

# Study Tour Report – Cosmic Ray Laboratory Visit

## 1. Centre

The **Cosmic Ray Laboratory** at Ooty, established by TIFR in the 1990s, is dedicated to studying high-energy particles from space. The centre focuses on understanding cosmic rays, gamma rays, and muons using advanced detection techniques. It plays a vital role in space science research in India.

## 2. Facility

The laboratory hosts over **4000 glass detectors** that capture and analyze gamma rays from primary cosmic sources. It also houses the **world's largest Muon (M.U.O.N.) telescope**, which provides valuable data for understanding cosmic radiation. Around 40 employees work here, developing their own hardware and software, using Linux-based systems and specialized applications like **ROOT** for data analysis.

## 3. What Students and Teachers Could Do

Students can learn how cosmic rays and gamma rays are detected, recorded, and analyzed. They gain exposure to large-scale scientific instruments, data analysis tools, and research methods. Teachers can connect the visit to broader topics in physics, astronomy, and computing, inspiring students to explore space research and technology.

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