



Andean Perspectives

Jaime E. Forero-Romero

je.forero@uniandes.edu.co
@github:forero

- **Universidad de los Andes
Bogotá, Colombia**

PABLO PORCIUNCULA/AFP/Getty Images

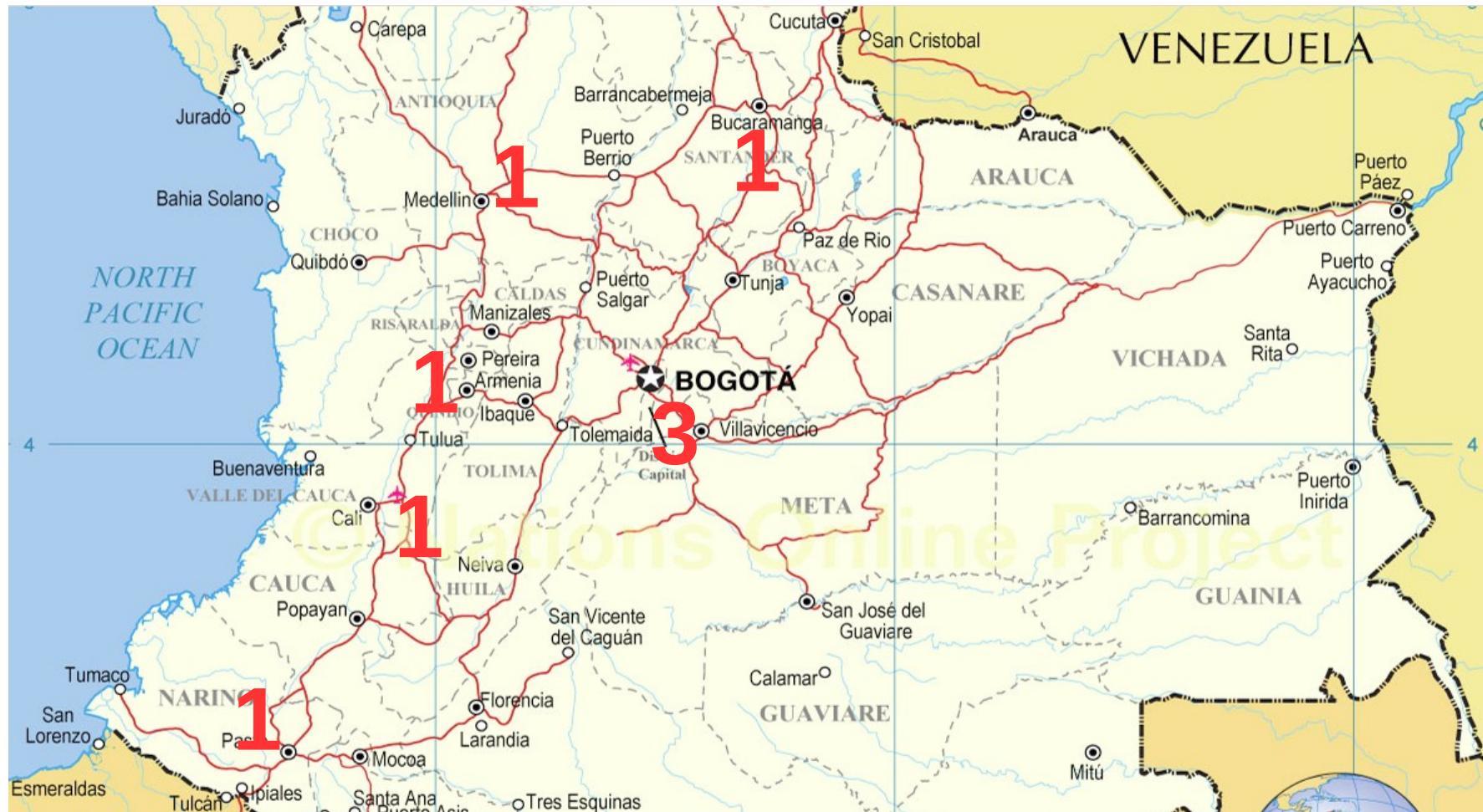
Welcome to Colombia



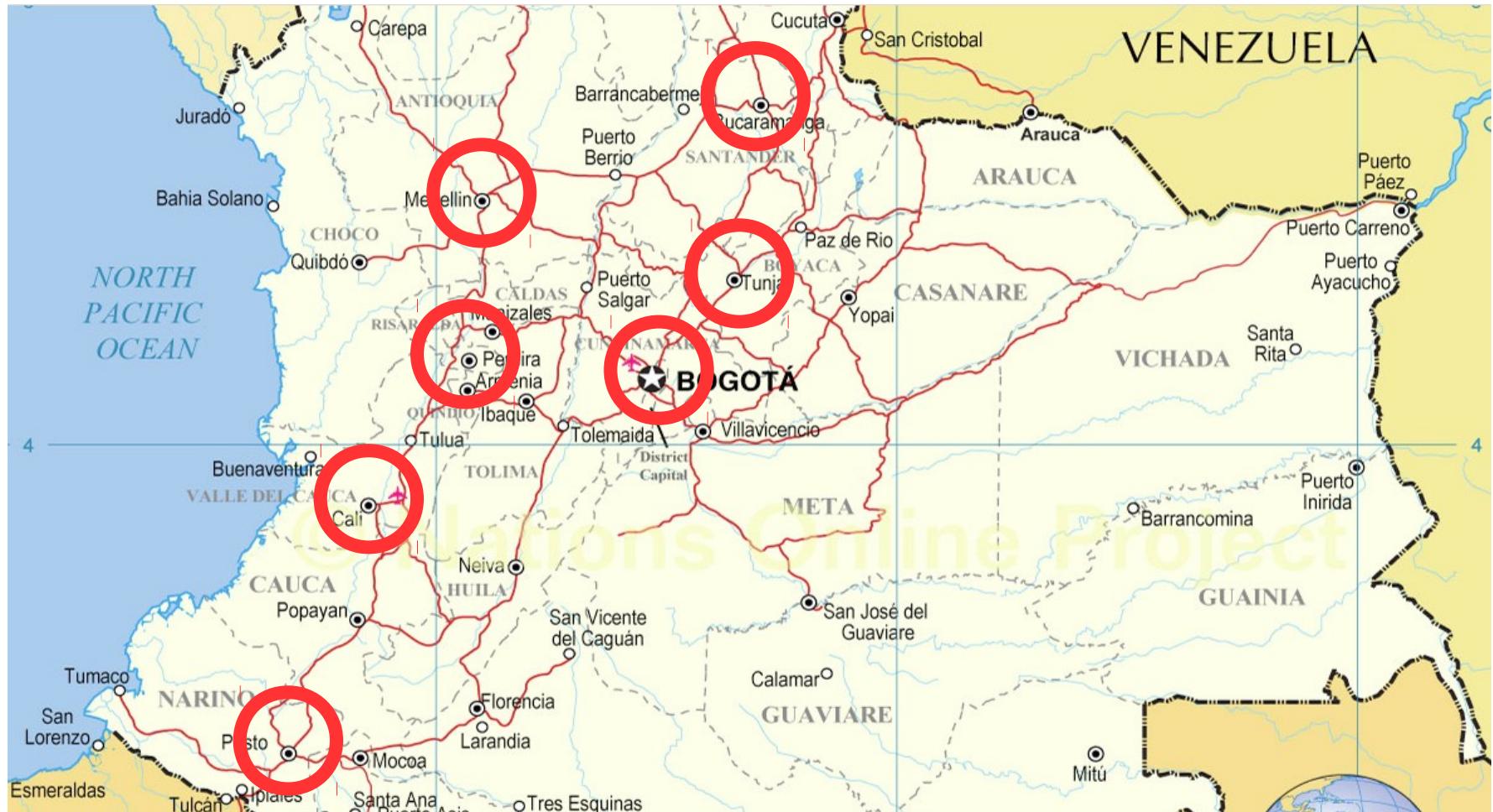
Most of the academic activity happens in this region



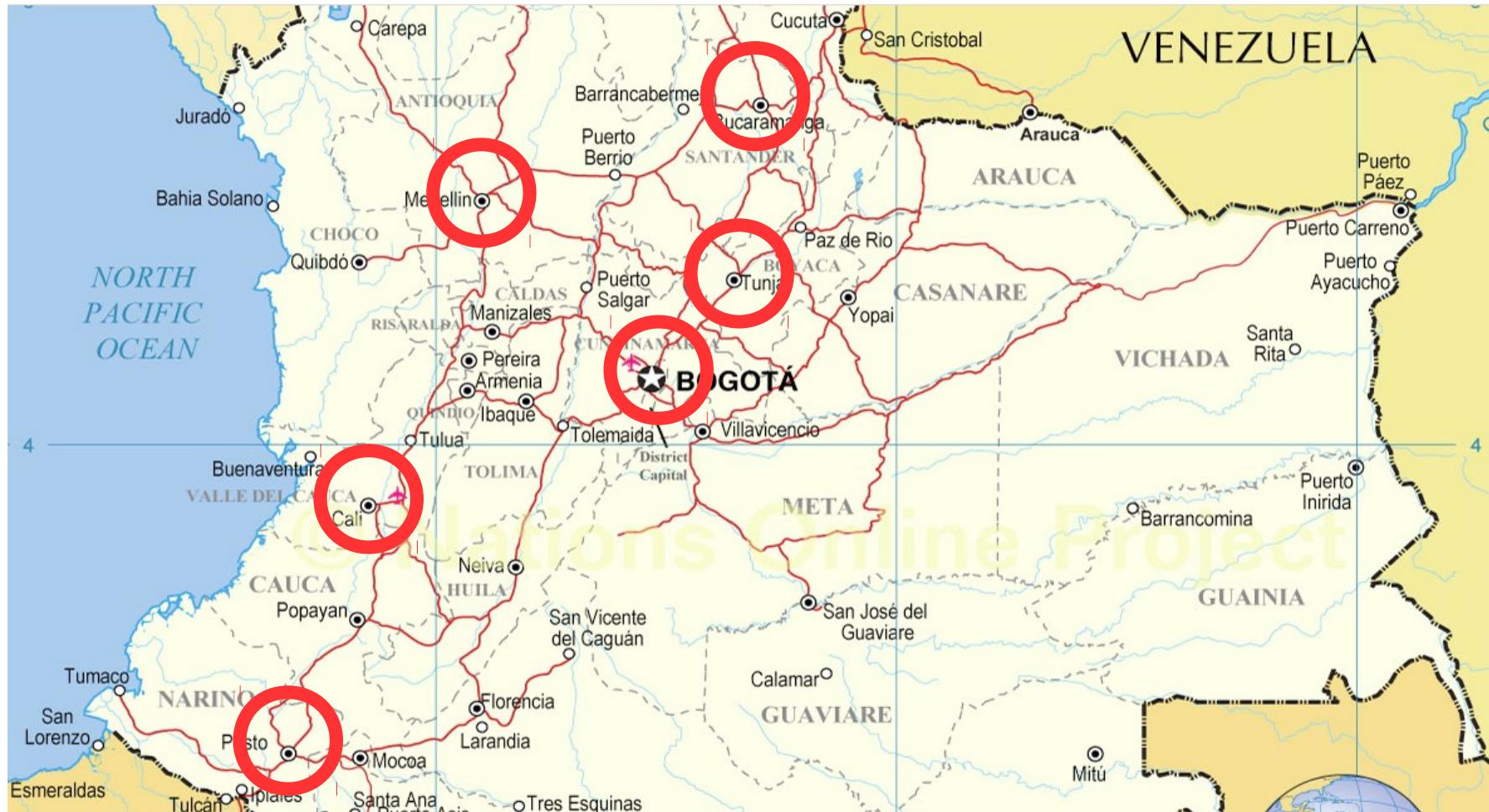
9 registered research groups



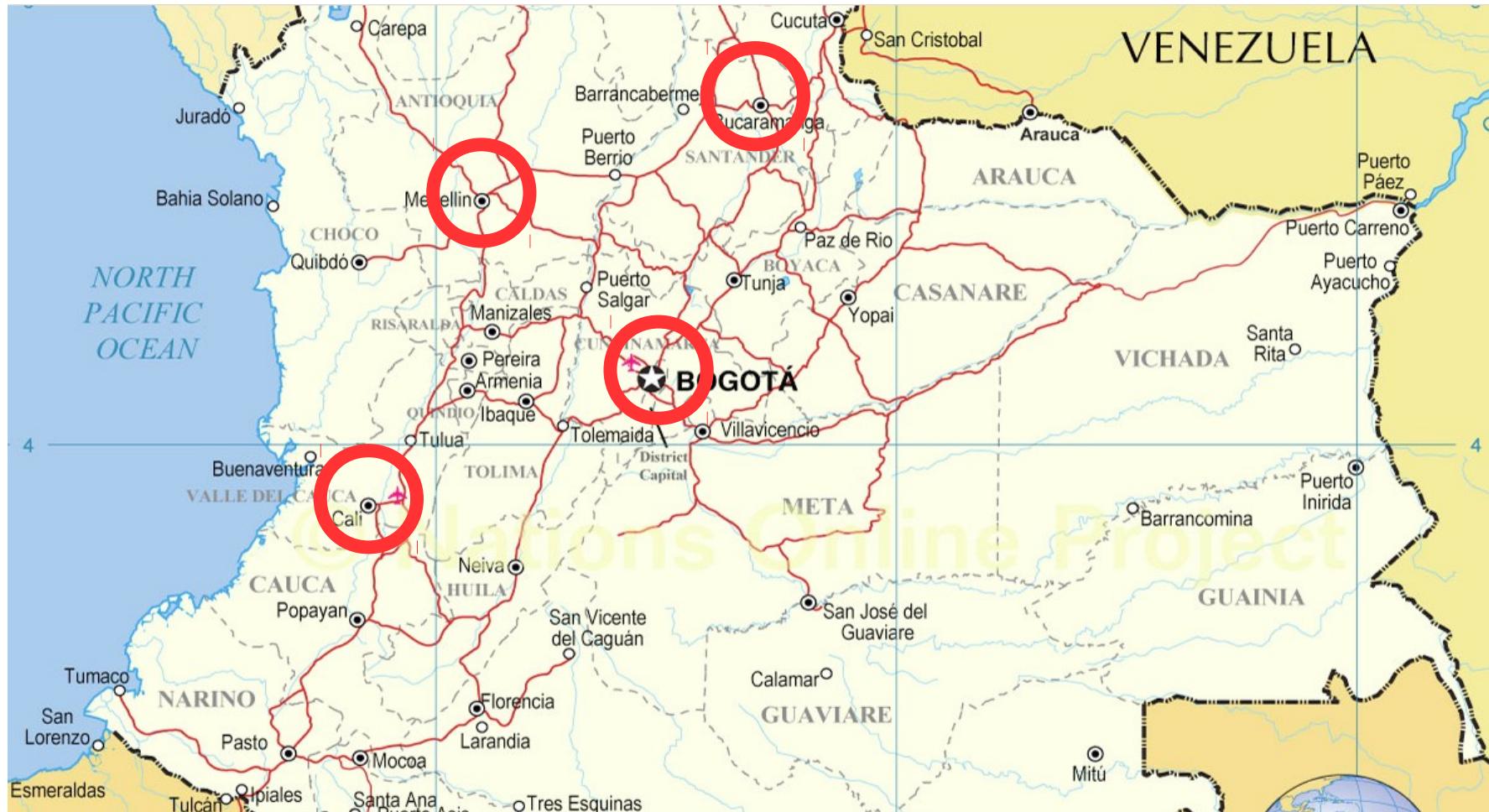
7 cities with some teaching activities in astro-*



6 cities with some teaching activities in astro-* + undergraduate physics



4 cities with some teaching activities in astro-* + postgraduate physics



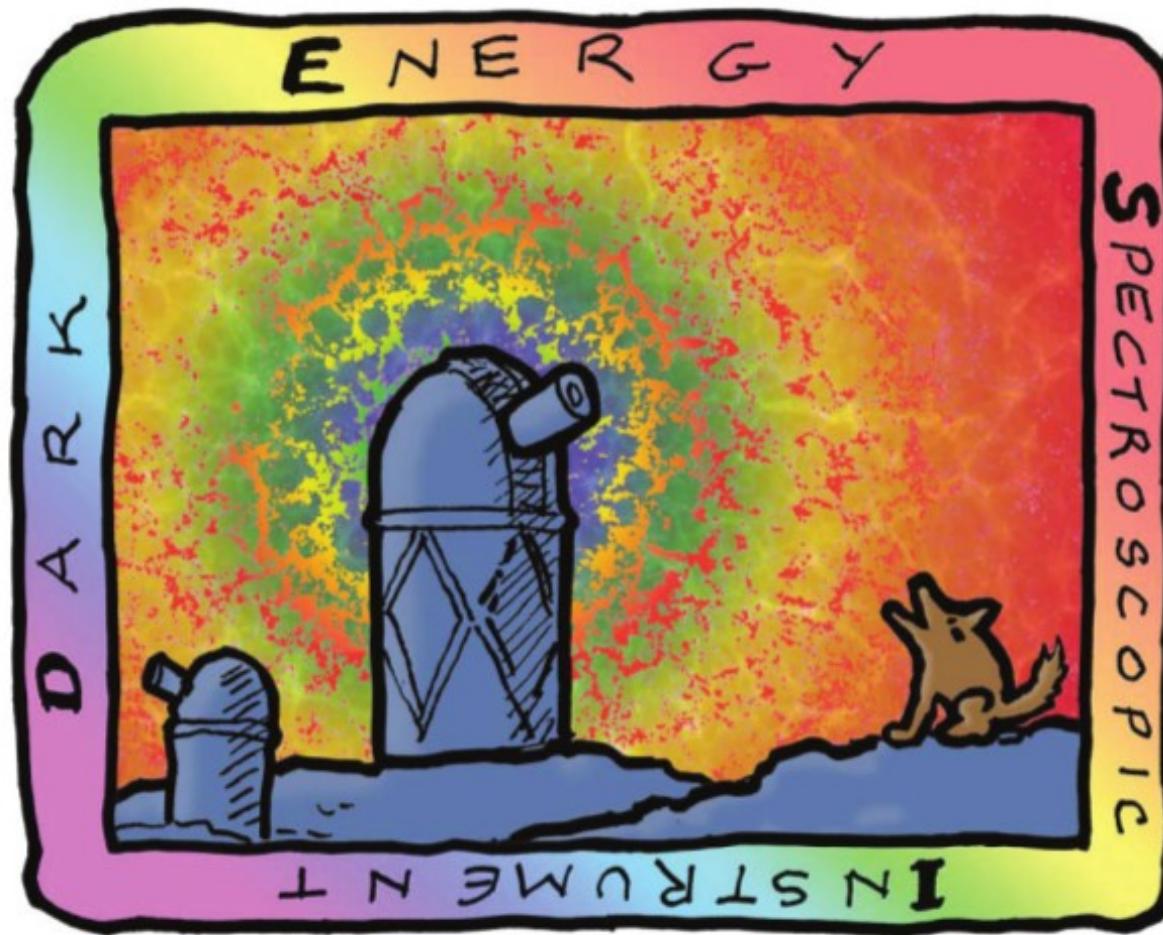
2 universities joined in 2015 BIG Experimental Projects



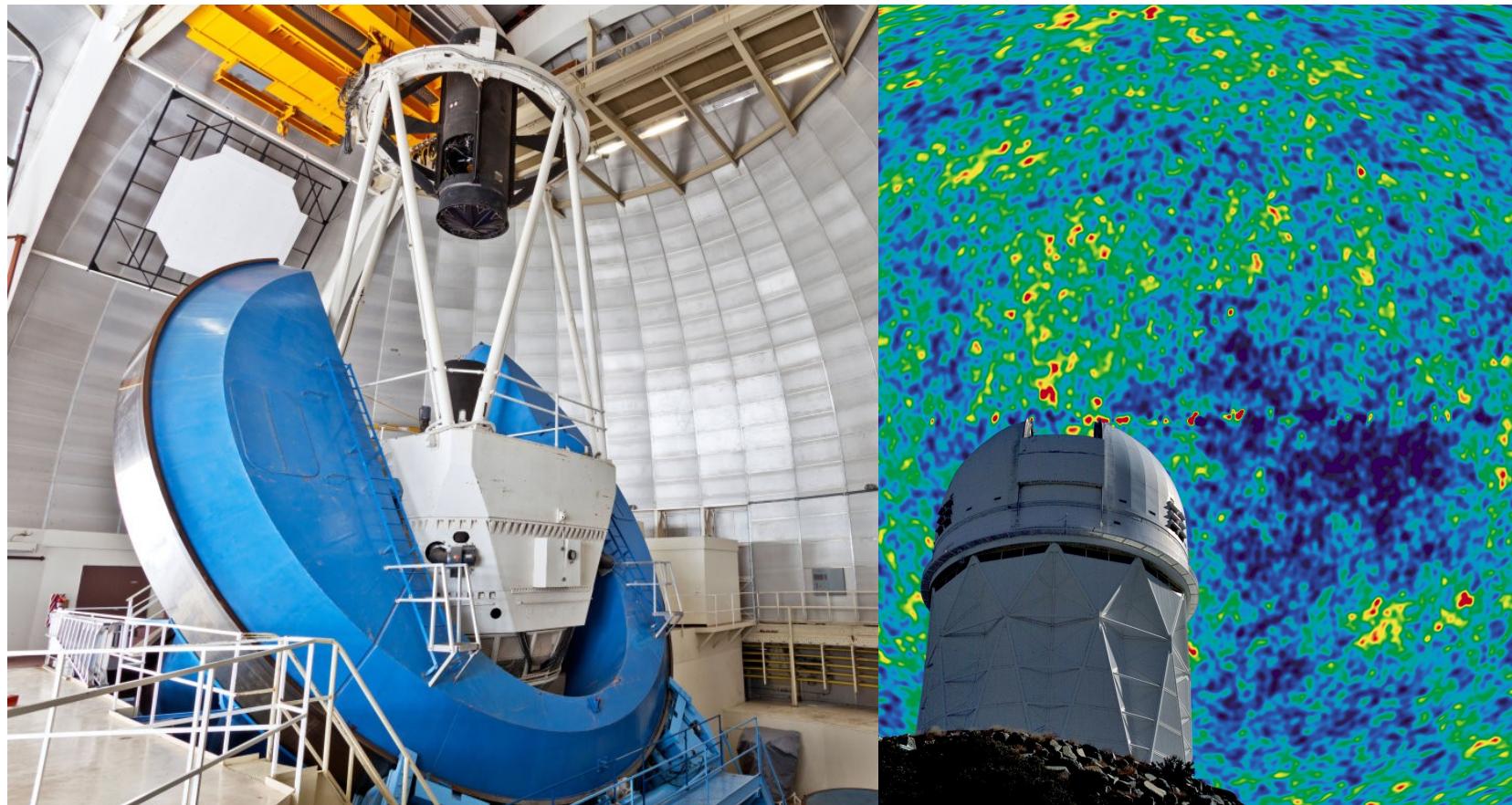
AUGER [UIS]



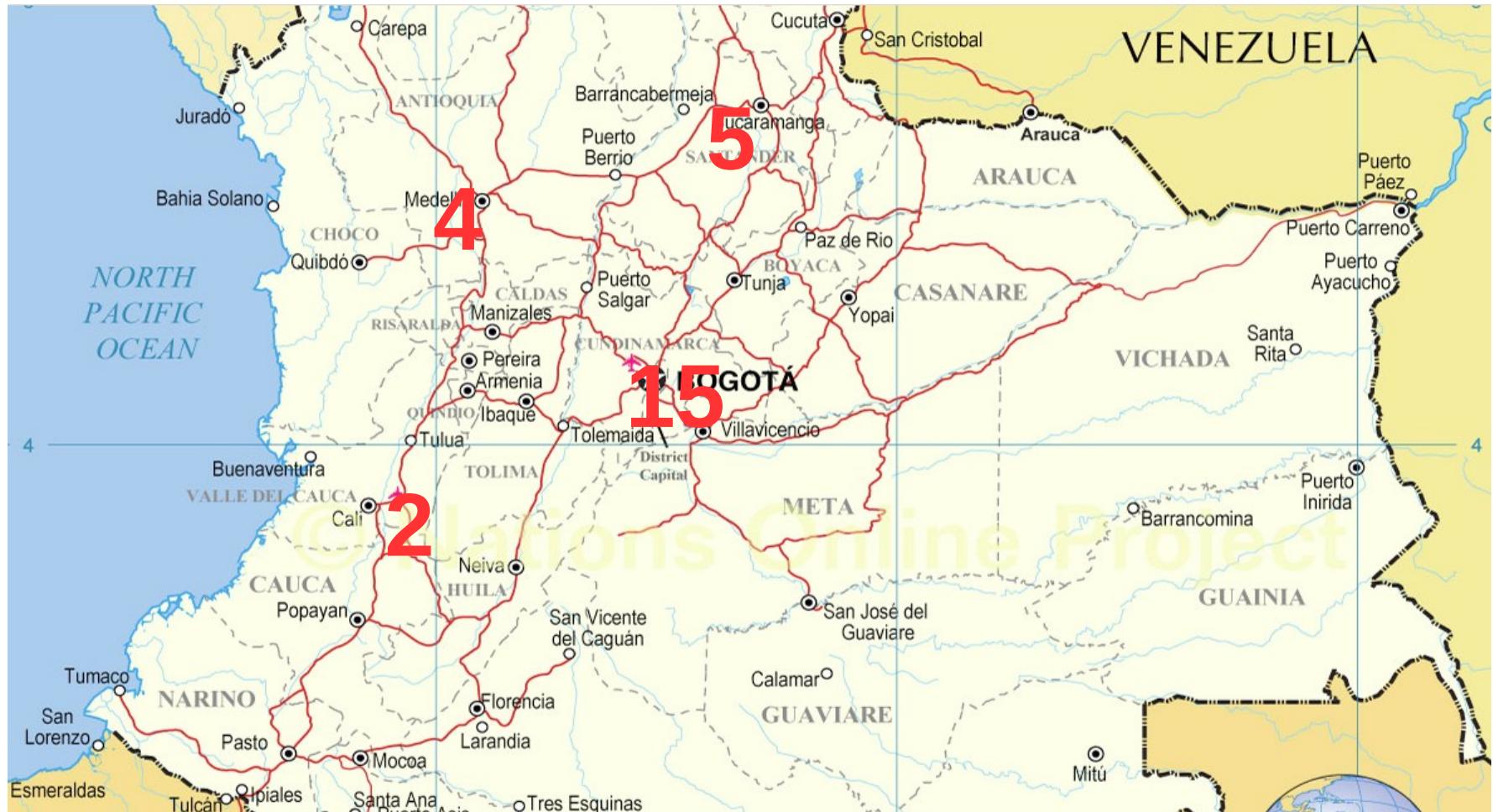
Dark Energy Spectroscopic Instrument (DESI) [Uniandes]



Dark Energy Spectroscopic Instrument (DESI) [Uniandes]



We are a community of roughly 35 faculty



We know some rough facts about us

- 35 Faculty + 5 postdocs + 8 PhD students
- Most of them in Bogotá – Bucaramanga – Medellín – Cali
- 50% Theory + 30% Simulation + 25% Observation + 5% Instrumentation
- Some 20 colombian postdocs abroad who want to come back.
- **Only 2 women out of the 40 postdocs+faculty (!)**

We try to keep track of some statistics about productivity

	#Apellido	Primera Entrada	Entrada Reciente	Citaciones	h-Index	Universidad	Area
1	Rodriguez (Yeinzon)	2002	2014	1023	12	UIS/UAN	Teoria
2	Ferrin (Ignacio)	1969	2014	575	12	UdeA	Obs.
3	Granda (L. N.)	1992	2014	503	12	Univalle	Teoria
4	Vargas-Dominguez	2007	2014	318	10	OAN	Obs.
5	Nuñez (L. A.)	1984	2014	286	10	UIS	Teoria
6	González (Guillermo A.)	1999	2014	284	10	UIS	Teoria
7	Forero-Romero	2007	2014	323	9	Uniandes	Computo
8	Valenzuela-Toledo	2008	2014	296	8	Univalle	Teoria
9	Romano (Antonio Enea)	2006	2013	282	8	UdeA	Teoria
10	Beltran-Almeida	2004	2014	184	8	UAN	Teoria
11	*Silva-Villa	2008	2014	180	7	UdeA	Obs.
12	*Ruiz Milton	2007	2014	109	7	UIS	Computo
13	Sabogal/Sabogal-Martinez	2000	2014	100	7	Uniandes	Obs.
14	Hoyos (Jaime)	2004	2014	98	7	UdM	Computo

https://github.com/ColombianAstronomy/ProductividadAstronomica/blob/master/ADS_stats_colombia.csv

We know a little bit about the colombian diaspora

	#Apellido	Primer Paper	Paper Reciente	Citaciones	h-index	Universidad	Area
1	Noreña	2008		527	13	Suiza	Teoria
2	Gonzalez-Gaitan (Santiago)	2010		967	12	Chile	Obs.
4	Pinilla (Paola)	2012		305	9	Holanda	Obs.
5	Martínez-Fiorenzano	2003		207	9	Italia	Obs.
6	Nuñez (Paul D.)	2008		222	8	Francia	Inst.
7	Martinez-Oliveros	2007		118	8	USA	Obs.
8	Trujillo-Gomez	2011		435	7	Suiza	Computo
9	Soler	2010		143	7	Francia	Inst.
10	Balaguera-Antolinez	2005		140	7	Italia	Teoria
11	Bueno-Sanchez	2007		140	7	Espana	Teoria
12	Vera-Ciro	2011	2014	185	6	USA	Computo
13	Munoz-Jaramillo	2009		141	6	USA	Computo
14	Peña-Ramirez	2011		92	6	Chile	Obs.

https://github.com/ColombianAstronomy/ProductividadAstronomica/blob/master/ADS_stats_abroad.csv

Compared to a more mature community we have a different structure

- Colombia:
- **35 Faculty**
- 5 postdocs
- 8 PhD students
- PUC + Uchile:
- **35 Faculty**
- 60 Postdocs
- 35 PhD students

Compared to a more mature community we have a different structure

- Colombia:
- **50% Theory**
- **30% Simulation**
- 25% Observation
- 5% Instrumentation
- PUC + Uchile:
- 10% Theory
- 10 % Simulation
- **60% Observation**
- **20% Instrumentation**

Are we happy with those numbers?

- Colombia:
- 35 Faculty
- 5 postdocs
- 8 PhD students
- PUC + Uchile:
- 35 Faculty
- 60 Postdocs
- 35 PhD students

**YES! We are happy because none
of this existed 15 years ago!**

1 faculty job/year, for 15 years

- Colombia (2015):
 - **35 Faculty**
 - 5 postdocs
 - 8 PhD students
- Colombia (2000):
 - **20 Faculty**
 - 0 Postdocs
 - 0 PhD students

We are now doing more than Theory

- Colombia (2015):
 - 50% Theory
 - 30% Simulation
 - 25% Observation
 - 5% Instrumentation
- Colombia (2000)
 - 84% Theory
 - 7% Simulation
 - 7% Observation
 - 0% Instrumentation

We can (probably) keep it up until 2020

- At OAN: 3-4 more jobs
- At UIS: 2-3 more jobs
- At Uniandes: 1-2 more jobs
- At UdeA: 0-1 more jobs
- **6-10 new jobs in the next 10 years (Hopefully with priority to observations & instrumentation)**

Interesting times for students starting their PhD right now

- At OAN: 3-4 more jobs
- At UIS: 2-3 more jobs
- At Uniandes: 1-2 more jobs
- At UdeA: 0-1 more jobs
- 6-10 new jobs in the next 5 years
- **Some 20 postdocs waiting in the line**

Job prospects for new colombian PhD students

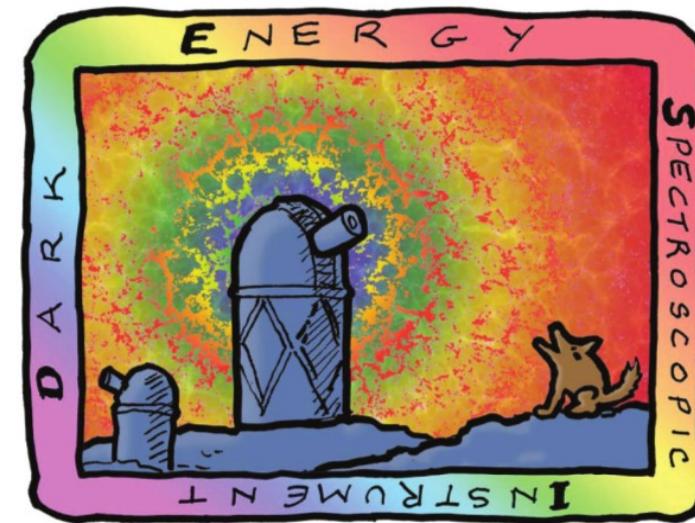
- Your academic future is (probably) abroad.
- Your academic future in Colombia is (probably) in the small (private & public) universities.



CREDIT: Hal Mayforth

Join BIG experimental projects

- Your country needs you!
- State-of-the-art science
- Large network to find a postdoc & keep your productivity at a small University.



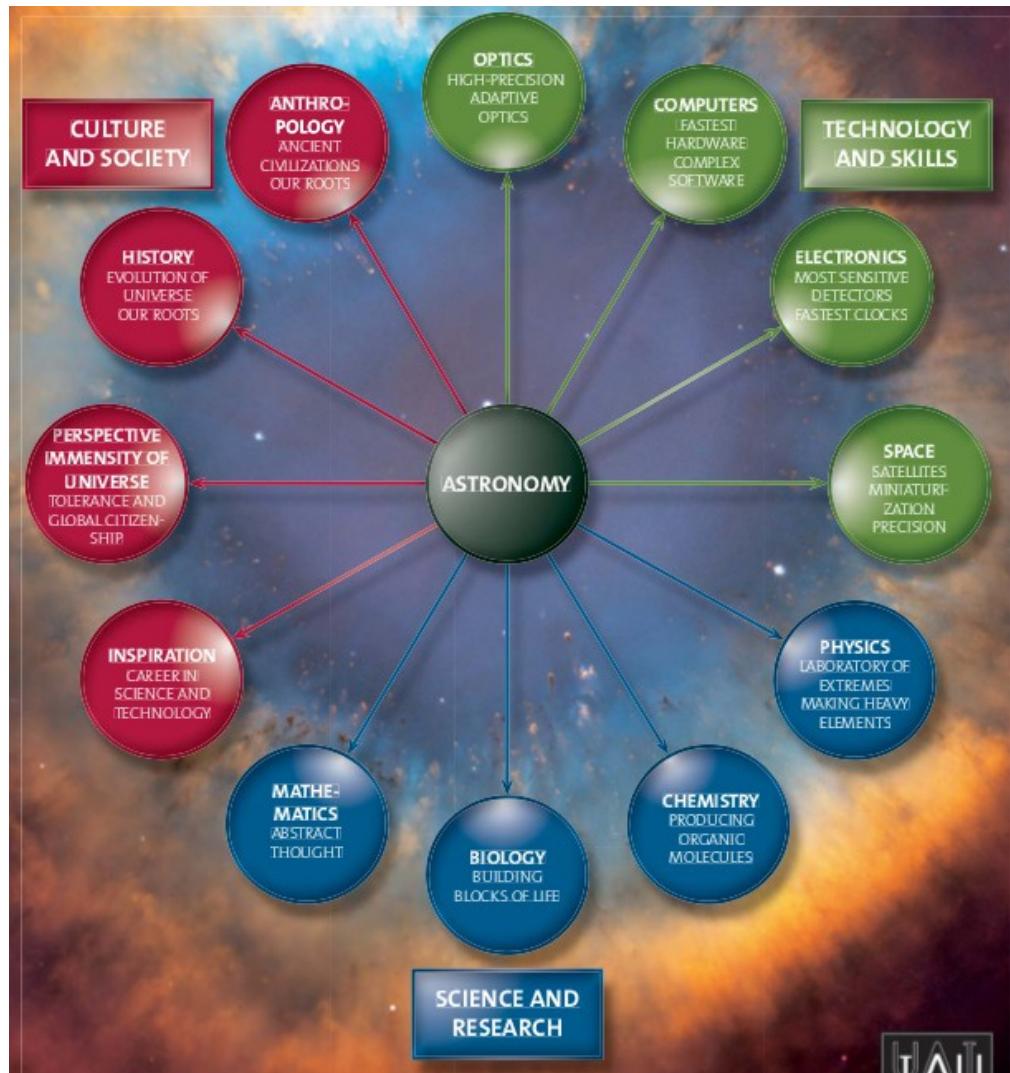
Join BIG Communities

- Your country needs you!
- State-of-the-art science
- Large network to find a postdoc & keep your productivity at small University.



Andean Region
Office of Astronomy for Development

What is the Office of Astronomy for Development?



Who is in the **ANDEAN** Office of Astronomy for Development?



What is the ANDEAN Office of Astronomy for Development ?

- Agreement of cooperation.
- Backed by the International Astronomical Union.
- 20 institutions in 6 countries.
- 5 years: 2015 - 2020
- 3 Task Forces

Andean ROAD Coordinators

- Task Force 1 (**Research**): Germán Chaparro (UECCI, Colombia), germancho@gmail.com
- Task Force 2 (**Children**): Angela Perez (Parque Explora, Colombia), angela.perez@parqueexplora.org
- Task Force 3 (**Public**): Farid Char (SOCHIAS, Chile), farid@austrinus.com
- General coordinator: Jaime Forero (Uniandes, Colombia), je.forero@uniandes.edu.co

What is the ANDEAN Office of Astronomy for Development?

The screenshot shows the homepage of the Andean Region Office of Astronomy for Development. At the top left is the IAU logo. To its right, the text "Andean Region" and "Office of Astronomy for Development" is displayed against a dark background with a starry field. Below this is a navigation bar with links for Home, About, Activities, Events, Media, and Contact. A search bar is also present. On the left side, there is a sidebar with sections for Focus Areas (Universities & Research, Children & Schools, Public Outreach) and a Network section listing various regions. The main content area features a large title "Andean Regional Office of Astronomy for Development" and a subtitle "Astronomy for a better World". It includes a paragraph about the International Astronomical Union (IAU) and its Office of Astronomy for Development (OAD), mentioning its establishment in 2011 and its regional offices. It also discusses the mission of the OAD and the role of Regional Nodes and Language Expertise Centres.

FOCUS AREAS

Universities & Research (TF1)
Children & Schools (TF2)
Public Outreach (TF3)

NETWORK

IAU OAD
Arab World and Arabic Language
East Africa
East Asia and Chinese Language
Portuguese Language
South East Asia
South West Asia
Southern Africa
West Africa

Andean Regional Office of Astronomy for Development

"Astronomy for a better World"

The International Astronomical Union (IAU) is the largest body of professional astronomers in the world and has set up the Office of Astronomy for Development (OAD) in partnership with the South African National Research Foundation (NRF). The OAD was officially opened on 16th April 2011 at the South African Astronomical Observatory (SAAO) in Cape Town, South Africa. Since then nine regional offices have been established in Armenia, China, Colombia, Ethiopia, Jordan, Nigeria, Portugal, Thailand and Zambia.

The mission of the OAD is to help further the use of ***astronomy as a tool for development*** by mobilizing the human and financial resources necessary in order to realize the field's scientific, technological and cultural benefits to society.

Regional Nodes and Language Expertise Centres are offices based around the world with similar objectives as the OAD but with regional focus. These offices work closely with the OAD in order to implement the IAU Strategic Plan. "Regions" which they focus on could be geographical (neighbouring countries) or cultural (language or cultural

<http://andean.astro4dev.org/>

First Workshop Astronomía en los Andes (2013) - Bogotá



Second Workshop Astronomía en los Andes (2015) - Bogotá



UIS, Bucaramanga – 24-11-
2015

Andean Perspectives – Jaime E. Forero-Romero
(Uniandes, Colombia)

Latin American Regional IAU Meeting (2016) - Cartagena



XV
LARIM
XV Latin American
Regional IAU Meeting

October 2 - 7 :: 2016
Cartagena de Indias
Colombia

2016

COLOMBIA
Destino
astronomico

+ info

<http://larim.unal.edu.co/>
e mail: larim2016@unal.edu.co



Third Workshop Astronomía en los Andes (2017) - Peru

Andean Schools of Astronomy and Astrophysics (Ecuador 2014)



Andean School of Cosmology (Colombia 2015)



*Escuela Andina de Cosmología. Junio 1-26, 2015.
Universidad de los Andes, Bogotá, Colombia.*

Andean School of Astronomy and Astrophysics (Peru 2016)

Working group on Astroparticle Physics

- Contact: Luis Núñez (Colombia)



<http://www.aps.org/units/fip/newsletters/201202/lago.cfm>

Working group on Radioastronomy

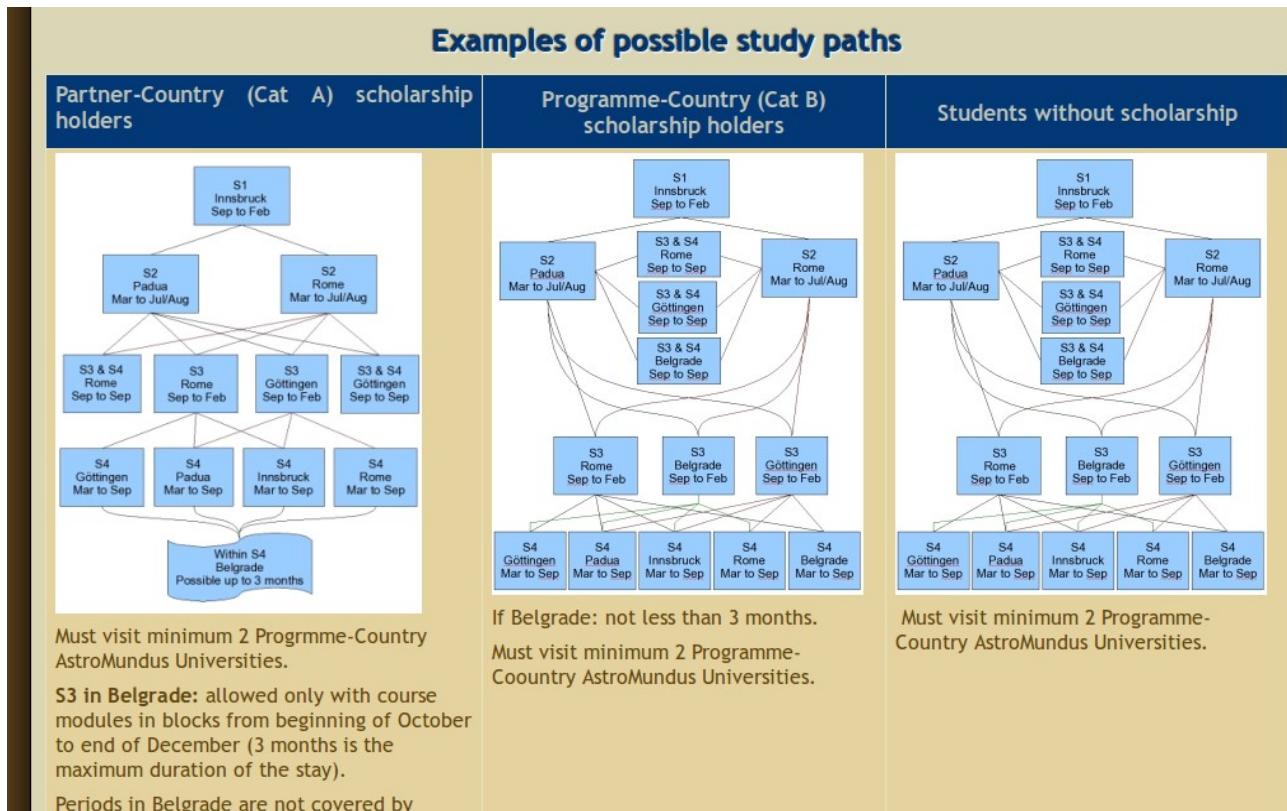
- Contact: Oscar Restrepo (Colombia)



<http://www.panoramio.com/photo/44704551>

Andean Master's program

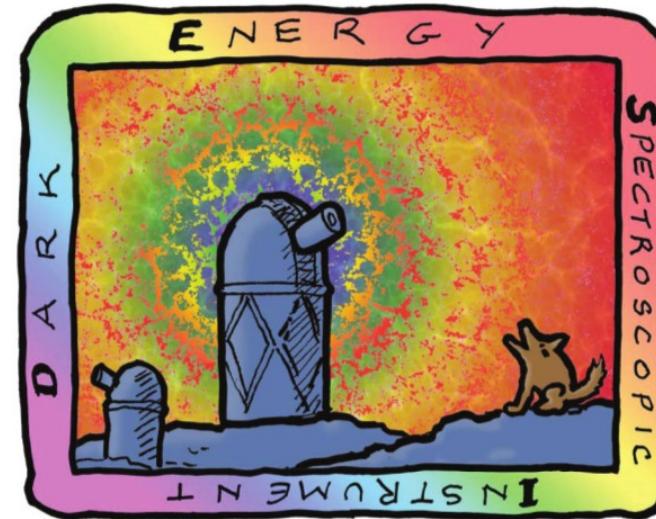
- Contacts: Jaime Forero (Colombia) / Eduardo Unda-Sanzana (Chile)



<http://www.astromundus.eu/>

perspectives

- Astro-* is growing fast in Colombia.
- Astro-* offers interesting opportunities for students in the Andean region.
- Big Science and Large Networks are a promissing ROAD to grow and mature our scientific communities.



Andean Region
Office of Astronomy for Development

je.forero@uniandes.edu.co