

UNVEILING THE INVISIBLE UNIVERSE

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INAF - Institute of Radio Astronomy
Outreach within RadioNet
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THE VISITOR CENTRE "MARCELLO CECCARELLI"



OUTREACH ACTIVITIES AT THE VC

- *Lectures and guided tours for schools during the week (2 days)*
- *Opening for the general public on week ends (with or without the guided tour)*

Wednesday and Friday	9:00 – 12:30	Schools
Saturday	15-18	General public (with reservation)
Sunday	15-18	General public

Total number of visitors: 6k/year

OUTREACH ACTIVITIES AT THE VC

- *Collaboration with teachers*
- *Public cultural events (in and out the VC)*
- *New exhibits and ways of communication for the general public*
- *New targets: dedicated activities for children*

OUR GUESTS

- *Students (from primary up to high schools)*
- *General public (organized groups, amateur astronomers, radio amateurs, occasional visitors)*
- *Children (both from schools and other contexts, both organized groups and occasional young visitors)*



OUR GOAL

IN GENERAL

- communicate the “scientific way of thinking” and the tentative nature of this (and any) research activity*
- show the necessity and effectiveness of a world-wide collaboration*

OUR GOAL

IN PARTICULAR

- *convey the difficulties in this kind of observation (e.g. resolution, electromagnetic pollution)*
- *answer basic questions about what radio telescopes are and how they work*

AND...

- *tell how we can study something that we can not see with our eyes*

WAYS OF ACTING

- *School students: lectures, teaching projects in collaboration with teachers*
- *General public: engage them by means of narration, try to make them aware of the existence of this science*
- *Children: make them "try" themselves through dedicated activities*

3 TO 5 YEAR OLD CHILDREN...

THE UNIVERSE IS SOMETHING THEY MERELY
HAVE HEARD OF

A TELESCOPE IS SOMETHING STRANGE

A RADIO TELESCOPE IS SOMETHING REALLY
WEIRD...

EXPERIENCING THE EXISTENCE OF INVISIBLE INFORMATION

(SENSE OF) HEARING
(WHO SPEAKS? HOW MANY?)

SMELL
(WHICH SMELL? WHAT IS IT?)

TOUCH
(COLD OR HOT?)

TASTE
(SWEET OR NOT?)

THE SCIENTIST



THE ASTRONOMER



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ENOUGH?

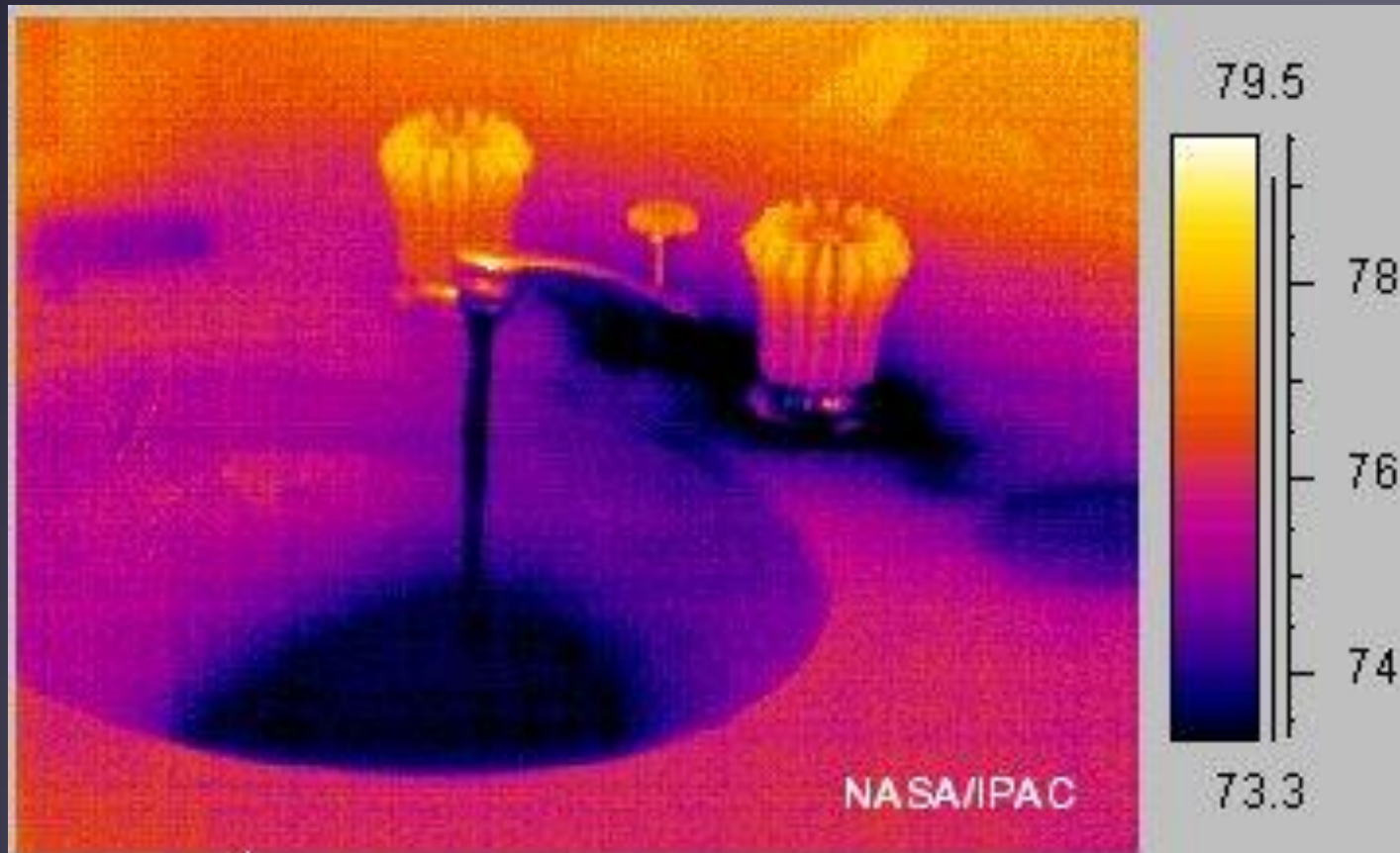
THERE IS ALSO "INVISIBLE"
INFORMATION,
WHICH OUR EYES ARE NOT ABLE
TO SEE DIRECTLY

COLD OR HOT WATER?

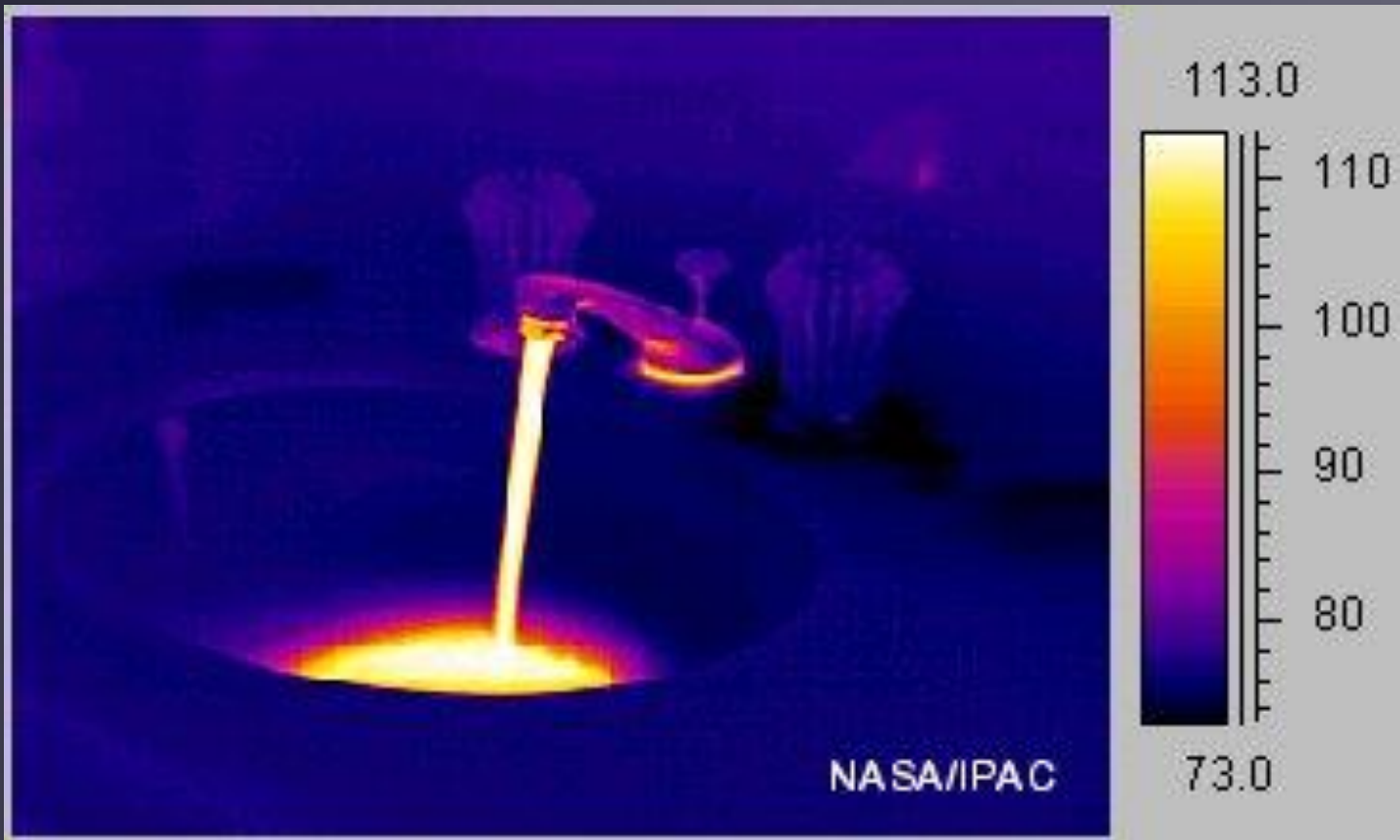


ALL WE NEED IS THE
"RIGHT EYES"...

DARK OR BRIGHT?



DARK OR BRIGHT?



"SPECIAL EYES"

Image Courtesy of Norbert Junkes

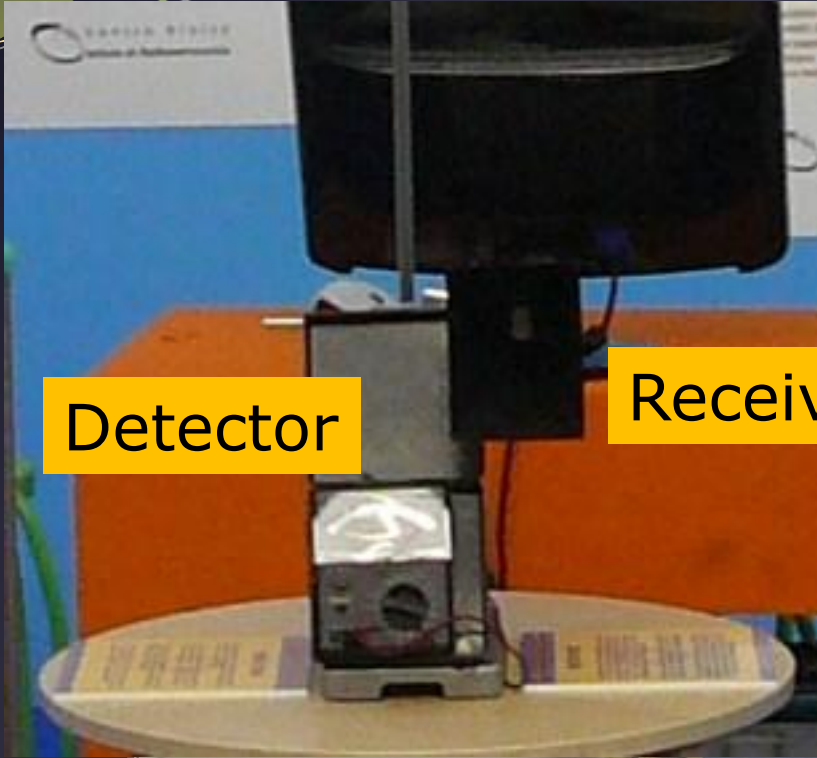
NORTHERN CROSS



5 TO 8 YEAR OLD CHILDREN

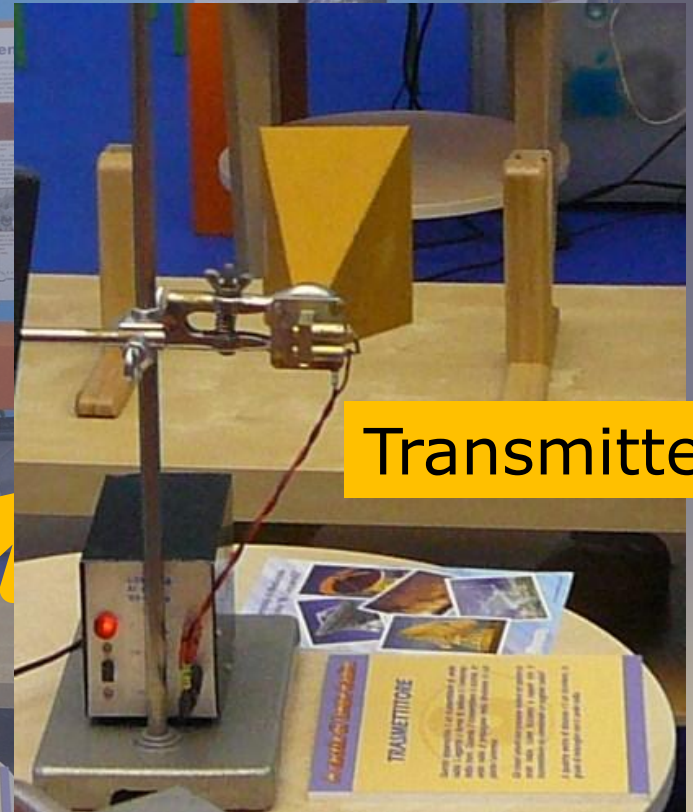
THEY KNOW MORE ABOUT THE
UNIVERSE

PERHAPS THEY HAVE ALREADY HEARD
ABOUT RADIO WAVES



Detector

Receiver



Transmitter

Trasmitter



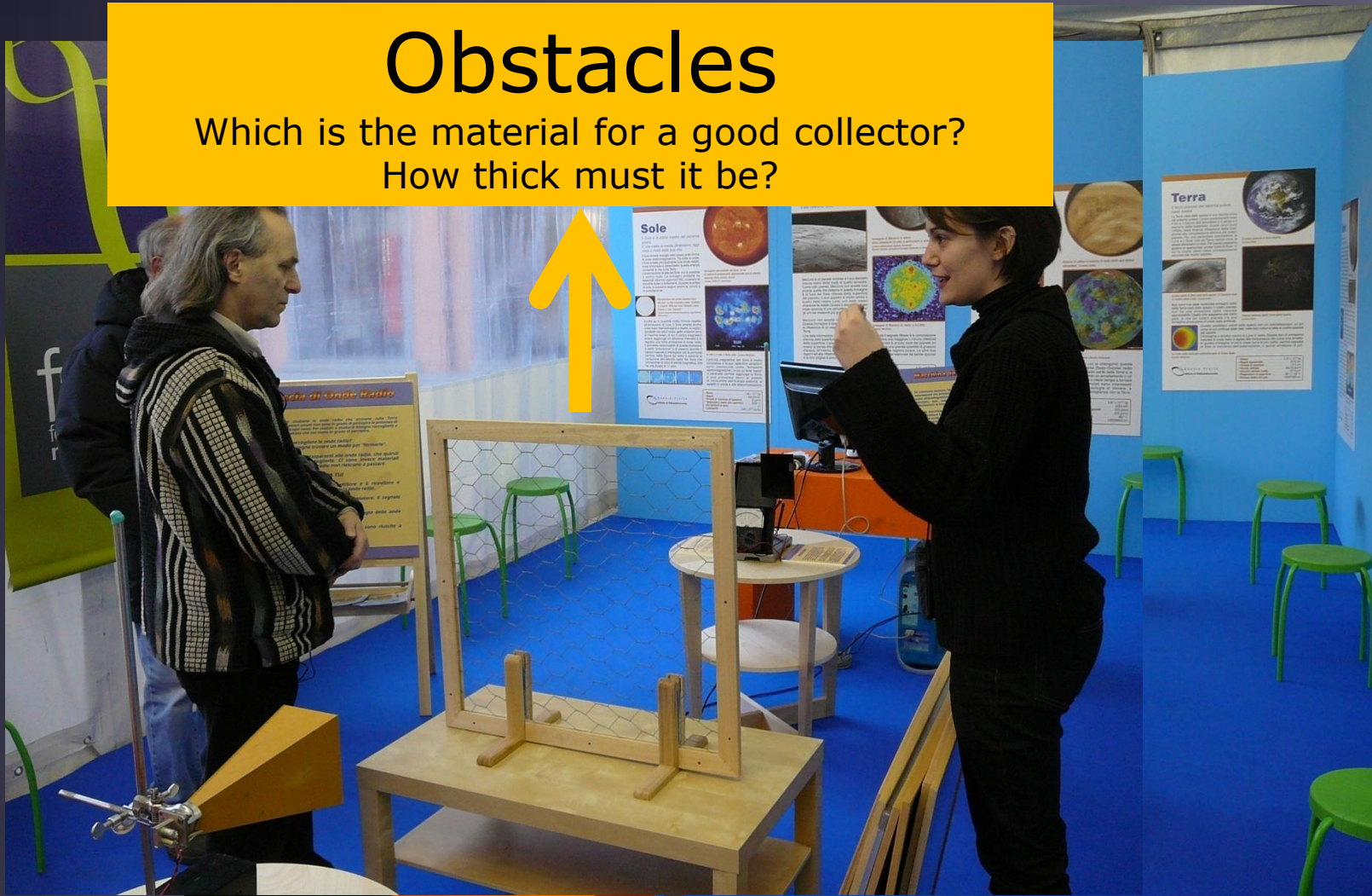
Detector's detectors



RADIO WAVE "HUNTERS"

Obstacles

Which is the material for a good collector?
How thick must it be?

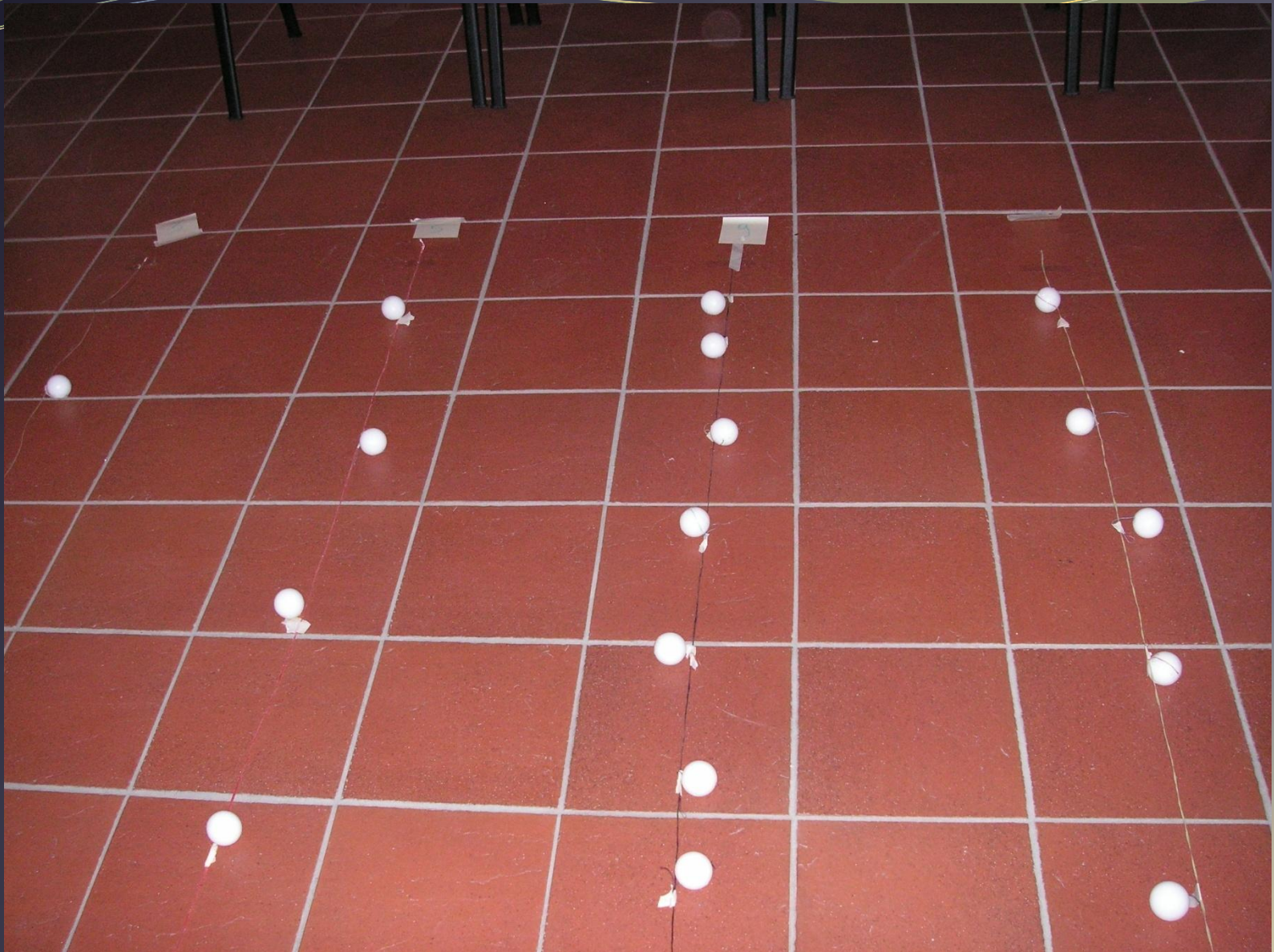




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CONTENTS

- Electromagnetic waves: messengers of information
- Different instruments for different waves
- Relevance of receivers and detectors: visualization techniques for what we cannot see

WORK IN PROGRESS

- Educational tools and projects
- Strong cooperation with teachers
- New hands-on exhibits
- 3D movie



WORK IN PROGRESS

- New web site with repository of pictures and educational materials
- New exhibition (less text, digital frames, both italian and english)
- Today at the telescope
- Exhibit with webcams showing EVN

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Thank you!