

TESS-W night sky brightness photometer network

Real time data at:

<http://tessstars4all.eu>



STARS4ALL TESS-W NIGHT SKY BRIGHTNESS PHOTOMETER

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TESS

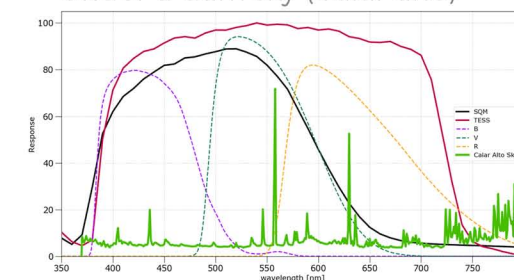
TESS-W

- The Telescope Encoder and Sky Sensor (TESS-W) is the first model of several compact devices to monitor the night sky.
- Wherever there is electricity and WIFI you can install it as a fixed station to monitor the sky brightness every night.
- It doesn't need a computer to work. TESS-W sends the brightness values automatically to our data repository using Internet of Things (IoT) protocols.
- It also can be used to take measurements "on the go" in remote locations using a portable battery to power it and a phone to store the data.
- This device also comes with extra features such anti-condensation heating and cloud coverage estimations. The hardware, software and data are open and free.

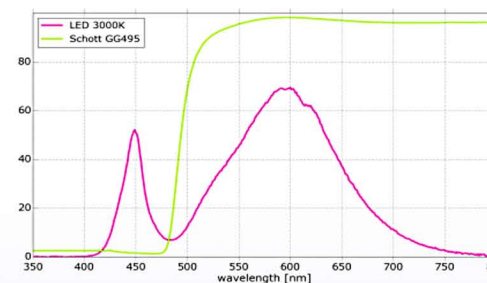
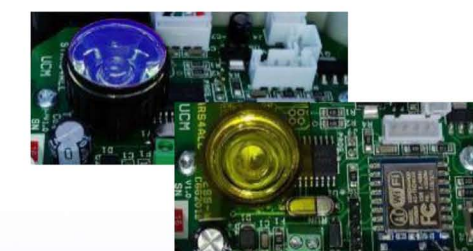
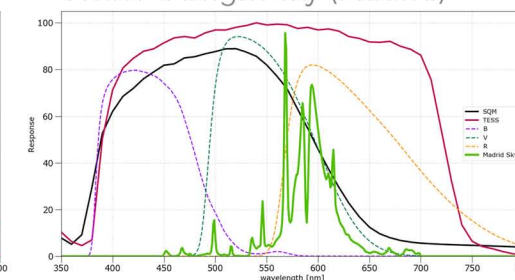
TESS vs SQM

TESS detector is sensible to light beyond red. Its response is higher and almost flat plus it detects light from 400 to 750nm.

Under a dark sky (Calar alto)



Under a bright sky (Madrid)



Select your favorite passband. TESS-W photometer is designed so extra filters can be installed inside the box.

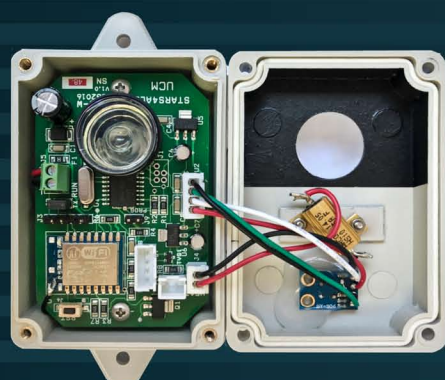
Detection of the blue component of LED spectra using two photometers, one of them with an extra long pass filter.

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AND FORGET

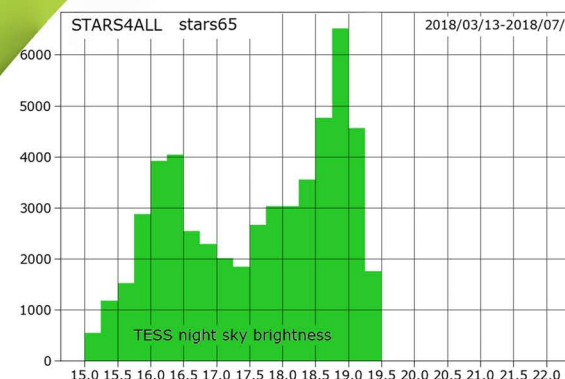


COMPONENTS

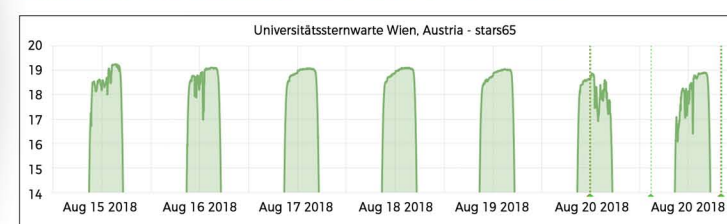
- Dichroic filter
- Light collector
- Light sensor
- Weatherproof enclosure box
- Clear glass window
- Heater
- Custom printed circuit board
- Infrared thermometer
- WIFI + microcontroller chip
- USB wire



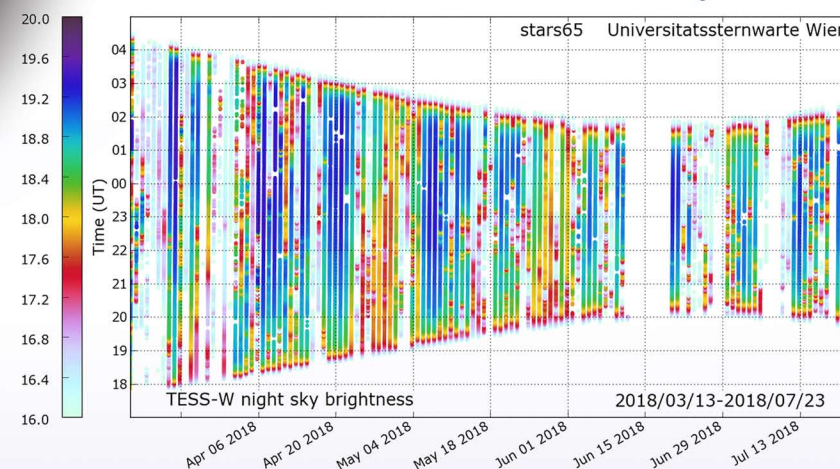
Universitätssternwarte Wien
Night sky brightness histogram



Universitätssternwarte Wien last week



Universitätssternwarte Wien over half a year



Monitoring light pollution allow us to determine statistical values after long term series of data.



STARS4ALL
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