

# UV PROTECTION AGAINST THE HARMFUL RAYS OF THE SUN! AMULET

## Battery

Unscrew the back to change the battery. It takes a CR2032 coin cell. After fitting, it might take a few seconds for the touch sensor to re-calibrate.

**WARNING: Do not fit the battery backwards!** The designer of the amulet was too lazy to add reverse polarity protection.

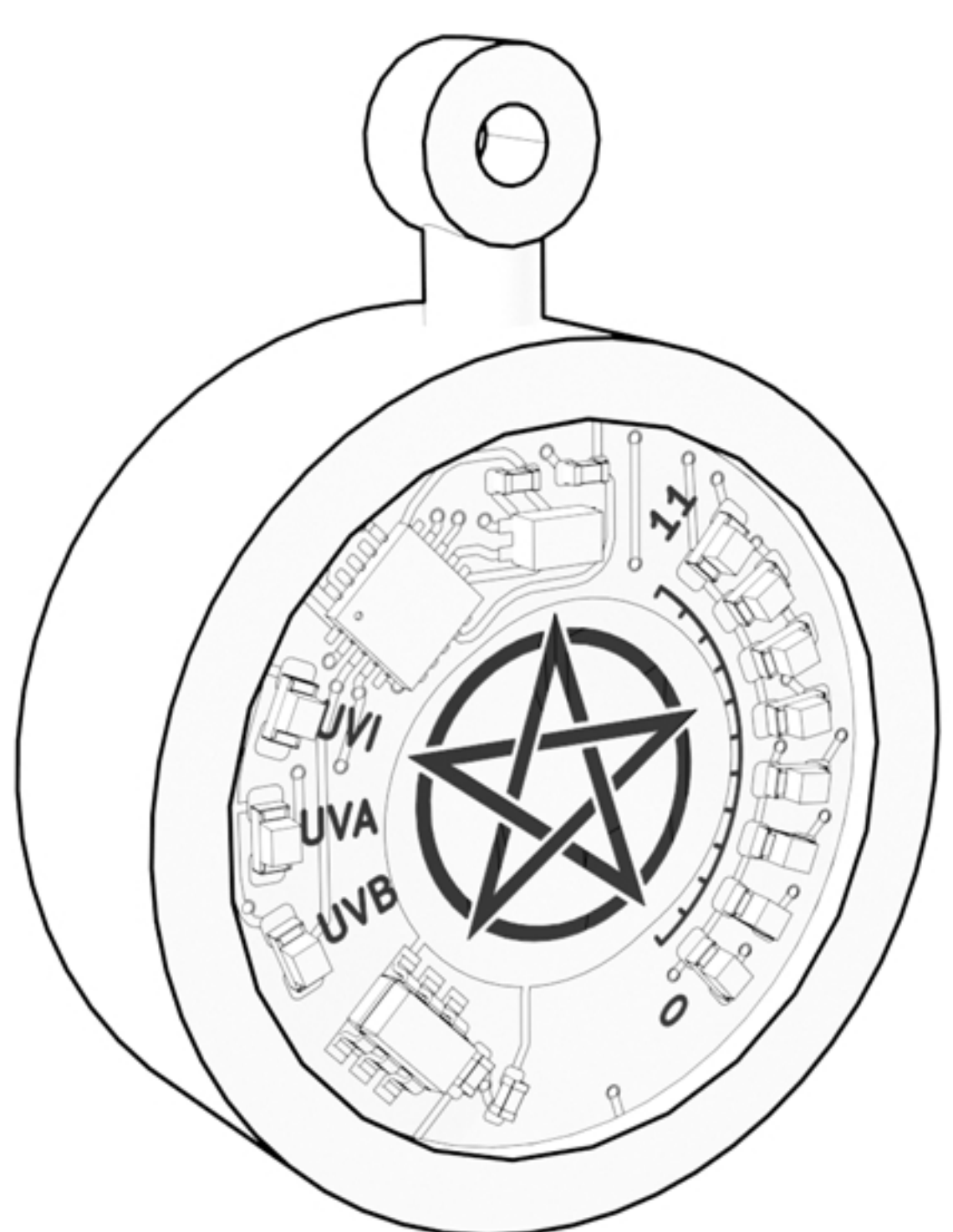
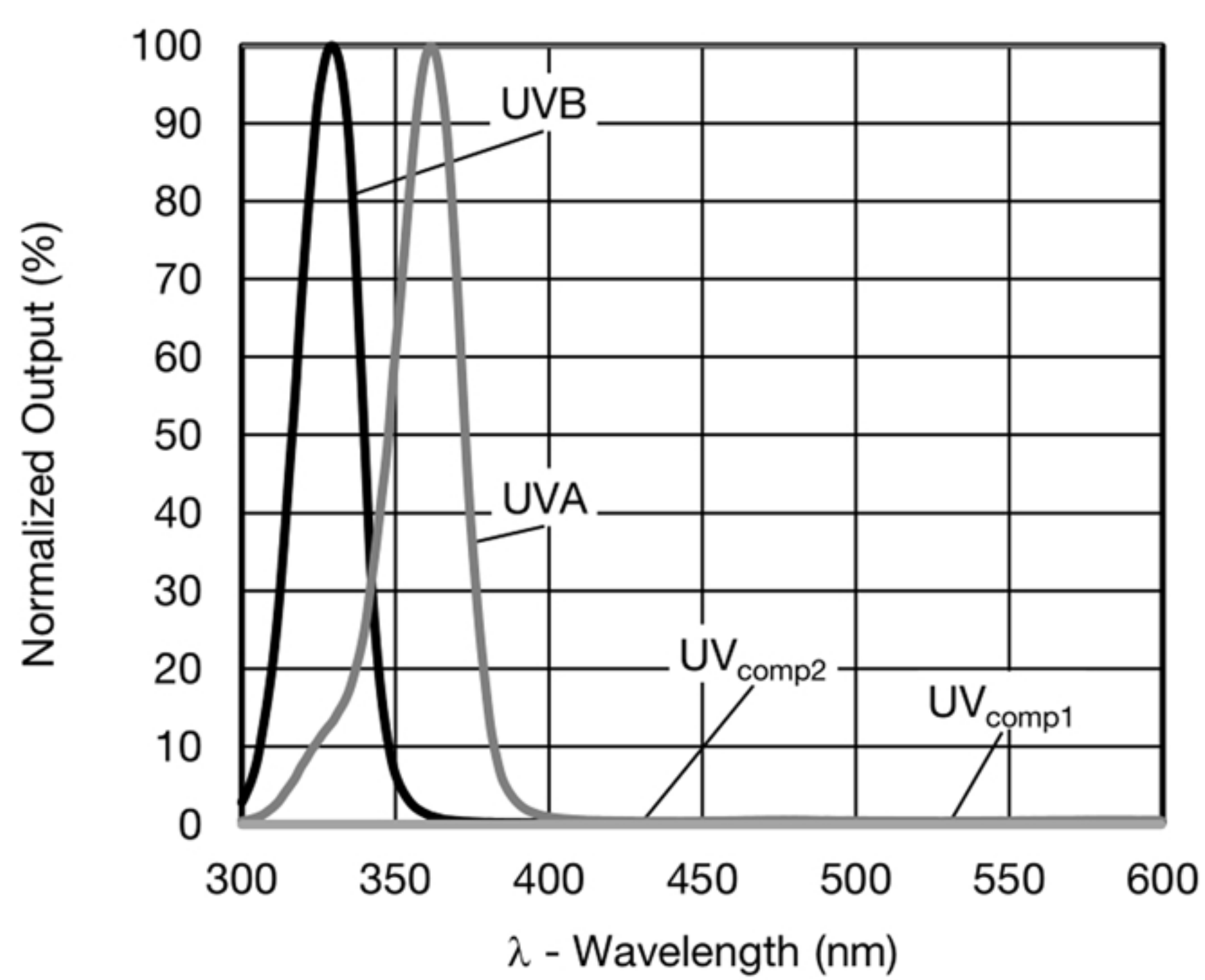
## Technical data

The ultraviolet sensor part number is VEML6075.

The spectral response for its UVA and UVB channels is shown in the diagram opposite. ISO-21348 says that UVA is 315-400nm and UVB is 280-315nm, but the sensor's "UVB" peak is around 330nm, which means that even in UVB mode the amulet is still mostly measuring UVA. Unfortunately, by the time this discrepancy was noticed, it was too late to choose a different sensor.

The UV-Index is calculated by applying a weighted average to four spectral channels (two of which compensate for visible and infrared).

UV-Index graphs across the UK can be found here:  
<https://uk-air.defra.gov.uk/data/uv-index-graphs>



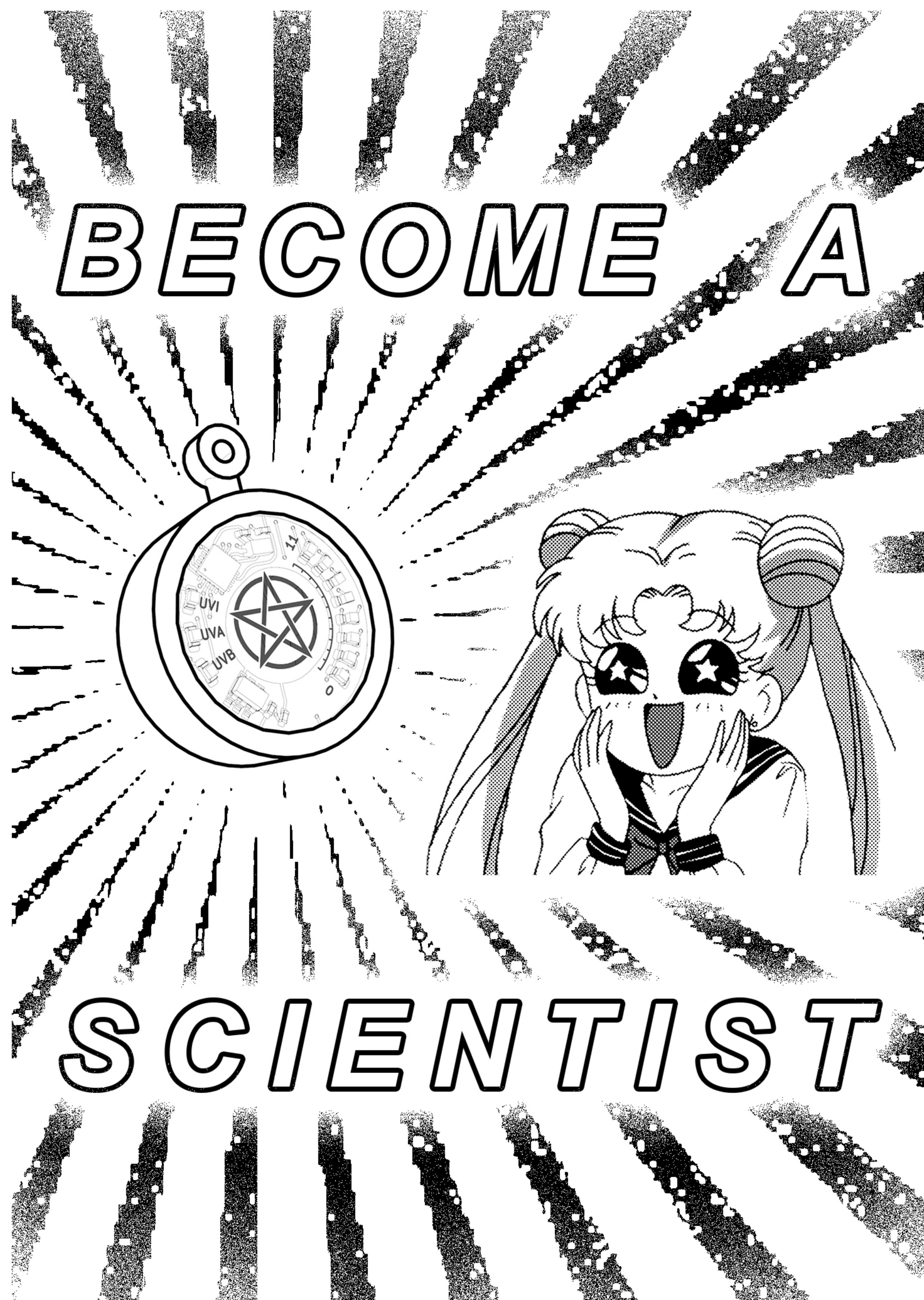
~ From the workshop of mitxela ~

**ART!**

**SCIENCE!**

**MAGIC!**

UV PROTECTION AMULET



**Trouble reading?**  
 If the sunlight is too bright to see the LEDs, tap and hold the pentacle to freeze the display. You can then shade the amulet to see the reading.

**Bar Graph**  
 The LEDs progressively light up to show the reading for the current mode. The scale ranges from 0 to 11.

**UV Sensor**  
 This tiny sensor is the heart of the device. Aim towards the sun!

**Pentacle**  
 The magical symbol is a capacitive touch sensor. Tap the pentacle to activate the amulet and cycle through the modes.

**Mode Indicators**  
 The first mode reads out UV-Index. The second two modes measure UVA and UVB\* separately. The last mode turns off the device. The amulet will also turn off after 15 seconds of inactivity to save battery.

\* The UVA and UVB outputs are amplified to highlight relative differences, so in those modes the scaled output does not correspond to calibrated units.