

PyCAMA report generated by tropl2-proc

tropl2-proc

2025-06-21 (05:00)

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]	0.609 ± 0.373	18426121	0.995	0.640	0.770	0.0	1.000
cloud fraction [1]	0.592 ± 0.346	18426121	0.995	0.731	0.602	6.412×10^{-3}	1.000
cloud top height [m]	$(0.383 \pm 0.255) \times 10^4$	18426121	1.425×10^3	3.579×10^3	3.356×10^3	0.0	2.000×10^4
cloud optical thickness [1]	20.1 ± 34.5	18426121	9.77	12.3	9.82	1.000	250
cloud fraction crb [1]	0.591 ± 0.346	18426121	0.995	0.731	0.600	5.851×10^{-3}	1.000
cloud height crb [m]	$(0.301 \pm 0.228) \times 10^4$	18426121	75.0	3.295×10^3	2.542×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.555 ± 0.199	18426121	0.505	0.243	0.551	0.0	1.000
surface albedo fitted [1]	0.194 ± 0.239	18426121	2.500×10^{-2}	0.241	6.349×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.192 ± 0.244	18426121	1.500×10^{-2}	0.252	4.731×10^{-2}	0.0	1.000
fitted root mean square [1]	$(7.789 \pm 19.307) \times 10^{-4}$	18426121	5.000×10^{-5}	9.373×10^{-4}	3.406×10^{-4}	8.060×10^{-7}	1.52
fitted root mean square crb [1]	$(6.649 \pm 17.338) \times 10^{-4}$	18426121	5.000×10^{-5}	8.793×10^{-4}	2.725×10^{-4}	8.626×10^{-7}	1.30
wavelength shift [nm]	$(6.854 \pm 6.753) \times 10^{-3}$	18426121	-3.000×10^{-4}	9.851×10^{-3}	6.162×10^{-3}	-8.370×10^{-2}	0.550
cloud fraction apriori [1]	0.600 ± 0.352	18426121	0.995	0.739	0.623	0.0	1.000
reflectance blue ocra [1]	0.520 ± 0.197	18426121	0.305	0.315	0.496	0.139	1.91
reflectance green ocra [1]	0.466 ± 0.225	18426121	0.185	0.377	0.439	8.273×10^{-2}	2.39
reflectance continuum aband [1]	0.423 ± 0.253	18426121	3.500×10^{-2}	0.399	0.402	8.943×10^{-3}	6.42

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	3.000×10^{-2}	0.300	0.940	1.000	1.000	1.000	1.000
cloud fraction [1]	2.610×10^{-2}	6.746×10^{-2}	0.106	0.160	0.263	0.994	1.000	1.000	1.000	1.000
cloud top height [m]	152	577	993	1.336×10^3	1.793×10^3	5.372×10^3	6.483×10^3	7.483×10^3	8.803×10^3	1.095×10^4
cloud optical thickness [1]	1.000	2.25	3.54	4.58	5.93	18.2	27.7	41.0	70.7	236
cloud fraction crb [1]	2.554×10^{-2}	6.652×10^{-2}	0.105	0.159	0.262	0.993	1.000	1.000	1.000	1.000
cloud height crb [m]	0.0	57.7	427	770	1.166×10^3	4.461×10^3	5.422×10^3	6.279×10^3	7.396×10^3	9.261×10^3
cloud albedo crb [1]	0.0	0.204	0.304	0.380	0.443	0.686	0.756	0.815	0.888	1.000
surface albedo fitted [1]	0.0	1.032×10^{-2}	1.606×10^{-2}	2.115×10^{-2}	2.857×10^{-2}	0.270	0.412	0.600	0.769	0.933
surface albedo fitted crb [1]	2.161×10^{-4}	6.995×10^{-3}	1.112×10^{-2}	1.494×10^{-2}	2.061×10^{-2}	0.273	0.446	0.630	0.762	0.897
fitted root mean square [1]	8.902×10^{-6}	2.131×10^{-5}	3.495×10^{-5}	5.529×10^{-5}	9.850×10^{-5}	1.036×10^{-3}	1.516×10^{-3}	2.027×10^{-3}	2.785×10^{-3}	4.643×10^{-3}
fitted root mean square crb [1]	5.306×10^{-6}	1.123×10^{-5}	2.015×10^{-5}	3.236×10^{-5}	5.881×10^{-5}	9.381×10^{-4}	1.387×10^{-3}	1.852×10^{-3}	2.542×10^{-3}	3.947×10^{-3}
wavelength shift [nm]	-7.756×10^{-3}	-1.257×10^{-3}	-2.362×10^{-4}	2.466×10^{-4}	1.484×10^{-3}	1.133×10^{-2}	1.370×10^{-2}	1.575×10^{-2}	1.848×10^{-2}	2.441×10^{-2}
cloud fraction apriori [1]	2.793×10^{-2}	6.426×10^{-2}	9.970×10^{-2}	0.152	0.261	1.000	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.228	0.257	0.281	0.307	0.350	0.665	0.741	0.799	0.861	0.973
reflectance green ocra [1]	0.147	0.171	0.192	0.217	0.263	0.640	0.726	0.788	0.851	0.961
reflectance continuum aband [1]	2.956×10^{-2}	5.346×10^{-2}	8.861×10^{-2}	0.137	0.217	0.616	0.708	0.772	0.845	0.975

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]	0.602 ± 0.364	12454237	0.620	0.750	0.0	1.000	0.280	0.900
cloud fraction [1]	0.638 ± 0.345	12454237	0.683	0.700	6.412×10^{-3}	1.000	0.316	1.000
cloud top height [m]	$(0.380 \pm 0.262) \times 10^4$	12454237	3.700×10^3	3.368×10^3	0.0	2.000×10^4	1.693×10^3	5.394×10^3
cloud optical thickness [1]	16.5 ± 27.8	12454237	10.3	9.08	1.000	250	5.35	15.6
cloud fraction crb [1]	0.638 ± 0.345	12454237	0.684	0.700	5.851×10^{-3}	1.000	0.316	1.000
cloud height crb [m]	$(0.293 \pm 0.233) \times 10^4$	12454237	3.485×10^3	2.476×10^3	0.0	2.000×10^4	989	4.474×10^3
cloud albedo crb [1]	0.543 ± 0.211	12454237	0.268	0.540	0.0	1.000	0.422	0.689
surface albedo fitted [1]	0.258 ± 0.264	12454237	0.348	0.185	0.0	1.000	3.381×10^{-2}	0.382
surface albedo fitted crb [1]	0.260 ± 0.267	12454237	0.384	0.185	0.0	1.000	2.780×10^{-2}	0.412
fitted root mean square [1]	$(9.978 \pm 22.935) \times 10^{-4}$	12454237	1.237×10^{-3}	5.754×10^{-4}	2.190×10^{-6}	1.52	1.362×10^{-4}	1.373×10^{-3}
fitted root mean square crb [1]	$(8.520 \pm 20.612) \times 10^{-4}$	12454237	1.149×10^{-3}	4.853×10^{-4}	1.029×10^{-6}	1.30	9.650×10^{-5}	1.245×10^{-3}
wavelength shift [nm]	$(7.834 \pm 6.758) \times 10^{-3}$	12454237	9.871×10^{-3}	7.585×10^{-3}	-8.370×10^{-2}	0.550	2.517×10^{-3}	1.239×10^{-2}
cloud fraction apriori [1]	0.651 ± 0.348	12454237	0.675	0.736	0.0	1.000	0.325	1.000
reflectance blue ocr [1]	0.535 ± 0.205	12454237	0.345	0.522	0.140	1.88	0.350	0.695
reflectance green ocr [1]	0.489 ± 0.232	12454237	0.409	0.478	8.273×10^{-2}	2.03	0.271	0.680
reflectance continuum aband [1]	0.461 ± 0.251	12454237	0.401	0.453	1.120×10^{-2}	5.19	0.260	0.662

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]	0.624 ± 0.390	5971884	0.700	0.850	0.0	1.000	0.300	1.000
cloud fraction [1]	0.495 ± 0.328	5971884	0.602	0.446	7.532×10^{-3}	1.000	0.193	0.795
cloud top height [m]	$(0.391 \pm 0.240) \times 10^4$	5971884	3.382×10^3	3.331×10^3	0.0	2.000×10^4	1.934×10^3	5.316×10^3
cloud optical thickness [1]	27.7 ± 44.6	5971884	18.0	11.9	1.000	250	7.16	25.1
cloud fraction crb [1]	0.492 ± 0.328	5971884	0.600	0.442	8.045×10^{-3}	1.000	0.191	0.791
cloud height crb [m]	$(0.318 \pm 0.214) \times 10^4$	5971884	3.018×10^3	2.672×10^3	0.0	2.000×10^4	1.411×10^3	4.429×10^3
cloud albedo crb [1]	0.581 ± 0.169	5971884	0.198	0.568	0.0	1.000	0.480	0.679
surface albedo fitted [1]	$(6.159 \pm 7.521) \times 10^{-2}$	5971884	3.857×10^{-2}	3.799×10^{-2}	0.0	1.000	2.306×10^{-2}	6.162×10^{-2}
surface albedo fitted crb [1]	$(4.975 \pm 7.615) \times 10^{-2}$	5971884	2.700×10^{-2}	2.466×10^{-2}	0.0	1.000	1.458×10^{-2}	4.159×10^{-2}
fitted root mean square [1]	$(3.224 \pm 4.732) \times 10^{-4}$	5971884	3.142×10^{-4}	1.643×10^{-4}	8.060×10^{-7}	7.708×10^{-2}	6.325×10^{-5}	3.775×10^{-4}
fitted root mean square crb [1]	$(2.747 \pm 4.351) \times 10^{-4}$	5971884	2.804×10^{-4}	9.814×10^{-5}	8.626×10^{-7}	2.933×10^{-2}	3.595×10^{-5}	3.164×10^{-4}
wavelength shift [nm]	$(4.808 \pm 6.268) \times 10^{-3}$	5971884	7.713×10^{-3}	3.450×10^{-3}	-4.261×10^{-2}	6.019×10^{-2}	5.181×10^{-4}	8.231×10^{-3}
cloud fraction apriori [1]	0.493 ± 0.336	5971884	0.624	0.442	0.0	1.000	0.181	0.805
reflectance blue ocra [1]	0.488 ± 0.175	5971884	0.248	0.456	0.139	1.91	0.350	0.599
reflectance green ocra [1]	0.417 ± 0.199	5971884	0.298	0.380	8.673×10^{-2}	2.39	0.251	0.549
reflectance continuum aband [1]	0.343 ± 0.239	5971884	0.355	0.305	8.943×10^{-3}	6.42	0.143	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]	0.616 ± 0.367	12229458	0.650	0.770	0.0	1.000	0.300	0.950
cloud fraction [1]	0.557 ± 0.343	12229458	0.713	0.542	6.641×10^{-3}	1.000	0.230	0.943
cloud top height [m]	$(0.368 \pm 0.263) \times 10^4$	12229458	3.510×10^3	3.031×10^3	0.0	2.000×10^4	1.614×10^3	5.124×10^3
cloud optical thickness [1]	21.8 ± 36.9	12229458	12.8	10.5	1.000	250	6.62	19.4
cloud fraction crb [1]	0.556 ± 0.343	12229458	0.713	0.539	8.472×10^{-3}	1.000	0.228	0.941
cloud height crb [m]	$(0.287 \pm 0.234) \times 10^4$	12229458	3.172×10^3	2.285×10^3	0.0	2.000×10^4	1.023×10^3	4.195×10^3
cloud albedo crb [1]	0.558 ± 0.183	12229458	0.223	0.547	0.0	1.000	0.450	0.673
surface albedo fitted [1]	0.130 ± 0.225	12229458	4.293×10^{-2}	3.630×10^{-2}	0.0	1.000	2.186×10^{-2}	6.479×10^{-2}
surface albedo fitted crb [1]	0.124 ± 0.228	12229458	3.264×10^{-2}	2.643×10^{-2}	0.0	1.000	1.545×10^{-2}	4.808×10^{-2}
fitted root mean square [1]	$(6.037 \pm 20.890) \times 10^{-4}$	12229458	6.512×10^{-4}	2.255×10^{-4}	8.060×10^{-7}	1.52	7.858×10^{-5}	7.298×10^{-4}
fitted root mean square crb [1]	$(5.063 \pm 17.690) \times 10^{-4}$	12229458	5.982×10^{-4}	1.700×10^{-4}	8.626×10^{-7}	1.27	5.109×10^{-5}	6.492×10^{-4}
wavelength shift [nm]	$(6.524 \pm 6.783) \times 10^{-3}$	12229458	9.530×10^{-3}	5.606×10^{-3}	-4.482×10^{-2}	0.550	1.388×10^{-3}	1.092×10^{-2}
cloud fraction apriori [1]	0.563 ± 0.349	12229458	0.753	0.556	0.0	1.000	0.225	0.978
reflectance blue oca [1]	0.514 ± 0.189	12229458	0.299	0.492	0.155	1.91	0.352	0.651
reflectance green oca [1]	0.456 ± 0.218	12229458	0.365	0.433	8.673×10^{-2}	2.39	0.258	0.623
reflectance continuum aband [1]	0.383 ± 0.255	12229458	0.433	0.363	1.120×10^{-2}	6.42	0.149	0.581

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]	0.622 ± 0.375	3718901	0.690	0.780	0.0	1.000	0.250	0.940
cloud fraction [1]	0.633 ± 0.349	3718901	0.693	0.689	6.412×10^{-3}	1.000	0.307	1.000
cloud top height [m]	$(0.432 \pm 0.238) \times 10^4$	3718901	3.326×10^3	4.076×10^3	0.0	2.000×10^4	2.495×10^3	5.821×10^3
cloud optical thickness [1]	16.1 ± 27.1	3718901	10.1	8.35	1.000	250	5.14	15.2
cloud fraction crb [1]	0.633 ± 0.350	3718901	0.693	0.689	5.851×10^{-3}	1.000	0.306	1.000
cloud height crb [m]	$(0.343 \pm 0.212) \times 10^4$	3718901	3.197×10^3	3.056×10^3	0.0	2.000×10^4	1.739×10^3	4.936×10^3
cloud albedo crb [1]	0.575 ± 0.226	3718901	0.297	0.581	0.0	1.000	0.444	0.741
surface albedo fitted [1]	0.350 ± 0.231	3718901	0.152	0.263	0.0	1.000	0.206	0.358
surface albedo fitted crb [1]	0.350 ± 0.228	3718901	0.161	0.261	0.0	1.000	0.204	0.365
fitted root mean square [1]	$(1.182 \pm 1.406) \times 10^{-3}$	3718901	1.357×10^{-3}	8.315×10^{-4}	2.609×10^{-6}	0.671	3.319×10^{-4}	1.689×10^{-3}
fitted root mean square crb [1]	$(1.089 \pm 1.551) \times 10^{-3}$	3718901	1.342×10^{-3}	7.798×10^{-4}	1.245×10^{-6}	1.08	2.642×10^{-4}	1.606×10^{-3}
wavelength shift [nm]	$(7.536 \pm 6.417) \times 10^{-3}$	3718901	9.474×10^{-3}	7.411×10^{-3}	-8.370×10^{-2}	5.555×10^{-2}	2.355×10^{-3}	1.183×10^{-2}
cloud fraction apriori [1]	0.648 ± 0.355	3718901	0.689	0.737	0.0	1.000	0.311	1.000
reflectance blue ocrs [1]	0.535 ± 0.227	3718901	0.391	0.496	0.140	1.88	0.333	0.724
reflectance green ocrs [1]	0.491 ± 0.252	3718901	0.450	0.444	8.273×10^{-2}	2.03	0.260	0.710
reflectance continuum aband [1]	0.518 ± 0.234	3718901	0.394	0.470	1.568×10^{-2}	5.04	0.320	0.713

3 Granule outlines

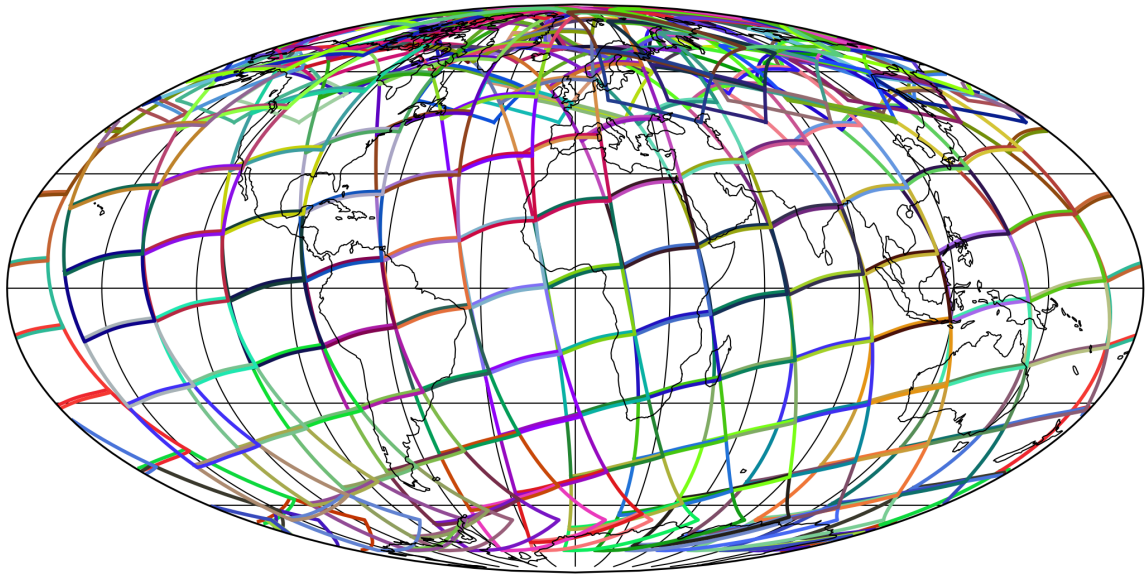


Figure 1: Outline of the granules.

4 Input data monitoring

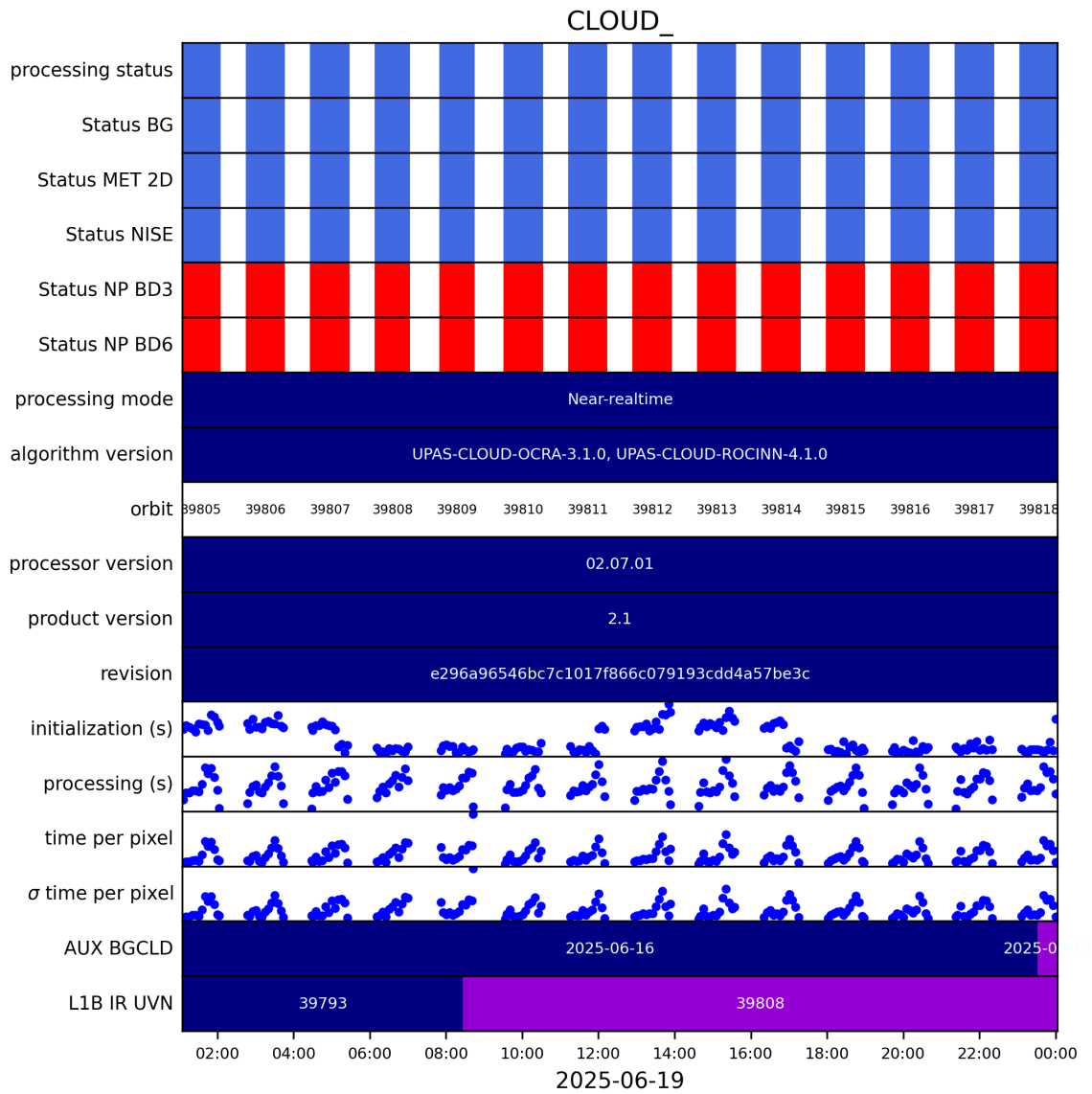


Figure 2: Input data per granule

5 Warnings and errors

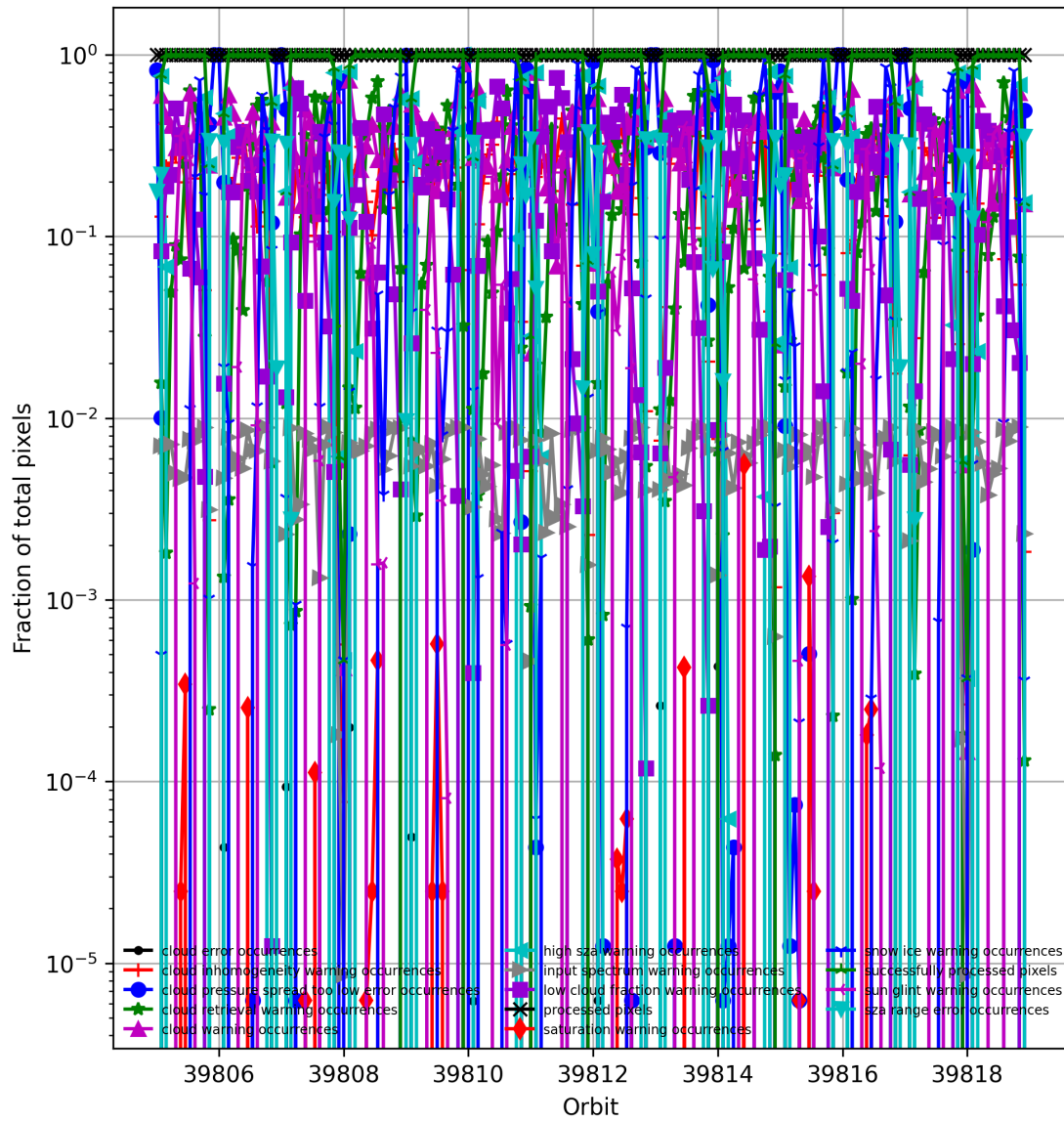


Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

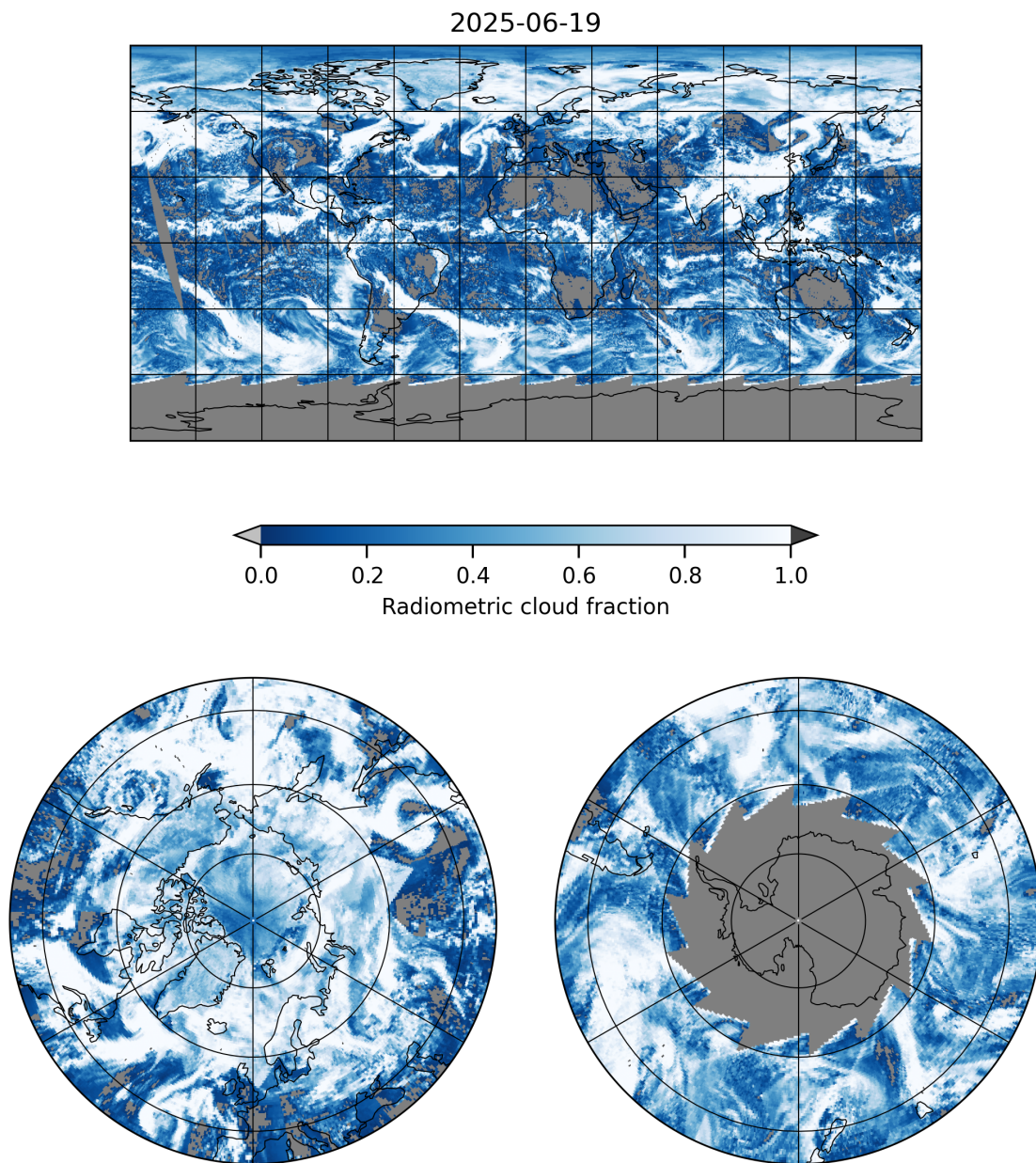


Figure 4: Map of “Radiometric cloud fraction” for 2025-06-19 to 2025-06-20

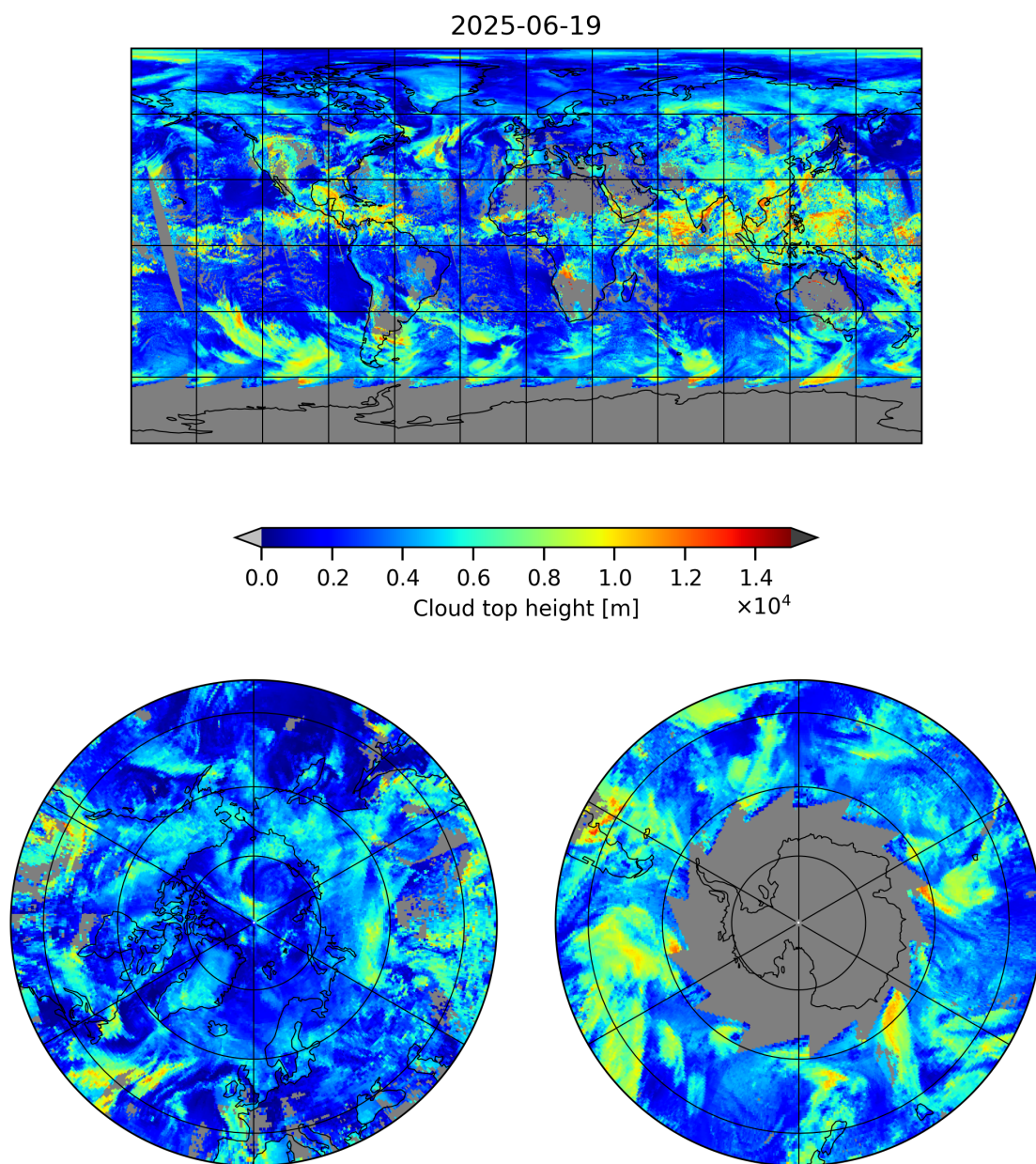


Figure 5: Map of “Cloud top height” for 2025-06-19 to 2025-06-20

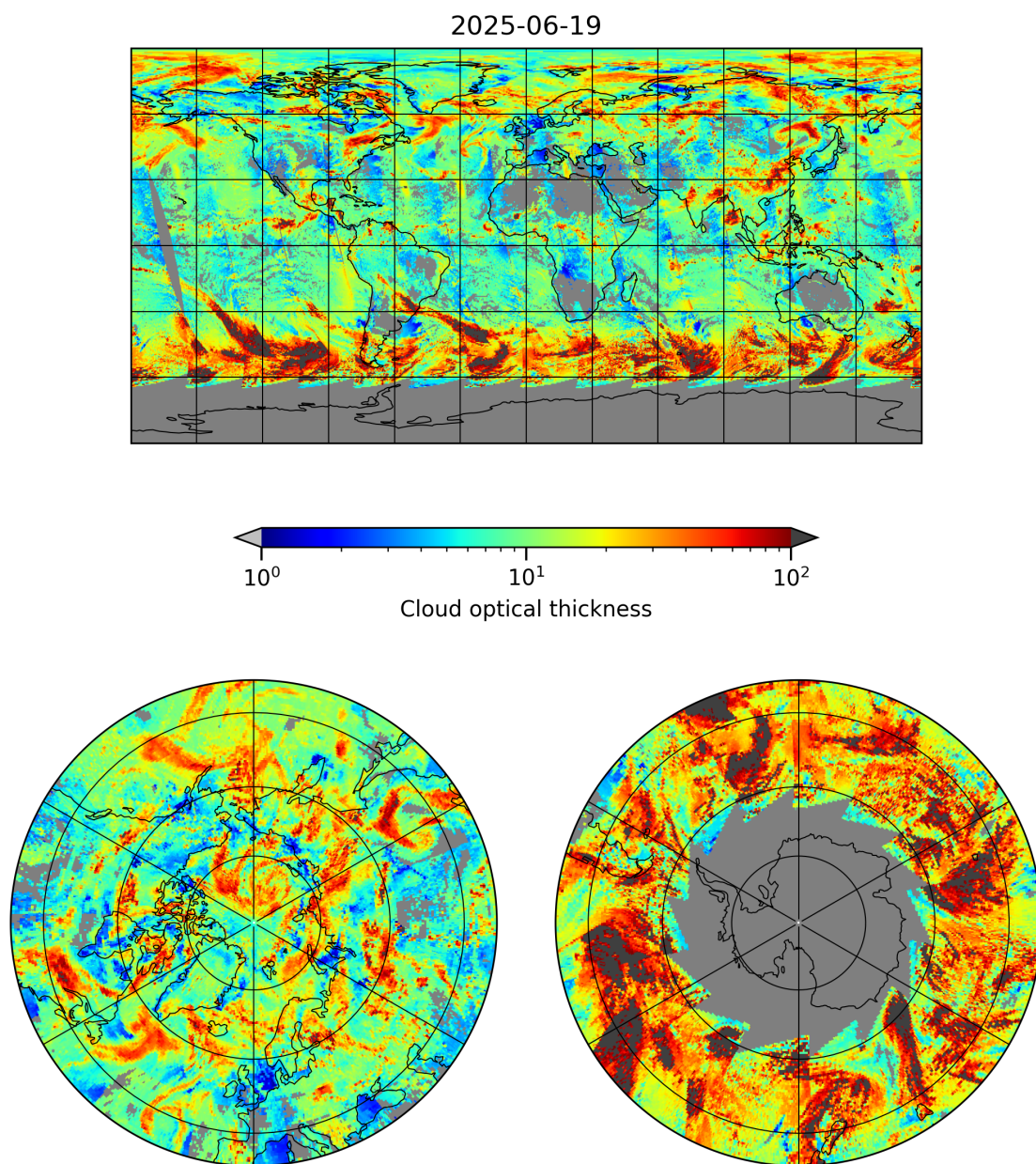


Figure 6: Map of “Cloud optical thickness” for 2025-06-19 to 2025-06-20

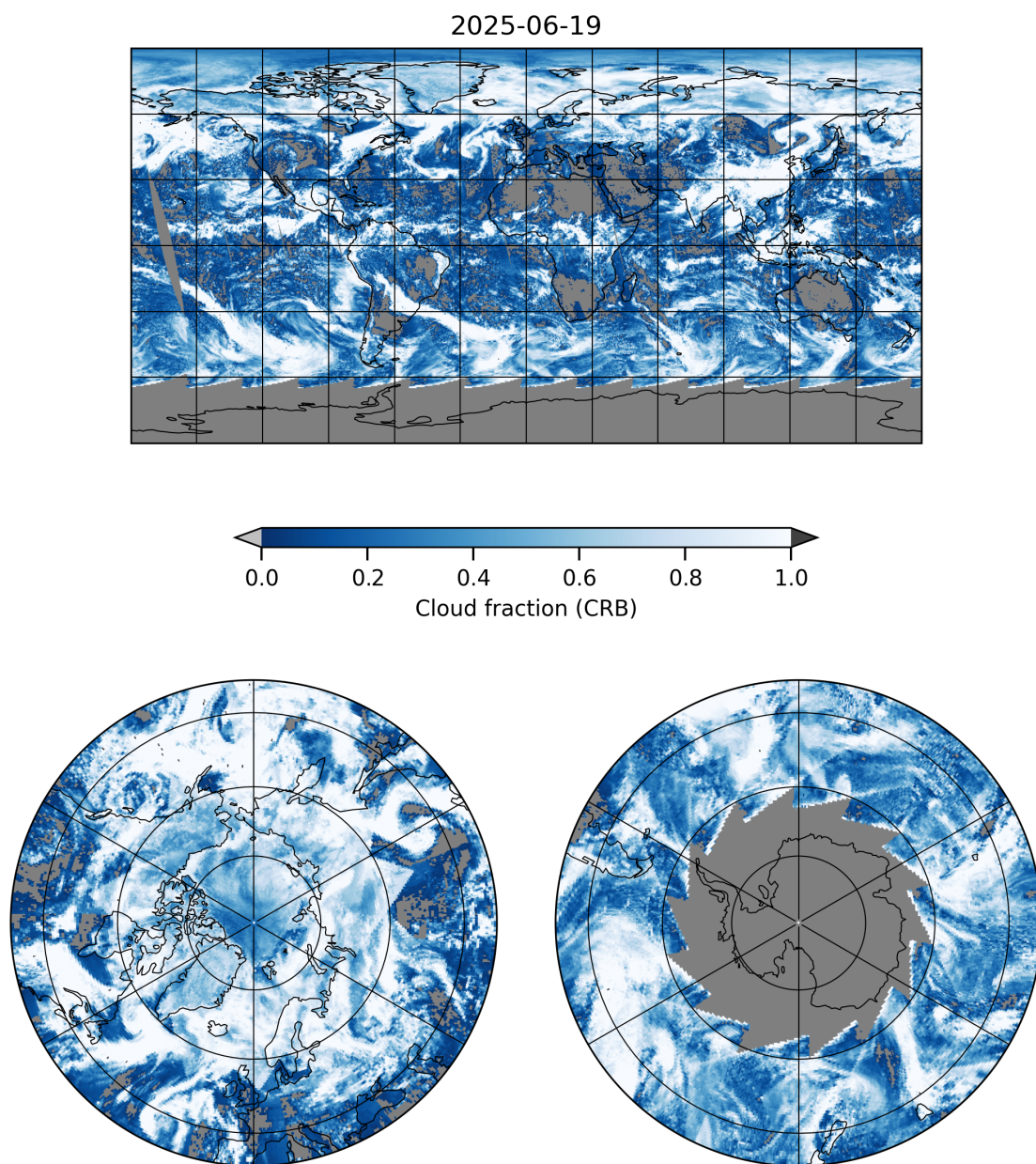


Figure 7: Map of “Cloud fraction (CRB)” for 2025-06-19 to 2025-06-20

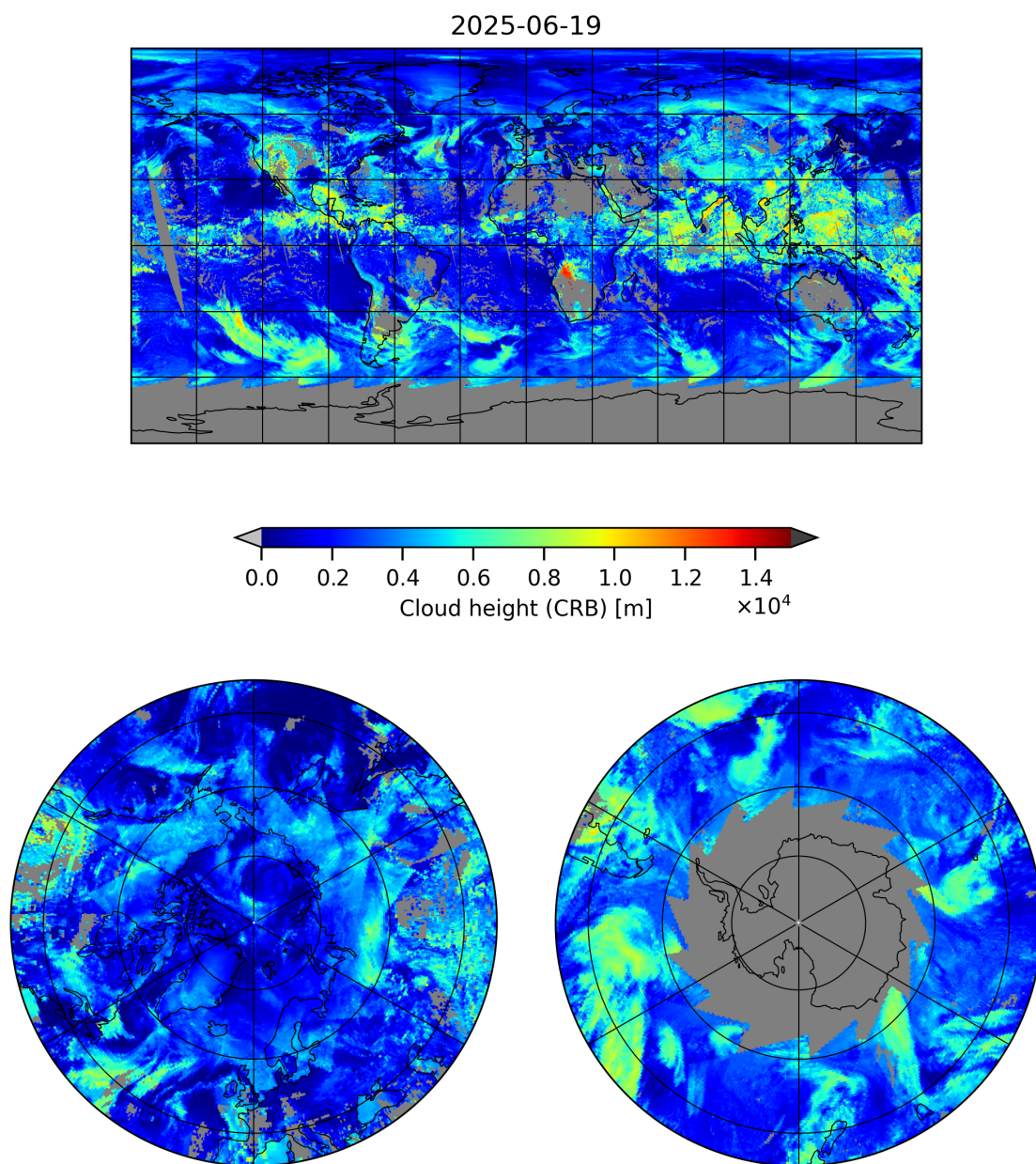


Figure 8: Map of “Cloud height (CRB)” for 2025-06-19 to 2025-06-20

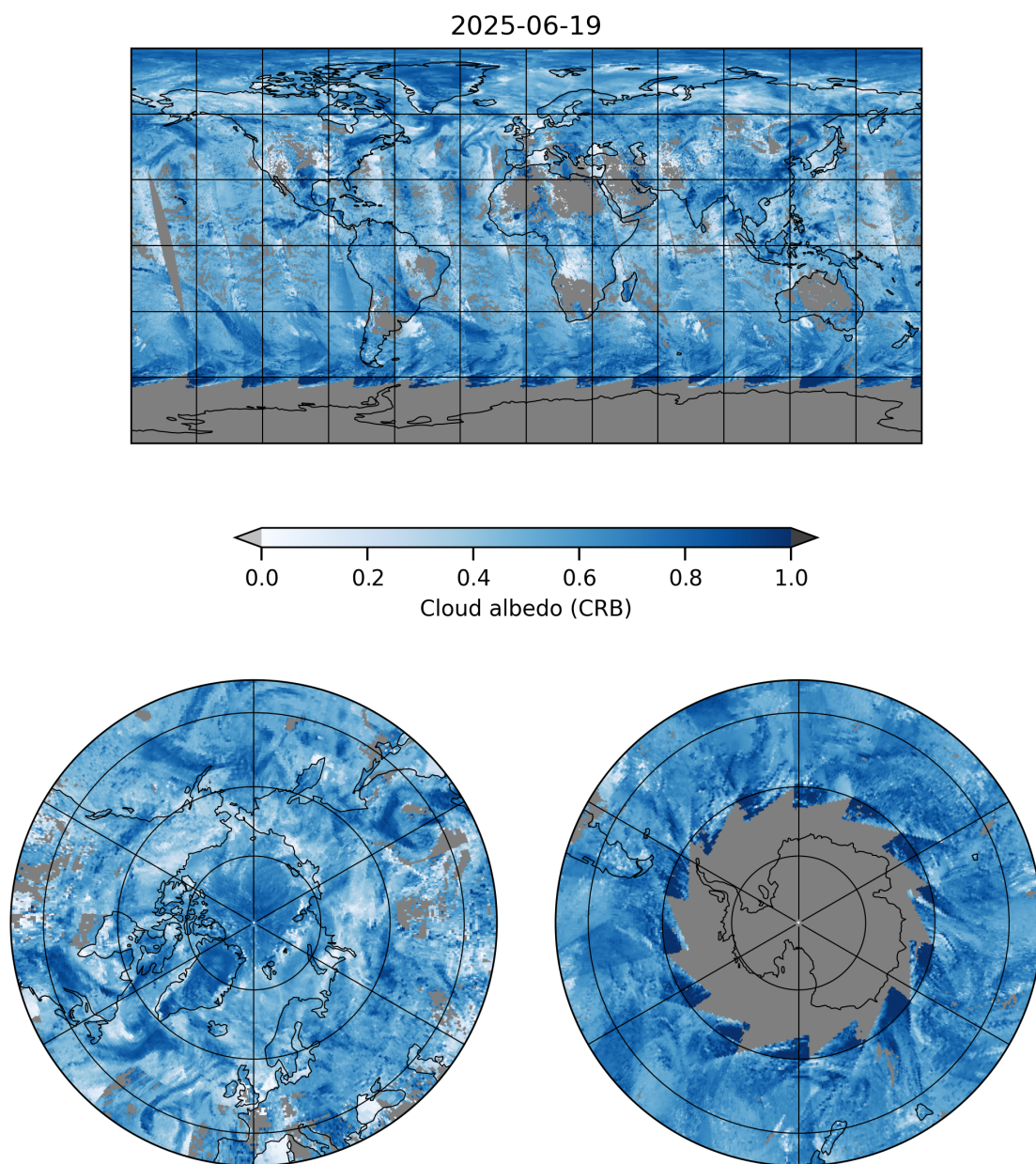


Figure 9: Map of “Cloud albedo (CRB)” for 2025-06-19 to 2025-06-20

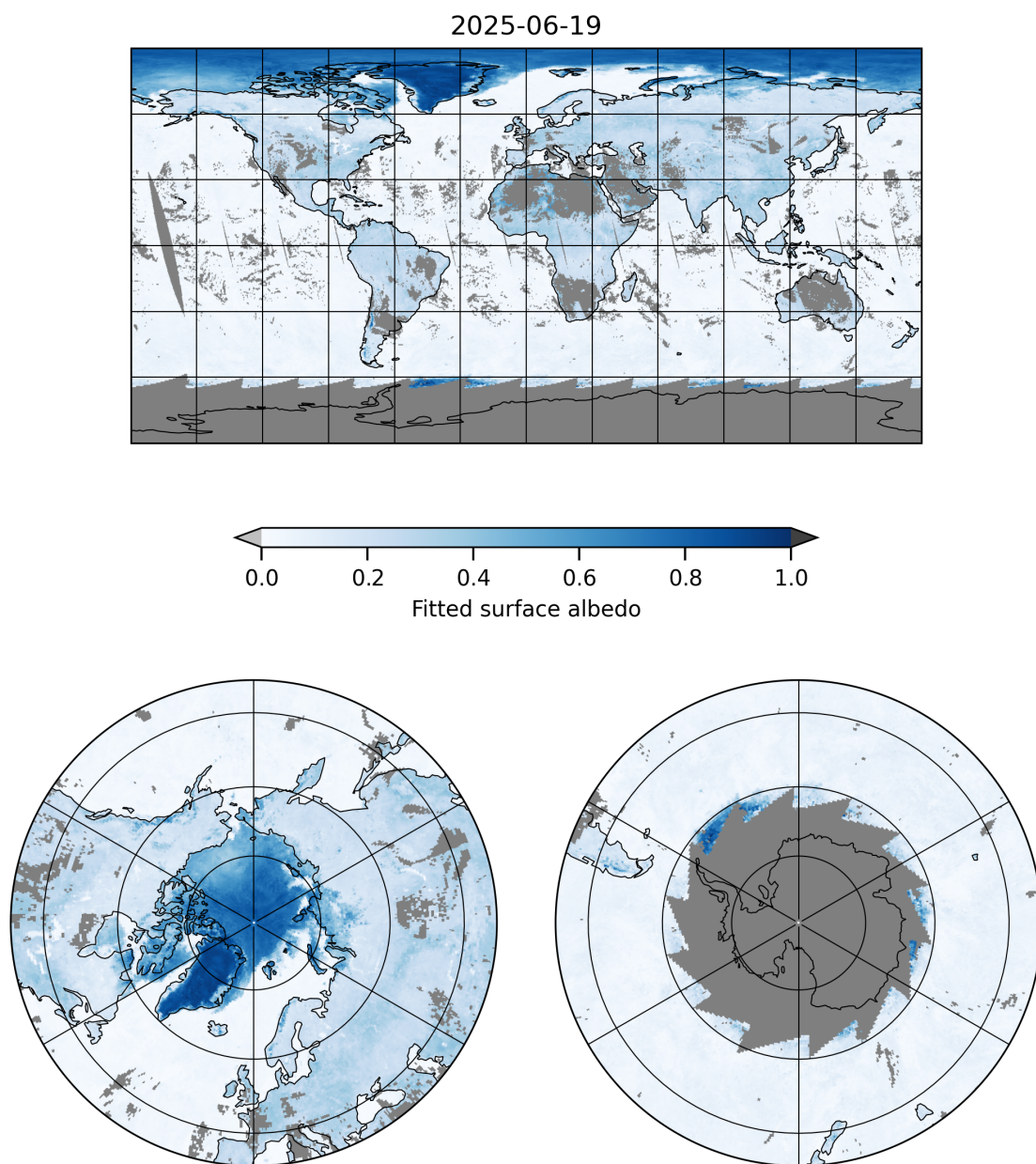


Figure 10: Map of “Fitted surface albedo” for 2025-06-19 to 2025-06-20

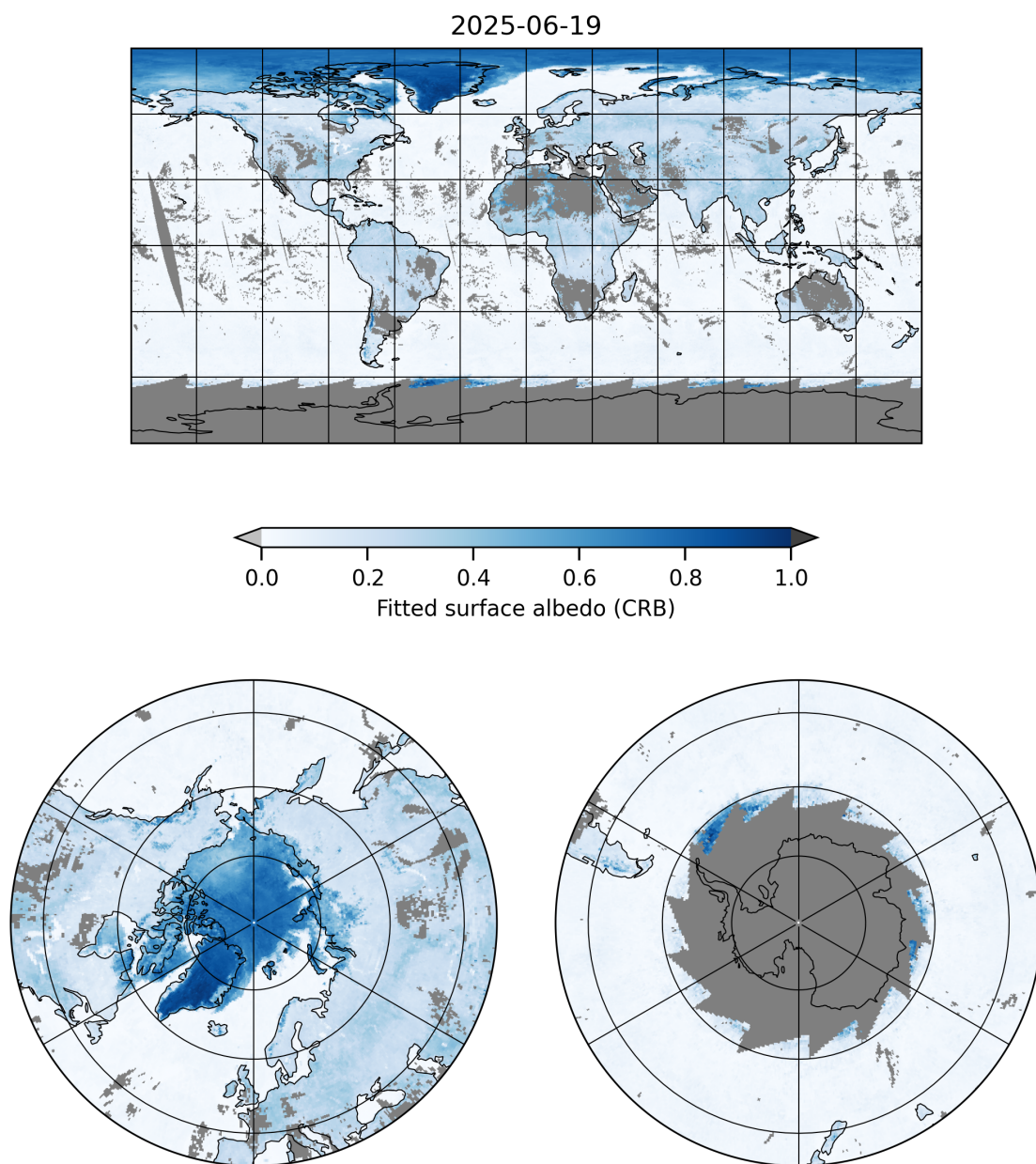


Figure 11: Map of “Fitted surface albedo (CRB)” for 2025-06-19 to 2025-06-20

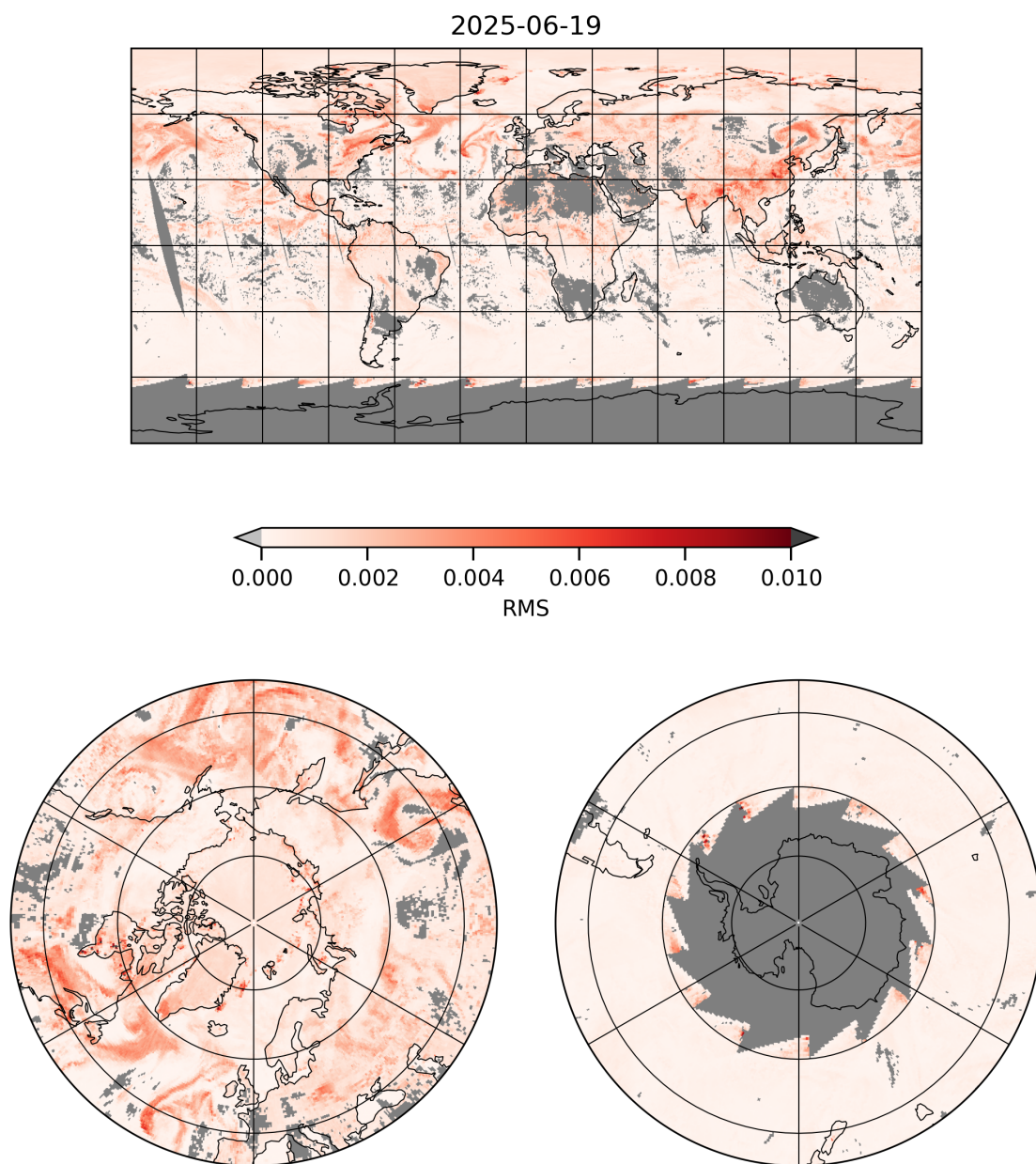


Figure 12: Map of “RMS” for 2025-06-19 to 2025-06-20

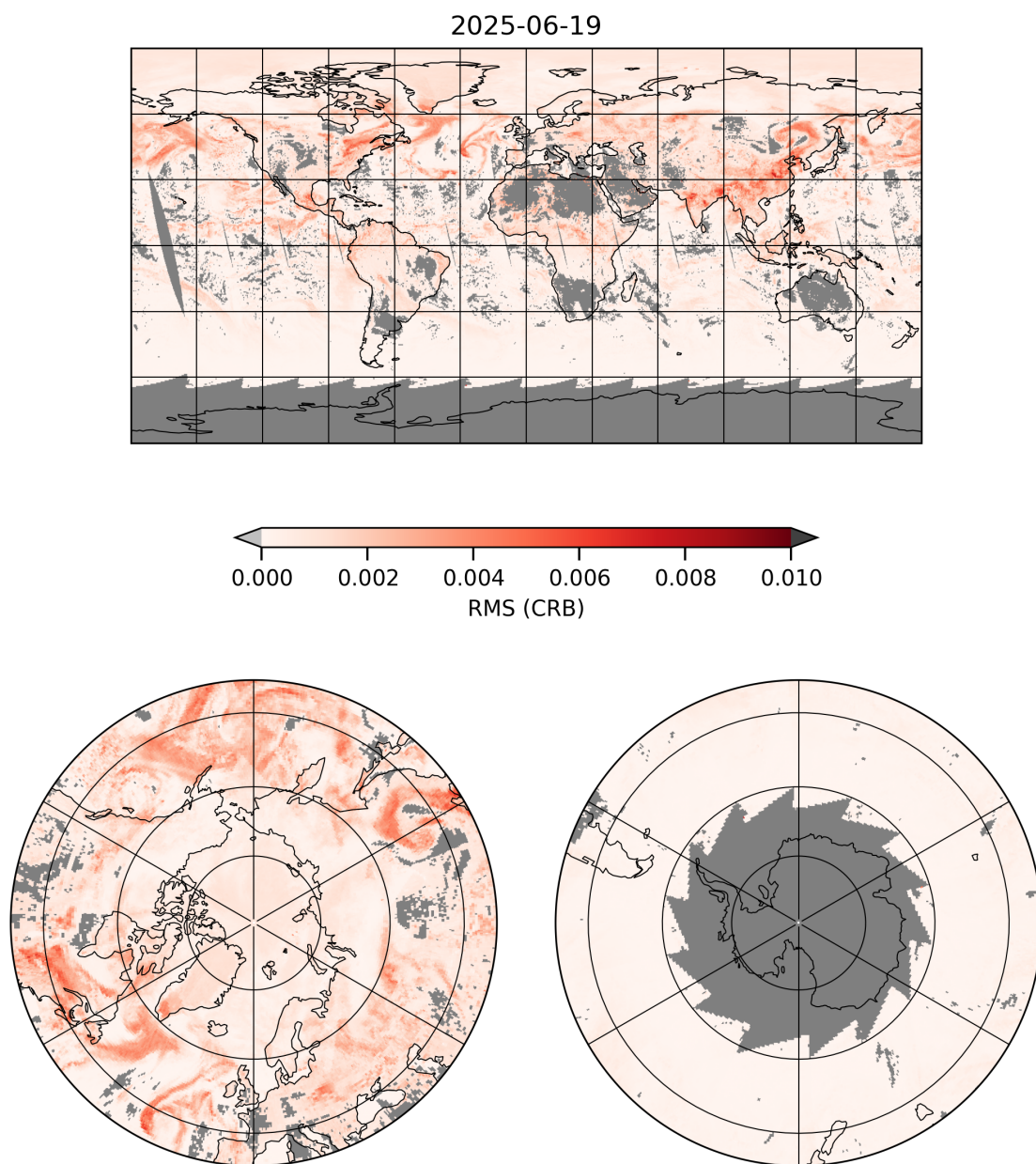


Figure 13: Map of “RMS (CRB)” for 2025-06-19 to 2025-06-20

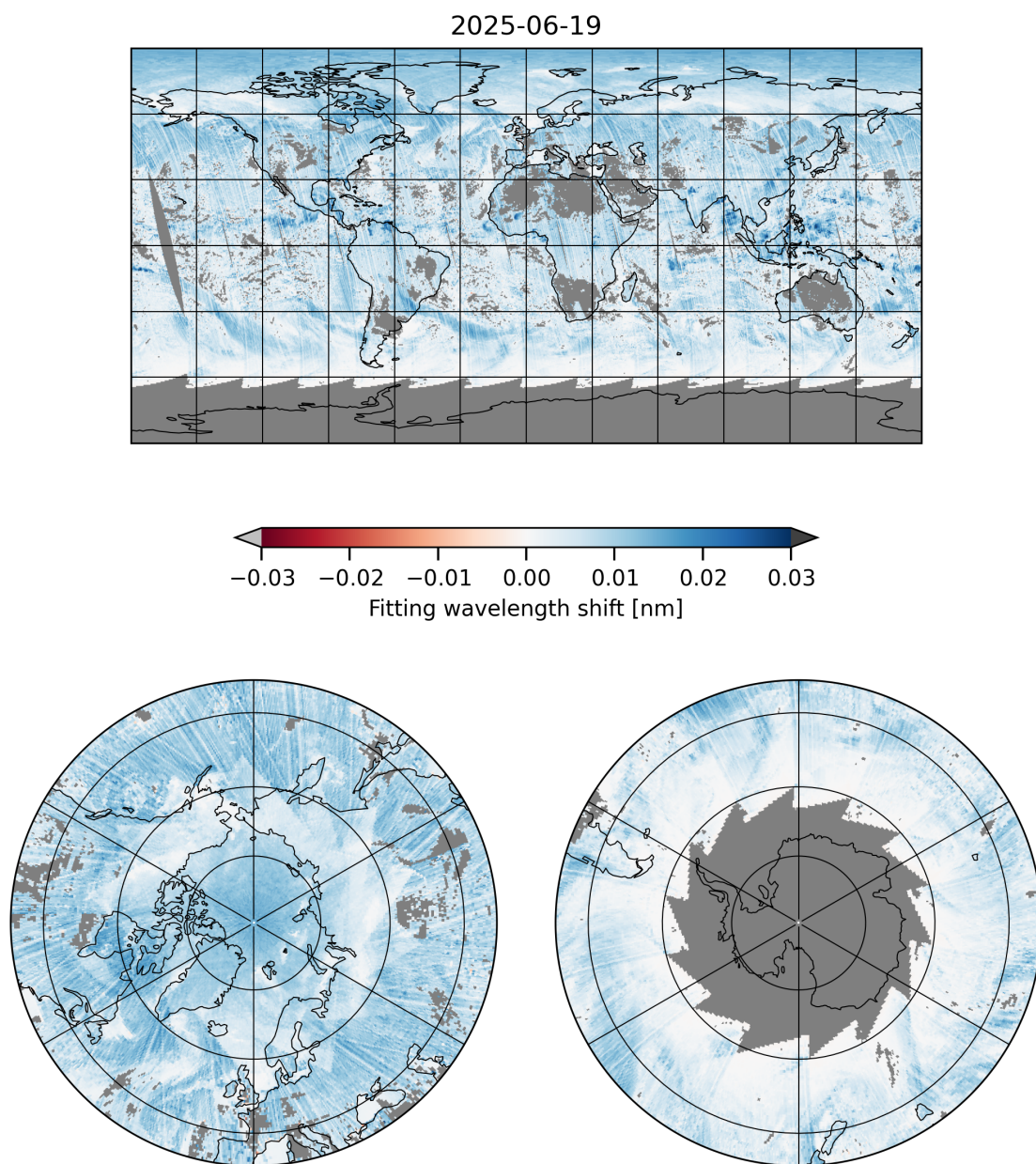


Figure 14: Map of “Fitting wavelength shift” for 2025-06-19 to 2025-06-20

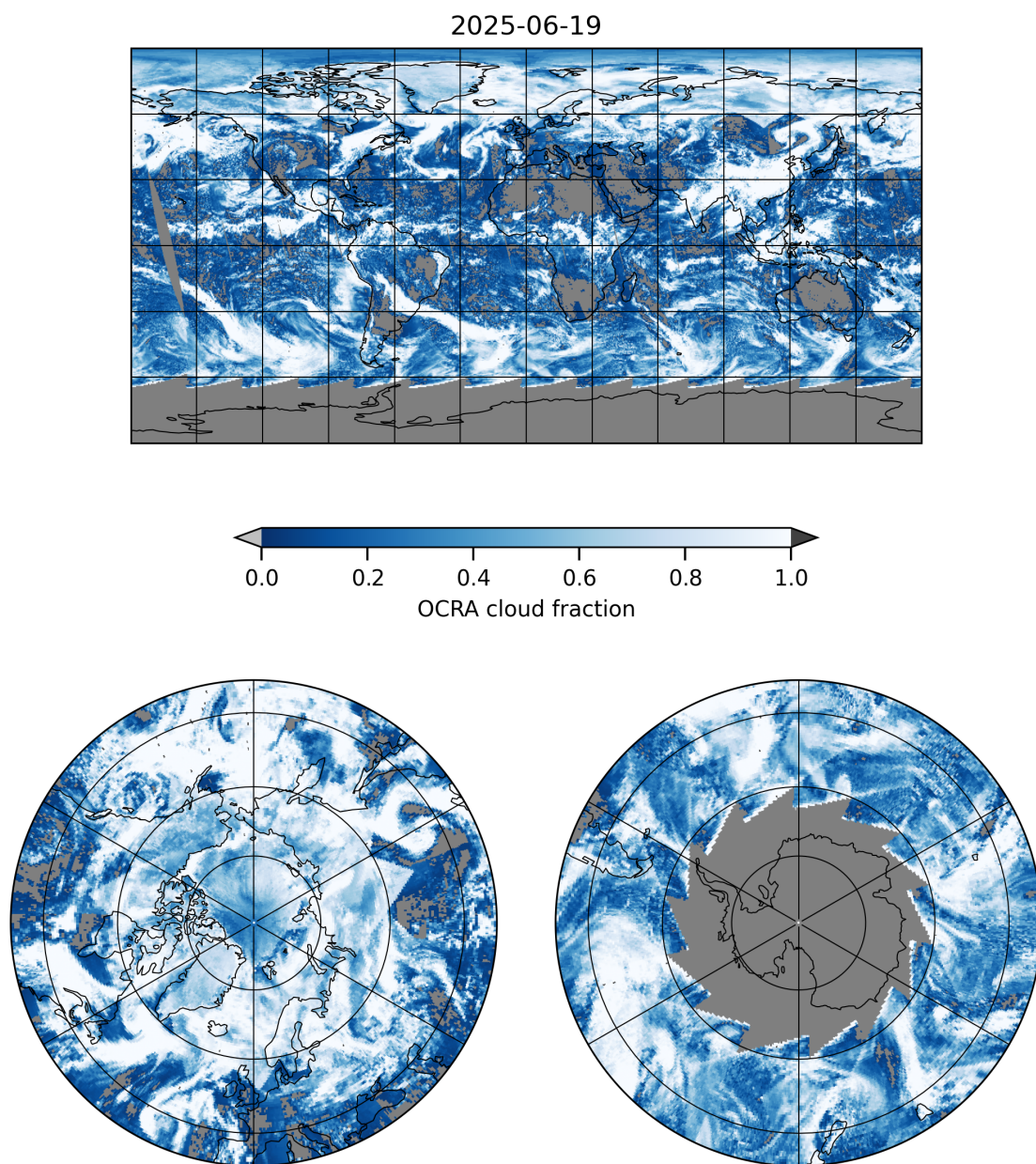


Figure 15: Map of “OCRA cloud fraction” for 2025-06-19 to 2025-06-20

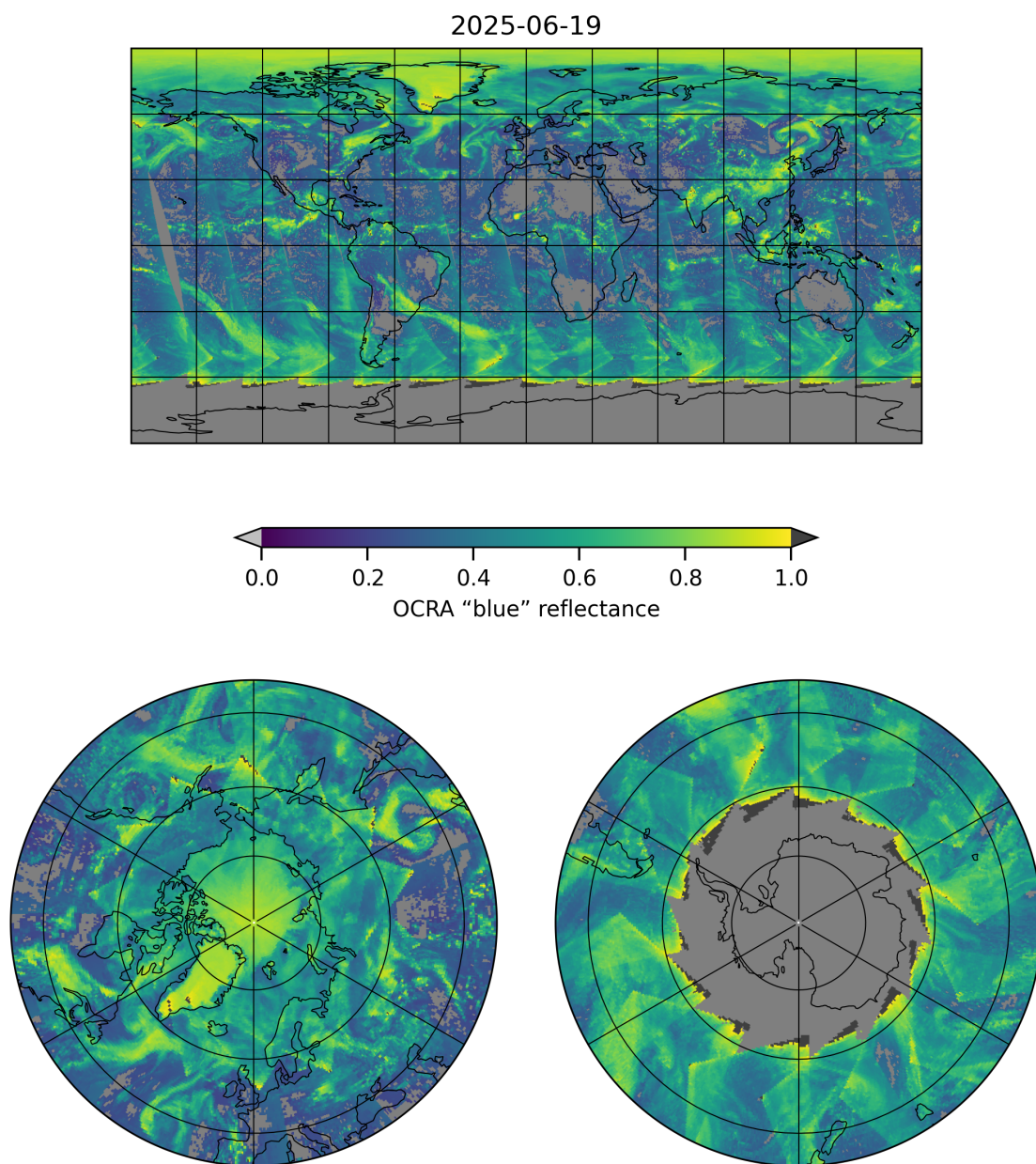


Figure 16: Map of "OCRA "blue" reflectance" for 2025-06-19 to 2025-06-20

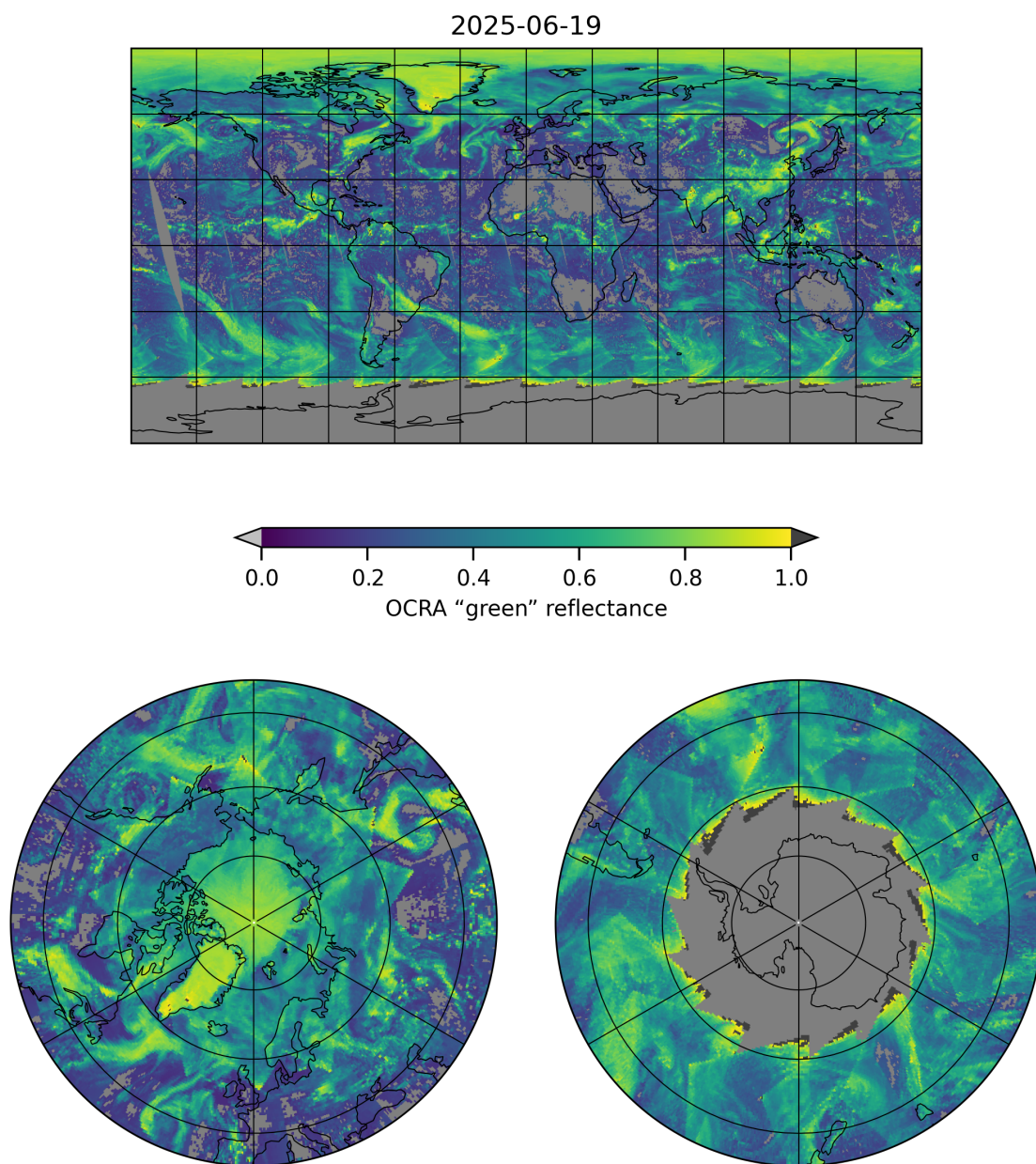


Figure 17: Map of "OCRA "green" reflectance" for 2025-06-19 to 2025-06-20

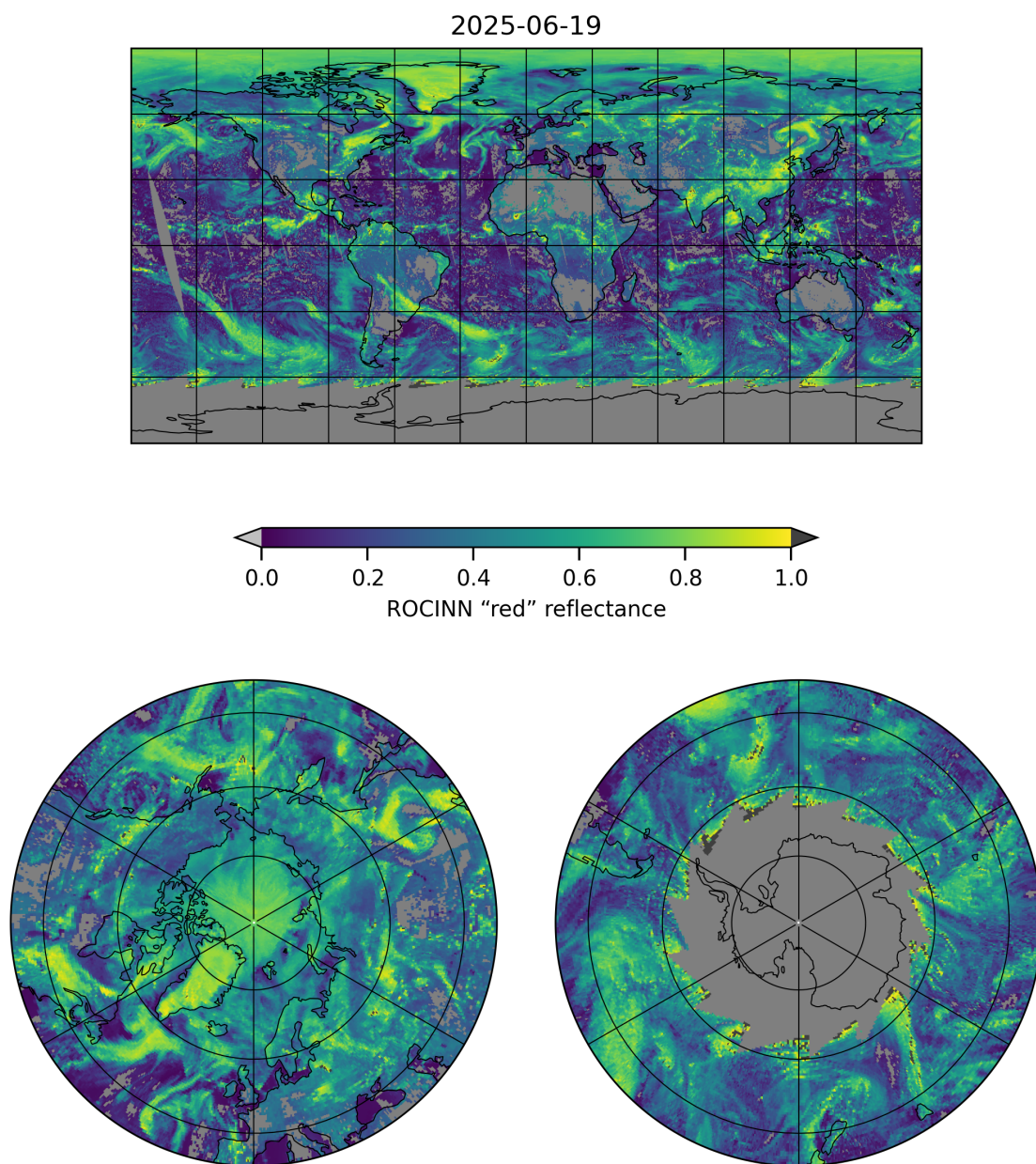


Figure 18: Map of "ROCINN "red" reflectance" for 2025-06-19 to 2025-06-20

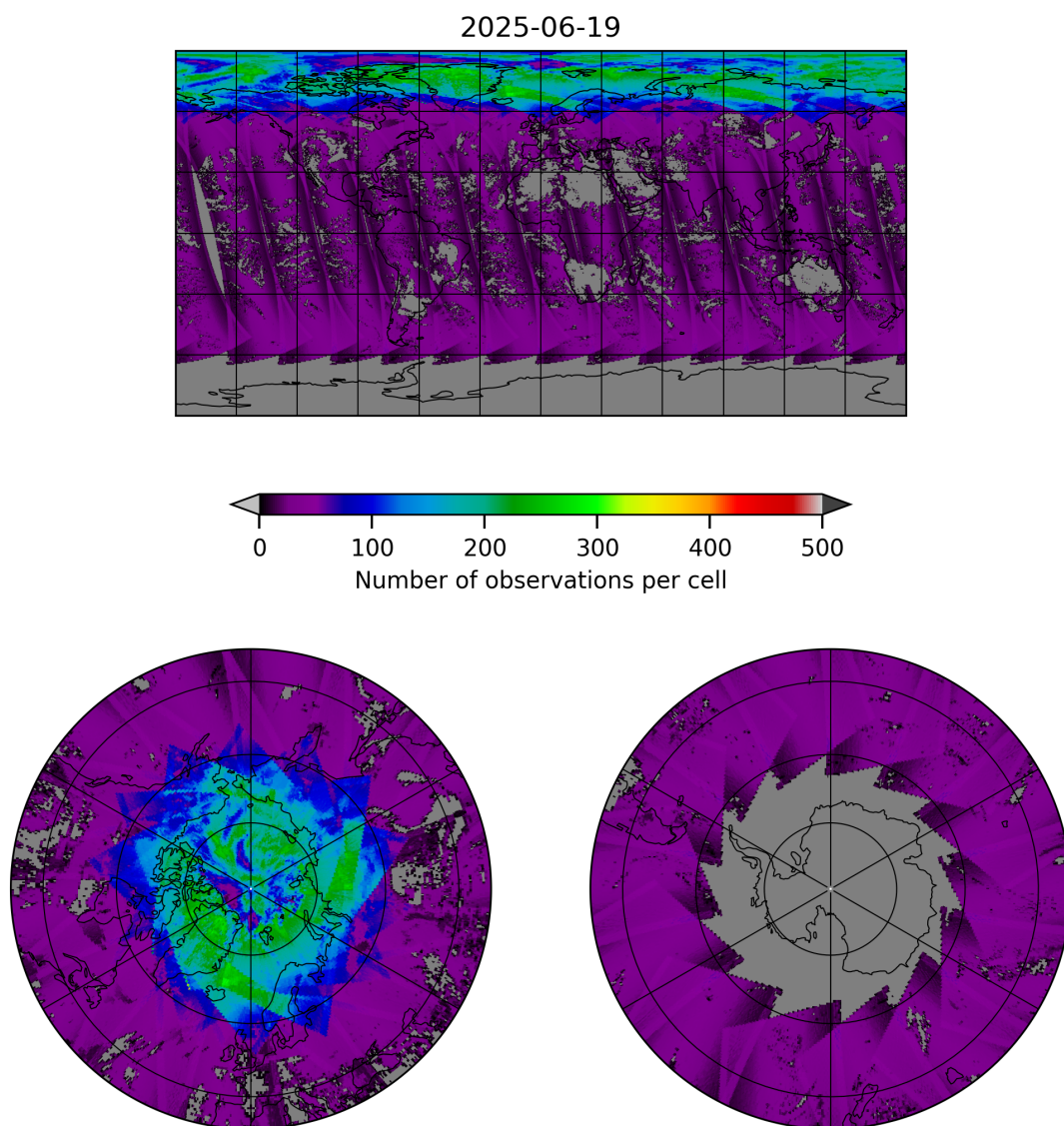


Figure 19: Map of the number of observations for 2025-06-19 to 2025-06-20

7 Zonal average

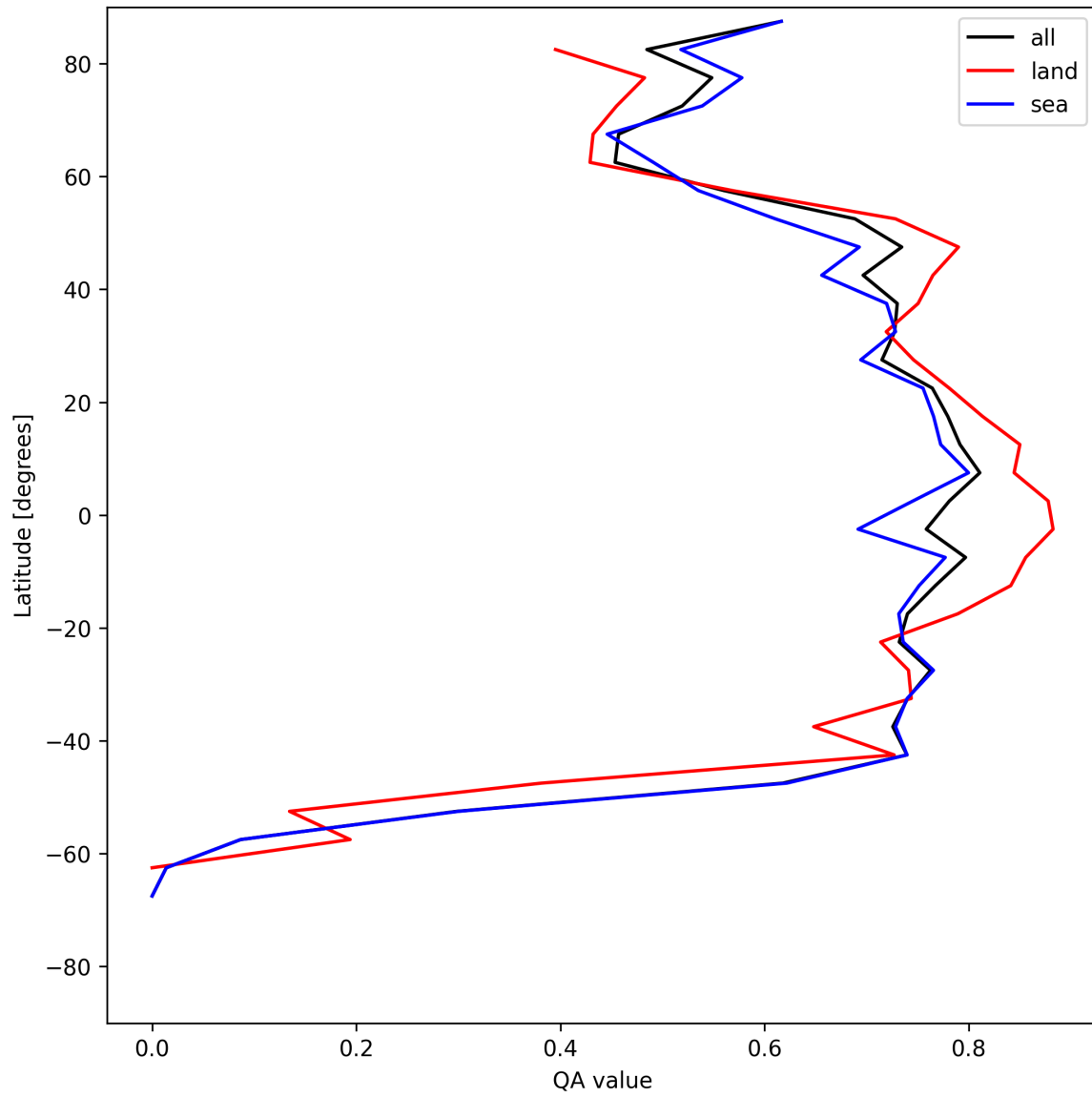


Figure 20: Zonal average of “QA value” for 2025-06-19 to 2025-06-20.

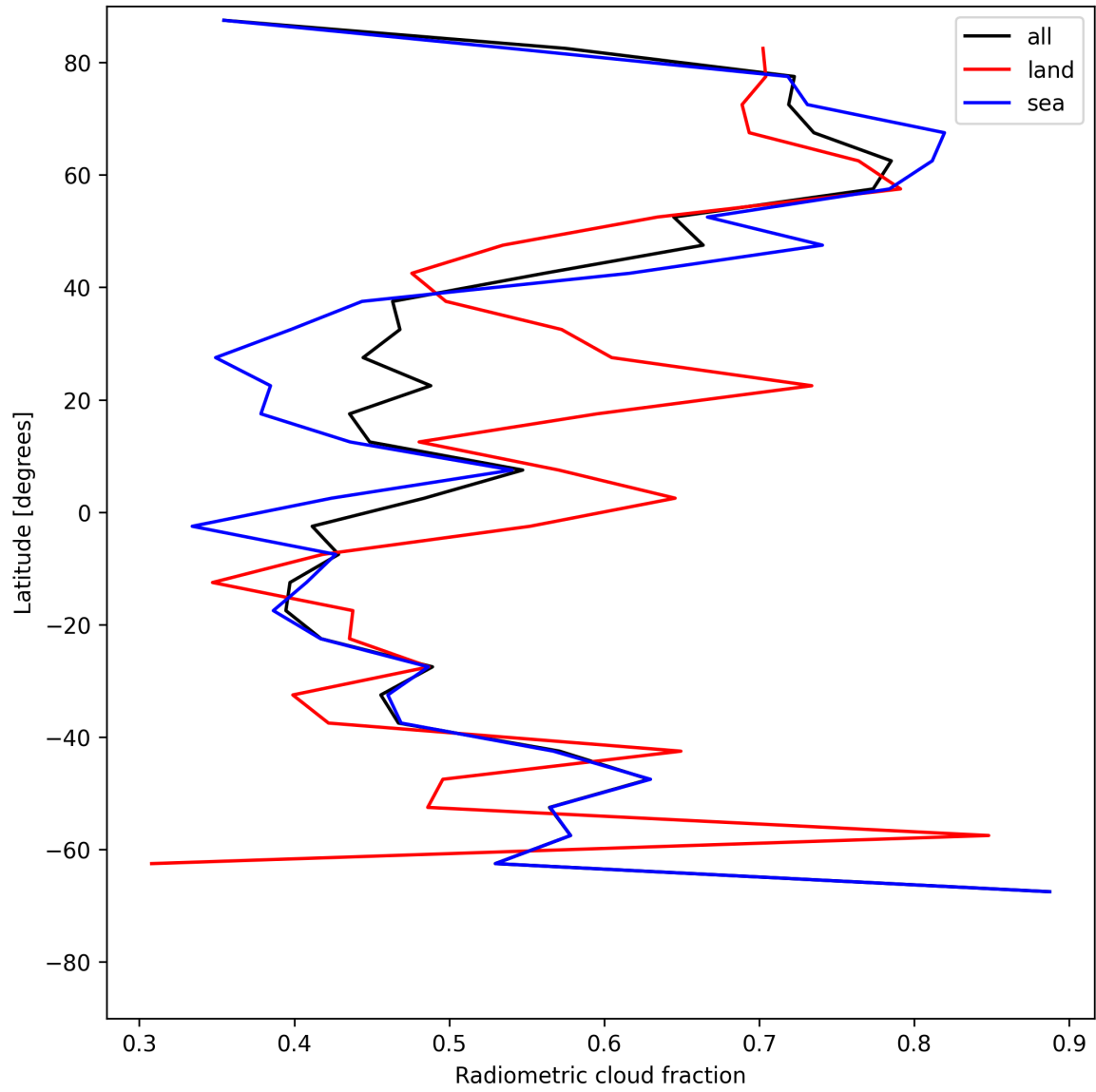


Figure 21: Zonal average of “Radiometric cloud fraction” for 2025-06-19 to 2025-06-20.

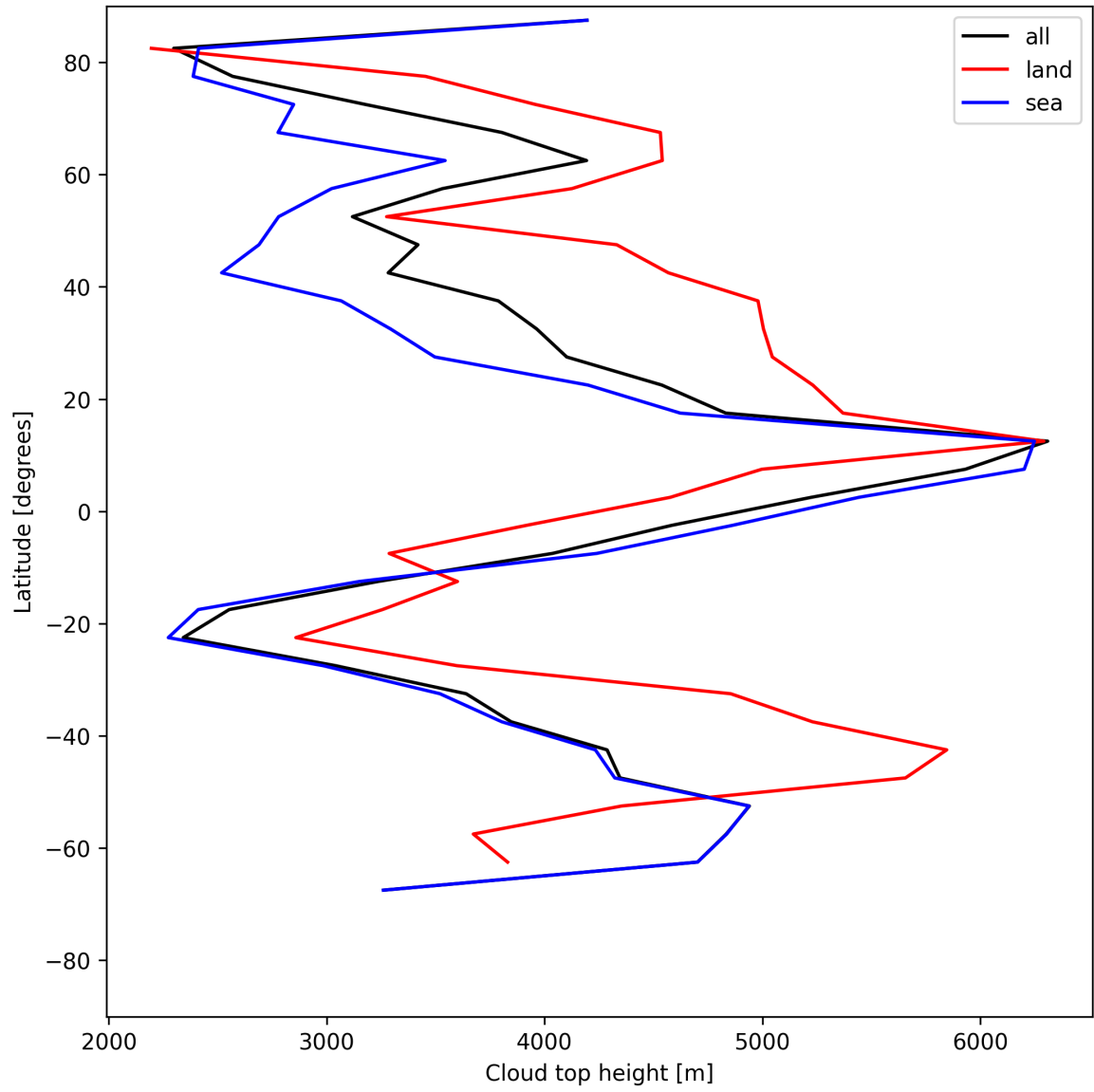


Figure 22: Zonal average of “Cloud top height” for 2025-06-19 to 2025-06-20.

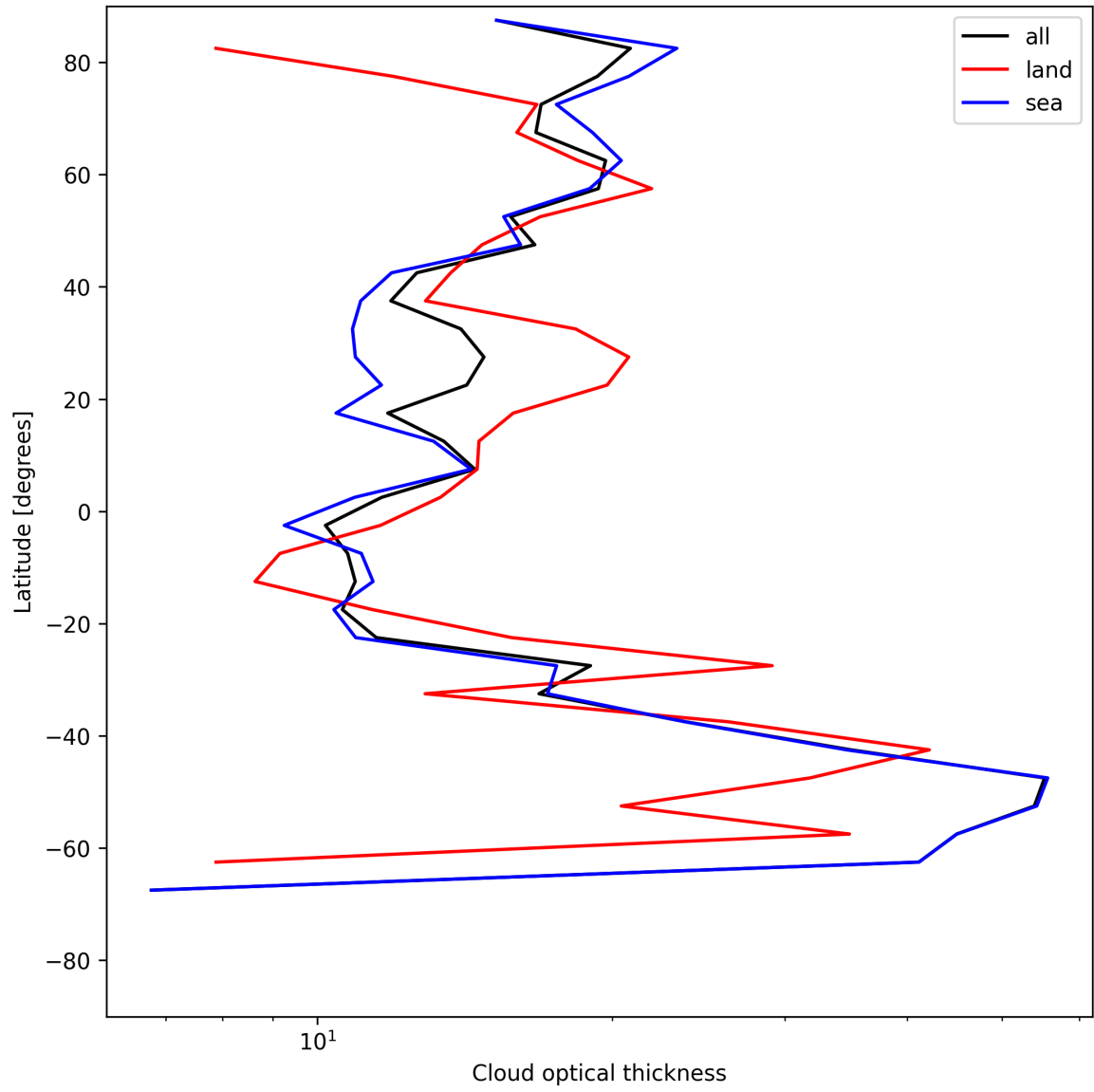


Figure 23: Zonal average of “Cloud optical thickness” for 2025-06-19 to 2025-06-20.

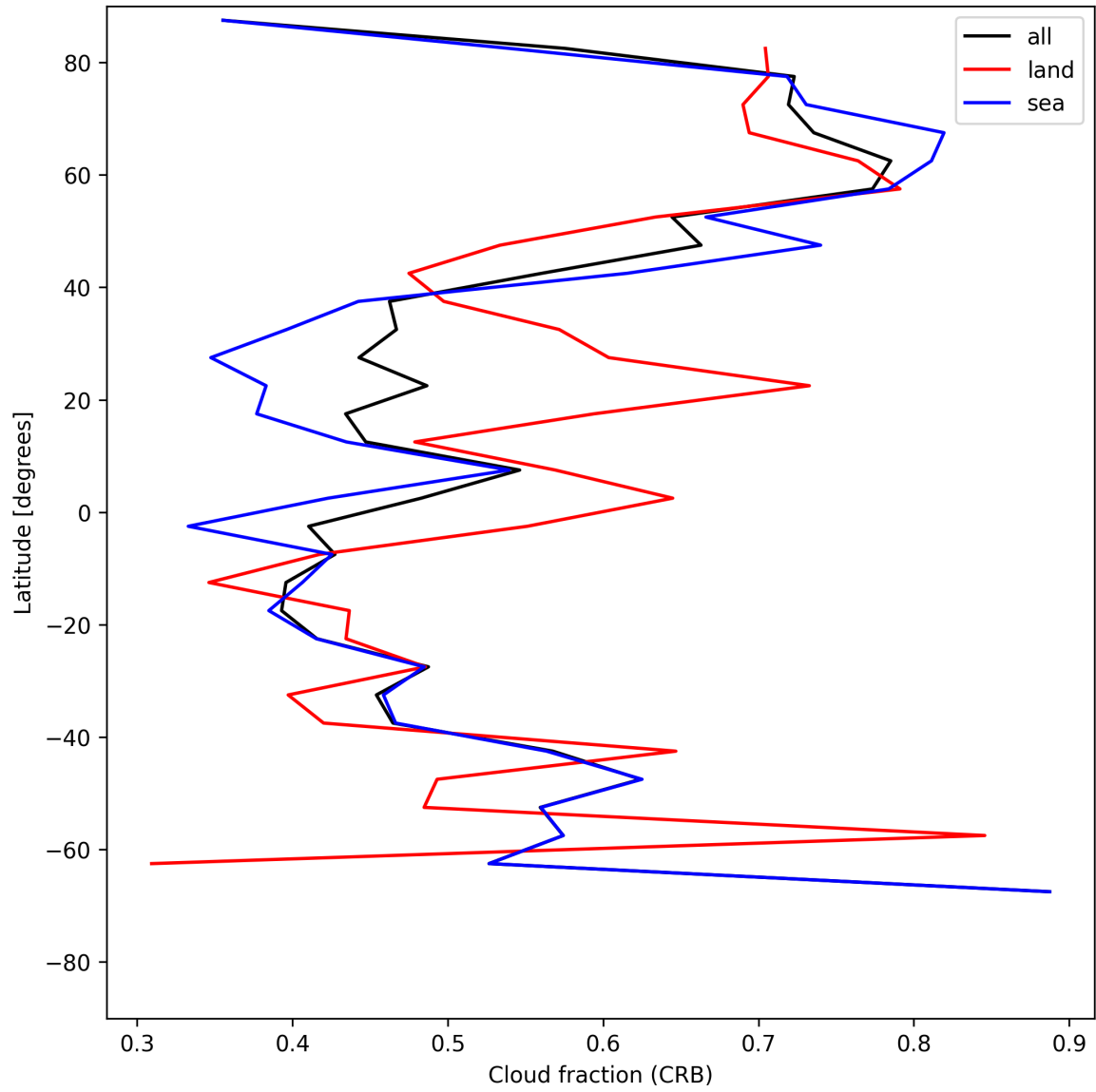


Figure 24: Zonal average of “Cloud fraction (CRB)” for 2025-06-19 to 2025-06-20.

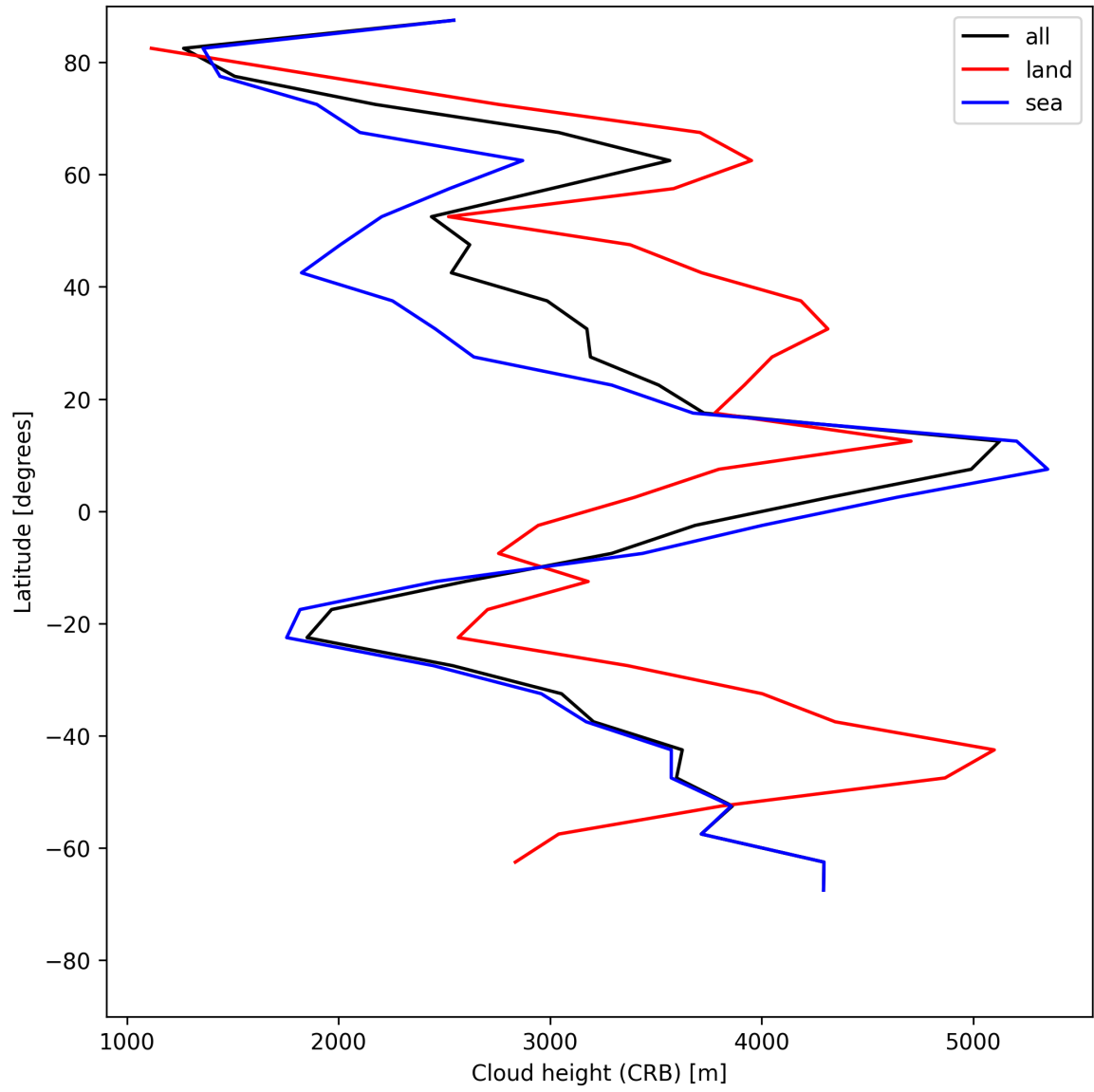


Figure 25: Zonal average of “Cloud height (CRB)” for 2025-06-19 to 2025-06-20.

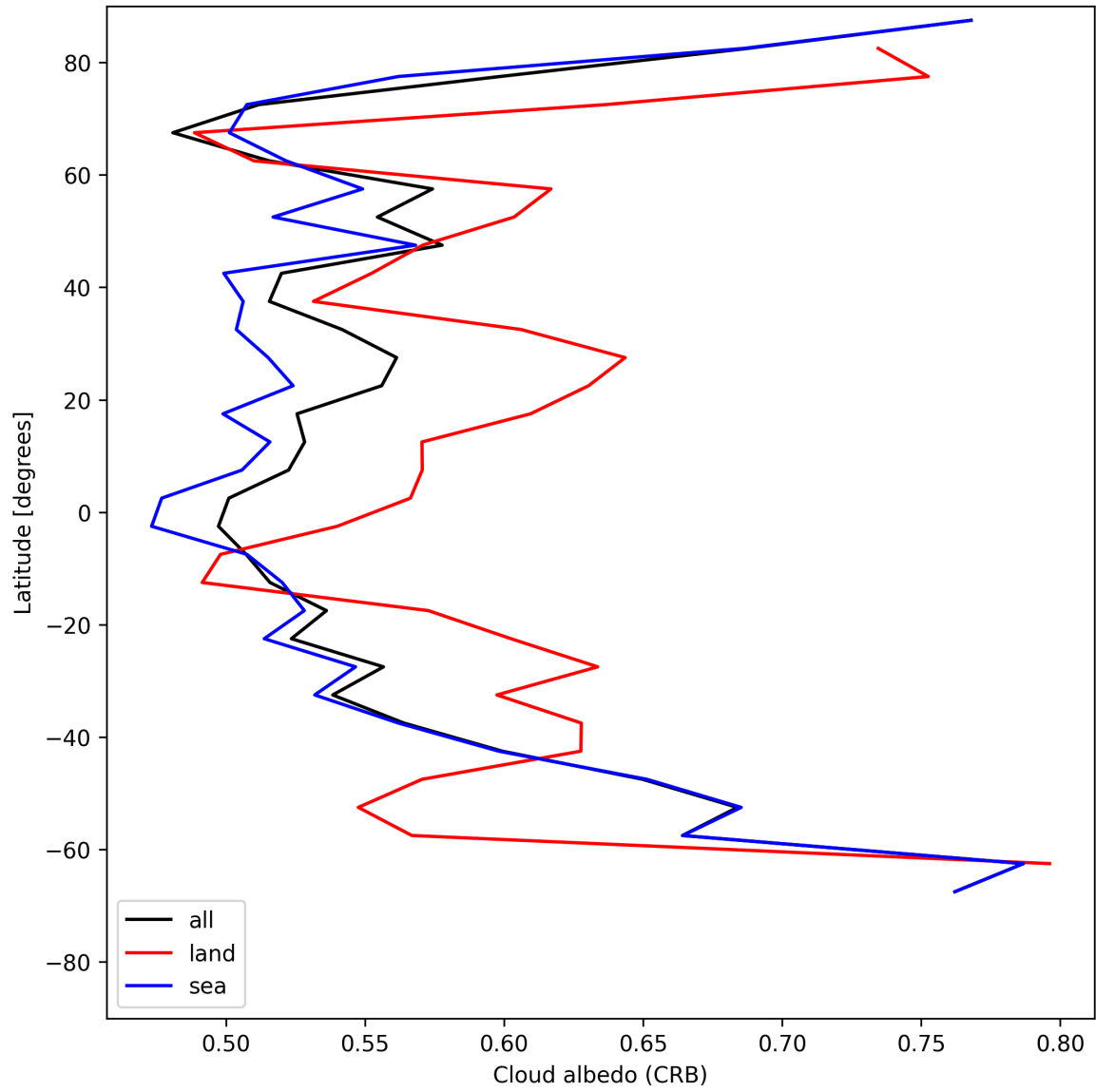


Figure 26: Zonal average of “Cloud albedo (CRB)” for 2025-06-19 to 2025-06-20.

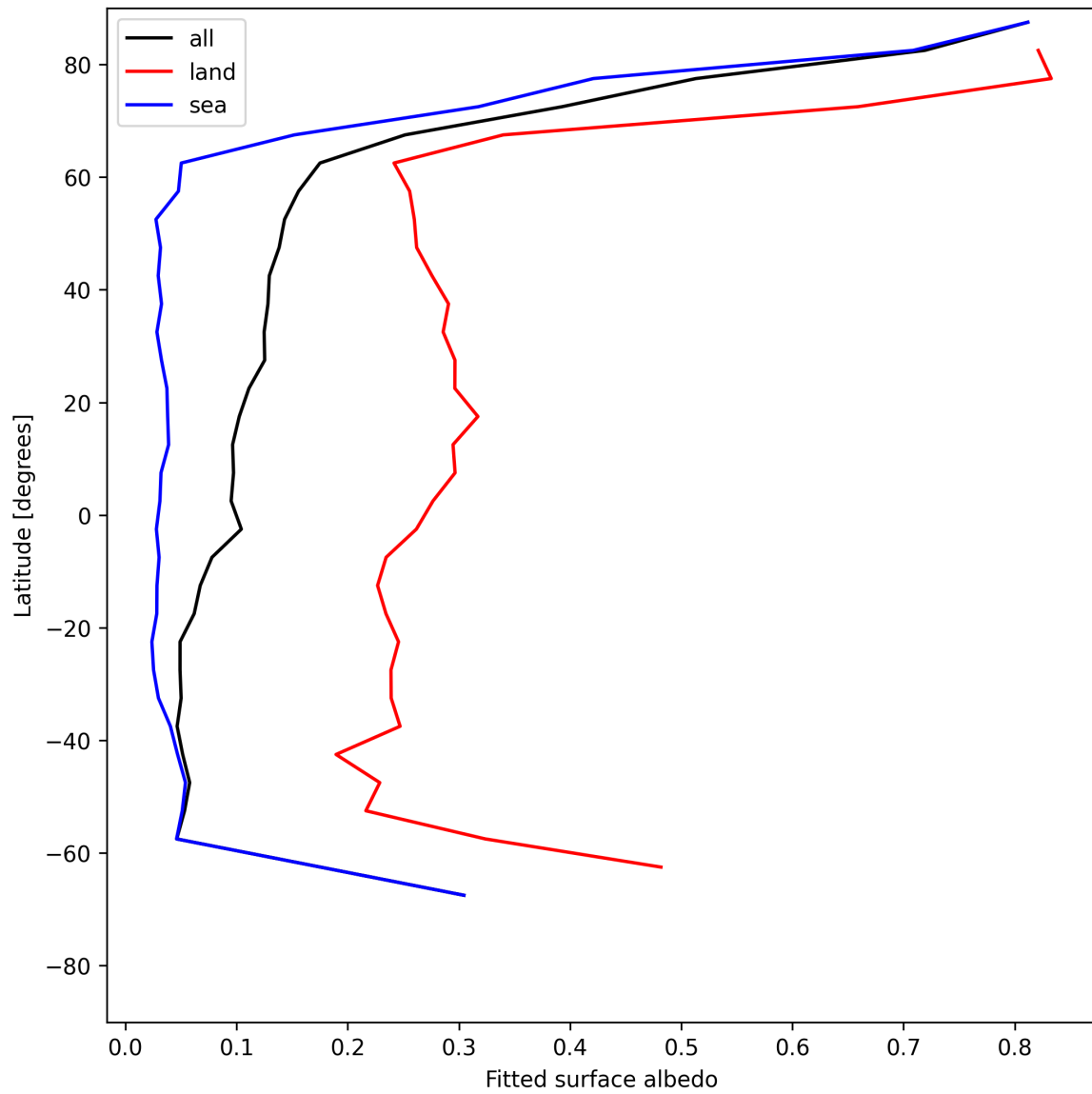


Figure 27: Zonal average of “Fitted surface albedo” for 2025-06-19 to 2025-06-20.

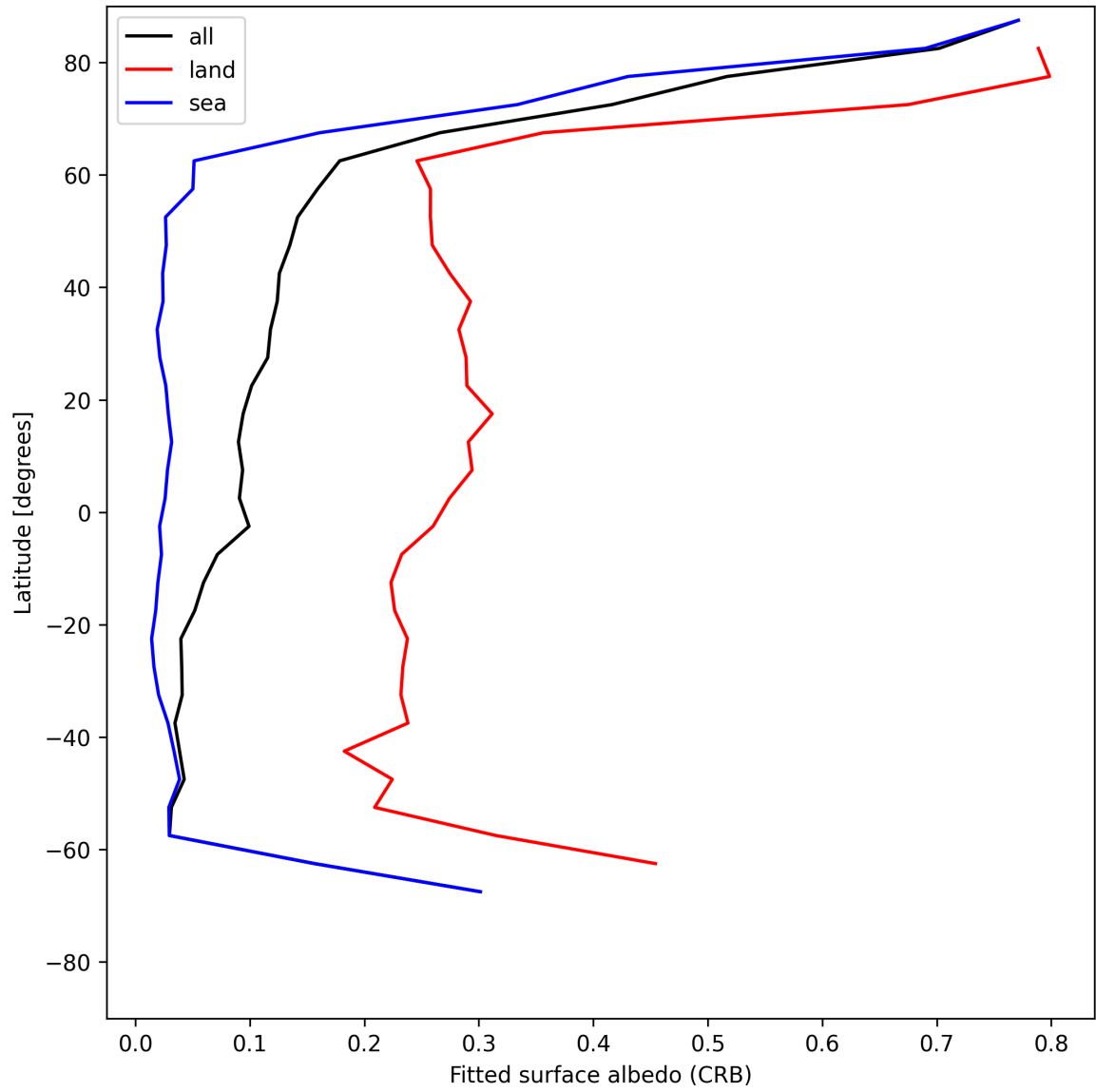


Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2025-06-19 to 2025-06-20.

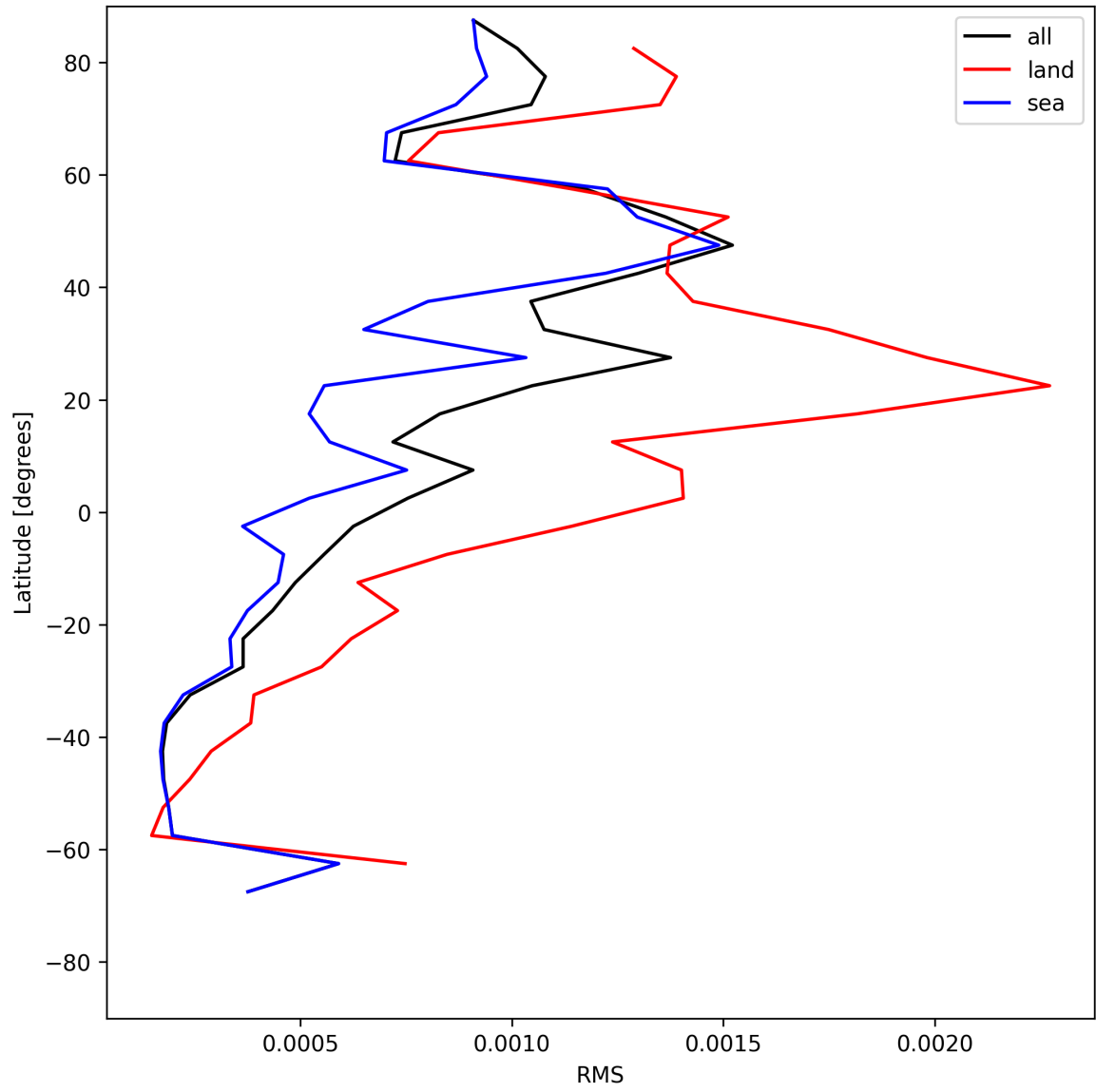


Figure 29: Zonal average of “RMS” for 2025-06-19 to 2025-06-20.

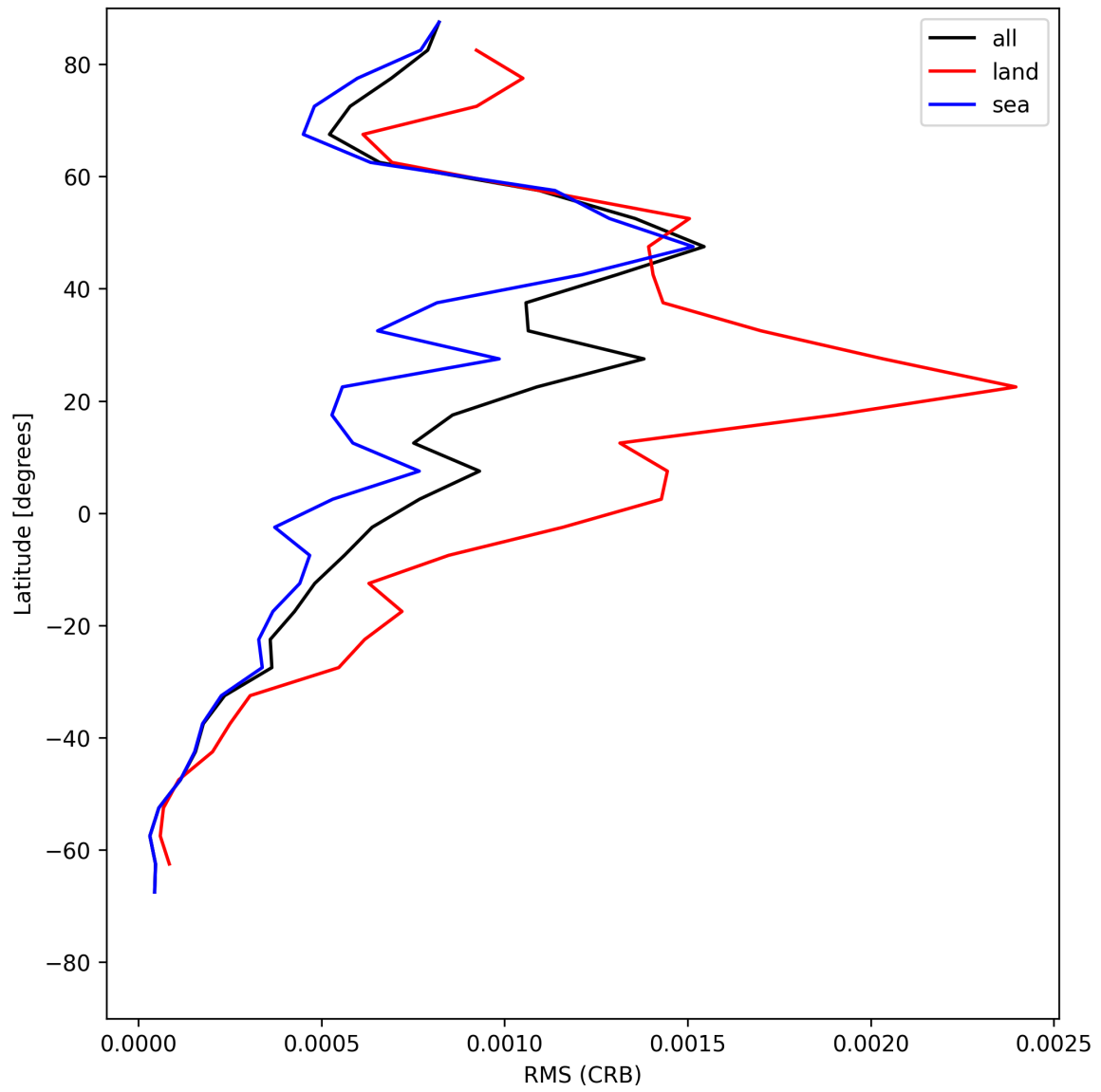


Figure 30: Zonal average of “RMS (CRB)” for 2025-06-19 to 2025-06-20.

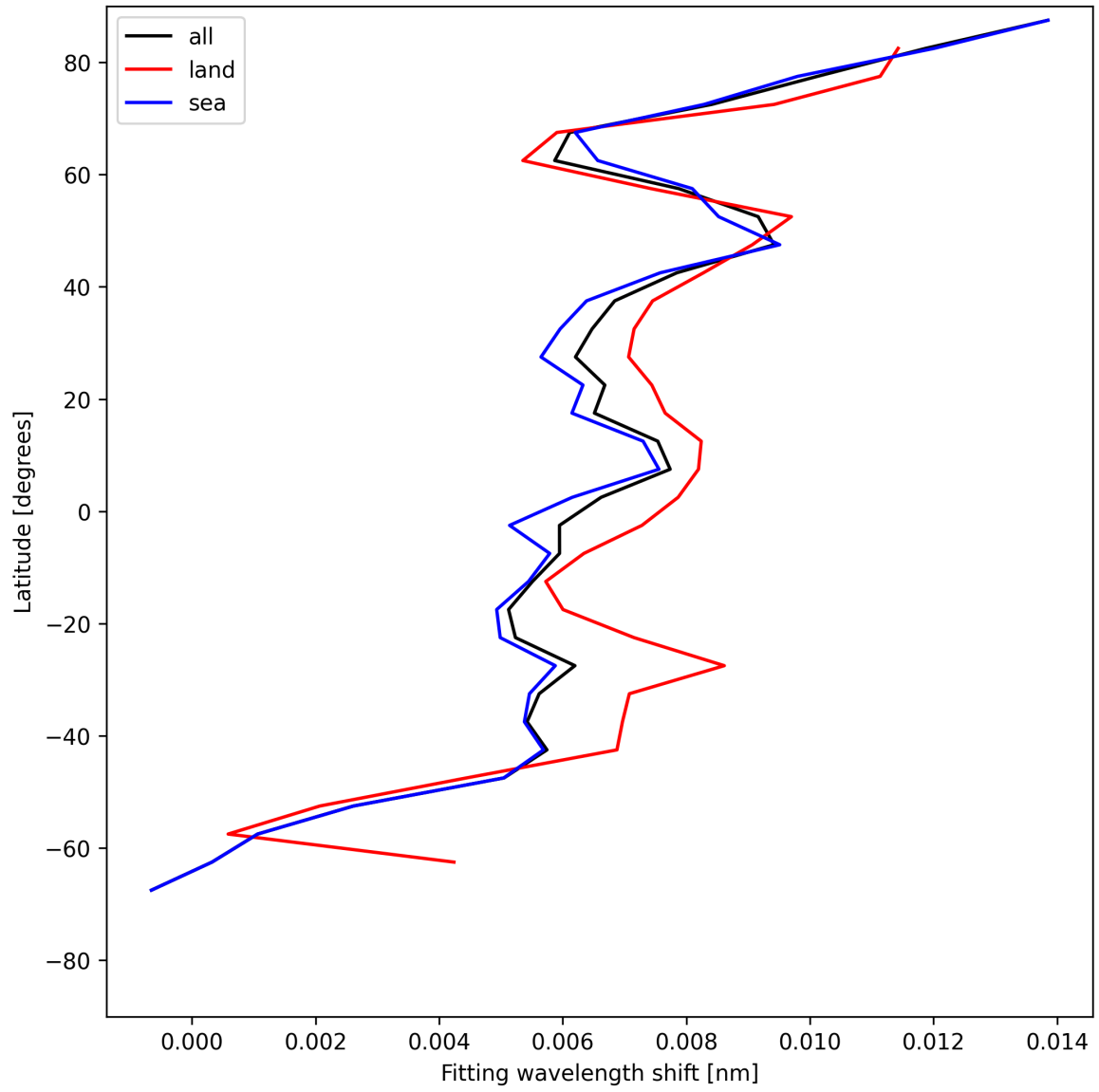


Figure 31: Zonal average of “Fitting wavelength shift” for 2025-06-19 to 2025-06-20.

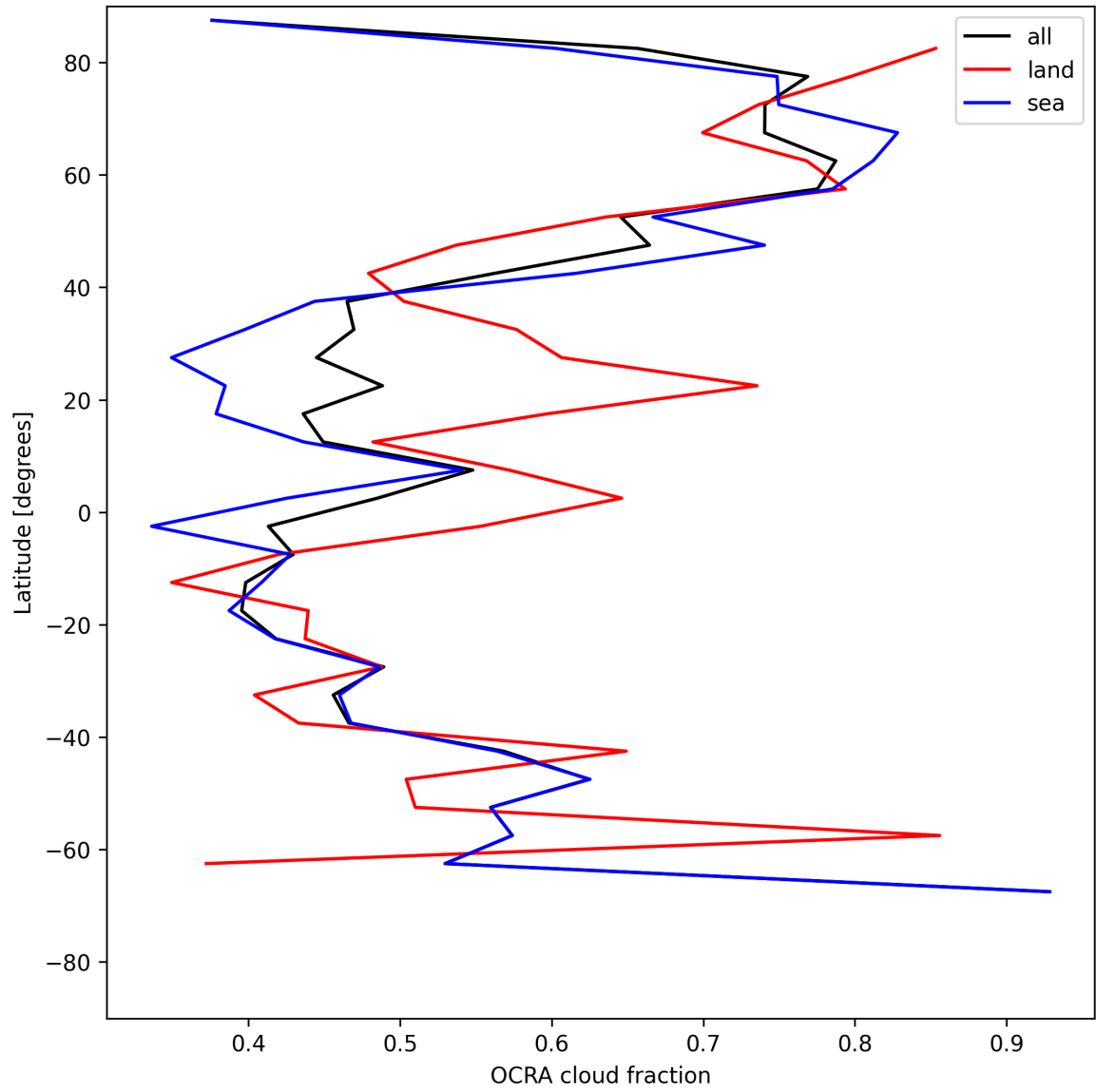


Figure 32: Zonal average of “OCRA cloud fraction” for 2025-06-19 to 2025-06-20.

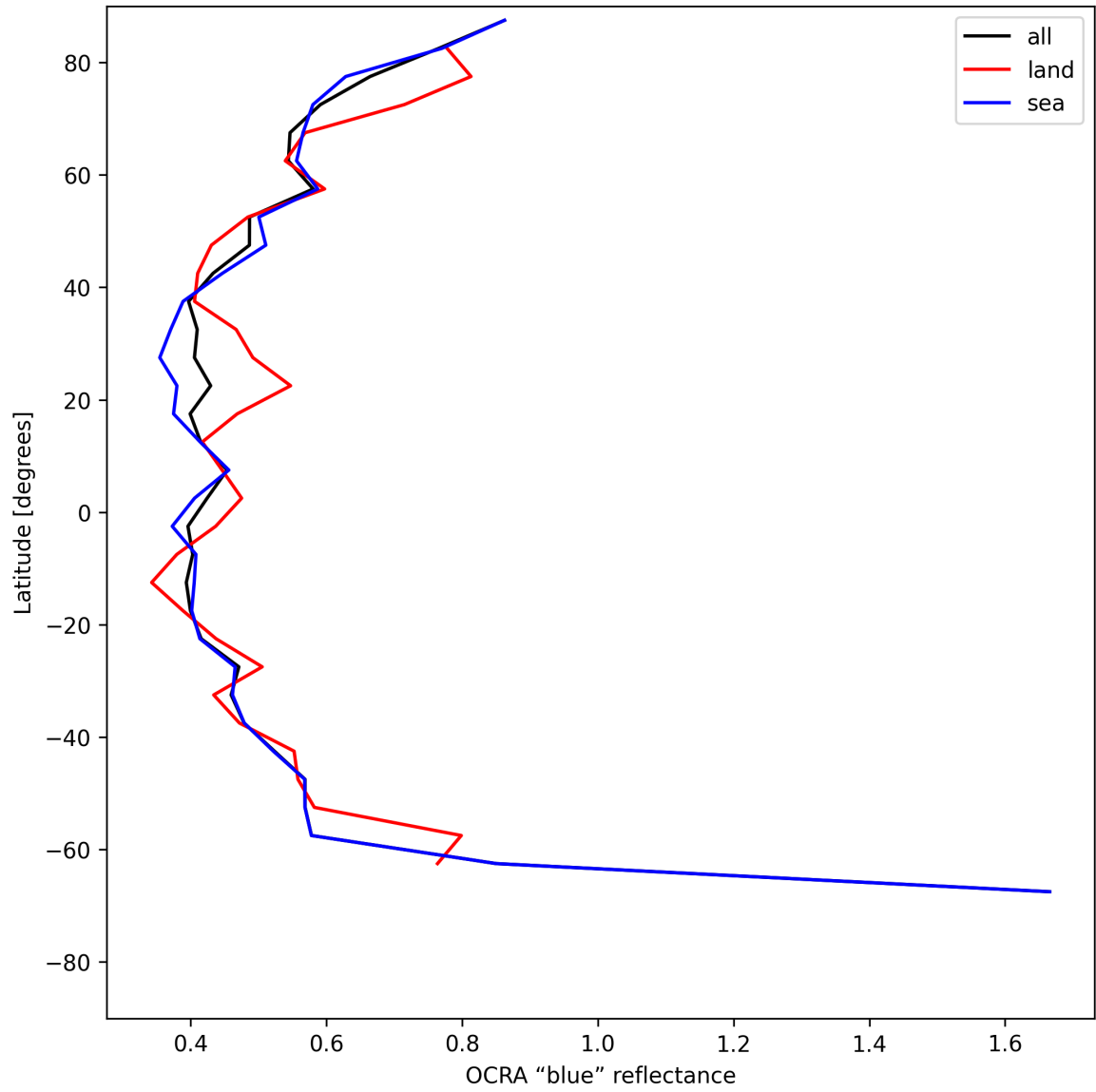


Figure 33: Zonal average of “OCRA “blue” reflectance” for 2025-06-19 to 2025-06-20.

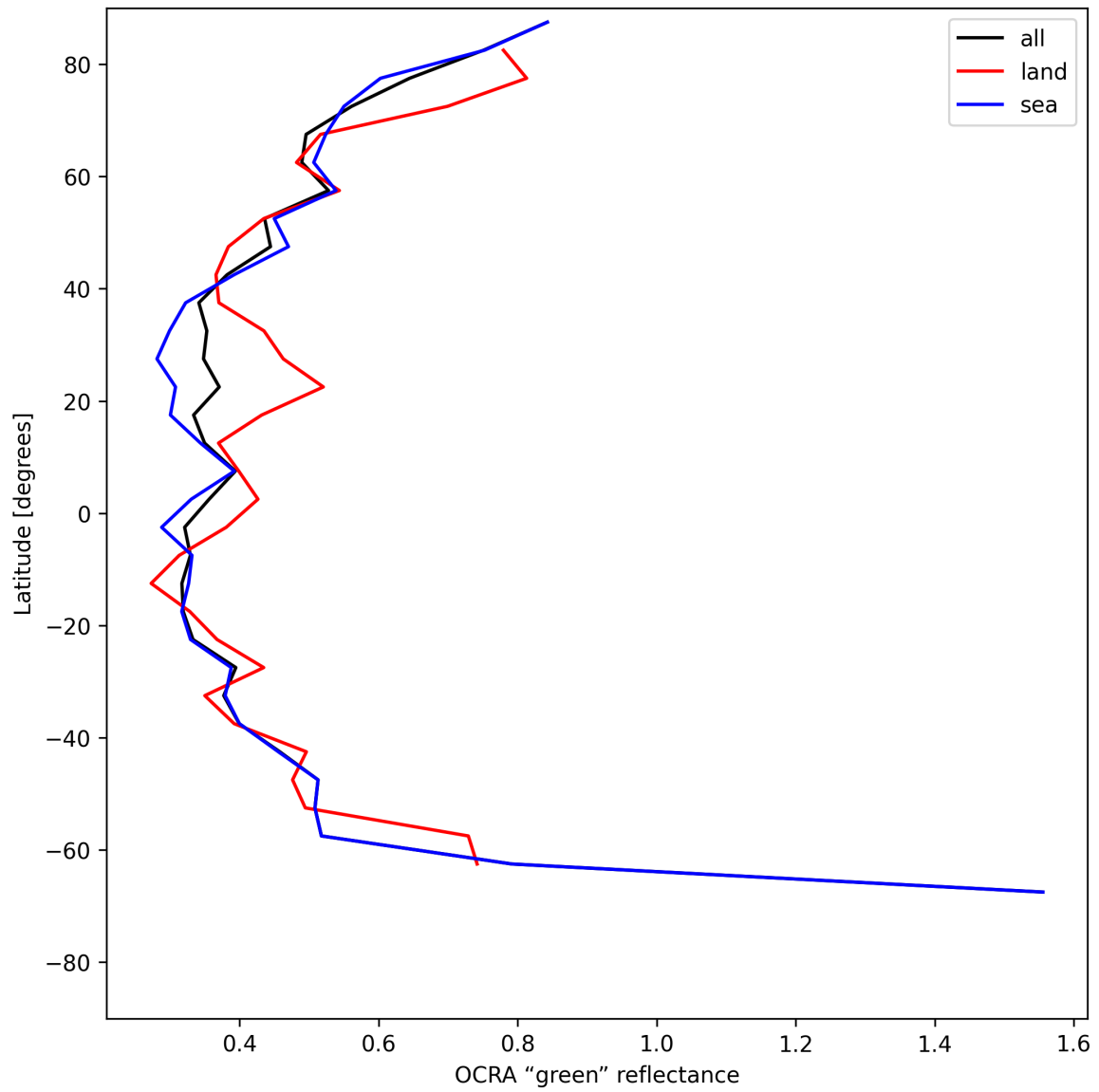


Figure 34: Zonal average of “OCRA “green” reflectance” for 2025-06-19 to 2025-06-20.

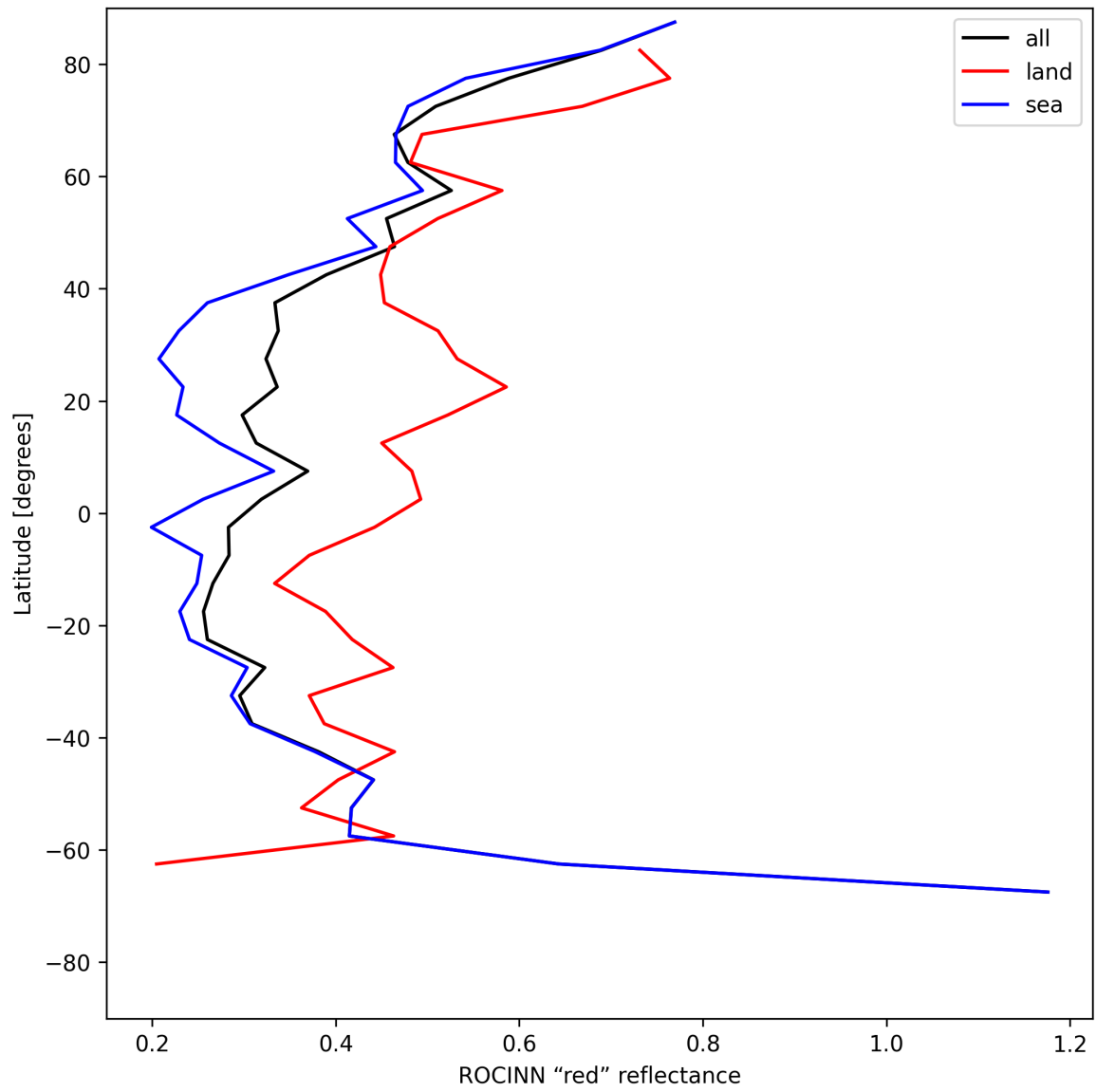


Figure 35: Zonal average of “ROCINN “red” reflectance” for 2025-06-19 to 2025-06-20.

8 Histograms

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

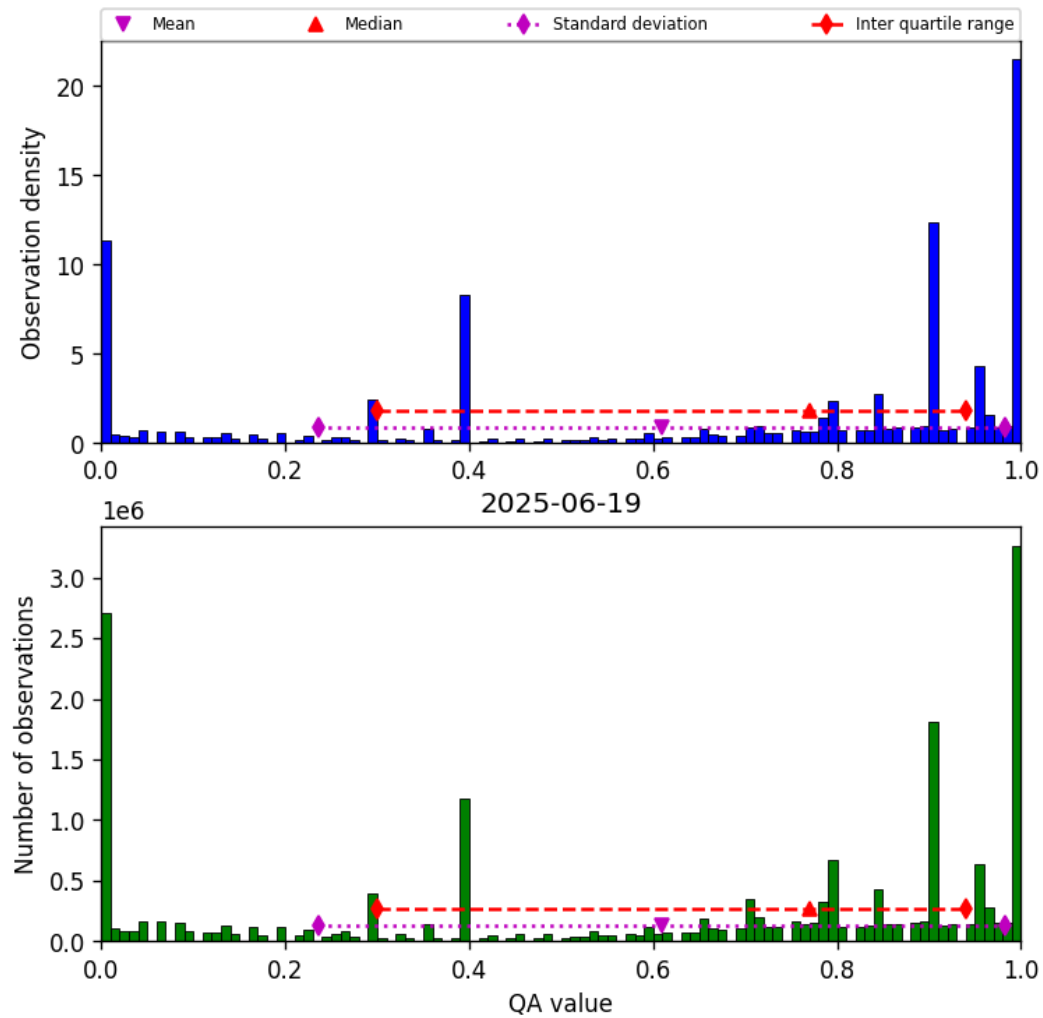


Figure 36: Histogram of “QA value” for 2025-06-19 to 2025-06-20

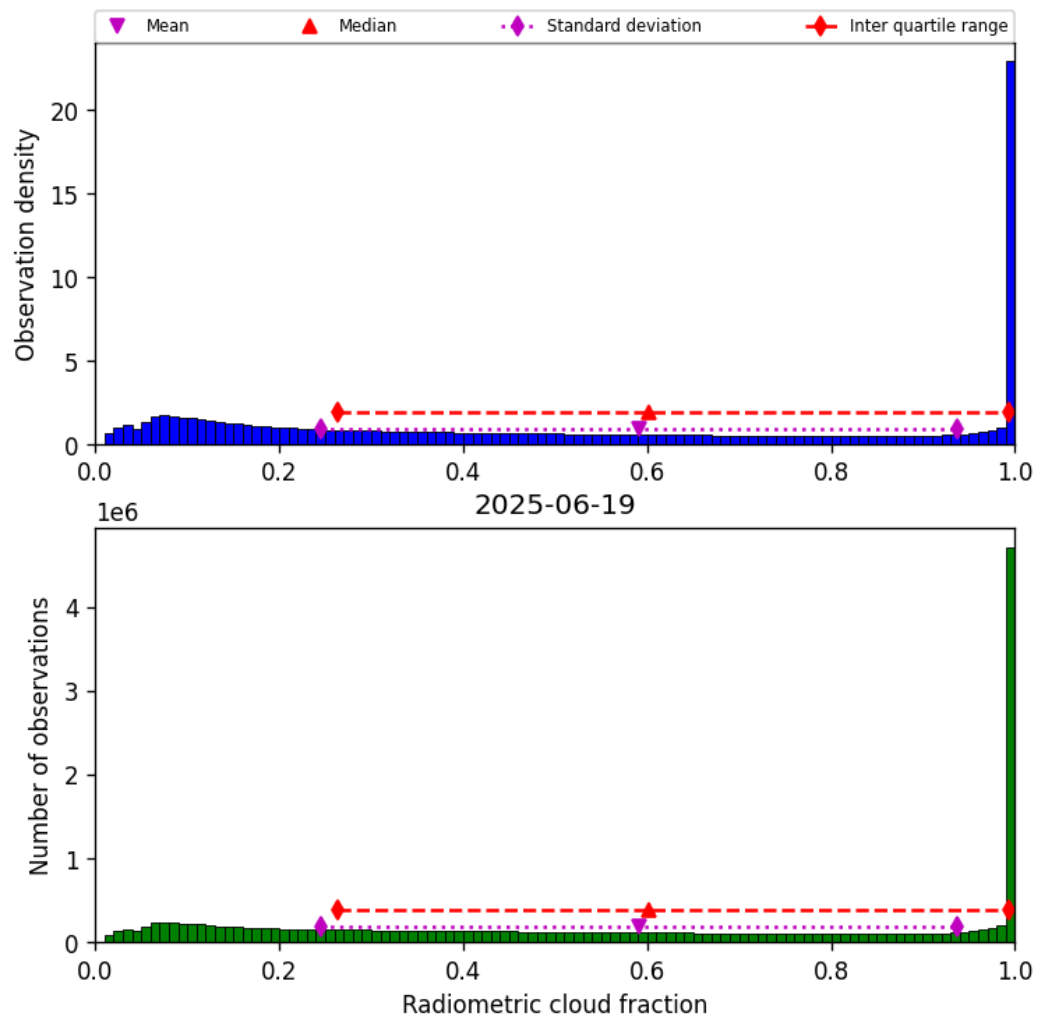


Figure 37: Histogram of “Radiometric cloud fraction” for 2025-06-19 to 2025-06-20

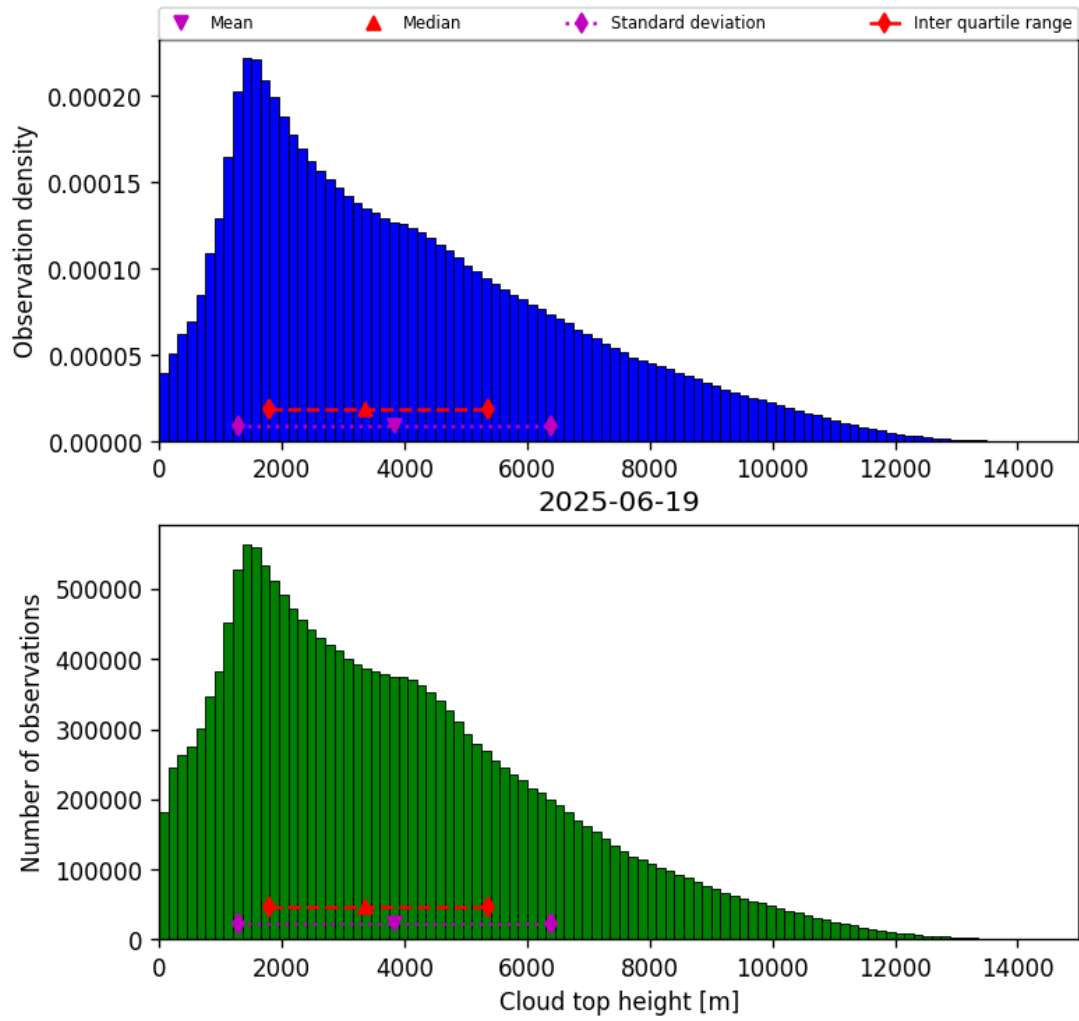


Figure 38: Histogram of “Cloud top height” for 2025-06-19 to 2025-06-20

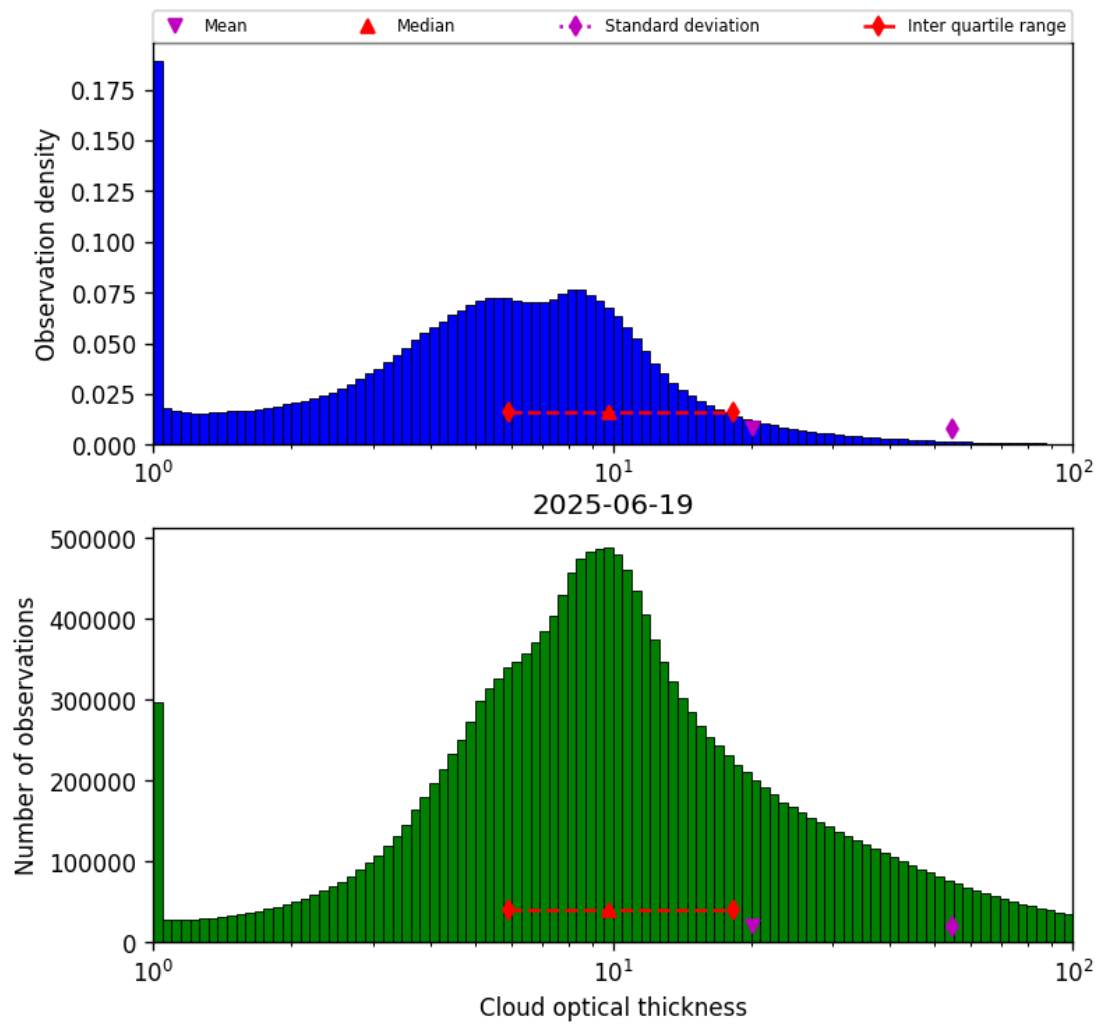


Figure 39: Histogram of “Cloud optical thickness” for 2025-06-19 to 2025-06-20

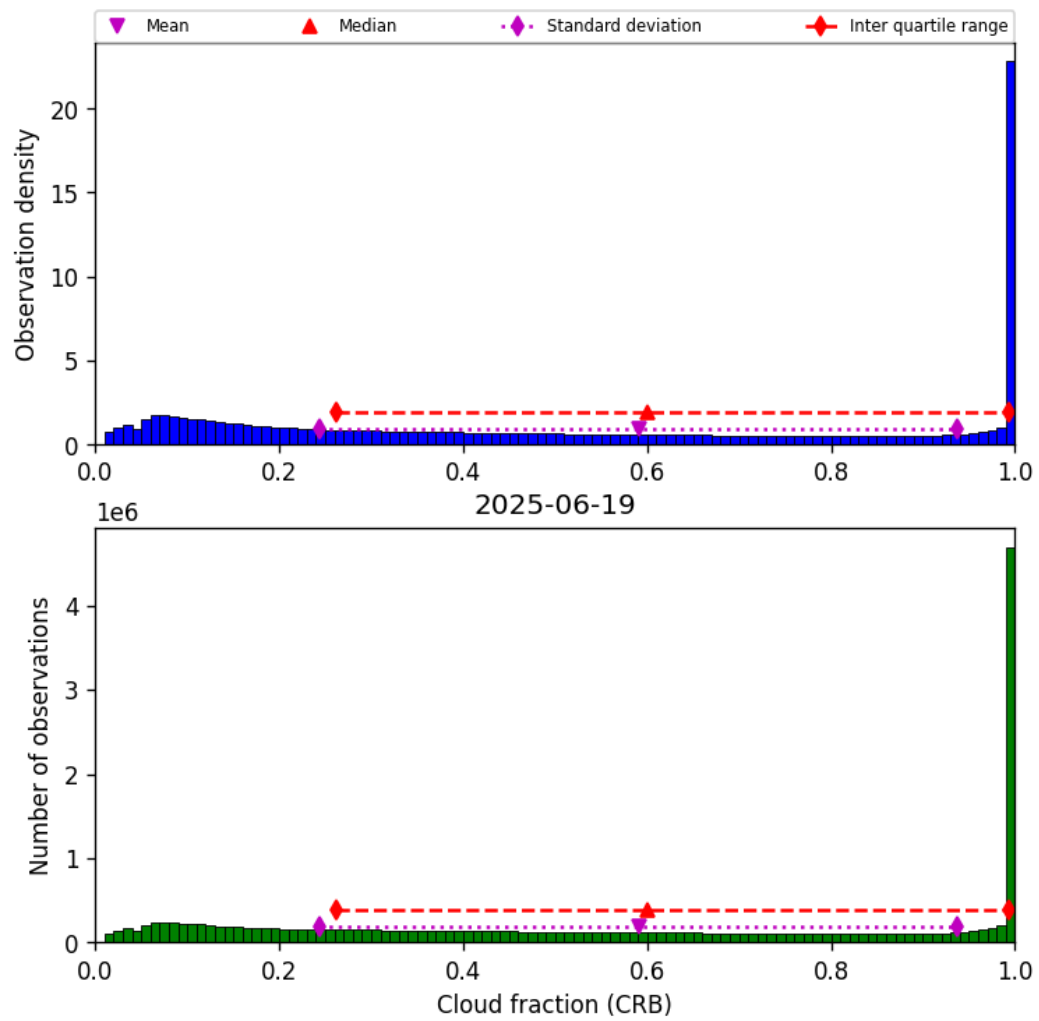


Figure 40: Histogram of “Cloud fraction (CRB)” for 2025-06-19 to 2025-06-20

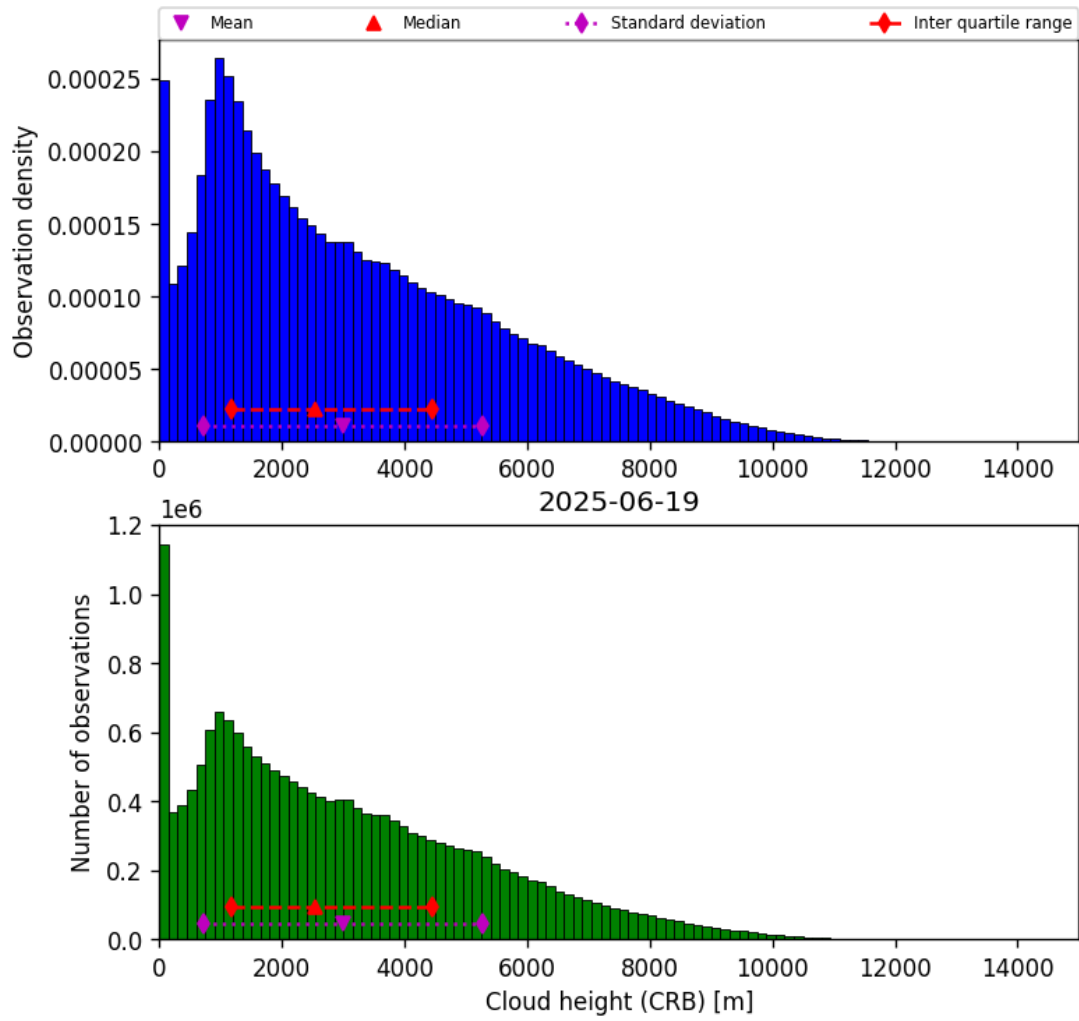


Figure 41: Histogram of “Cloud height (CRB)” for 2025-06-19 to 2025-06-20

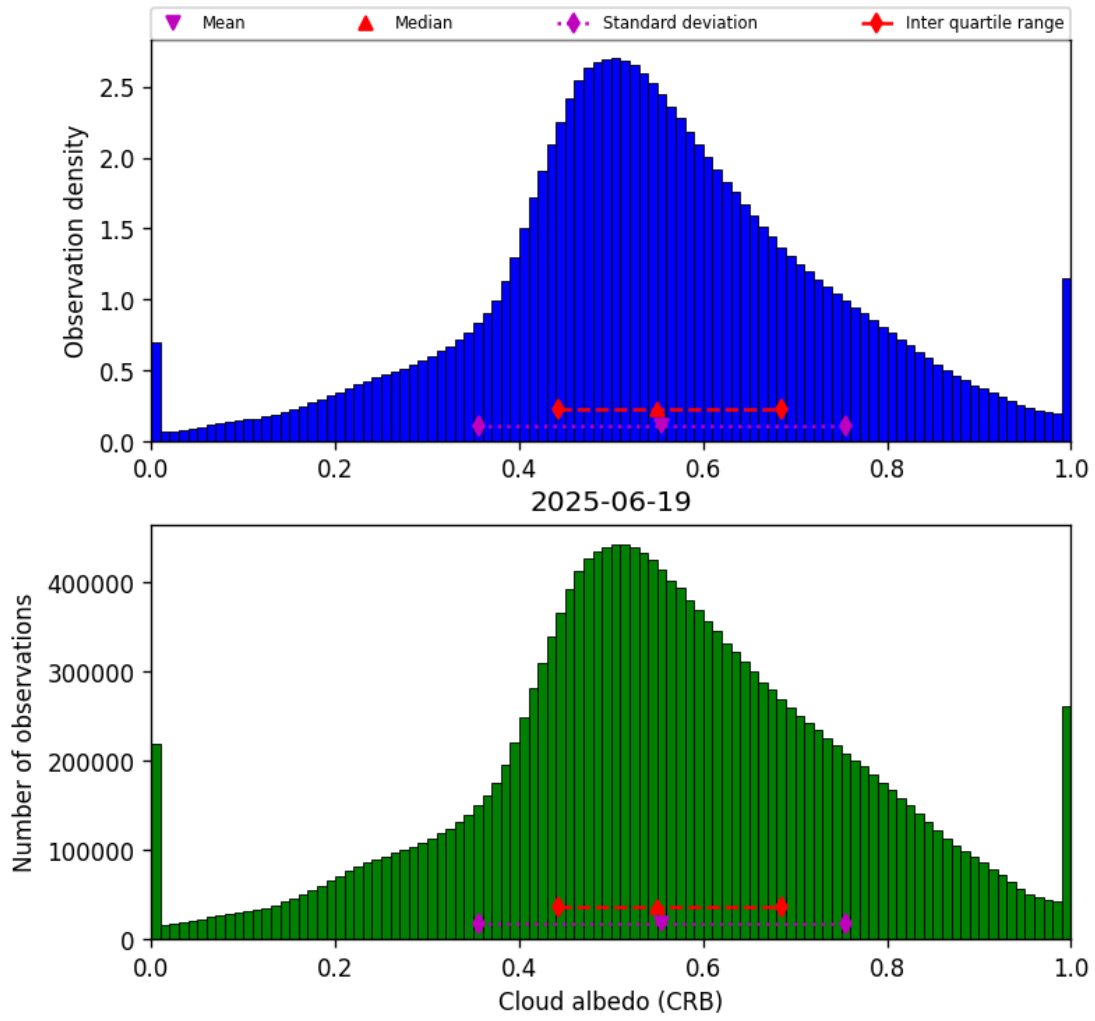


Figure 42: Histogram of “Cloud albedo (CRB)” for 2025-06-19 to 2025-06-20

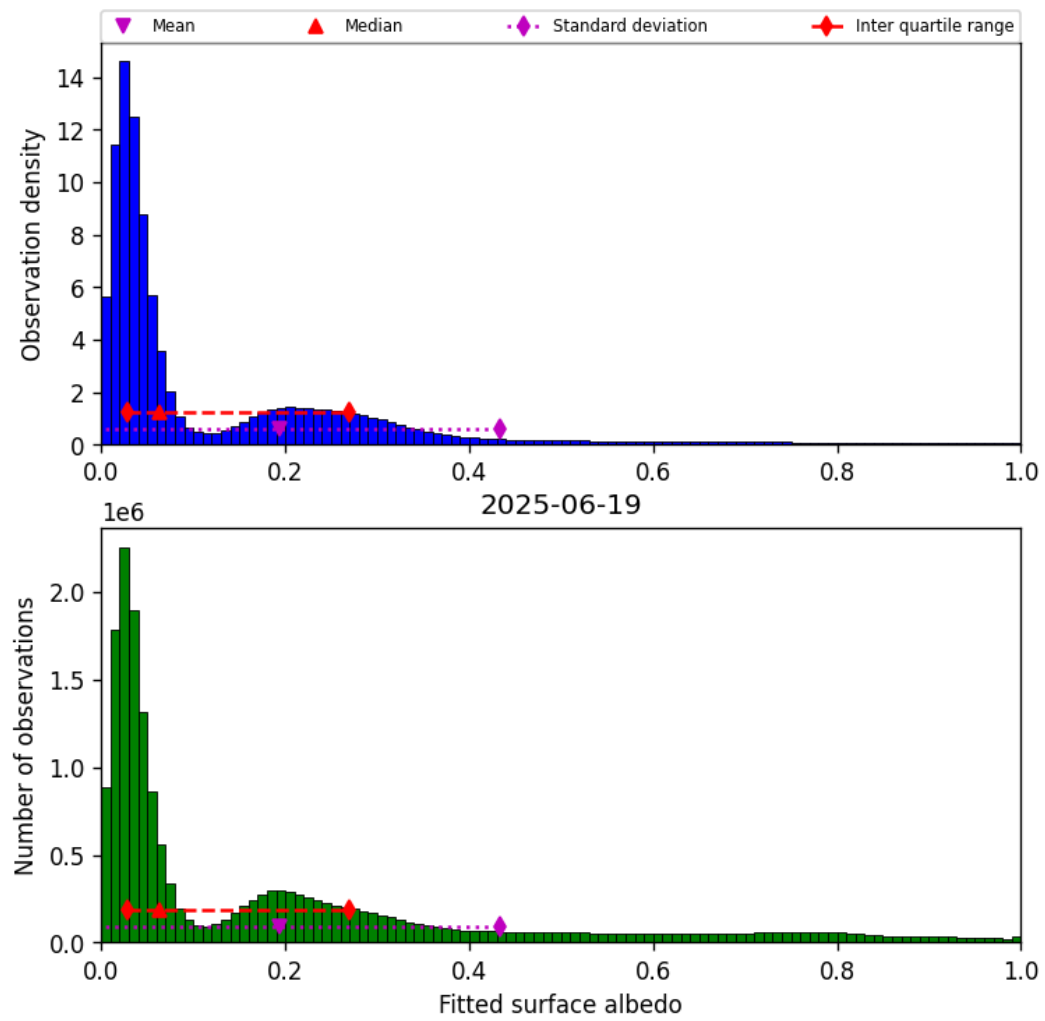


Figure 43: Histogram of “Fitted surface albedo” for 2025-06-19 to 2025-06-20

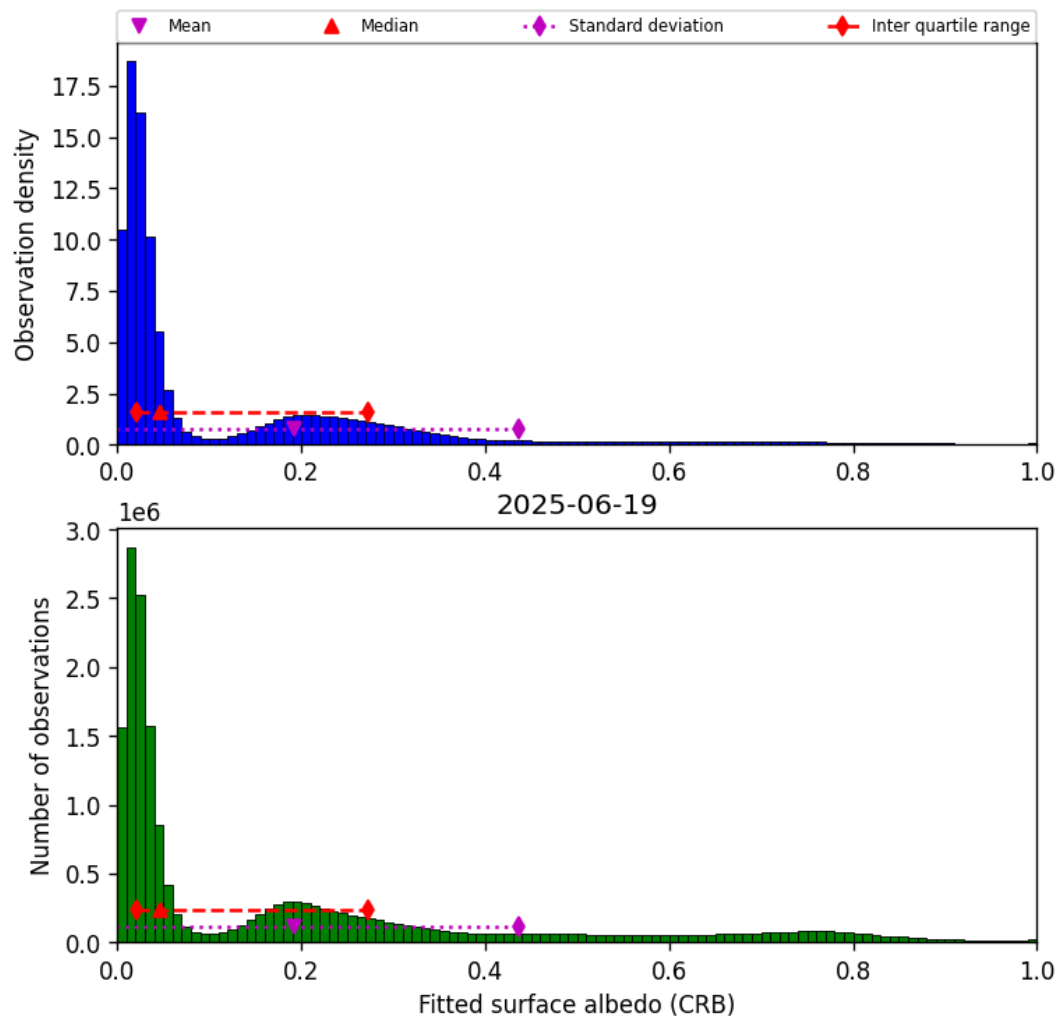


Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2025-06-19 to 2025-06-20

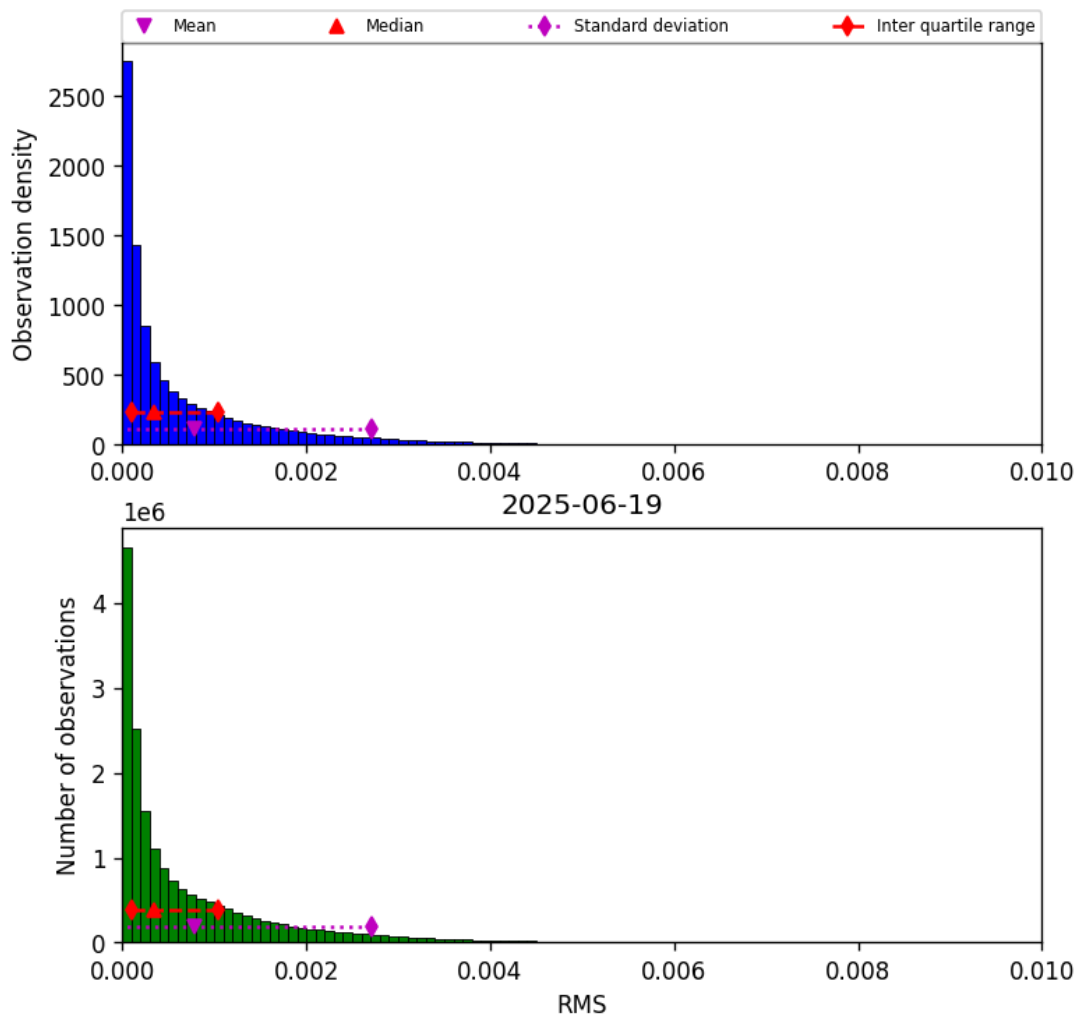


Figure 45: Histogram of “RMS” for 2025-06-19 to 2025-06-20

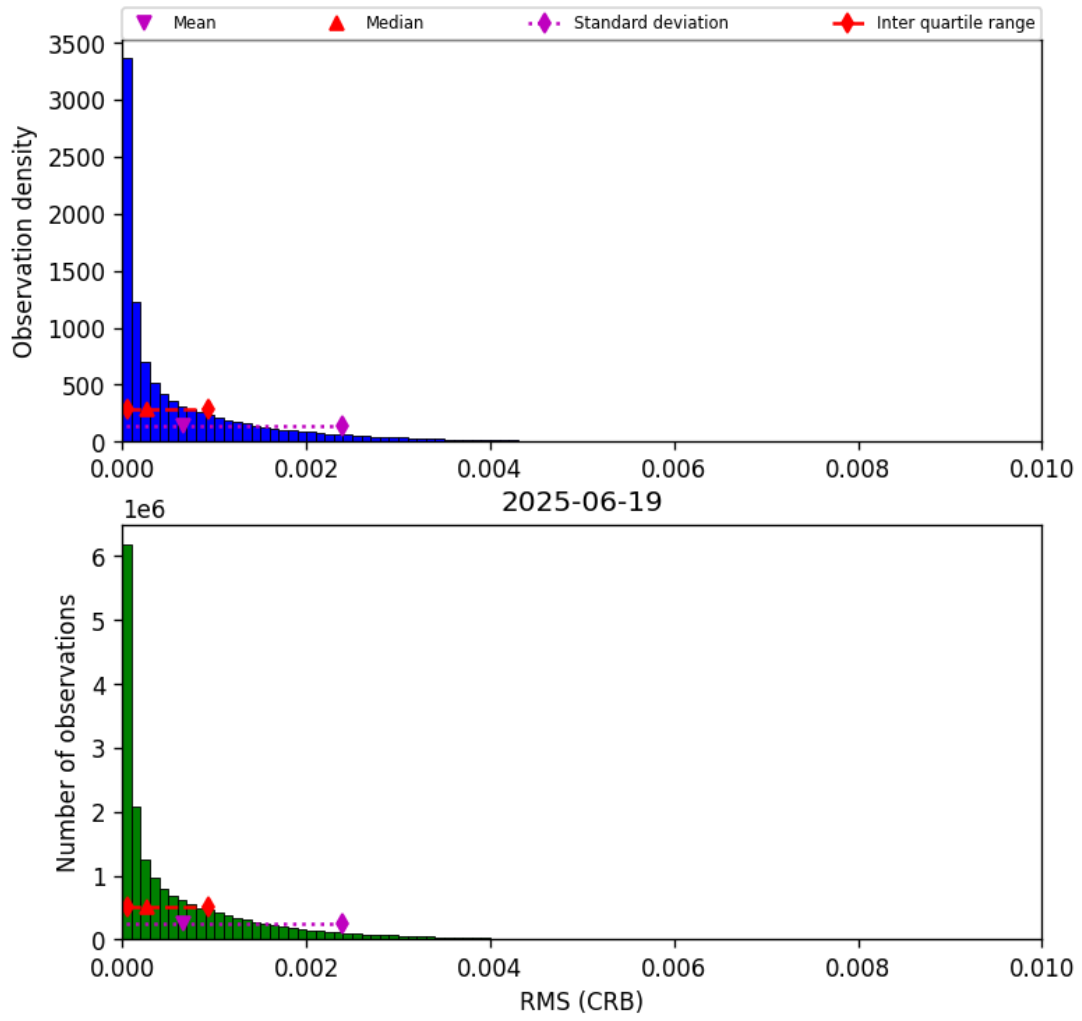


Figure 46: Histogram of “RMS (CRB)” for 2025-06-19 to 2025-06-20

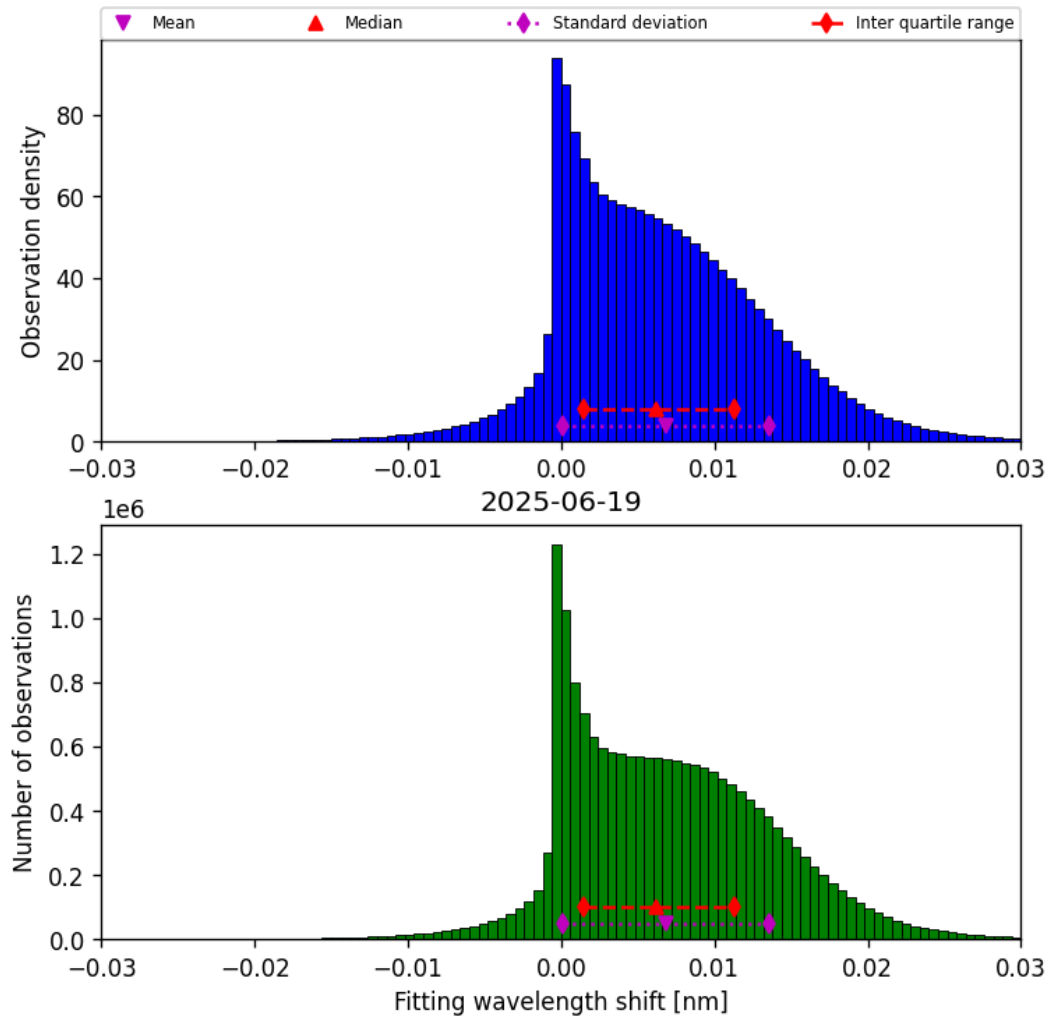


Figure 47: Histogram of “Fitting wavelength shift” for 2025-06-19 to 2025-06-20

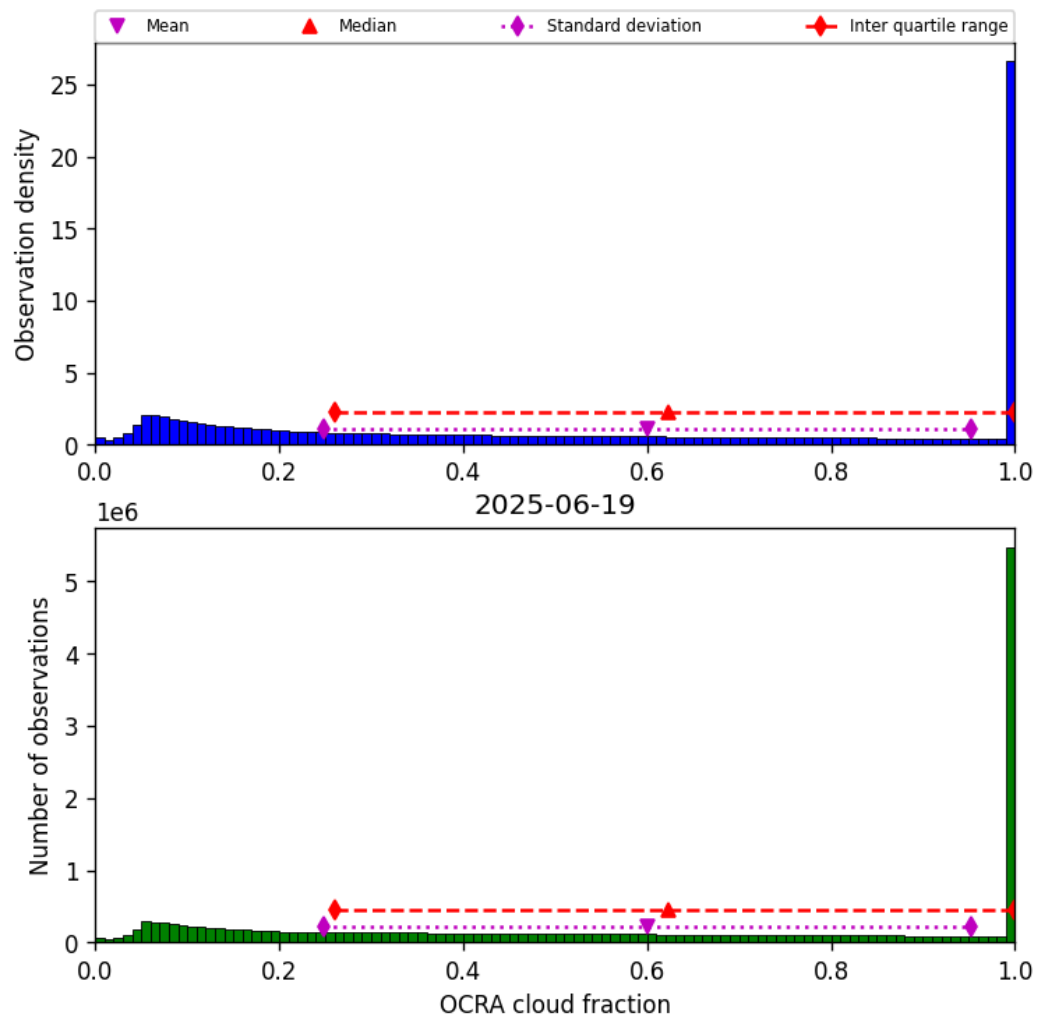


Figure 48: Histogram of “OCRA cloud fraction” for 2025-06-19 to 2025-06-20

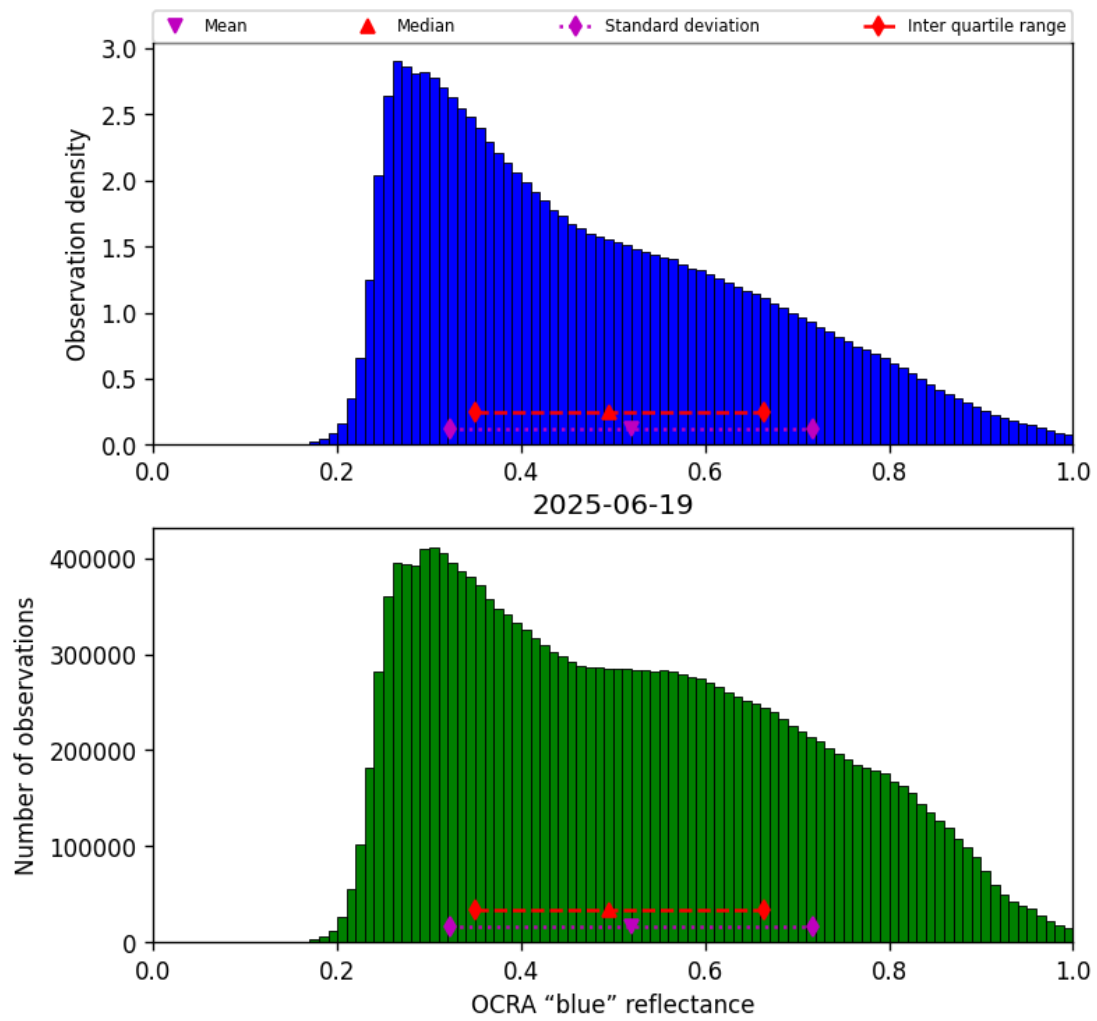


Figure 49: Histogram of “OCRA “blue” reflectance” for 2025-06-19 to 2025-06-20

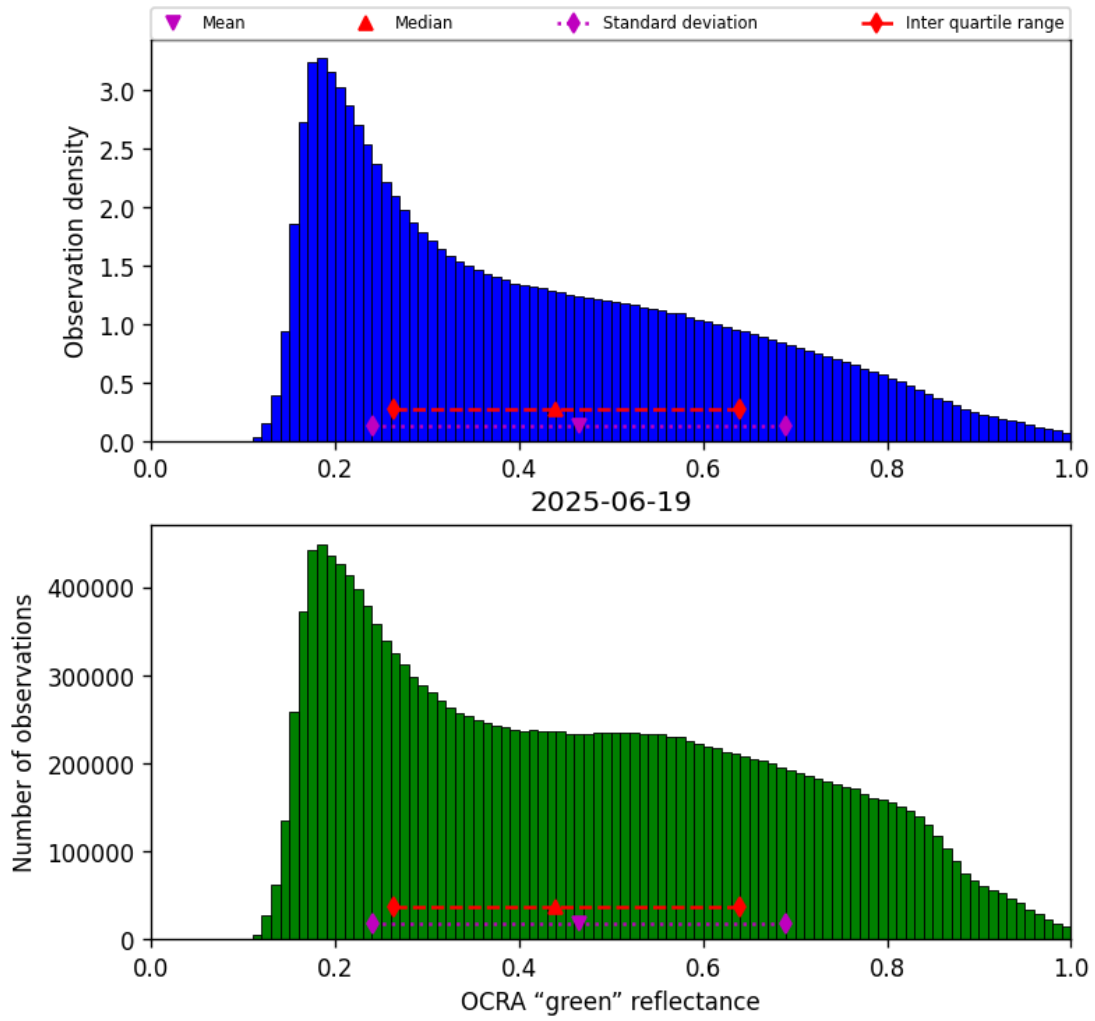


Figure 50: Histogram of “OCRA “green” reflectance” for 2025-06-19 to 2025-06-20

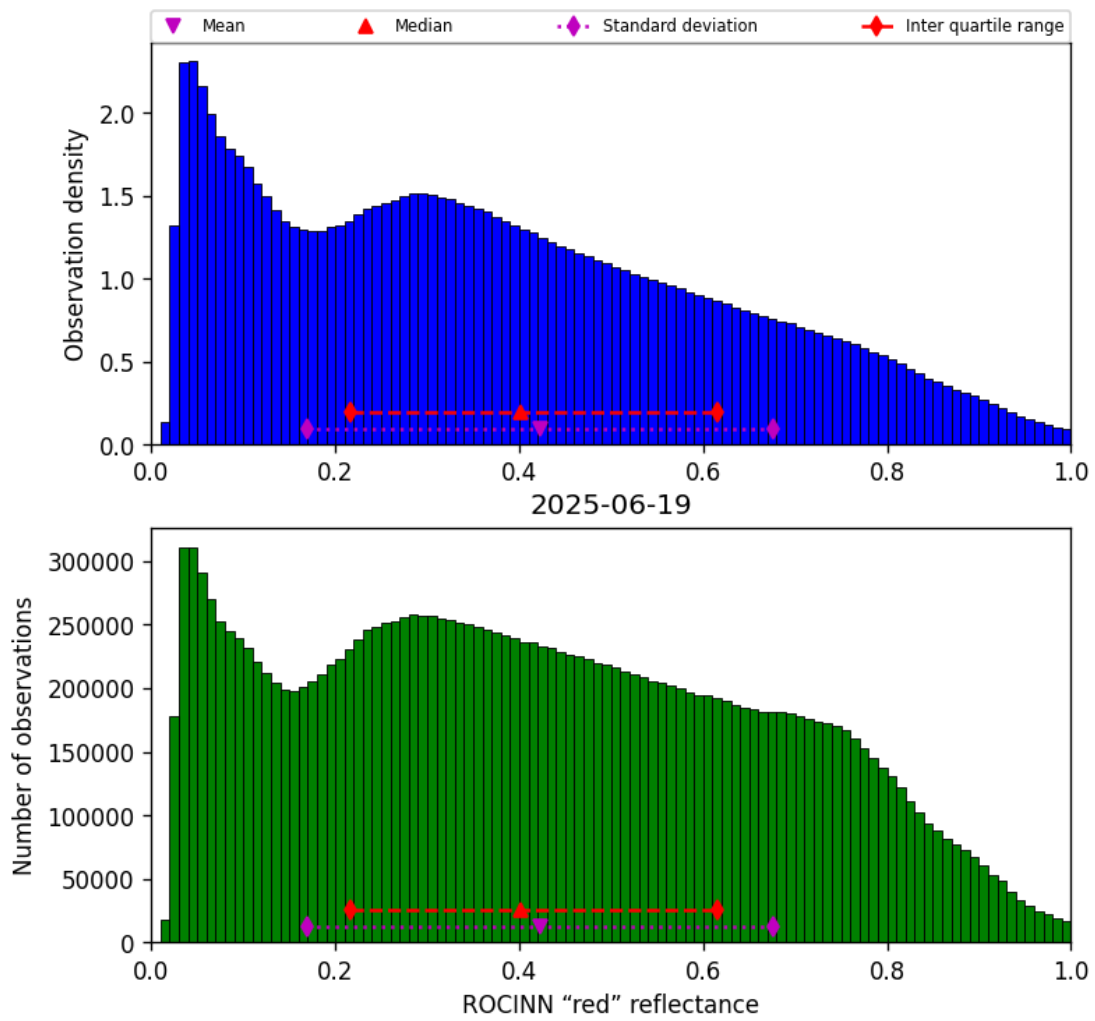


Figure 51: Histogram of “ROCINN “red” reflectance” for 2025-06-19 to 2025-06-20

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.

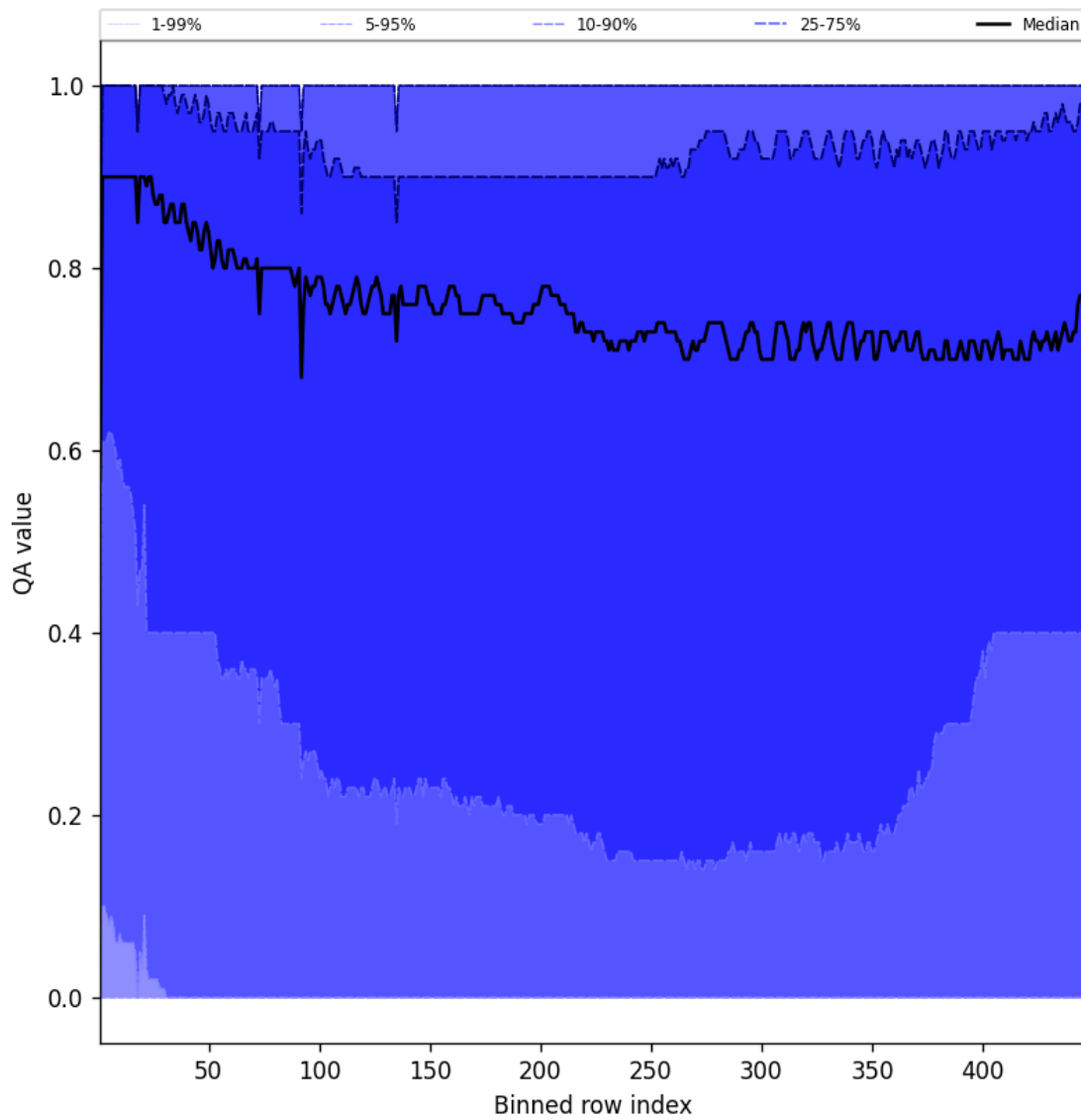


Figure 52: Along track statistics of “QA value” for 2025-06-19 to 2025-06-20

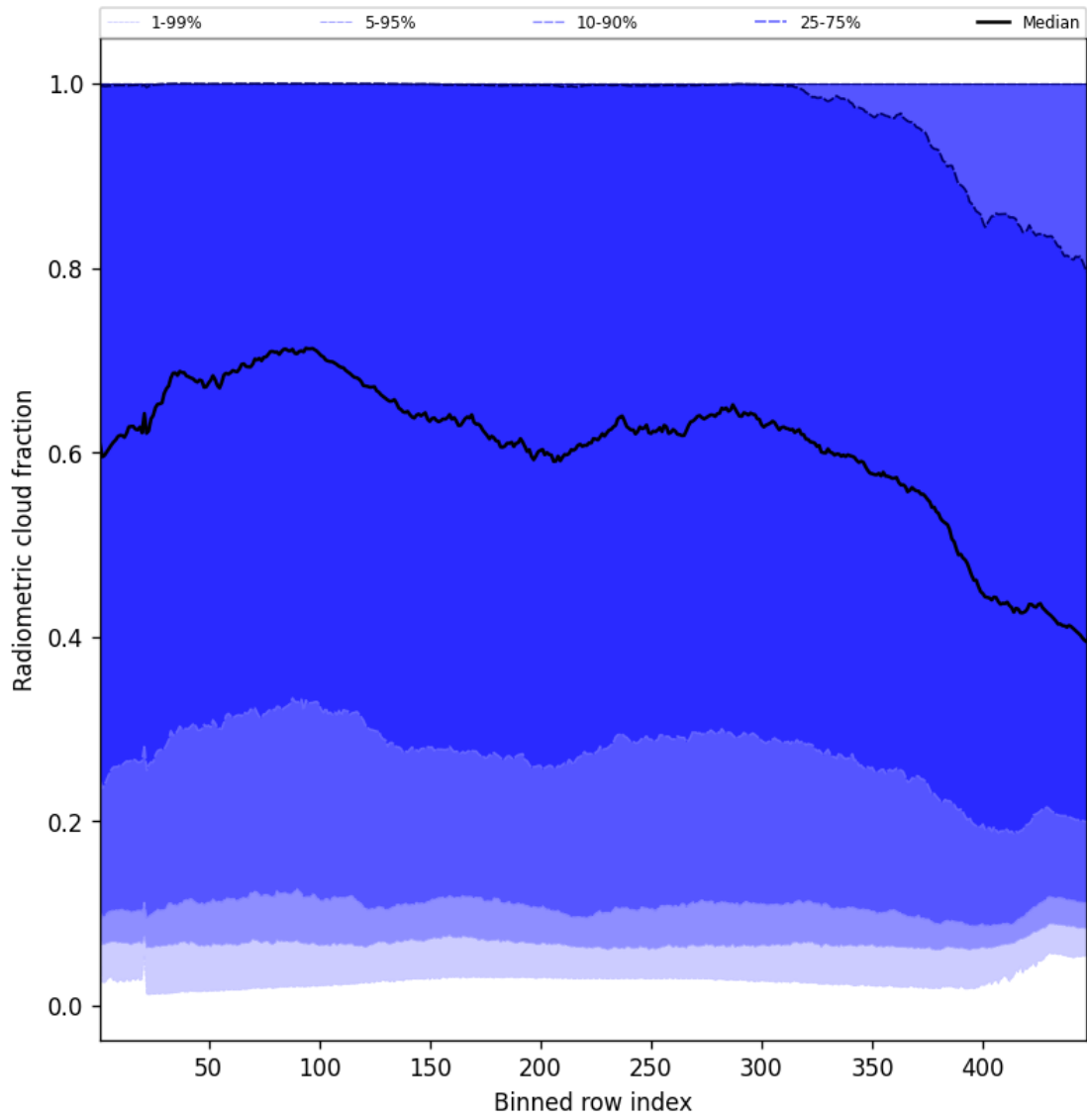


Figure 53: Along track statistics of “Radiometric cloud fraction” for 2025-06-19 to 2025-06-20

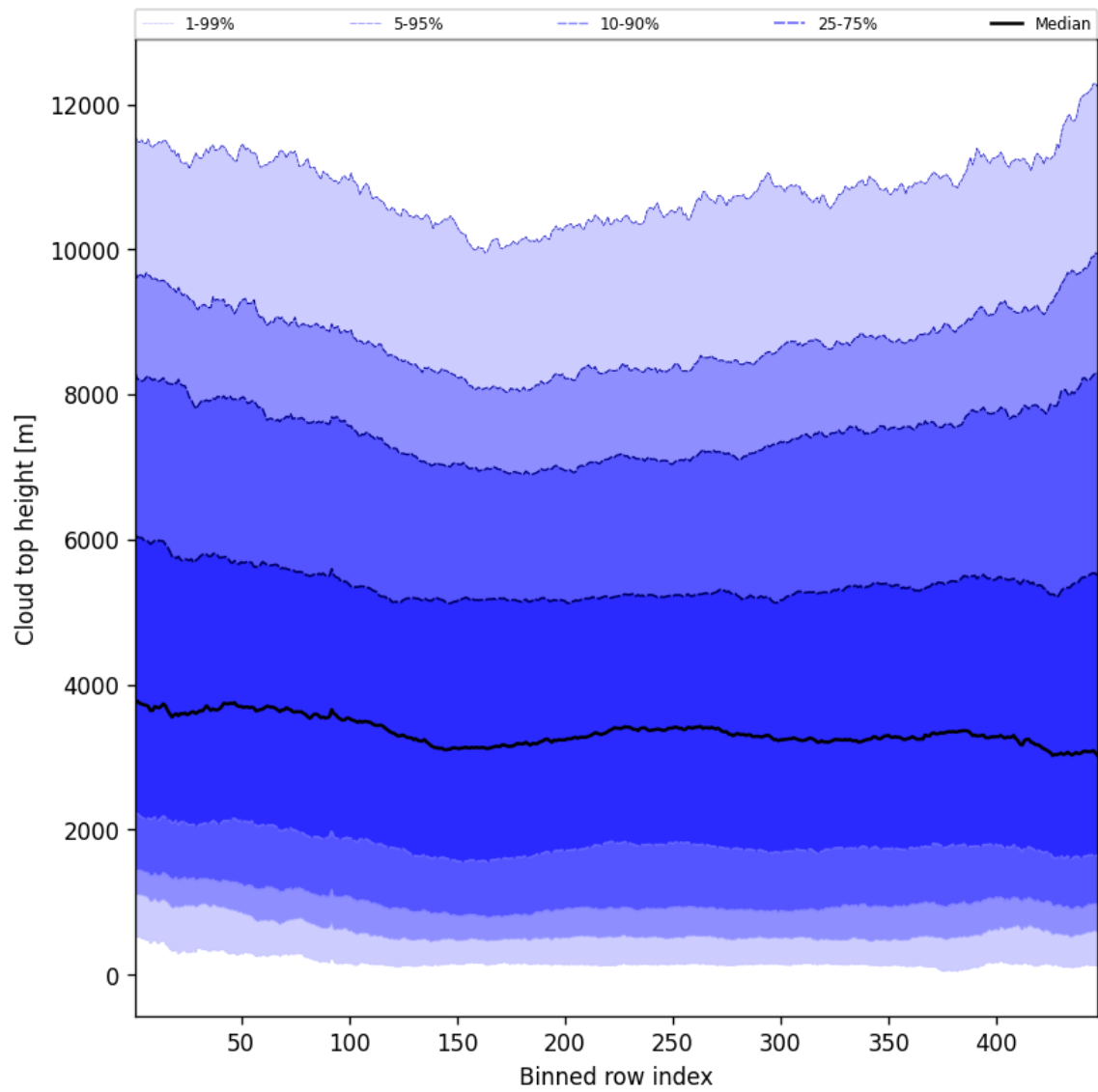


Figure 54: Along track statistics of “Cloud top height” for 2025-06-19 to 2025-06-20

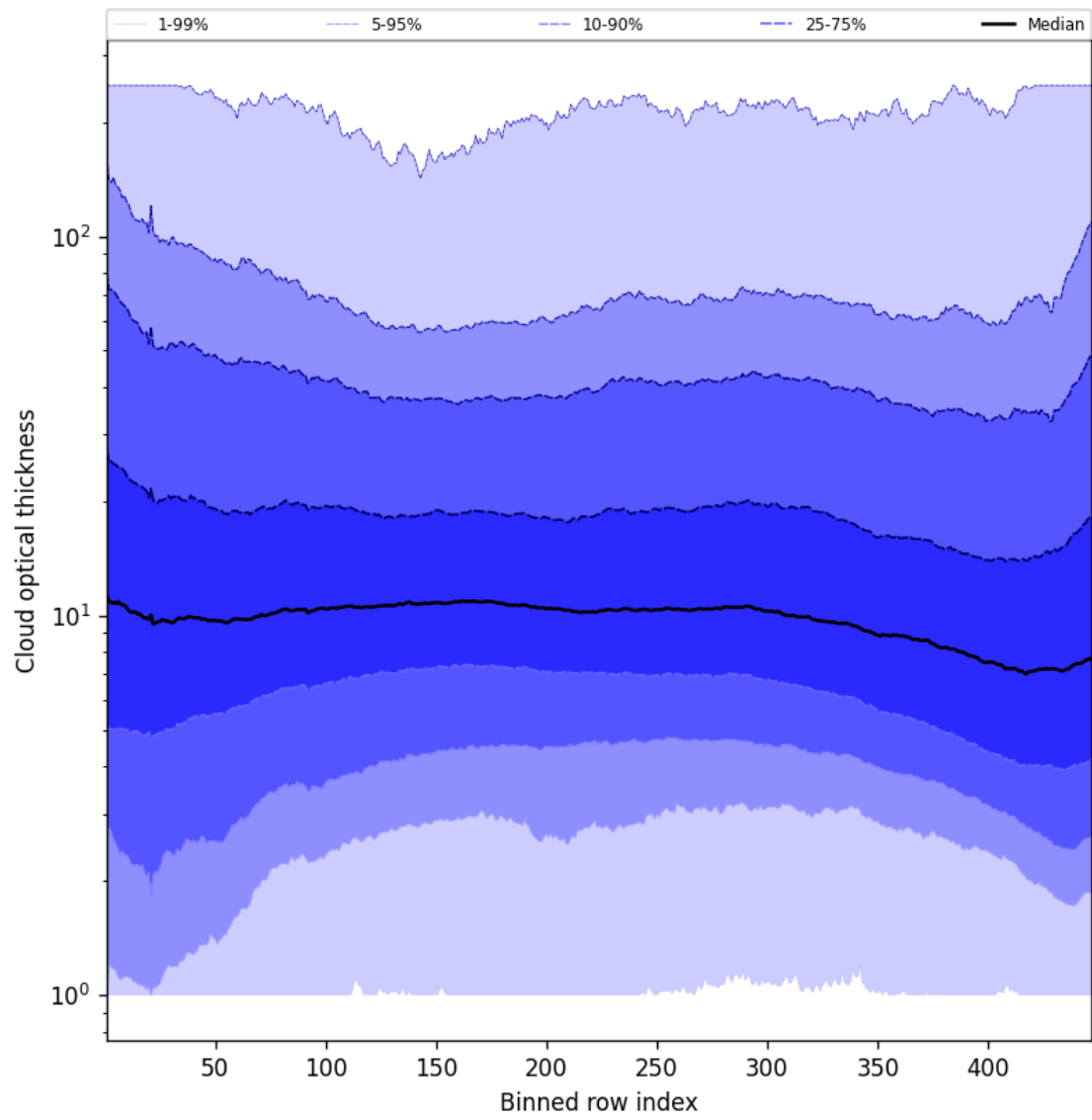


Figure 55: Along track statistics of “Cloud optical thickness” for 2025-06-19 to 2025-06-20

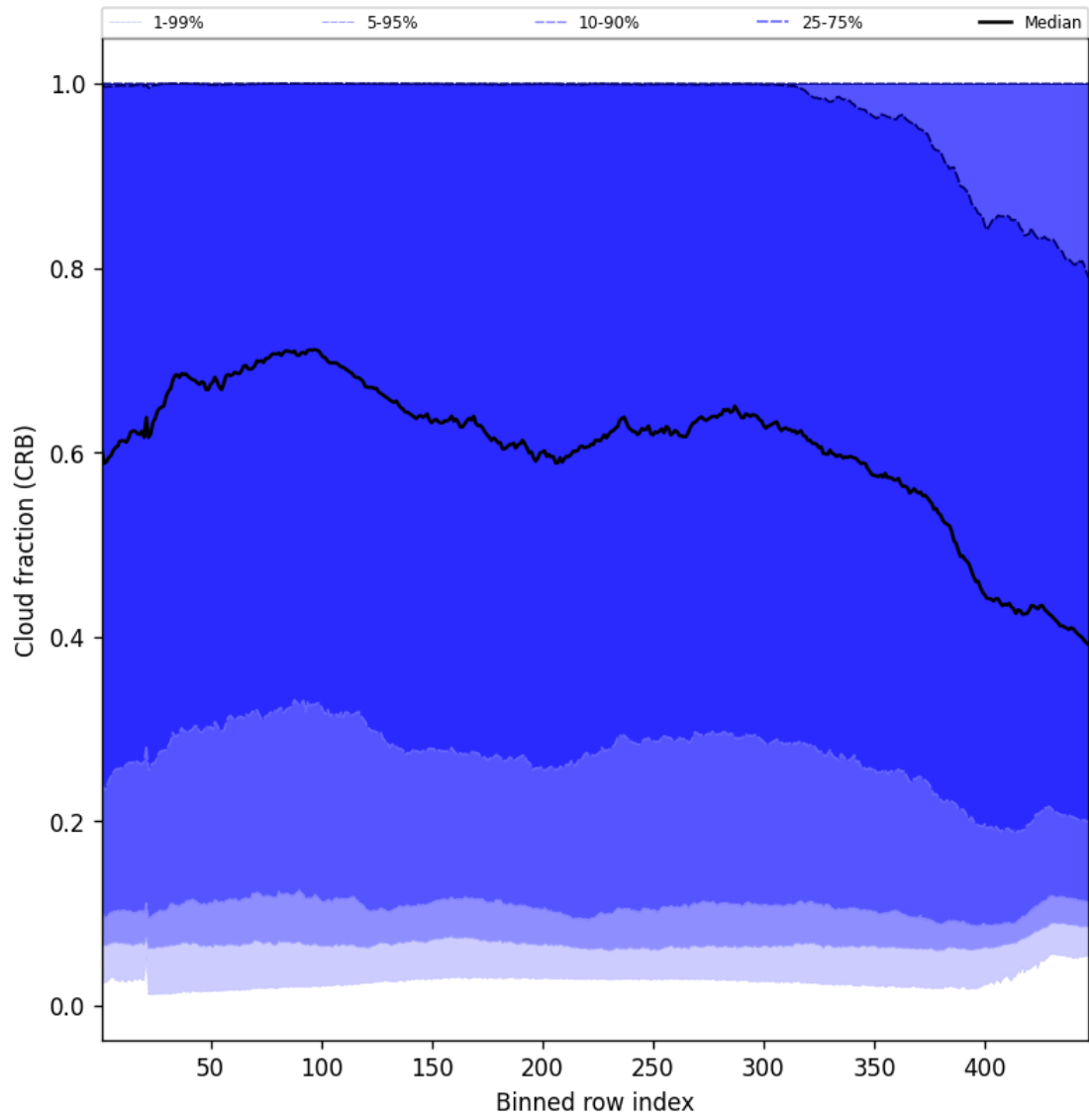


Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2025-06-19 to 2025-06-20

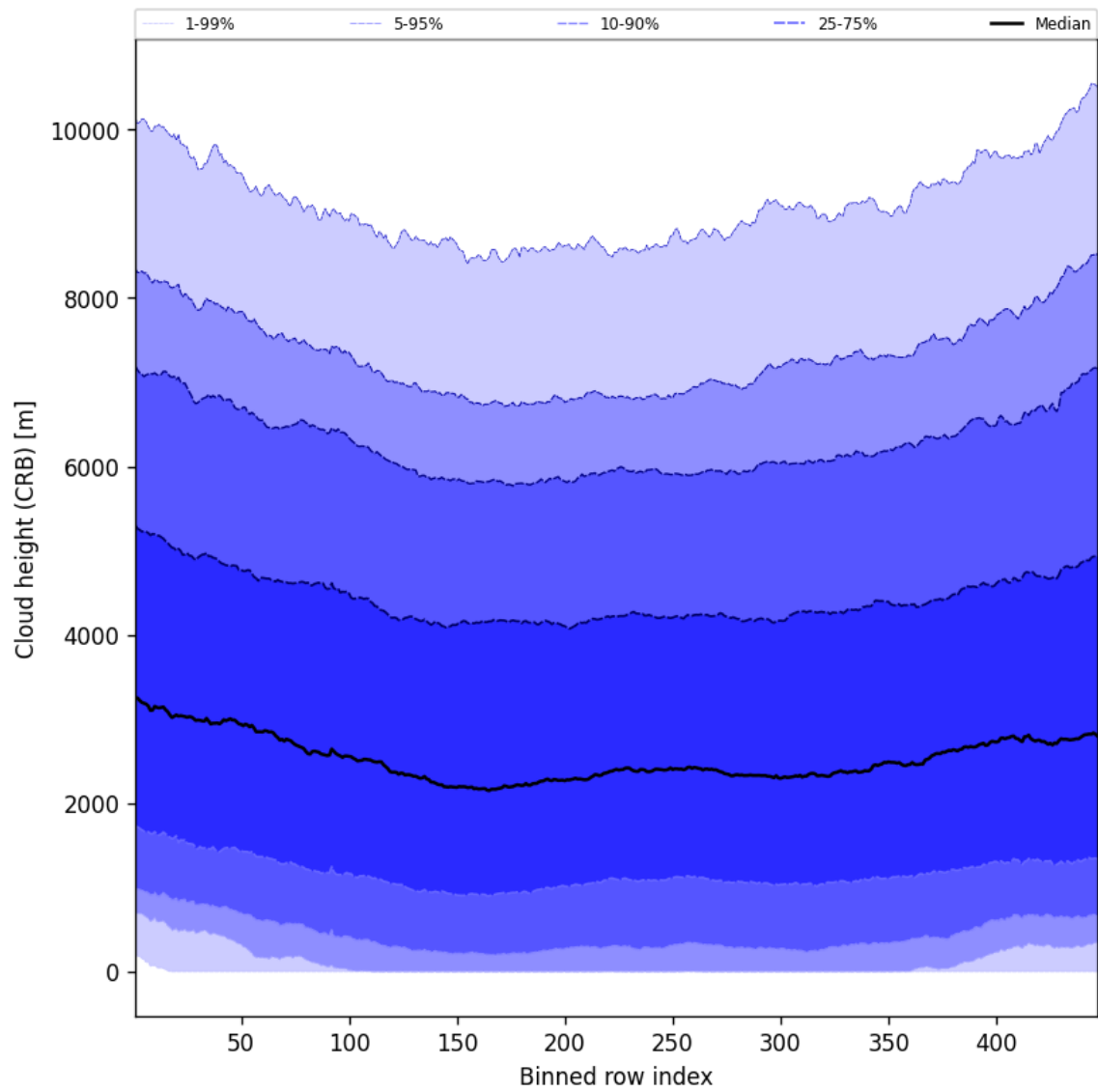


Figure 57: Along track statistics of “Cloud height (CRB)” for 2025-06-19 to 2025-06-20

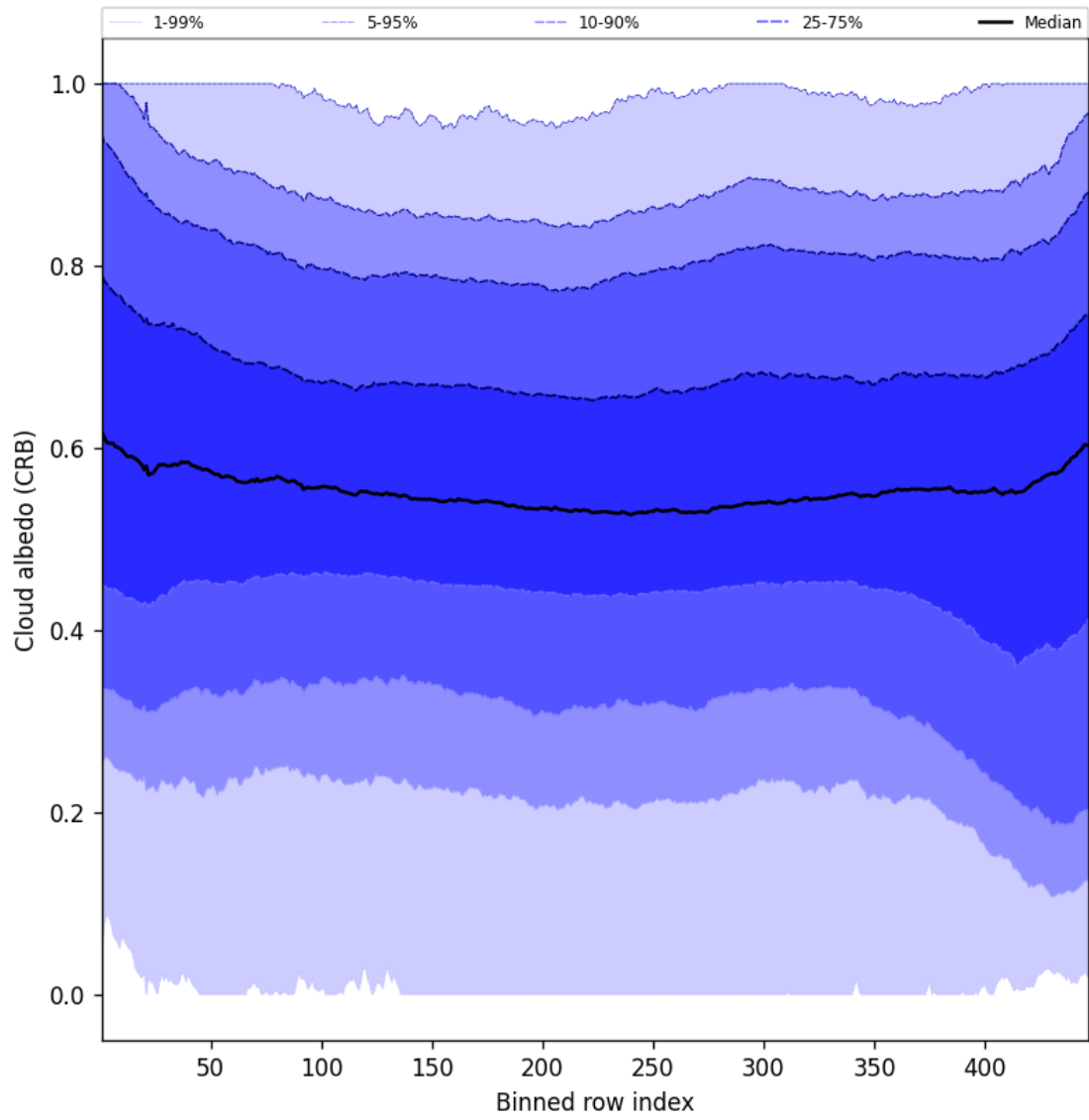


Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2025-06-19 to 2025-06-20

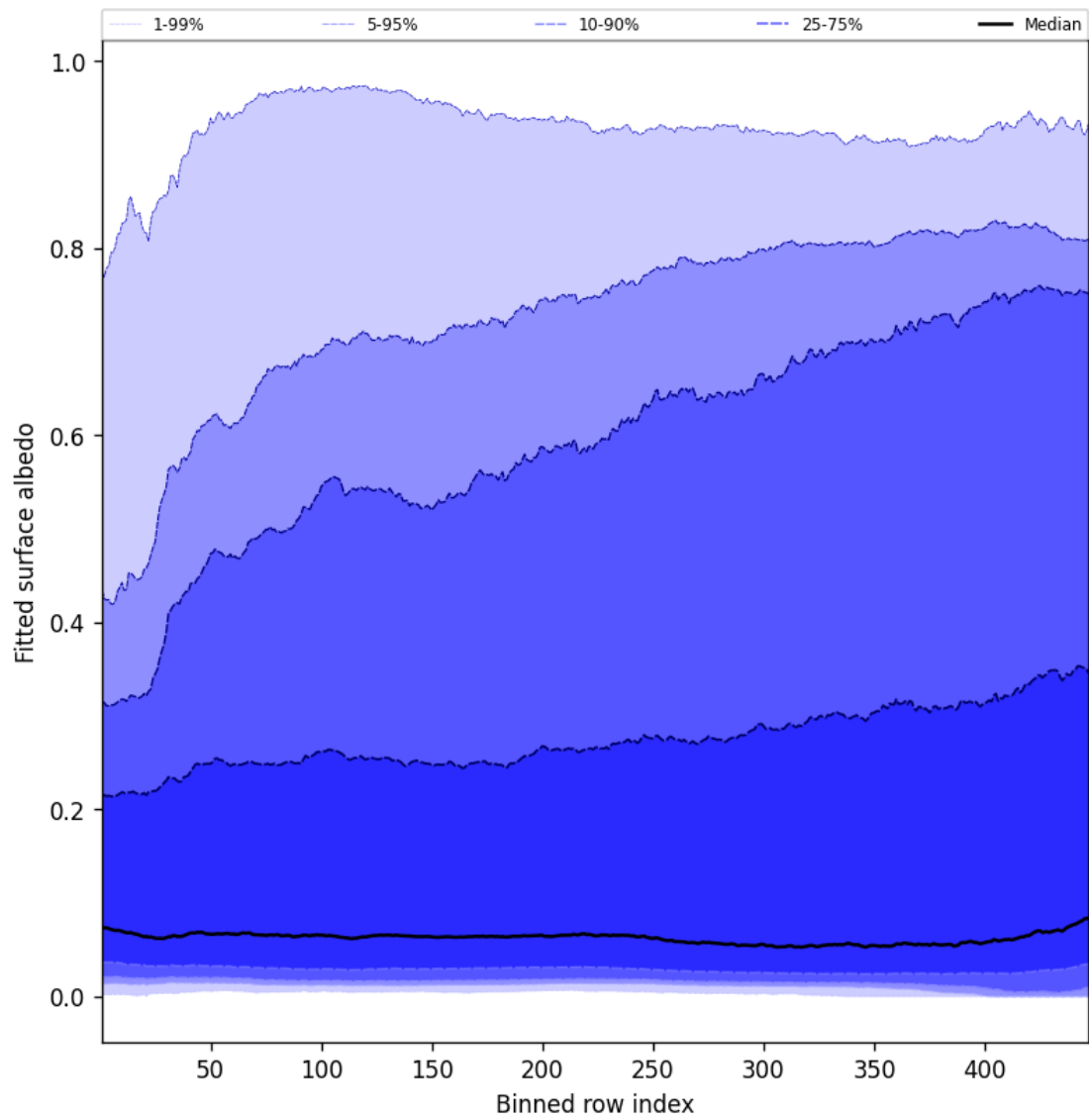


Figure 59: Along track statistics of “Fitted surface albedo” for 2025-06-19 to 2025-06-20

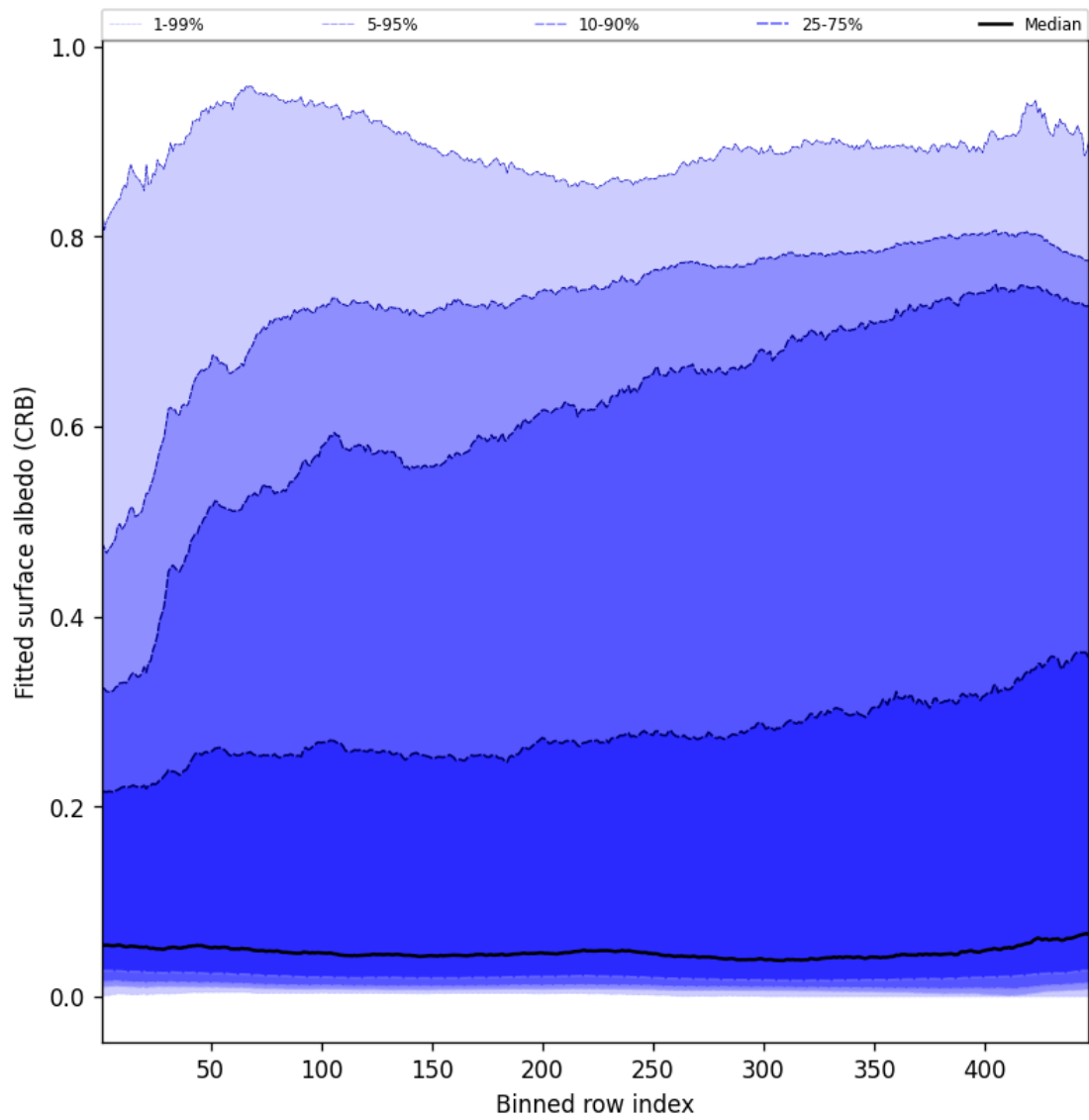


Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2025-06-19 to 2025-06-20

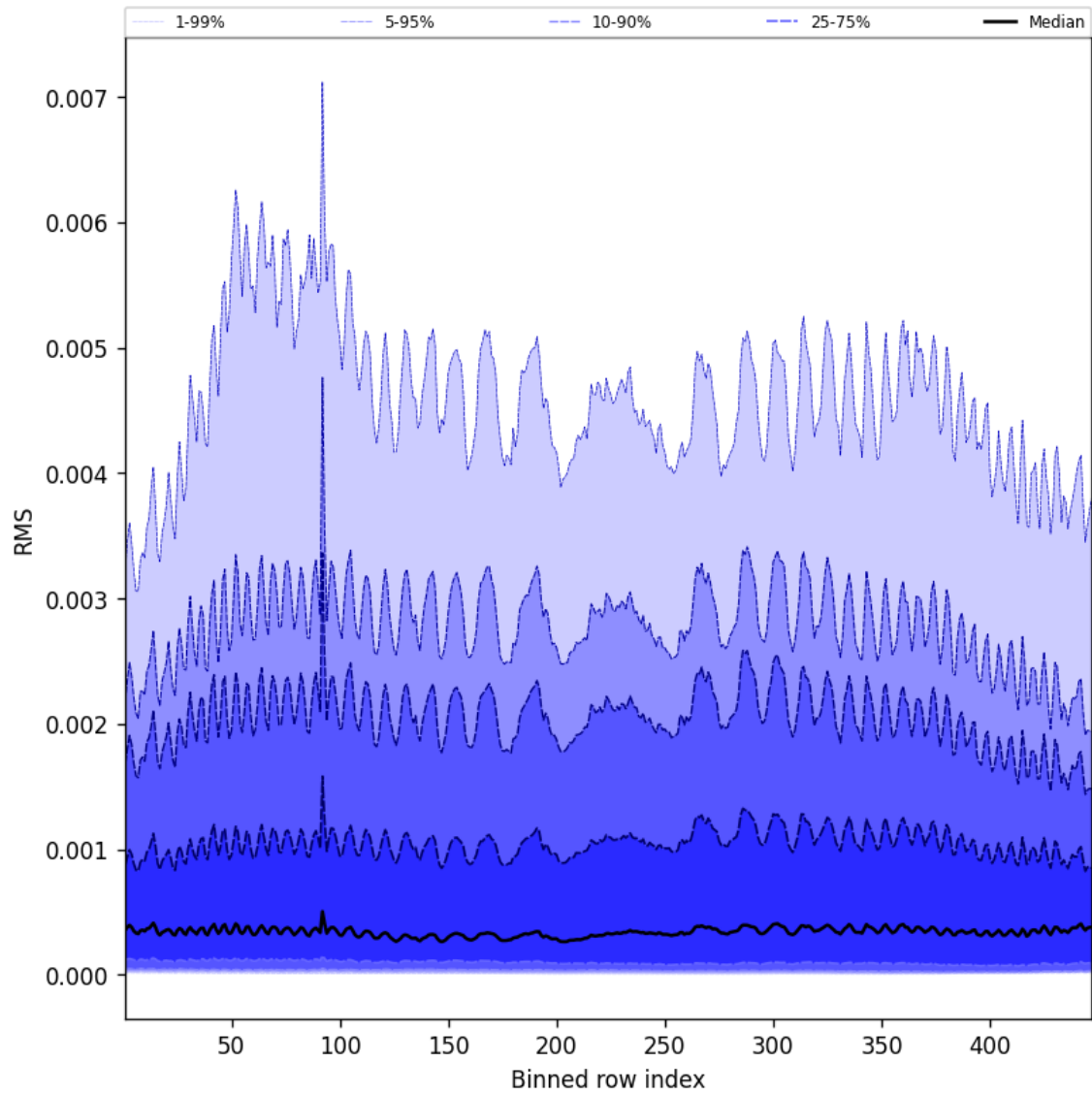


Figure 61: Along track statistics of “RMS” for 2025-06-19 to 2025-06-20

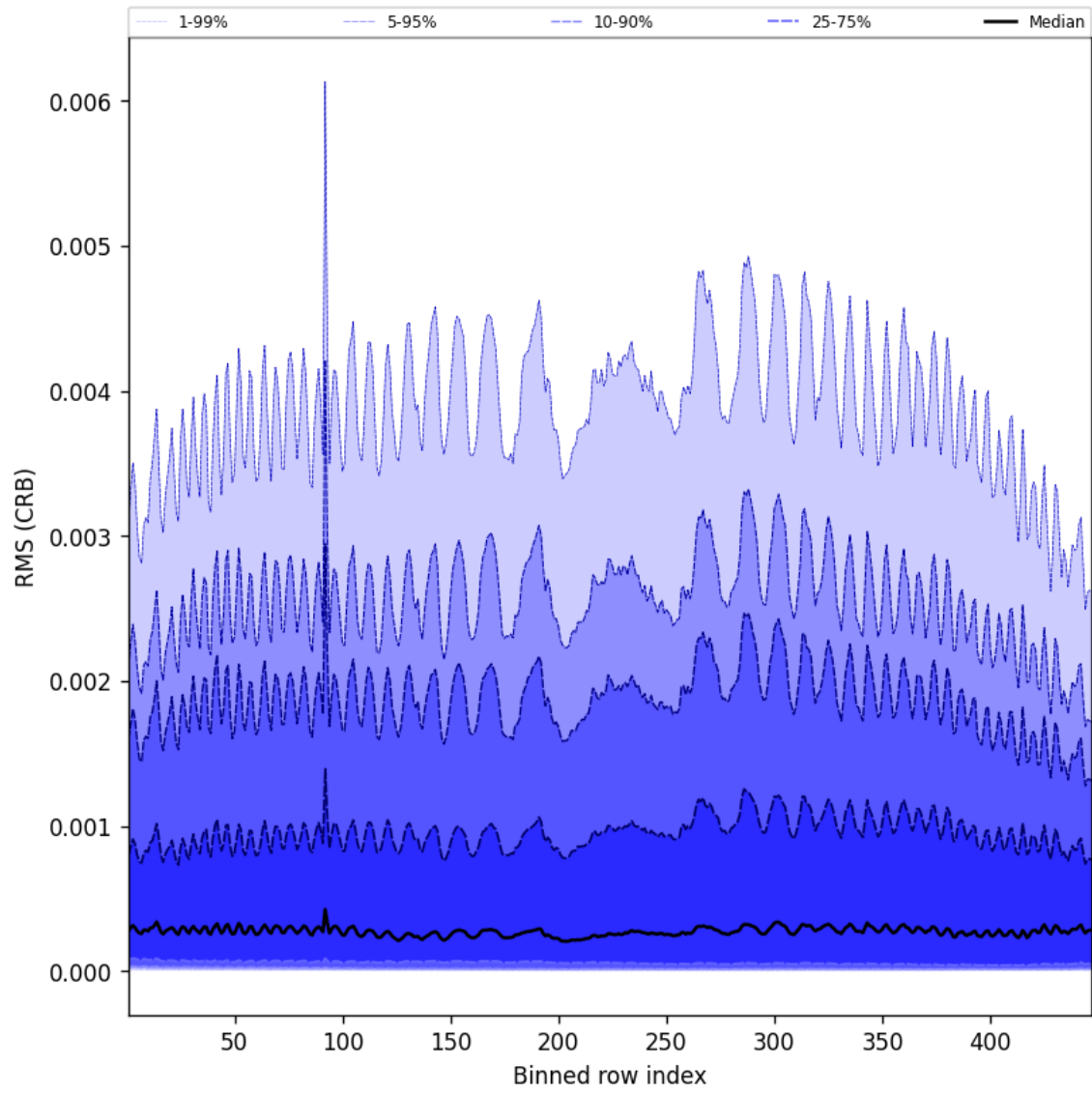


Figure 62: Along track statistics of “RMS (CRB)” for 2025-06-19 to 2025-06-20

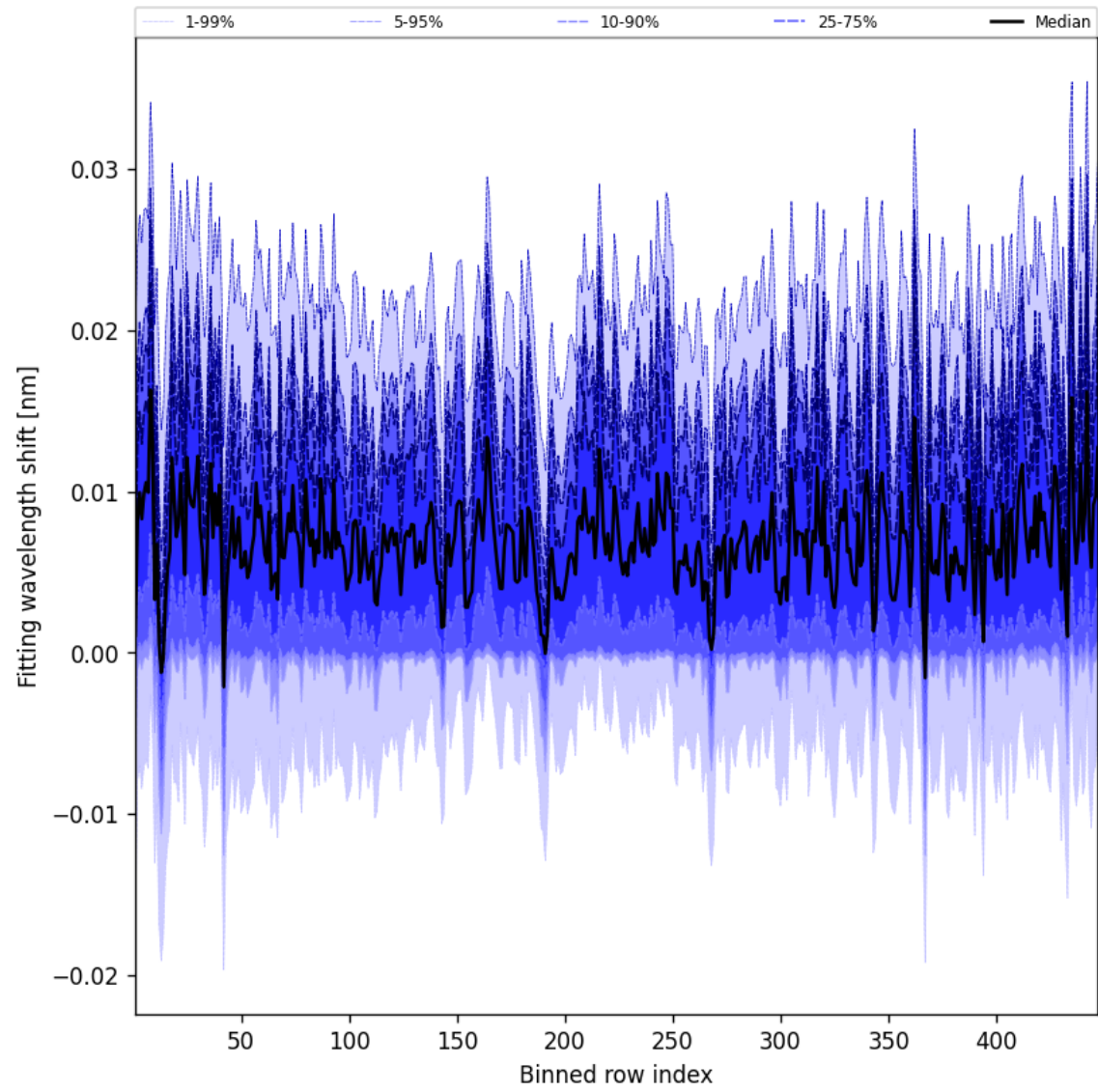


Figure 63: Along track statistics of “Fitting wavelength shift” for 2025-06-19 to 2025-06-20

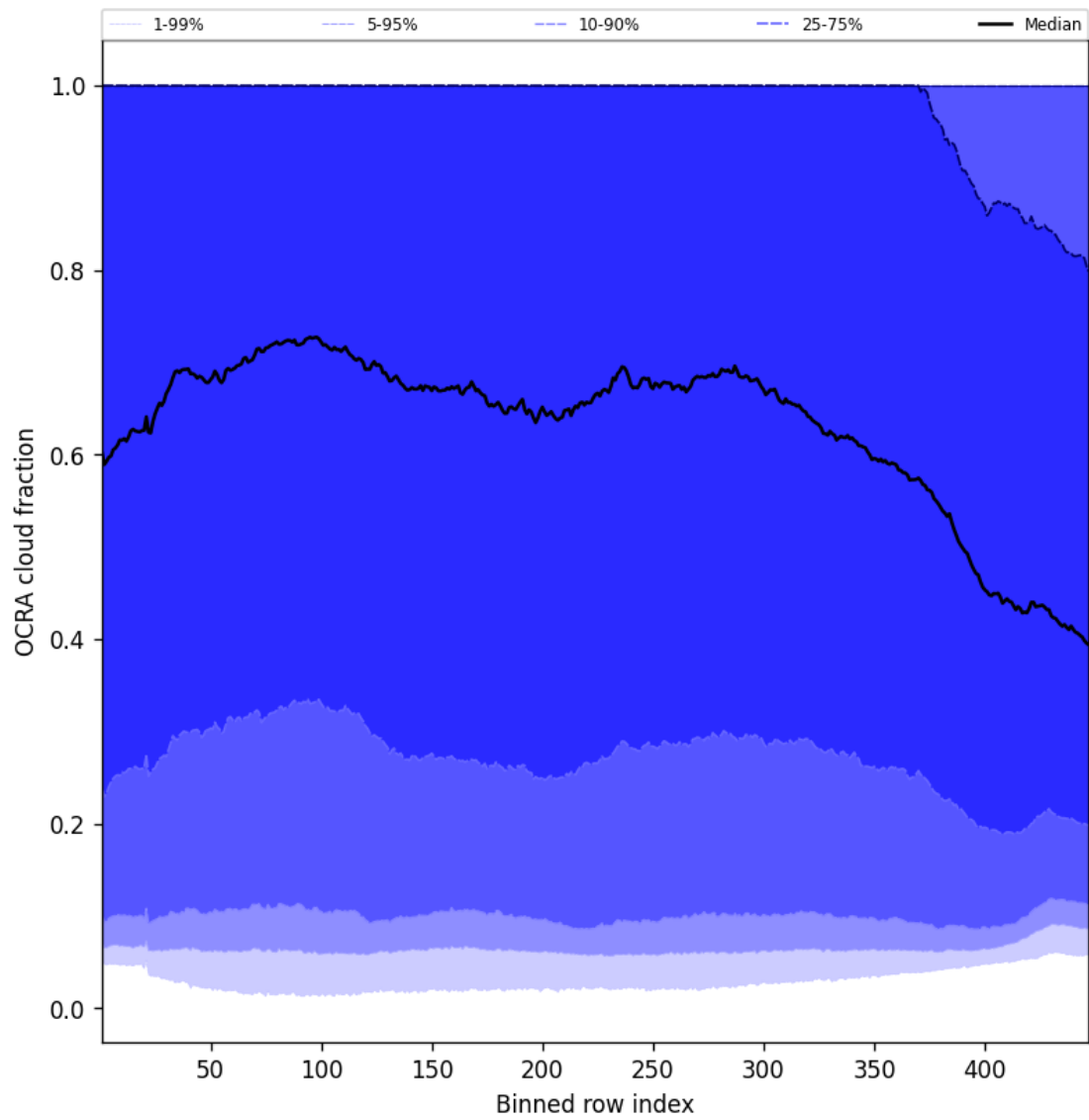


Figure 64: Along track statistics of “OCRA cloud fraction” for 2025-06-19 to 2025-06-20

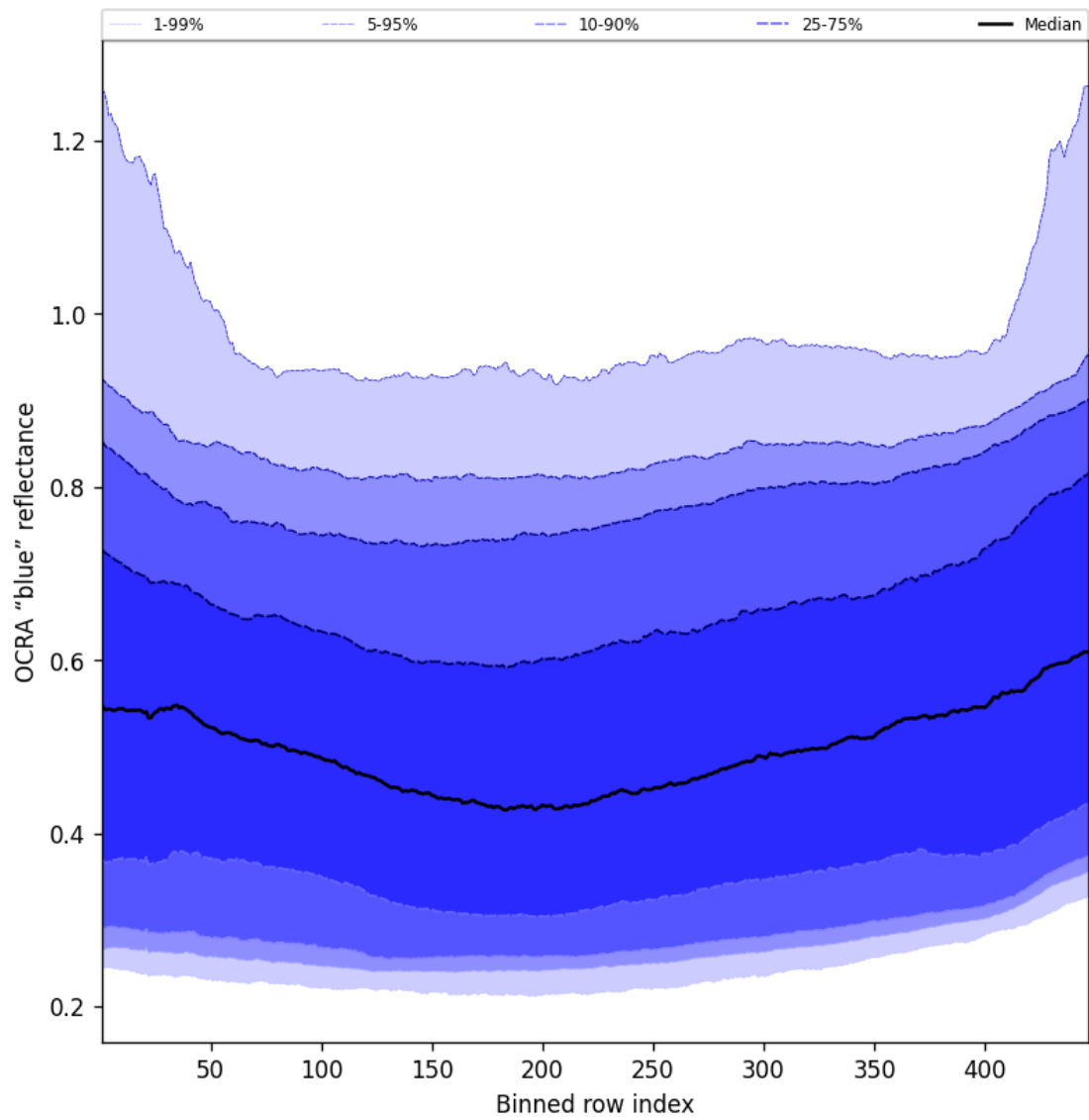


Figure 65: Along track statistics of “OCRA “blue” reflectance” for 2025-06-19 to 2025-06-20

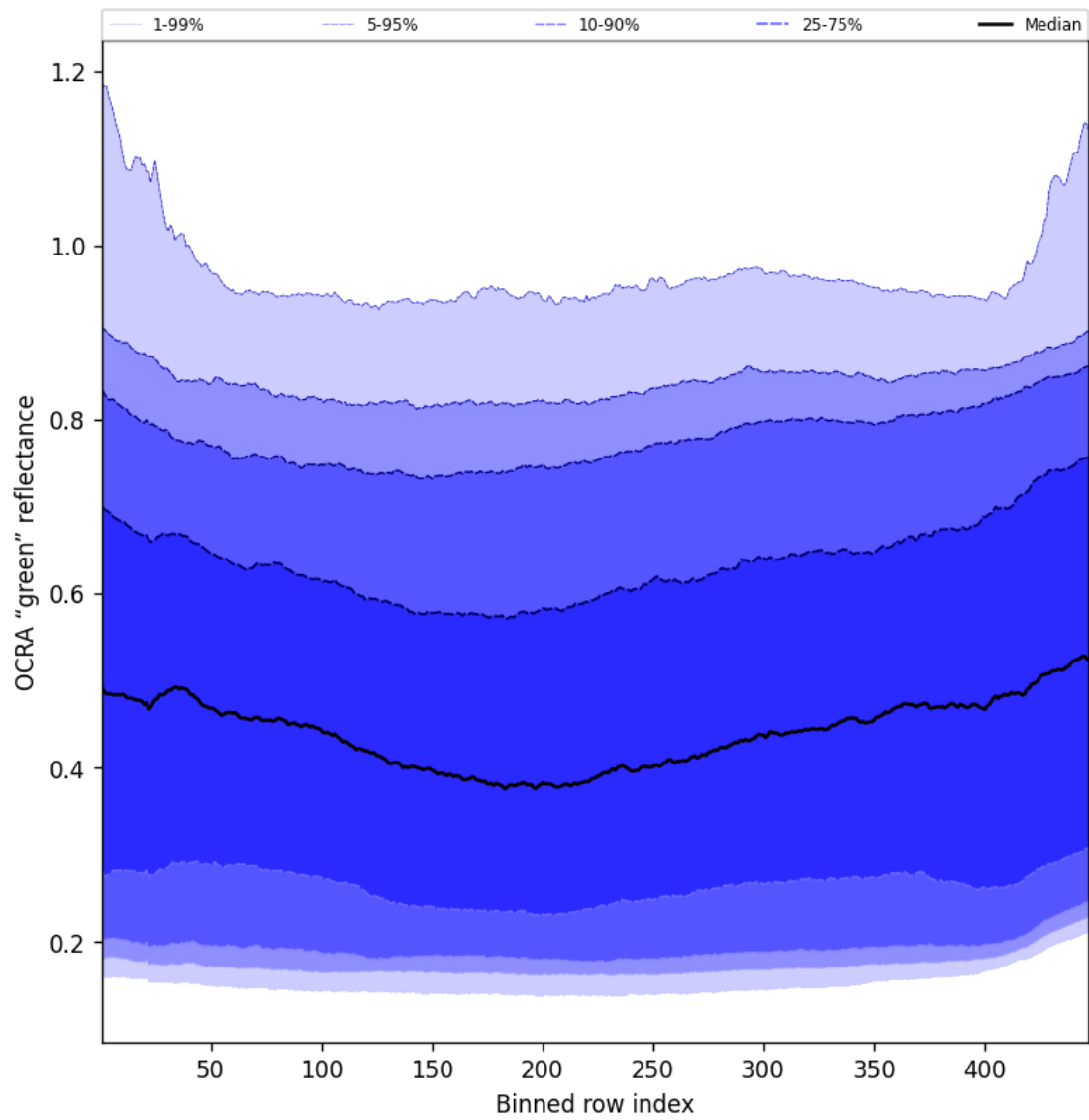


Figure 66: Along track statistics of “OCRA “green” reflectance” for 2025-06-19 to 2025-06-20

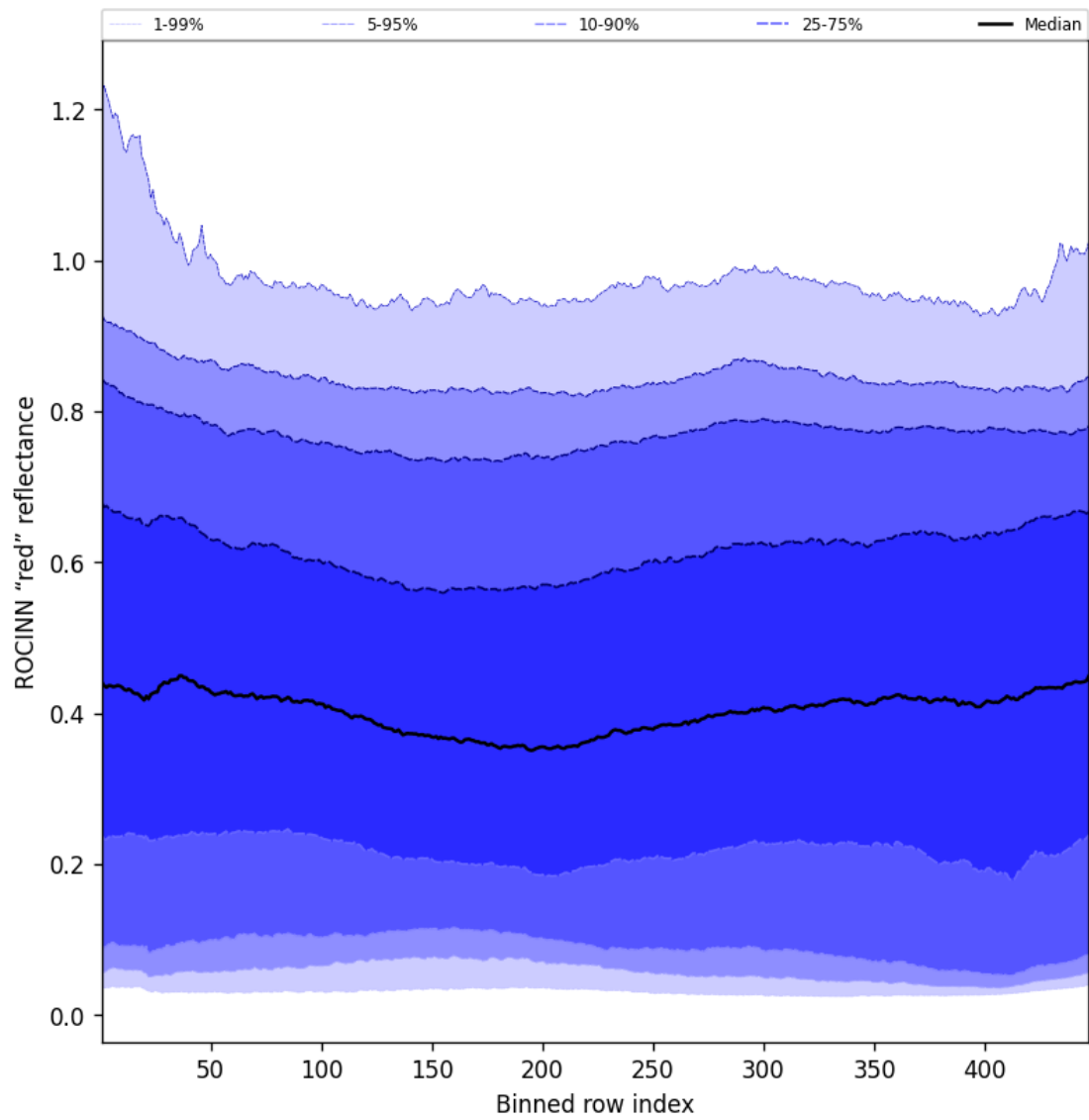


Figure 67: Along track statistics of "ROCINN "red" reflectance" for 2025-06-19 to 2025-06-20

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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