



# What happens when Citizens start to measure Radiation in the Environment?

Valery Bordoïs  
History Geography Teacher

Gaël Alkan  
Student

Presles - Albert Londres  
High School (Vichy)



# Two Projects in Vichy



2013-2015

- measuring radon

2014-2015

- Background Radiation measured with the SafeCast Device

# The Participants in the Radon Project

## ■ The Albert Londres High School in Presles/ Vichy and the Mayet-de Montagne Secondary School

- *More than a hundred students participated (in the age of 15-16)*
- *Teachers of different disciplines (Geography, Biology, Physics, Electrical Engineering, etc. )*

■ IRSN

■ IFFO-RME





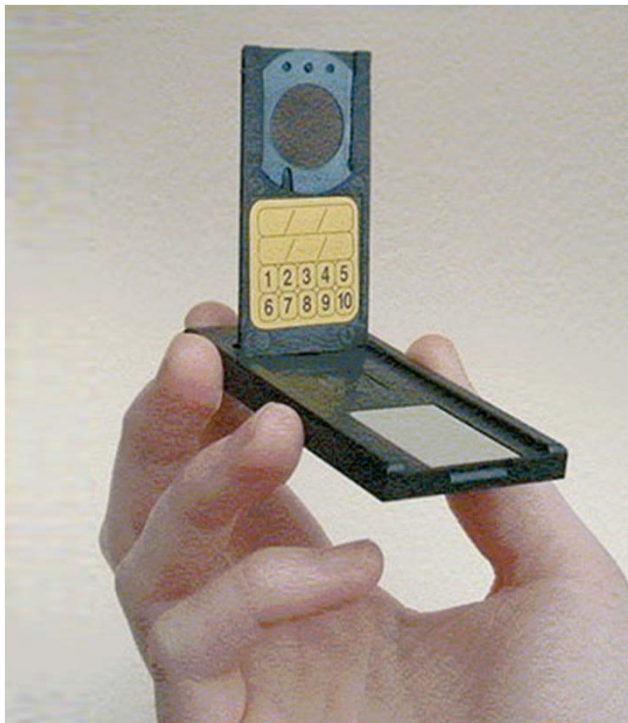
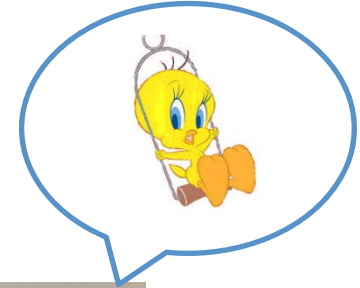
# How the Project was carried out

## Step 1: the Preparation



# How the Project was carried out

## Step 2: The Measurements

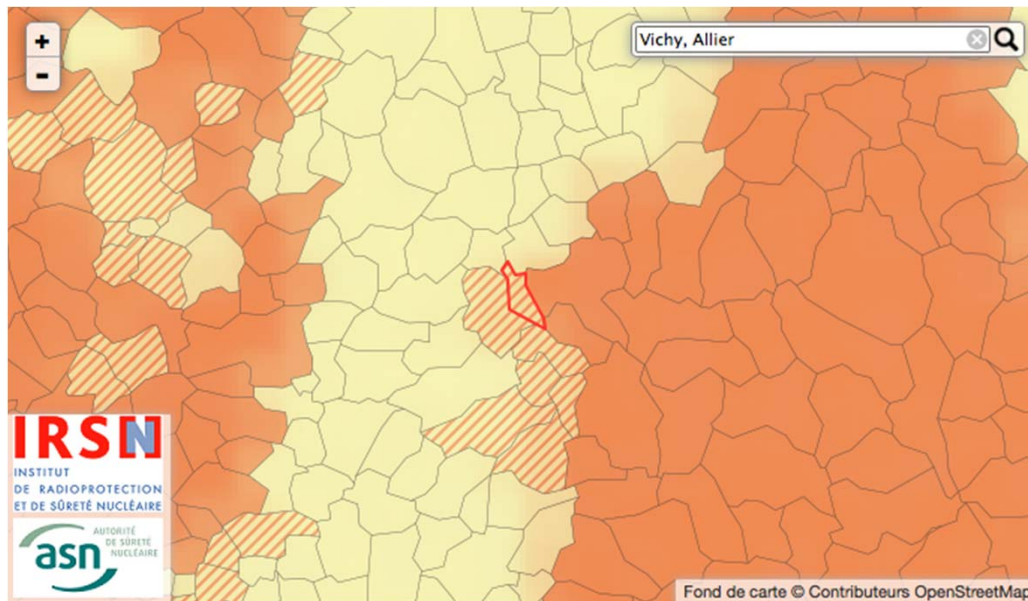


# How the Project was carried out

## Step 3: The Results



# The results



*Potential Radon Mapping in the region of Vichy*



- 15 % of the students observed at least one value above 300 Bq/m<sup>3</sup> (Especially in the region of Mayet)
- The existence of very high levels up to 3,500 Bq/m<sup>3</sup> in areas with high radon potential
- Also observations of high values in areas with low radon potential, where these results, from a geological point of view, are not expected.

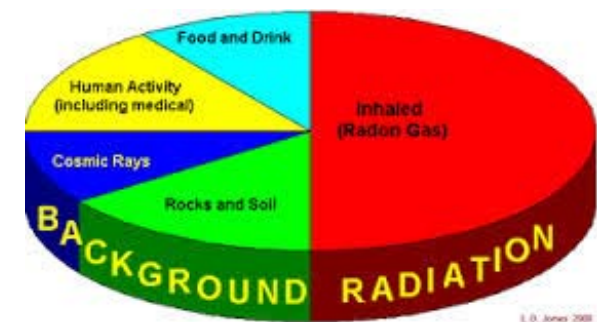
# Lessons learned from the Ground Breaking Project

## ■ *Great educational interest*

- Different disciplines around a single Topic
- For the students the occasion of conducting a scientific study in partnership with experts, of developing tools and skills

## ■ The project allowed the teachers to apply their knowledge from a different angle than the classical talk and chalk approach and to collaborate with the children

## ■ *Benefits for teachers and students* *Awareness of the risk concept*





# Questions raised by the Project

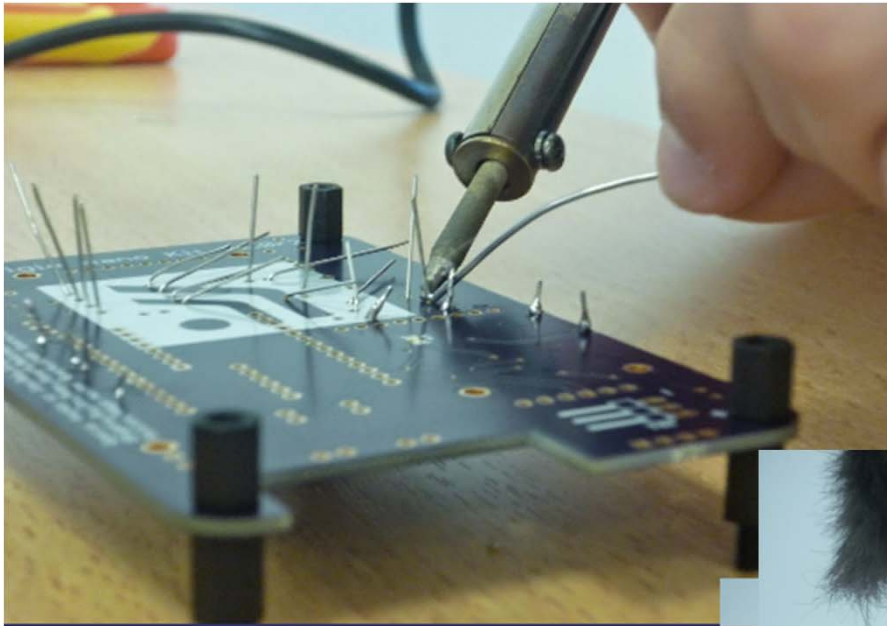
- *How to define the limits of recommendations coming from an official expertise and or from school?*
- What to do with families living in a House with an unexpectedly high radon level?
- Is it up to the School to give recommendation or should we leave that to the Experts



- How to avoid feeling of fear?



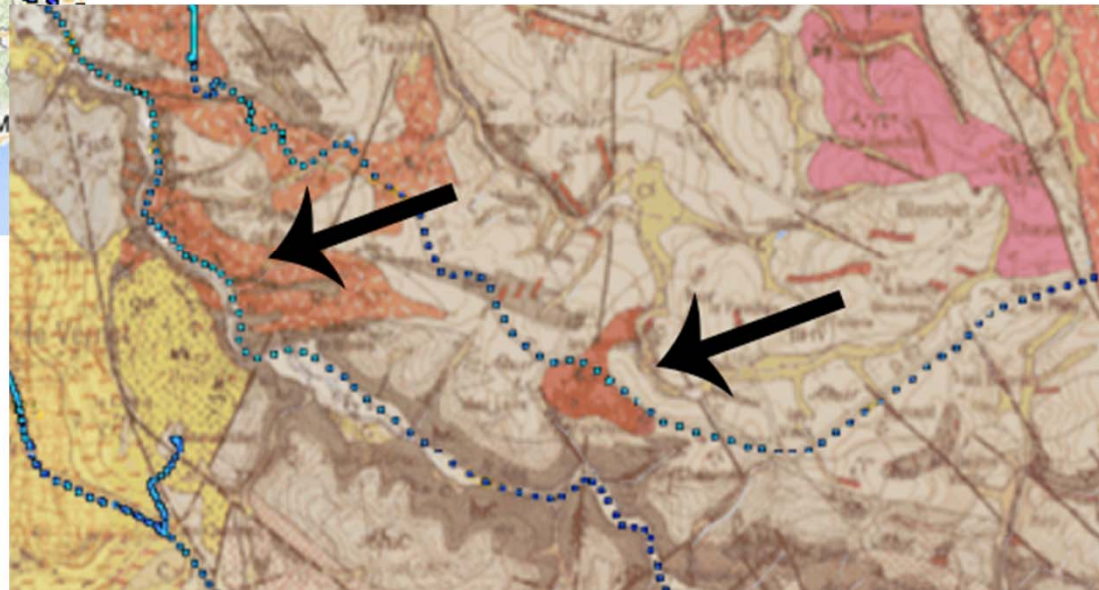
# The Assembling of the SAFECAST



# Mapping of Background Radioactivity



SAFECAST Data Map



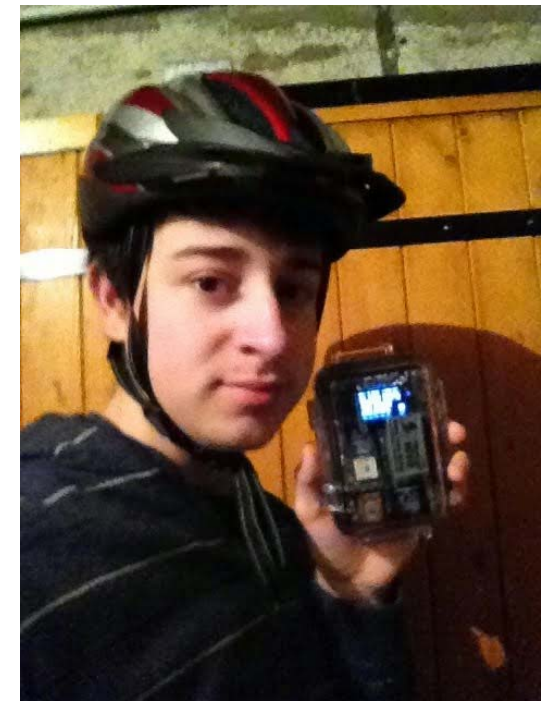
Geological Map of Auvergne



# Level of radioactivity higher in Crowded Areas

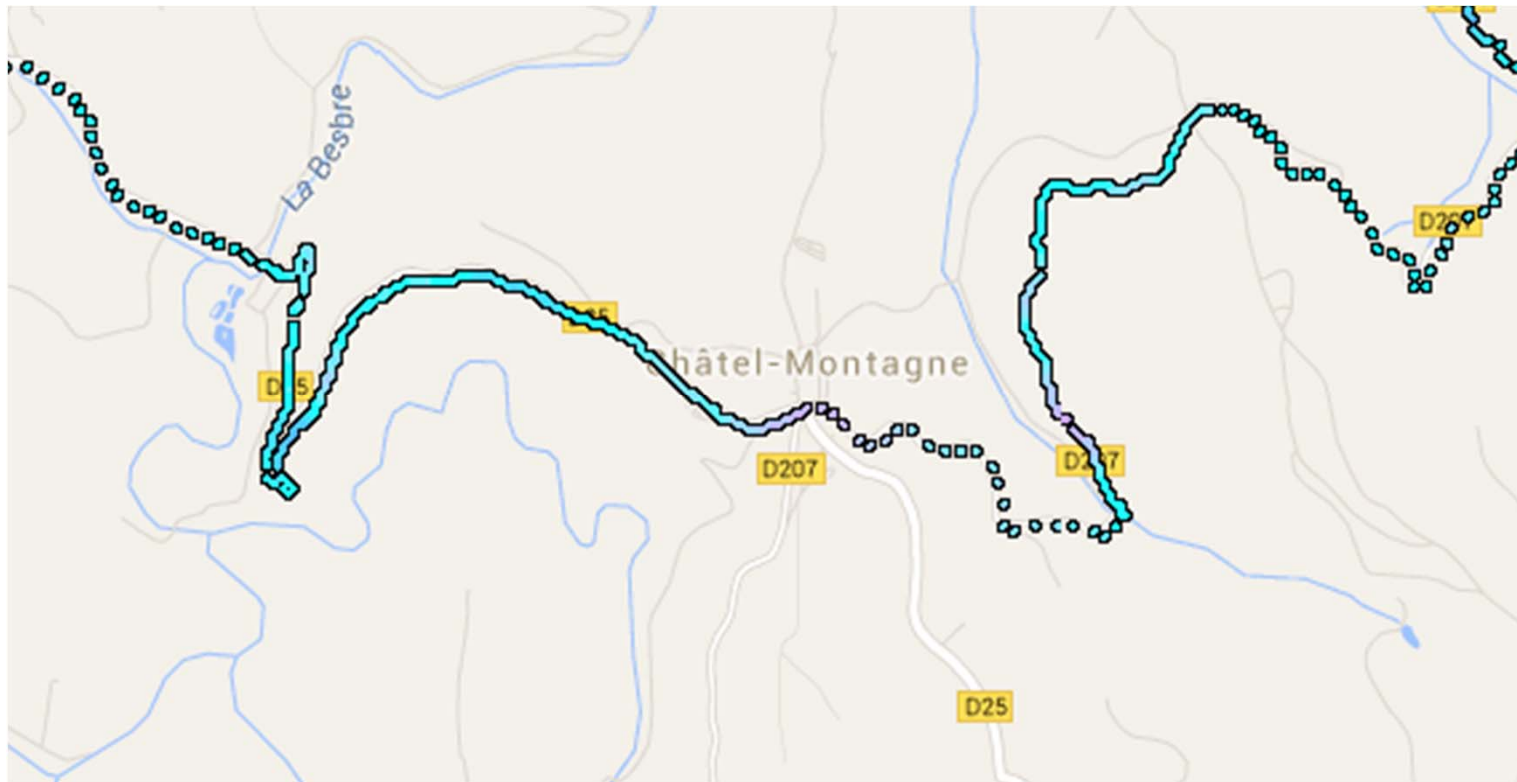


*Small town in the Auvergne Region*





# Radioactive Hot Spot



Hot spot in the small Town : Châtel-Montagne

# SAFECAST



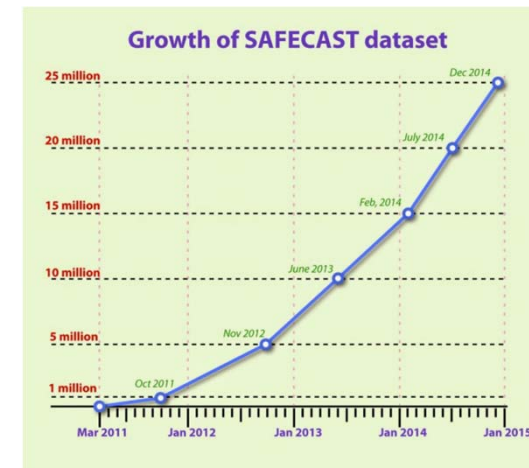
Great Team Work



The SAFECAST Device



The Japanese Radiation Map



Growth of SAFECAST dataset

# Our Blog: radioactivite-auvergne

Comment mesurer la radioactivité naturelle ?

Classique Carte Magazine Mosaïque Barre Latérale Instantané Chronologie

22

Entrée	Pages vues
France	645
États-Unis	495
Japon	44
Maroc	12
Taiwan	6
Royaume-Uni	5
Suisse	2
Indonésie	2
Belgique	1
Macao	1

Modèle Dynamic Views. Fourni par [Blogger](#).



Thank you for your Attention

Welcome to Auvergne

