

AugerAccess

G. Matthiae

Malargüe, November 2011

**Project financed by the European Commission (800 kEuro)
to improve the connectivity of the Observatory**

Co-funding

Spanish Universities: 150 kEuro

Universidad de Alcalá' de Henares

Universidad Complutense de Madrid

Universidad de Granada

CLARA Cooperación Latino Americana de Redes Avanzadas : 87 kEuro

Argentina (Ministerio de Ciencia, Tecnología e Innovación Productiva):

~ as much as AugerAccess

**[Brazil + CLARA : substantial funds to improve the connectivity between
Argentina and Brazil]**

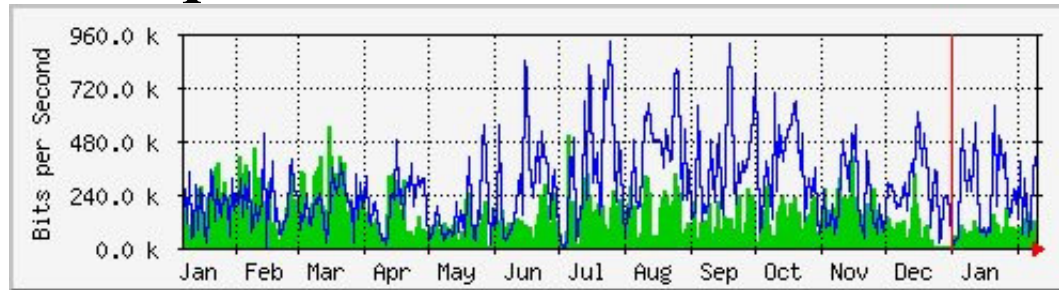
**The Auger Observatory has a IRU (Indefeasible Right of Use) on a capacity
of 1 Gbps for 15 years from the Observatory to Buenos Aires and/or
Santiago.**

However the Observatory (Op Costs) has to pay for the **international access
(to Europe and to US). Actual contract is for 32 Mbps.**

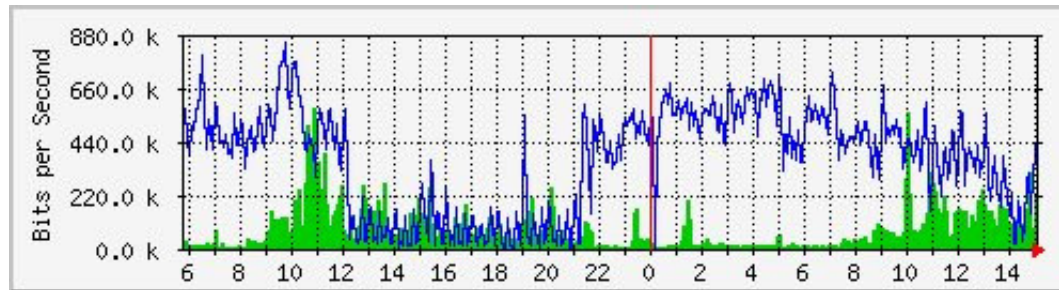
Optical fibre network



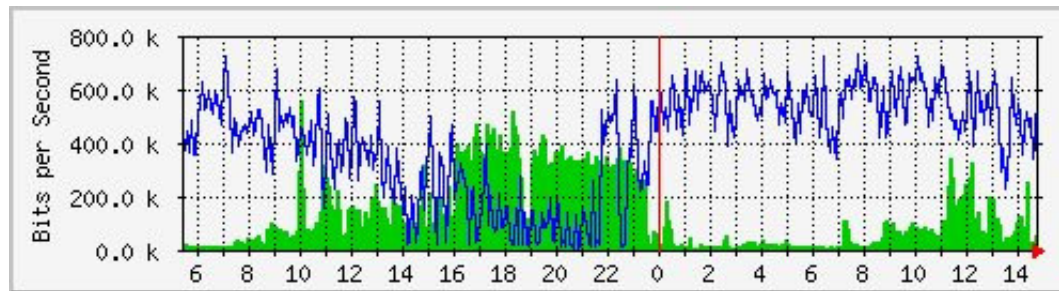
Typical traffic profiles before advent of AugerAccess from Ruben Squartini



One year



One day



Another day

Peak value was around 0.5 – 0.6 Mbps
Maximum 1 Mbps

**The AugerAccess connectivity was given by the provider
Silica Networks on December 23rd, 2010**

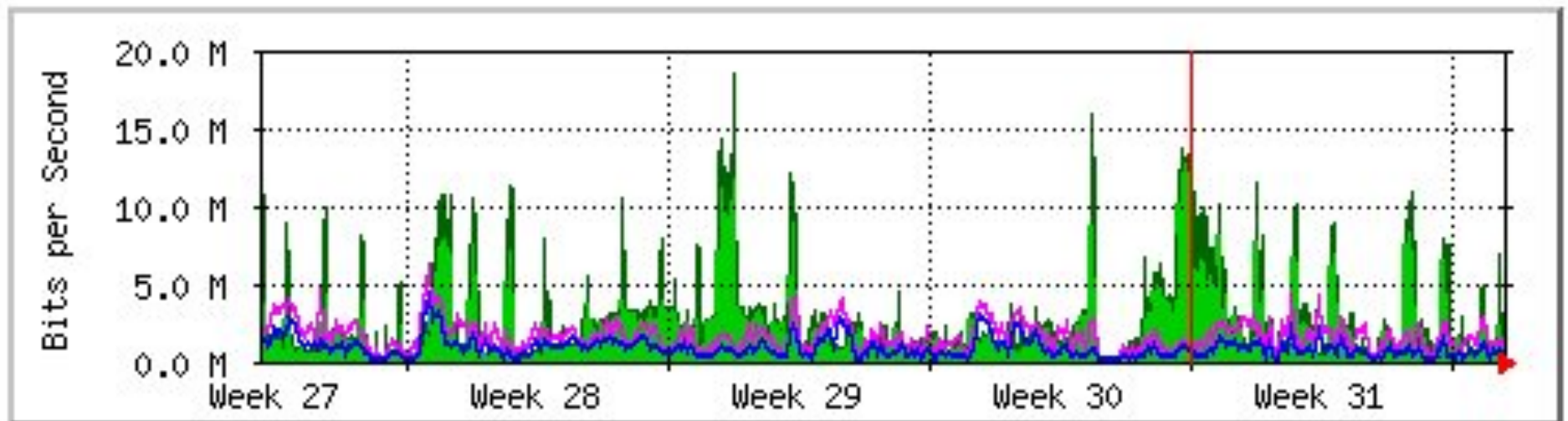
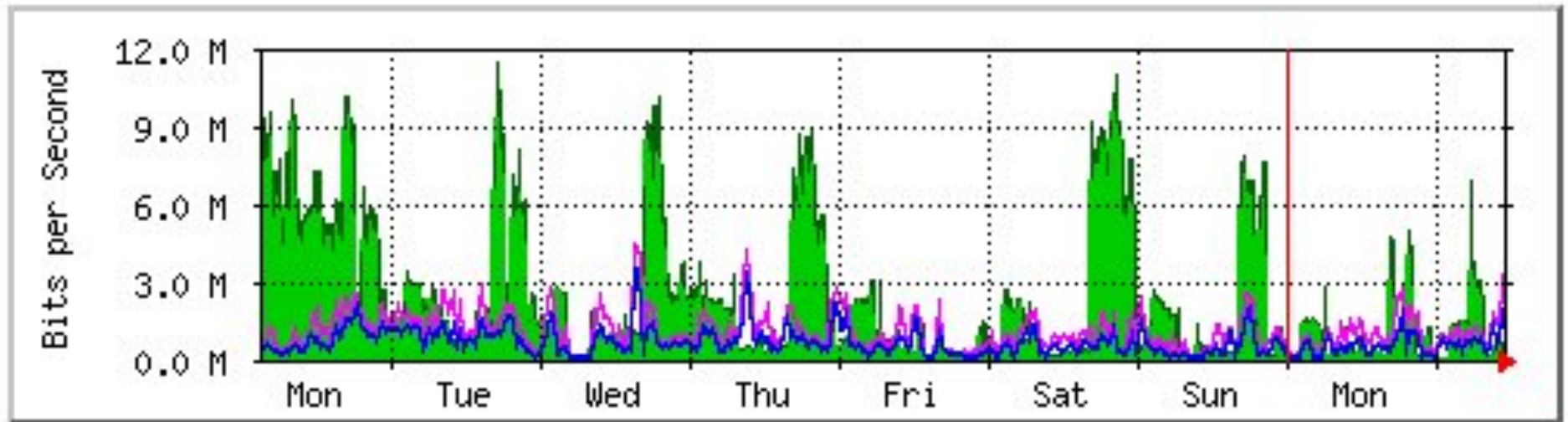
Information on the traffic (from January until August)

from Ruben Squartini (System Manager of the Auger Observatory)
and from Silica Networks (Buenos Aires)

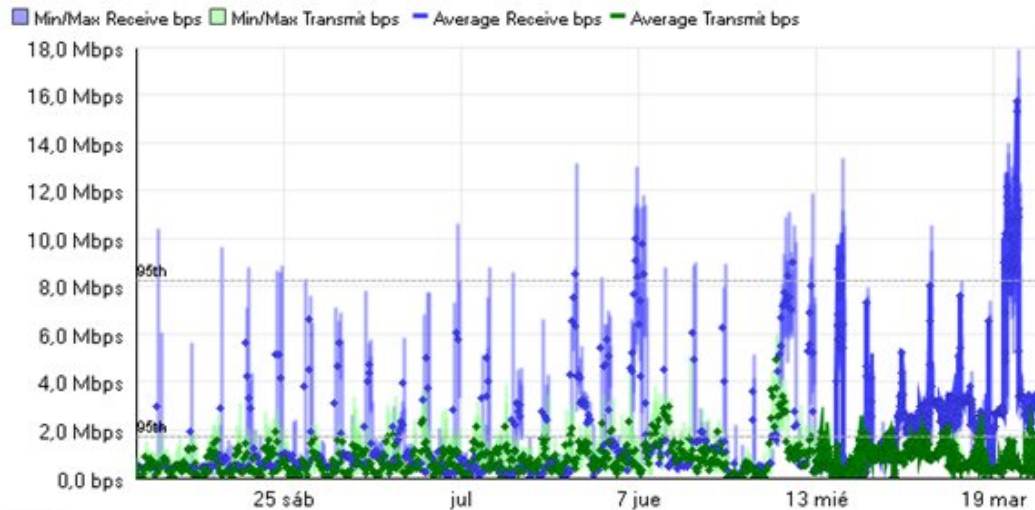
- **About 3 Terabytes sent from the Observatory (CDAS, Calibration data, Monitoring, Software etc.)**
- **About 1 Terabyte of data received at the Observatory, mostly software and traffic from FOPAA.**
- **Peak usage is 6 to 9 Mbps, up to about 15 Mbps**

In the next two slides examples of measured traffic on the line between the Observatory and Buenos Aires

From Ruben Squartini, as seen at the Observatory



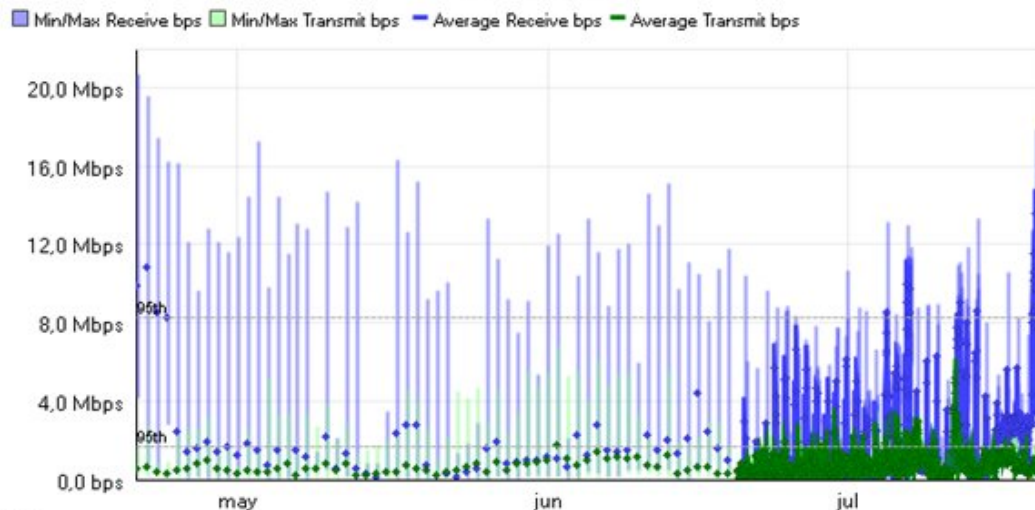
SW-R2-MLG-Ethernet1/0/1 · [CLT-Obs. Pierre-Auger]
 Min/Max/Average bps of Recv 100,0 Mbps Xmit 100,0 Mbps
 LAST 30 DAYS



jun 2011
 95th Percentile: Average Receive bps is 8,2555 Mbps, Average Transmit bps is 1,6933 Mbps
 SolarWinds Orion Network Performance Monitor 9.5 SP3

**From Silica Networks
 traffic as seen at the other
 end of the line,
 in Buenos Aires**

SW-R2-MLG-Ethernet1/0/1 · [CLT-Obs. Pierre-Auger]
 Min/Max/Average bps of Recv 100,0 Mbps Xmit 100,0 Mbps
 LAST 3 MONTHS



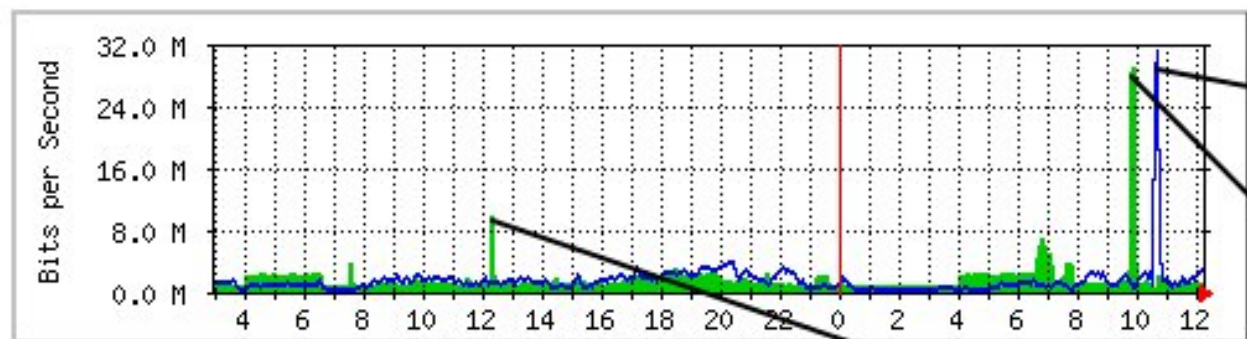
2011
 95th Percentile: Average Receive bps is 8,2555 Mbps, Average Transmit bps is 1,6886 Mbps
 SolarWinds Orion Network Performance Monitor 9.5 SP3

The project AugerAccess has ended on 31 October. Still several documents to be prepared.

Expert from GARR (Massimo Malabotta) now in Malargüe working during our meeting with Ruben to prepare document on the final technical testing for the European Commission

Estadísticas actualizadas el **Miércoles 16 de Noviembre de 2011 a las 12:15**, 'clara-ar.noc.redclara.net' ha estado funcionando durante **322 days, 18:36:15**.

Gráfico diario (5 minutos : Promedio)



UDP 30M for 10 minutes from Trieste (Italy)

UDP 29M for 10 minutes to Trieste (Italy)

TCP for 5 minutes to Trieste (Italy)

	Máx	Promedio	Actual
Entrante:	29.1 Mb/s	1594.9 kb/s	1219.7 kb/s
Saliente:	31.0 Mb/s	1314.3 kb/s	1938.6 kb/s



30 Mbps

Old annual cost to the Observatory was ~ 41 k\$ for 1 Mbps paid to Innova-Red.

The old cost had two components:

- 1) 36.3 k\$ for the domestic traffic (from Innova-Red to Impsat)**
- 2) 4.7 k\$ for the International access (controlled by Innova-Red)**

At present the Observatory does not have to pay for the domestic traffic, because of the IRU.

We will have to pay only for the International access.

This is not responsibility of AugerAccess anymore

Rule for the cost of the International access.

Cost = (Unit cost/Mbs) x Bandwidth0.54**

Now there is a contract between the Observatory (FOPAA) and Innova-Red for Bandwidth =34 Mbps,

the cost is $4.7 \times 34 **0.54 = \underline{31 \text{ k\$}}$