



Astronomy ESFRI & Research Infrastructure Cluster
ASTERICS - 653477



Citizen Science in the classroom: problems and requirements

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Citizen Science

- public engagement in scientific research
- more data collection and data analysis than the scientists could do alone
- partnership between inexperienced citizens and scientists
- citizens are volunteers

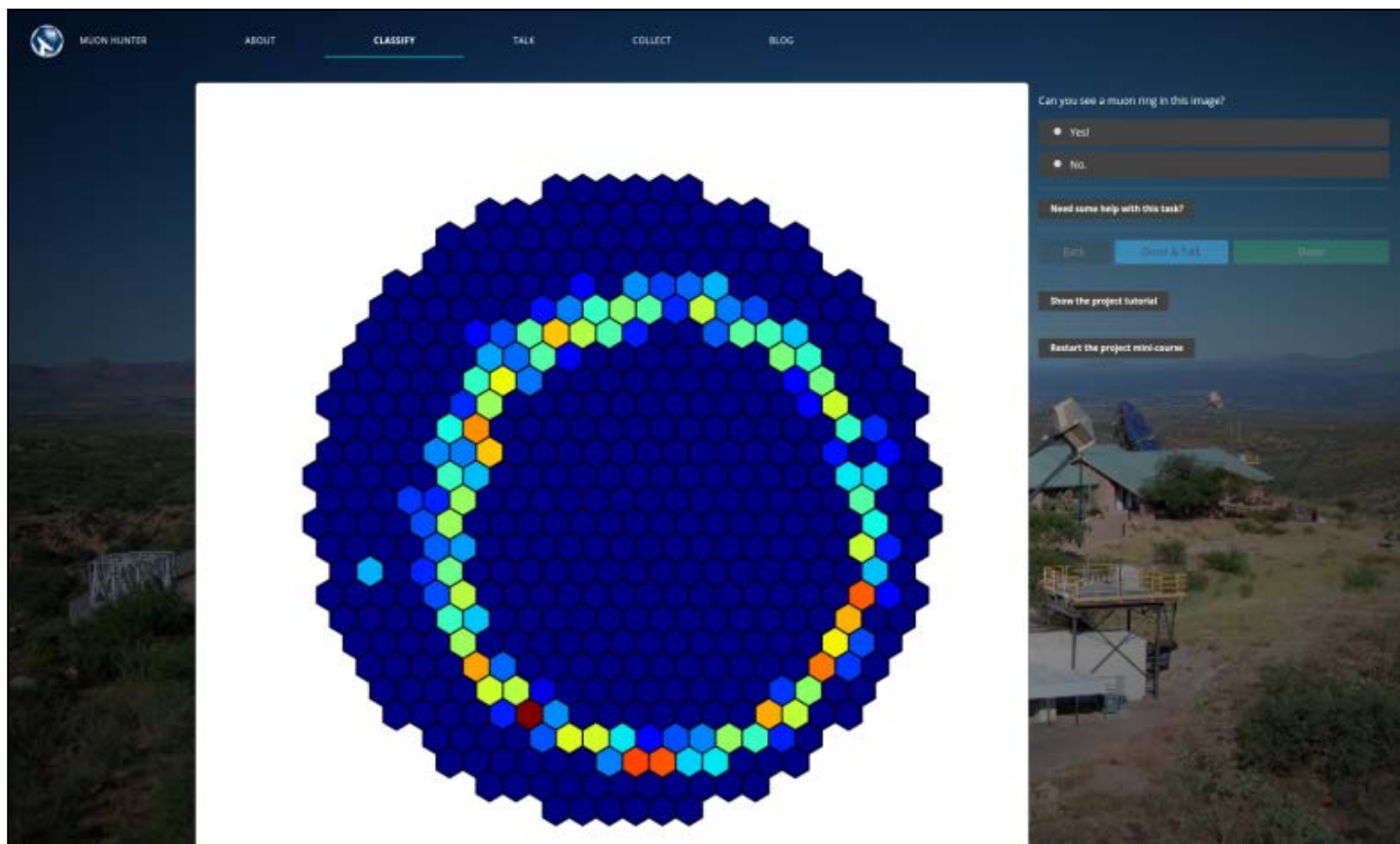
Citizen Science @school

- alternative to traditional science education
- may be beneficial for both parties involved
- creates an environment in the classroom that encourages students participation in science
- students learn analyzing data and interpreting their own observations

Citizen Science @school

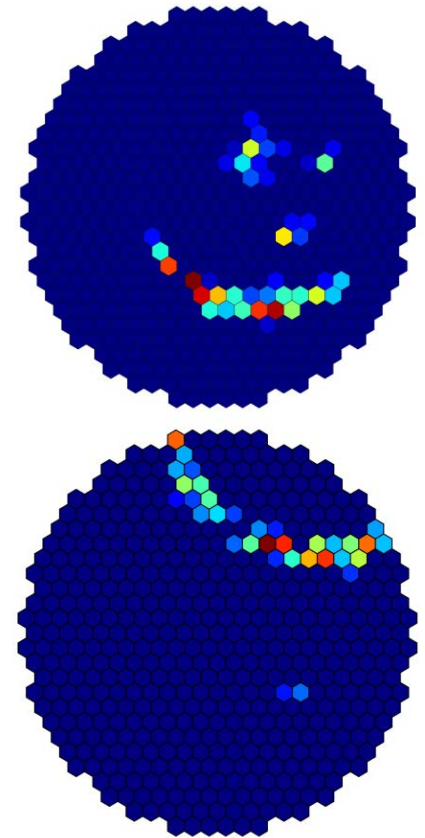
- compromise between the research value and the educational value of the project
- avoid getting pupils to work with anything too specialized for them: dedicated surveys
- the quality of the experiment and its data should not be compromised, but the learning objectives for the students must be the priority

Muon hunter CS experiment



Muon hunter CS experiment

- muons leave a distinctive ring-like shape making them obvious to the human eye
- but incomplete or truncated rings can appear very gamma-ray-like to automatic analysis algorithms
- help is needed to identify images that contain muon rings so computers can learn to better identify such images



CS @school: the Galilei experience

- 4 students of the last year (17-18 yr old)
- one afternoon (4hr) during the whole school yr
- first part of the program:
 - selected lectures on basic astronomy
 - familiarize with VO tools and measures in astronomy
- second part of the program:
 - Muon hunting

CS @school: problems

- schools need long lasting projects
- teacher's lack of experience in science
- experiment theme too difficult
- english is not enough

CS @school: how-to

- best way to start a CS project is to find a scientist interested in working with school
- develop the CS experiment together with some teachers and EPO experts
- provide support and training material for users (demos, videos, lessons, ...)

CS @school: further requirements

- avoid starting from scratch at each new school year
- find motivated teachers with the appropriate scientific background
- long enough commitment to allow development of a community
- translations! @MuonHunter2

Conclusions

successful citizen science projects in the classroom need:

- collaboration between scientists, teachers, EPO
- teacher training
- compromise between scientific goal and comprehensibility of the CS experiment
- long term commitment