

PyCAMA report generated by tropl2-proc

tropl2-proc

2025-10-14 (02:45)

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]	0.619 ± 0.376	19160854	0.995	0.650	0.780	0.0	1.000
cloud fraction [1]	0.572 ± 0.342	19160854	0.995	0.721	0.552	4.620×10^{-3}	1.000
cloud top height [m]	$(0.389 \pm 0.275) \times 10^4$	19160854	1.425×10^3	3.862×10^3	3.228×10^3	0.0	2.000×10^4
cloud optical thickness [1]	21.7 ± 41.1	19160854	9.77	11.5	9.68	1.000	250
cloud fraction crb [1]	0.571 ± 0.342	19160854	0.995	0.719	0.550	8.015×10^{-3}	1.000
cloud height crb [m]	$(0.306 \pm 0.231) \times 10^4$	19160854	975	3.257×10^3	2.554×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.604 ± 0.216	19160854	0.995	0.282	0.579	0.0	1.000
surface albedo fitted [1]	0.232 ± 0.303	19160854	2.500×10^{-2}	0.277	5.641×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.219 ± 0.288	19160854	1.500×10^{-2}	0.283	4.704×10^{-2}	0.0	1.000
fitted root mean square [1]	$(6.154 \pm 7.442) \times 10^{-4}$	19160854	5.000×10^{-5}	7.507×10^{-4}	3.917×10^{-4}	1.012×10^{-6}	0.140
fitted root mean square crb [1]	$(5.366 \pm 6.381) \times 10^{-4}$	19160854	5.000×10^{-5}	6.808×10^{-4}	2.968×10^{-4}	9.532×10^{-7}	6.571×10^{-2}
wavelength shift [nm]	$(8.815 \pm 7.304) \times 10^{-3}$	19160854	-3.000×10^{-4}	1.090×10^{-2}	8.290×10^{-3}	-4.653×10^{-2}	6.680×10^{-2}
cloud fraction apriori [1]	0.579 ± 0.347	19160854	0.995	0.747	0.565	0.0	1.000
reflectance blue ocra [1]	0.576 ± 0.234	19160854	0.285	0.400	0.552	0.123	2.10
reflectance green ocra [1]	0.523 ± 0.262	19160854	0.175	0.471	0.503	7.108×10^{-2}	2.21
reflectance continuum aband [1]	0.475 ± 0.286	19160854	4.500×10^{-2}	0.475	0.466	8.139×10^{-3}	6.02

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	0.0	0.300	0.950	1.000	1.000	1.000	1.000
cloud fraction [1]	2.791×10^{-2}	7.179×10^{-2}	0.113	0.164	0.253	0.974	1.000	1.000	1.000	1.000
cloud top height [m]	239	704	1.036×10^3	1.304×10^3	1.682×10^3	5.544×10^3	6.810×10^3	7.857×10^3	9.210×10^3	1.163×10^4
cloud optical thickness [1]	1.000	2.35	3.56	4.57	5.78	17.3	27.3	42.1	80.7	250
cloud fraction crb [1]	2.741×10^{-2}	7.107×10^{-2}	0.112	0.163	0.253	0.973	1.000	1.000	1.000	1.000
cloud height crb [m]	0.0	301	593	829	1.170×10^3	4.427×10^3	5.542×10^3	6.524×10^3	7.604×10^3	9.437×10^3
cloud albedo crb [1]	5.131×10^{-2}	0.245	0.360	0.421	0.467	0.749	0.845	0.931	1.000	1.000
surface albedo fitted [1]	0.0	8.833×10^{-3}	1.461×10^{-2}	1.950×10^{-2}	2.654×10^{-2}	0.304	0.693	0.796	0.890	0.994
surface albedo fitted crb [1]	0.0	7.232×10^{-3}	1.126×10^{-2}	1.513×10^{-2}	2.087×10^{-2}	0.304	0.661	0.739	0.829	0.940
fitted root mean square [1]	1.563×10^{-5}	2.982×10^{-5}	4.738×10^{-5}	7.428×10^{-5}	1.270×10^{-4}	8.777×10^{-4}	1.171×10^{-3}	1.460×10^{-3}	1.903×10^{-3}	3.016×10^{-3}
fitted root mean square crb [1]	7.621×10^{-6}	1.736×10^{-5}	2.951×10^{-5}	4.734×10^{-5}	8.578×10^{-5}	7.665×10^{-4}	1.075×10^{-3}	1.380×10^{-3}	1.829×10^{-3}	2.875×10^{-3}
wavelength shift [nm]	-6.590×10^{-3}	-4.450×10^{-4}	3.042×10^{-4}	1.249×10^{-3}	3.004×10^{-3}	1.390×10^{-2}	1.639×10^{-2}	1.847×10^{-2}	2.114×10^{-2}	2.679×10^{-2}
cloud fraction apriori [1]	3.166×10^{-2}	6.800×10^{-2}	0.107	0.159	0.253	1.000	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.232	0.258	0.285	0.317	0.370	0.770	0.832	0.878	0.939	1.14
reflectance green ocra [1]	0.152	0.174	0.194	0.223	0.278	0.749	0.821	0.871	0.931	1.10
reflectance continuum aband [1]	2.978×10^{-2}	5.451×10^{-2}	8.977×10^{-2}	0.140	0.230	0.705	0.789	0.847	0.916	1.09

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]	0.605 ± 0.384	9158341	0.690	0.780	0.0	1.000	0.260	0.950
cloud fraction [1]	0.607 ± 0.353	9158341	0.745	0.650	4.620×10^{-3}	1.000	0.255	1.000
cloud top height [m]	$(0.396 \pm 0.259) \times 10^4$	9158341	3.585×10^3	3.430×10^3	0.0	2.000×10^4	1.880×10^3	5.465×10^3
cloud optical thickness [1]	24.2 ± 41.1	9158341	15.3	10.6	1.000	250	6.37	21.7
cloud fraction crb [1]	0.606 ± 0.353	9158341	0.746	0.648	8.015×10^{-3}	1.000	0.253	1.000
cloud height crb [m]	$(0.330 \pm 0.226) \times 10^4$	9158341	3.175×10^3	2.873×10^3	0.0	2.000×10^4	1.464×10^3	4.640×10^3
cloud albedo crb [1]	0.576 ± 0.200	9158341	0.246	0.565	0.0	1.000	0.458	0.704
surface albedo fitted [1]	0.148 ± 0.190	9158341	0.174	5.888×10^{-2}	0.0	1.000	2.727×10^{-2}	0.201
surface albedo fitted crb [1]	0.143 ± 0.191	9158341	0.175	4.874×10^{-2}	0.0	1.000	2.145×10^{-2}	0.197
fitted root mean square [1]	$(4.837 \pm 6.933) \times 10^{-4}$	9158341	5.345×10^{-4}	2.473×10^{-4}	1.012×10^{-6}	0.140	9.553×10^{-5}	6.301×10^{-4}
fitted root mean square crb [1]	$(4.350 \pm 5.968) \times 10^{-4}$	9158341	5.338×10^{-4}	1.852×10^{-4}	9.532×10^{-7}	6.571×10^{-2}	5.483×10^{-5}	5.887×10^{-4}
wavelength shift [nm]	$(7.270 \pm 6.887) \times 10^{-3}$	9158341	9.848×10^{-3}	6.306×10^{-3}	-4.348×10^{-2}	6.679×10^{-2}	1.839×10^{-3}	1.169×10^{-2}
cloud fraction apriori [1]	0.612 ± 0.358	9158341	0.749	0.664	0.0	1.000	0.251	1.000
reflectance blue ocra [1]	0.545 ± 0.220	9158341	0.340	0.519	0.123	2.01	0.359	0.700
reflectance green ocra [1]	0.487 ± 0.245	9158341	0.404	0.460	7.108×10^{-2}	2.21	0.266	0.670
reflectance continuum aband [1]	0.440 ± 0.273	9158341	0.408	0.416	8.139×10^{-3}	6.02	0.223	0.631

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]	0.632 ± 0.367	10002513	0.570	0.770	0.0	1.000	0.380	0.950
cloud fraction [1]	0.540 ± 0.329	10002513	0.647	0.484	8.056×10^{-3}	1.000	0.252	0.899
cloud top height [m]	$(0.384 \pm 0.289) \times 10^4$	10002513	4.075×10^3	2.995×10^3	0.0	2.000×10^4	1.543×10^3	5.618×10^3
cloud optical thickness [1]	19.5 ± 41.0	10002513	8.78	9.06	1.000	250	5.38	14.2
cloud fraction crb [1]	0.540 ± 0.329	10002513	0.645	0.483	8.497×10^{-3}	1.000	0.253	0.898
cloud height crb [m]	$(0.284 \pm 0.234) \times 10^4$	10002513	3.250×10^3	2.196×10^3	0.0	2.000×10^4	964	4.214×10^3
cloud albedo crb [1]	0.629 ± 0.227	10002513	0.326	0.596	0.0	1.000	0.475	0.801
surface albedo fitted [1]	0.310 ± 0.361	10002513	0.692	5.404×10^{-2}	0.0	1.000	2.592×10^{-2}	0.718
surface albedo fitted crb [1]	0.289 ± 0.339	10002513	0.658	4.552×10^{-2}	0.0	1.000	2.036×10^{-2}	0.678
fitted root mean square [1]	$(7.360 \pm 7.684) \times 10^{-4}$	10002513	8.483×10^{-4}	5.660×10^{-4}	2.324×10^{-6}	0.101	2.011×10^{-4}	1.050×10^{-3}
fitted root mean square crb [1]	$(6.296 \pm 6.601) \times 10^{-4}$	10002513	7.616×10^{-4}	4.189×10^{-4}	2.275×10^{-6}	6.037×10^{-2}	1.418×10^{-4}	9.034×10^{-4}
wavelength shift [nm]	$(1.023 \pm 0.739) \times 10^{-2}$	10002513	1.083×10^{-2}	1.028×10^{-2}	-4.653×10^{-2}	6.680×10^{-2}	4.603×10^{-3}	1.543×10^{-2}
cloud fraction apriori [1]	0.548 ± 0.333	10002513	0.674	0.497	0.0	1.000	0.254	0.928
reflectance blue oca [1]	0.604 ± 0.242	10002513	0.430	0.597	0.157	2.10	0.382	0.811
reflectance green oca [1]	0.557 ± 0.273	10002513	0.509	0.559	9.213×10^{-2}	2.13	0.292	0.801
reflectance continuum aband [1]	0.506 ± 0.295	10002513	0.517	0.531	1.326×10^{-2}	4.68	0.239	0.757

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]	0.674 ± 0.351	12389855	0.570	0.850	0.0	1.000	0.400	0.970
cloud fraction [1]	0.582 ± 0.347	12389855	0.738	0.592	7.963×10^{-3}	1.000	0.243	0.981
cloud top height [m]	$(0.349 \pm 0.256) \times 10^4$	12389855	3.237×10^3	2.738×10^3	0.0	2.000×10^4	1.532×10^3	4.769×10^3
cloud optical thickness [1]	19.4 ± 33.2	12389855	10.1	10.2	1.000	250	6.81	16.9
cloud fraction crb [1]	0.581 ± 0.347	12389855	0.738	0.591	8.497×10^{-3}	1.000	0.242	0.980
cloud height crb [m]	$(0.278 \pm 0.227) \times 10^4$	12389855	2.981×10^3	2.127×10^3	0.0	2.000×10^4	1.004×10^3	3.985×10^3
cloud albedo crb [1]	0.557 ± 0.186	12389855	0.219	0.539	0.0	1.000	0.452	0.671
surface albedo fitted [1]	0.114 ± 0.226	12389855	3.442×10^{-2}	3.284×10^{-2}	0.0	1.000	1.985×10^{-2}	5.427×10^{-2}
surface albedo fitted crb [1]	0.106 ± 0.220	12389855	2.970×10^{-2}	2.623×10^{-2}	0.0	1.000	1.539×10^{-2}	4.509×10^{-2}
fitted root mean square [1]	$(5.542 \pm 6.865) \times 10^{-4}$	12389855	7.137×10^{-4}	2.935×10^{-4}	1.012×10^{-6}	6.766×10^{-2}	9.049×10^{-5}	8.042×10^{-4}
fitted root mean square crb [1]	$(5.205 \pm 6.349) \times 10^{-4}$	12389855	7.020×10^{-4}	2.584×10^{-4}	9.532×10^{-7}	4.295×10^{-2}	6.454×10^{-5}	7.665×10^{-4}
wavelength shift [nm]	$(8.436 \pm 7.619) \times 10^{-3}$	12389855	1.155×10^{-2}	7.637×10^{-3}	-4.344×10^{-2}	6.680×10^{-2}	2.280×10^{-3}	1.383×10^{-2}
cloud fraction apriori [1]	0.586 ± 0.352	12389855	0.763	0.601	0.0	1.000	0.237	1.000
reflectance blue oca [1]	0.530 ± 0.210	12389855	0.334	0.496	0.162	2.03	0.351	0.685
reflectance green oca [1]	0.469 ± 0.237	12389855	0.401	0.435	8.803×10^{-2}	2.20	0.254	0.655
reflectance continuum aband [1]	0.398 ± 0.270	12389855	0.468	0.375	1.326×10^{-2}	4.37	0.148	0.616

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]	0.495 ± 0.402	5161567	0.900	0.630	0.0	1.000	0.0	0.900
cloud fraction [1]	0.517 ± 0.321	5161567	0.599	0.431	4.620×10^{-3}	1.000	0.253	0.852
cloud top height [m]	$(0.496 \pm 0.297) \times 10^4$	5161567	4.140×10^3	4.737×10^3	0.0	2.000×10^4	2.626×10^3	6.766×10^3
cloud optical thickness [1]	23.5 ± 51.0	5161567	10.5	7.22	1.000	250	4.56	15.0
cloud fraction crb [1]	0.517 ± 0.321	5161567	0.596	0.431	8.015×10^{-3}	1.000	0.255	0.851
cloud height crb [m]	$(0.376 \pm 0.229) \times 10^4$	5161567	3.289×10^3	3.486×10^3	0.0	2.000×10^4	1.928×10^3	5.217×10^3
cloud albedo crb [1]	0.708 ± 0.247	5161567	0.406	0.726	0.0	1.000	0.540	0.946
surface albedo fitted [1]	0.514 ± 0.304	5161567	0.578	0.437	0.0	1.000	0.222	0.801
surface albedo fitted crb [1]	0.486 ± 0.276	5161567	0.511	0.452	5.325×10^{-3}	1.000	0.218	0.729
fitted root mean square [1]	$(7.924 \pm 8.349) \times 10^{-4}$	5161567	7.323×10^{-4}	6.233×10^{-4}	2.013×10^{-6}	0.140	3.155×10^{-4}	1.048×10^{-3}
fitted root mean square crb [1]	$(6.050 \pm 6.513) \times 10^{-4}$	5161567	6.498×10^{-4}	3.993×10^{-4}	2.367×10^{-6}	6.571×10^{-2}	1.685×10^{-4}	8.182×10^{-4}
wavelength shift [nm]	$(9.884 \pm 6.617) \times 10^{-3}$	5161567	9.525×10^{-3}	9.636×10^{-3}	-3.443×10^{-2}	5.834×10^{-2}	4.924×10^{-3}	1.445×10^{-2}
cloud fraction apriori [1]	0.529 ± 0.326	5161567	0.633	0.446	0.0	1.000	0.259	0.892
reflectance blue ocra [1]	0.677 ± 0.256	5161567	0.421	0.763	0.124	2.08	0.440	0.861
reflectance green ocra [1]	0.645 ± 0.281	5161567	0.486	0.742	7.108×10^{-2}	2.13	0.373	0.859
reflectance continuum aband [1]	0.640 ± 0.257	5161567	0.421	0.683	9.787×10^{-3}	6.02	0.413	0.834

3 Granule outlines

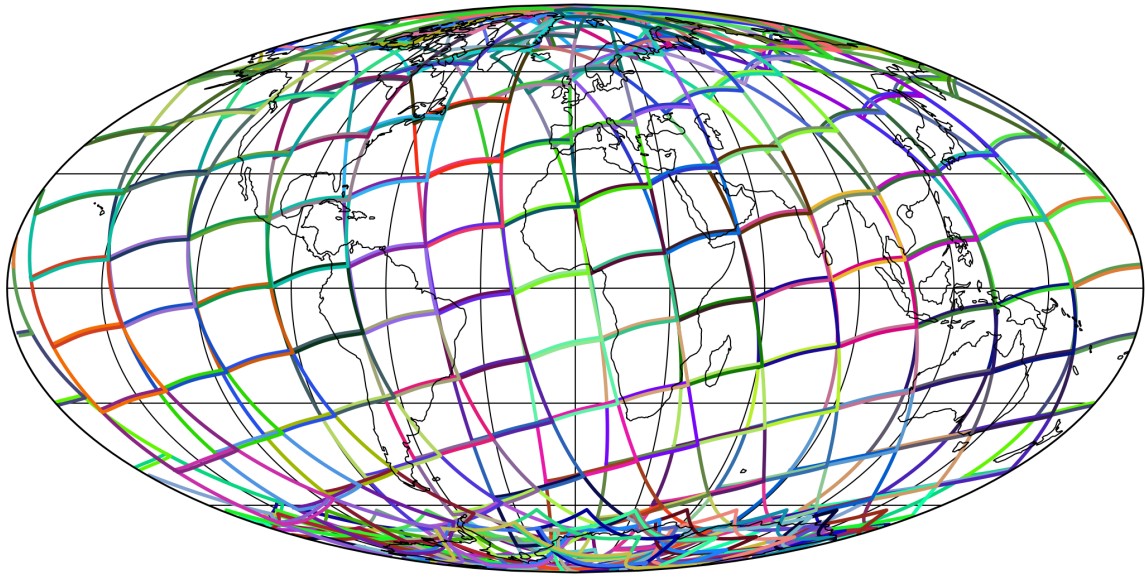


Figure 1: Outline of the granules.

4 Input data monitoring

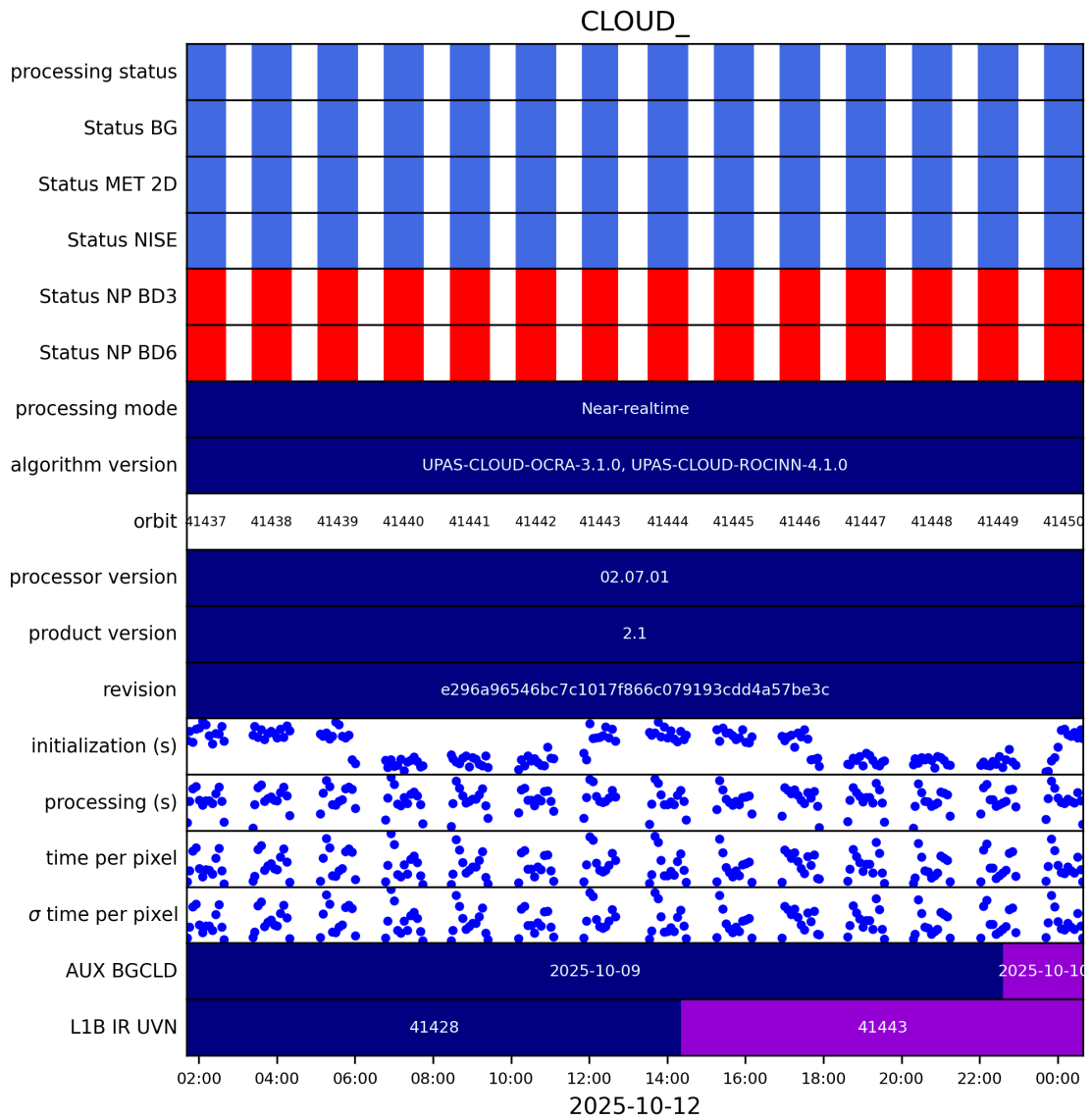


Figure 2: Input data per granule

5 Warnings and errors

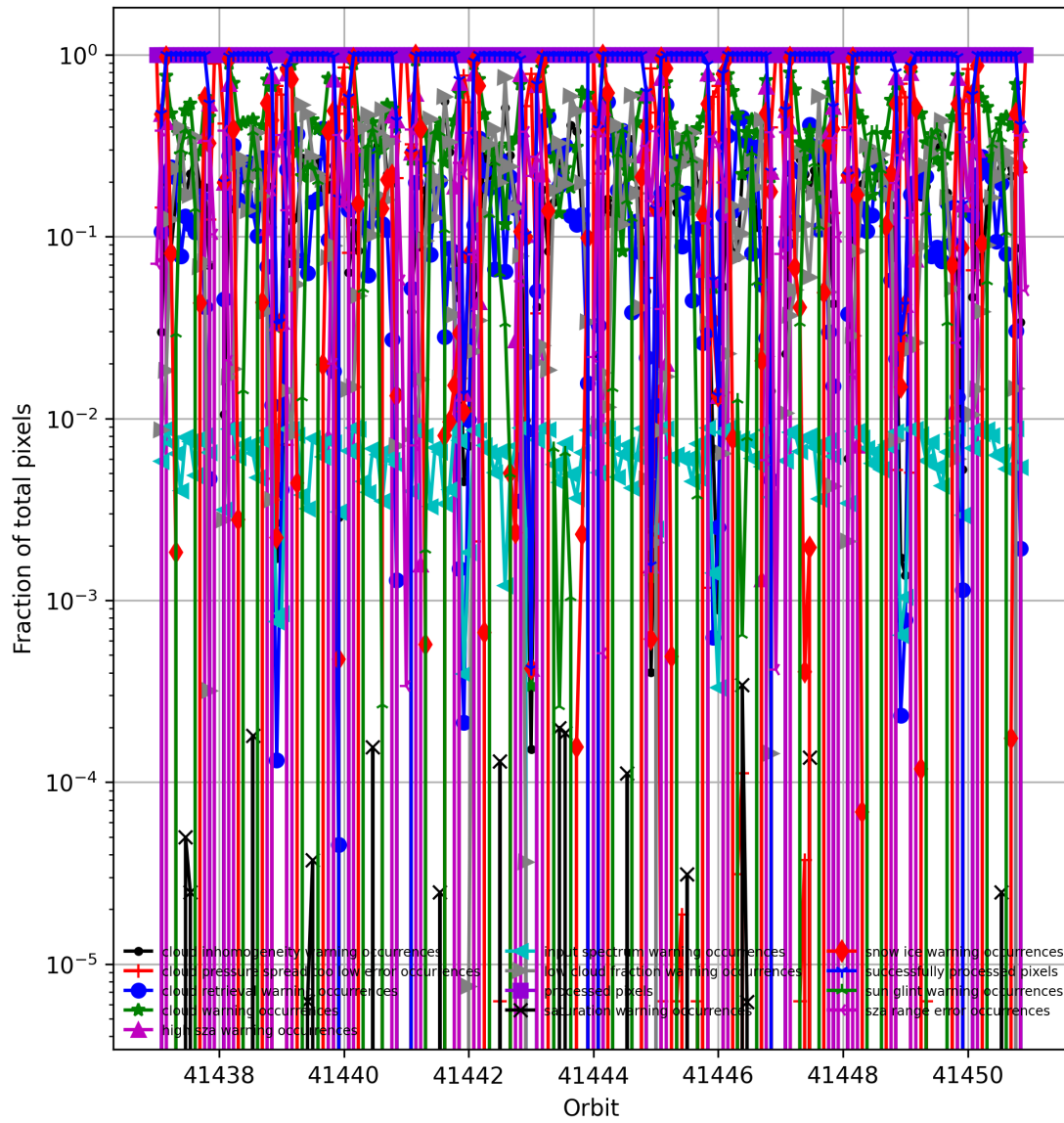


Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

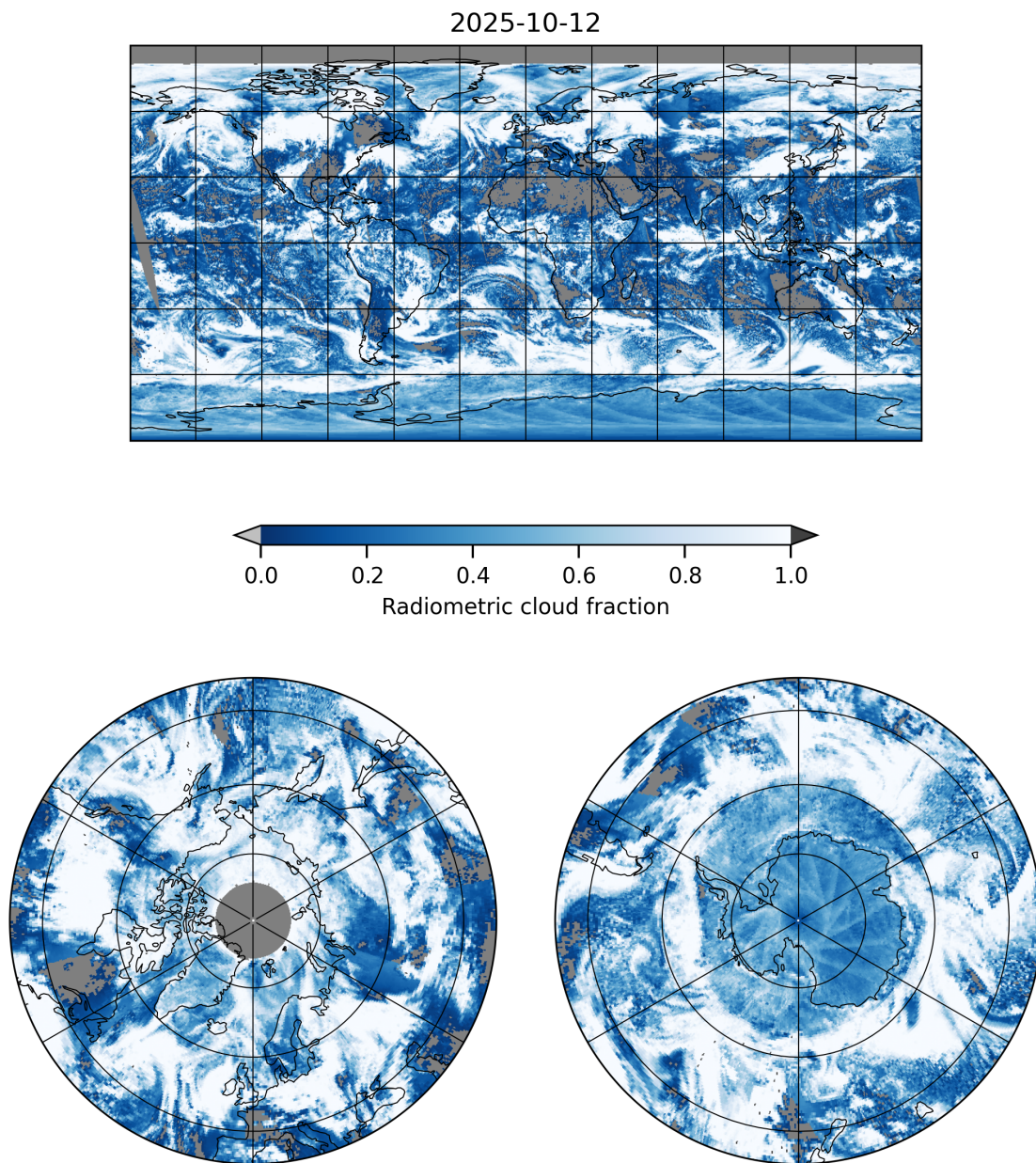


Figure 4: Map of “Radiometric cloud fraction” for 2025-10-12 to 2025-10-13

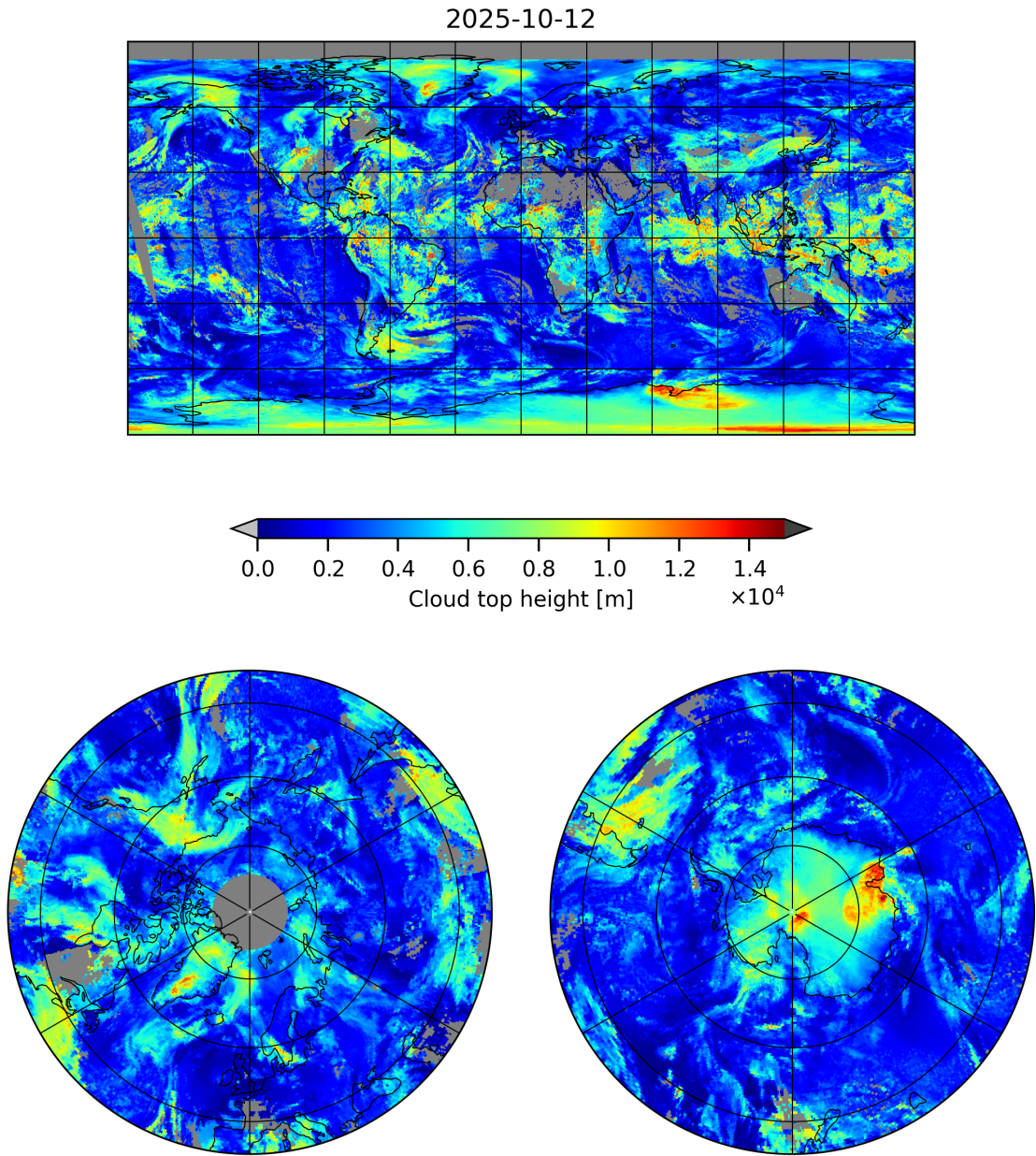


Figure 5: Map of “Cloud top height” for 2025-10-12 to 2025-10-13

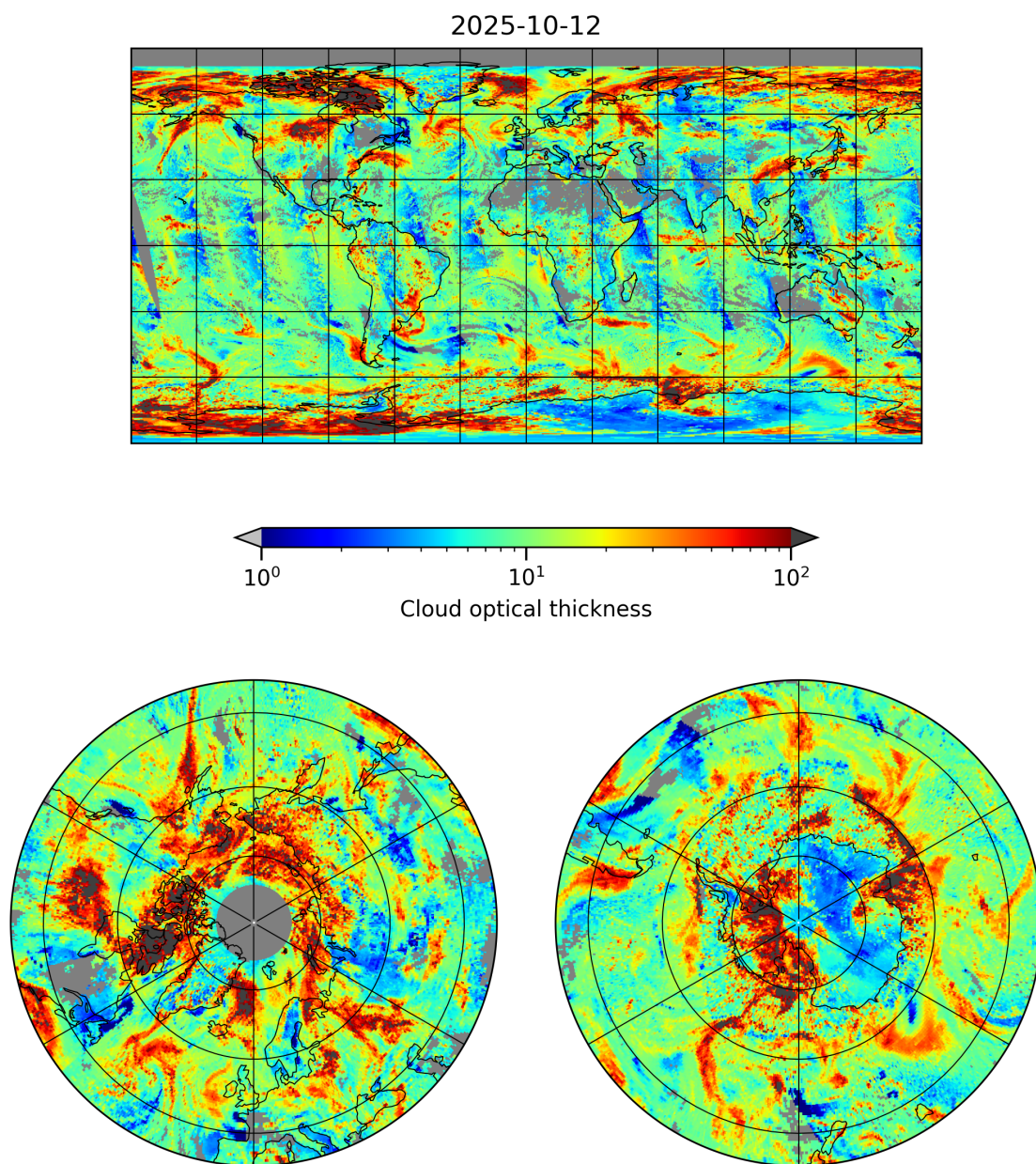


Figure 6: Map of “Cloud optical thickness” for 2025-10-12 to 2025-10-13

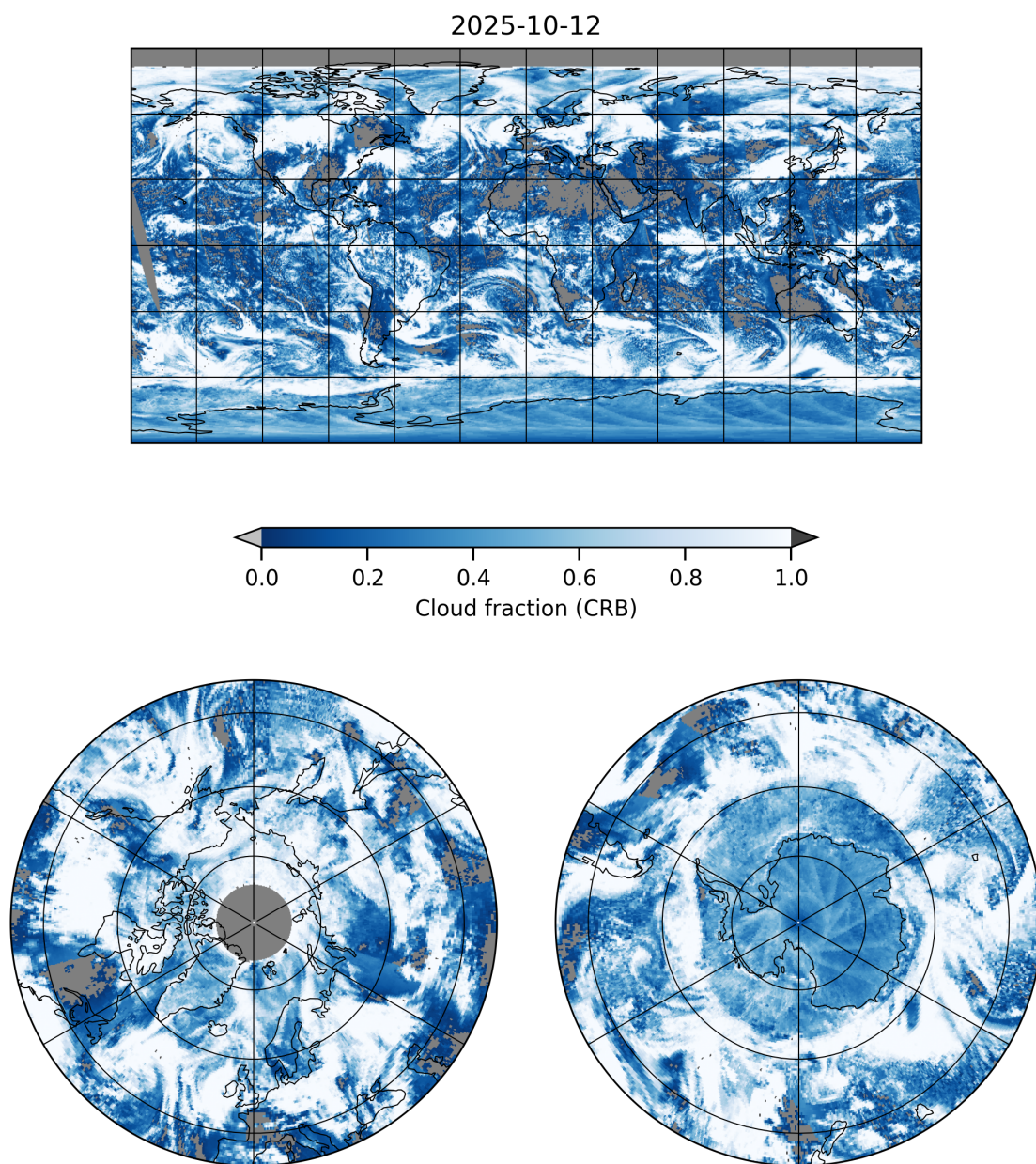


Figure 7: Map of “Cloud fraction (CRB)” for 2025-10-12 to 2025-10-13

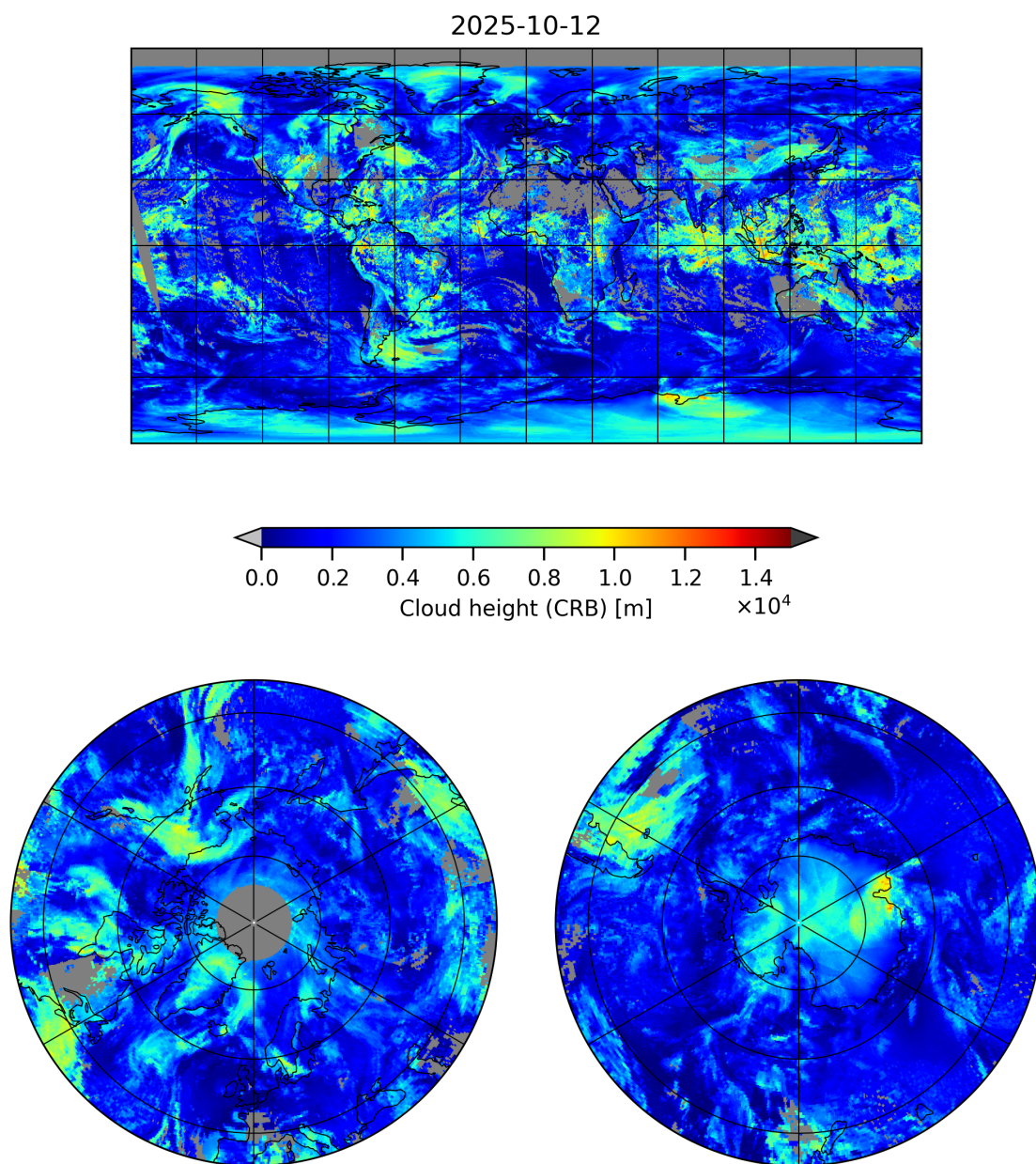


Figure 8: Map of “Cloud height (CRB)” for 2025-10-12 to 2025-10-13

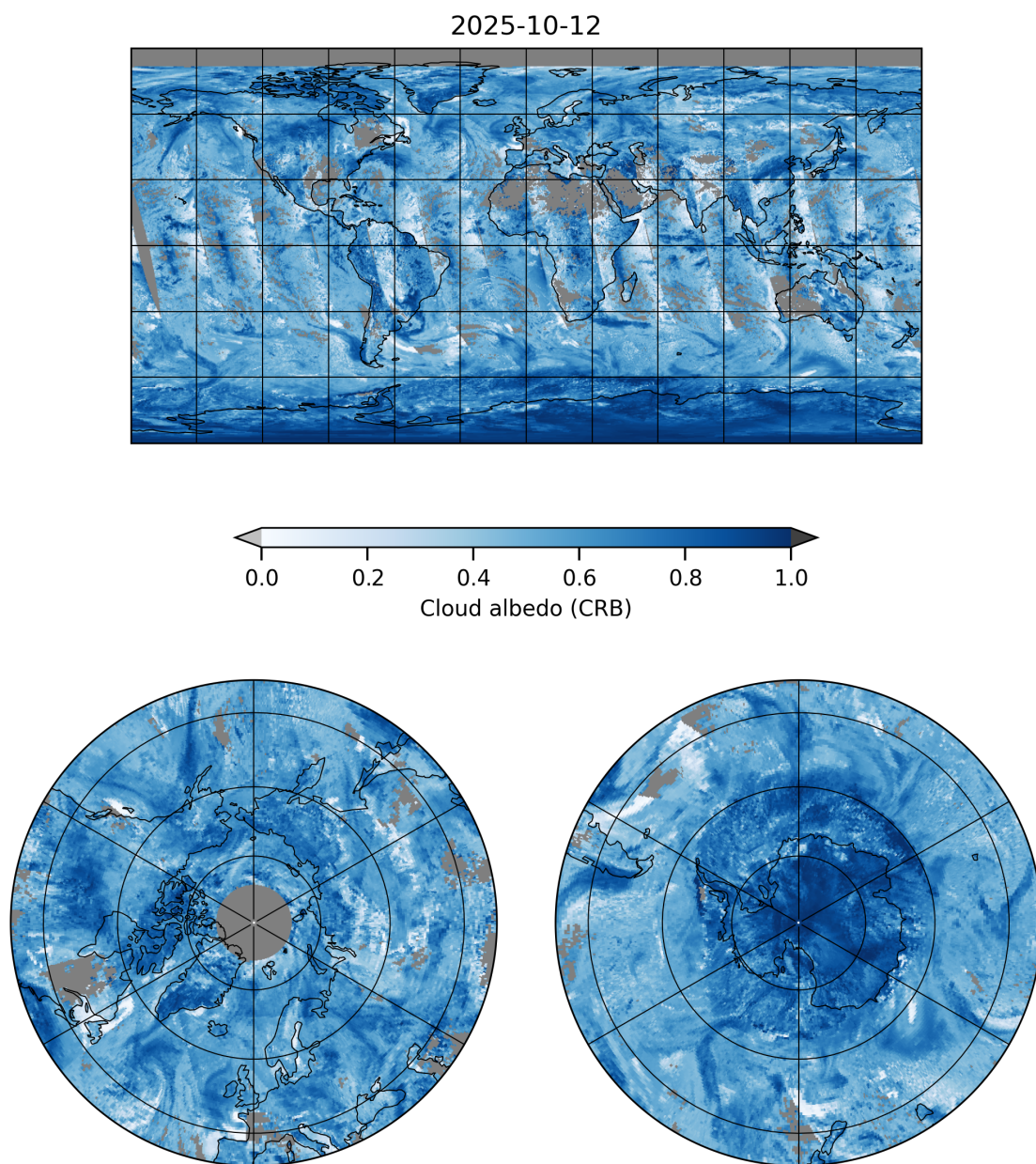


Figure 9: Map of “Cloud albedo (CRB)” for 2025-10-12 to 2025-10-13

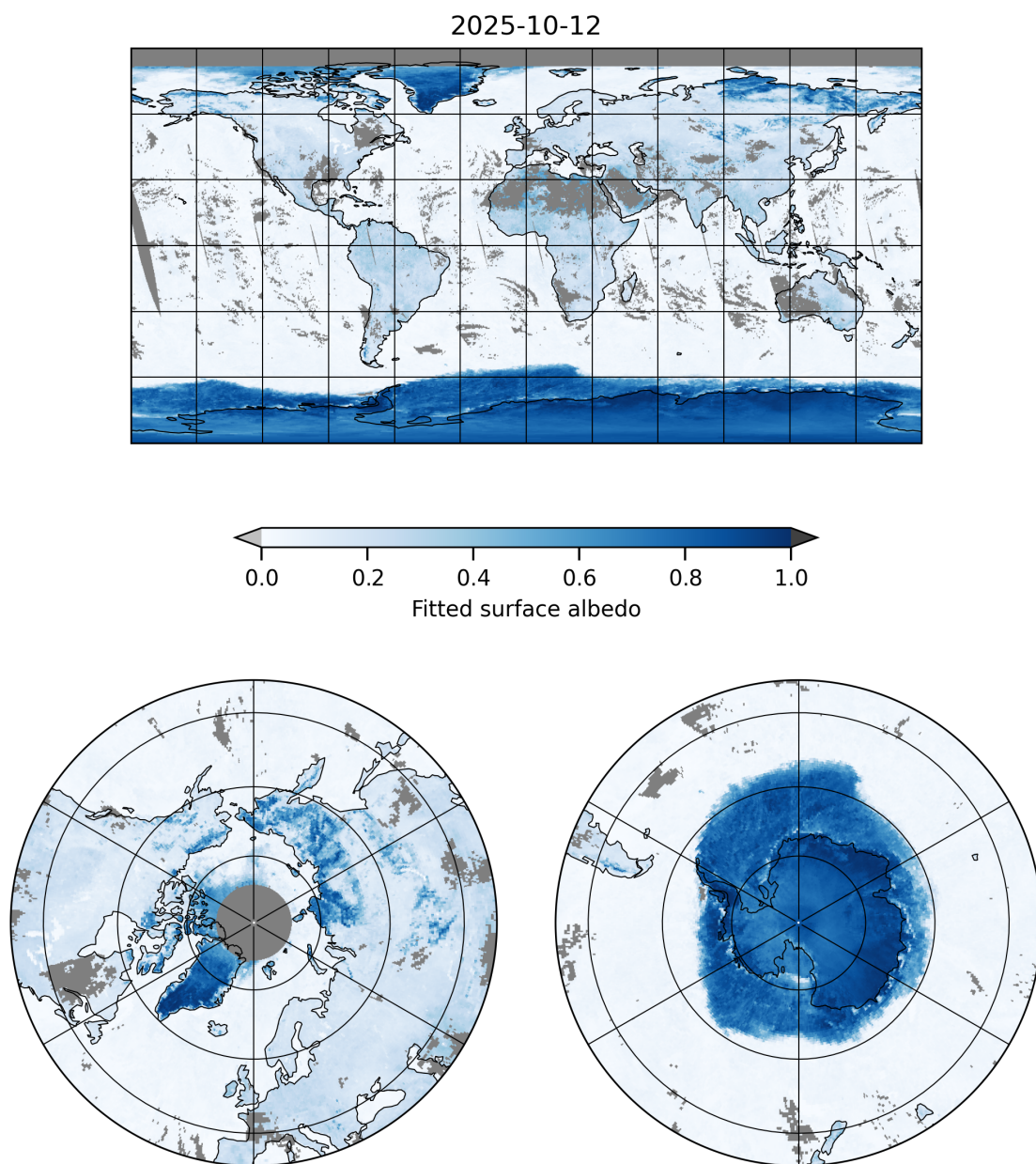


Figure 10: Map of “Fitted surface albedo” for 2025-10-12 to 2025-10-13

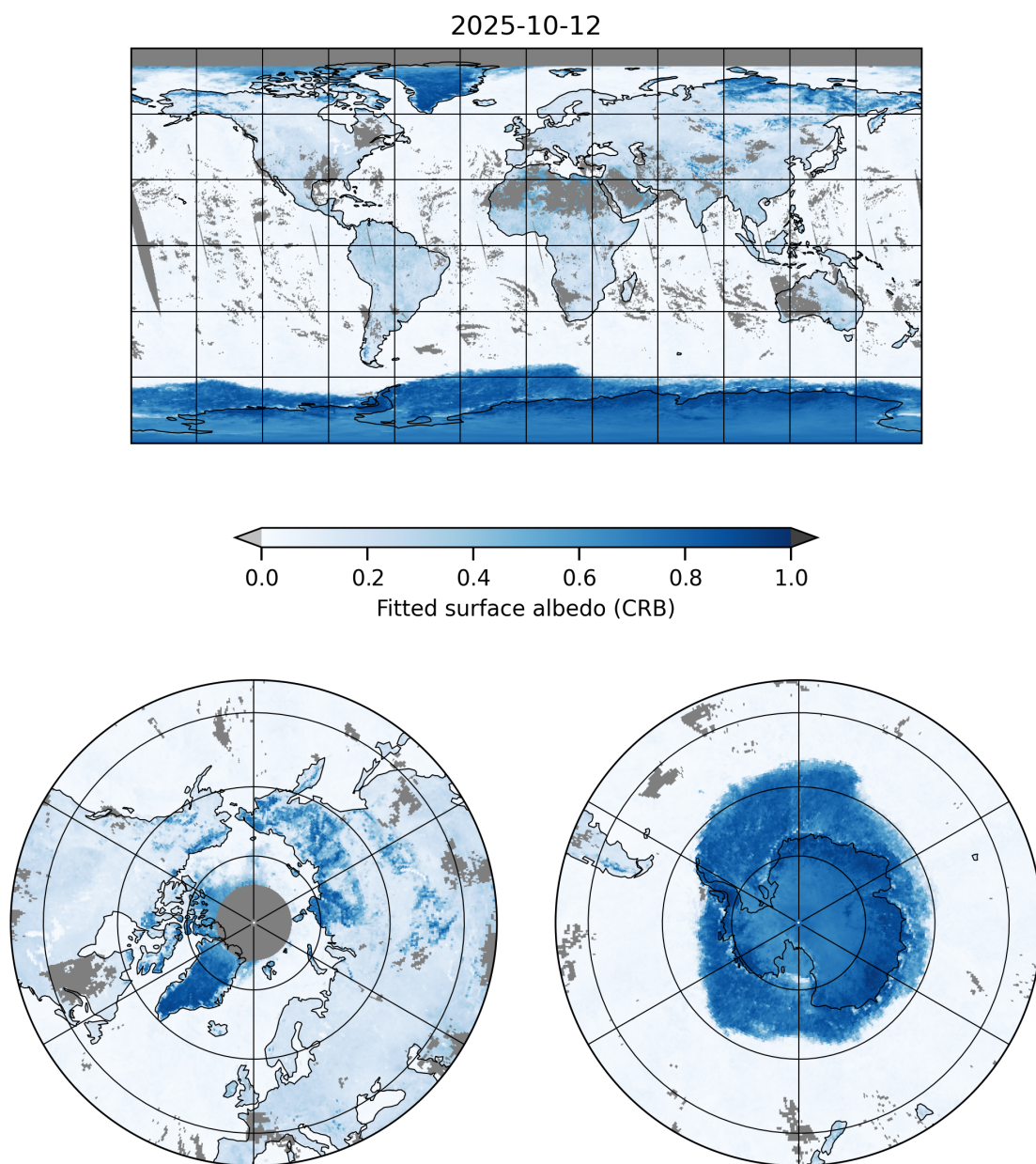


Figure 11: Map of “Fitted surface albedo (CRB)” for 2025-10-12 to 2025-10-13

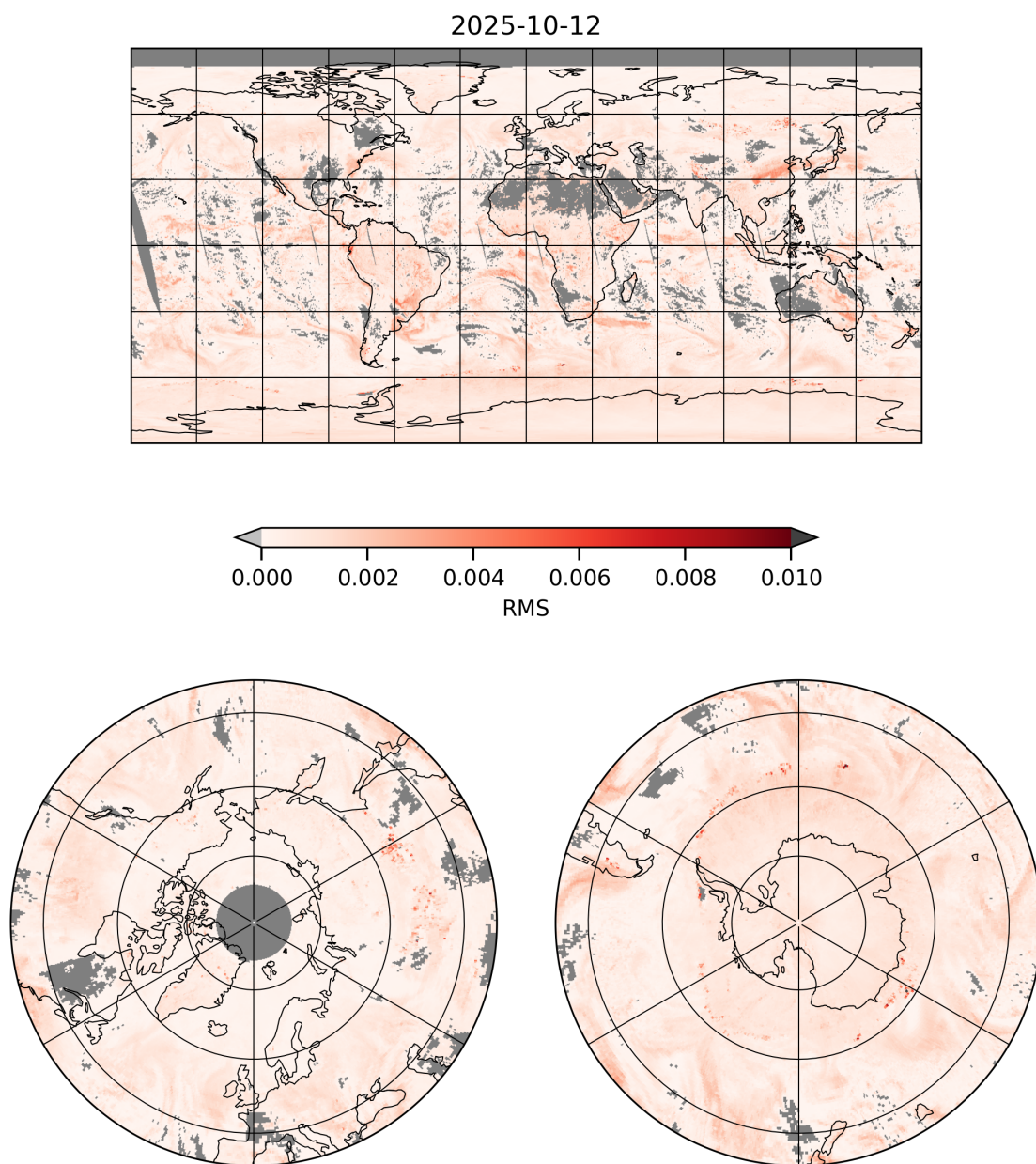


Figure 12: Map of “RMS” for 2025-10-12 to 2025-10-13

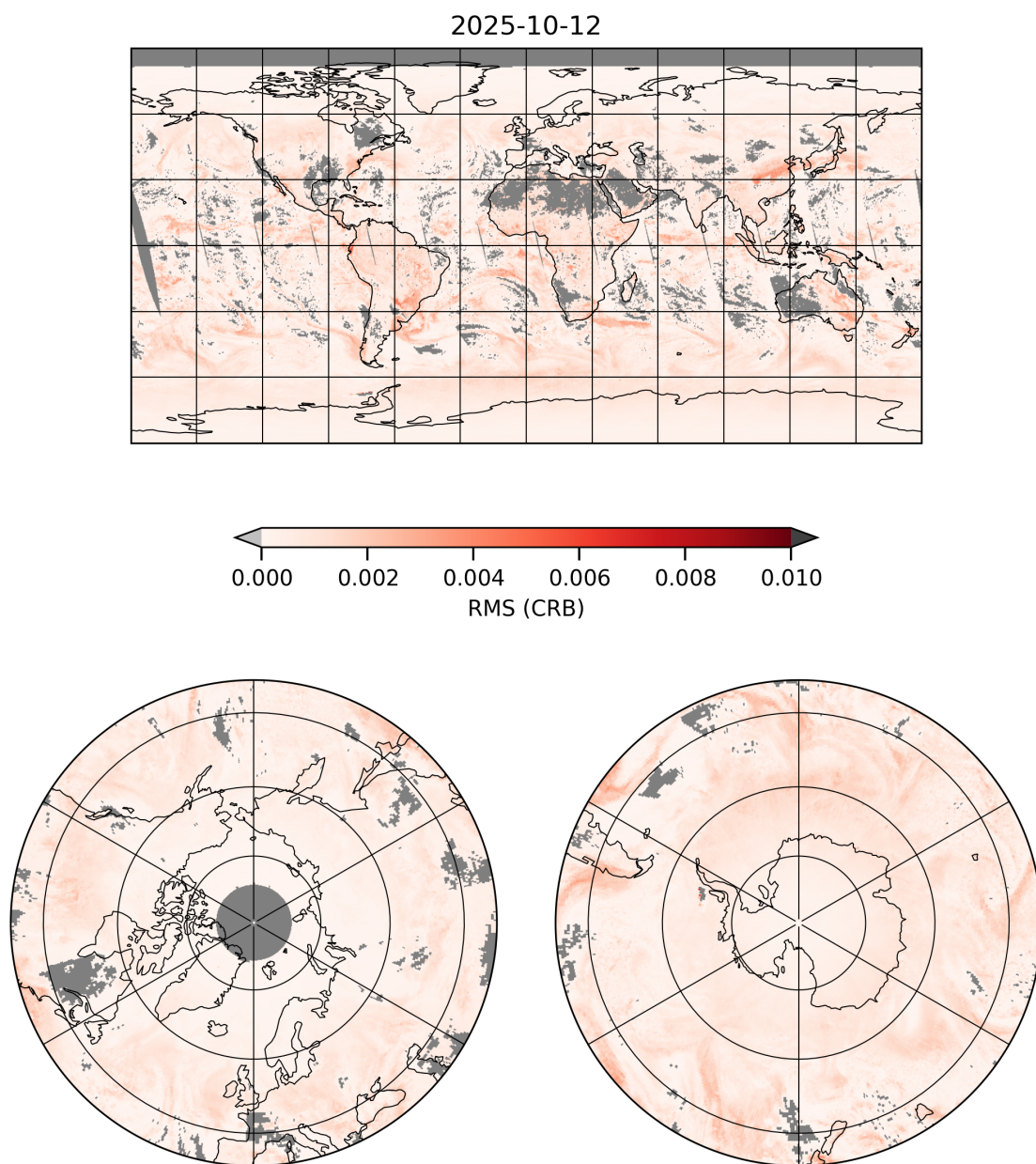


Figure 13: Map of “RMS (CRB)” for 2025-10-12 to 2025-10-13

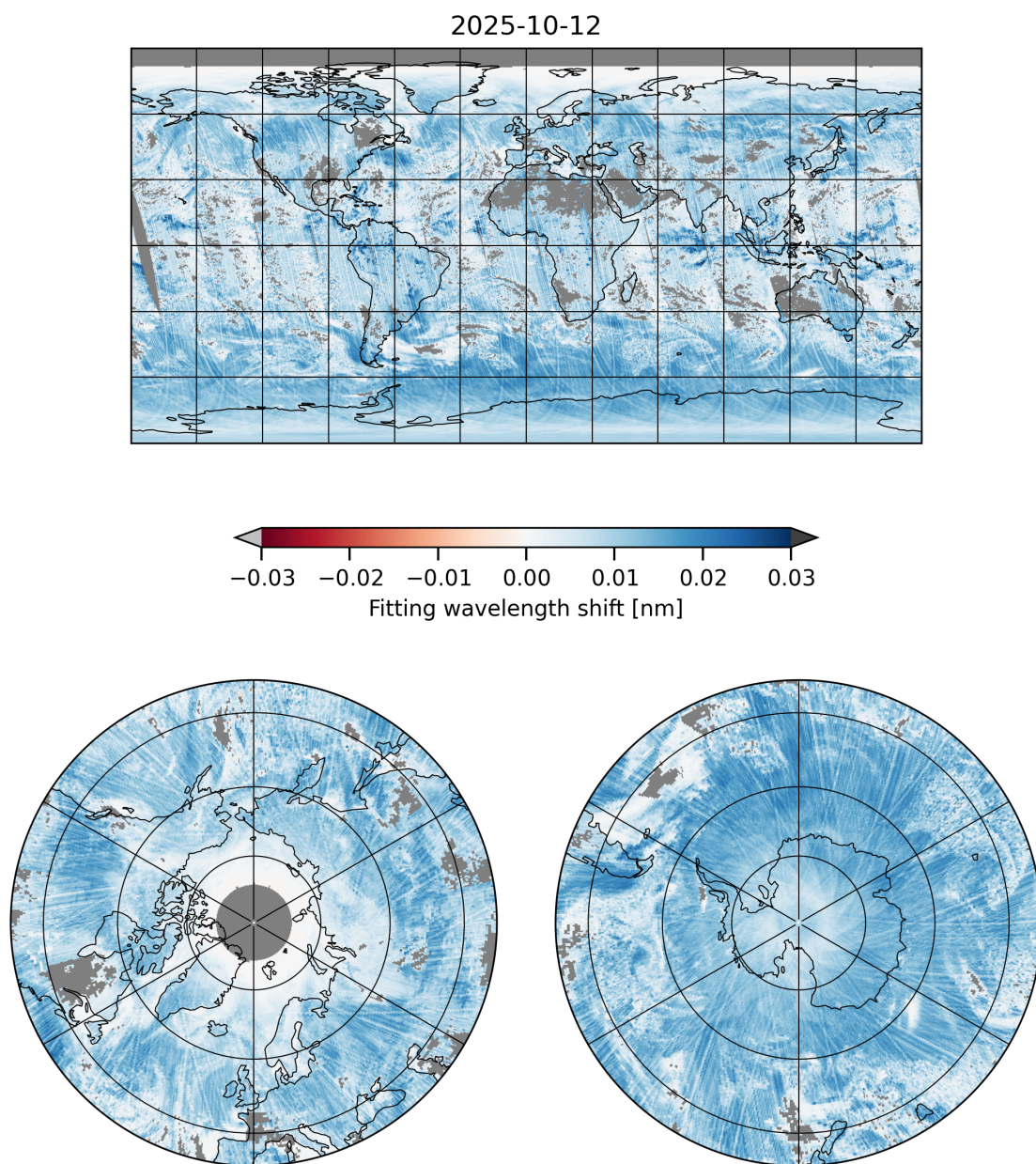


Figure 14: Map of “Fitting wavelength shift” for 2025-10-12 to 2025-10-13

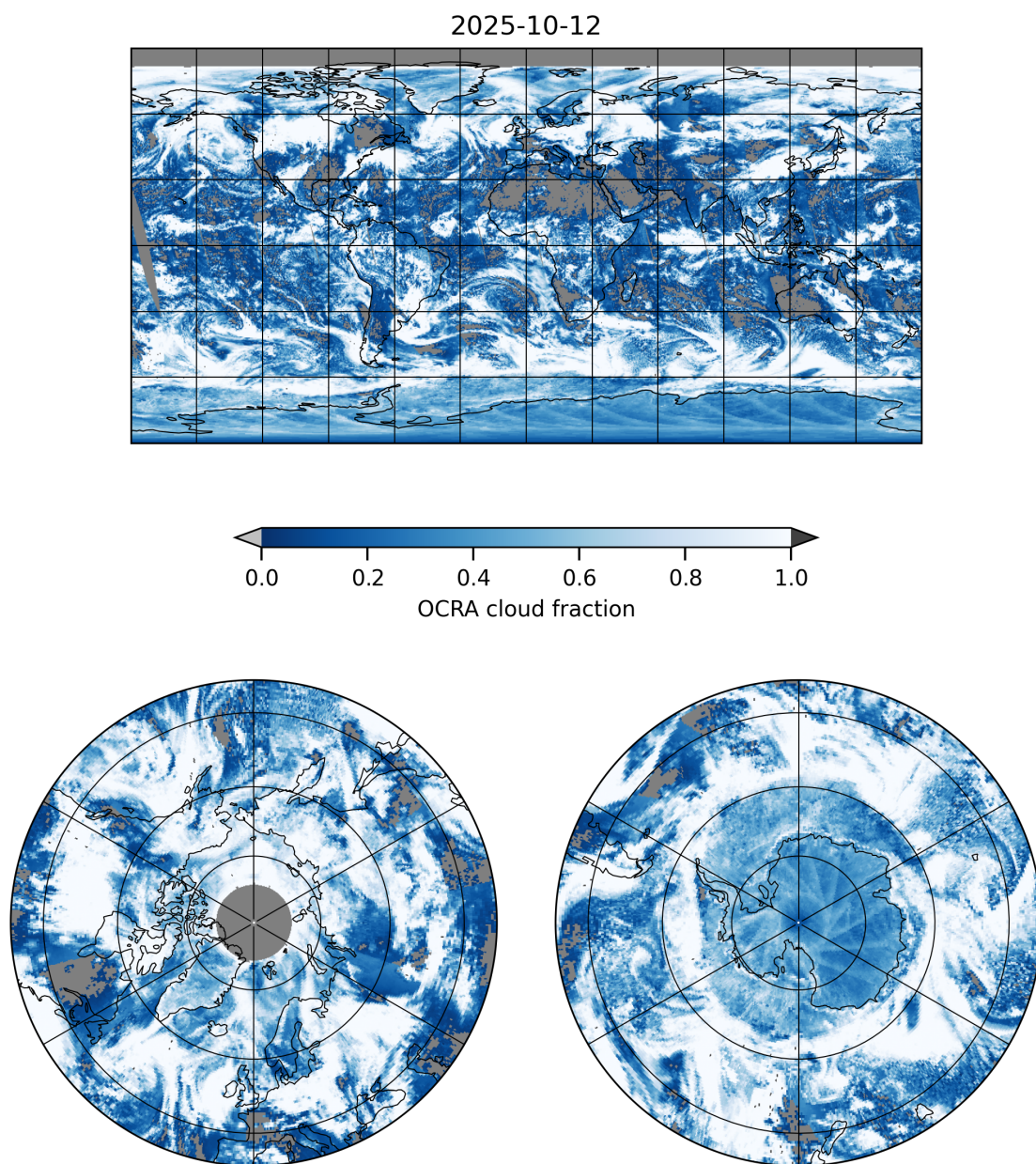


Figure 15: Map of “OCRA cloud fraction” for 2025-10-12 to 2025-10-13

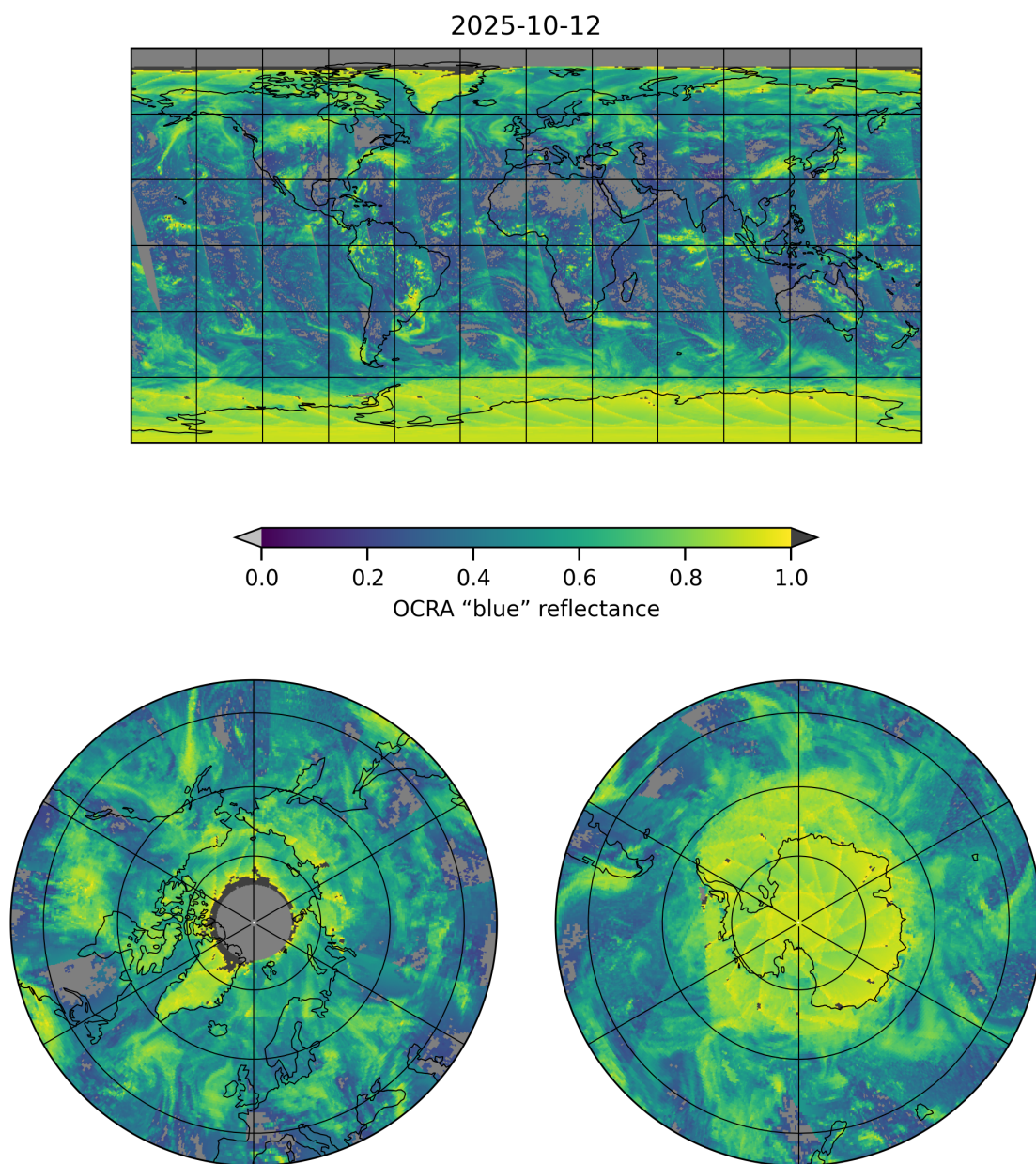


Figure 16: Map of "OCRA "blue" reflectance" for 2025-10-12 to 2025-10-13

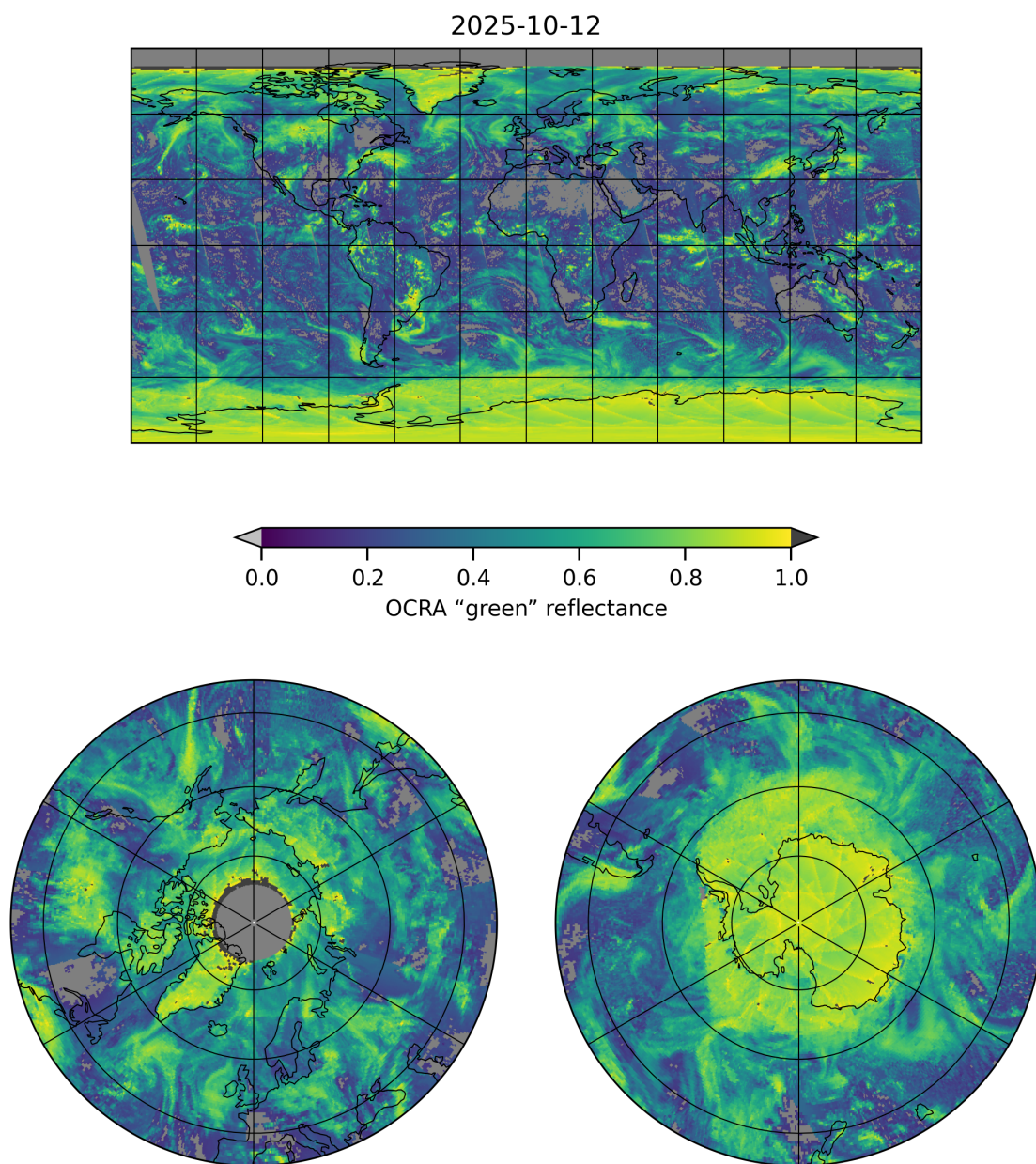


Figure 17: Map of "OCRA "green" reflectance" for 2025-10-12 to 2025-10-13

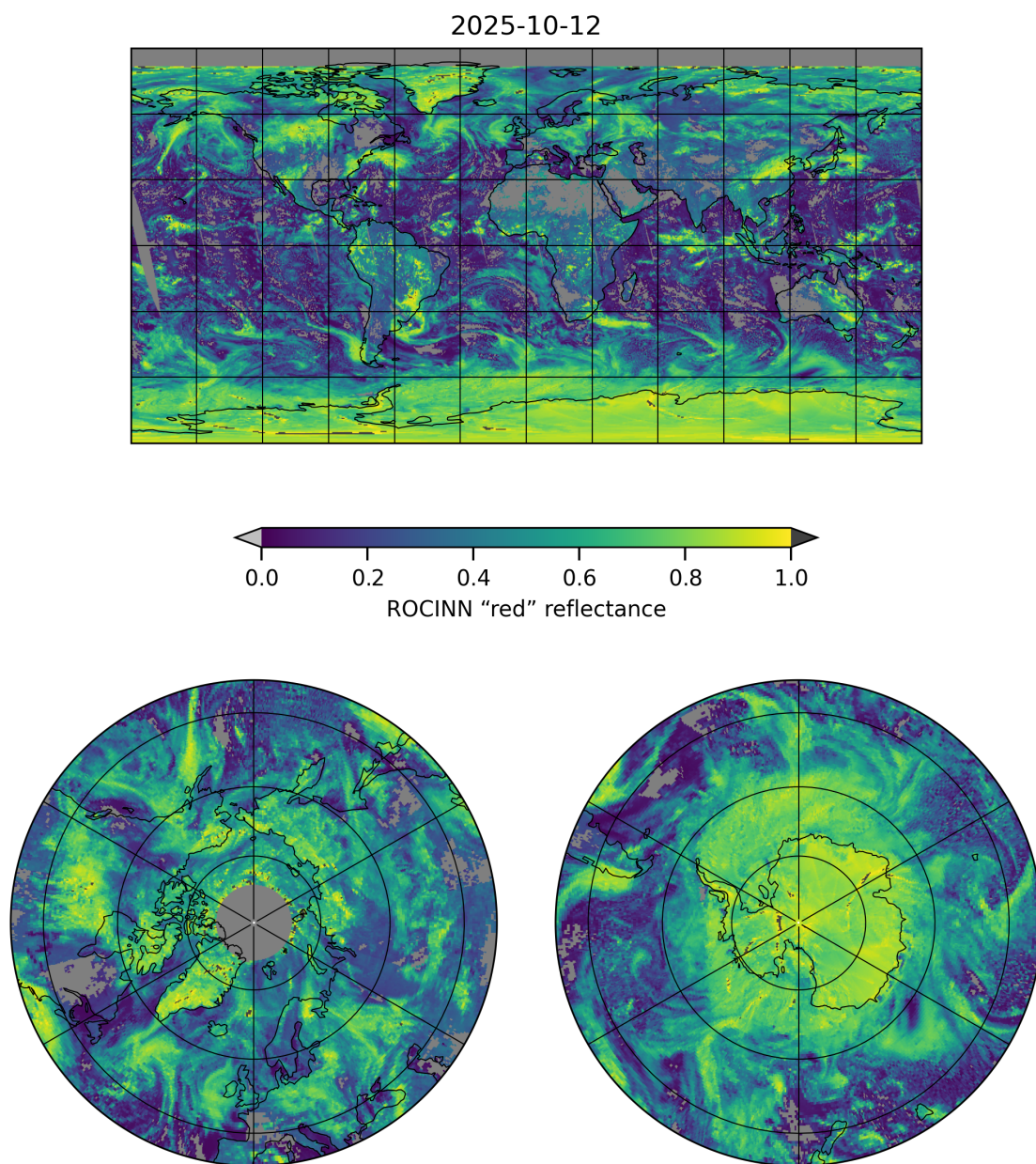


Figure 18: Map of "ROCINN "red" reflectance" for 2025-10-12 to 2025-10-13

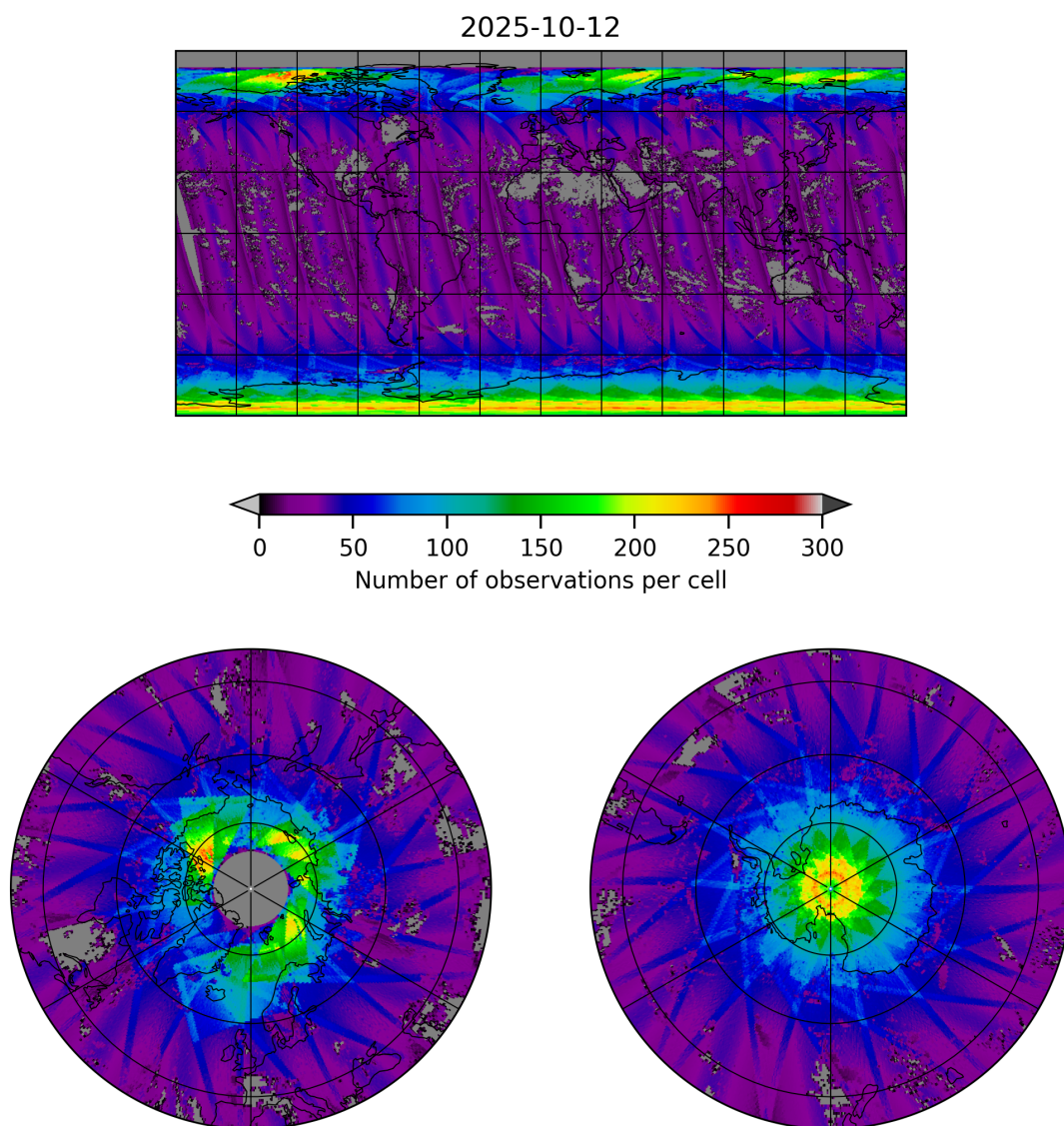


Figure 19: Map of the number of observations for 2025-10-12 to 2025-10-13

7 Zonal average

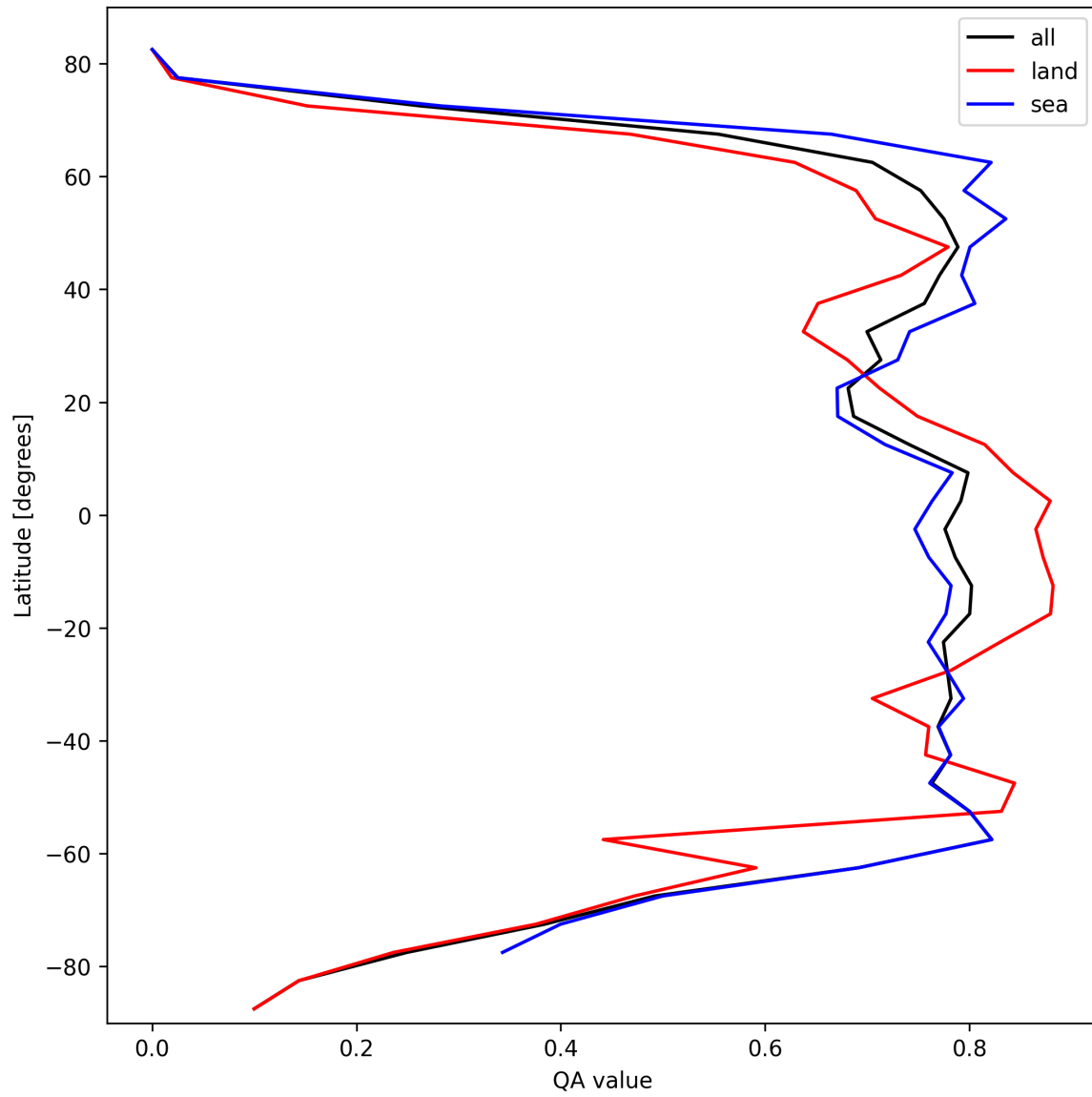


Figure 20: Zonal average of “QA value” for 2025-10-12 to 2025-10-13.

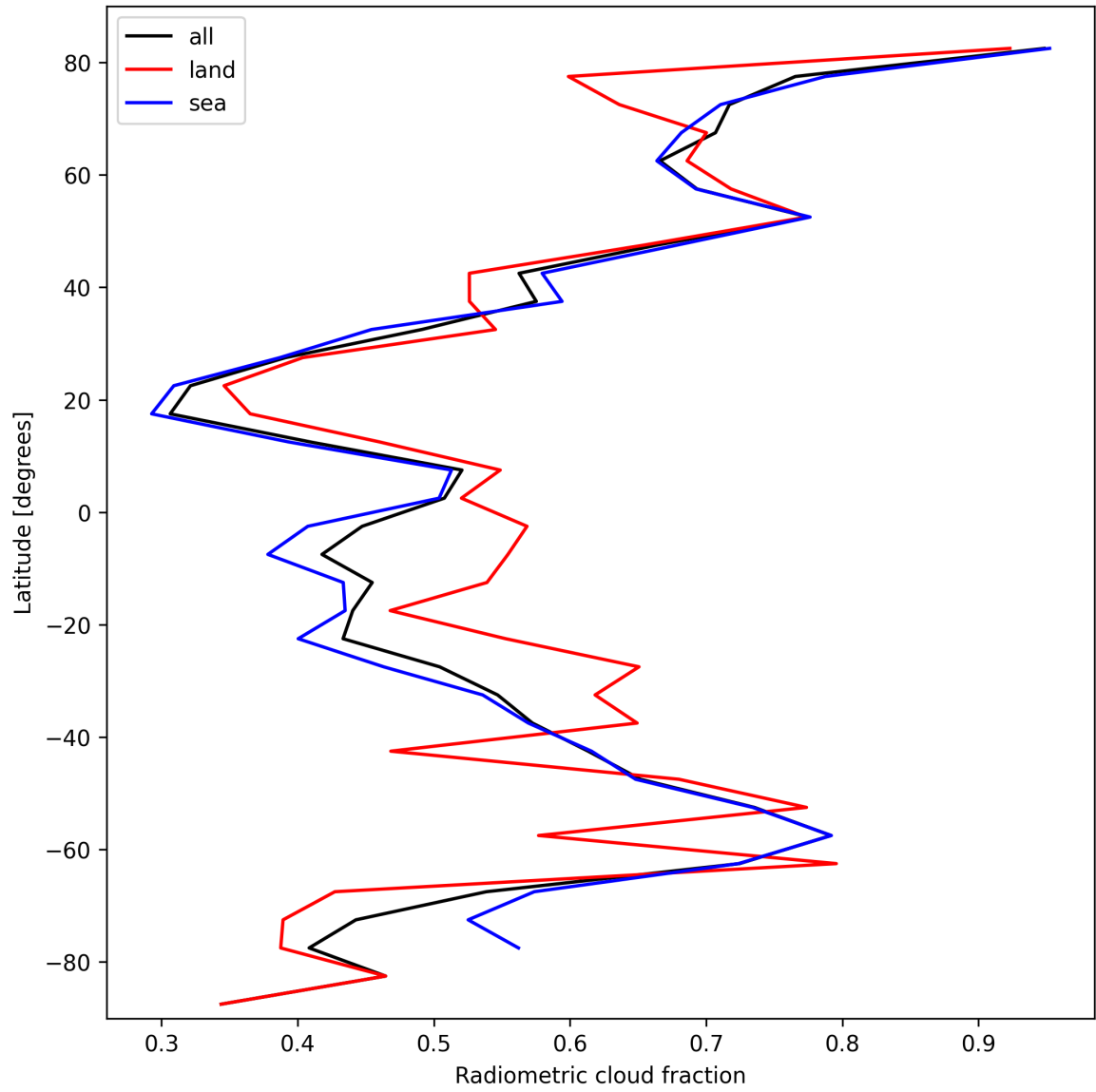


Figure 21: Zonal average of “Radiometric cloud fraction” for 2025-10-12 to 2025-10-13.

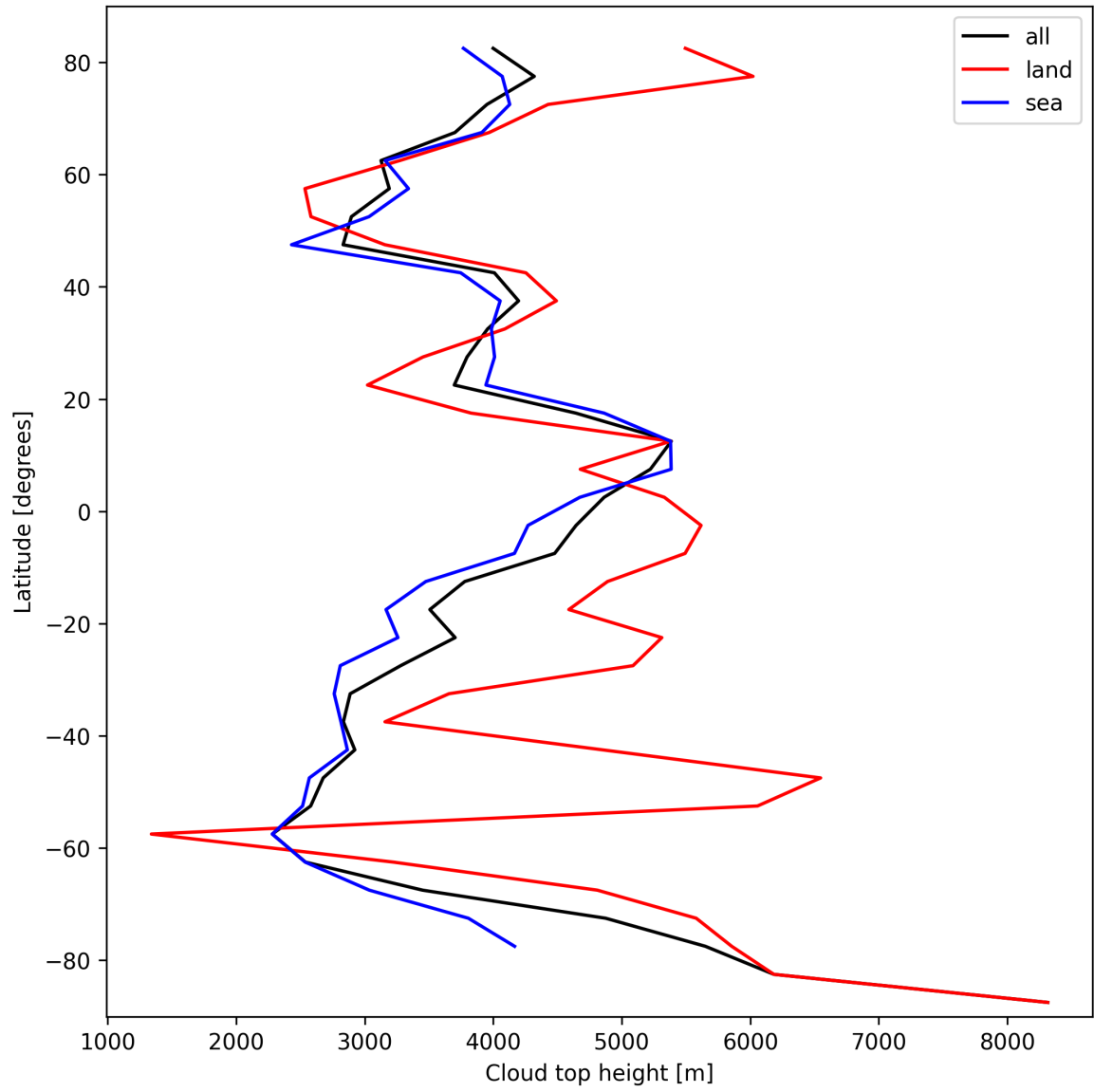


Figure 22: Zonal average of “Cloud top height” for 2025-10-12 to 2025-10-13.

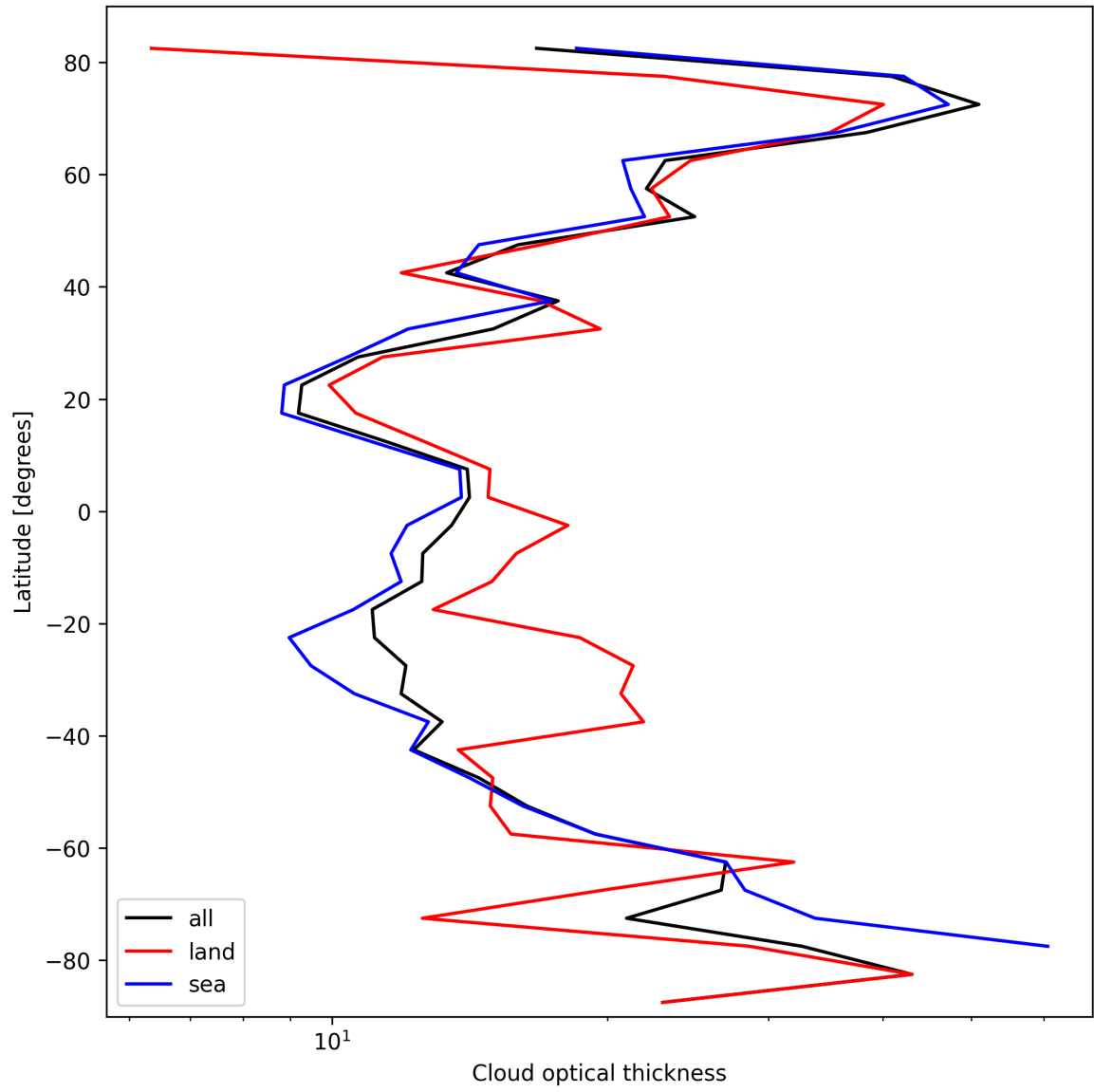


Figure 23: Zonal average of “Cloud optical thickness” for 2025-10-12 to 2025-10-13.

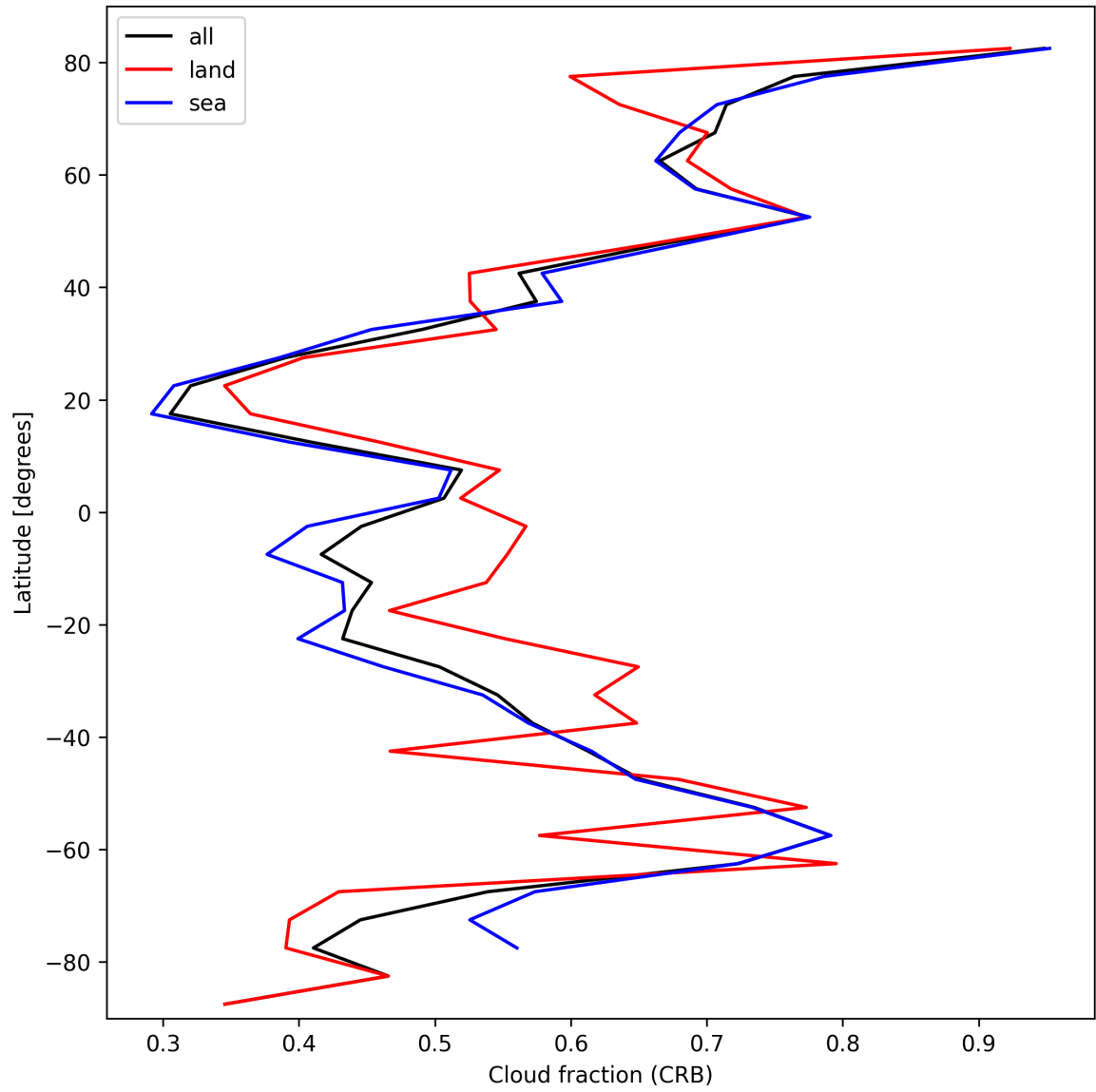


Figure 24: Zonal average of “Cloud fraction (CRB)” for 2025-10-12 to 2025-10-13.

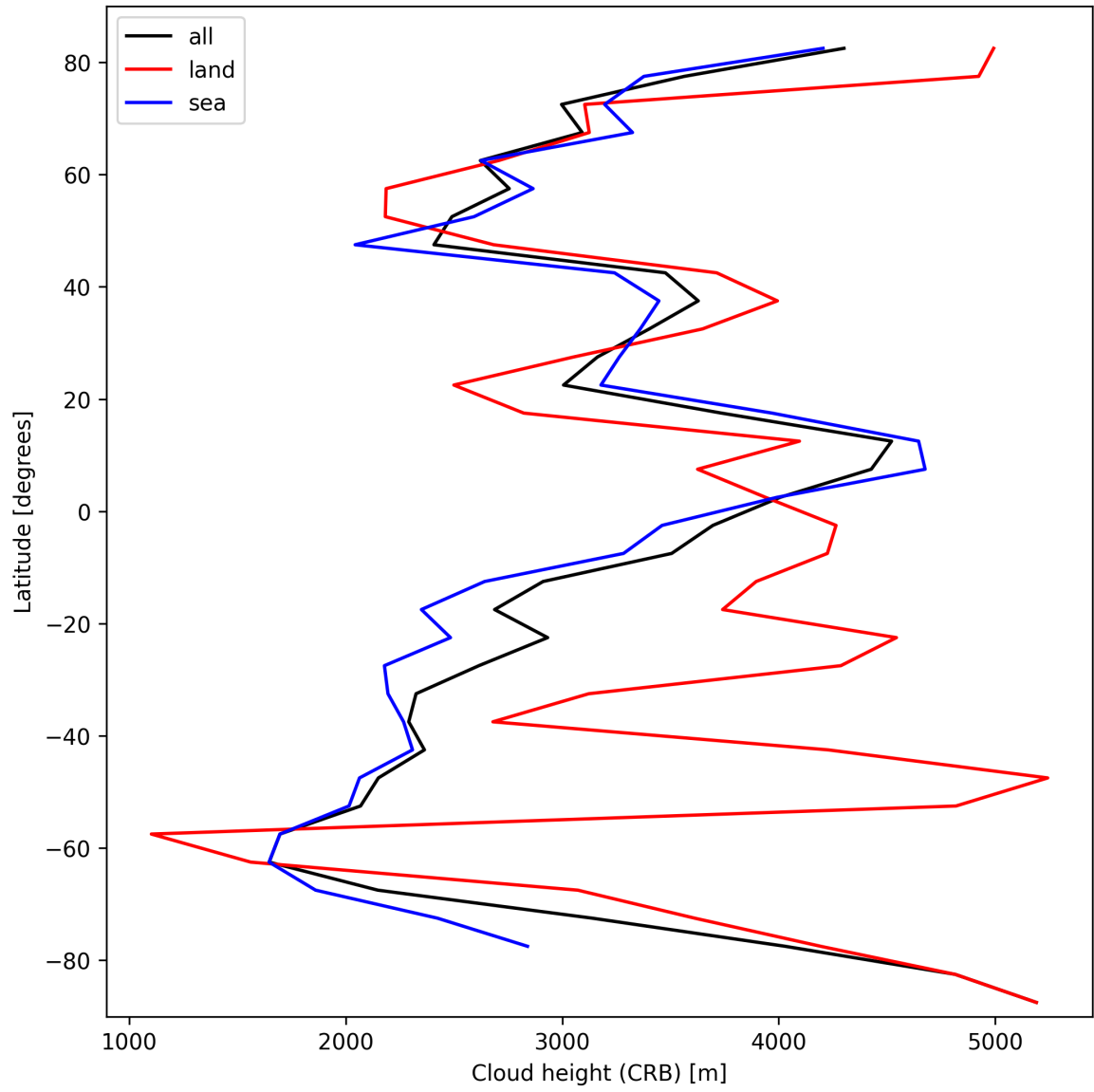


Figure 25: Zonal average of “Cloud height (CRB)” for 2025-10-12 to 2025-10-13.

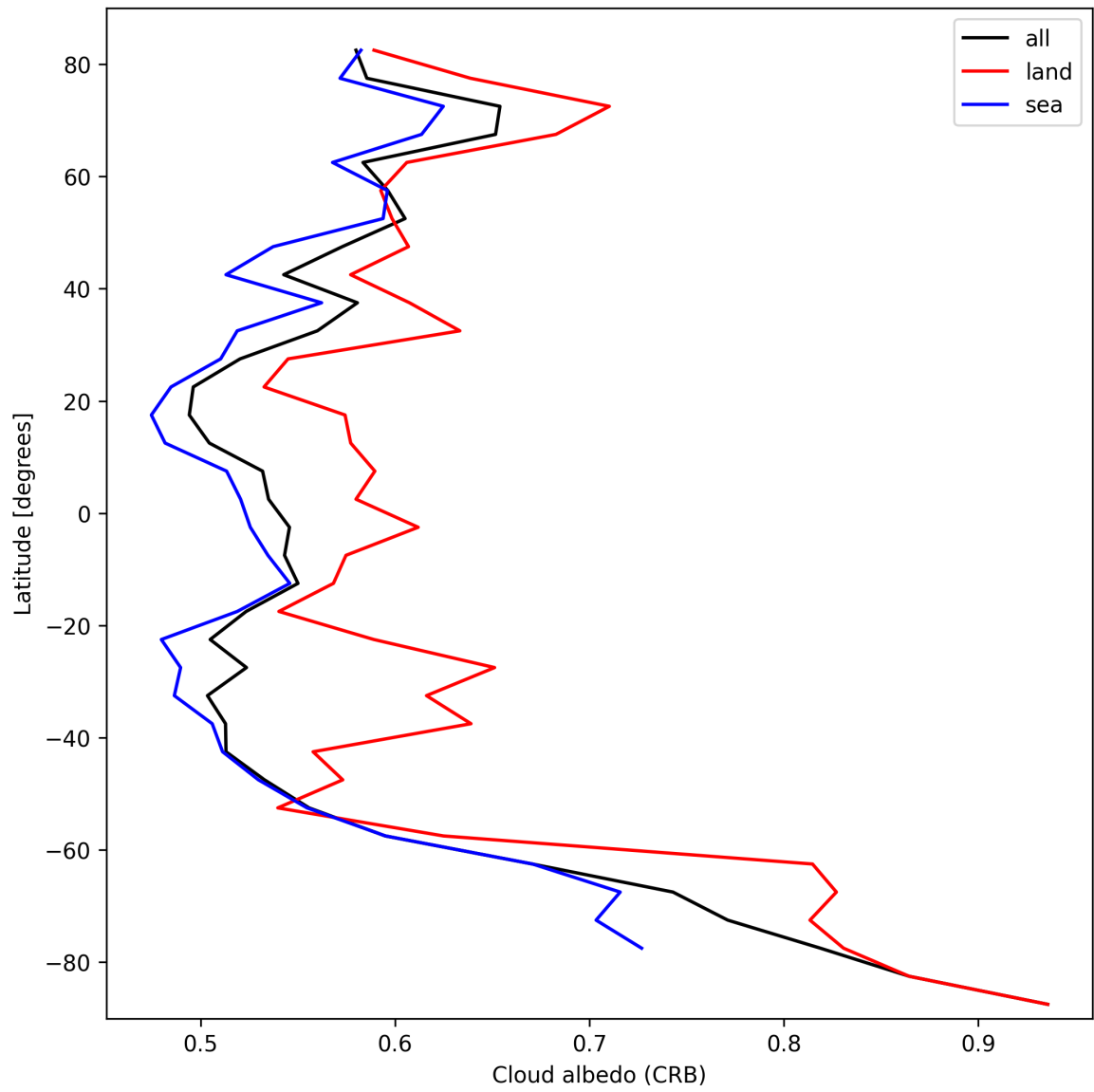


Figure 26: Zonal average of “Cloud albedo (CRB)” for 2025-10-12 to 2025-10-13.

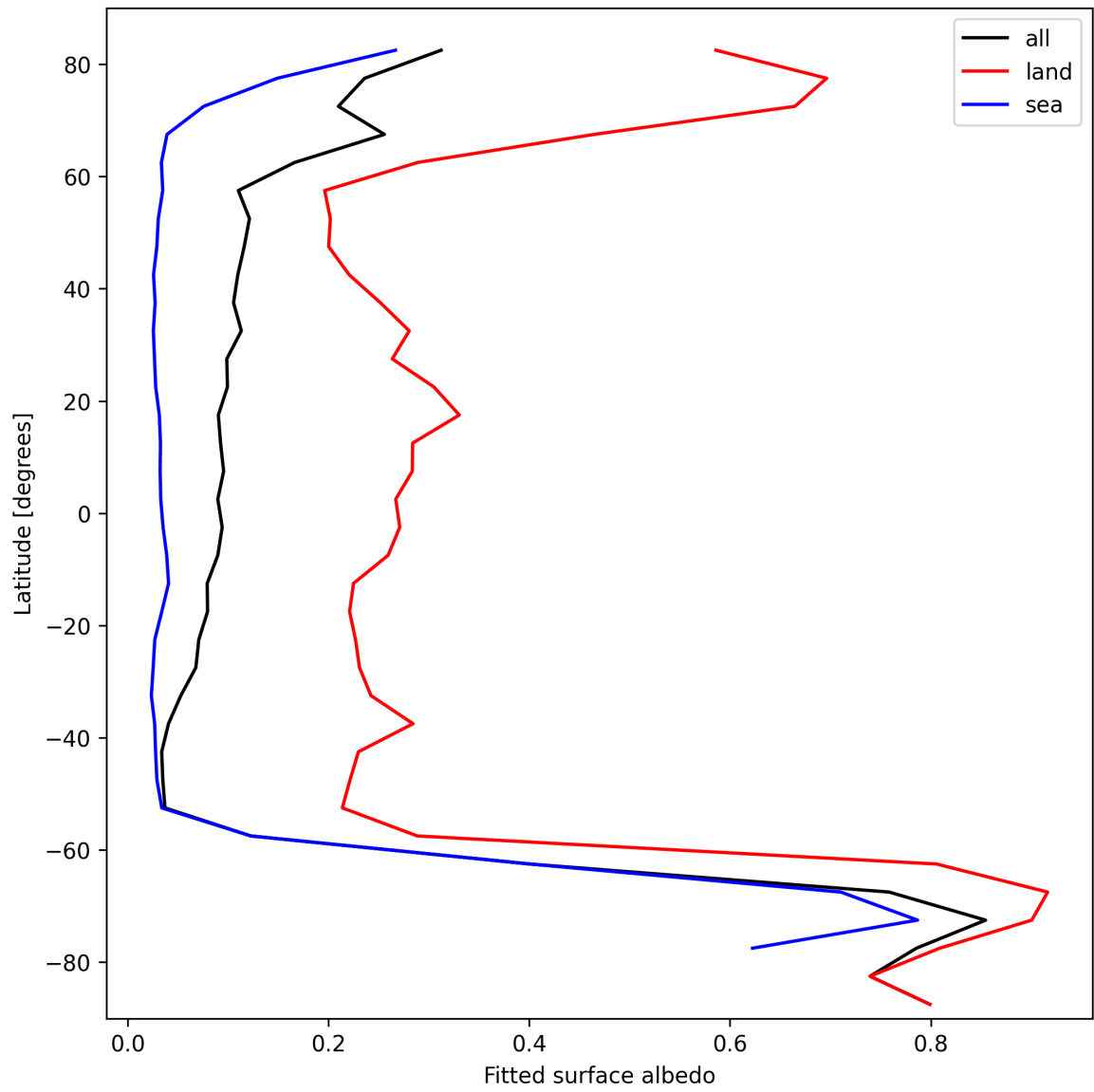


Figure 27: Zonal average of “Fitted surface albedo” for 2025-10-12 to 2025-10-13.

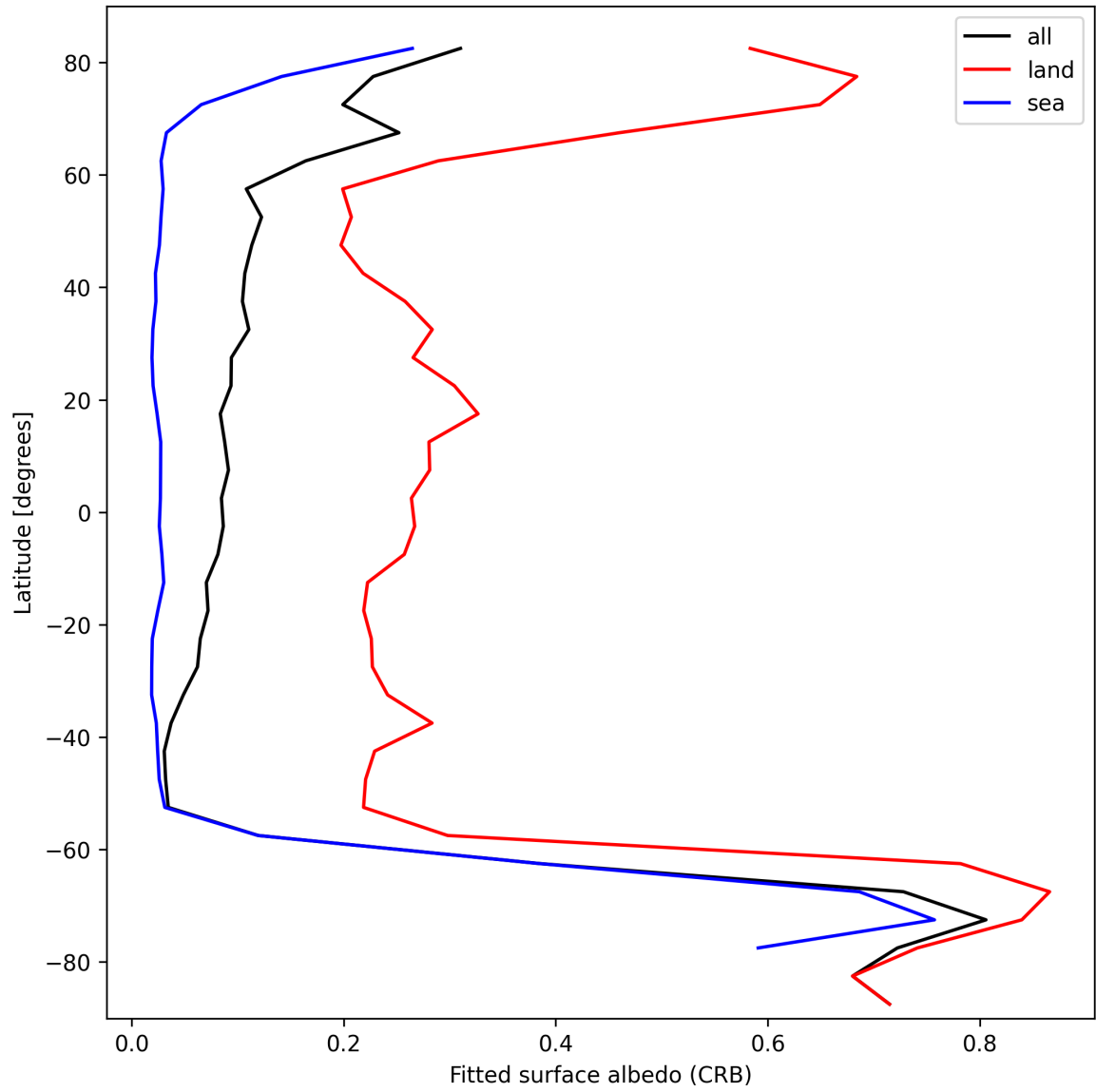


Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2025-10-12 to 2025-10-13.

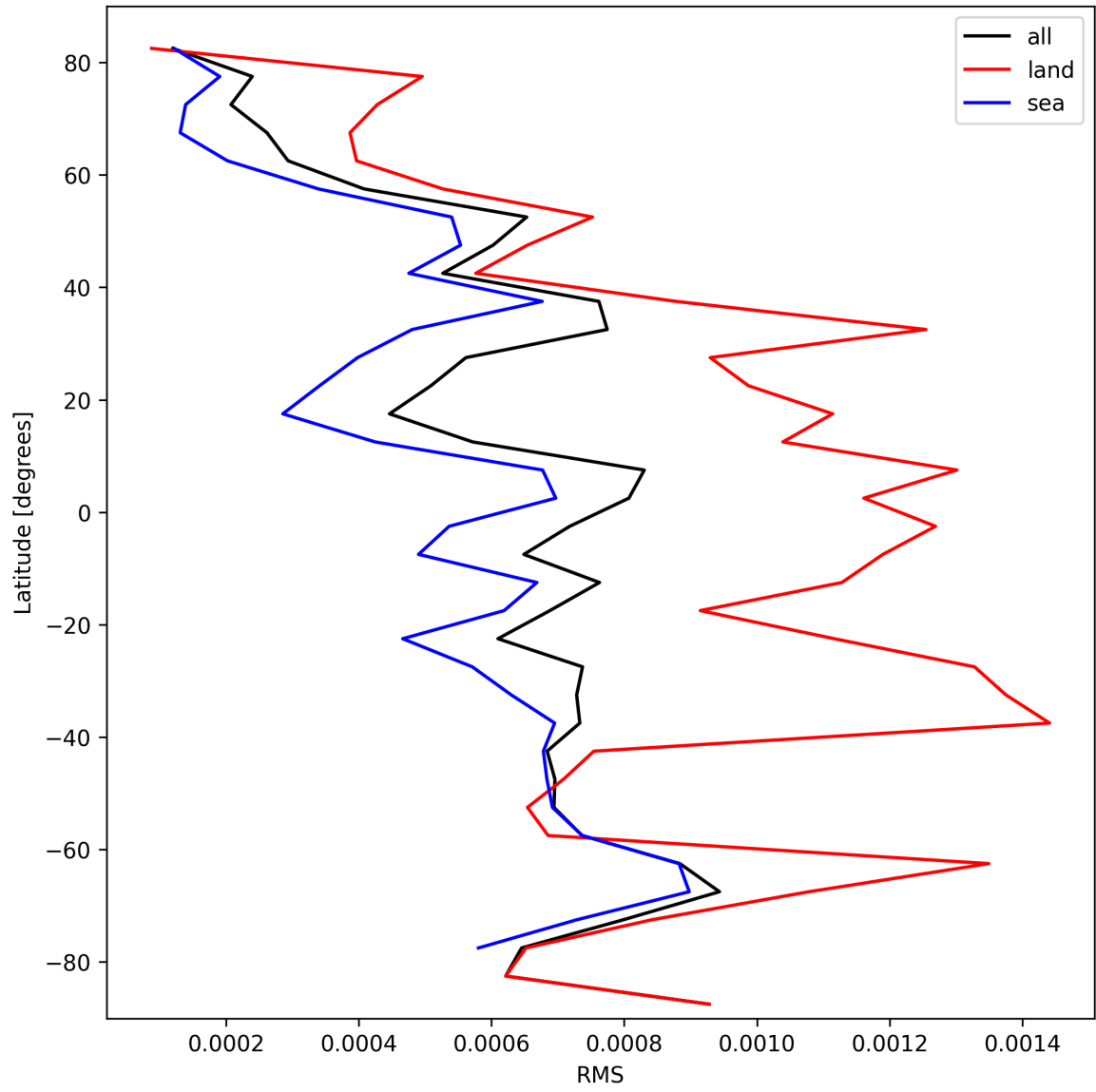


Figure 29: Zonal average of “RMS” for 2025-10-12 to 2025-10-13.

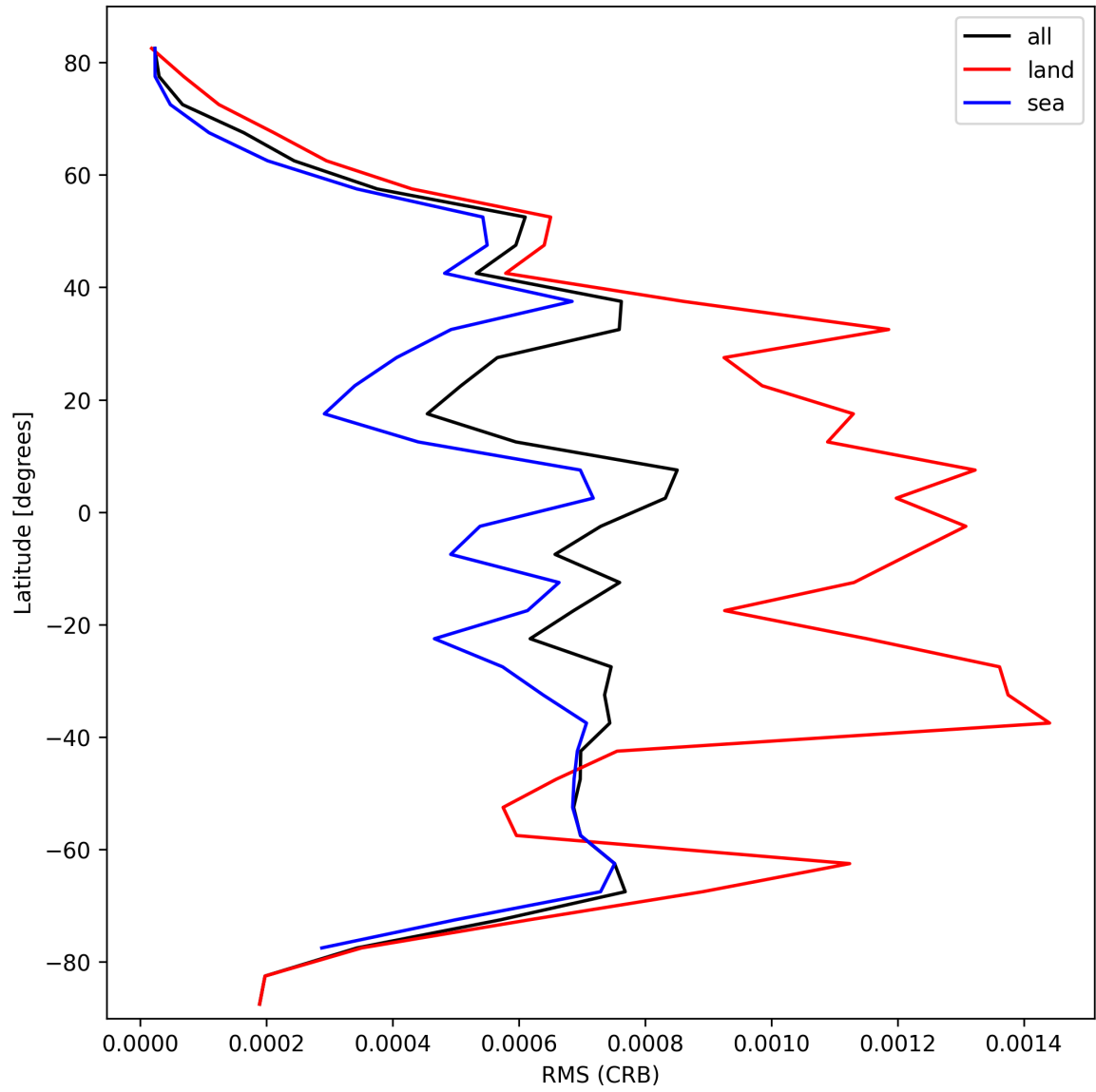


Figure 30: Zonal average of “RMS (CRB)” for 2025-10-12 to 2025-10-13.

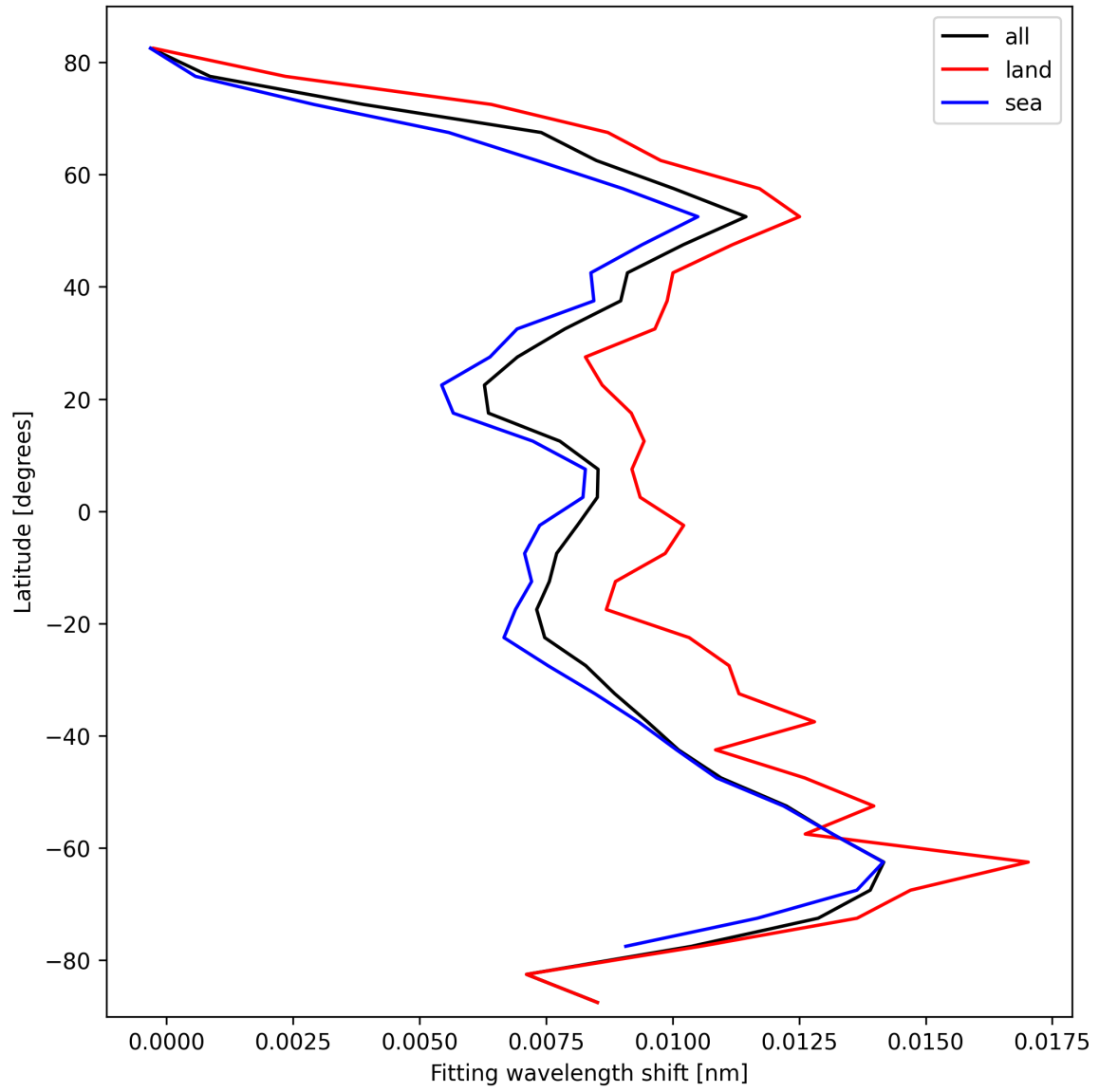


Figure 31: Zonal average of “Fitting wavelength shift” for 2025-10-12 to 2025-10-13.

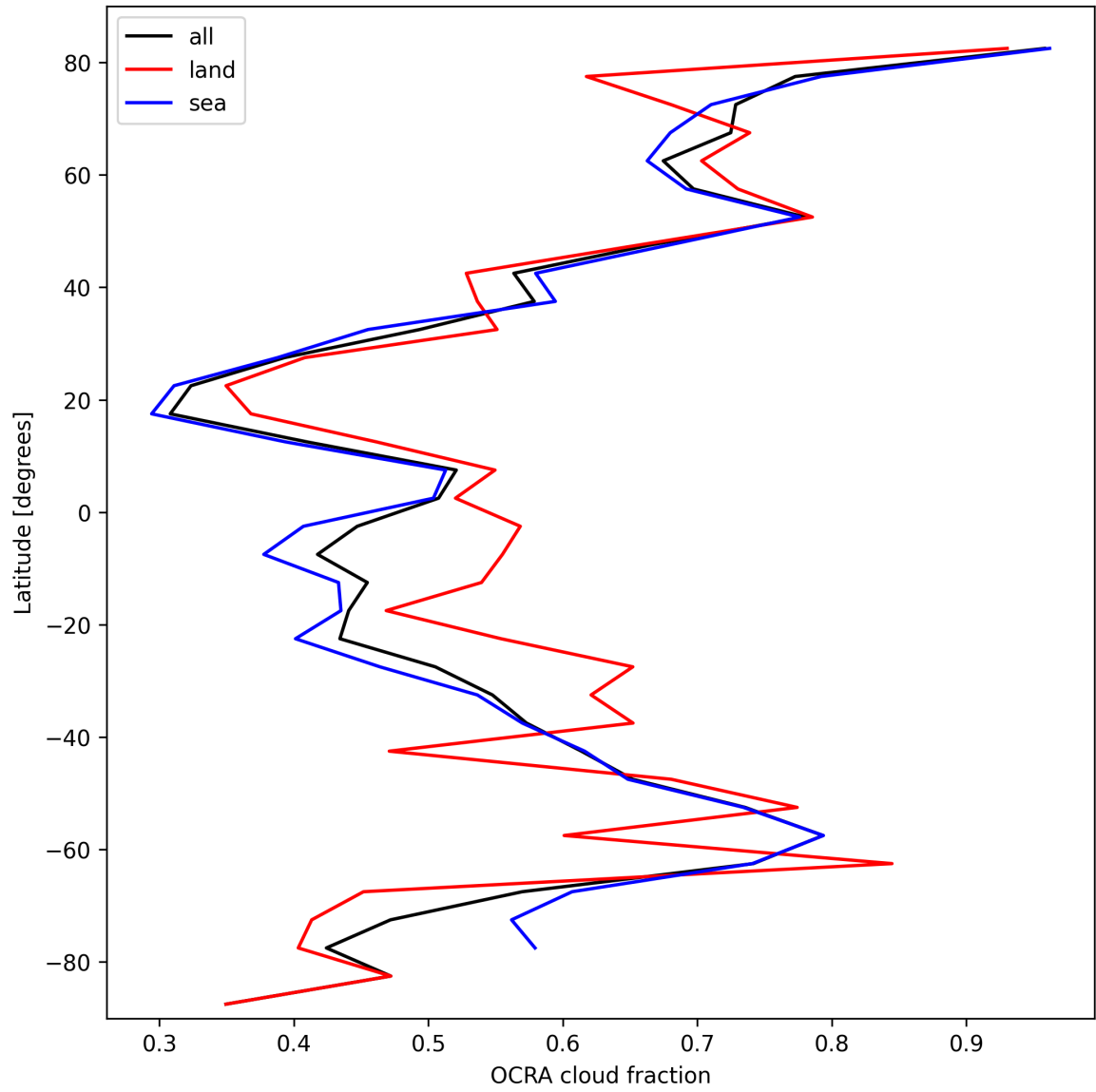


Figure 32: Zonal average of “OCRA cloud fraction” for 2025-10-12 to 2025-10-13.

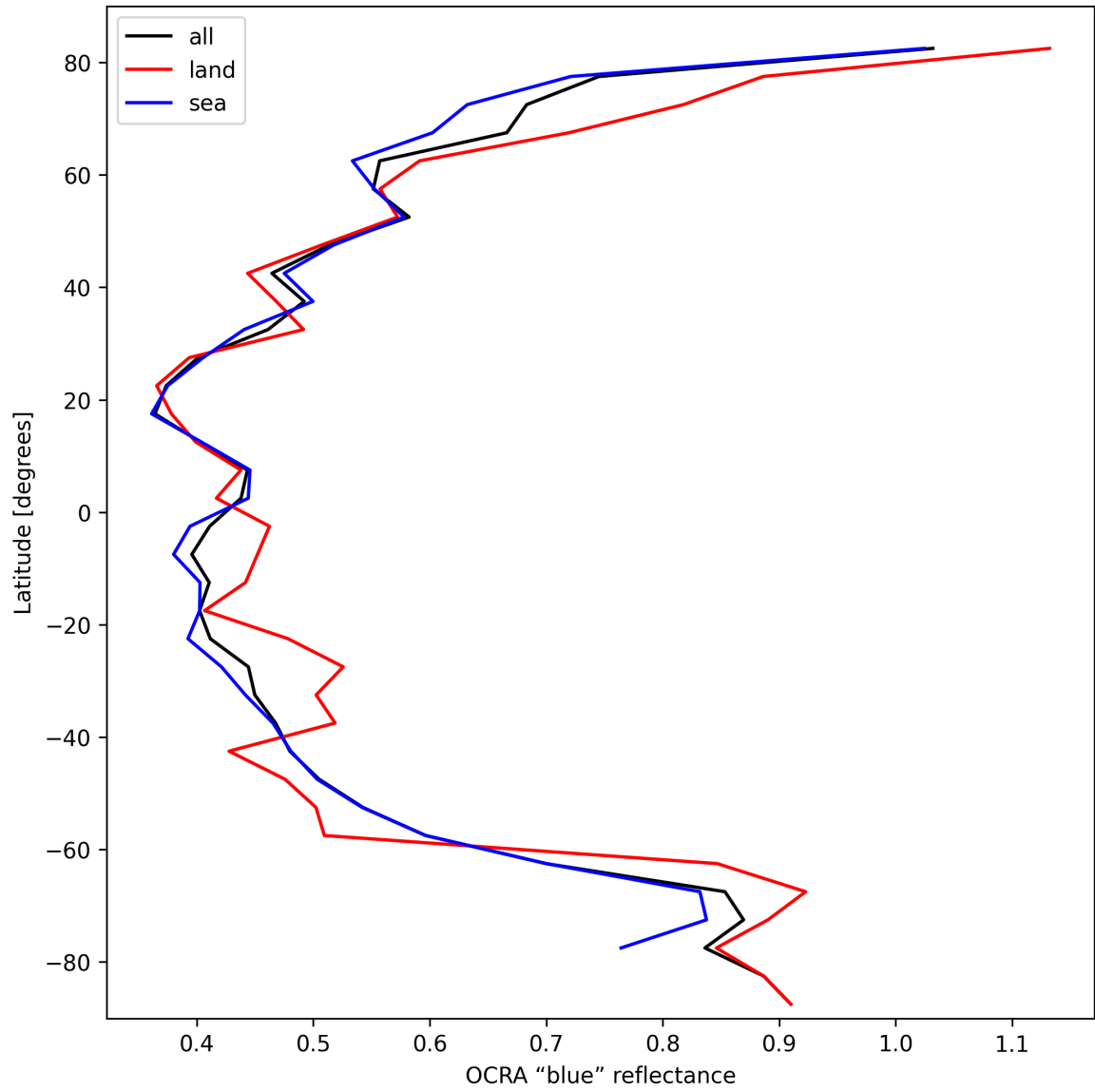


Figure 33: Zonal average of “OCRA “blue” reflectance” for 2025-10-12 to 2025-10-13.

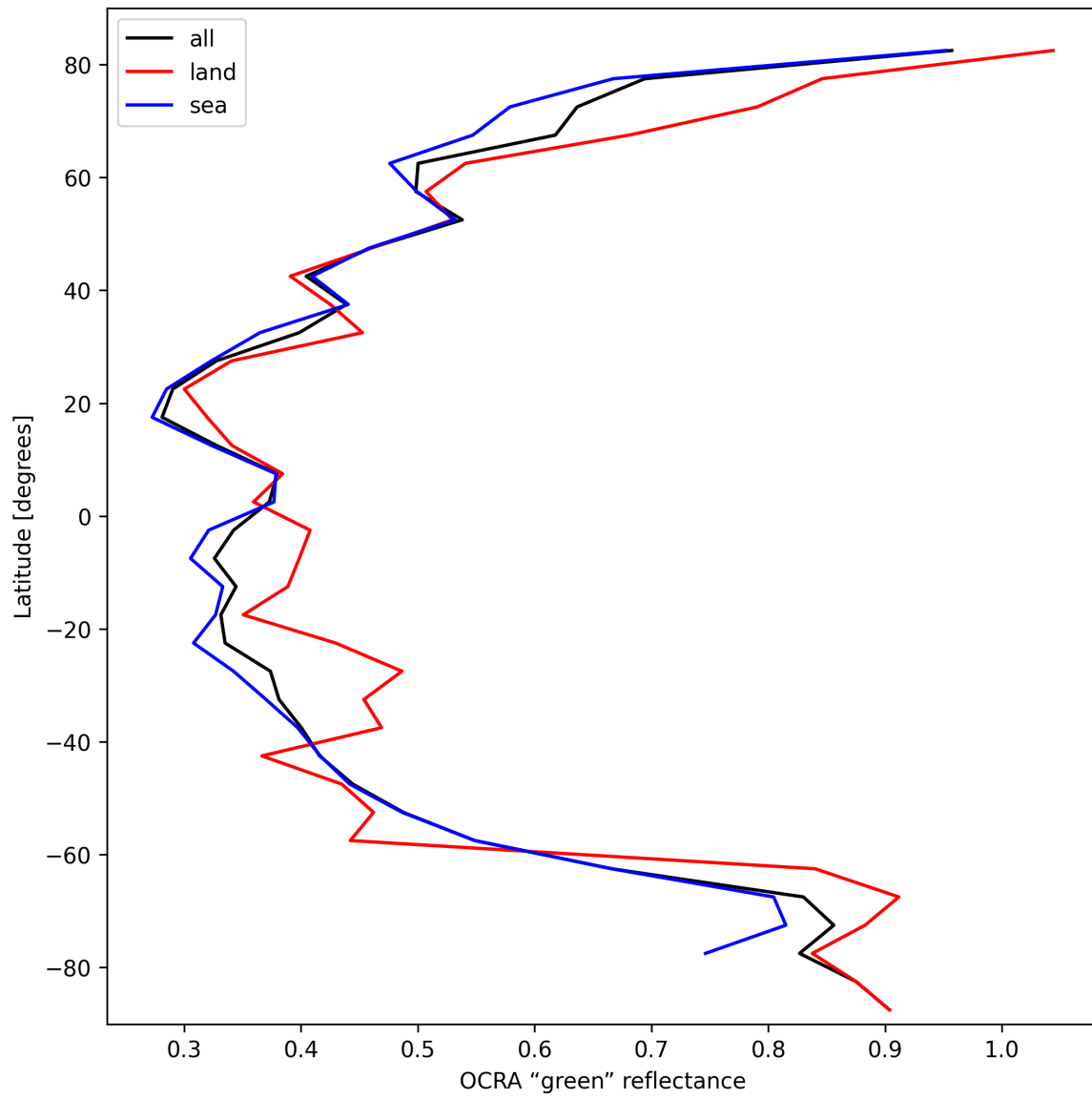


Figure 34: Zonal average of “OCRA “green” reflectance” for 2025-10-12 to 2025-10-13.

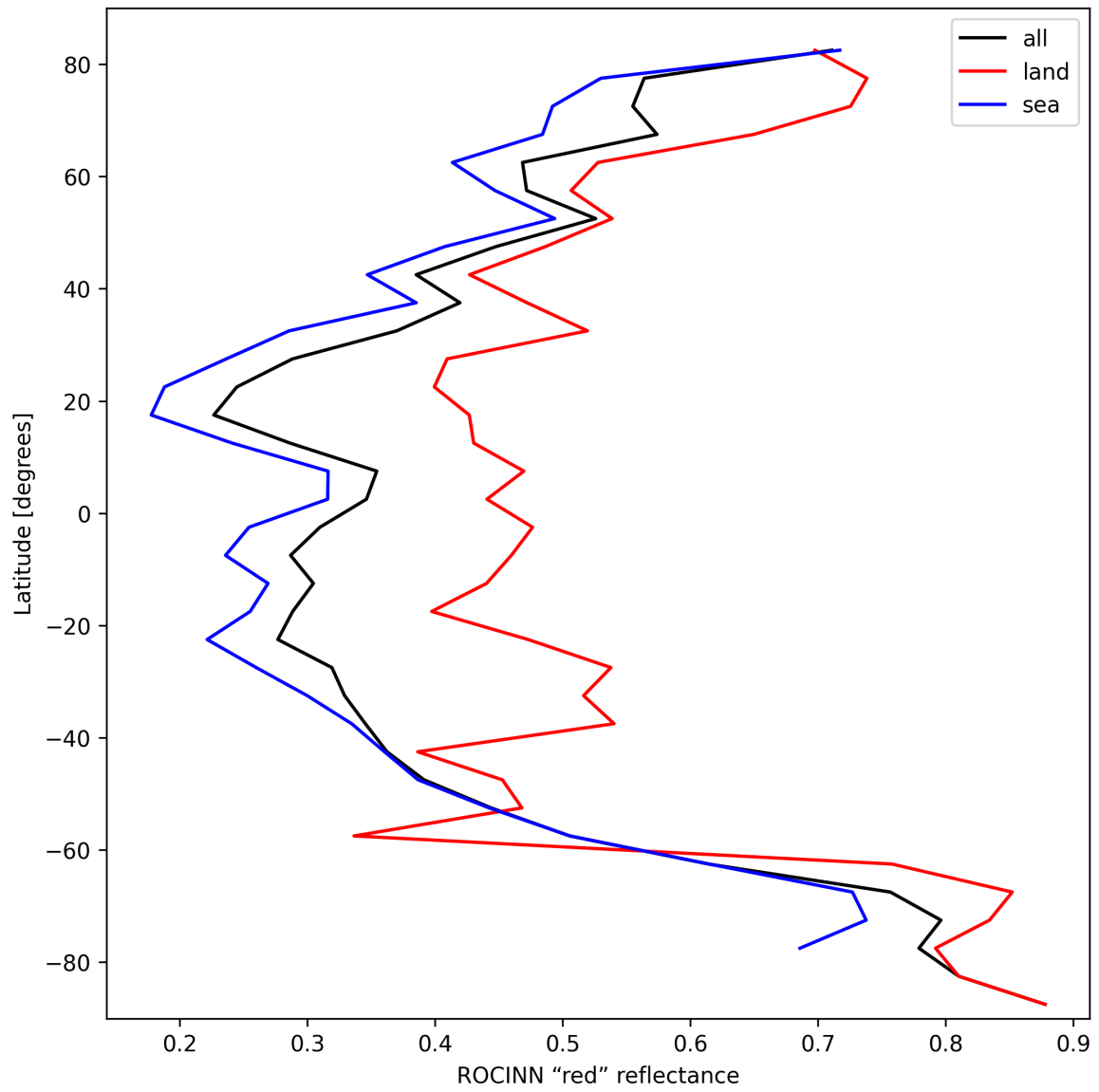


Figure 35: Zonal average of “ROCINN “red” reflectance” for 2025-10-12 to 2025-10-13.

8 Histograms

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

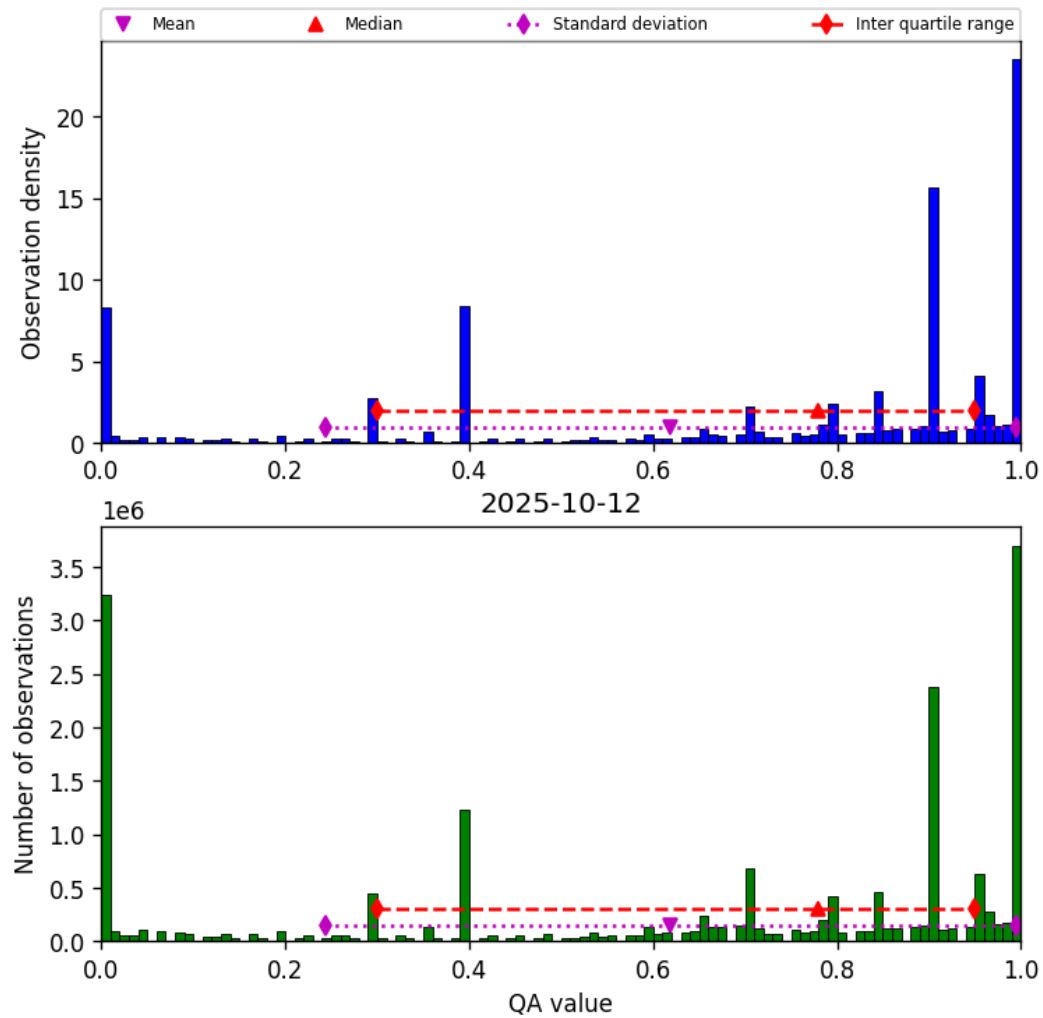


Figure 36: Histogram of “QA value” for 2025-10-12 to 2025-10-13

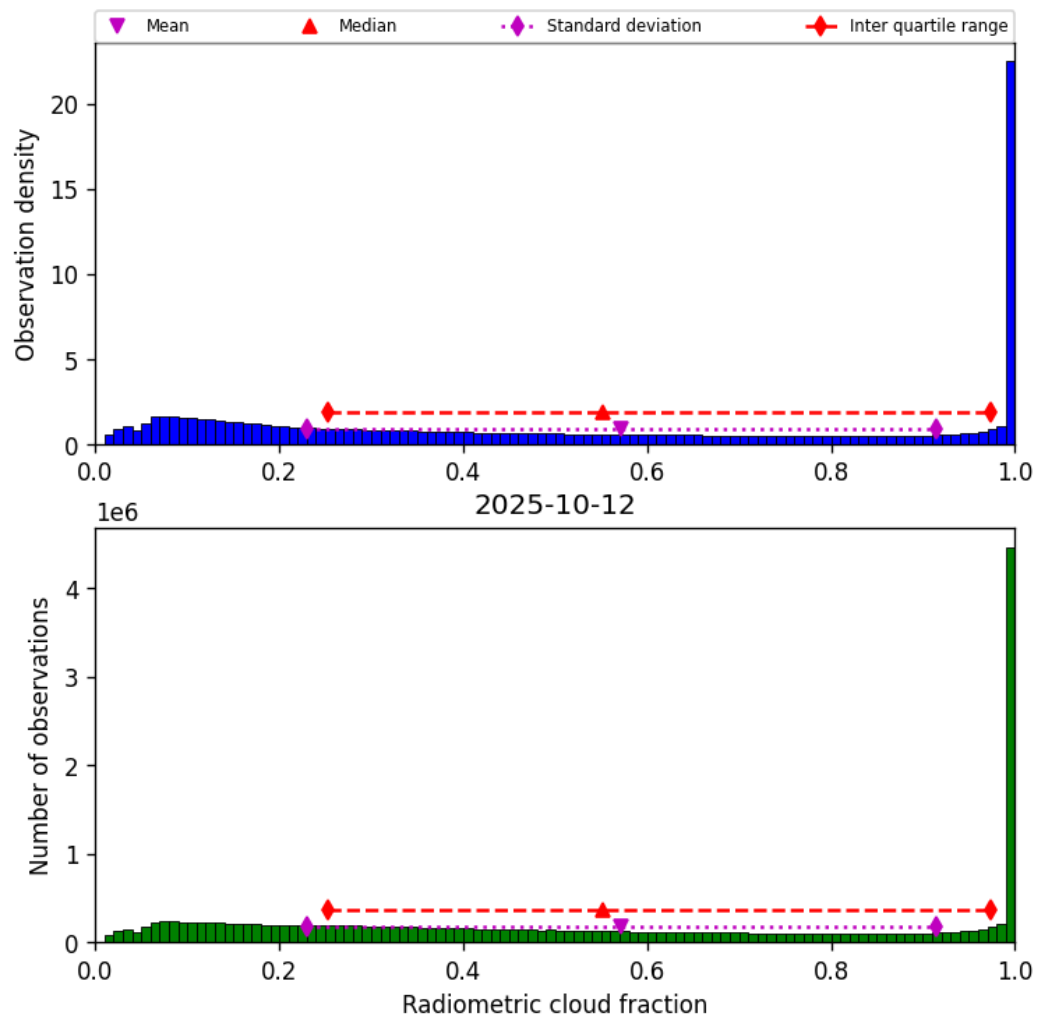


Figure 37: Histogram of “Radiometric cloud fraction” for 2025-10-12 to 2025-10-13

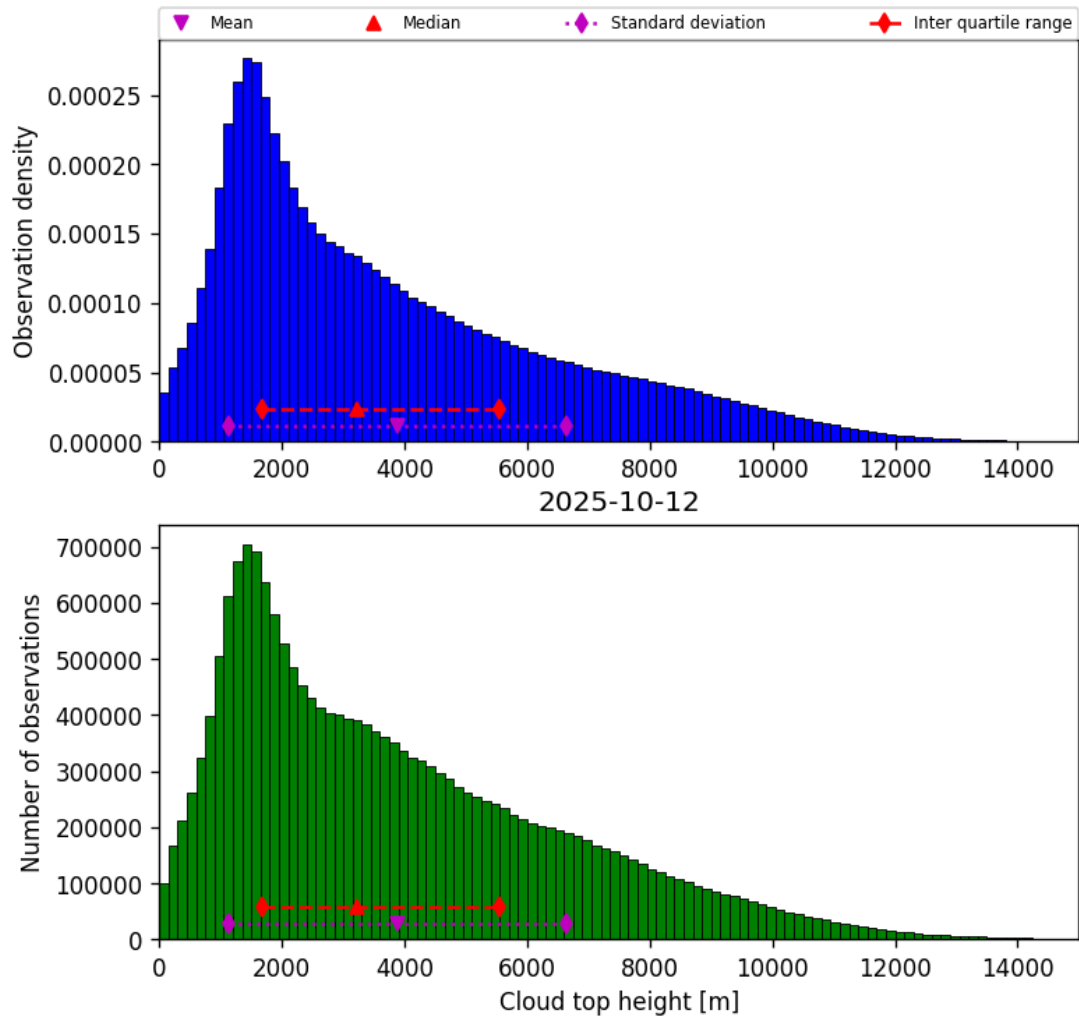


Figure 38: Histogram of “Cloud top height” for 2025-10-12 to 2025-10-13

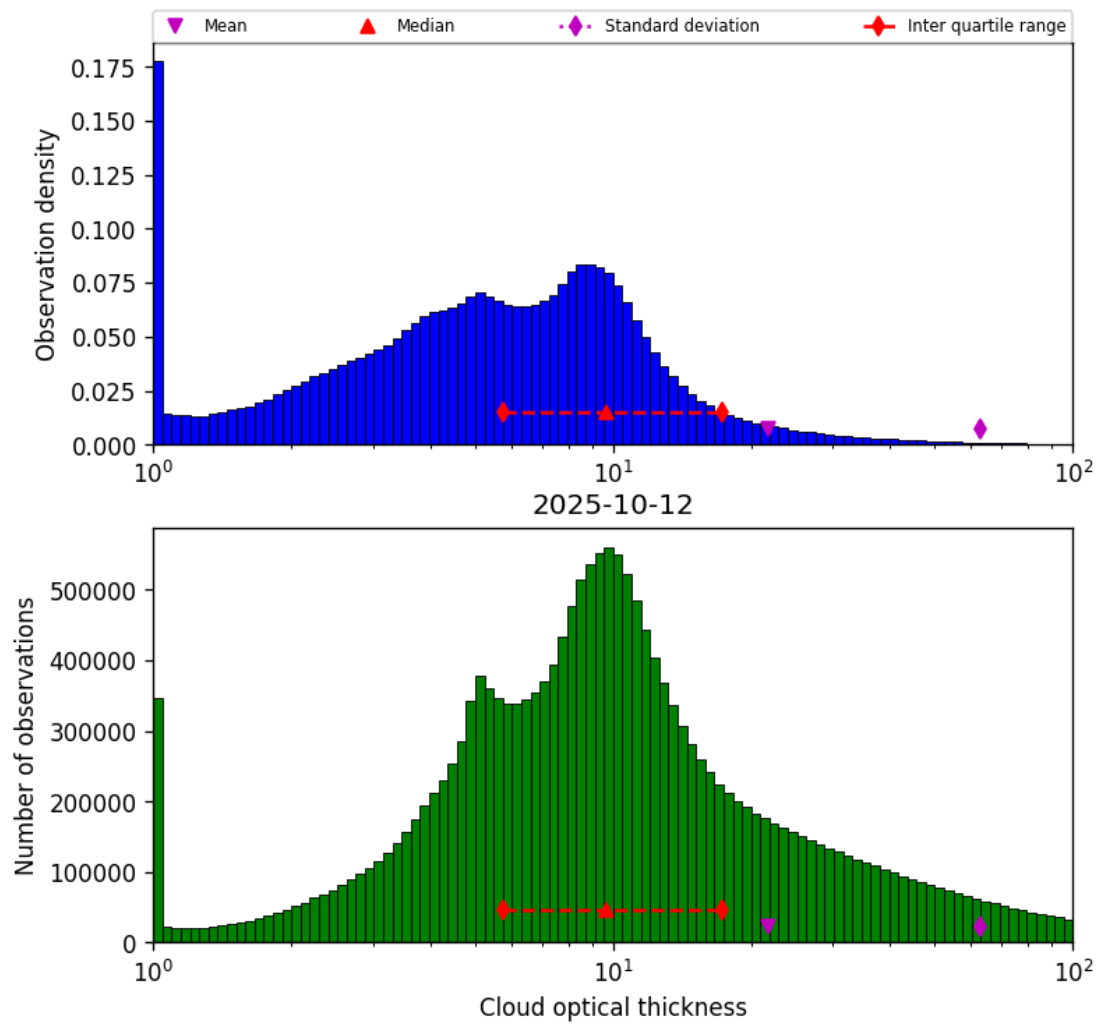


Figure 39: Histogram of “Cloud optical thickness” for 2025-10-12 to 2025-10-13

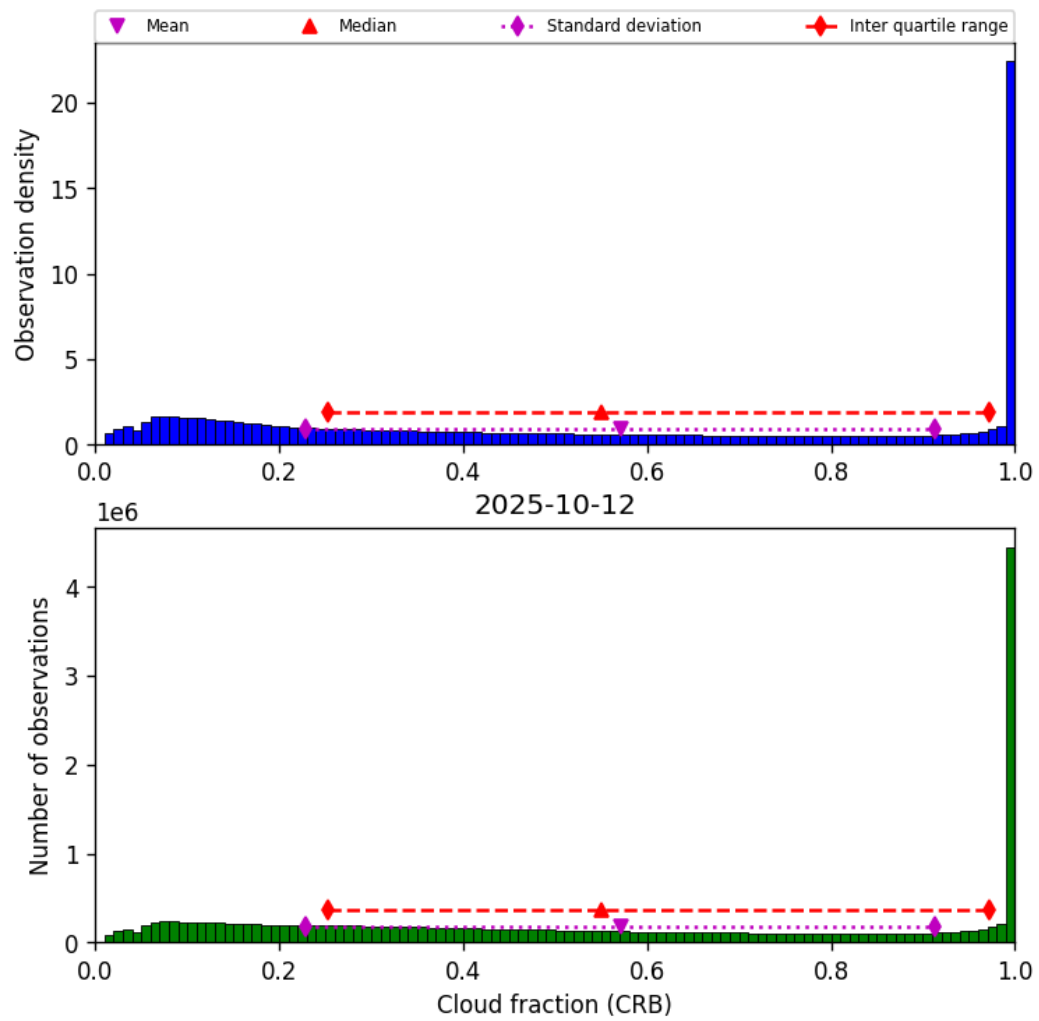


Figure 40: Histogram of “Cloud fraction (CRB)” for 2025-10-12 to 2025-10-13

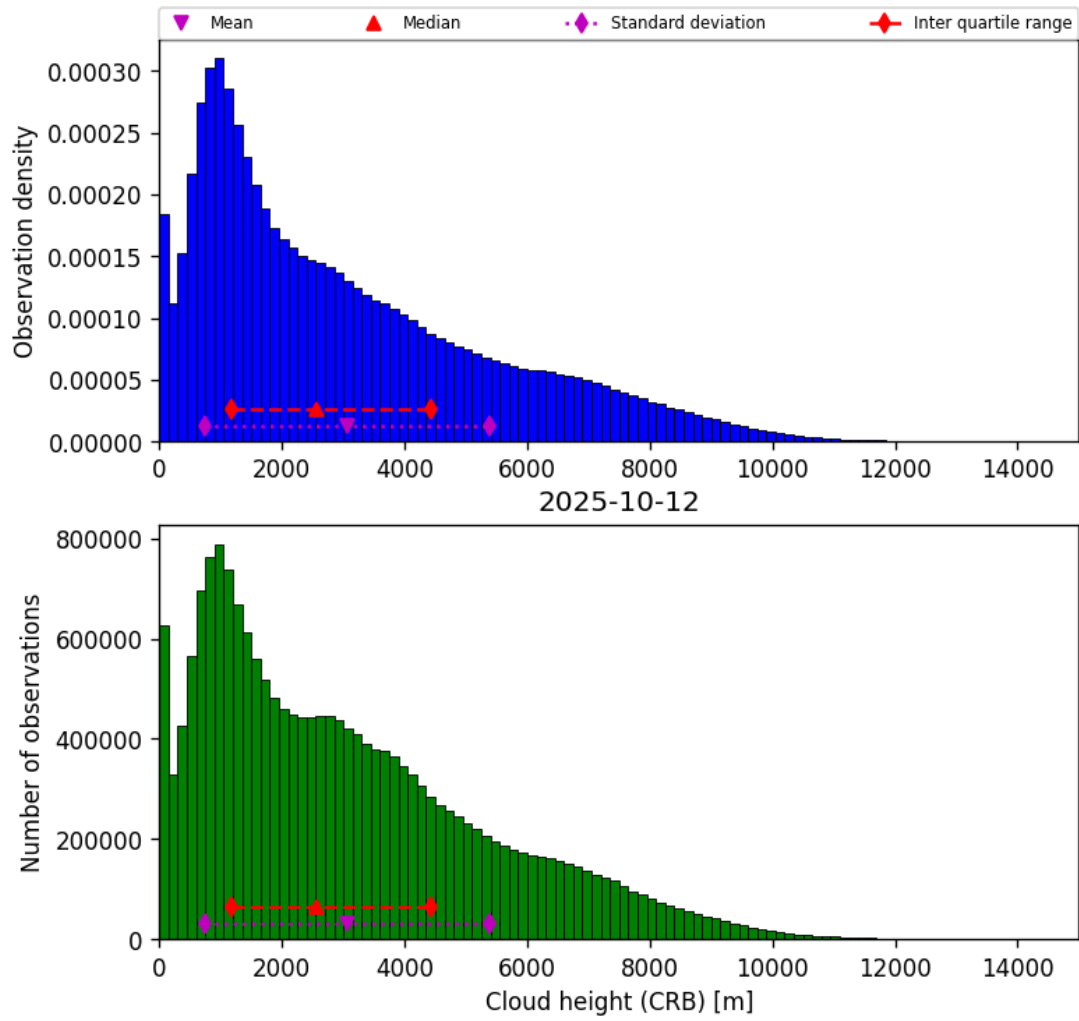


Figure 41: Histogram of “Cloud height (CRB)” for 2025-10-12 to 2025-10-13

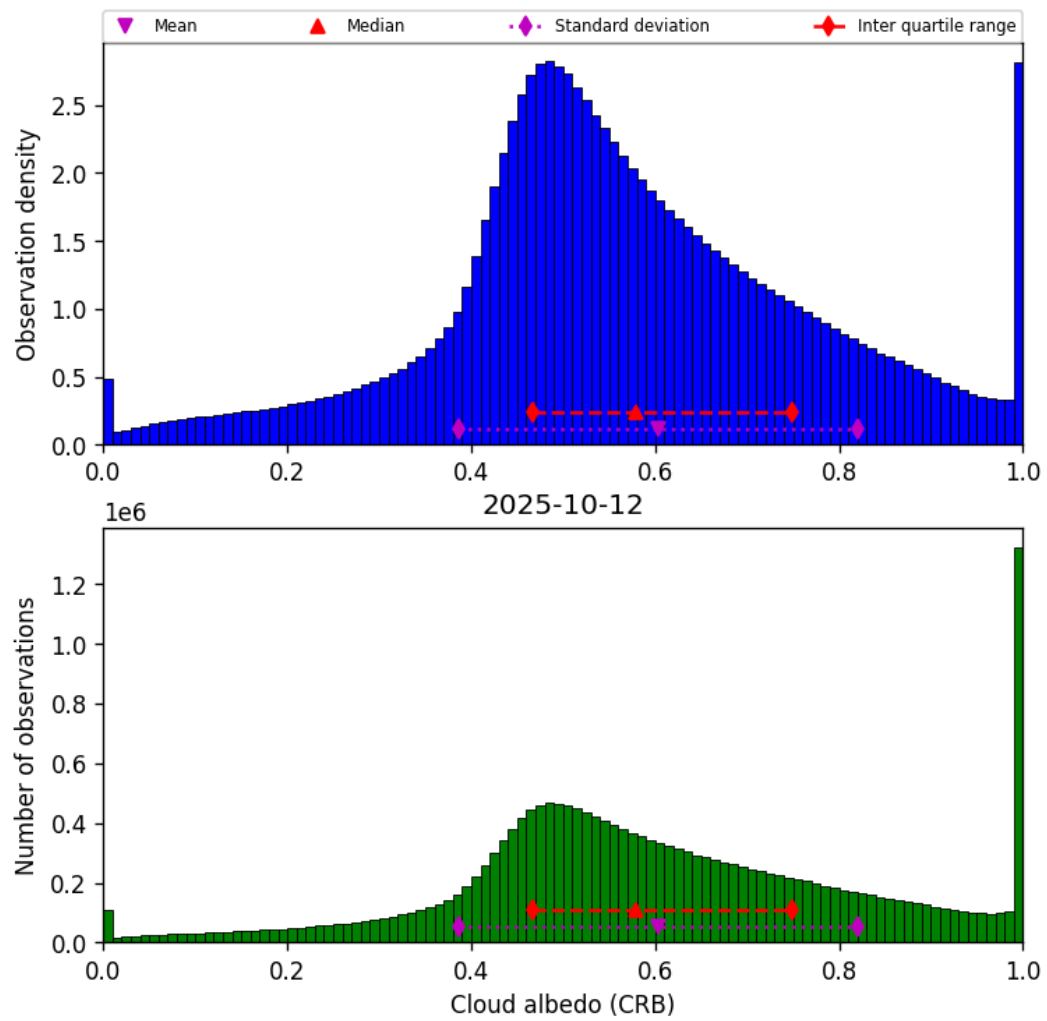


Figure 42: Histogram of “Cloud albedo (CRB)” for 2025-10-12 to 2025-10-13

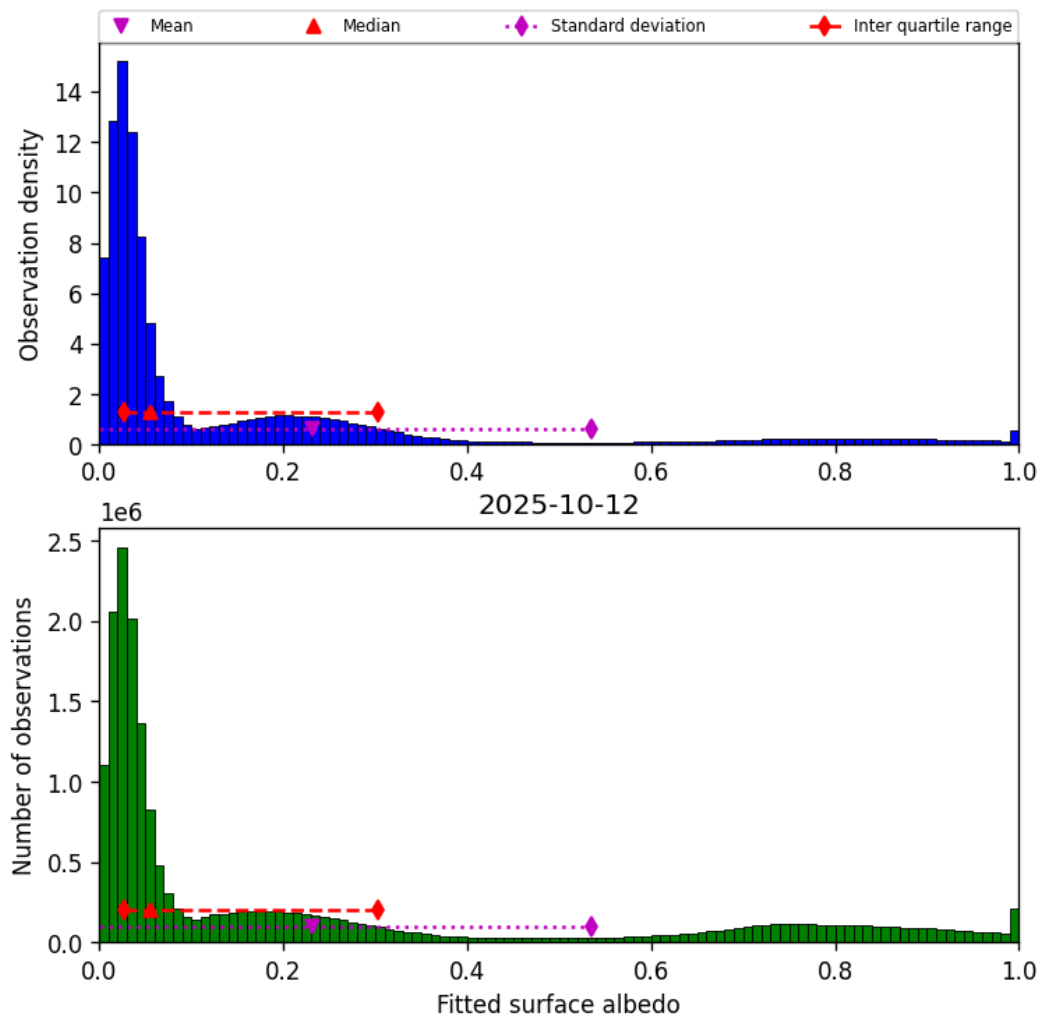


Figure 43: Histogram of “Fitted surface albedo” for 2025-10-12 to 2025-10-13

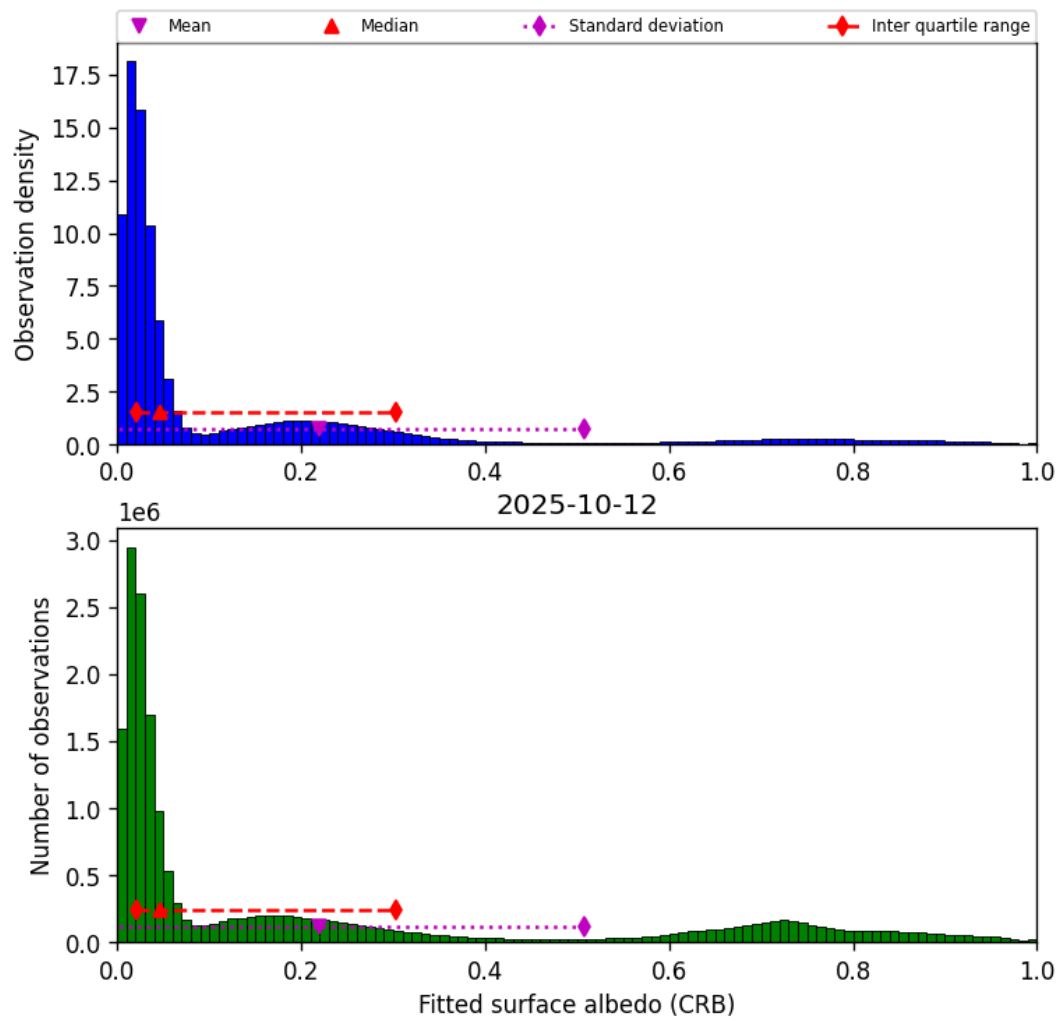


Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2025-10-12 to 2025-10-13

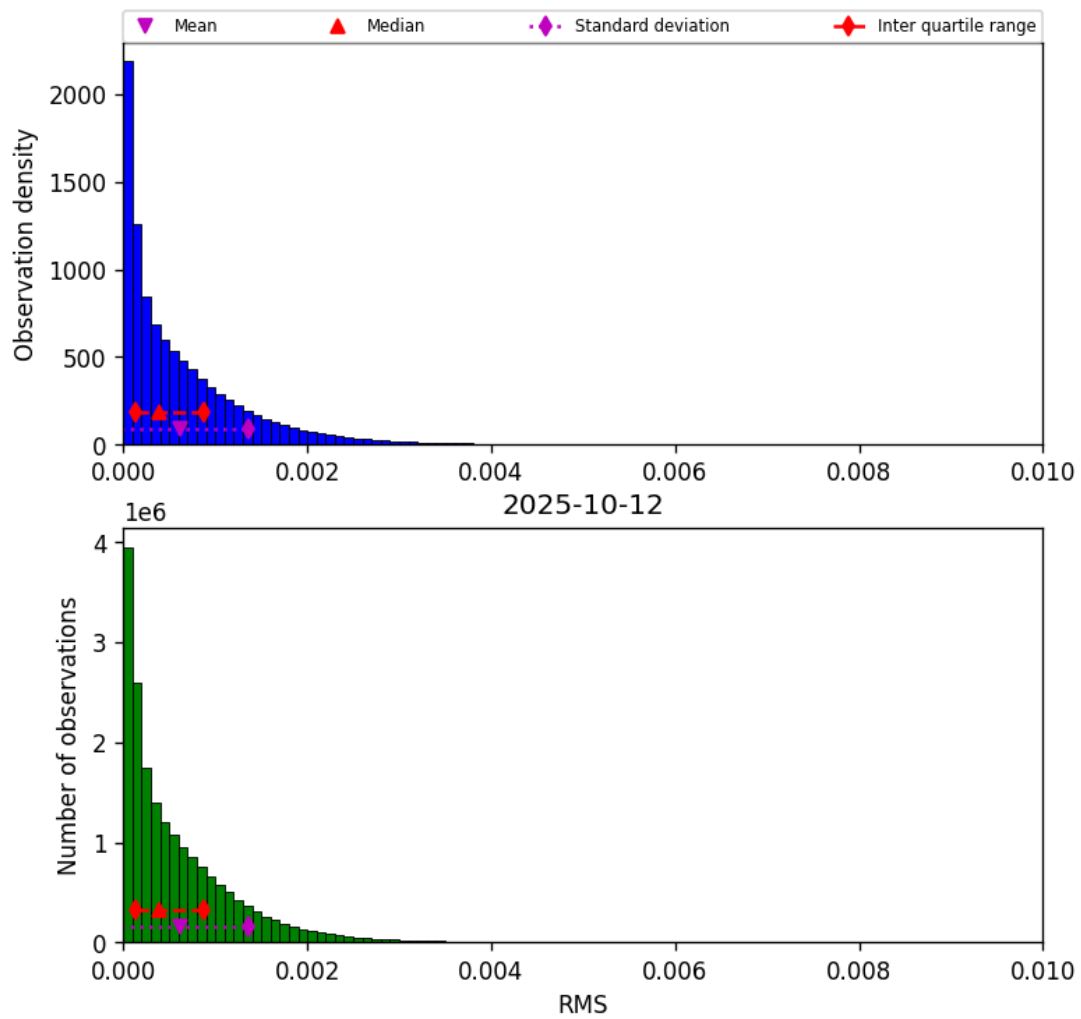


Figure 45: Histogram of “RMS” for 2025-10-12 to 2025-10-13

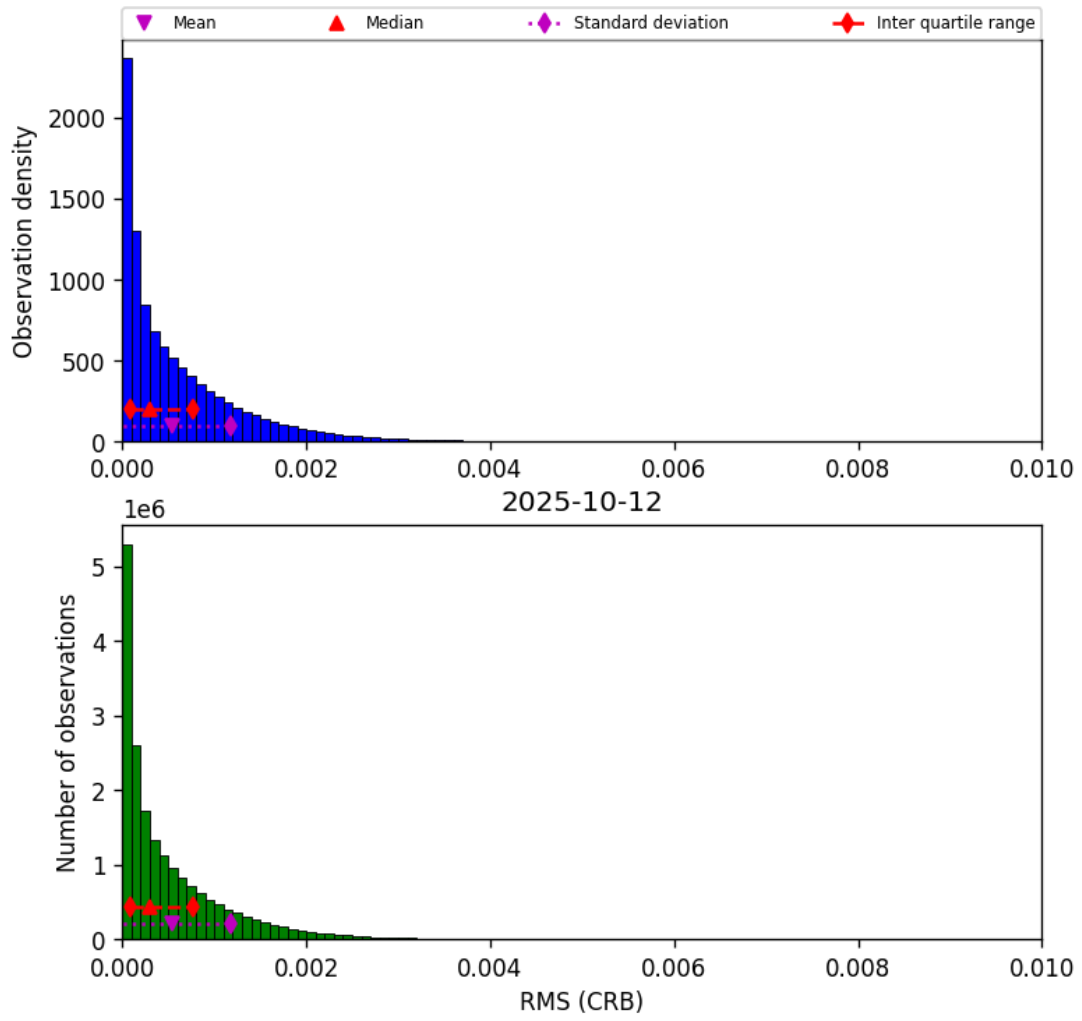


Figure 46: Histogram of “RMS (CRB)” for 2025-10-12 to 2025-10-13

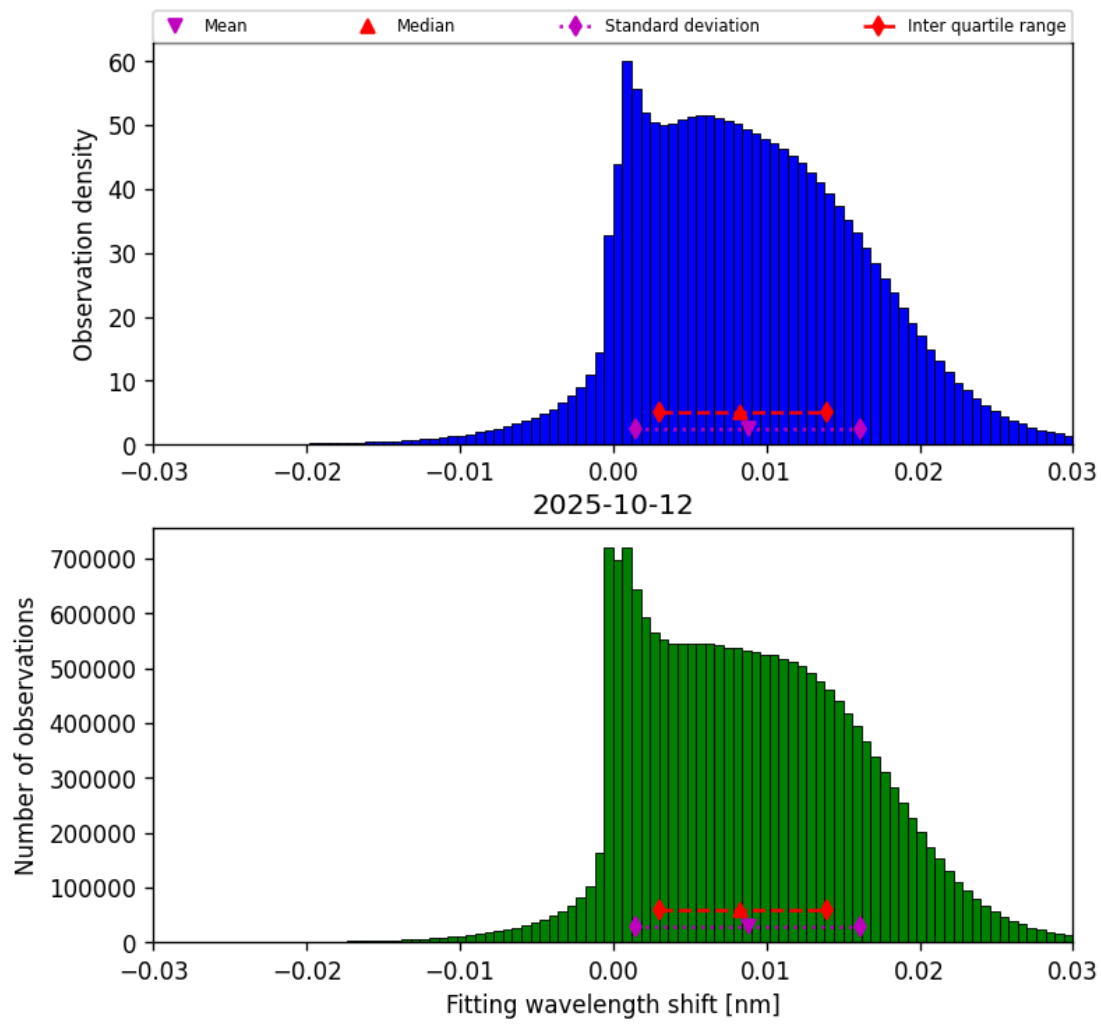


Figure 47: Histogram of “Fitting wavelength shift” for 2025-10-12 to 2025-10-13

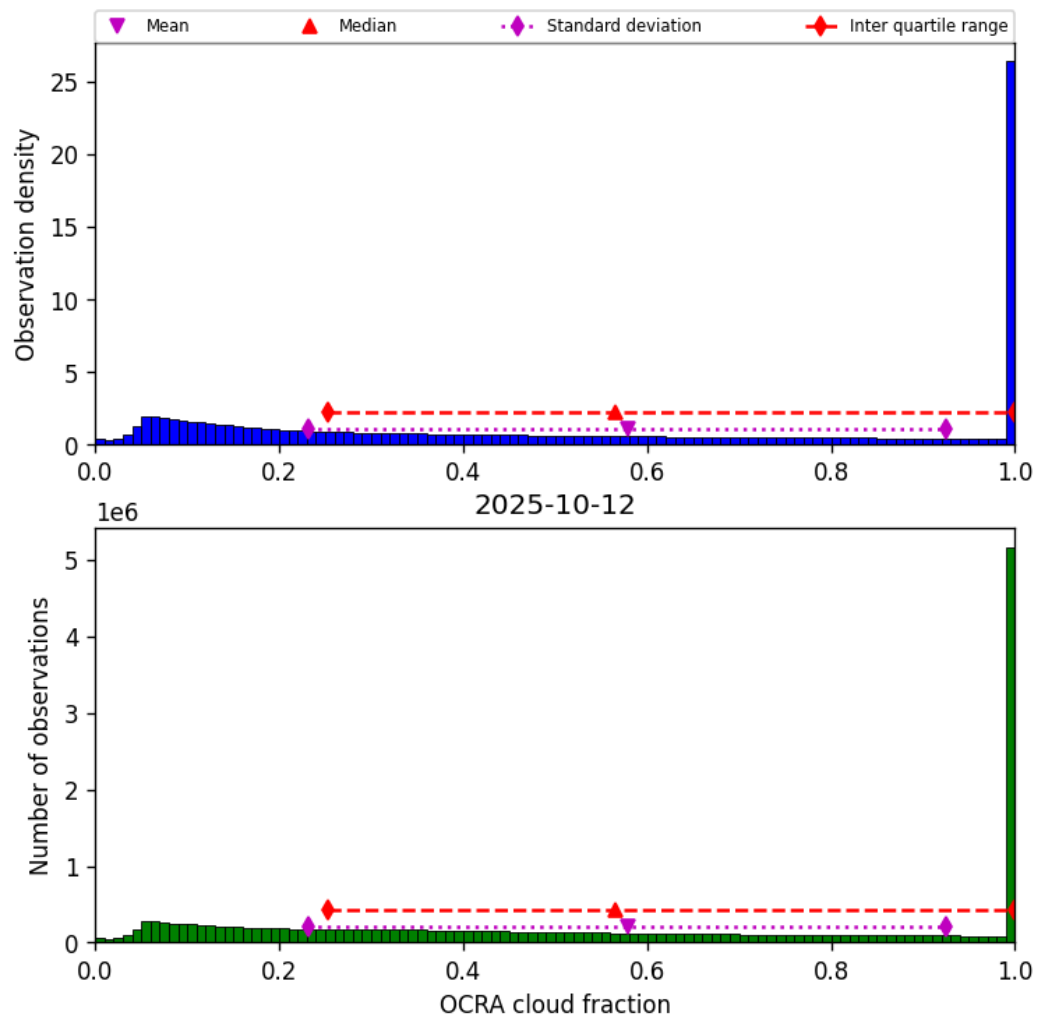


Figure 48: Histogram of “OCRA cloud fraction” for 2025-10-12 to 2025-10-13

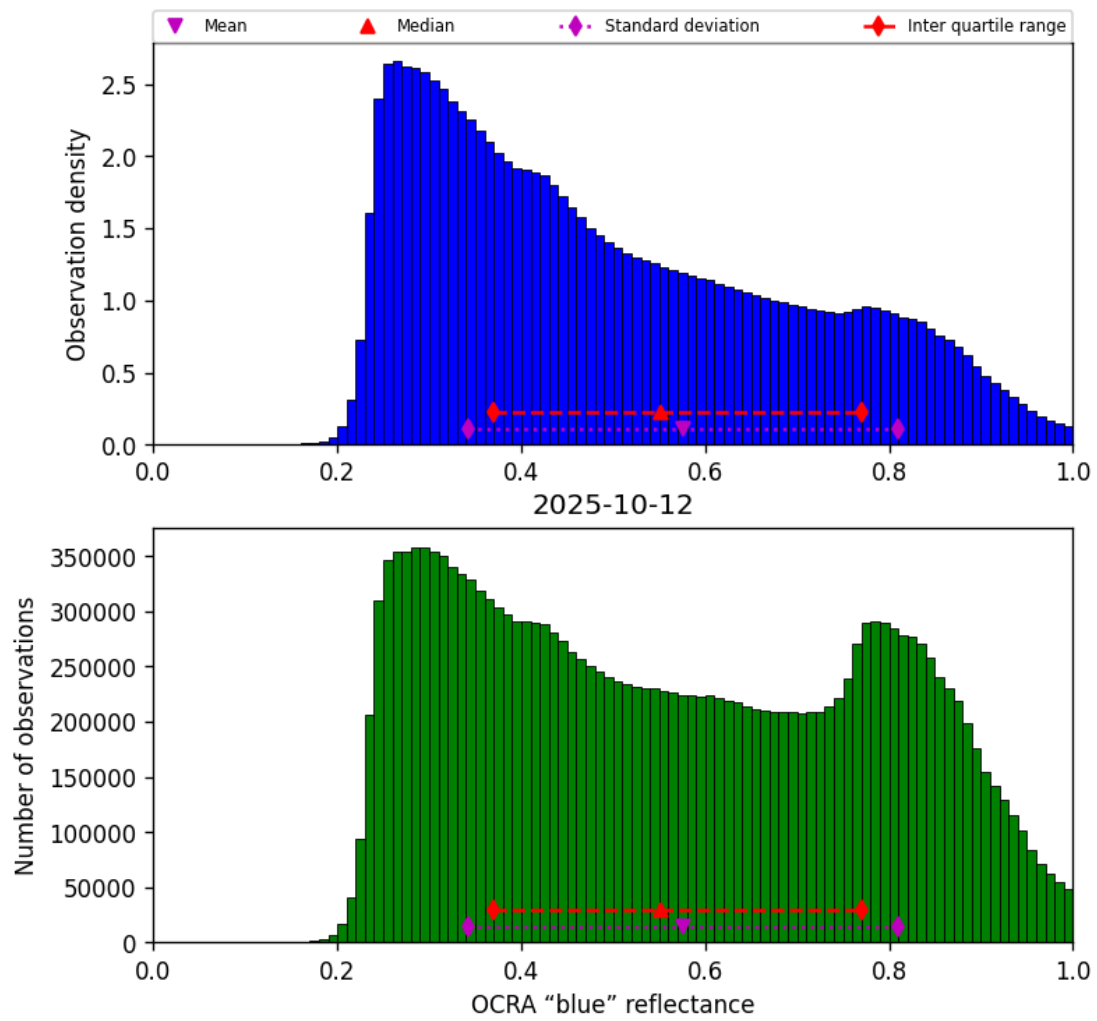


Figure 49: Histogram of “OCRA “blue” reflectance” for 2025-10-12 to 2025-10-13

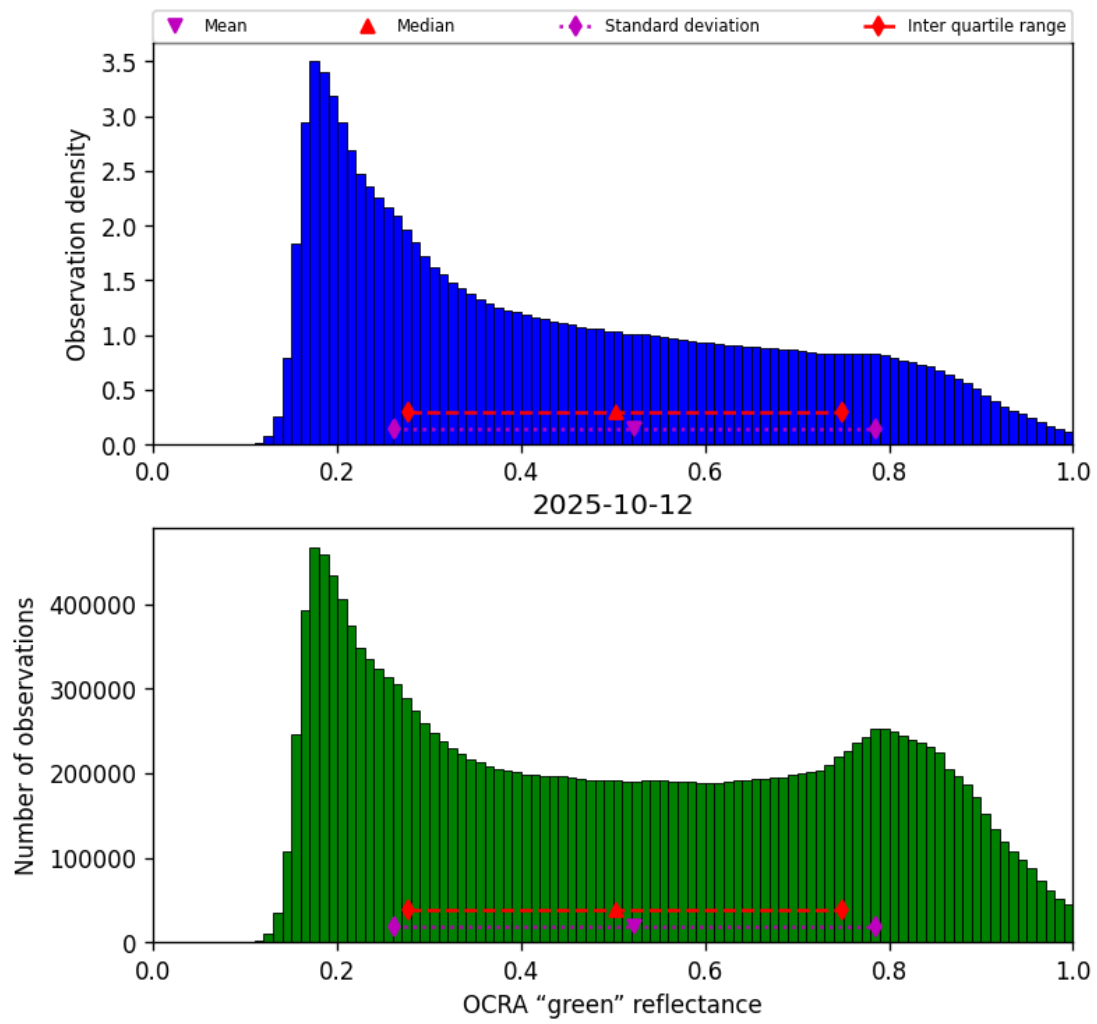


Figure 50: Histogram of “OCRA “green” reflectance” for 2025-10-12 to 2025-10-13

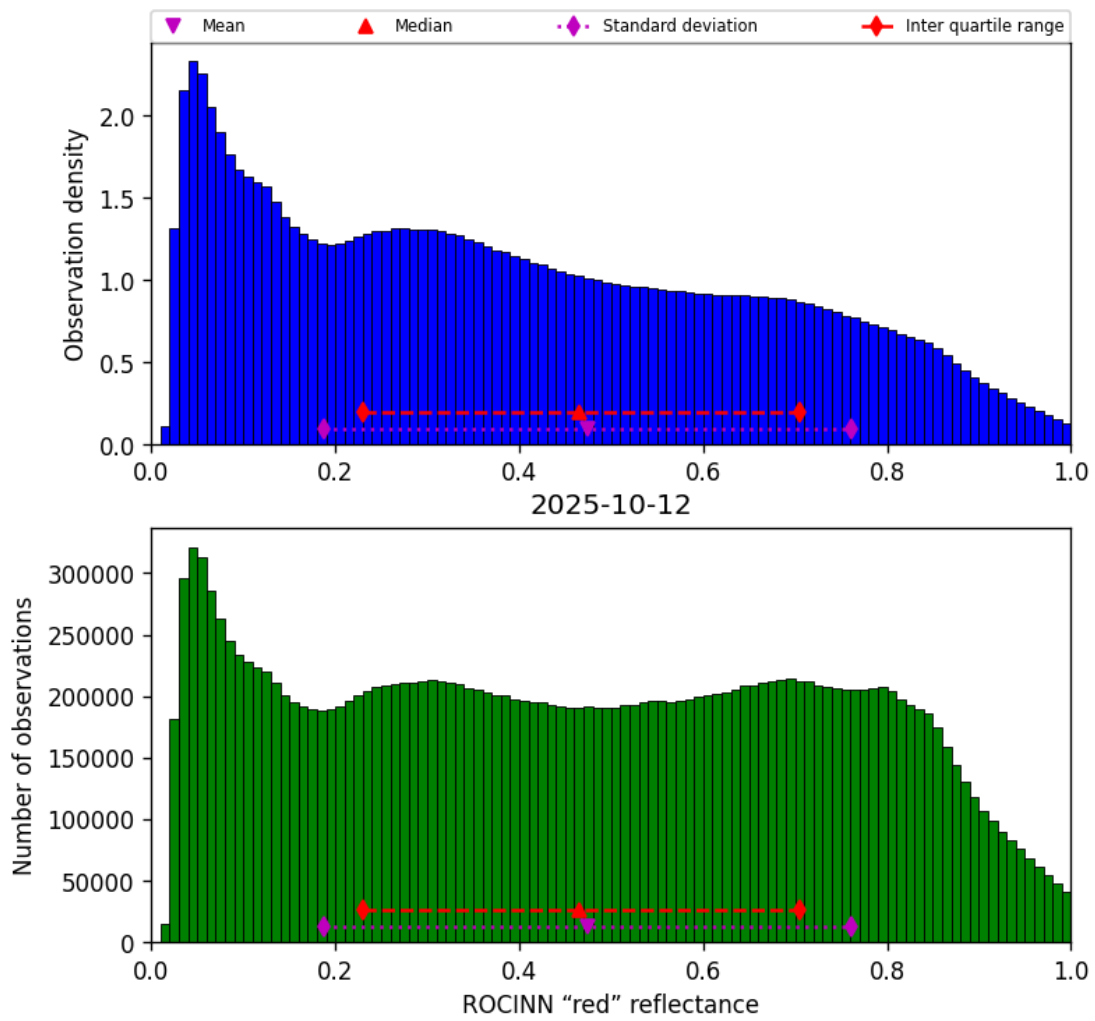


Figure 51: Histogram of “ROCINN “red” reflectance” for 2025-10-12 to 2025-10-13

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.

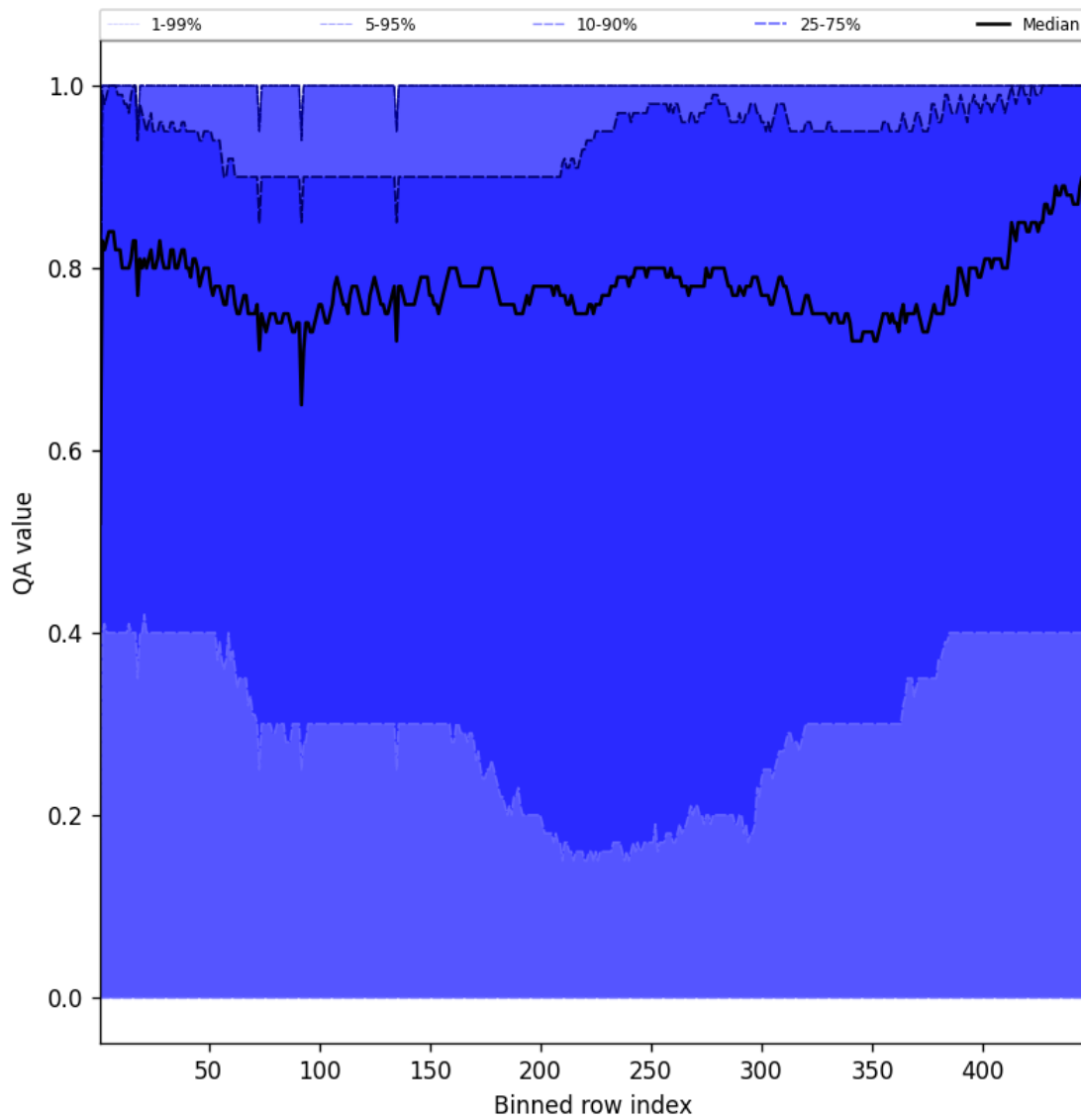


Figure 52: Along track statistics of “QA value” for 2025-10-12 to 2025-10-13

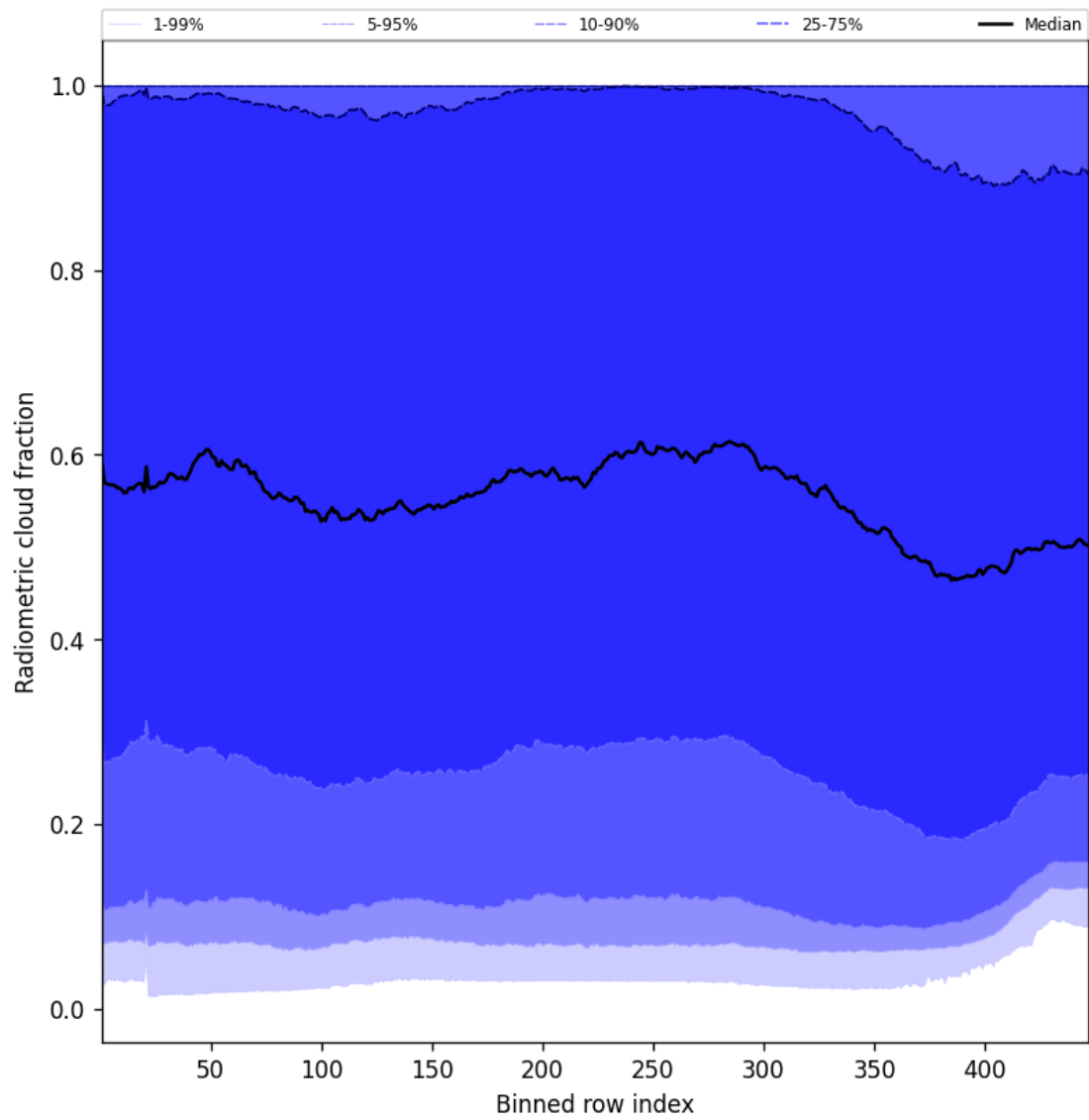


Figure 53: Along track statistics of “Radiometric cloud fraction” for 2025-10-12 to 2025-10-13

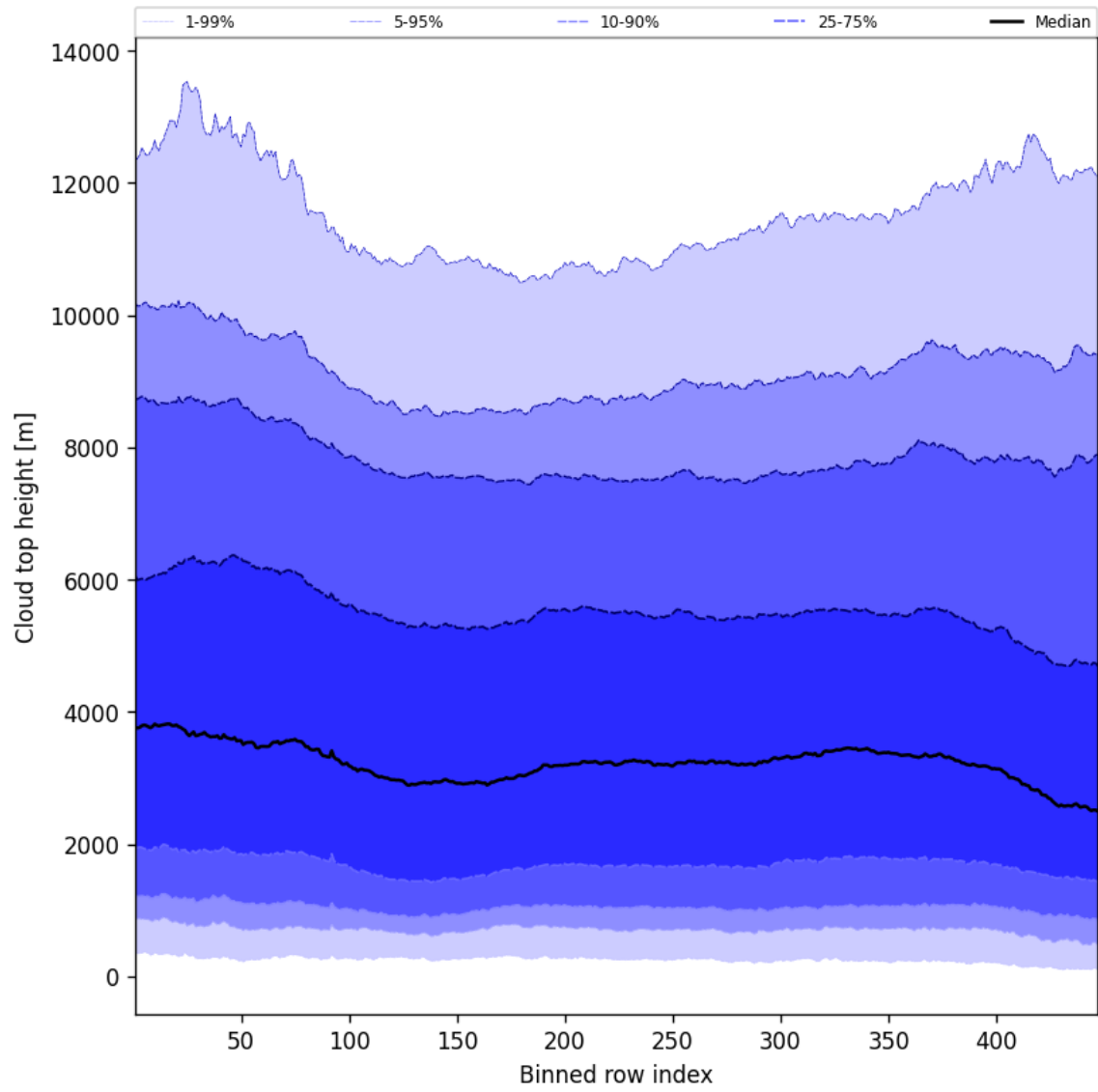


Figure 54: Along track statistics of “Cloud top height” for 2025-10-12 to 2025-10-13

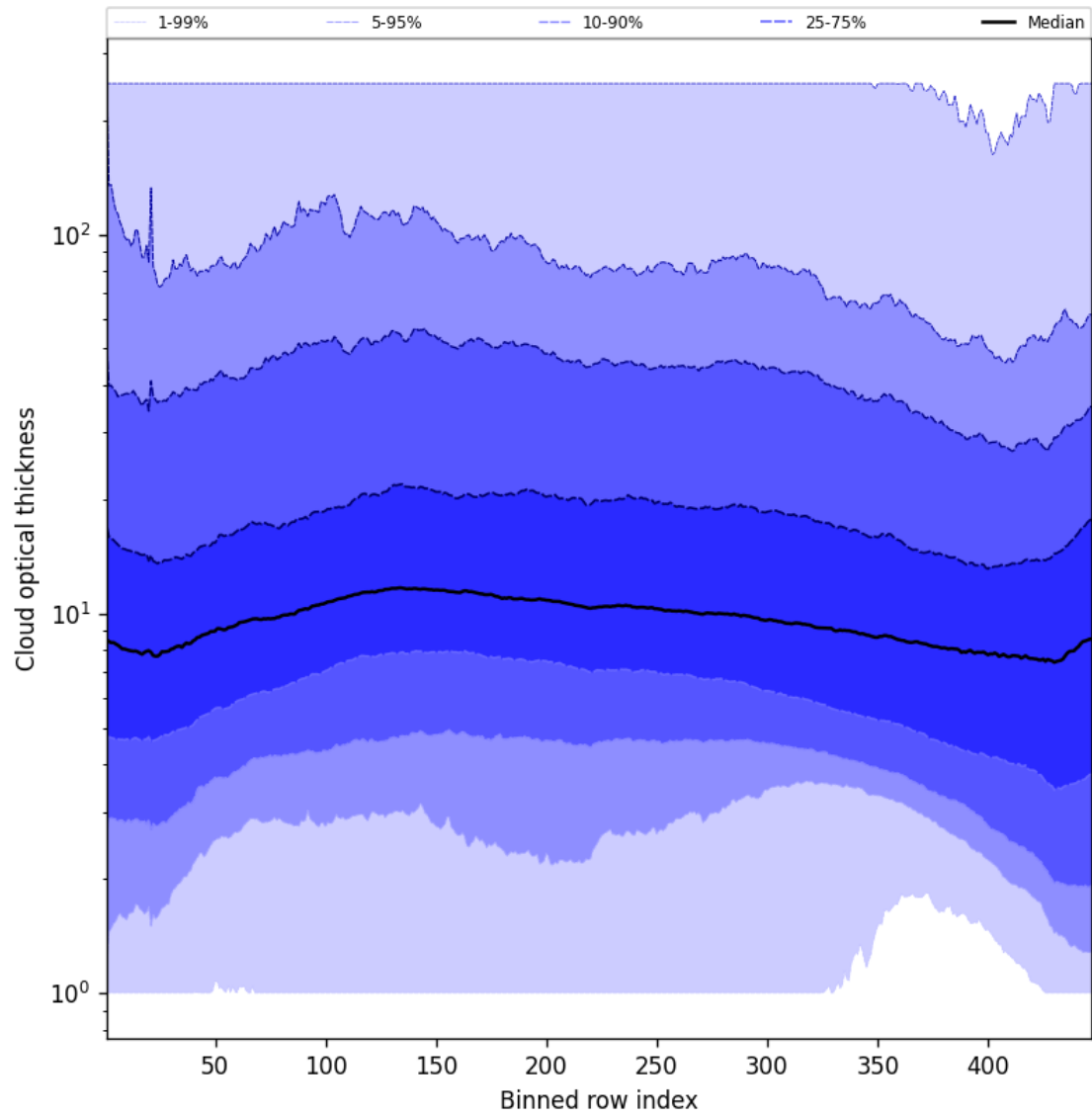


Figure 55: Along track statistics of “Cloud optical thickness” for 2025-10-12 to 2025-10-13

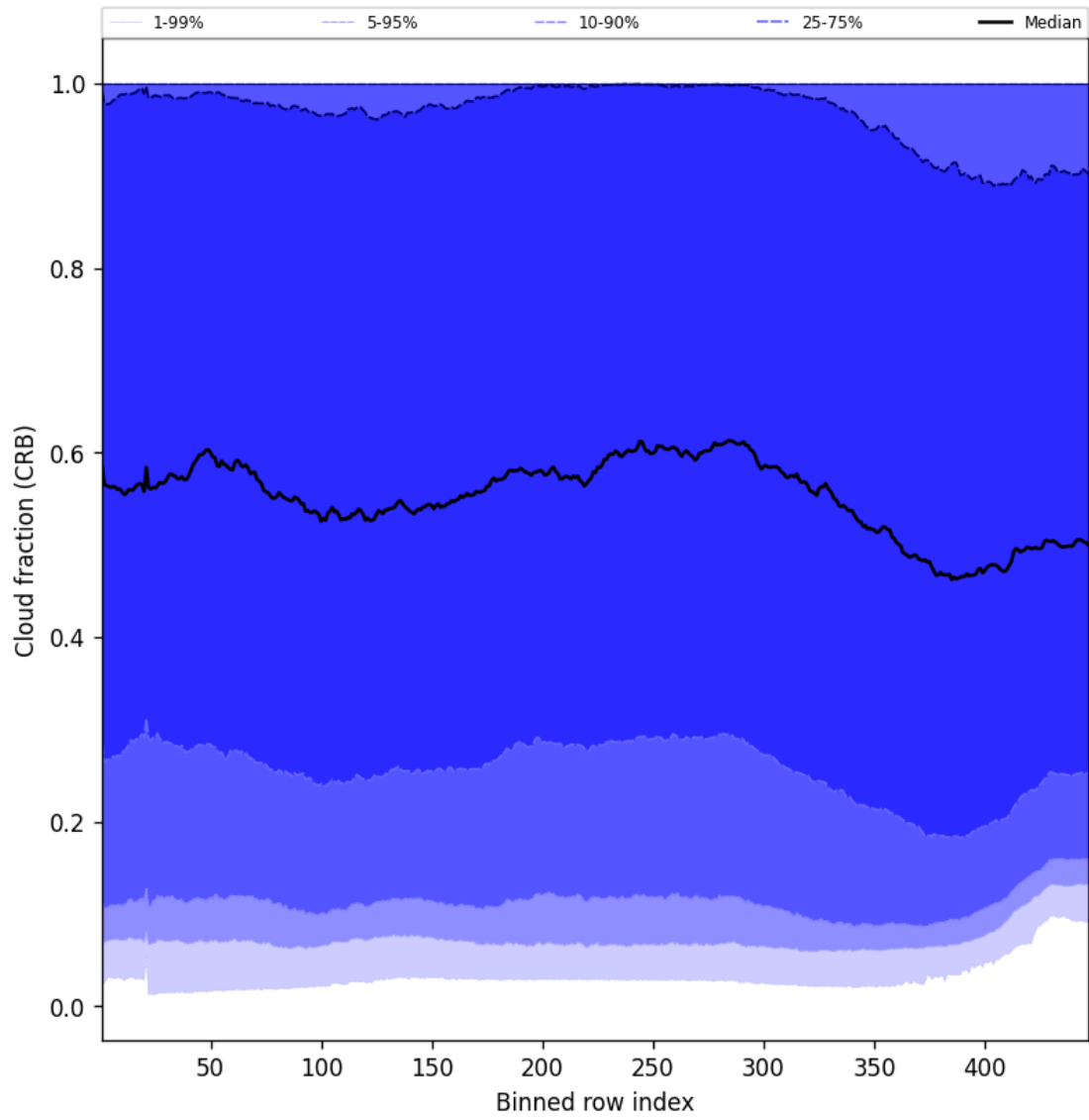


Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2025-10-12 to 2025-10-13

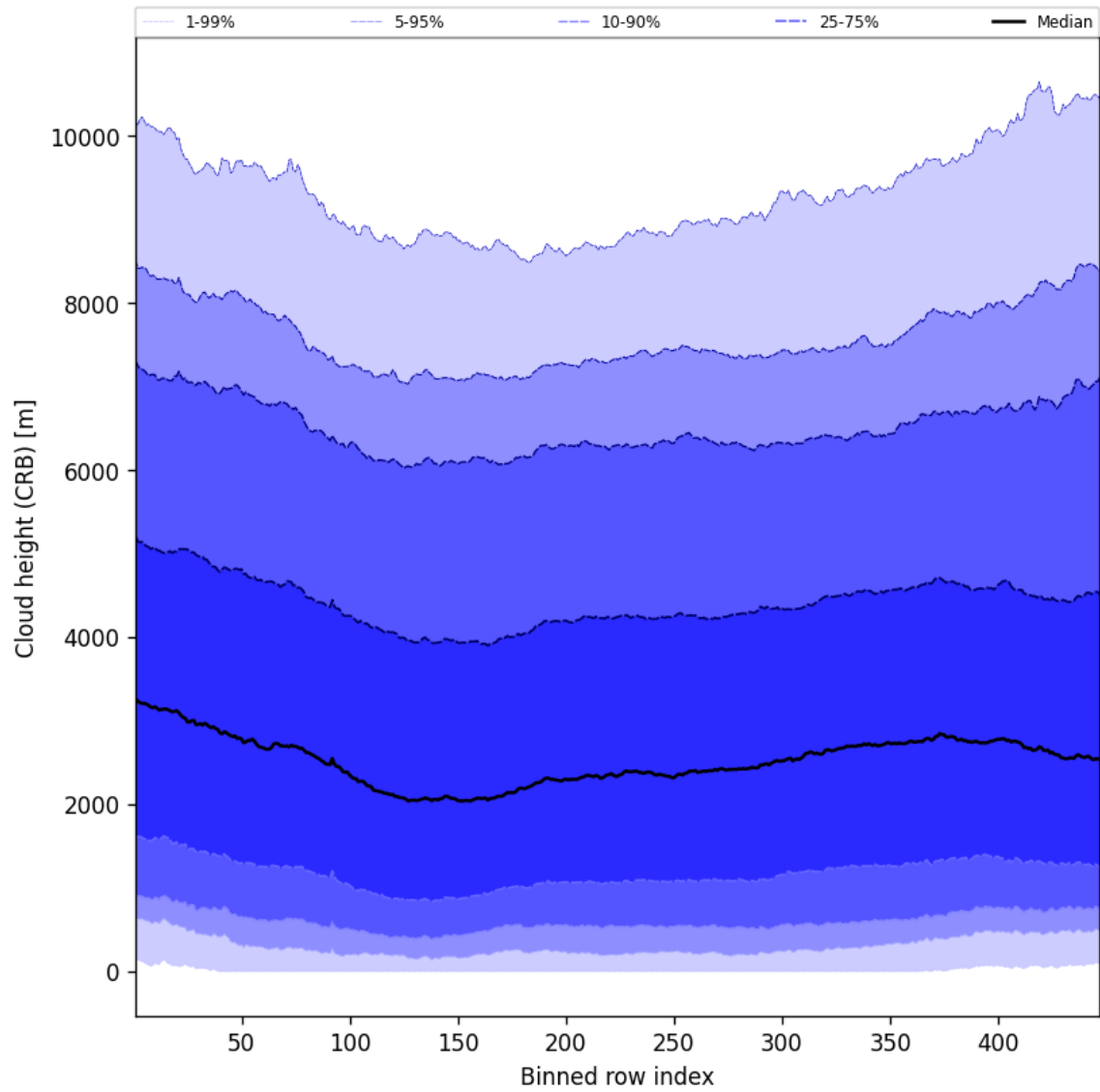


Figure 57: Along track statistics of “Cloud height (CRB)” for 2025-10-12 to 2025-10-13

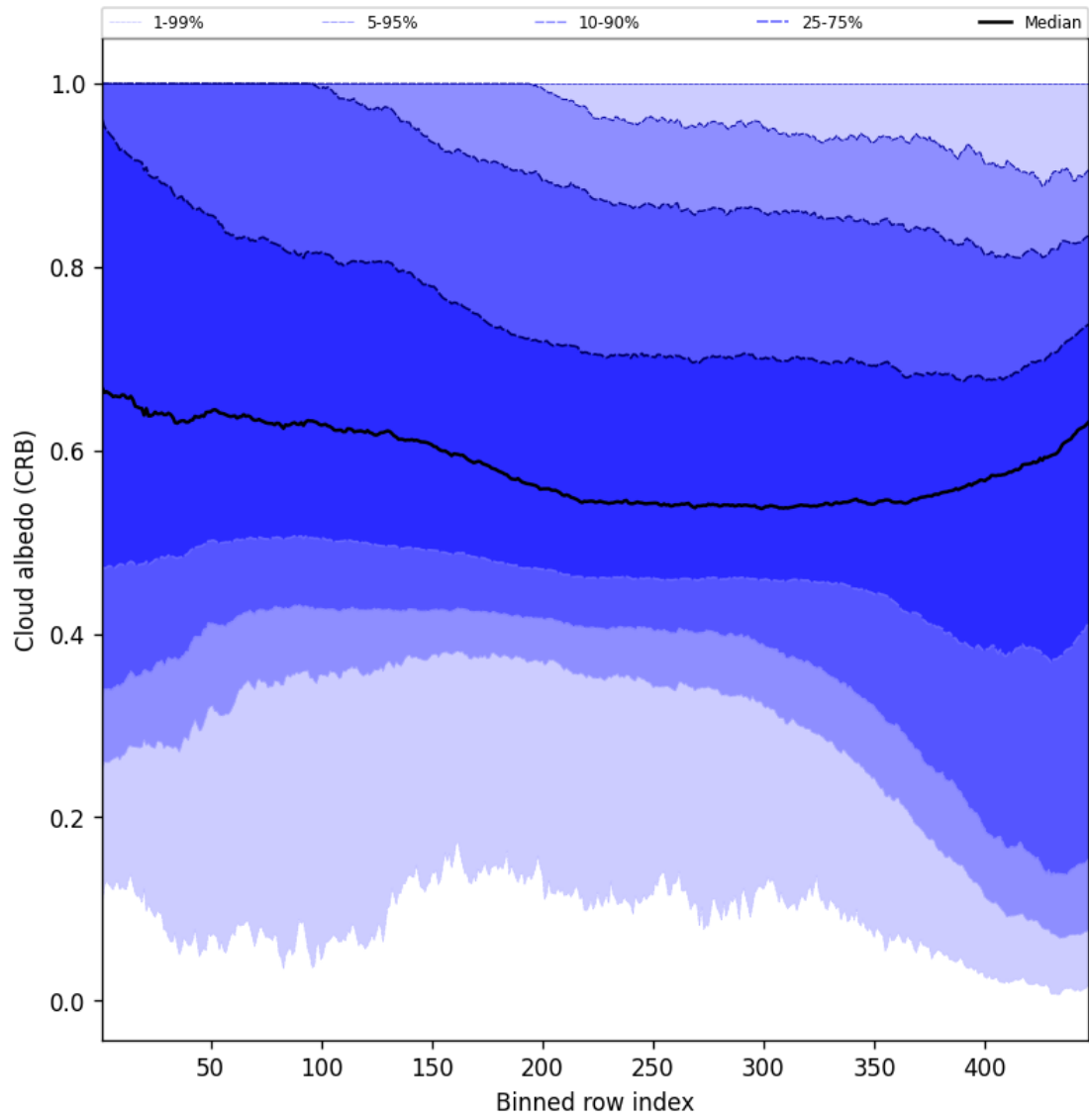


Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2025-10-12 to 2025-10-13

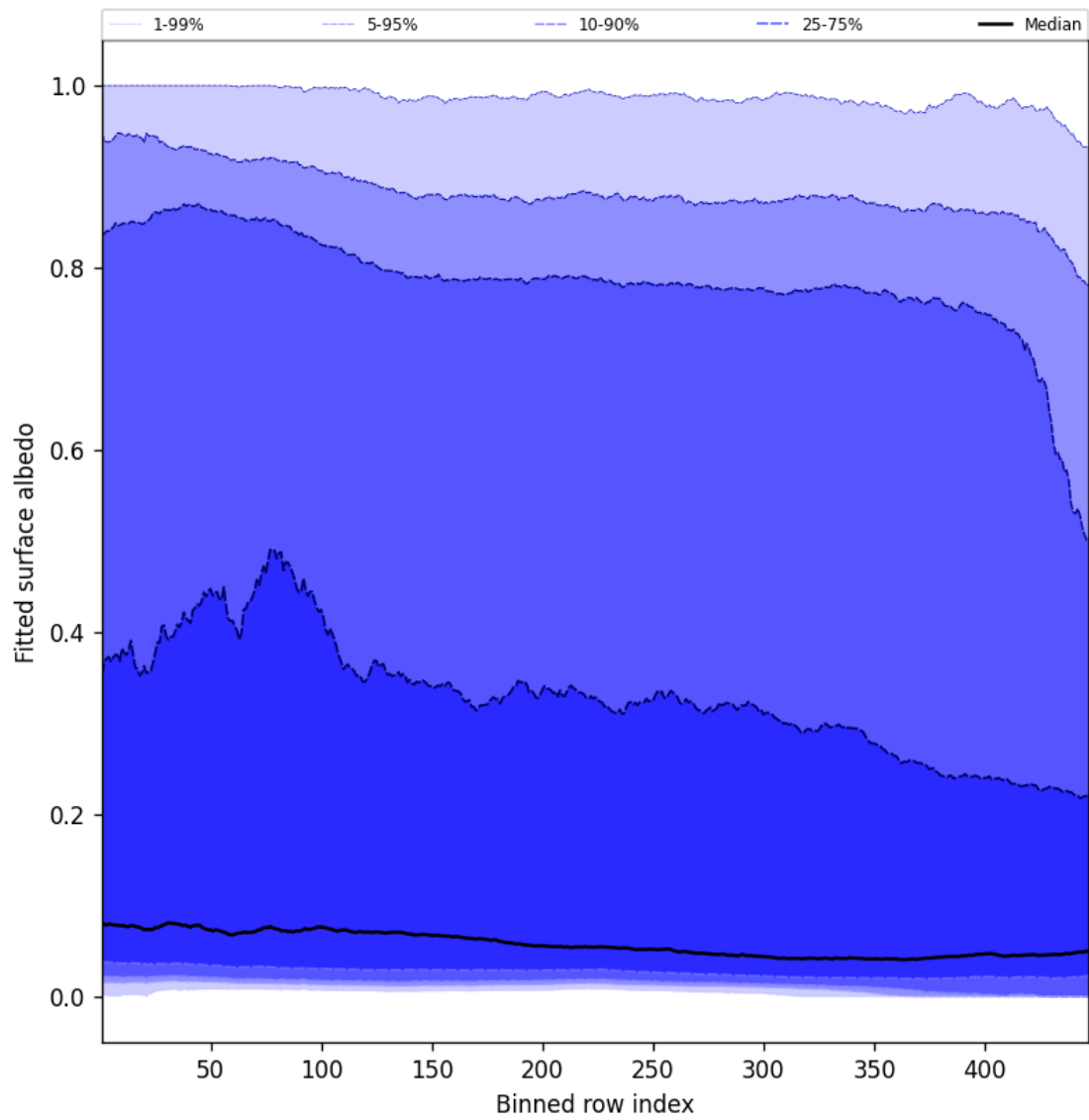


Figure 59: Along track statistics of “Fitted surface albedo” for 2025-10-12 to 2025-10-13

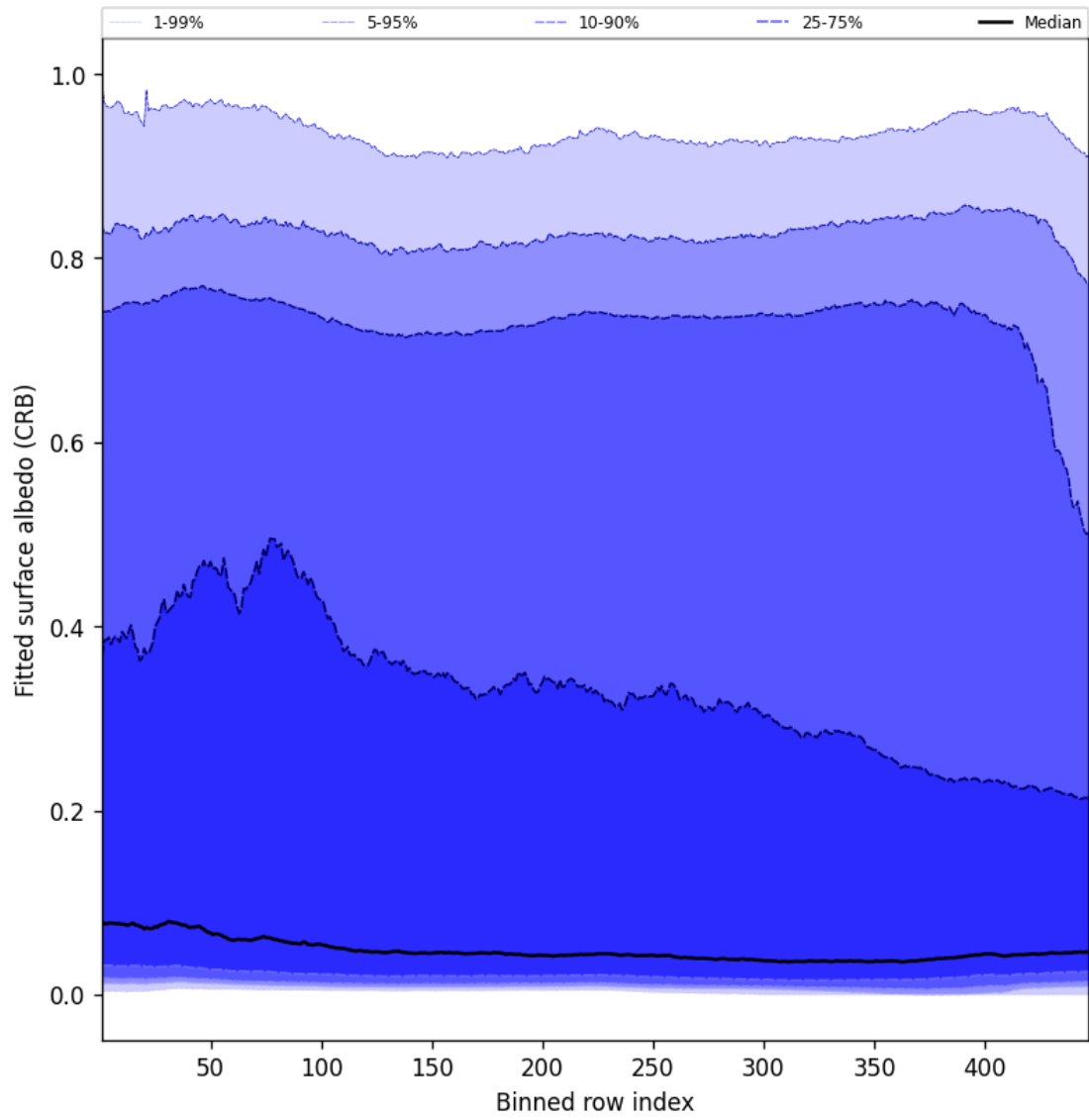


Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2025-10-12 to 2025-10-13

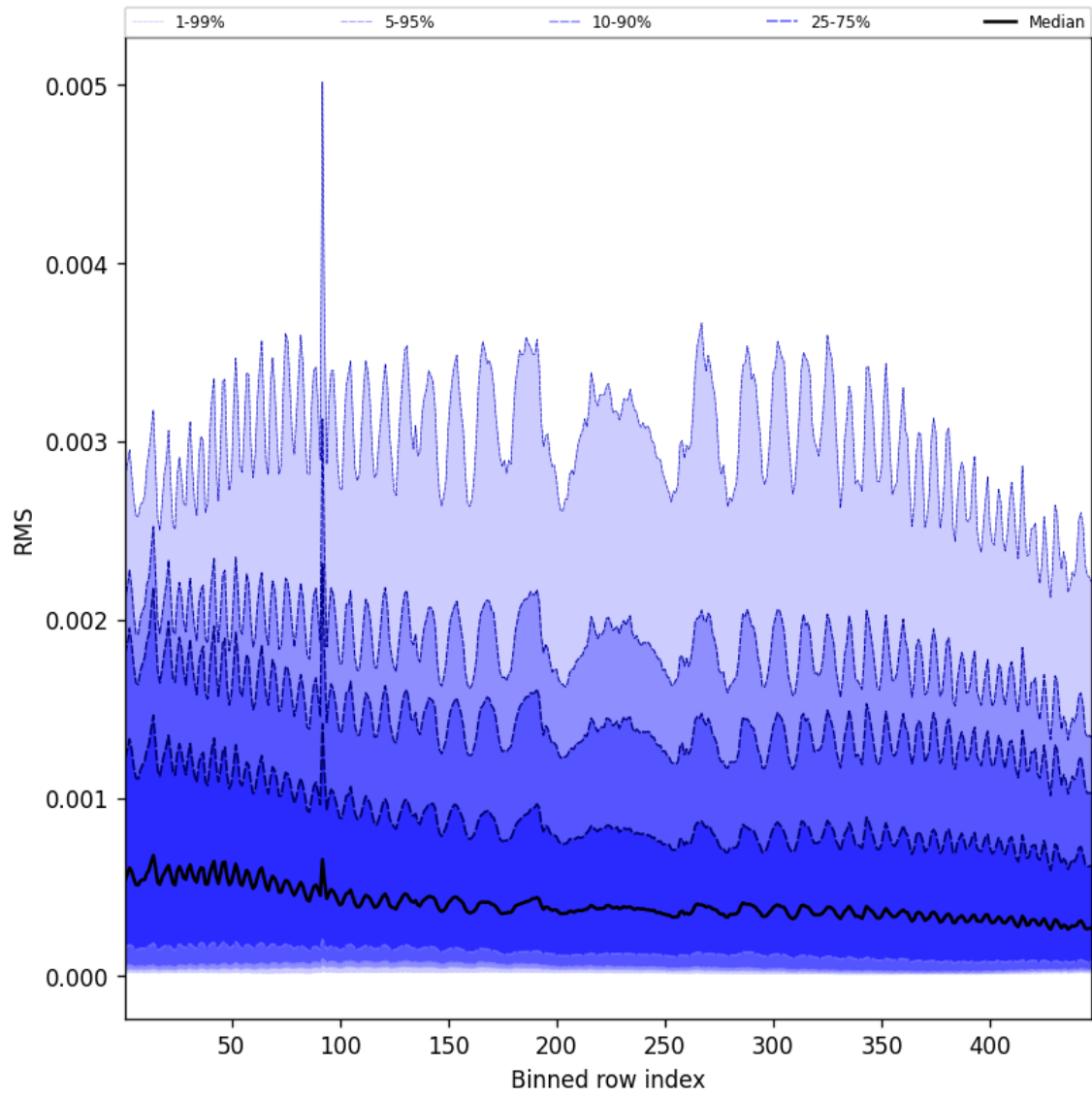


Figure 61: Along track statistics of “RMS” for 2025-10-12 to 2025-10-13

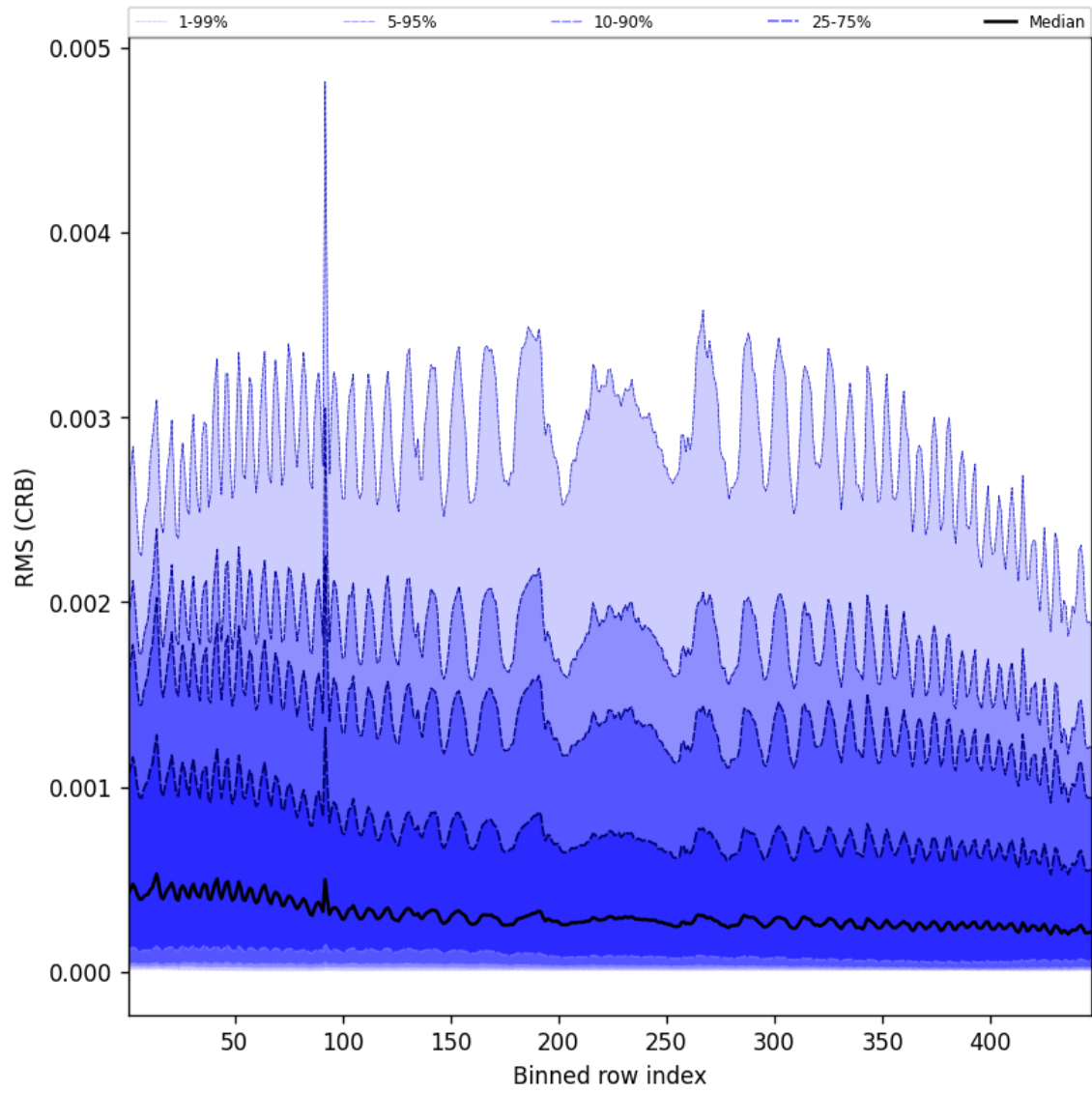


Figure 62: Along track statistics of “RMS (CRB)” for 2025-10-12 to 2025-10-13

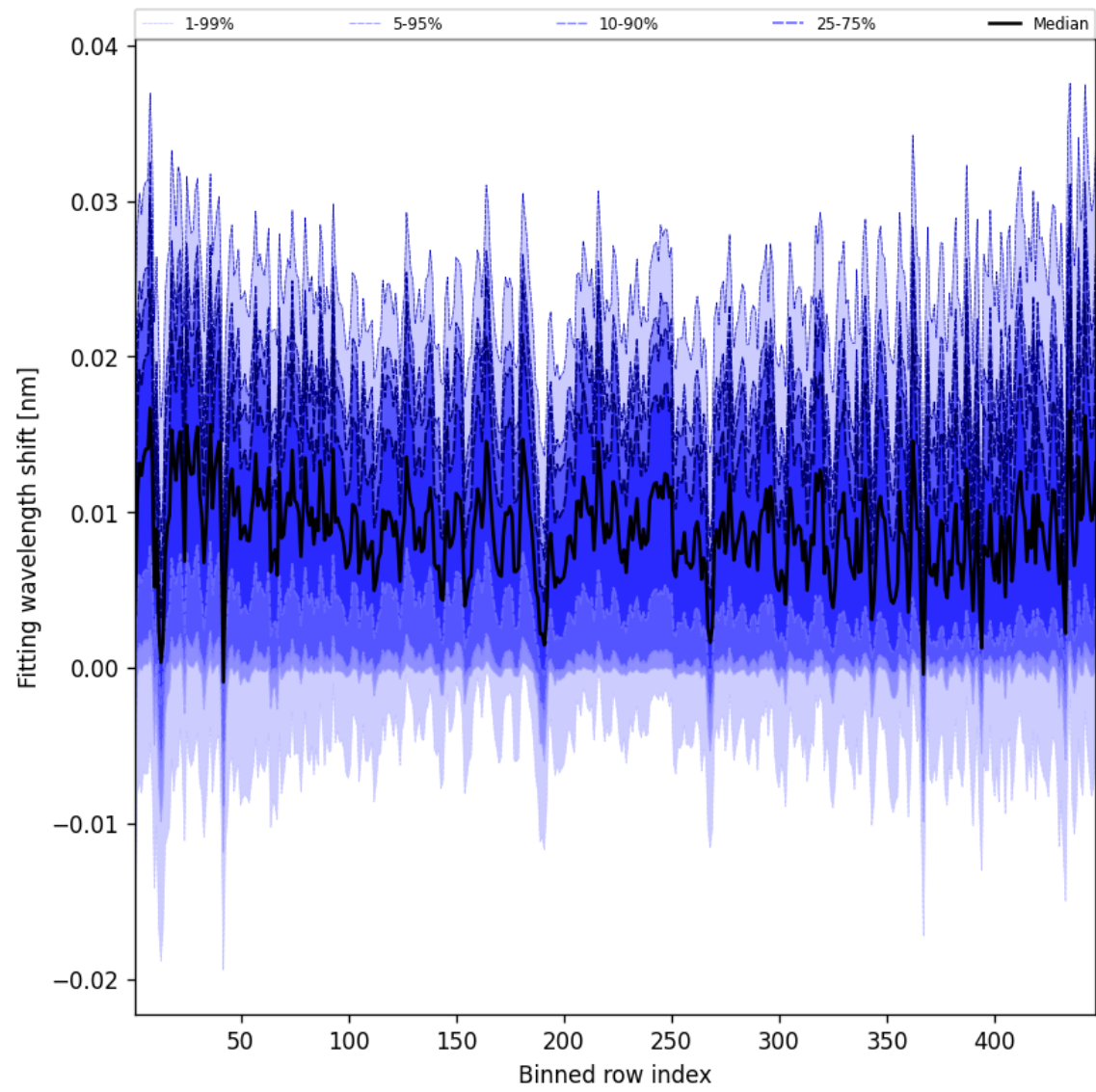


Figure 63: Along track statistics of “Fitting wavelength shift” for 2025-10-12 to 2025-10-13

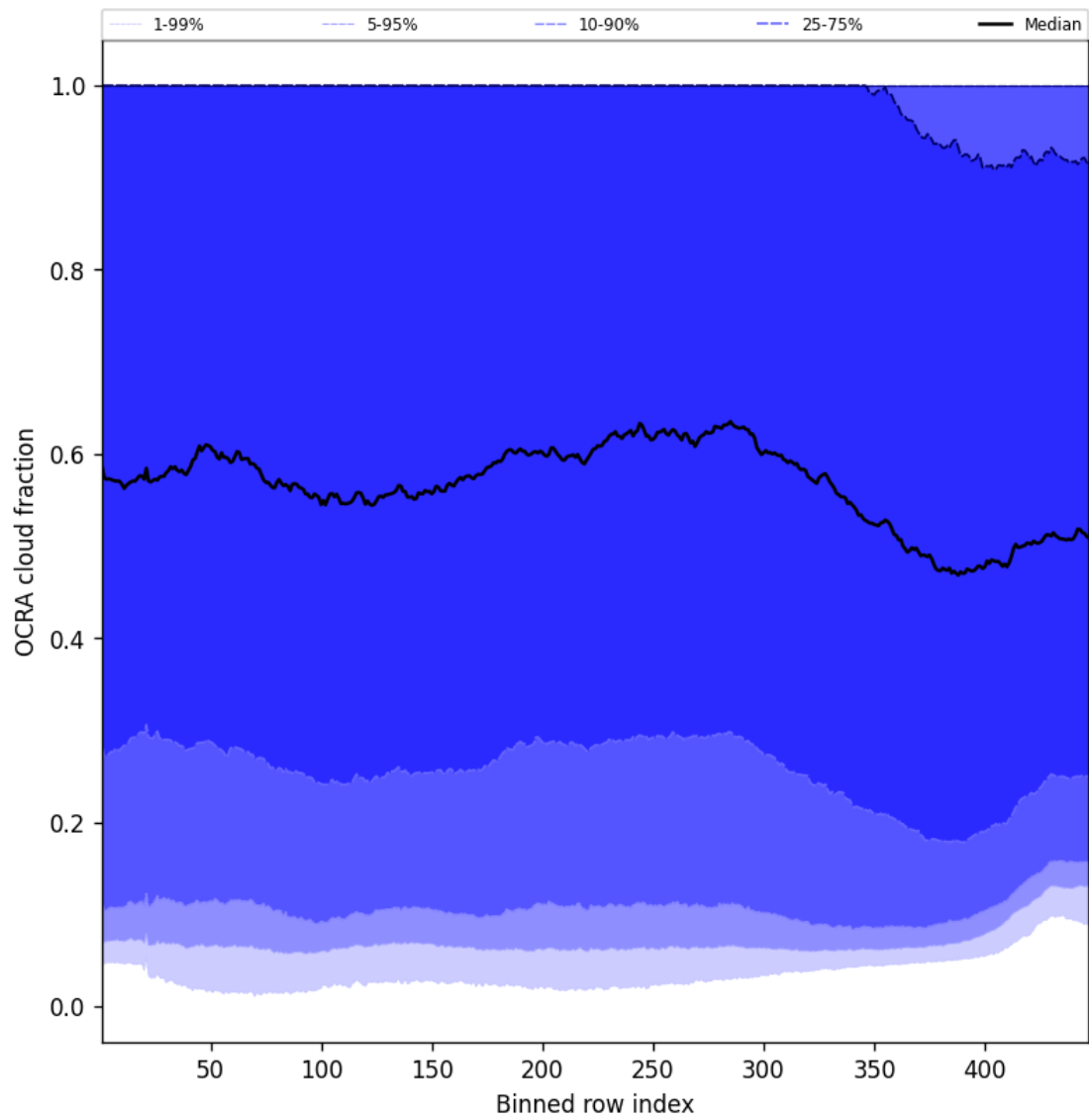


Figure 64: Along track statistics of “OCRA cloud fraction” for 2025-10-12 to 2025-10-13

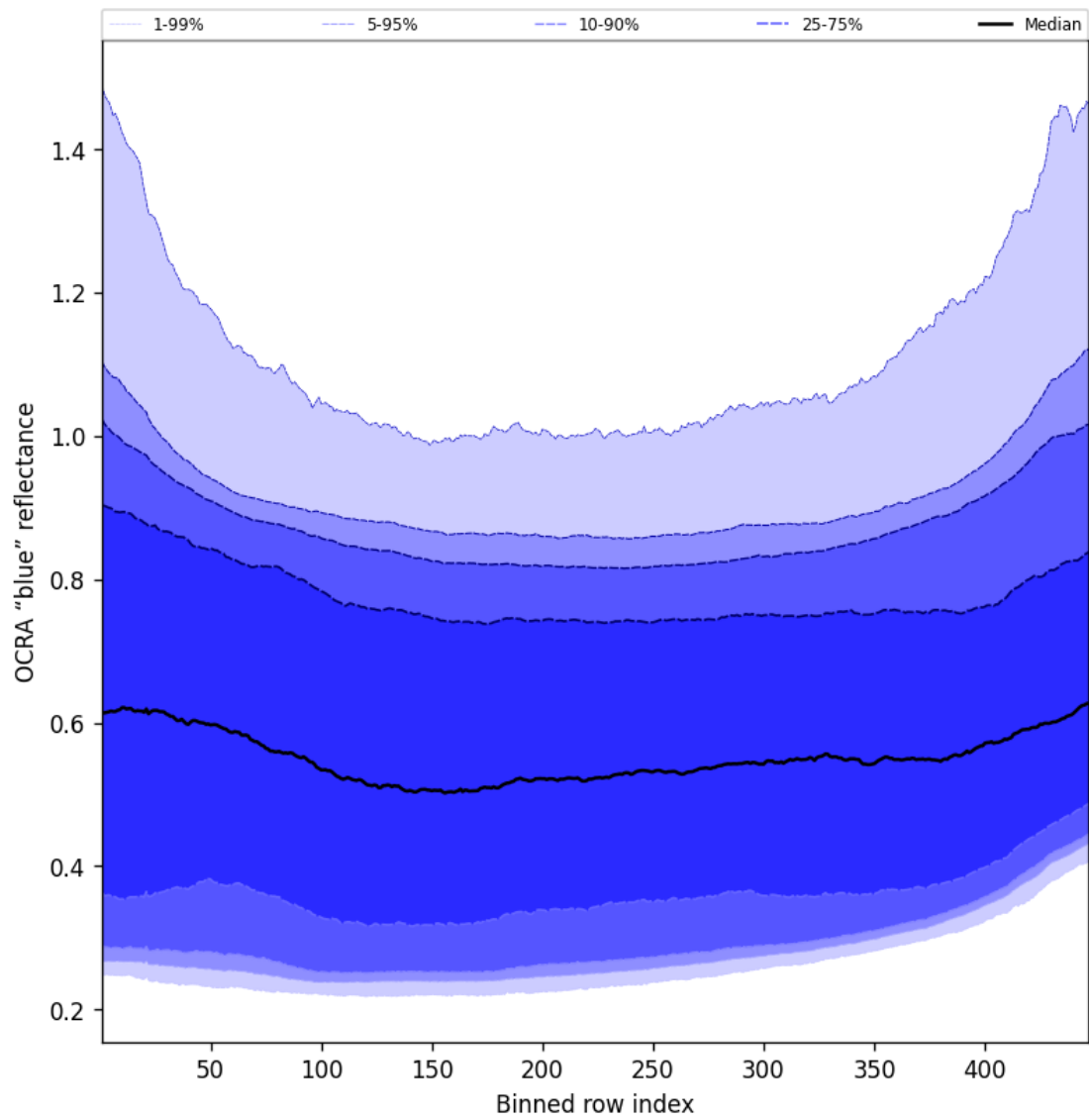


Figure 65: Along track statistics of “OCRA “blue” reflectance” for 2025-10-12 to 2025-10-13

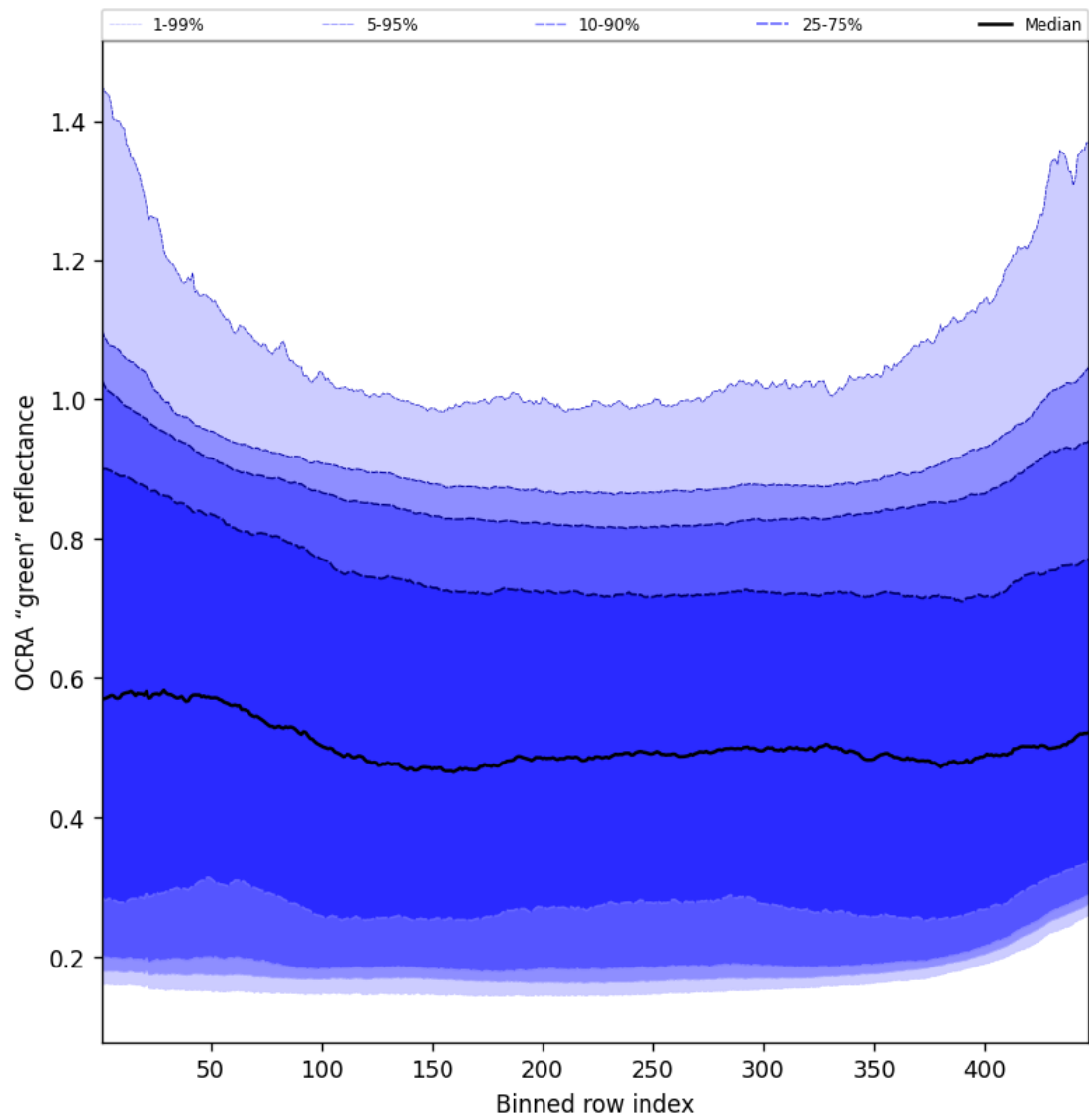


Figure 66: Along track statistics of “OCRA “green” reflectance” for 2025-10-12 to 2025-10-13

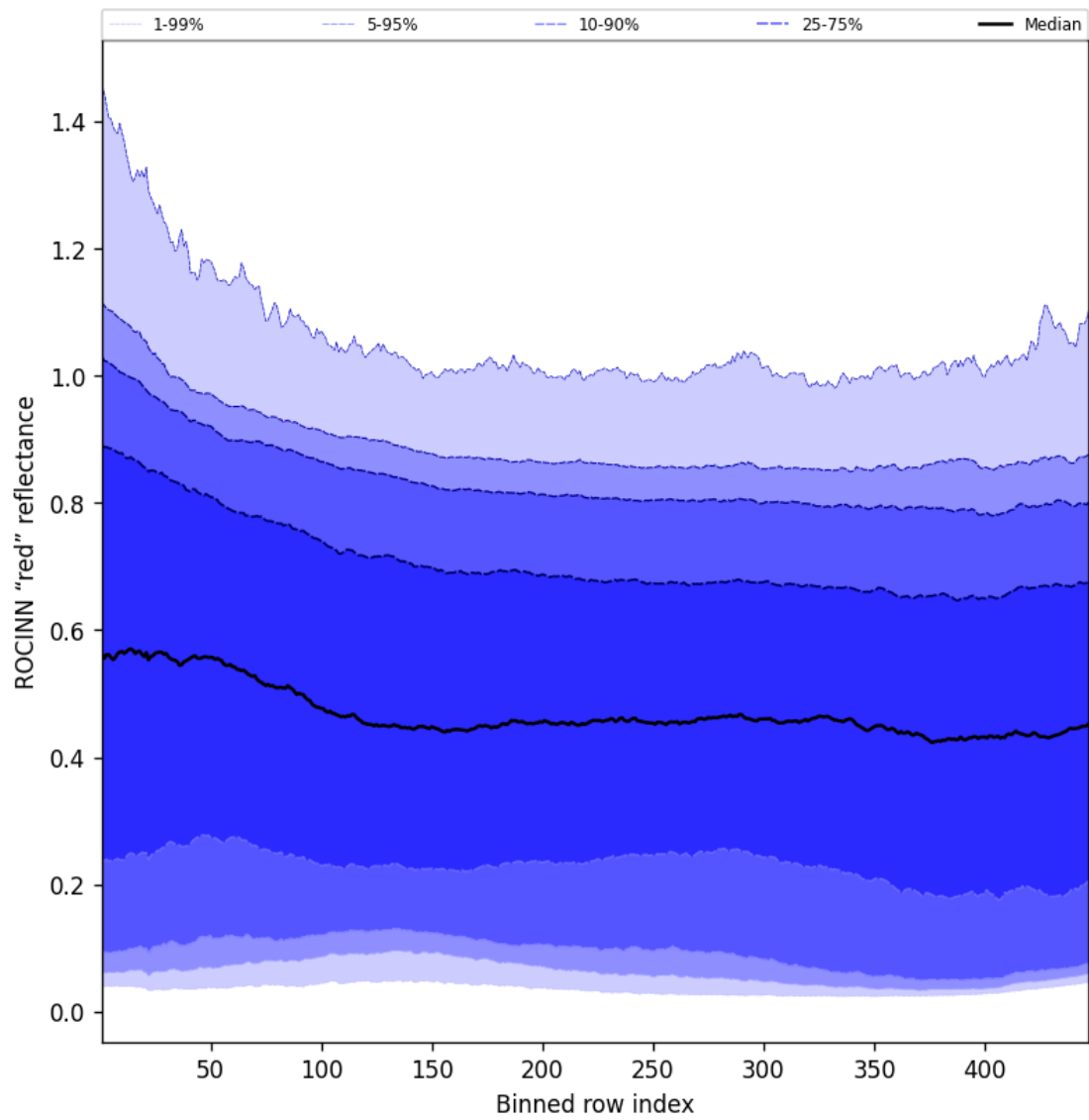


Figure 67: Along track statistics of “ROCINN “red” reflectance” for 2025-10-12 to 2025-10-13

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.

Contents

1	Short Introduction	1
1.1	The list of parameters	1
2	Definitions	1
3	Granule outlines	8
4	Input data monitoring	9
5	Warnings and errors	10
6	World maps	11
7	Zonal average	27
8	Histograms	43
9	Along track statistics	59
10	Coincidence density	75
11	Copyright information of ‘PyCAMA’	75

List of Figures

1	Outline of the granules.	8
2	Input data per granule	9
3	Fraction of pixels with specific warnings and errors during processing	10
4	Map of “Radiometric cloud fraction” for 2025-10-12 to 2025-10-13	11
5	Map of “Cloud top height” for 2025-10-12 to 2025-10-13	12
6	Map of “Cloud optical thickness” for 2025-10-12 to 2025-10-13	13
7	Map of “Cloud fraction (CRB)” for 2025-10-12 to 2025-10-13	14
8	Map of “Cloud height (CRB)” for 2025-10-12 to 2025-10-13	15
9	Map of “Cloud albedo (CRB)” for 2025-10-12 to 2025-10-13	16
10	Map of “Fitted surface albedo” for 2025-10-12 to 2025-10-13	17
11	Map of “Fitted surface albedo (CRB)” for 2025-10-12 to 2025-10-13	18
12	Map of “RMS” for 2025-10-12 to 2025-10-13	19
13	Map of “RMS (CRB)” for 2025-10-12 to 2025-10-13	20
14	Map of “Fitting wavelength shift” for 2025-10-12 to 2025-10-13	21
15	Map of “OCRA cloud fraction” for 2025-10-12 to 2025-10-13	22
16	Map of “OCRA “blue” reflectance” for 2025-10-12 to 2025-10-13	23
17	Map of “OCRA “green” reflectance” for 2025-10-12 to 2025-10-13	24
18	Map of “ROCINN “red” reflectance” for 2025-10-12 to 2025-10-13	25
19	Map of the number of observations for 2025-10-12 to 2025-10-13	26
20	Zonal average of “QA value” for 2025-10-12 to 2025-10-13.	27
21	Zonal average of “Radiometric cloud fraction” for 2025-10-12 to 2025-10-13.	28
22	Zonal average of “Cloud top height” for 2025-10-12 to 2025-10-13.	29
23	Zonal average of “Cloud optical thickness” for 2025-10-12 to 2025-10-13.	30
24	Zonal average of “Cloud fraction (CRB)” for 2025-10-12 to 2025-10-13.	31
25	Zonal average of “Cloud height (CRB)” for 2025-10-12 to 2025-10-13.	32
26	Zonal average of “Cloud albedo (CRB)” for 2025-10-12 to 2025-10-13.	33
27	Zonal average of “Fitted surface albedo” for 2025-10-12 to 2025-10-13.	34
28	Zonal average of “Fitted surface albedo (CRB)” for 2025-10-12 to 2025-10-13.	35
29	Zonal average of “RMS” for 2025-10-12 to 2025-10-13.	36

30	Zonal average of “RMS (CRB)” for 2025-10-12 to 2025-10-13.	37
31	Zonal average of “Fitting wavelength shift” for 2025-10-12 to 2025-10-13.	38
32	Zonal average of “OCRA cloud fraction” for 2025-10-12 to 2025-10-13.	39
33	Zonal average of “OCRA “blue” reflectance” for 2025-10-12 to 2025-10-13.	40
34	Zonal average of “OCRA “green” reflectance” for 2025-10-12 to 2025-10-13.	41
35	Zonal average of “ROCINN “red” reflectance” for 2025-10-12 to 2025-10-13.	42
36	Histogram of “QA value” for 2025-10-12 to 2025-10-13	43
37	Histogram of “Radiometric cloud fraction” for 2025-10-12 to 2025-10-13	44
38	Histogram of “Cloud top height” for 2025-10-12 to 2025-10-13	45
39	Histogram of “Cloud optical thickness” for 2025-10-12 to 2025-10-13	46
40	Histogram of “Cloud fraction (CRB)” for 2025-10-12 to 2025-10-13	47
41	Histogram of “Cloud height (CRB)” for 2025-10-12 to 2025-10-13	48
42	Histogram of “Cloud albedo (CRB)” for 2025-10-12 to 2025-10-13	49
43	Histogram of “Fitted surface albedo” for 2025-10-12 to 2025-10-13	50
44	Histogram of “Fitted surface albedo (CRB)” for 2025-10-12 to 2025-10-13	51
45	Histogram of “RMS” for 2025-10-12 to 2025-10-13	52
46	Histogram of “RMS (CRB)” for 2025-10-12 to 2025-10-13	53
47	Histogram of “Fitting wavelength shift” for 2025-10-12 to 2025-10-13	54
48	Histogram of “OCRA cloud fraction” for 2025-10-12 to 2025-10-13	55
49	Histogram of “OCRA “blue” reflectance” for 2025-10-12 to 2025-10-13	56
50	Histogram of “OCRA “green” reflectance” for 2025-10-12 to 2025-10-13	57
51	Histogram of “ROCINN “red” reflectance” for 2025-10-12 to 2025-10-13	58
52	Along track statistics of “QA value” for 2025-10-12 to 2025-10-13	59
53	Along track statistics of “Radiometric cloud fraction” for 2025-10-12 to 2025-10-13	60
54	Along track statistics of “Cloud top height” for 2025-10-12 to 2025-10-13	61
55	Along track statistics of “Cloud optical thickness” for 2025-10-12 to 2025-10-13	62
56	Along track statistics of “Cloud fraction (CRB)” for 2025-10-12 to 2025-10-13	63
57	Along track statistics of “Cloud height (CRB)” for 2025-10-12 to 2025-10-13	64
58	Along track statistics of “Cloud albedo (CRB)” for 2025-10-12 to 2025-10-13	65
59	Along track statistics of “Fitted surface albedo” for 2025-10-12 to 2025-10-13	66
60	Along track statistics of “Fitted surface albedo (CRB)” for 2025-10-12 to 2025-10-13	67
61	Along track statistics of “RMS” for 2025-10-12 to 2025-10-13	68
62	Along track statistics of “RMS (CRB)” for 2025-10-12 to 2025-10-13	69
63	Along track statistics of “Fitting wavelength shift” for 2025-10-12 to 2025-10-13	70
64	Along track statistics of “OCRA cloud fraction” for 2025-10-12 to 2025-10-13	71
65	Along track statistics of “OCRA “blue” reflectance” for 2025-10-12 to 2025-10-13	72
66	Along track statistics of “OCRA “green” reflectance” for 2025-10-12 to 2025-10-13	73
67	Along track statistics of “ROCINN “red” reflectance” for 2025-10-12 to 2025-10-13	74

List of Tables

1	Parameterlist and basic statistics for the analysis	2
2	Percentile ranges	3
3	Parameterlist and basic statistics for the analysis for observations in the northern hemisphere	4
4	Parameterlist and basic statistics for the analysis for observations in the southern hemisphere	5
5	Parameterlist and basic statistics for the analysis for observations over water	6
6	Parameterlist and basic statistics for the analysis for observations over land	7

11 Copyright information of ‘PyCAMA’

Copyright © 2005 – 2023, Maarten Sneep (KNMI).

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

This software is provided by the copyright holders and contributors “as is” and any express or implied warranties, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose are disclaimed. In no event shall the copyright holder or contributors be liable for any direct, indirect, incidental, special, exemplary, or consequential damages (including, but not limited to, procurement of substitute goods or services; loss of use, data, or profits; or business interruption) however caused and on any theory of liability, whether in contract, strict liability, or tort (including negligence or otherwise) arising in any way out of the use of this software, even if advised of the possibility of such damage.

Maarten Sneep (maarten.sneep@knmi.nl).