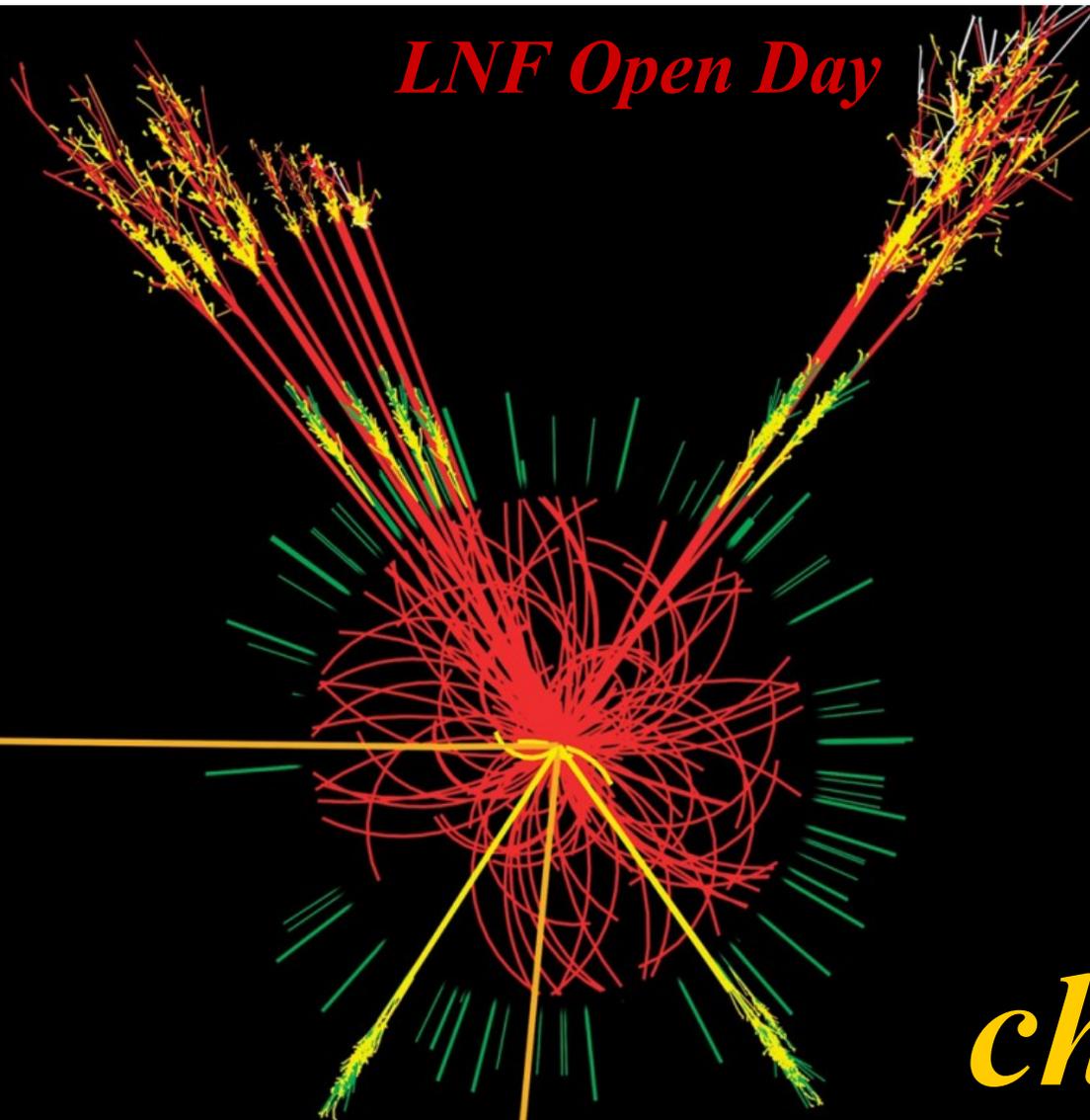


*LNF Open Day*

*22 aprile 2013*



*Ma a  
che serve il  
bosone di Higgs?*

*Barbara Sciascia LNF-INFN*

# *Galleggia o non galleggia?*



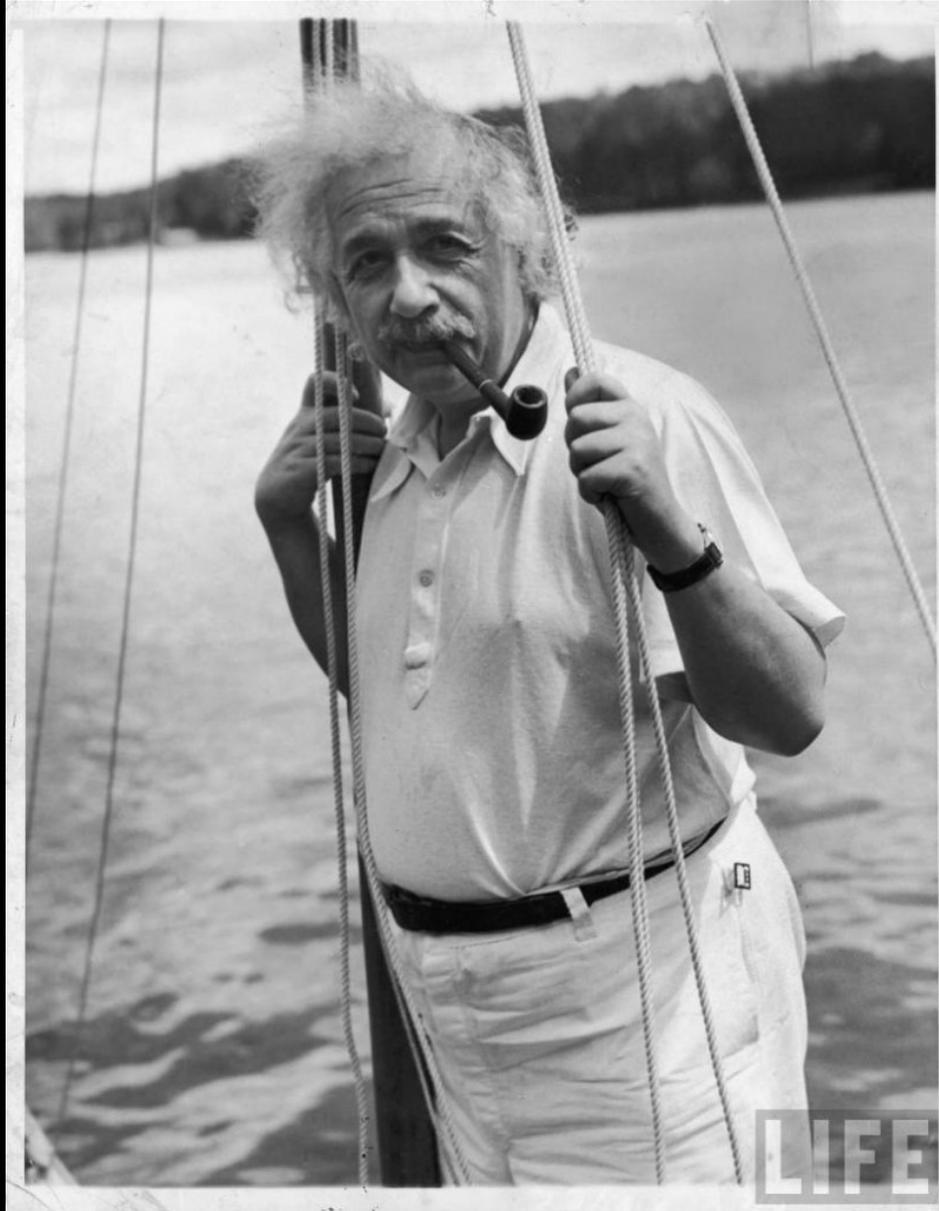
- Barbara Sciascia (INFN) - LNF Open Day, 22 aprile 2013



**- Barbara Sciascia (INFN) - LNF Open Day, 22 aprile 2013**

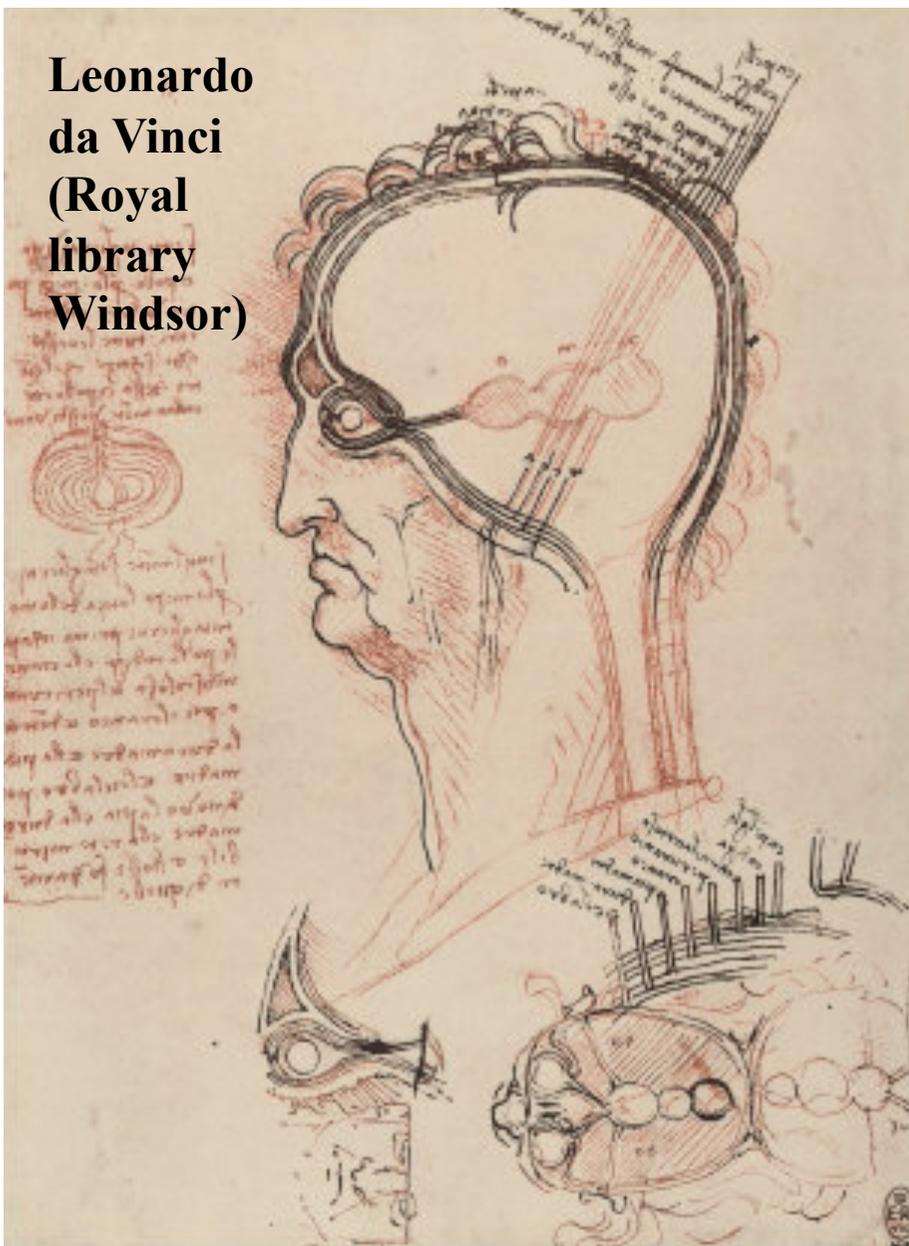


- Barbara Sciascia (INFN) - LNF Open Day, 22 aprile 2013



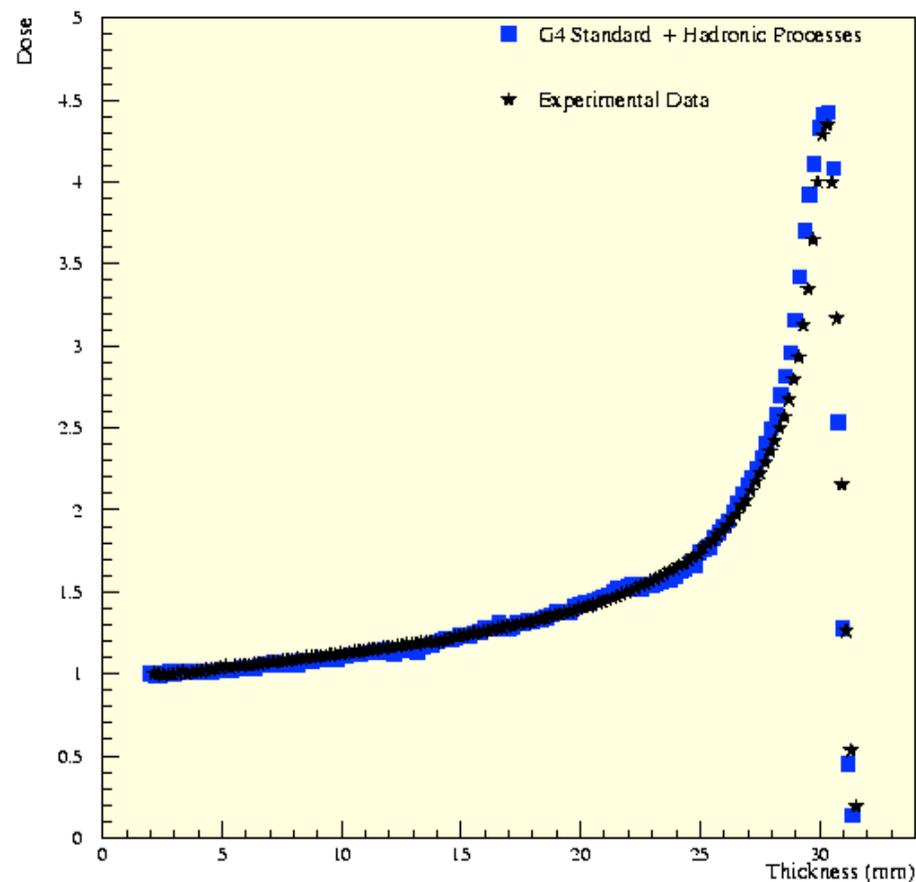
*Sono solo un  
uomo curioso...*

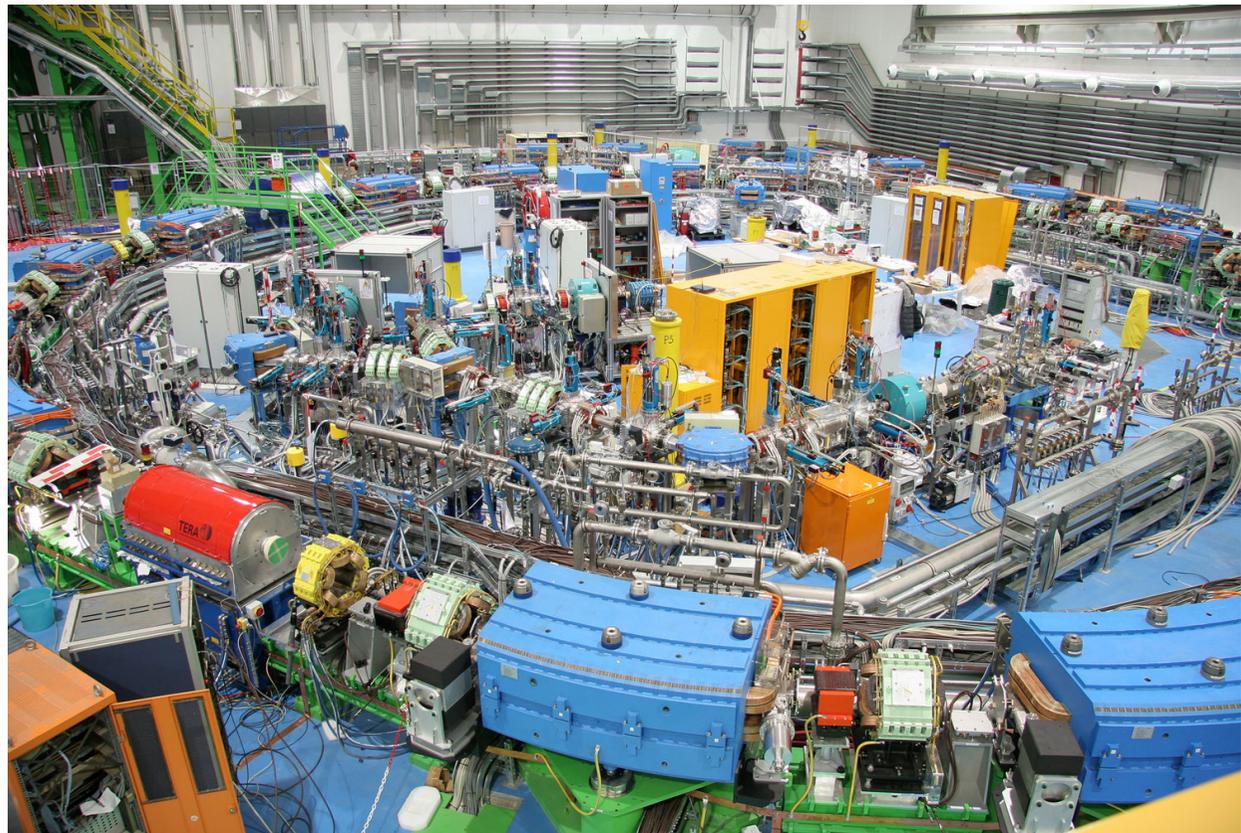
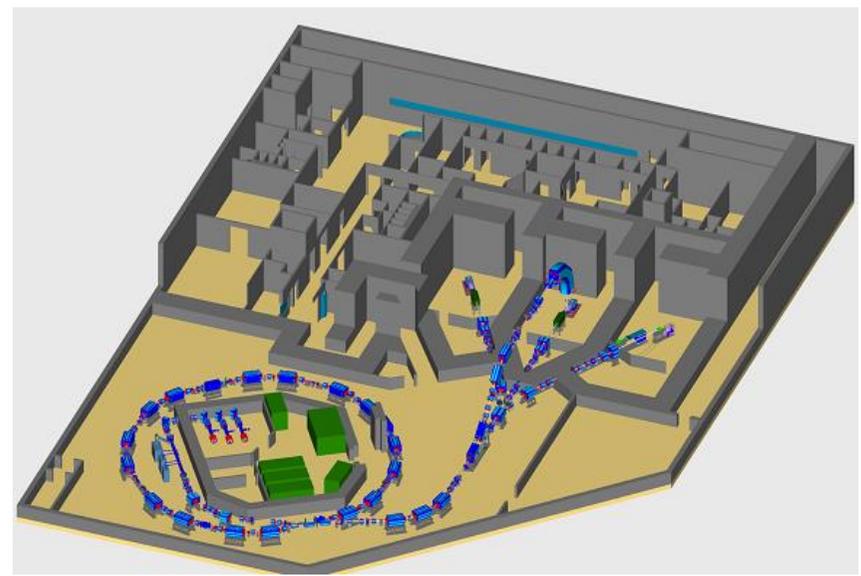
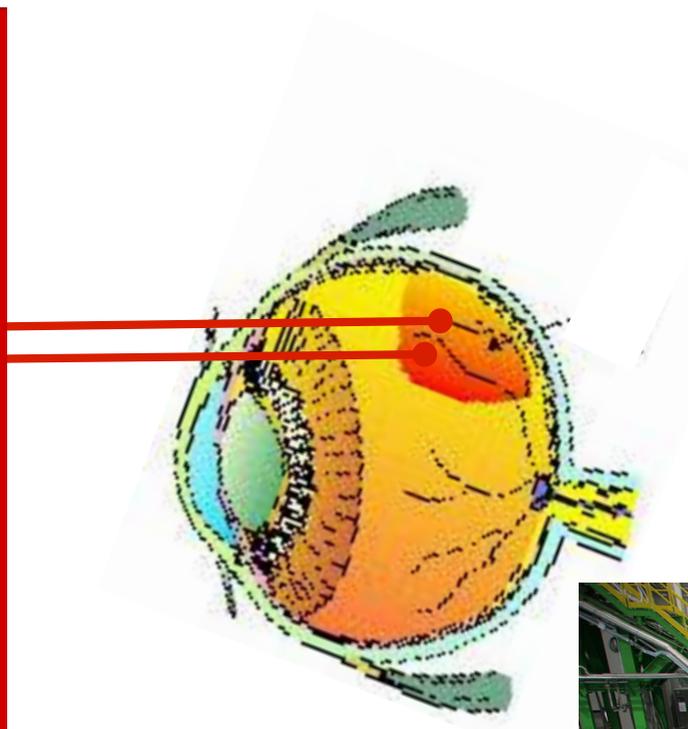
Leonardo  
da Vinci  
(Royal  
library  
Windsor)



*Ostinatamente  
curiosi...*

Protons - Bragg Peak - Water

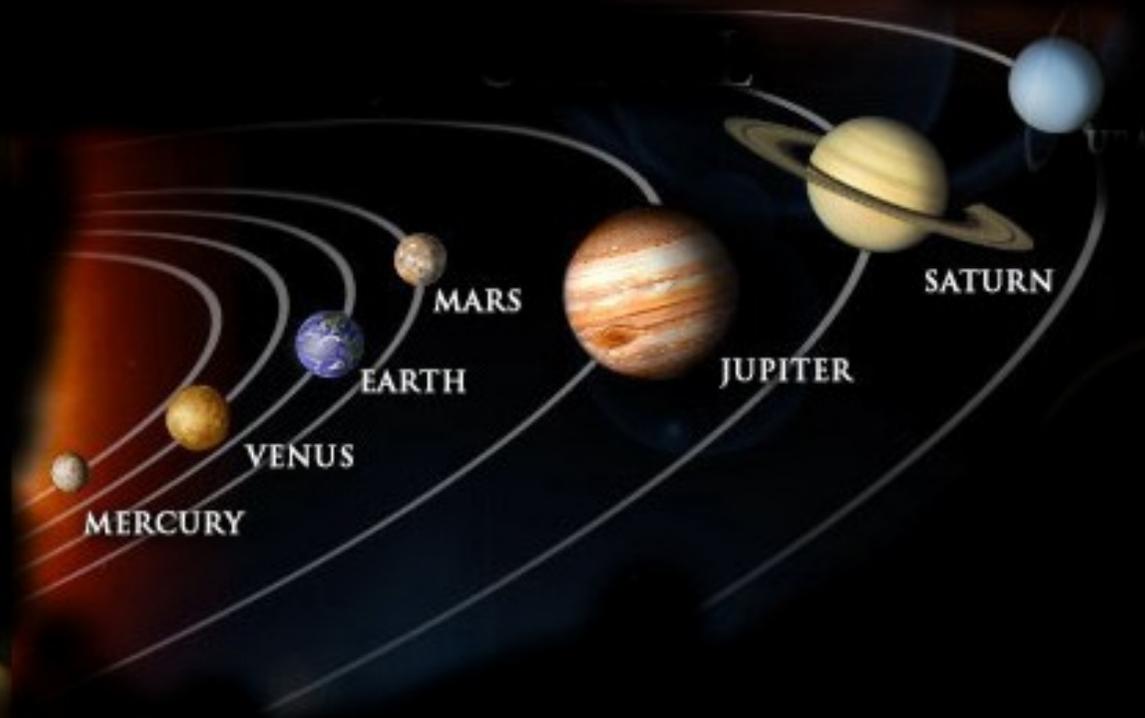




# *Tycho Brahe*

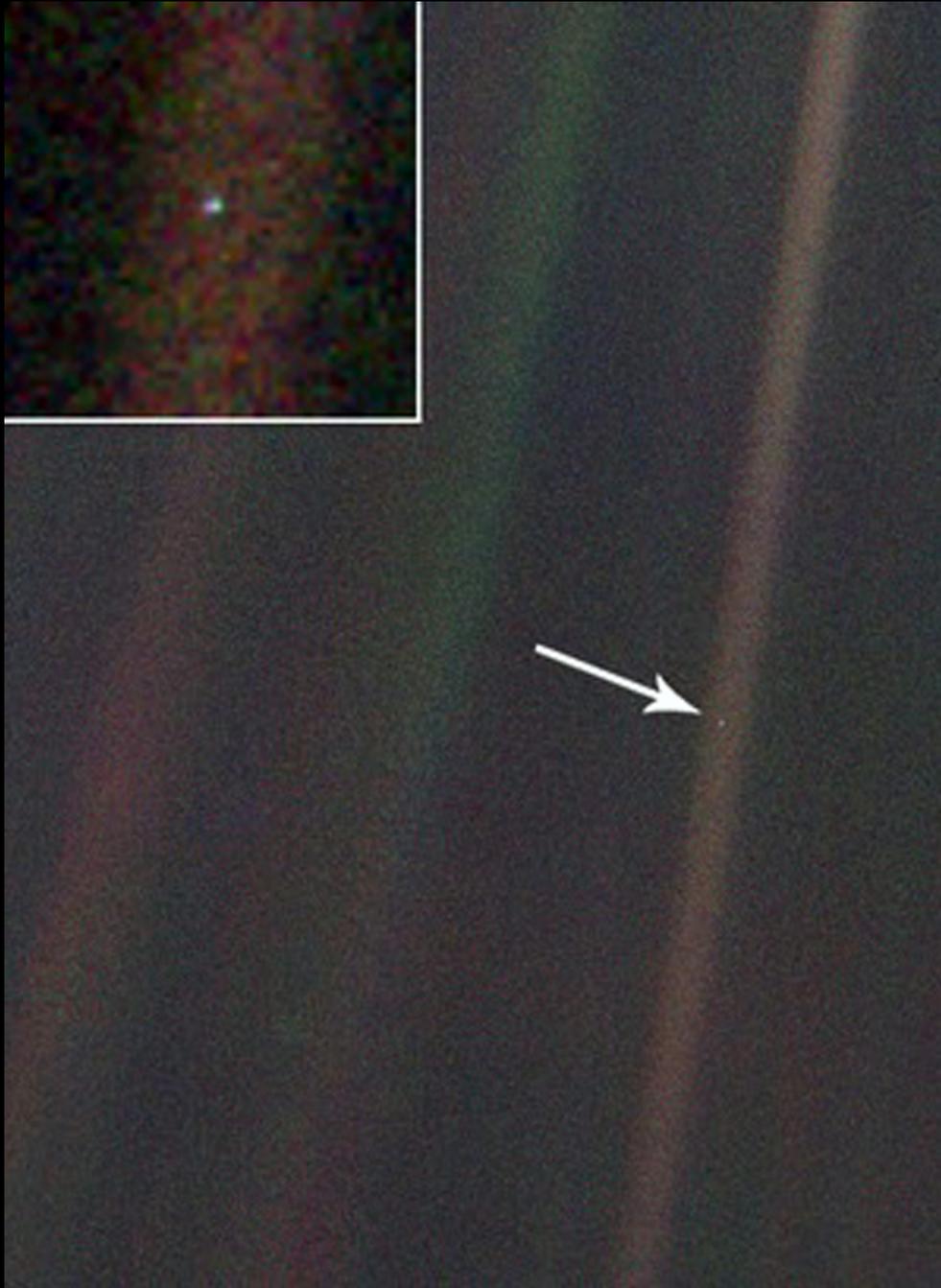


# *Johannes Kepler*





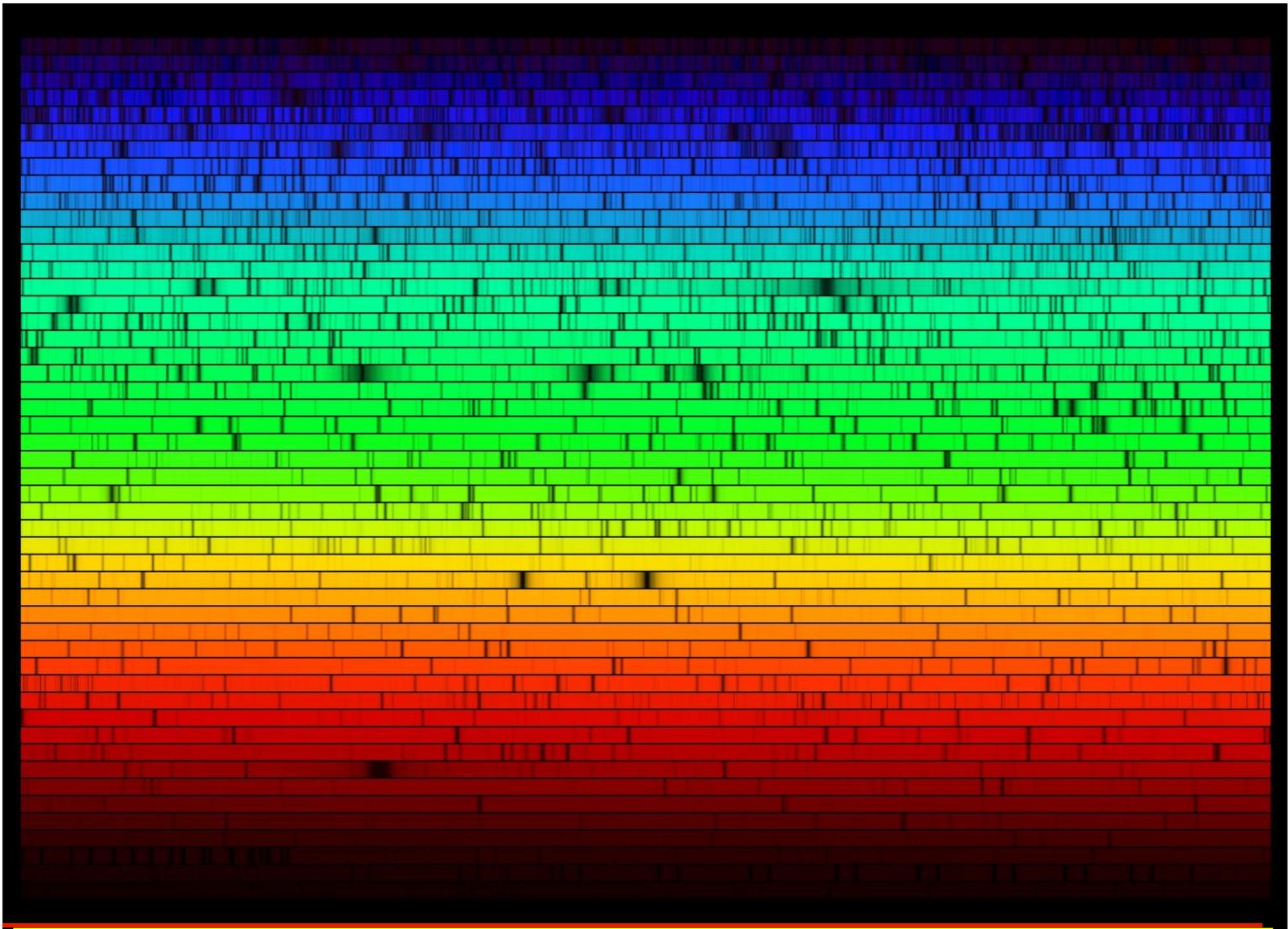
*Newton*



# *Tra teoria ed esperimento*







- Barbara Sciascia (INFN) - LNF Open Day, 22 aprile 2013



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- Barbara Sciascia (INFN) - LNF Open Day, 22 aprile 2013

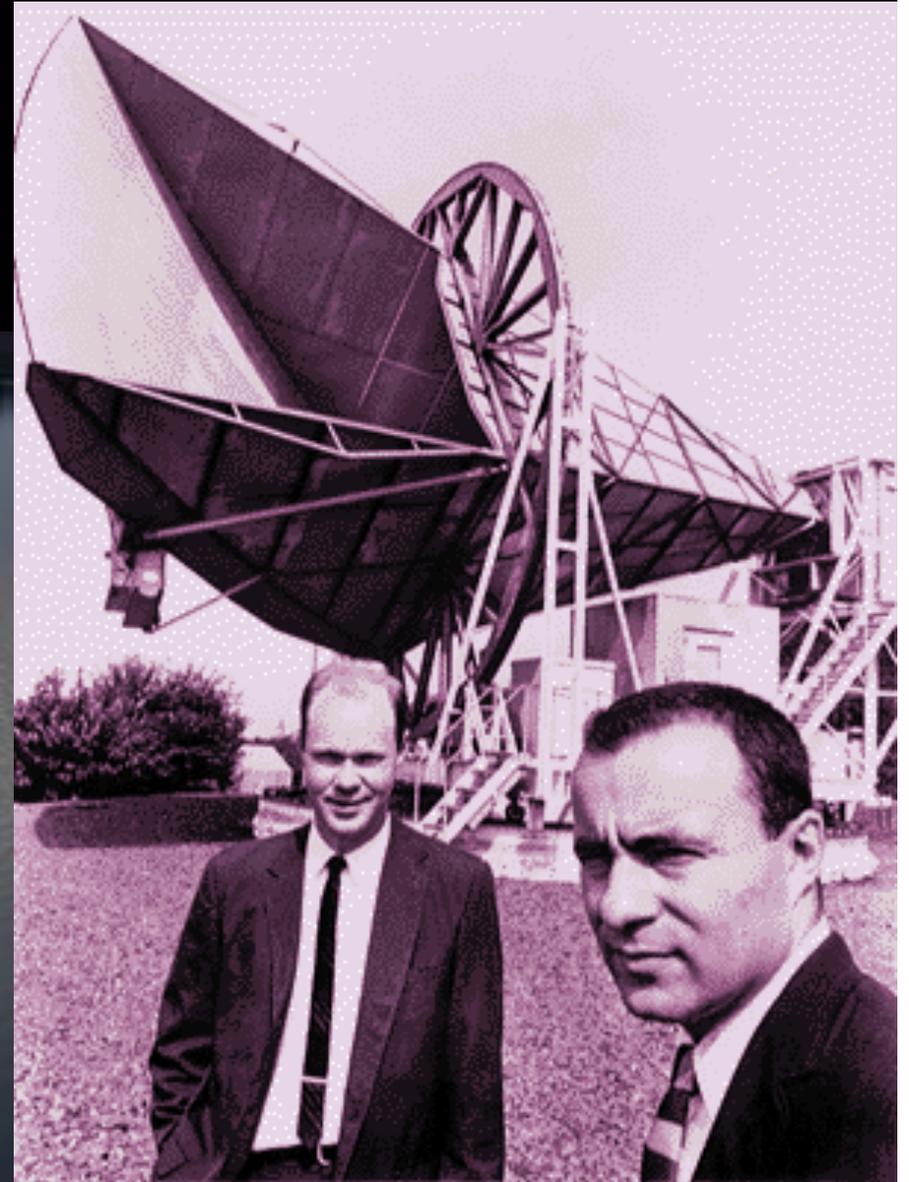


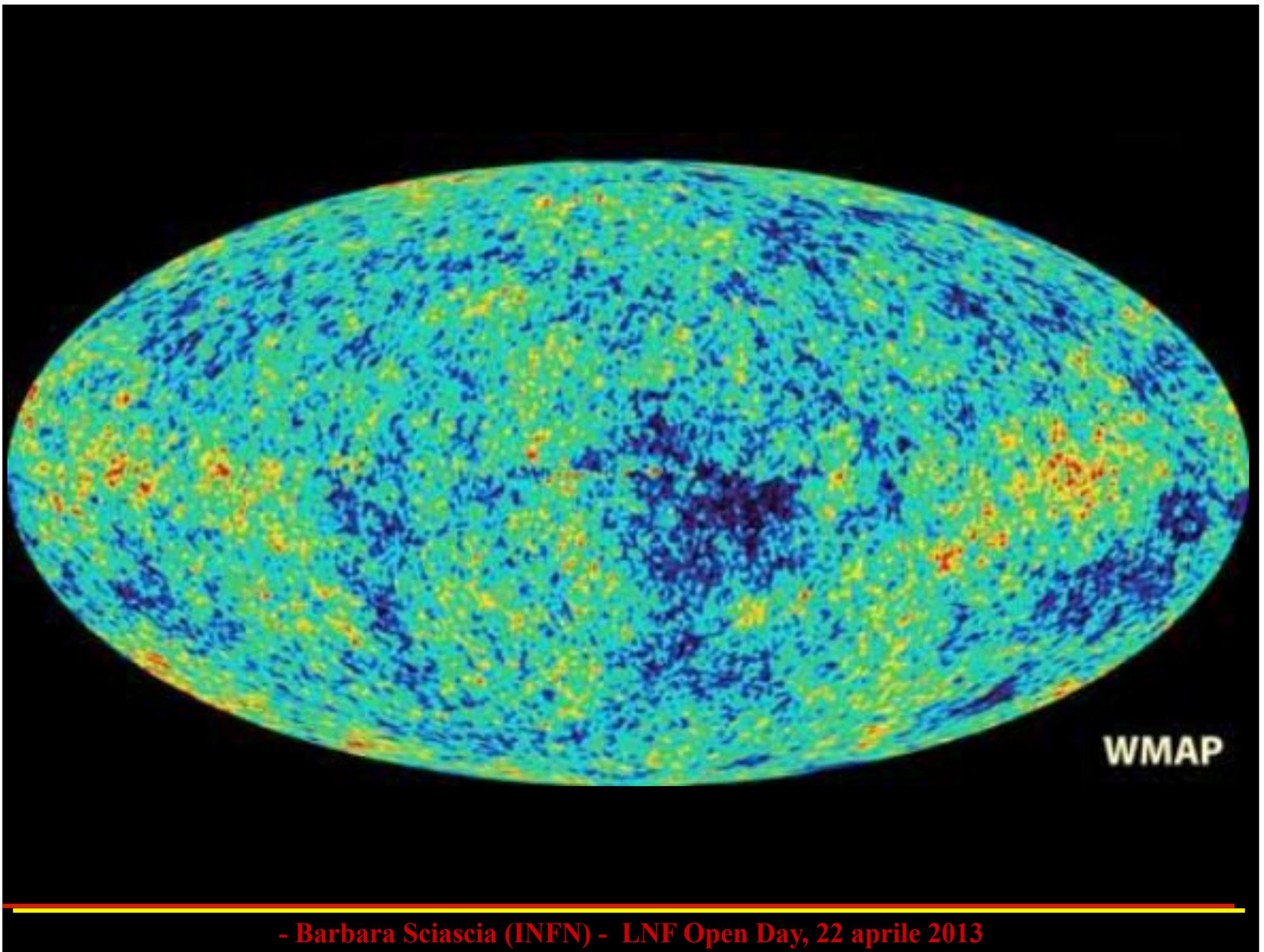
SCIENCEPHOTOLIBRARY

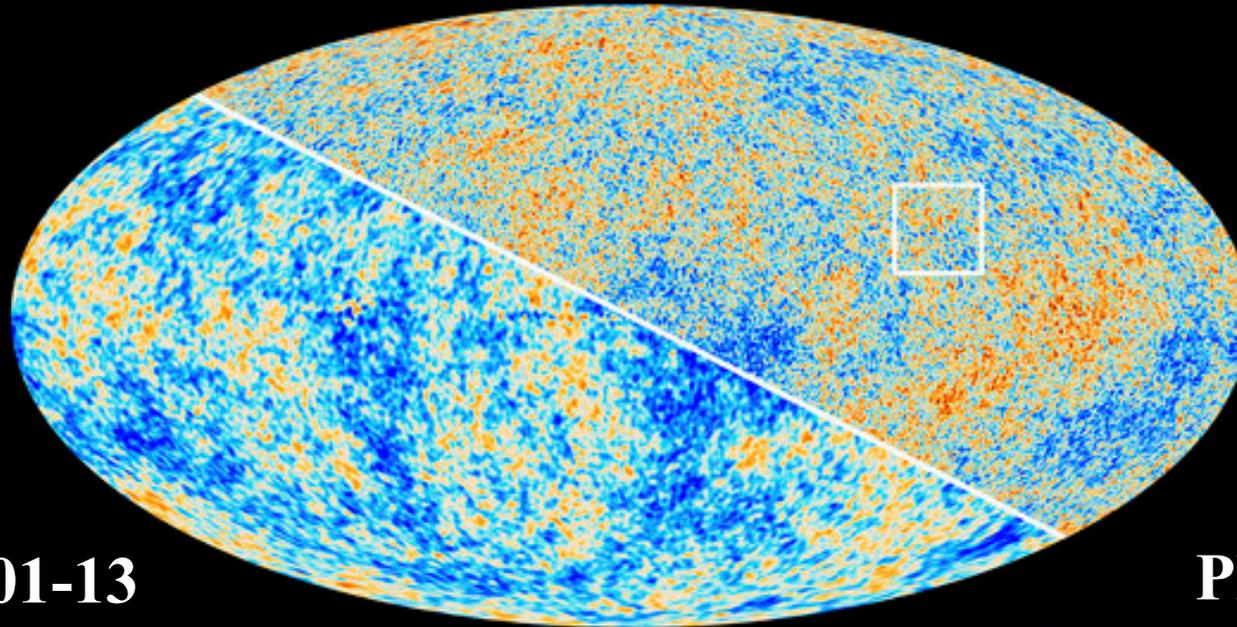
# *Hubble e Leavitt*

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# *Arno Penzias e Robert Wilson*

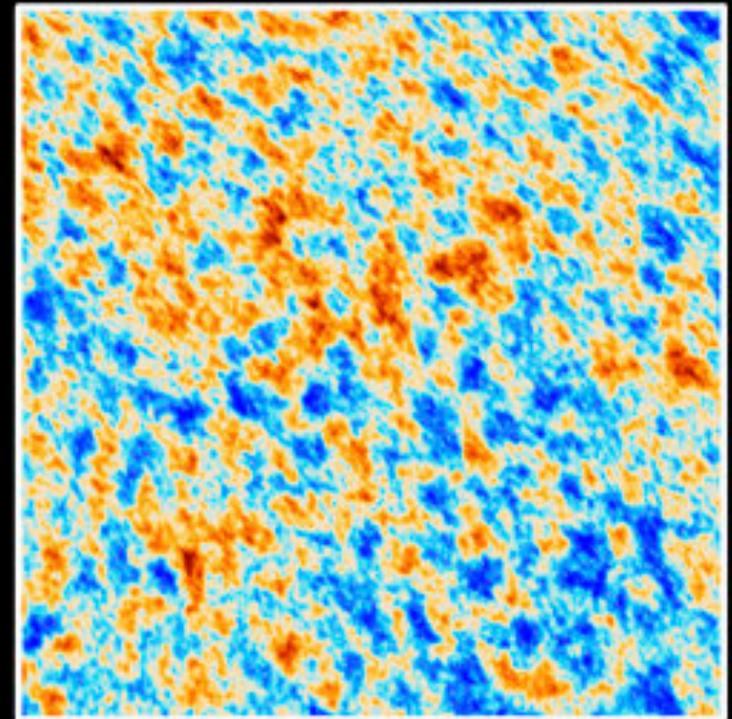
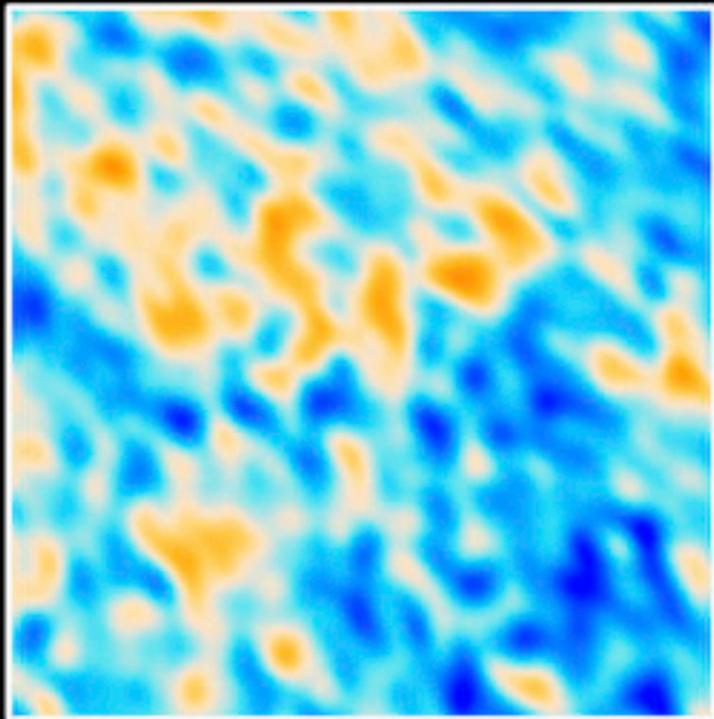


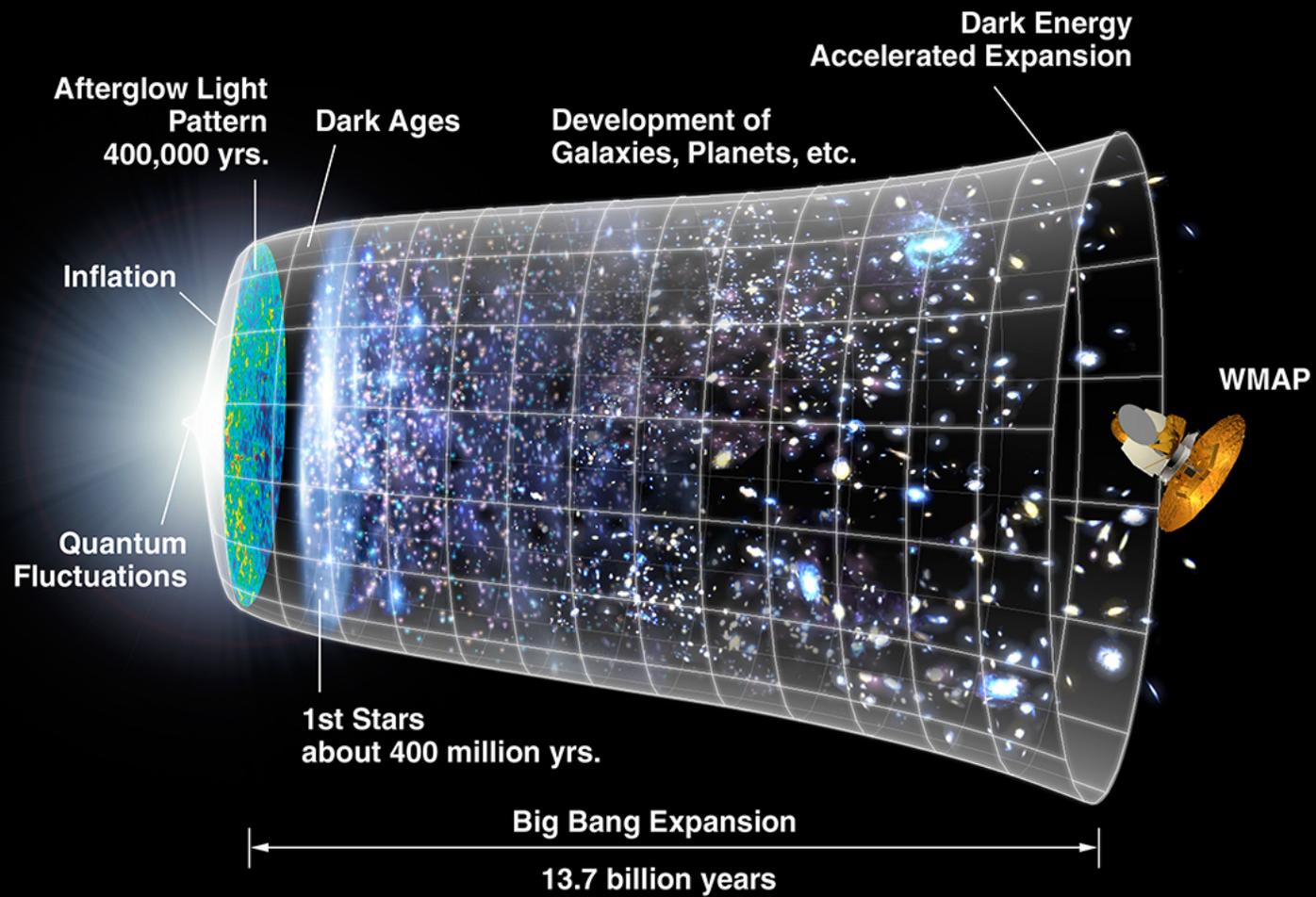




**WMAP, 2001-13**

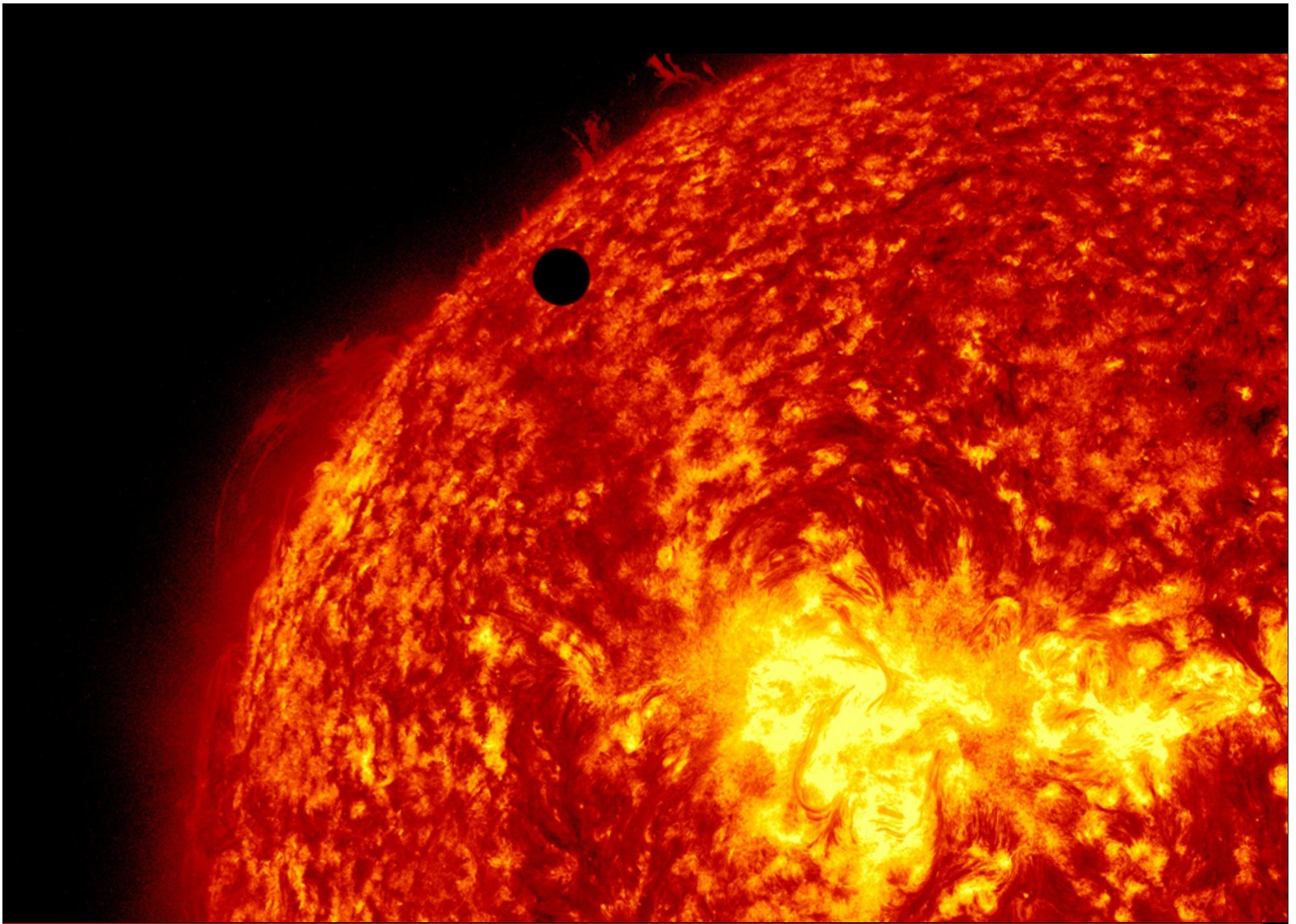
**Planck, 2013**





NASA/WMAP Science Team

1968: SLAC <b><i>u</i></b> up quark	1974: Brookhaven & SLAC <b><i>c</i></b> charm quark	1995: Fermilab <b><i>t</i></b> top quark	1979: DESY <b><i>g</i></b> gluon
1968: SLAC <b><i>d</i></b> down quark	1947: Manchester University <b><i>s</i></b> strange quark	1977: Fermilab <b><i>b</i></b> bottom quark	1923: Washington University* <b><math>\gamma</math></b> photon
1956: Savannah River Plant <b><math>\nu_e</math></b> electron neutrino	1962: Brookhaven <b><math>\nu_\mu</math></b> muon neutrino	2000: Fermilab <b><math>\nu_\tau</math></b> tau neutrino	1983: CERN <b><i>W</i></b> <i>W</i> boson
1897: Cavendish Laboratory <b><i>e</i></b> electron	1937: Caltech and Harvard <b><math>\mu</math></b> muon	1976: SLAC <b><math>\tau</math></b> tau	1983: CERN <b><i>Z</i></b> <i>Z</i> boson

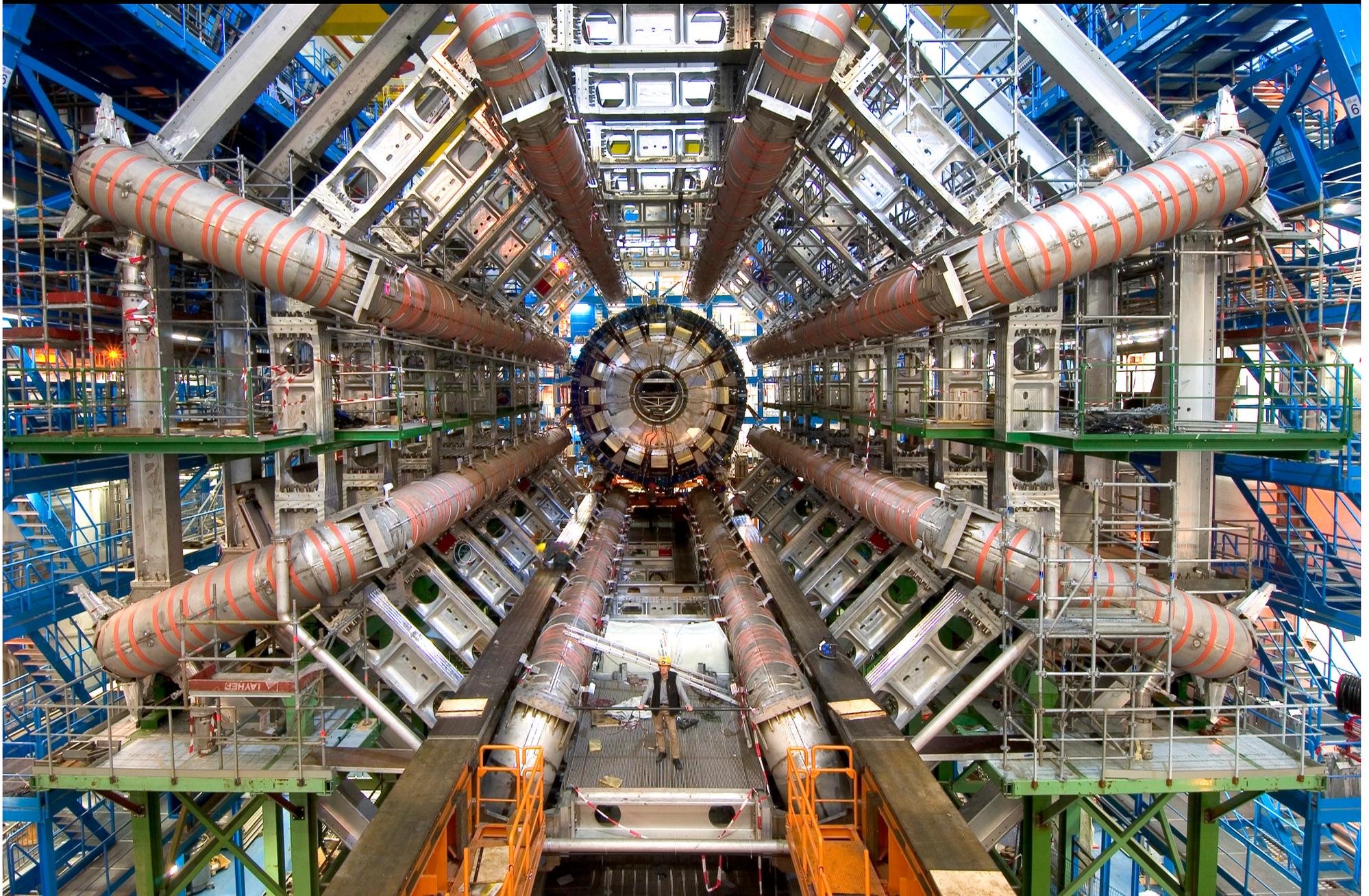


- Barbara Sciascia (INFN) - LNF Open Day, 22 aprile 2013

**SAY GOD PARTICLE**

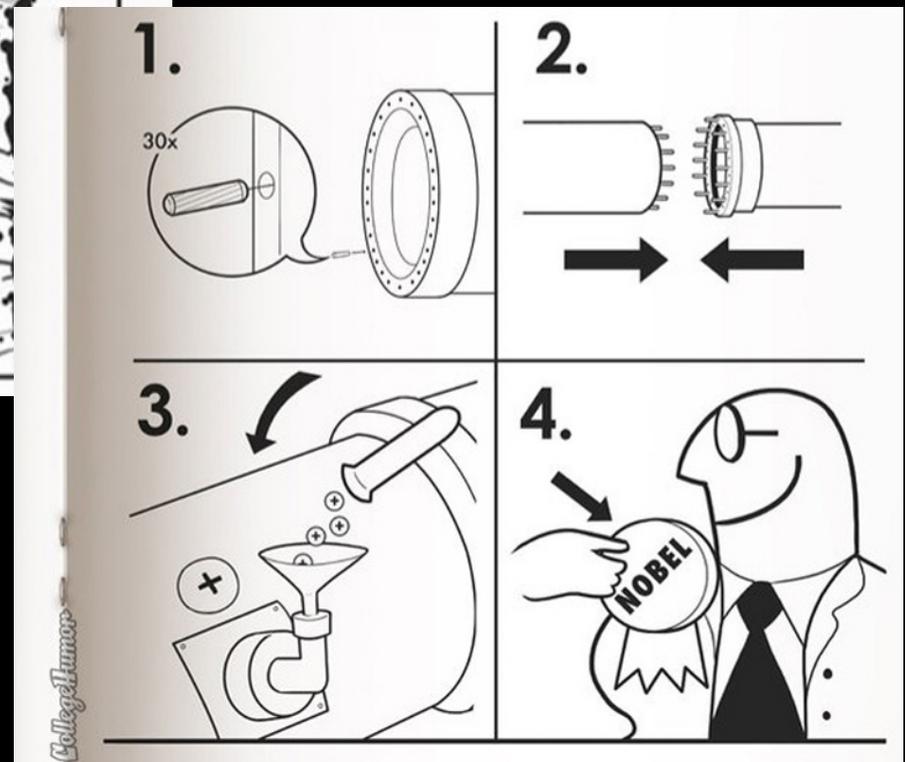
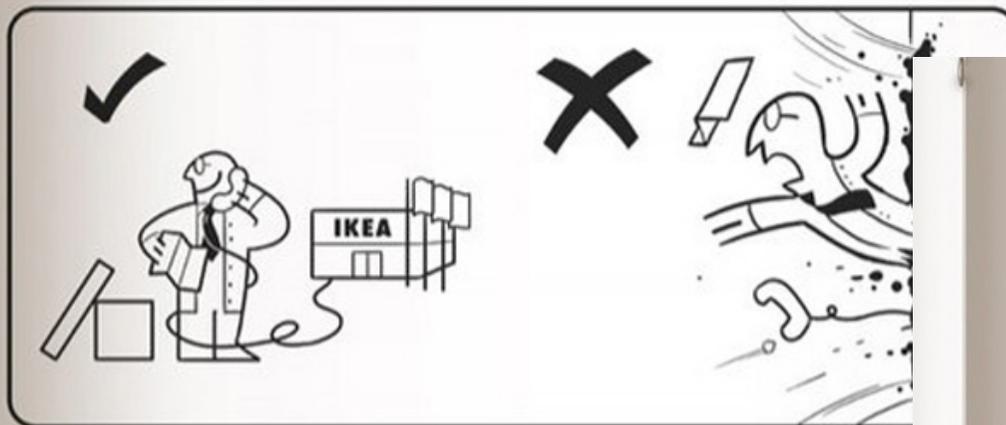
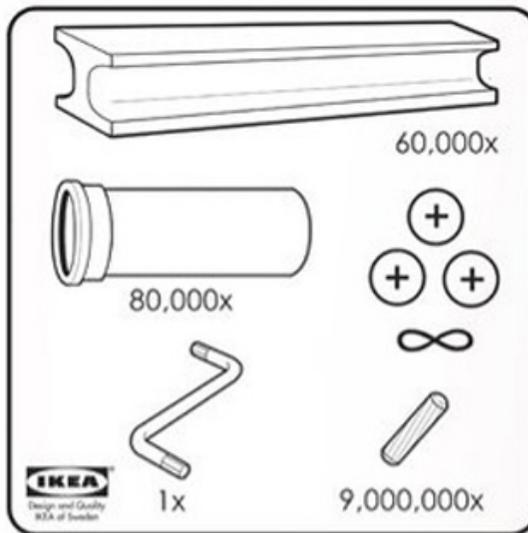
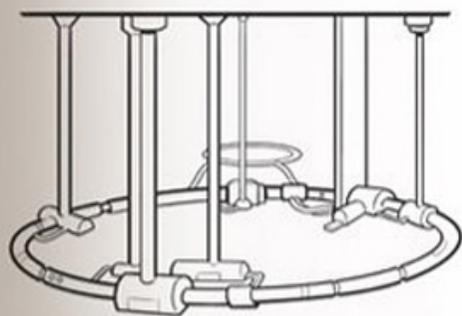


**ONE MORE  
GODDAMN TIME**



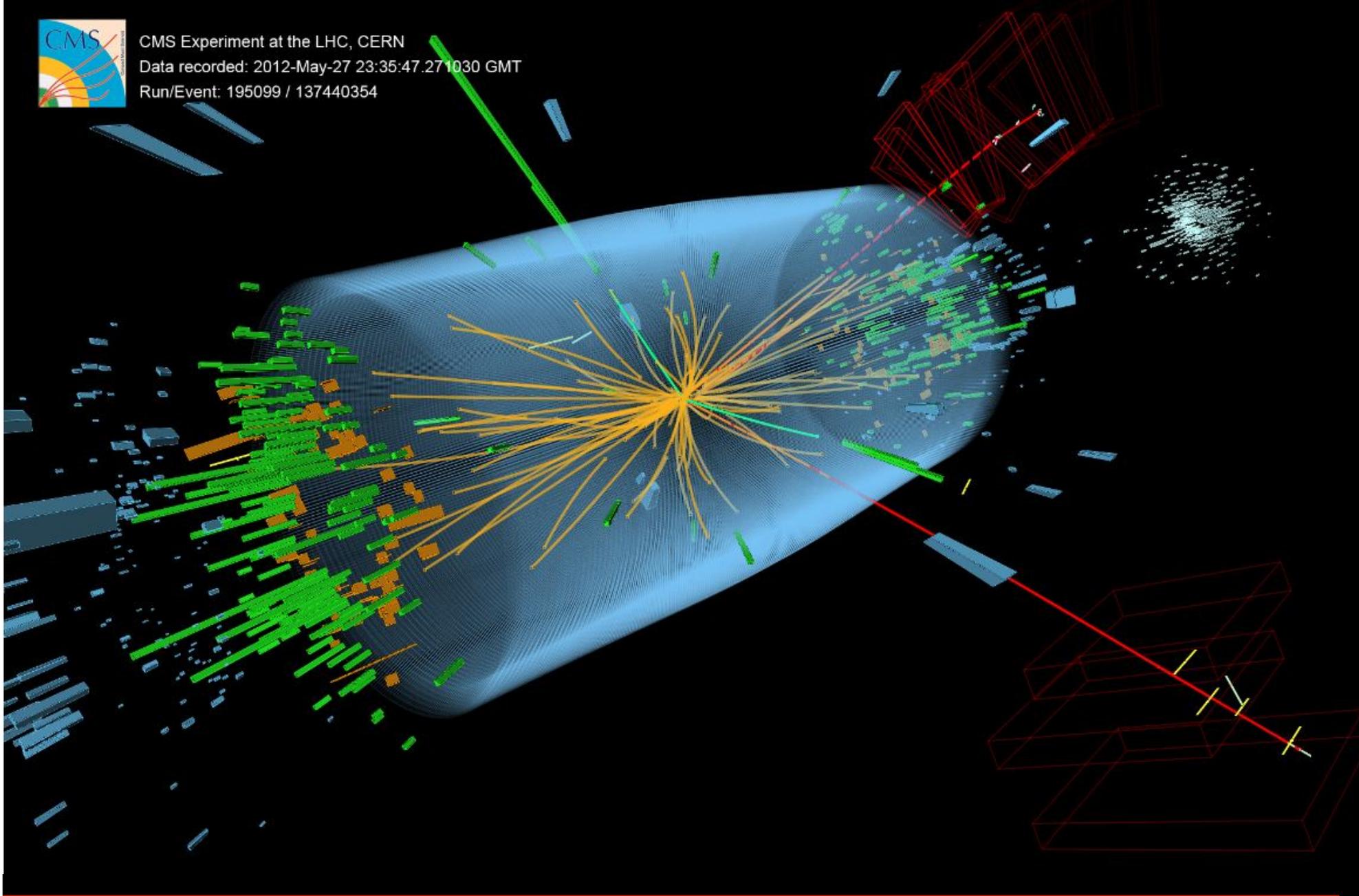
- Barbara Sciascia (INFN) - LNF Open Day, 22 aprile 2013

# HÄDRÖNN CJÖLIDDER

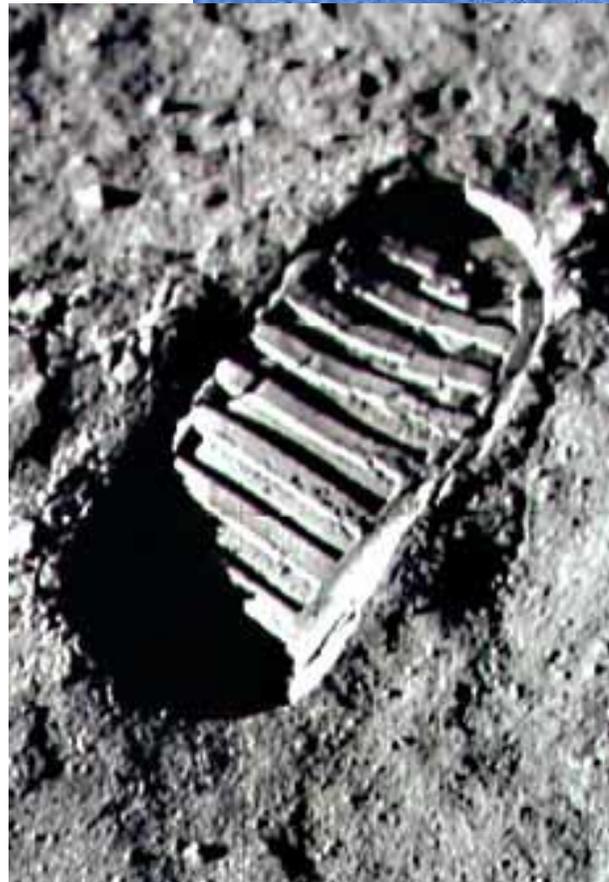
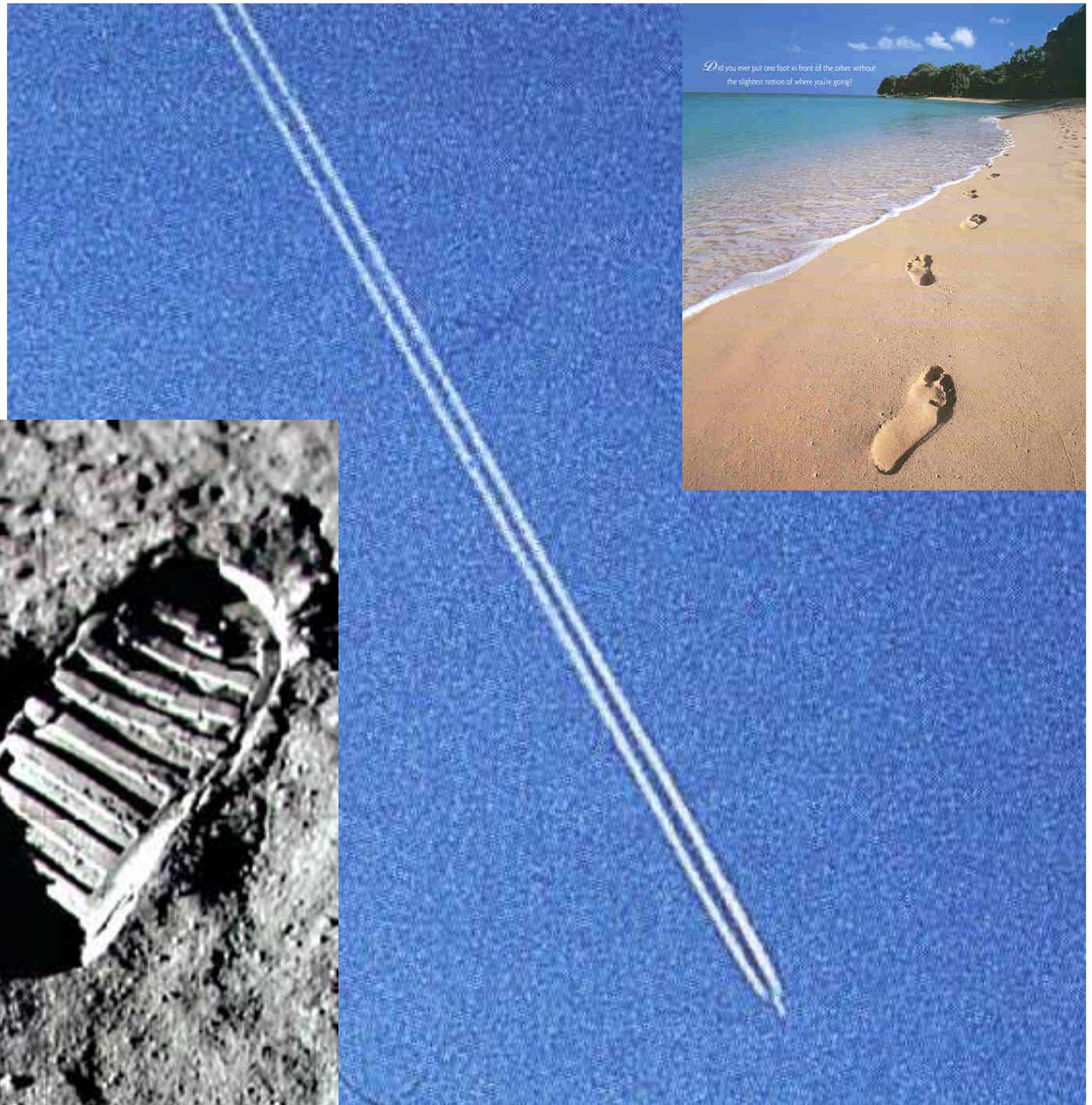




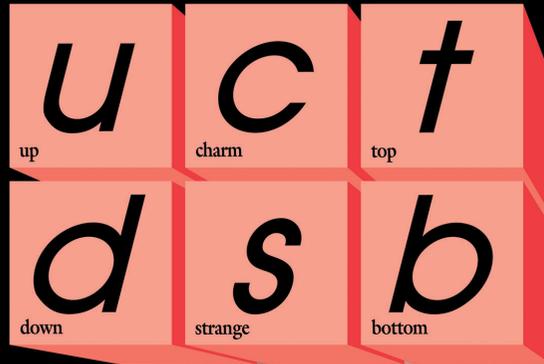
CMS Experiment at the LHC, CERN  
Data recorded: 2012-May-27 23:35:47.271030 GMT  
Run/Event: 195099 / 137440354



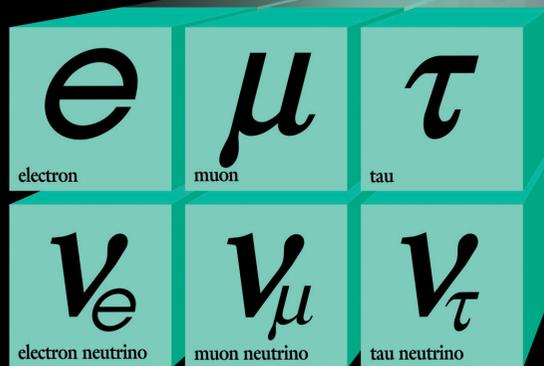
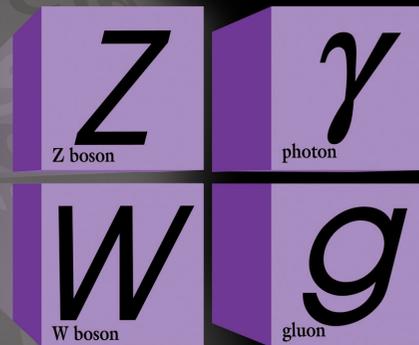
# *Rivelatori: alla ricerca di tracce...*



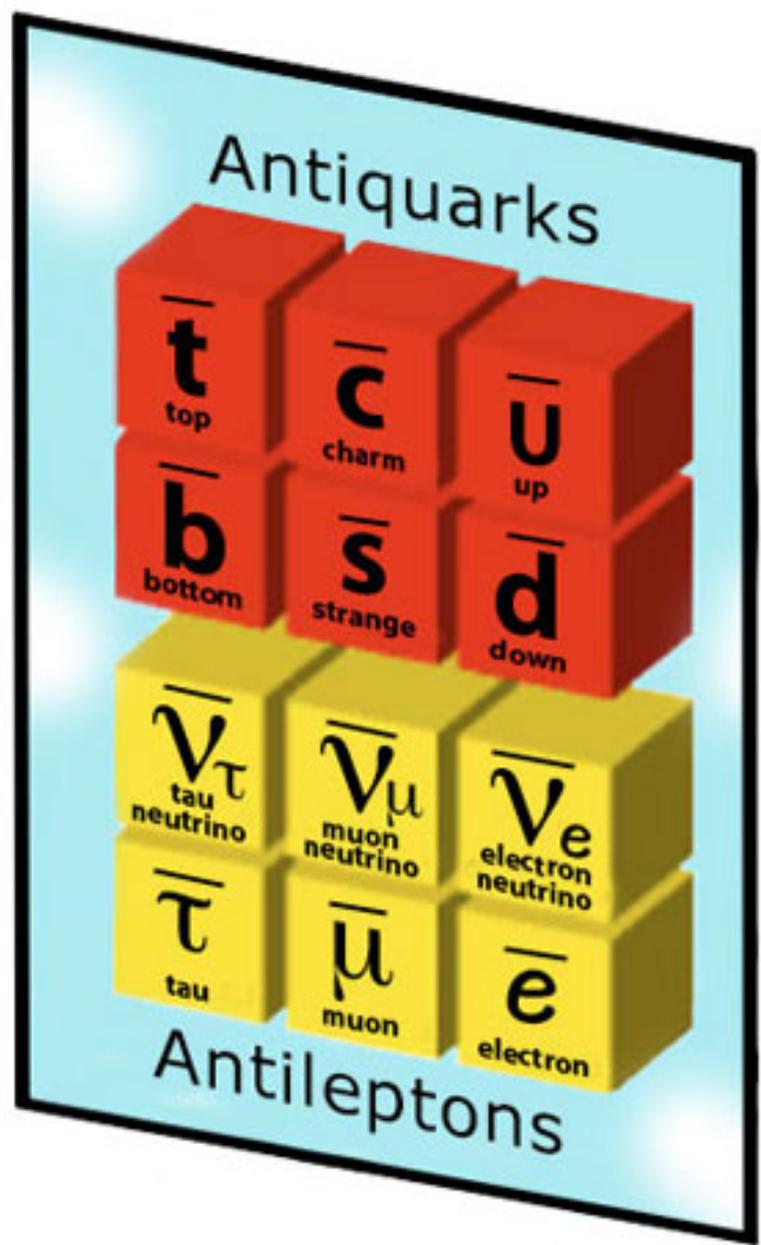
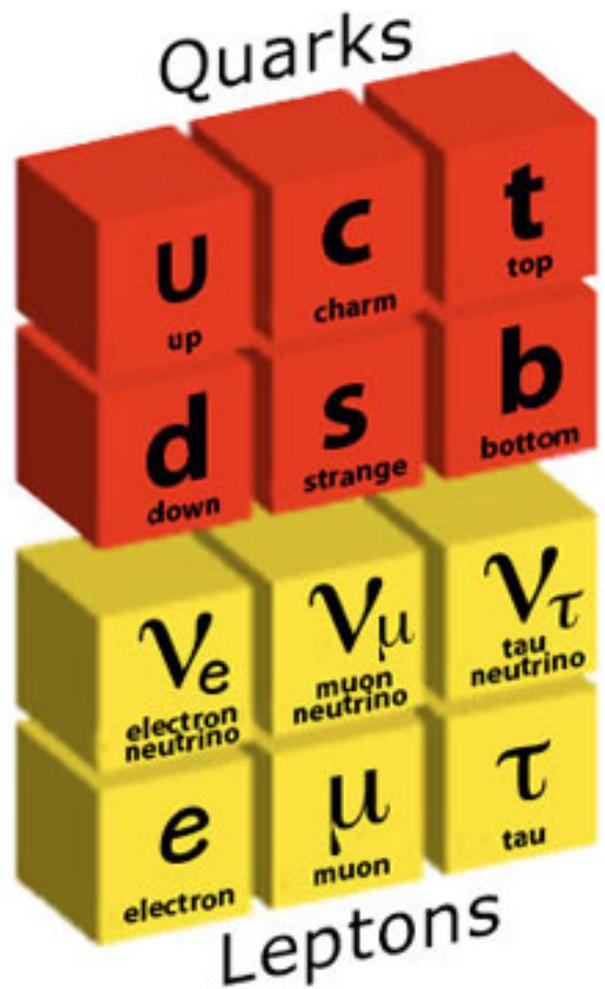
# Quarks



# Forces



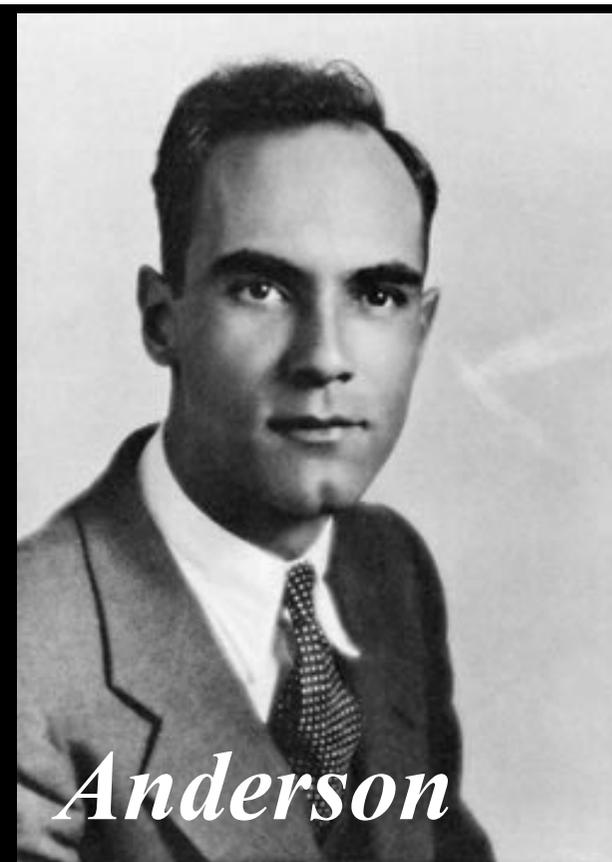
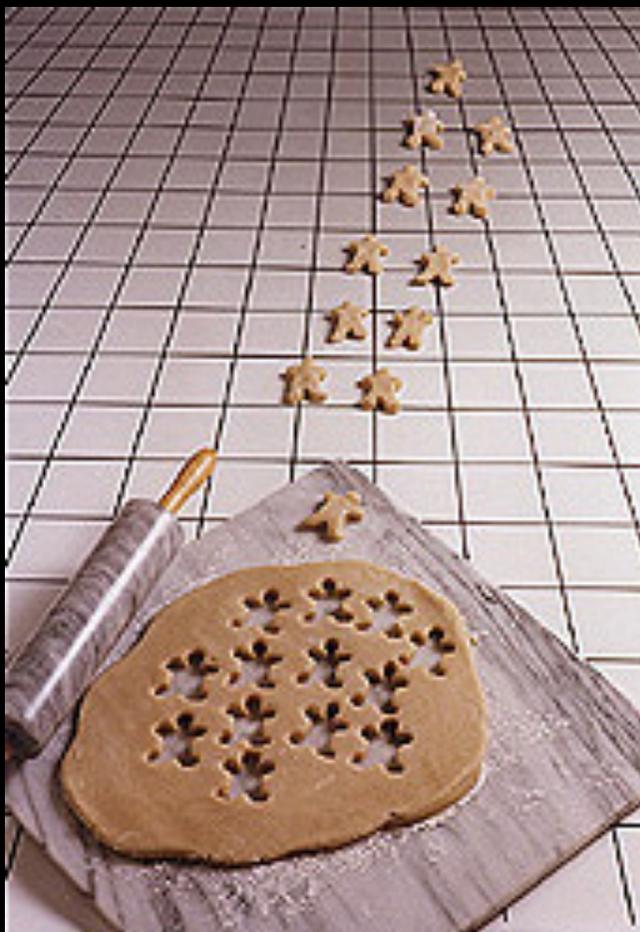
# Leptons





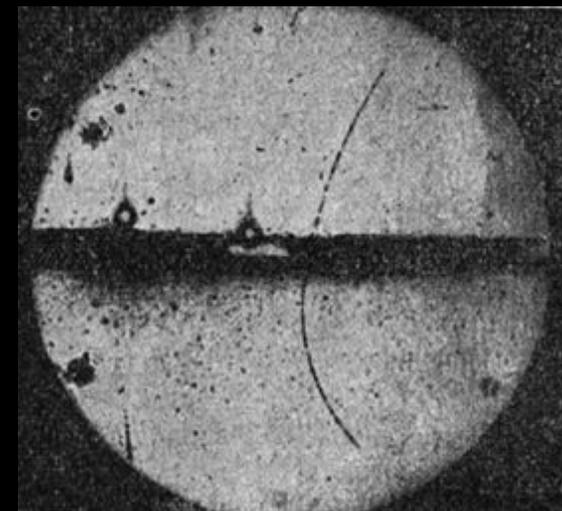
*Dirac*

# *Scoperta dell'antimateria*

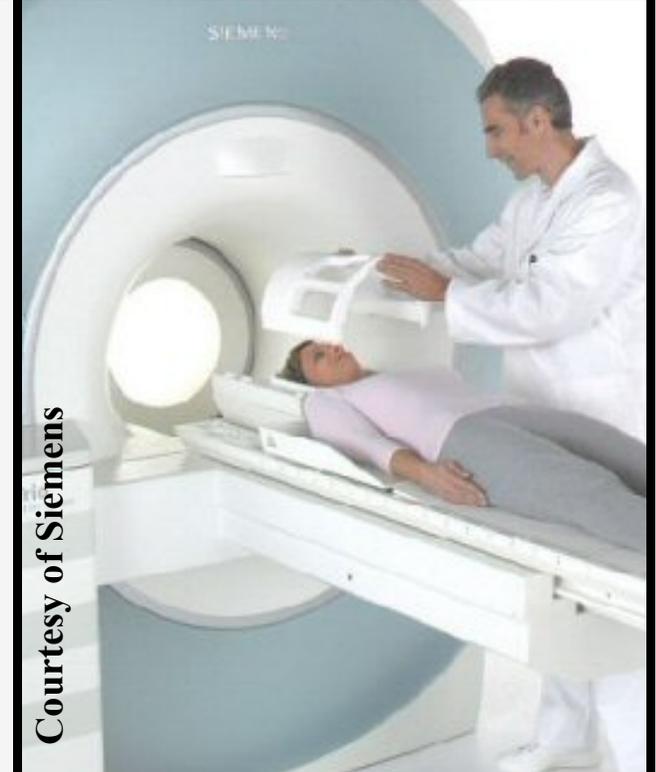
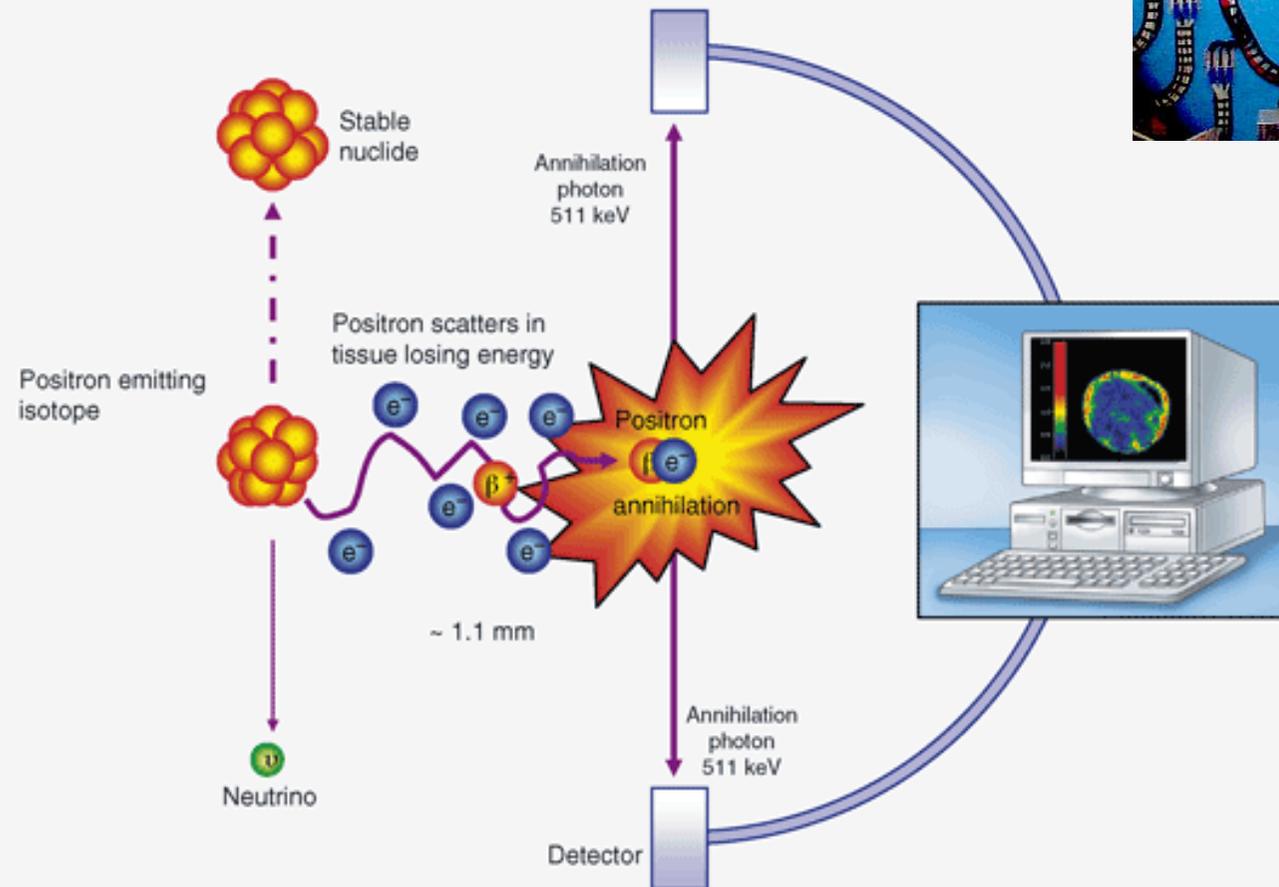
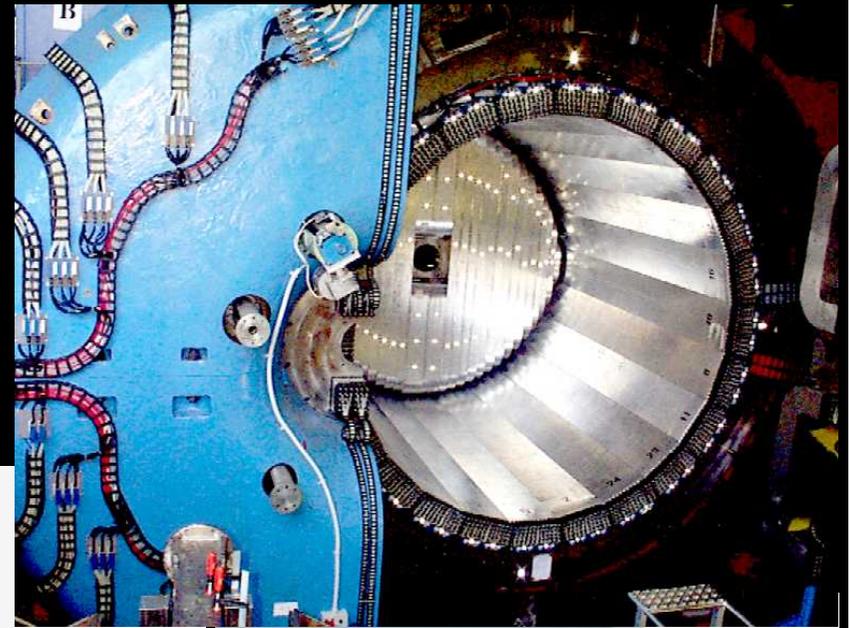


*Anderson*

$$(i\gamma^\mu \partial_\mu - m)\psi = 0$$



# Positron Emission Tomography (PET)

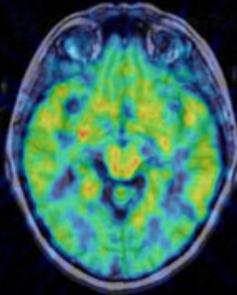


Courtesy of Siemens

# PET

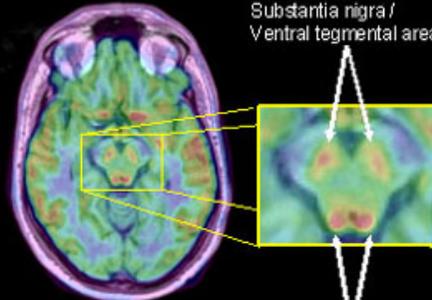
Old PET Camera

Resolution 4 mm



New PET Camera

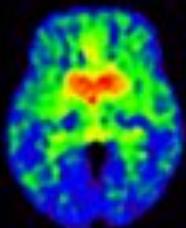
Resolution 2.3 mm



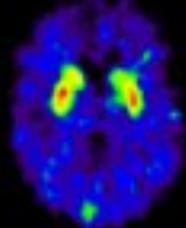
Substantia nigra /  
Ventral tegmental area

Superior colliculi

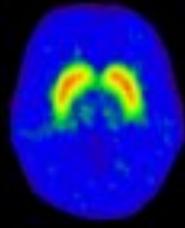
Dopamine D2 receptor  
[<sup>11</sup>C]FLB457



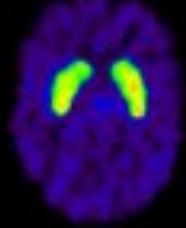
Smoker



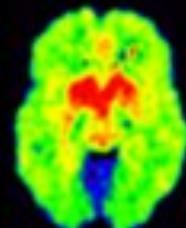
Alcoholic



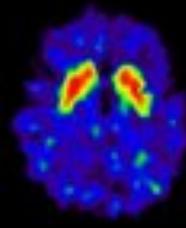
Obese



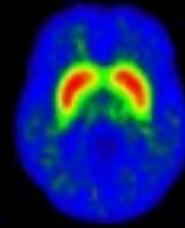
Cocaine



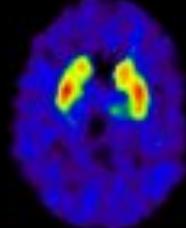
Non-Smoker



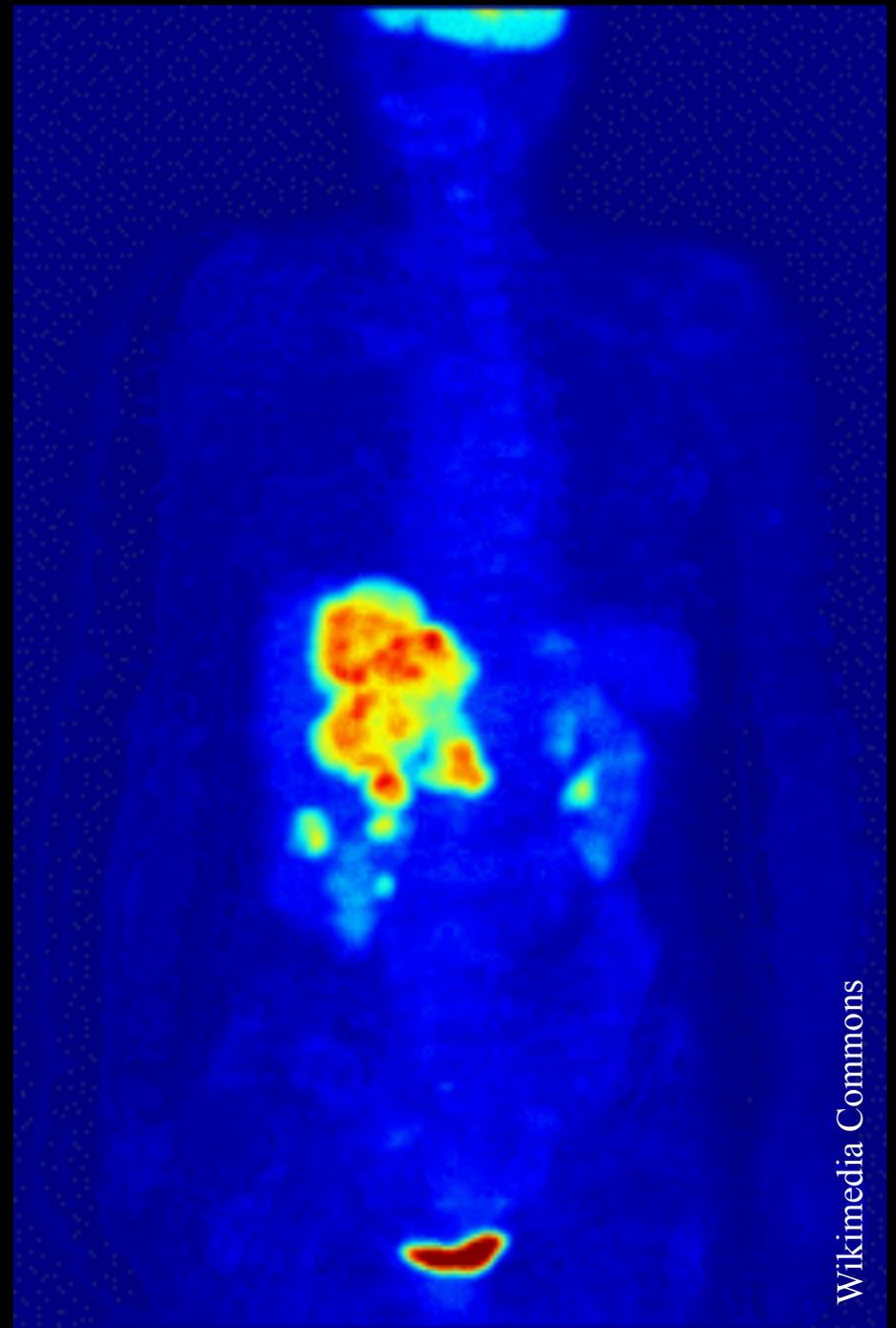
Normal



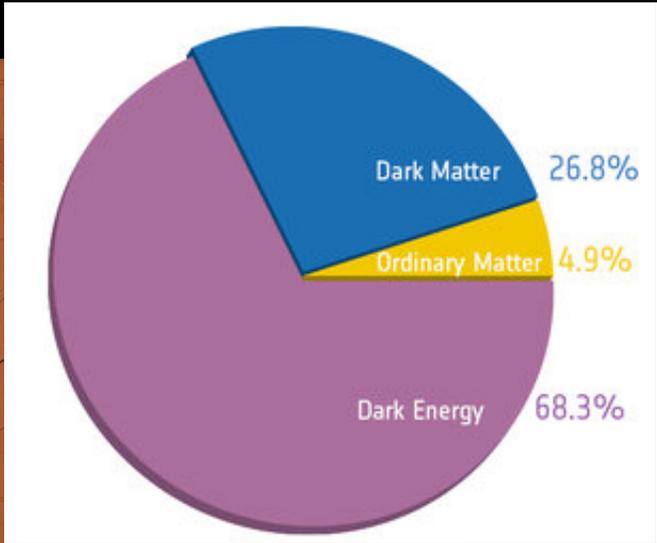
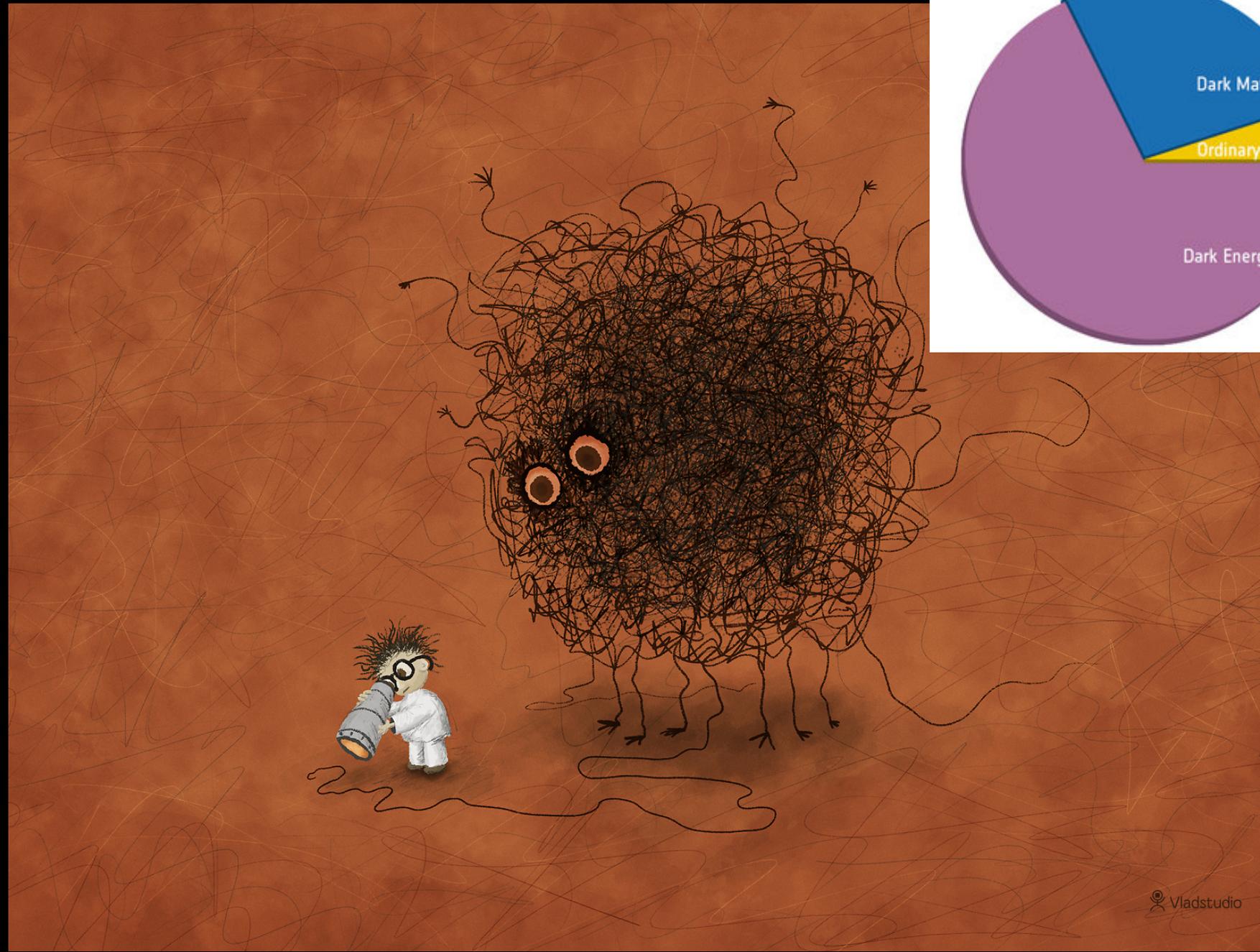
Normal



Normal



Wikimedia Commons



Vladstudio



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**- Barbara Sciascia (INFN) - LNF Open Day, 22 aprile 2013**