

# **Astronomy Outreach in Argentina**

## **Outreach of the Auger Cosmic Ray Observatory in Malargue Argentina**

**James W Cronin  
The Chile Education Summit  
Santiago  
November 23, 2010**

# The Pierre Auger Observatory

Auger north is planned in Colorado

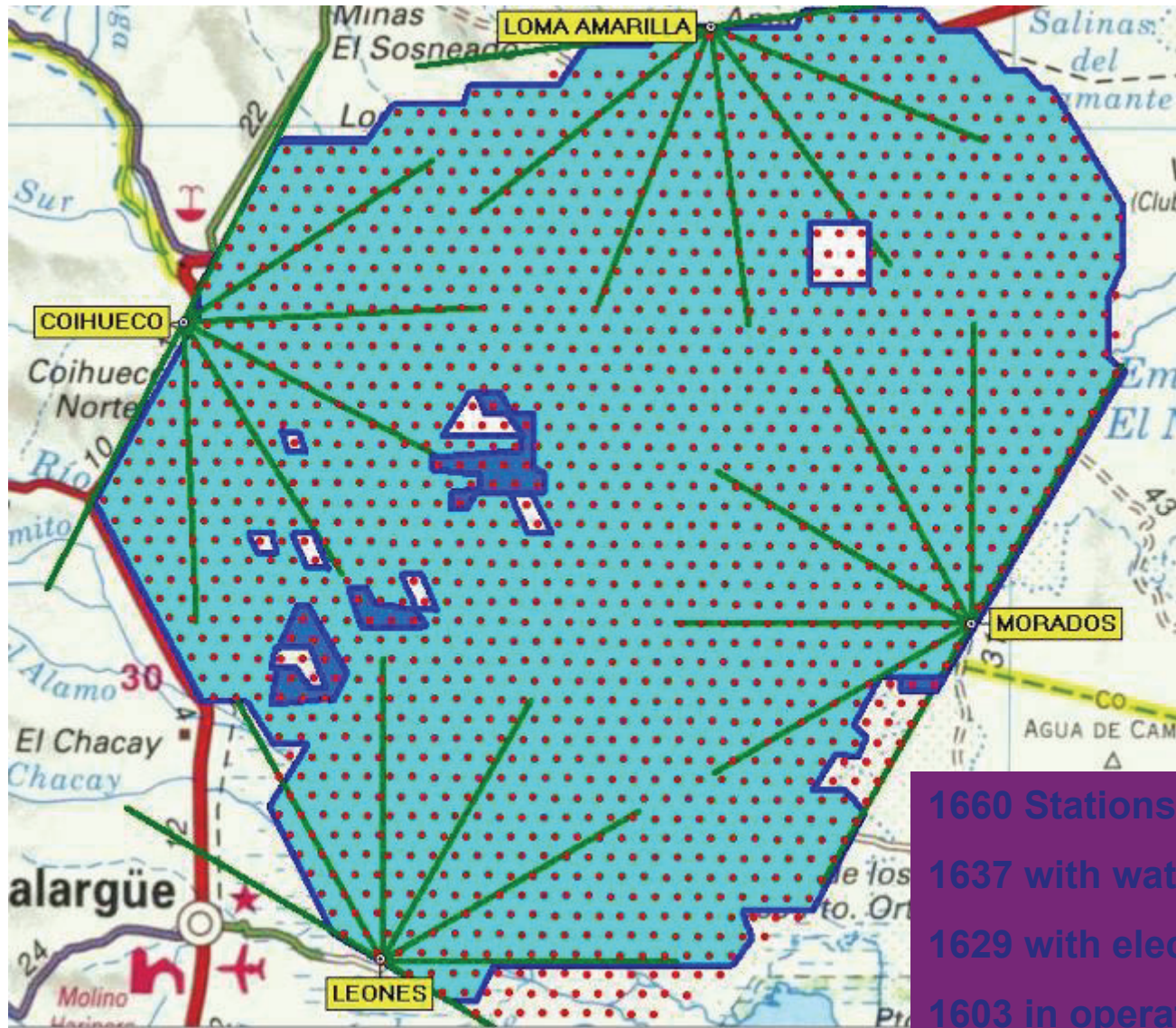


Auger south is here.

Malargüe is a small town on the high plains, the foothills of the Andes. Mendoza Province is also the wine making region of AR.



# Surface Array (*April 2009*)



1660 Stations in the Field  
1637 with water  
1629 with electronics  
1603 in operation







# The Auger Collaboration

67 Institutions, 369 Collaborators

Argentina	Netherlands
Australia	Poland
Bolivia*	Portugal
Brazil	Slovenia
Czech Republic	Spain
France	U.K.
Germany	USA
Italy	Vietnam*
Mexico	

\* *associate*



DPF 2009, Detroit, July 27, 2009

**Auger Education and Outreach**  
– *G. Snow*







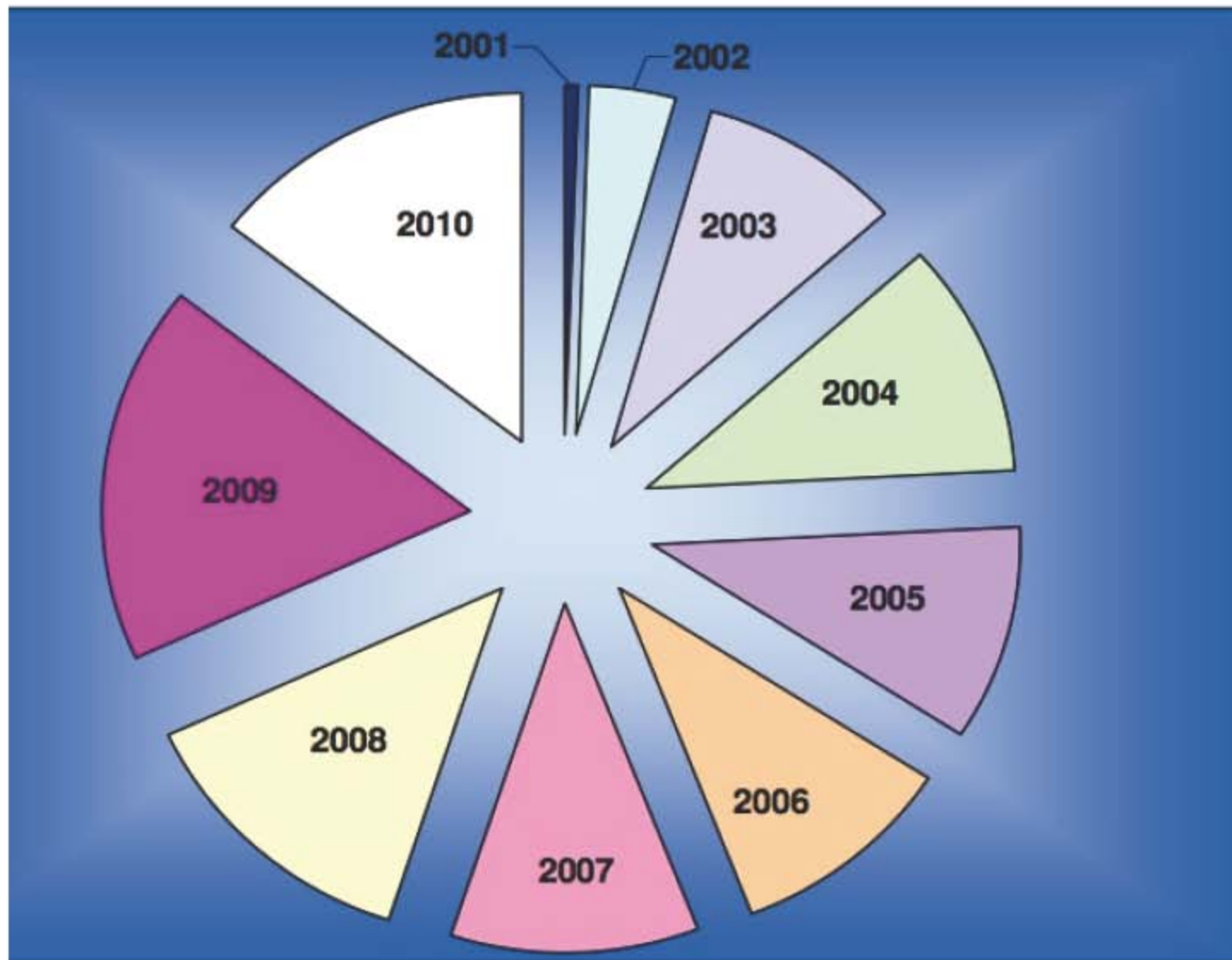
## Visitor Center at Auger Office Building

**Data Acquisition**

**Visitor Center**  
**10 × 12 m<sup>2</sup>**



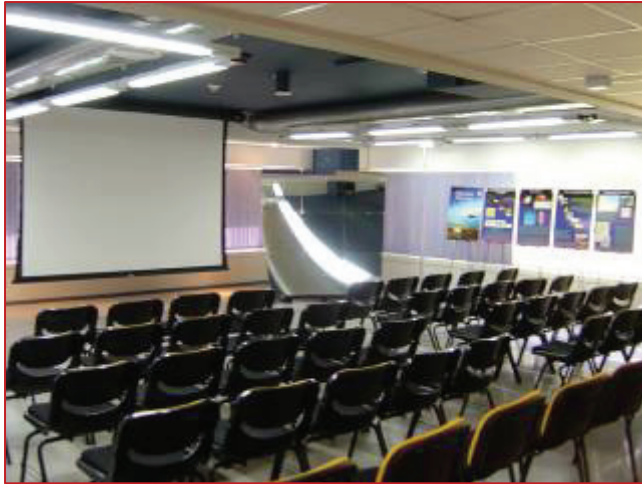
## Visitors Center Statistics



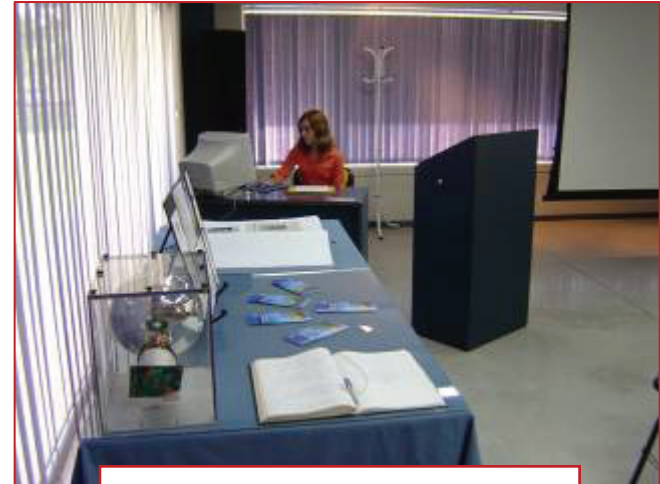
**TOTAL: 60,000 Visitors**



## Visitor Center at Auger Office Building



**Seats 60 people**



**PC and multimedia projection**



**Glass cabinet for library and displays**



**Quarter-size FD mirror set-up from Karlsruhe**

# Public Lectures in Malargüe



- Nightly science talks given to student and adult groups during collaboration meetings
- Thanks to Office of Tourism for hosting

ICATPP, October 7, 2010  
Auger Education and Outreach – G. Snow





# Training about PAO activities

## Thesaurus and Tourism Office Staff

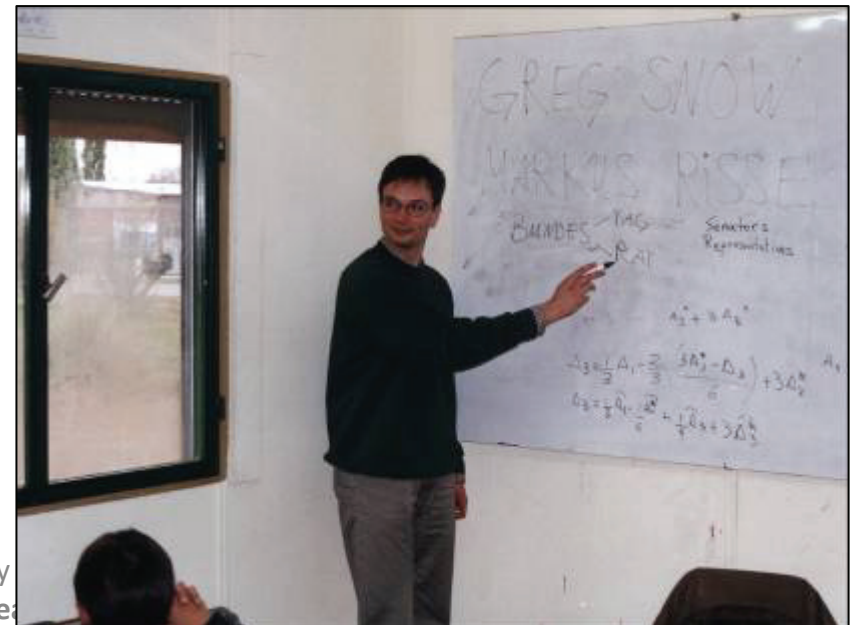


June 15<sup>th</sup>, 2010 / Two Groups: 10-12 am and 3-5 pm

Responsible: Julio Rodriguez Martino, Ricardo Sato and Analia Cáceres

Total: 31 peoples

## Close Contact with Malargüe Schools





## School Visit “El Sosneado”



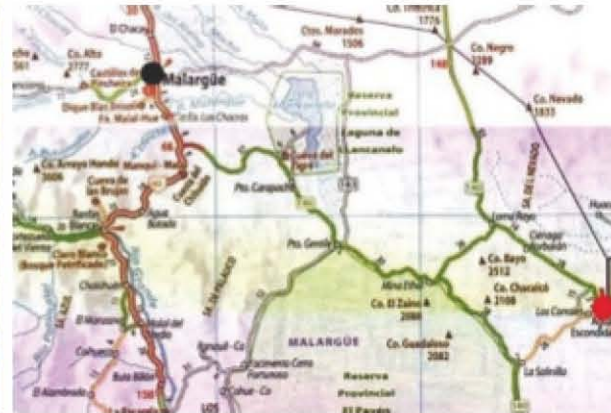
November 12<sup>th</sup>, 2010

Total: 50 peoples



## Visits to Rural Schools

### “Cristo Redentor School - Agua Escondida”



December 5<sup>th</sup>, 2009

220 km of Malargüe  
37 students  
4 teachers



## Education Activities



## Maintenance



## Future Visits to Rural Schools



**Scheduled:**

- Bardas Blancas and Las Loicas - December
- Carapacho - December
- El Manzano and El Alambrado - March
- Ranquil Norte - March
- Pata Mora (two days) - April

Others:

- Los Parlamentos
- El Sosneado
- El Chacay
- Los Molles
- Las Leñas

El Chacay: 15 km  
La Junta: 32 km  
Los Molles: 50 km  
Las Leñas: 75 km  
Carapacho: 75 km  
Agua Escondida: 220 km  
El Cortaderal: 227 km  
Bardas Blancas: 65 km  
Las Loicas: 150 km  
El Manzano: 90 km  
El Alambrado: 130 km  
Ranquil Norte: 200 km  
Pata Mora: 350 km  
Los Parlamentos: 80 km  
El Sosneado: 50 km



## Auger collaboration participates in Malargüe Day parades





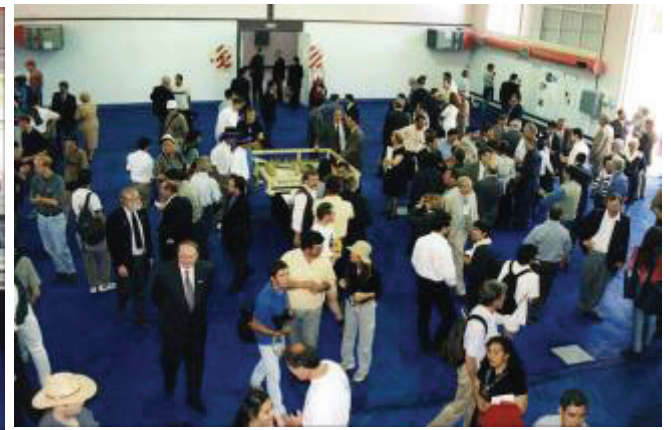
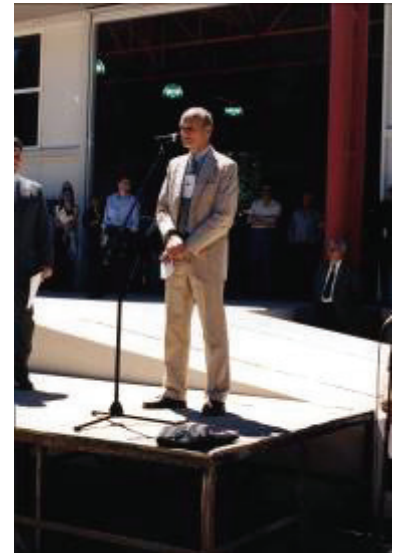
## Auger collaborators participating in Malargüe Day parade - a tradition !!



ICATPP, October 7, 2010  
Auger Education and Outreach  
– G. Snow



## Assembly Building Inauguration and Open House, November 2000



ICATPP, October 7, 2010  
Auger Education and Outreach – G. Snow





## **James Cronin School Inauguration**



**New school opened  
November 2007**

**Funding from Malargüe,  
Mendoza Province,  
U.S. Grainger Foundation**



ICATPP, October 7, 2010  
Auger Education and Outreach  
– G. Snow





## November 2007 Science Fair drew 42 participating teams



**Jim Cronin with first-place  
team in Technology**

ICATPP, October 7, 2010  
Auger Education and Outreach  
– G. Snow

**Science Fair 2010**

**Young participants**

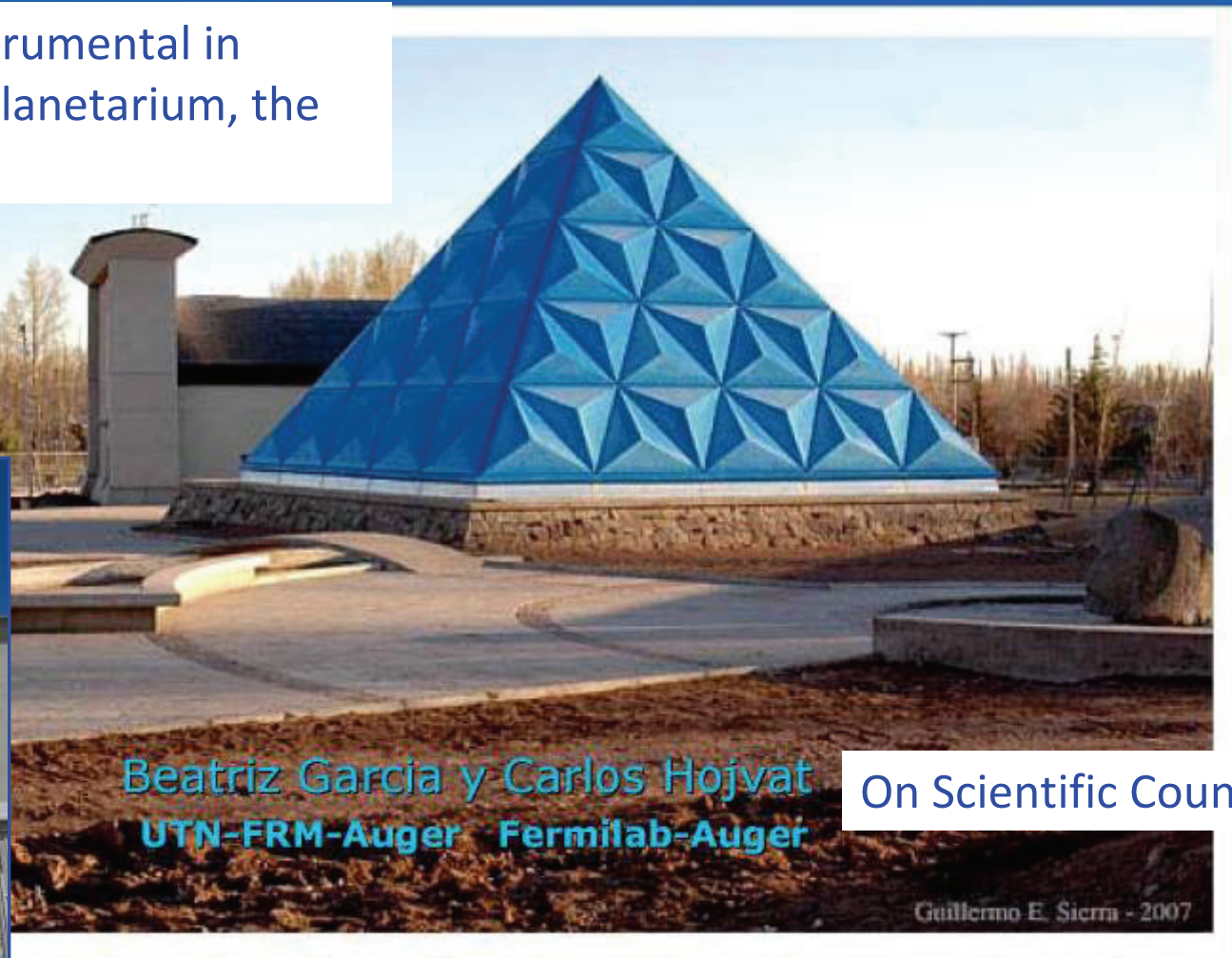




# Planetario Malargüe

*Municipalidad de Malargüe*

- Collaboration instrumental in Malargüe's new planetarium, the 2<sup>nd</sup> in Argentina.



Beatriz Garcia y Carlos Hojvat  
UTN-FRM-Auger Fermilab-Auger

On Scientific Council

Guillermo E. Sierra - 2007

Auger Collaboration Meeting, Malargüe,  
November 2007

## Release of event information to public

- 30 October 2007
- 5 languages
- Wikipedia links
- Google site statistics

**Pierre Auger Observatorium  
Öffentlicher Ereignis-Betrachter**

### Öffentlicher Ereignis-Betrachter

Herzlich Willkommen beim öffentlichen Ereignis-Betrachter des Pierre Auger Observatoriums.

Die Pierre Auger-Kollaboration hat beschlossen, 1% der Daten öffentlich verfügbar zu machen. Auf dieser Webseite, die täglich aktualisiert wird, können die seit 2004 gesammelten Ereignisse angezeigt werden.

Sie können eine Ereignisnummer (ID) im Suchfenster eingeben, das Menü "Ereignis-Selektion" benutzen oder ein Ereignis anschauen, das schon im Cache geladen ist. Zum Abspeichern auf dem eigenen Computer steht eine [ascii Datei](#) mit allen Ereignissen zur Verfügung.

Der aktuelle Datensatz besteht aus 7446 Ereignissen mit Energien zwischen 0 EeV und 41.1 EeV. Das letzte Ereignis hat die ID [4156500](#) und der Zeitpunkt der Messung war Nov 05 2007 04:01:34, UTC Time.

#### Ereignisse im Zwischenspeicher

Die 3 meistbetrachteten Ereignisse

★★★★★  
[000001234800](#)

★★★★★  
[000004128900](#)

★★★★★  
[000004044700](#)

**Pierre Auger Observatorium  
Ereignis-Betrachter**

#### Ereignis-Selektion

	Min	Max
Anzahl Stationen	5	
Zenitwinkel	0	60
Energie (EeV)	5	

Sortiert: [Datum \(rückwärts\)](#)

Zeige: 10 Ereignisse

[Suchen](#)

[Gehe zu Ereignis](#)

[Impressum](#) [astro.uni-wuppertal](#)

ICATPP, October 7, 2010

Auger Education and Outreach  
– G. Snow

Xavier Bertou, et al.

S. Coutu, C. Lachaud, P.L. Ghia, P. Mantsch,  
M. Mostafa, J. Rautenberg, M. Risse, P. Sommers