65 years of radiation measurements in Tartu-Tõravere Station

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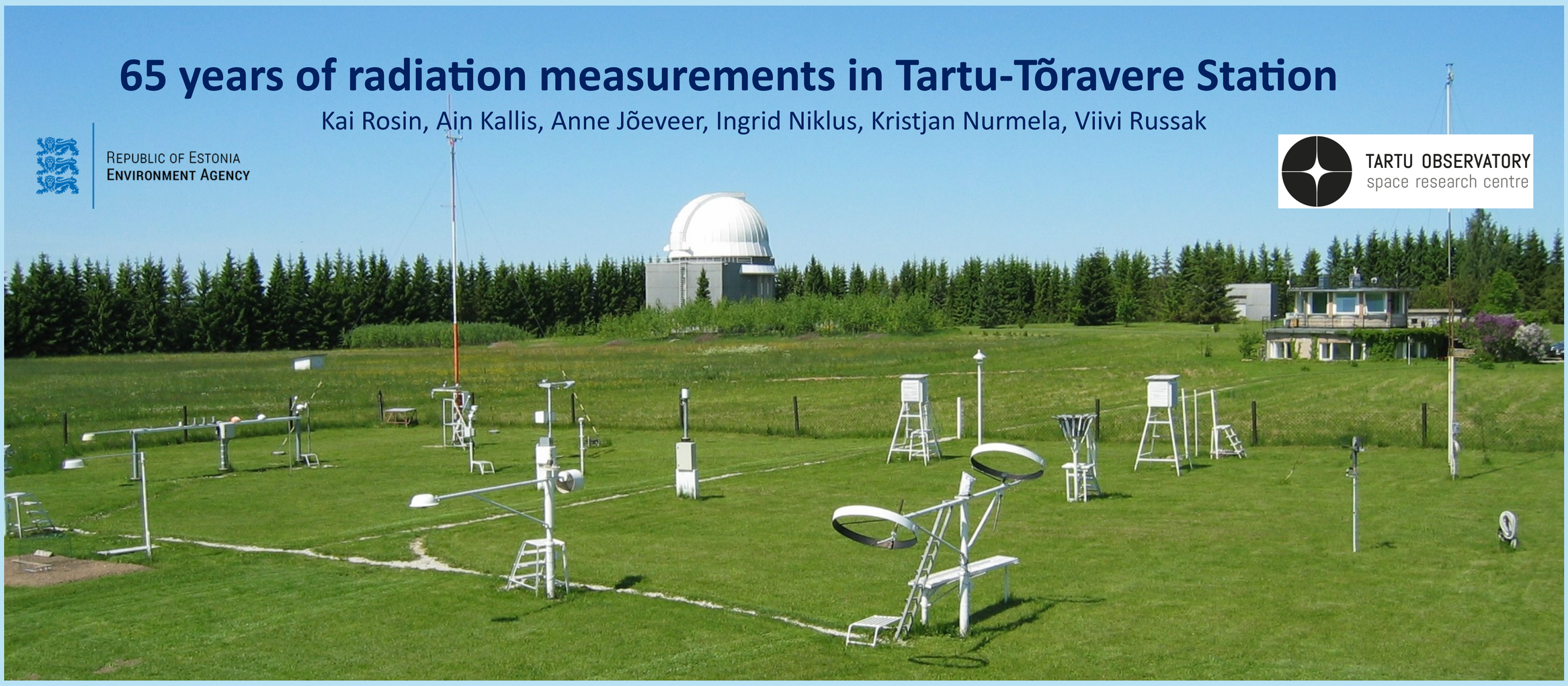
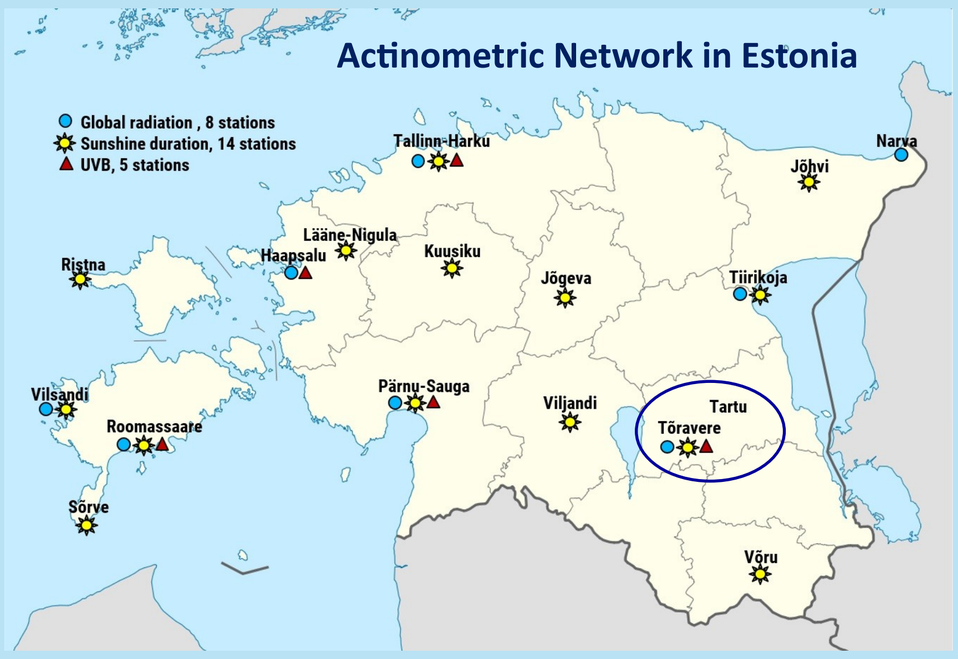


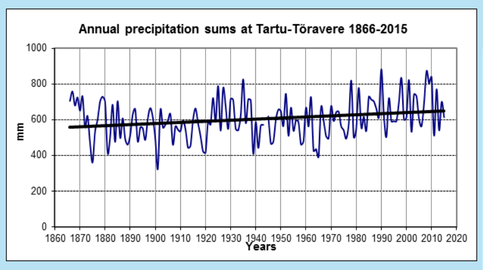


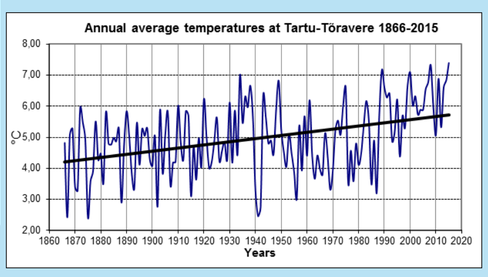
Tartu-Tõravere Meteorological Station (since 1965)
Φ = 58°16´ λ = 26°28´ h = 70 m

Radiation measurements were moved to Tõravere, 20 km from Tartu, in 1965.
The station became a BSRN candidate in 1993, since 1999 it has operated as a BSRN station.
Data from period 19.01.1999 - 31.03.2016 are submitted to BSRN archive.

Radiation sensors in 2016:

1. direct irradiance (PMO6 absolute radiometer, pyrheliometers AT-50, NIP, spectral radiometer PFR, pyrheliometer CHP1)
2. global, diffuse, reflected irradiance (CM-21)
3. net radiation (GB-1)
4. upward longwave irradiance (Eppley PIR)
5. UVA, UVB, UV erythemal radiation (CUV3, CUVB1, UV-SET)
6. photosynthetically active radiation, global and direct (LI-COR LI-190SA)
7. total ozone measurements (MICROTOPS II)
8. downward longwave irradiance (pyrgeometer CGR4 with CVF4 ventilation unit and sun tracker 2AP)



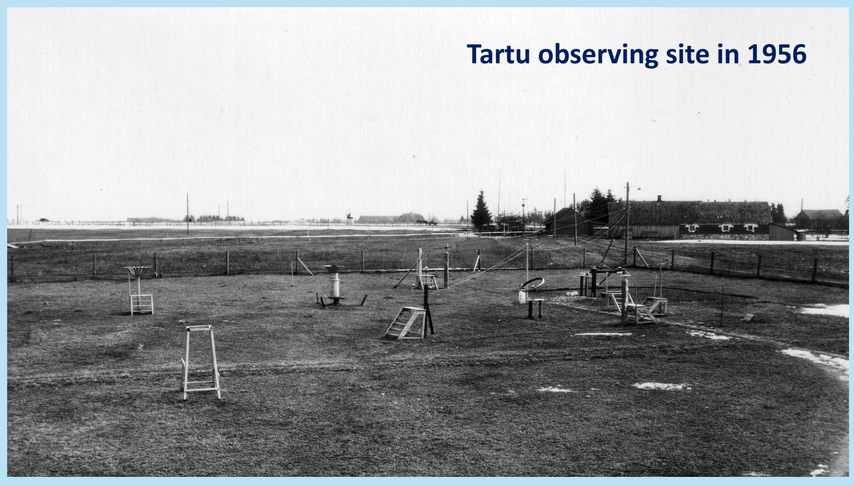


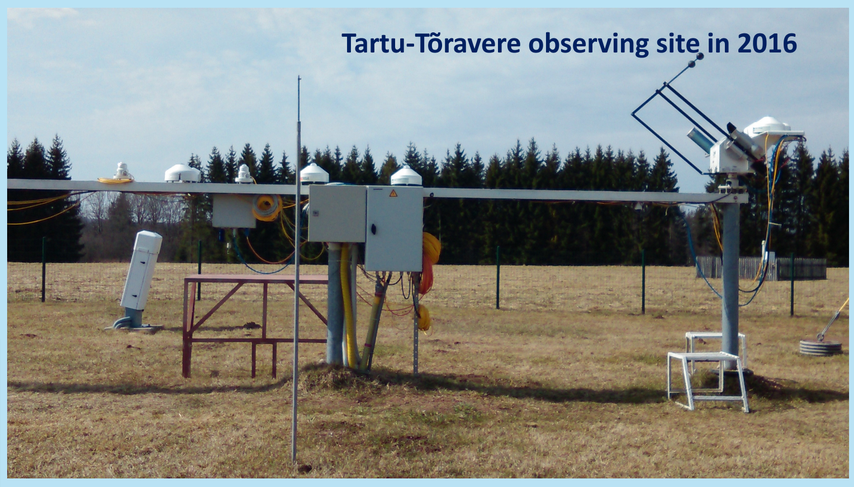
Tartu Actinometric Station (1950-1965)
Φ = 58°21´ λ = 26°41´ h = 76 m

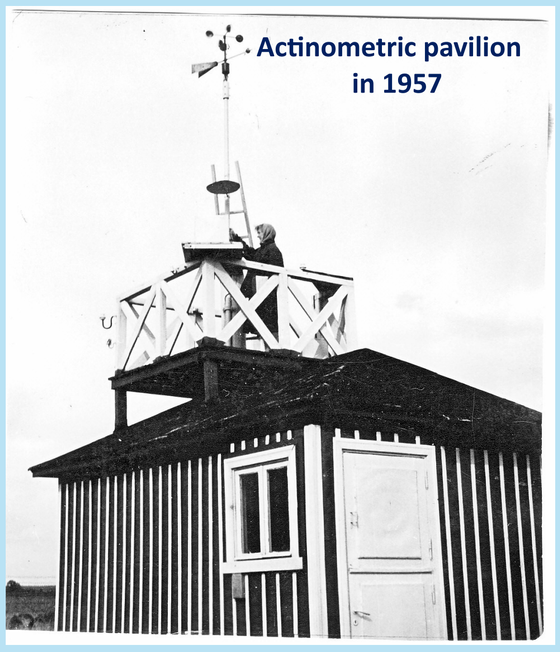
The longest time series of radiation measurements in Estonia can be obtained from Tartu-Tõravere.
Tartu Actinometric Station was established in 1950, it was also the beginning of regular measurements of global radiation and direct irradiance. The measurements of diffuse irradiance were added in 1954, reflected irradiance in 1955.

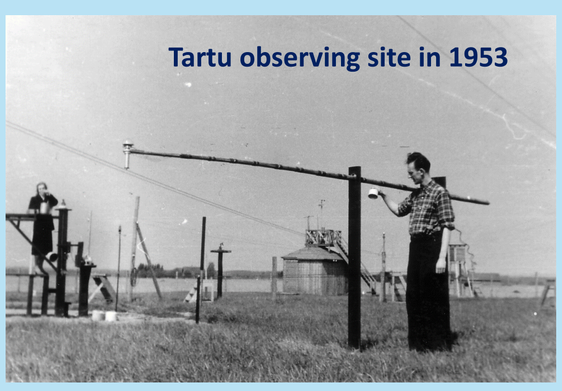
Measuring devices 1950-1965:

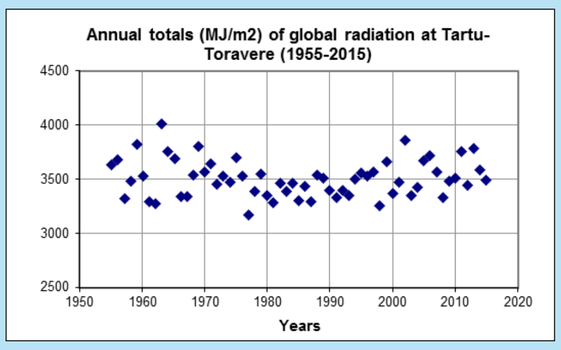
1. Yanishevsky actinometer AT-50
2. Ångström pyrheliometer No Å-143
3. pyranometers AC-4x4, АП-3x3, M-80, M-115
4. balance meter M-10
5. galvanograph МСЩПр
6. electronic potentiometer ЭПП-09
7. Reemann automatic radiation integration system

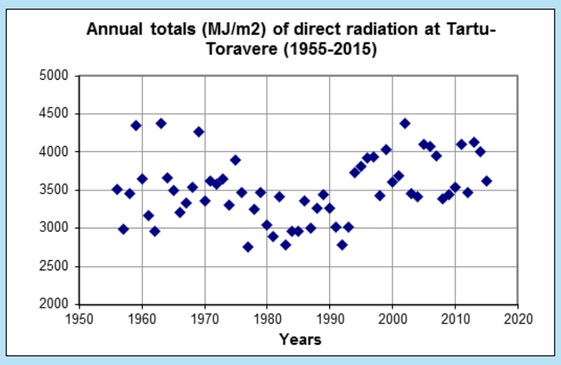

Tartu observing site in 1956


Tartu-Tõravere observing site in 2016


Actinometric pavilion in 1957


Tartu observing site in 1953





Baltic Solar Atlas on EUMETSAT CM-SAF climate data records

A web-based solar radiation atlas was born as a joint initiative of Latvia, Lithuania, Poland and Estonia. The atlas is comprised of satellite based solar surface irradiance, direct irradiance and direct normalized irradiance maps.
The first version of the Atlas, covering the period 1991-2014, was released in November 2015.
A new surface solar radiation dataset called SARAH, based on observations of MVIRI and SEVIRI instruments on board Meteosat satellites was used. Final maps were created with the use of climate mapping tool.
Satellite data were first validated against time series of *in situ* solar radiation measurements from Kaunas, Šilutė, Dobele, Zīlāni, Tartu-Tõravere and Vilsandi.
The atlas can be accessed through the official websites of the NMSs of the Baltic Republics in the national languages and in English.
www.ilmateenistus.ee

Monthly mean solar surface irradiance (W/m^2) in July 2003