



# How Did the Higgs Boson Become a Rock Star?



REUTERS/David Moir



Arnaud Marsollier – Head of Press – Public Awareness of Research Infrastructures workshop, ESO, June 2015



# The simple answers:

- Because it is the most important discovery in particle physics of the last 50 years
- Because it is called the “God Particle”
- Because Higgs is as much difficult to find than the Higgs particle
- Because of black holes at the LHC

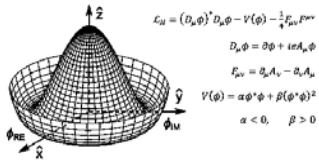
It's all about a long long story...



# The search of the Higgs boson



1964

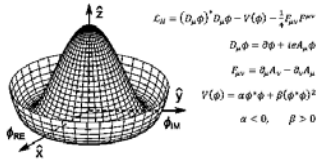


Higgs, Brout and Englert independently work on the Higgs mechanism

# The search of the Higgs boson



1964



$$\begin{aligned} \mathcal{L}_H &= (\partial_\mu \phi)^\dagger \partial_\mu \phi - V(\phi) - \frac{1}{4} F_{\mu\nu}^2 \\ D_\mu \phi &= \partial_\mu \phi + ieA_\mu \phi \\ F_{\mu\nu} &= \partial_\mu A_\nu - \partial_\nu A_\mu \\ V(\phi) &= \alpha \phi^\dagger \phi + \beta (\phi^\dagger \phi)^2 \\ \alpha &< 0, \quad \beta > 0 \end{aligned}$$

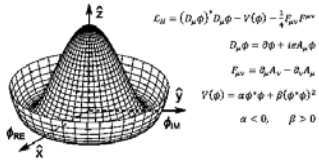
1989



Large Electron-Positron collider: First injection

# The search of the Higgs boson

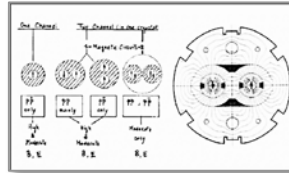
1964



1989



1994



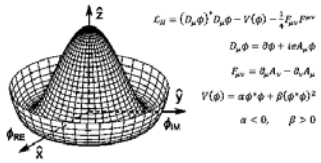
The LHC is approved



# The search of the Higgs boson



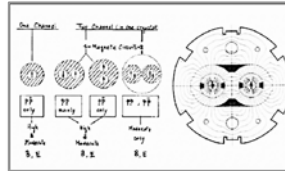
1964



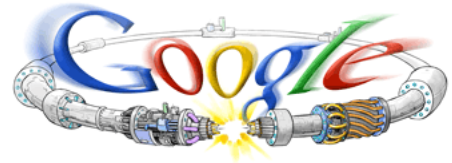
1989



1994



2008

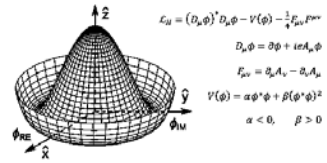


The LHC starts up

# The search of the Higgs boson



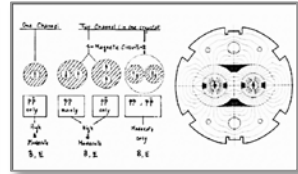
1964



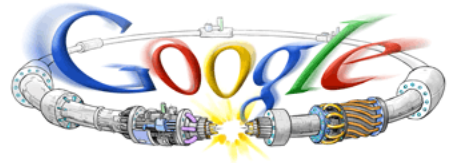
1989



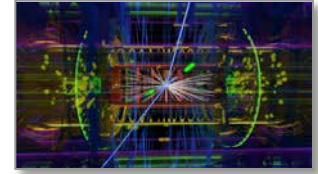
1994



2008



2012



ATLAS and CMS observe a particle consistent with the Higgs boson



And October 2013...



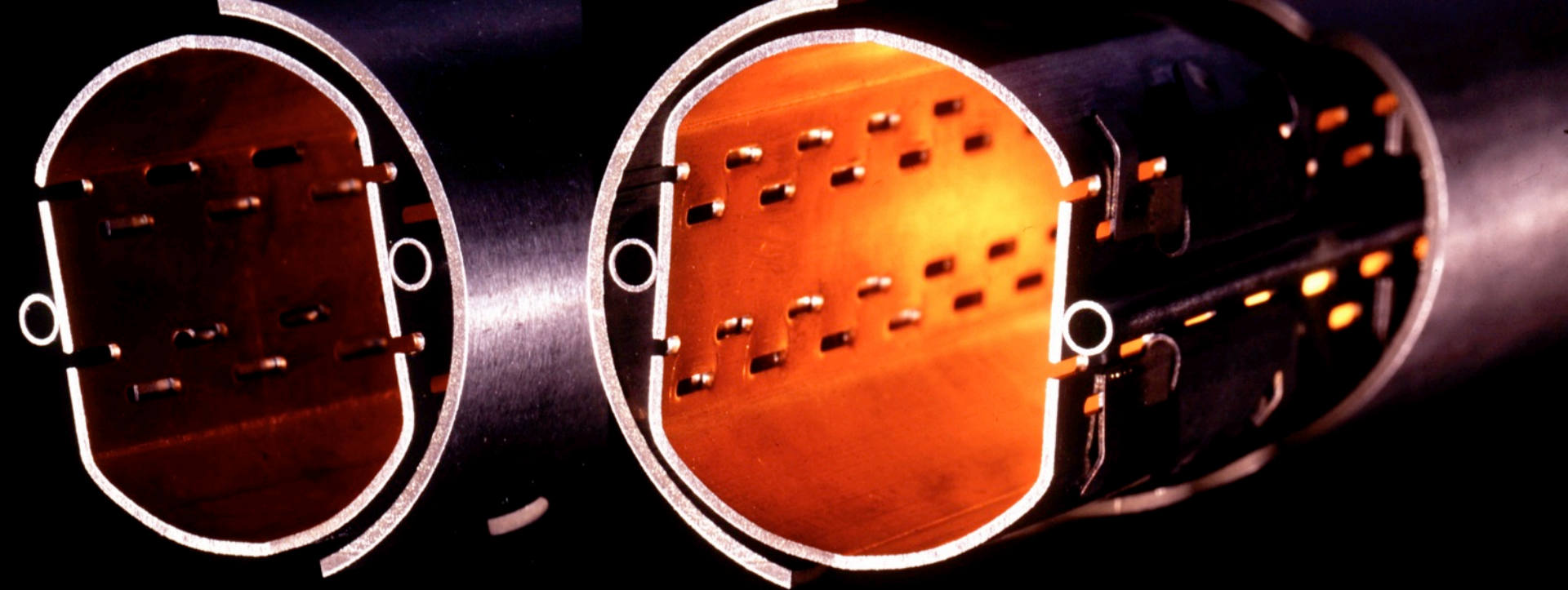


It's all about extremes...

LHC

The fastest  
racetrack  
on the planet...





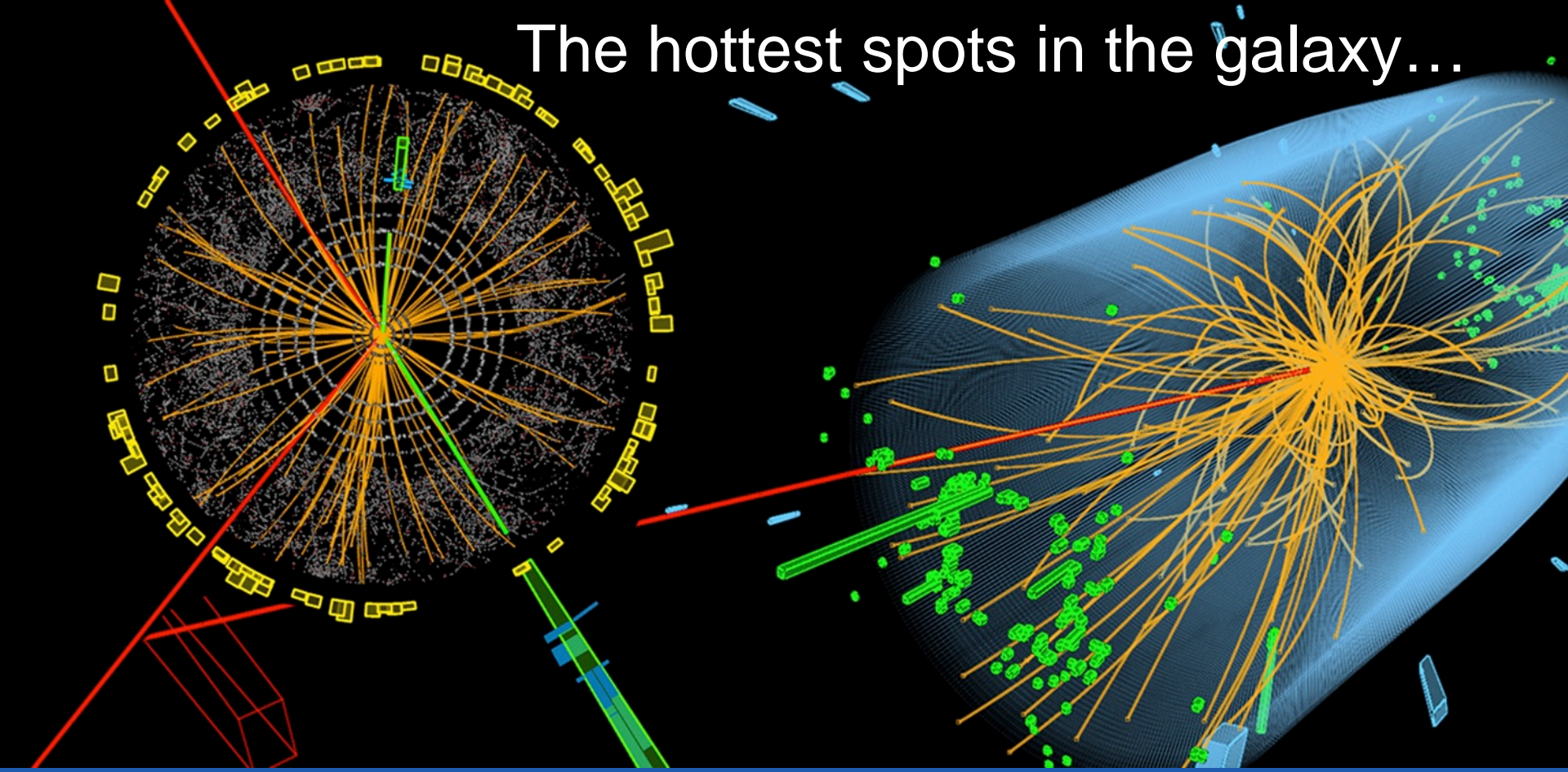
One of the emptiest  
places in the solar system.



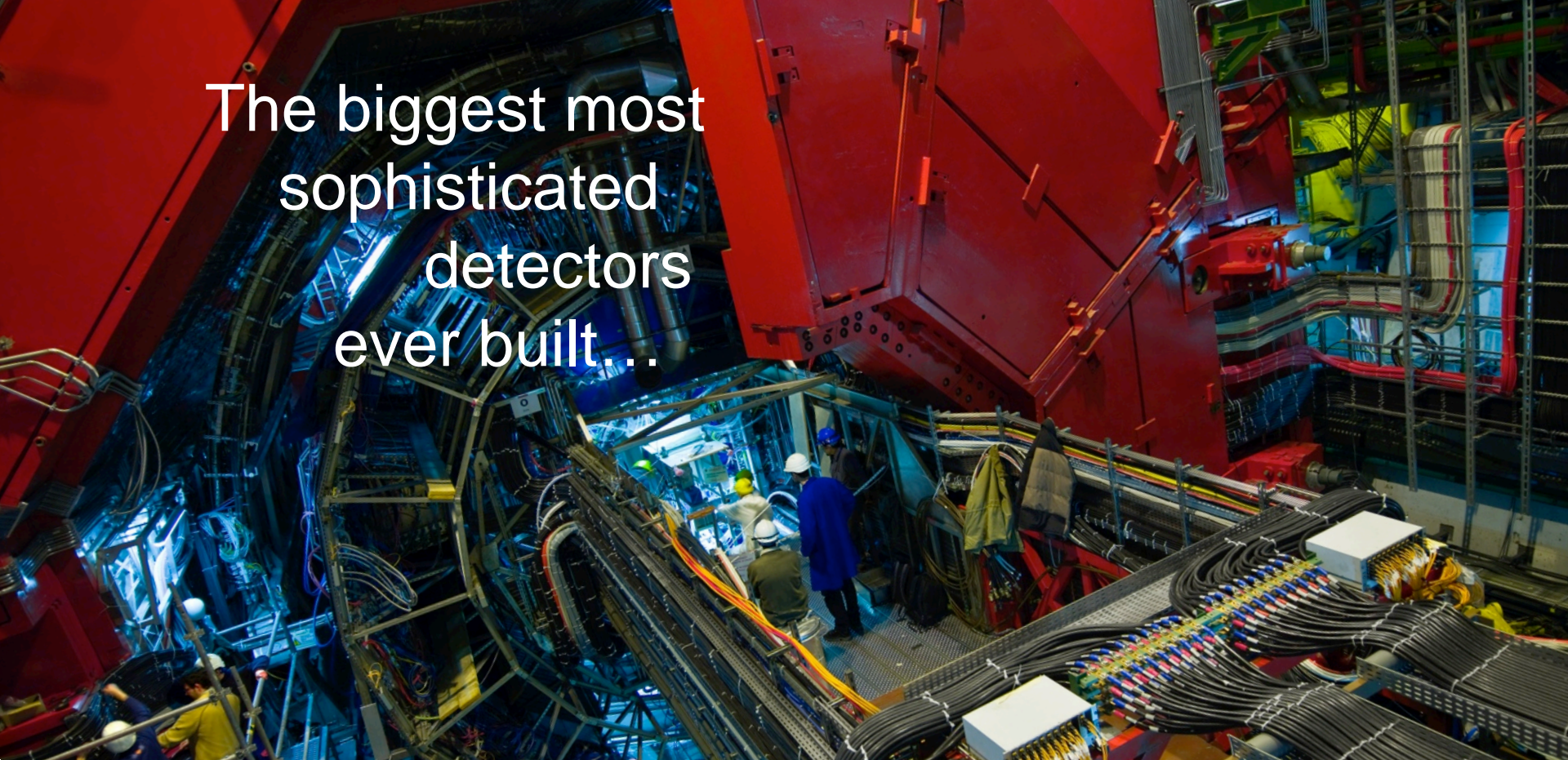
One of the  
coldest places in the universe...



# The hottest spots in the galaxy...



The biggest most  
sophisticated  
detectors  
ever built...





...Involving thousands of people.

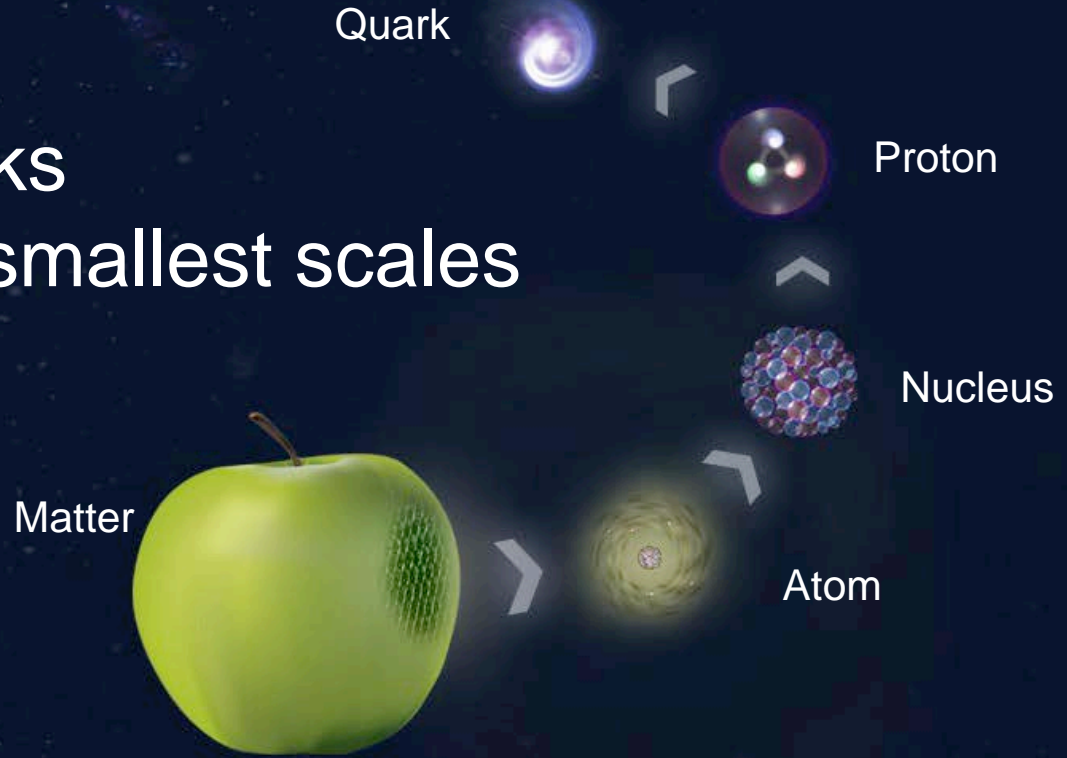
It is all about exciting  
science...

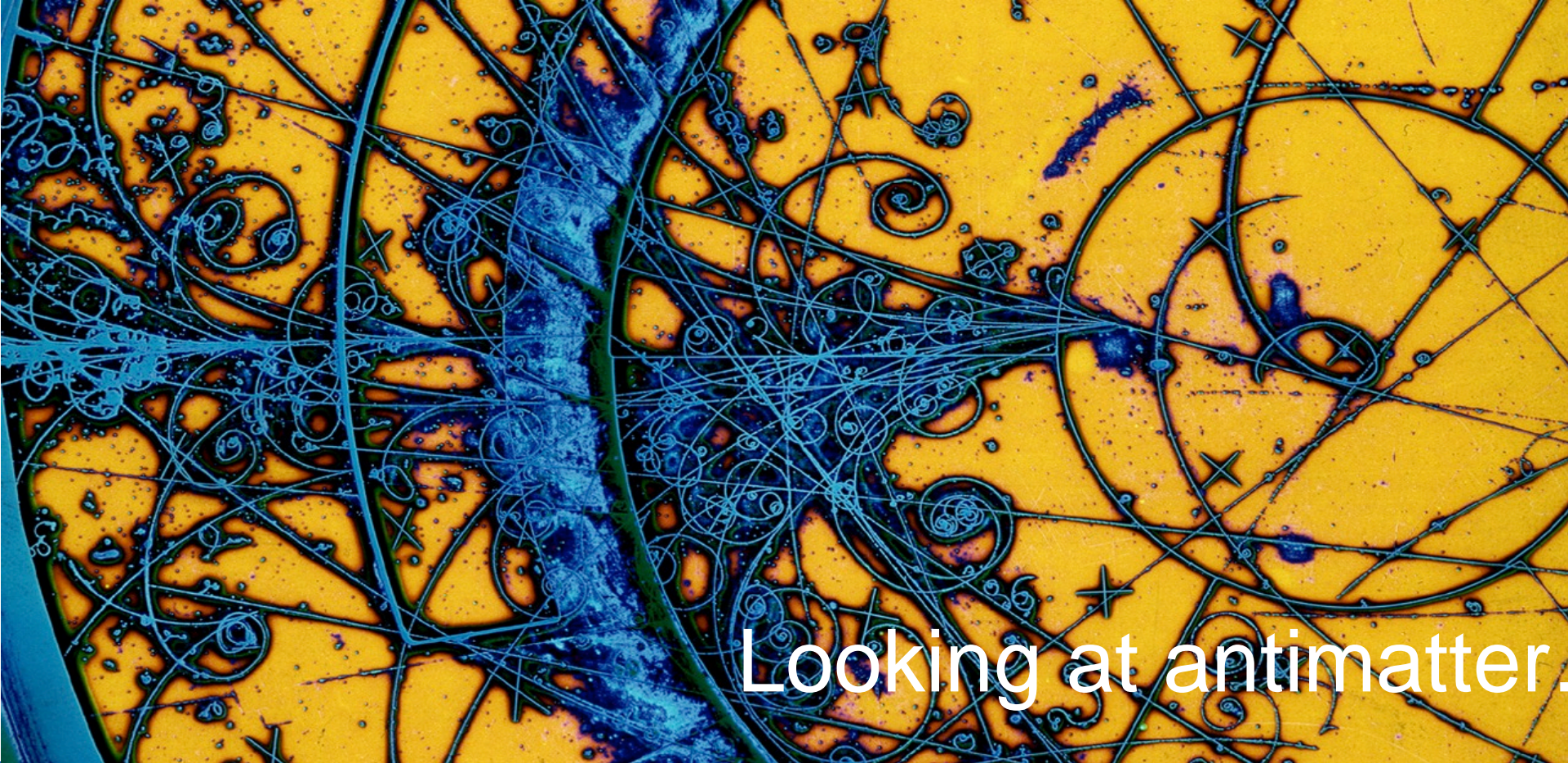




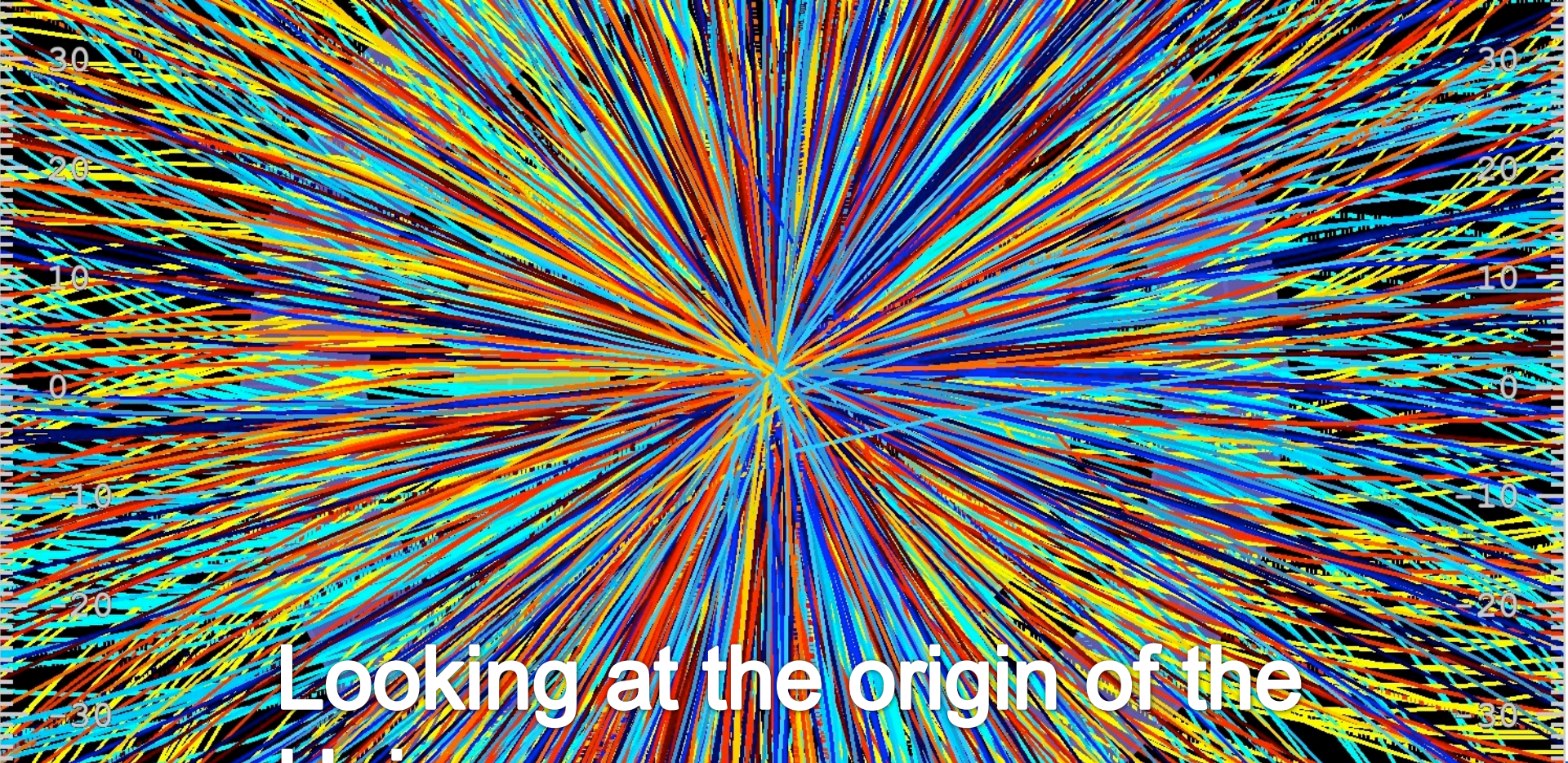
...to push back  
the frontiers of knowledge.

# Studying the blocks of matter at the smallest scales





Looking at antimatter.



# Looking at the origin of the Universe





# Probing Dark Matter...



It's all about hard work

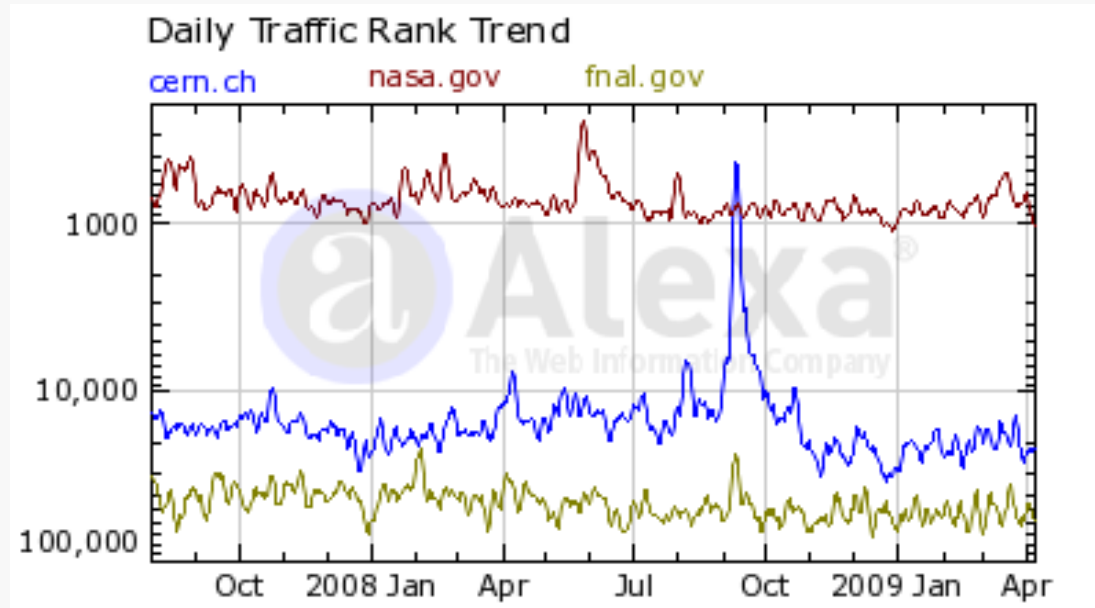
Media visits, visits and visits!

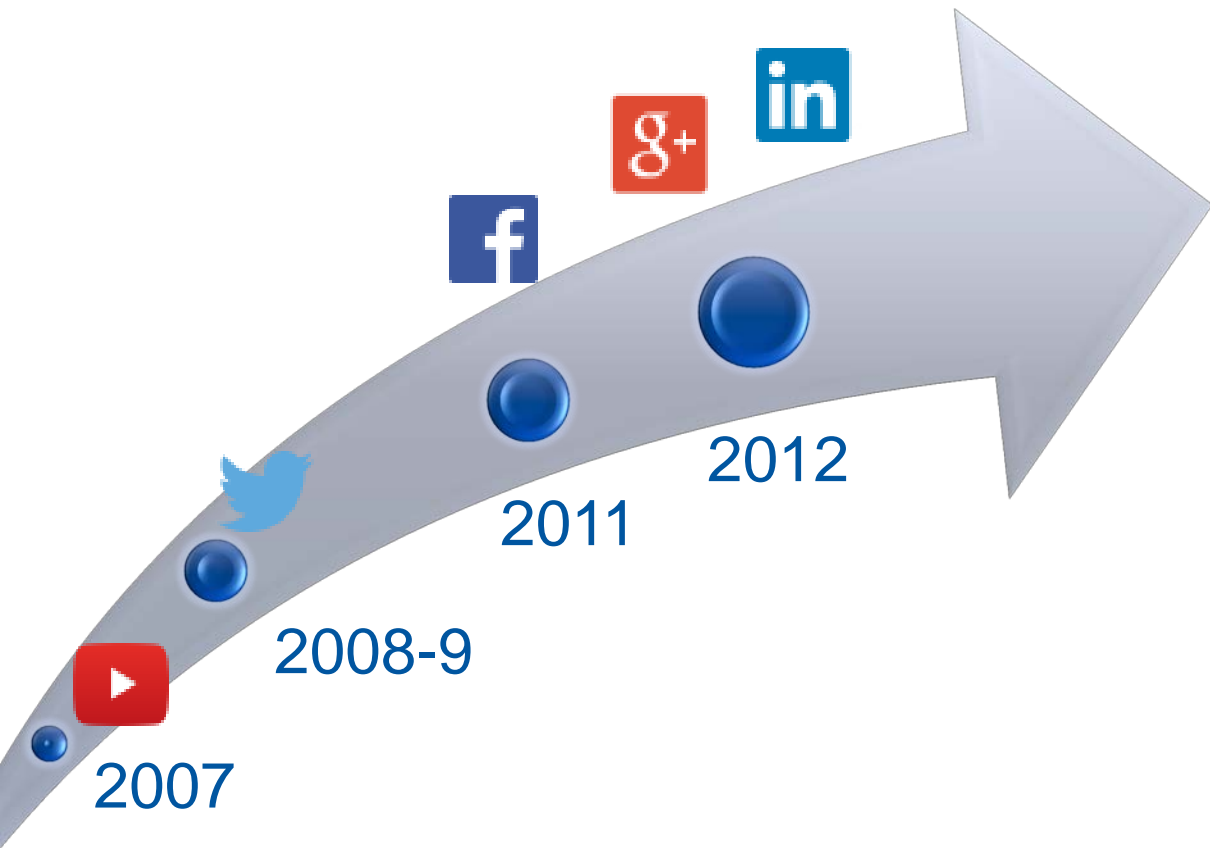




It is all about networks...

“New NASA”? Well, for a couple of days at least





CERN shared Angry Birds's photo.  
4 July 2012

Attention scientists: Avian intelligence suggests that the particle you're searching for is known as the PIGGS Boson!

THE PIGGS BOSON

Like · Comment · Share

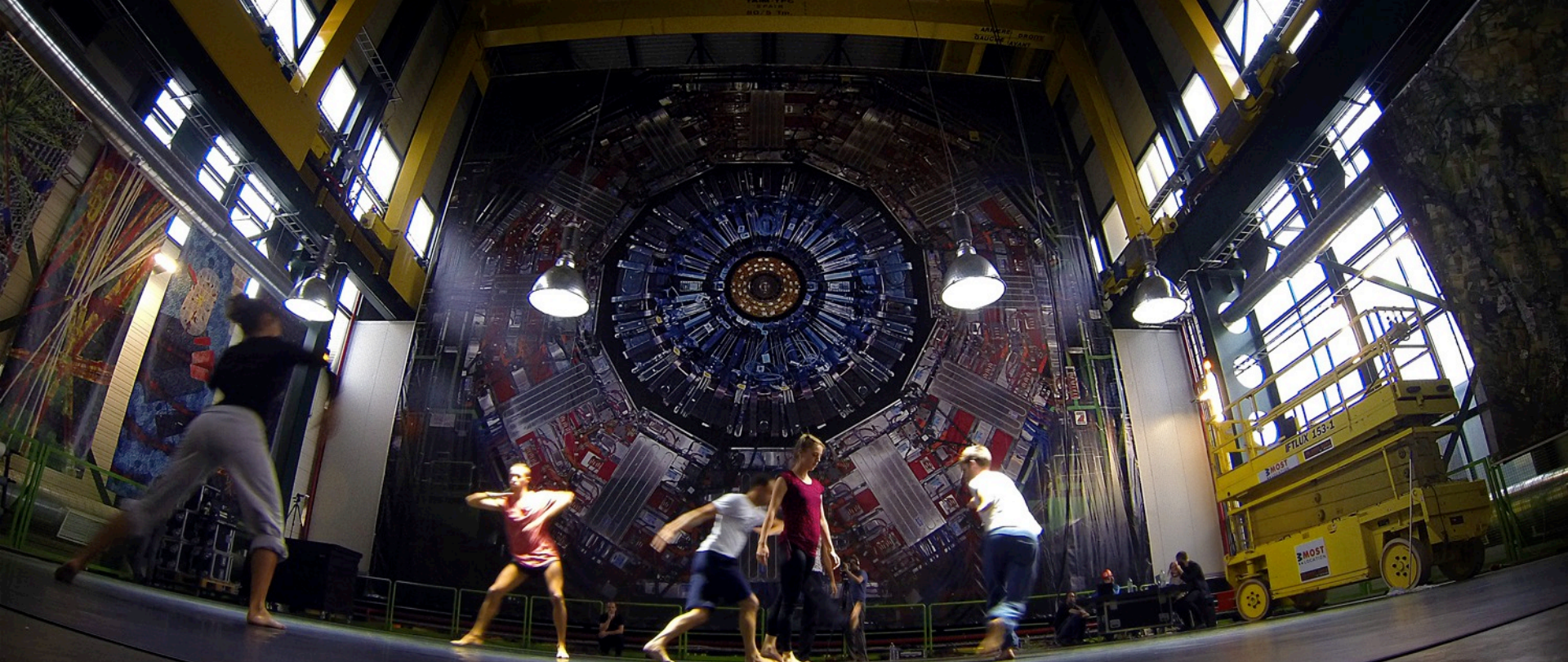
3,798 197 1,486

107,766 people saw this post

Boost Post

...bringing hype to the lab!





It's all about engaging with new audiences.



... and seize opportunities



# A few key points

- Be open – Share – Engage!
- Develop – Organize & Work with your networks
- Build your story / audiences with long term view
- Science is exciting and fun...
- Make it live: 2.0 offers many new opportunities
- Good stories are not always science-related...
- ...and sometimes even not triggered by yourself!

