

A Summer Program in Fundamental Physics for High School Students Rutgers University

Students will learn about the really big questions in physics today.

- **Cosmology:**
the universe at the largest scale
- **Elementary Particles**
the building blocks of the universe

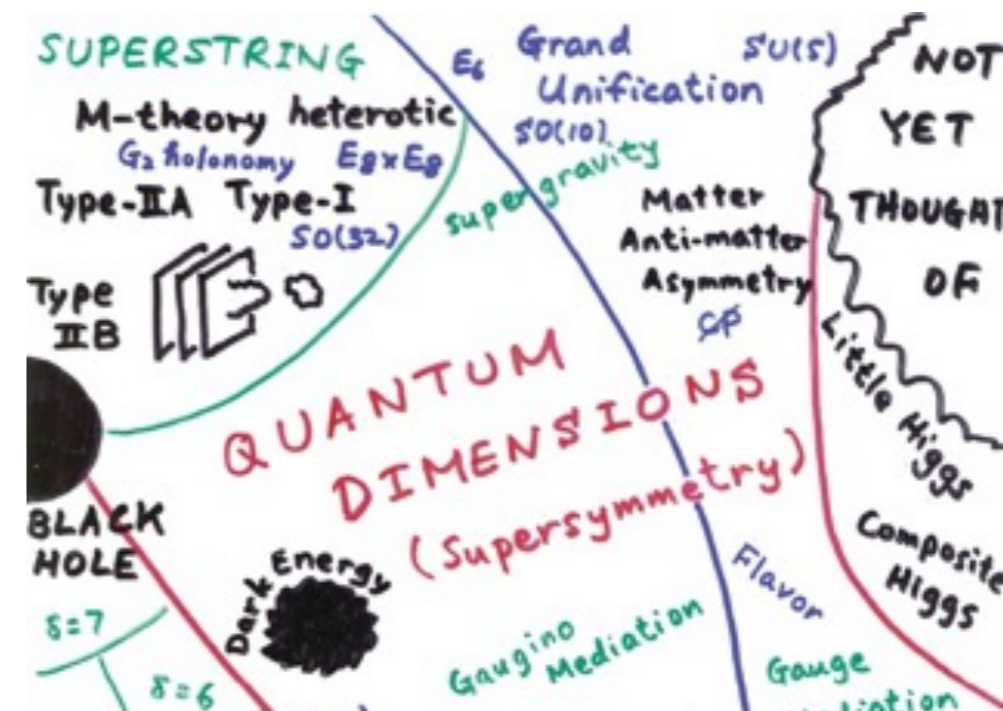
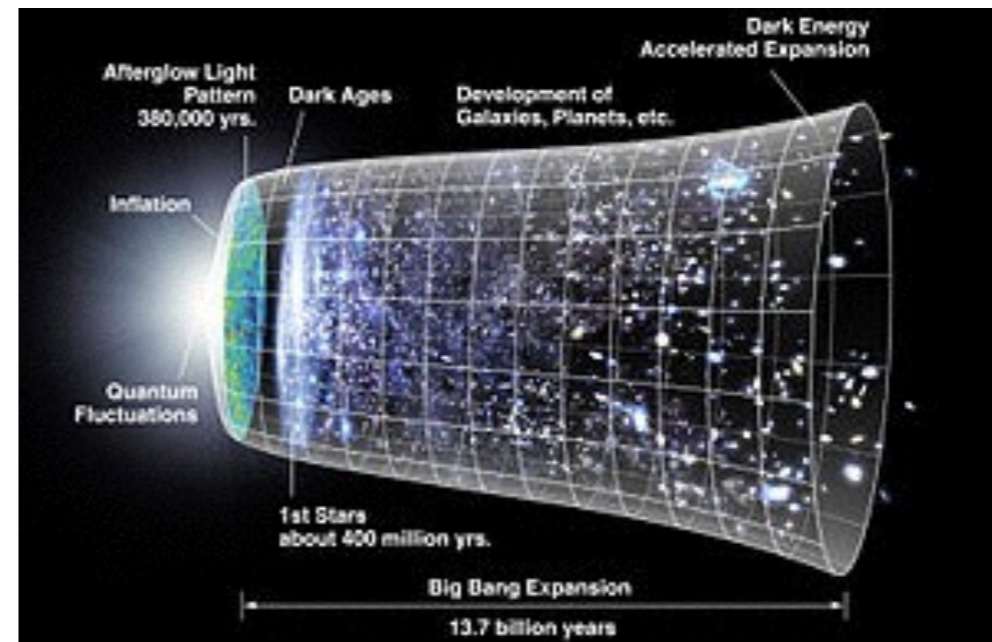
Program includes:

- Sessions with Rutgers faculty
- Tours of Rutgers physics labs
- Measurements of cosmic ray muons
- Data from the Large Hadron Collider

Program meets 9am to 3pm
July 9 to July 20 on the
Rutgers University Busch Campus.

For more information contact:
Prof. Stephen Schnetzer
steves@physics.rutgers.edu

Program is free of charge





Rutgers University 2018 Summer QuarkNet Program

Fundamental Physics

- Cosmology
- Elementary Particle Physics

Cosmology

Study of the universe
at the largest scale

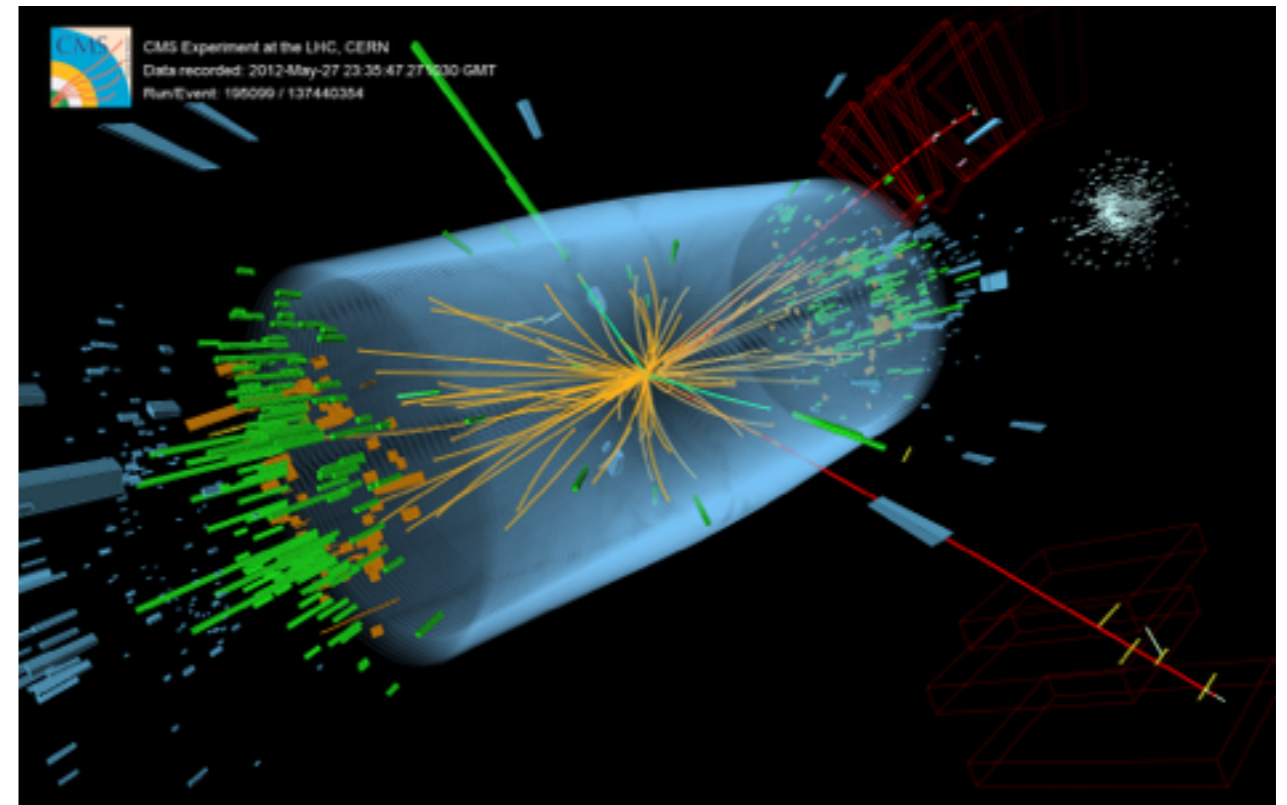
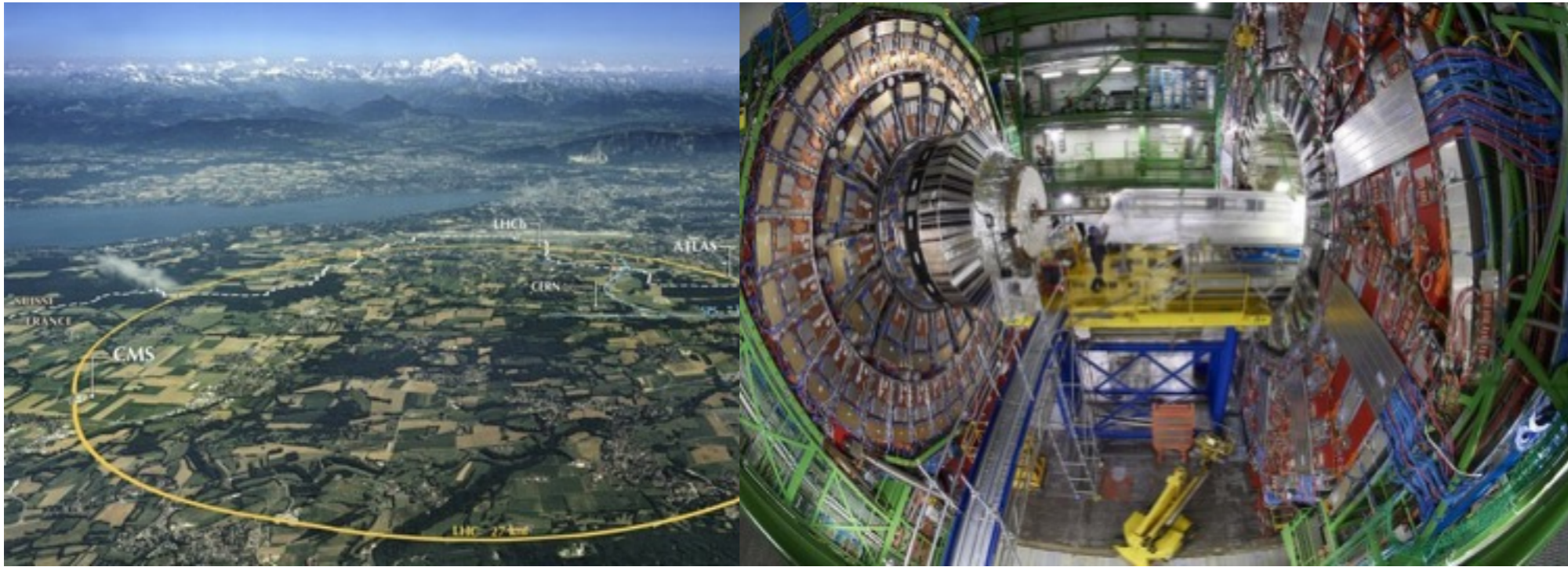
- How big is the universe?
- Where did it come from?
- What is the fate of the universe?
- Are there other universes? How many?
- What is dark matter?
- What is dark energy?

Elementary Particle Physics

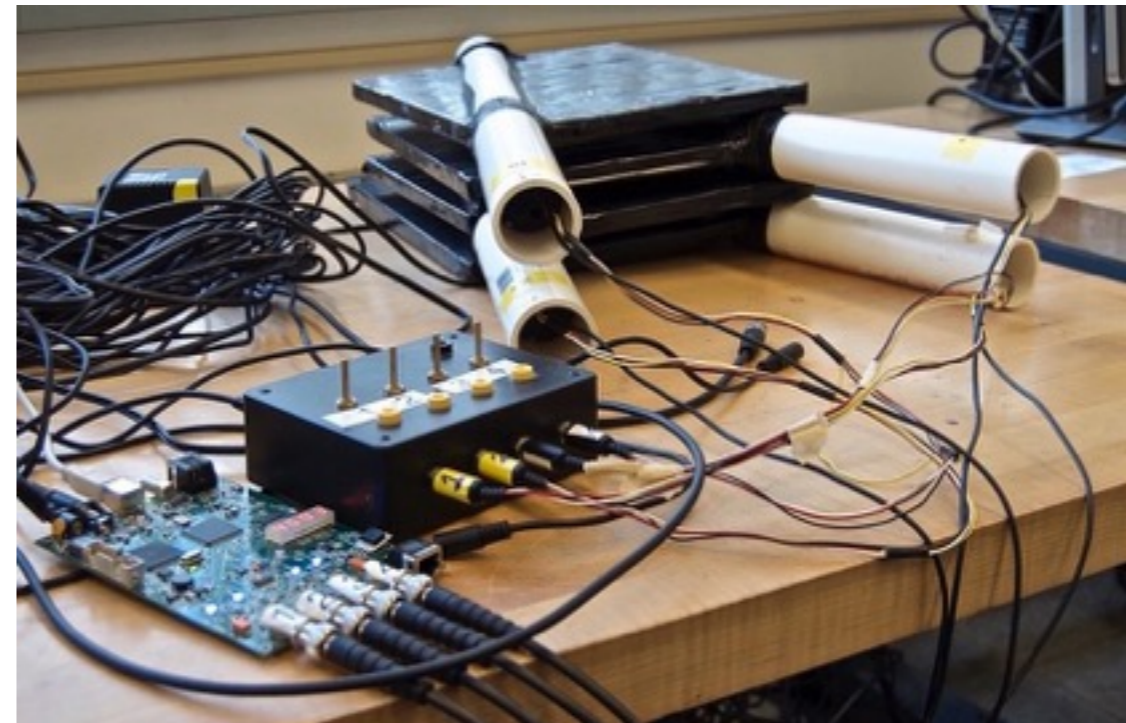
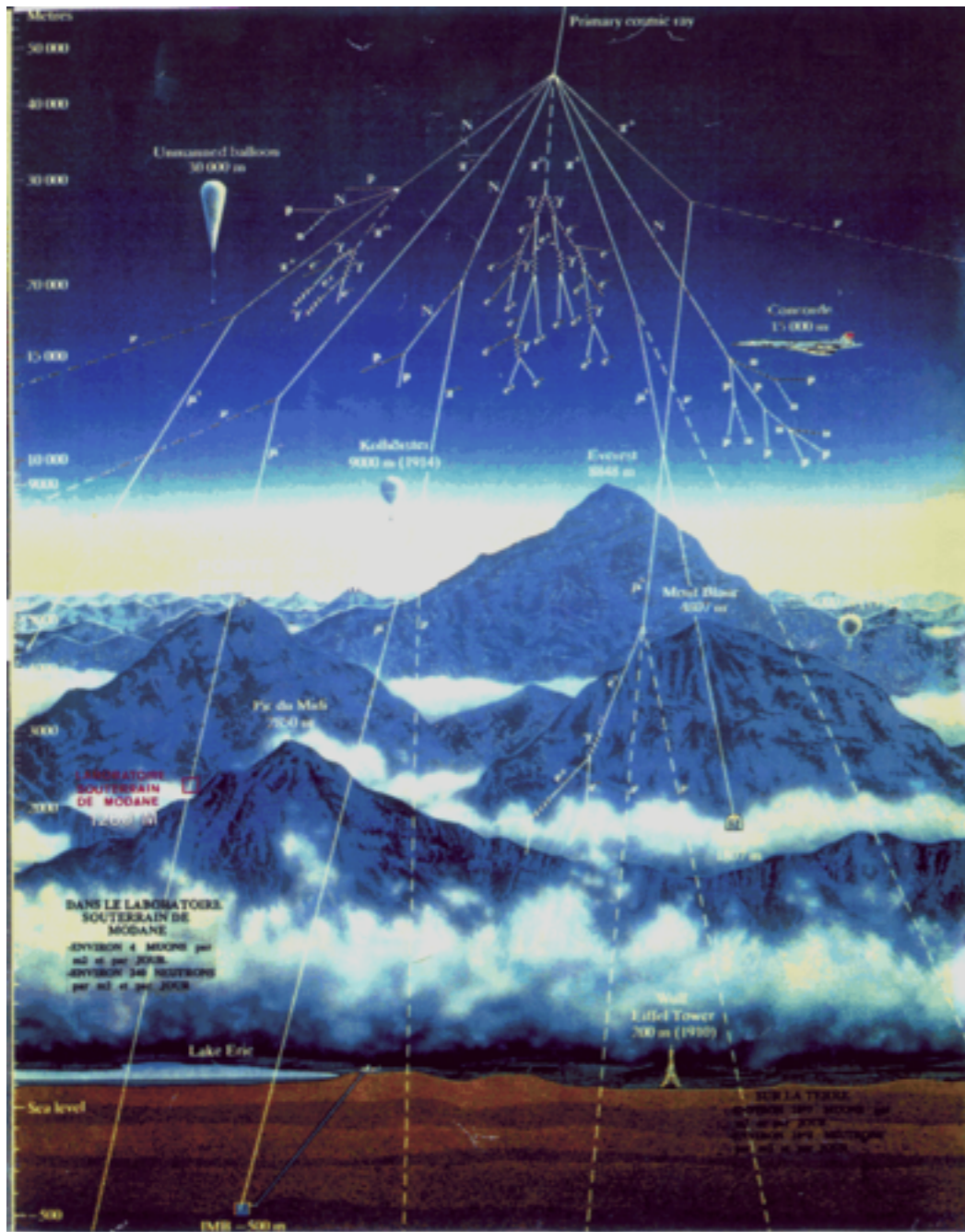
Study of the small scale structure of the universe

- What are the basic building blocks?
- How do they interact with one another?
- Is there a smallest amount of space and time?
- Is space-time doomed?
- Is there a theory of everything?

Analyze Data from the Large Hadron Collider



Detect Cosmic Ray Muons



- Measure lifetime of the muon
- Measure speed of cosmic ray muons

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