



TNO SATELLITE PRE-FLIGHT CALIBRATION FACILITIES

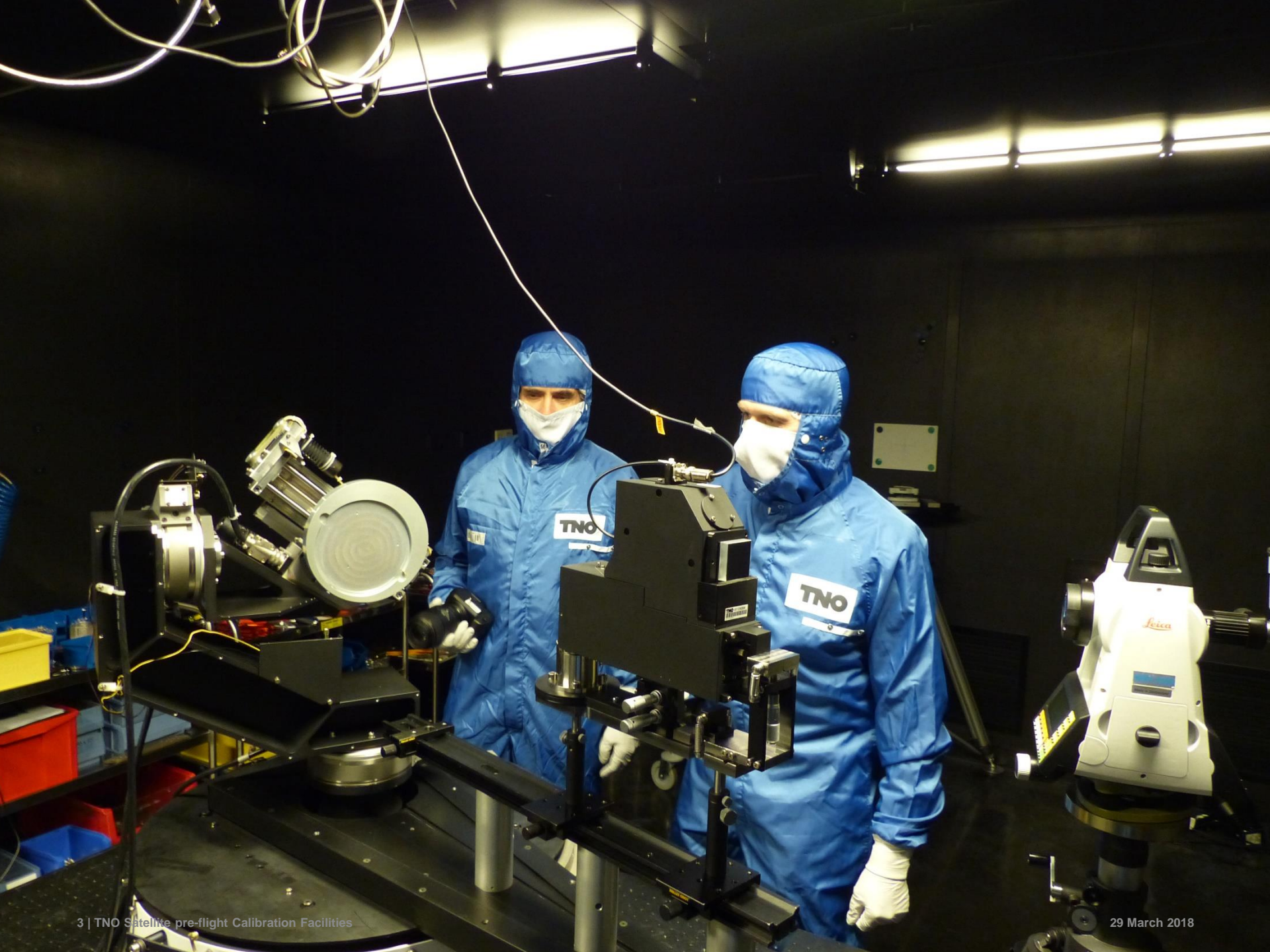
Overview and Outlook | R.C. Snel

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CURRENT FACILITIES (1)

- › Absolute Radiometric Calibration Facility ARCF
 - › Absolute BRDF measurements
 - › Clean room facility (Class 100 / ISO 5)
 - › Wavelength range from 210 nm to 2600 nm
 - › Variable bandwidth monochromator or EKSPLA tuneable laser
 - › Polarisation possible
 - › Well-known uncertainty contributions
 - › Accuracy as good as 0.5% (1σ)

- › B. Gür, G. Otter, R. Jansen, J. Groote-Schaarsberg, S. Brinkers, "The absolute radiometric calibration facility ARCF 2.0 at TNO", Proc. SPIE 9628, Optical Systems Design 2015: Optical Fabrication, Testing, and Metrology V, 96280O (24 September 2015); doi: 10.1117/12.2191595; <https://doi.org/10.1117/12.2191595>



CURRENT FACILITIES (2)

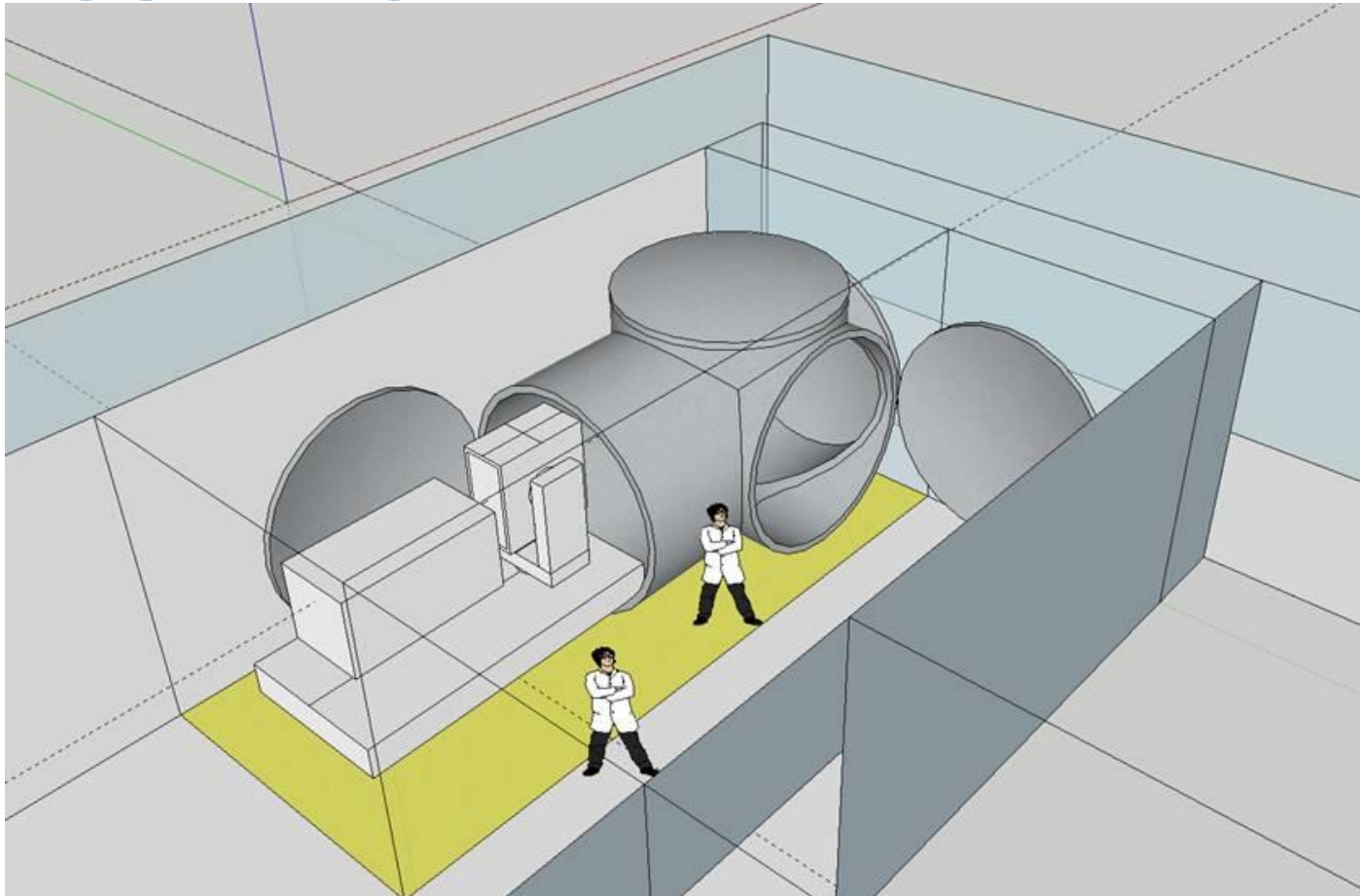
- › Vacuum Calibration Facility VCF
 - › Thermal Vacuum Chamber (1.5 m)
 - › Cleanroom facility (Class 100 / ISO 5)
 - › Radiometric calibration
 - › Polarisation characterisation
 - › Wavelength calibration
 - › Slit-function characterisation
 - › Stray light
 - › Field of view
 - › <https://www.tno.nl/en/focus-areas/industry/roadmaps/space-scientific-instrumentation/earth-observation/space-instrument-calibration/>



FUTURE FACILITY (1)

- › “Calibration Space Instruments” CSI
 - › Thermal Vacuum Chamber (2.5 - 3 m?)
 - › Cleanroom facility (Class 100 / ISO 5)
 - › Tip-tilt of instrument
 - › Optical Stimuli (partially) in vacuum
 - › Goal: 1 solar constant irradiance, 1 earth radiance
 - › Tuneable laser, (xenon?) White Light Source
 - › Traceability to SI

EARLY SKETCH OF POSSIBLE CONFIGURATION



FUTURE FACILITY (2)

› Status:

- › Funding secured
- › Kick-off was January 2018
- › Currently in definition phase:

Any features you'd like to have for your future calibration needs?



THANK YOU FOR YOUR ATTENTION

Take a look:
TIME.TNO.NL

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