BOINC – not only calculations

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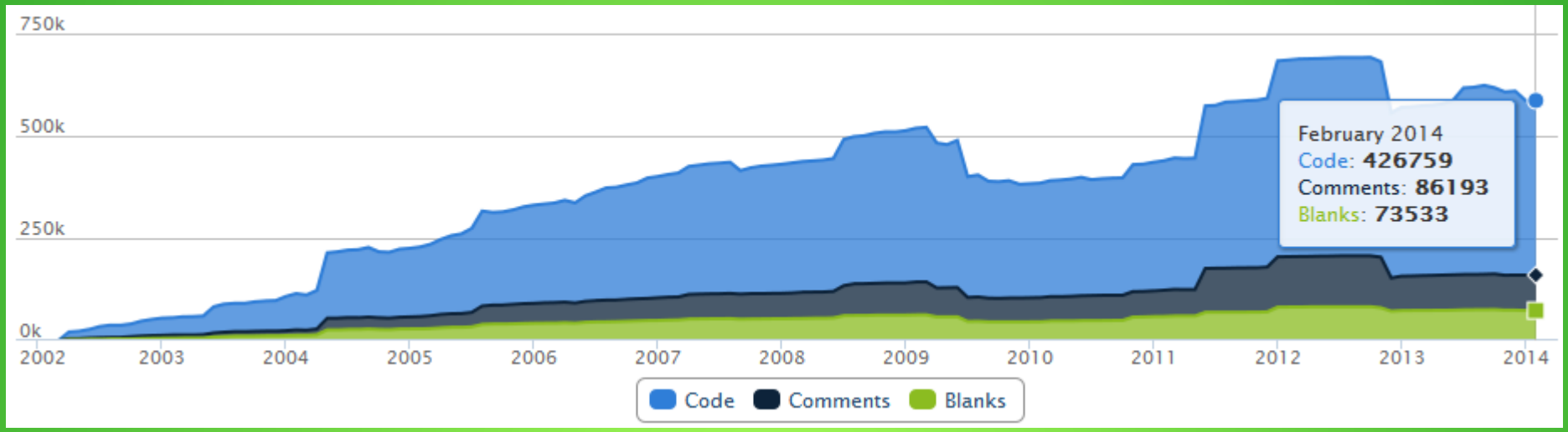
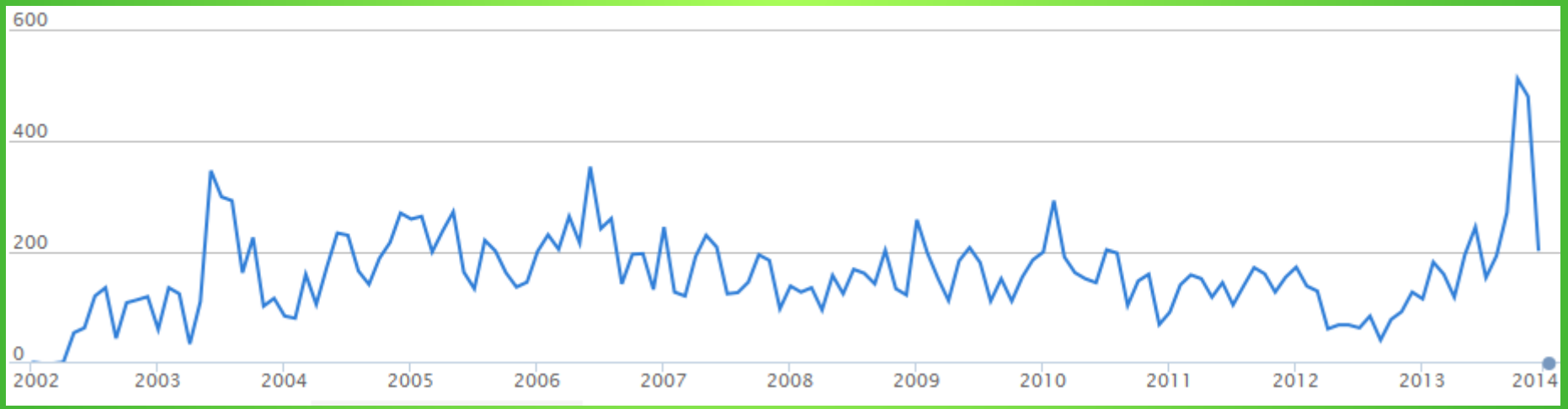
- Introduction to BOINC
- Radioactive@Home

Many people participated in the SETI@Home project, which was launched almost 15 years ago - ie 17 May 1999. At that time providing ones computing power to the scientists from big American research center was for a common user virtual adventure. Research conducted on shared computers involved (and still do) rather "popular" subject, searching in the radio waves, signals that may come from foreign civilization. The project has gained popularity and in this respect a comparison to todays "Facebook " can be quite accurate. One should remember though that this are completely different systems and SETI@Home began operations in 1999, when Internet in Poland was infancy. However, SETI@home and BOINC turned out to be a great initiative, which has already nearly two decades and unites people around the distributed computing.



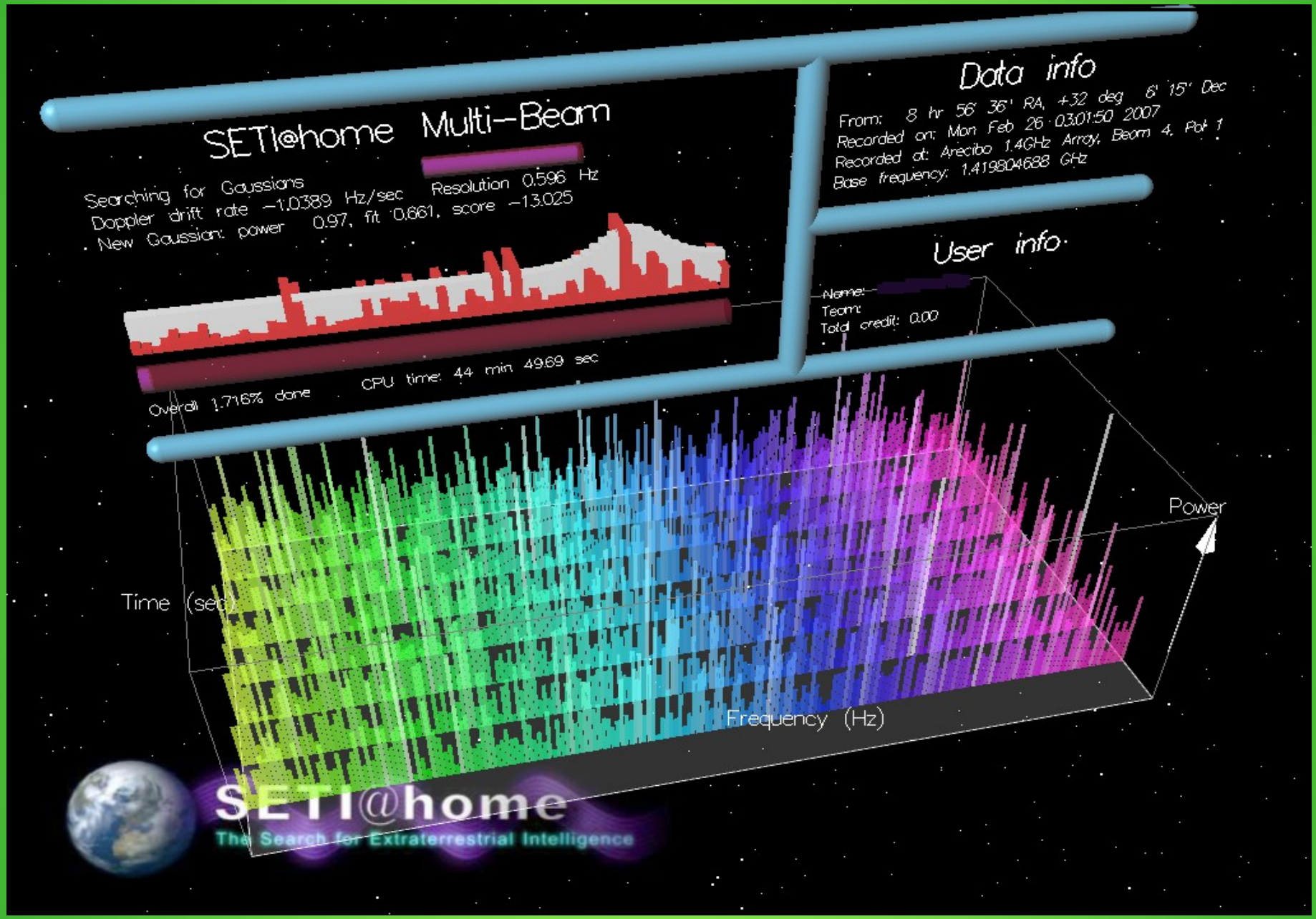
BOINC project - lines of code (data from 5 February 2014). Source: www.ohloh.net.



BOINC project - commits per month (data from 5 February 2014). Source: www.ohloh.net.

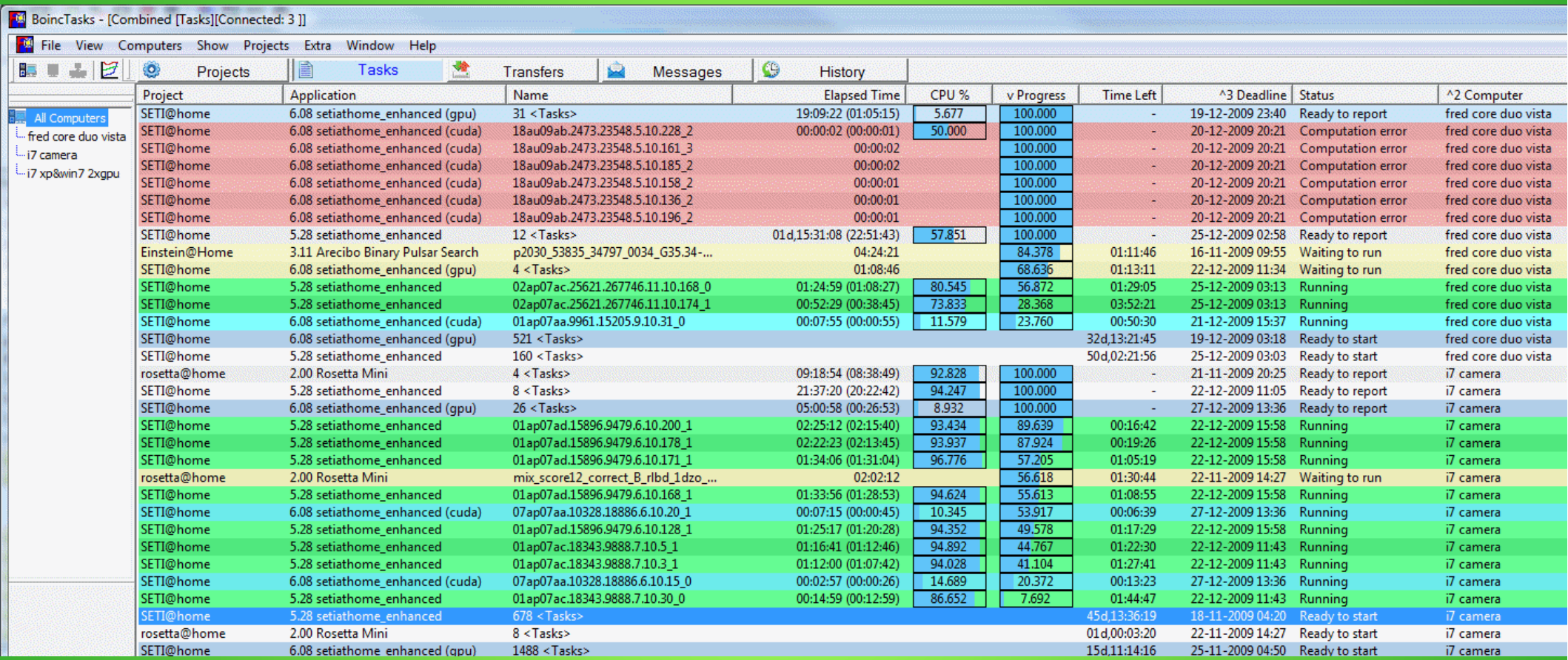
The Berkeley Open Infrastructure for Network Computing (**BOINC**) is an open source middleware system for volunteer and grid computing. It was originally developed to support the SETI@home project before it became useful as a platform for other distributed applications in areas as diverse as mathematics, medicine, molecular biology, climatology, and astrophysics. The intent of BOINC is to make it possible for researchers to tap into the enormous processing power of personal computers around the world.

BOINC has been developed by a team based at the Space Sciences Laboratory (SSL) at the University of California, Berkeley led by David Anderson, who also leads SETI@home. As a high performance distributed computing platform, BOINC has about 596,224 active computers (hosts) worldwide processing on average 9.2 petaFLOPS as of March 2013.



SETI@Home screensaver

BOINC Manager (simplified view).
Source: wcg.wikia.com



BOINC Manager (advenced view).
Source: boinc.berkeley.edu

Radioactive@Home

On March 11th 2011 the Fukushima 1 atomic powerplant suffered major damage due to earthquake and tsunami that followed. Major concern about safety of atomic energetics among BOINC@Poland users caused the beginning of new project for BOINC platform Radioactive@home, which was started on April 16th 2011. Developing detector prototype for gamma radiation lasted a couple of weeks and ware finished by the test in ghost town of Prypiat where the Chernobyl disaster took place. Today every user that has a computer, detector and internet access can join the project that creates a virtual map of radiation enveloping the entire world.

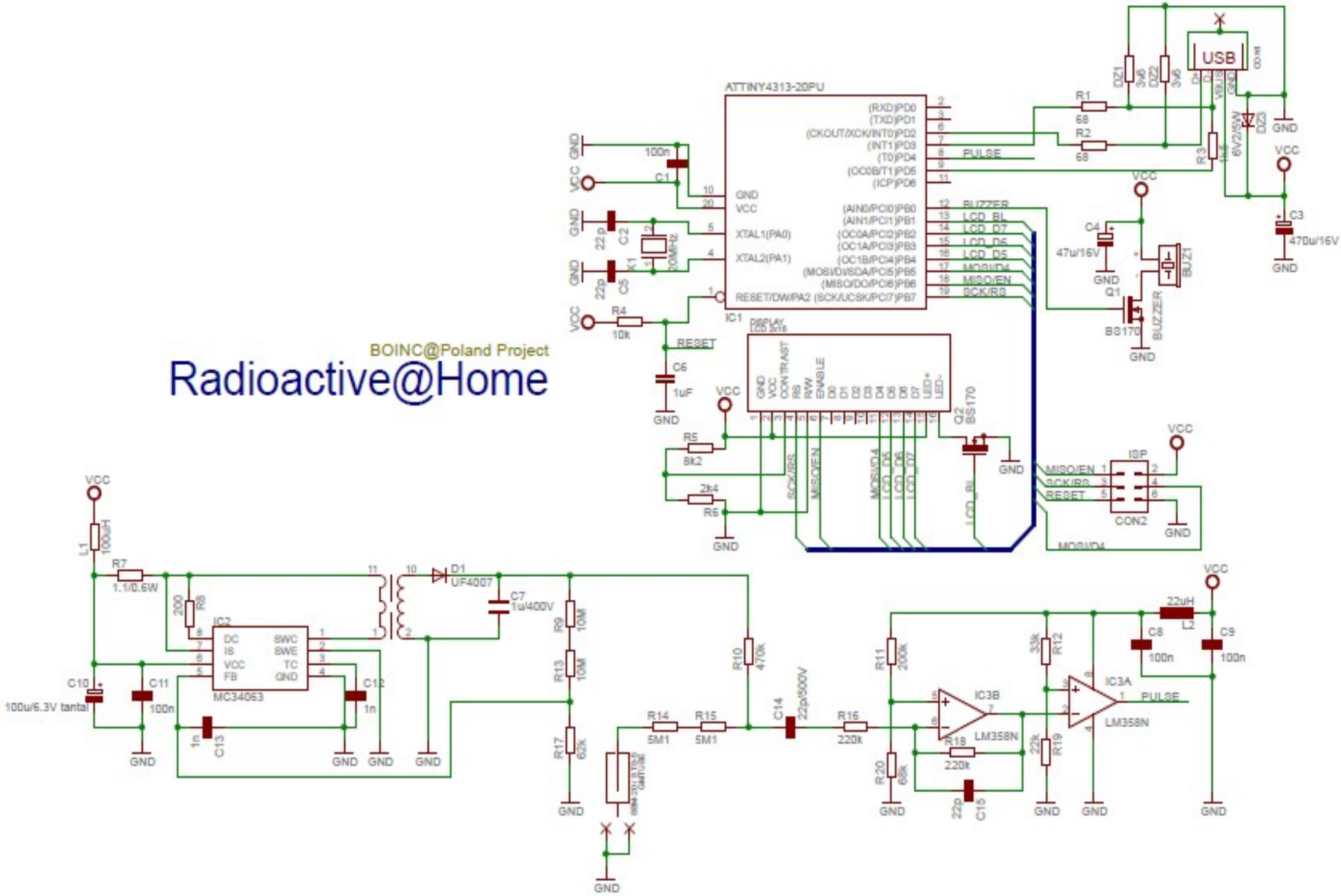

NUCLEAR FALLOUT MAP
3000 RADS
1500 RADS
750 RADS
MAR 12 11 03:15 ZULU
AK
YT
NT
Canada
Gulf of Alaska
Bering Sea
AB
BC
SK
Sea of Okhotsk
3 days
6 days
WA
MT
ND
OR
ID
WY
SD
NE
NV
UT
CO
CA
AZ
NM
TX
Nuclear Meltdown
Fukushima Daiichi Plant
Japan
S Korea
North Pacific Ocean
10 days
México
HI

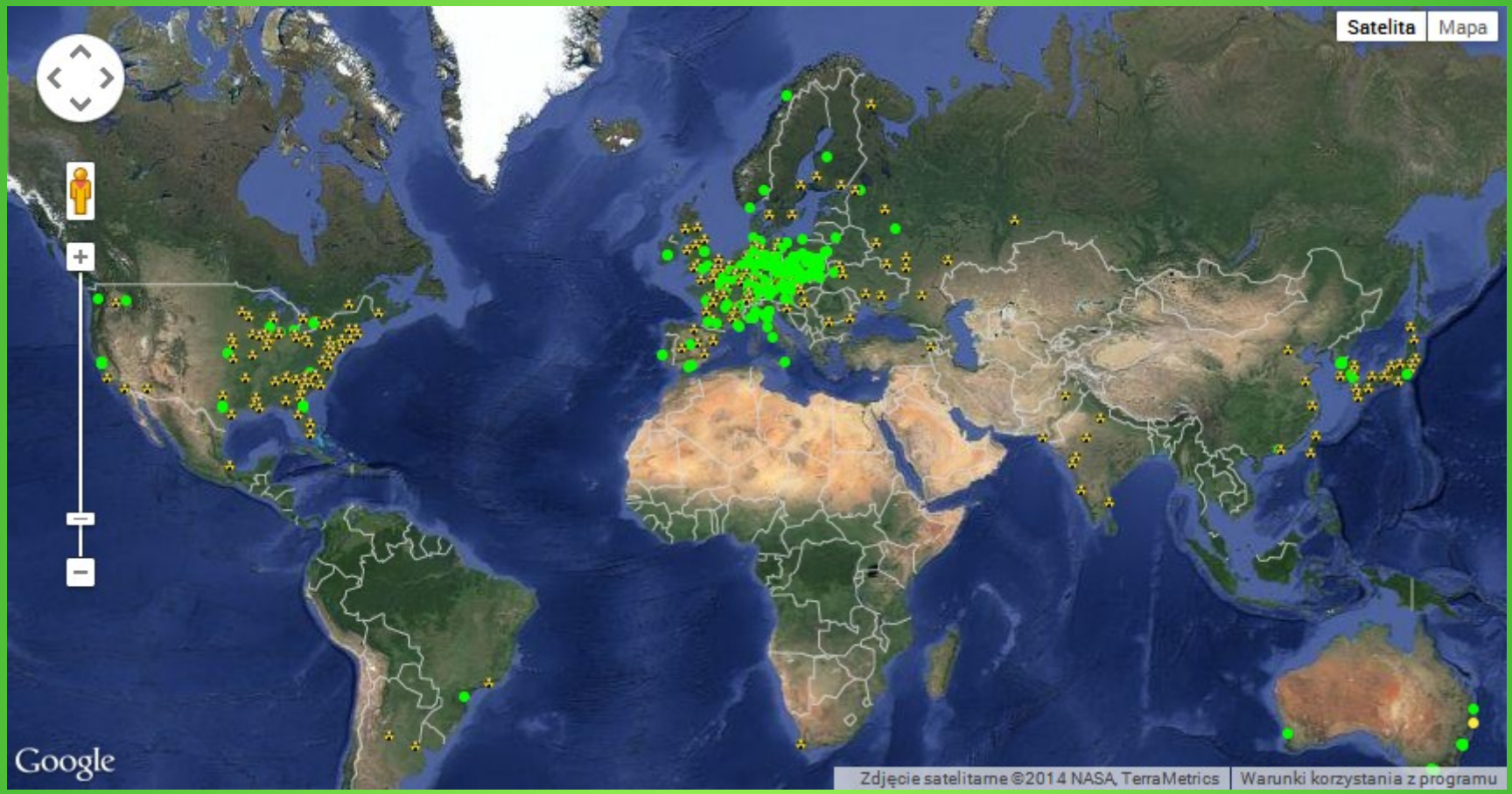
One version of the gamma-ray detector system used in Radioactive@Home

Radiation detector in the housing.

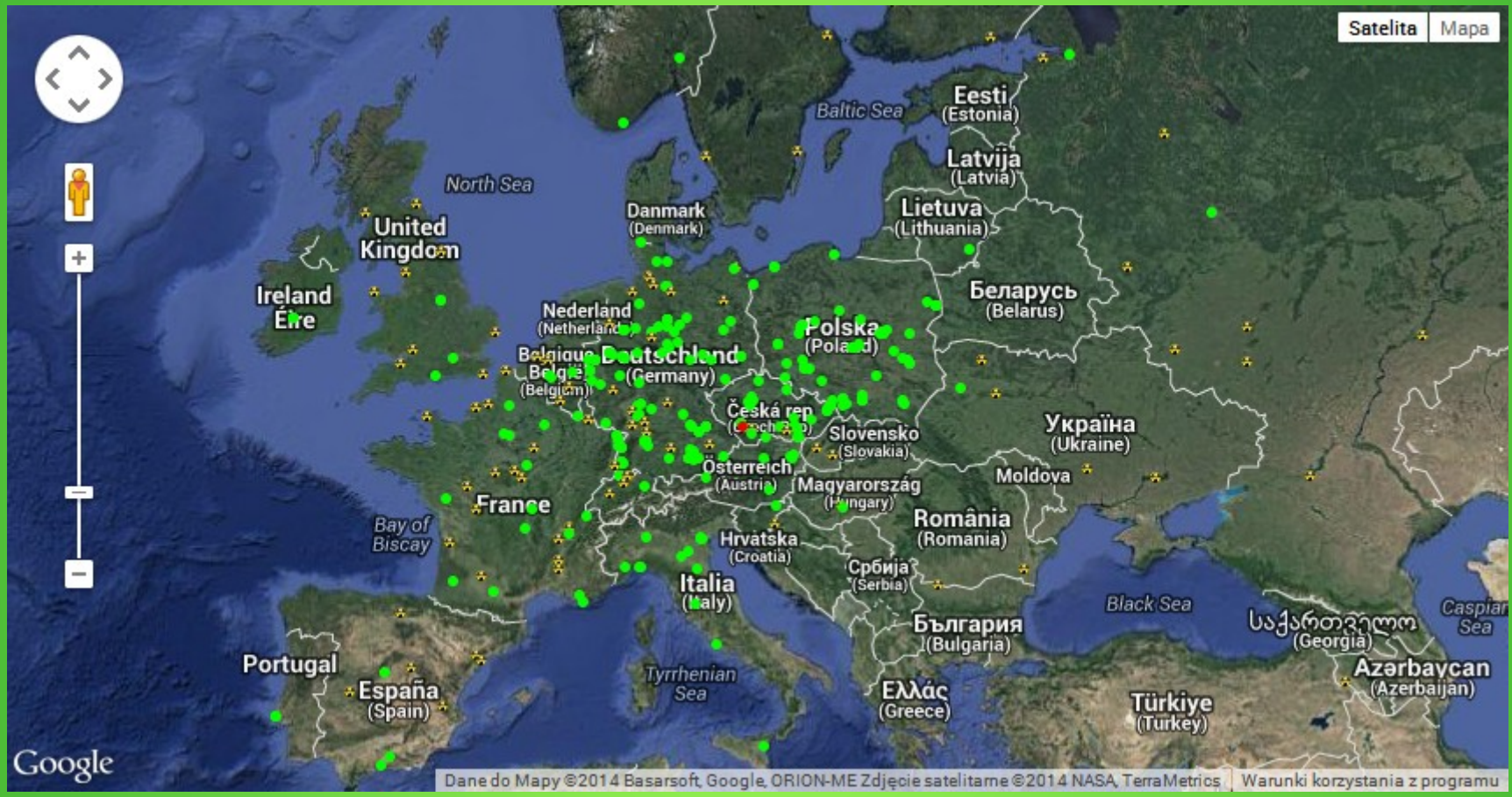
BOINC@Poland Project

Radioactive@Home

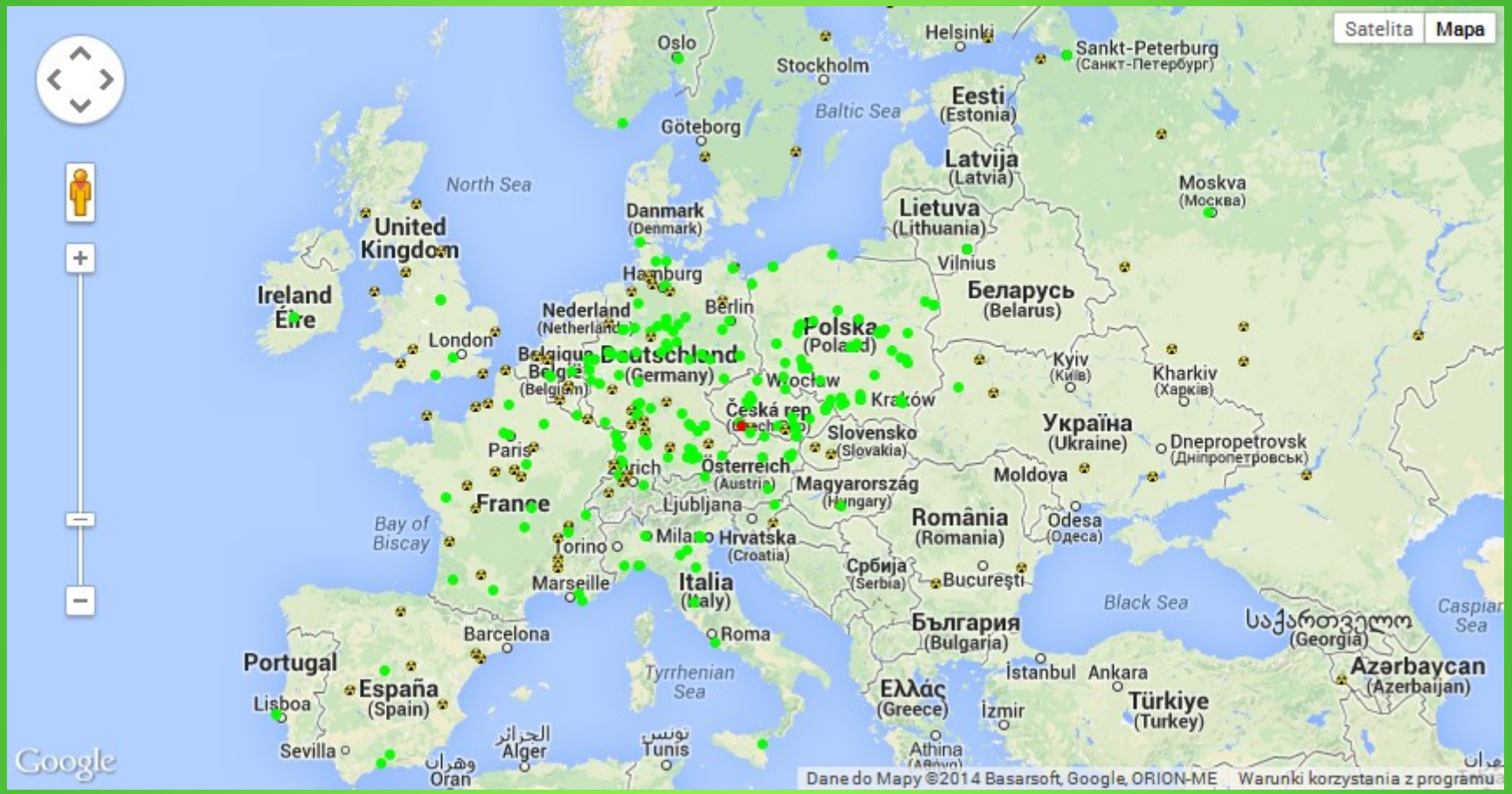




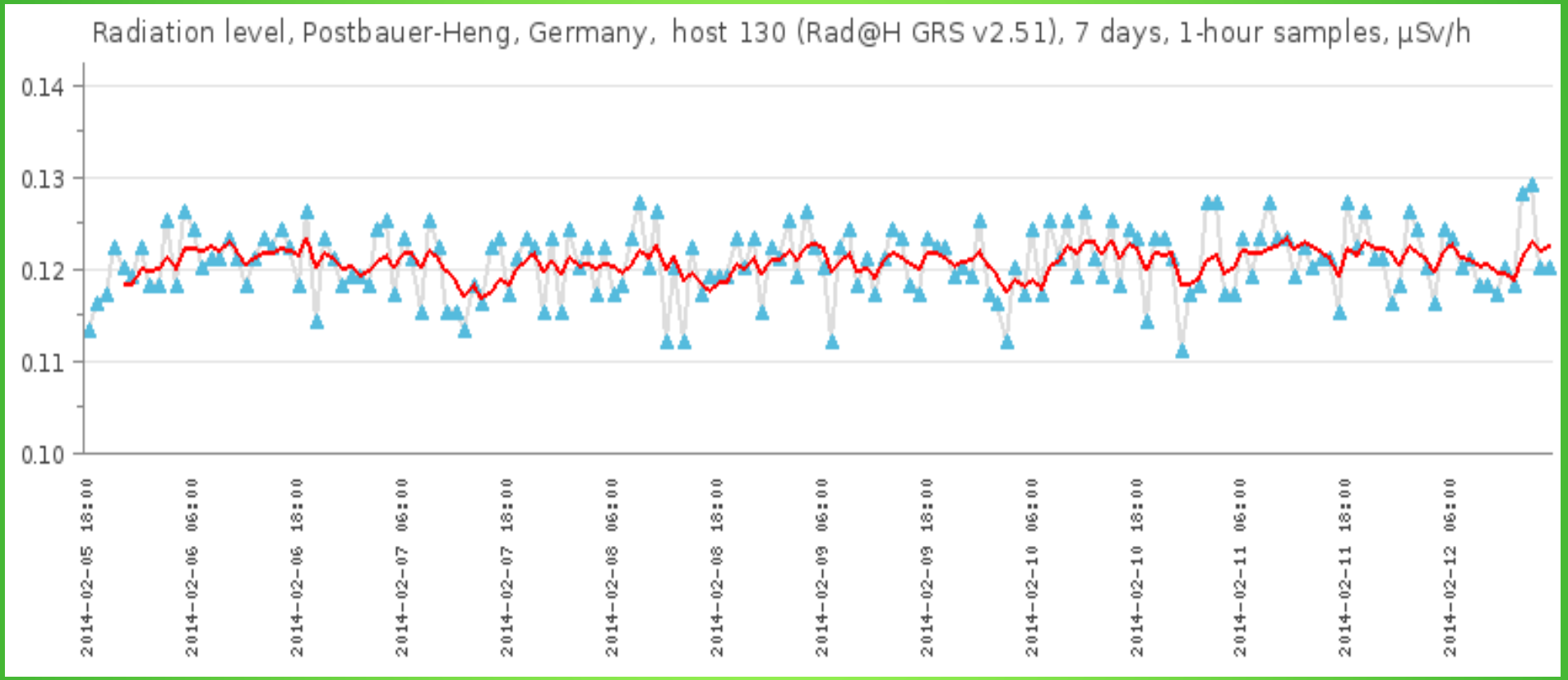
Map of radiation sensors located in World (color version).



Map of radiation sensors located in Europe (color version).



Map of radiation sensors located in Europe (grayscale version).



Sample statistics of radiation from one of the locations.

Site: **www.radioactiveathome.org**

Thank you for your attention!

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