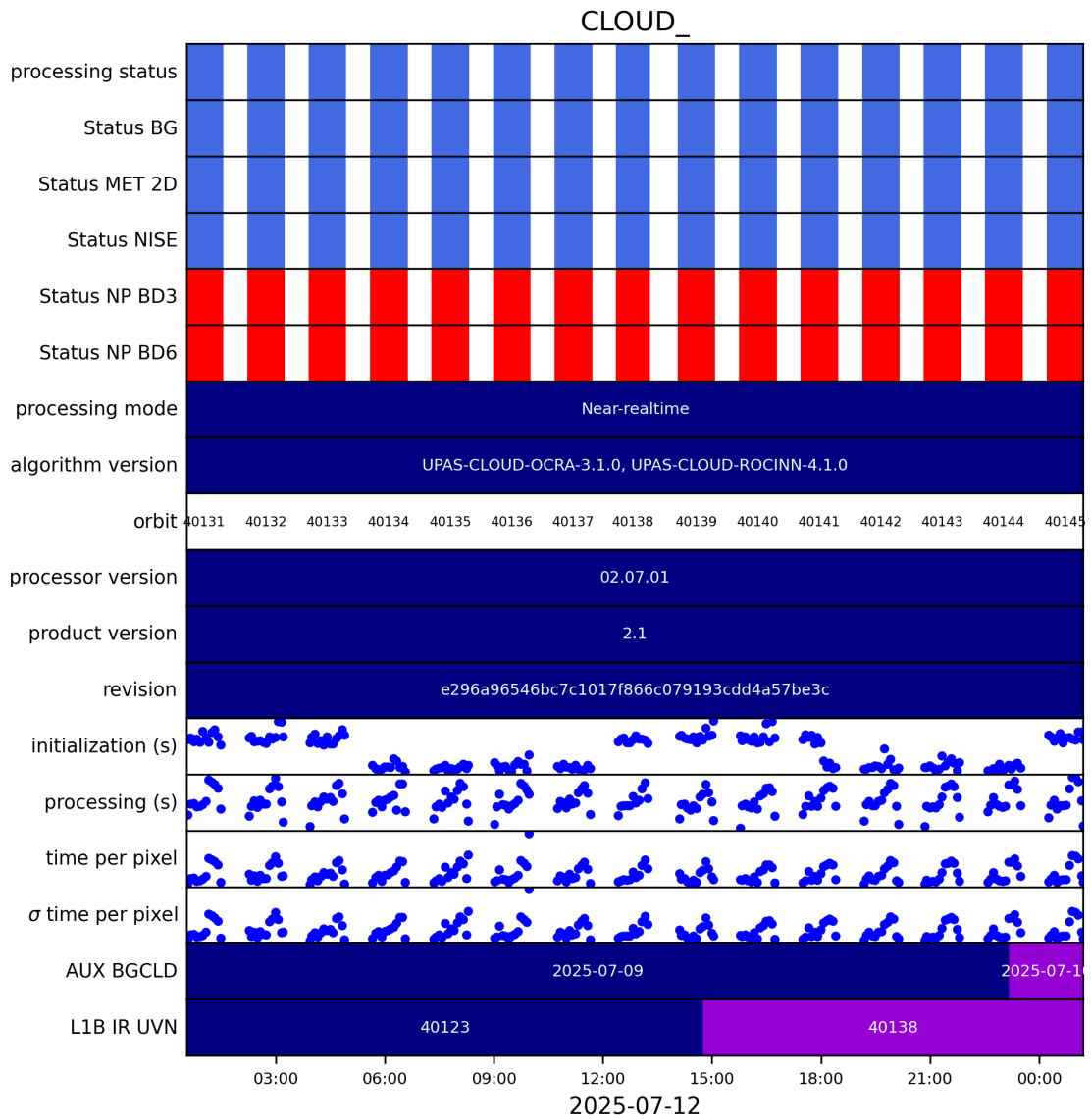


Figure 2: Input data per granule

5 Warnings and errors

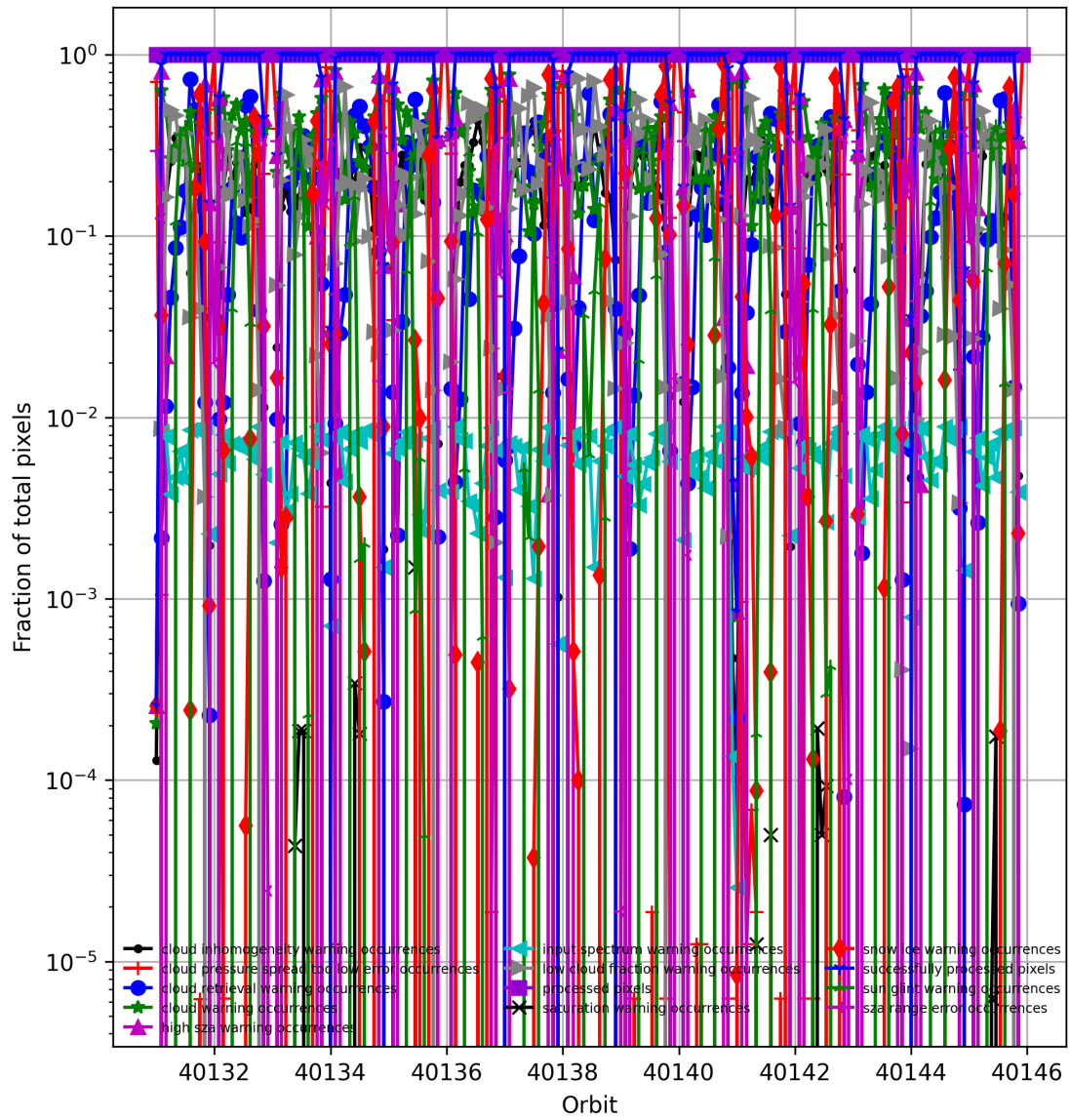


Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

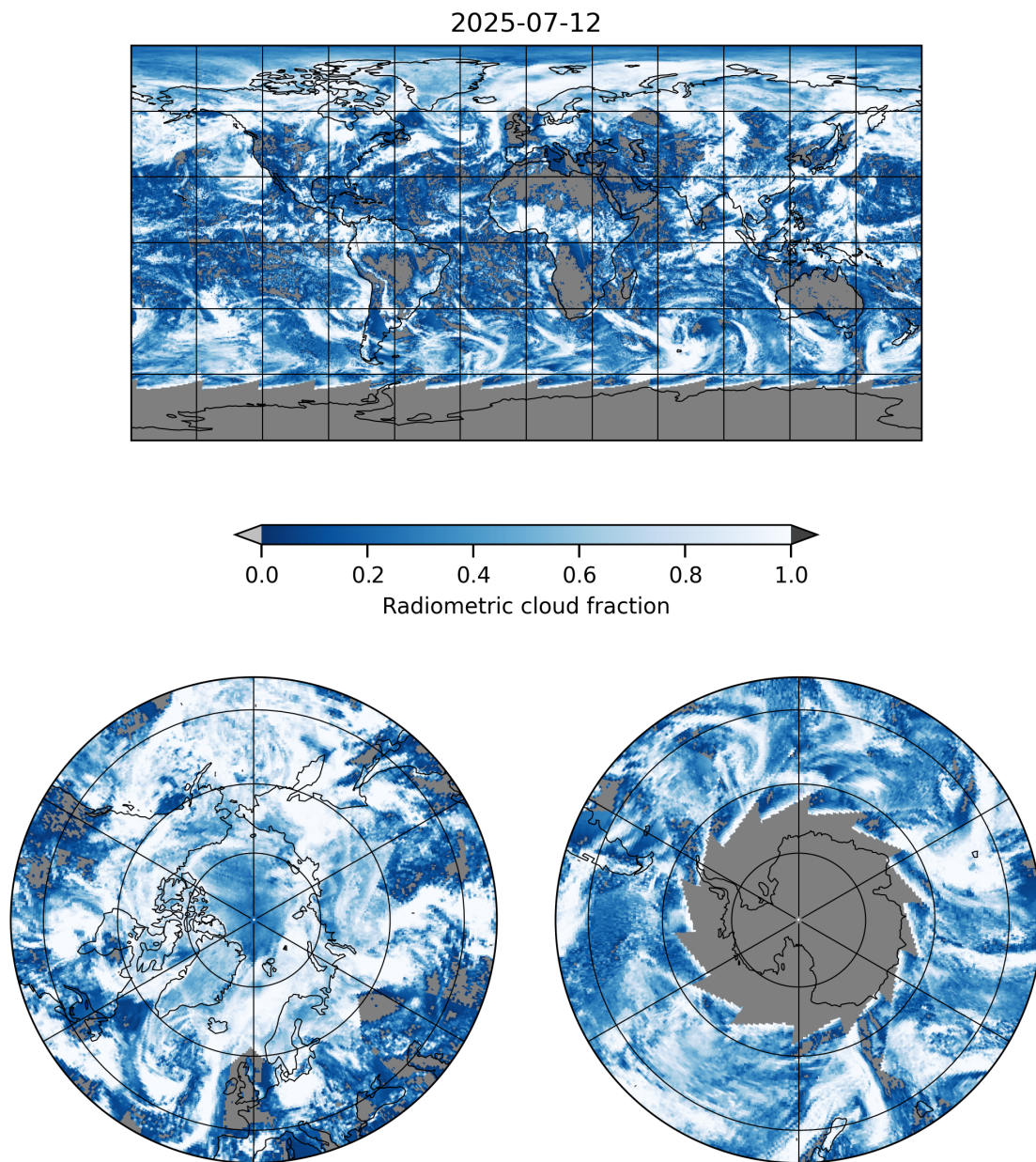


Figure 4: Map of “Radiometric cloud fraction” for 2025-07-12 to 2025-07-13

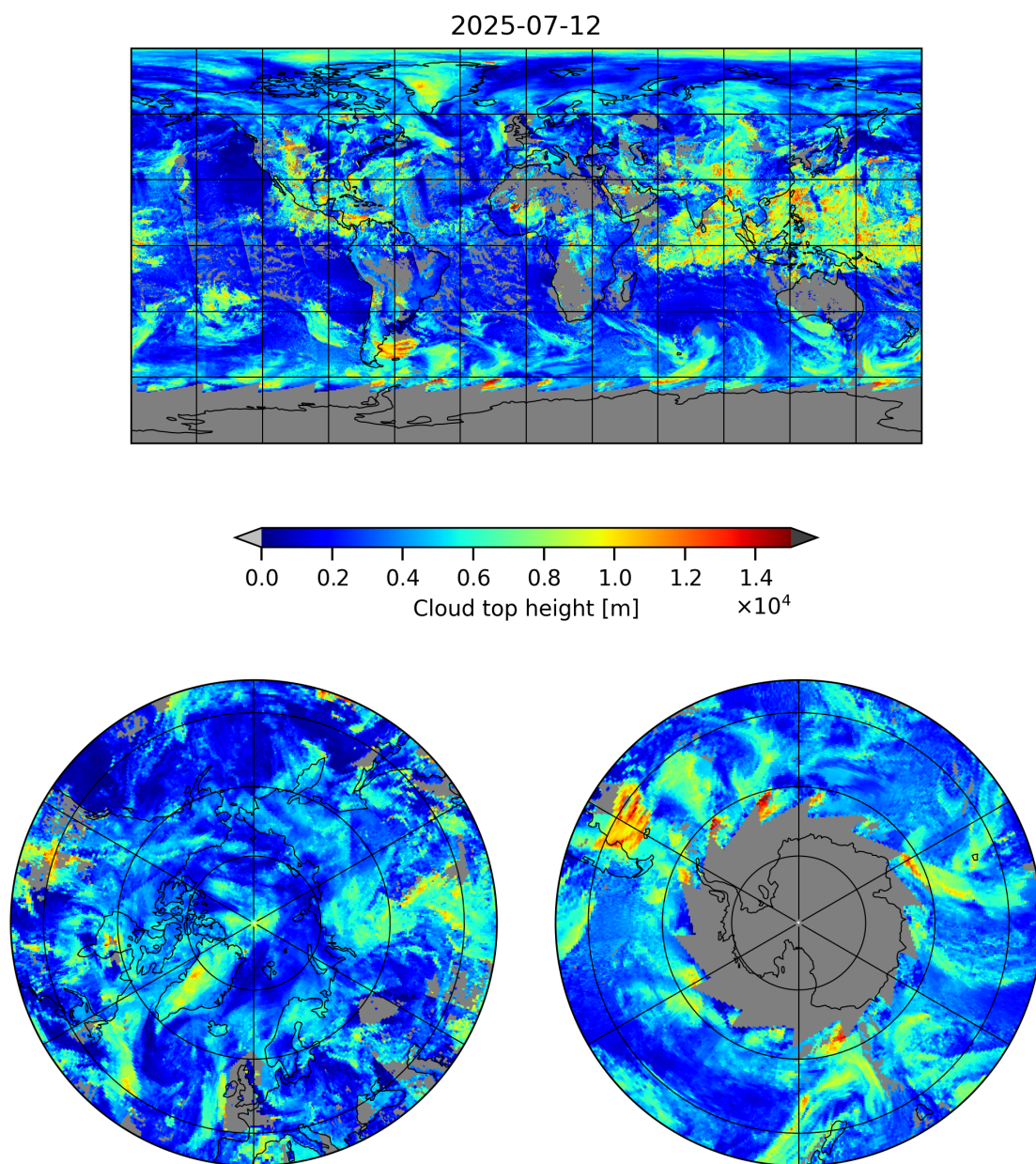


Figure 5: Map of “Cloud top height” for 2025-07-12 to 2025-07-13

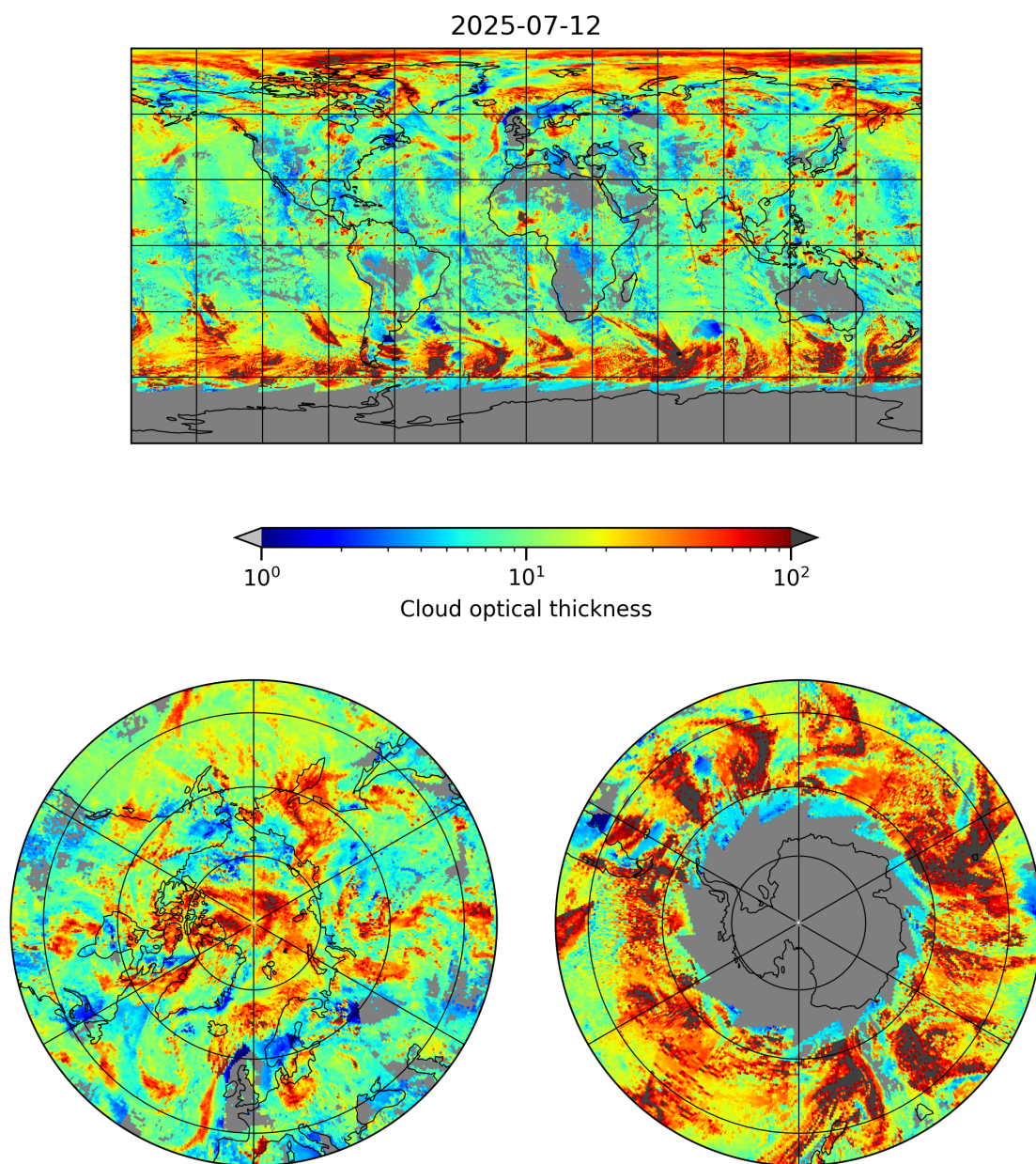


Figure 6: Map of “Cloud optical thickness” for 2025-07-12 to 2025-07-13

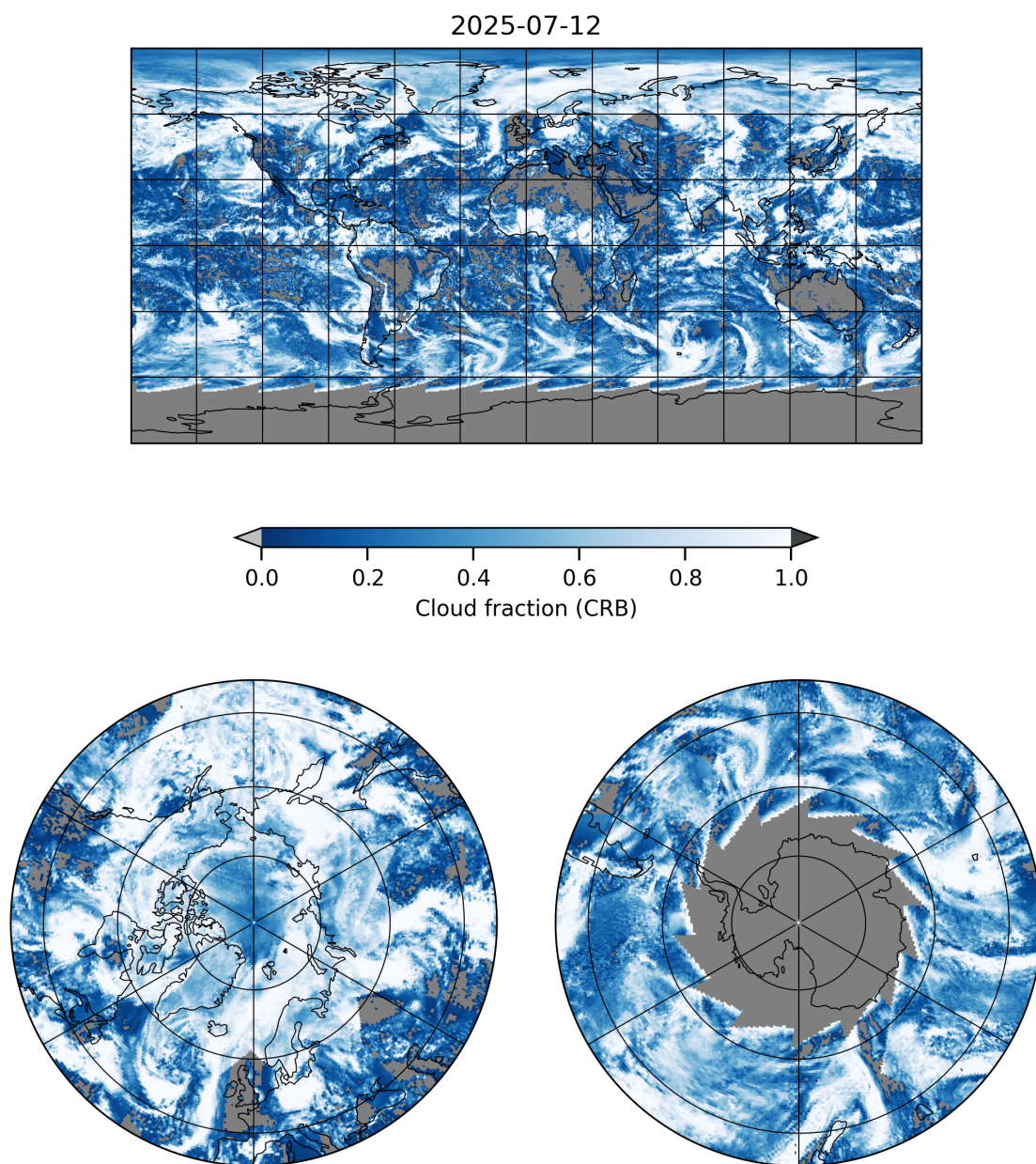


Figure 7: Map of “Cloud fraction (CRB)” for 2025-07-12 to 2025-07-13

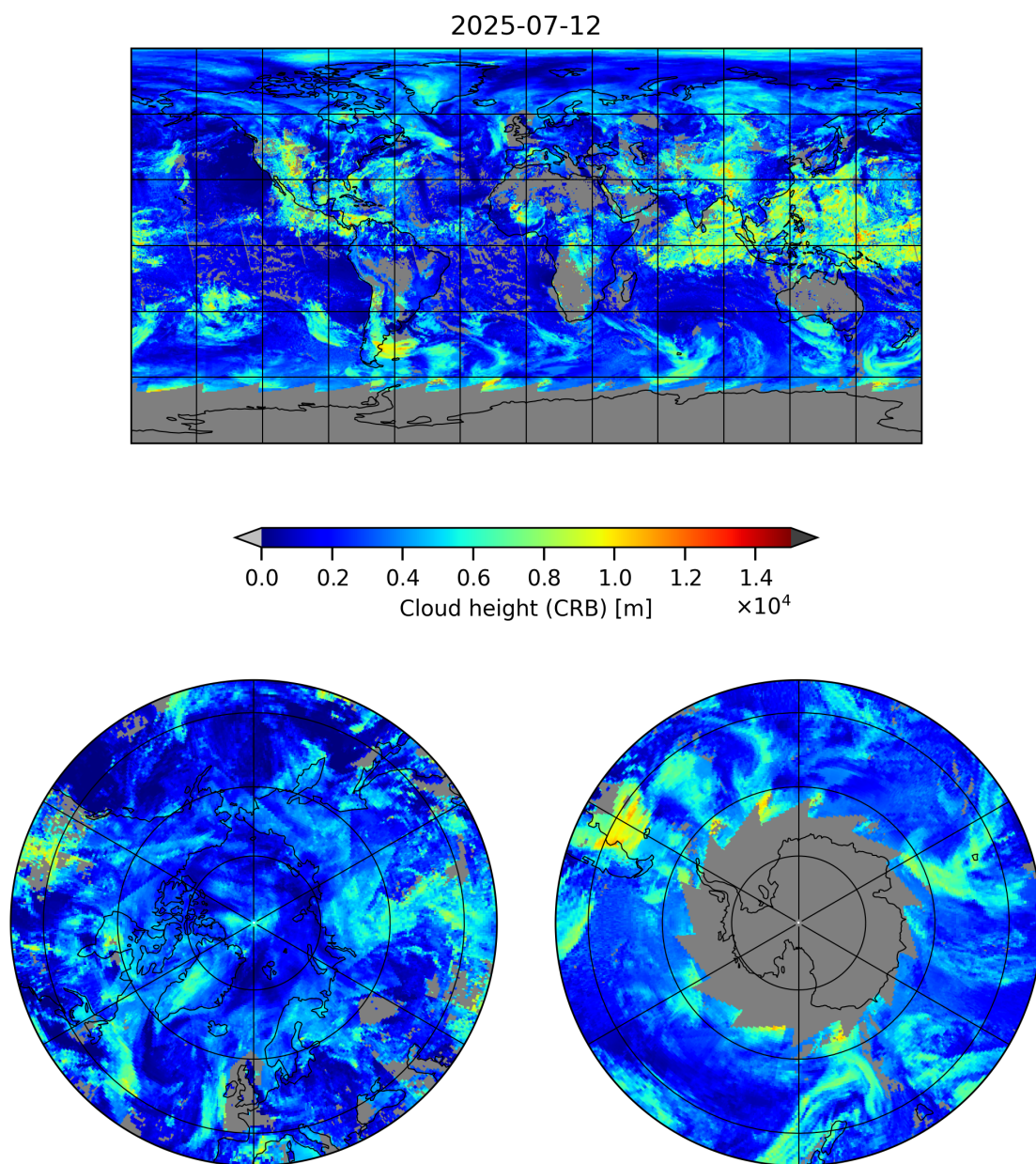


Figure 8: Map of “Cloud height (CRB)” for 2025-07-12 to 2025-07-13

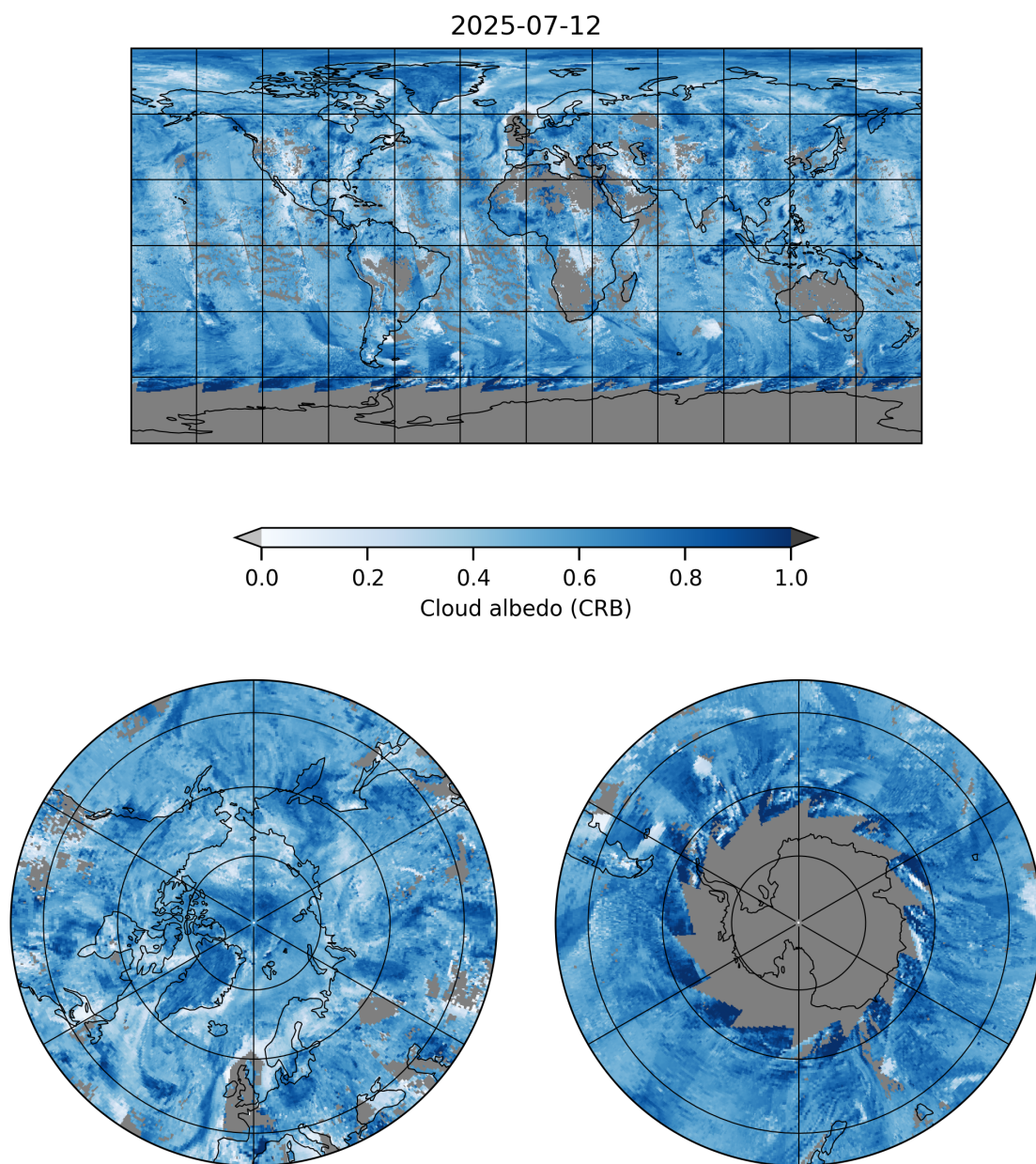


Figure 9: Map of “Cloud albedo (CRB)” for 2025-07-12 to 2025-07-13

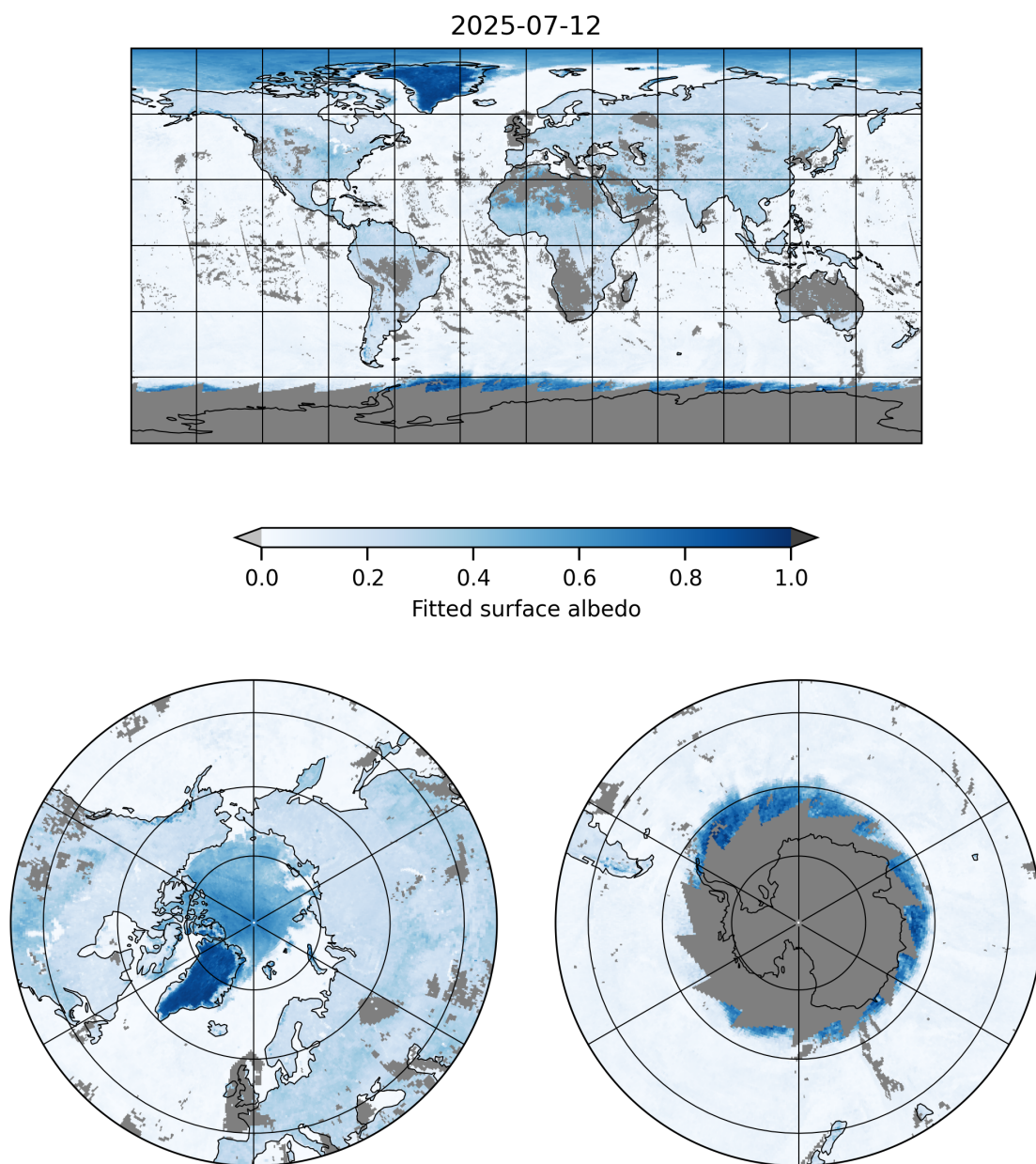


Figure 10: Map of “Fitted surface albedo” for 2025-07-12 to 2025-07-13

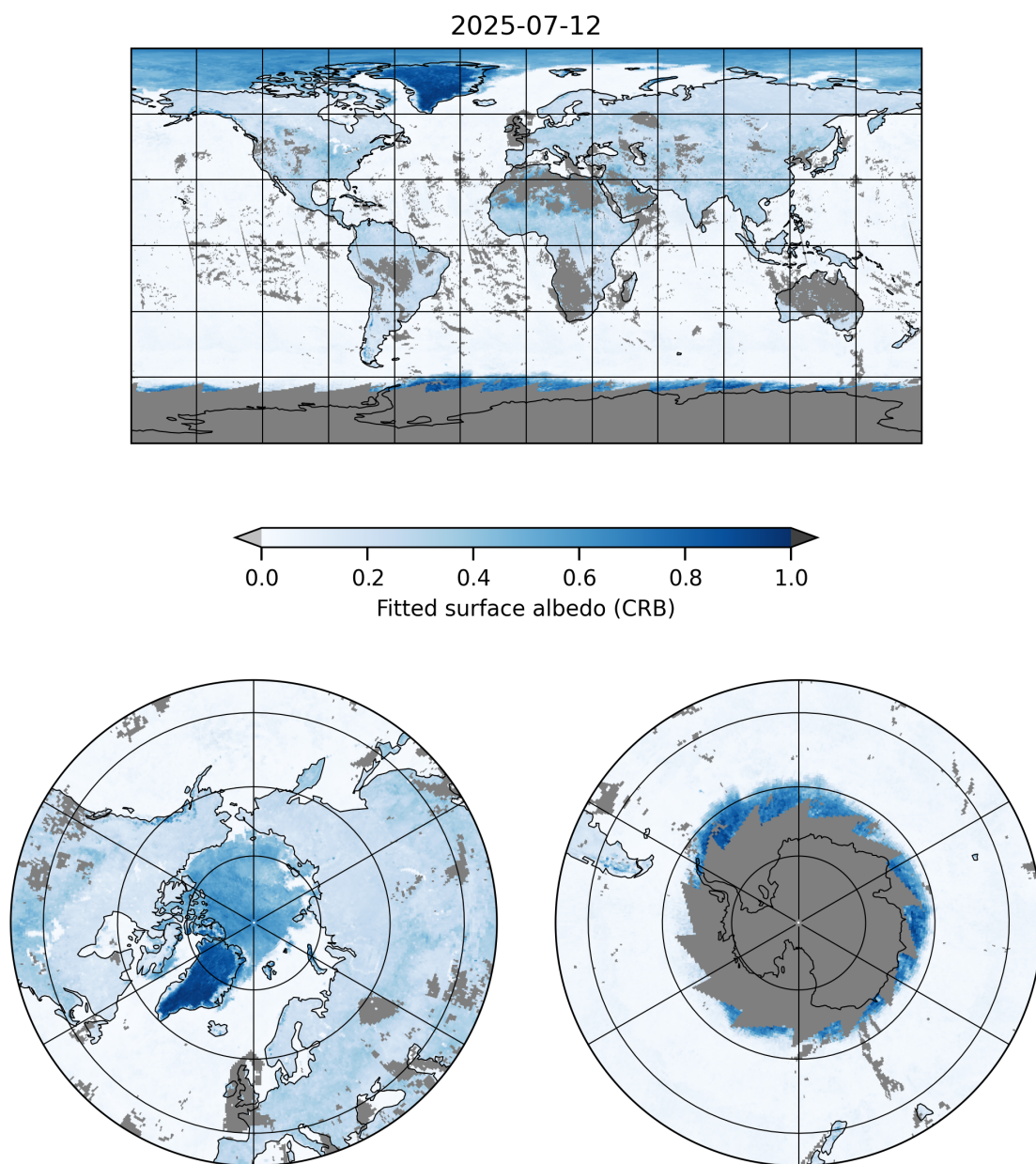


Figure 11: Map of “Fitted surface albedo (CRB)” for 2025-07-12 to 2025-07-13

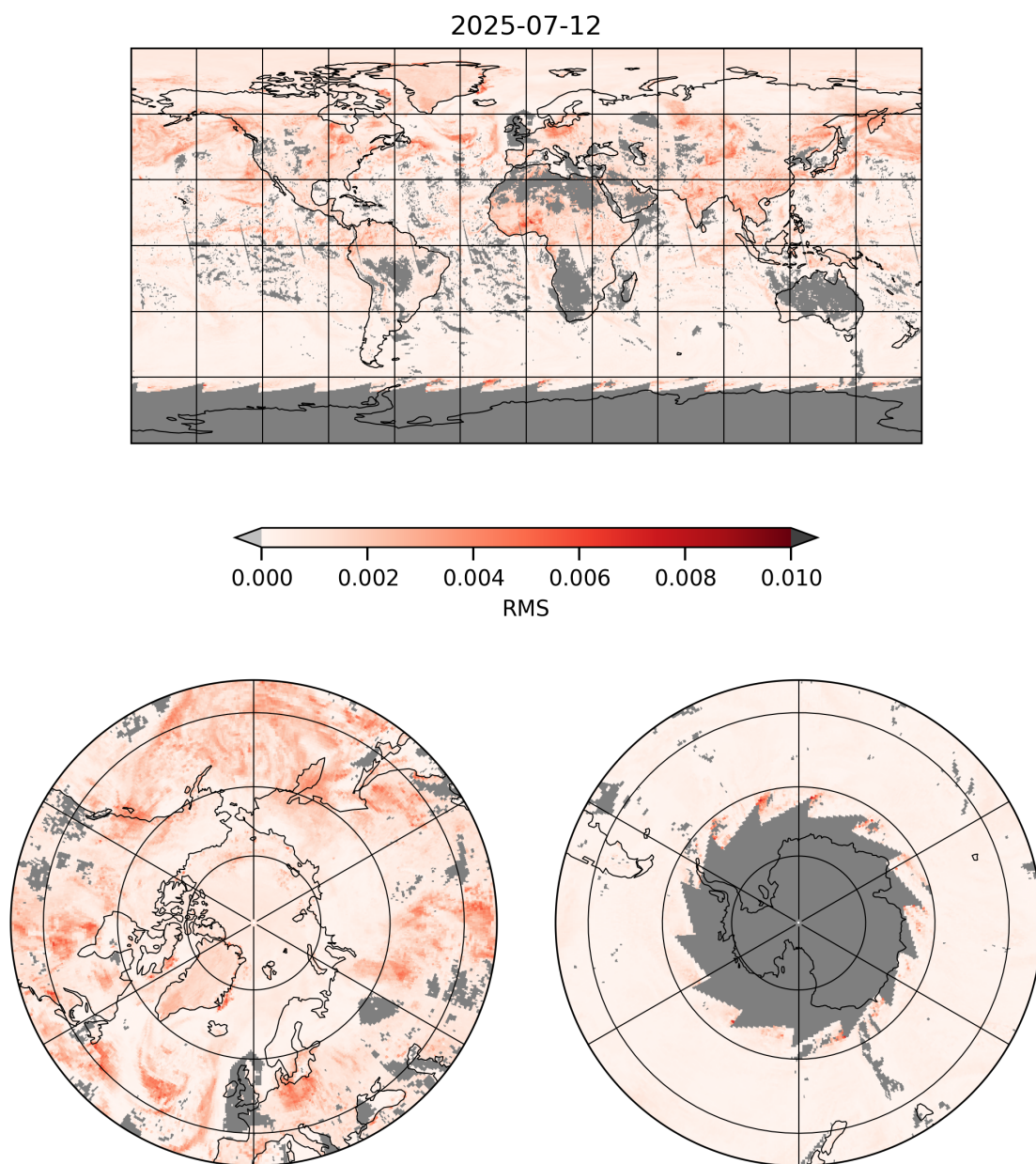


Figure 12: Map of “RMS” for 2025-07-12 to 2025-07-13

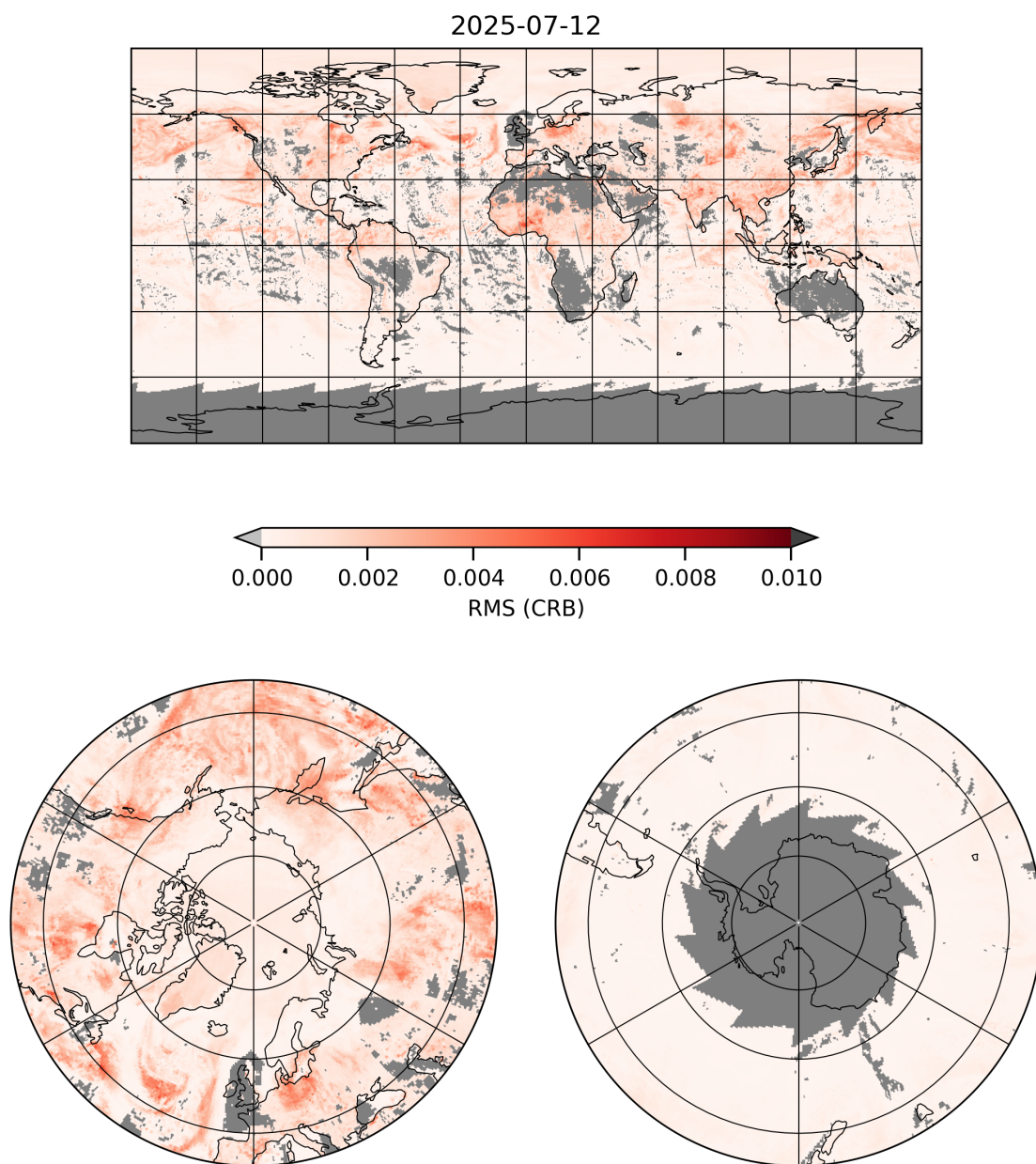


Figure 13: Map of “RMS (CRB)” for 2025-07-12 to 2025-07-13

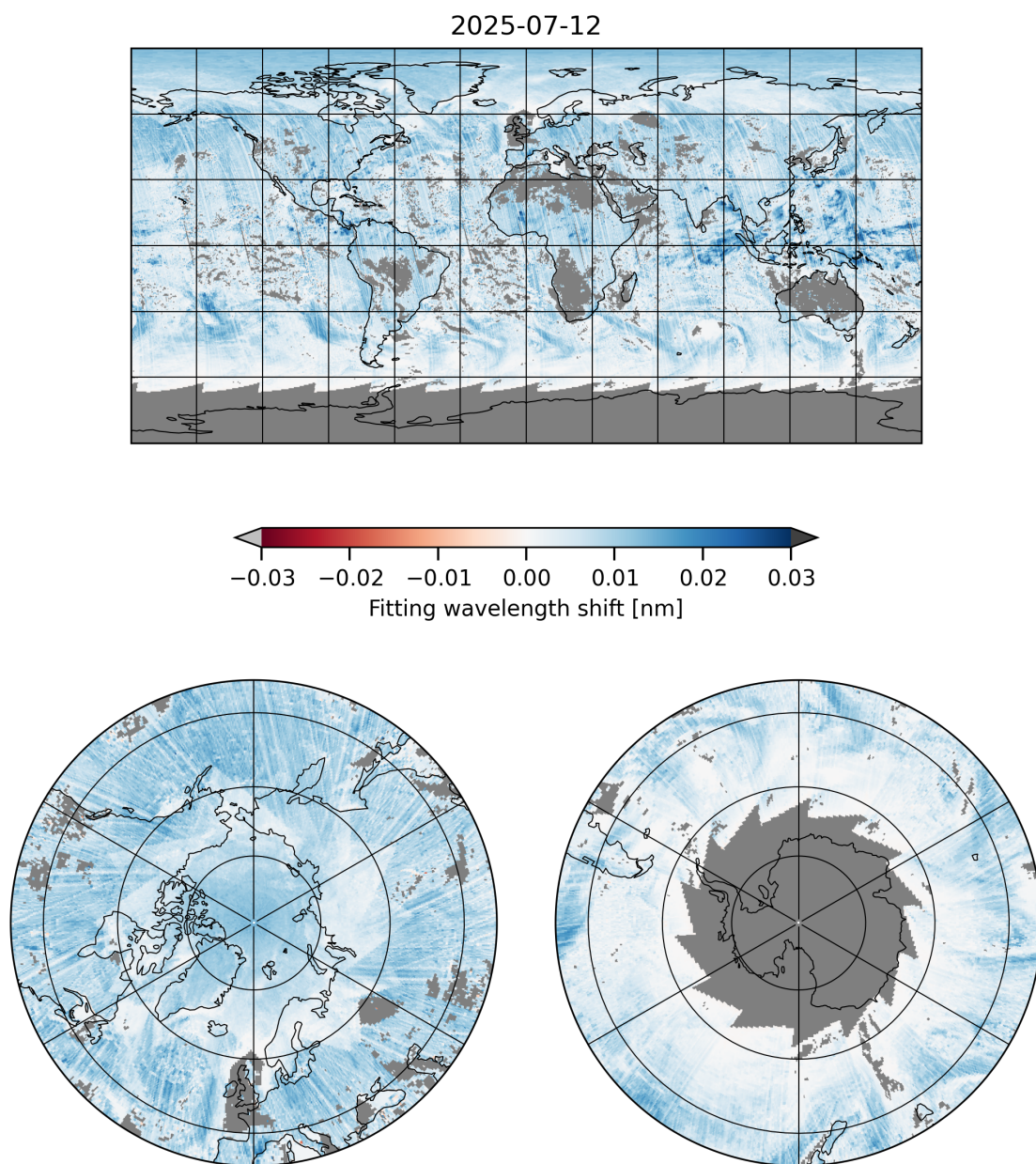


Figure 14: Map of "Fitting wavelength shift" for 2025-07-12 to 2025-07-13

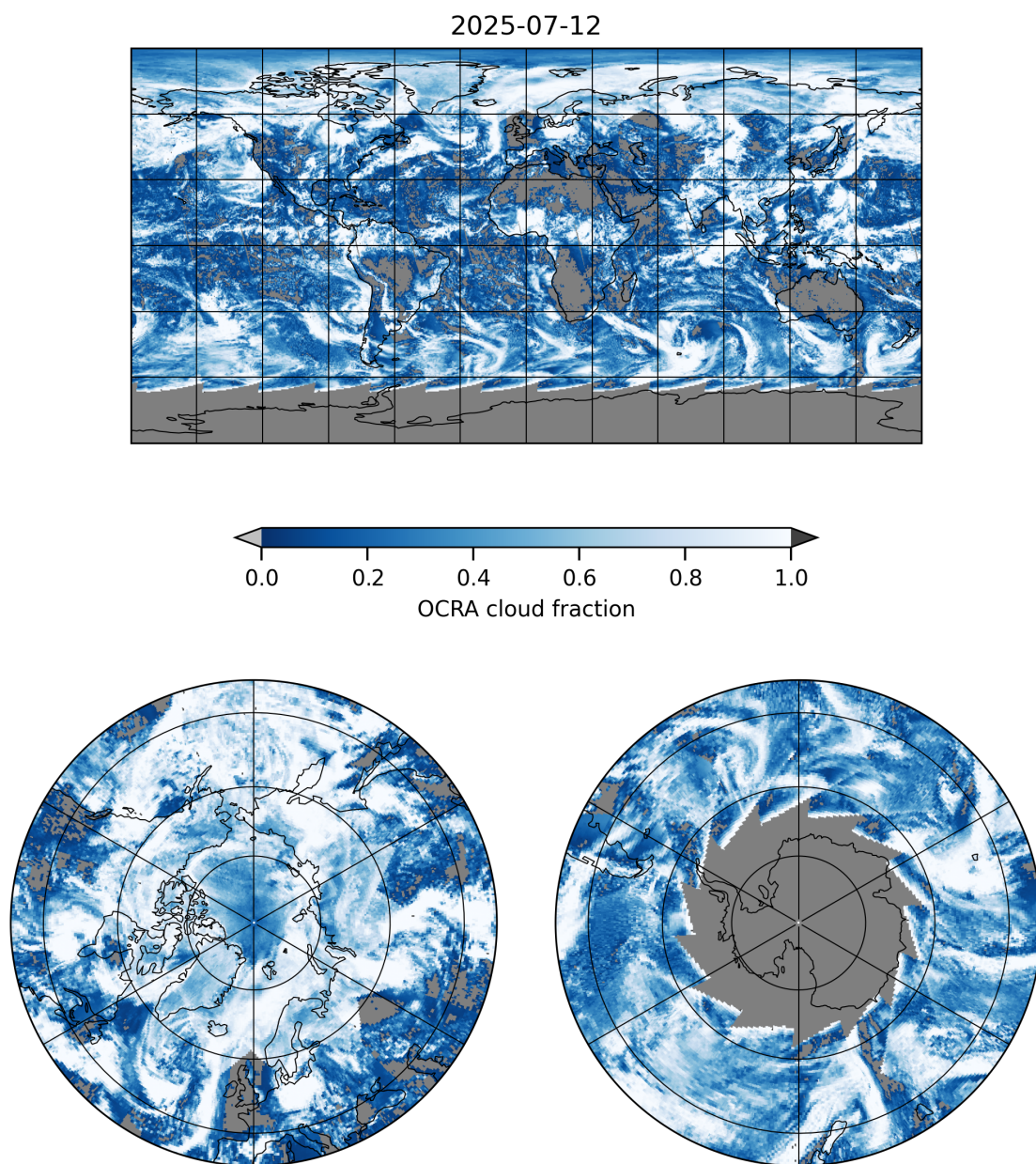


Figure 15: Map of “OCRA cloud fraction” for 2025-07-12 to 2025-07-13

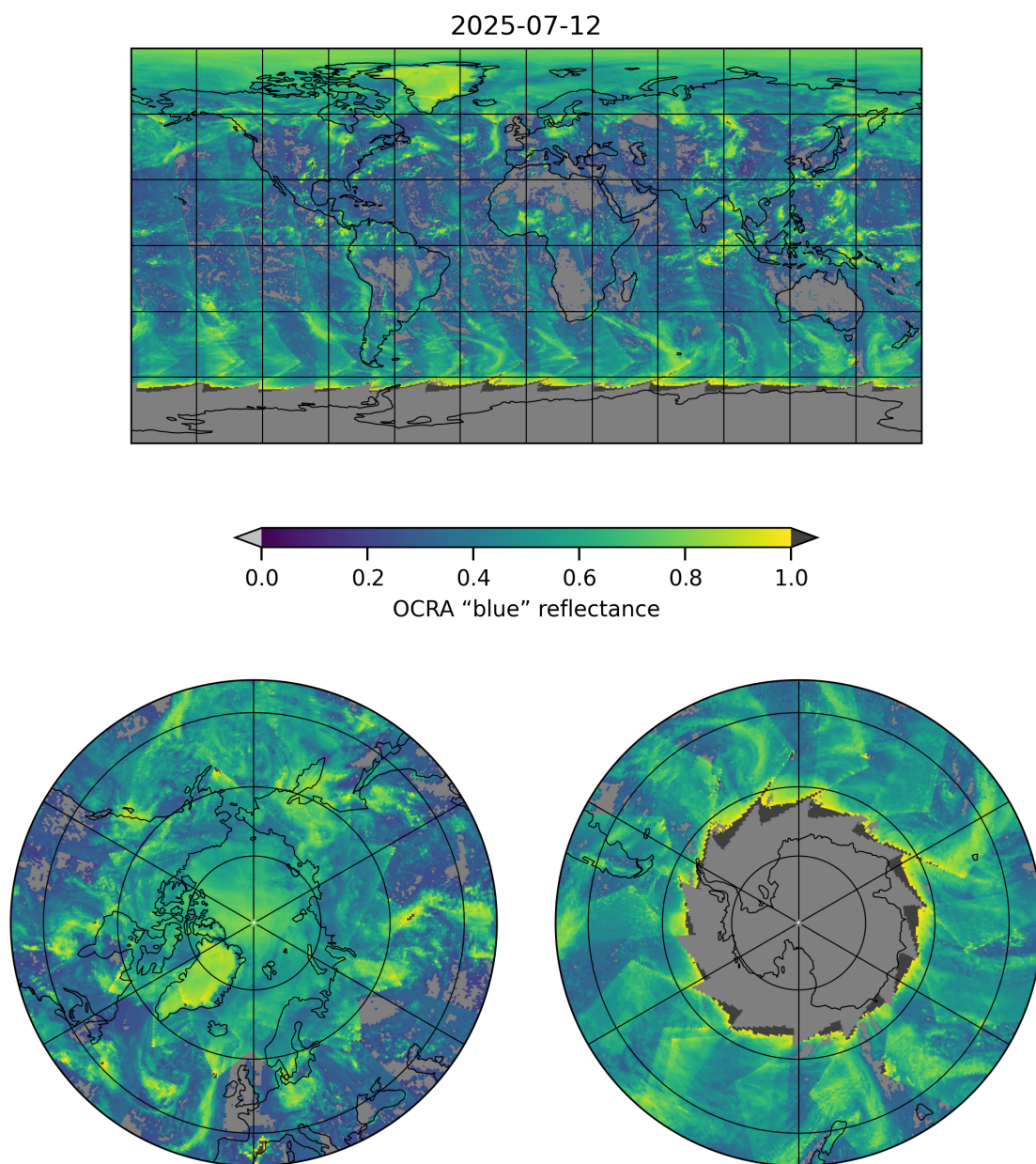


Figure 16: Map of "OCRA "blue" reflectance" for 2025-07-12 to 2025-07-13

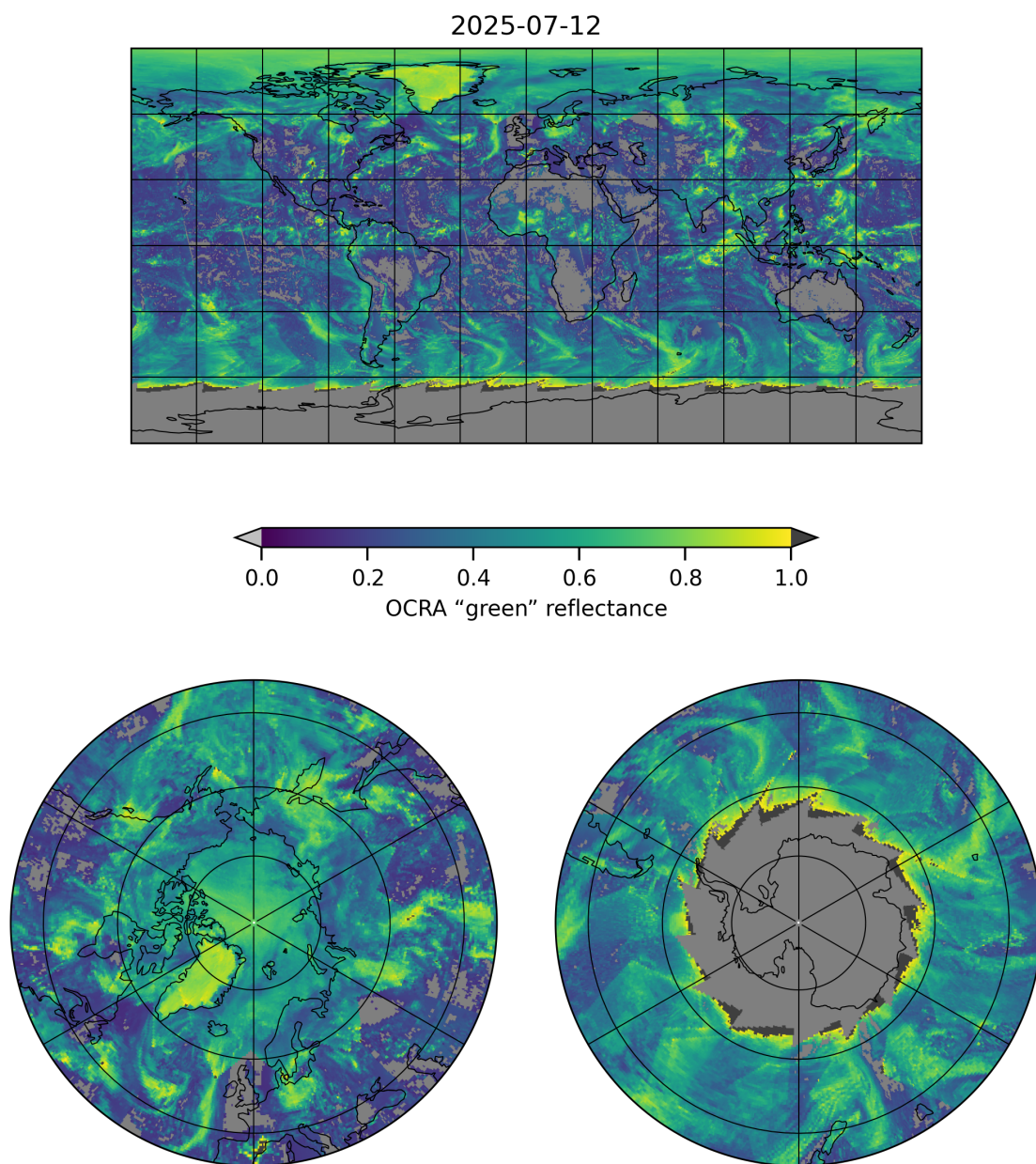


Figure 17: Map of "OCRA "green" reflectance" for 2025-07-12 to 2025-07-13

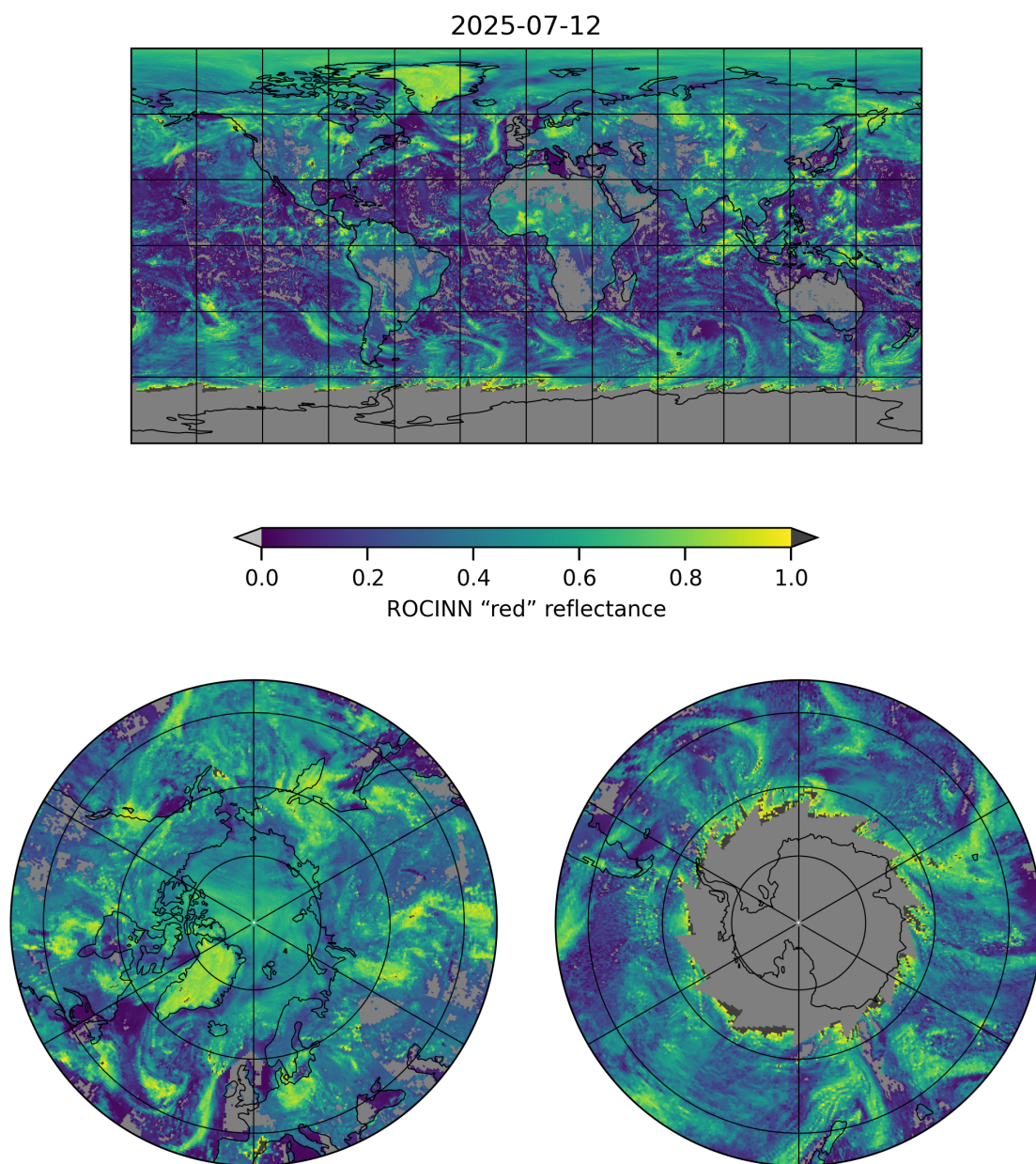


Figure 18: Map of "ROCINN "red" reflectance" for 2025-07-12 to 2025-07-13

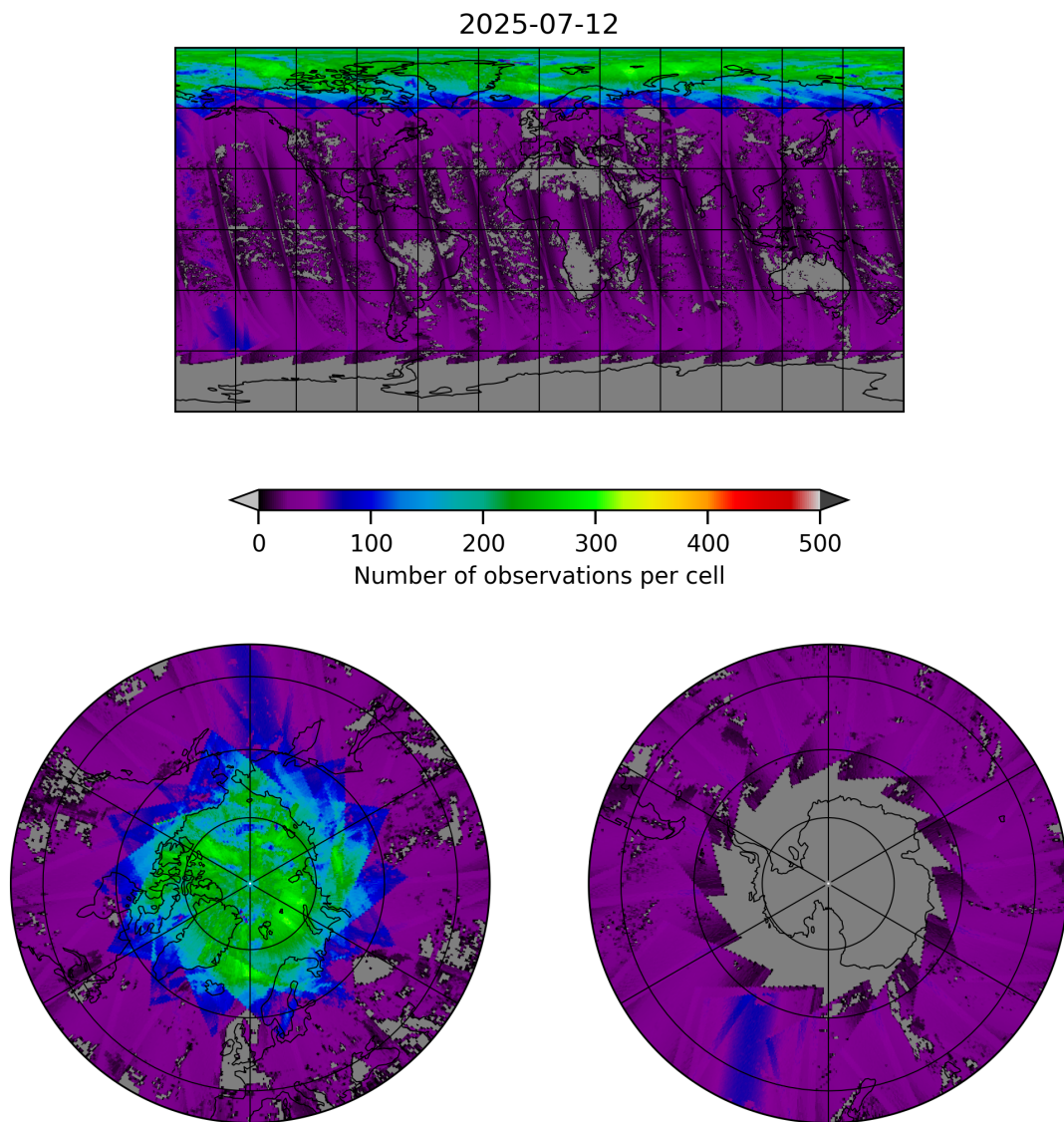


Figure 19: Map of the number of observations for 2025-07-12 to 2025-07-13

7 Zonal average

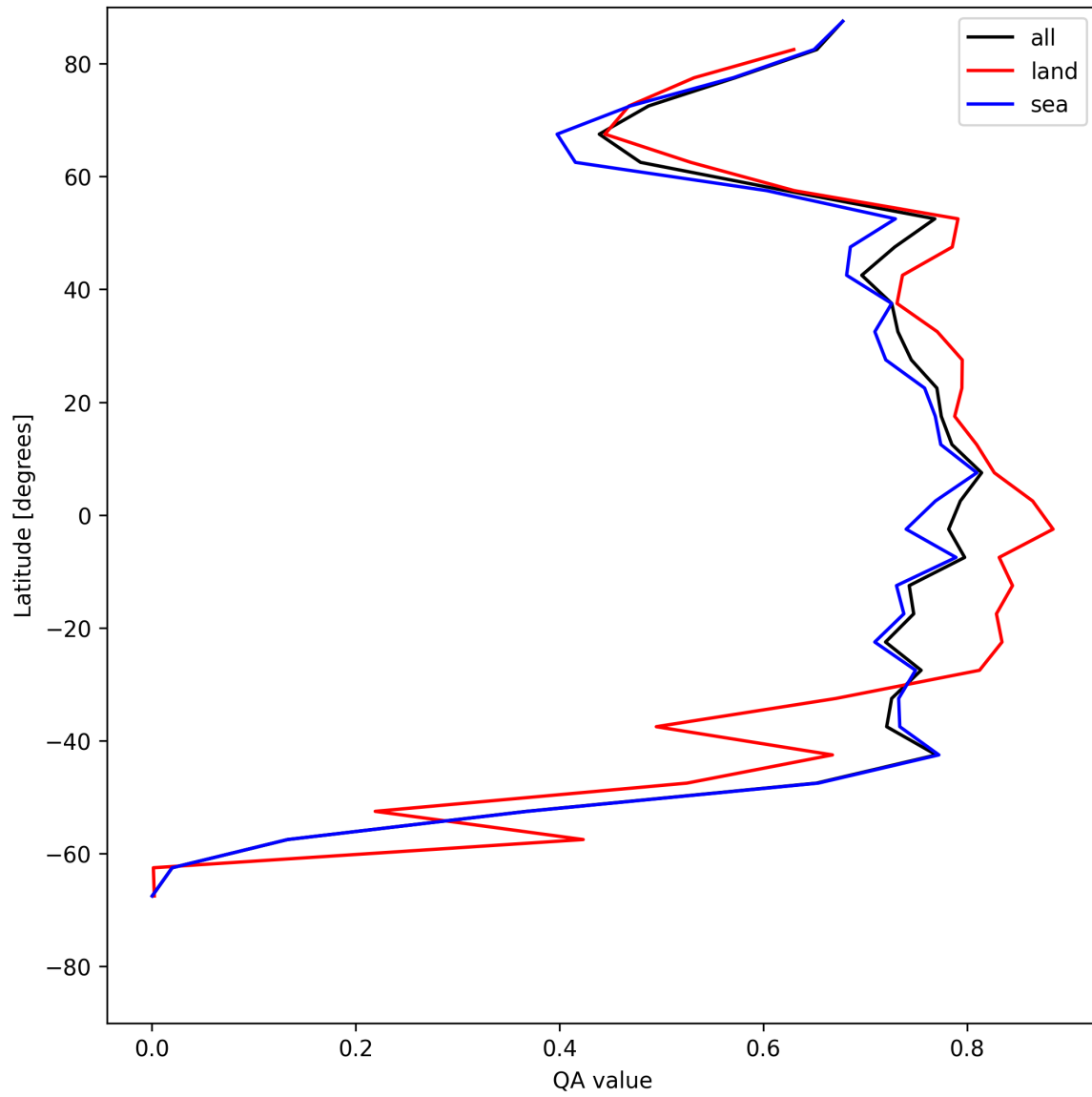


Figure 20: Zonal average of “QA value” for 2025-07-12 to 2025-07-13.

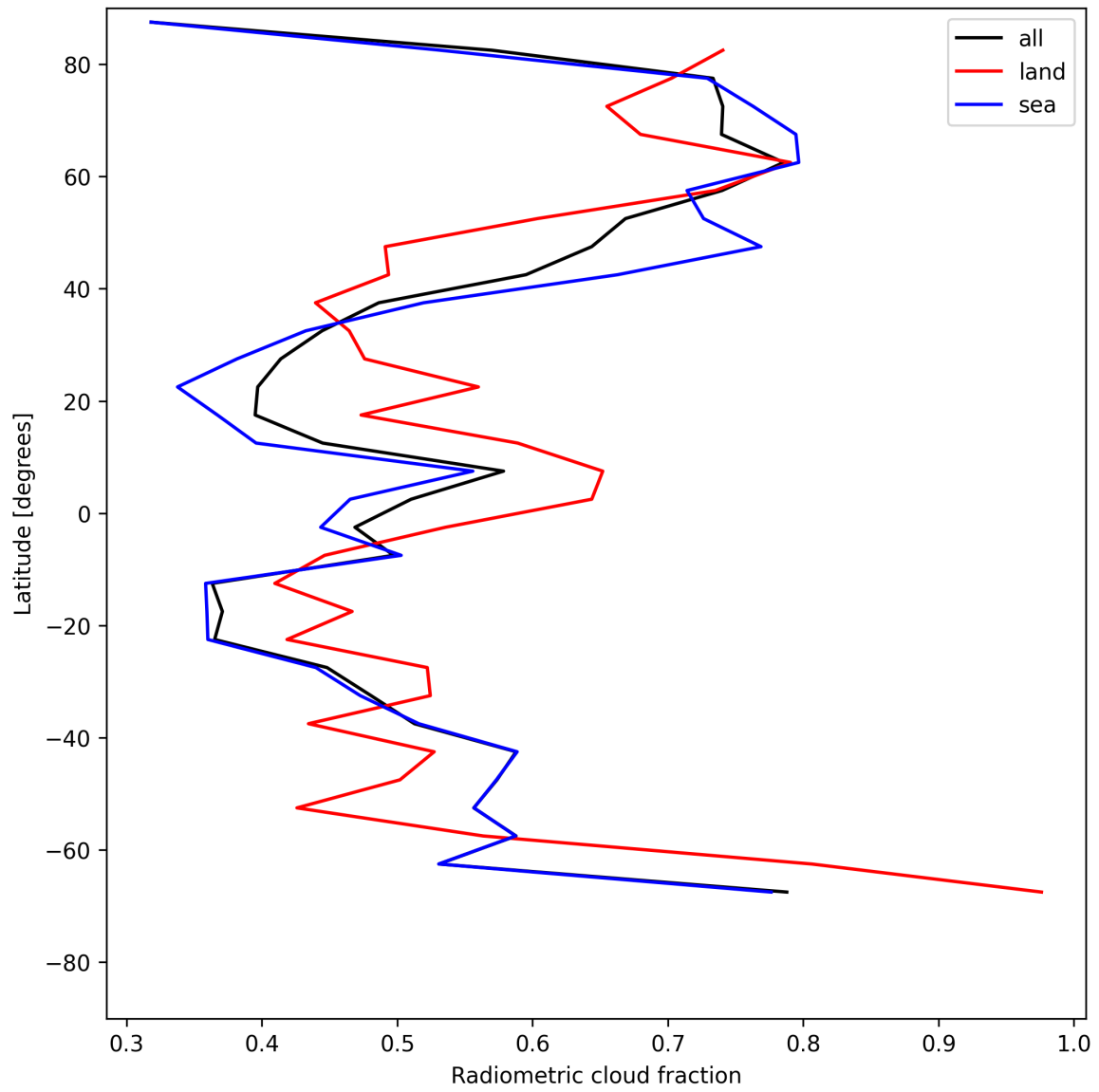


Figure 21: Zonal average of “Radiometric cloud fraction” for 2025-07-12 to 2025-07-13.

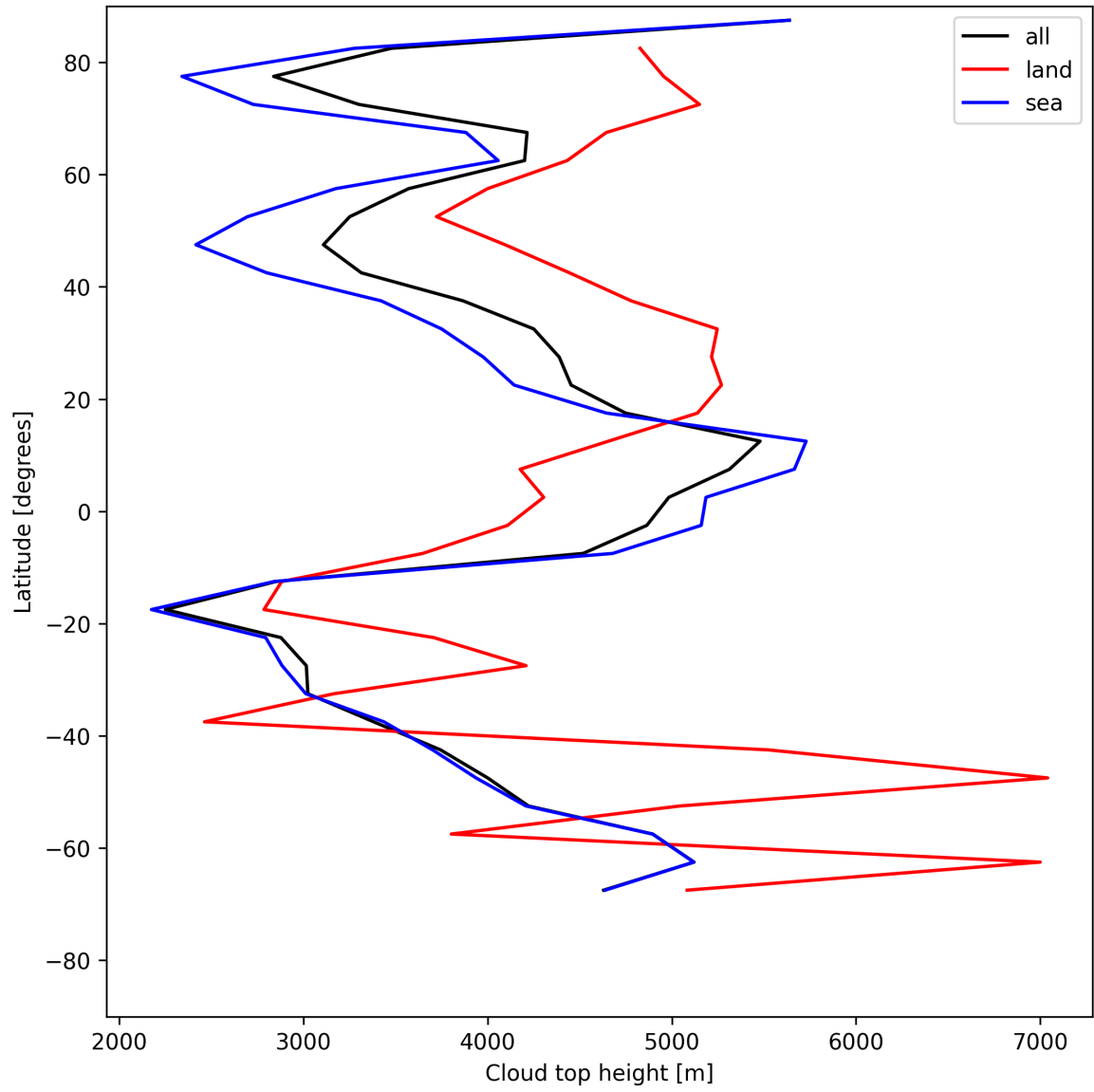


Figure 22: Zonal average of “Cloud top height” for 2025-07-12 to 2025-07-13.

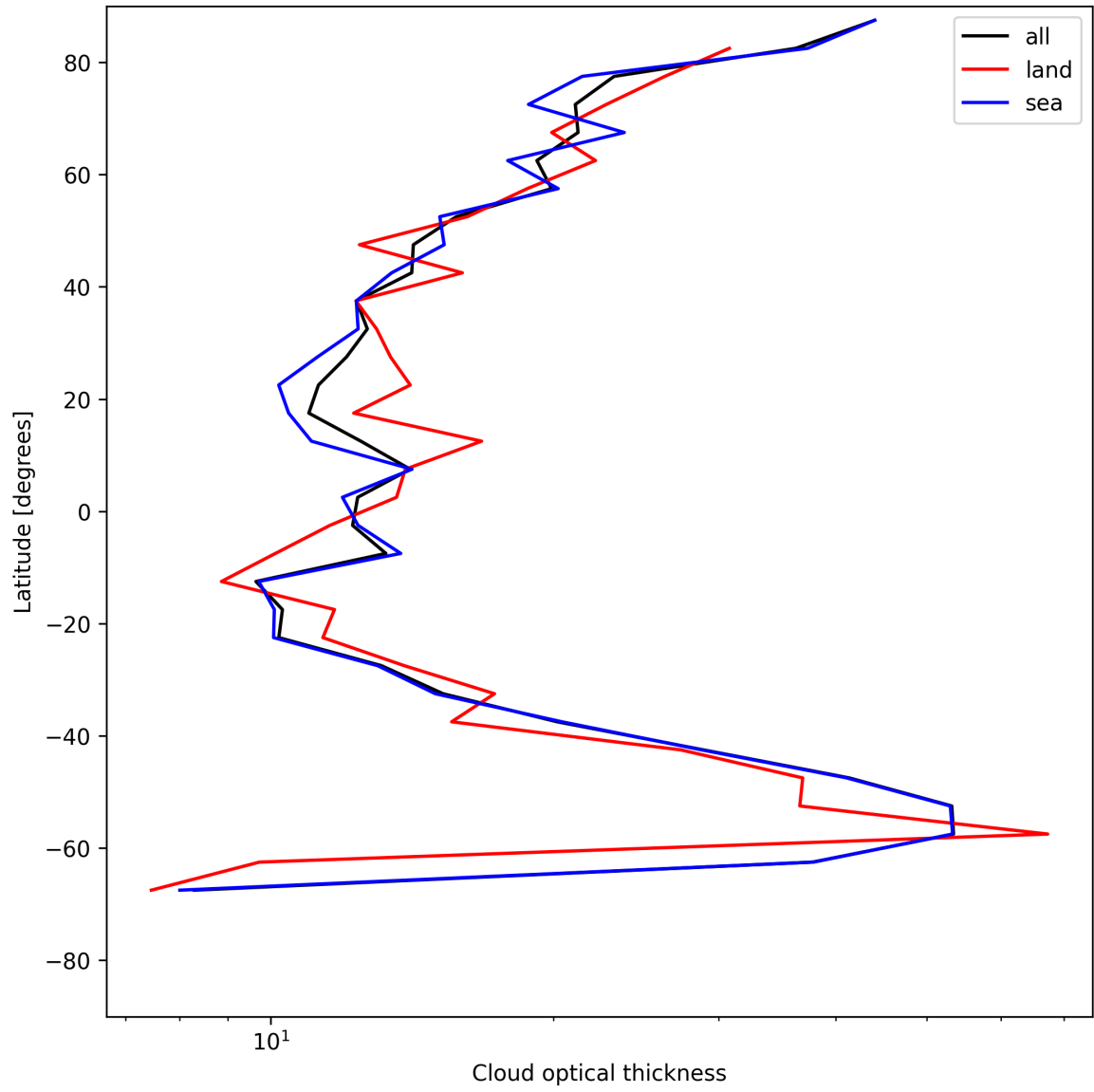


Figure 23: Zonal average of “Cloud optical thickness” for 2025-07-12 to 2025-07-13.

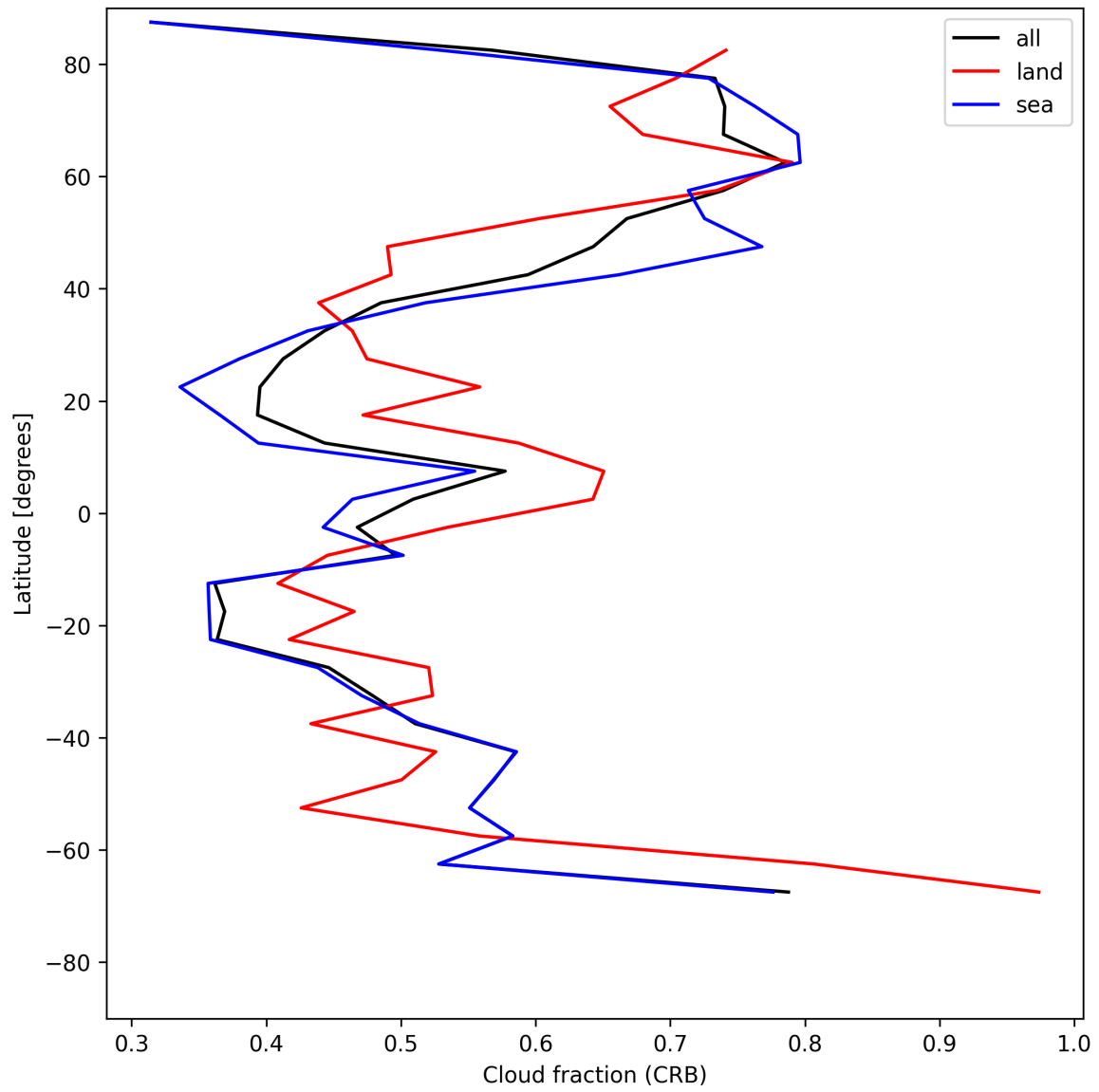


Figure 24: Zonal average of “Cloud fraction (CRB)” for 2025-07-12 to 2025-07-13.

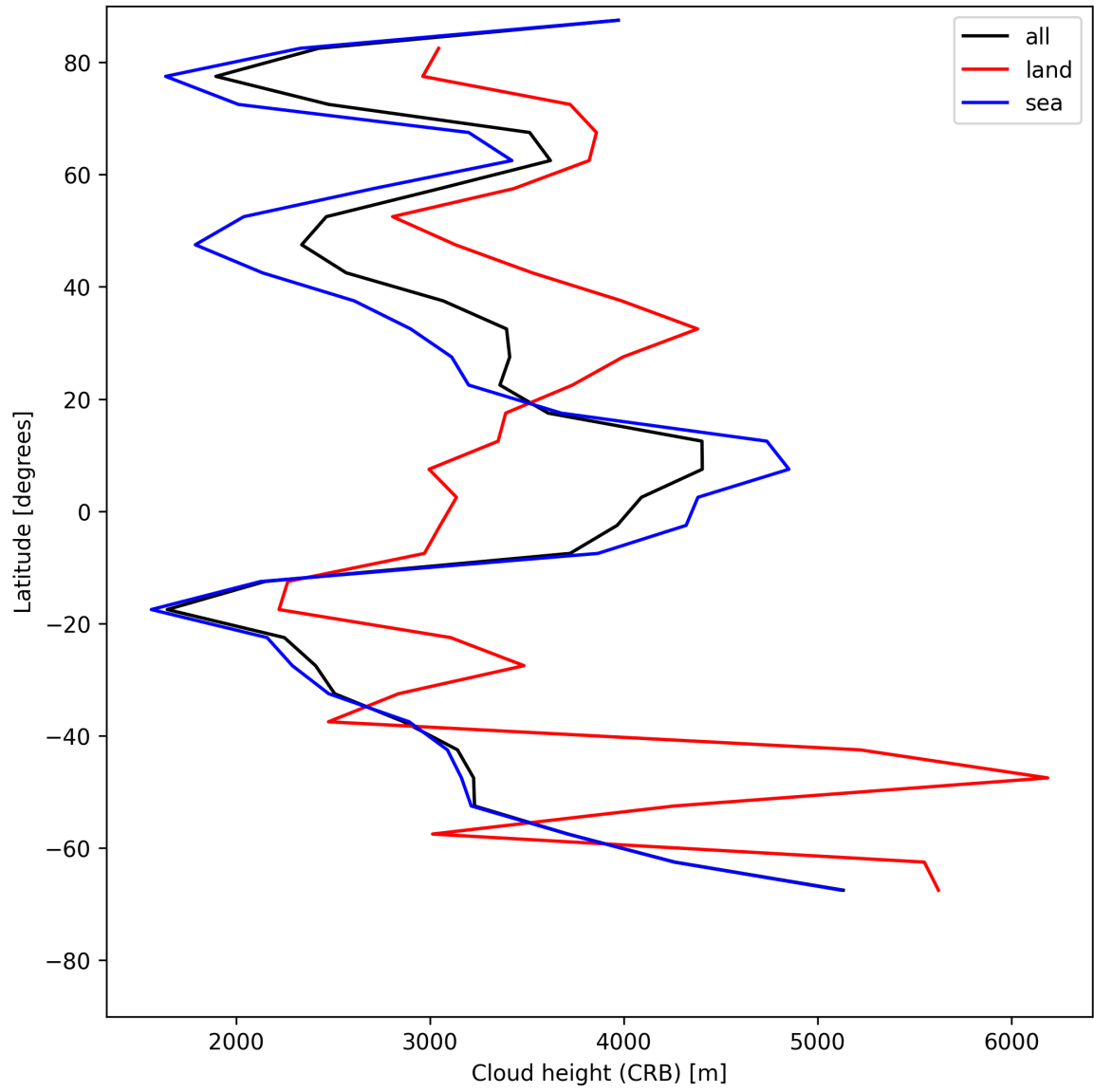


Figure 25: Zonal average of “Cloud height (CRB)” for 2025-07-12 to 2025-07-13.

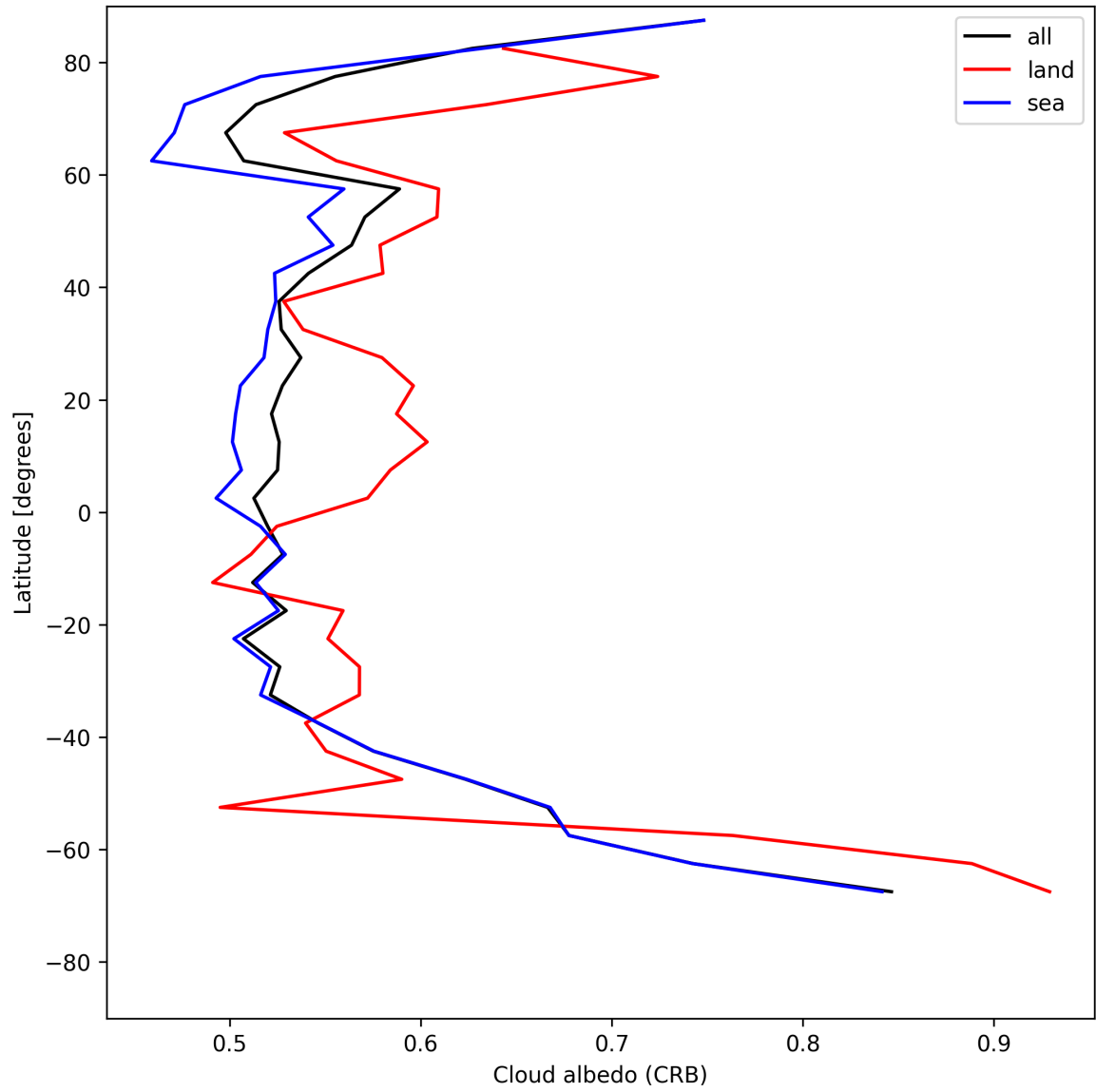


Figure 26: Zonal average of “Cloud albedo (CRB)” for 2025-07-12 to 2025-07-13.

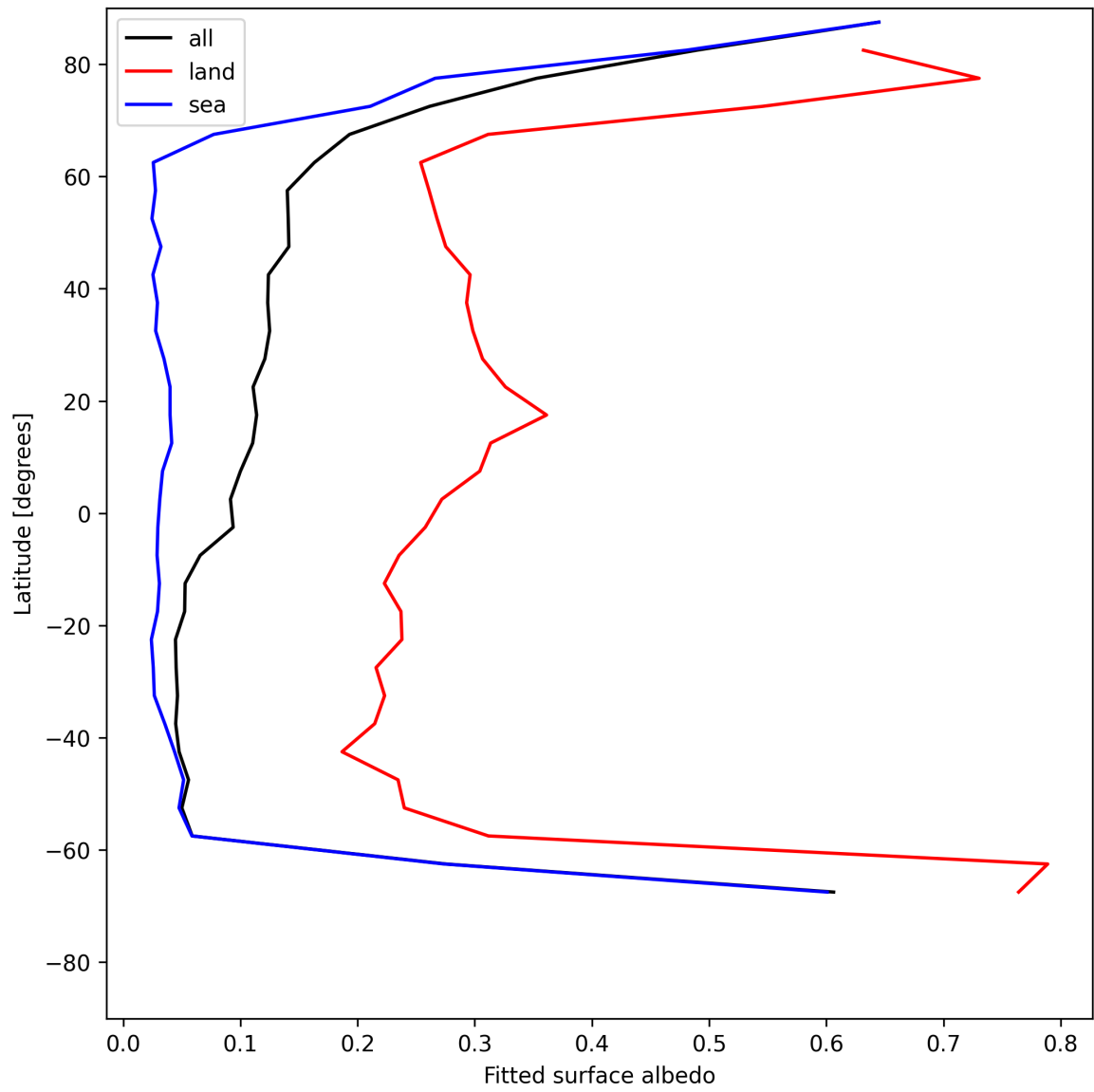


Figure 27: Zonal average of “Fitted surface albedo” for 2025-07-12 to 2025-07-13.

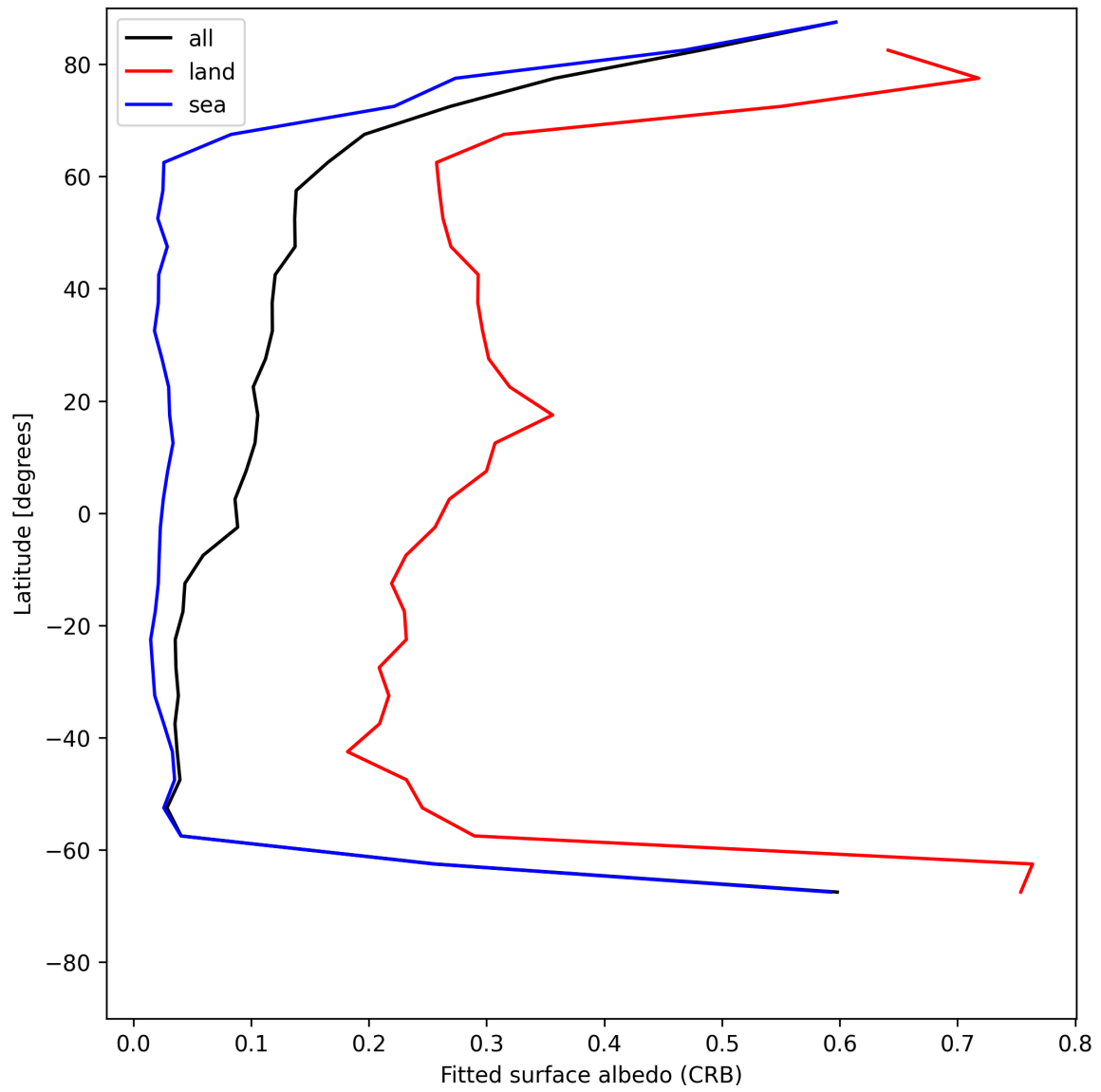


Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2025-07-12 to 2025-07-13.

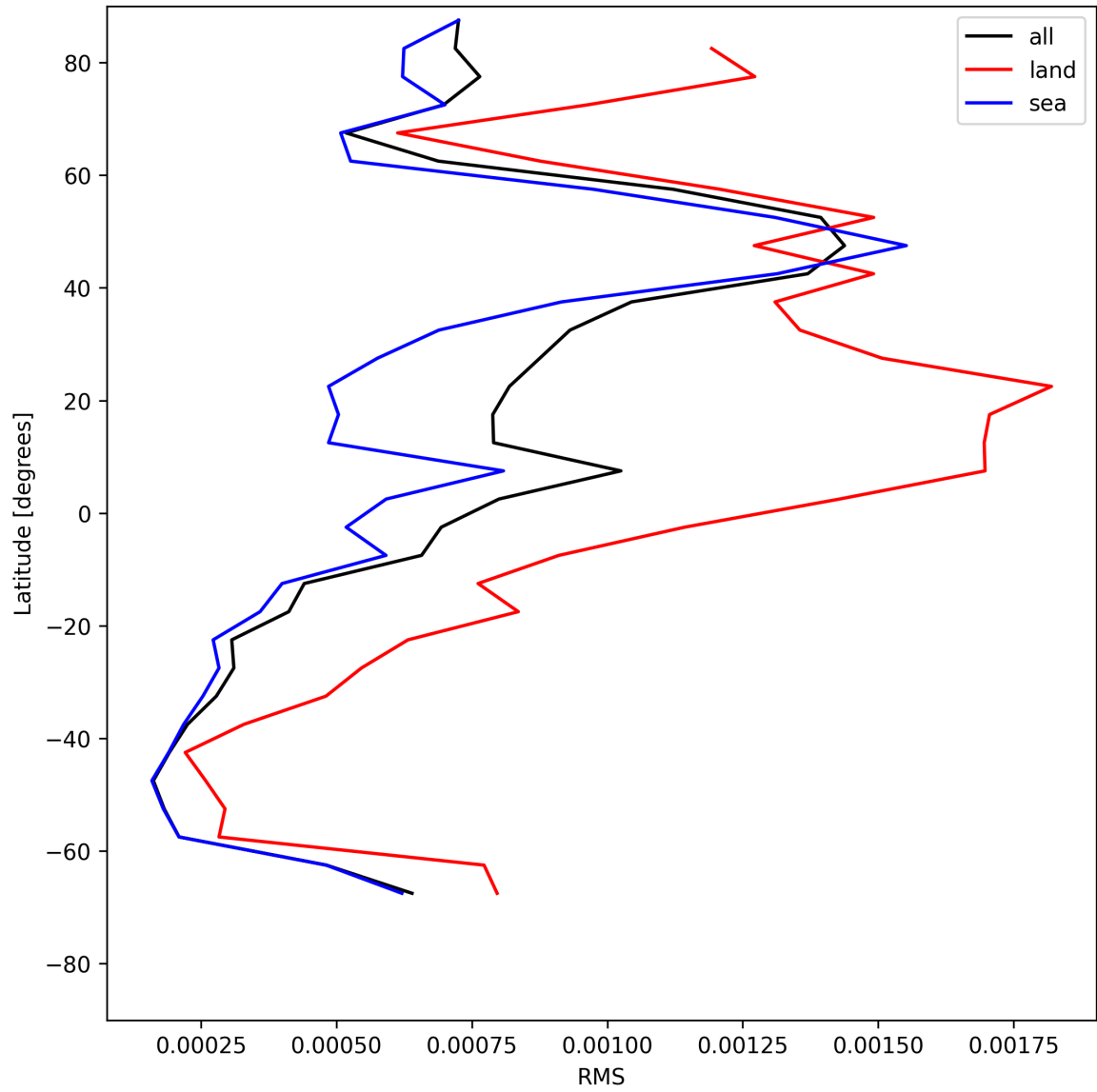


Figure 29: Zonal average of “RMS” for 2025-07-12 to 2025-07-13.

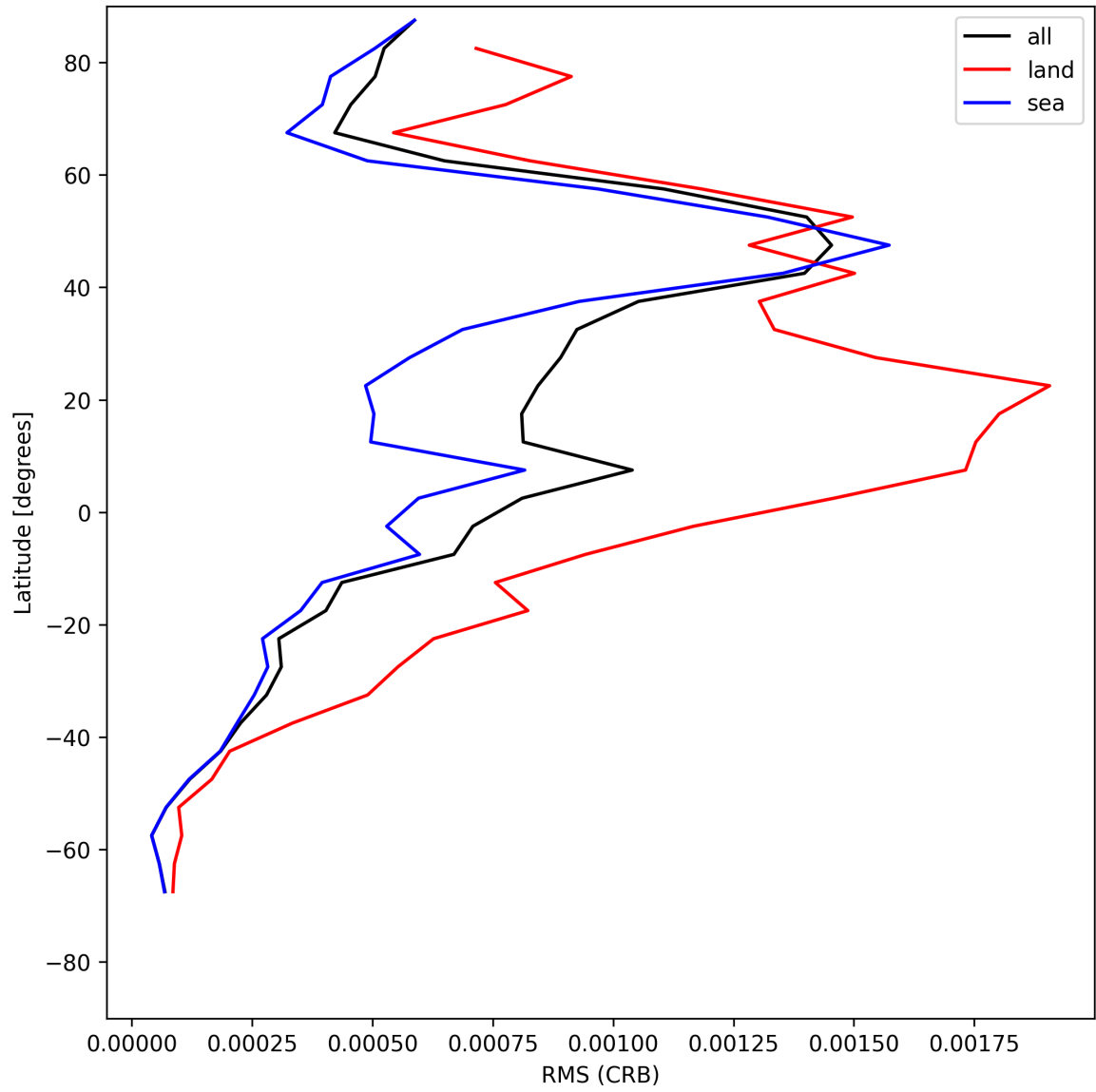


Figure 30: Zonal average of “RMS (CRB)” for 2025-07-12 to 2025-07-13.

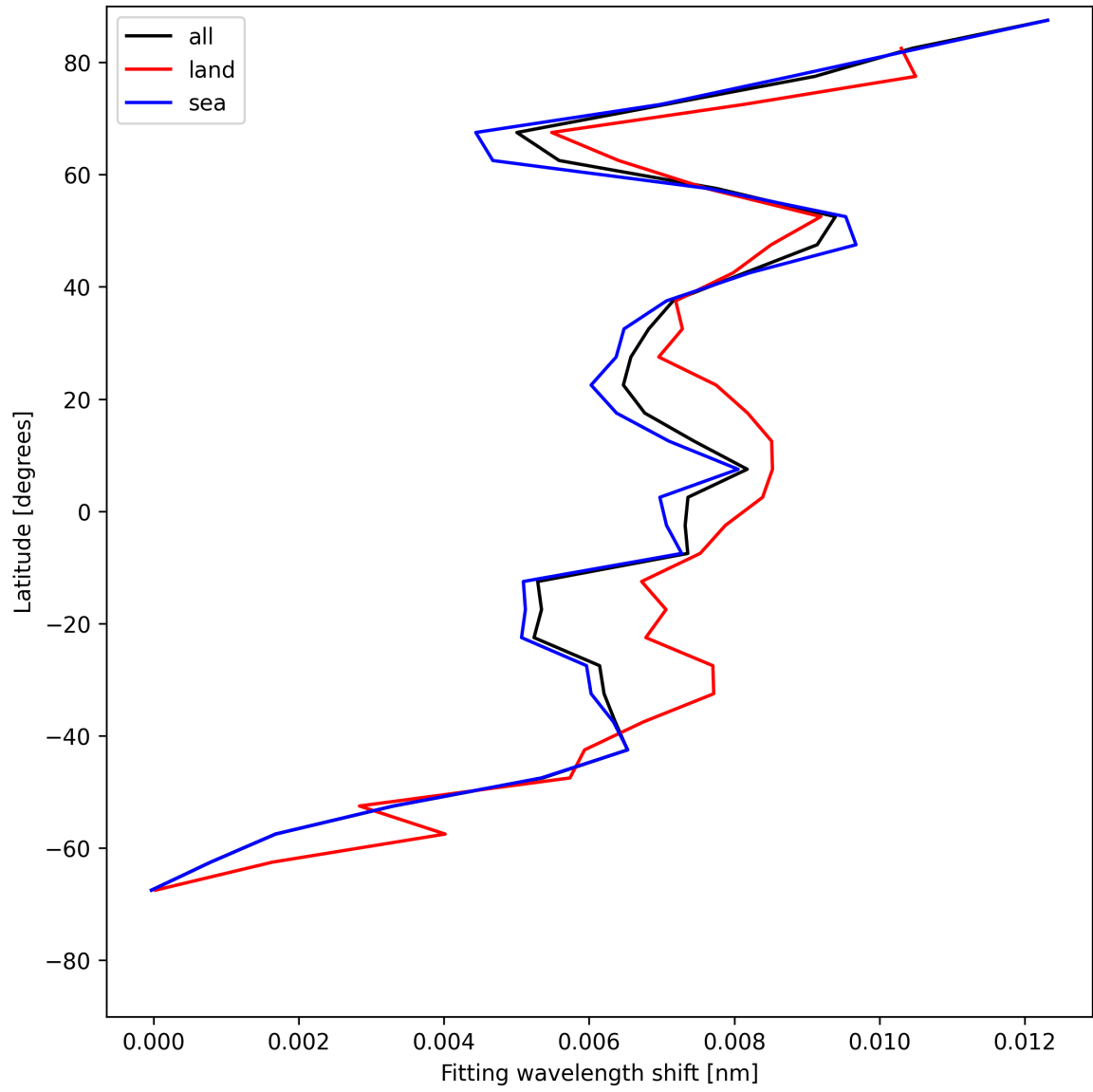


Figure 31: Zonal average of “Fitting wavelength shift” for 2025-07-12 to 2025-07-13.

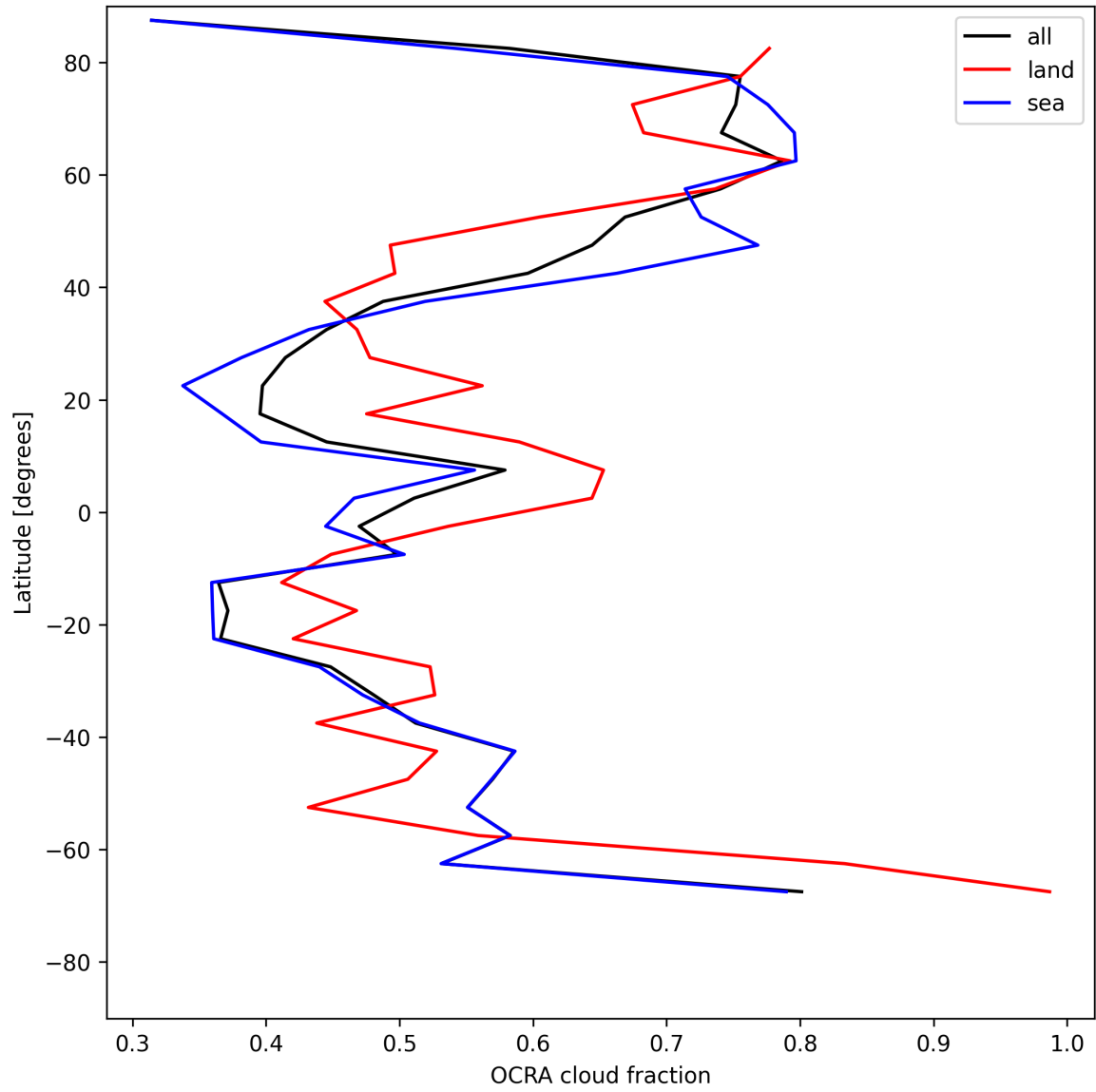


Figure 32: Zonal average of “OCRA cloud fraction” for 2025-07-12 to 2025-07-13.

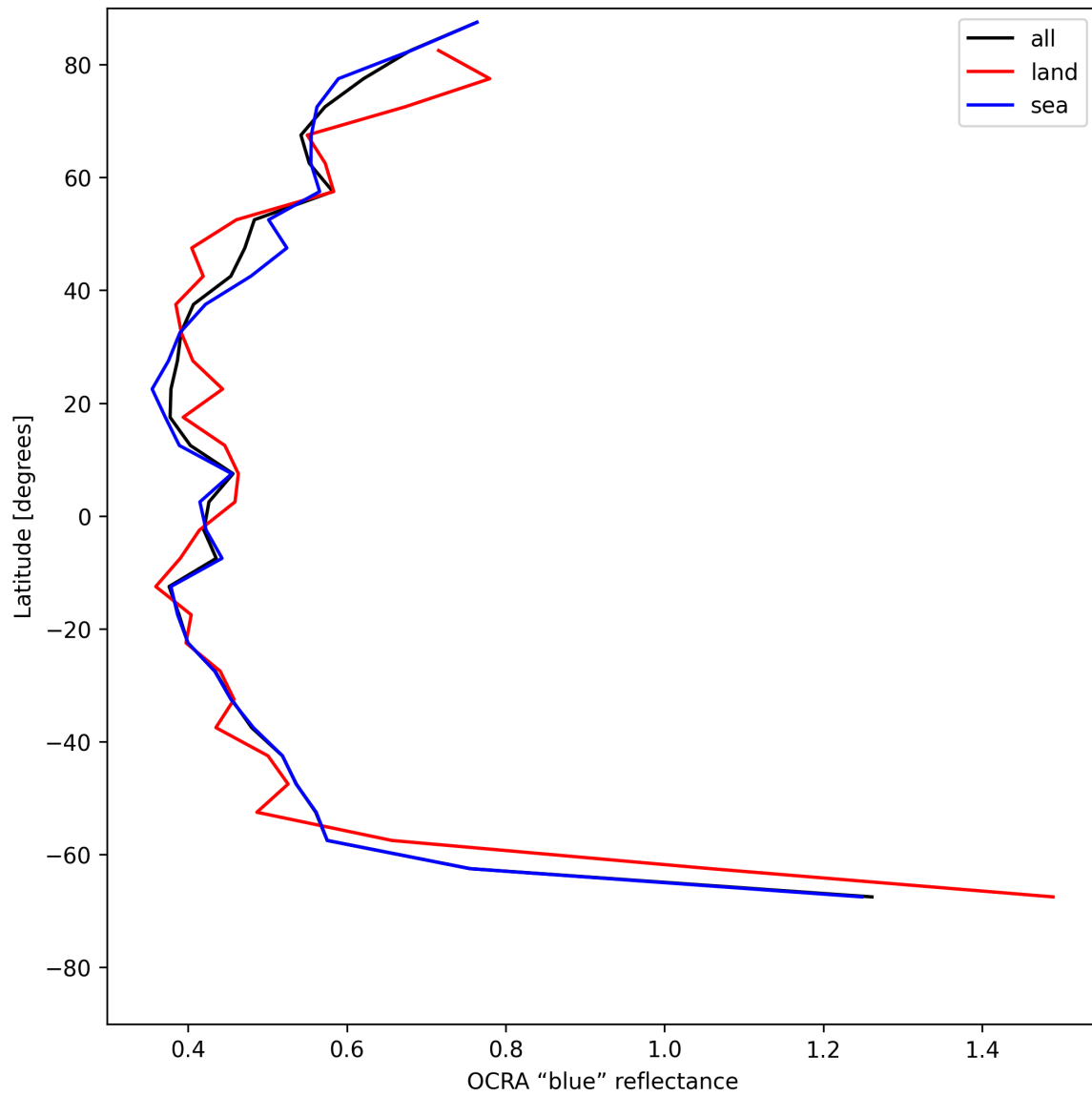


Figure 33: Zonal average of “OCRA “blue” reflectance” for 2025-07-12 to 2025-07-13.

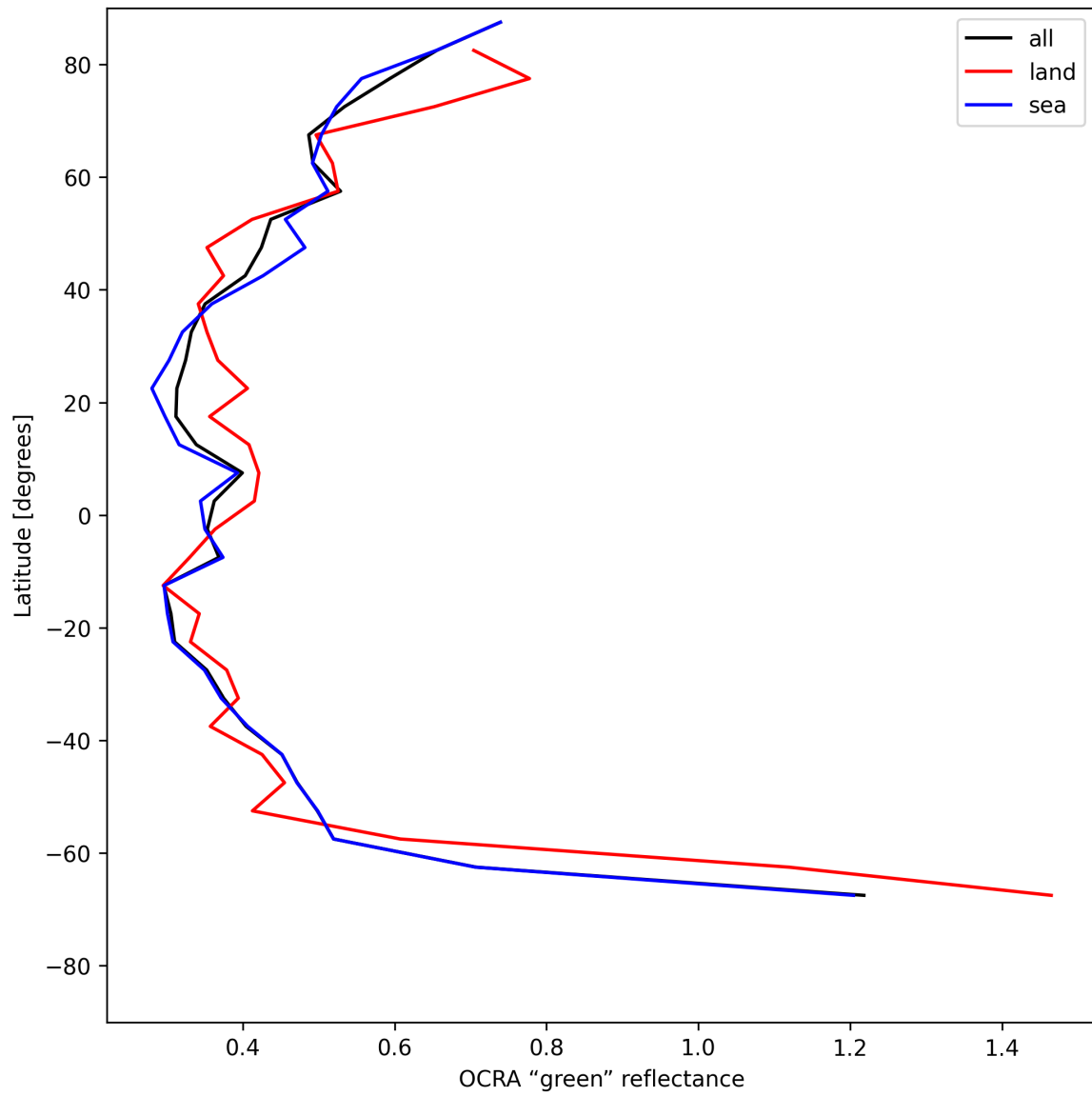


Figure 34: Zonal average of “OCRA “green” reflectance” for 2025-07-12 to 2025-07-13.

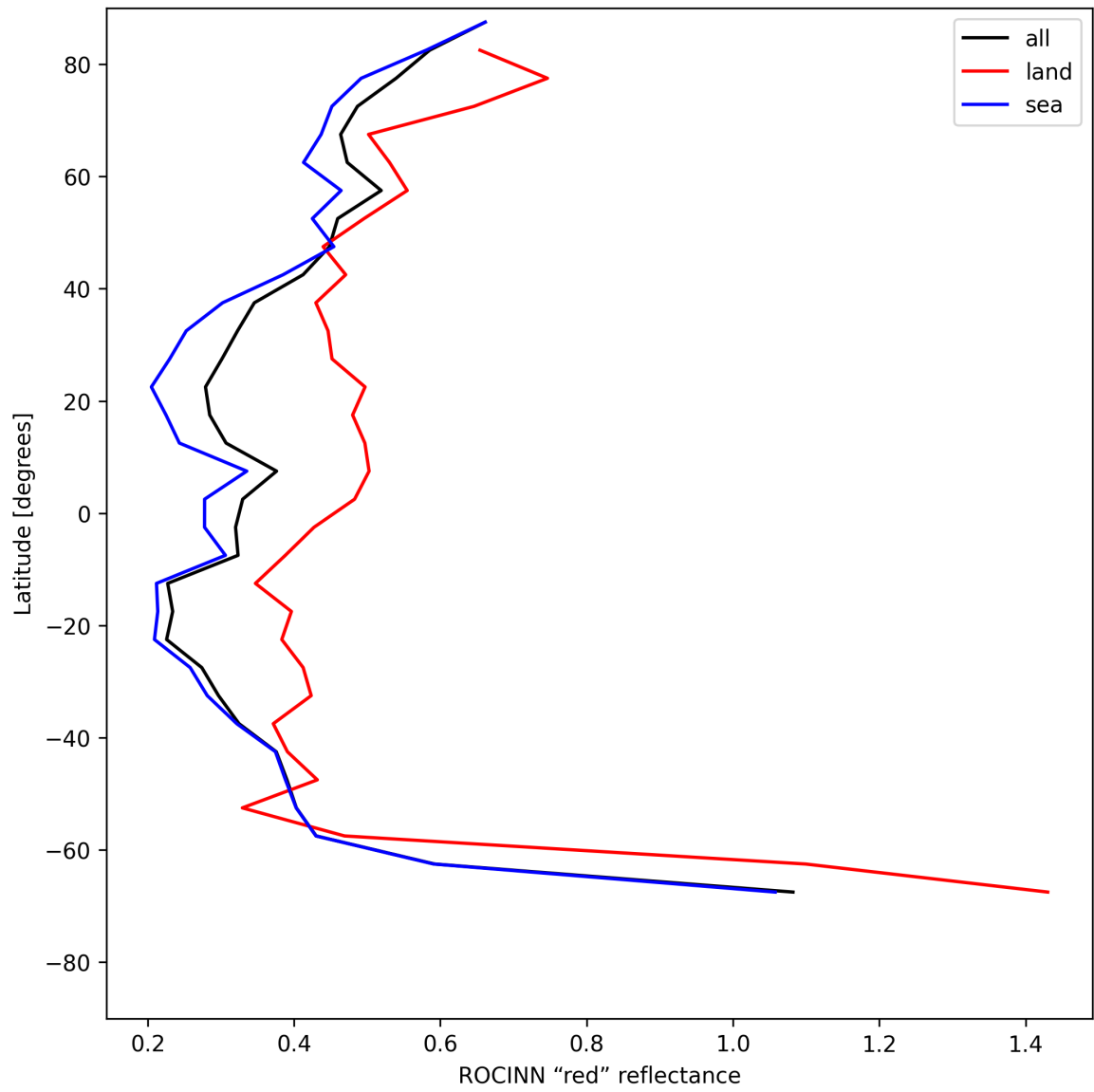


Figure 35: Zonal average of “ROCINN “red” reflectance” for 2025-07-12 to 2025-07-13.

8 Histograms

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

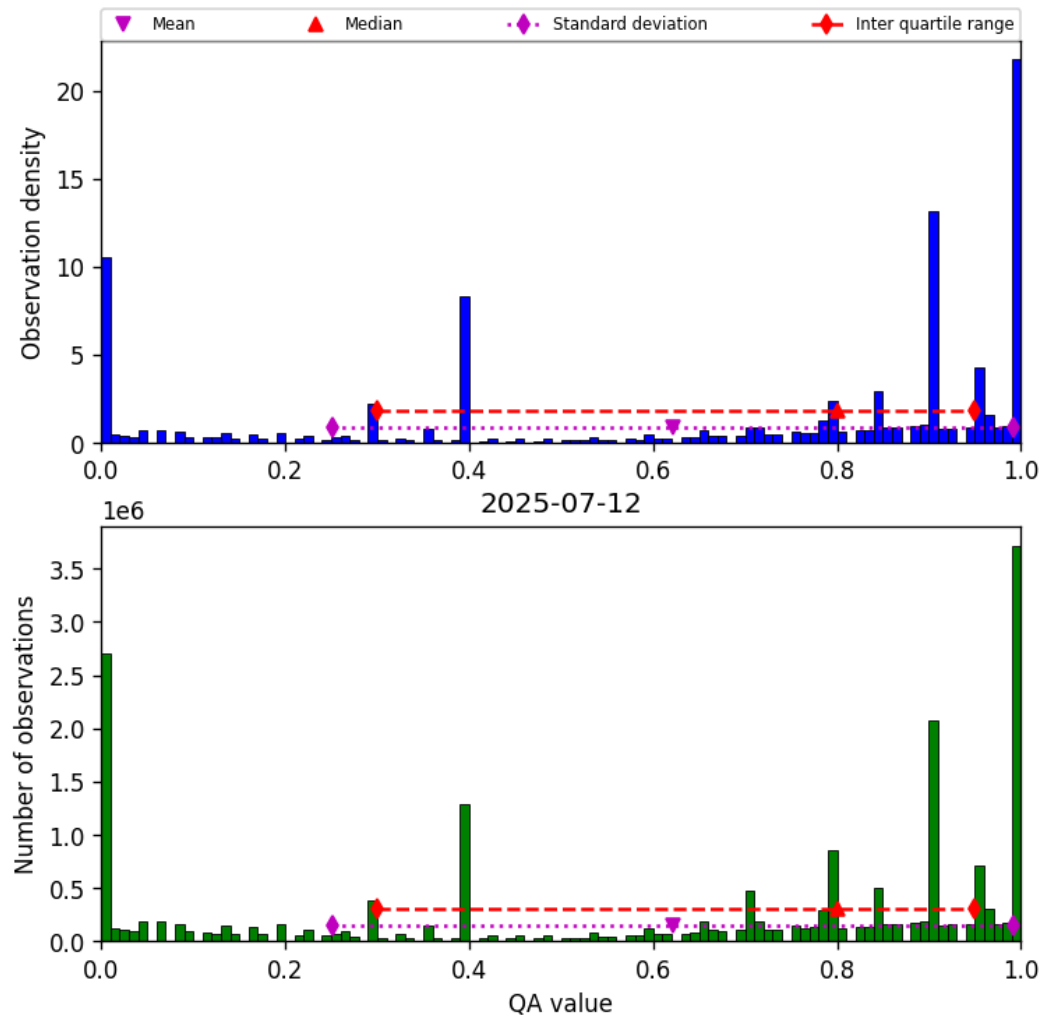


Figure 36: Histogram of “QA value” for 2025-07-12 to 2025-07-13

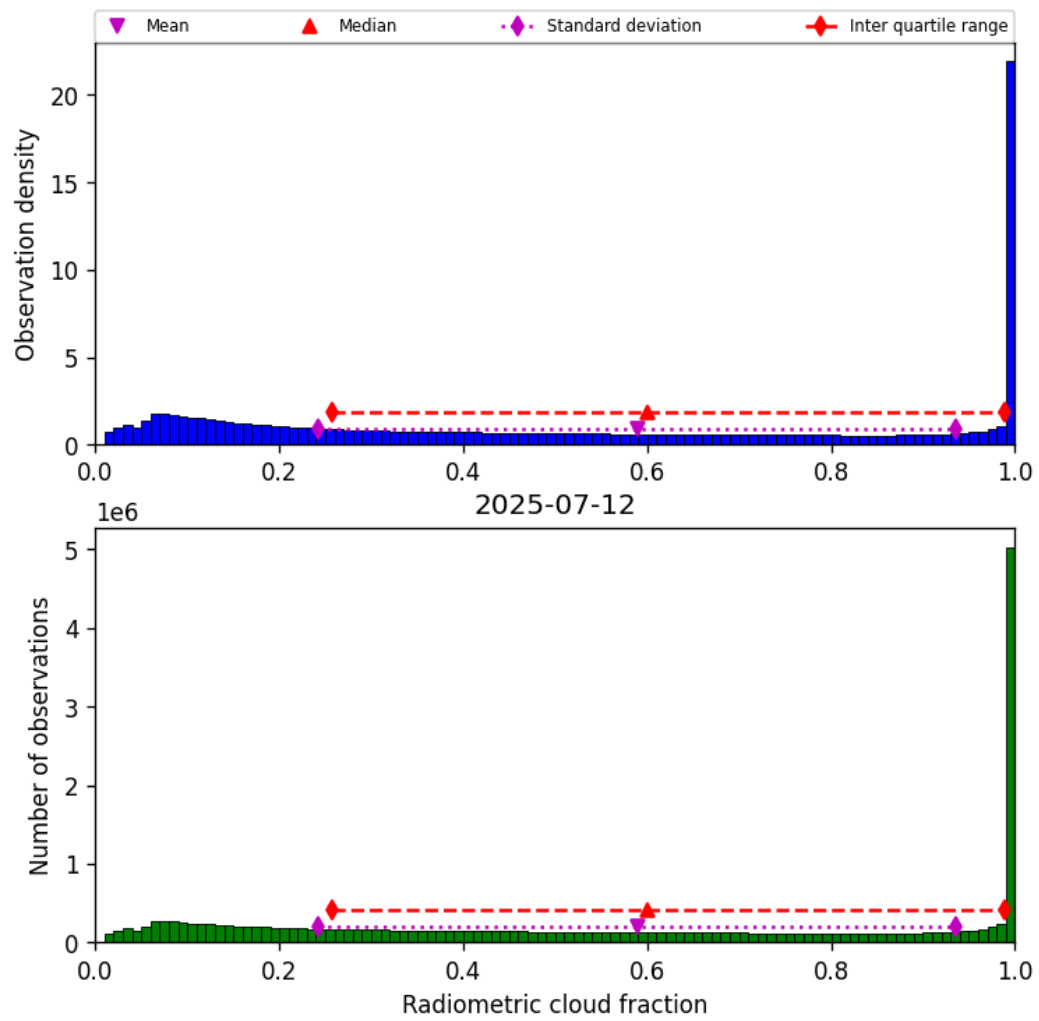


Figure 37: Histogram of “Radiometric cloud fraction” for 2025-07-12 to 2025-07-13

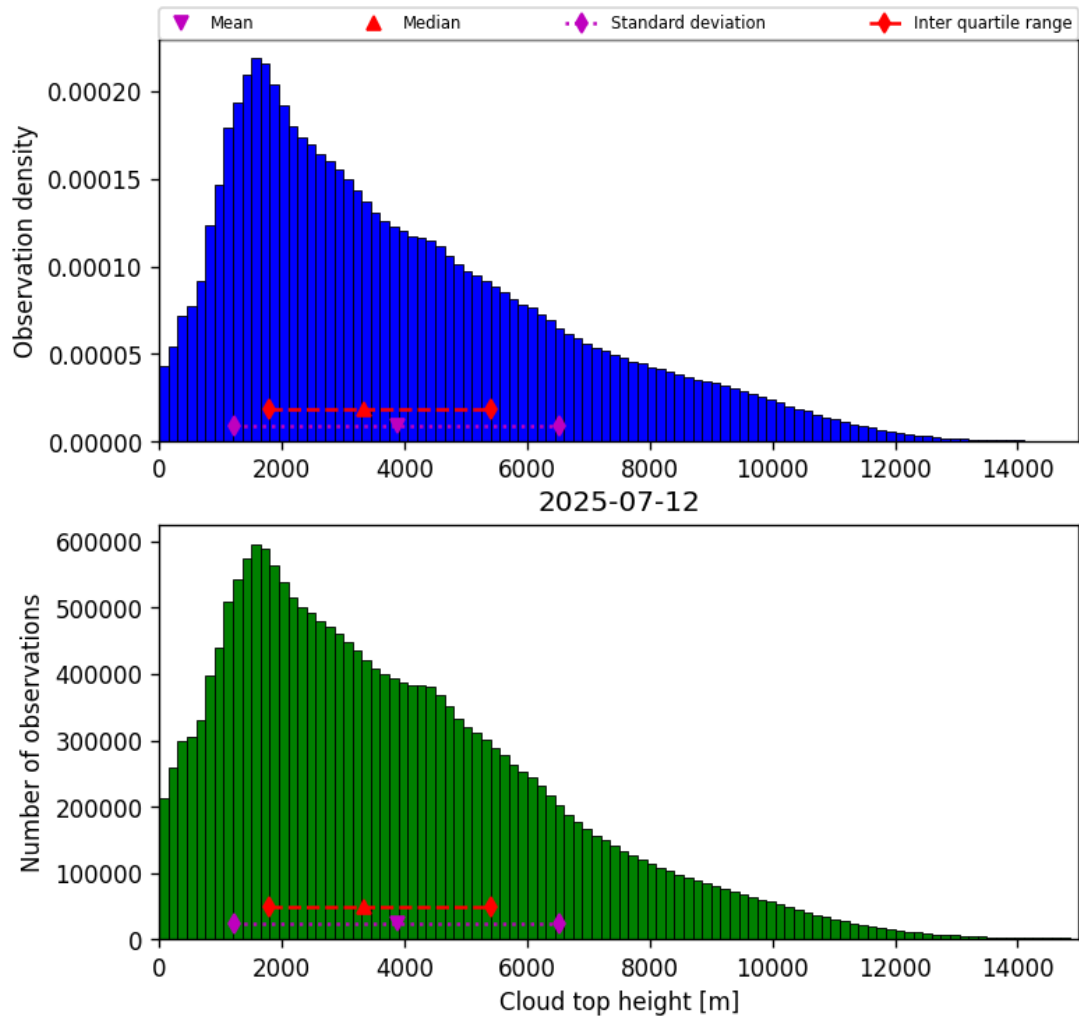


Figure 38: Histogram of “Cloud top height” for 2025-07-12 to 2025-07-13

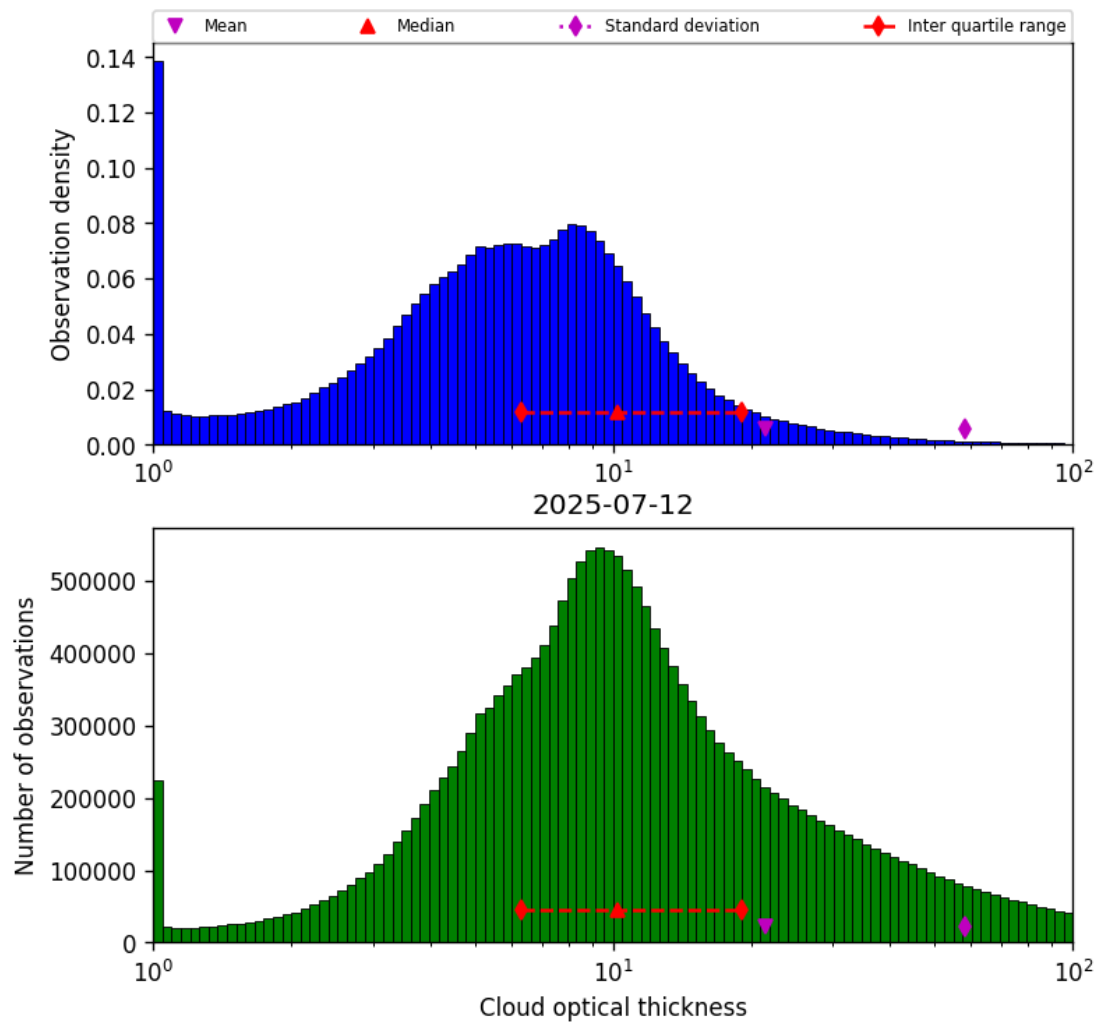


Figure 39: Histogram of “Cloud optical thickness” for 2025-07-12 to 2025-07-13

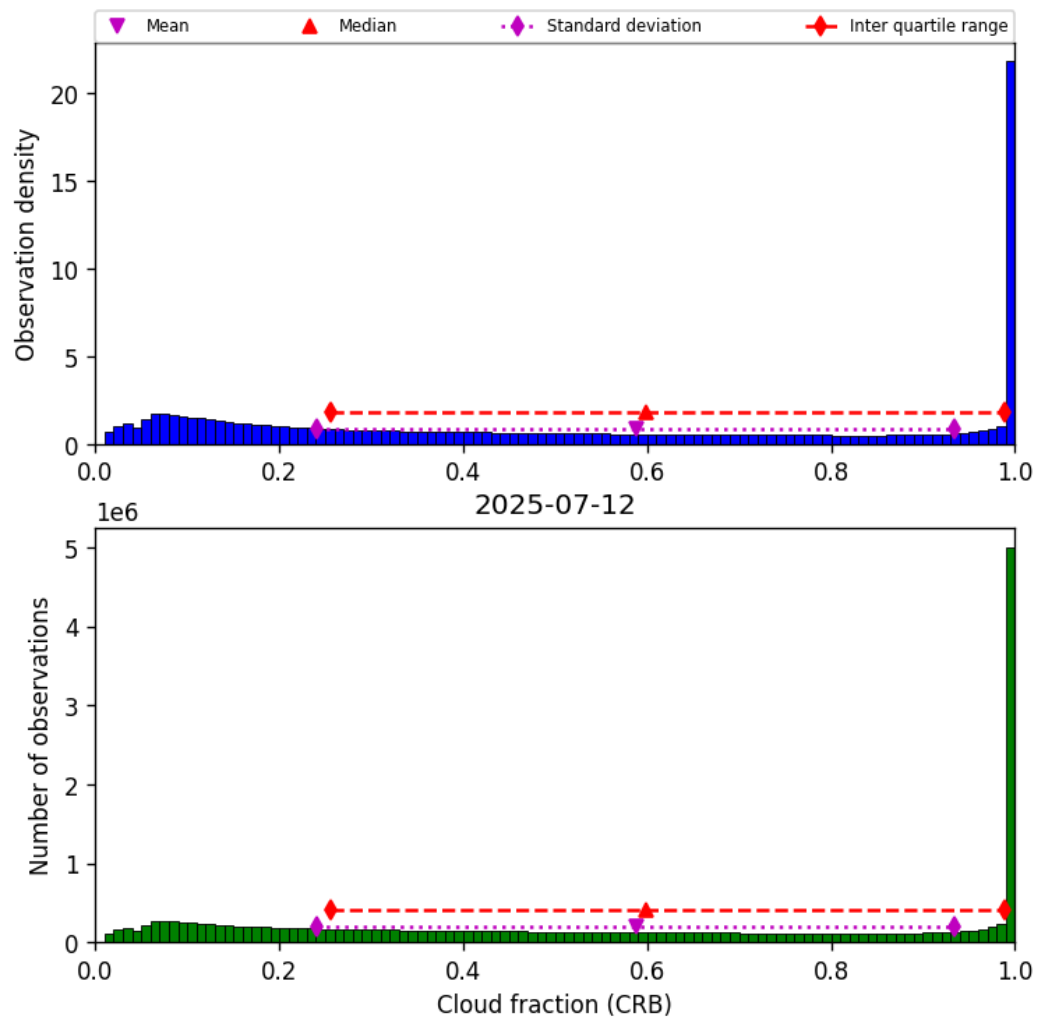


Figure 40: Histogram of “Cloud fraction (CRB)” for 2025-07-12 to 2025-07-13

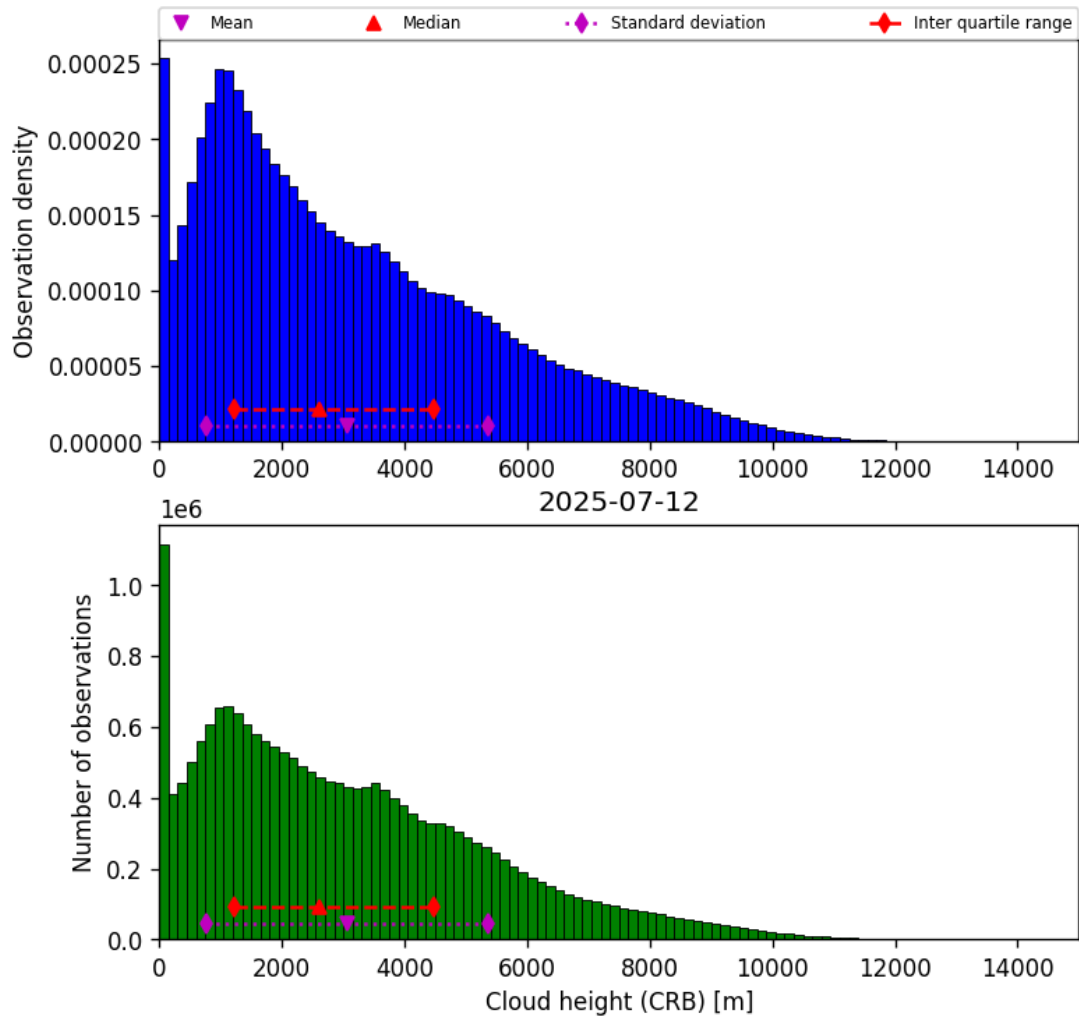


Figure 41: Histogram of “Cloud height (CRB)” for 2025-07-12 to 2025-07-13

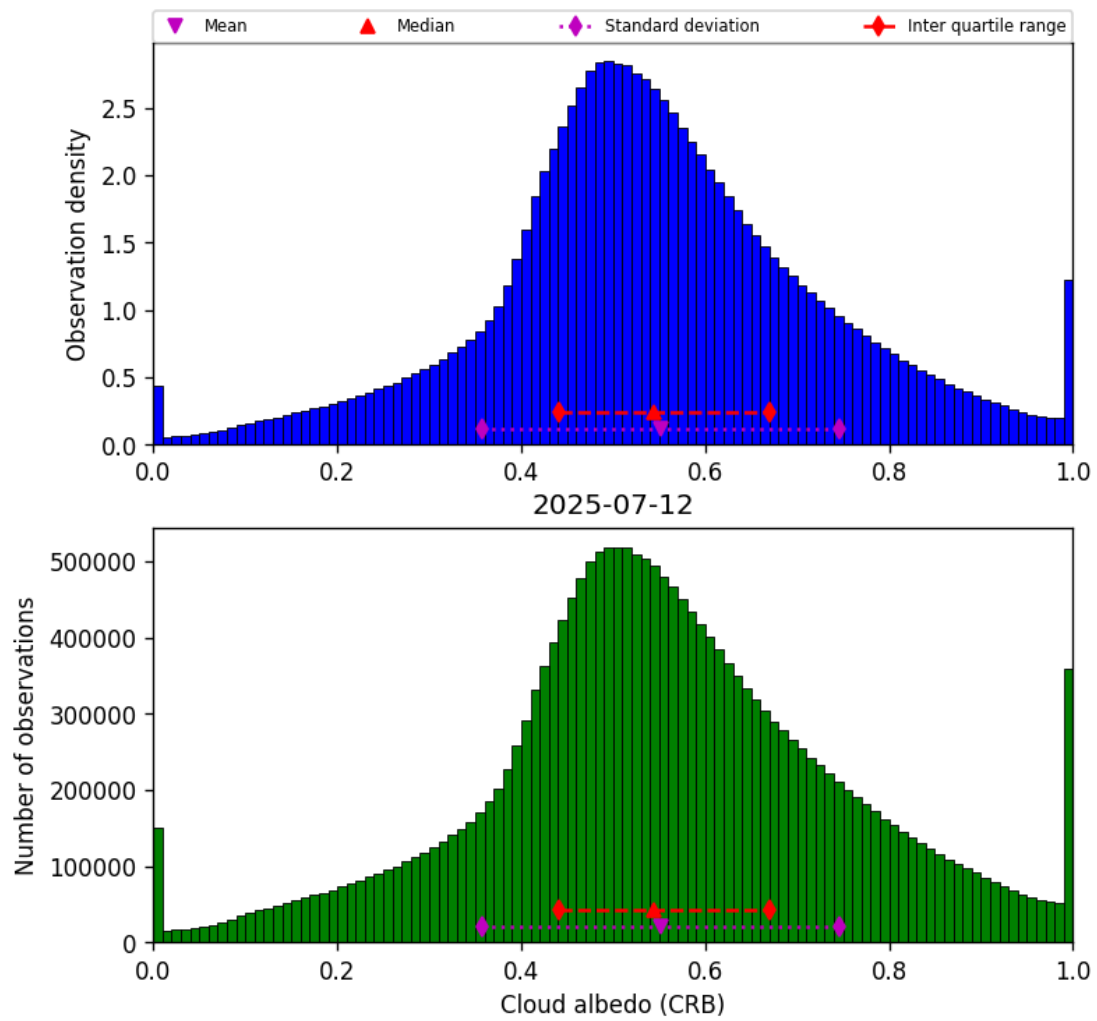


Figure 42: Histogram of “Cloud albedo (CRB)” for 2025-07-12 to 2025-07-13

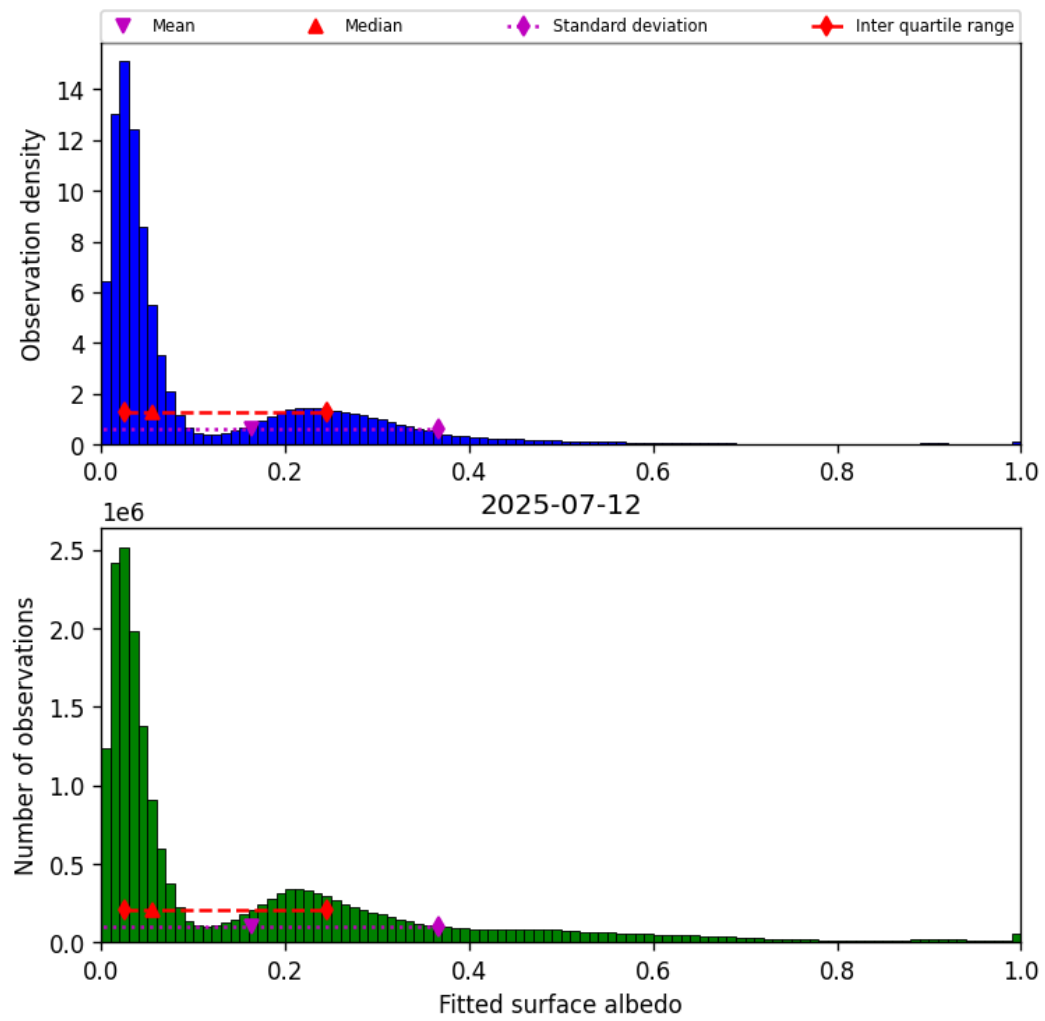


Figure 43: Histogram of “Fitted surface albedo” for 2025-07-12 to 2025-07-13

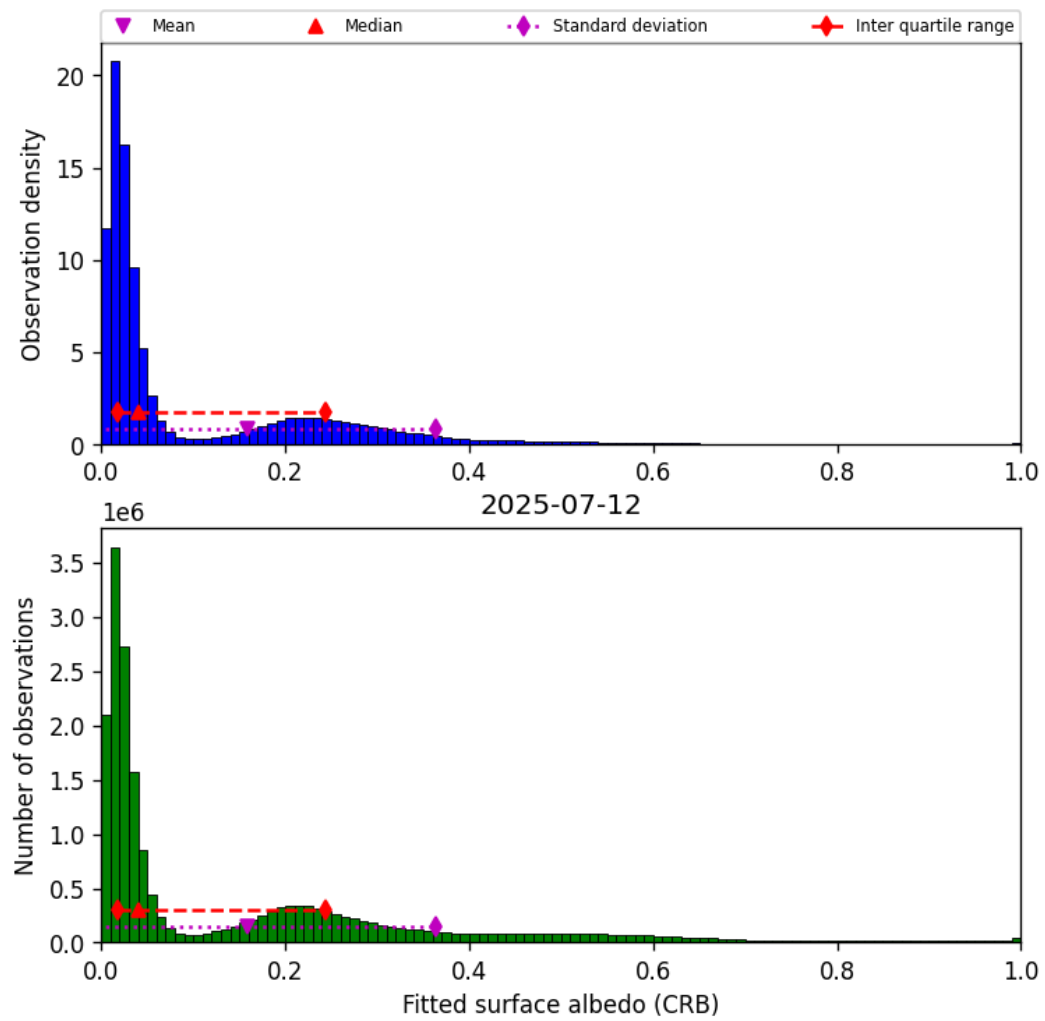


Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2025-07-12 to 2025-07-13

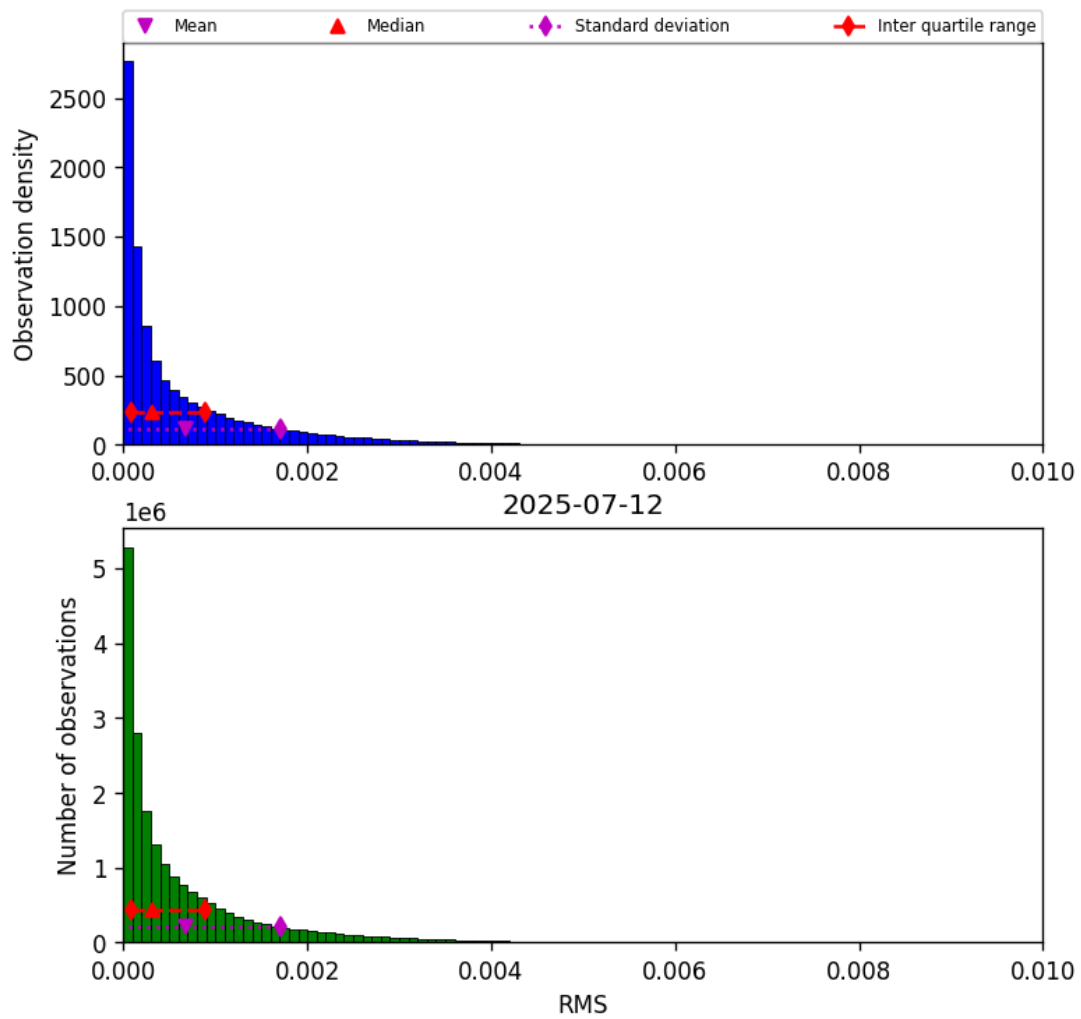


Figure 45: Histogram of “RMS” for 2025-07-12 to 2025-07-13

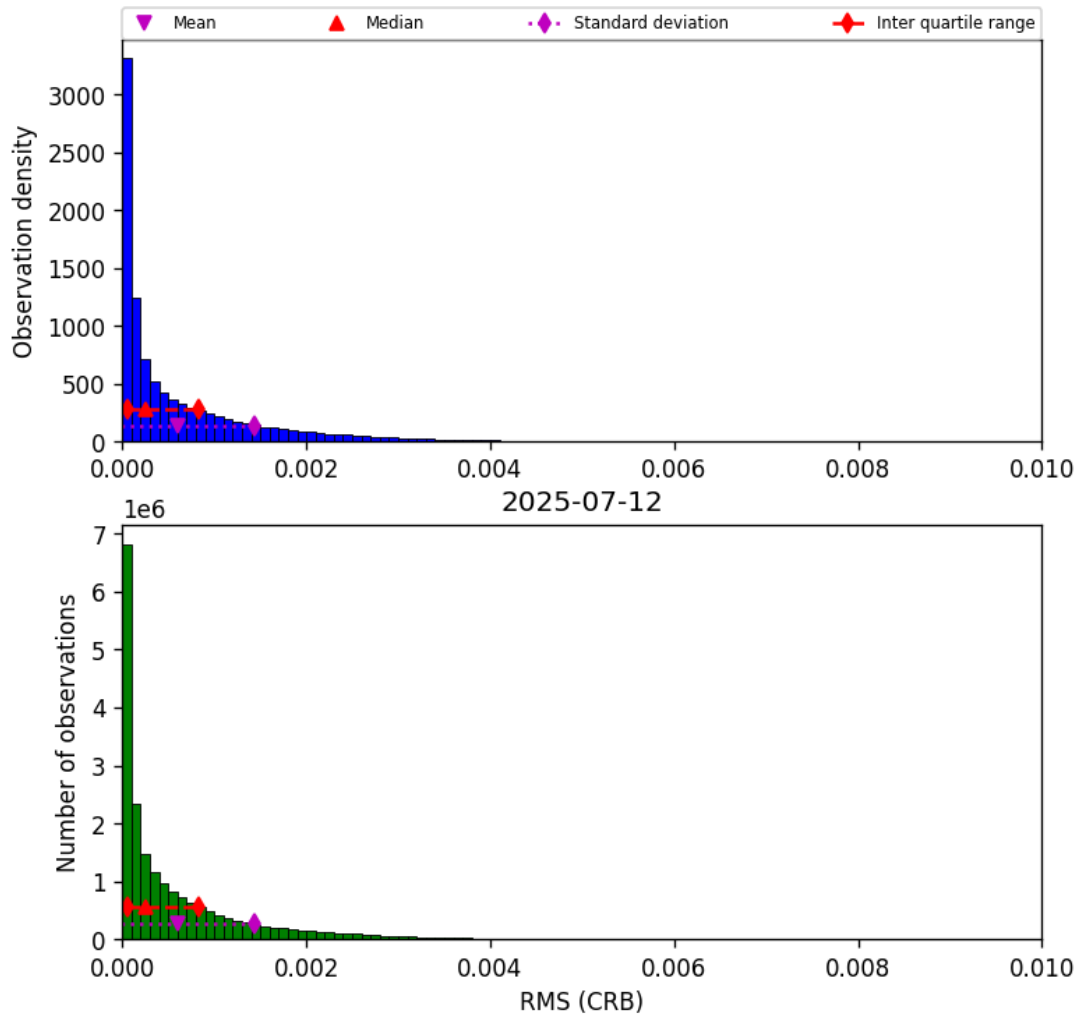


Figure 46: Histogram of "RMS (CRB)" for 2025-07-12 to 2025-07-13

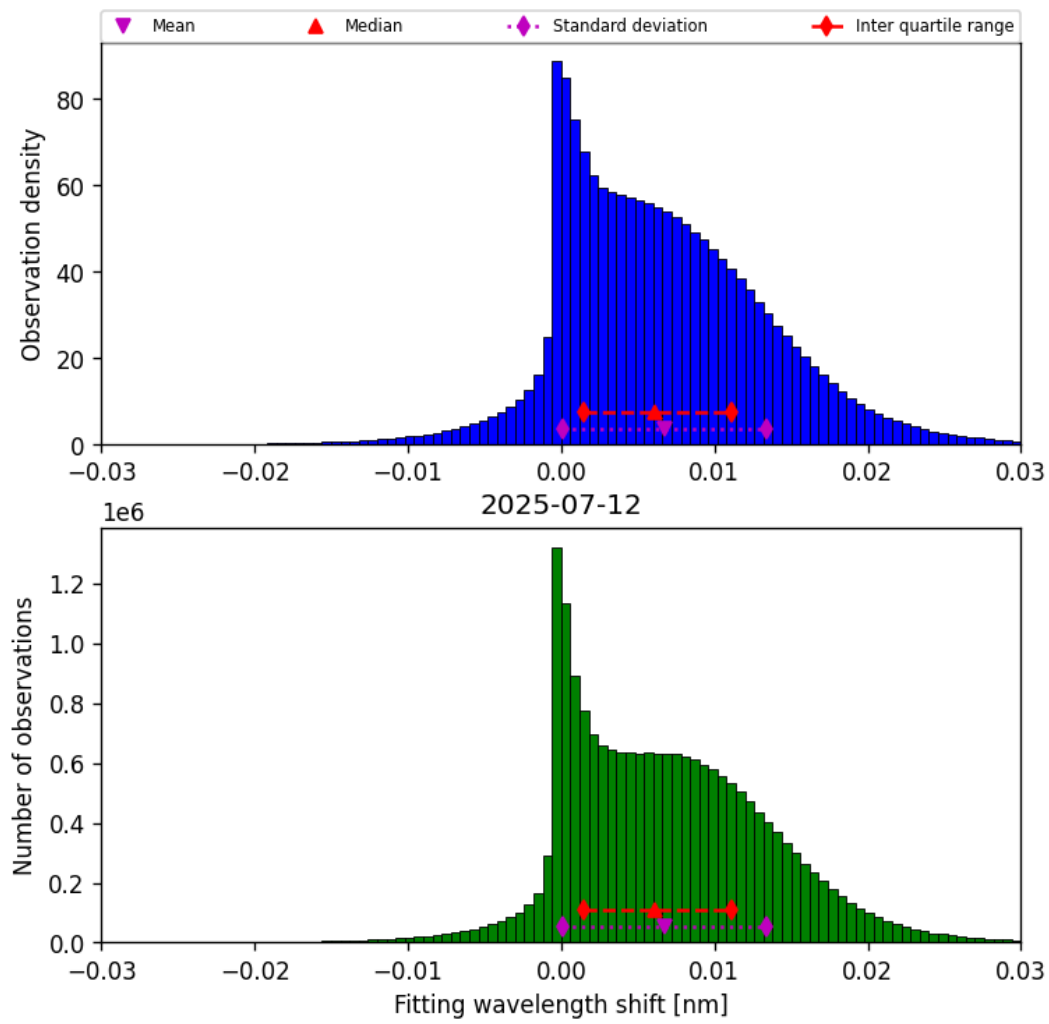


Figure 47: Histogram of “Fitting wavelength shift” for 2025-07-12 to 2025-07-13

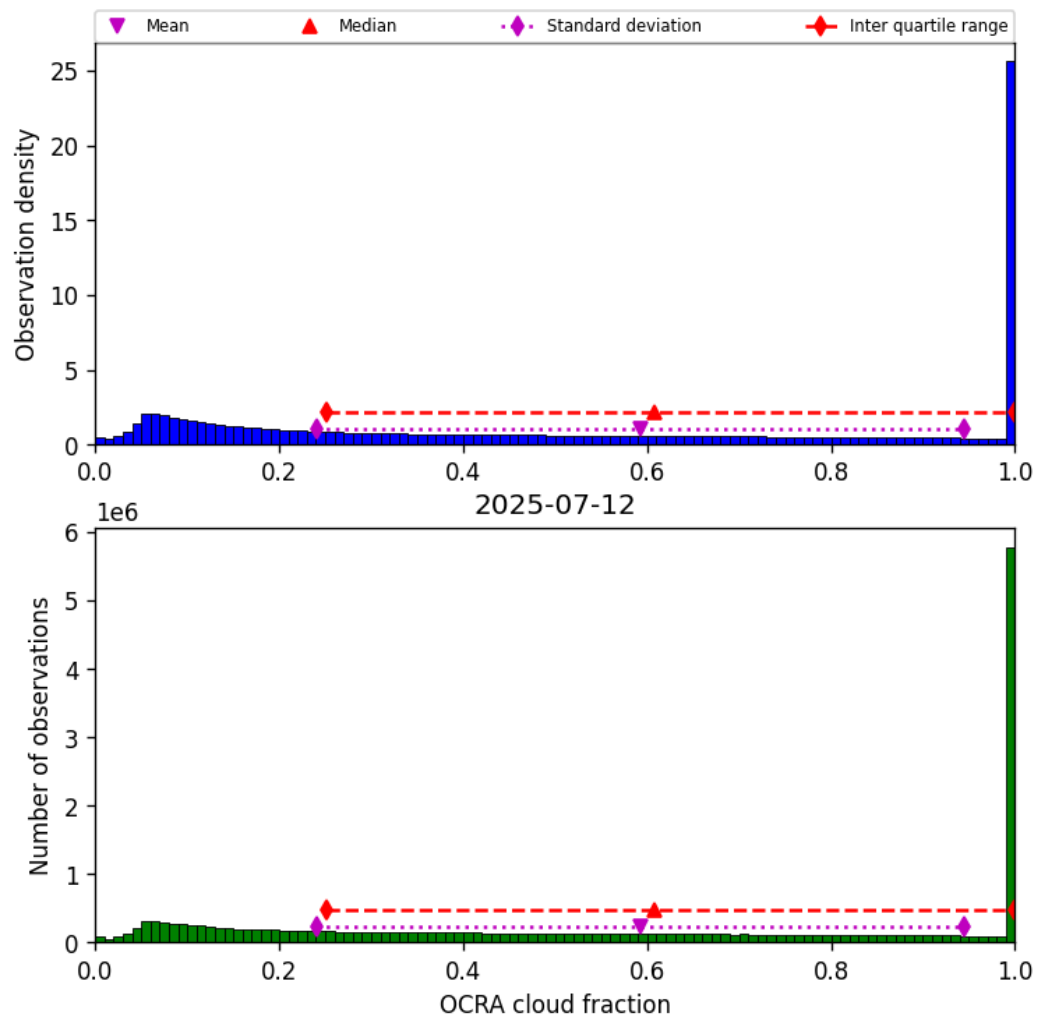


Figure 48: Histogram of “OCRA cloud fraction” for 2025-07-12 to 2025-07-13

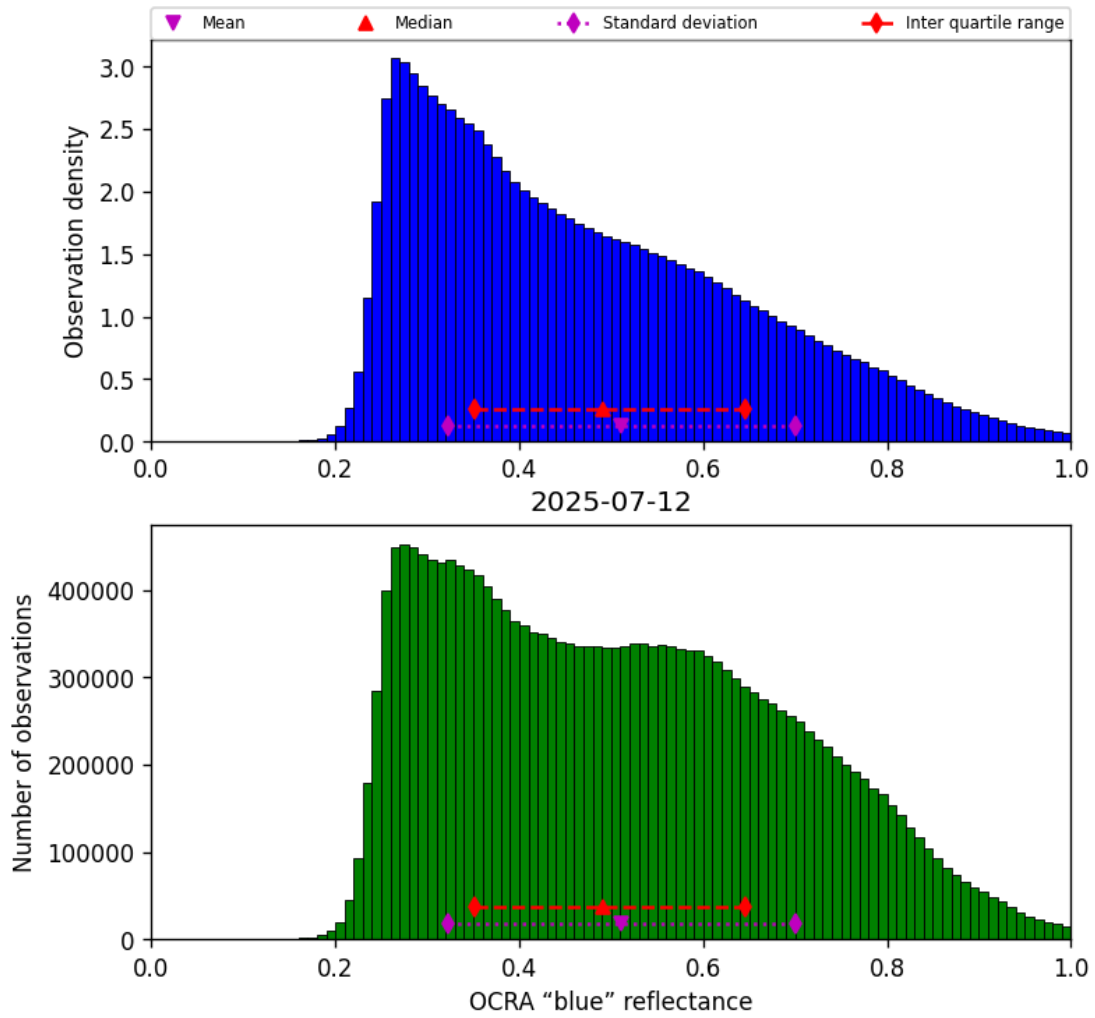


Figure 49: Histogram of “OCRA “blue” reflectance” for 2025-07-12 to 2025-07-13

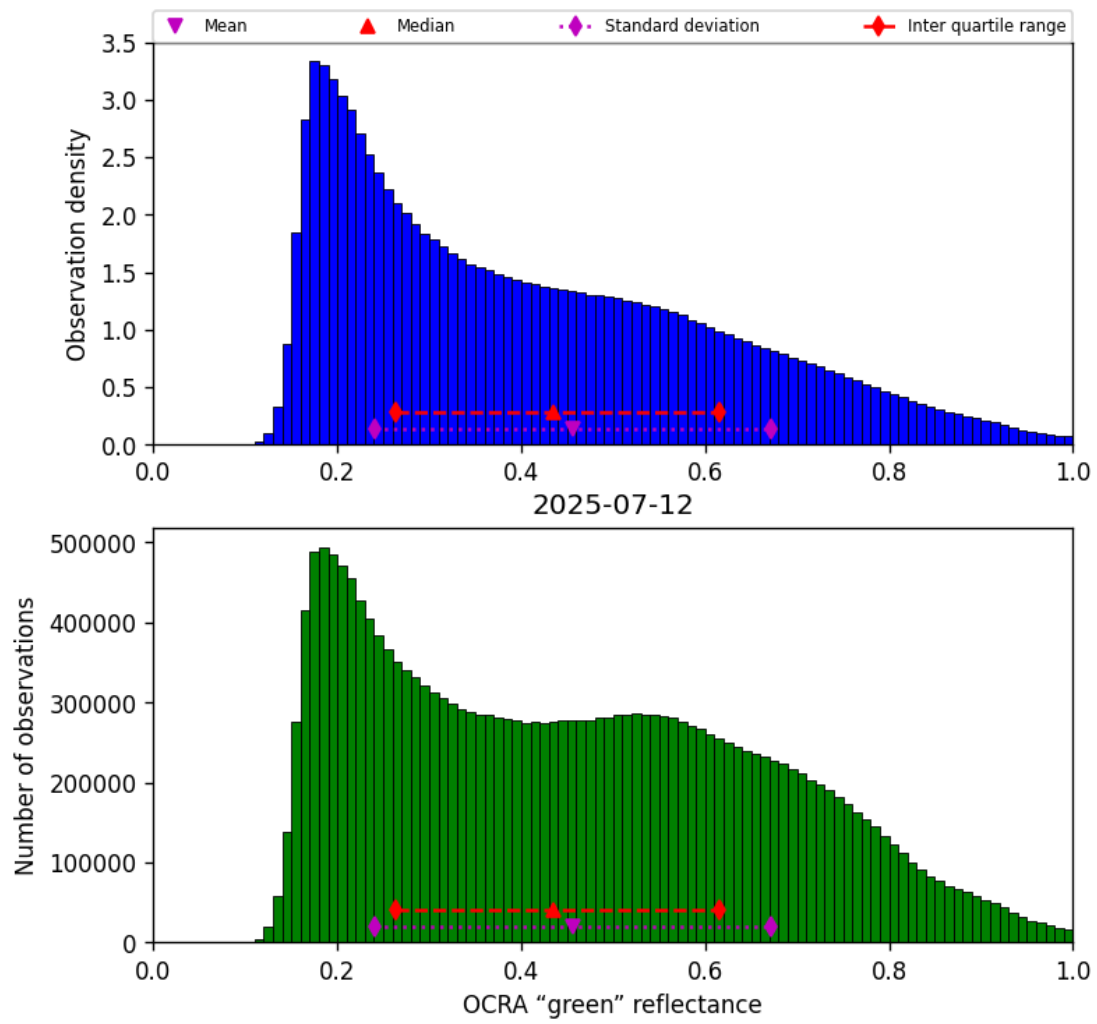


Figure 50: Histogram of “OCRA “green” reflectance” for 2025-07-12 to 2025-07-13

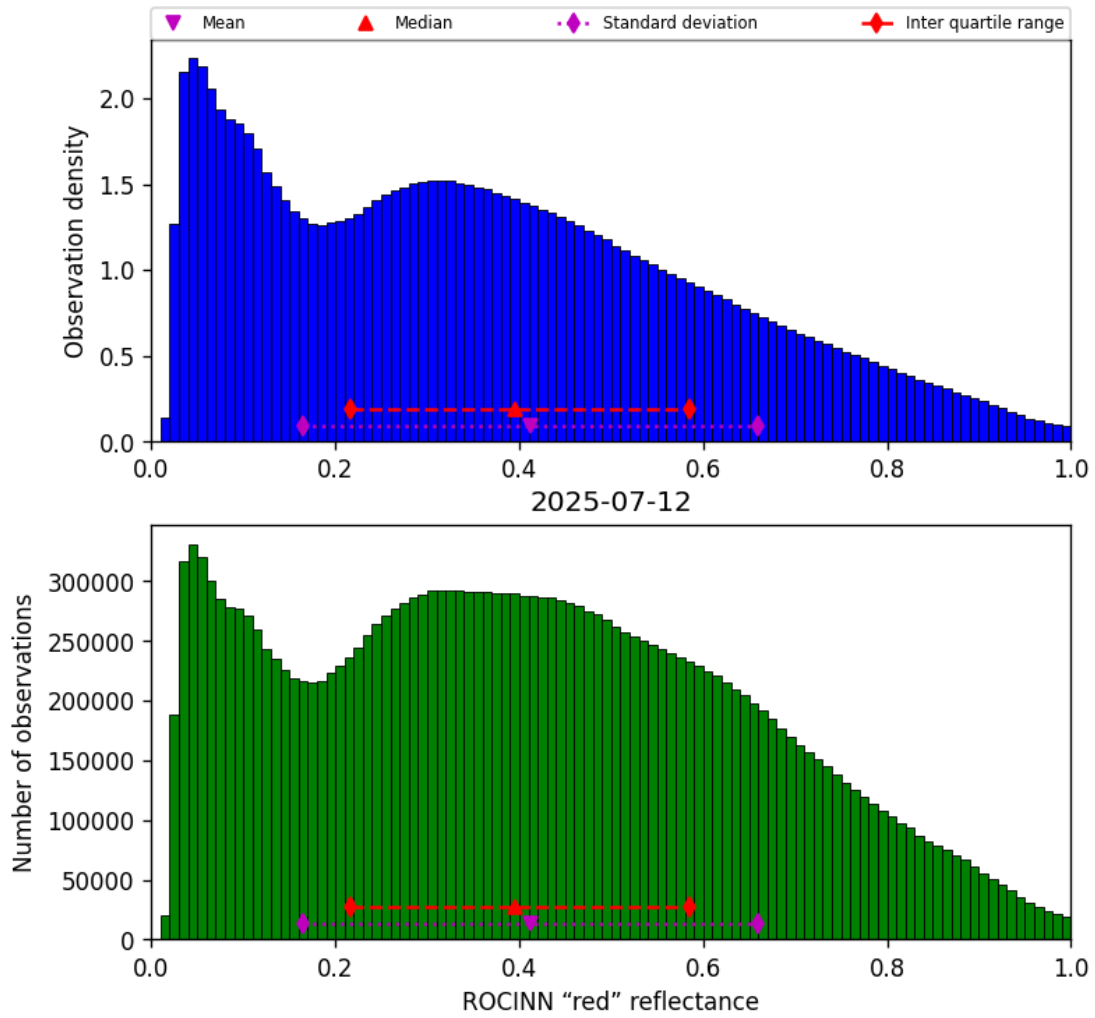


Figure 51: Histogram of “ROCINN “red” reflectance” for 2025-07-12 to 2025-07-13

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.

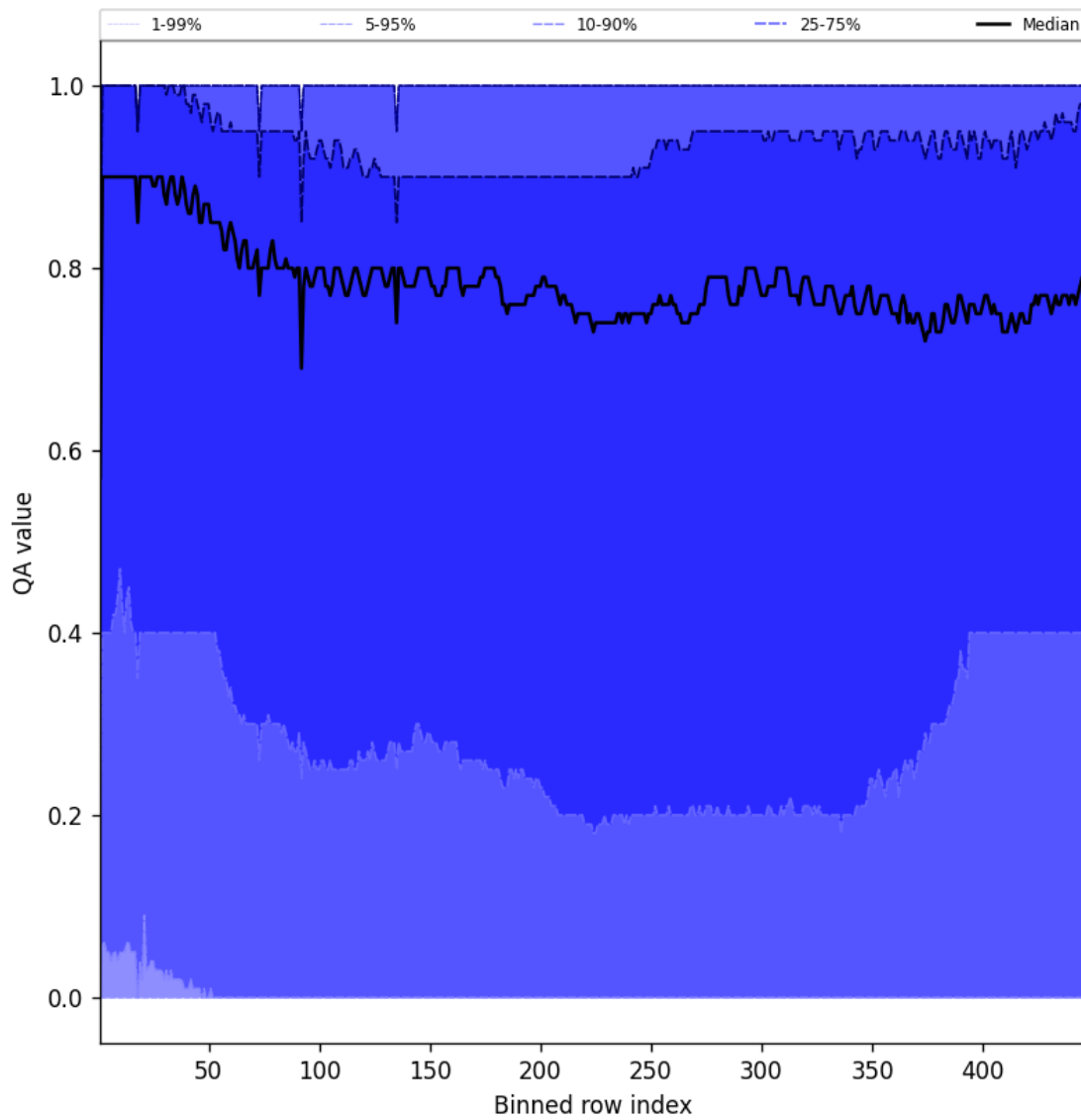


Figure 52: Along track statistics of “QA value” for 2025-07-12 to 2025-07-13

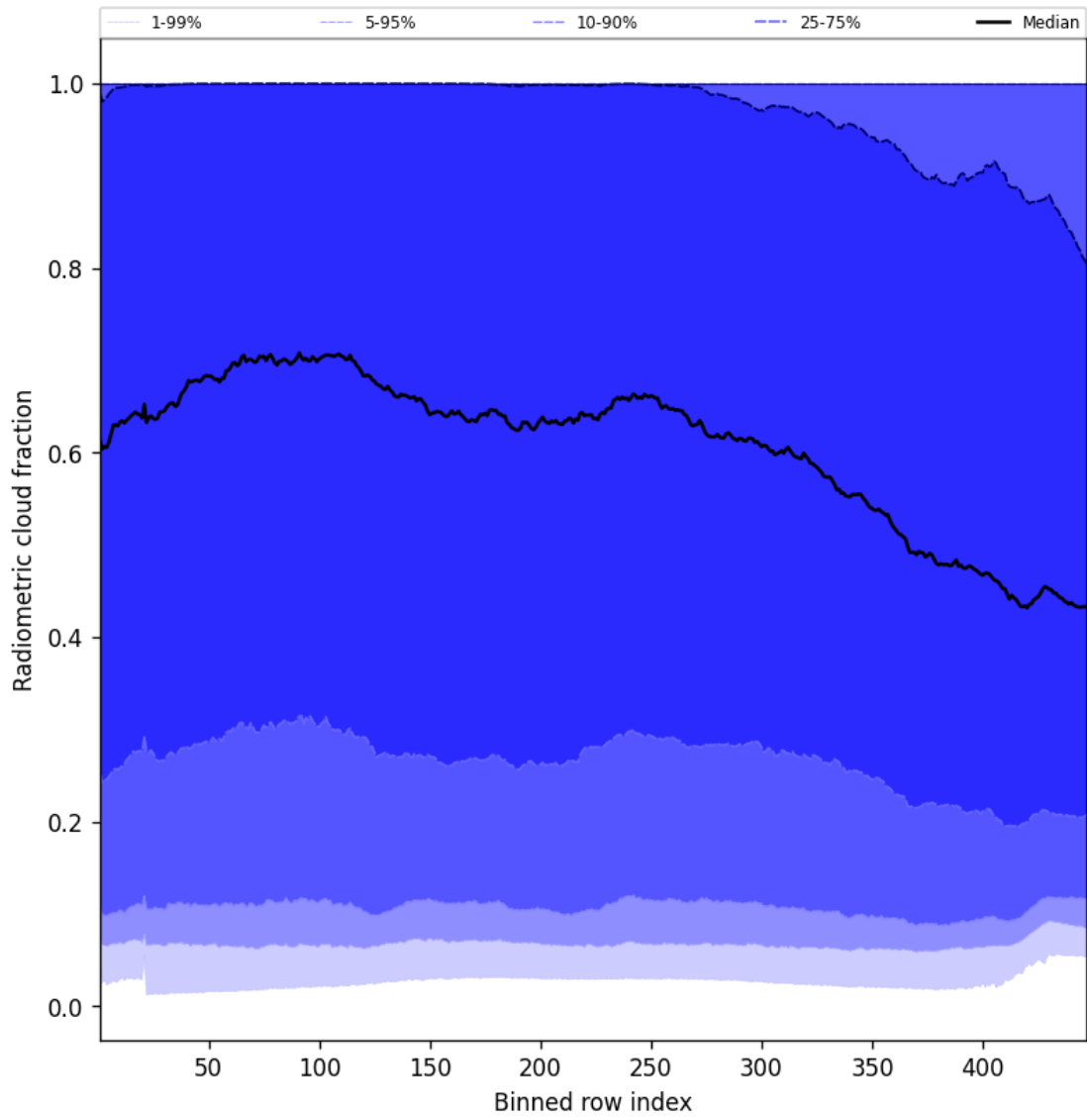


Figure 53: Along track statistics of “Radiometric cloud fraction” for 2025-07-12 to 2025-07-13

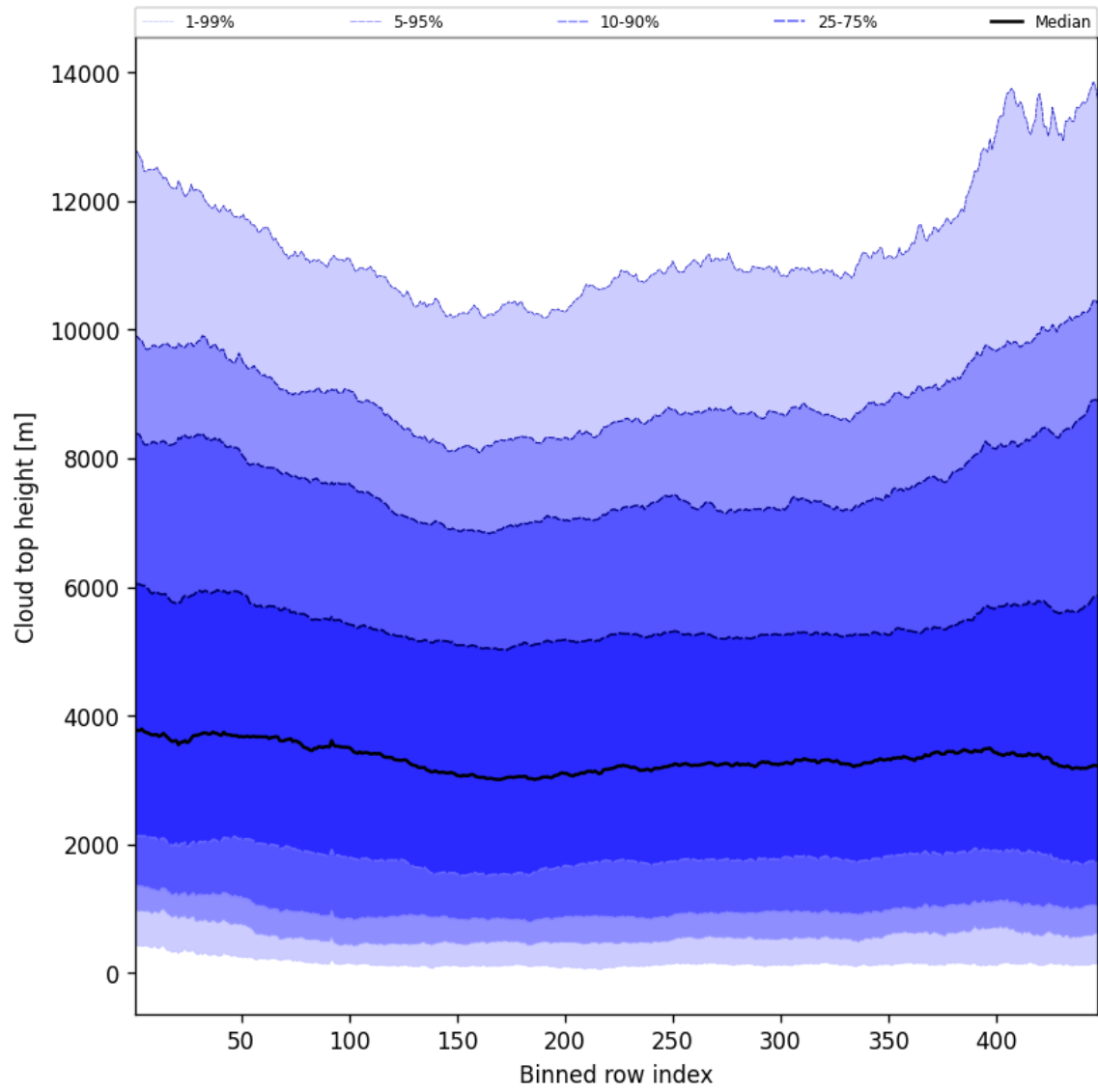


Figure 54: Along track statistics of “Cloud top height” for 2025-07-12 to 2025-07-13

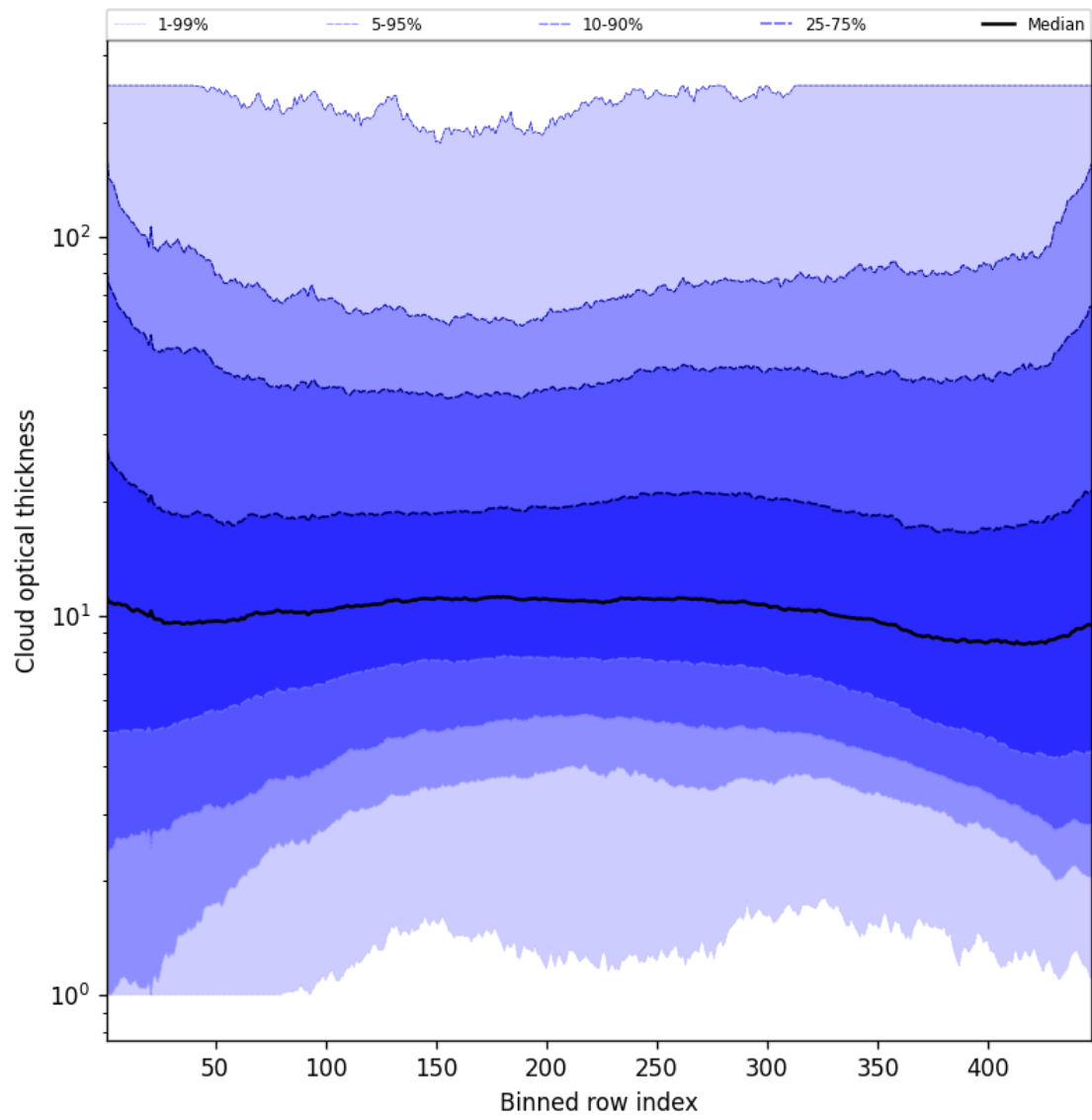


Figure 55: Along track statistics of “Cloud optical thickness” for 2025-07-12 to 2025-07-13

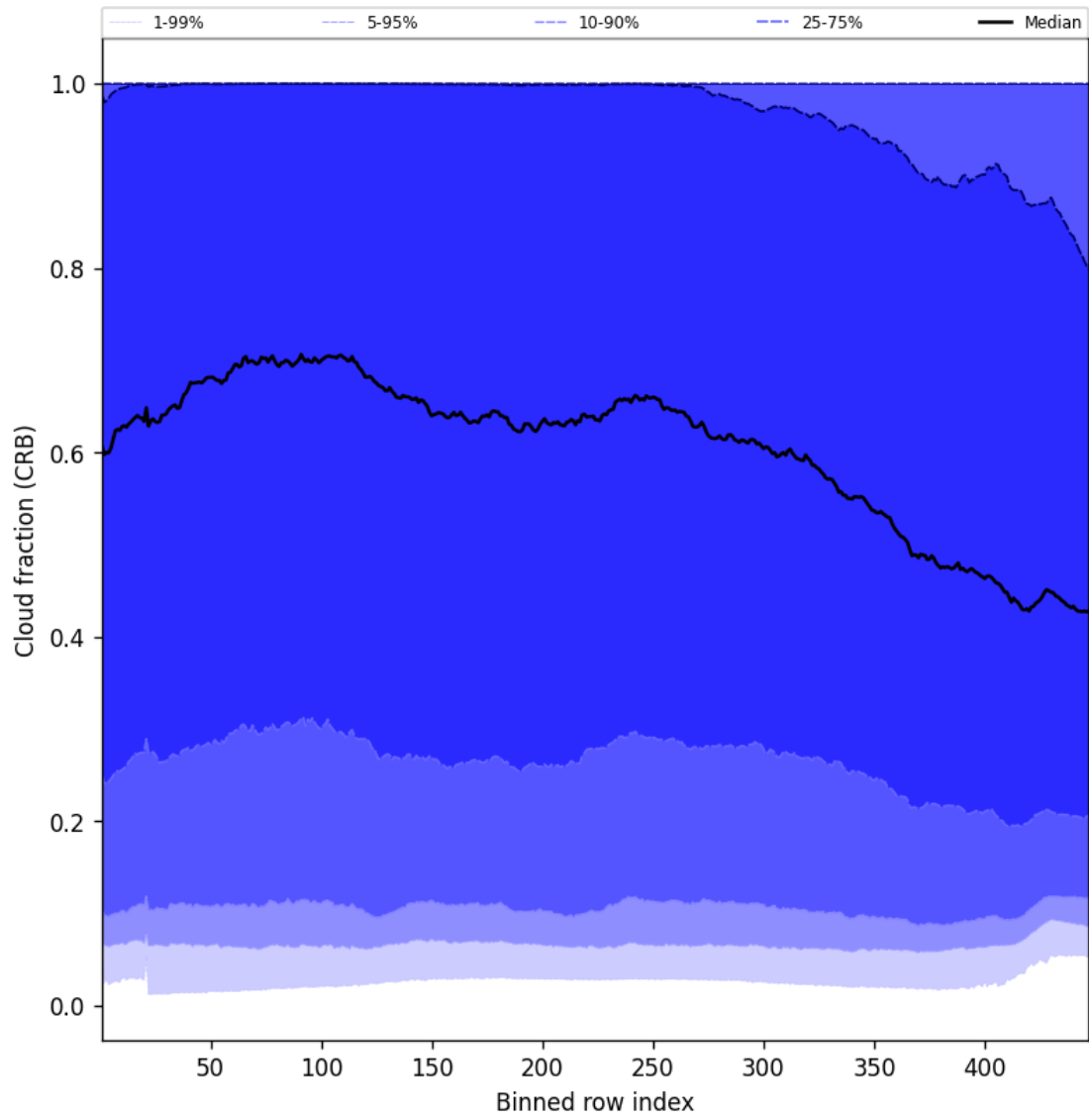


Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2025-07-12 to 2025-07-13

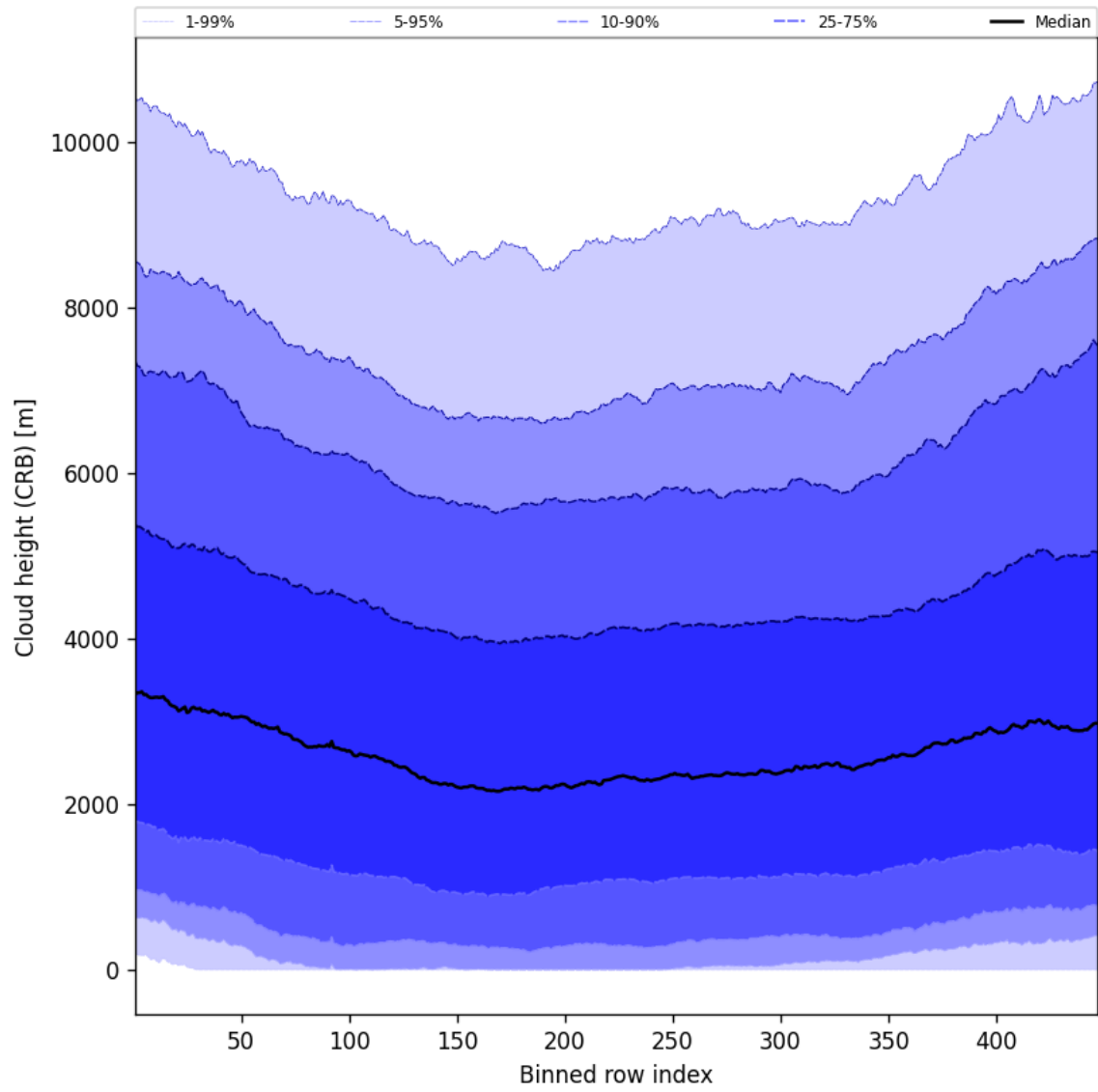


Figure 57: Along track statistics of “Cloud height (CRB)” for 2025-07-12 to 2025-07-13

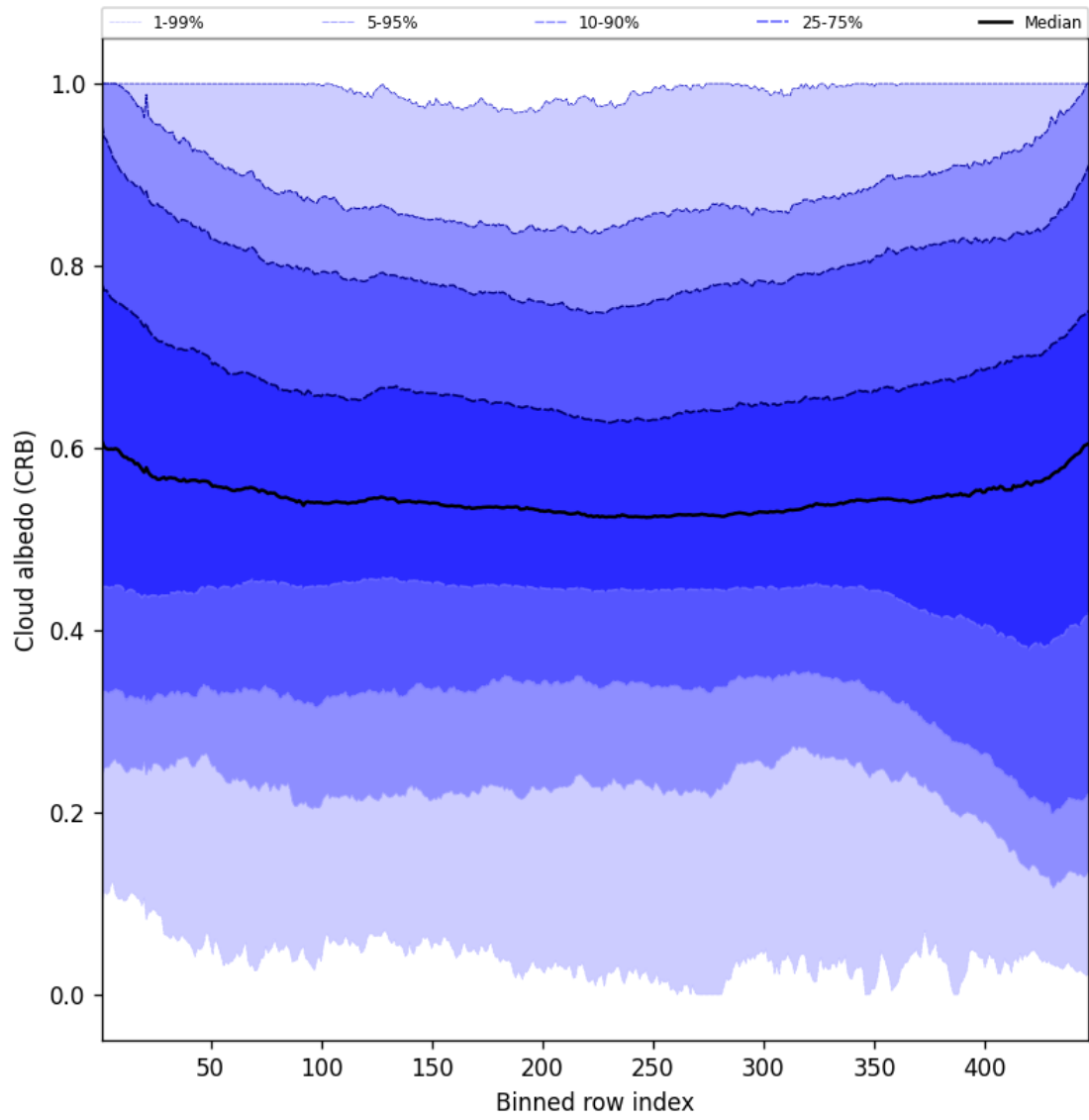


Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2025-07-12 to 2025-07-13

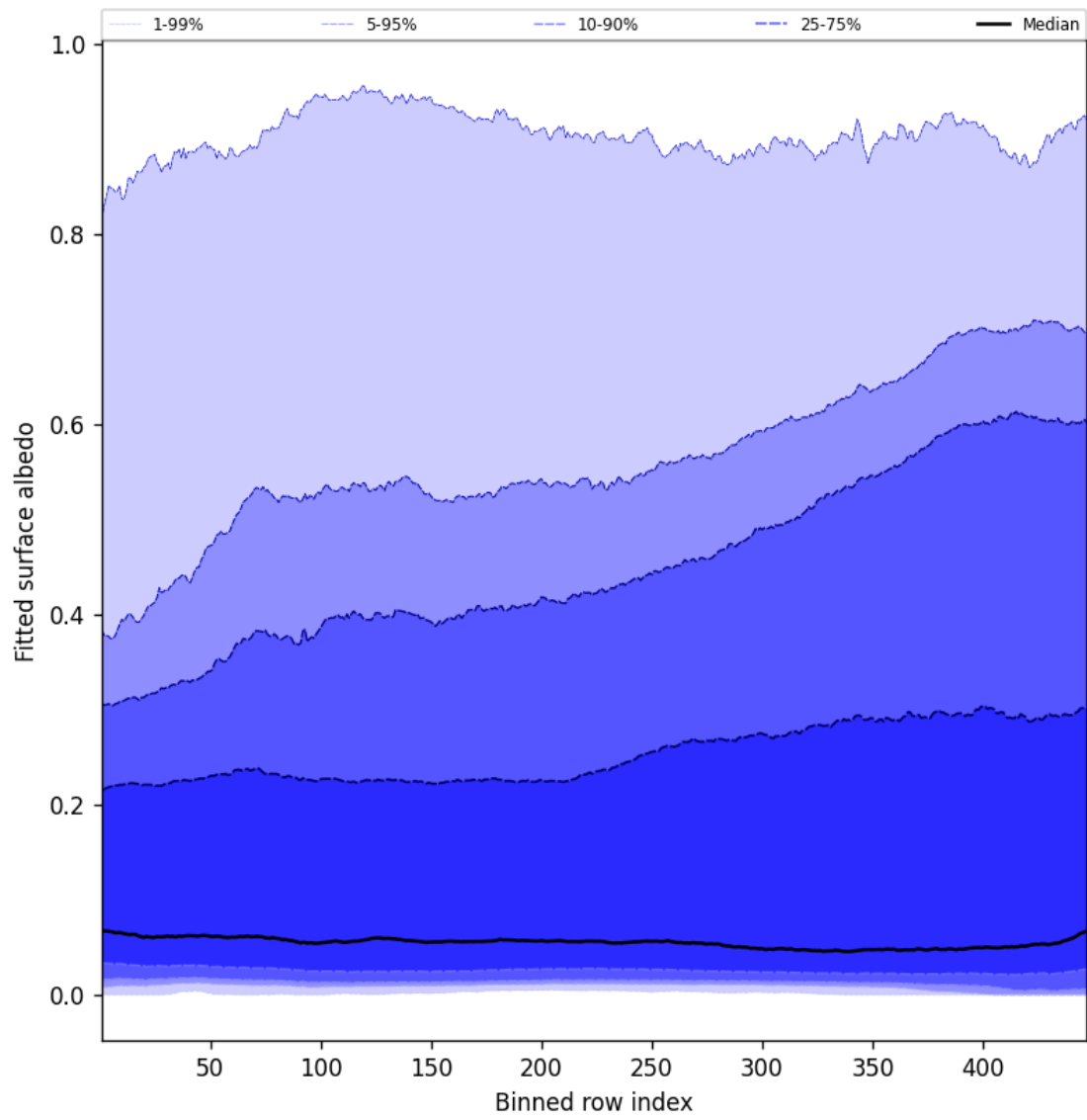


Figure 59: Along track statistics of “Fitted surface albedo” for 2025-07-12 to 2025-07-13

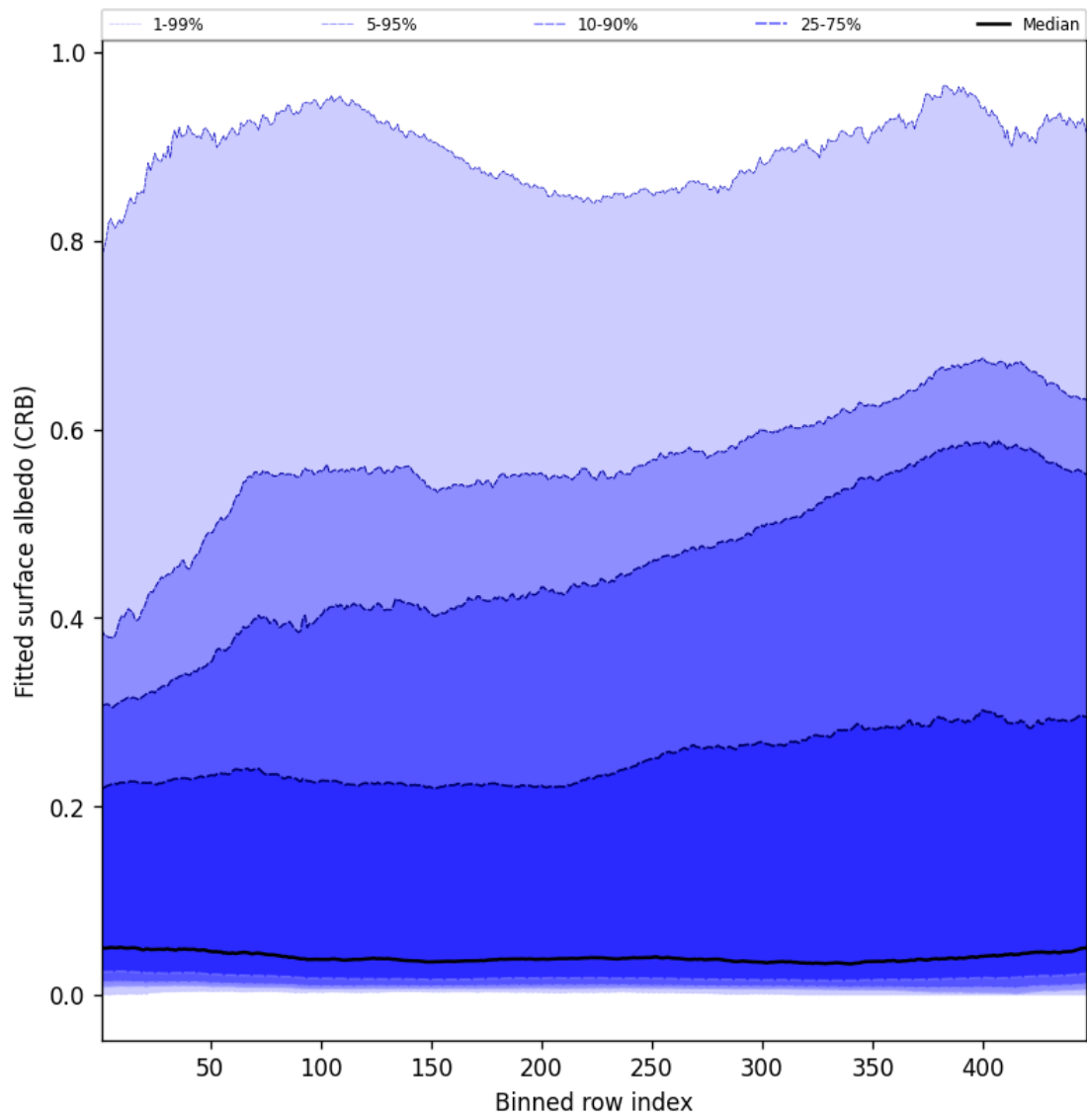


Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2025-07-12 to 2025-07-13

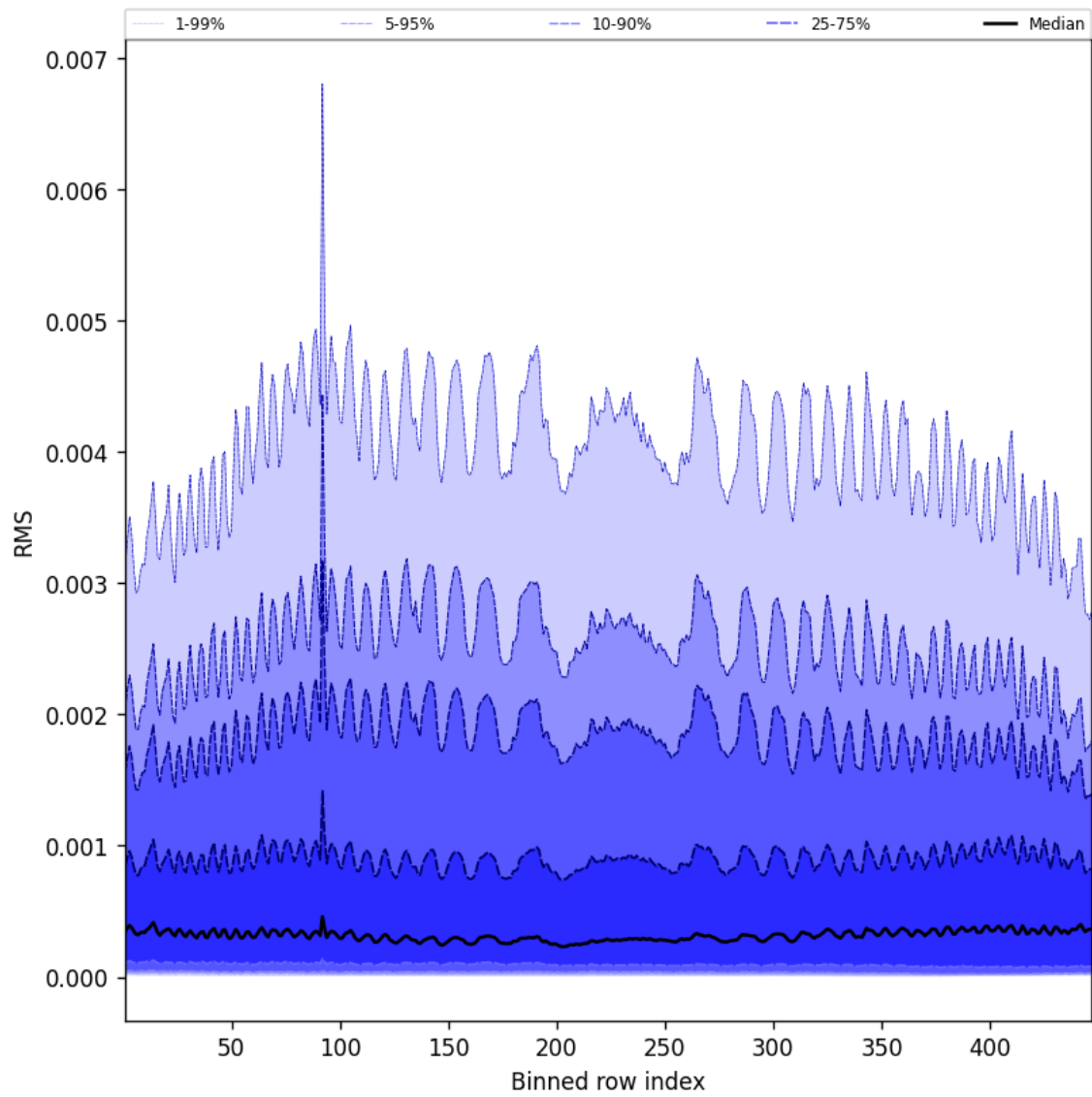


Figure 61: Along track statistics of “RMS” for 2025-07-12 to 2025-07-13

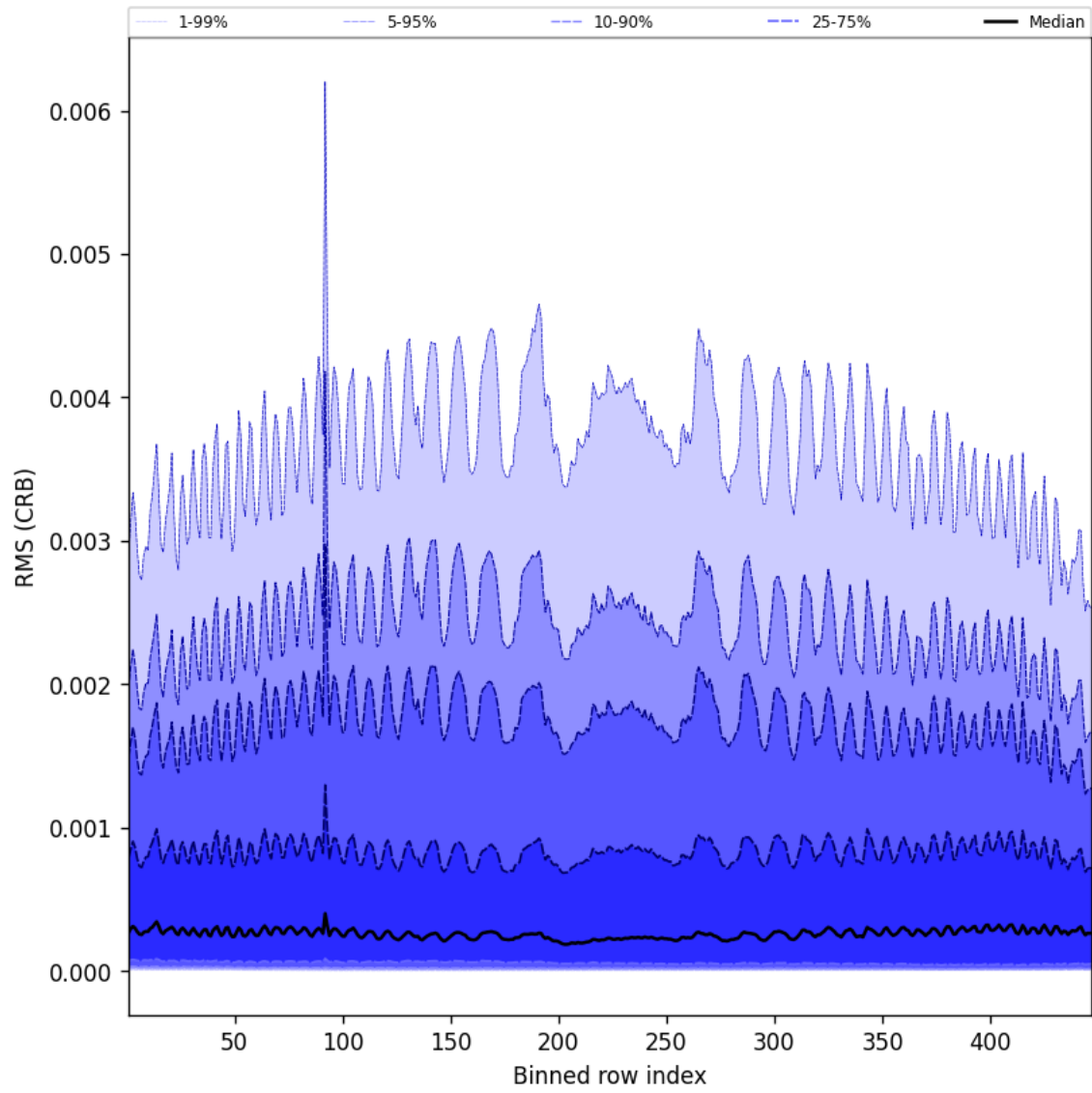


Figure 62: Along track statistics of “RMS (CRB)” for 2025-07-12 to 2025-07-13

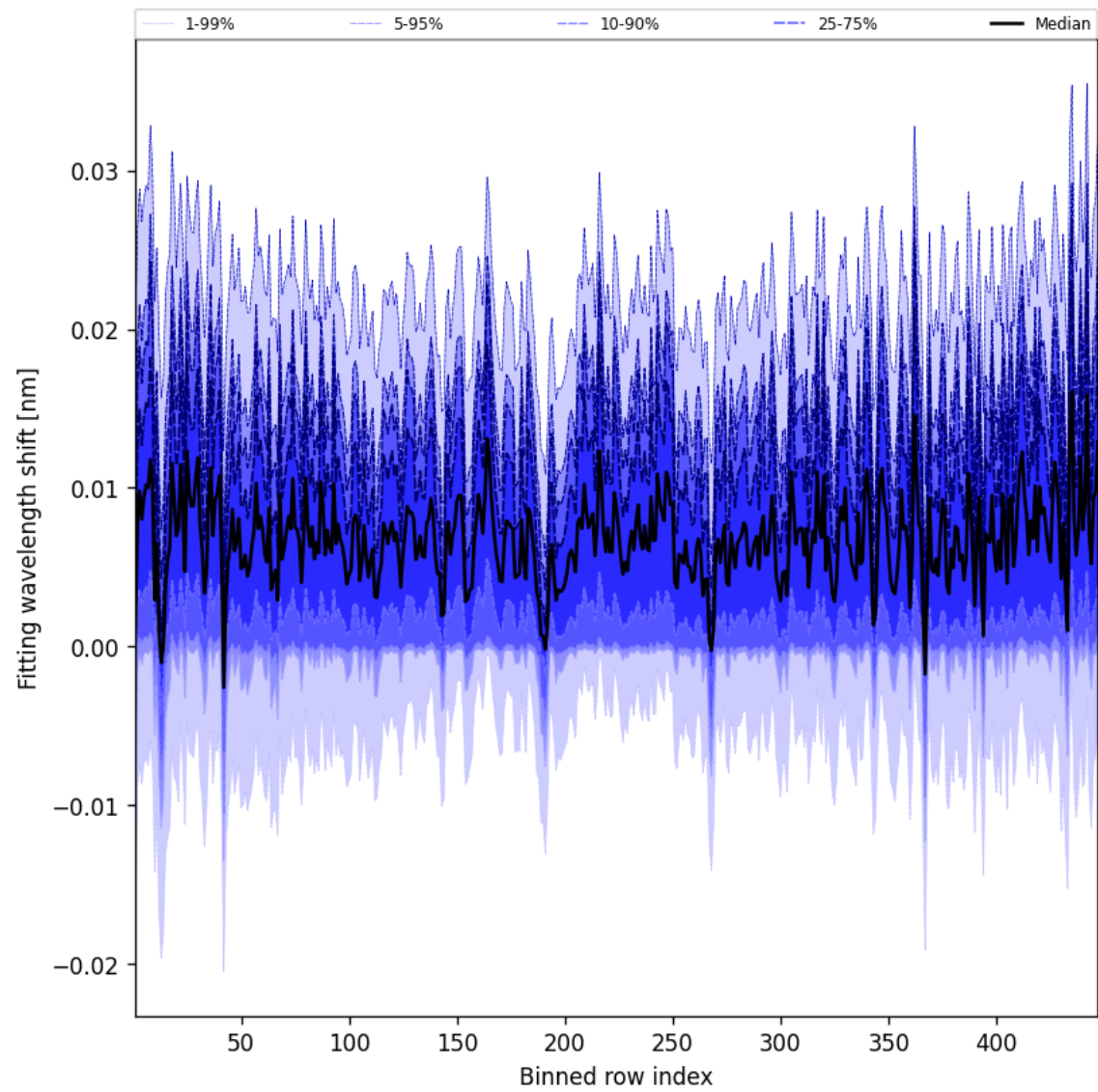


Figure 63: Along track statistics of “Fitting wavelength shift” for 2025-07-12 to 2025-07-13

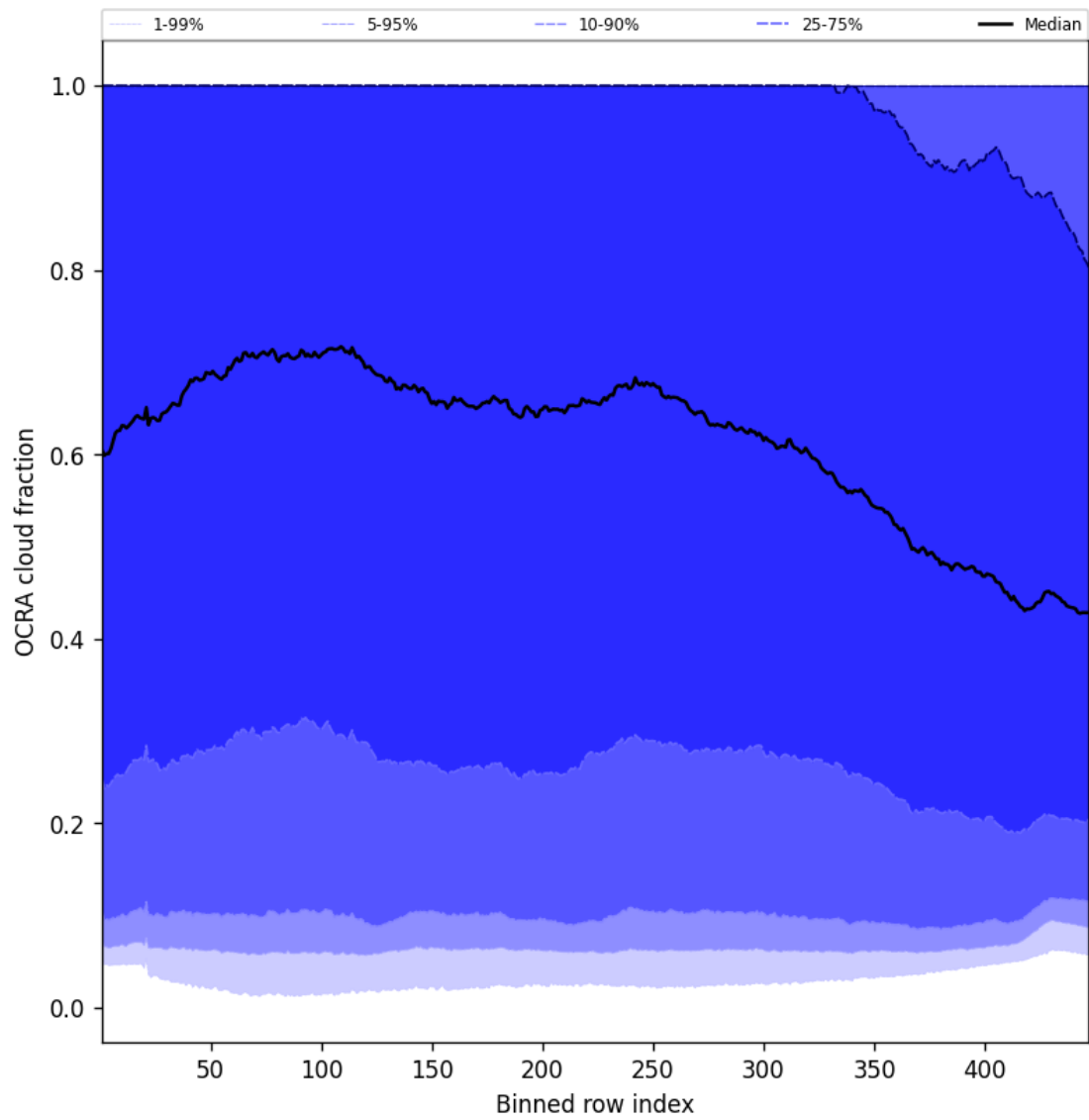


Figure 64: Along track statistics of “OCRA cloud fraction” for 2025-07-12 to 2025-07-13

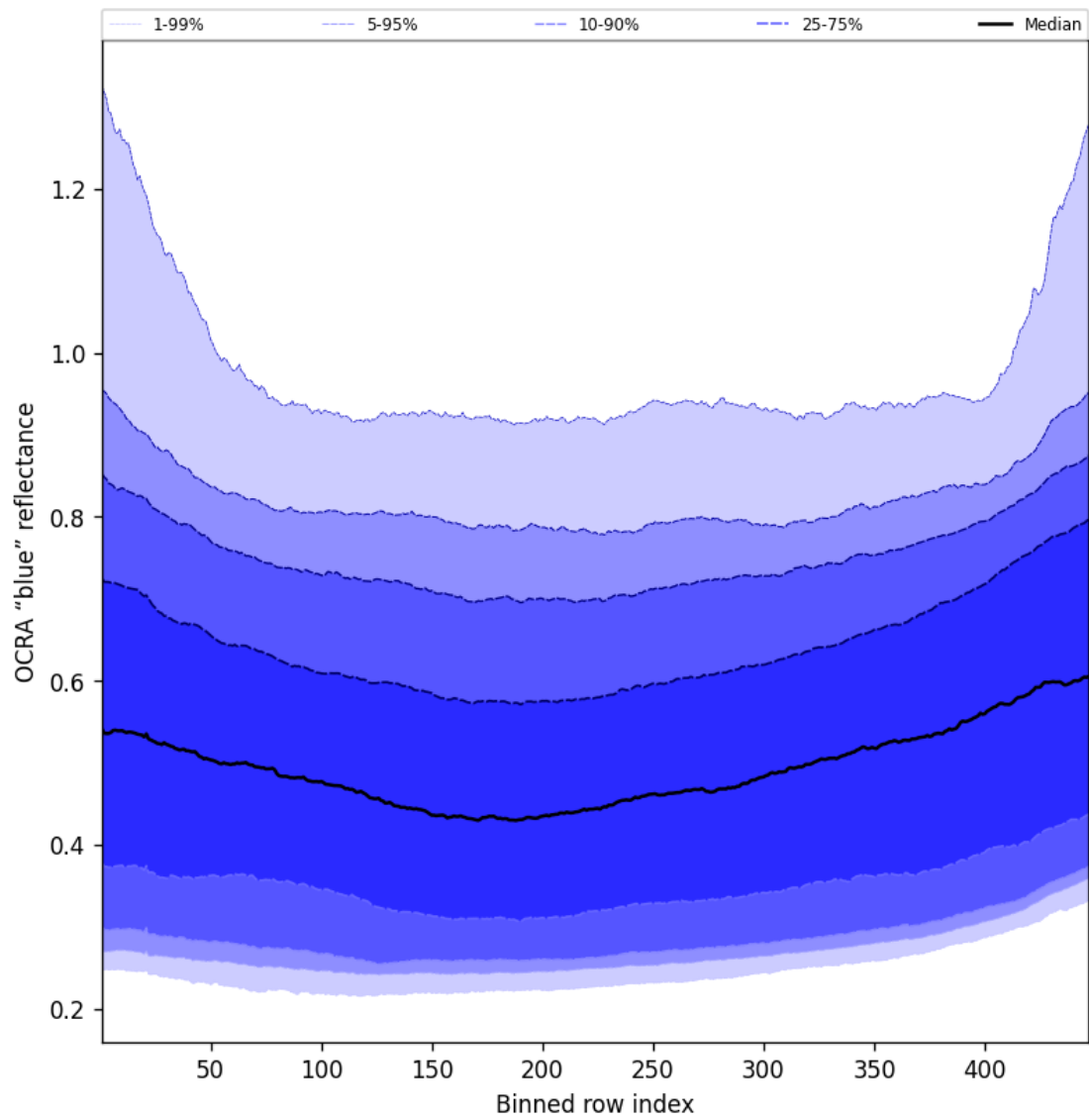


Figure 65: Along track statistics of “OCRA “blue” reflectance” for 2025-07-12 to 2025-07-13

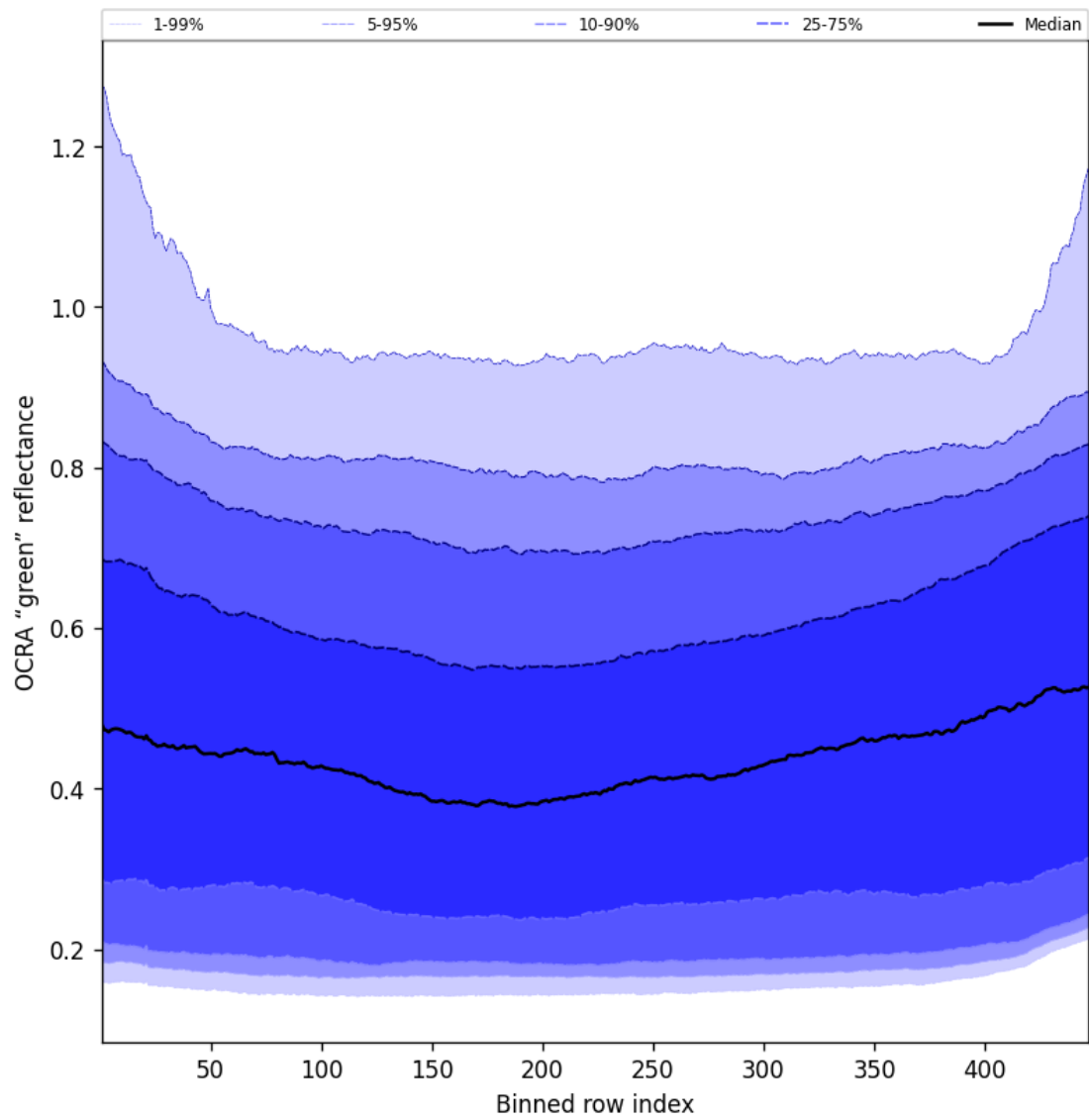


Figure 66: Along track statistics of “OCRA “green” reflectance” for 2025-07-12 to 2025-07-13

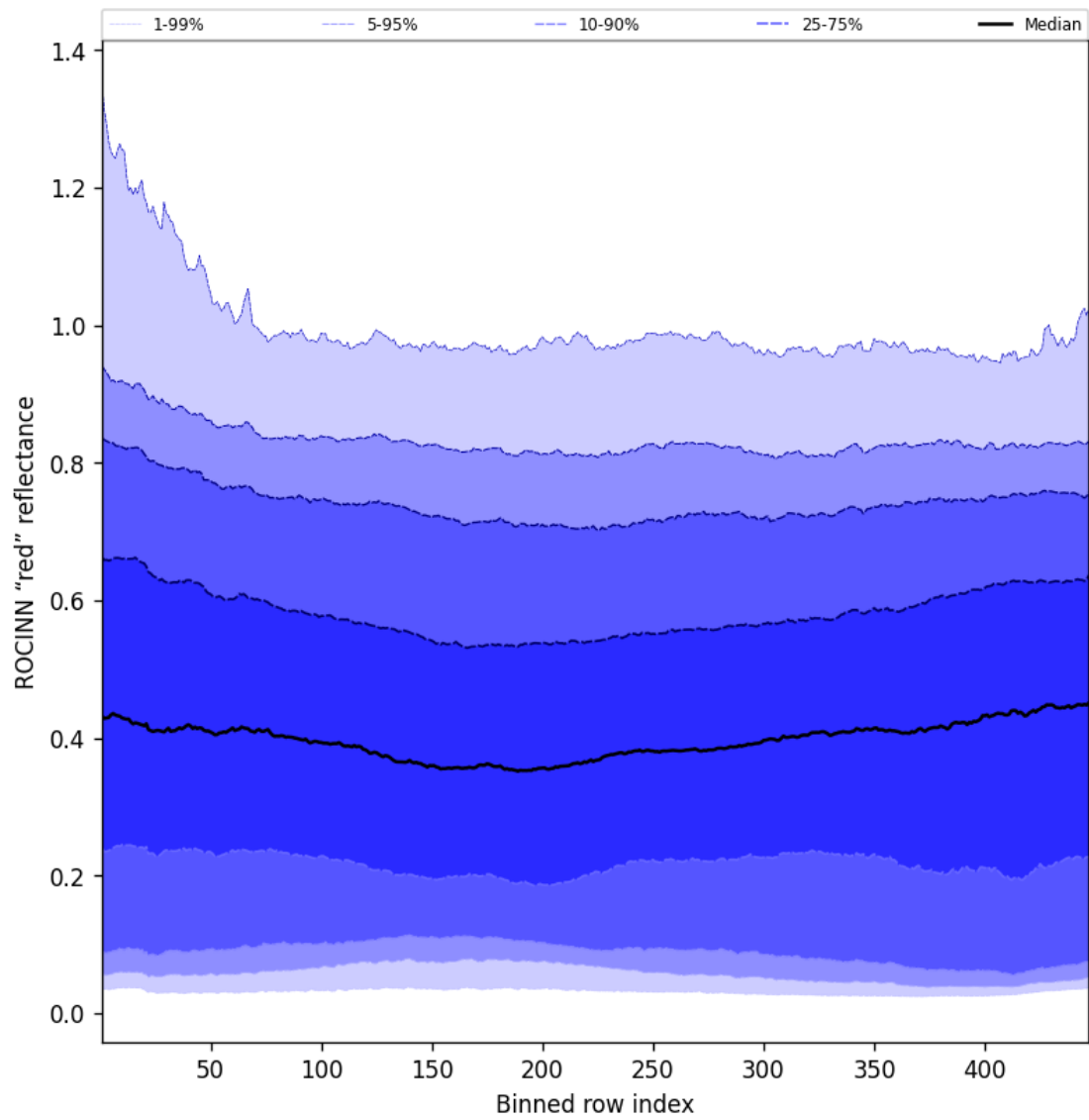


Figure 67: Along track statistics of “ROCINN “red” reflectance” for 2025-07-12 to 2025-07-13

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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