

World Calibration Center for Ultraviolet Radiation (WCC-UV)



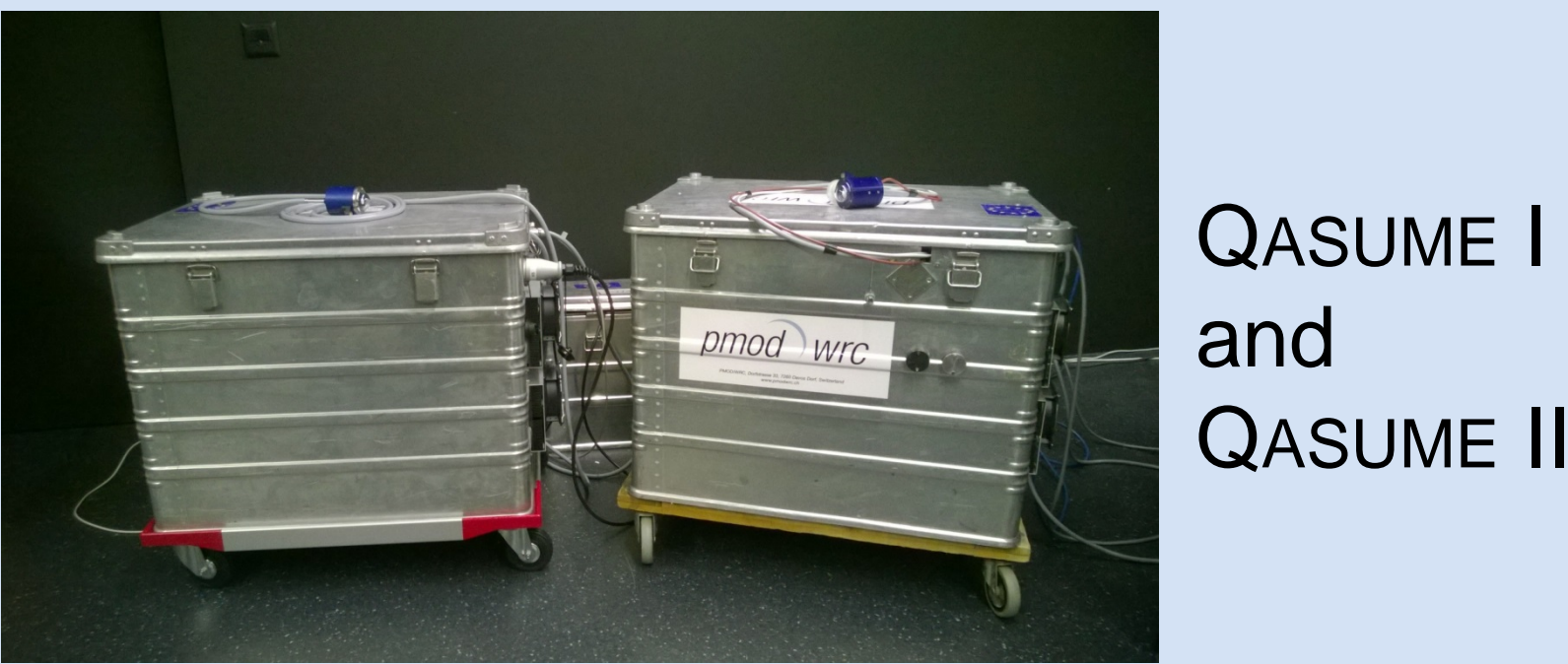
Tasks and capabilities

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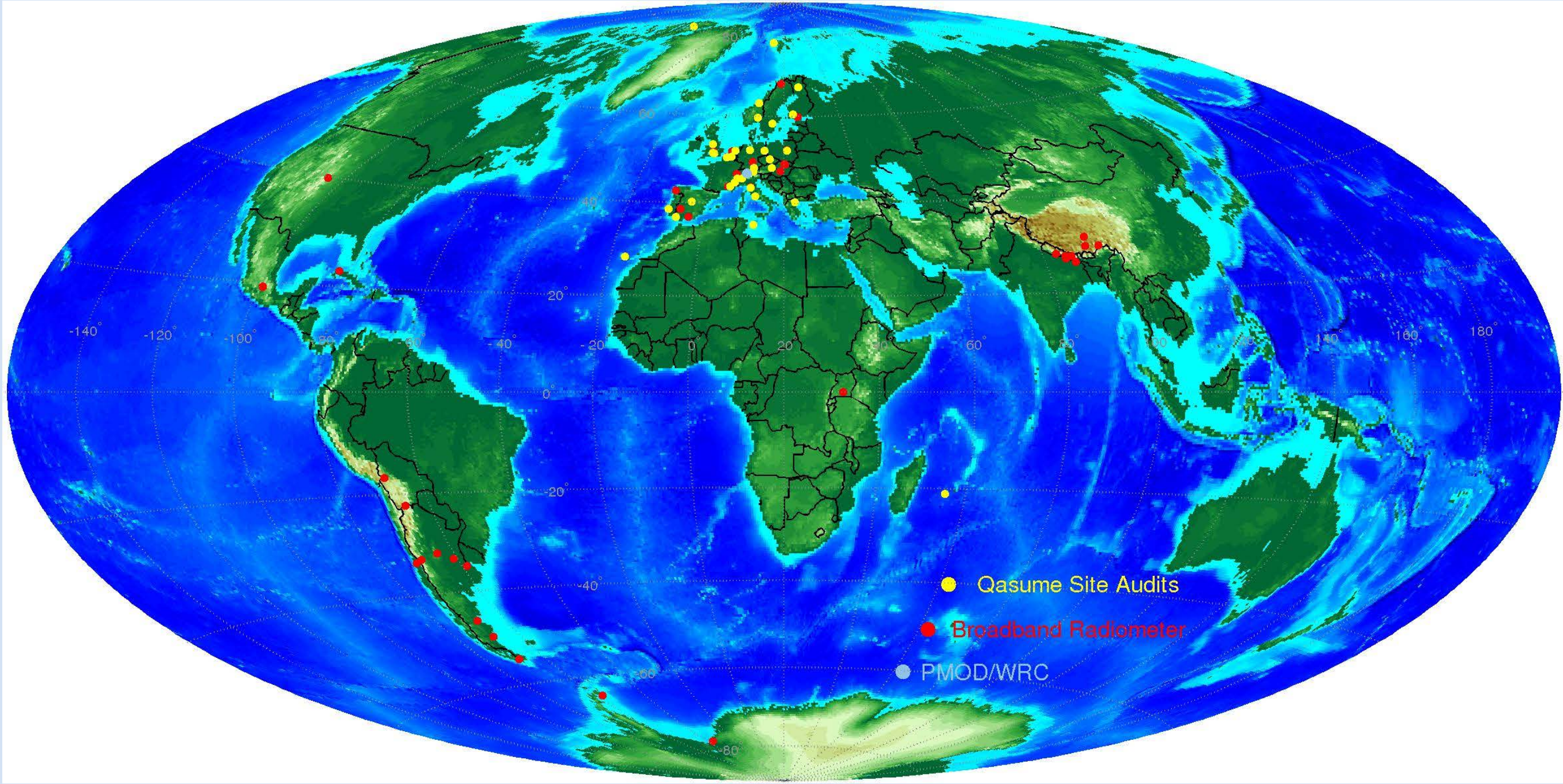
QASUME Site Audits: European UV Quality Assurance Program

- Assist WMO Members operating WMO/GAW stations to link their UV radiation observations to the WMO/GAW reference scale through comparisons of the station instruments with the reference instruments operated by PMOD/WRC.
- Maintain and operate a transportable reference spectroradiometer for the routine quality assurance and calibration of spectroradiometers measuring spectral solar UV irradiance through regular site visits (QASUME).



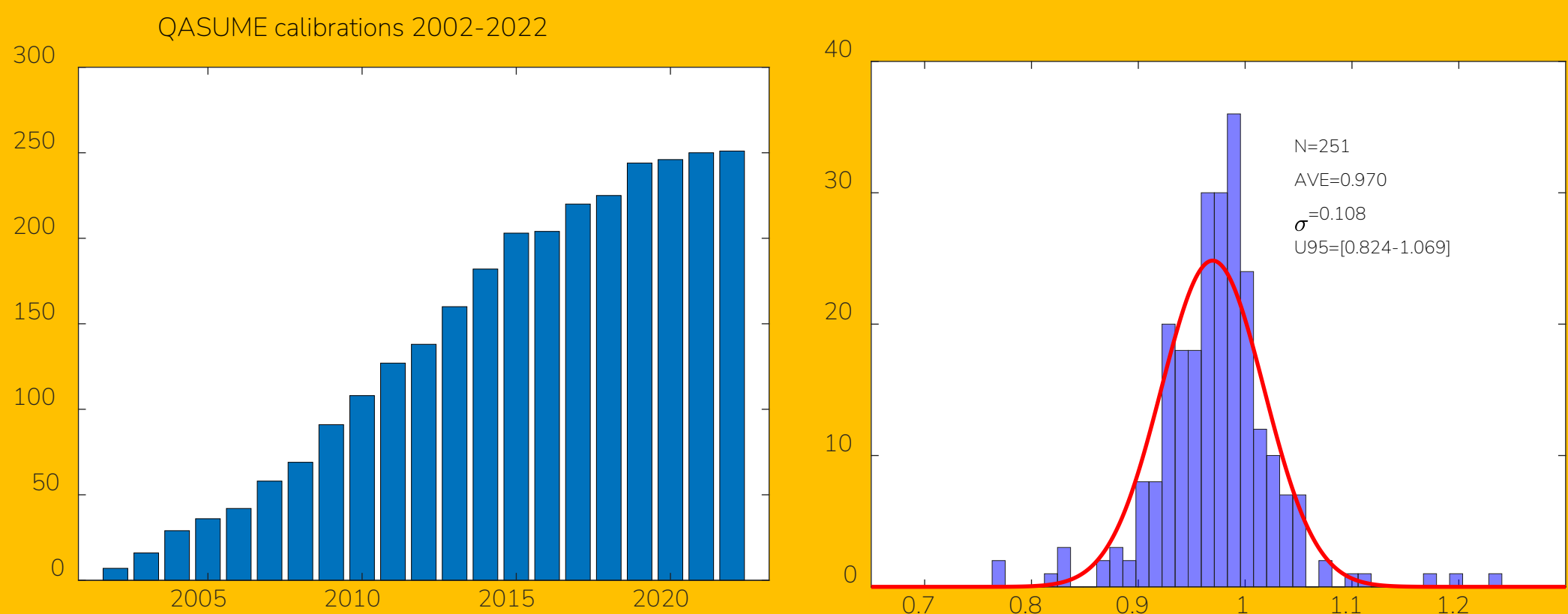
QASUME I and QASUME II

Cargo Box for Intercontinental Site Audits



On site comparison with the portable QASUME reference spectroradiometer
Status 2002 - 2022

- 86 site visits (33 individual sites)
- 251 spectroradiometer intercomparisons
- DUT/QASUME = $-3 \pm 10 \%$



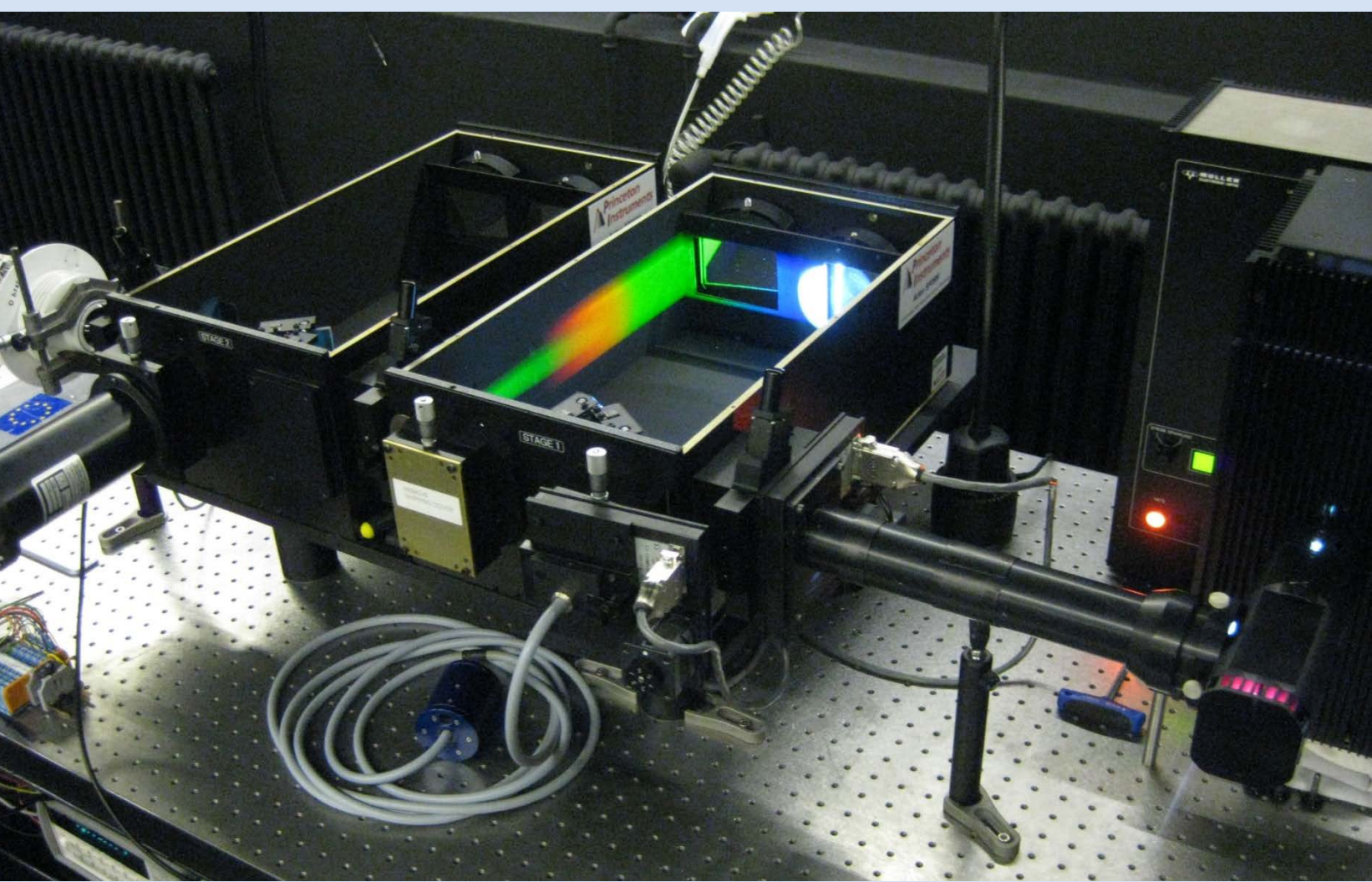
Absolute Calibration and Characterisation of UV Radiometers

Maintain and operate instrumentation to provide calibration facilities for UV radiation radiometers and spectroradiometers

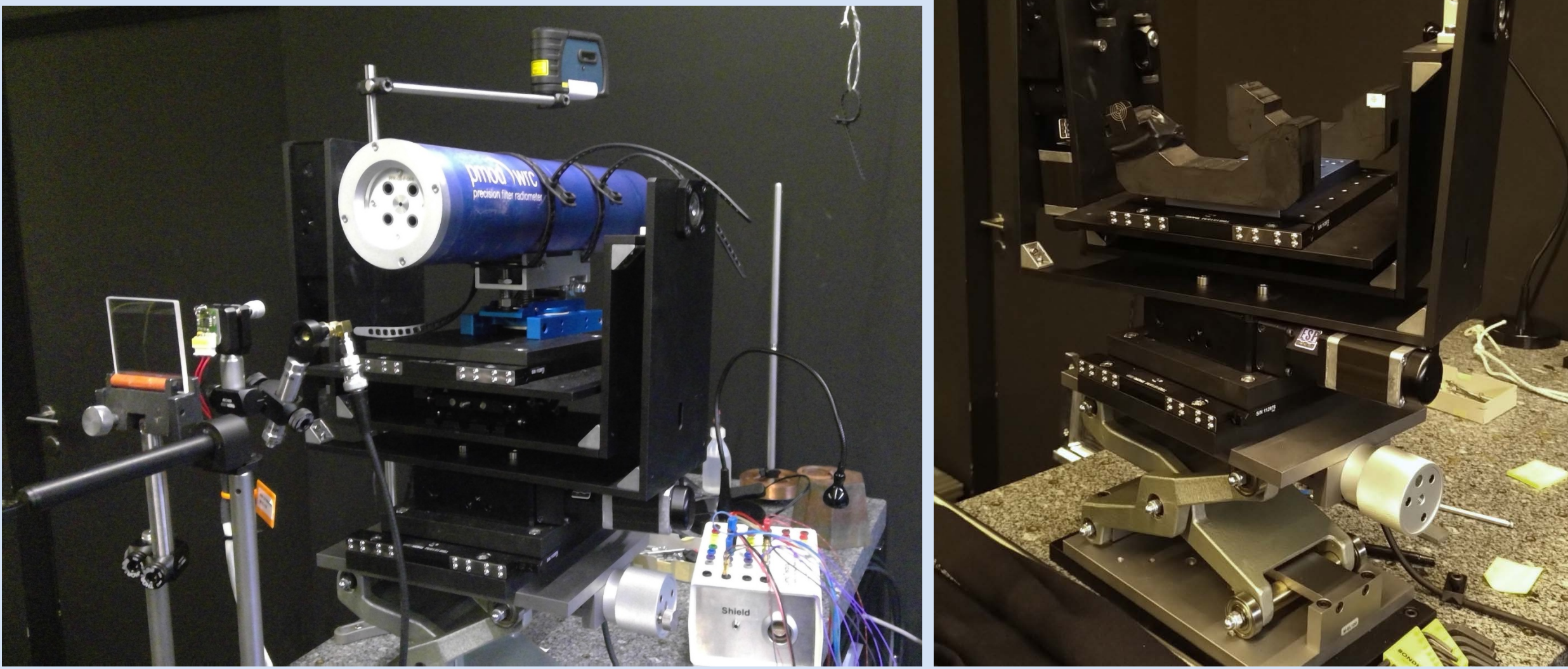
PMOD/WRC Roof Platform



Spectral Response Facility
Acton SP2500/1kW Xenon Source



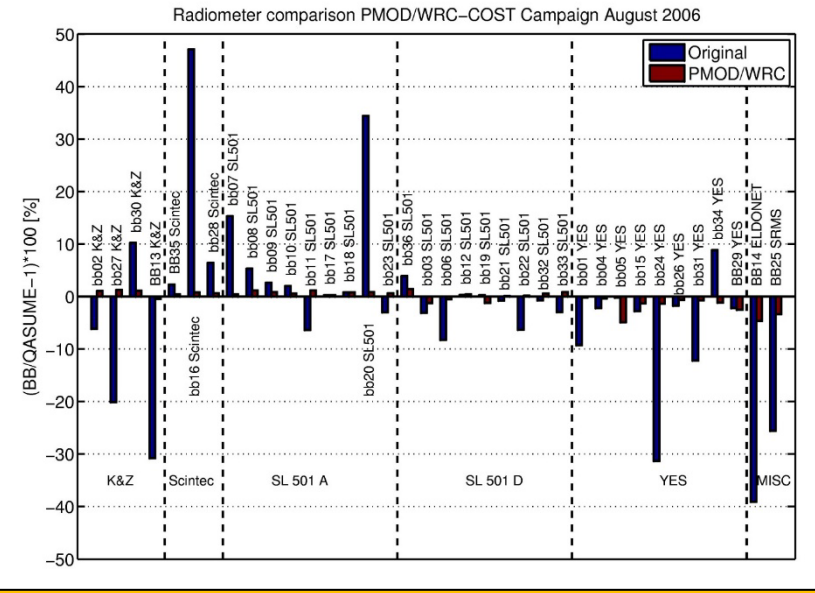
Angular Response Facility



Intercomparison:

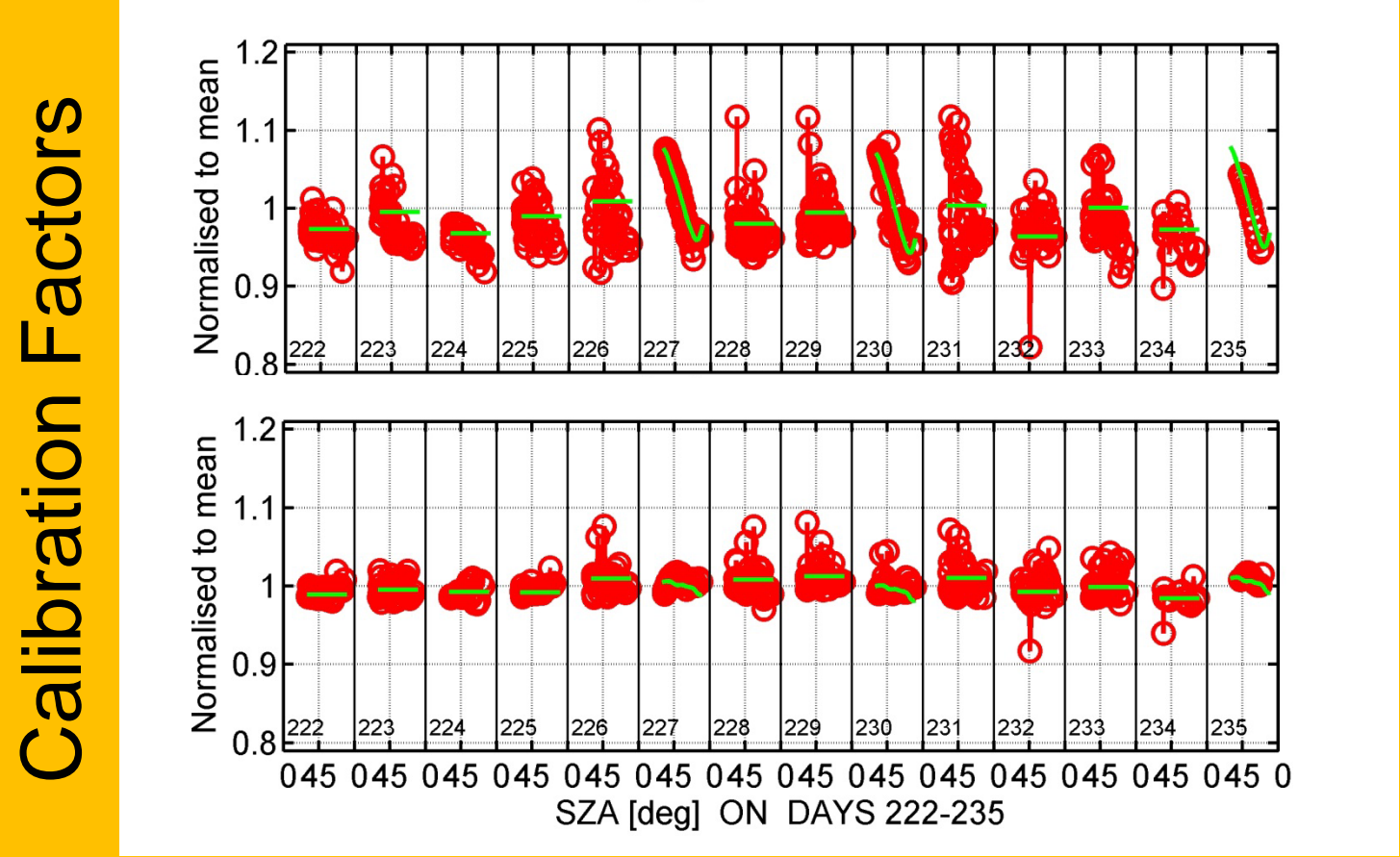
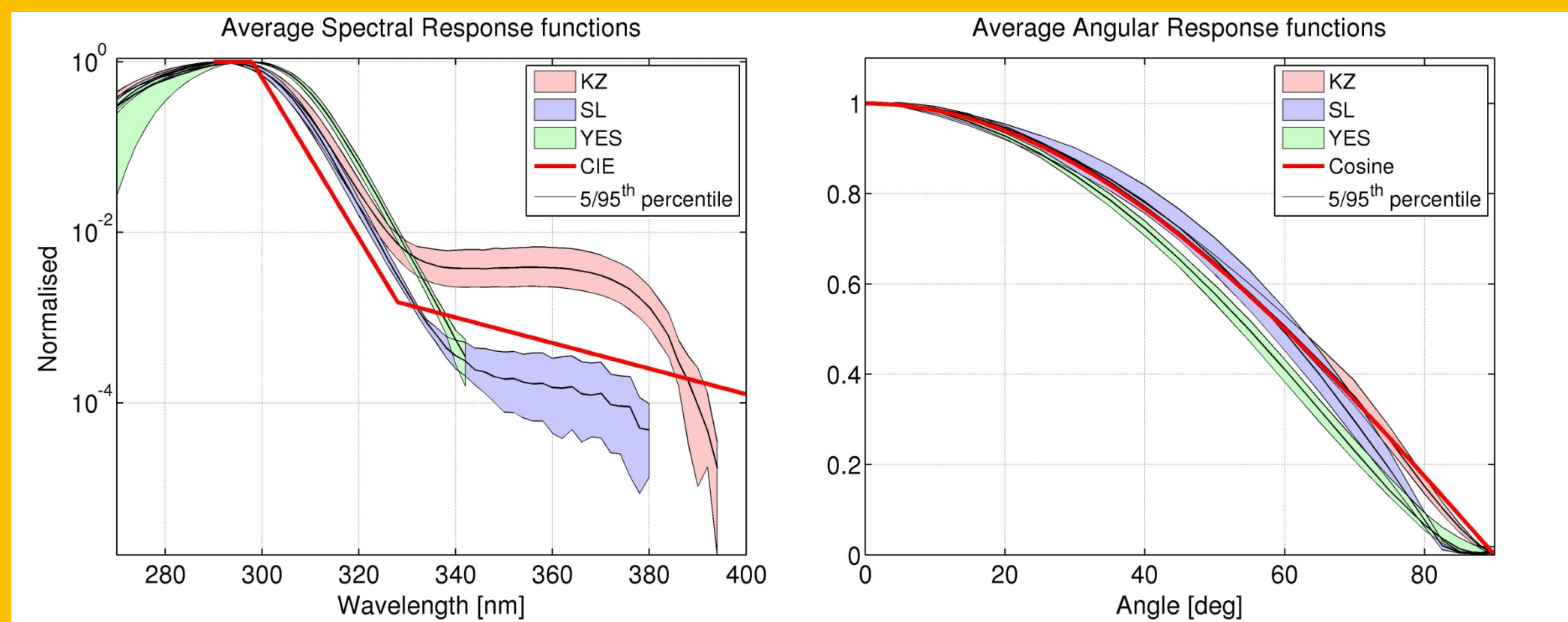
→ 2022: UVC-III
63 Radiometers,
Analysis ongoing.

2006: COST726

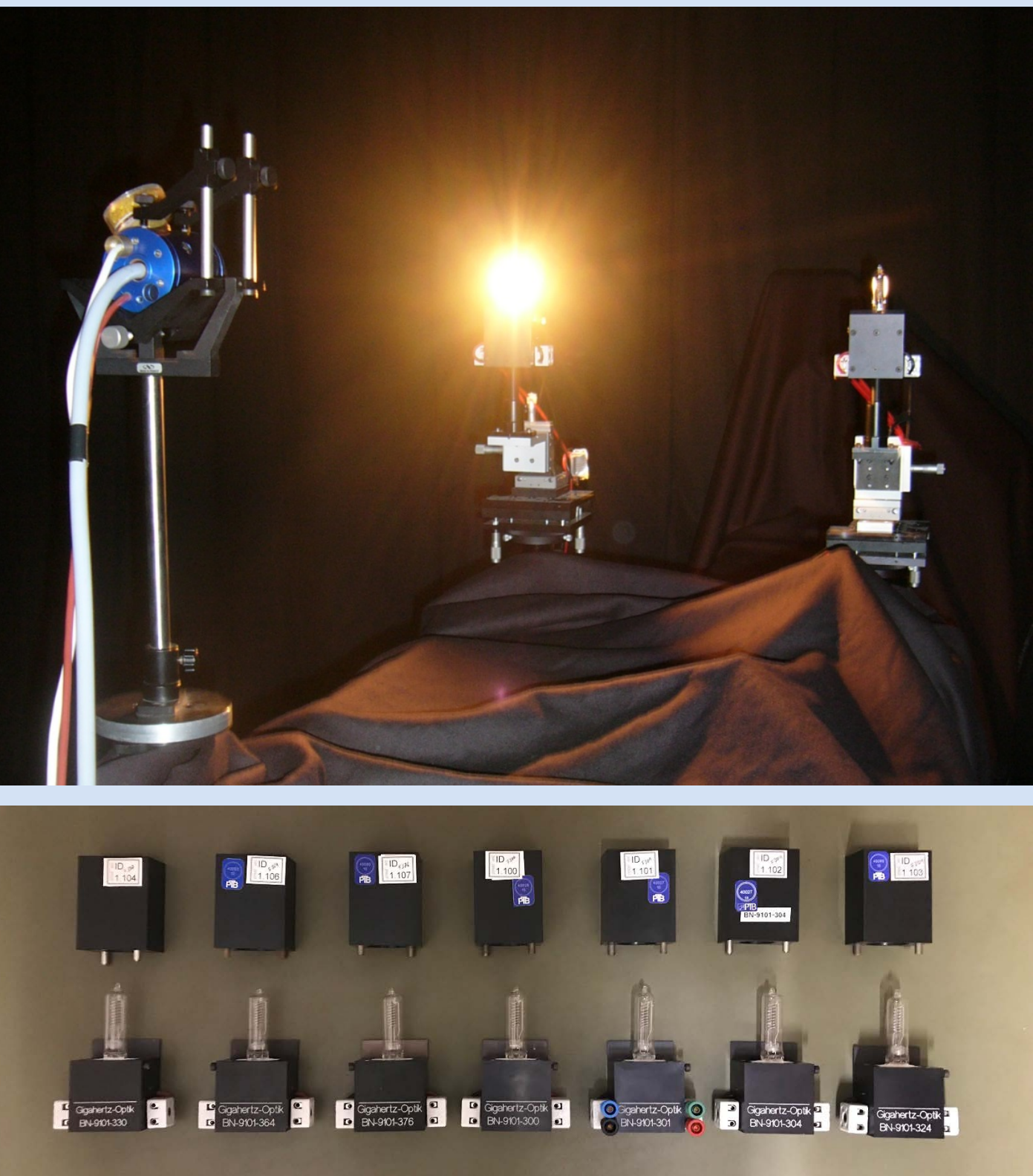


Average Calibration year=2012
→ Last Calibration was on average 4 year ago:

Measurement uncertainty	Nb. Radiometers	
	USER	PMOD
< 5%	32 (43%)	75 (100%)
< 10%	48 (64%)	0
≥ 10%	27 (36%)	0

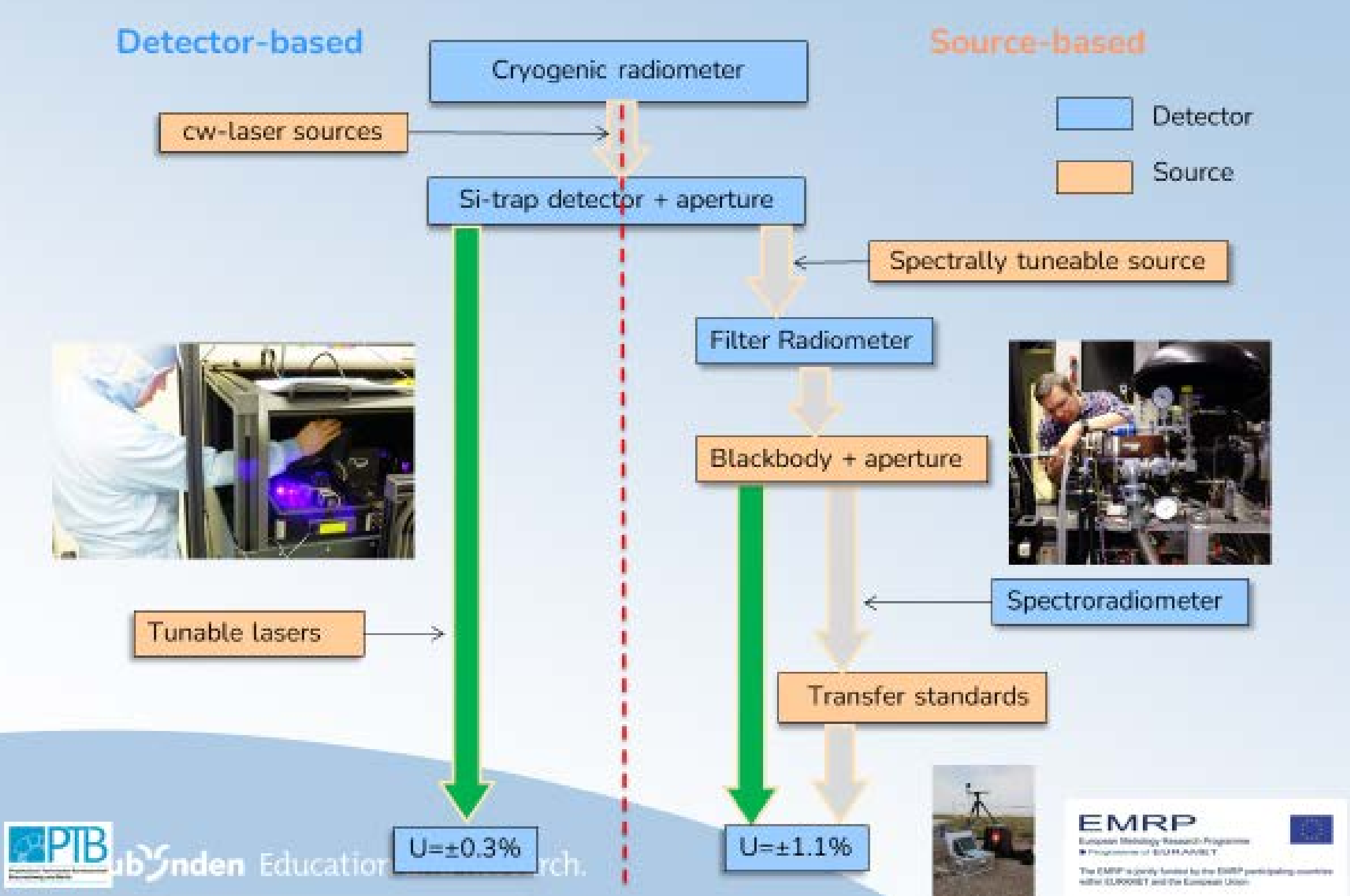


Maintain a set of reference irradiance standards and ensure their traceability to the SI.

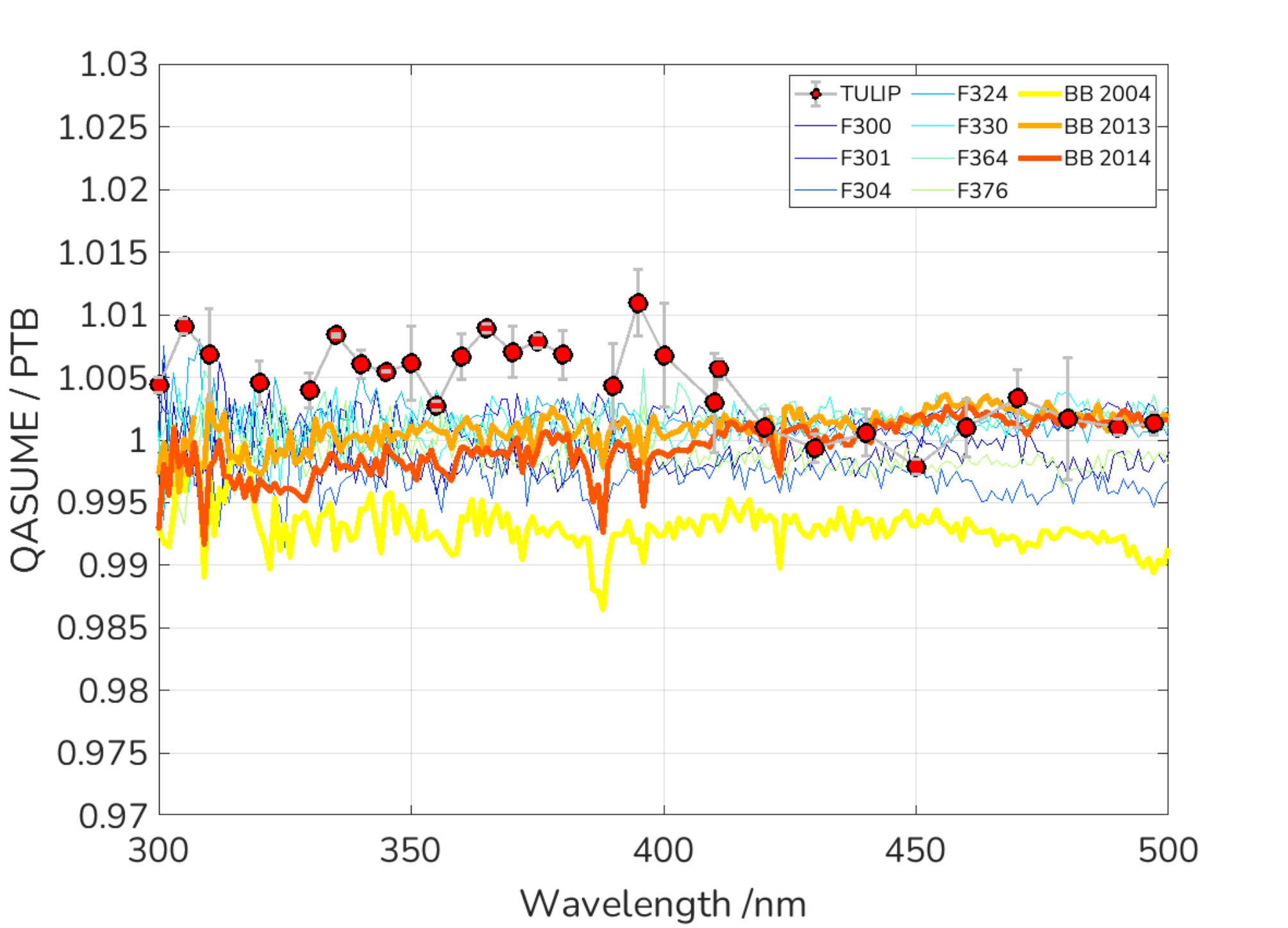


TRACEABILITY OF WCC-UV TO THE SI

Traceability chain for spectral irradiance at PTB



Comparison QASUME with PTB primary spectral irradiance standards (Blackbody BB3200bg and Tuneable Laser TULIP)



Acknowledgment: The 2022 comparison between QASUME & PTB was performed within the project 19ENV04 MAPP.

