

Building the Pierre Auger Observatory



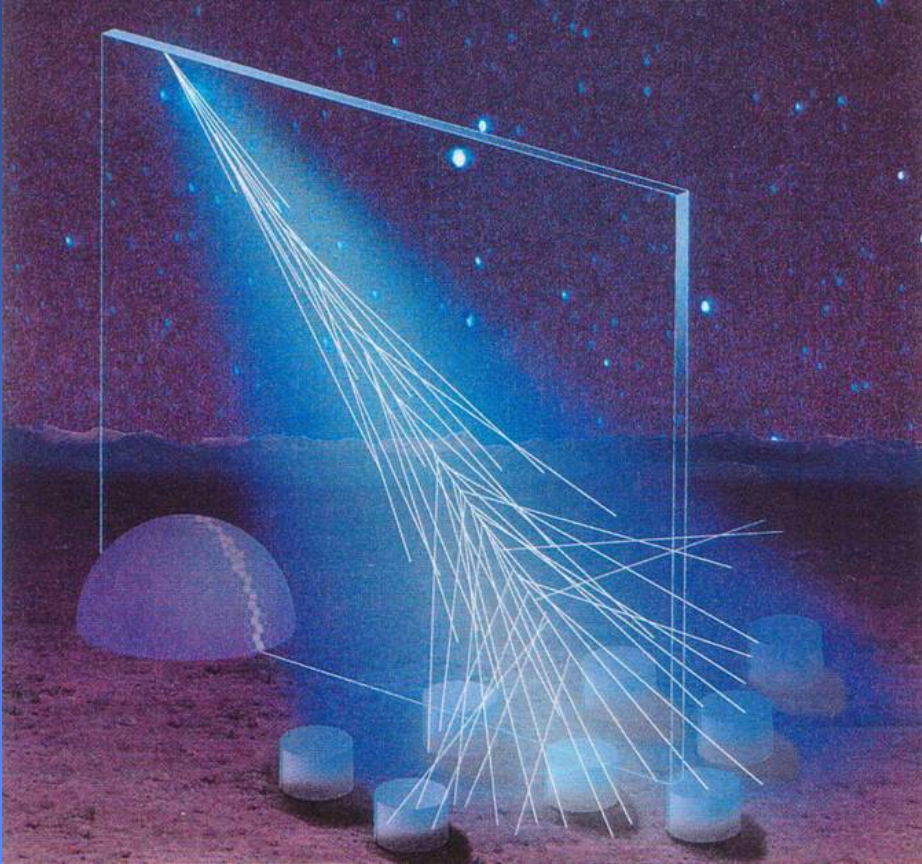
Adventures in Cosmic Ray Physics



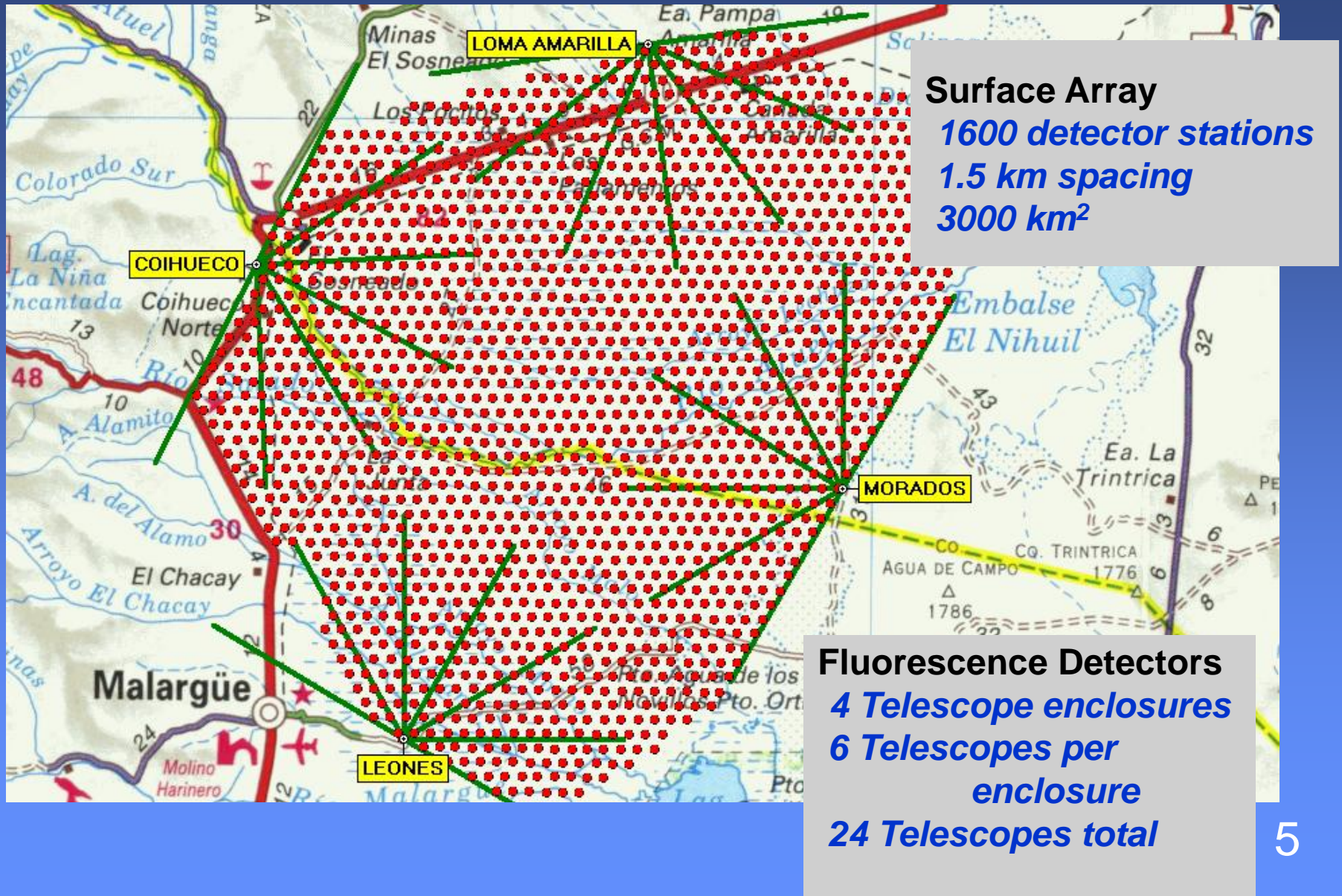
The Builders



The Design



The Observatory Plan



Communications antenna

GPS antenna

Electronics enclosure

Solar panels

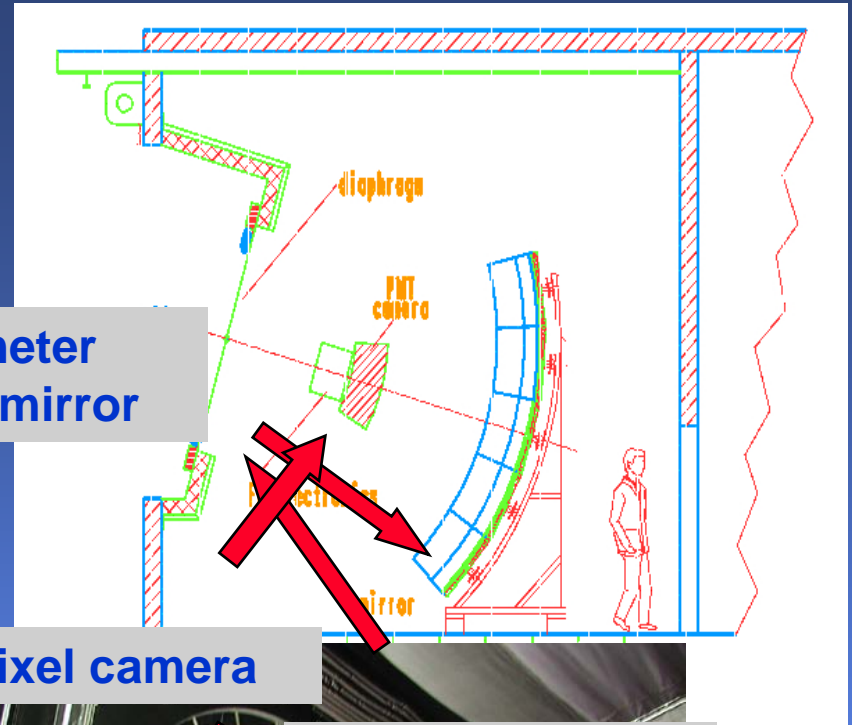
Battery box

3 – nine inch photomultiplier tubes

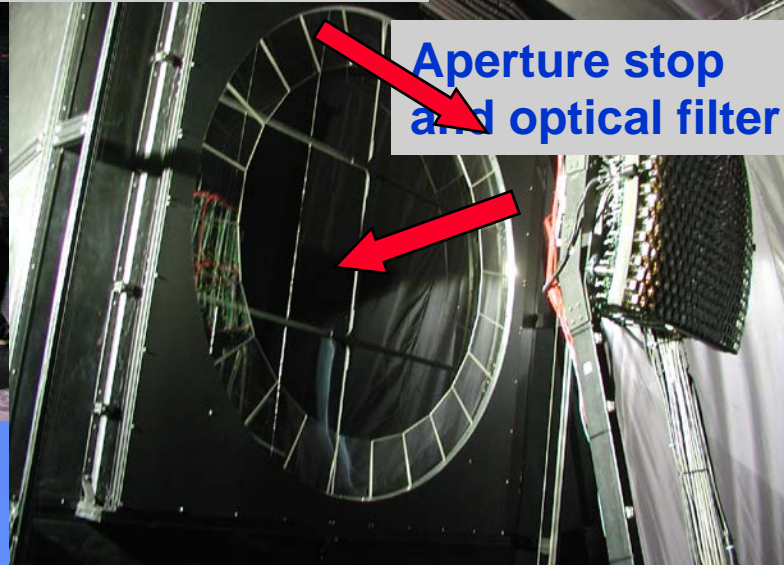
Plastic tank with 12 tons of water

11 square segments

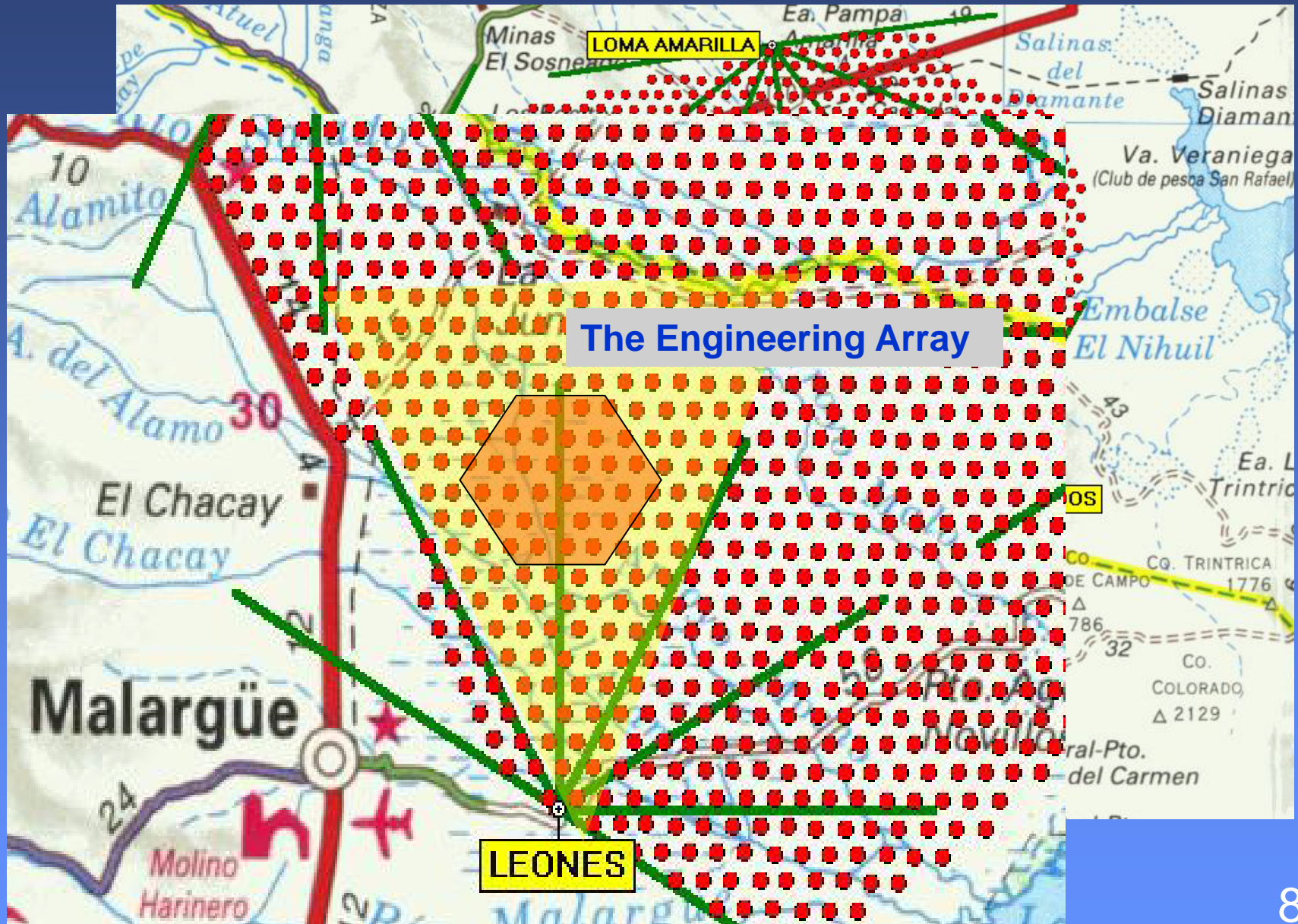
440 pixel camera



Aperture stop
and optical filter



The Engineering Array



Building the First Fluorescence Station



Deployi



The First and Last Engineering Array Detectors

**First Engineering Array Detector
21 FEB 2000**



**Last Engineering Array Detector
26 April 2001**



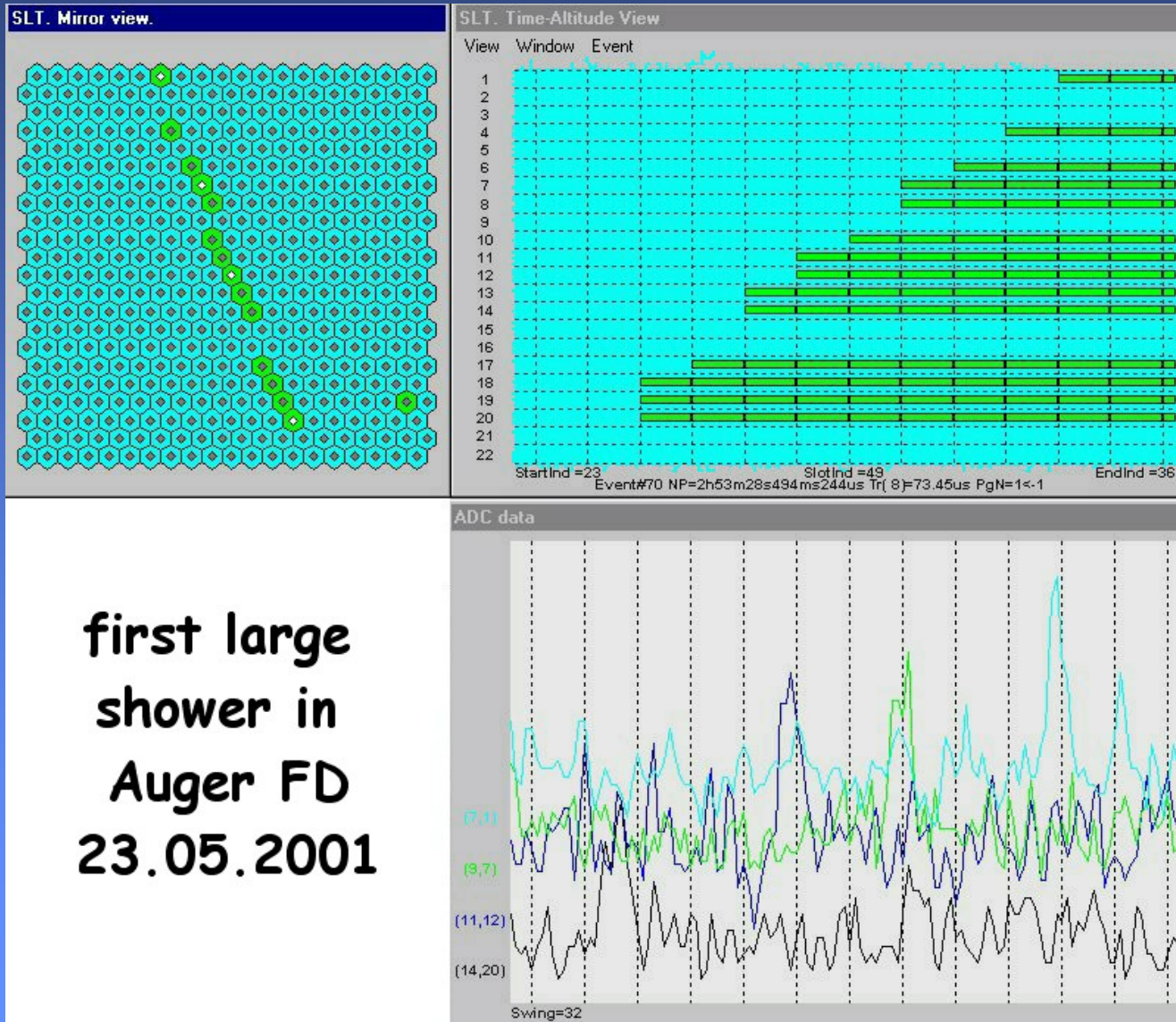
Rigging Communications Tower



Central Data Acquisition System

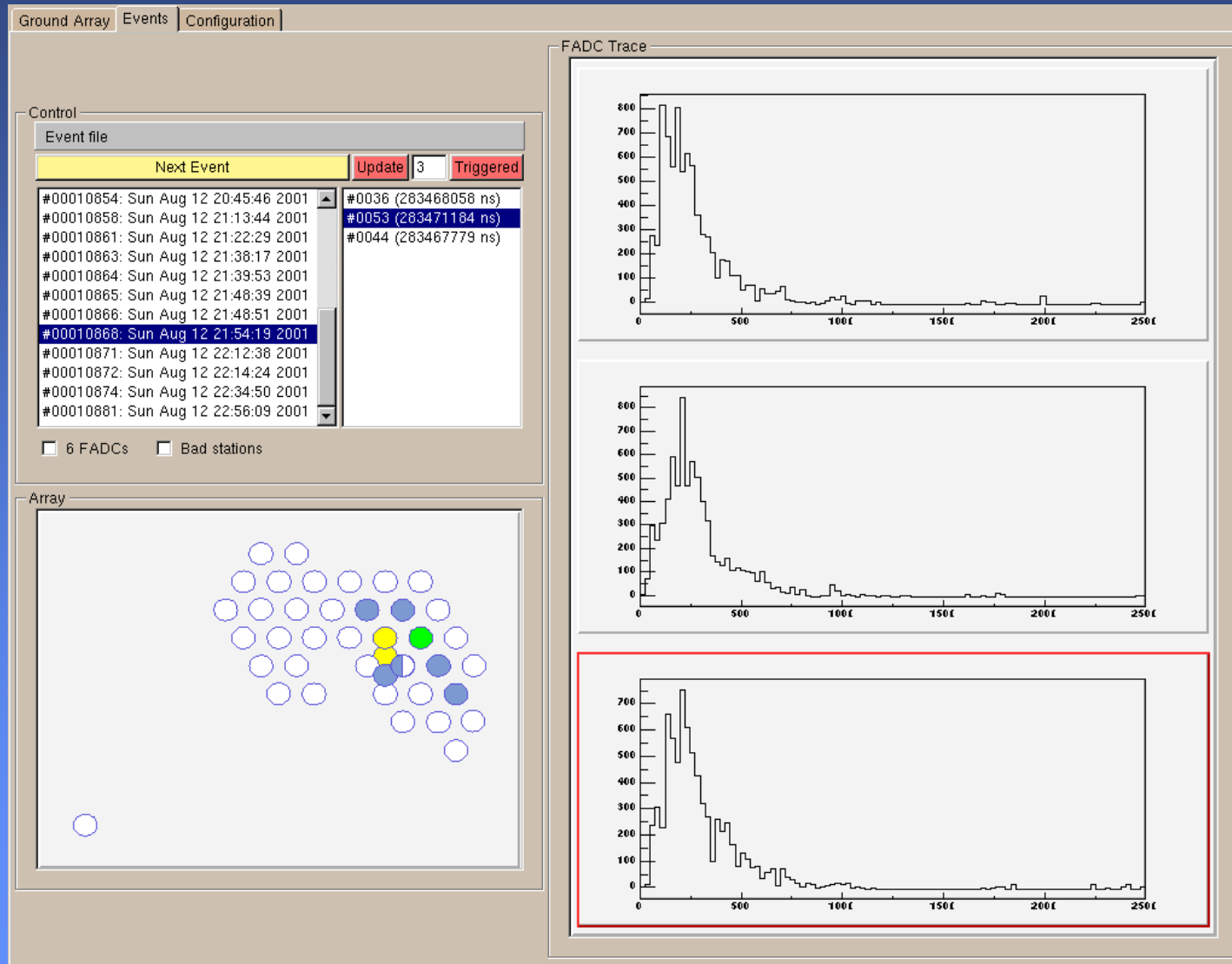


Official First Fluorescence Event 23 May 2001

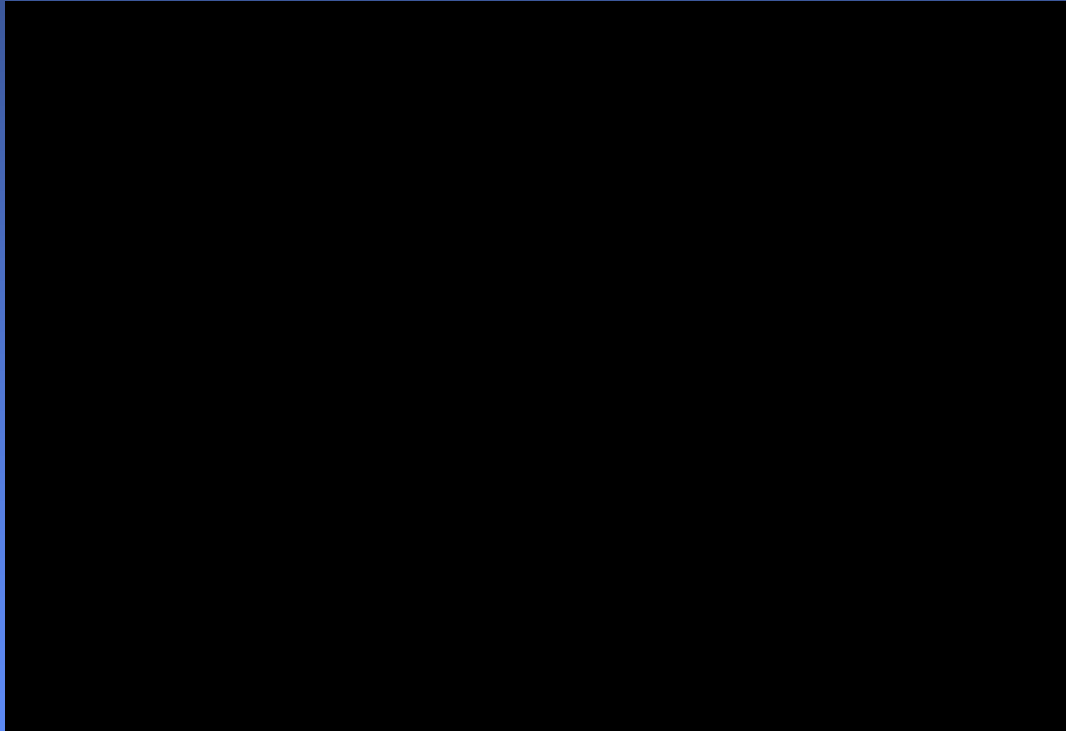


First Surface Detector

4 – fold event – 12 August 2001



Building the Observatory



Thanks to Cristina Raschia

Deployment Sequence



Thanks to Cyril Lachaud

Status of

ory



deployed

Three of four
fluorescence buildings
operational each with 6
telescopes

Atmospheric Monitoring and Calibration



Central Laser Facility

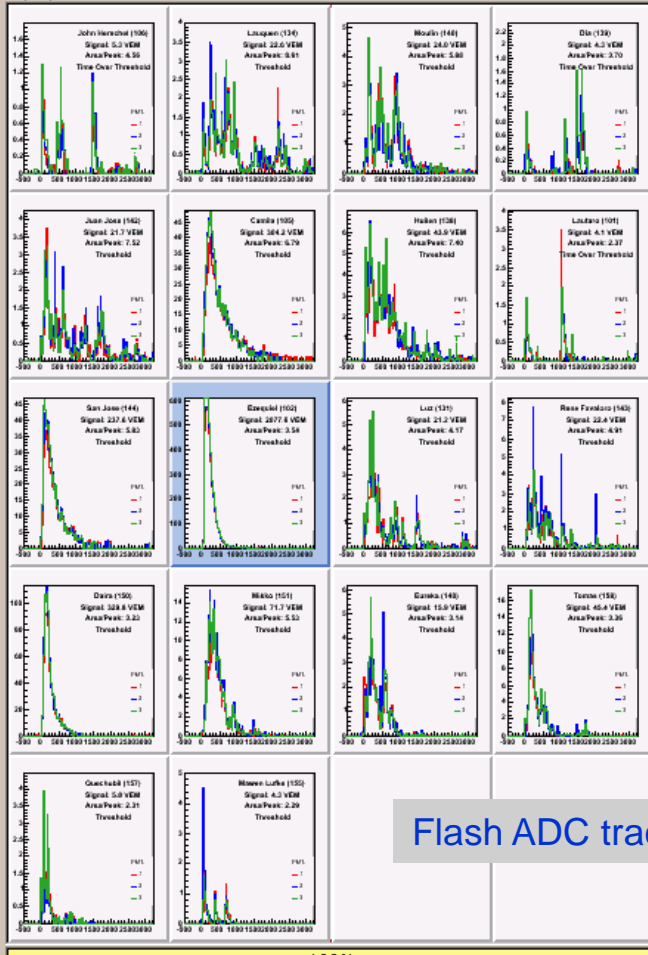
Lidar at each fluorescence eye



Example Surface Array Event

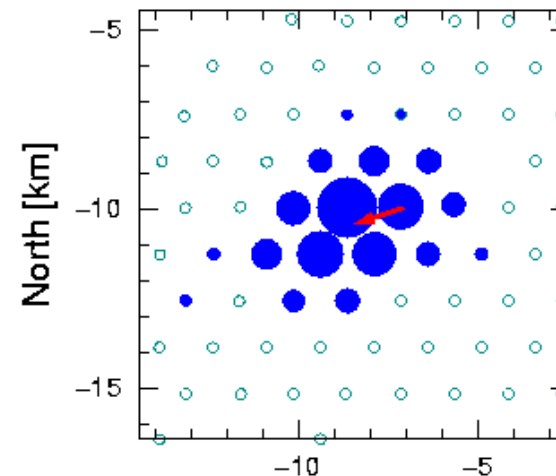
☉ $\sim 48^\circ$, ~ 70 EeV

Display

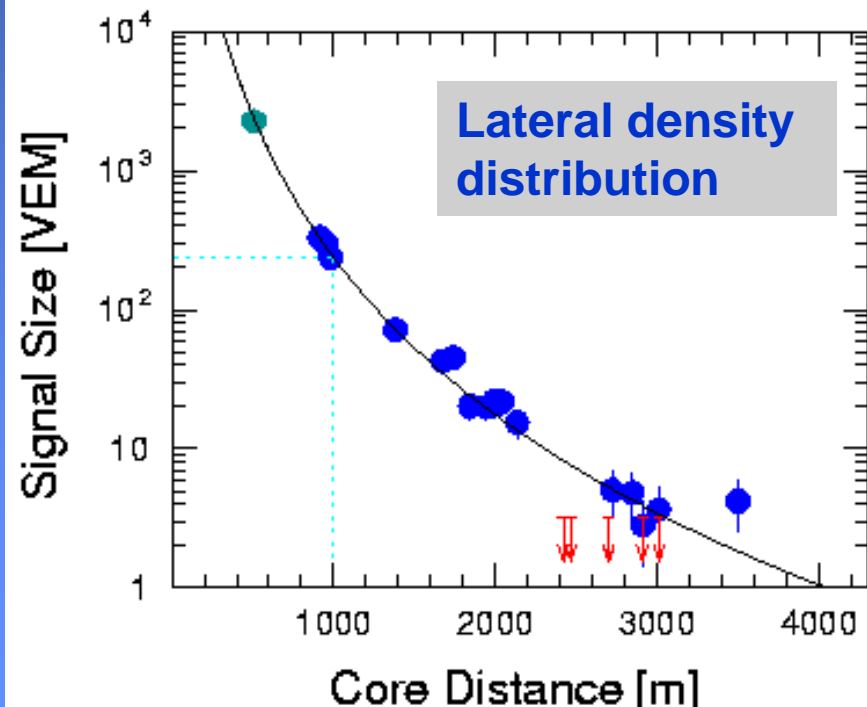


Flash ADC traces

ID 762238

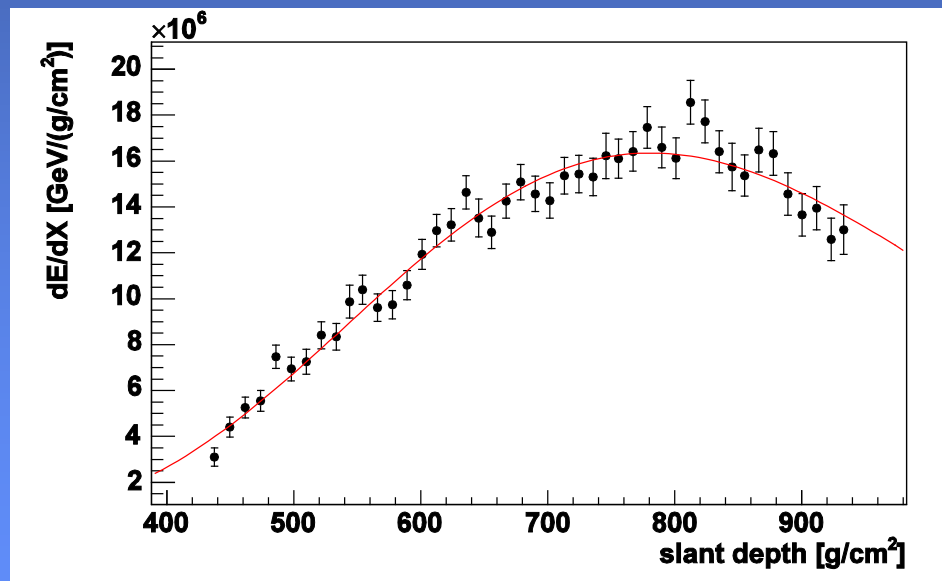
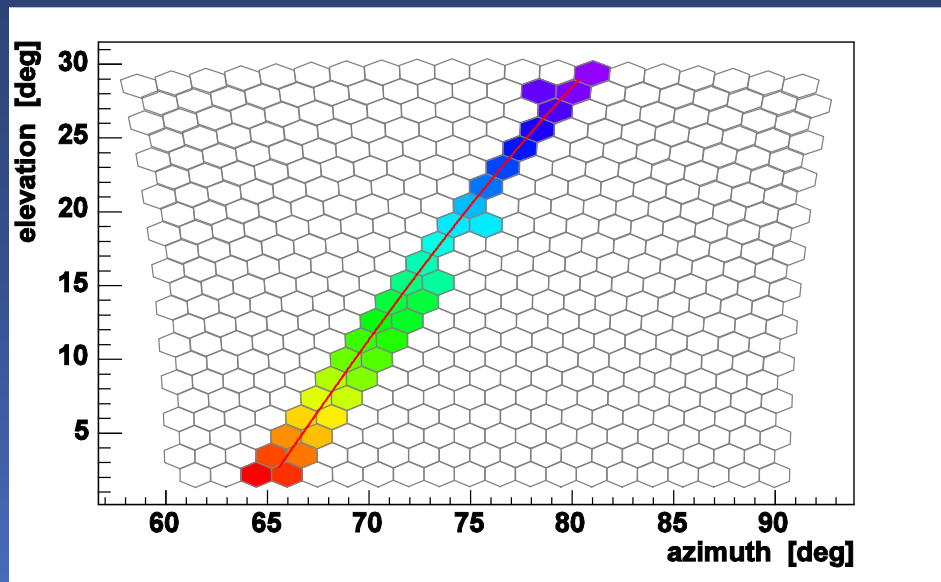
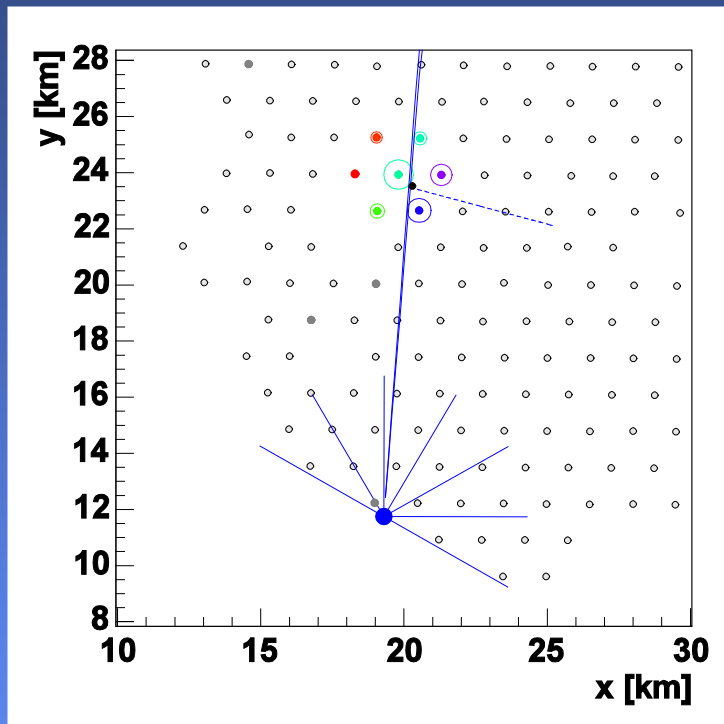


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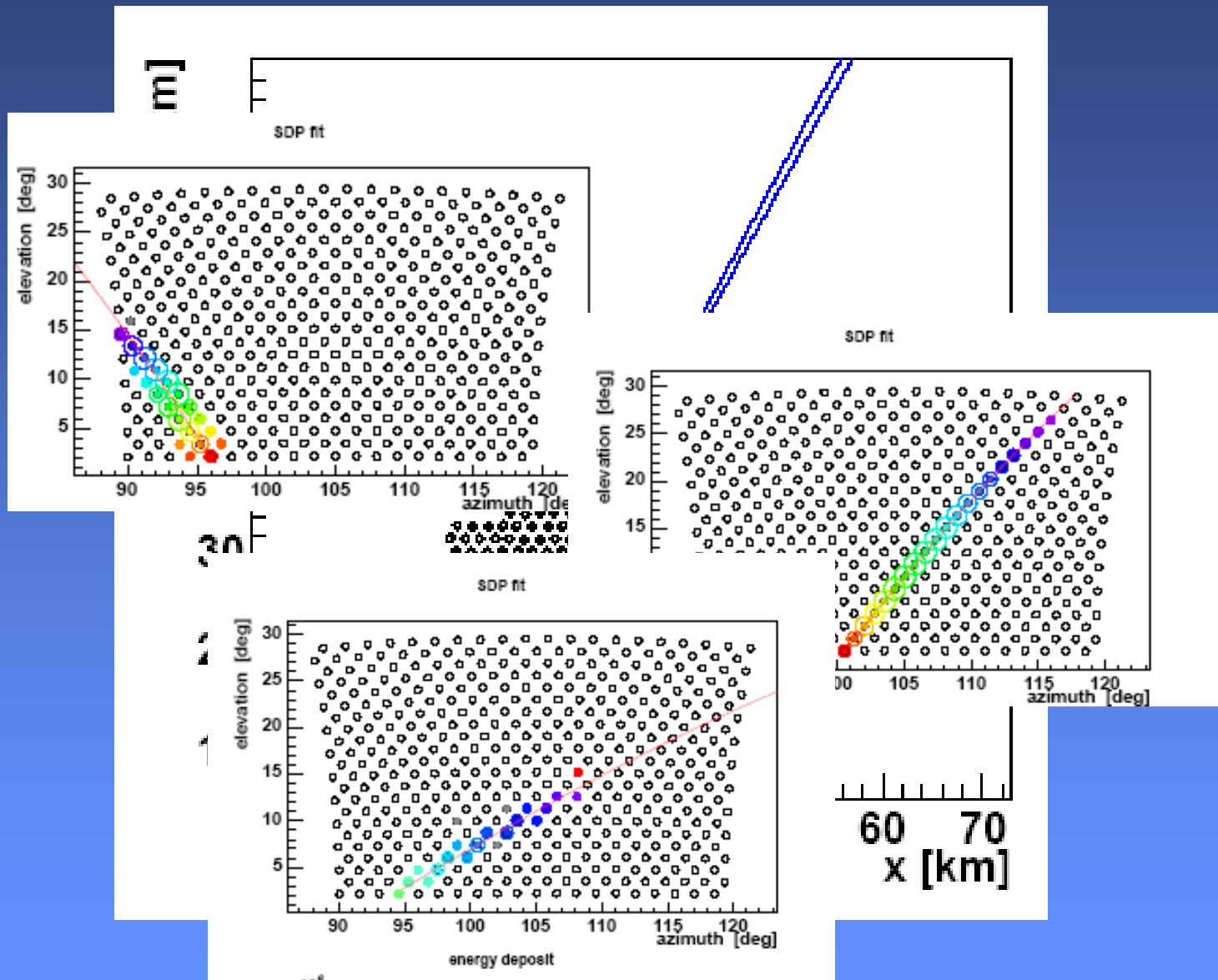
Example Hybrid Event

• $\sim 30^\circ$, ~ 8 EeV



A Tri-ocular Event!

~20EeV



Malargüe

