

LOOKING BACK: THE PIERRE AUGER OBSERVATORY

PLANNING AND DESIGN

It is interesting to look back for a moment at the story of the Pierre Auger Observatory, how it was planned, designed, and constructed. Then reflect on the features that led to its success in pursuing the mysteries of the highest-energy cosmic rays. Other international science projects now in the planning stage could well benefit from lessons learned from the Auger Observatory experience.

The Auger Observatory is truly unique among large international science projects in that no country, region, or institution dominates. Indeed, the fact that the collaborating countries and institutions had an equal voice in all aspects of the project (independent of the size of their contribution) has helped ensure its success. This organizational style resulted in a close collaboration that was able to conceive and build an Observatory where almost every component and analysis process has contributions from several countries.

The Auger Observatory project was conceived in a fateful meeting when, while on sabbatical in 1991, Jim Cronin visited Alan Watson at the University of Leeds. Cronin had been intrigued by recent observations of cosmic rays of very high energy and had pursued this interest with the Chicago Airshower Array in the Utah Desert.

Watson was eager to extend his ongoing study of cosmic rays at the Haverah Park array in the UK. Where do the highest energy cosmic rays come from? What were these particles? What is the mechanism that hurls them into space with such great energy? They agreed that a new array had to be very large to stand any chance of solving these mysteries. The Giant Air-Shower Array Project was born. They later decided to name the project to honor a pioneer in cosmic ray physics, Pierre Auger.

To promote the new project, Cronin and Watson described their vision in talks at scientific meetings and workshops around the world where cosmic ray physics was on the agenda.

Under their outstanding leadership, Cronin and Watson were able to pull together 17 countries that contributed their skilled scientists, engineers, and technicians along with the resources that made the Auger Observatory possible.

The extensive findings and resulting publications produced by the Auger Observatory have significantly advanced the science of the highest-energy cosmic rays and are the measure of its success.

Credit: Paul Mantsch



FIGURE 1: PHOTO OF THE FIRST MEETING OF THE EMERGING INTERNATIONAL COLLABORATION FOR THE PIERRE AUGER PROJECT, 1996, VALLE GRANDE, SAN RAFAEL, MENDOZA.