Protocol of the solar UV intercomparison at INTA, El Arenosillo, Spain from September 4 to September 14, 2023, with the travelling reference spectroradiometer QASUME from PMOD/WRC

Report prepared by Gregor Hülsen

Operator: Franz Zeilinger

The purpose of the visit was the comparison of spectral global solar irradiance measurements between the 16 spectrophotometers participating at the 18th Regional Brewer Calibration Center – Europe (RBCC-E) Campaign and the travel reference spectroradiometer QASUME. The measurement site is located at El Arenosillo; Latitude 37.10 N, Longitude 6.73 W and altitude 50 m a.s.l.
The horizon of the measurement site is free down to at least 85° solar zenith angle (SZA). Measurements between 6:00 UT and 19:00 UT have been analysed.

QASUME arrived at INTA in the evening of September 5, 2023. The spectroradiometer was installed in line to the Brewer spectrophotometers with the entrance optic of QASUME between 2 and 20 m away from the other instruments. The measurement campaign lasted nine days, from morning of September 6 to the afternoon of September 14.

QASUME was calibrated several times during the intercomparison period using a portable calibration system. Three lamps (T16573, T61251 and T68523) were used to obtain an absolute spectral irradiance calibration traceable to the primary reference held at PMOD/WRC, which is traceable to PTB. The daily mean responsivity of the instrument based on these calibrations varied by less than 1 % during the intercomparison period.
The wavelength shifts relative to the QASUMEFTS (Gröbner et al., 2017) spectrum as retrieved from the MatSHIC analysis were between ±50 pm in the spectral range 290 to 400 nm.

Table 1: Participating Brewer spectrophotometers; 6 single and 8 double monochromators.

Instrument ID	Institution	Operator	Country
#017-MKII	IOS	Volodia Savastiok	Canada
#033-MKIV	AEMET Santa Cruz	Jose Maria San Atanasio	Spain
#070-MKIV	AEMET Coruna	Jose Maria San Atanasio	Spain
#075-MKIV	UKMO	John Rimmer	U.K.
#117-MKIV	INM MURCIA	Jose Maria San Atanasio	Spain
#126-MKII	UKMO	John Rimmer	U.K.
#150-MKIII	INTA HUELVA	Jose Manuel Vilaplana	Spain
#151-MKIV	AEMET Madrid	Jose Maria San Atanasio	Spain
#158-MKIII	Kipp & Zonen	Pavel Babal	The Netherland
#166-MKIV	AEMET Zargoza	Jose Maria San Atanasio	Spain
#172-MKIII	UKMO	John Rimmer	U.K.
#185-MKIII (IZ3)	AEMET IZAÑA	Alberto Redondas	Spain
#186-MKIII	AEMET Madrid	Jose Maria San Atanasio	Spain
#202-MKIII	DNK	Nils	Denmark
#228-MKIII	DNK	Nils	Denmark
#256-MKIII	AEMET IZAÑA	Alberto Redondas	Spain

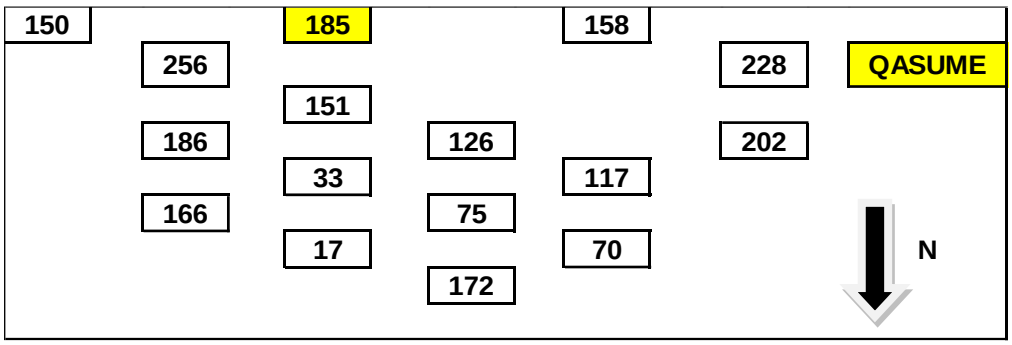


Figure 1: Roof setup at INTA

Protocol:

The measurement protocol was to measure one solar irradiance spectrum every 30 minutes from 290 to 400 nm, every 0.5 nm, and 3 seconds between each wavelength increment. The official UV days were scheduled from 11 to 14 September. However, UV scans were performed throughout the campaign.

DOY	Date	DAY	Weather	Comment (time in UT)
248	5-Sep	Tuesday	Mix of sun & clouds	Installed at 16:30
249	6-Sep	Wednesday	Mix of sun & cirrus	Calibrated: 14:40 using T68523
250	7-Sep	Thursday	Mostly diffuse sky	Calibrated: 09:43 using T68523
251	8-Sep	Friday	Clear sky (morning)	Calibrated: 11:13 using T68523
			Cirrus (afternoon)	Calibrated: 11:43 using T16573
252	9-Sep	Saturday	Diffuse sky (morning)	Calibrated: 09:43 using T68523
			Mix of sun & clouds	Calibrated: 14:37 using T68523
253	10-Sep	Sunday	Clear sky with	Calibrated: 09:13 using T68523
			few cumulus clouds	Calibrated: 09:42 using T16573
254	11-Sep	Monday	Clear sky with	Calibrated: 09:43 using T68523
			few cumulus clouds	
255	12-Sep	Tuesday	Clear sky with few	Calibrated: 10:43 using T68523
			clouds (@horizon)	Calibrated: 11:12 using T61251
256	13-Sep	Wednesday	Clear sky	Calibrated: 10:43 using T68523
257	14-Sep	Thursday	Clear sky with few	Calibrated: 10:43 using T68523
			clouds in the afternoon	Calibrated: 11:21 using T16573
				End of Campaign 15:15

Results:

Up to 62 synchronised simultaneous spectra from QASUME and the Brewer spectrophotometers are available from the measurement period. Measurements between 6:30 and 18:00 UT have been analysed (SZA smaller than 90°) using matSHIC.

Remarks:

The comparison between the Brewers and QASUME was very successful, and consistent with the results obtained in previous visits (see Figure 2-X of the Annex).
No UV data is available for Brewer 017.

Data Processing:

- The data from Brewers 33, 70, 117, 150, 151 and 166 were processed by the responsible operator.
- The data from Brewers 75, 126, 172, 202 and 228 were processed with Eubrewnet Level 1.5 or 1.6. In addition, all data processed by the operator are also available in this section.
- The data from Brewers 158, 185, 186 and 256 were processed with Eubrewnet Level 2 (cosine correction).

More information can be found here:
https://eubrewnet.aemet.es/dokuwiki/doku.php?id=codes:uvaccess

https://eubrewnet.aemet.es/dokuwiki/doku.php?id=codes:uvaccess#process_uvl1

https://eubrewnet.aemet.es/dokuwiki/doku.php?id=codes:uvaccess#uv_corrections_flag

https://drive.google.com/file/d/1RitZadF38CQhpnoA3vFugaHFSlaDys4p/view?usp=sharing

https://drive.google.com/file/d/1ZaLHi5eGPvdadnCkE84Idp8_5V1I1B4Z/view?usp=sharing

Conclusion:

The angular response correction was applied to the solar UV spectra of 4 Brewer and show a considerably improvement to the comparison to QASUME. Remaining uncertainties are the stray-light for single monochromator brewers and the temperature dependence.

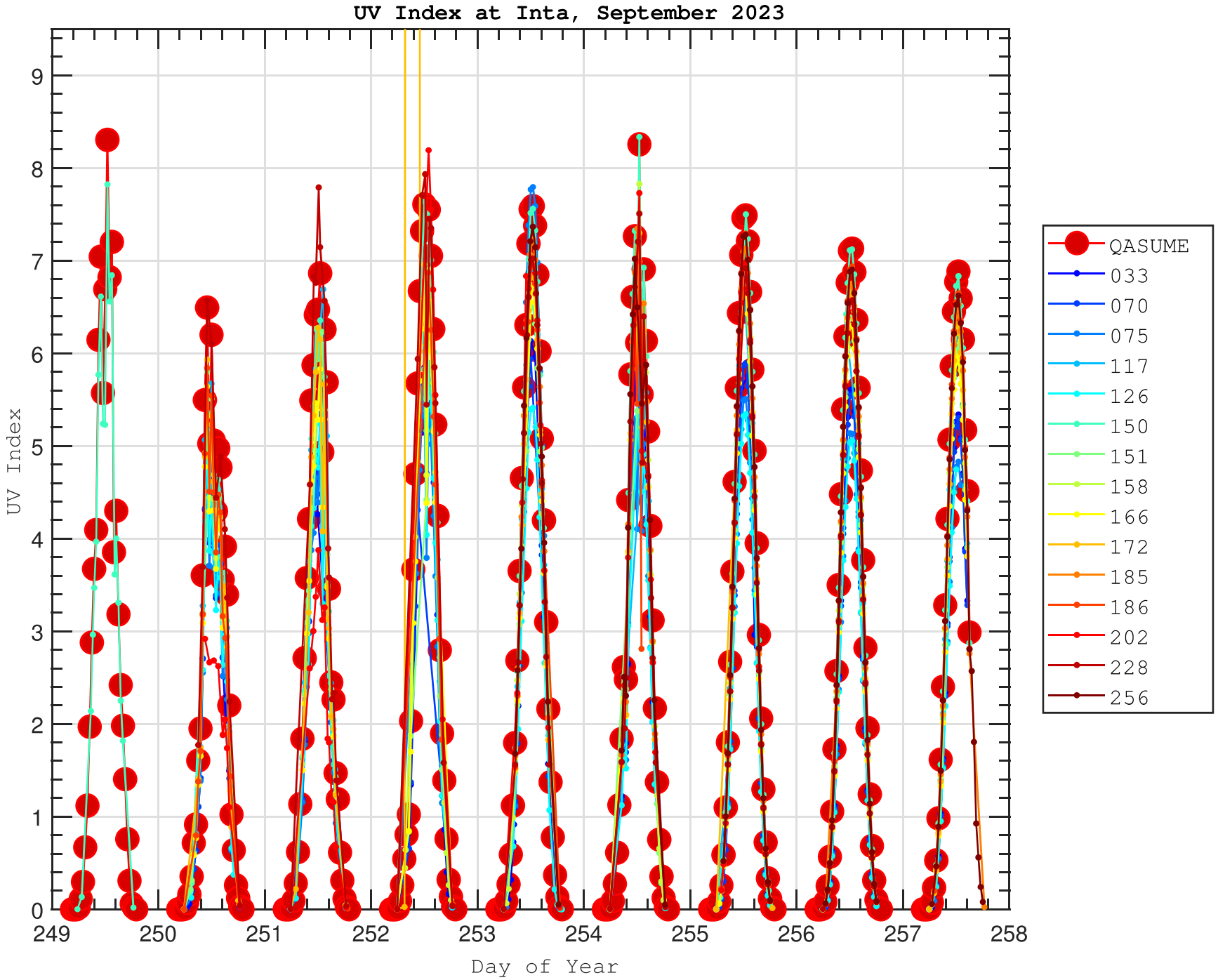
The data processed by the operators and Eubrewnet Level 1.6 are identical.

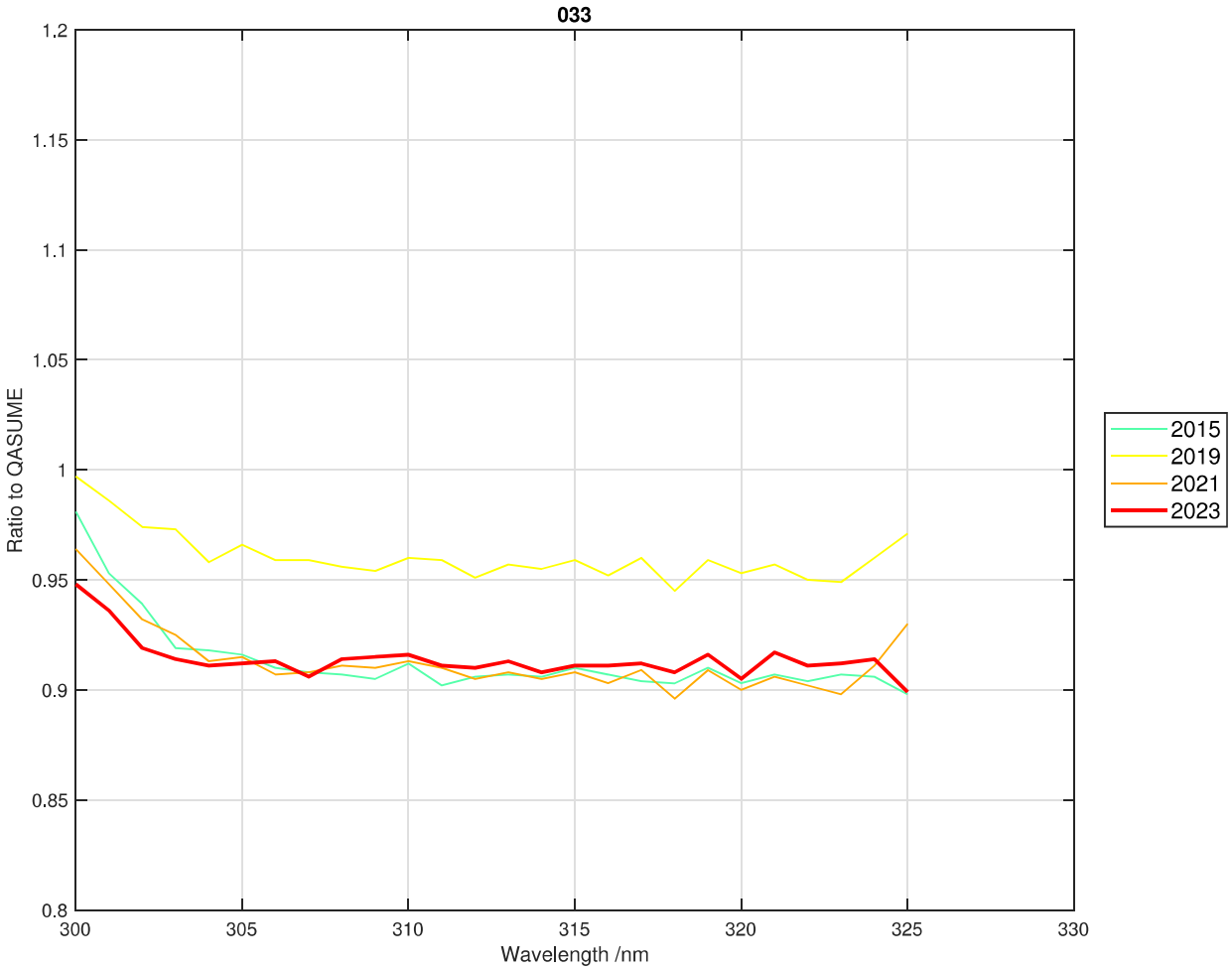
References:

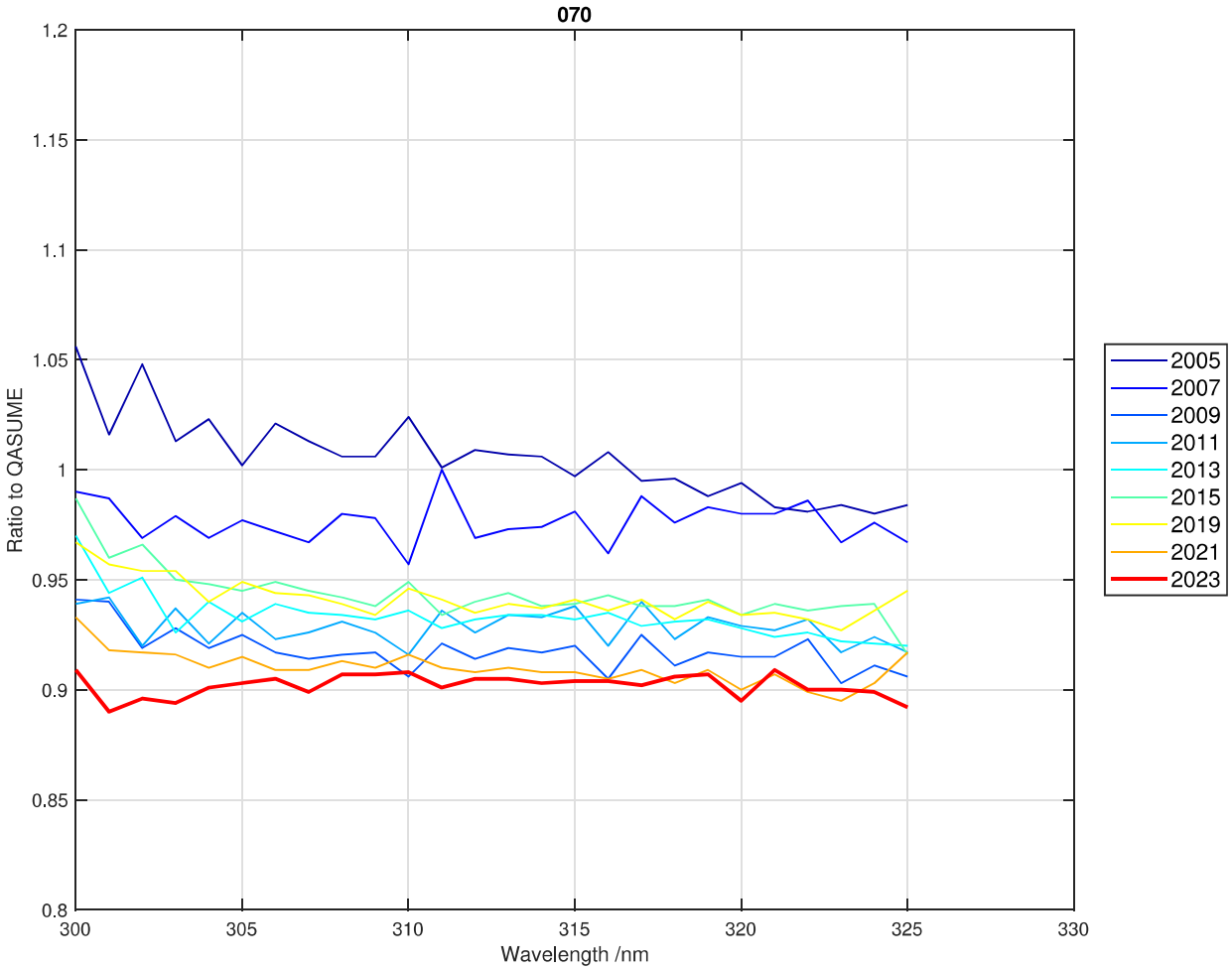
Gröbner, J., Kröger, I., Egli, L., Hülsen, G., Riechelmann, S., and Sperfeld, P.: The high-resolution extraterrestrial solar spectrum (QASUMEFTS) determined from ground-based solar irradiance measurements, Atmos. Meas. Tech., 10, 3375-3383, https://doi.org/10.5194/amt-10-3375-2017, 2017.

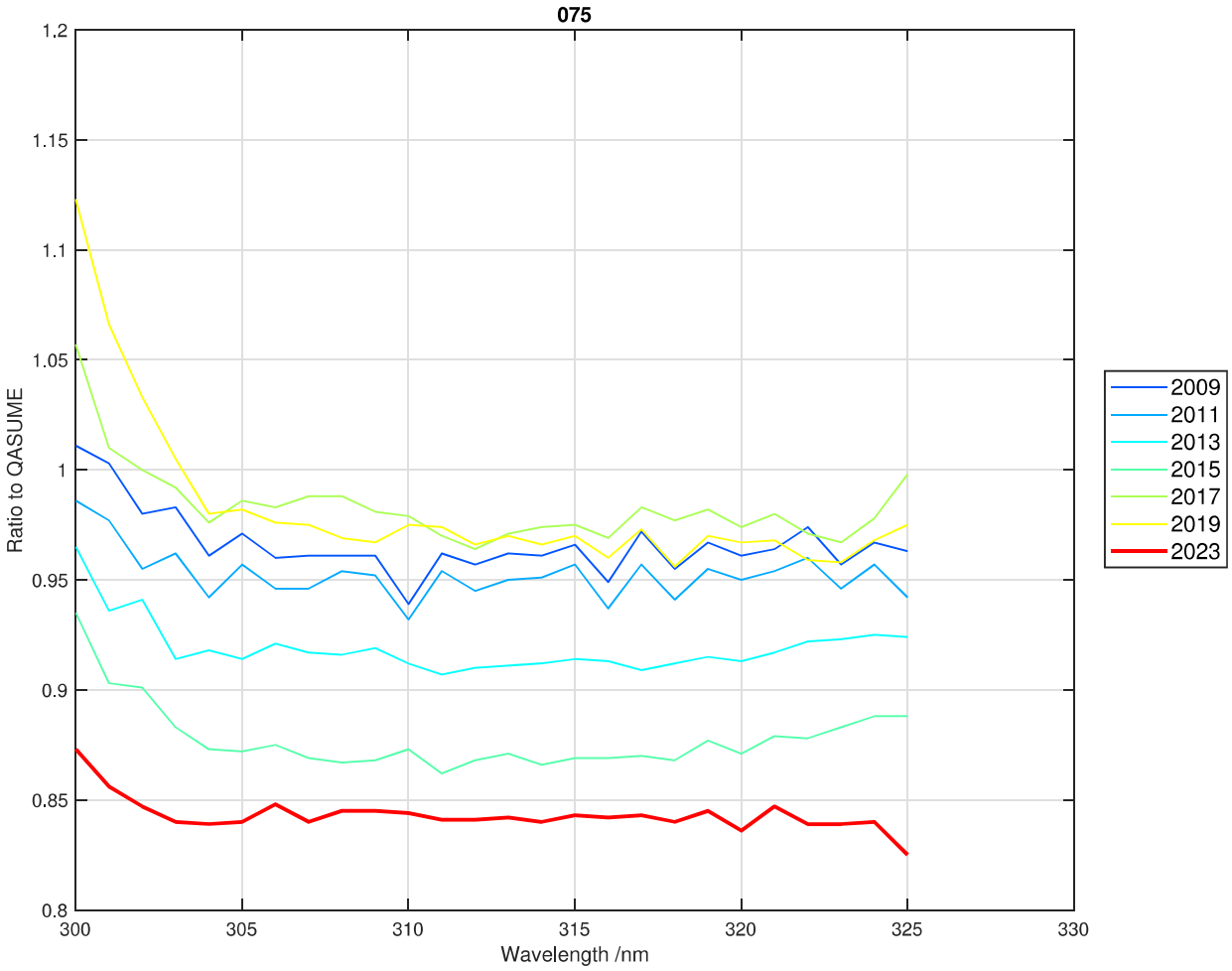
Appendix

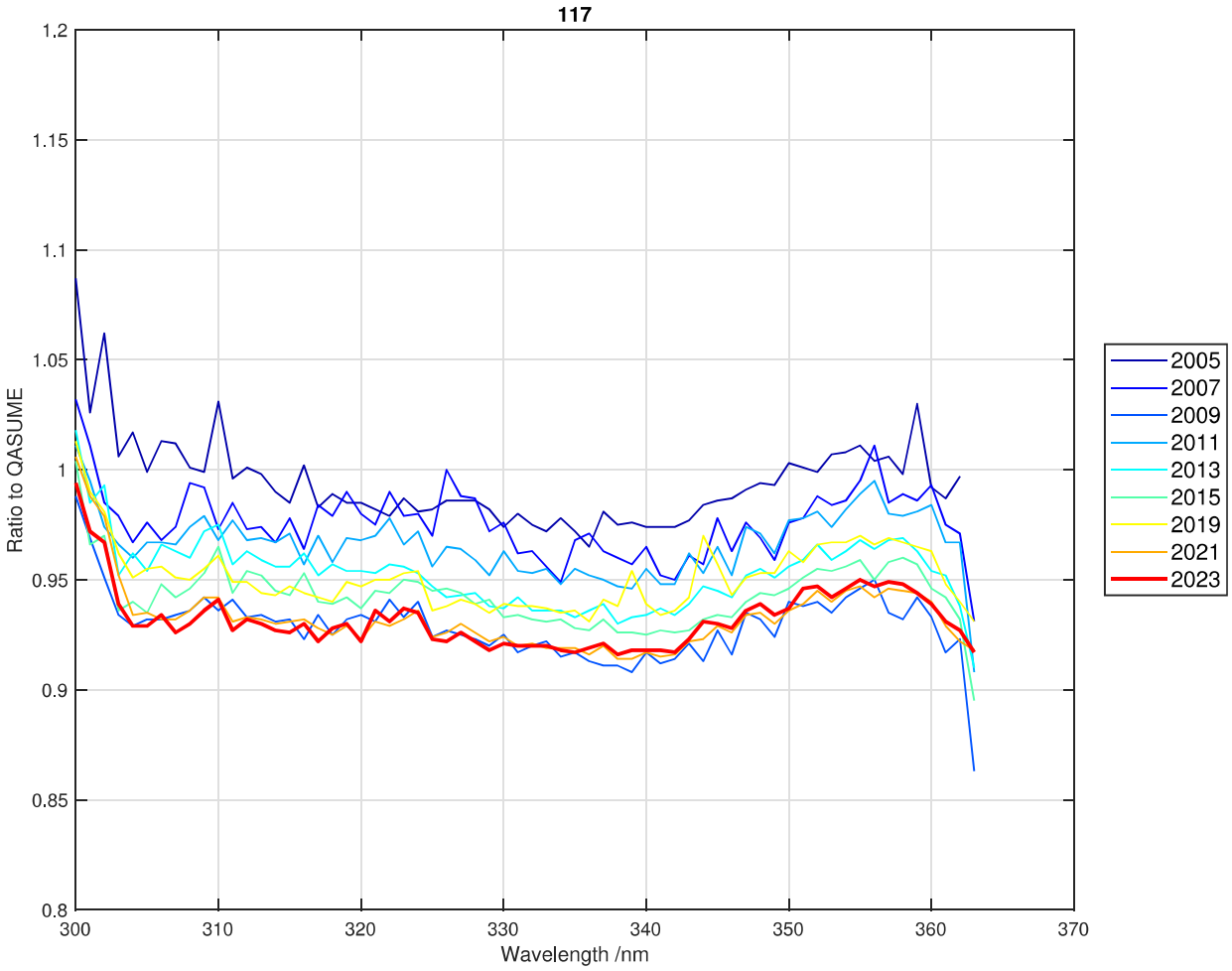
Detailed results for all Brewer spectrophotometers with respect to the reference spectroradiometer QASUME

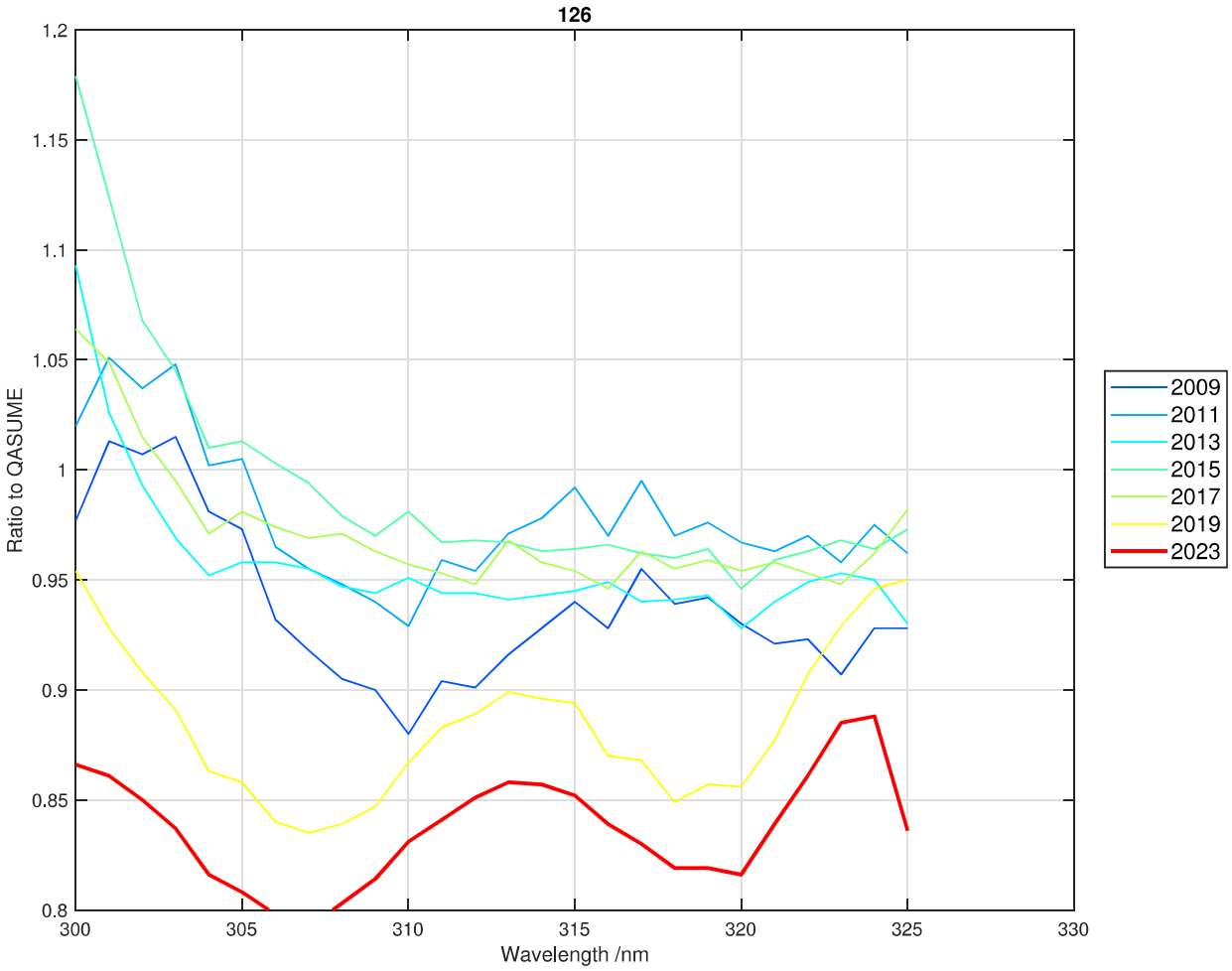

UV Index at Inta, September 2023
UV Index
Day of Year
0
1
2
3
4
5
6
7
8
9
249
250
251
252
253
254
255
256
257
258
QASUME
033
070
075
117
126
150
151
158
166
172
185
186
202
228
256


033
Ratio to QASUME
Wavelength /nm
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
300
305
310
315
320
325
330
2015
2019
2021
2023


070
Ratio to QASUME
Wavelength /nm
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
300
305
310
315
320
325
330
2005
2007
2009
2011
2013
2015
2019
2021
2023


075
Ratio to QASUME
Wavelength /nm
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
300
305
310
315
320
325
330
2009
2011
2013
2015
2017
2019
2023


117
Ratio to QASUME
Wavelength /nm
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
300
310
320
330
340
350
360
370
2005
2007
2009
2011
2013
2015
2019
2021
2023


126
Ratio to QASUME
Wavelength /nm
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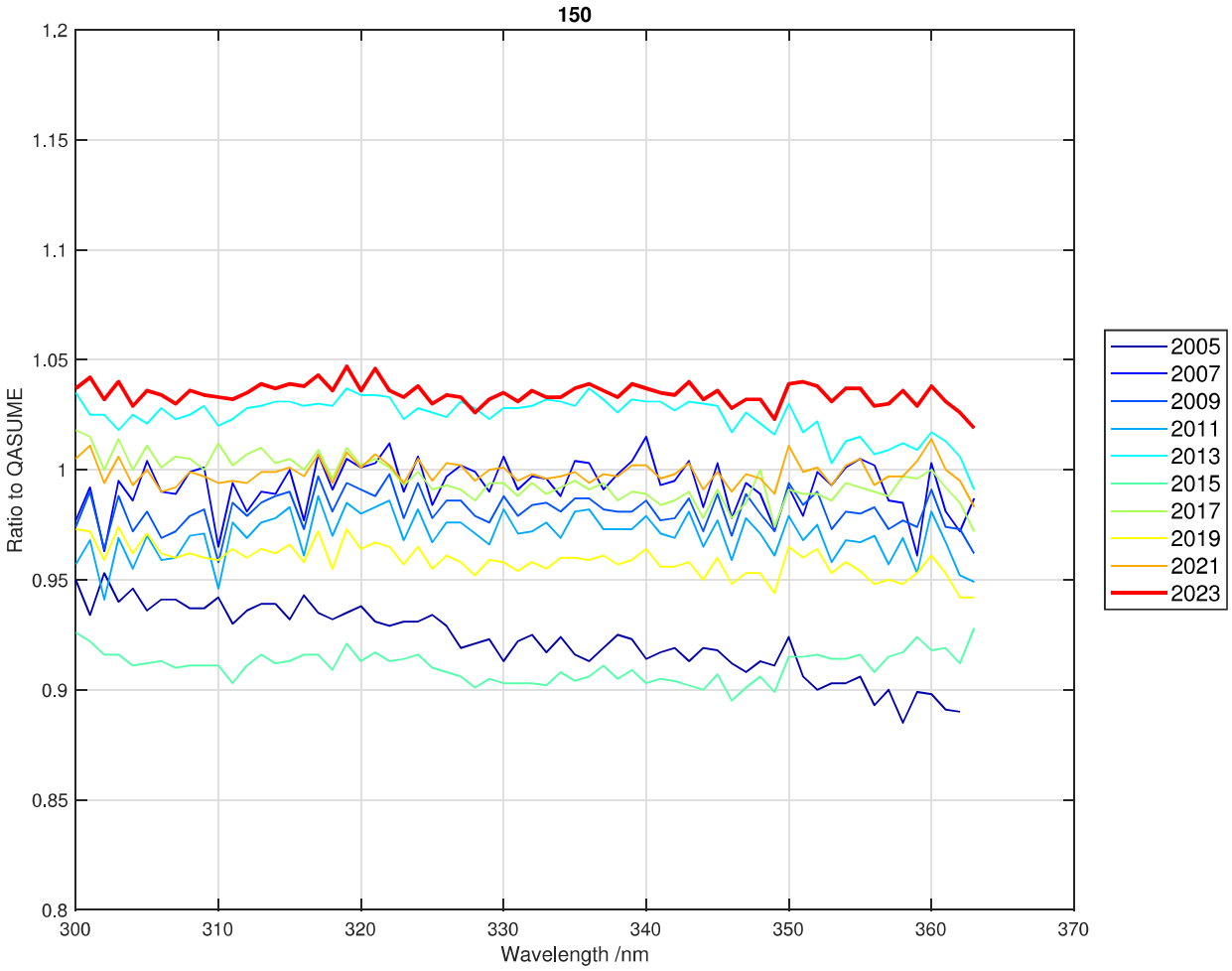
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
300
305
310
315
320
325
330
2009
2011
2013
2015
2017
2019
2023


150
Ratio to QASUME
Wavelength /nm
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
300
310
320
330
340
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370
2005
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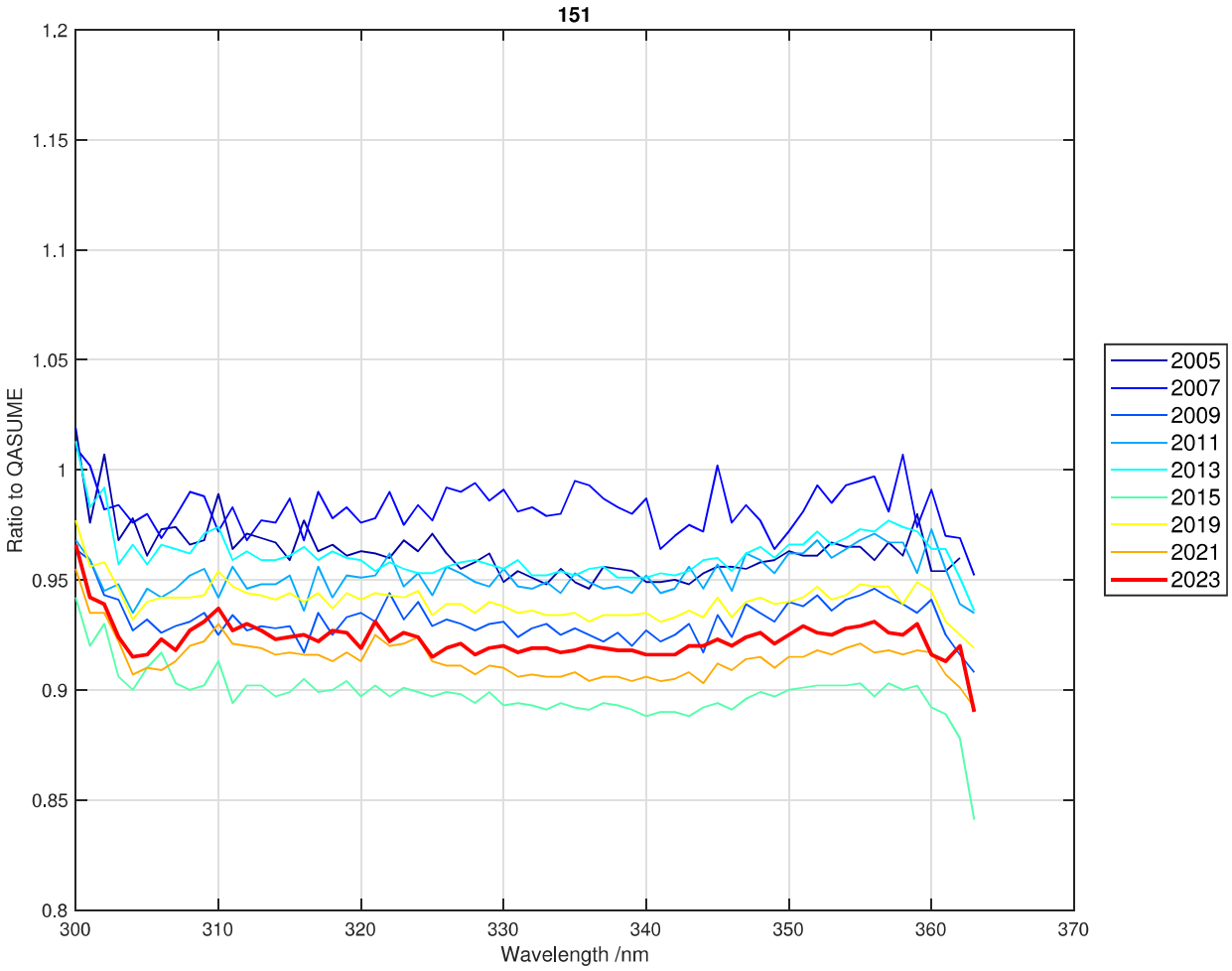
2021
2023


151
Ratio to QASUME
Wavelength /nm
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
300
310
320
330
340
350
360
370
2005
2007
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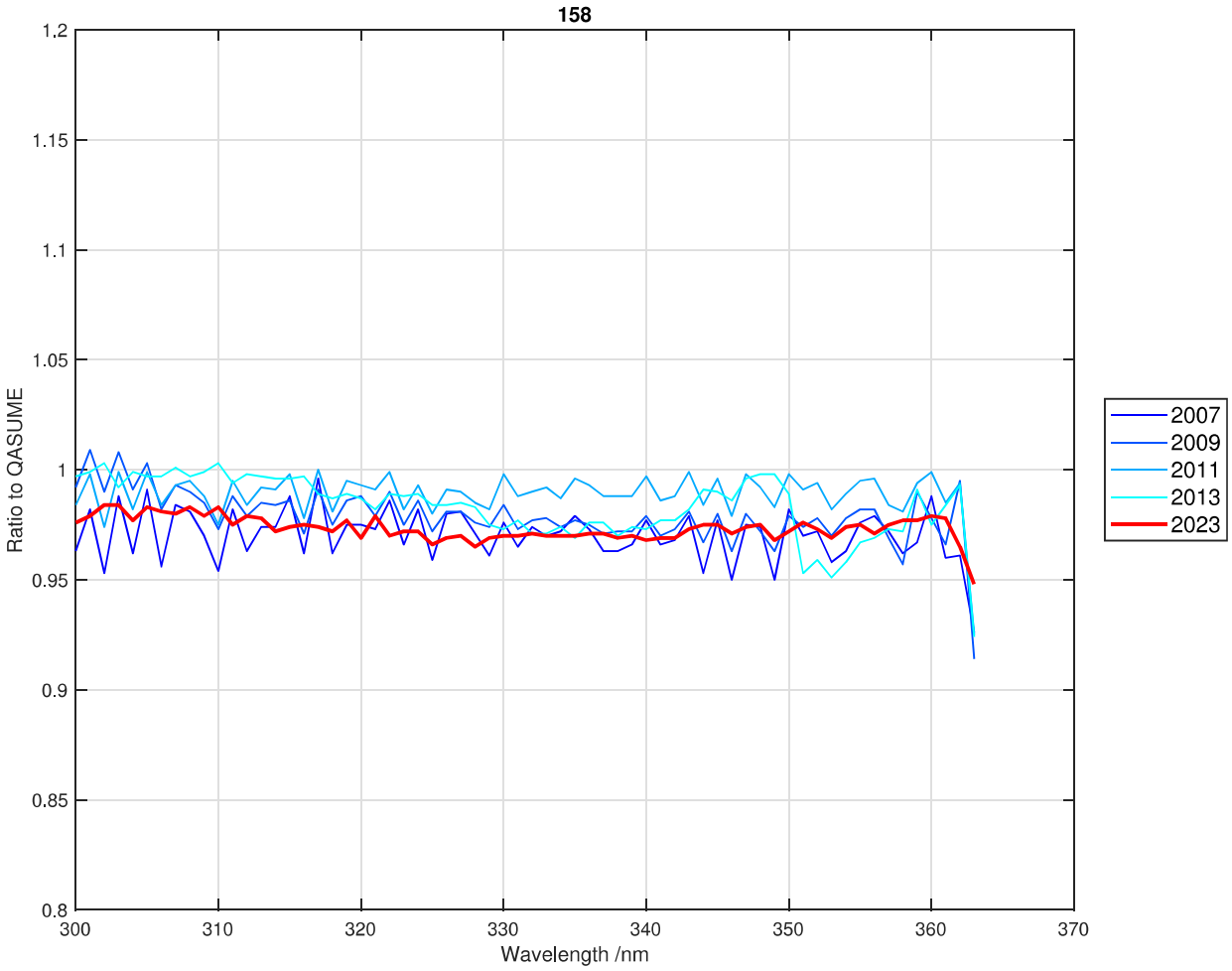
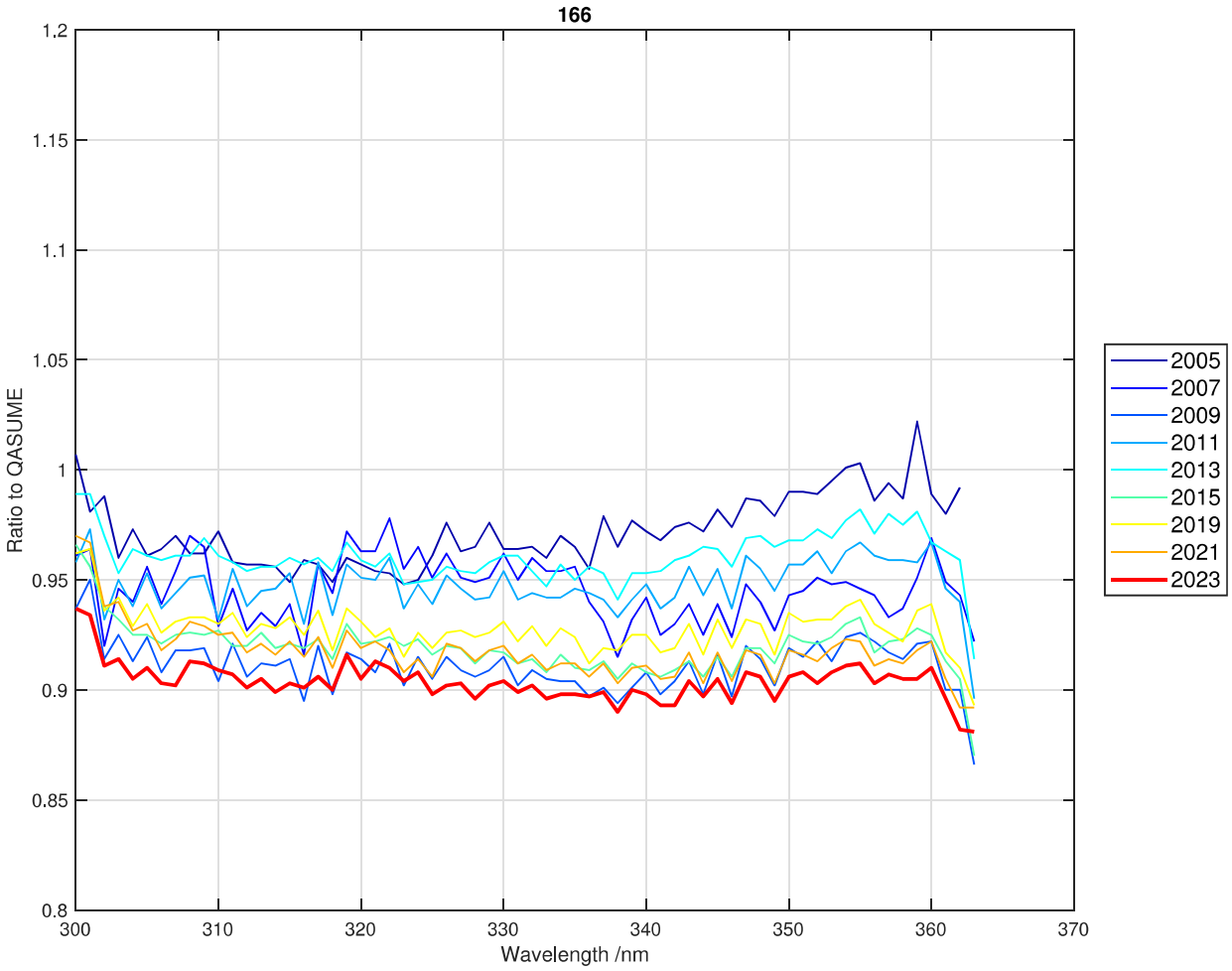
2011
2013
2015
2019
2021
2023


158
Ratio to QASUME
Wavelength /nm
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
300
310
320
330
340
350
360
370
2007
2009
2011
2013
2023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Ratio to QASUME
Wavelength /nm
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1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
300
310
320
330
340
350
360
370
2005
2007
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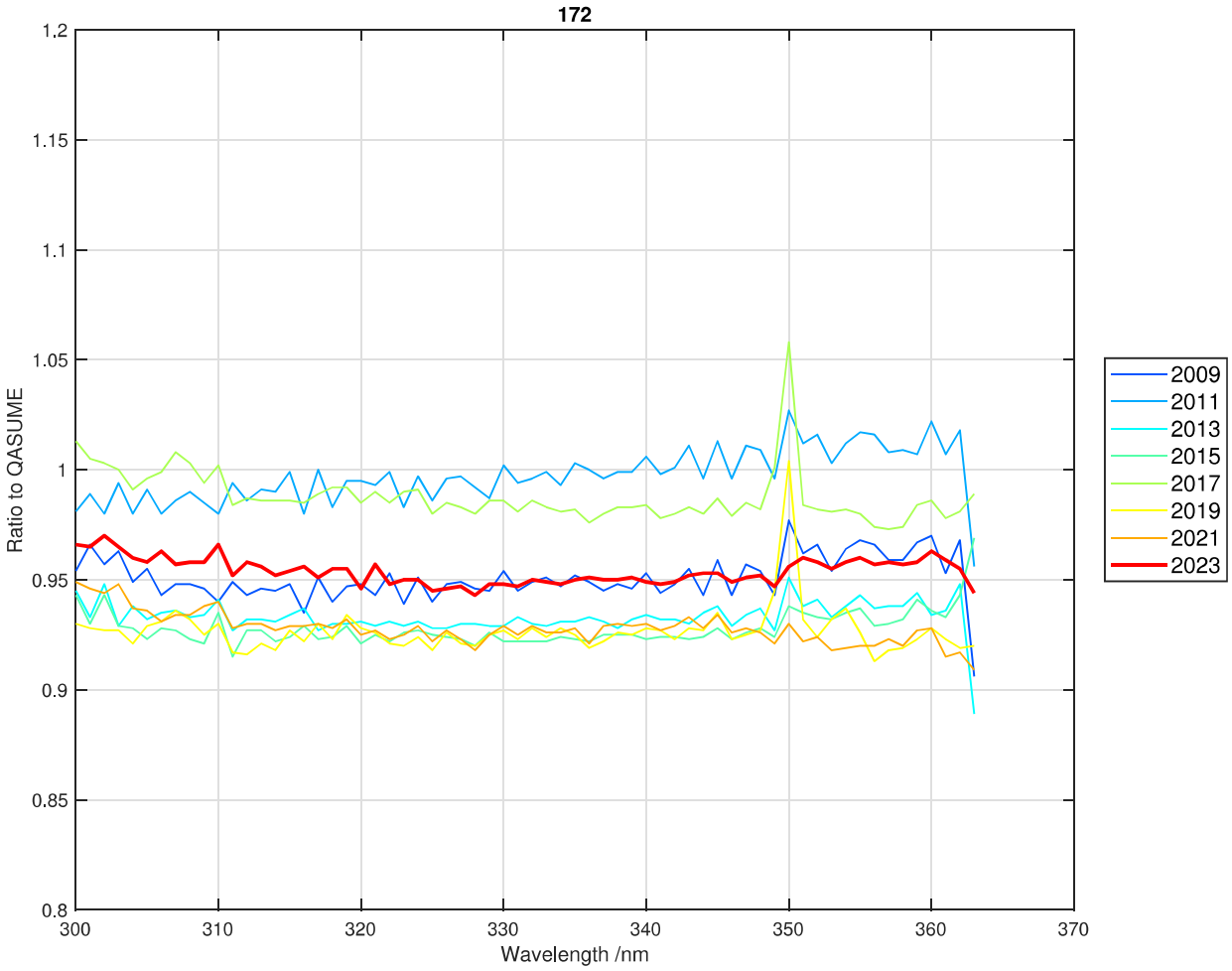
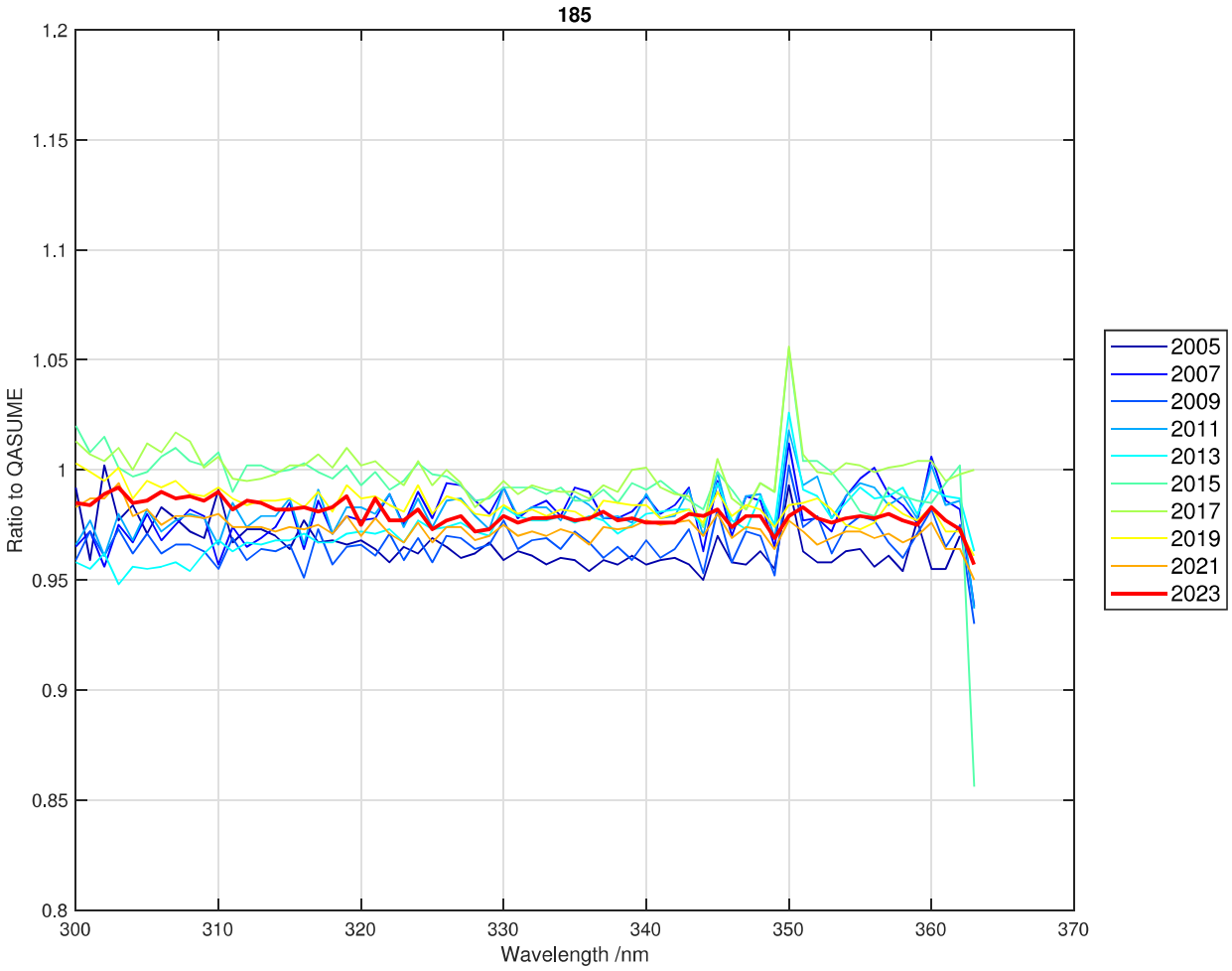
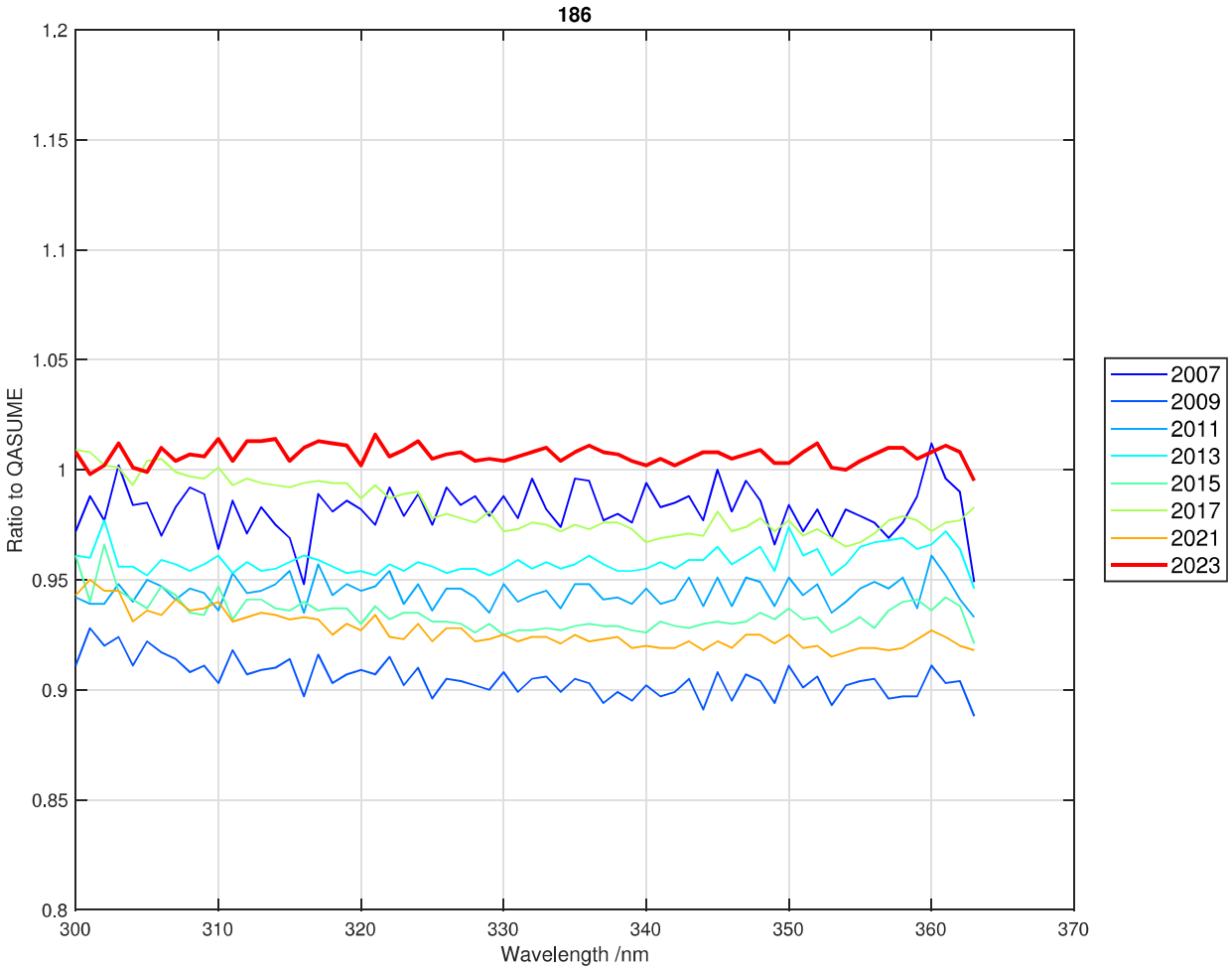
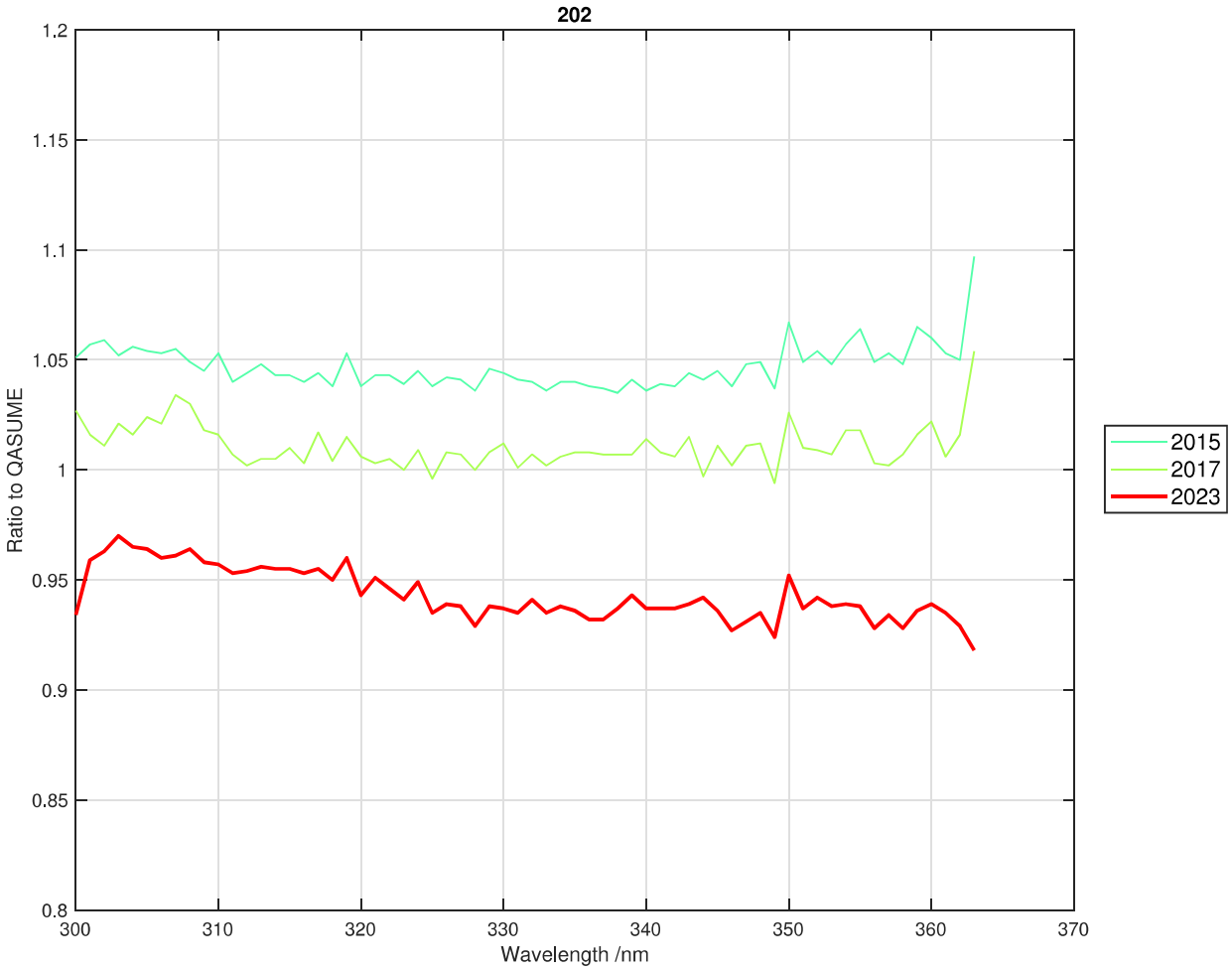
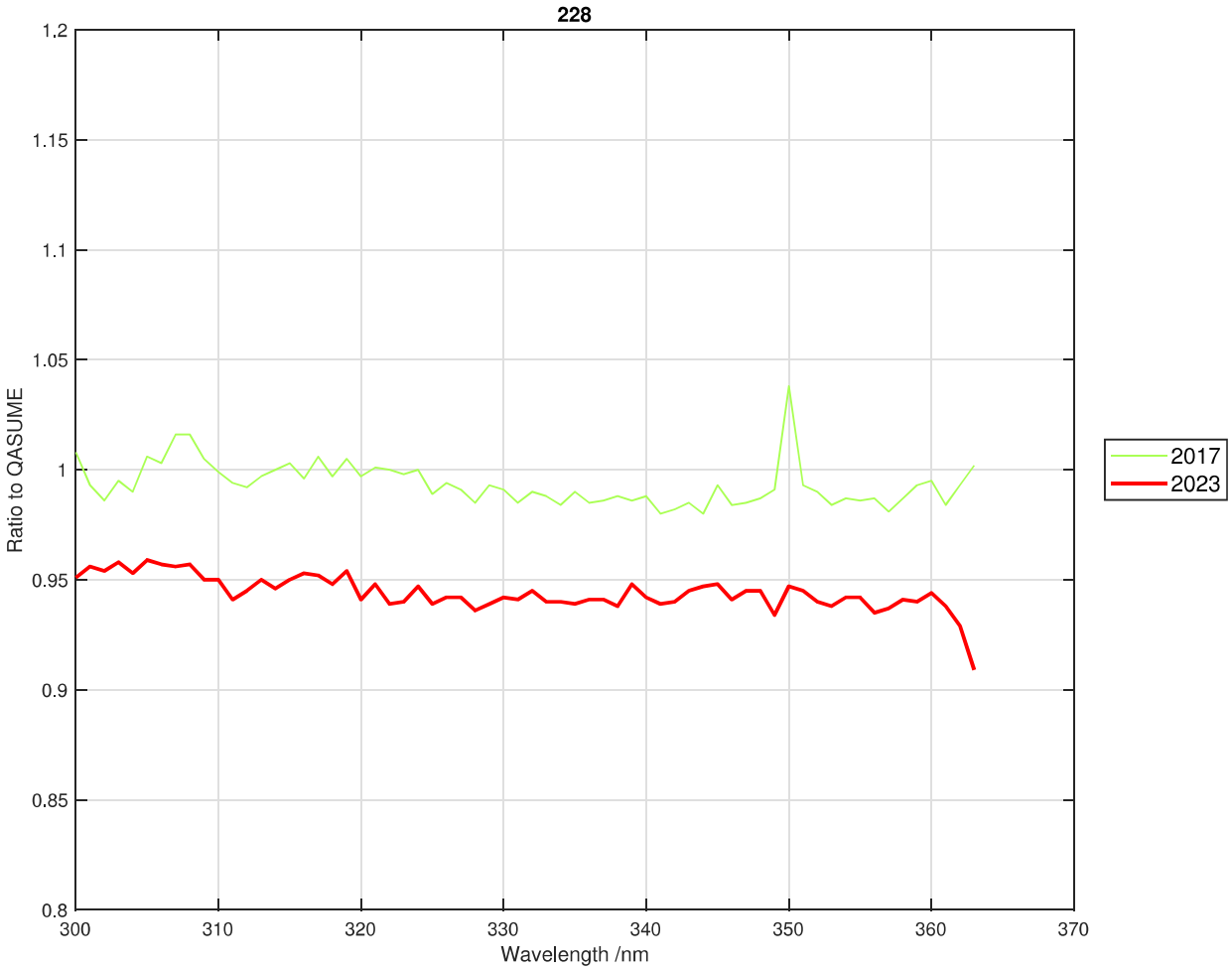
2019
2021
2023

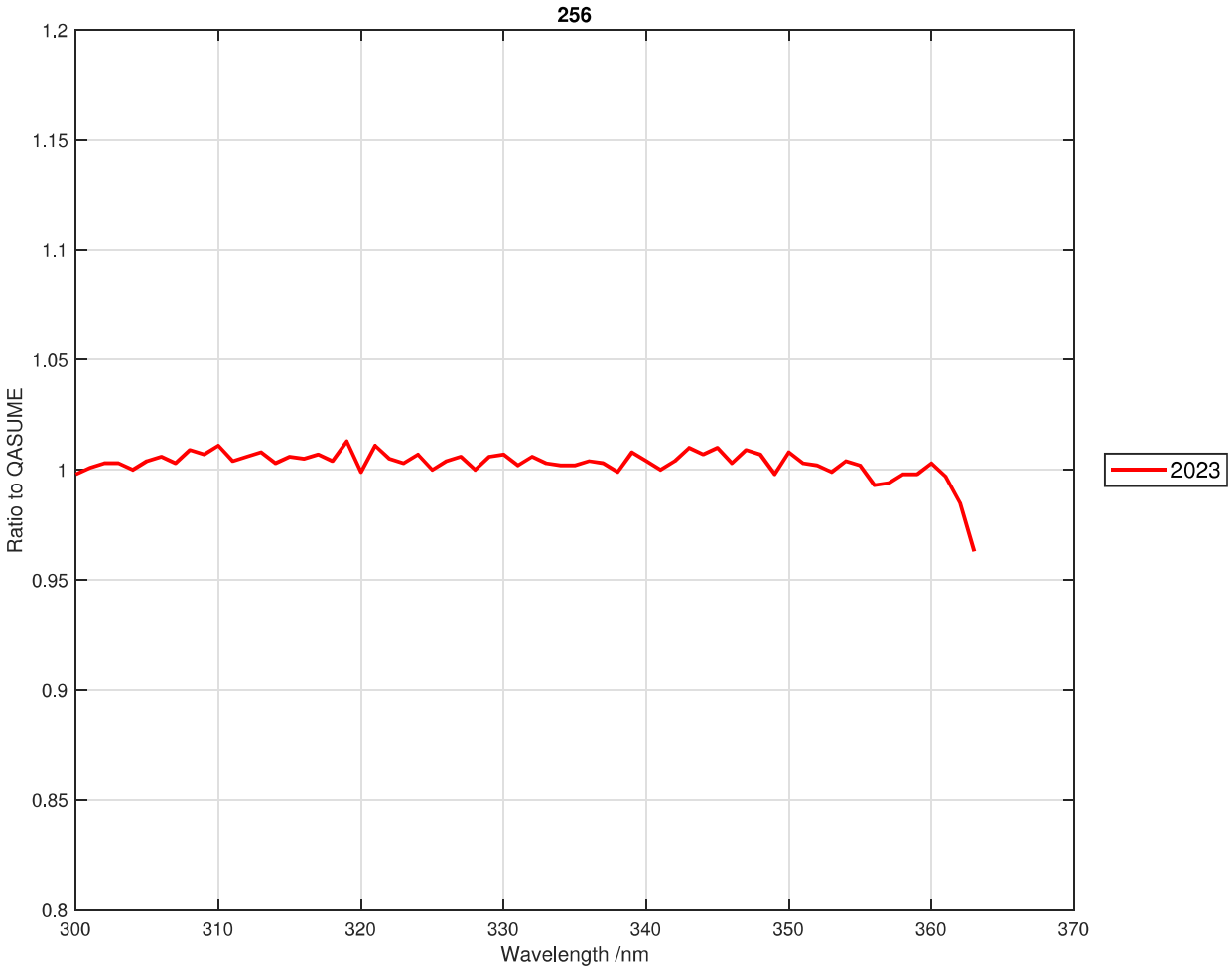

172
Ratio to QASUME
Wavelength /nm
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
300
310
320
330
340
350
360
370
2009
2011
2013
2015
2017
2019
2021
2023

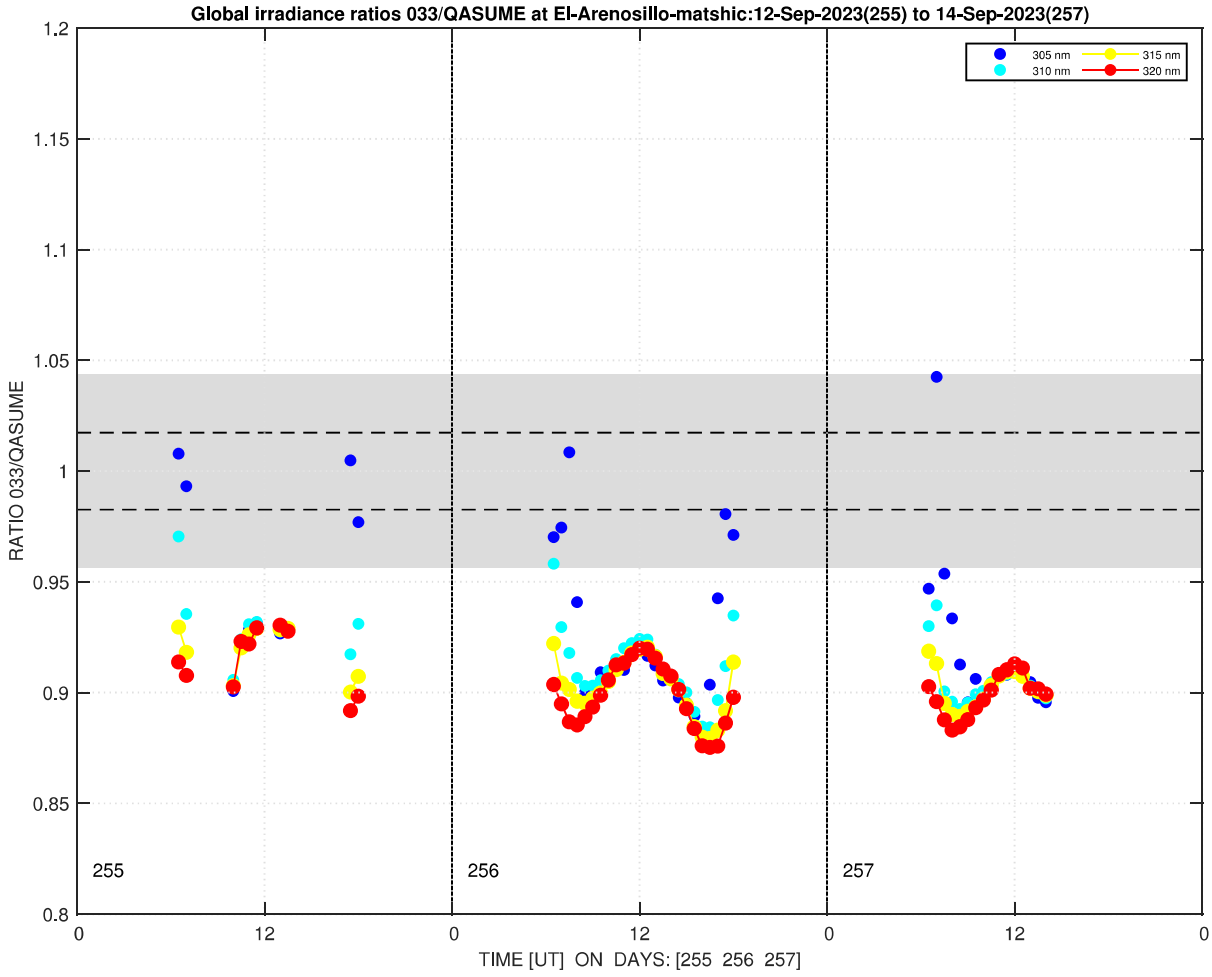

185
Ratio to QASUME
Wavelength /nm
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
300
310
320
330
340
350
360
370
2005
2007
2009
2011
2013
2015
2017
2019
2021
2023

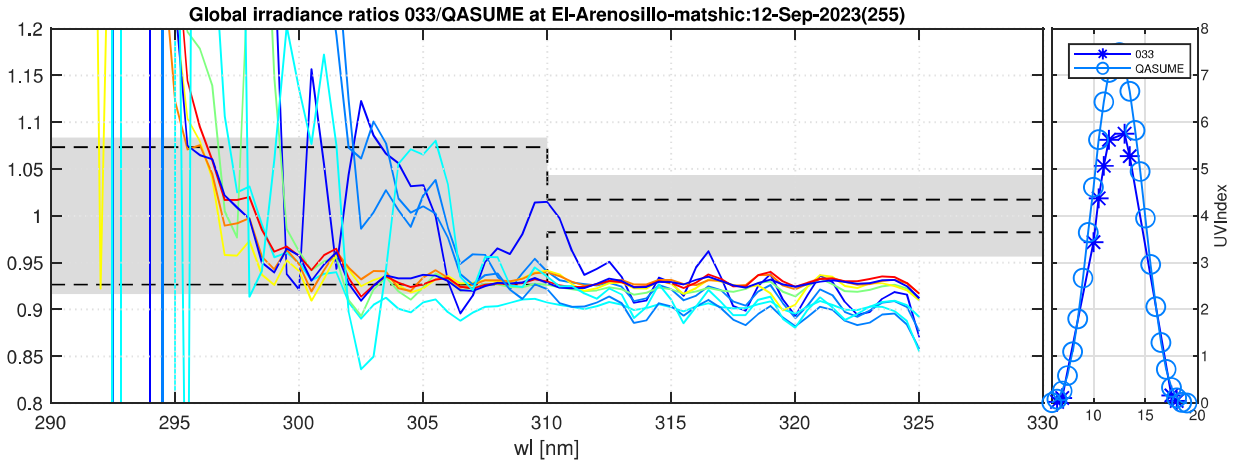

186
Ratio to QASUME
Wavelength /nm
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
300
310
320
330
340
350
360
370
2007
2009
2011
2013
2015
2017
2021
2023

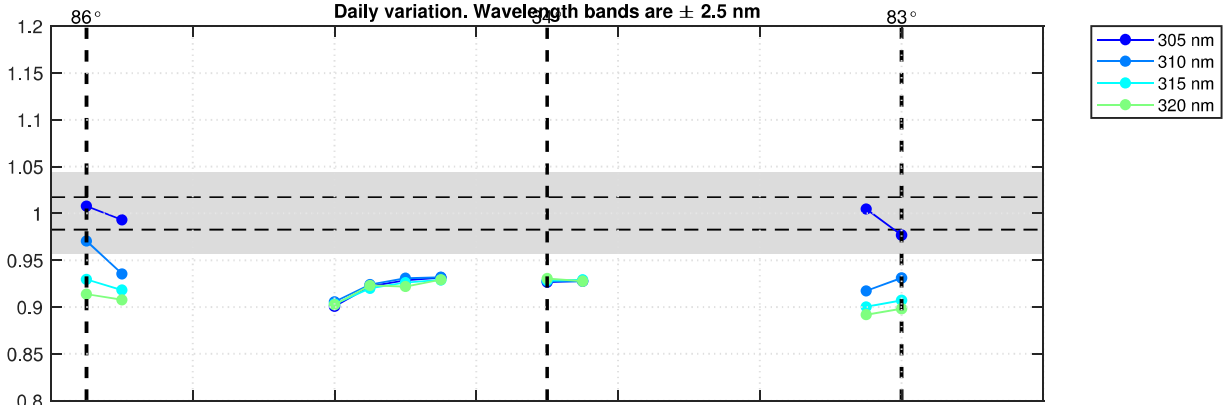

202
Ratio to QASUME
Wavelength /nm
2015
2017
2023

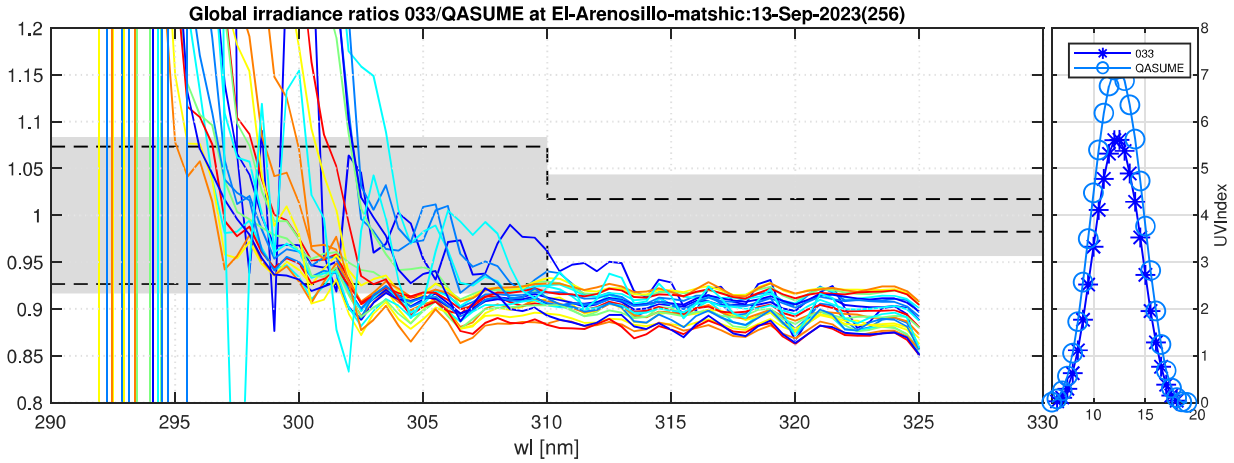

228
Ratio to QASUME
Wavelength /nm
2017
2023

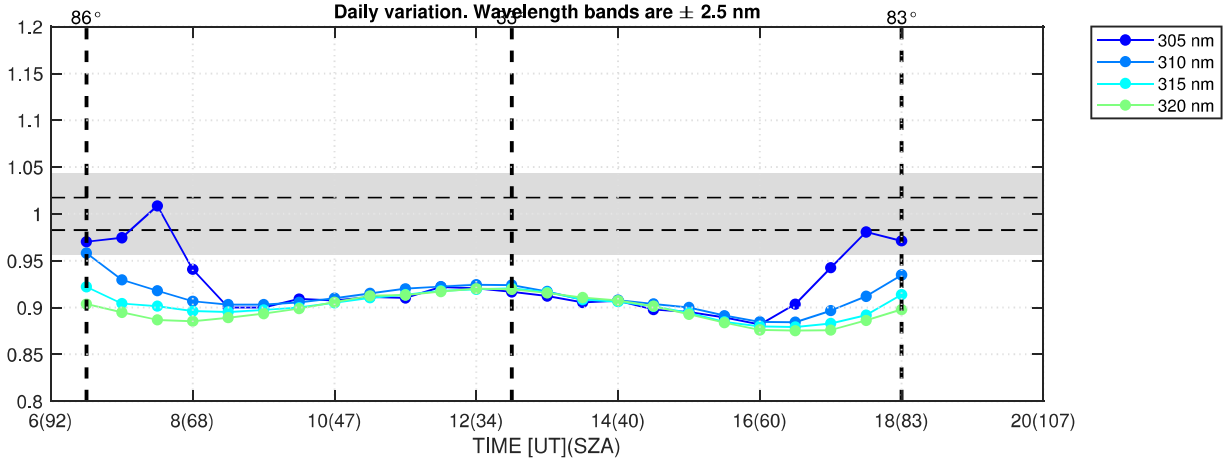

256
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
Ratio to QASUME
300
310
320
330
340
350
360
370
Wavelength /nm
2023

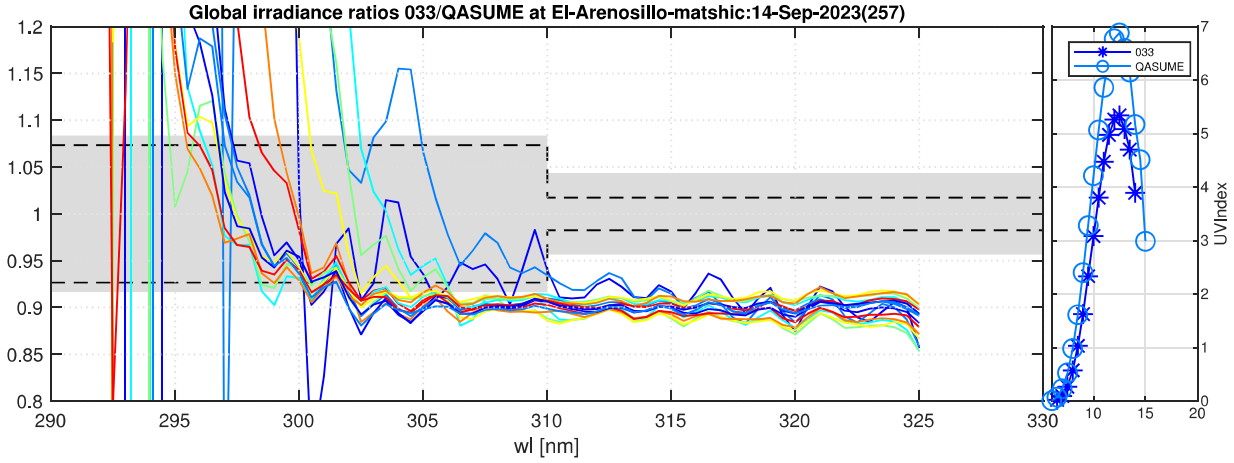

Global irradiance ratios 033/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 14-Sep-2023(257)
RATIO 033/QASUME
TIME [UT] ON DAYS: [255 256 257]
305 nm
310 nm
315 nm
320 nm
255
256
257

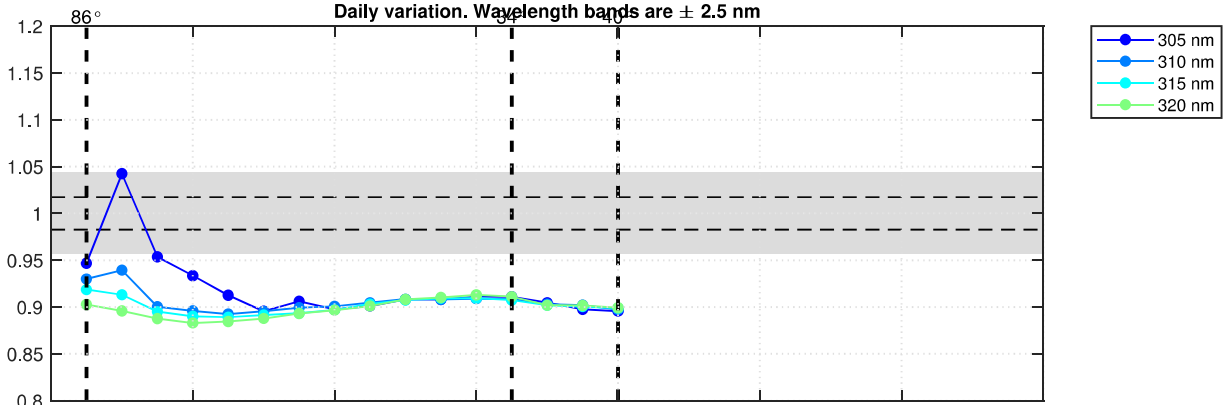

Global irradiance ratios 033/QASUME at El-Arenosillo-matshic:12-Sep-2023(255)
wl [nm]
UVIndex
033
QASUME

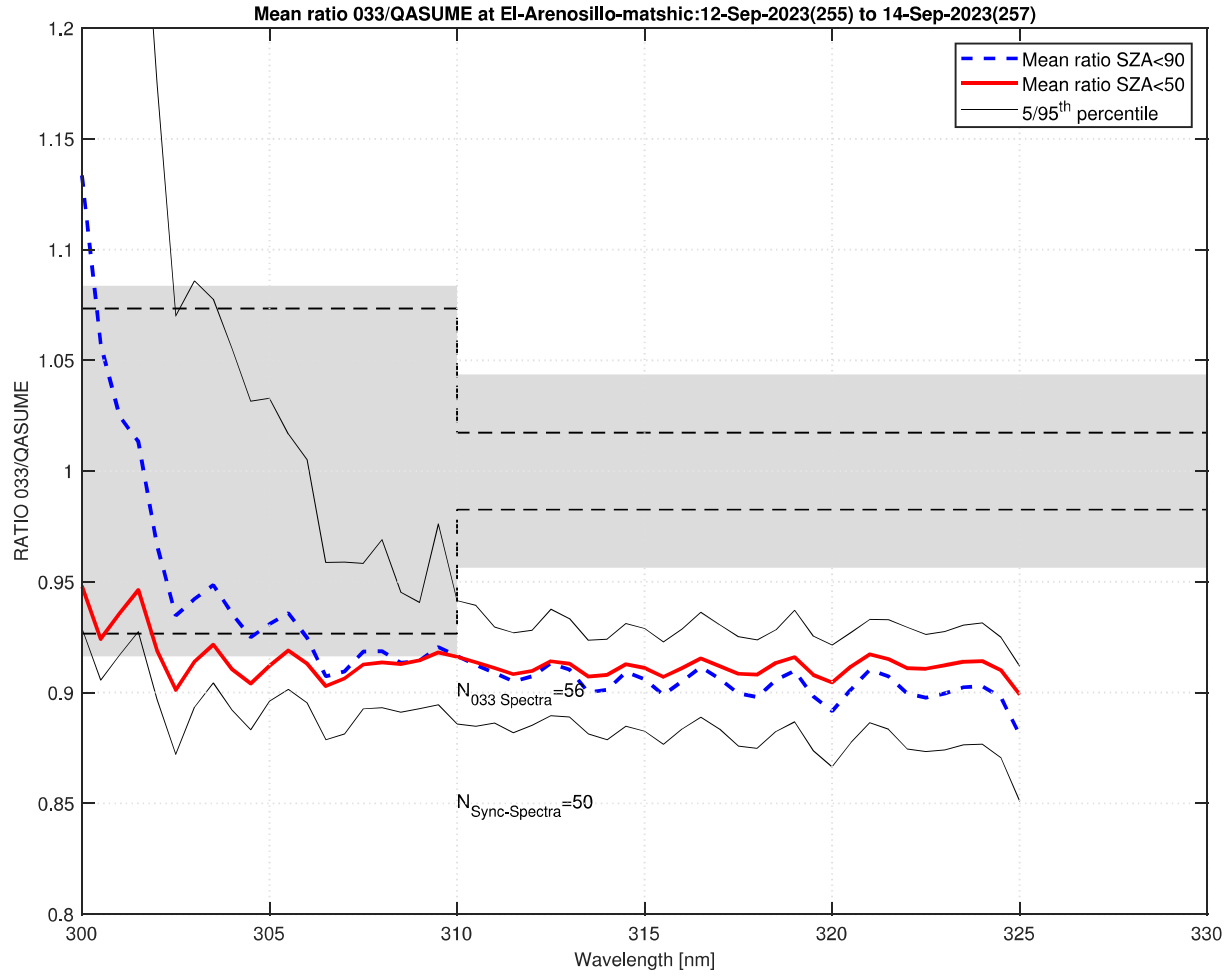

Daily variation. Wavelength bands are ± 2.5 nm
86°
83°
305 nm
310 nm
315 nm
320 nm

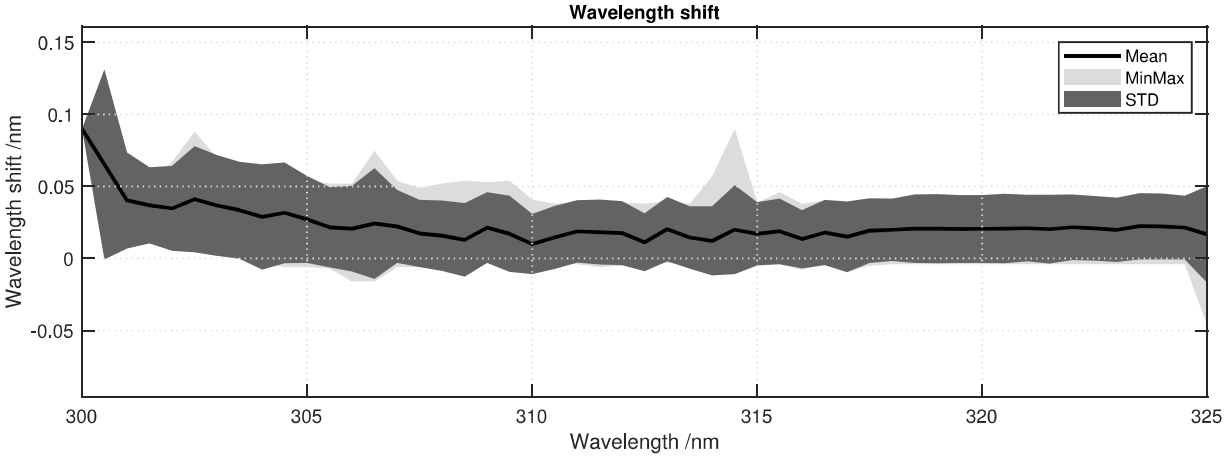

Global irradiance ratios 033/QASUME at El-Arenosillo-matshic:13-Sep-2023(256)
wl [nm]
UVIndex
033
QASUME

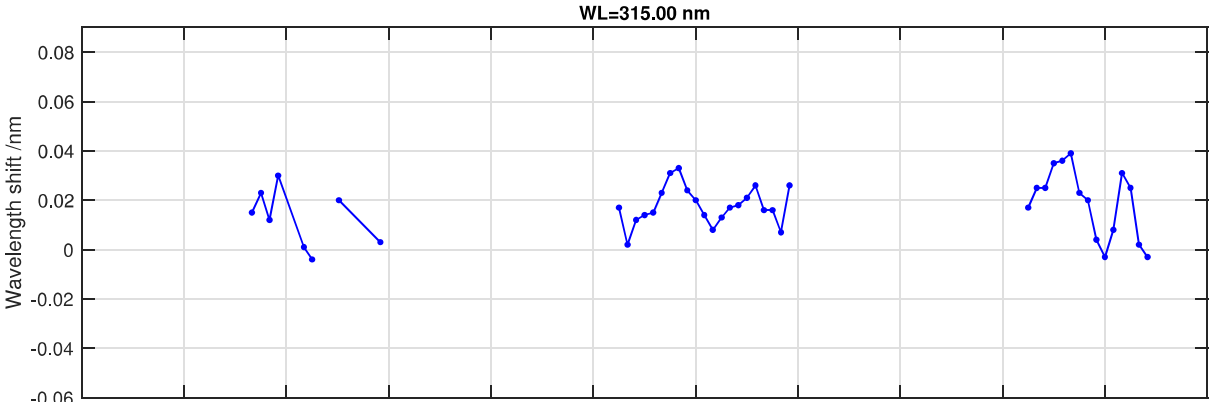

Daily variation. Wavelength bands are ± 2.5 nm
86°
83°
TIME [UT](SZA)
6(92)
8(68)
10(47)
12(34)
14(40)
16(60)
18(83)
20(107)
305 nm
310 nm
315 nm
320 nm

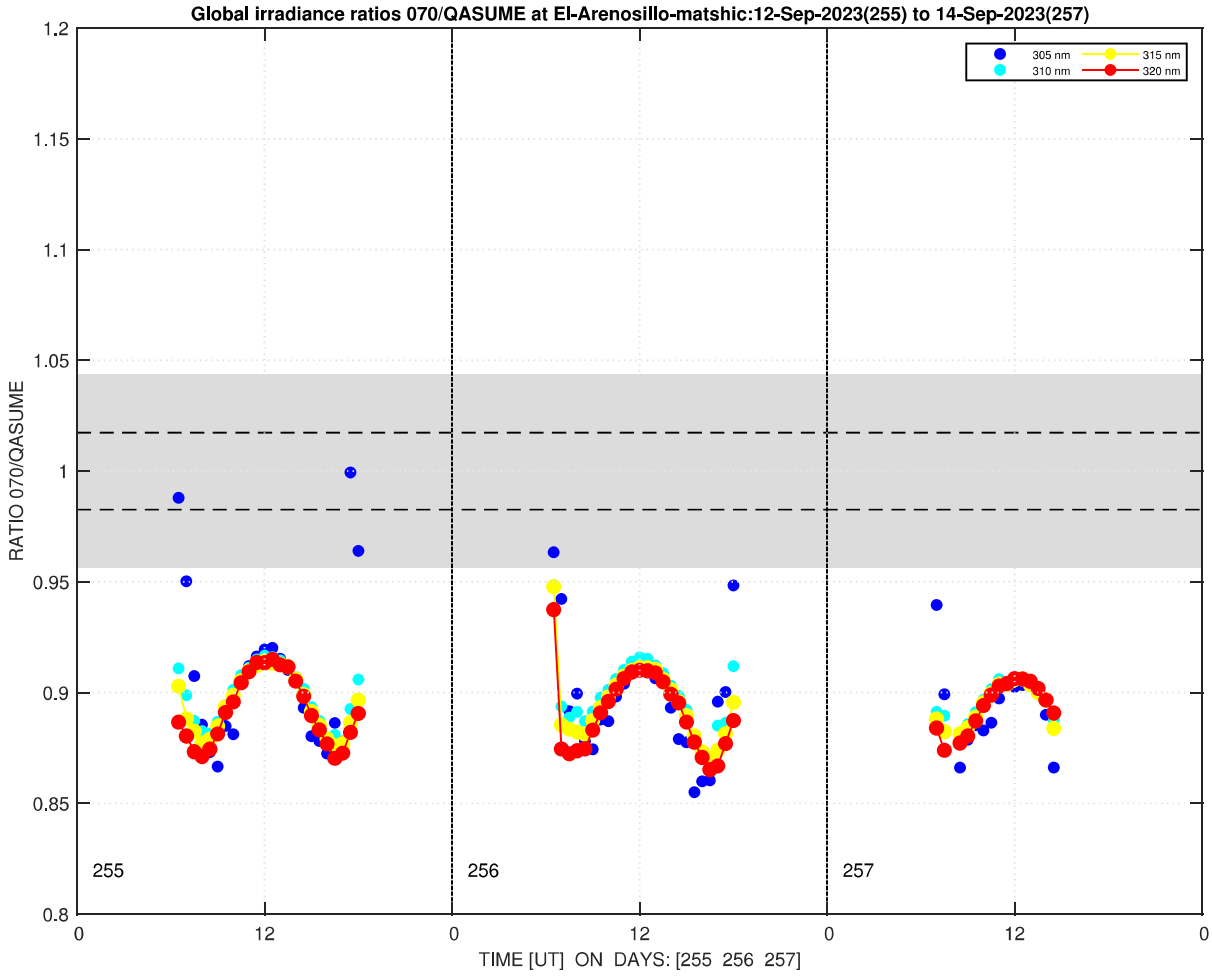

Global irradiance ratios 033/QASUME at El-Arenosillo-matshic:14-Sep-2023(257)
wl [nm]
UVIndex
033
QASUME

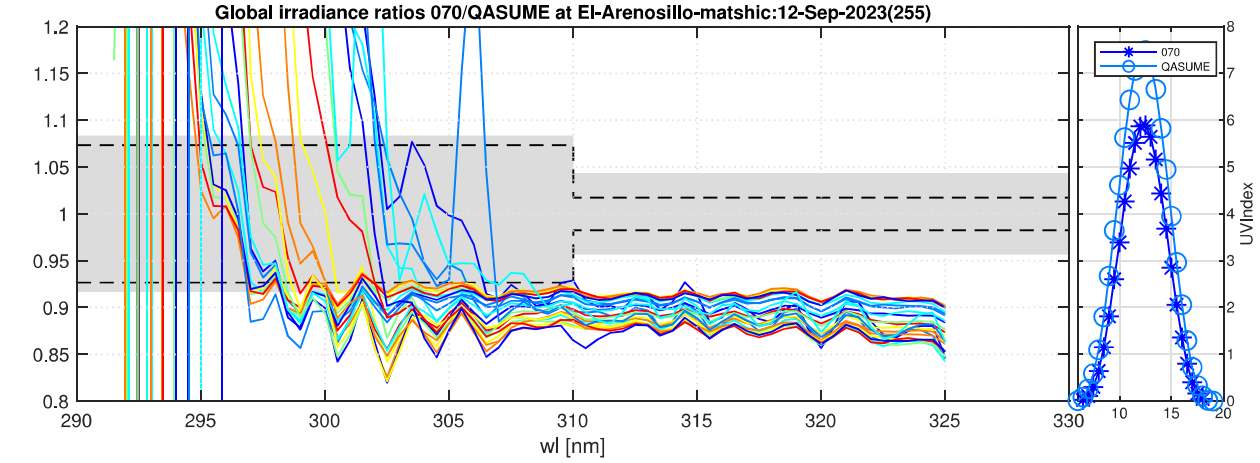

Daily variation. Wavelength bands are ± 2.5 nm
86°
305 nm
310 nm
315 nm
320 nm


Mean ratio 033/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 14-Sep-2023(257)
Mean ratio SZA<90
Mean ratio SZA<50
5/95th percentile
RATIO 033/QASUME
N033 Spectra=50
NSync-Spectra=50
Wavelength [nm]


Wavelength shift
Mean
MinMax
STD
Wavelength shift /nm
Wavelength /nm


WL=315.00 nm
Wavelength shift /nm


Global irradiance ratios 070/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 14-Sep-2023(257)
305 nm
310 nm
315 nm
320 nm
RATIO 070/QASUME
255
256
257
TIME [UT] ON DAYS: [255 256 257]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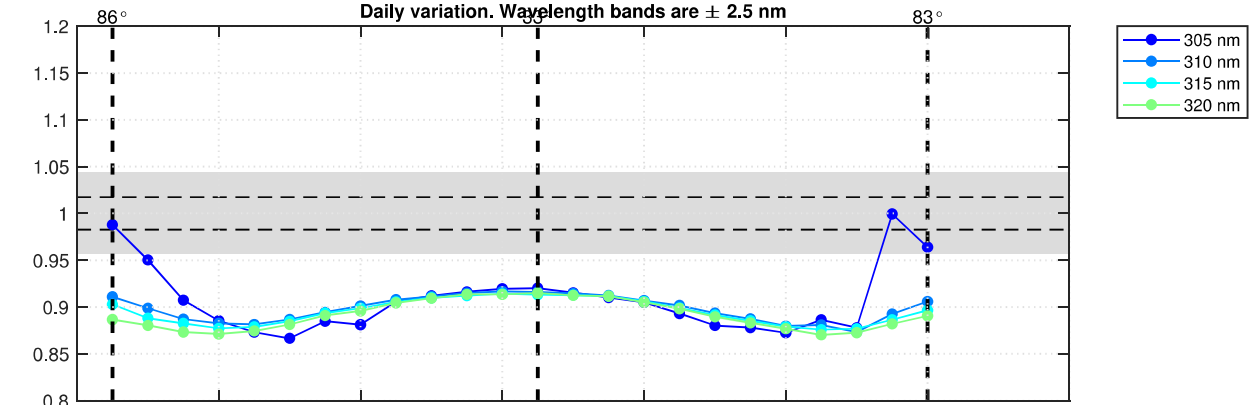
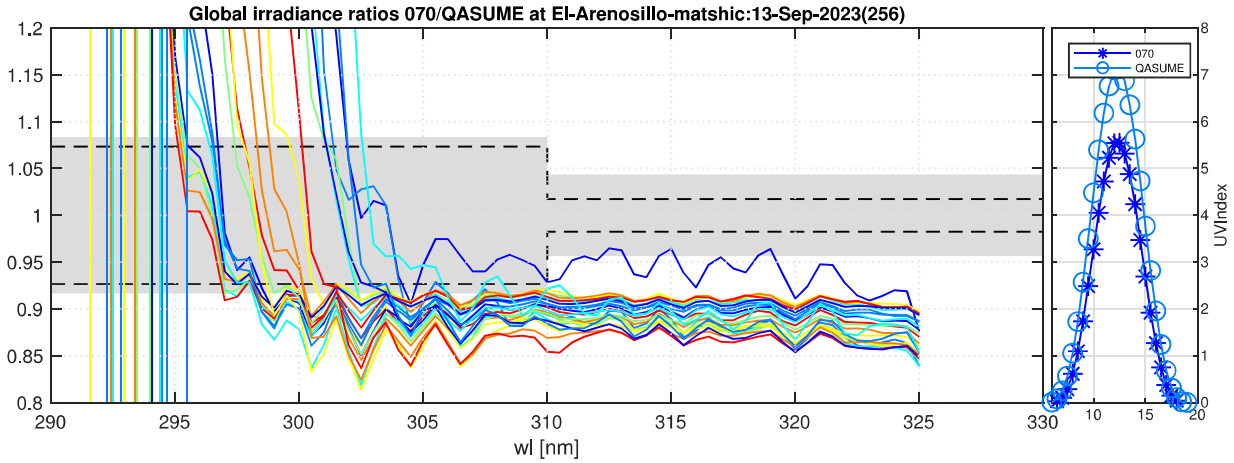
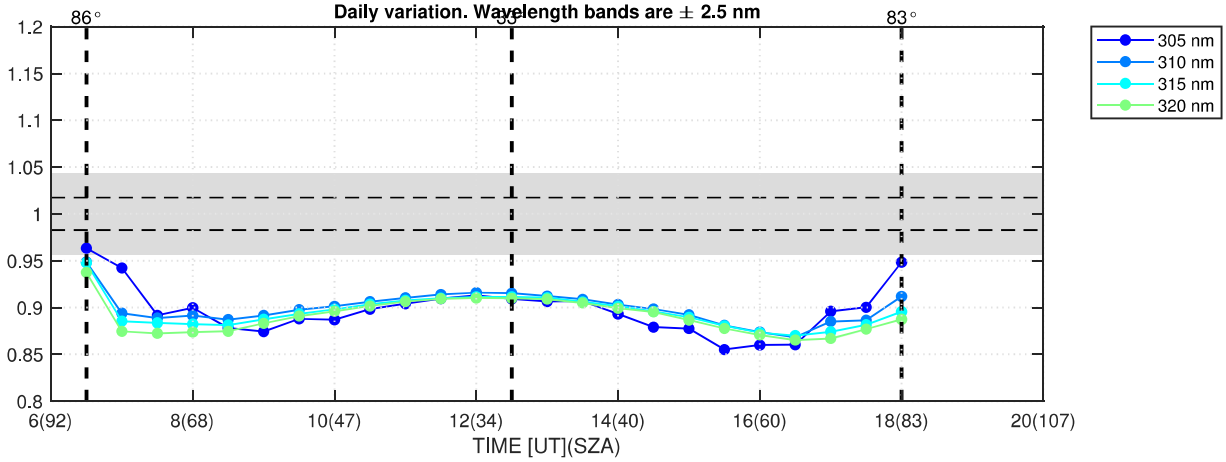
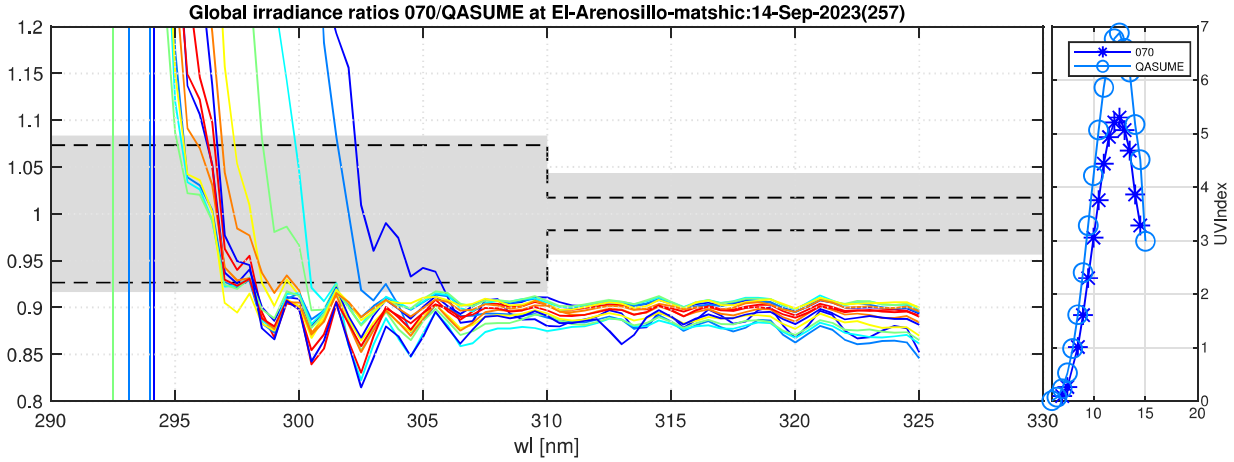
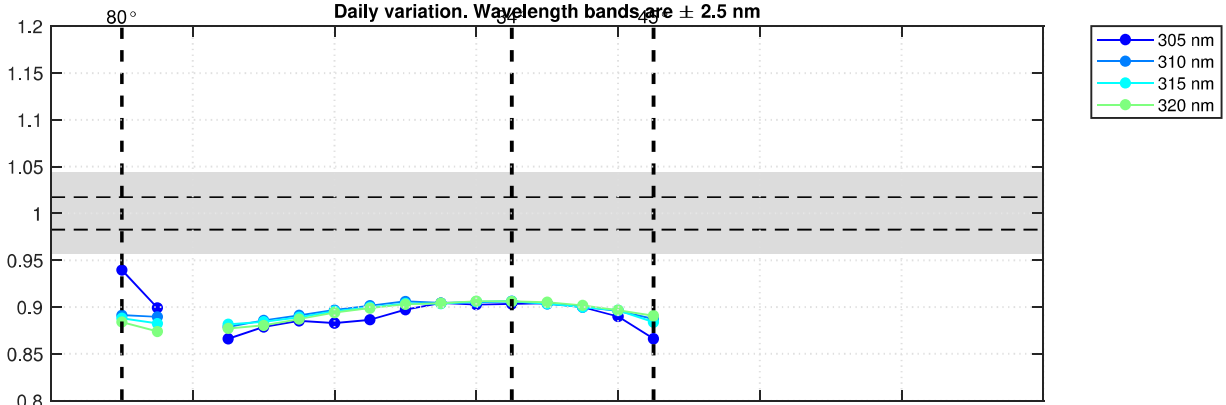
070
QASUME
UVIndex
wl [nm]

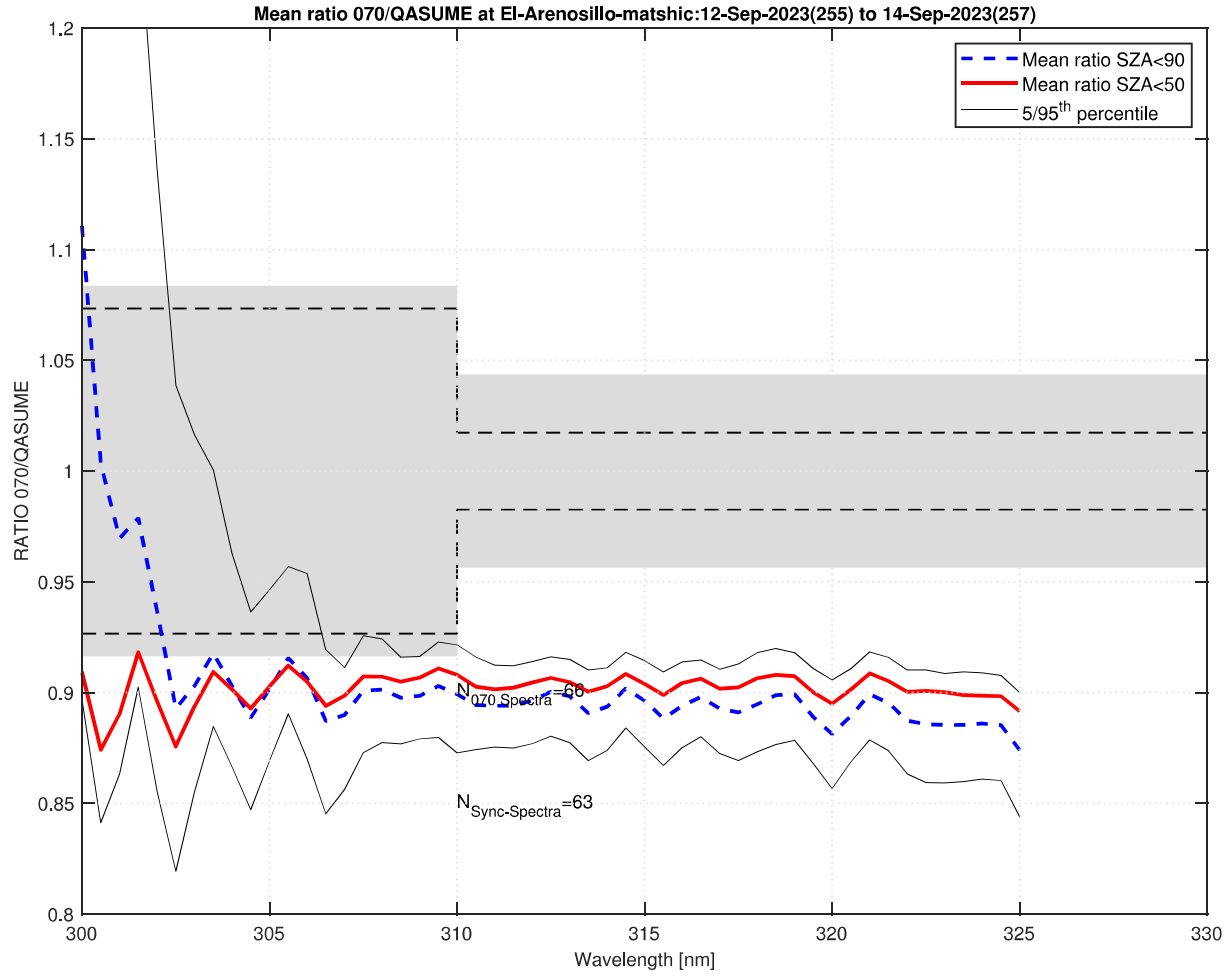

Daily variation. Wavelength bands are ± 2.5 nm
86°
83°
305 nm
310 nm
315 nm
320 nm

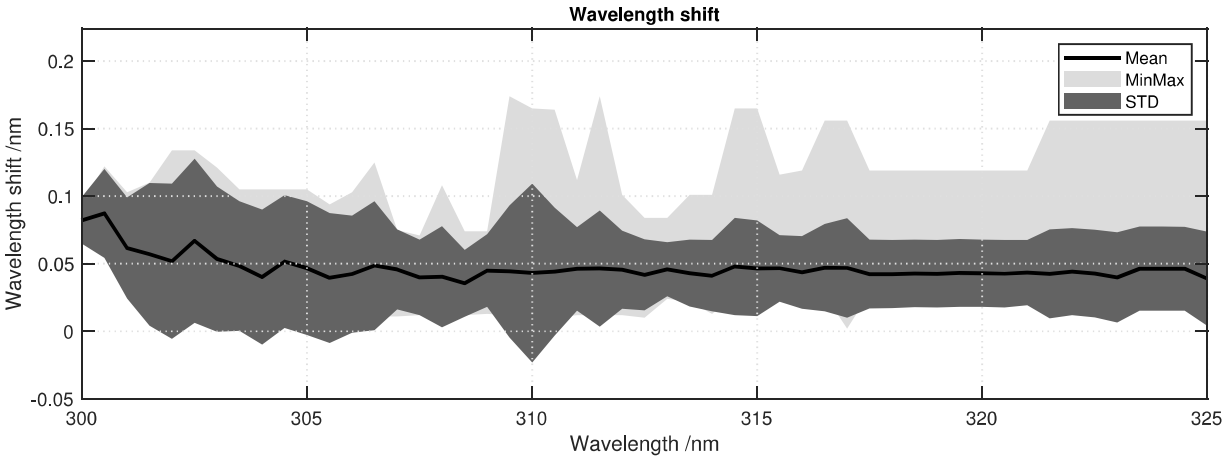

Global irradiance ratios 070/QASUME at El-Arenosillo-matshic:13-Sep-2023(256)
wl [nm]
UVIndex
070
QASUME

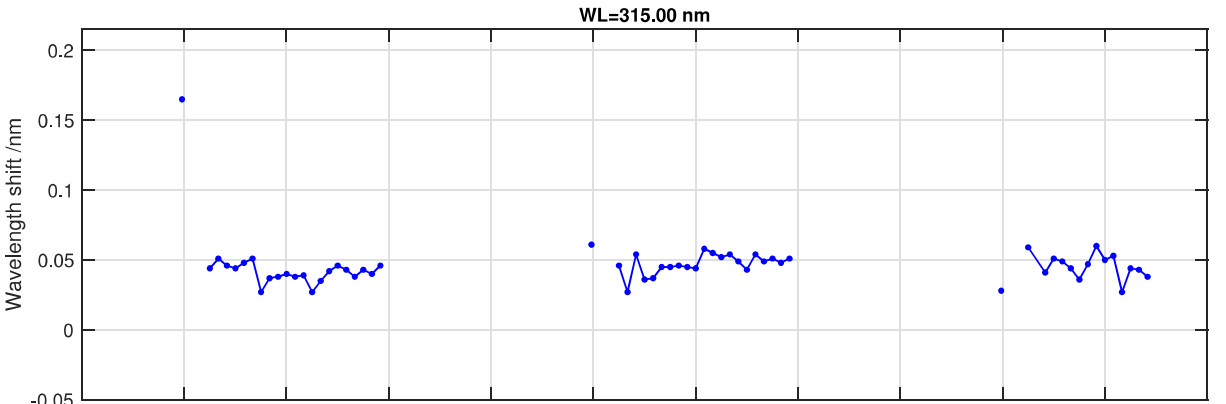

Daily variation. Wavelength bands are ± 2.5 nm
86°
83°
TIME [UT](SZA)
6(92)
8(68)
10(47)
12(34)
14(40)
16(60)
18(83)
20(107)
305 nm
310 nm
315 nm
320 nm

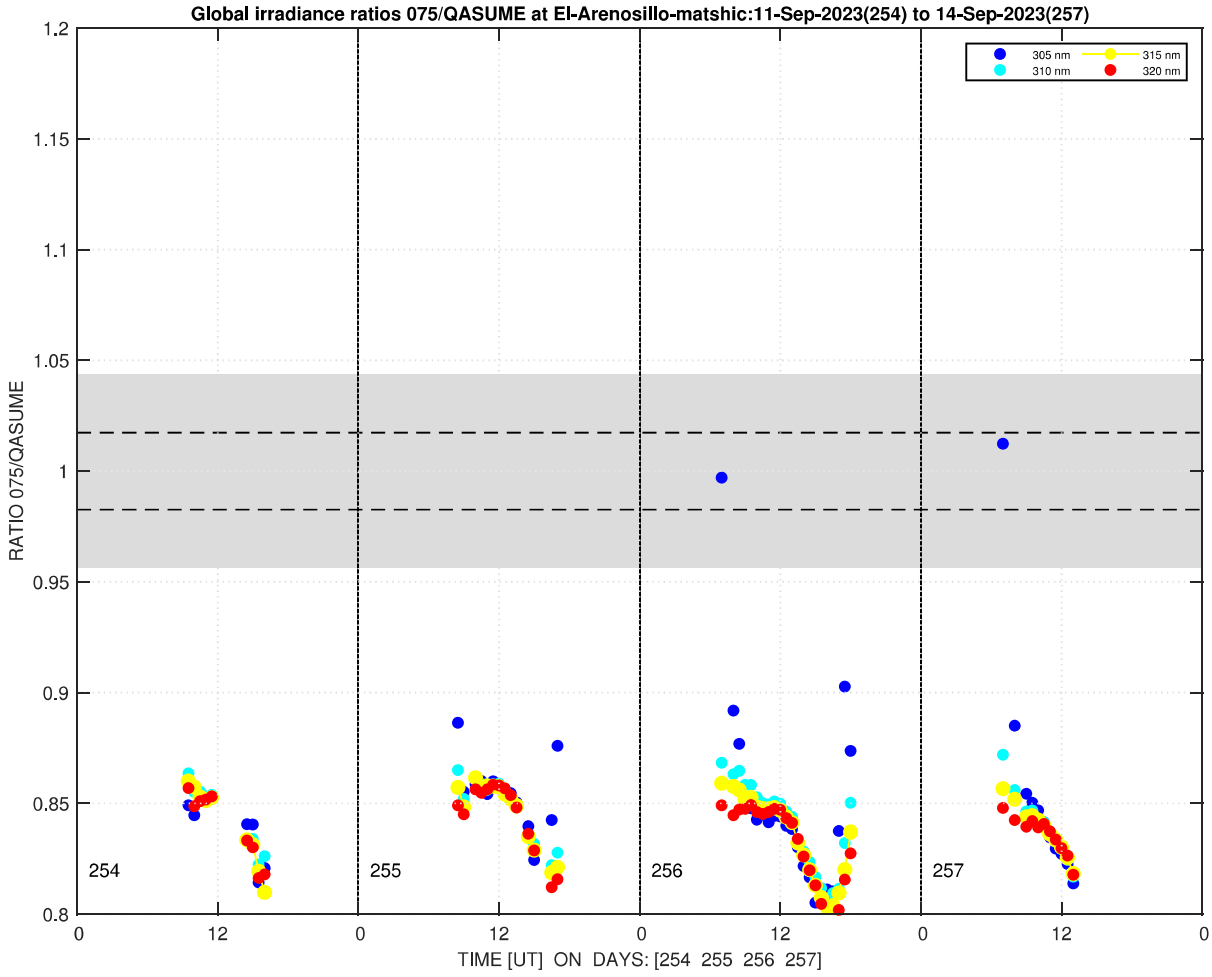

Global irradiance ratios 070/QASUME at El-Arenosillo-matshic:14-Sep-2023(257)
wl [nm]
UVIndex
070
QASUME

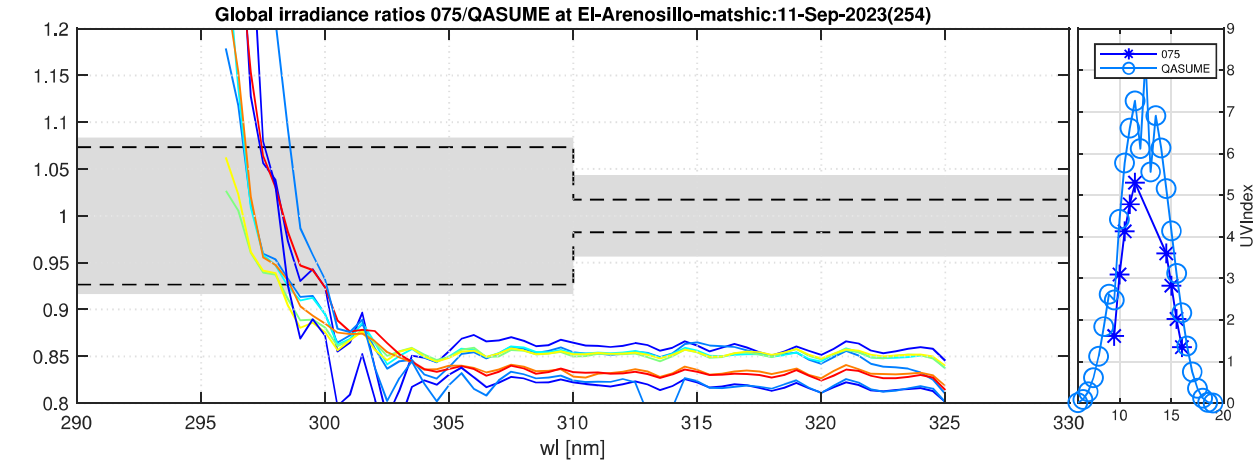

Daily variation. Wavelength bands are ± 2.5 nm
80°
305 nm
310 nm
315 nm
320 nm

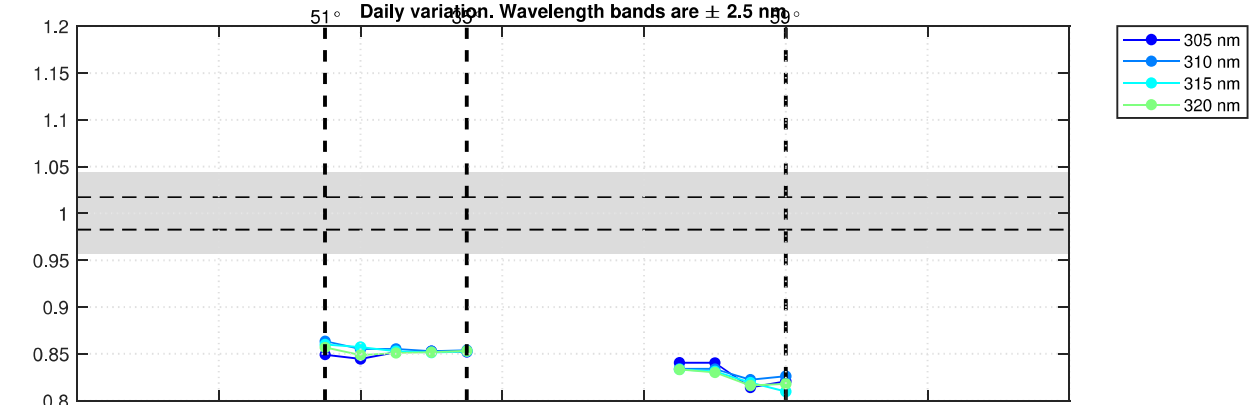

Mean ratio 070/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 14-Sep-2023(257)
Mean ratio SZA<90
Mean ratio SZA<50
5/95th percentile
RATIO 070/QASUME
Wavelength [nm]
N070 Spectra=60
NSync-Spectra=63

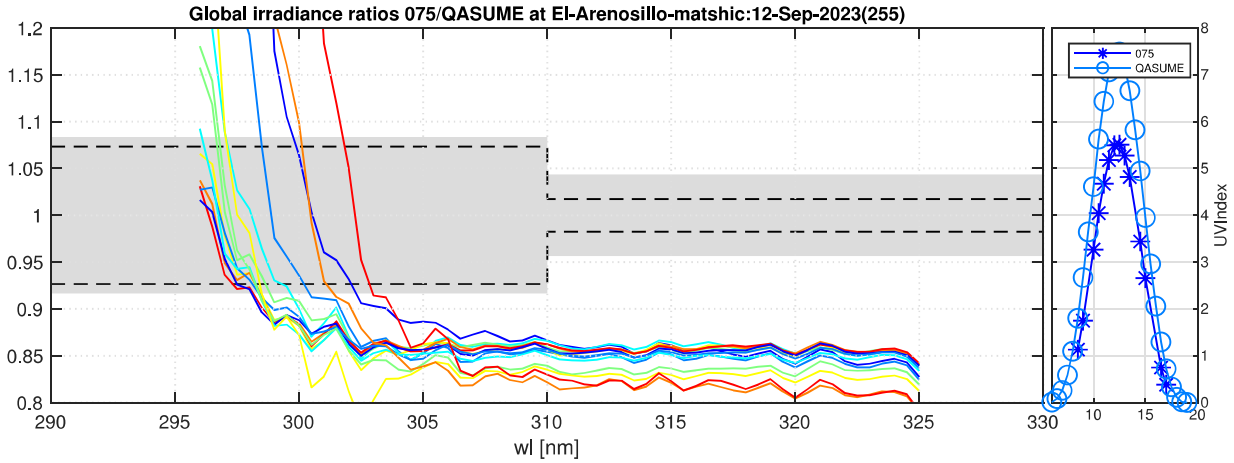

Wavelength shift
Mean
MinMax
STD
Wavelength shift /nm
Wavelength /nm

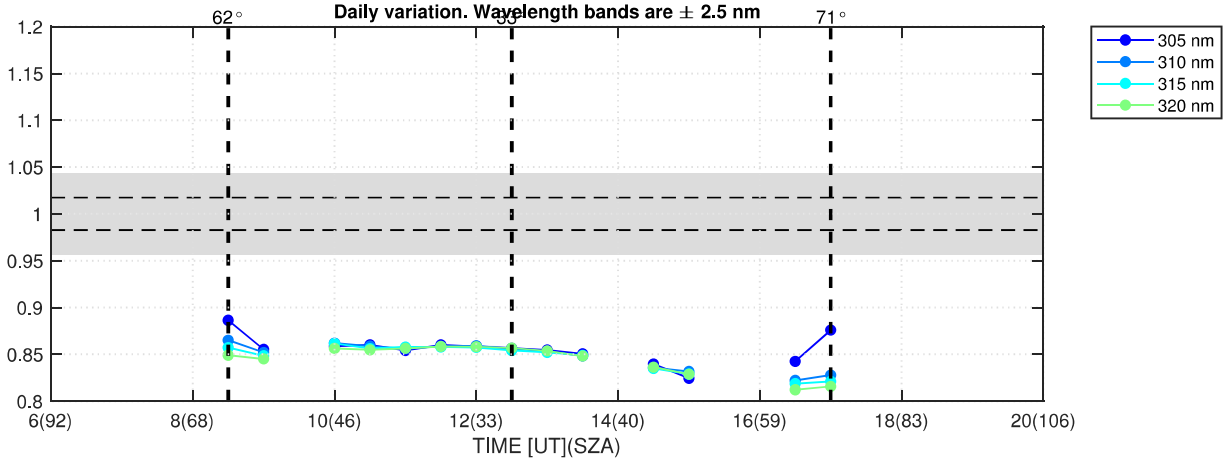

WL=315.00 nm
Wavelength shift /nm

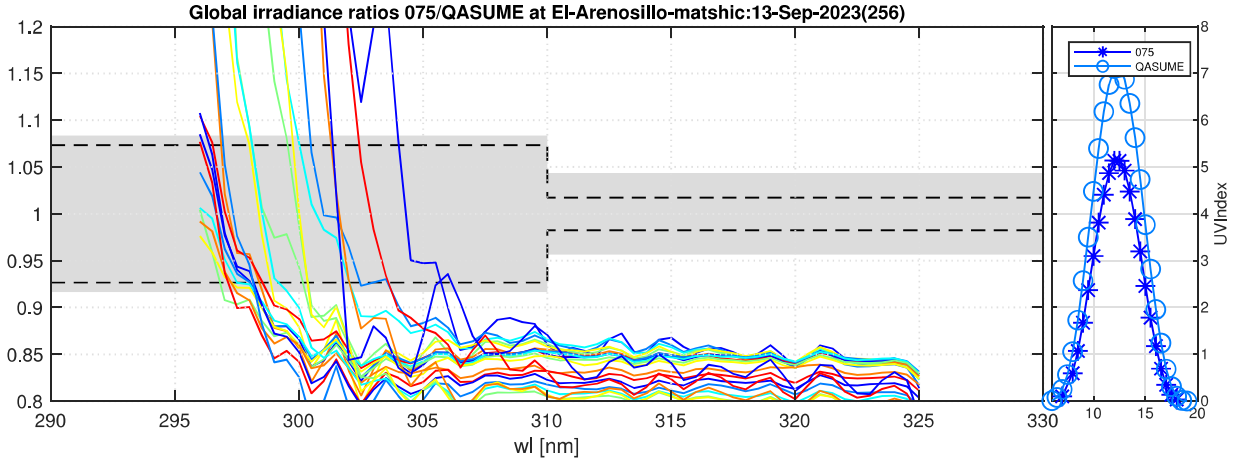

Global irradiance ratios 075/QASUME at El-Arenosillo-matshic:11-Sep-2023(254) to 14-Sep-2023(257)
305 nm
310 nm
315 nm
320 nm
RATIO 075/QASUME
254
255
256
257
TIME [UT] ON DAYS: [254 255 256 257]

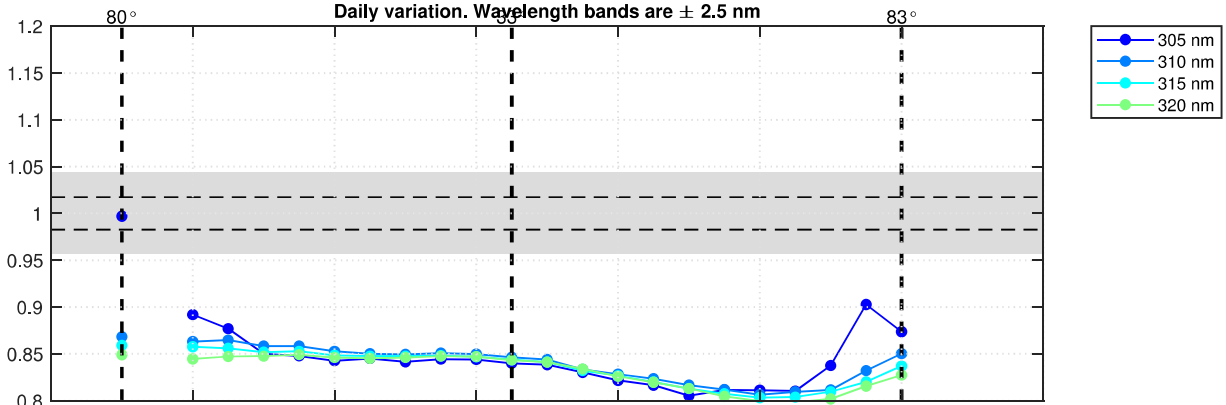

Global irradiance ratios 075/QASUME at El-Arenosillo-matshic:11-Sep-2023(254)
075
QASUME
UVIndex
wl [nm]

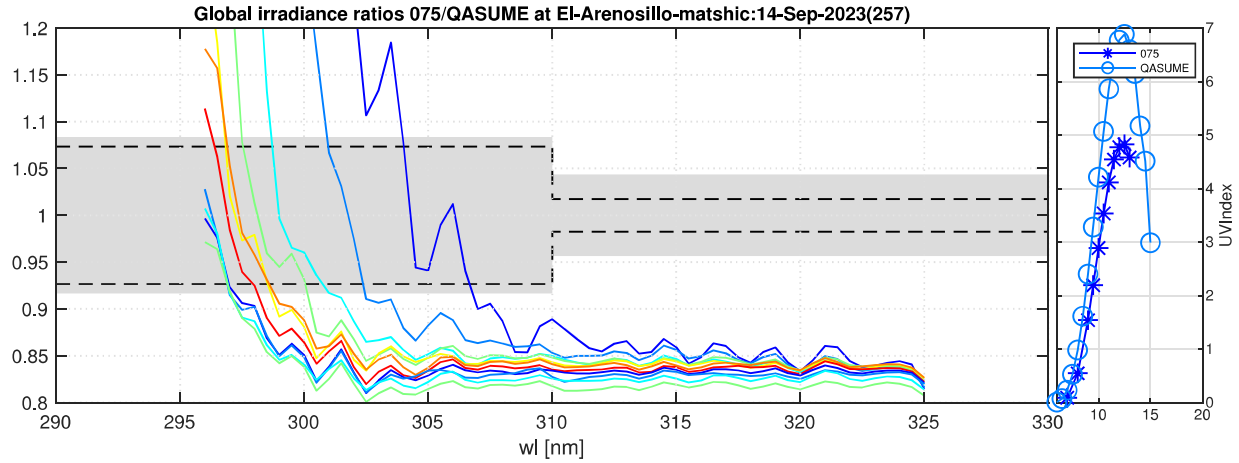

Daily variation. Wavelength bands are ± 2.5 nm
305 nm
310 nm
315 nm
320 nm

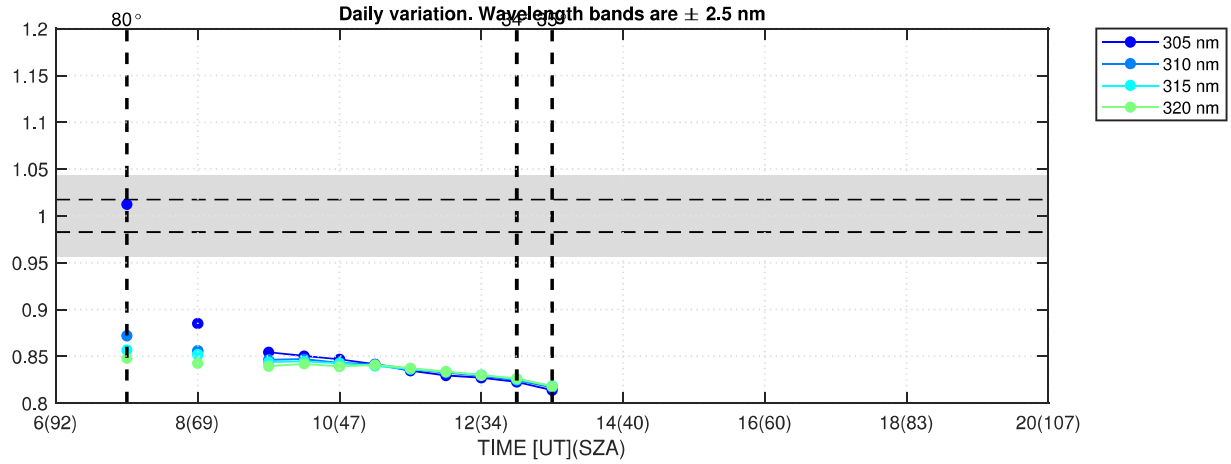

Global irradiance ratios 075/QASUME at El-Arenosillo-matshic:12-Sep-2023(255)
wl [nm]
UVIndex
075
QASUME

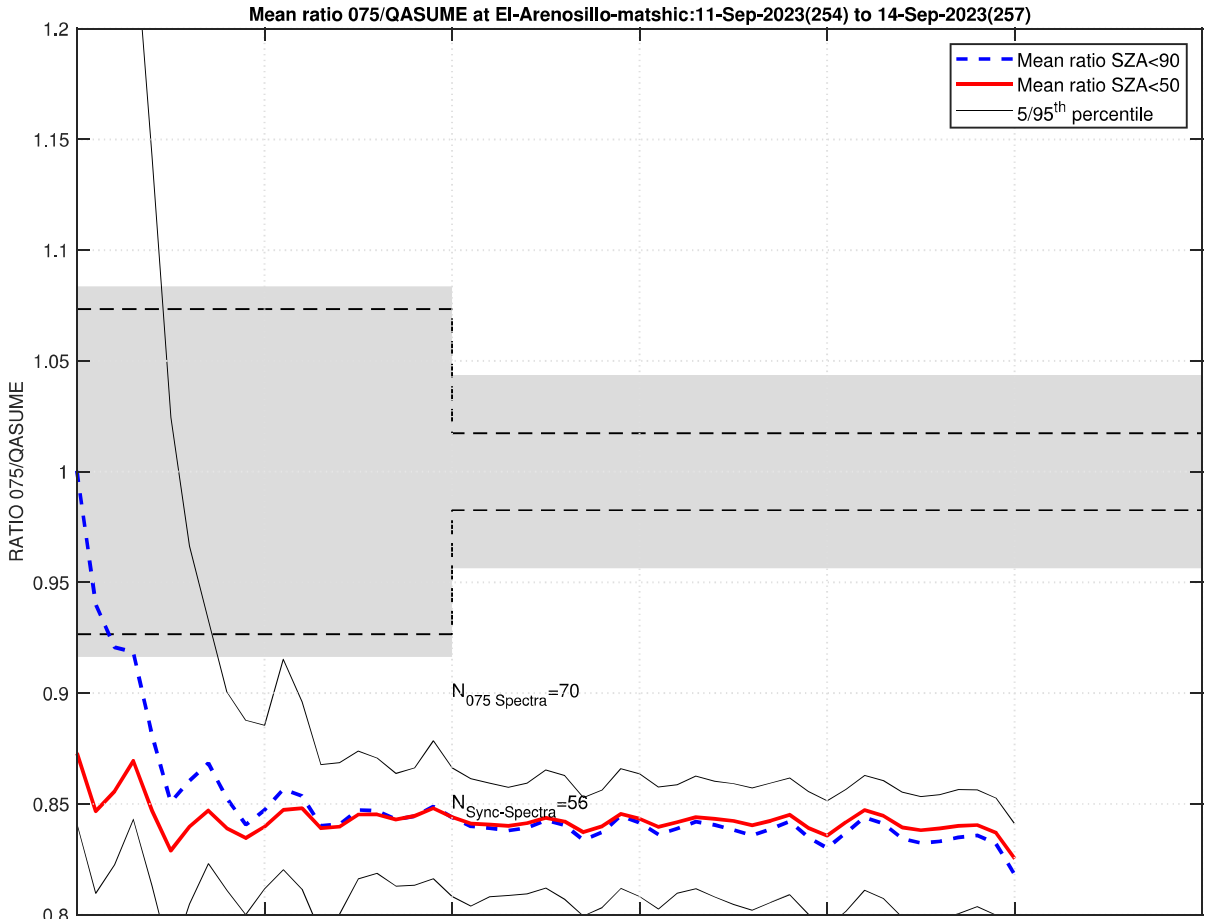

Daily variation. Wavelength bands are ± 2.5 nm
62°
71°
TIME [UT](SZA)
6(92)
8(68)
10(46)
12(33)
14(40)
16(59)
18(83)
20(106)
305 nm
310 nm
315 nm
320 nm

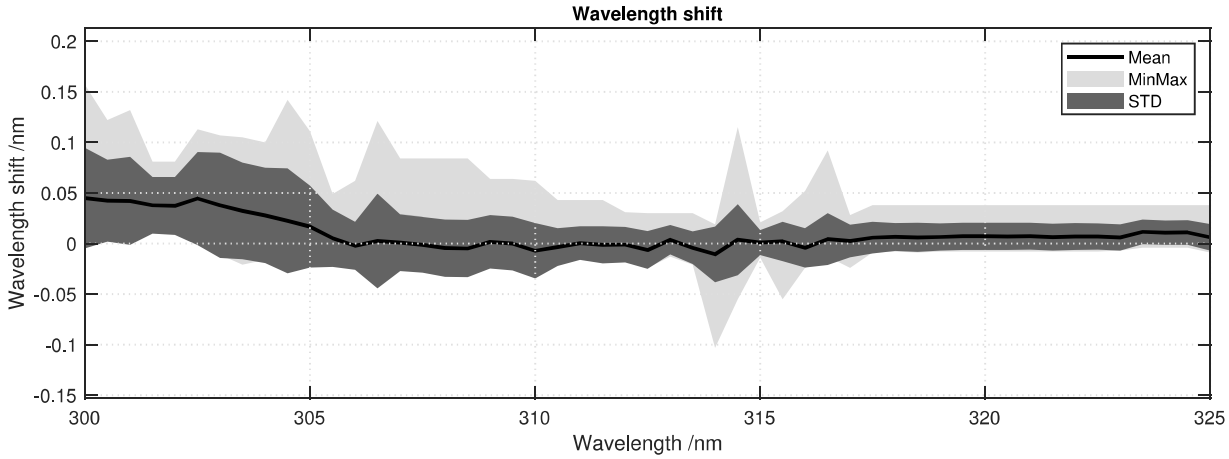

Global irradiance ratios 075/QASUME at El-Arenosillo-matshic:13-Sep-2023(256)
wl [nm]
UVIndex
075
QASUME

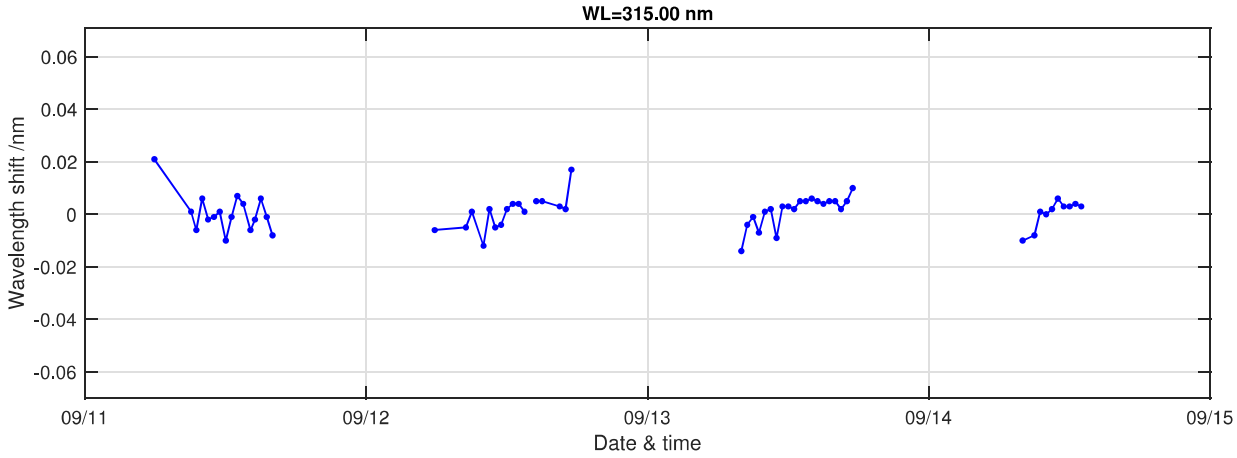

Daily variation. Wavelength bands are ± 2.5 nm
80°
83°
305 nm
310 nm
315 nm
320 nm

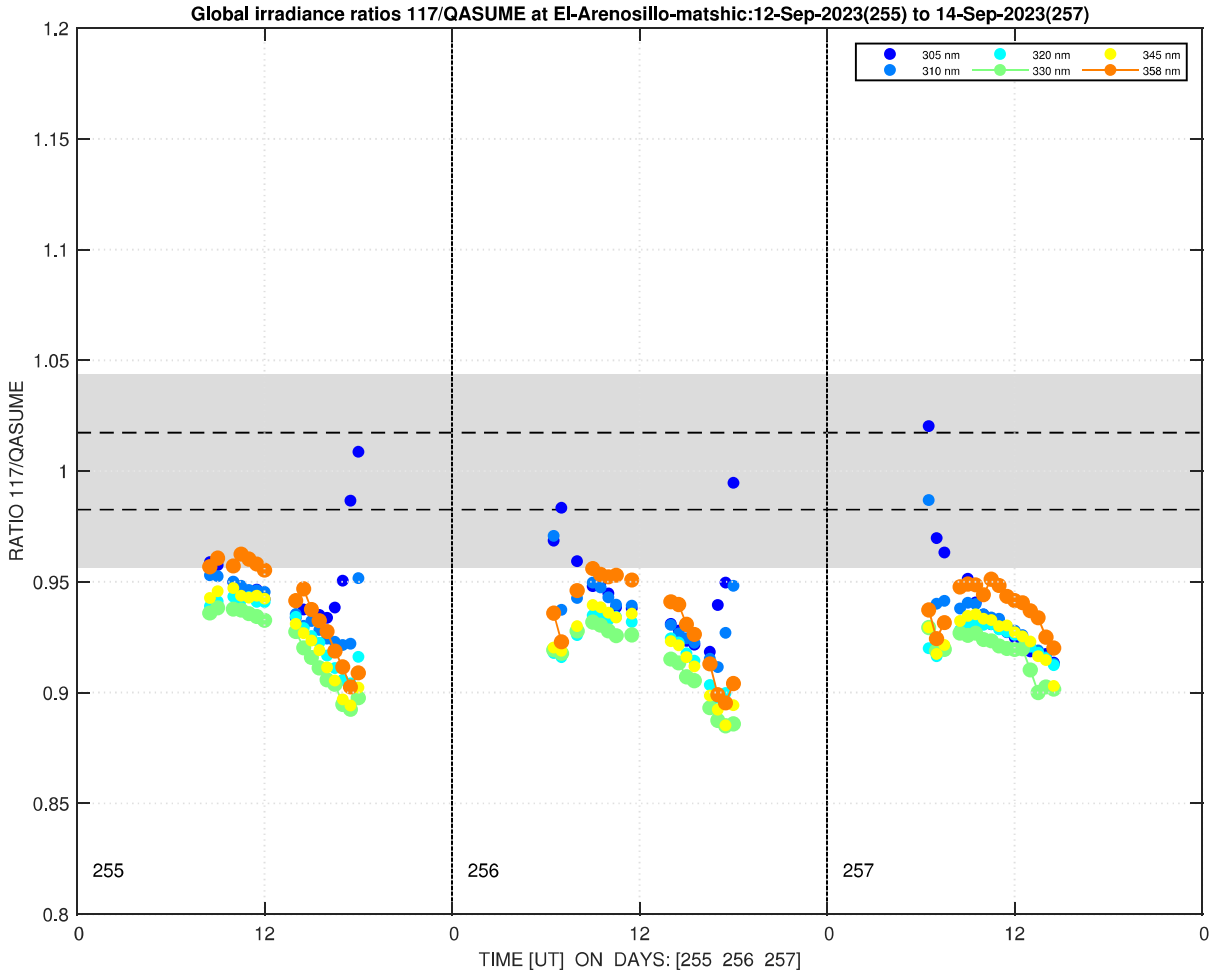

Global irradiance ratios 075/QASUME at El-Arenosillo-matshic:14-Sep-2023(257)
wl [nm]
UVIndex
075
QASUME

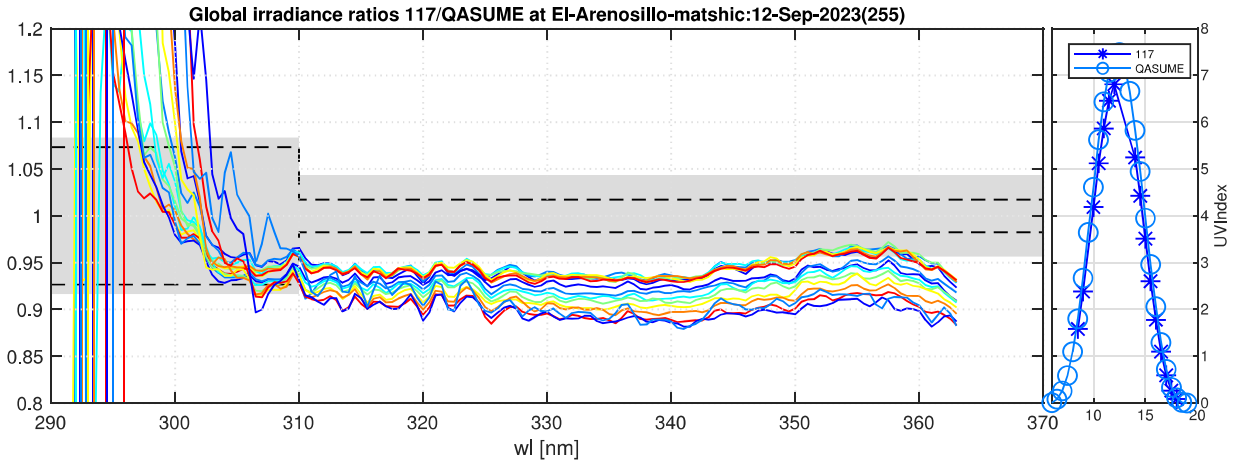

Daily variation. Wavelength bands are ± 2.5 nm
80°
TIME [UT](SZA)
305 nm
310 nm
315 nm
320 nm

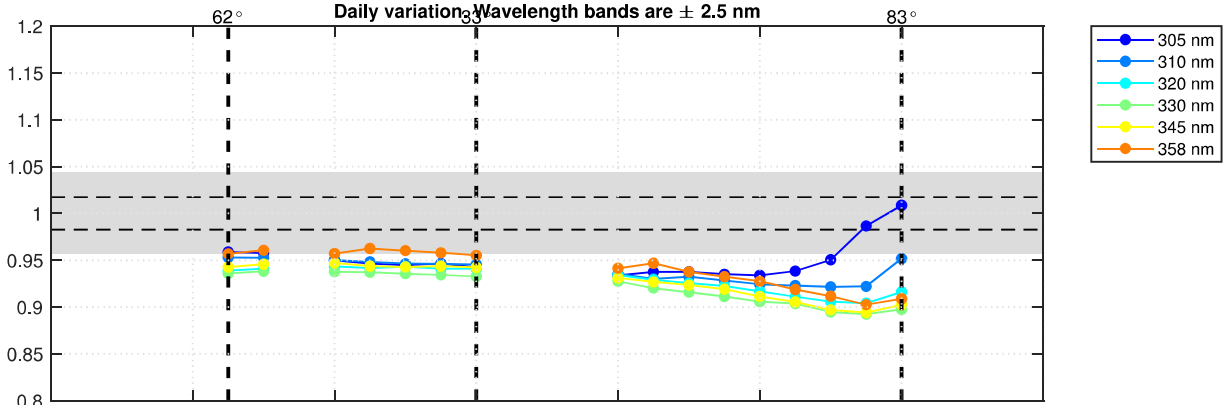

Mean ratio 075/QASUME at El-Arenosillo-matshic:11-Sep-2023(254) to 14-Sep-2023(257)
RATIO 075/QASUME
Mean ratio SZA<90
Mean ratio SZA<50
5/95th percentile
N075 Spectra=70
NSync-Spectra=56

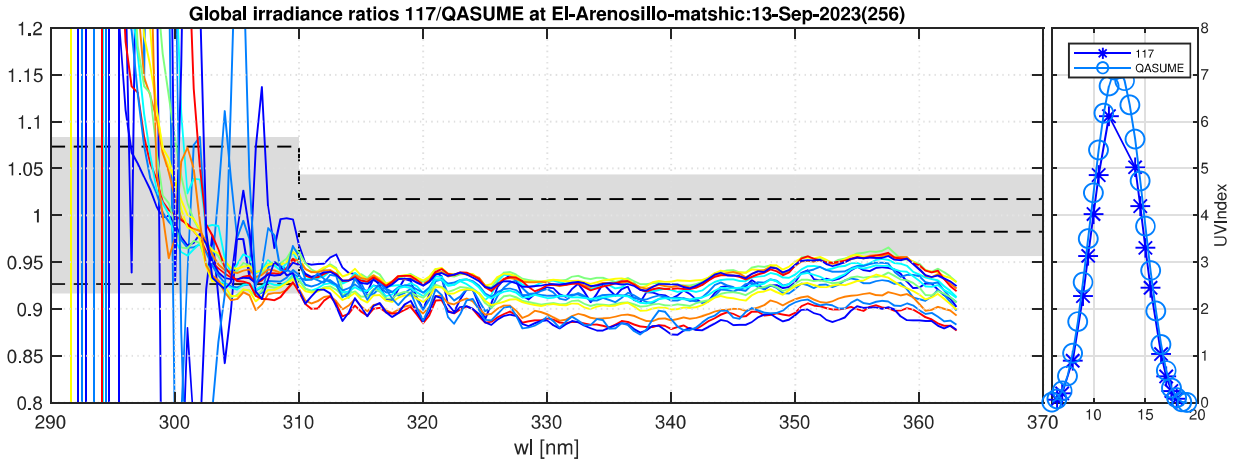

Wavelength shift
Mean
MinMax
STD
Wavelength shift /nm
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
300
305
310
315
320
325
Wavelength /nm

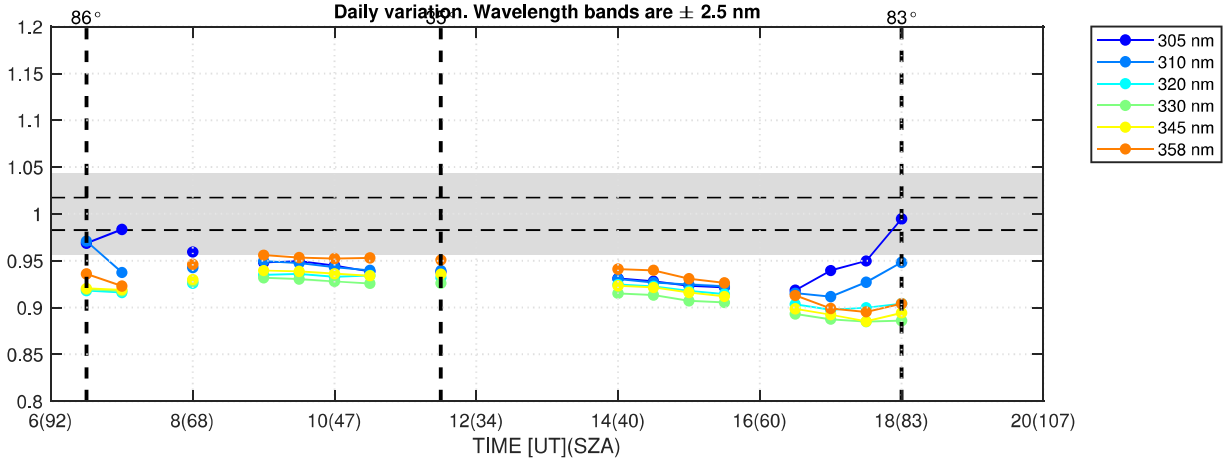

WL=315.00 nm
Wavelength shift /nm
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
09/11
09/12
09/13
09/14
09/15
Date & time

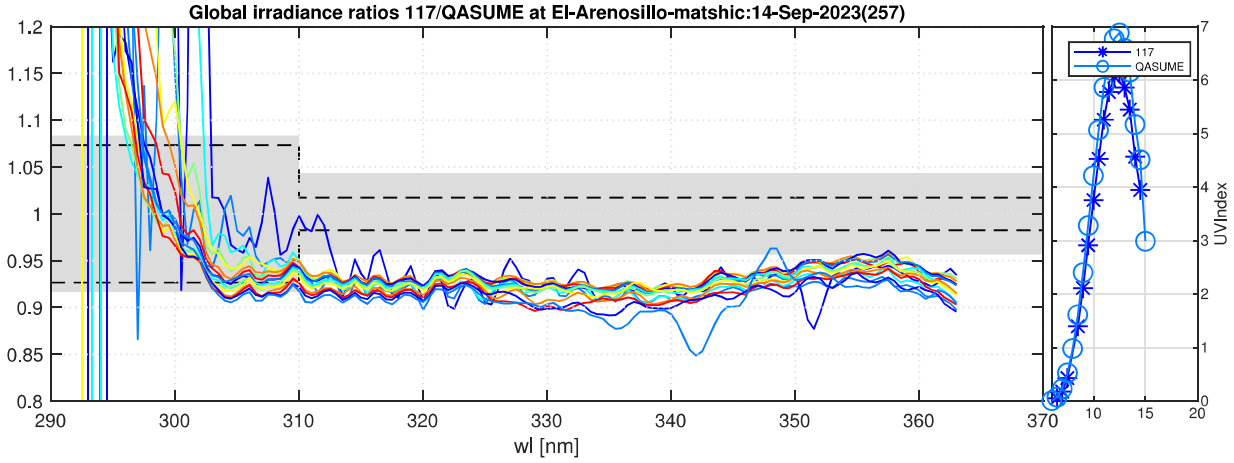

Global irradiance ratios 117/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 14-Sep-2023(257)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
RATIO 117/QASUME
255
256
257
TIME [UT] ON DAYS: [255 256 257]

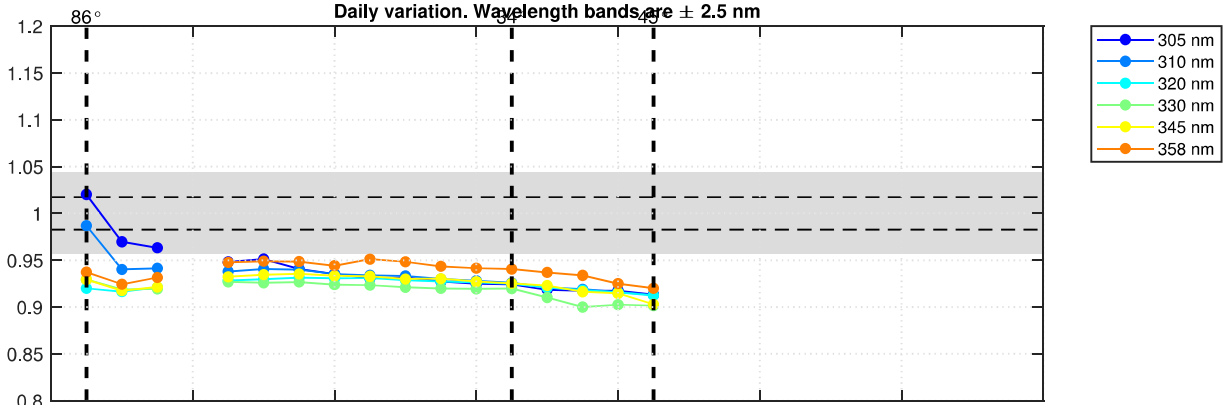

Global irradiance ratios 117/QASUME at El-Arenosillo-matshic:12-Sep-2023(255)
117
QASUME
UVIndex
wl [nm]

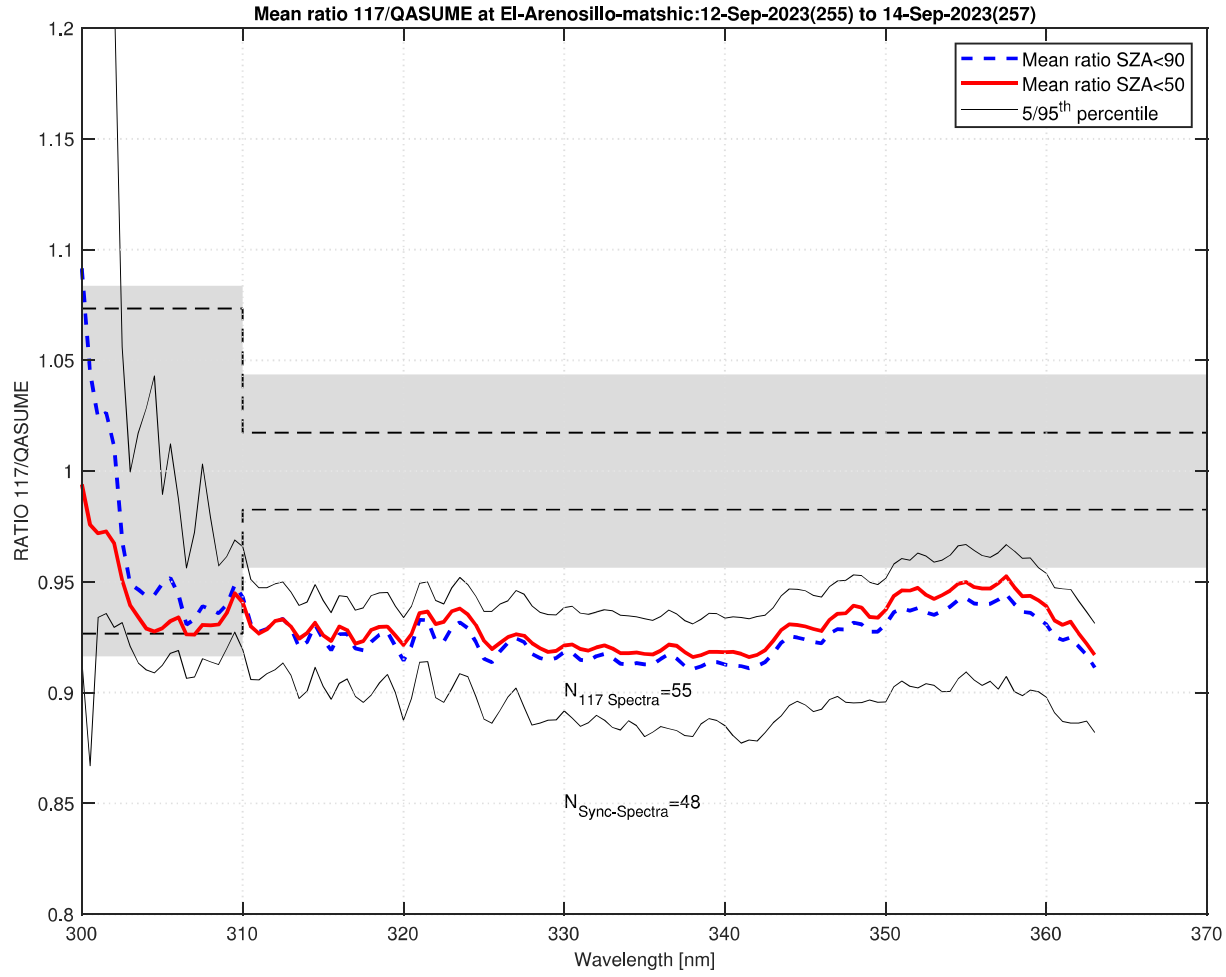

Daily variation. Wavelength bands are ± 2.5 nm
62°
83°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

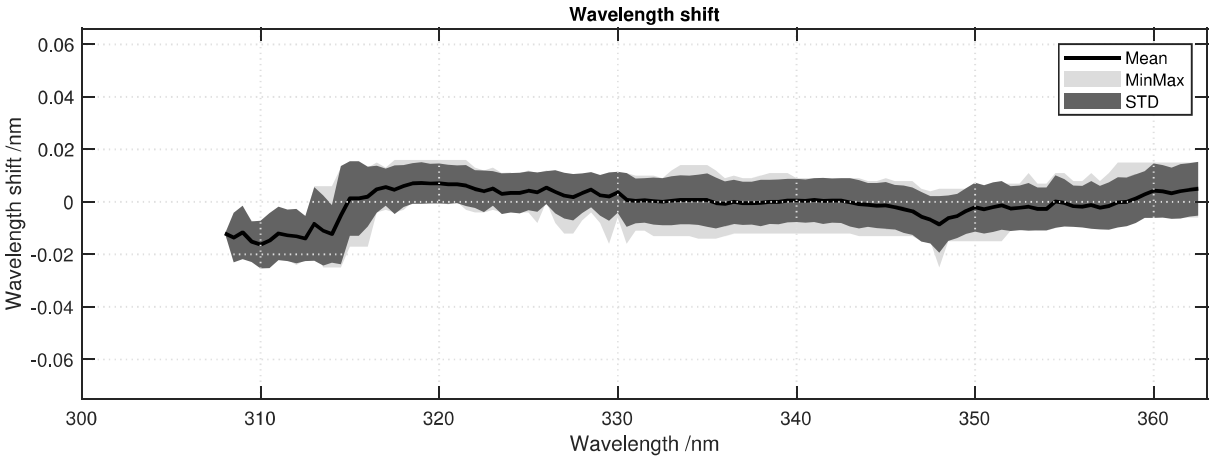

Global irradiance ratios 117/QASUME at El-Arenosillo-matshic:13-Sep-2023(256)
wl [nm]
UVIndex
117
QASUME

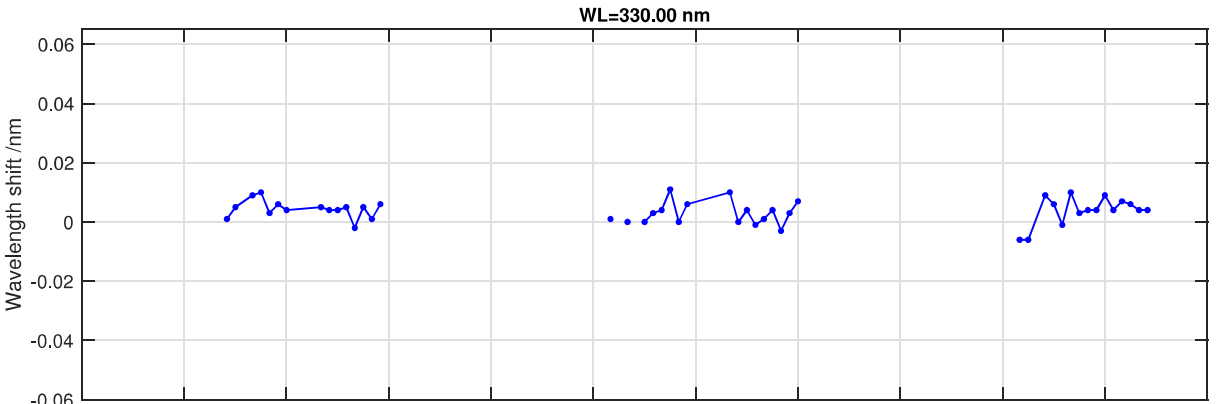

Daily variation. Wavelength bands are ± 2.5 nm
86°
83°
TIME [UT](SZA)
6(92)
8(68)
10(47)
12(34)
14(40)
16(60)
18(83)
20(107)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

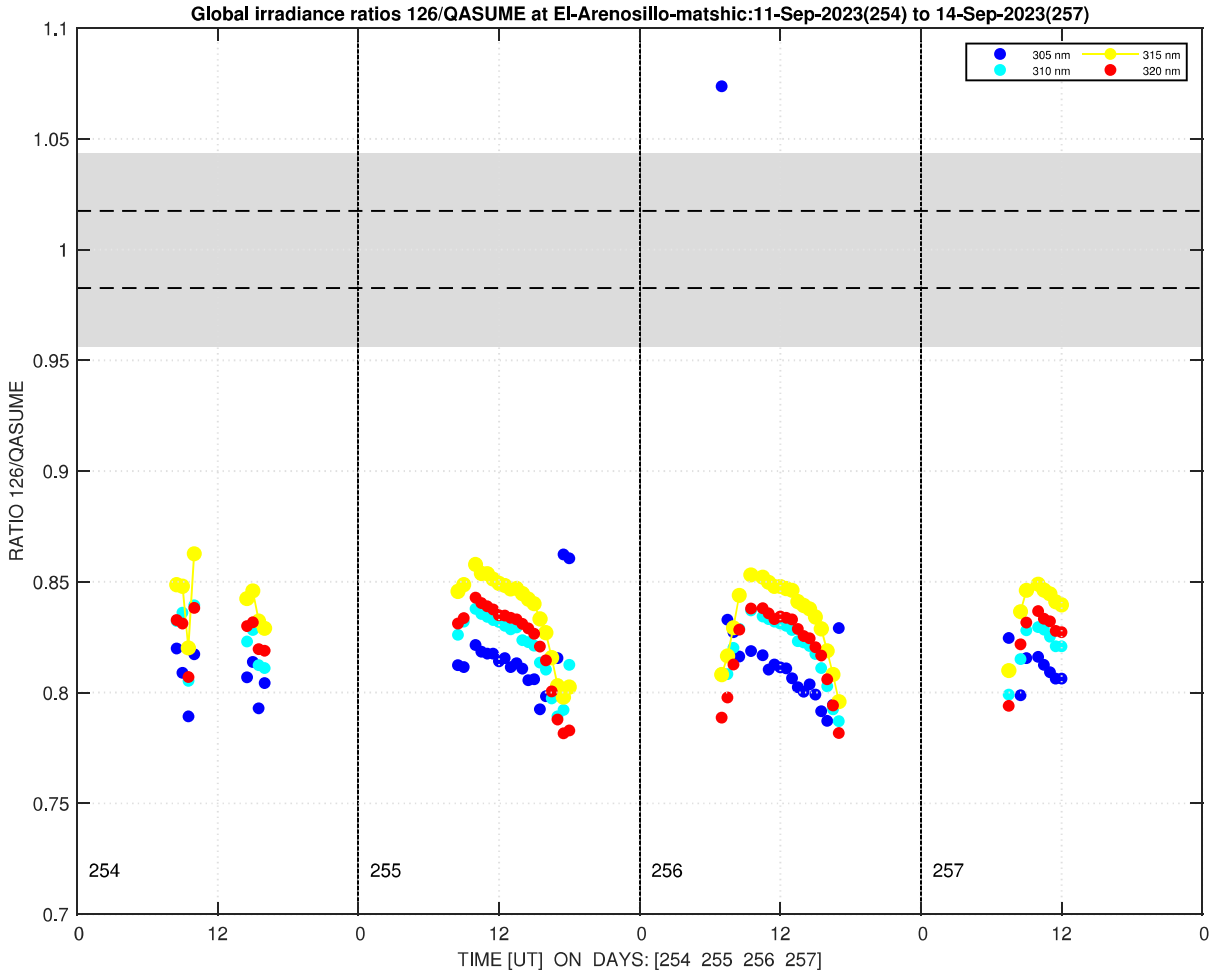

Global irradiance ratios 117/QASUME at El-Arenosillo-matshic:14-Sep-2023(257)
wl [nm]
UVIndex
117
QASUME

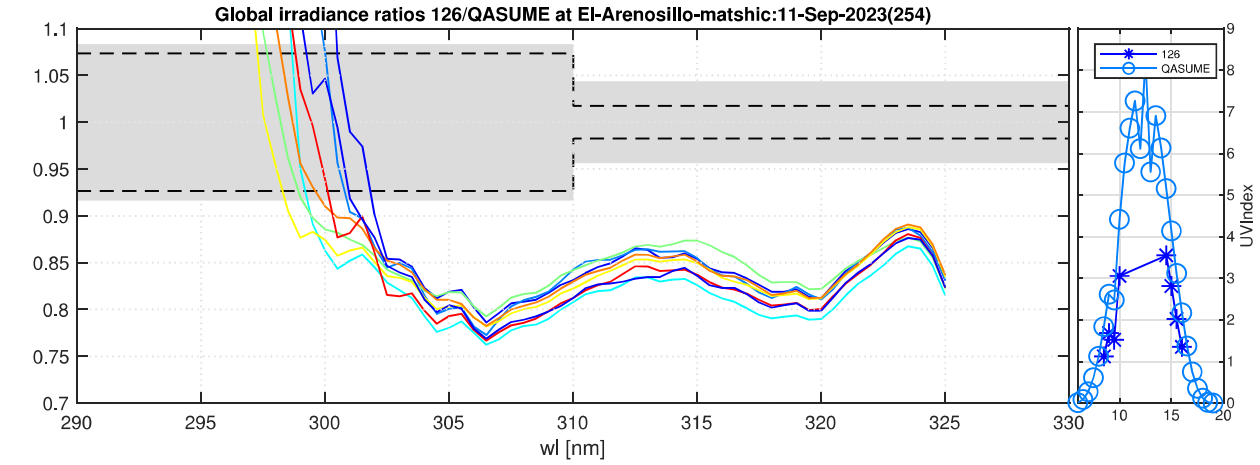

Daily variation. Wavelength bands are ± 2.5 nm
86°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

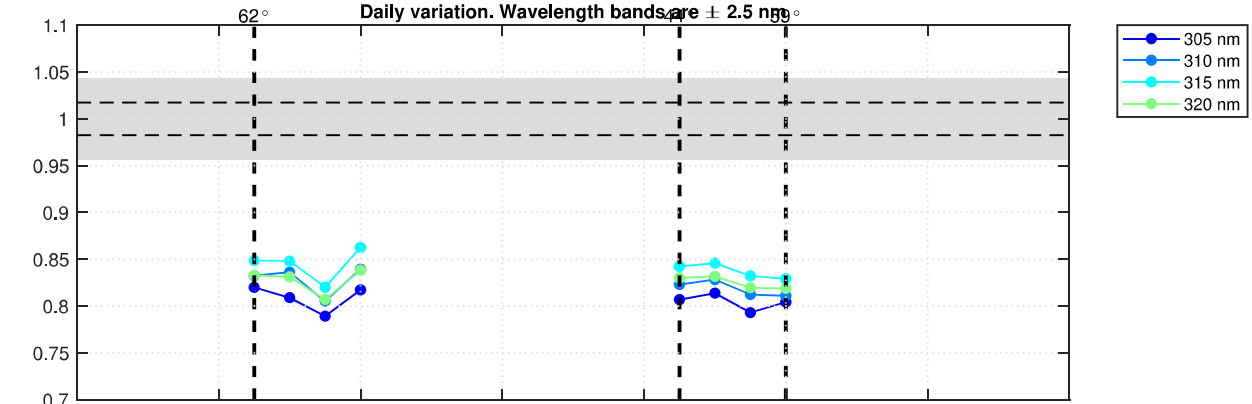

Mean ratio 117/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 14-Sep-2023(257)
Mean ratio SZA<90
Mean ratio SZA<50
5/95th percentile
RATIO 117/QASUME
N117 Spectra=55
NSync-Spectra=48
Wavelength [nm]

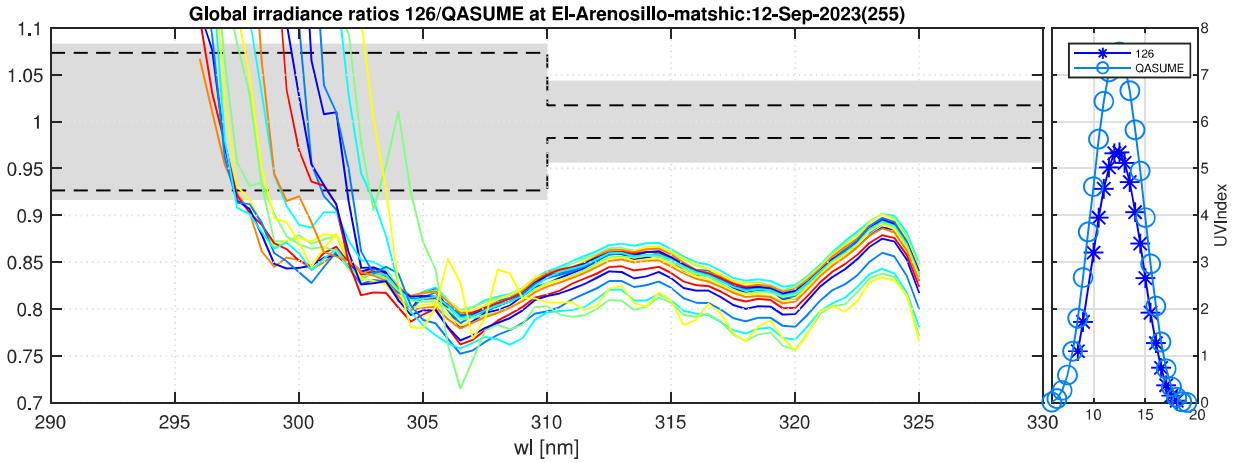

Wavelength shift
Mean
MinMax
STD
Wavelength shift /nm
Wavelength /nm

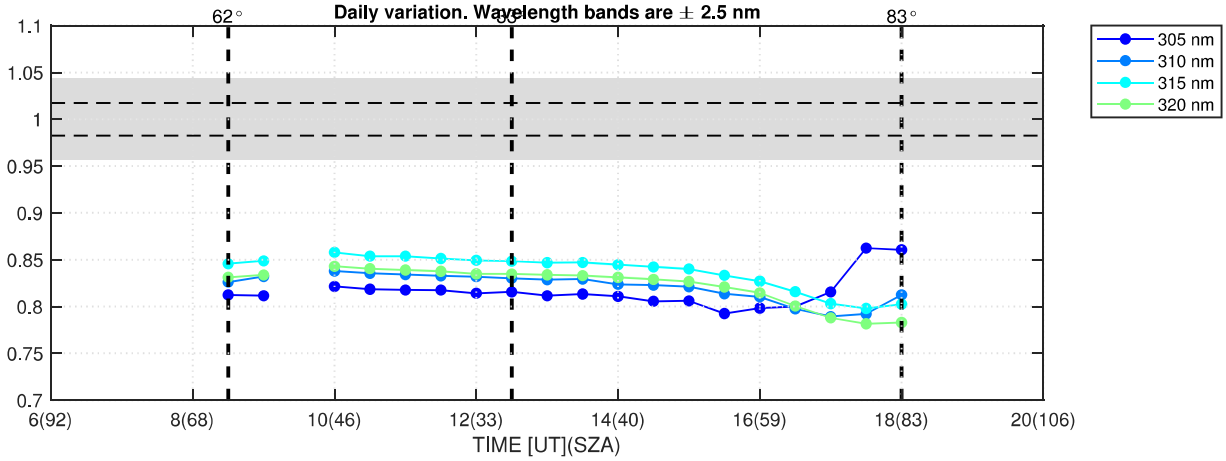

WL=330.00 nm
Wavelength shift /nm

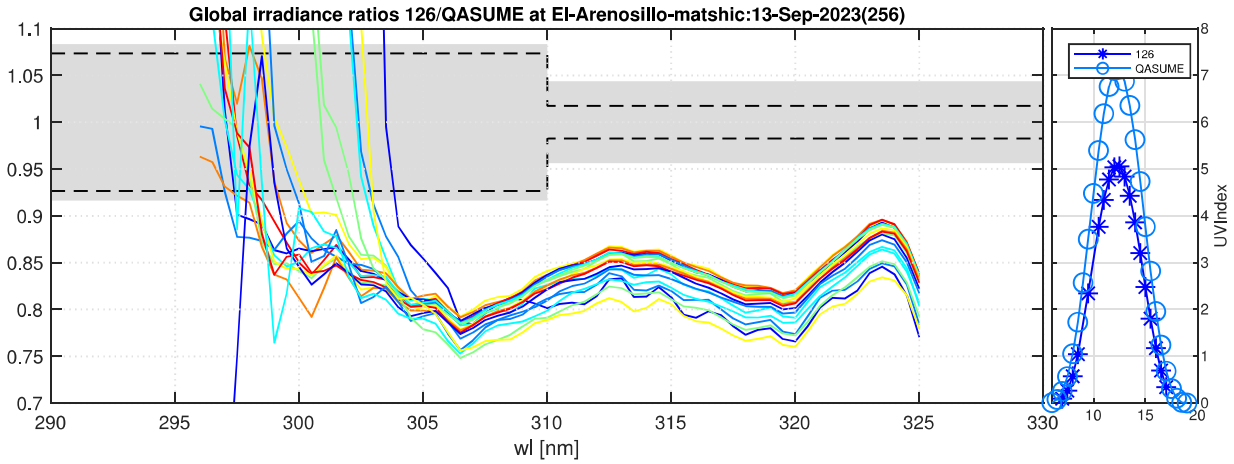

Global irradiance ratios 126/QASUME at El-Arenosillo-matshic:11-Sep-2023(254) to 14-Sep-2023(257)
305 nm
310 nm
315 nm
320 nm
RATIO 126/QASUME
254
255
256
257
TIME [UT] ON DAYS: [254 255 256 257]

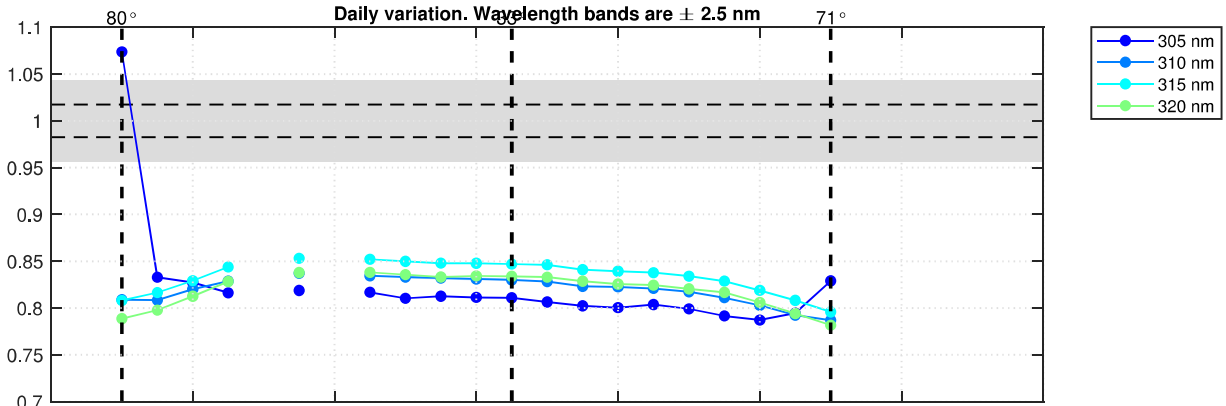

Global irradiance ratios 126/QASUME at El-Arenosillo-matshic:11-Sep-2023(254)
126
QASUME
UVIndex
wl [nm]

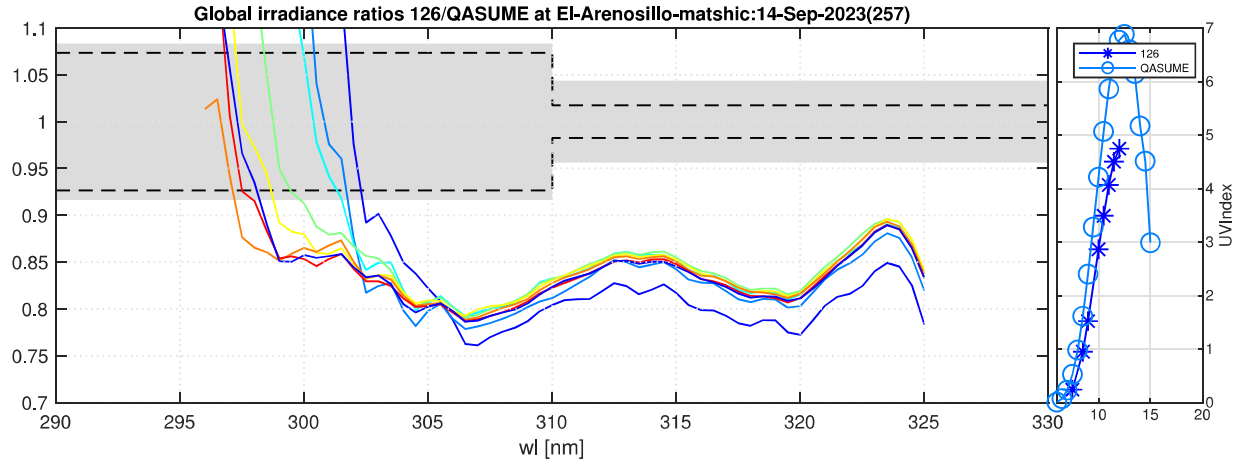

Daily variation. Wavelength bands are ± 2.5 nm
62°
305 nm
310 nm
315 nm
320 nm

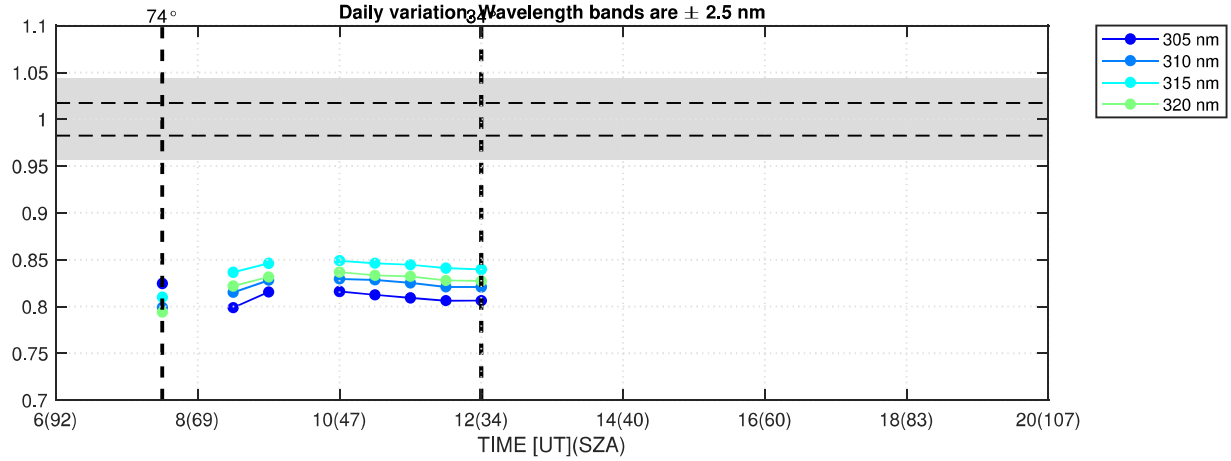

Global irradiance ratios 126/QASUME at El-Arenosillo-matshic:12-Sep-2023(255)
wl [nm]
UVIndex
126
QASUME

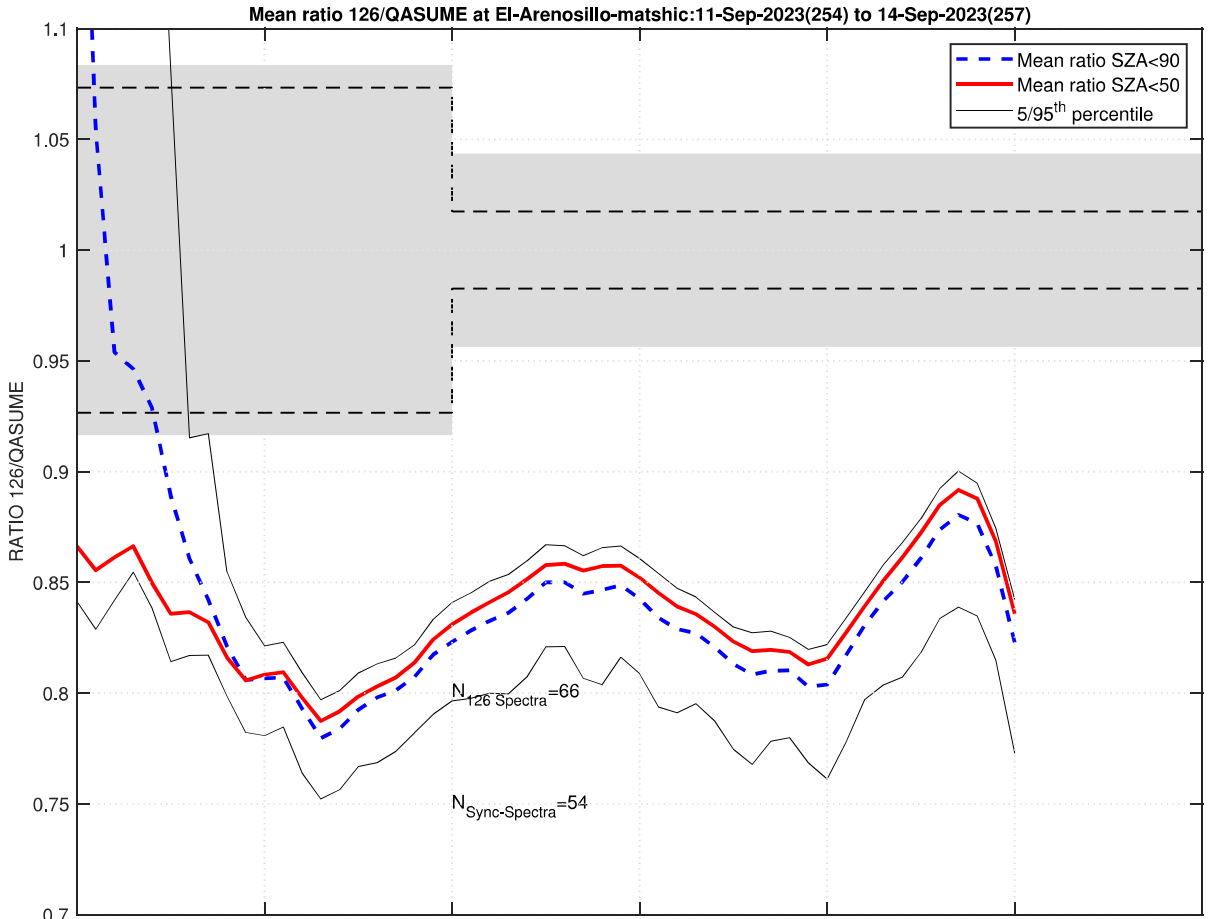

Daily variation. Wavelength bands are ± 2.5 nm
62°
83°
TIME [UT](SZA)
6(92)
8(68)
10(46)
12(33)
14(40)
16(59)
18(83)
20(106)
305 nm
310 nm
315 nm
320 nm

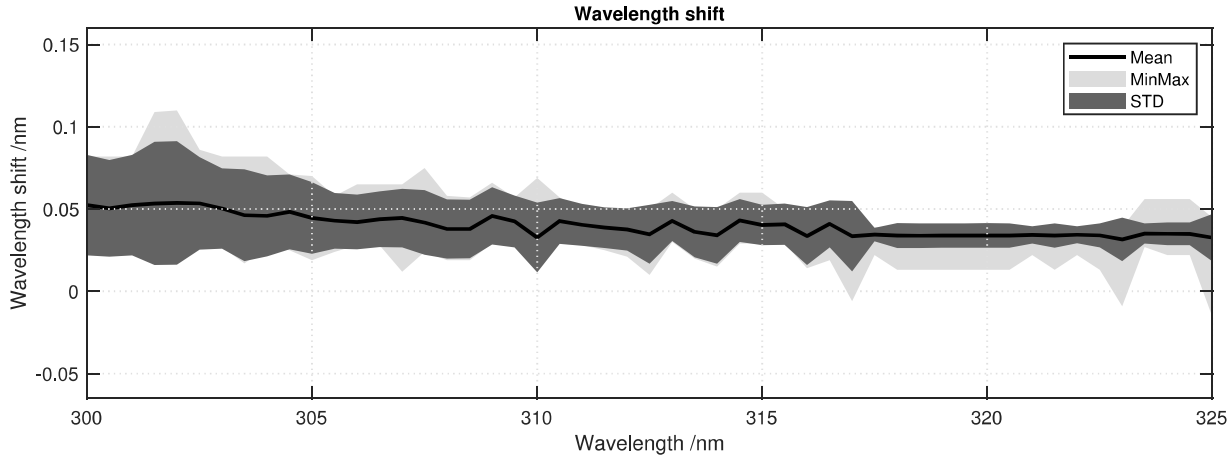

Global irradiance ratios 126/QASUME at El-Arenosillo-matshic:13-Sep-2023(256)
wl [nm]
UVIndex
126
QASUME

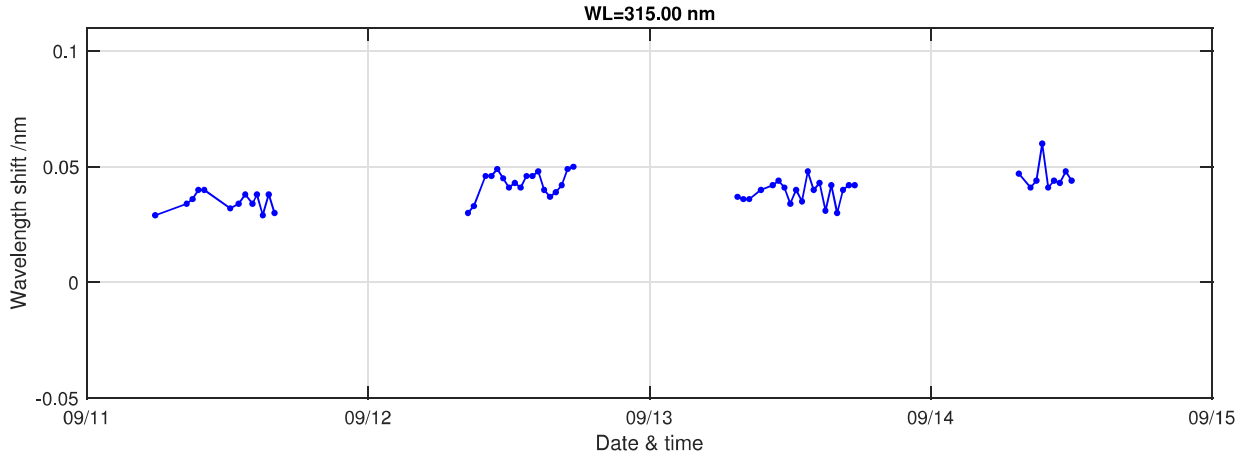

Daily variation. Wavelength bands are ± 2.5 nm
80°
71°
305 nm
310 nm
315 nm
320 nm

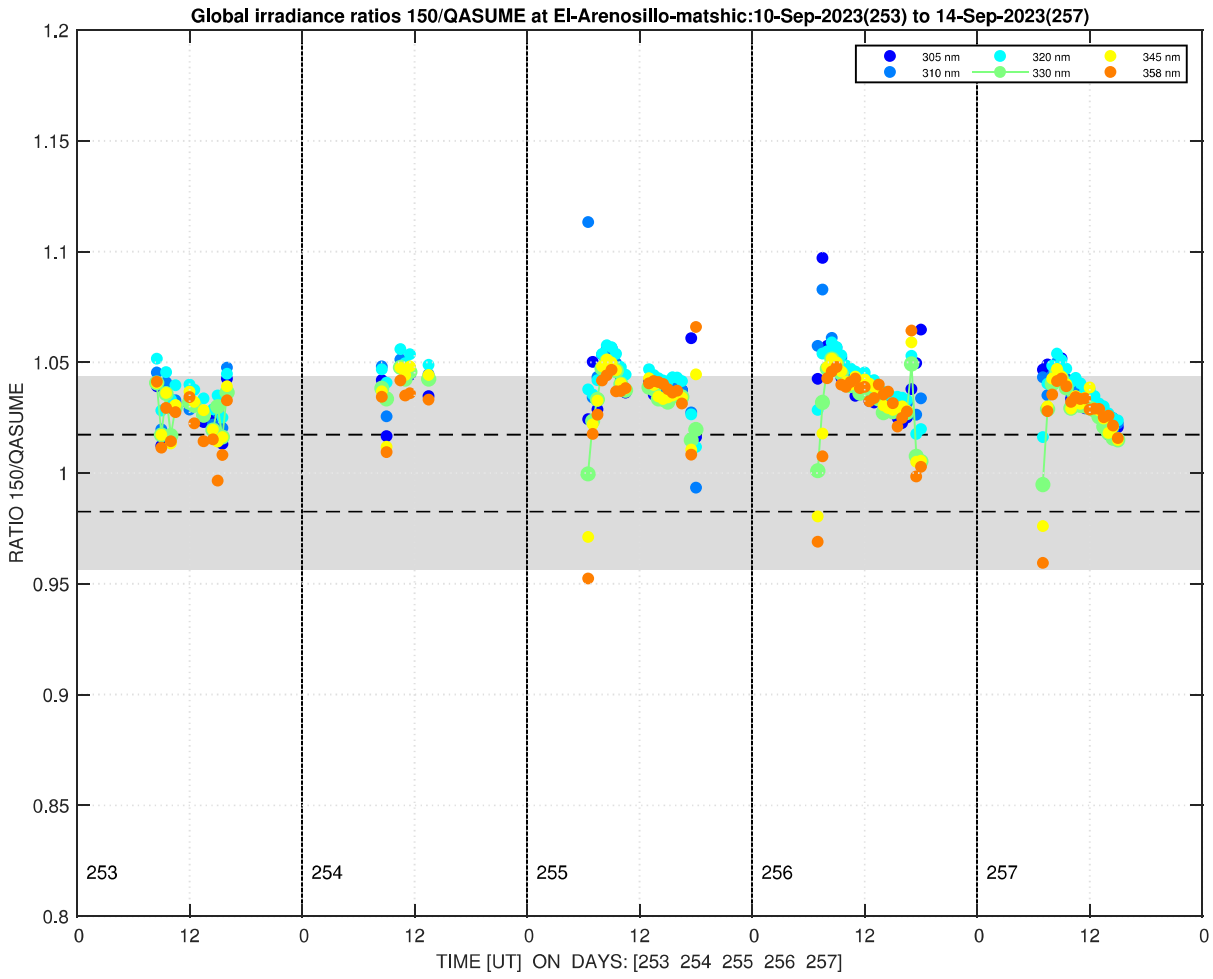

Global irradiance ratios 126/QASUME at El-Arenosillo-matshic:14-Sep-2023(257)
wl [nm]
UVIndex
126
QASUME

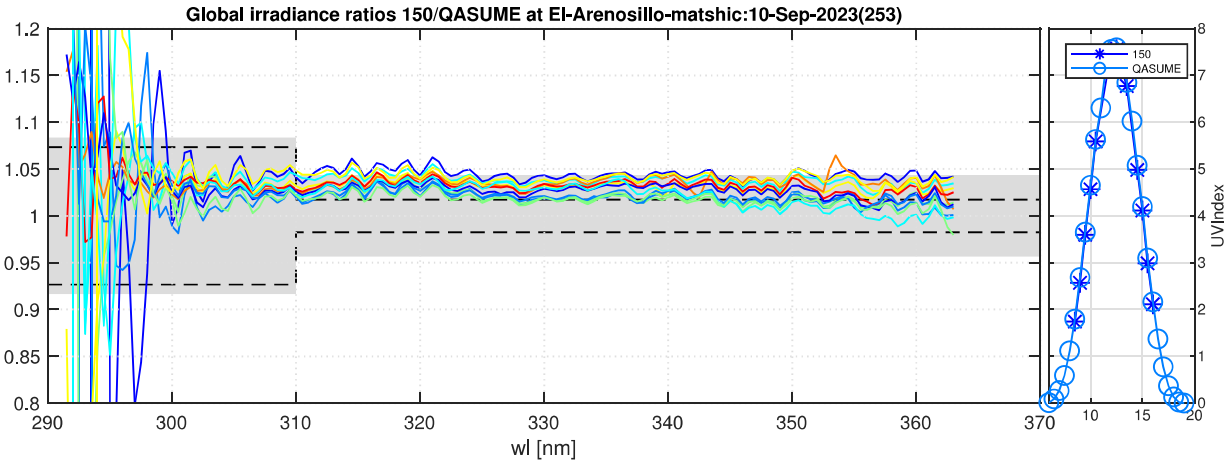

Daily variation, Wavelength bands are ± 2.5 nm
74°
34°
TIME [UT](SZA)
6(92)
8(69)
10(47)
12(34)
14(40)
16(60)
18(83)
20(107)
305 nm
310 nm
315 nm
320 nm

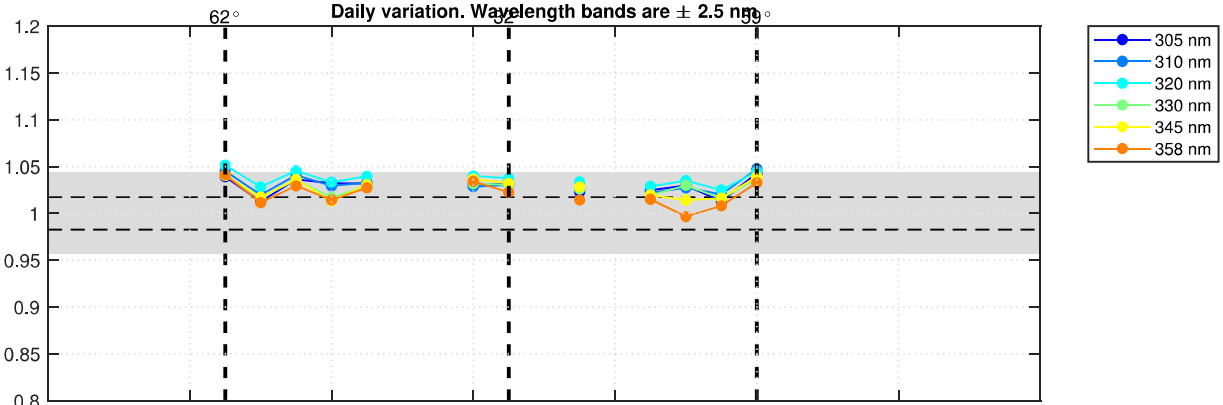

Mean ratio 126/QASUME at El-Arenosillo-matshic:11-Sep-2023(254) to 14-Sep-2023(257)
RATIO 126/QASUME
Mean ratio SZA<90
Mean ratio SZA<50
5/95th percentile
N126 Spectra=66
NSync-Spectra=54

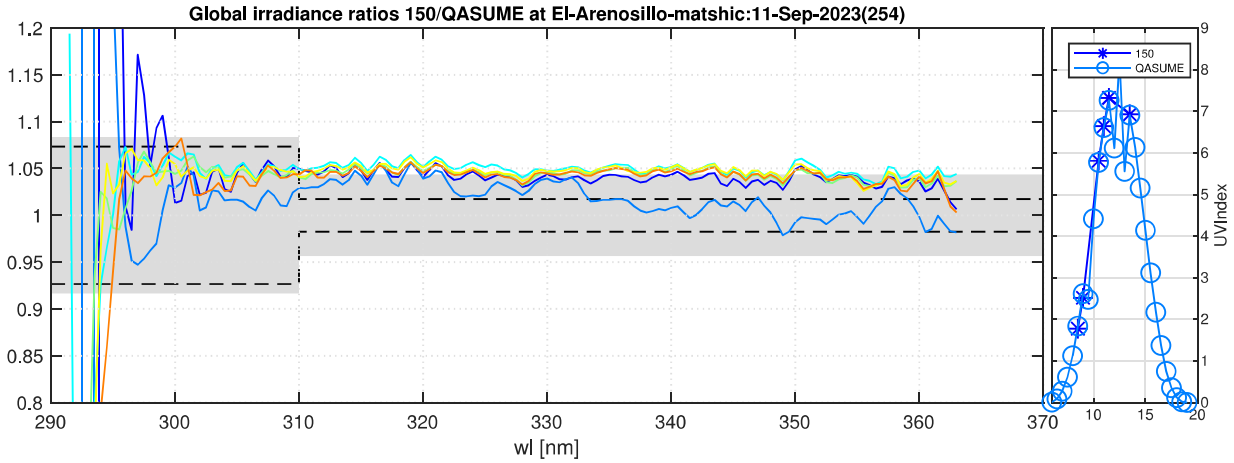

Wavelength shift
Mean
MinMax
STD
Wavelength shift /nm
0.15
0.1
0.05
0
-0.05
300
305
310
315
320
325
Wavelength /nm

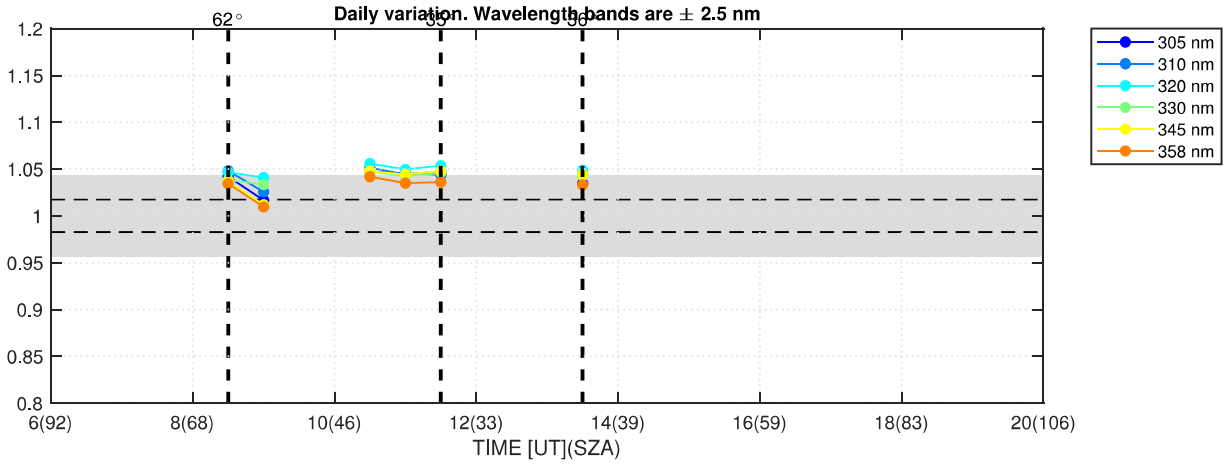

WL=315.00 nm
Wavelength shift /nm
0.1
0.05
0
-0.05
09/11
09/12
09/13
09/14
09/15
Date & time

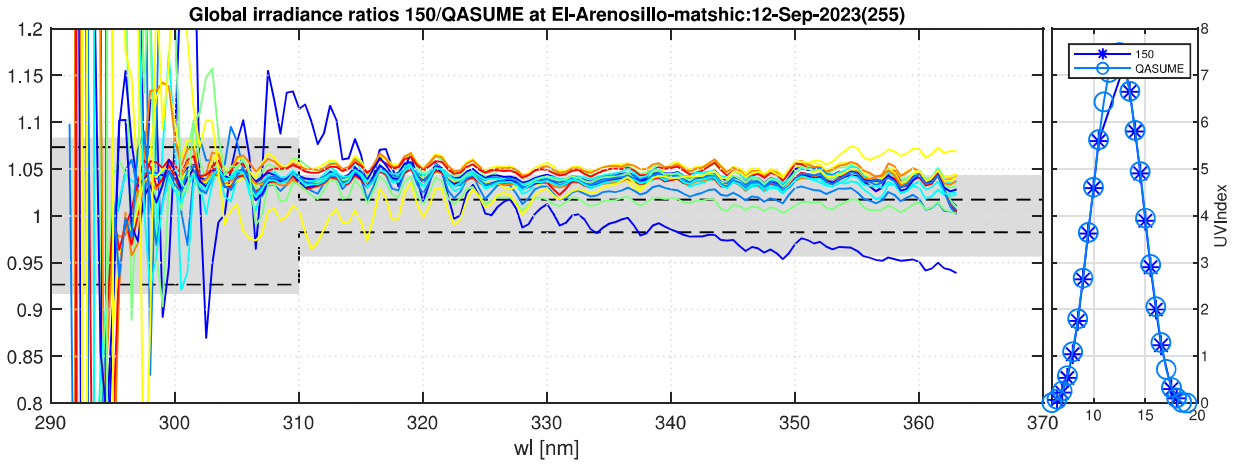

Global irradiance ratios 150/QASUME at El-Arenosillo-matshic:10-Sep-2023(253) to 14-Sep-2023(257)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
RATIO 150/QASUME
253
254
255
256
257
TIME [UT] ON DAYS: [253 254 255 256 257]

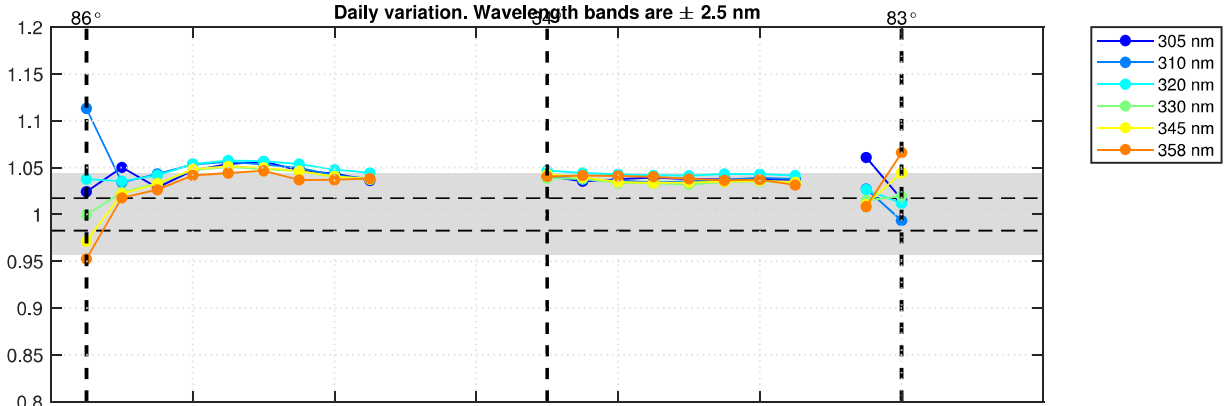

Global irradiance ratios 150/QASUME at El-Arenosillo-matshic:10-Sep-2023(253)
150
QASUME
UVIndex
wl [nm]

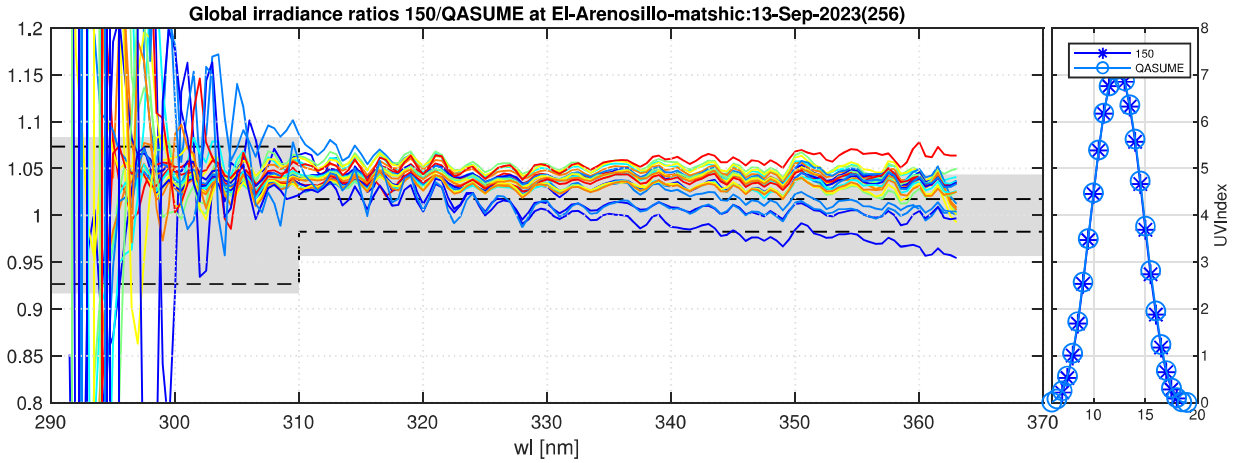

Daily variation. Wavelength bands are ± 2.5 nm
62°
82°
98°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

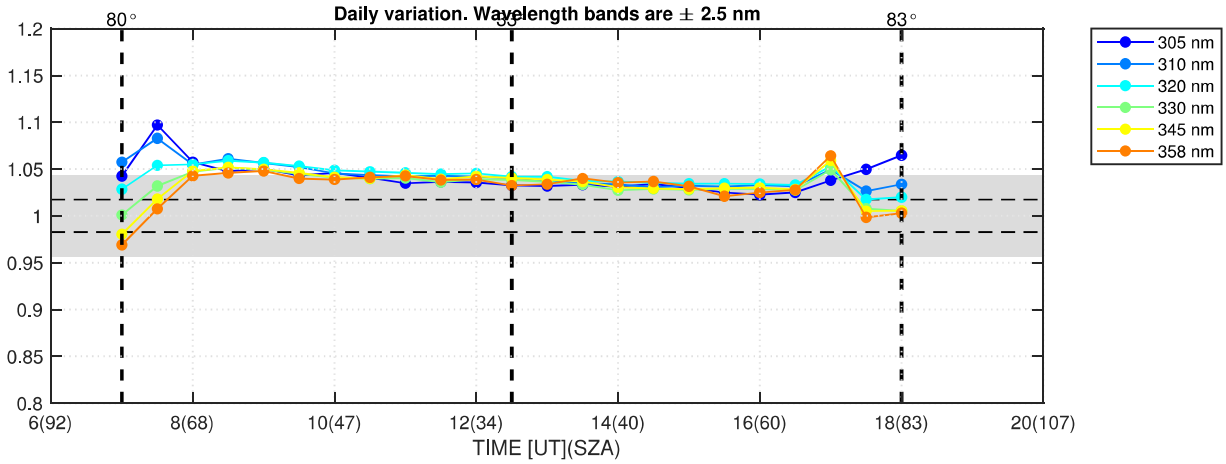

Global irradiance ratios 150/QASUME at El-Arenosillo-matshic:11-Sep-2023(254)
wl [nm]
UVIndex
150
QASUME

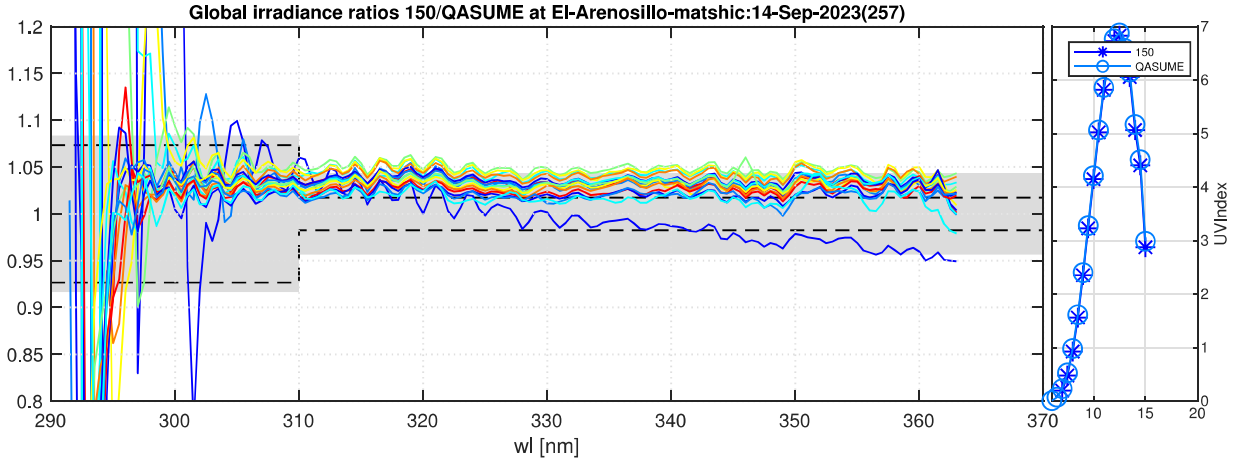

Daily variation. Wavelength bands are ± 2.5 nm
62°
35
36
TIME [UT](SZA)
6(92)
8(68)
10(46)
12(33)
14(39)
16(59)
18(83)
20(106)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

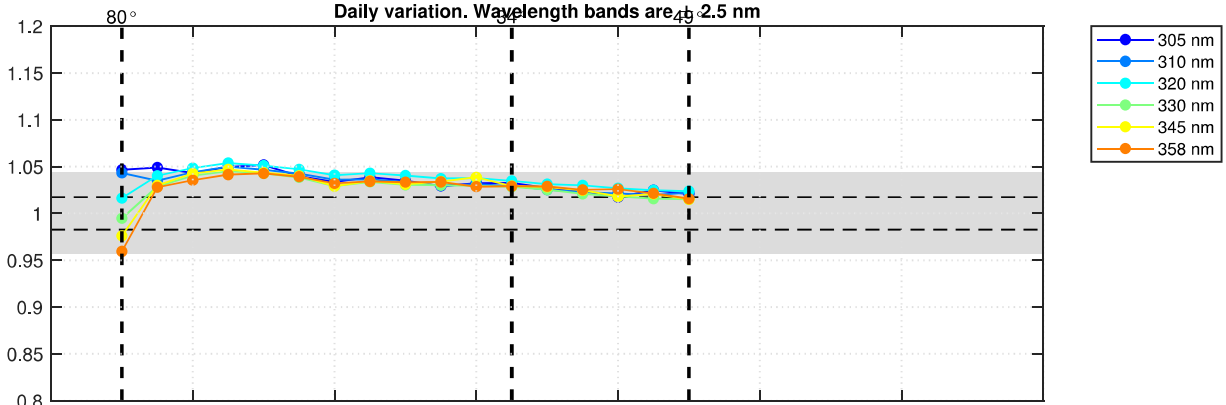

Global irradiance ratios 150/QASUME at El-Arenosillo-matshic:12-Sep-2023(255)
wl [nm]
UVIndex
150
QASUME

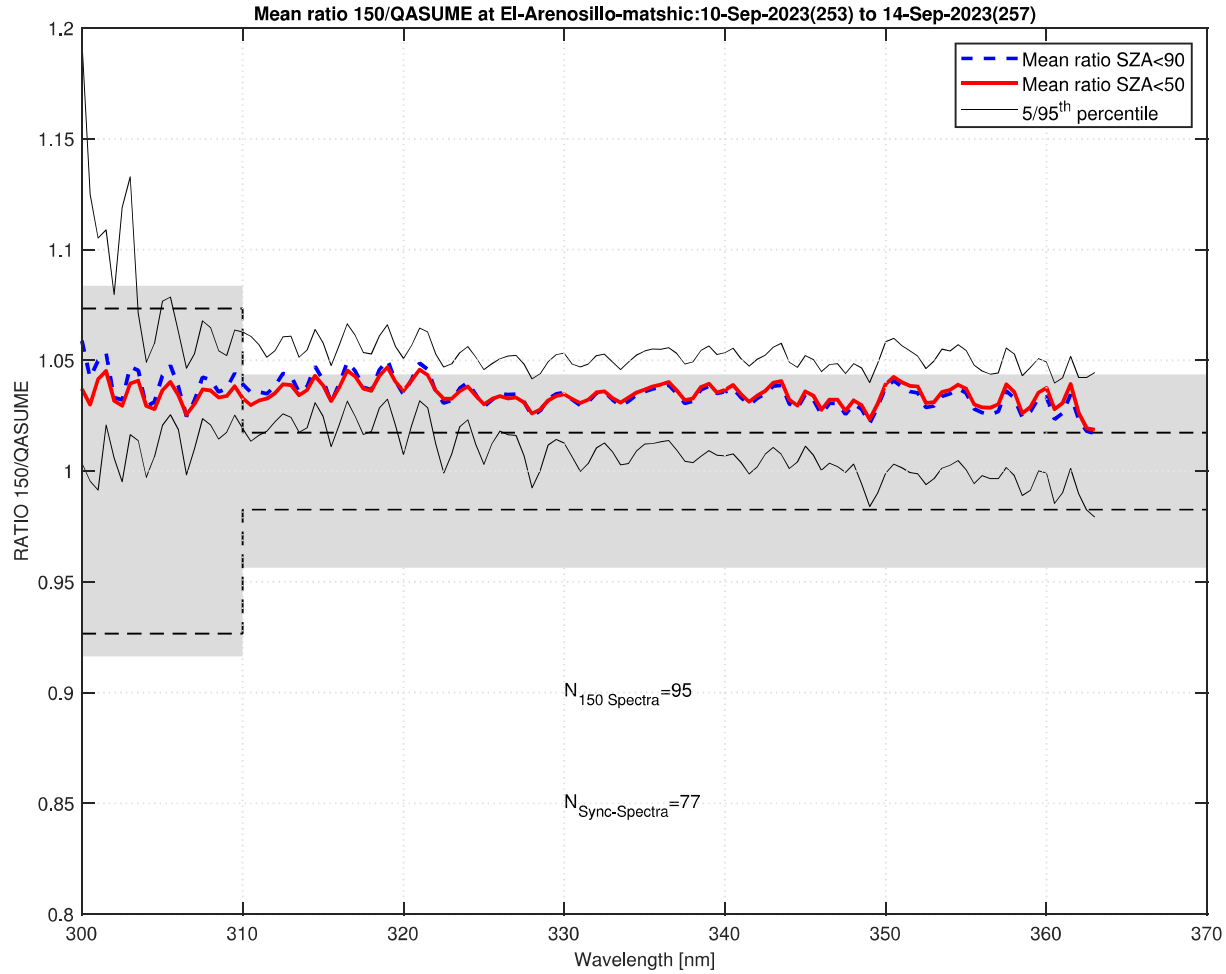

Daily variation. Wavelength bands are ± 2.5 nm
86°
34
83°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

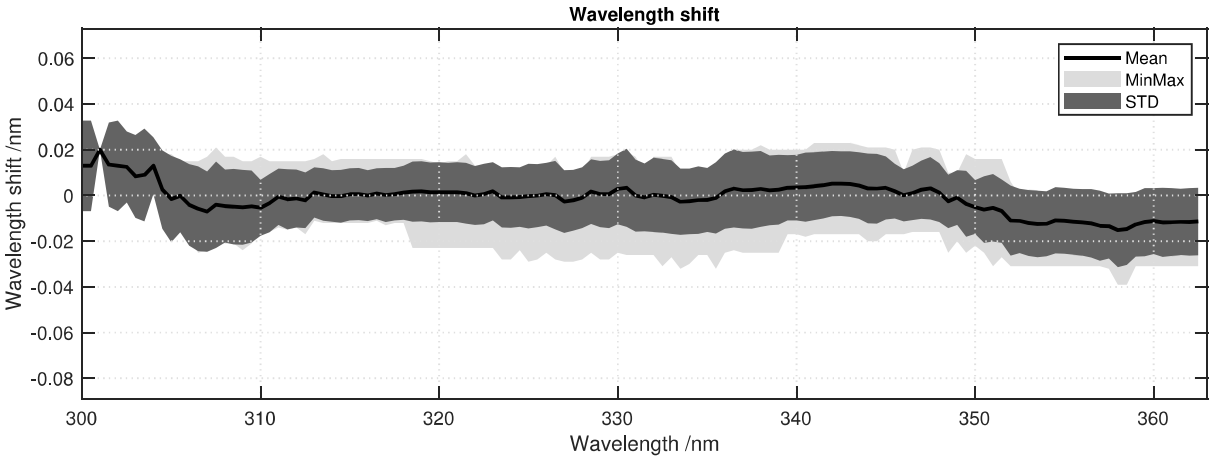

Global irradiance ratios 150/QASUME at El-Arenosillo-matshic:13-Sep-2023(256)
wl [nm]
UVIndex
150
QASUME

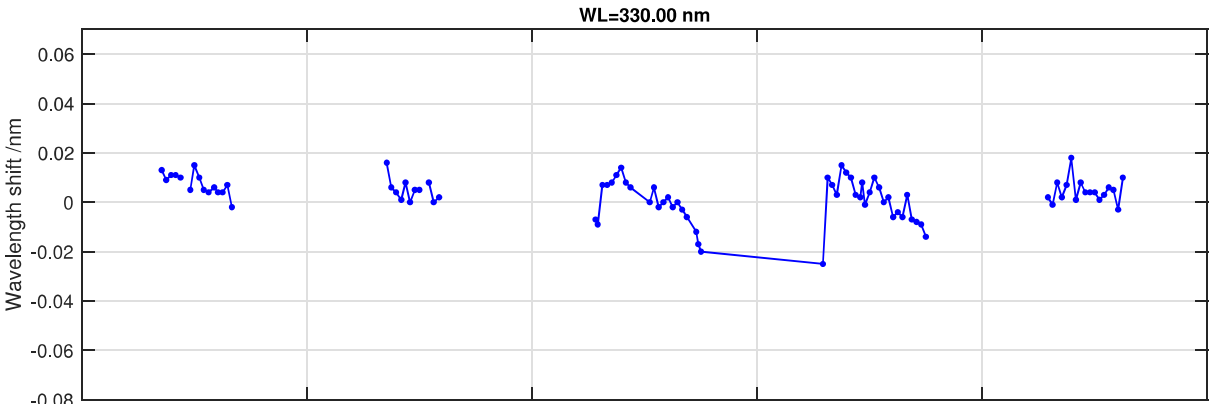

Daily variation. Wavelength bands are ± 2.5 nm
80°
83°
TIME [UT](SZA)
6(92)
8(68)
10(47)
12(34)
14(40)
16(60)
18(83)
20(107)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

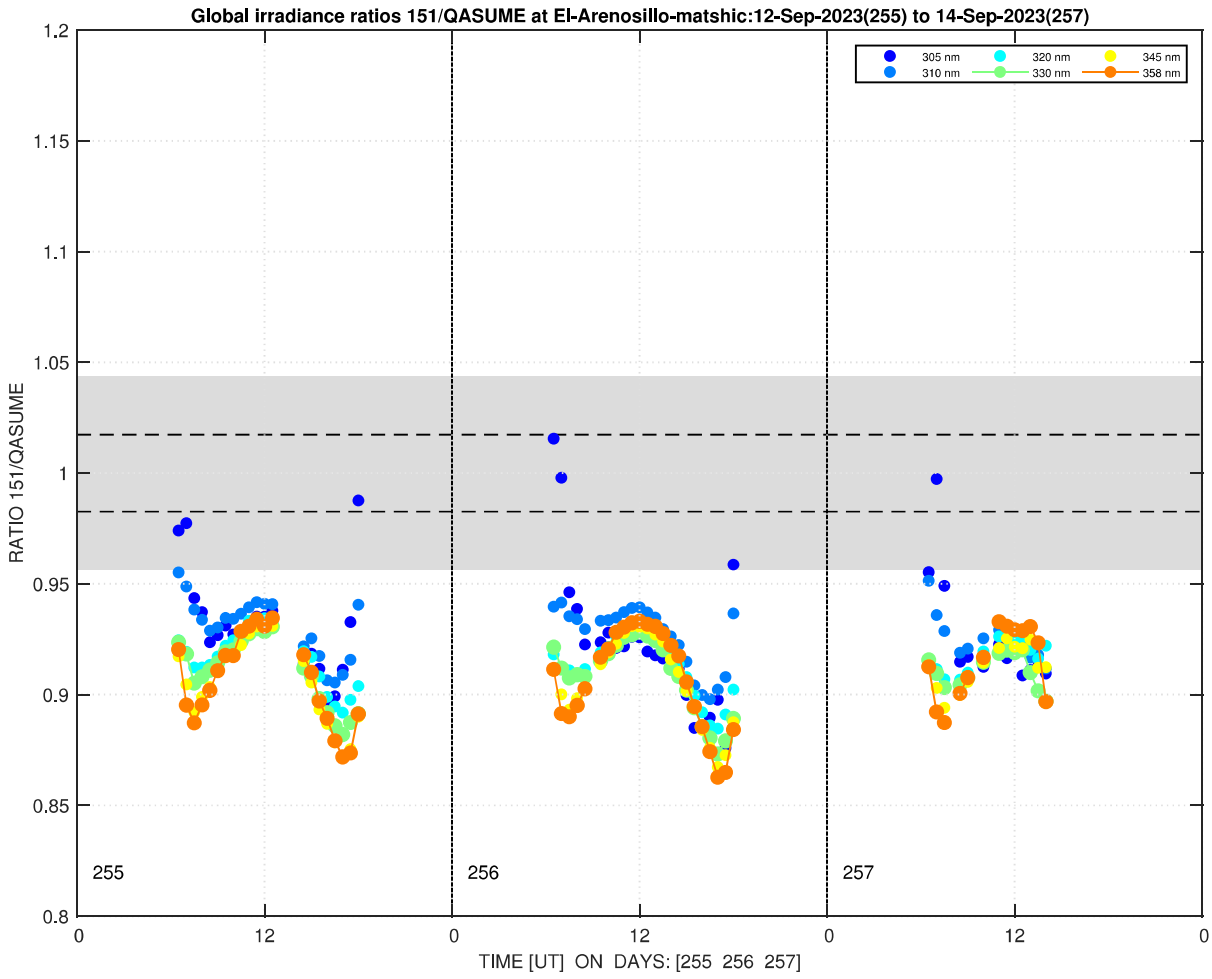

Global irradiance ratios 150/QASUME at El-Arenosillo-matshic:14-Sep-2023(257)
wl [nm]
UVIndex
150
QASUME

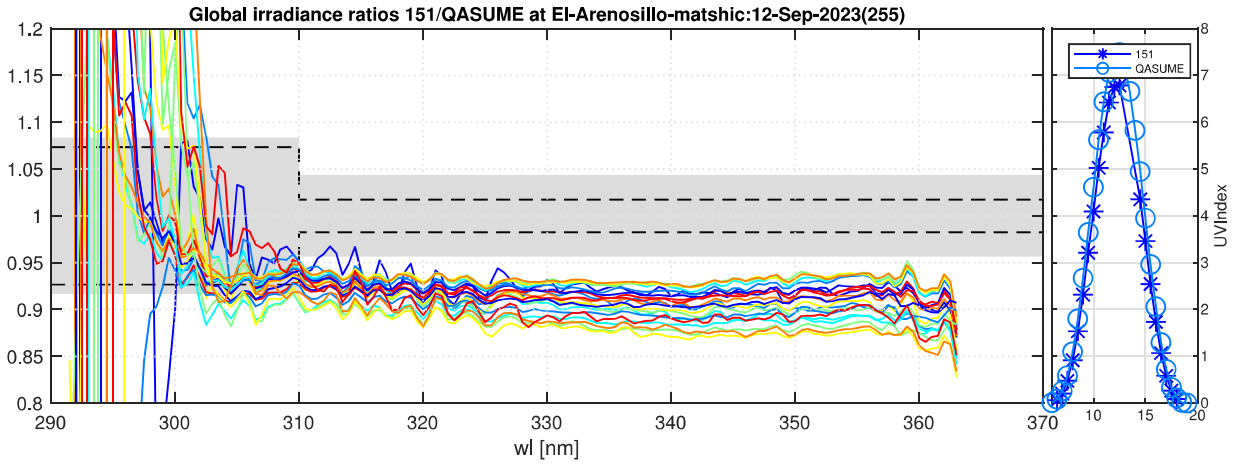

Daily variation. Wavelength bands are ± 2.5 nm
80°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

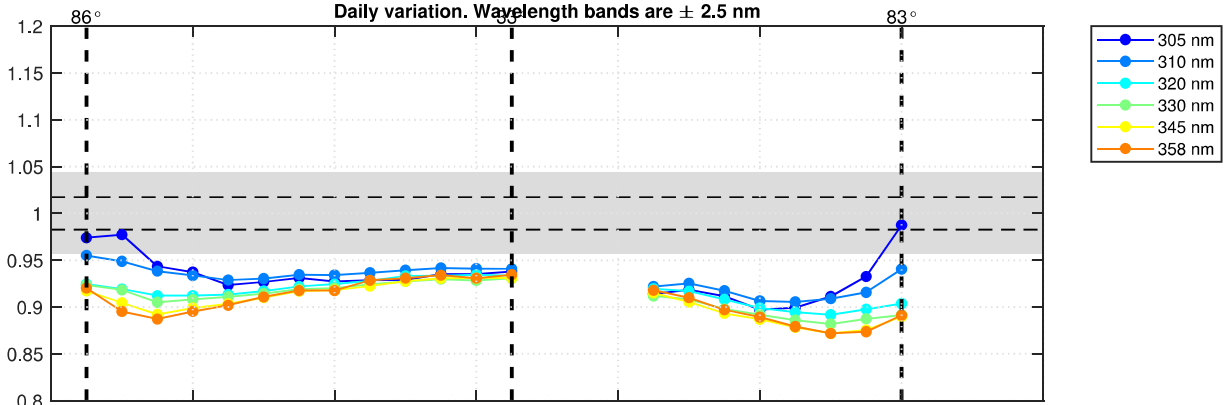

Mean ratio 150/QASUME at El-Arenosillo-matshic:10-Sep-2023(253) to 14-Sep-2023(257)
Mean ratio SZA<90
Mean ratio SZA<50
5/95th percentile
RATIO 150/QASUME
Wavelength [nm]
N150 Spectra=95
NSync-Spectra=77

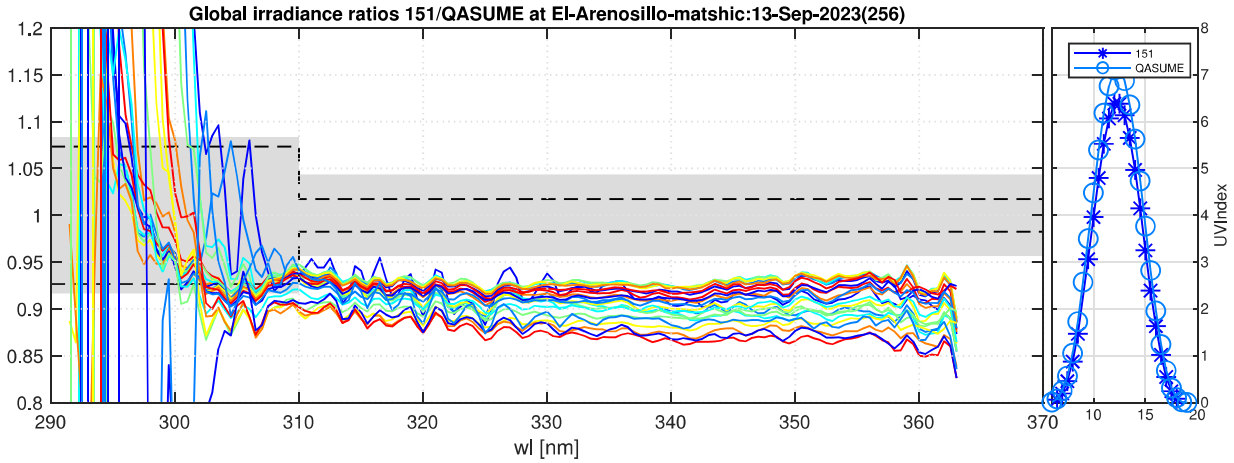

Wavelength shift
Mean
MinMax
STD
Wavelength shift /nm
Wavelength /nm

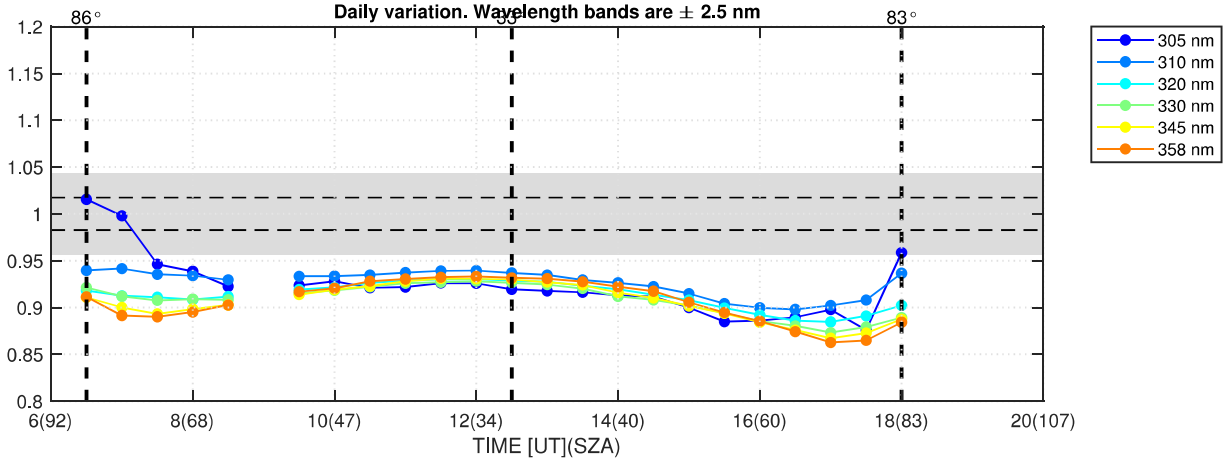

WL=330.00 nm
Wavelength shift /nm

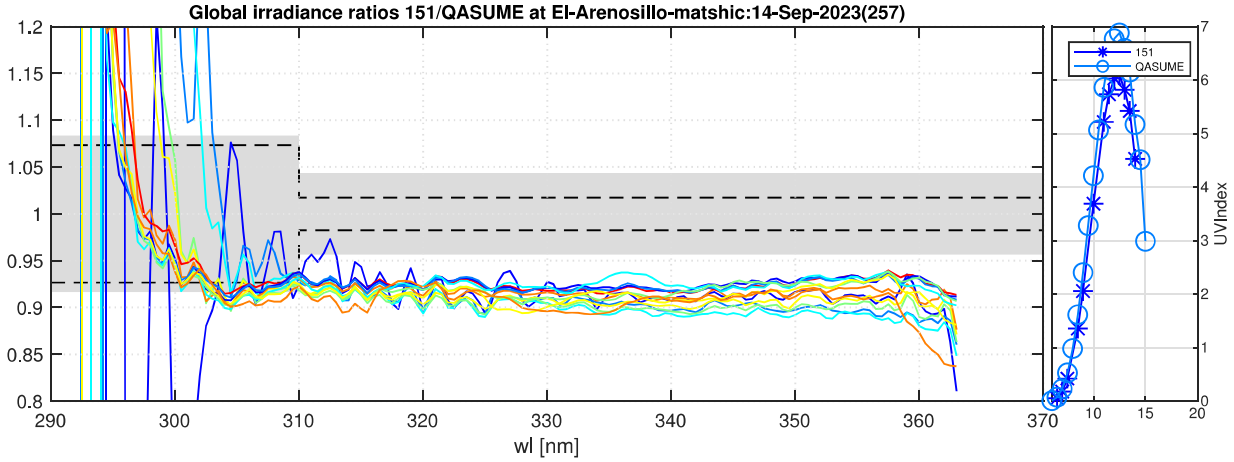

Global irradiance ratios 151/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 14-Sep-2023(257)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
RATIO 151/QASUME
255
256
257
TIME [UT] ON DAYS: [255 256 257]

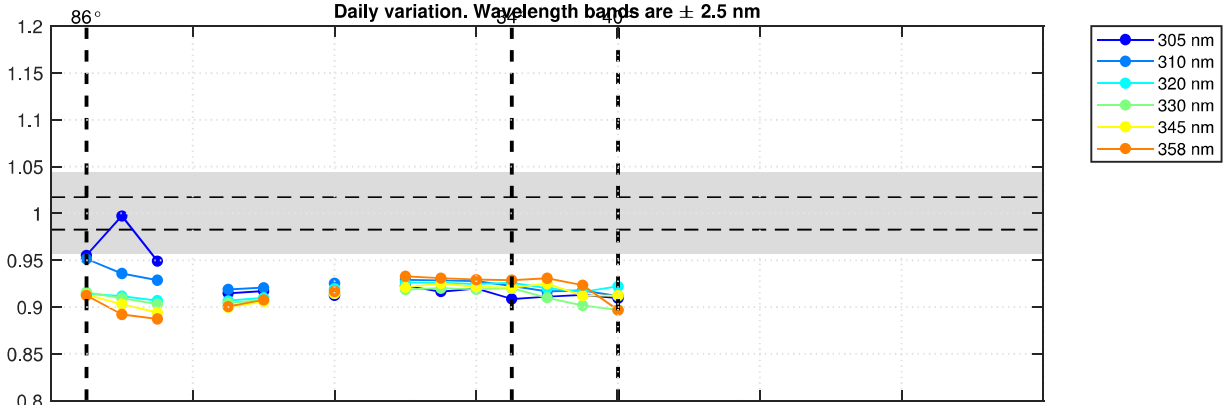

Global irradiance ratios 151/QASUME at El-Arenosillo-matshic:12-Sep-2023(255)
151
QASUME
UVIndex
wl [nm]

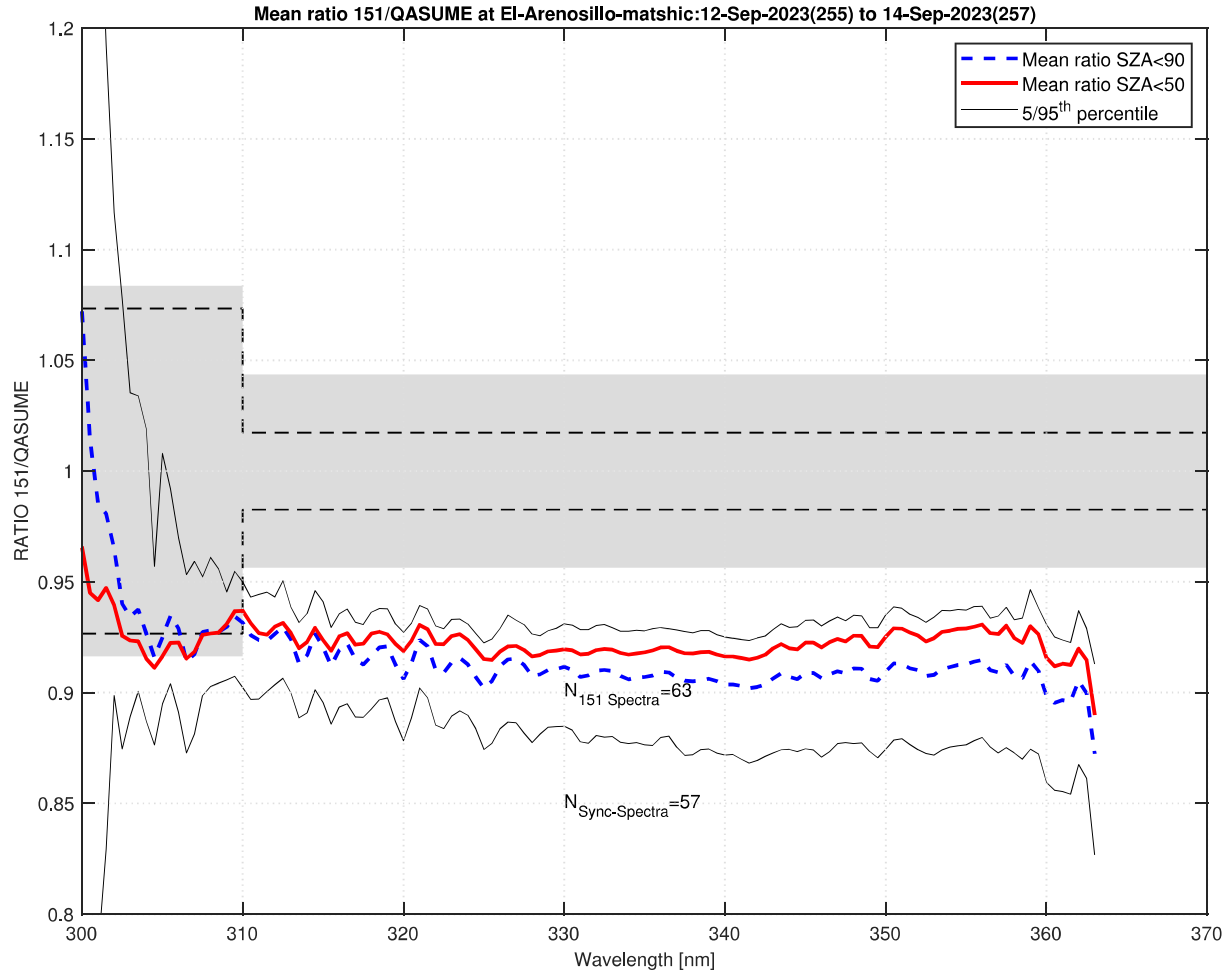

Daily variation. Wavelength bands are ± 2.5 nm
86°
83°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

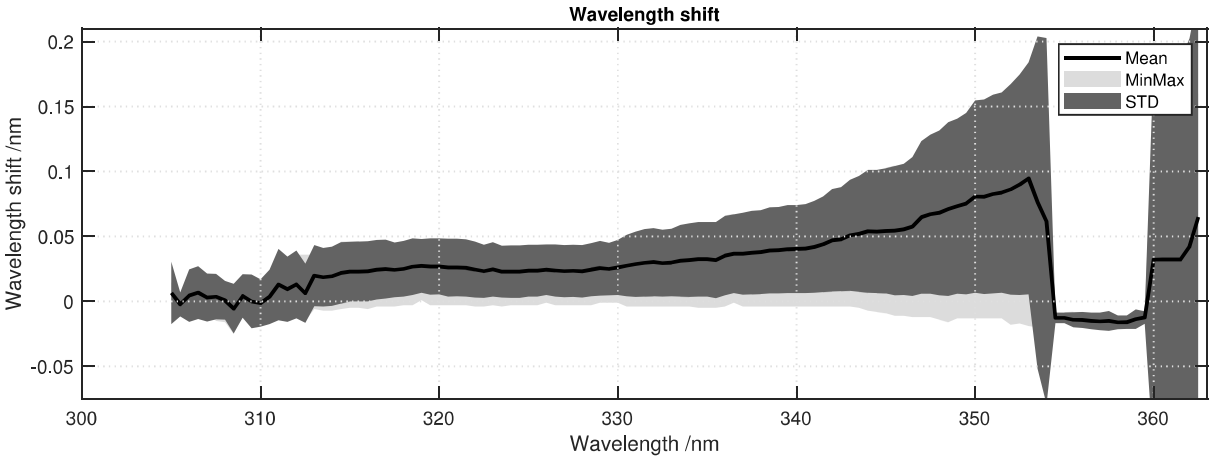

Global irradiance ratios 151/QASUME at El-Arenosillo-matshic:13-Sep-2023(256)
wl [nm]
UVIndex
151
QASUME

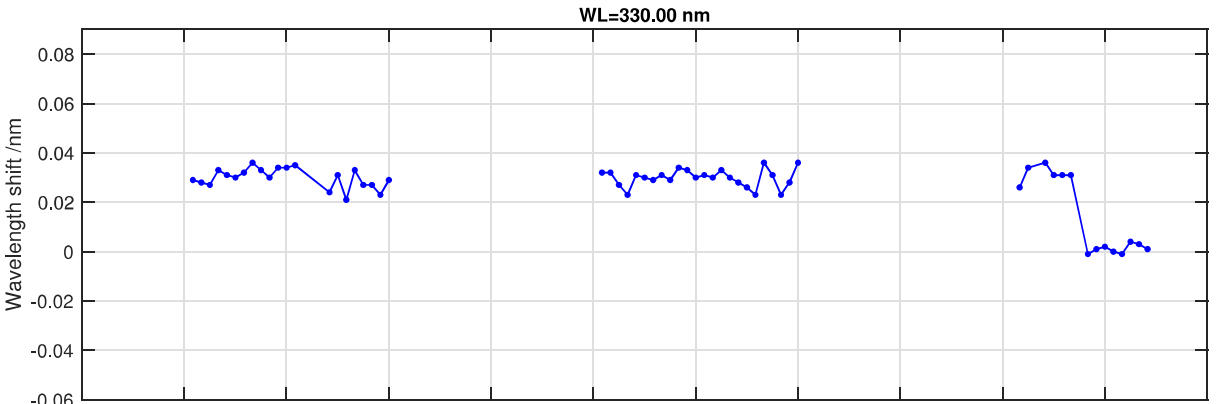

Daily variation. Wavelength bands are ± 2.5 nm
86°
83°
TIME [UT](SZA)
6(92)
8(68)
10(47)
12(34)
14(40)
16(60)
18(83)
20(107)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

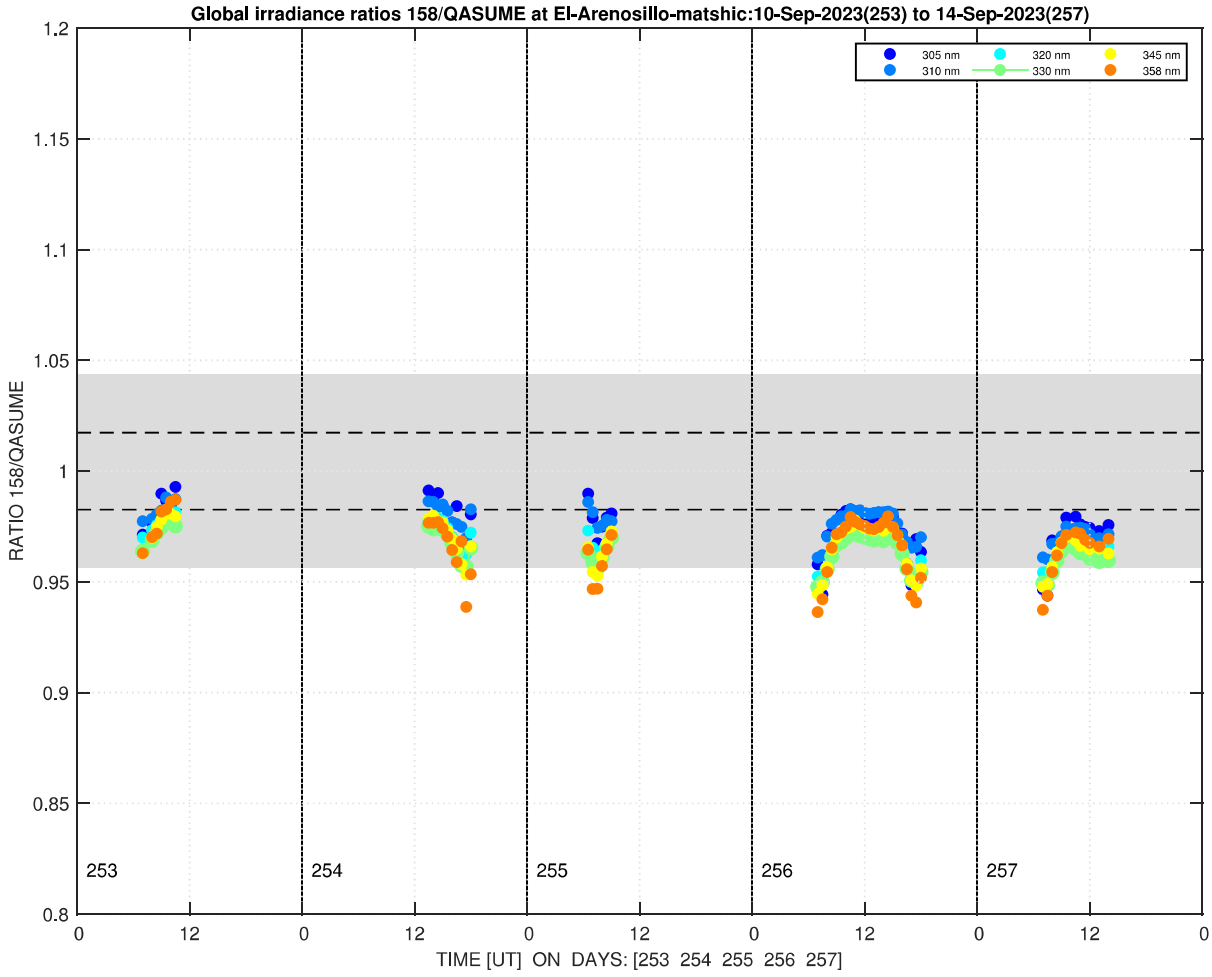

Global irradiance ratios 151/QASUME at El-Arenosillo-matshic:14-Sep-2023(257)
wl [nm]
UVIndex
151
QASUME

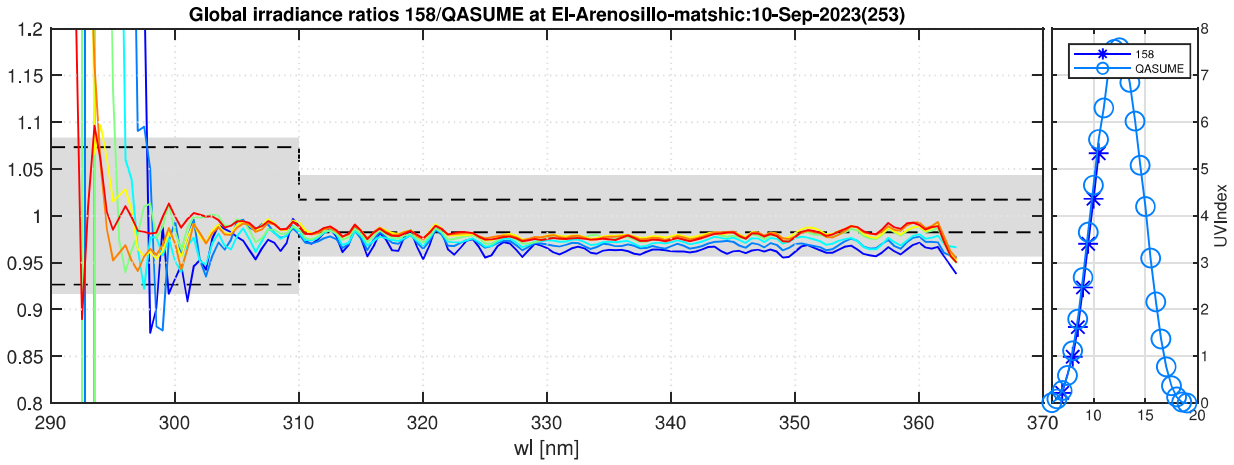

Daily variation. Wavelength bands are ± 2.5 nm
86°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

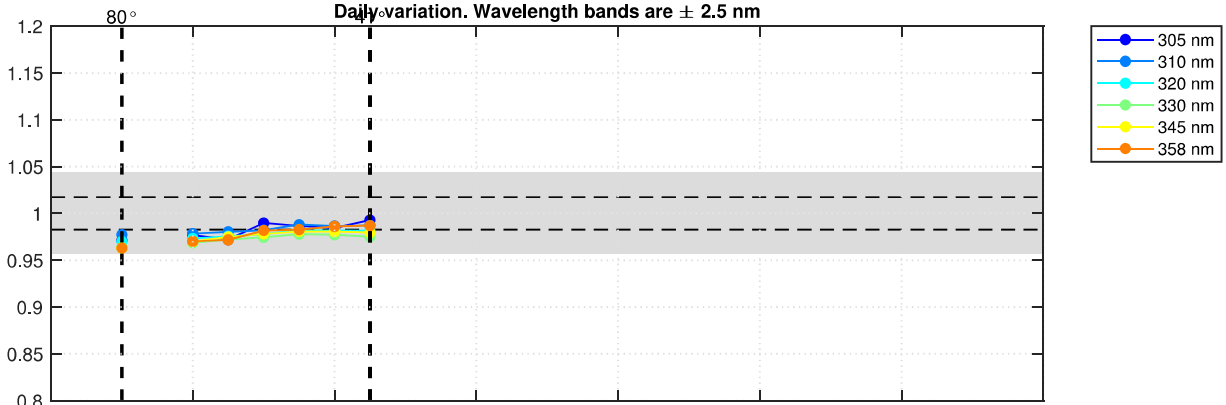

Mean ratio 151/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 14-Sep-2023(257)
Mean ratio SZA<90
Mean ratio SZA<50
5/95th percentile
RATIO 151/QASUME
N151 Spectra=63
NSync-Spectra=57
Wavelength [nm]

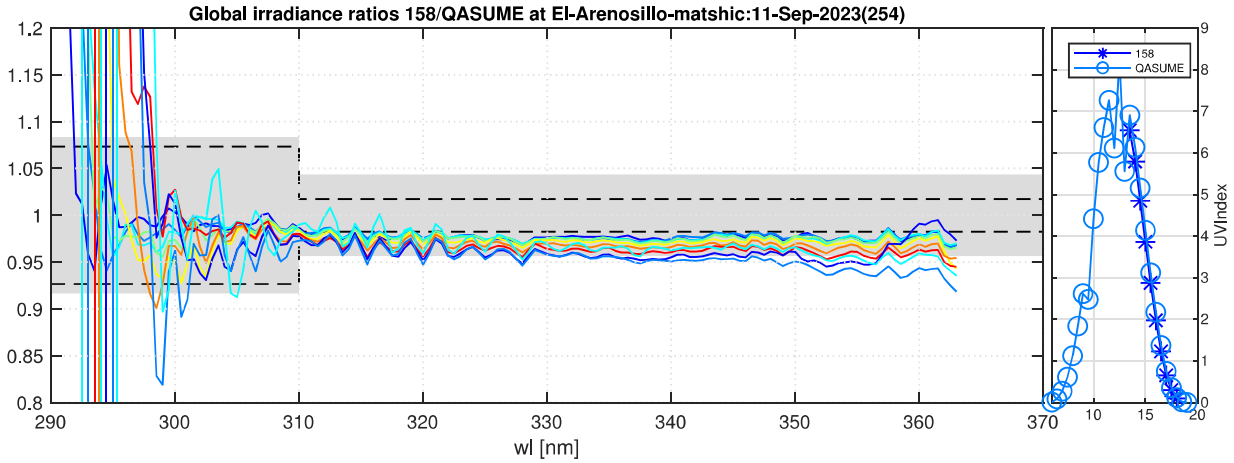

Wavelength shift
Mean
MinMax
STD
Wavelength shift /nm
Wavelength /nm

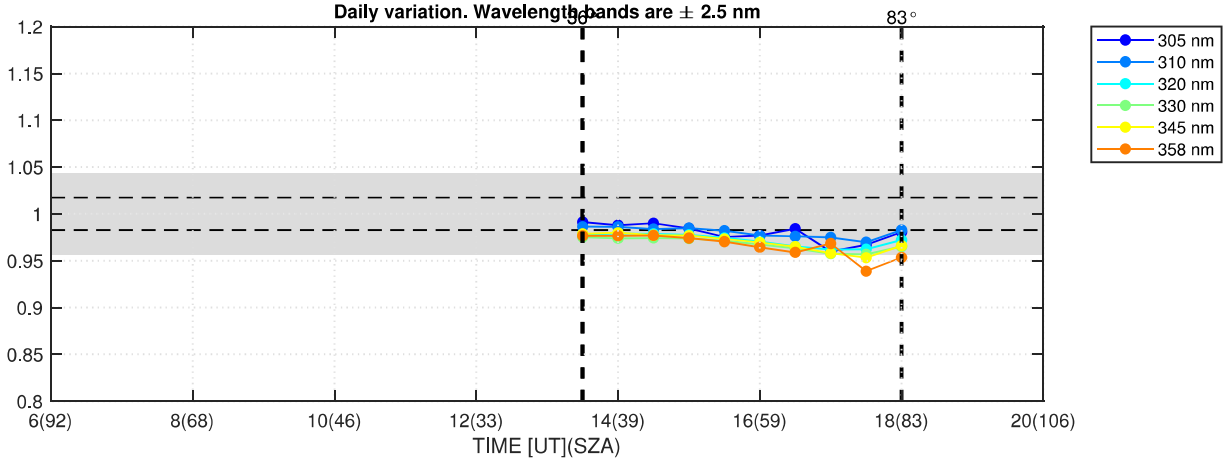

WL=330.00 nm
Wavelength shift /nm

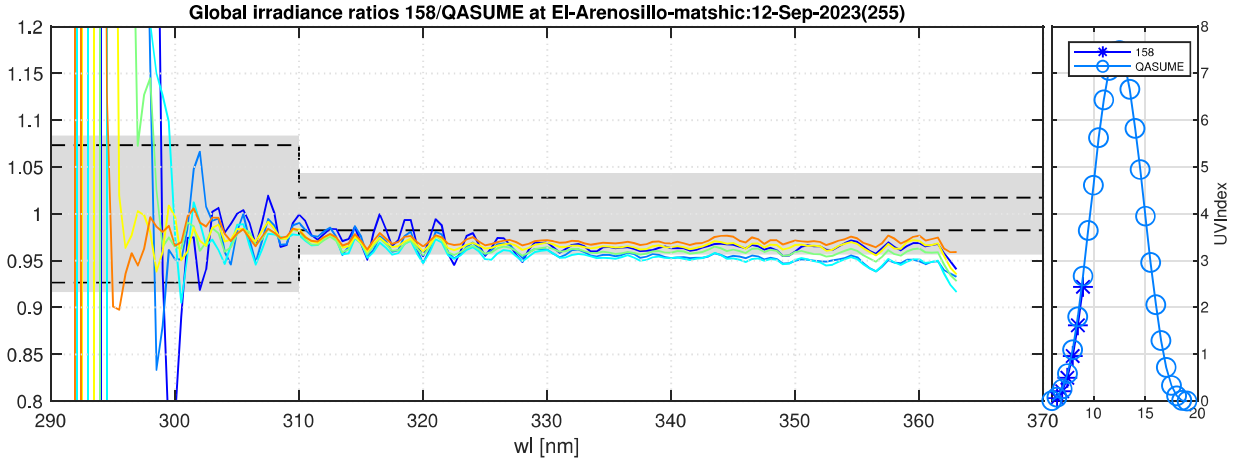

Global irradiance ratios 158/QASUME at El-Arenosillo-matshic:10-Sep-2023(253) to 14-Sep-2023(257)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
RATIO 158/QASUME
253
254
255
256
257
TIME [UT] ON DAYS: [253 254 255 256 257]

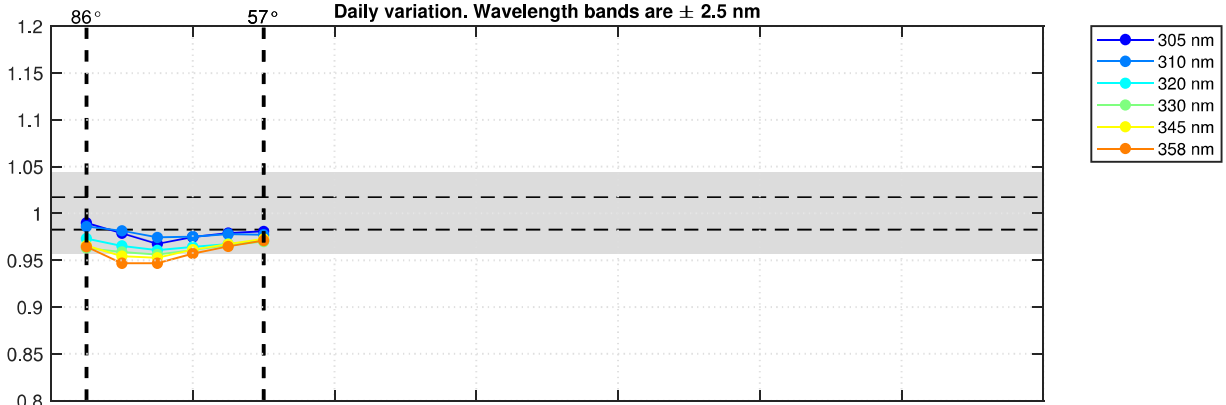

Global irradiance ratios 158/QASUME at El-Arenosillo-matshic:10-Sep-2023(253)
158
QASUME
UVIndex
wl [nm]

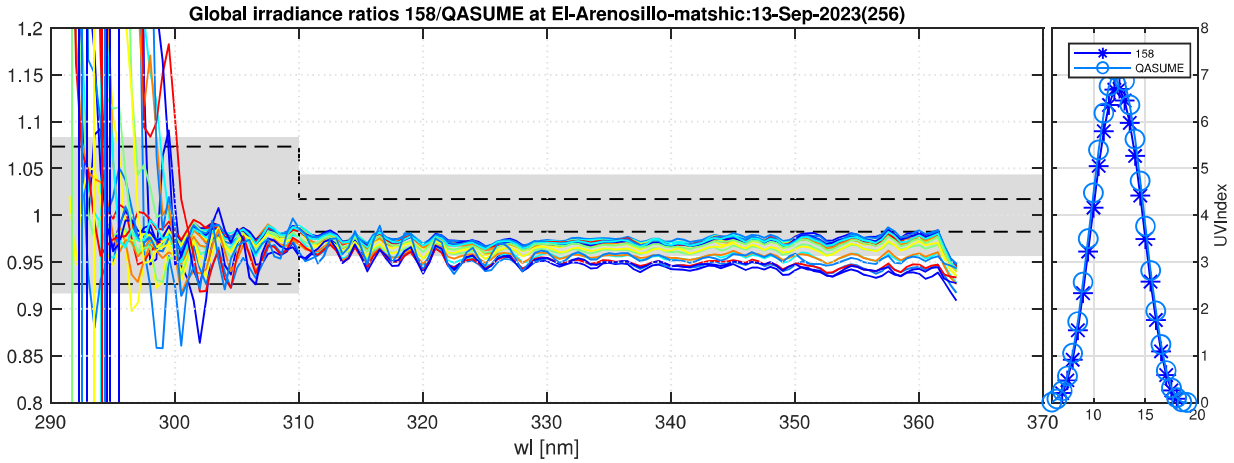

Daily variation. Wavelength bands are ± 2.5 nm
80°
40°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

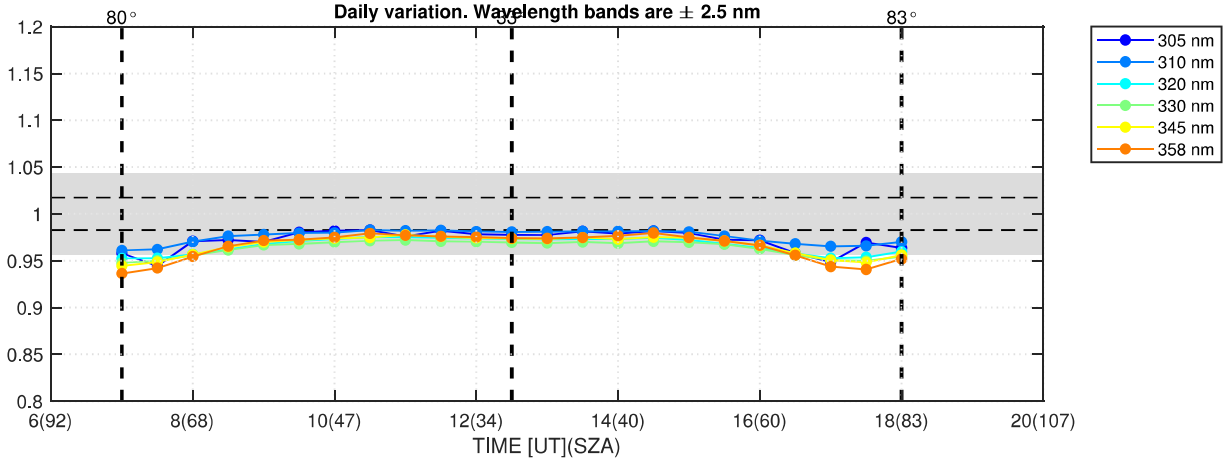

Global irradiance ratios 158/QASUME at El-Arenosillo-matshic:11-Sep-2023(254)
wl [nm]
UVIndex
158
QASUME

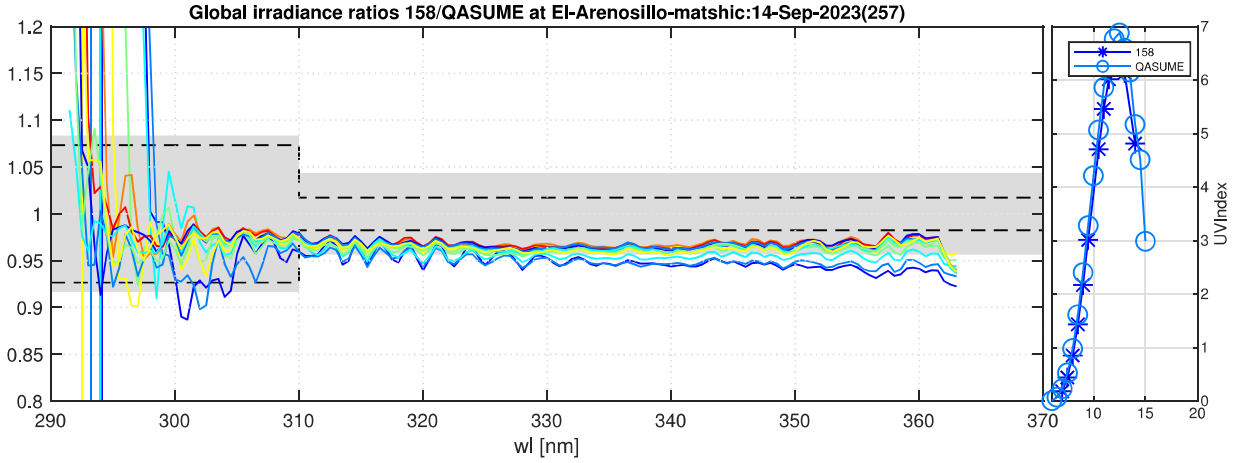

Daily variation. Wavelength bands are ± 2.5 nm
86°
83°
TIME [UT](SZA)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

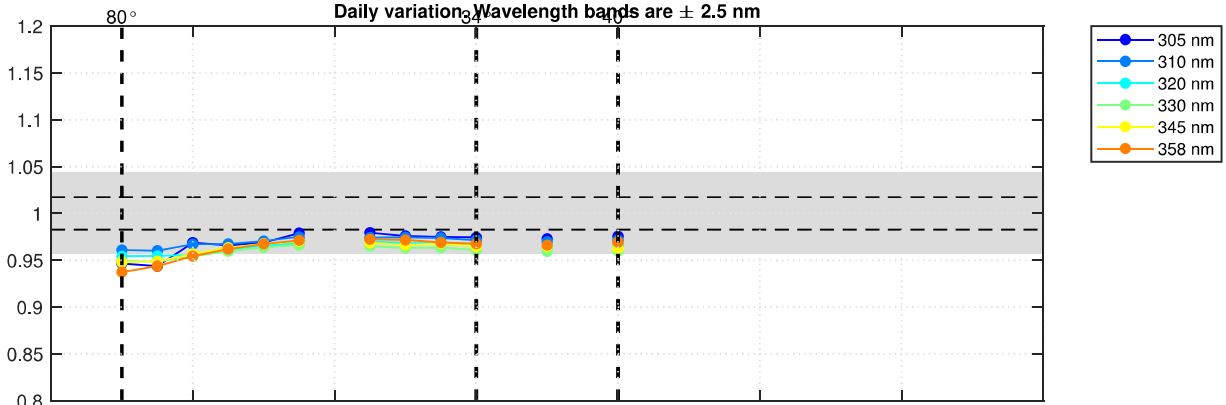

Global irradiance ratios 158/QASUME at El-Arenosillo-matshic:12-Sep-2023(255)
wl [nm]
UVIndex
158
QASUME

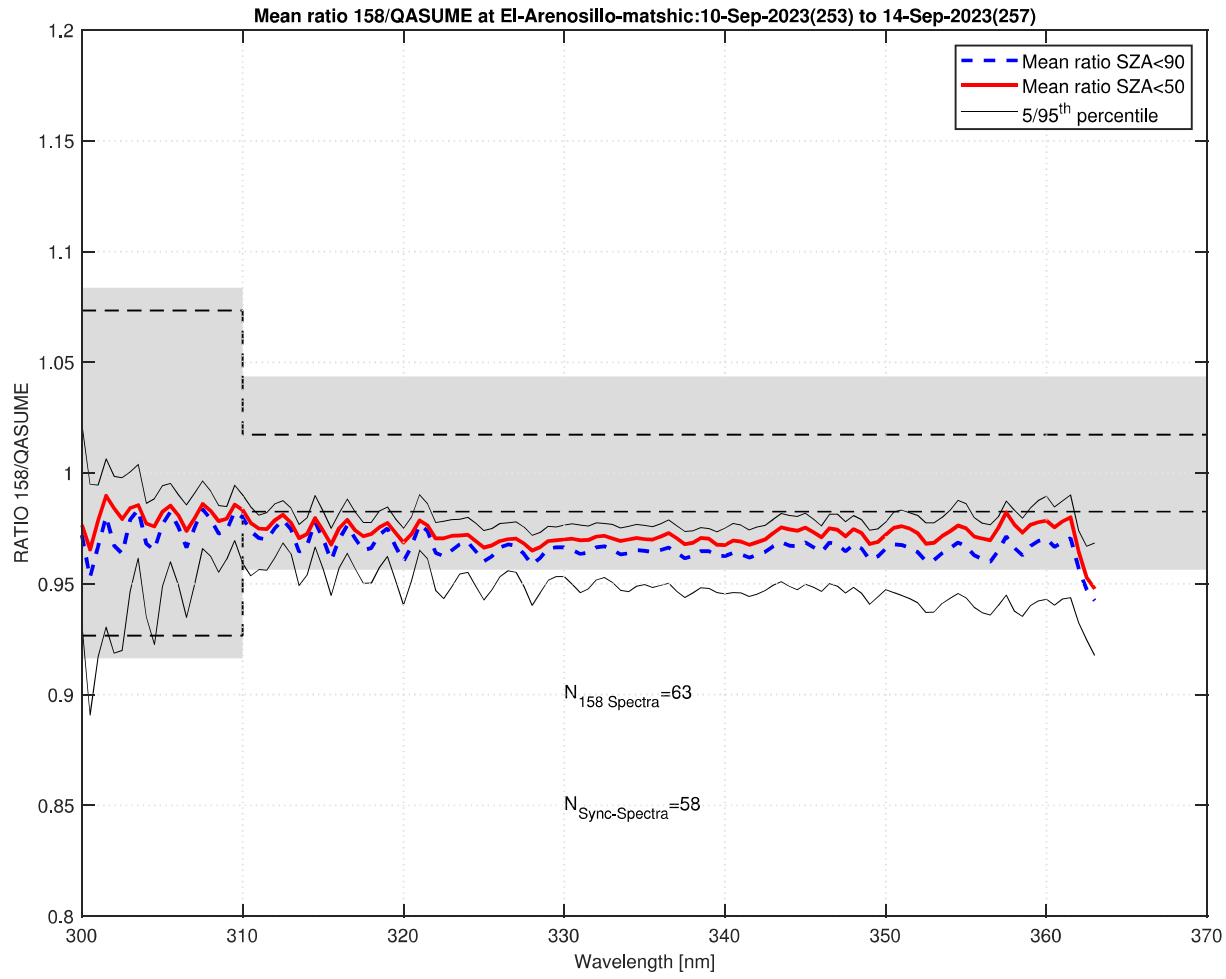

Daily variation. Wavelength bands are ± 2.5 nm
86°
57°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

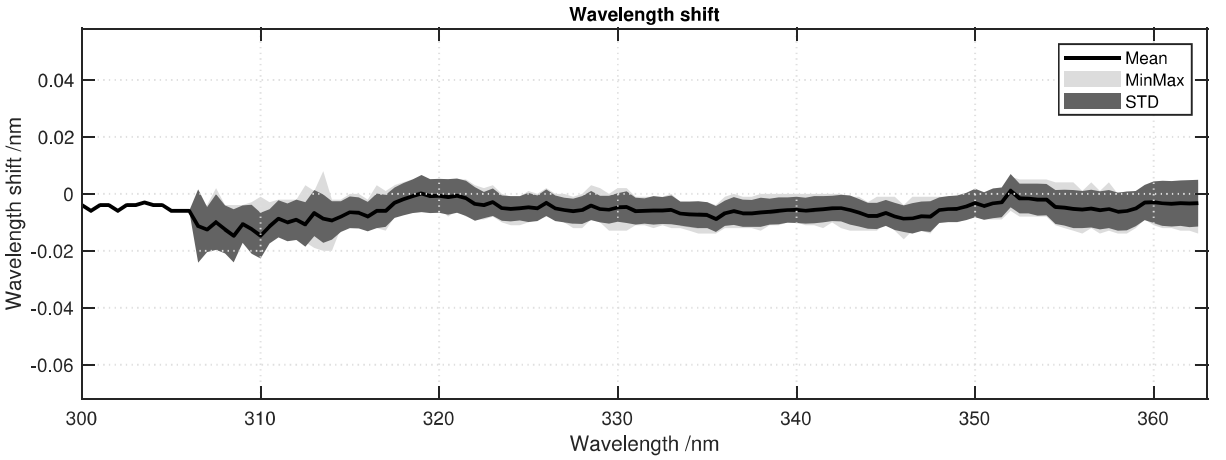

Global irradiance ratios 158/QASUME at El-Arenosillo-matshic:13-Sep-2023(256)
wl [nm]
158
QASUME
UVIndex

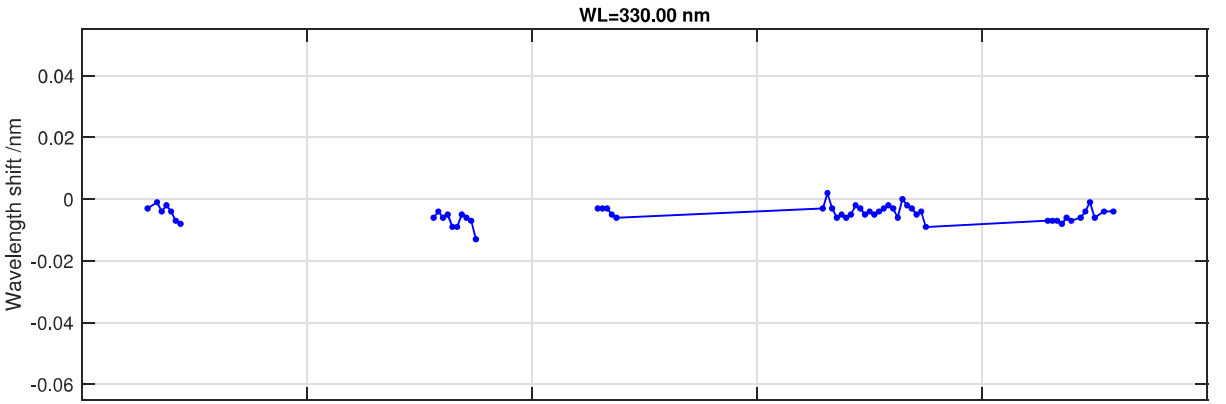

Daily variation. Wavelength bands are ± 2.5 nm
80°
83°
TIME [UT](SZA)
6(92)
8(68)
10(47)
12(34)
14(40)
16(60)
18(83)
20(107)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

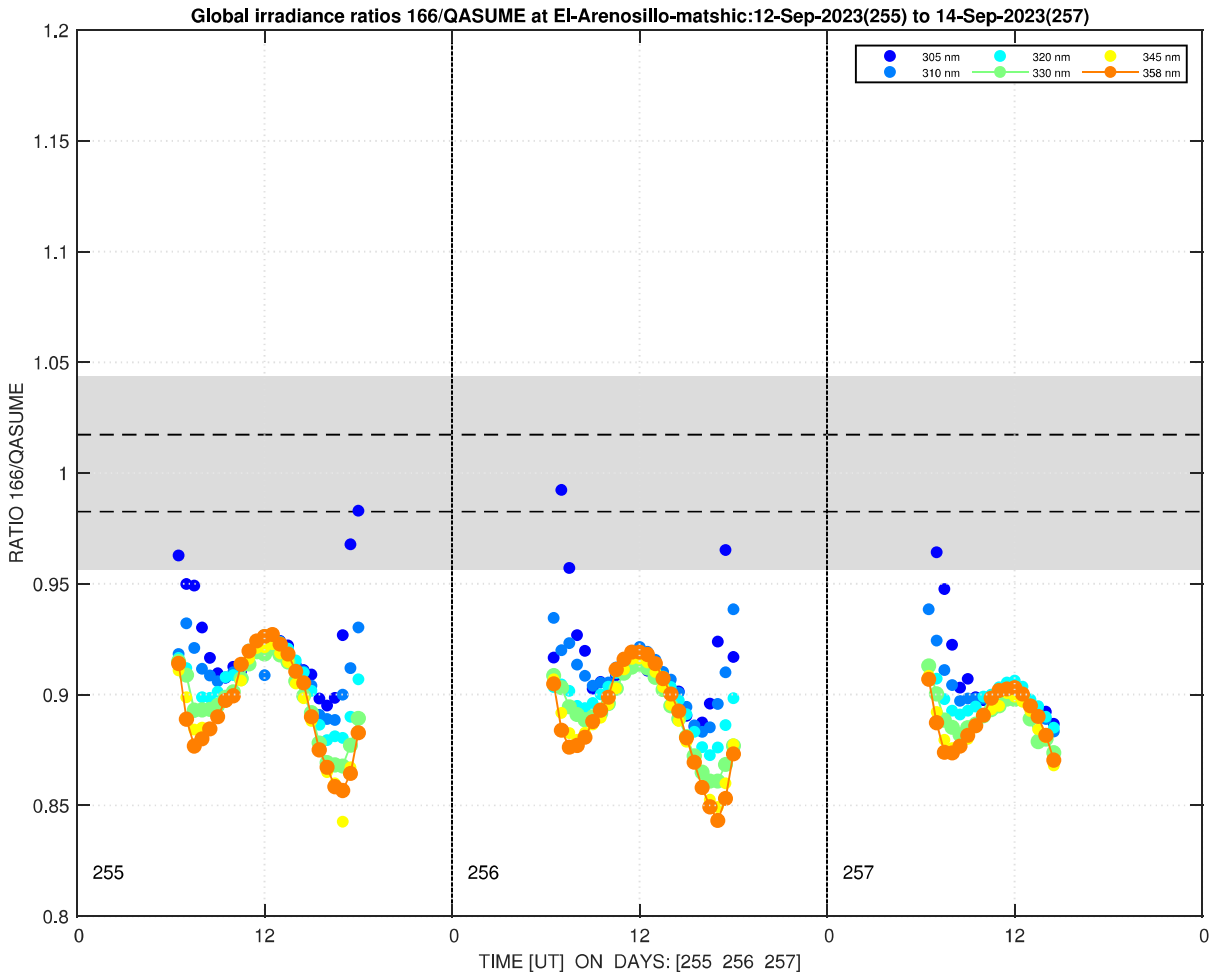

Global irradiance ratios 158/QASUME at El-Arenosillo-matshic:14-Sep-2023(257)
wl [nm]
158
QASUME
UVIndex

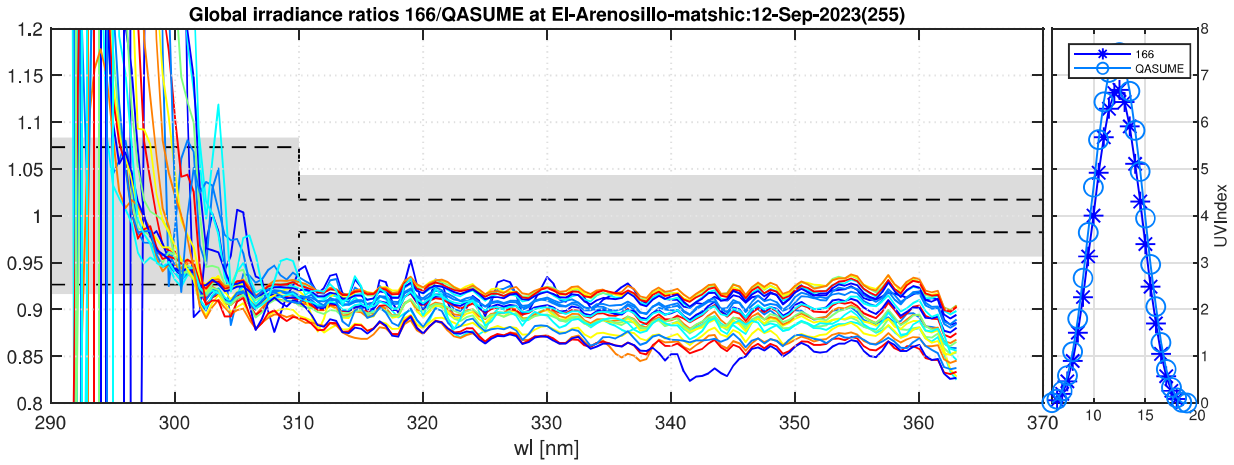

Daily variation. Wavelength bands are ± 2.5 nm
80°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

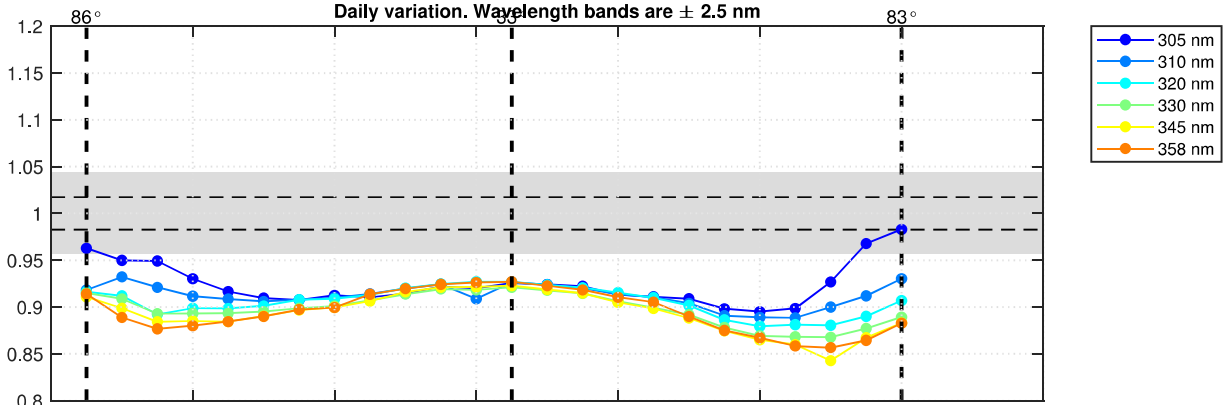

Mean ratio 158/QASUME at El-Arenosillo-matshic:10-Sep-2023(253) to 14-Sep-2023(257)
Mean ratio SZA<90
Mean ratio SZA<50
5/95th percentile
RATIO 158/QASUME
Wavelength [nm]
N158 Spectra=63
NSync-Spectra=58

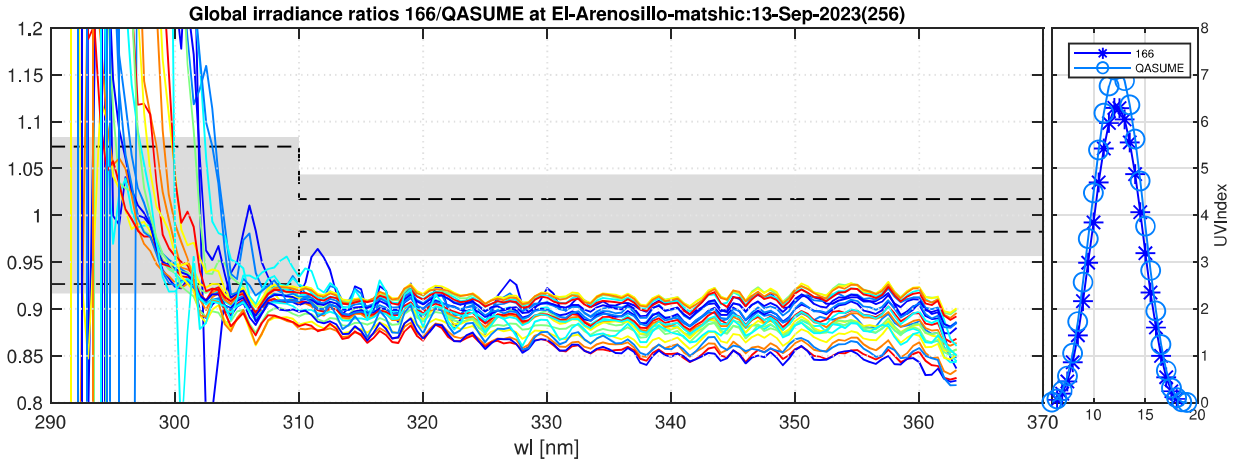

Wavelength shift
Mean
MinMax
STD
Wavelength shift /nm
Wavelength /nm

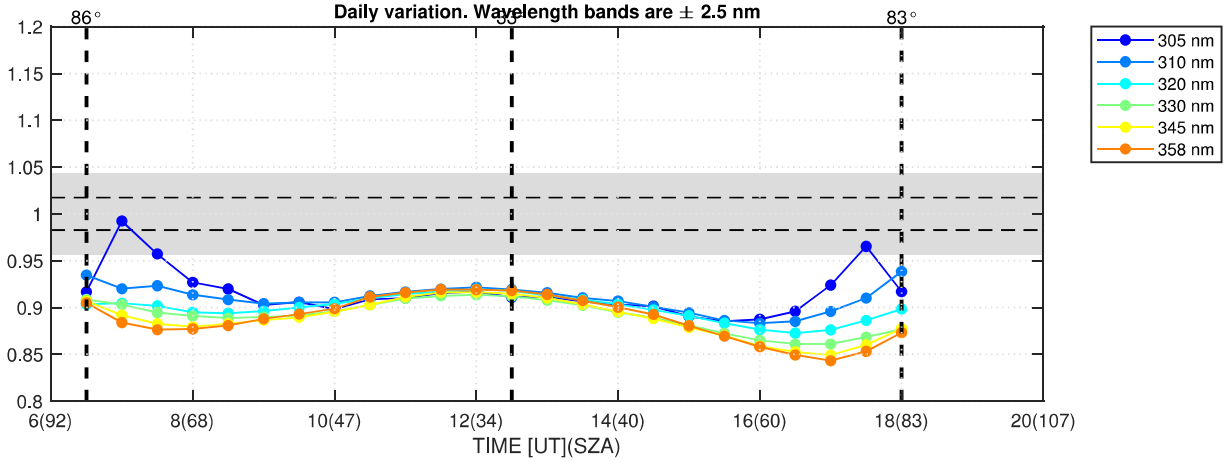

WL=330.00 nm
Wavelength shift /nm

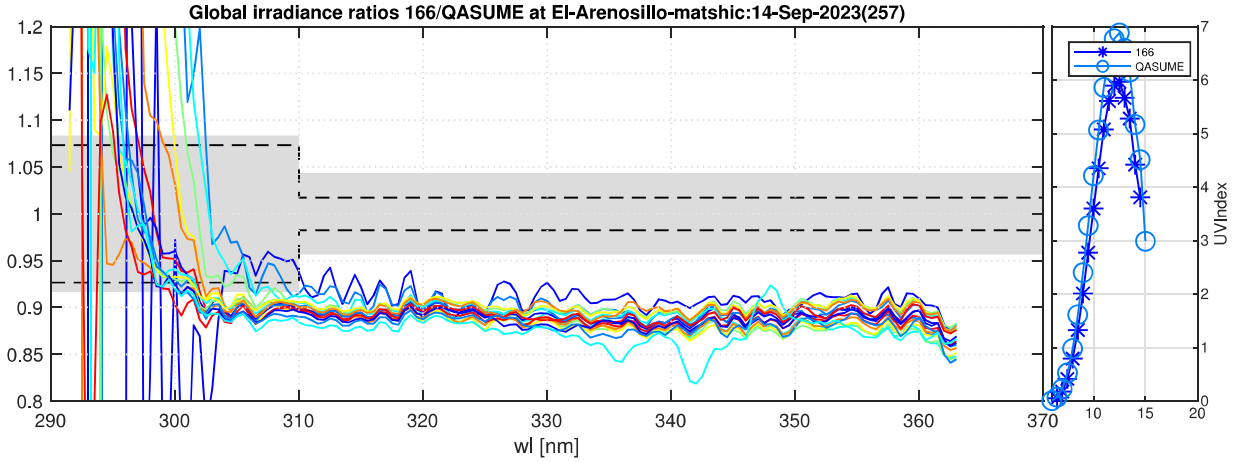

Global irradiance ratios 166/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 14-Sep-2023(257)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
RATIO 166/QASUME
255
256
257
TIME [UT] ON DAYS: [255 256 257]

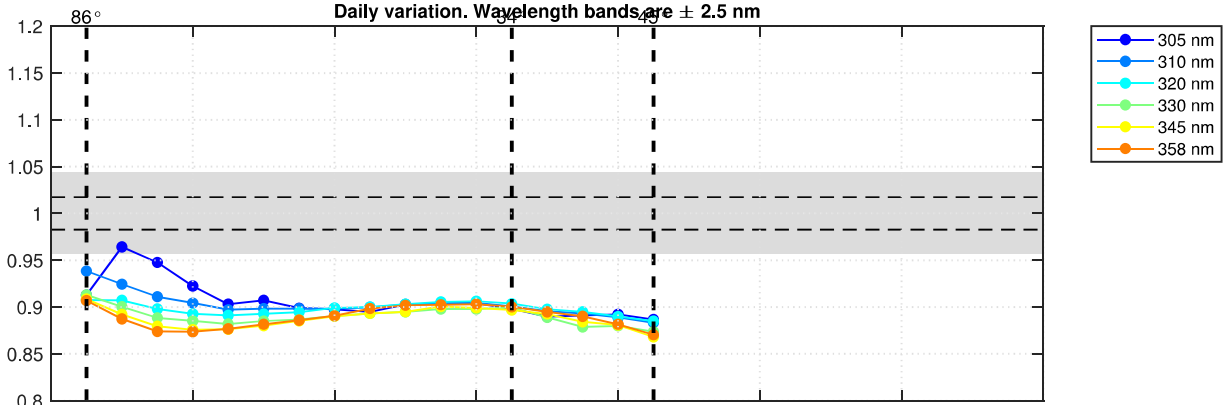

Global irradiance ratios 166/QASUME at El-Arenosillo-matshic:12-Sep-2023(255)
166
QASUME
UVIndex
wl [nm]

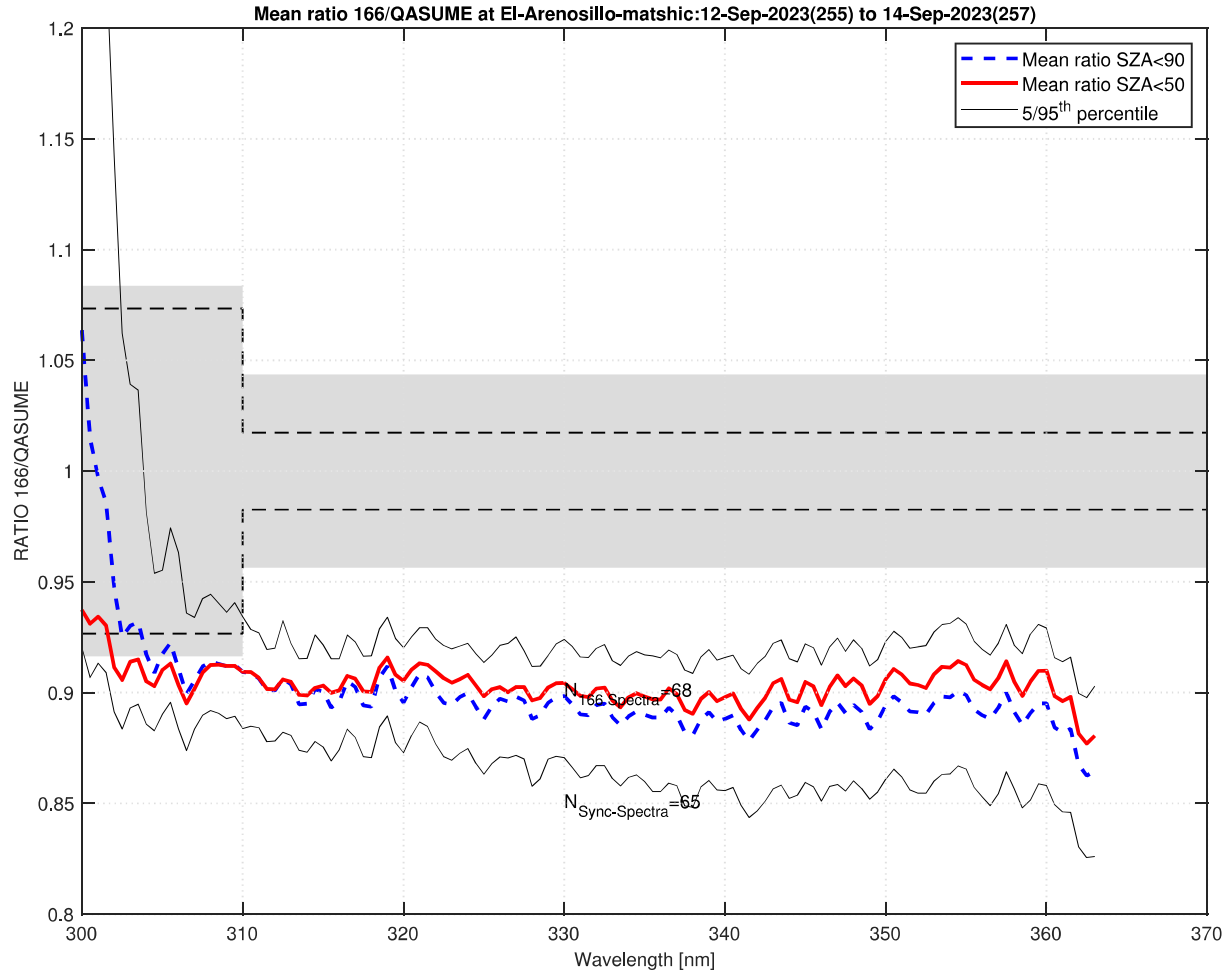

Daily variation. Wavelength bands are ± 2.5 nm
86°
83°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

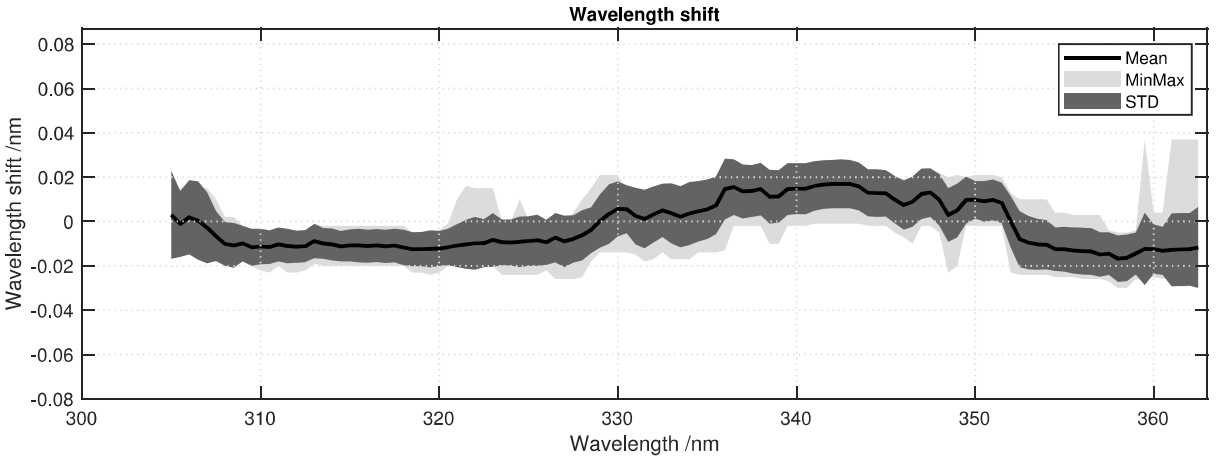

Global irradiance ratios 166/QASUME at El-Arenosillo-matshic:13-Sep-2023(256)
wl [nm]
UVIndex
166
QASUME

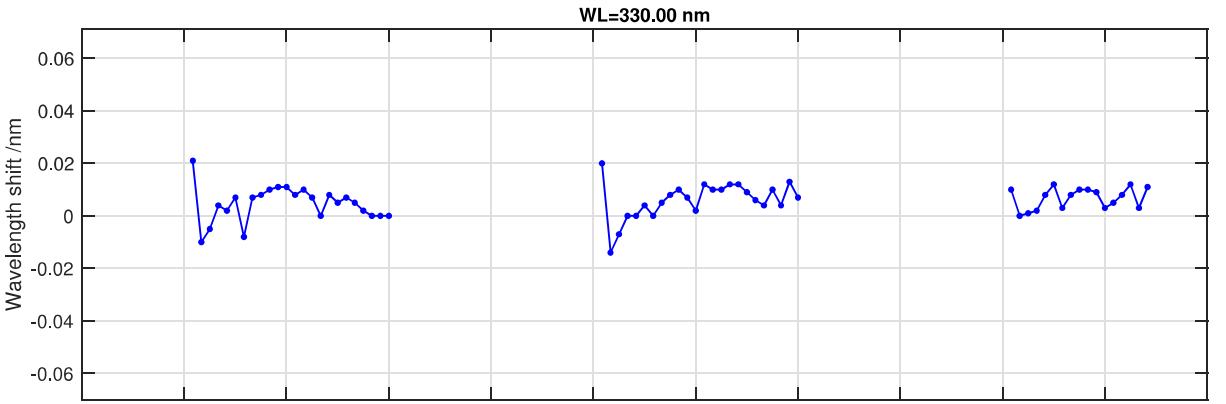

Daily variation. Wavelength bands are ± 2.5 nm
86°
83°
TIME [UT](SZA)
6(92)
8(68)
10(47)
12(34)
14(40)
16(60)
18(83)
20(107)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

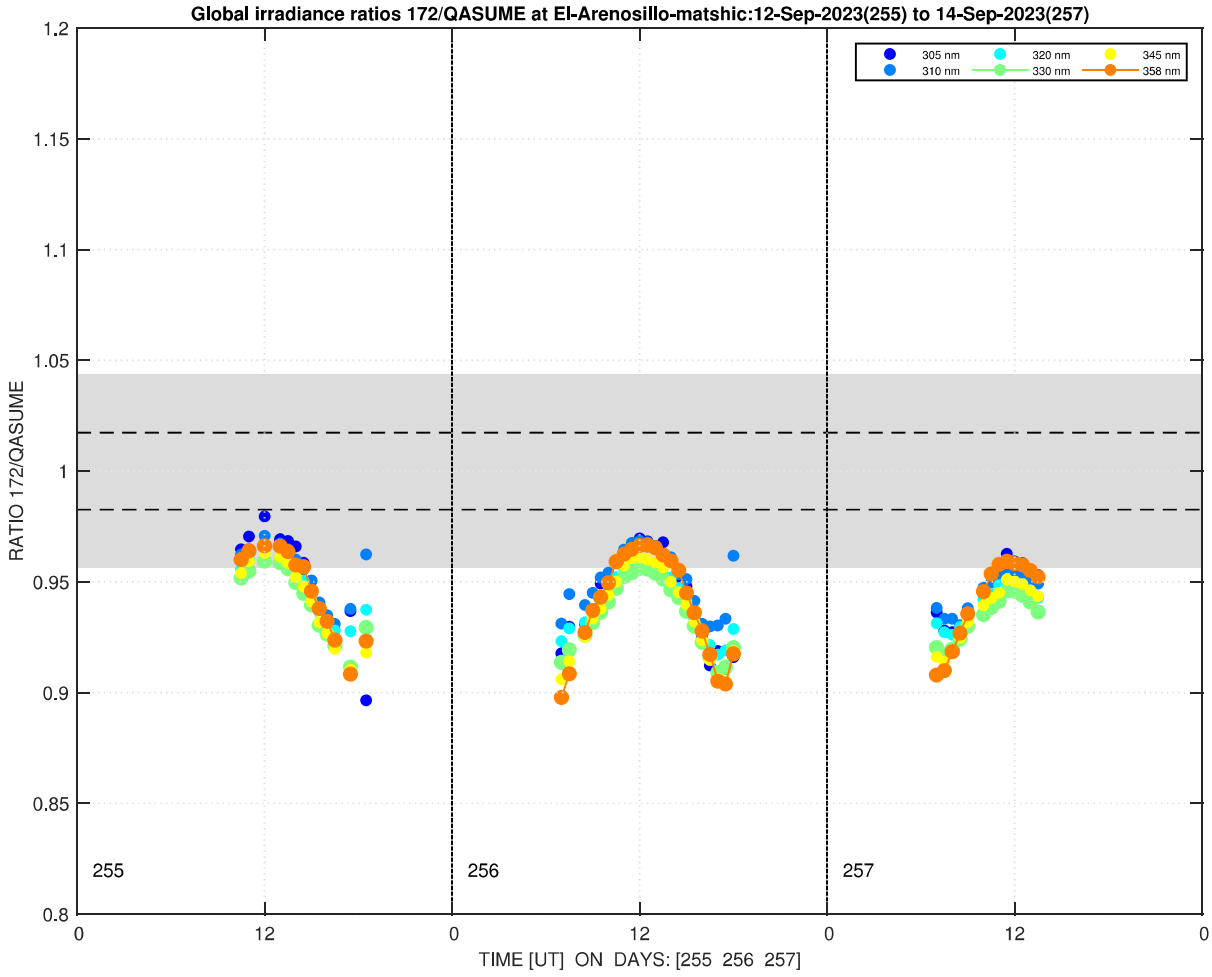

Global irradiance ratios 166/QASUME at El-Arenosillo-matshic:14-Sep-2023(257)
wl [nm]
UVIndex
166
QASUME

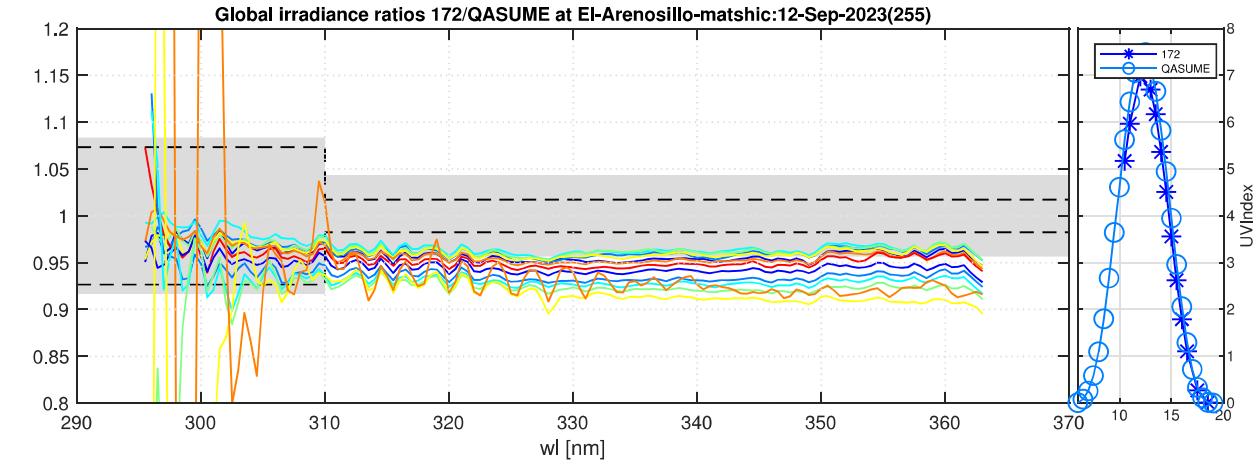

Daily variation. Wavelength bands are ± 2.5 nm
86°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

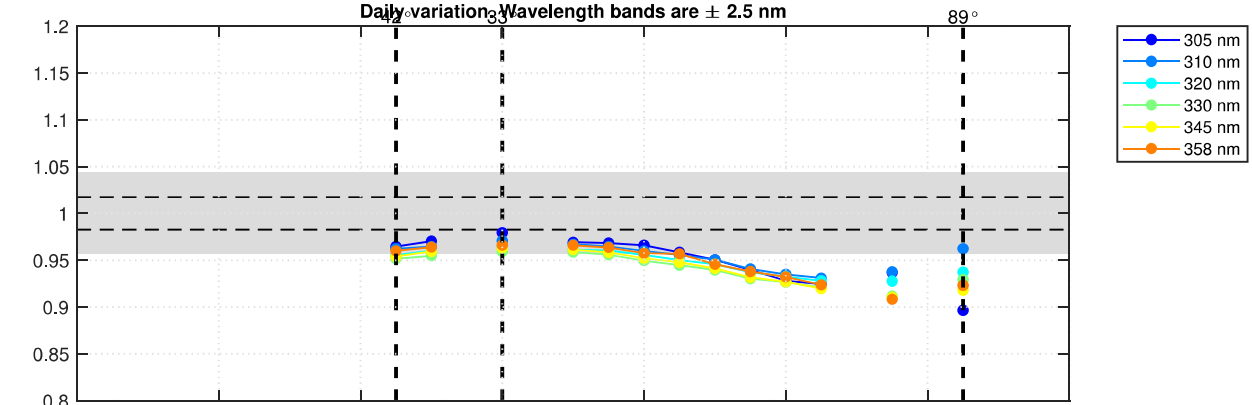

Mean ratio 166/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 14-Sep-2023(257)
Mean ratio SZA<90
Mean ratio SZA<50
5/95th percentile
RATIO 166/QASUME
Wavelength [nm]
N166-Spectra=68
NSync-Spectra=65

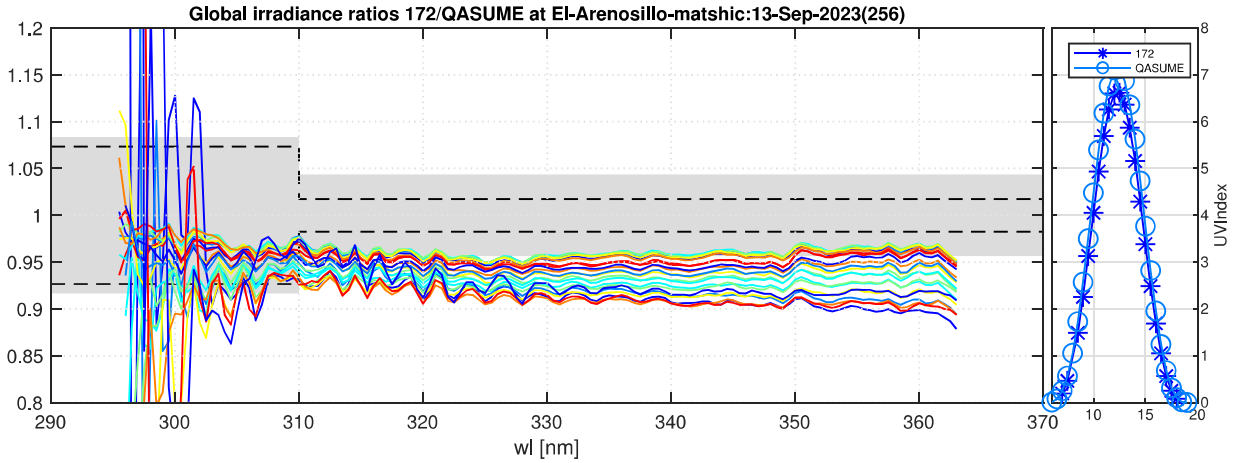

Wavelength shift
Mean
MinMax
STD
Wavelength shift /nm
Wavelength /nm

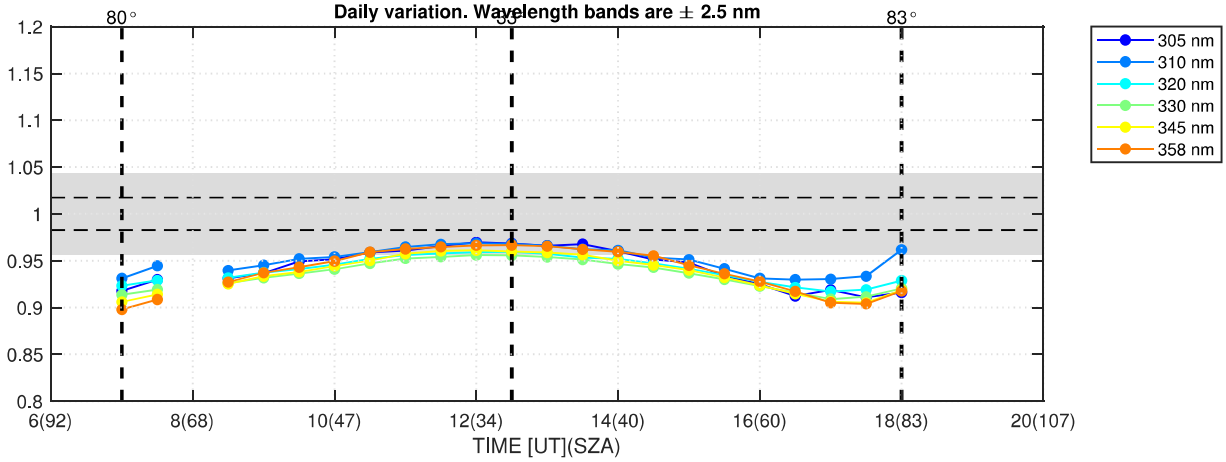

WL=330.00 nm
Wavelength shift /nm

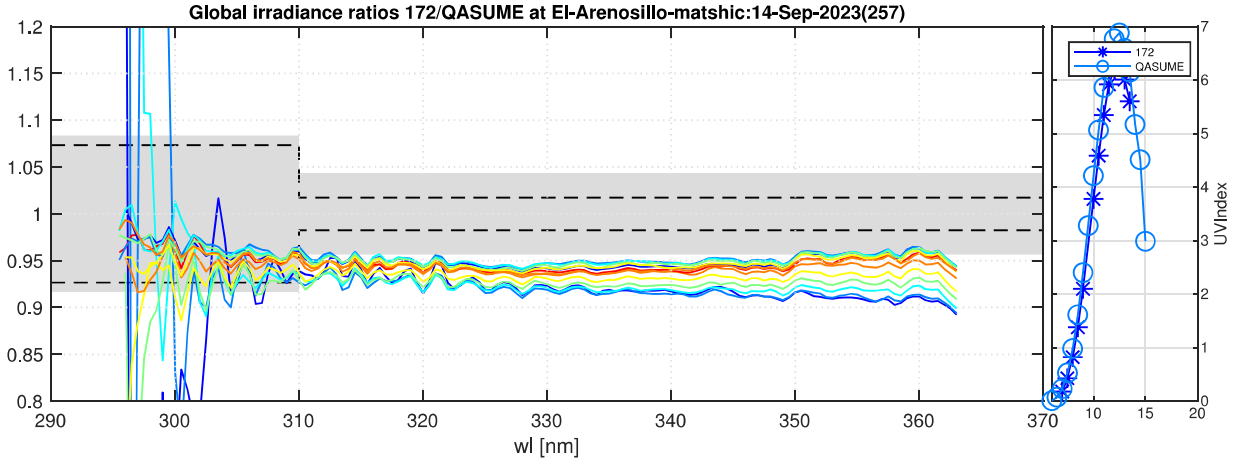

Global irradiance ratios 172/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 14-Sep-2023(257)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
RATIO 172/QASUME
255
256
257
TIME [UT] ON DAYS: [255 256 257]

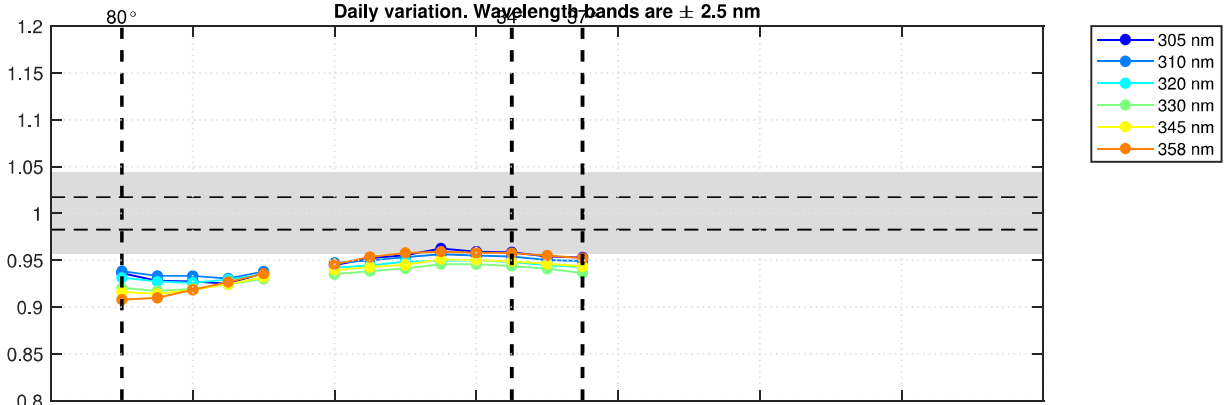

Global irradiance ratios 172/QASUME at El-Arenosillo-matshic:12-Sep-2023(255)
172
QASUME
UVIndex
wl [nm]

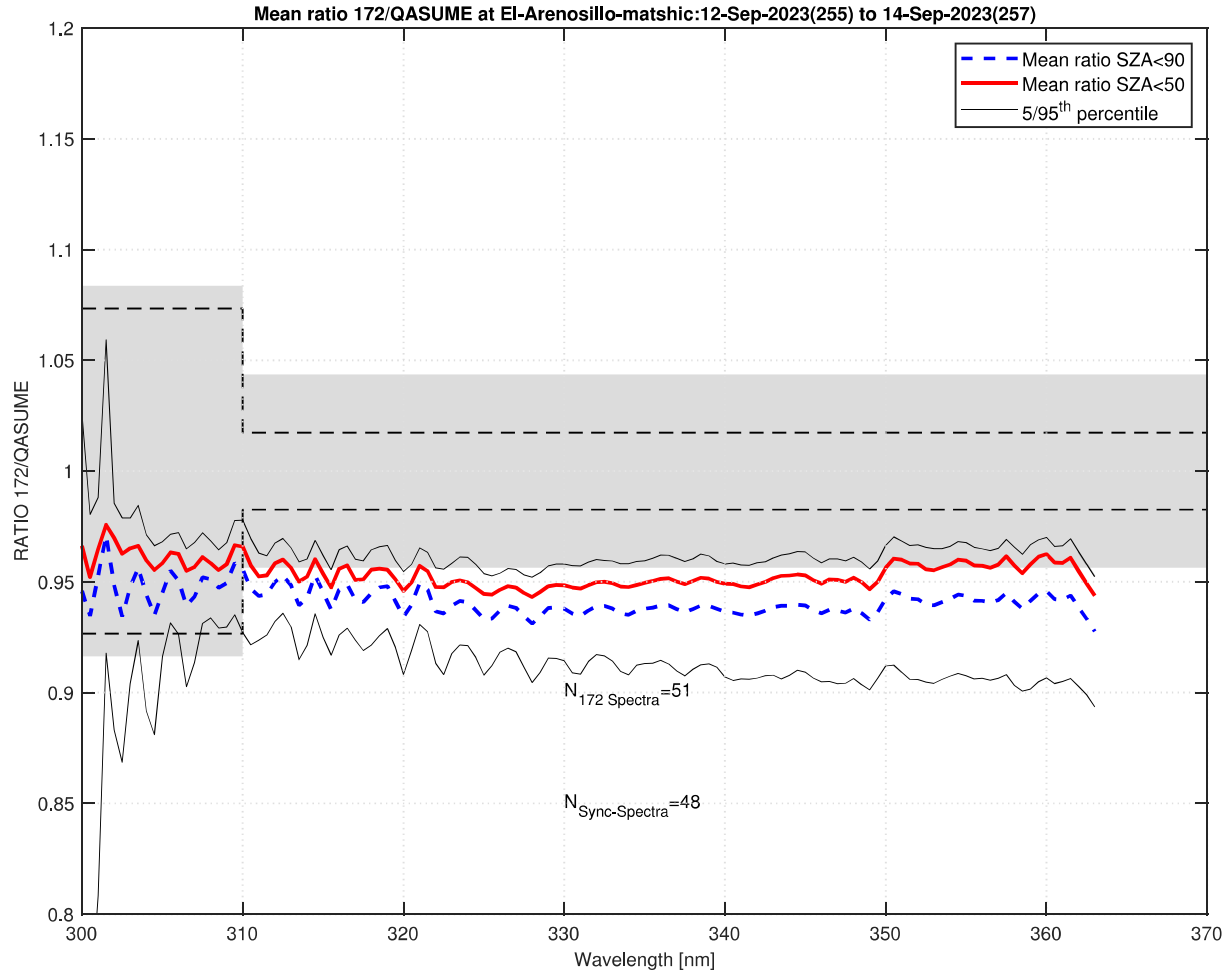

Daily variation. Wavelength bands are ± 2.5 nm
42°
33°
89°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

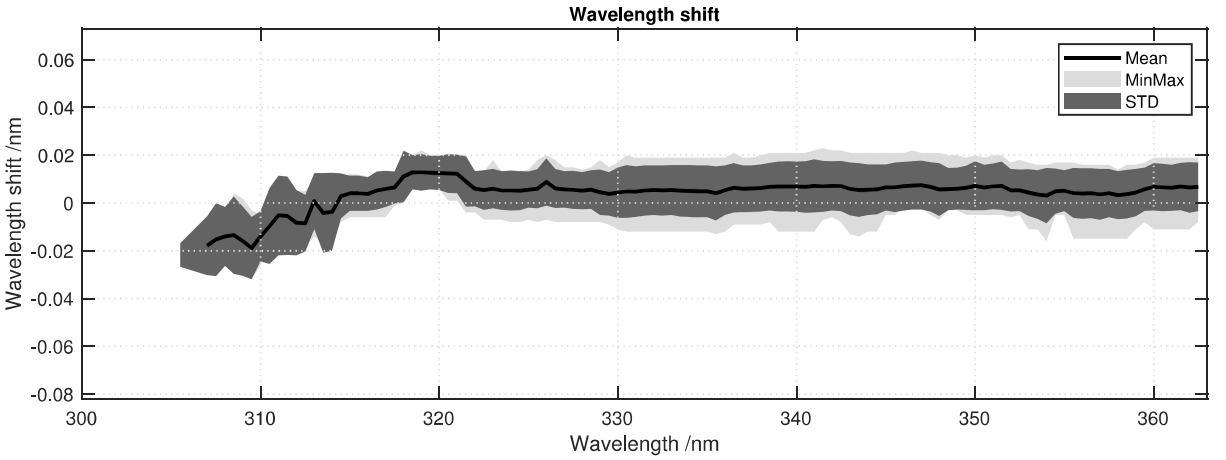

Global irradiance ratios 172/QASUME at El-Arenosillo-matshic:13-Sep-2023(256)
wl [nm]
UVIndex
172
QASUME

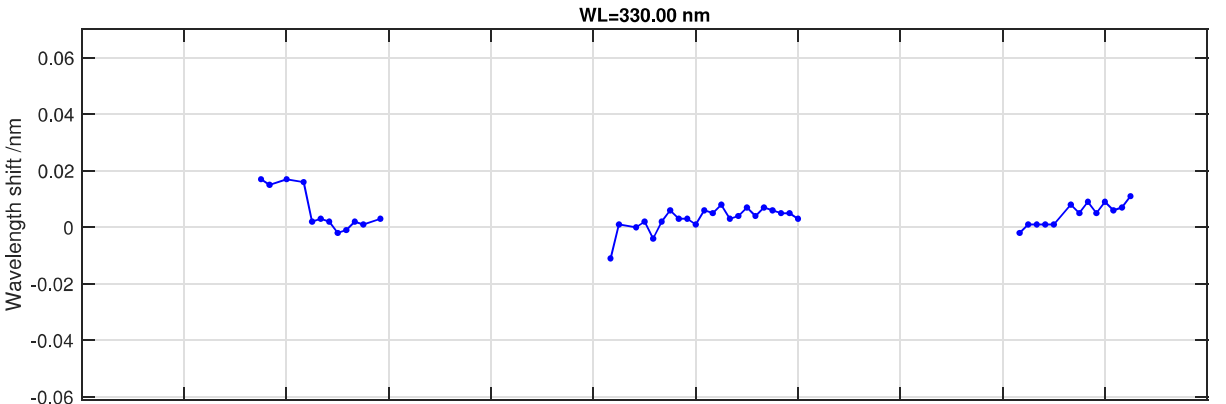

Daily variation. Wavelength bands are ± 2.5 nm
80°
83°
TIME [UT](SZA)
6(92)
8(68)
10(47)
12(34)
14(40)
16(60)
18(83)
20(107)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

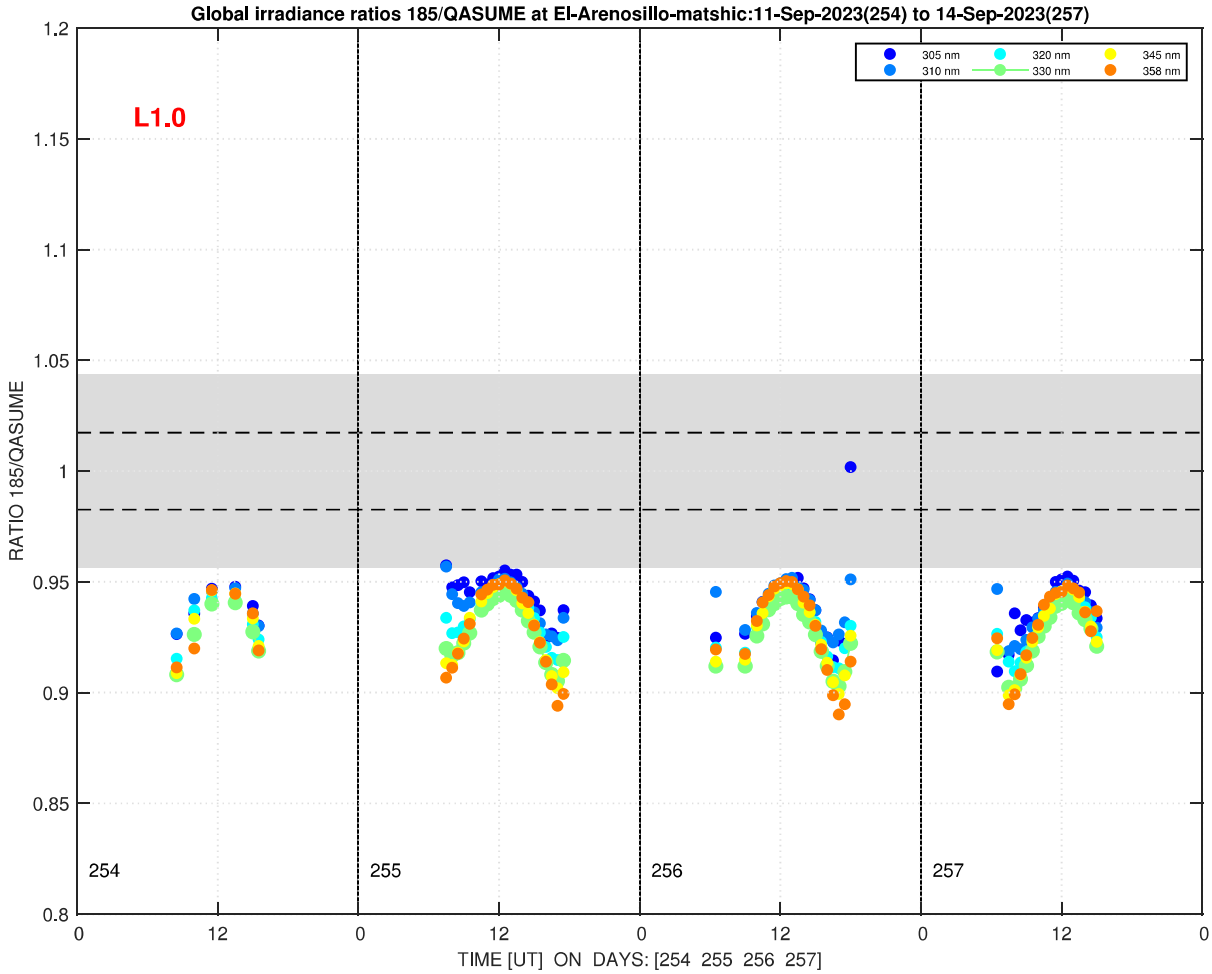

Global irradiance ratios 172/QASUME at El-Arenosillo-matshic:14-Sep-2023(257)
wl [nm]
UVIndex
172
QASUME

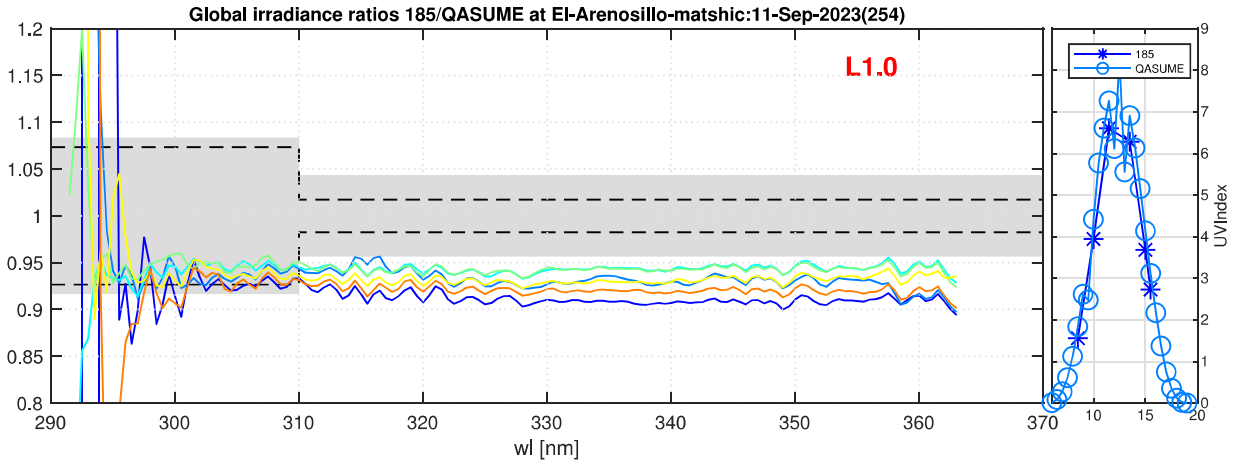

Daily variation. Wavelength bands are ± 2.5 nm
80°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

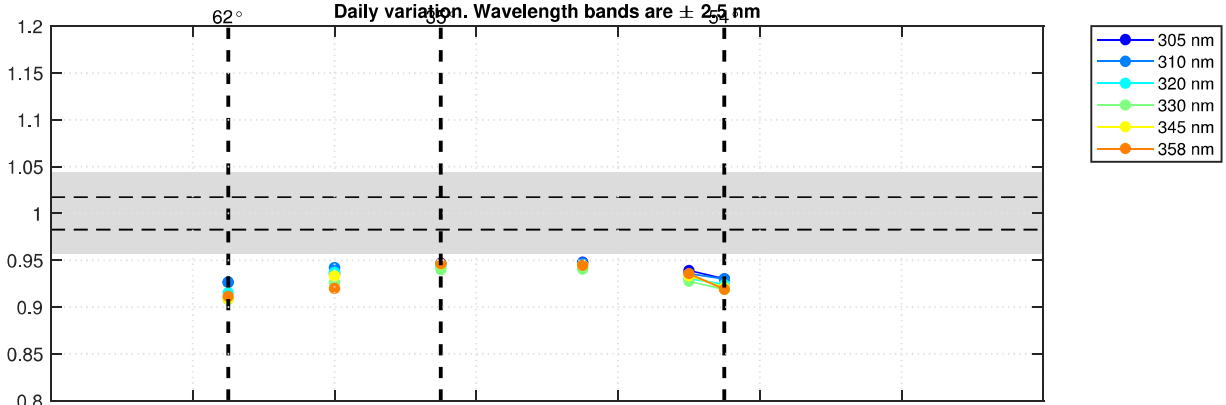

Mean ratio 172/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 14-Sep-2023(257)
Mean ratio SZA<90
Mean ratio SZA<50
5/95th percentile
RATIO 172/QASUME
N172 Spectra=51
NSync-Spectra=48
Wavelength [nm]

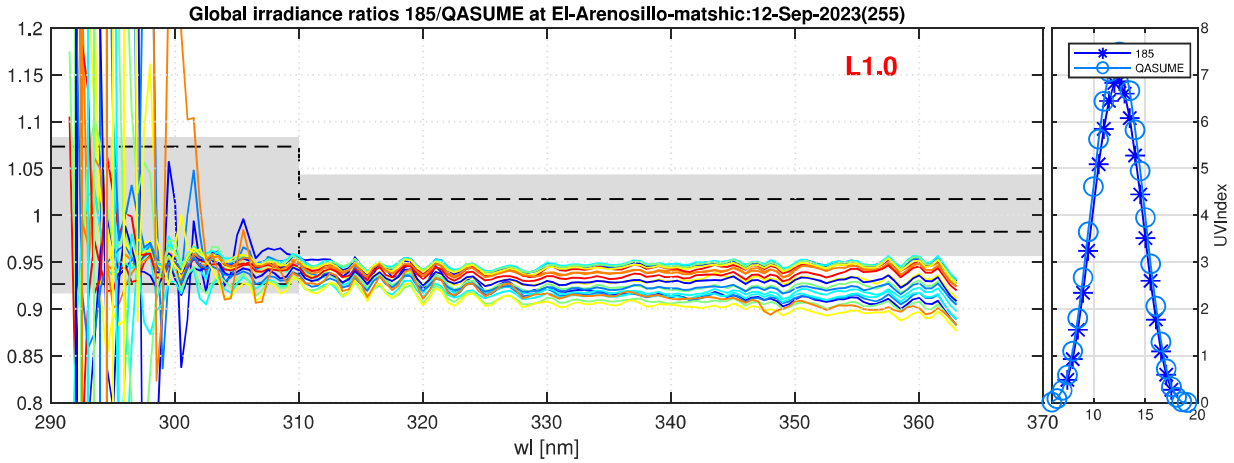

Wavelength shift
Mean
MinMax
STD
Wavelength shift /nm
Wavelength /nm

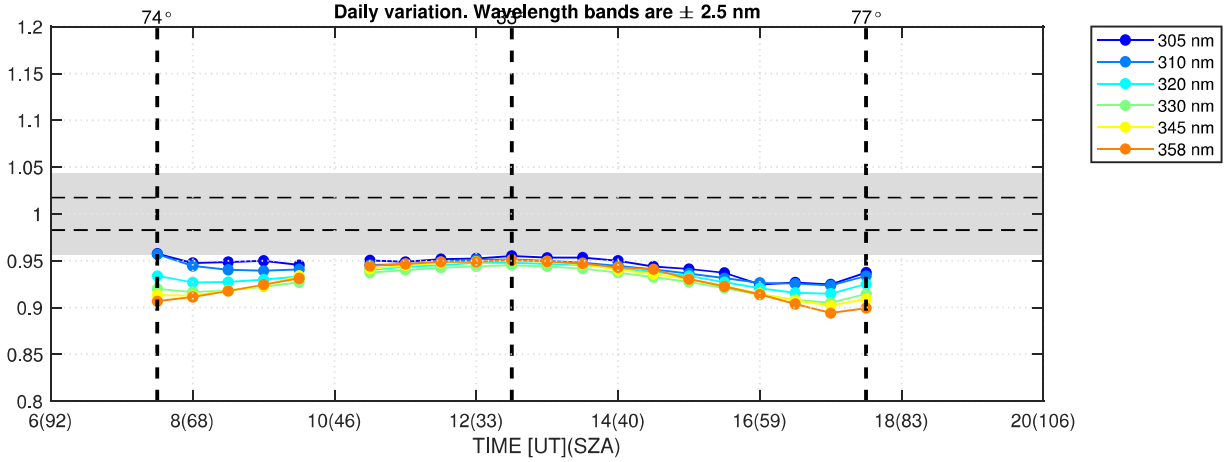

WL=330.00 nm
Wavelength shift /nm

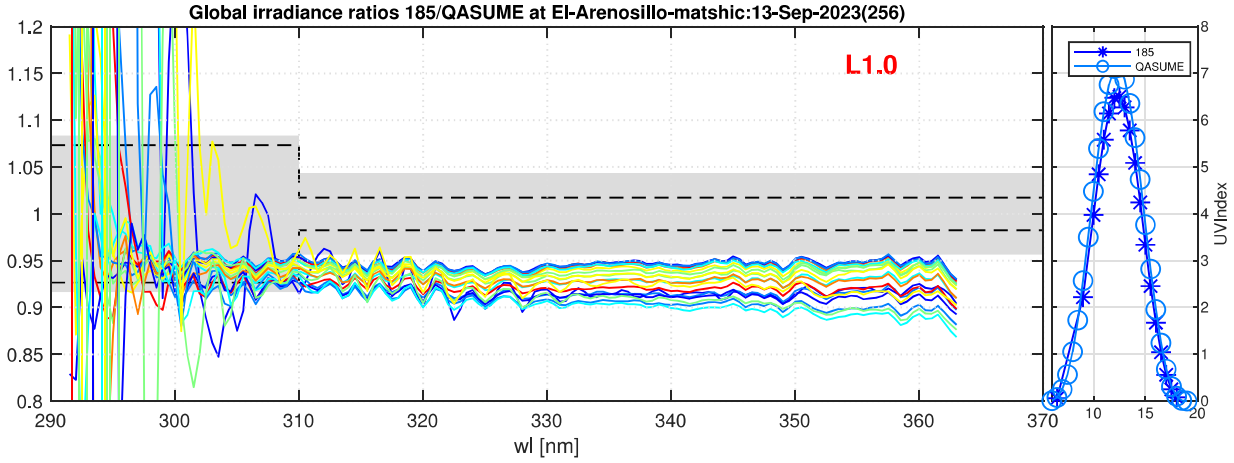

Global irradiance ratios 185/QASUME at El-Arenosillo-matshic:11-Sep-2023(254) to 14-Sep-2023(257)
L1.0
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
RATIO 185/QASUME
254
255
256
257
TIME [UT] ON DAYS: [254 255 256 257]

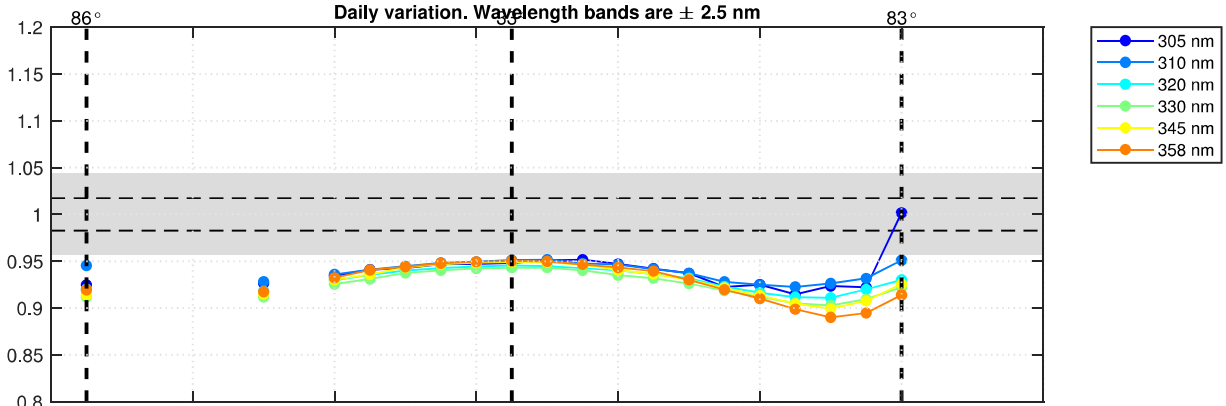

Global irradiance ratios 185/QASUME at El-Arenosillo-matshic:11-Sep-2023(254)
L1.0
185
QASUME
UVIndex
wl [nm]

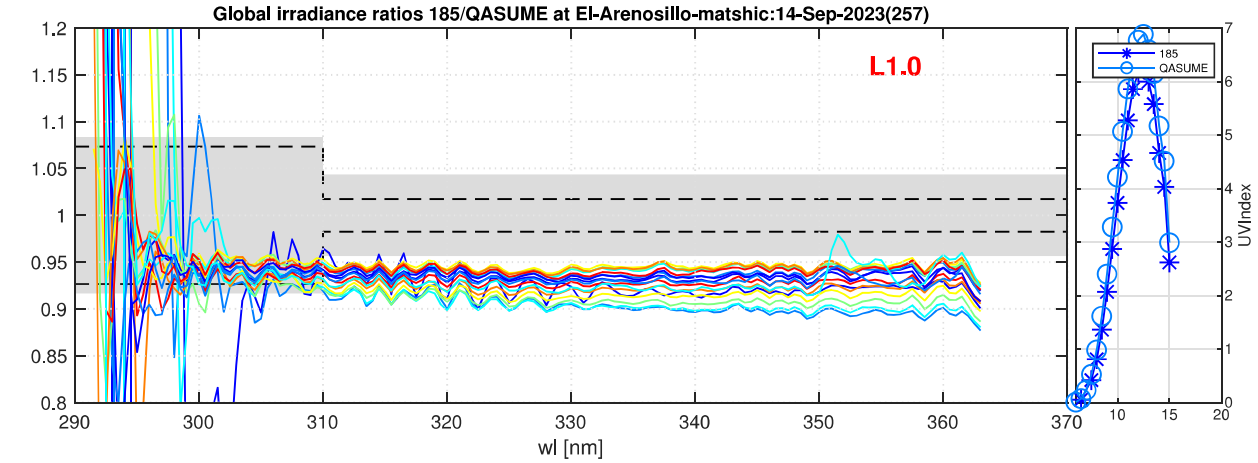

Daily variation. Wavelength bands are ± 2.5 nm
62°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

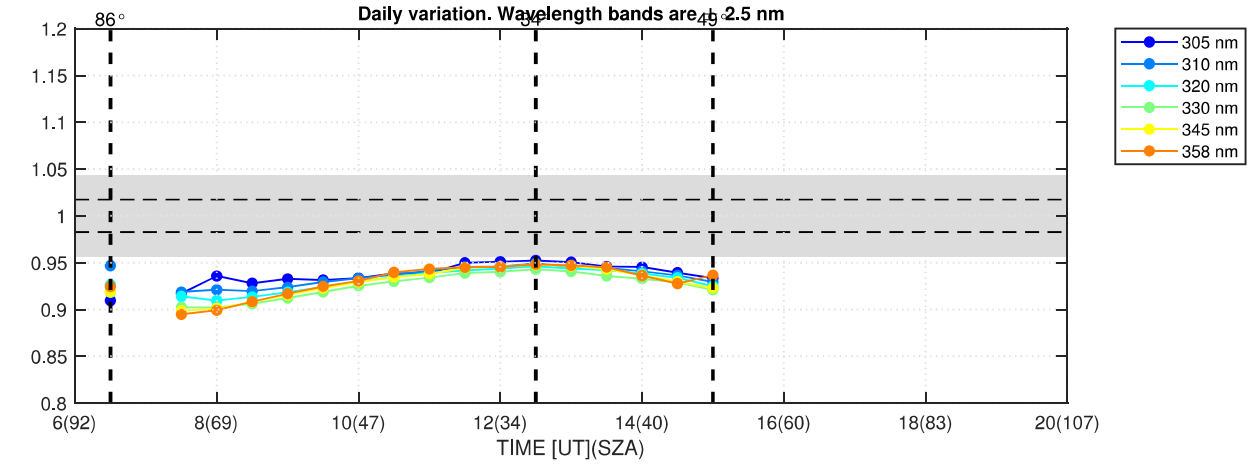

Global irradiance ratios 185/QASUME at El-Arenosillo-matshic:12-Sep-2023(255)
L1.0
185
QASUME
UVIndex
wl [nm]

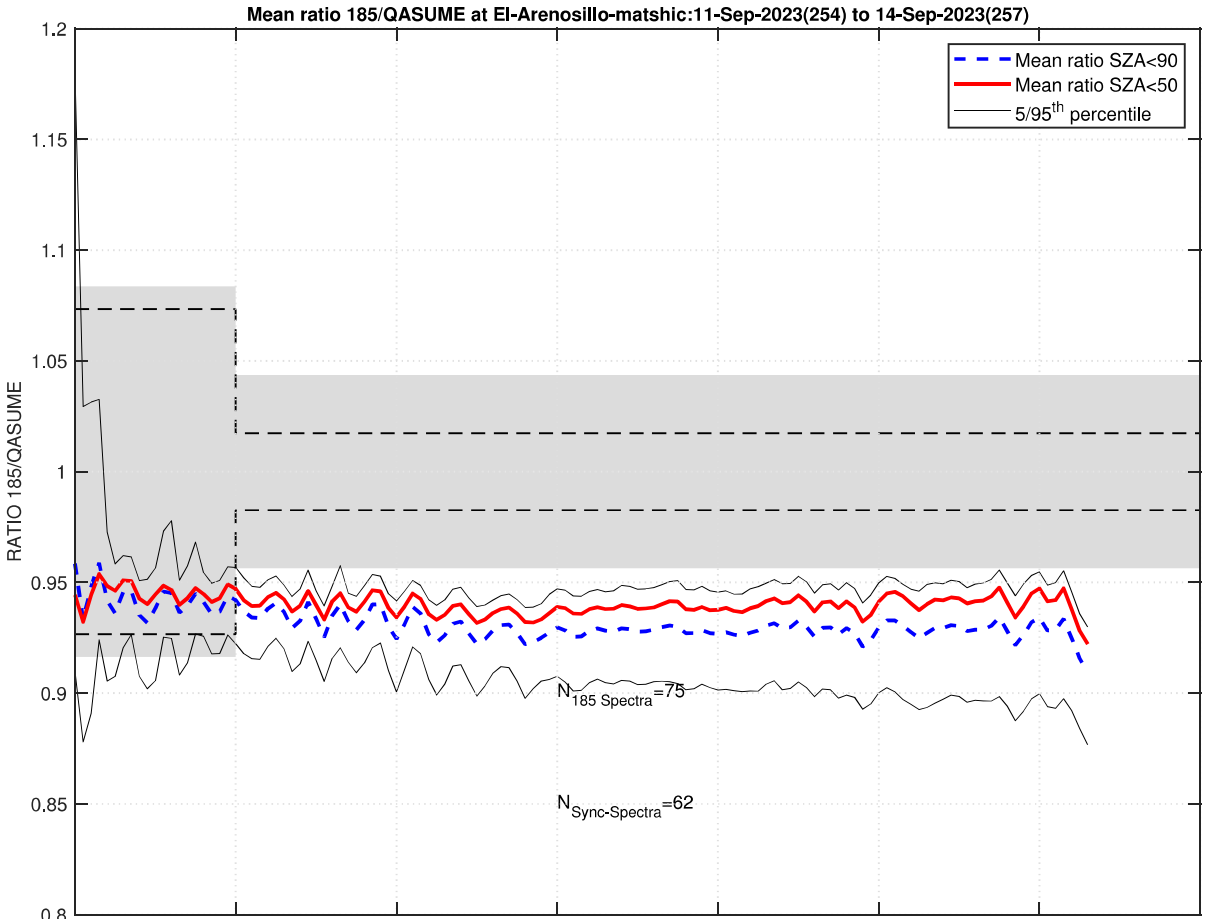

Daily variation. Wavelength bands are ± 2.5 nm
74°
77°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
TIME [UT](SZA)

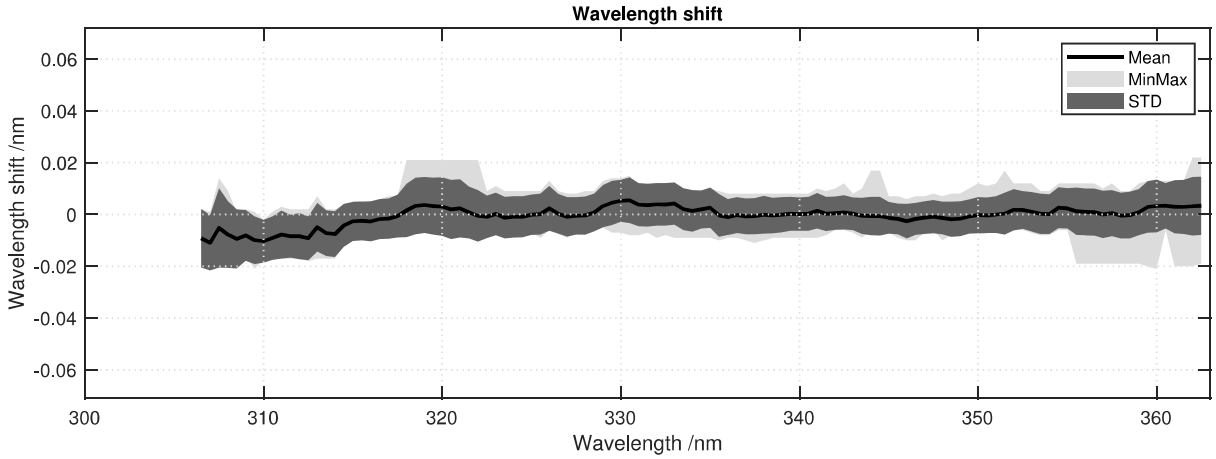

Global irradiance ratios 185/QASUME at El-Arenosillo-matshic:13-Sep-2023(256)
L1.0
185
QASUME
UVIndex
wl [nm]

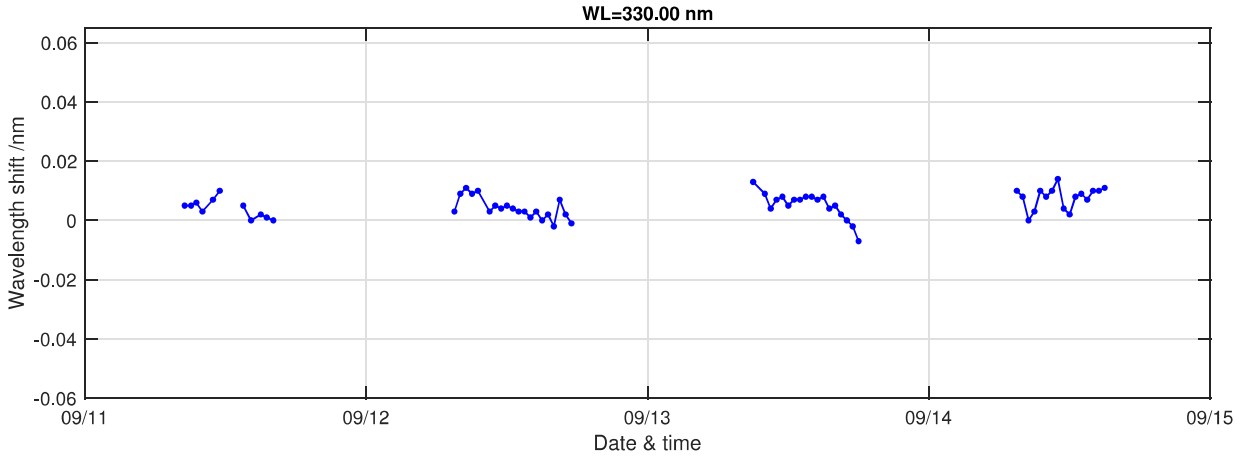

Daily variation. Wavelength bands are ± 2.5 nm
86°
83°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

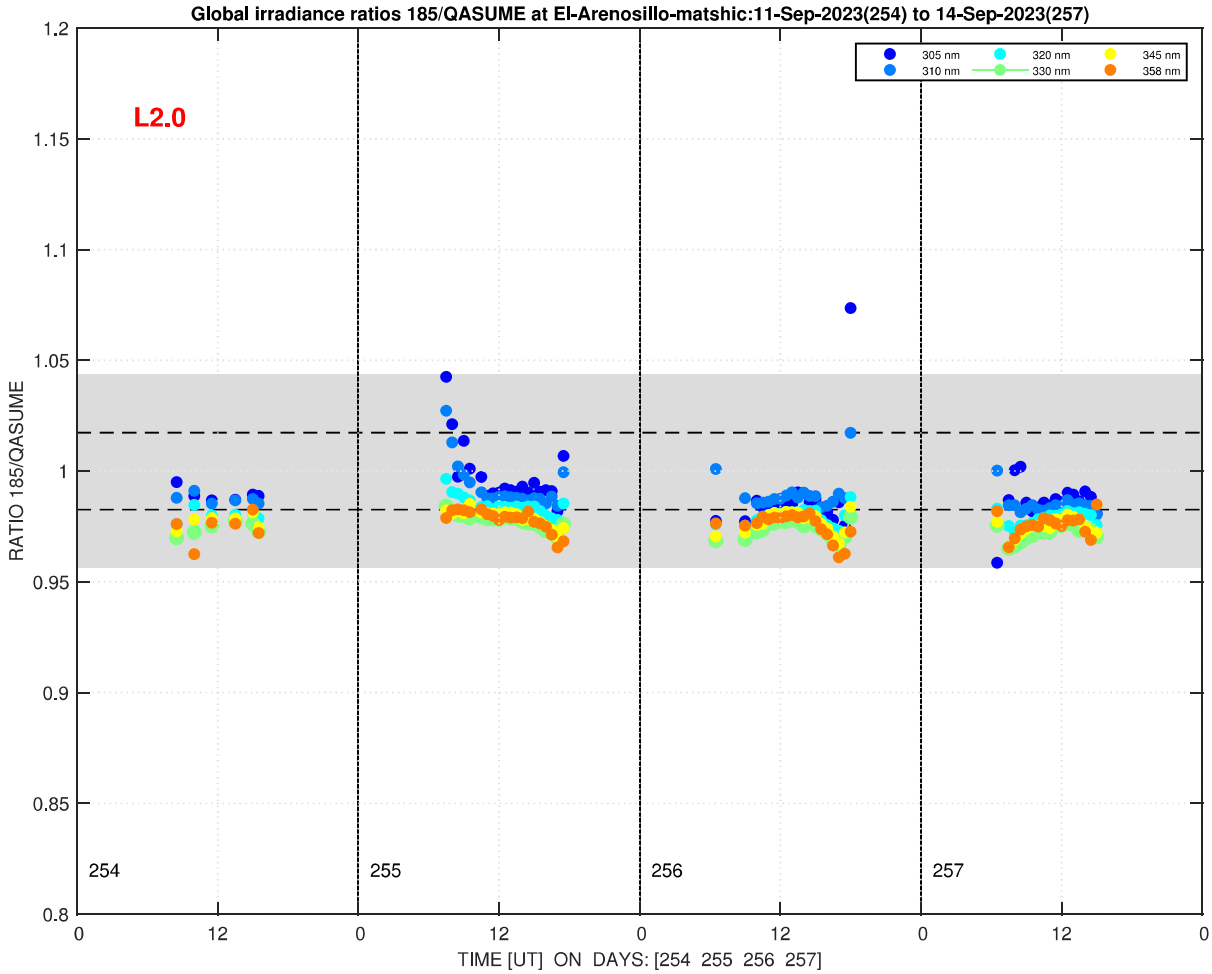

Global irradiance ratios 185/QASUME at El-Arenosillo-matshic:14-Sep-2023(257)
L1.0
185
QASUME
UVIndex
wl [nm]

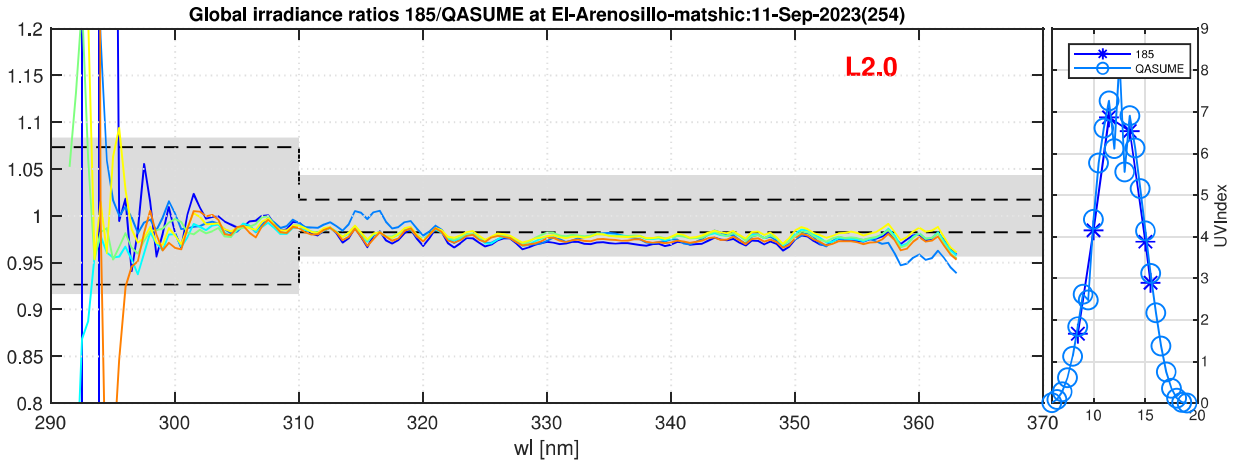

Daily variation. Wavelength bands are ± 2.5 nm
86°
34°
49°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
TIME [UT](SZA)

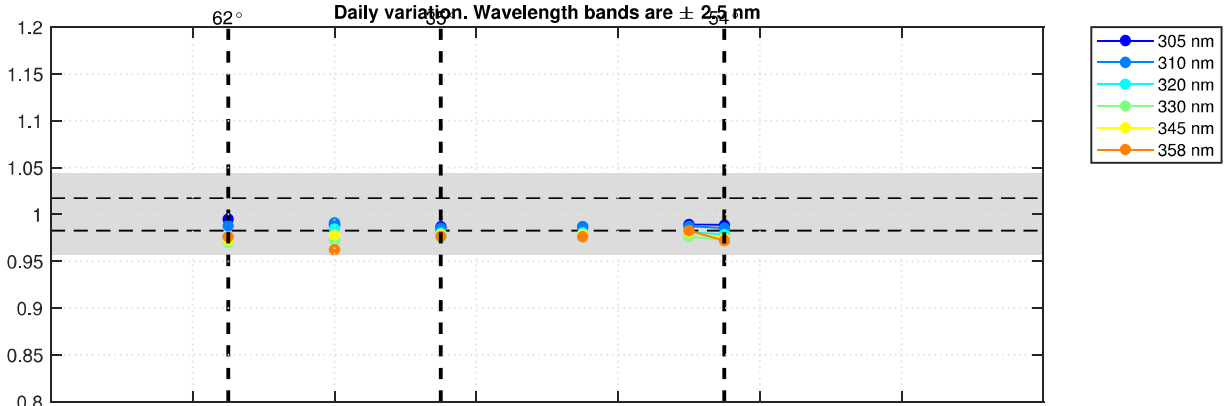

Mean ratio 185/QASUME at El-Arenosillo-matshic:11-Sep-2023(254) to 14-Sep-2023(257)
Mean ratio SZA<90
Mean ratio SZA<50
5/95th percentile
RATIO 185/QASUME
N185 Spectra=75
NSync-Spectra=62

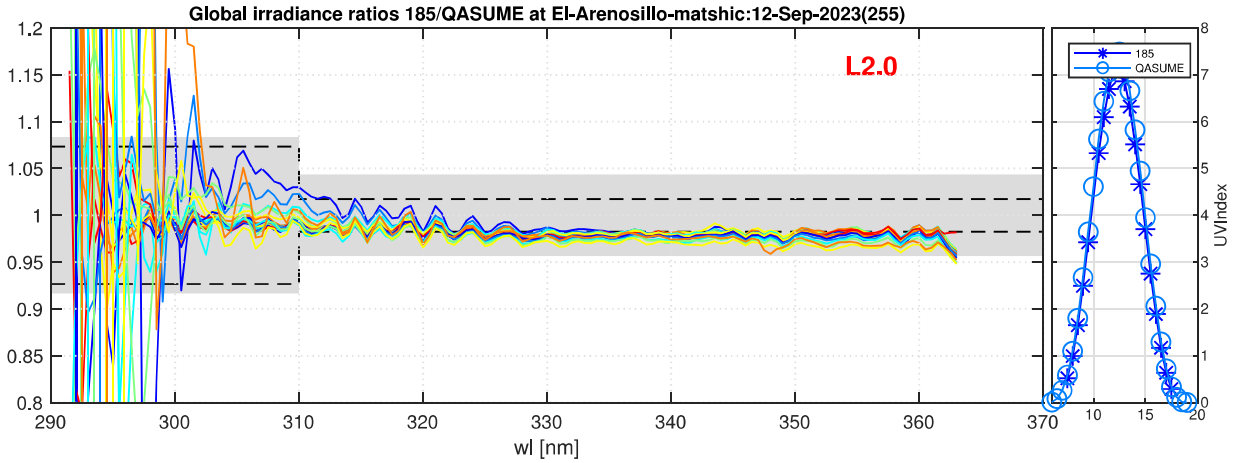

Wavelength shift
Mean
MinMax
STD
Wavelength shift /nm
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
300
310
320
330
340
350
360
Wavelength /nm

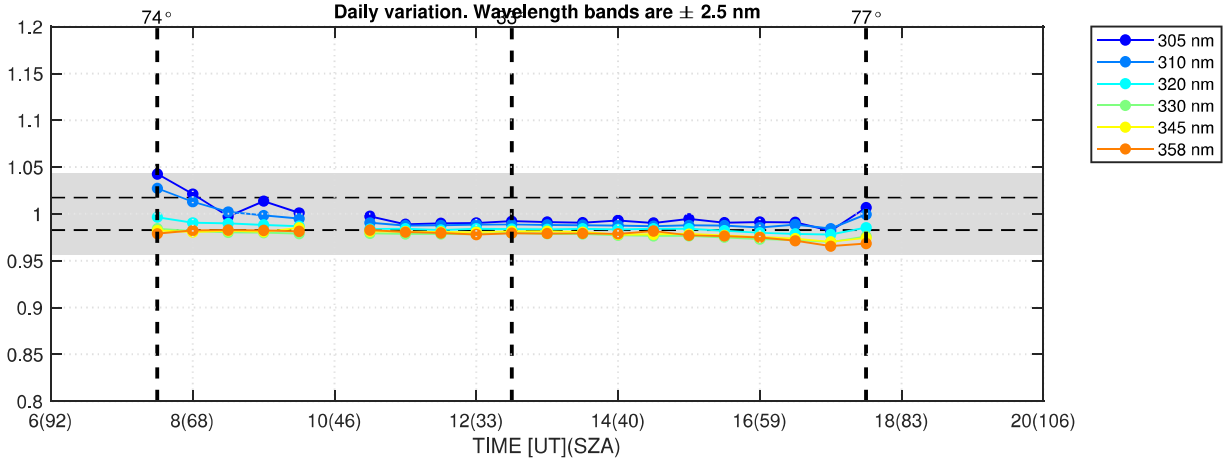

WL=330.00 nm
Wavelength shift /nm
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
09/11
09/12
09/13
09/14
09/15
Date & time

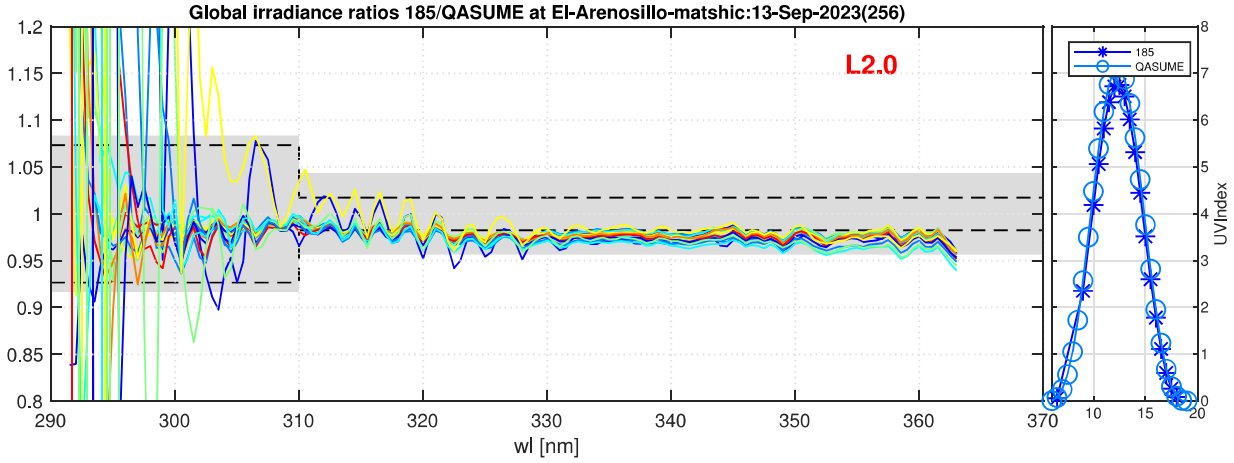

Global irradiance ratios 185/QASUME at El-Arenosillo-matshic:11-Sep-2023(254) to 14-Sep-2023(257)
L2.0
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
RATIO 185/QASUME
254
255
256
257
TIME [UT] ON DAYS: [254 255 256 257]

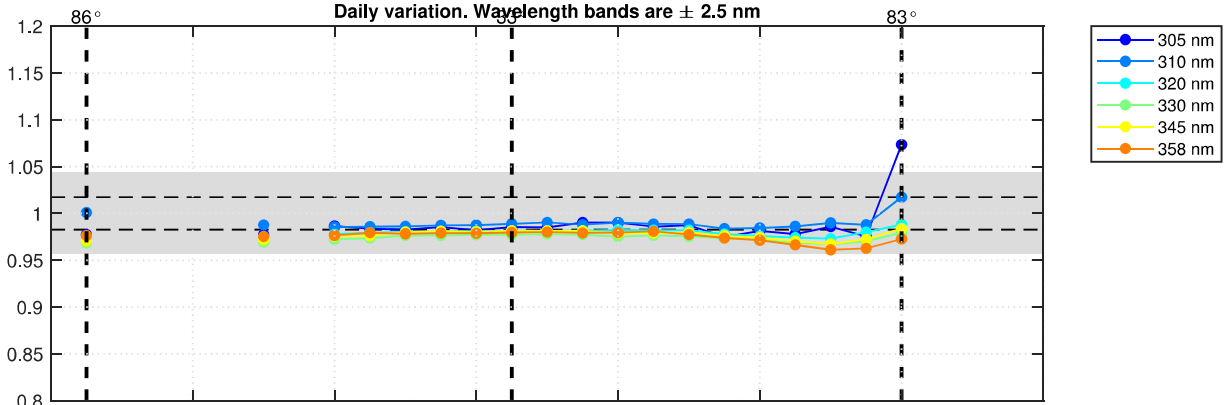

Global irradiance ratios 185/QASUME at El-Arenosillo-matshic:11-Sep-2023(254)
L2.0
185
QASUME
UVIndex
wl [nm]

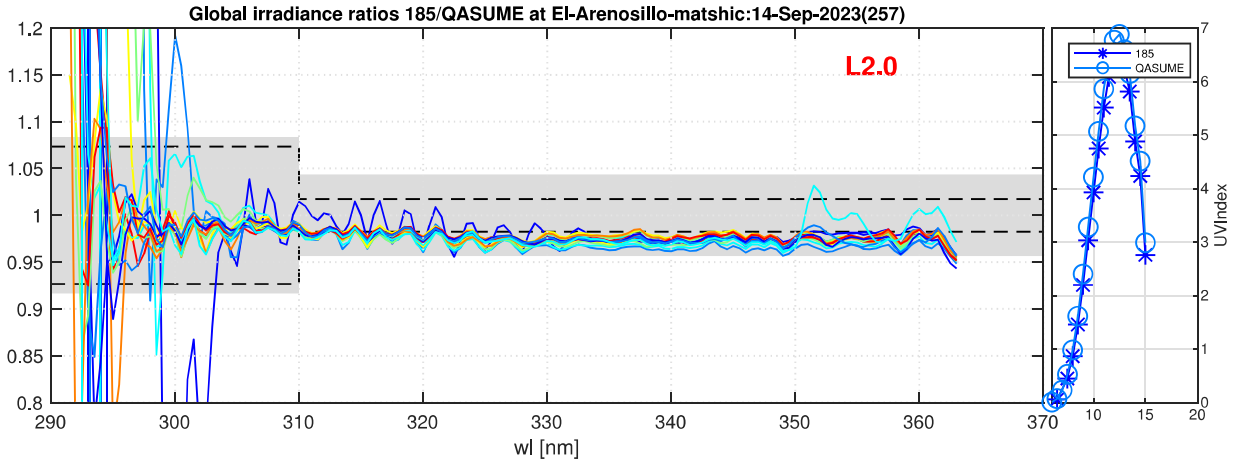

Daily variation. Wavelength bands are ± 2.5 nm
62°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

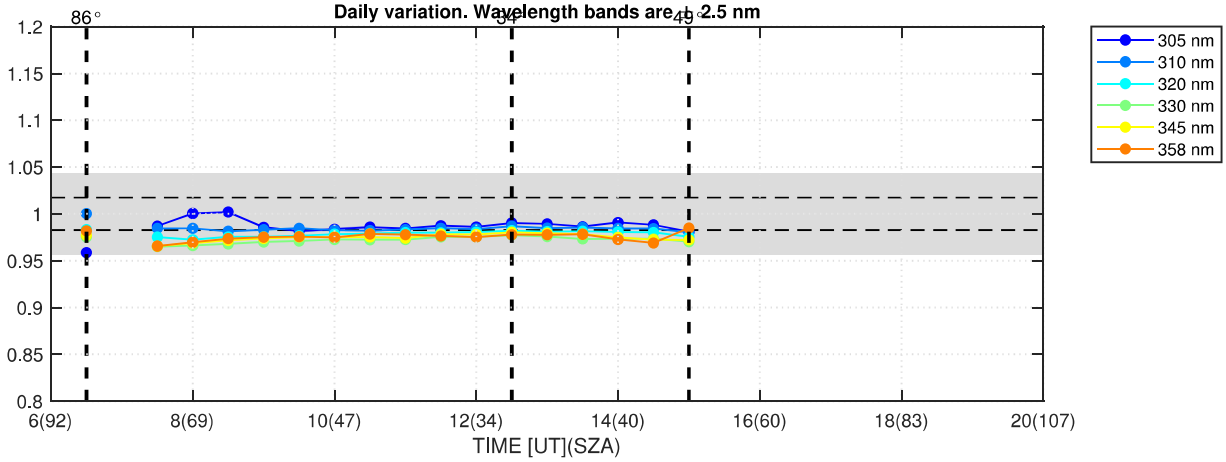

Global irradiance ratios 185/QASUME at El-Arenosillo-matshic:12-Sep-2023(255)
L2.0
185
QASUME
UVIndex
wl [nm]

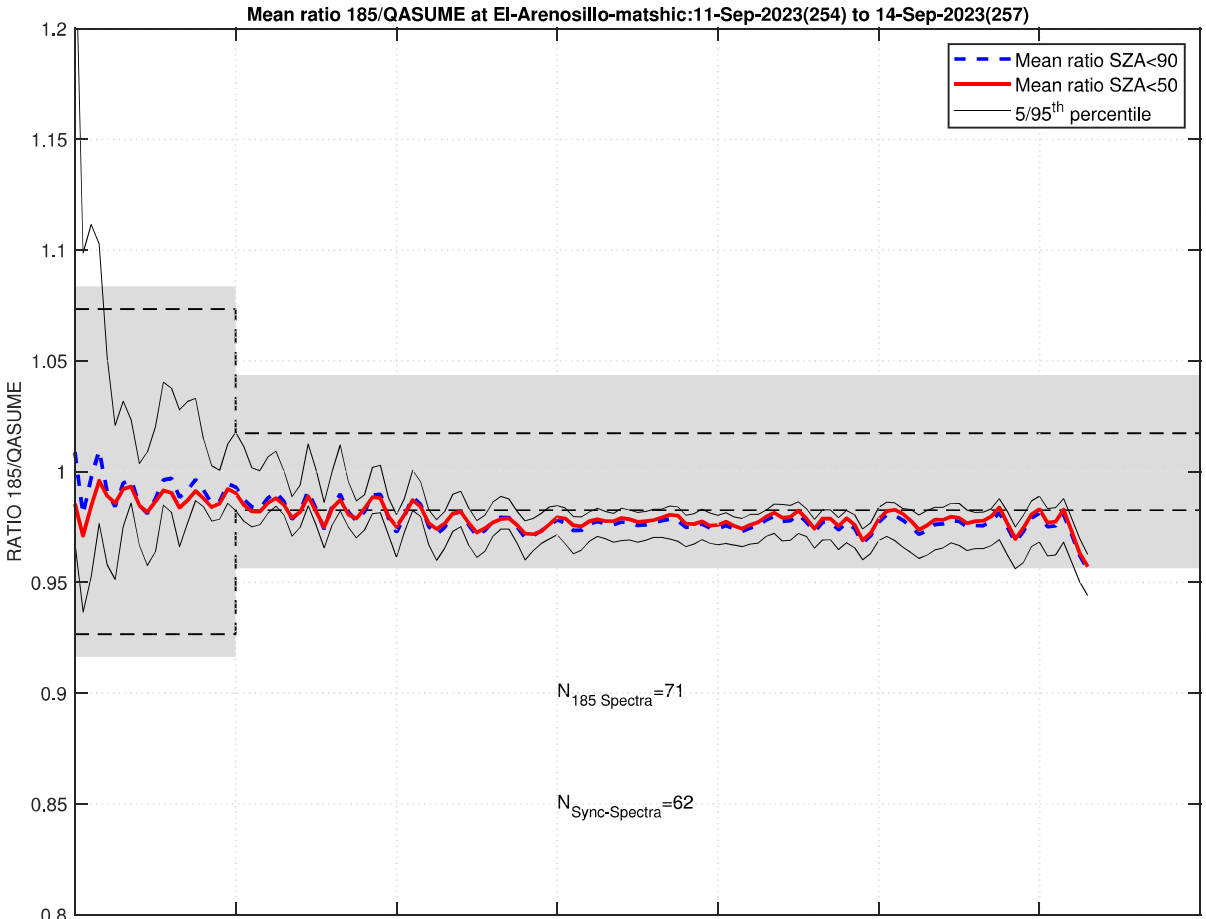

Daily variation. Wavelength bands are ± 2.5 nm
74°
77°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
6(92)
8(68)
10(46)
12(33)
14(40)
16(59)
18(83)
20(106)
TIME [UT](SZA)

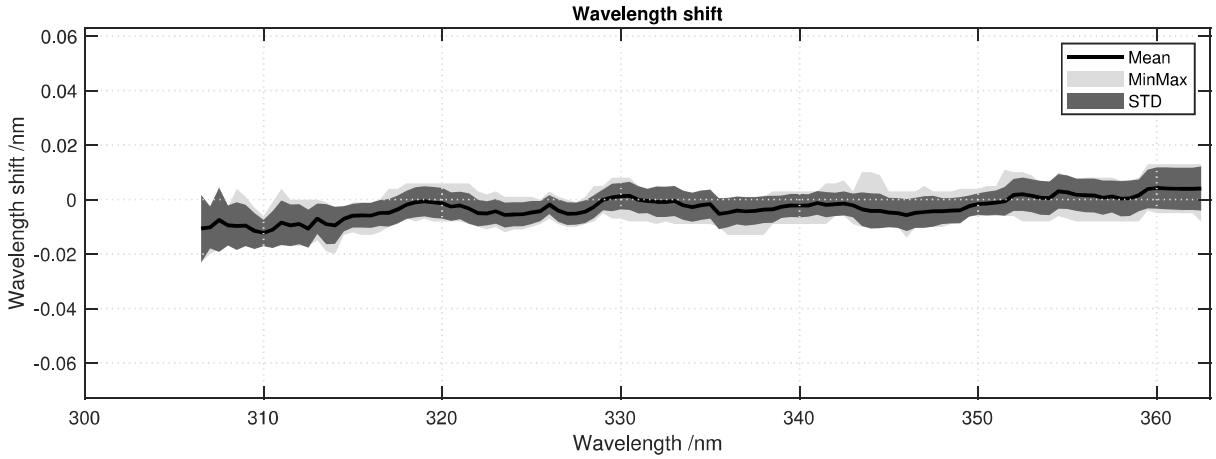

Global irradiance ratios 185/QASUME at El-Arenosillo-matshic:13-Sep-2023(256)
L2.0
185
QASUME
UVIndex
wl [nm]

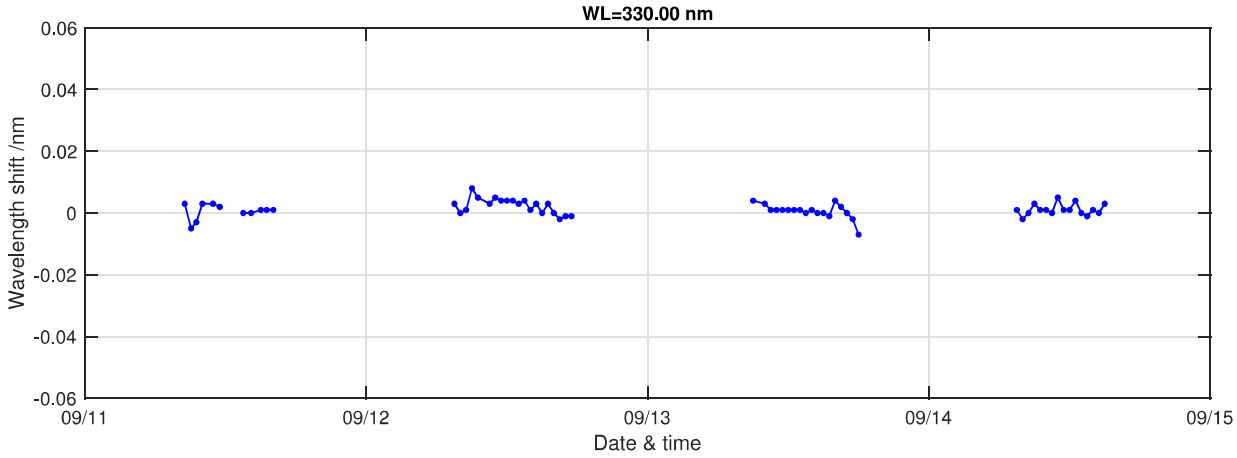

Daily variation. Wavelength bands are ± 2.5 nm
86°
83°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

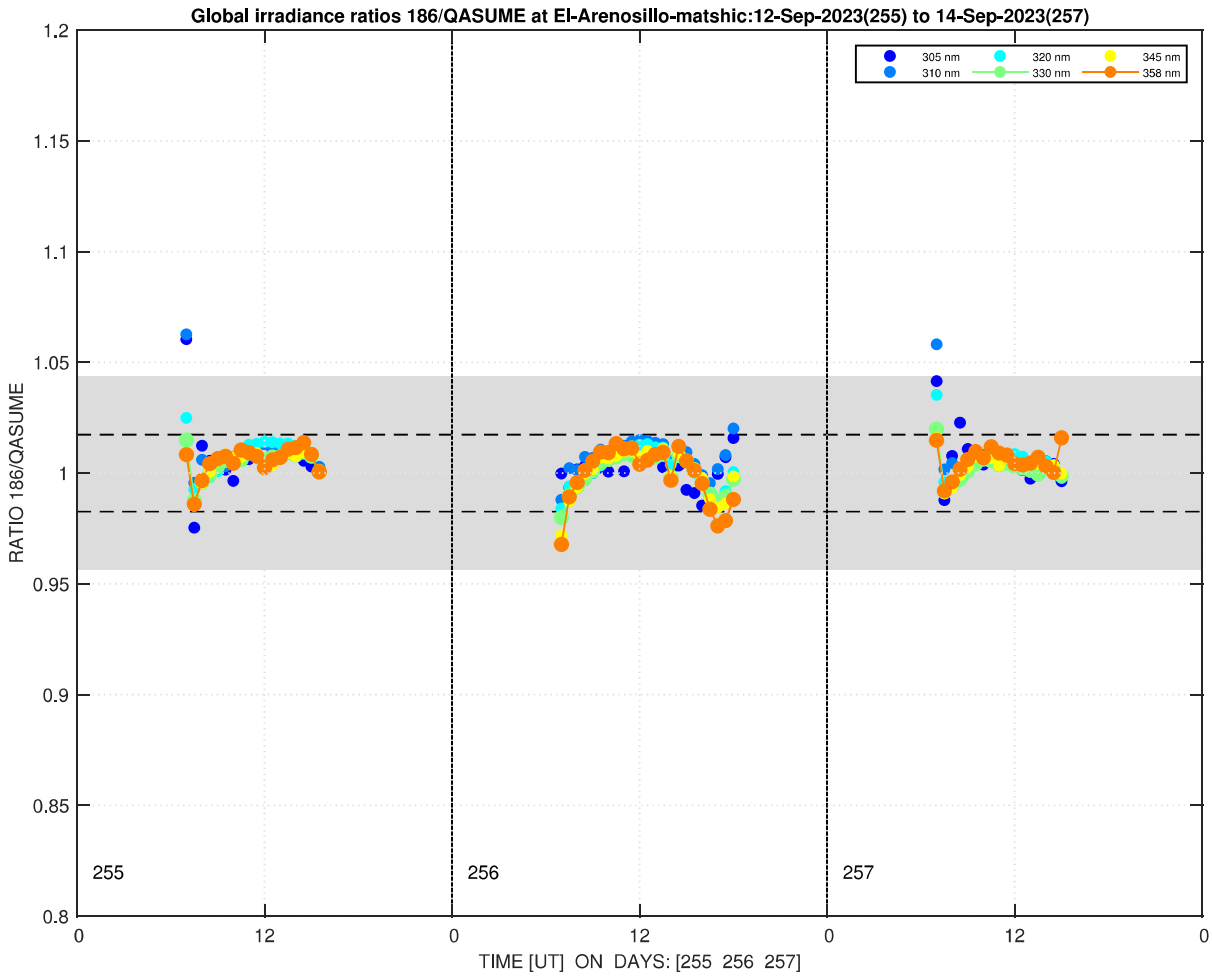

Global irradiance ratios 185/QASUME at El-Arenosillo-matshic:14-Sep-2023(257)
L2.0
185
QASUME
UVIndex
wl [nm]

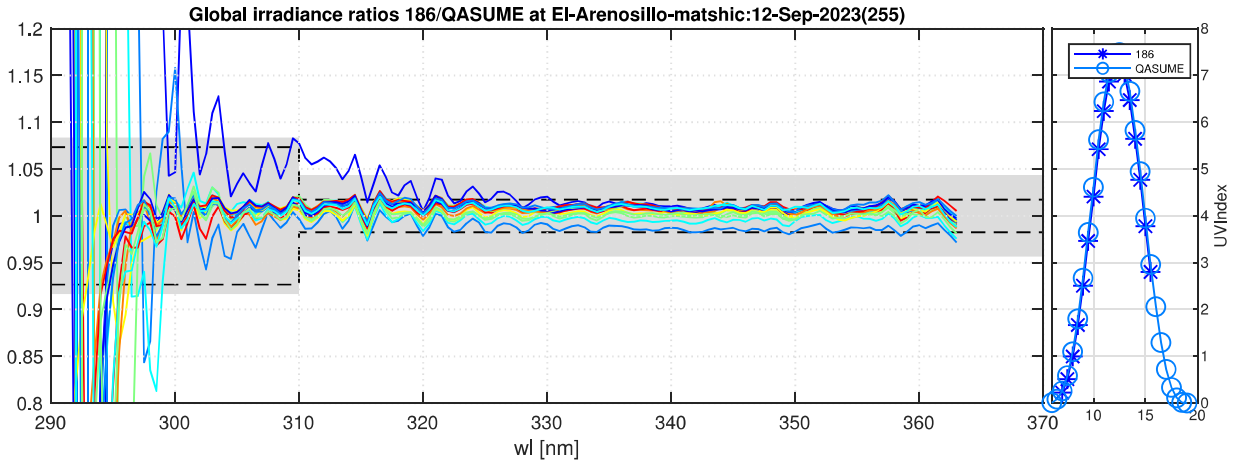

Daily variation. Wavelength bands are ± 2.5 nm
86°
34°
49°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
6(92)
8(69)
10(47)
12(34)
14(40)
16(60)
18(83)
20(107)
TIME [UT](SZA)

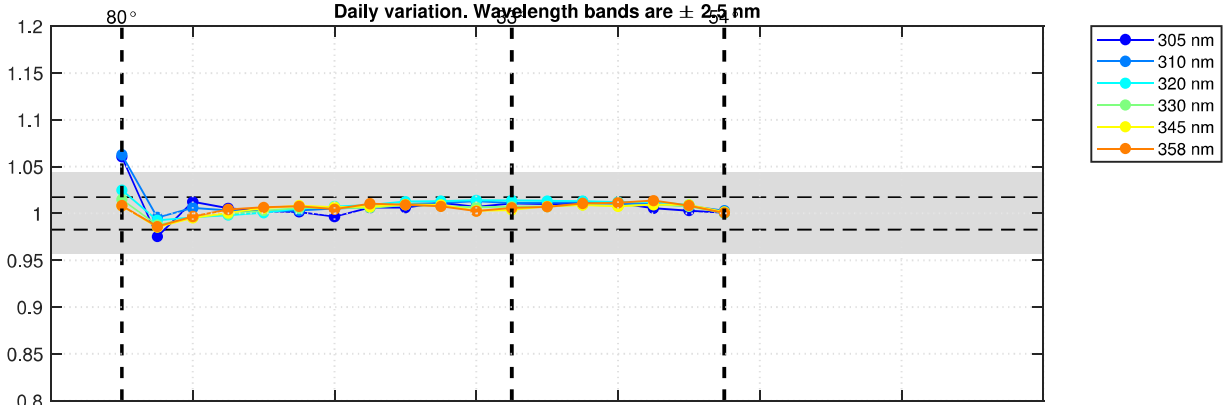

Mean ratio 185/QASUME at El-Arenosillo-matshic:11-Sep-2023(254) to 14-Sep-2023(257)
Mean ratio SZA<90
Mean ratio SZA<50
5/95th percentile
RATIO 185/QASUME
N185 Spectra=71
NSync-Spectra=62

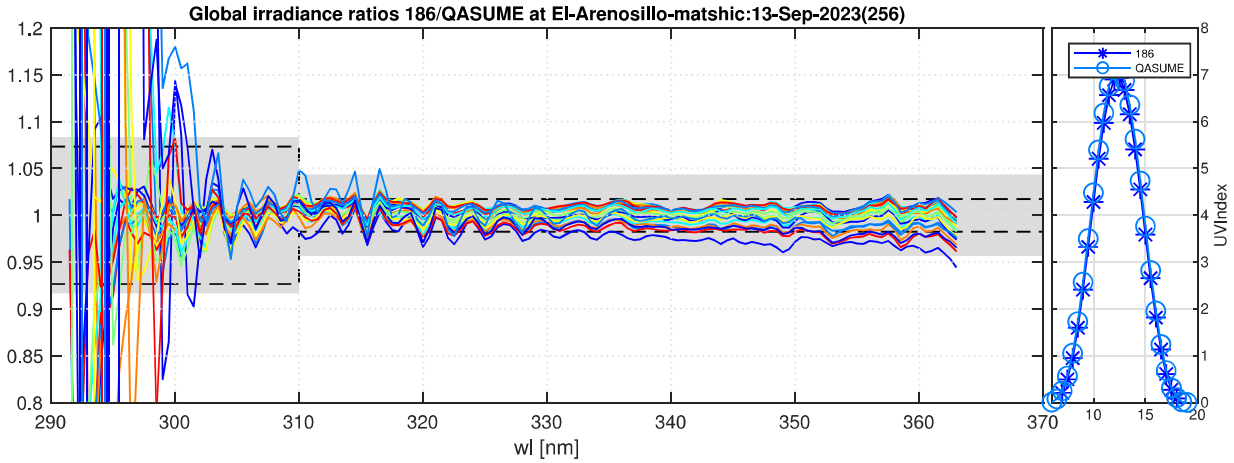

Wavelength shift
Mean
MinMax
STD
Wavelength shift /nm
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
300
310
320
330
340
350
360
Wavelength /nm

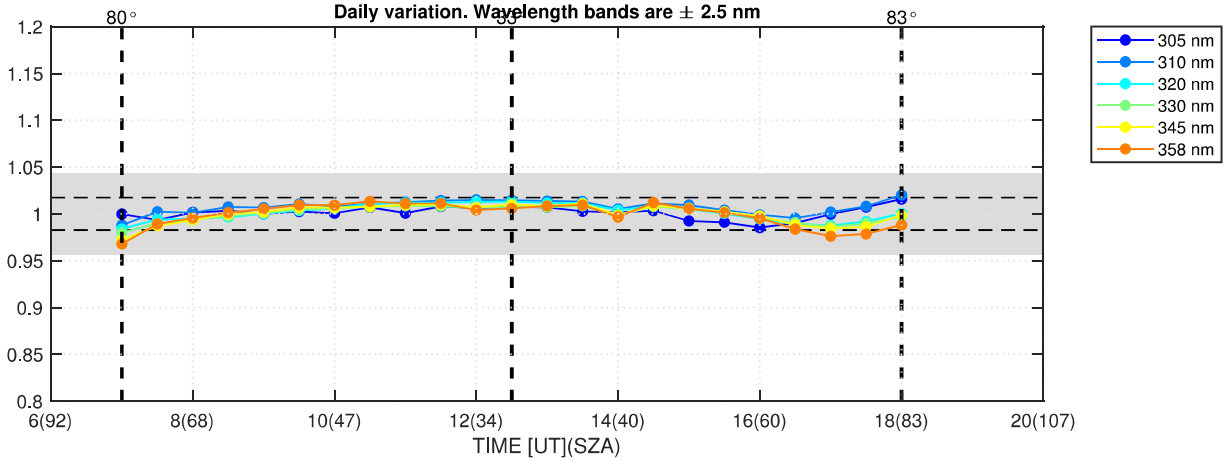

WL=330.00 nm
Wavelength shift /nm
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
09/11
09/12
09/13
09/14
09/15
Date & time

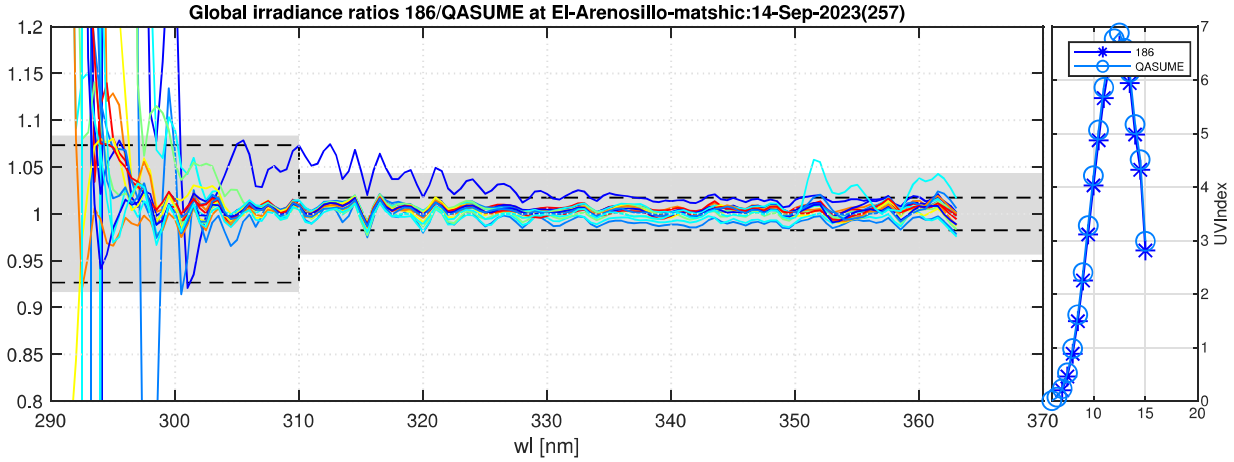

Global irradiance ratios 186/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 14-Sep-2023(257)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
RATIO 186/QASUME
255
256
257
TIME [UT] ON DAYS: [255 256 257]

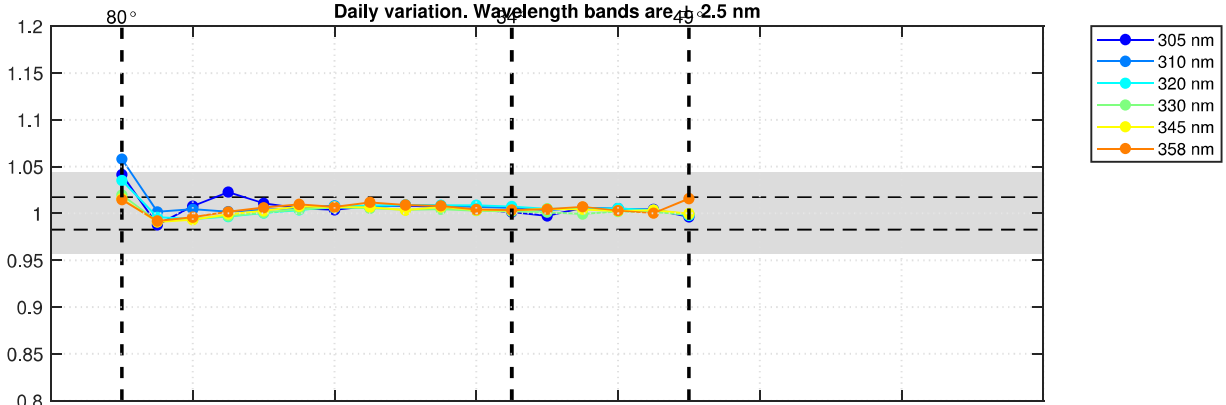

Global irradiance ratios 186/QASUME at El-Arenosillo-matshic:12-Sep-2023(255)
186
QASUME
UVIndex
wl [nm]

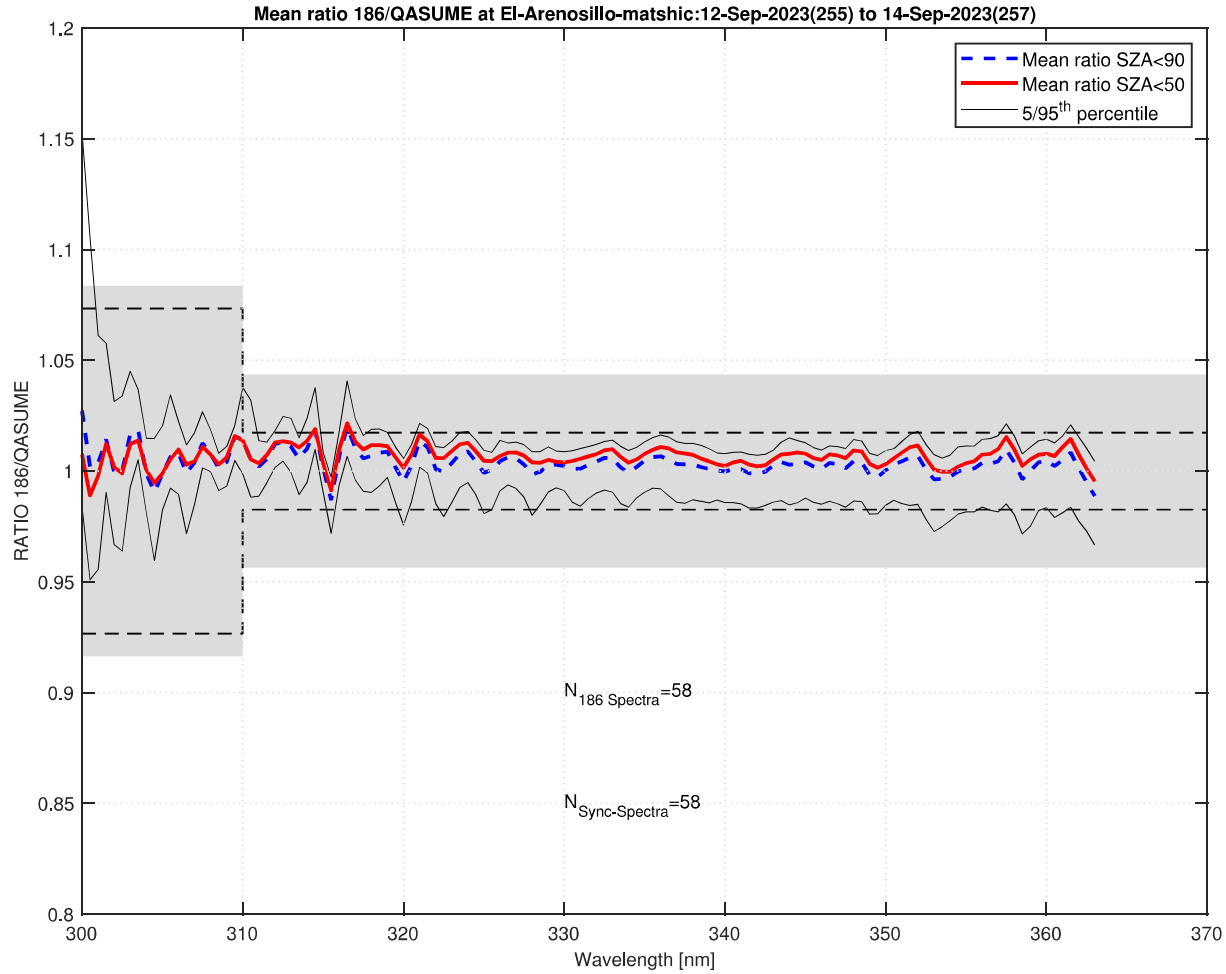

Daily variation. Wavelength bands are ± 2.5 nm
80°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

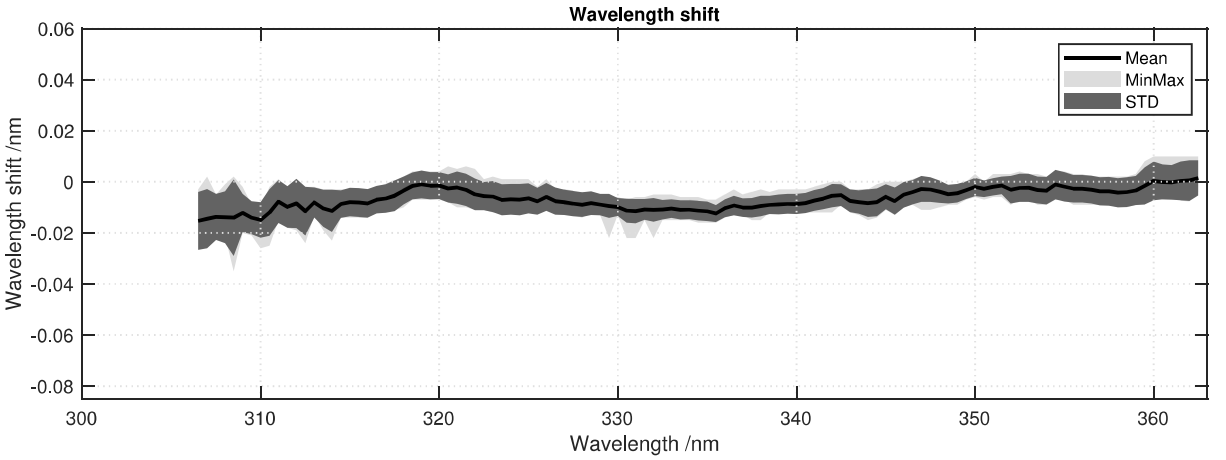

Global irradiance ratios 186/QASUME at El-Arenosillo-matshic:13-Sep-2023(256)
wl [nm]
UVIndex
186
QASUME

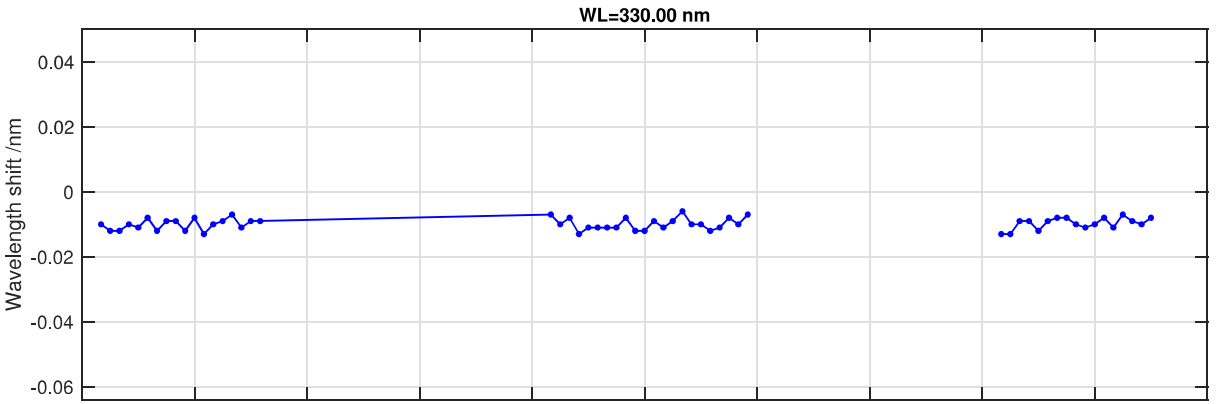

Daily variation. Wavelength bands are ± 2.5 nm
80°
83°
TIME [UT](SZA)
6(92)
8(68)
10(47)
12(34)
14(40)
16(60)
18(83)
20(107)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

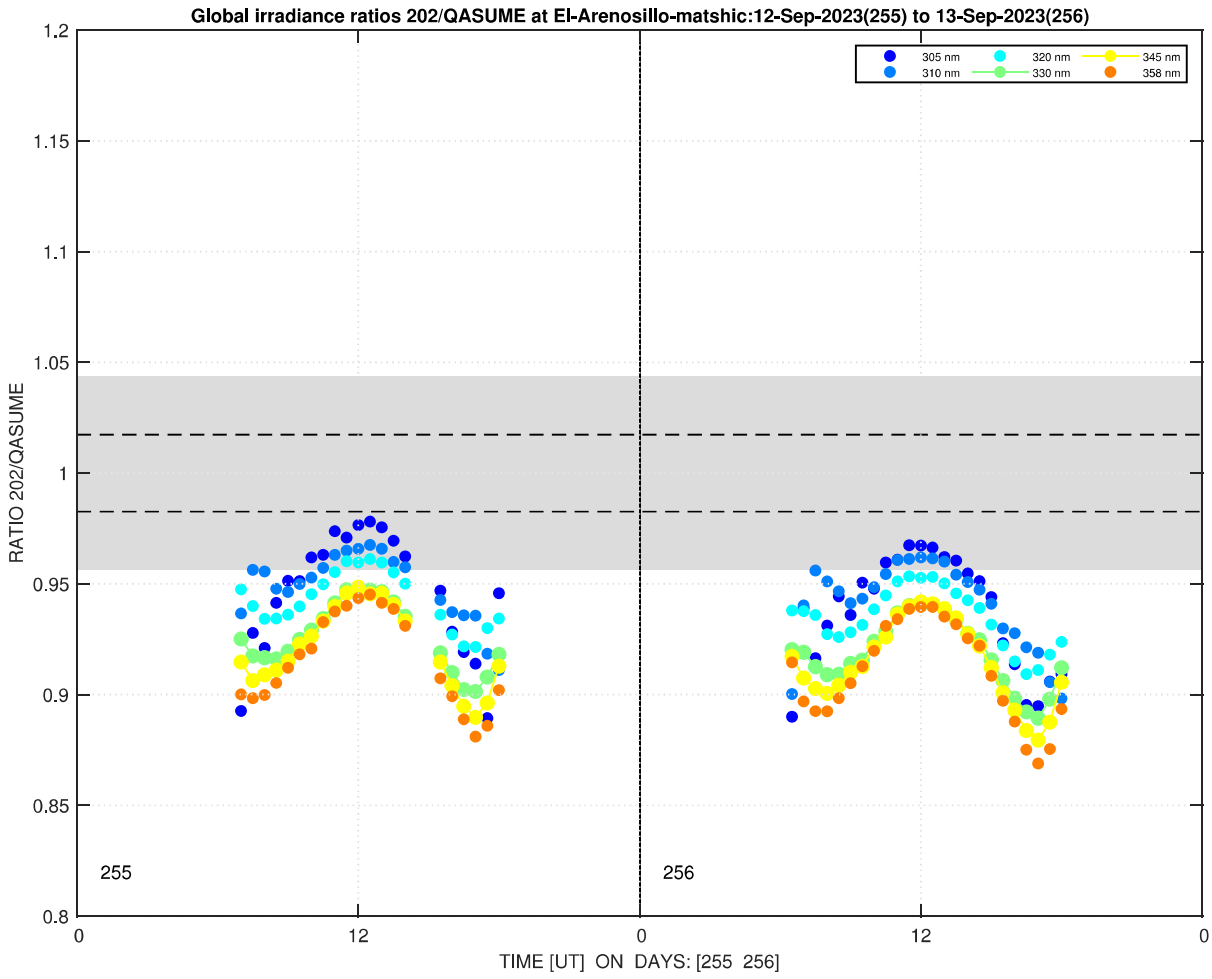

Global irradiance ratios 186/QASUME at El-Arenosillo-matshic:14-Sep-2023(257)
wl [nm]
UVIndex
186
QASUME

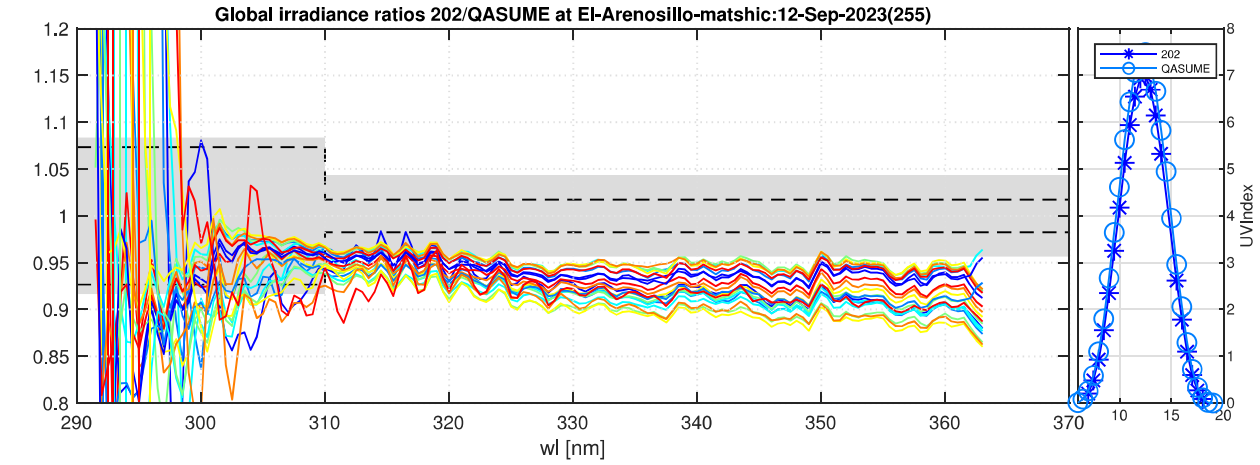

Daily variation. Wavelength bands are ± 2.5 nm
80°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

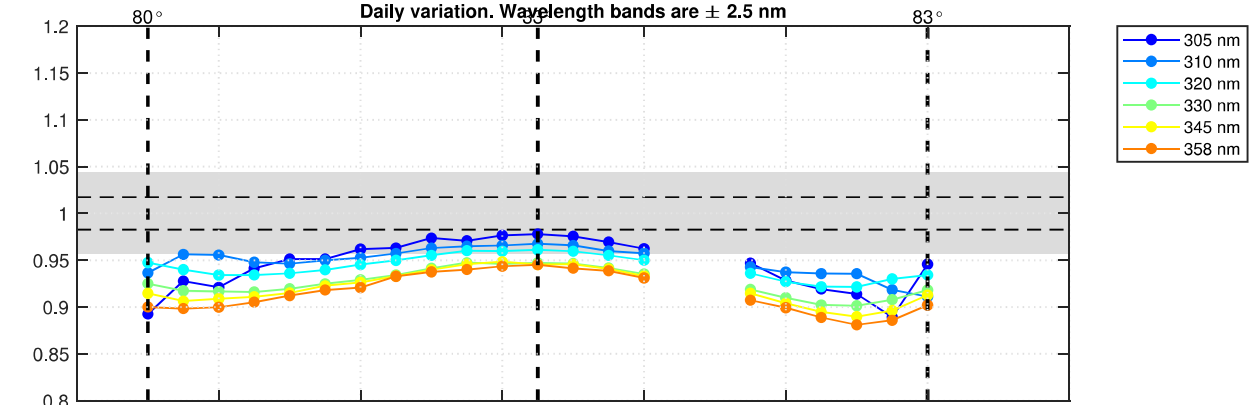

Mean ratio 186/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 14-Sep-2023(257)
Mean ratio SZA<90
Mean ratio SZA<50
5/95th percentile
RATIO 186/QASUME
Wavelength [nm]
N186 Spectra=58
NSync-Spectra=58

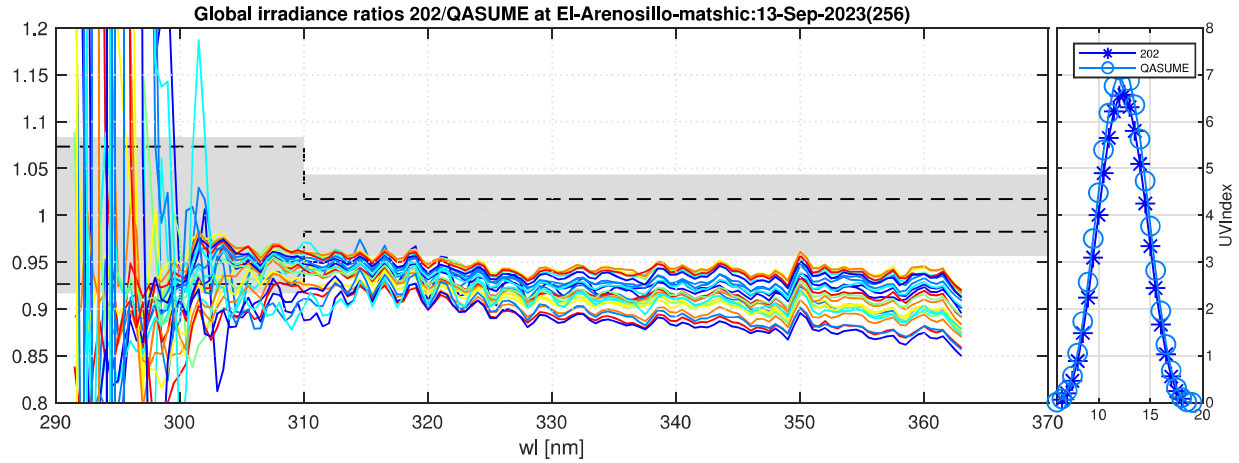

Wavelength shift
Mean
MinMax
STD
Wavelength shift /nm
Wavelength /nm

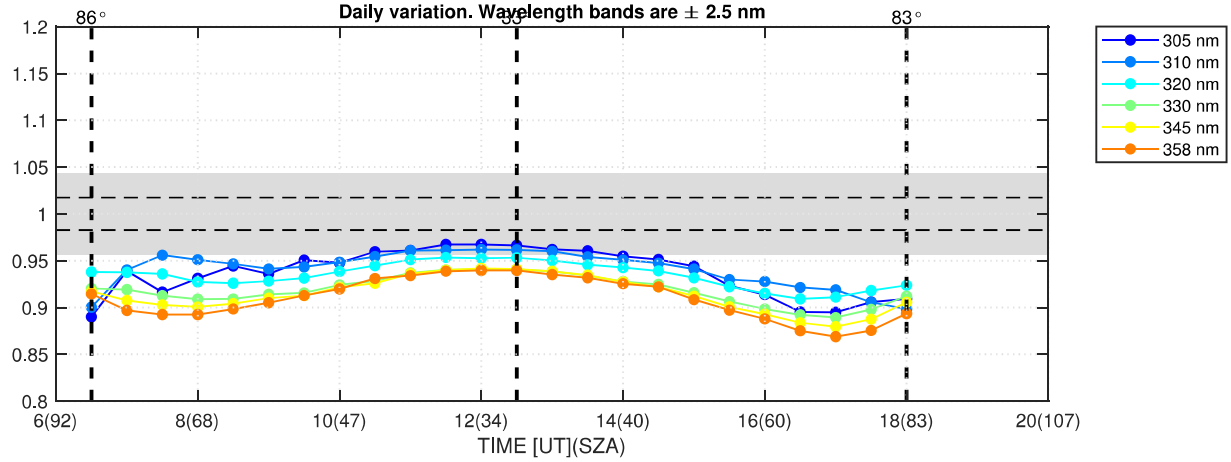

WL=330.00 nm
Wavelength shift /nm

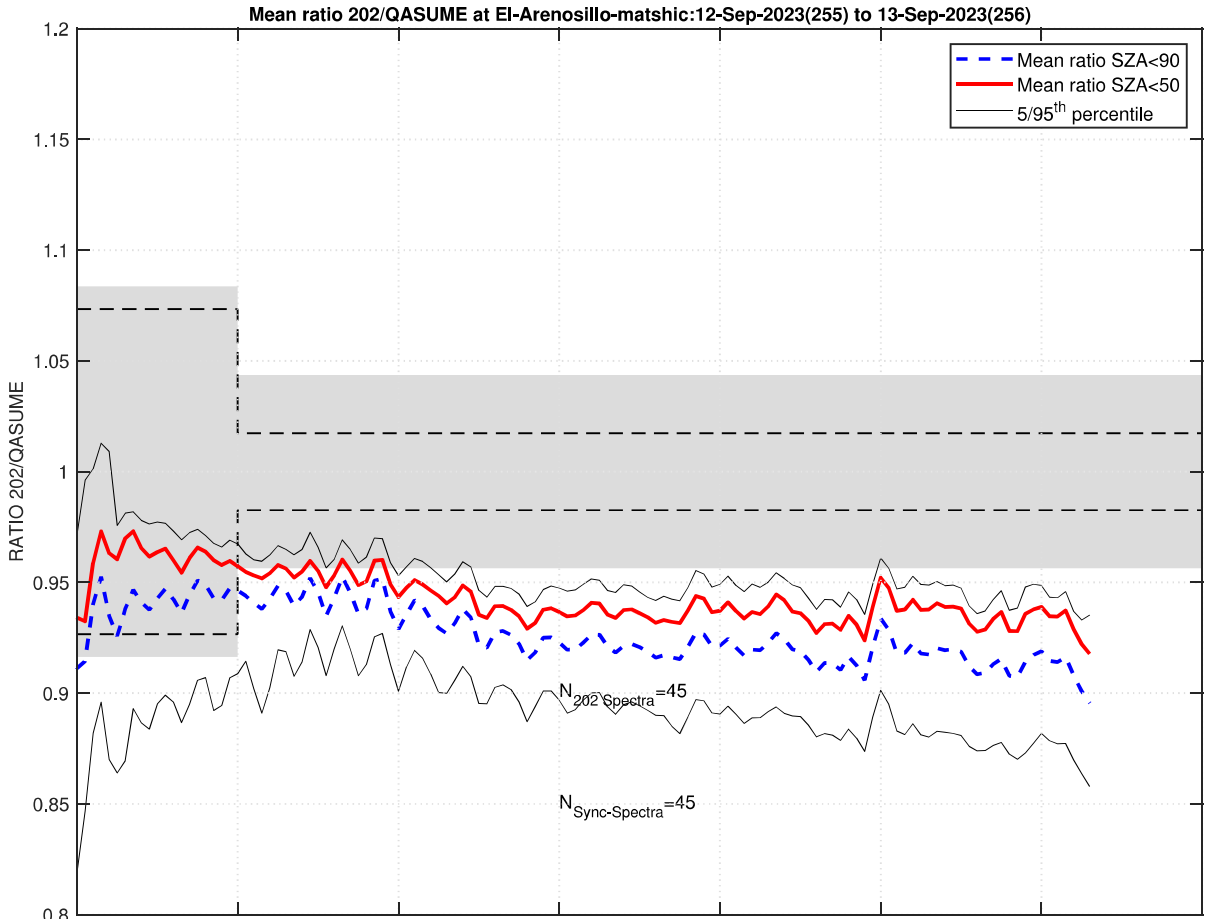

Global irradiance ratios 202/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 13-Sep-2023(256)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
RATIO 202/QASUME
255
256
TIME [UT] ON DAYS: [255 256]

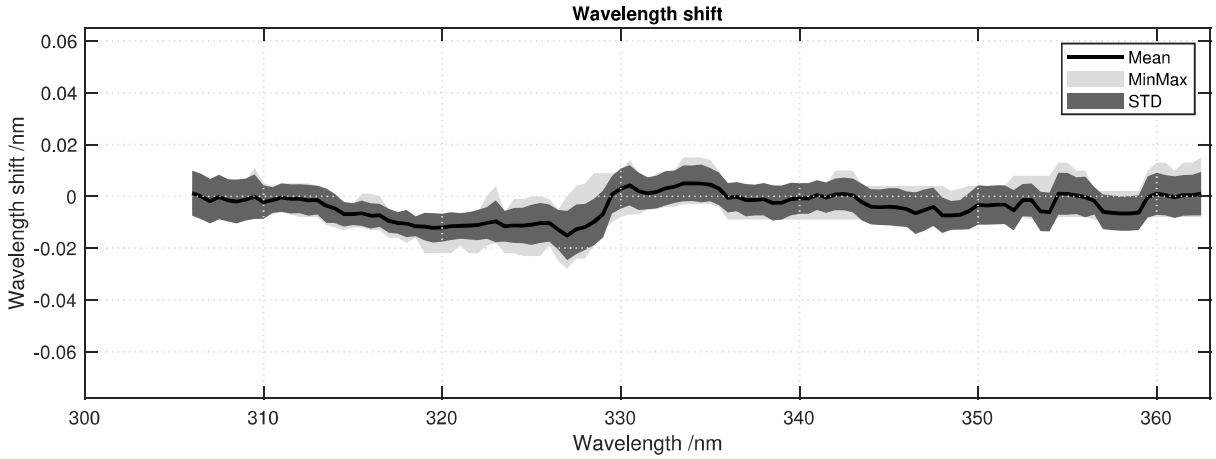

Global irradiance ratios 202/QASUME at El-Arenosillo-matshic:12-Sep-2023(255)
202
QASUME
UVIndex
wl [nm]

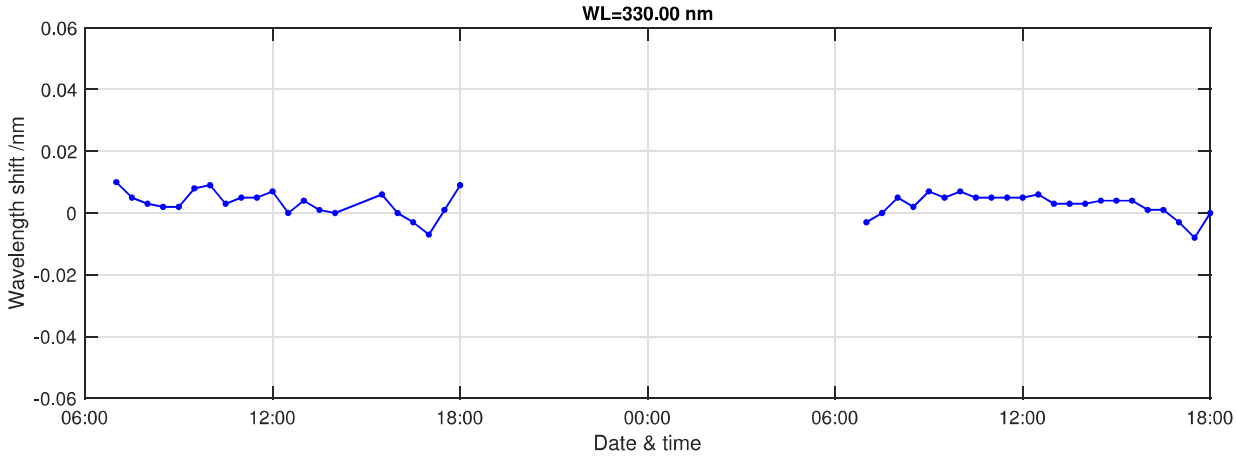

Daily variation. Wavelength bands are ± 2.5 nm
80°
83°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

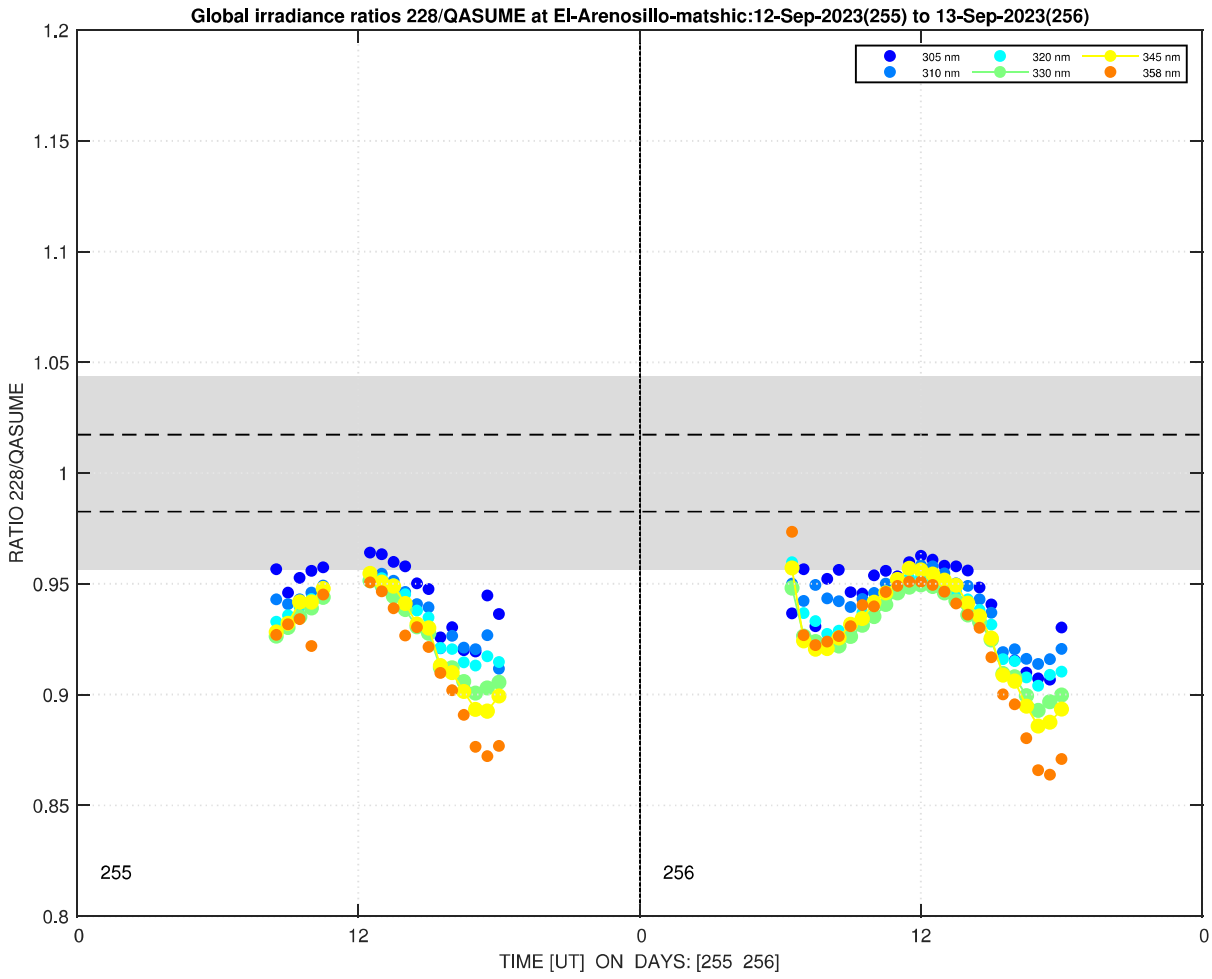

Global irradiance ratios 202/QASUME at El-Arenosillo-matshic:13-Sep-2023(256)
wl [nm]
UVIndex
202
QASUME

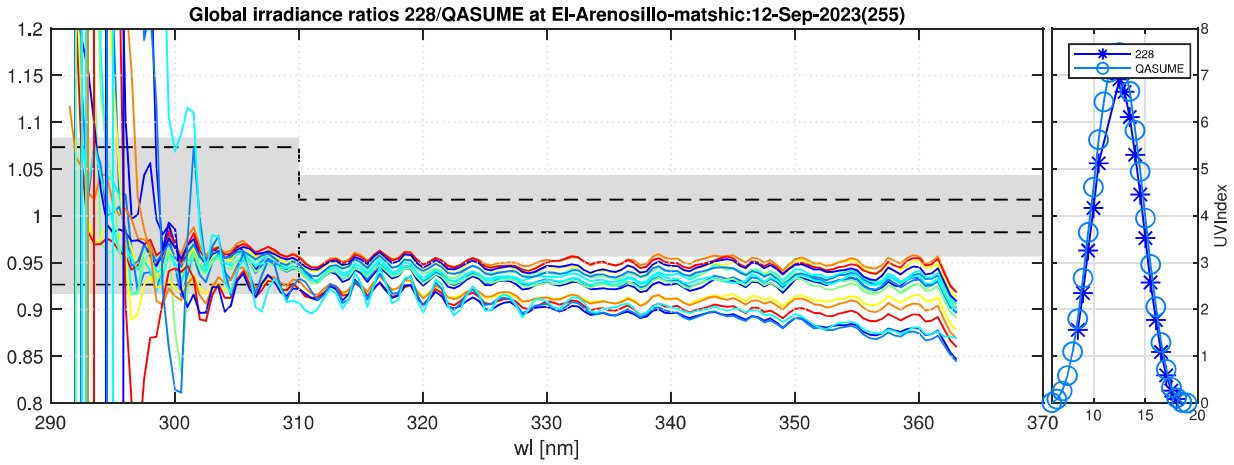

Daily variation. Wavelength bands are ± 2.5 nm
86°
83°
TIME [UT](SZA)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

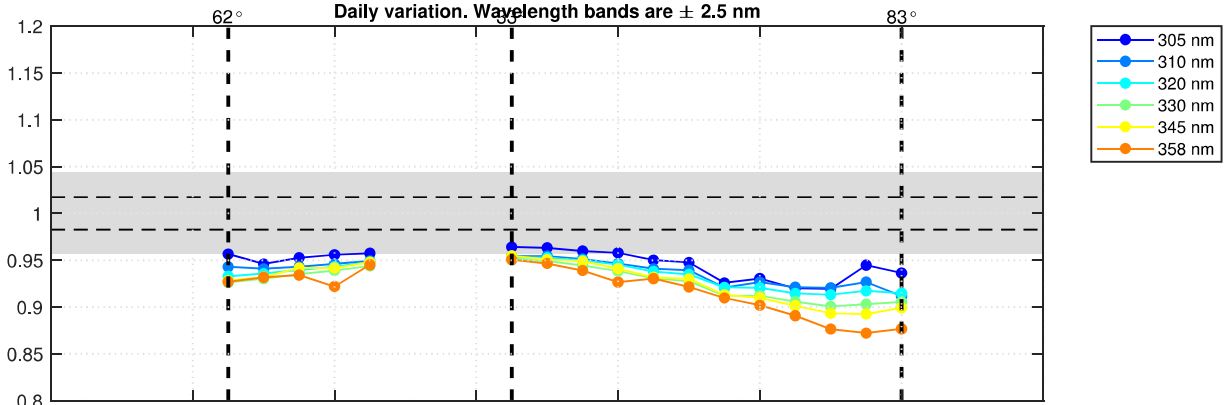

Mean ratio 202/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 13-Sep-2023(256)
RATIO 202/QASUME
Mean ratio SZA<90
Mean ratio SZA<50
5/95th percentile
N202 Spectra=45
NSync-Spectra=45

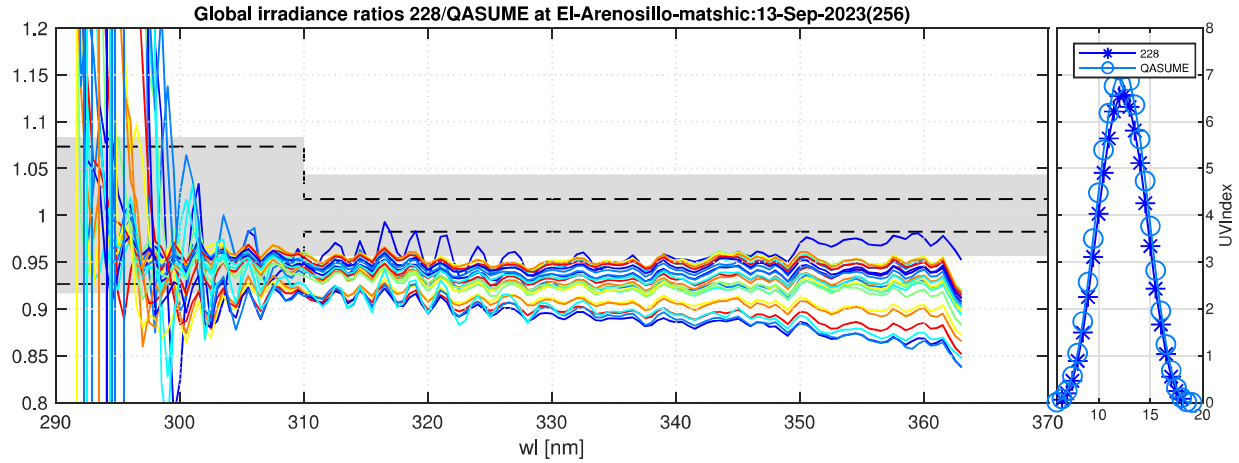

Wavelength shift
Mean
MinMax
STD
Wavelength shift /nm
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
300
310
320
330
340
350
360
Wavelength /nm

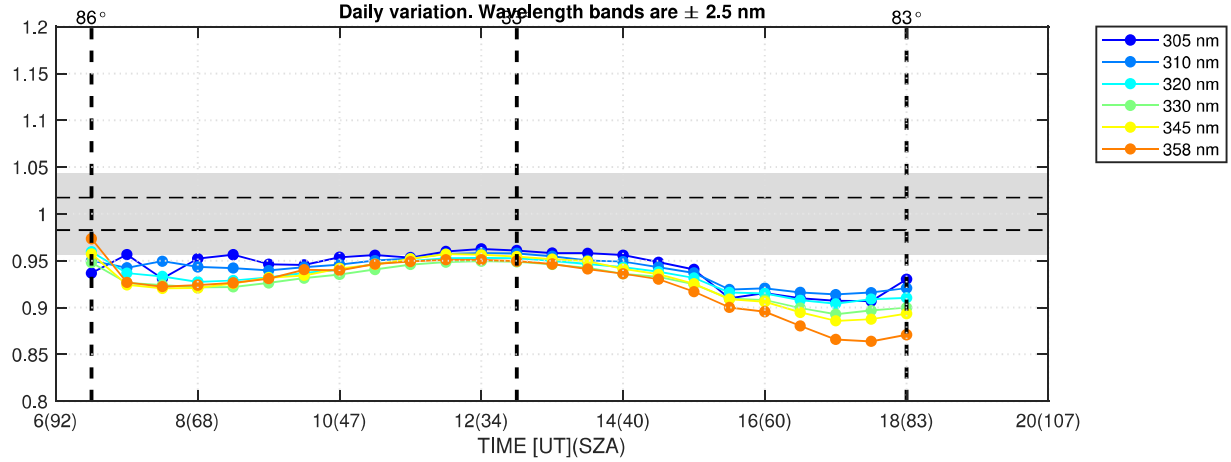

WL=330.00 nm
Wavelength shift /nm
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
06:00
12:00
18:00
00:00
06:00
12:00
18:00
Date & time

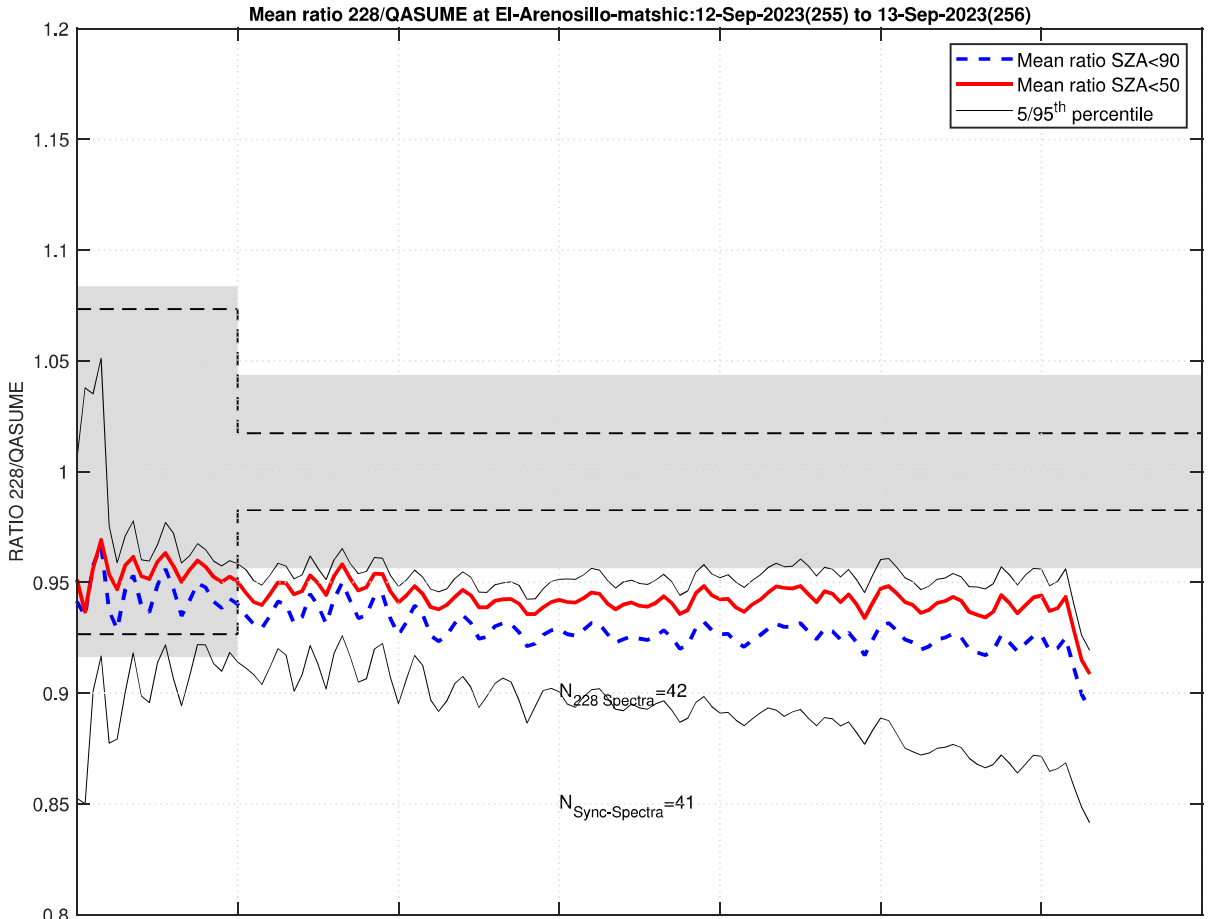

Global irradiance ratios 228/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 13-Sep-2023(256)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
RATIO 228/QASUME
255
256
TIME [UT] ON DAYS: [255 256]

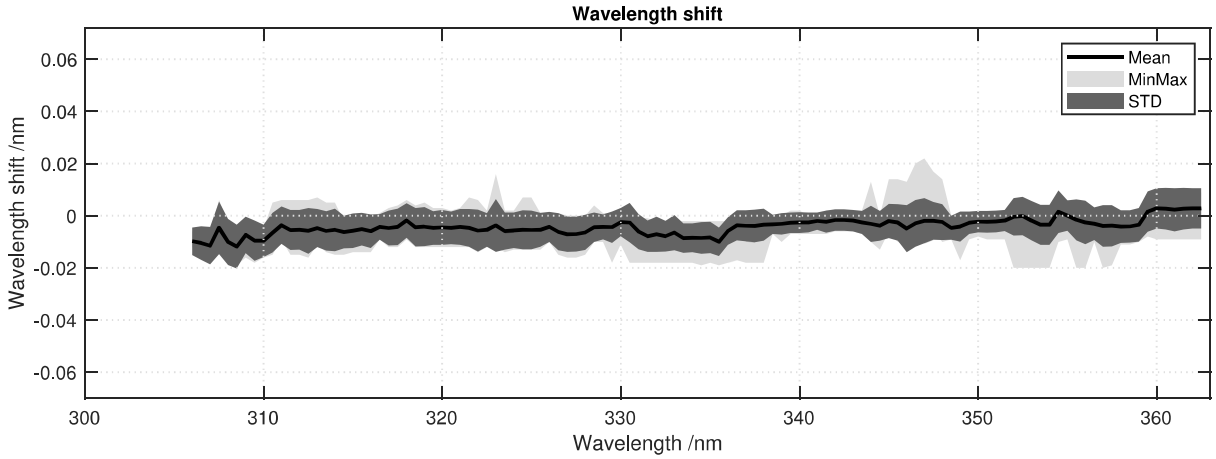

Global irradiance ratios 228/QASUME at El-Arenosillo-matshic:12-Sep-2023(255)
228
QASUME
UVIndex
wl [nm]

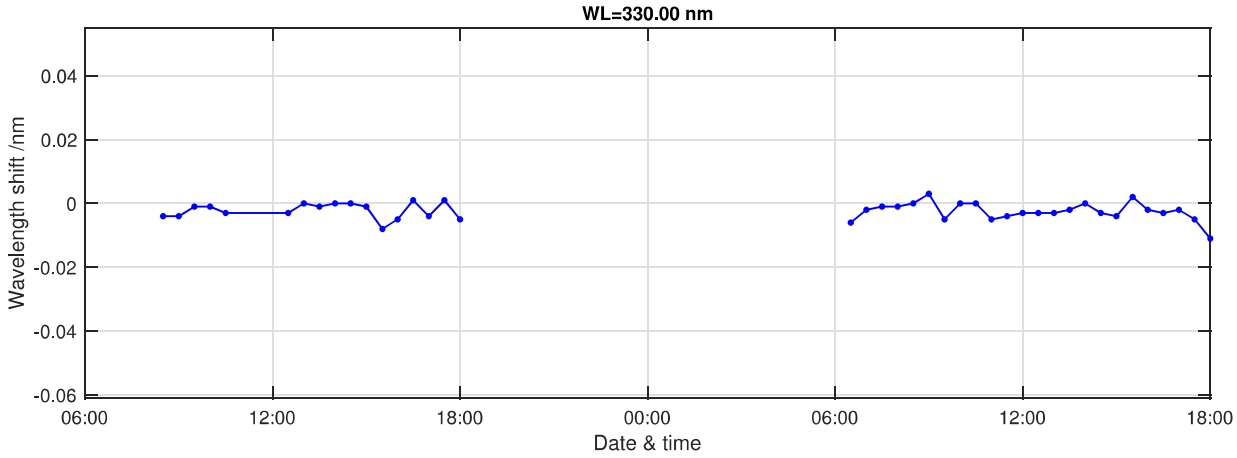

Daily variation. Wavelength bands are ± 2.5 nm
62°
83°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

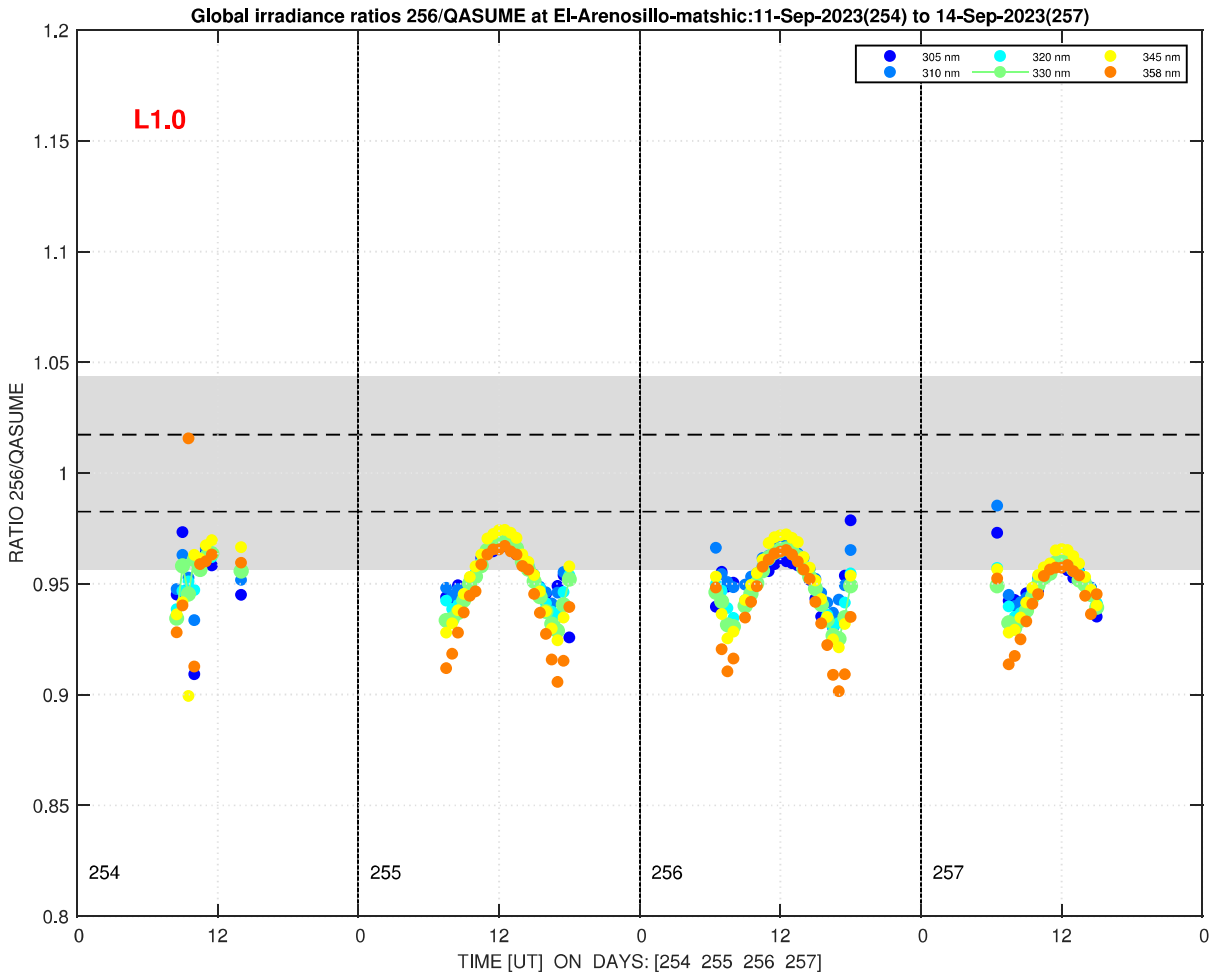

Global irradiance ratios 228/QASUME at El-Arenosillo-matshic:13-Sep-2023(256)
wl [nm]
UVIndex
228
QASUME

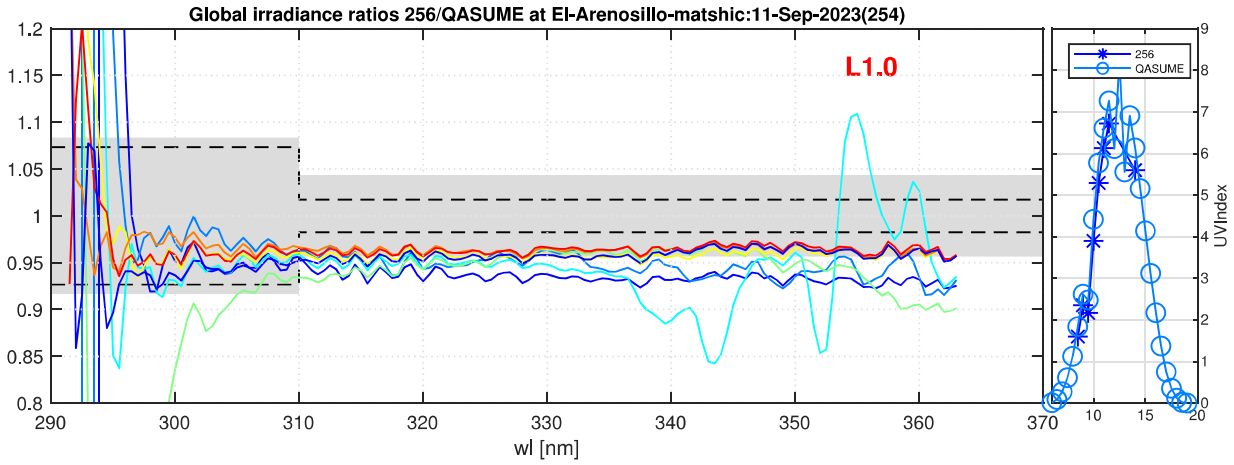

Daily variation. Wavelength bands are ± 2.5 nm
86°
83°
TIME [UT](SZA)
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

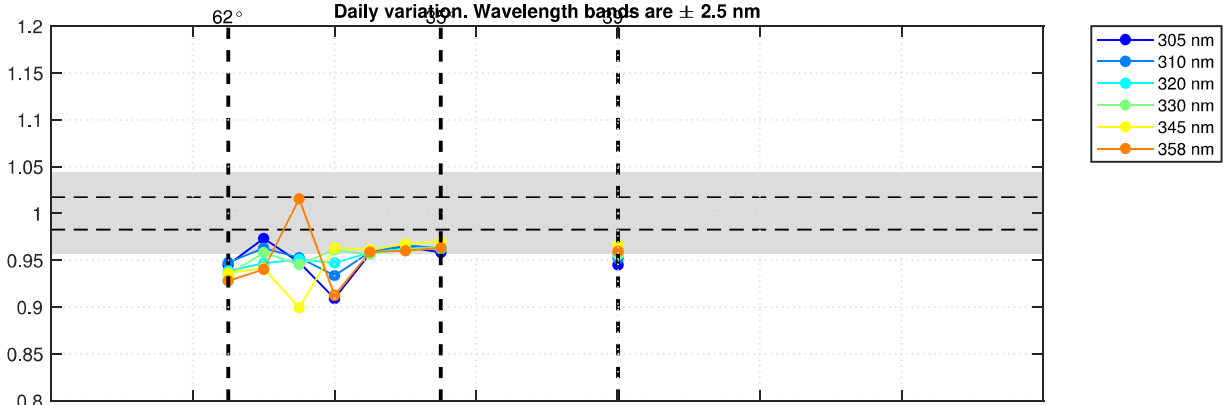

Mean ratio 228/QASUME at El-Arenosillo-matshic:12-Sep-2023(255) to 13-Sep-2023(256)
RATIO 228/QASUME
Mean ratio SZA<90
Mean ratio SZA<50
5/95th percentile
N228 Spectra=42
NSync-Spectra=41

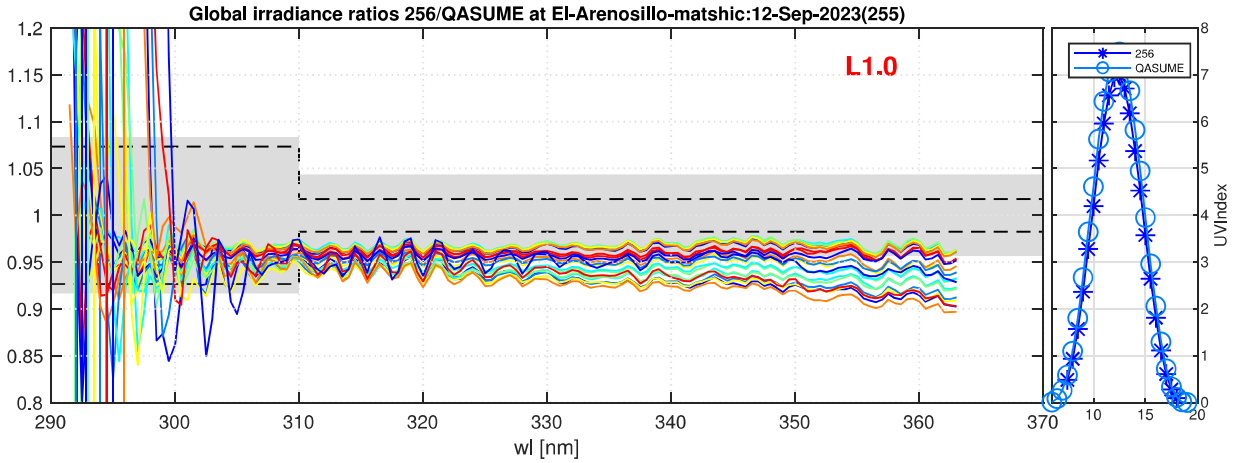

Wavelength shift
Mean
MinMax
STD
Wavelength shift /nm
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
300
310
320
330
340
350
360
Wavelength /nm

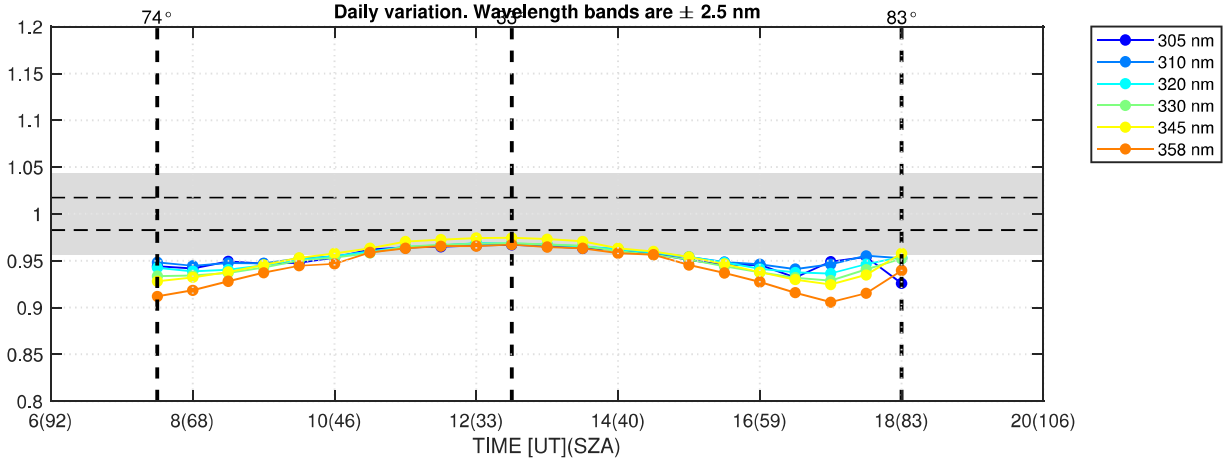

WL=330.00 nm
Wavelength shift /nm
0.04
0.02
0
-0.02
-0.04
-0.06
06:00
12:00
18:00
00:00
06:00
12:00
18:00
Date & time

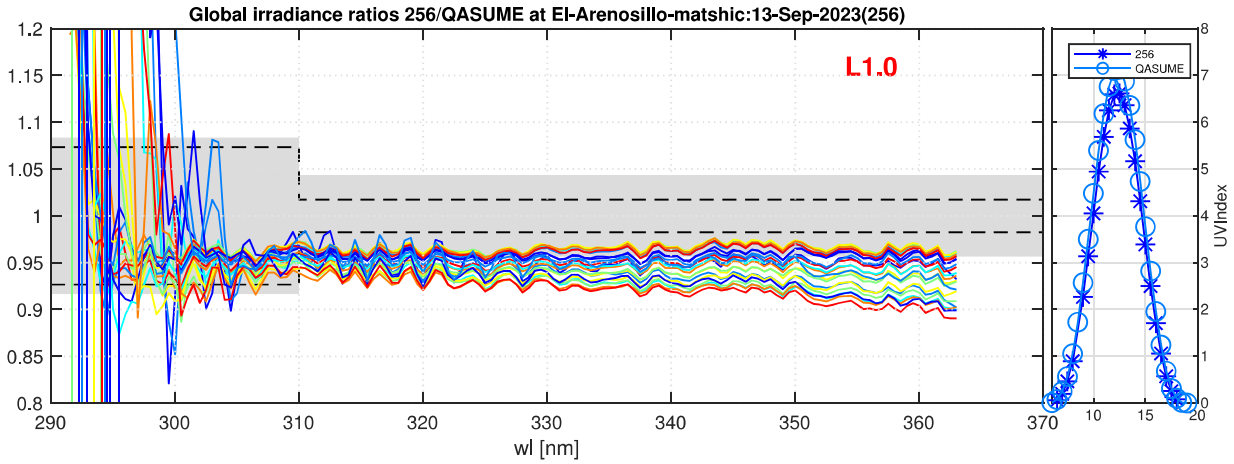

Global irradiance ratios 256/QASUME at El-Arenosillo-matshic:11-Sep-2023(254) to 14-Sep-2023(257)
L1.0
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
RATIO 256/QASUME
254
255
256
257
TIME [UT] ON DAYS: [254 255 256 257]

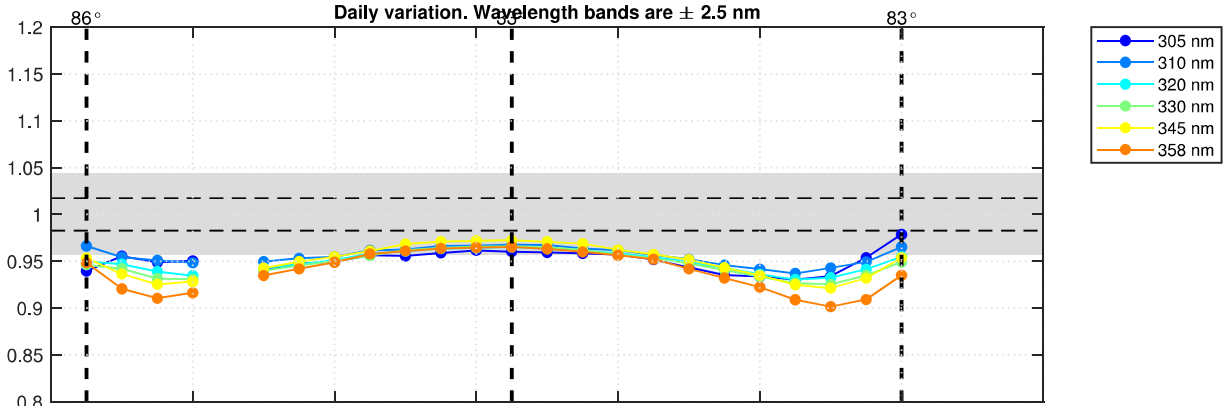

Global irradiance ratios 256/QASUME at El-Arenosillo-matshic:11-Sep-2023(254)
L1.0
256
QASUME
UVIndex
wl [nm]

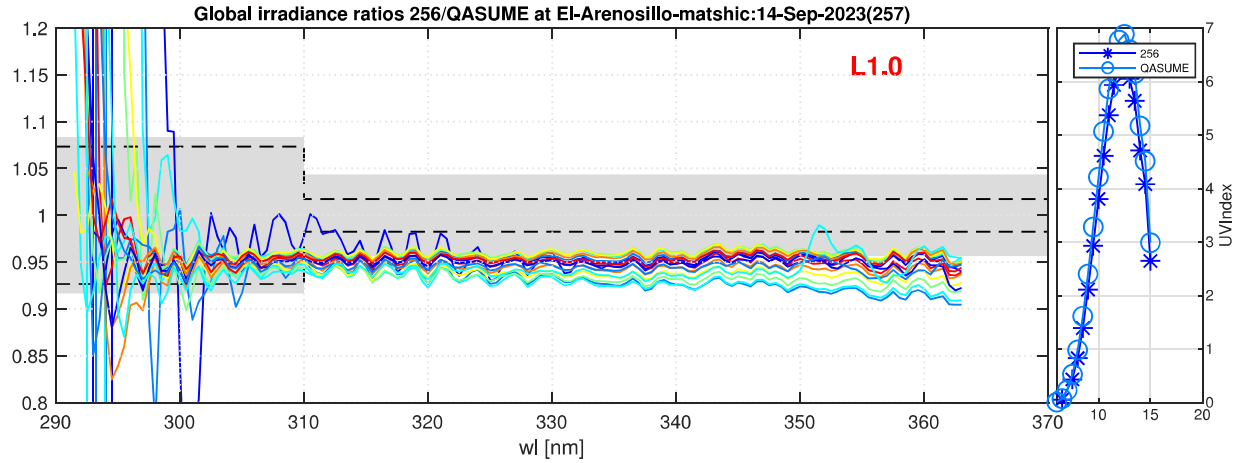

Daily variation. Wavelength bands are ± 2.5 nm
62°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

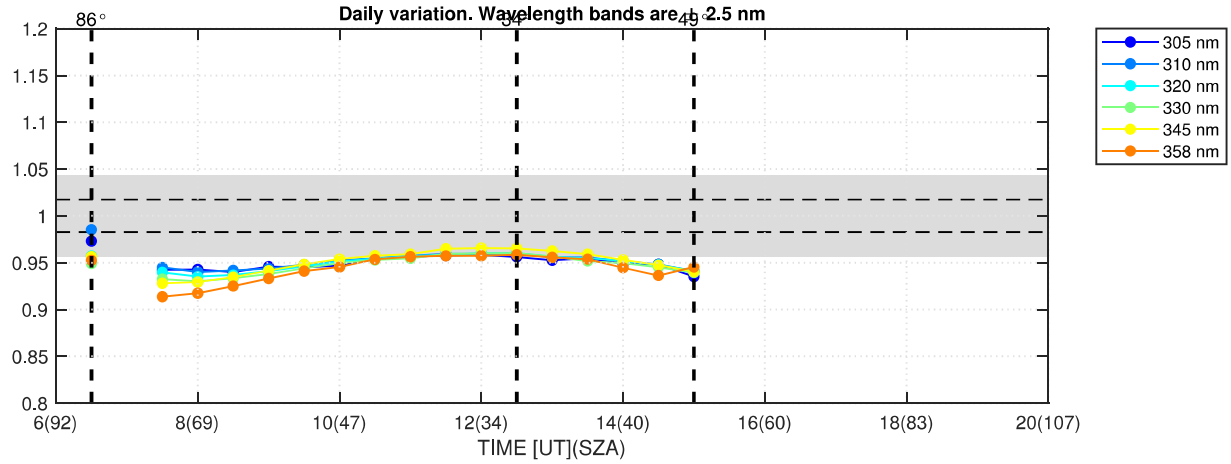

Global irradiance ratios 256/QASUME at El-Arenosillo-matshic:12-Sep-2023(255)
L1.0
256
QASUME
UVIndex
wl [nm]

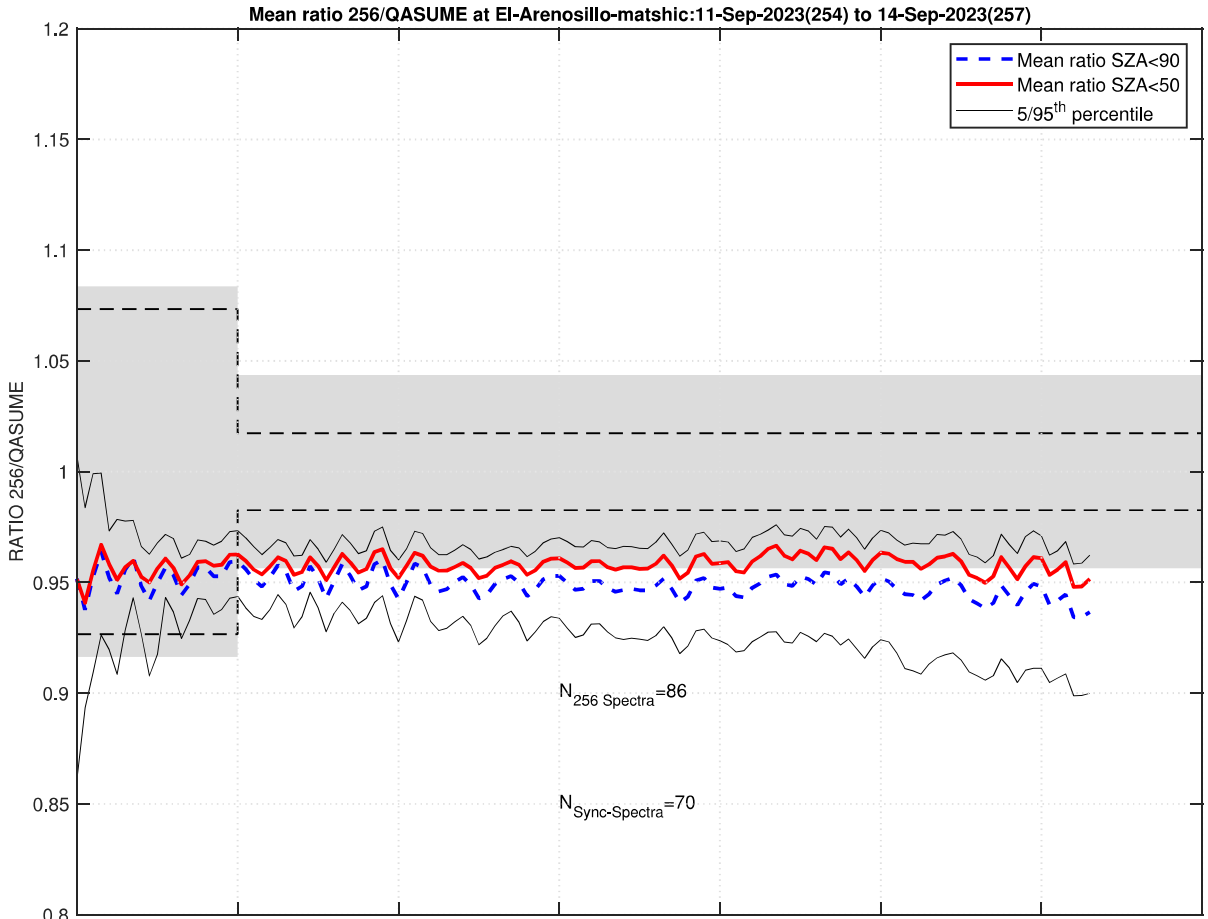

Daily variation. Wavelength bands are ± 2.5 nm
74°
83°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
TIME [UT](SZA)

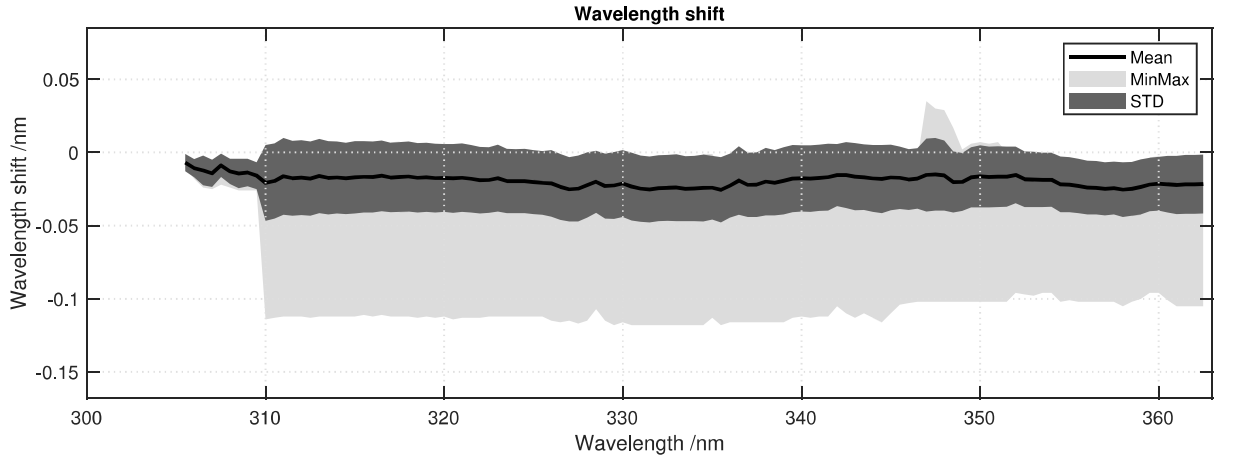

Global irradiance ratios 256/QASUME at El-Arenosillo-matshic:13-Sep-2023(256)
L1.0
256
QASUME
UVIndex
wl [nm]

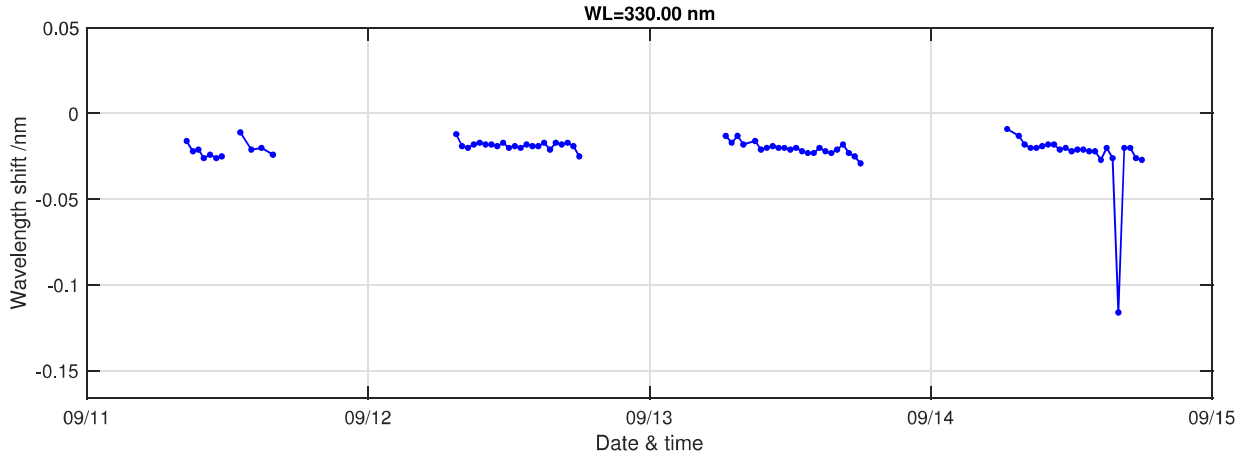

Daily variation. Wavelength bands are ± 2.5 nm
86°
83°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

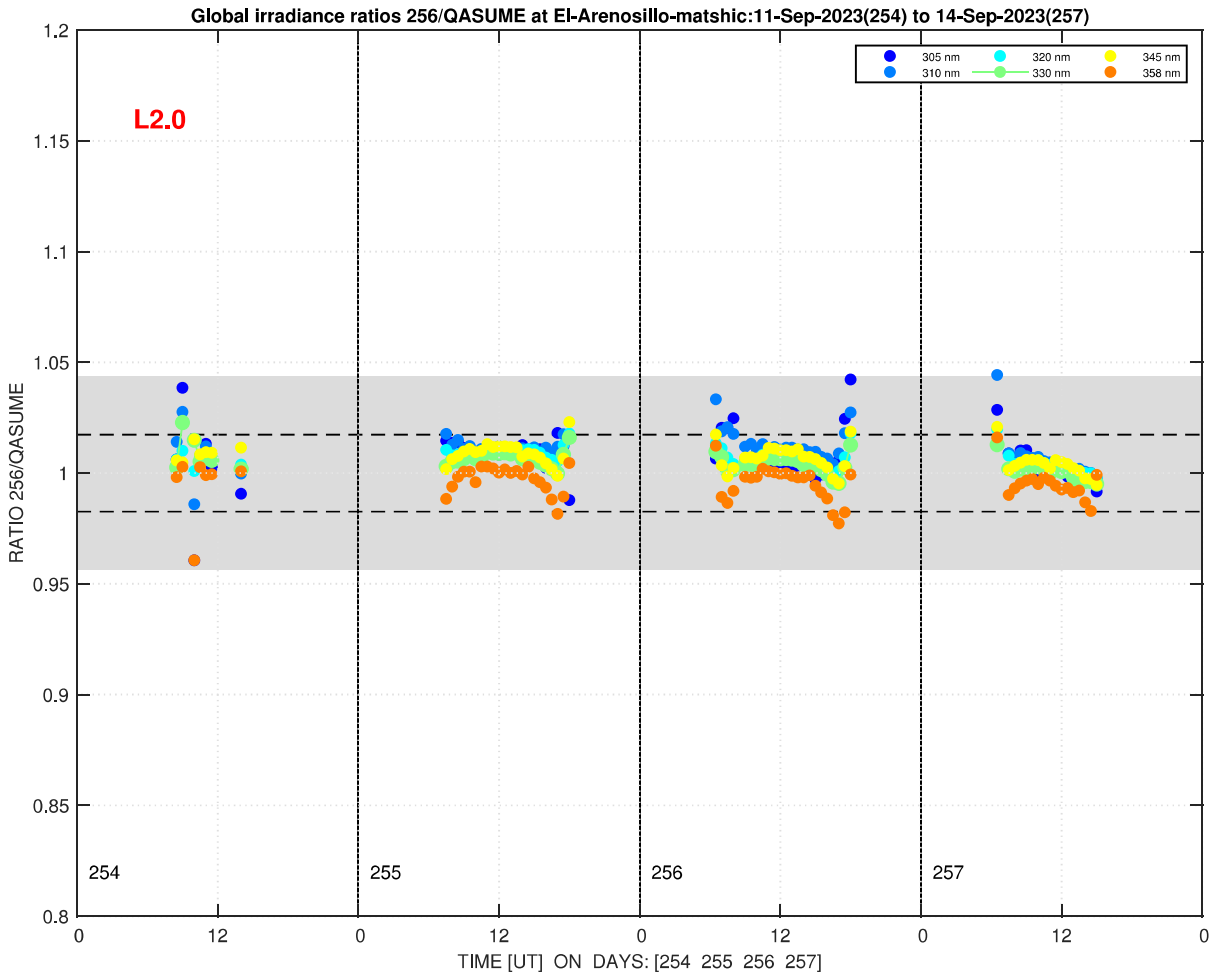

Global irradiance ratios 256/QASUME at El-Arenosillo-matshic:14-Sep-2023(257)
L1.0
256
QASUME
UVIndex
wl [nm]

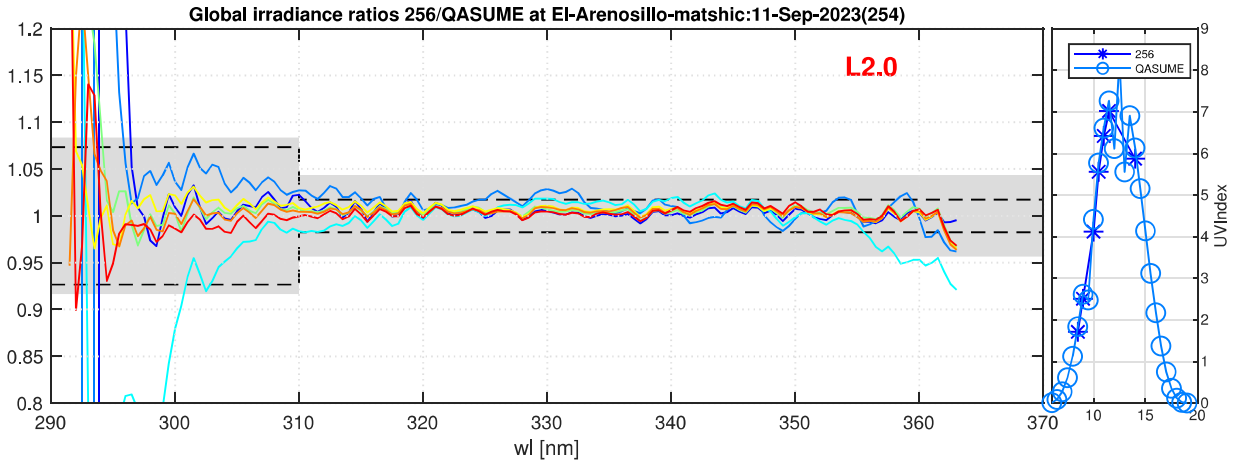

Daily variation. Wavelength bands are 2.5 nm
86°
34°
49°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
6(92)
8(69)
10(47)
12(34)
14(40)
16(60)
18(83)
20(107)
TIME [UT](SZA)

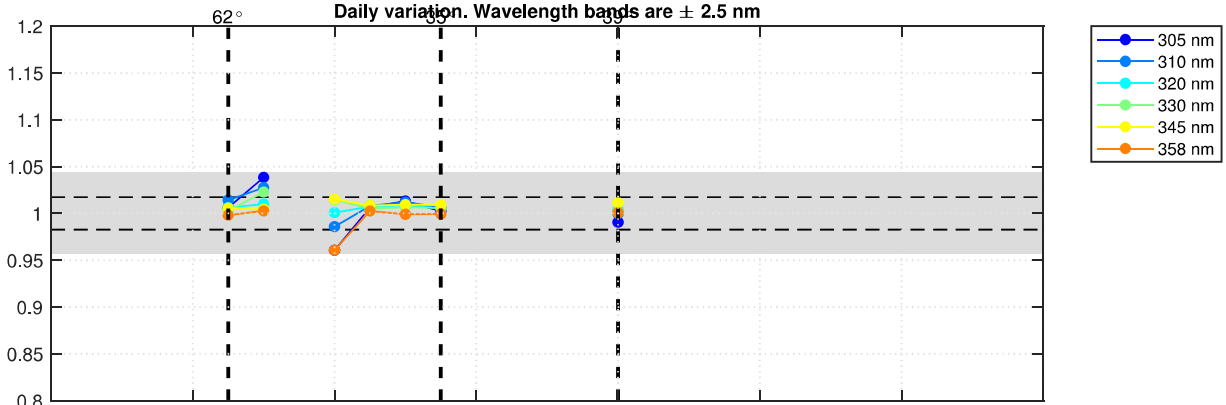

Mean ratio 256/QASUME at El-Arenosillo-matshic:11-Sep-2023(254) to 14-Sep-2023(257)
Mean ratio SZA<90
Mean ratio SZA<50
5/95th percentile
RATIO 256/QASUME
N256 Spectra=86
NSync-Spectra=70

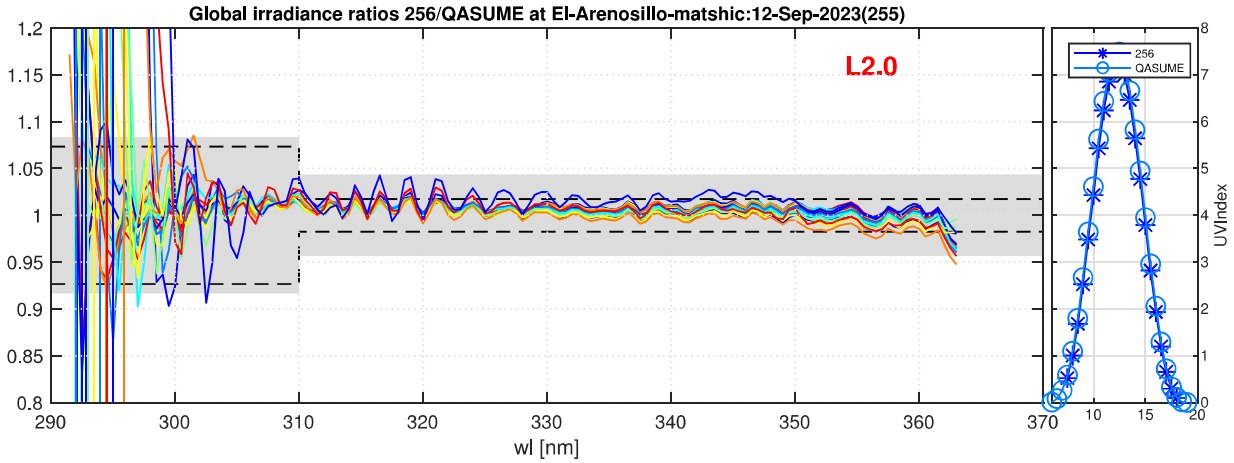

Wavelength shift
Mean
MinMax
STD
0.05
0
-0.05
-0.1
-0.15
Wavelength shift /nm
300
310
320
330
340
350
360
Wavelength /nm

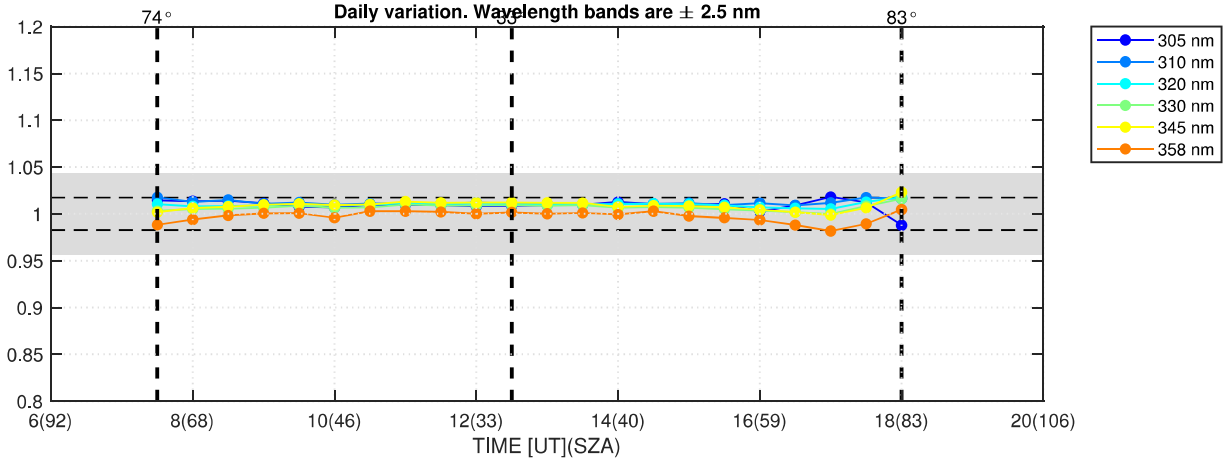

WL=330.00 nm
0.05
0
-0.05
-0.1
-0.15
Wavelength shift /nm
09/11
09/12
09/13
09/14
09/15
Date & time

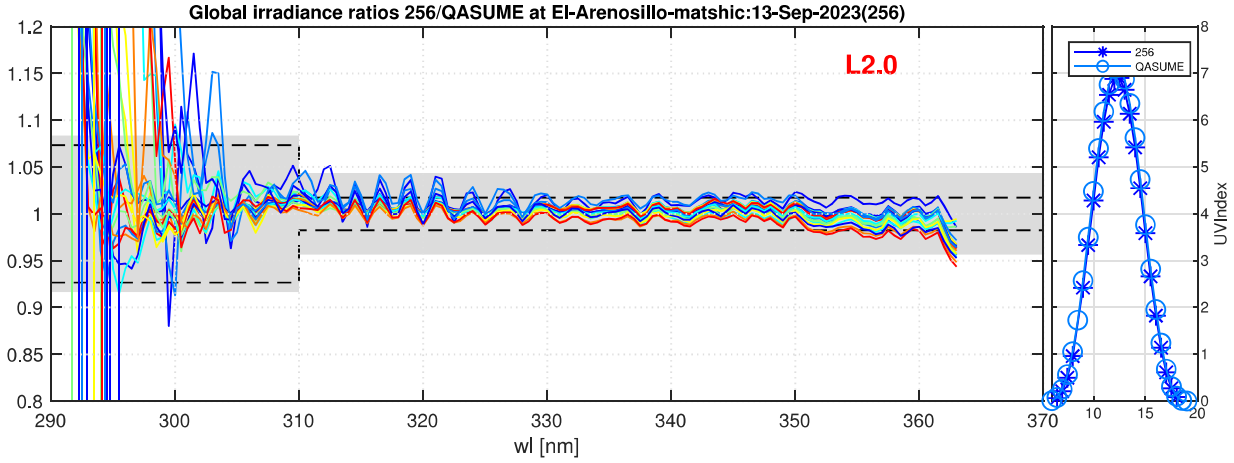

Global irradiance ratios 256/QASUME at El-Arenosillo-matshic:11-Sep-2023(254) to 14-Sep-2023(257)
L2.0
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
RATIO 256/QASUME
254
255
256
257
TIME [UT] ON DAYS: [254 255 256 257]

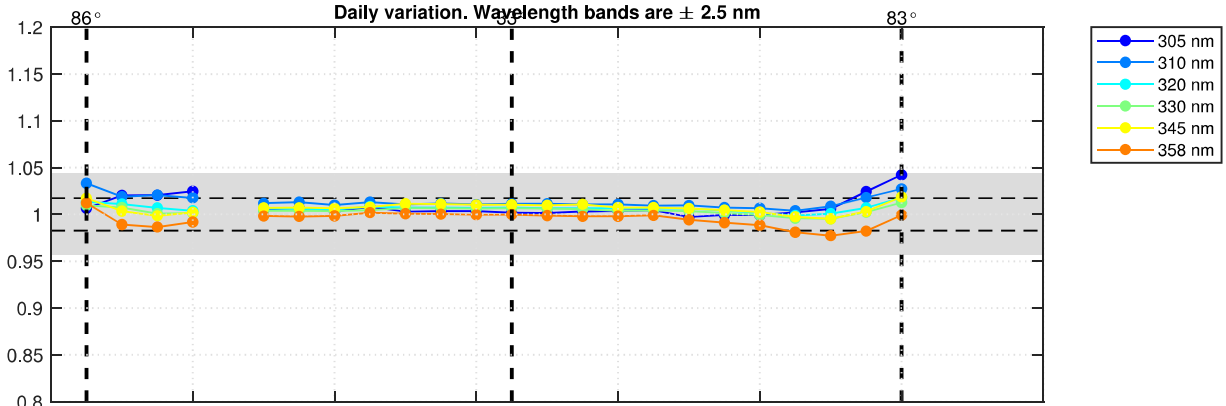

Global irradiance ratios 256/QASUME at El-Arenosillo-matshic:11-Sep-2023(254)
L2.0
256
QASUME
UVIndex
wl [nm]

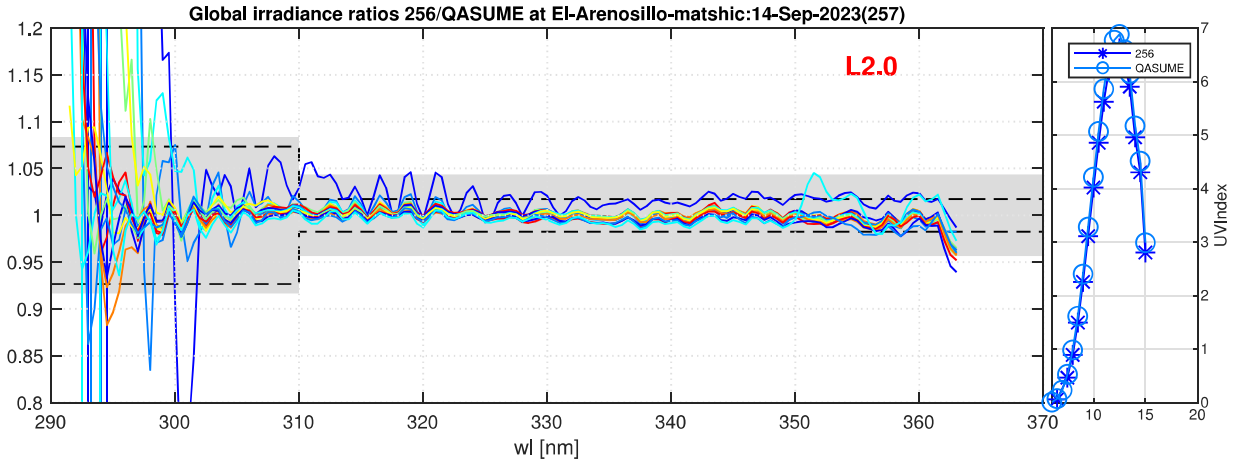

Daily variation. Wavelength bands are ± 2.5 nm
62°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

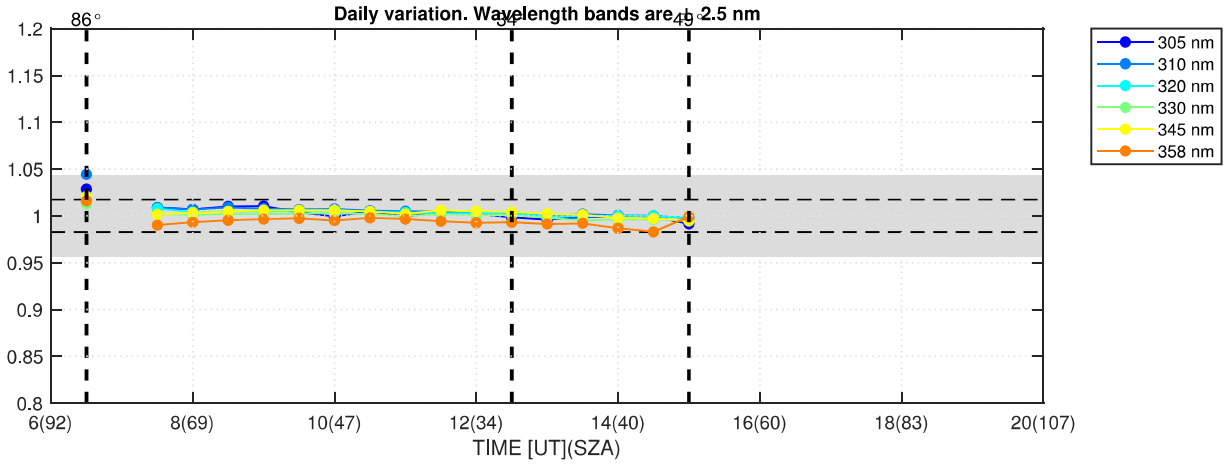

Global irradiance ratios 256/QASUME at El-Arenosillo-matshic:12-Sep-2023(255)
L2.0
256
QASUME
UVIndex
wl [nm]

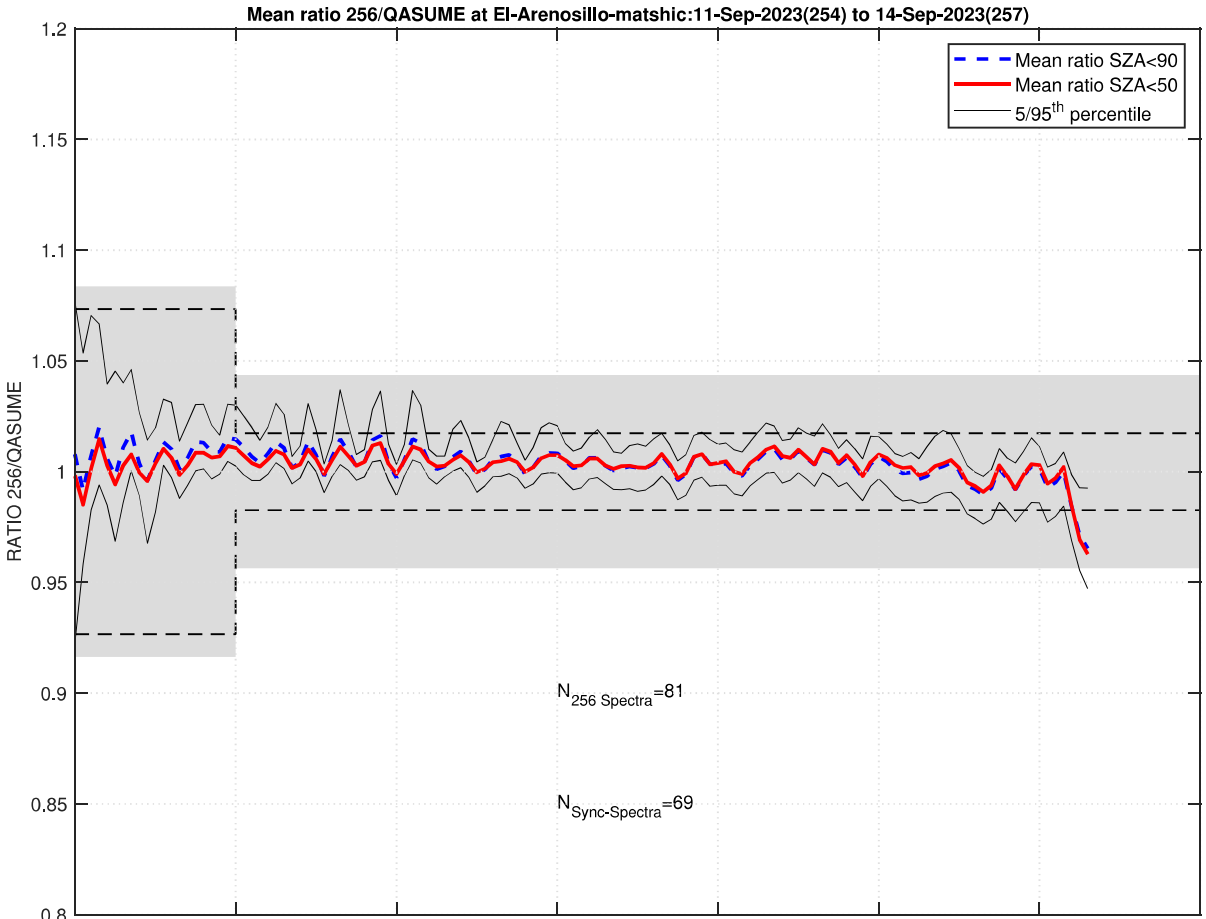

Daily variation. Wavelength bands are ± 2.5 nm
74°
83°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
TIME [UT](SZA)

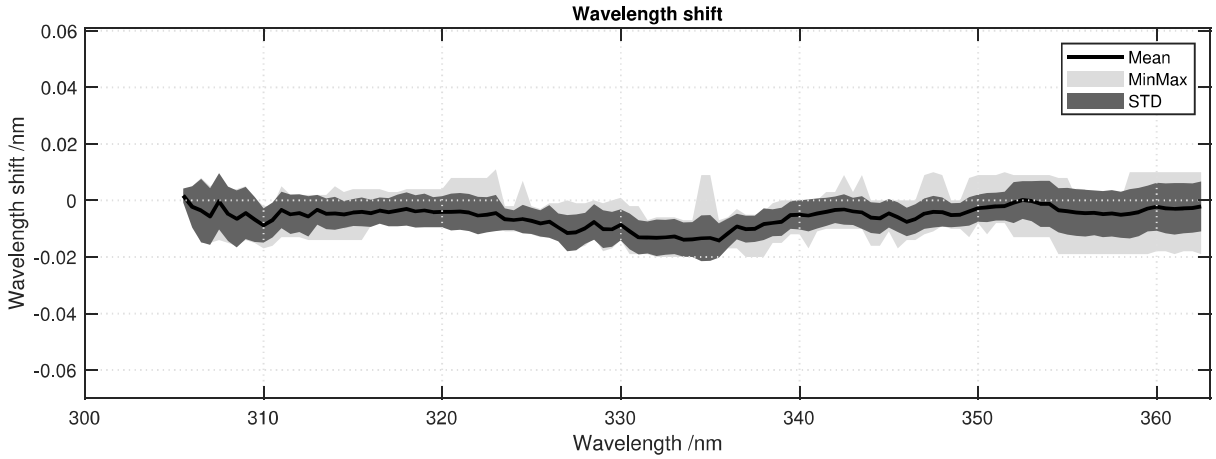

Global irradiance ratios 256/QASUME at El-Arenosillo-matshic:13-Sep-2023(256)
L2.0
256
QASUME
UVIndex
wl [nm]

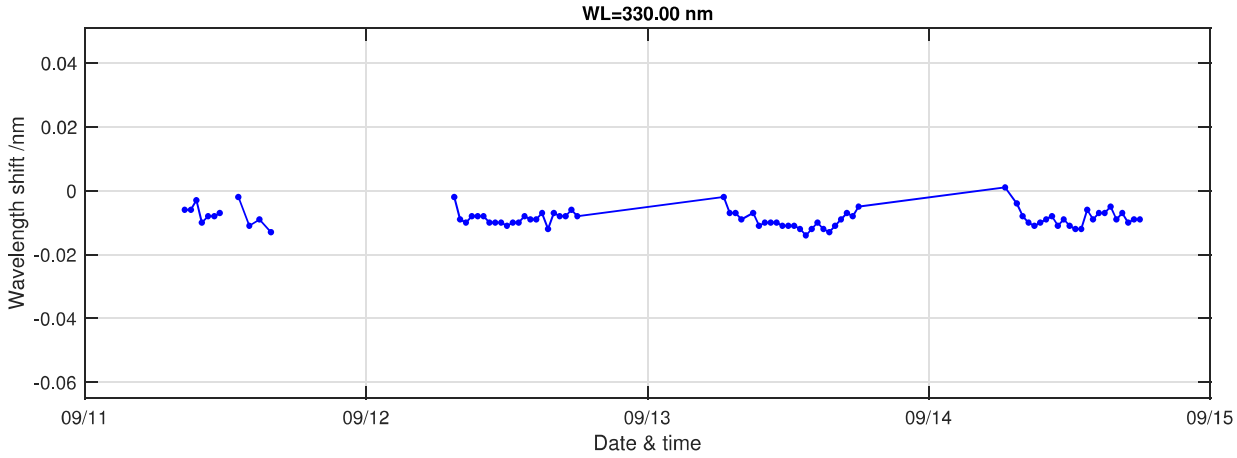

Daily variation. Wavelength bands are ± 2.5 nm
86°
83°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm

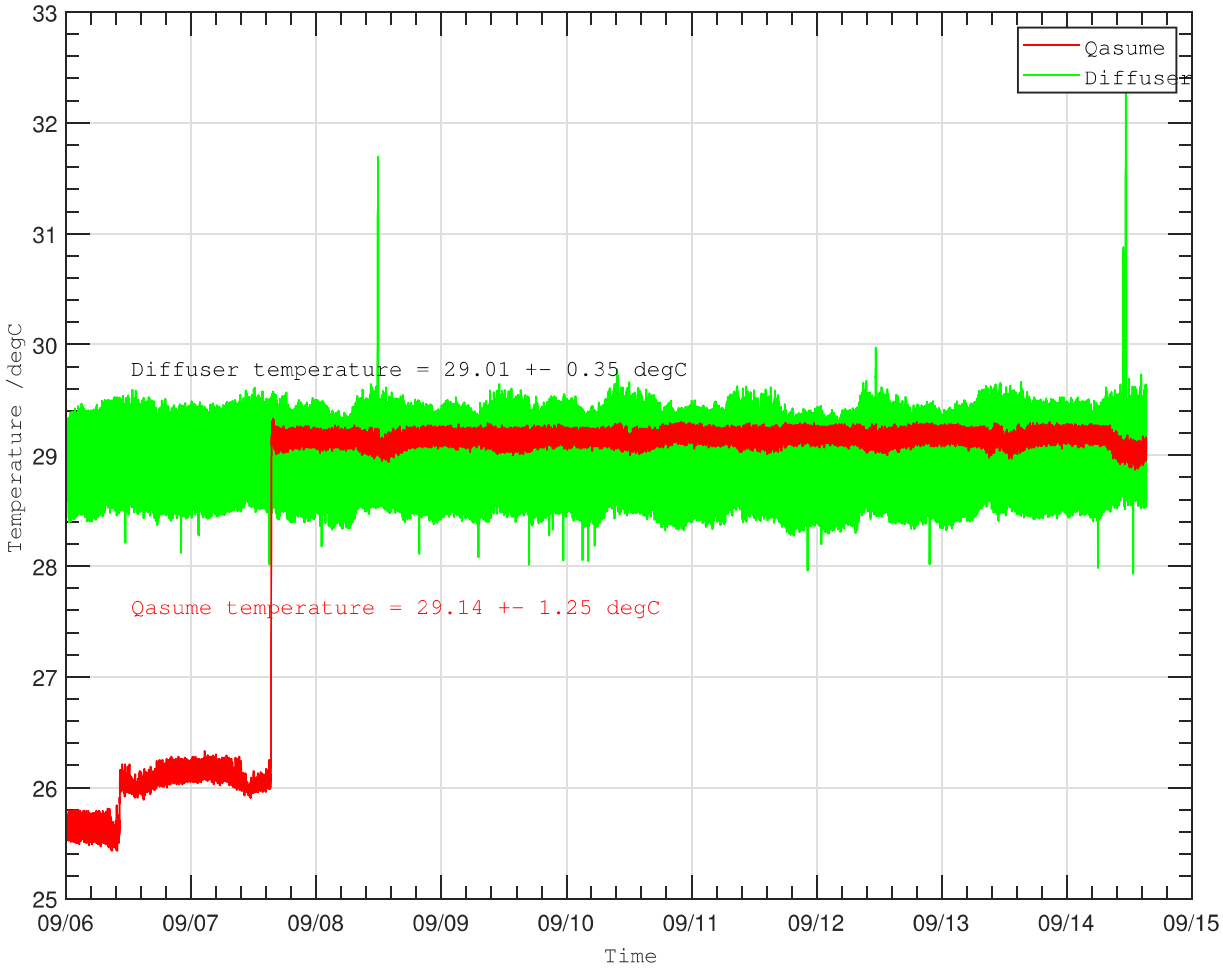

Global irradiance ratios 256/QASUME at El-Arenosillo-matshic:14-Sep-2023(257)
L2.0
256
QASUME
UVIndex
wl [nm]

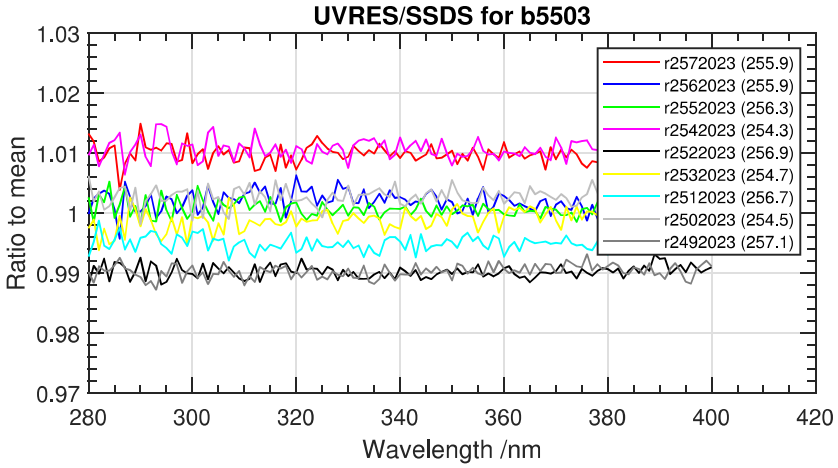

Daily variation. Wavelength bands are 2.5 nm
86°
34°
49°
305 nm
310 nm
320 nm
330 nm
345 nm
358 nm
TIME [UT](SZA)

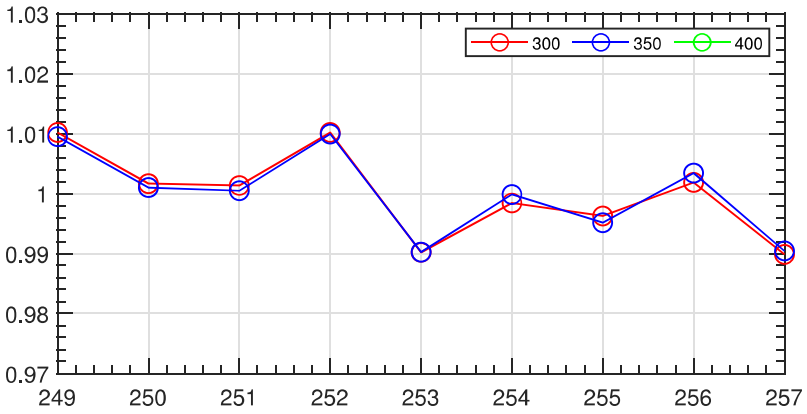

Mean ratio 256/QASUME at El-Arenosillo-matshic:11-Sep-2023(254) to 14-Sep-2023(257)
Mean ratio SZA<90
Mean ratio SZA<50
5/95th percentile
RATIO 256/QASUME
N256 Spectra=81
NSync-Spectra=69


Wavelength shift
Mean
MinMax
STD
Wavelength shift /nm
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
300
310
320
330
340
350
360
Wavelength /nm


WL=330.00 nm
Wavelength shift /nm
0.04
0.02
0
-0.02
-0.04
-0.06
09/11
09/12
09/13
09/14
09/15
Date & time


Qasume
Diffuser
Diffuser temperature = 29.01 +- 0.35 degC
Qasume temperature = 29.14 +- 1.25 degC
Temperature /degC
Time
33
32
31
30
29
28
27
26
25
09/06
09/07
09/08
09/09
09/10
09/11
09/12
09/13
09/14
09/15


UVRES/SSDS for b5503
r2572023 (255.9)
r2562023 (255.9)
r2552023 (256.3)
r2542023 (254.3)
r2522023 (256.9)
r2532023 (254.7)
r2512023 (256.7)
r2502023 (254.5)
r2492023 (257.1)
Ratio to mean
Wavelength /nm
1.03
1.02
1.01
1
0.99
0.98
0.97
280
300
320
340
360
380
400
420


300
350
400
1.03
1.02
1.01
1
0.99
0.98
0.97
249
250
251
252
253
254
255
256
257


BREWER MkIII