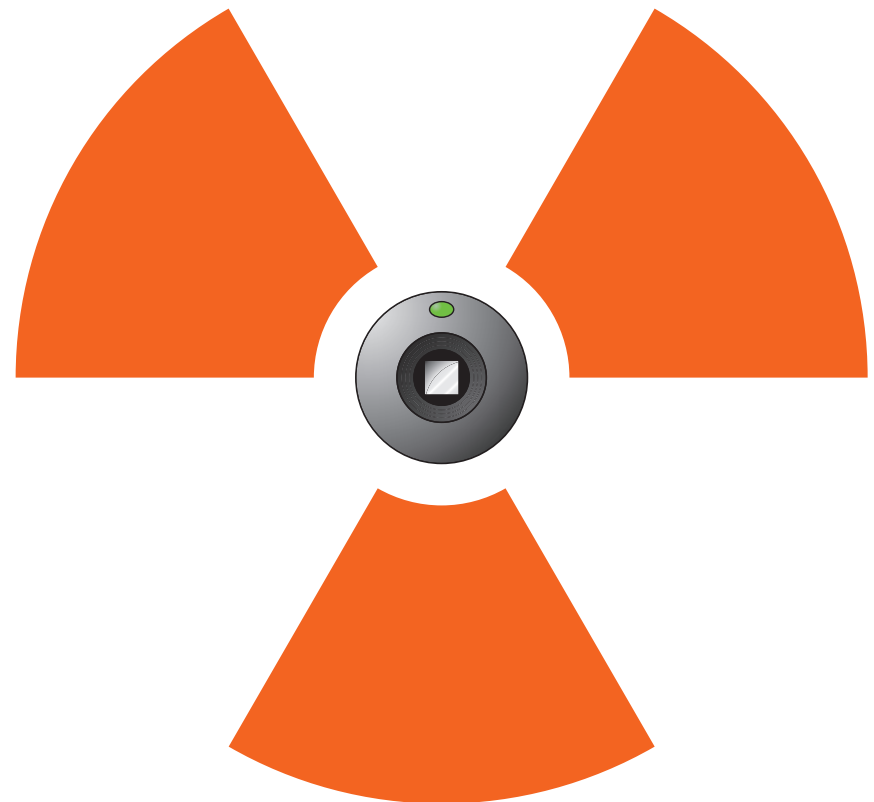


# GeigerCam: Measuring Radioactivity with Webcams

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## How-to



### Contact

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### Project

GeigerCam: Measuring Radioactivity with Webcams  
<http://www.cg.tuwien.ac.at/geigercam/>

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#### Materials needed:

A consumer grade HD webcam (we used a Logitech C270), pliers, screwdrivers, a utility knife, sticky tape and a foil to cover the exposed sensor (we used an 8 $\mu$ m Aluminium foil as it is thick enough to block visible light but is sufficiently transparent for alpha particles; furthermore it serves as a replacement for the removed IR filter).



#### Step 1

Unpack the webcam and locate the screws of the casing.



#### Step 2

Remove the front casing and locate the light sensor. It will be covered by a lens and a filter array. Locate all their screws (this most likely requires dismantling of the printed circuit board).

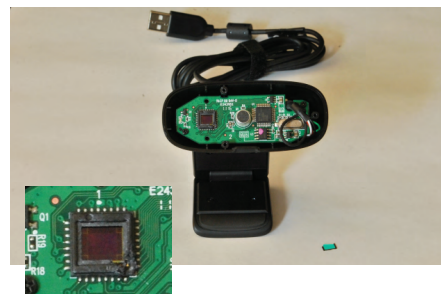
The front casing is not needed afterwards and can be destroyed in the process.



#### Step 3

Remove the lens array and locate the IR filter. It is usually a thin transparent layer directly above the sensor.

The lens is not needed afterwards and can be destroyed in the process.



#### Step 4

Remove the IR filter. This is the crux of this guide since the sensor should not be touched. In our case, this required the removal of a corner of the sensor casing and to bring leverage to bear on it with the tip of the knife. The filter is not needed afterwards and can be destroyed in the process.



#### Step 5

Cover the sensor with the foil and fix it with sticky tape. The foil should enclose the sensor as tightly as possible and no light must leak through this cover.



#### Step 6

Obtain a copy of our measurement software from the project homepage (use the QR code or the link on the next page).



#### Finish

Test your device with radioactive materials. Easily obtainable sources of radioactivity are incandescent gas mantles ( $^{232}\text{Th}$ , alpha), smoke detectors ( $^{241}\text{Am}$ , alpha), pitchblende ( $^{238}\text{U}$ , alpha) and tritium illumination ( $^3\text{H}$ , beta).

Have fun!