

# IAU Offices of Astronomy for Development: Progress and plans

Jordan, 2<sup>nd</sup> December 2015

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science  
& technology

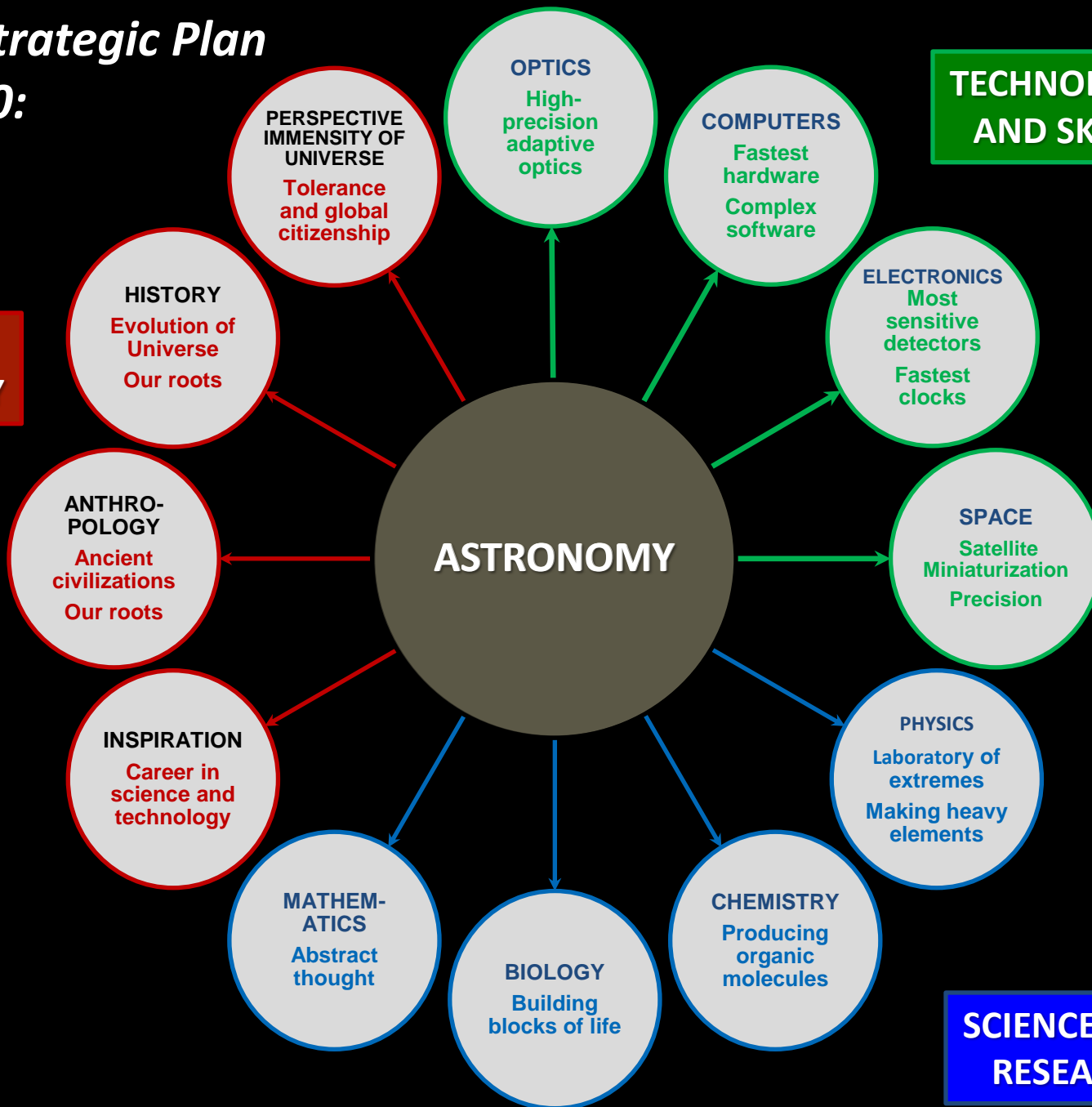
Department:  
Science and Technology  
REPUBLIC OF SOUTH AFRICA



# The IAU Strategic Plan 2010-2020:

## CULTURE AND SOCIETY

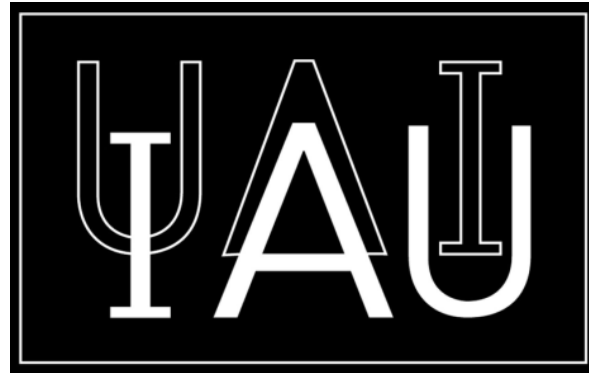
## TECHNOLOGY AND SKILLS



## SCIENCE AND RESEARCH



# OAO - OAD - IAU (Divisions)



**Knowledge**

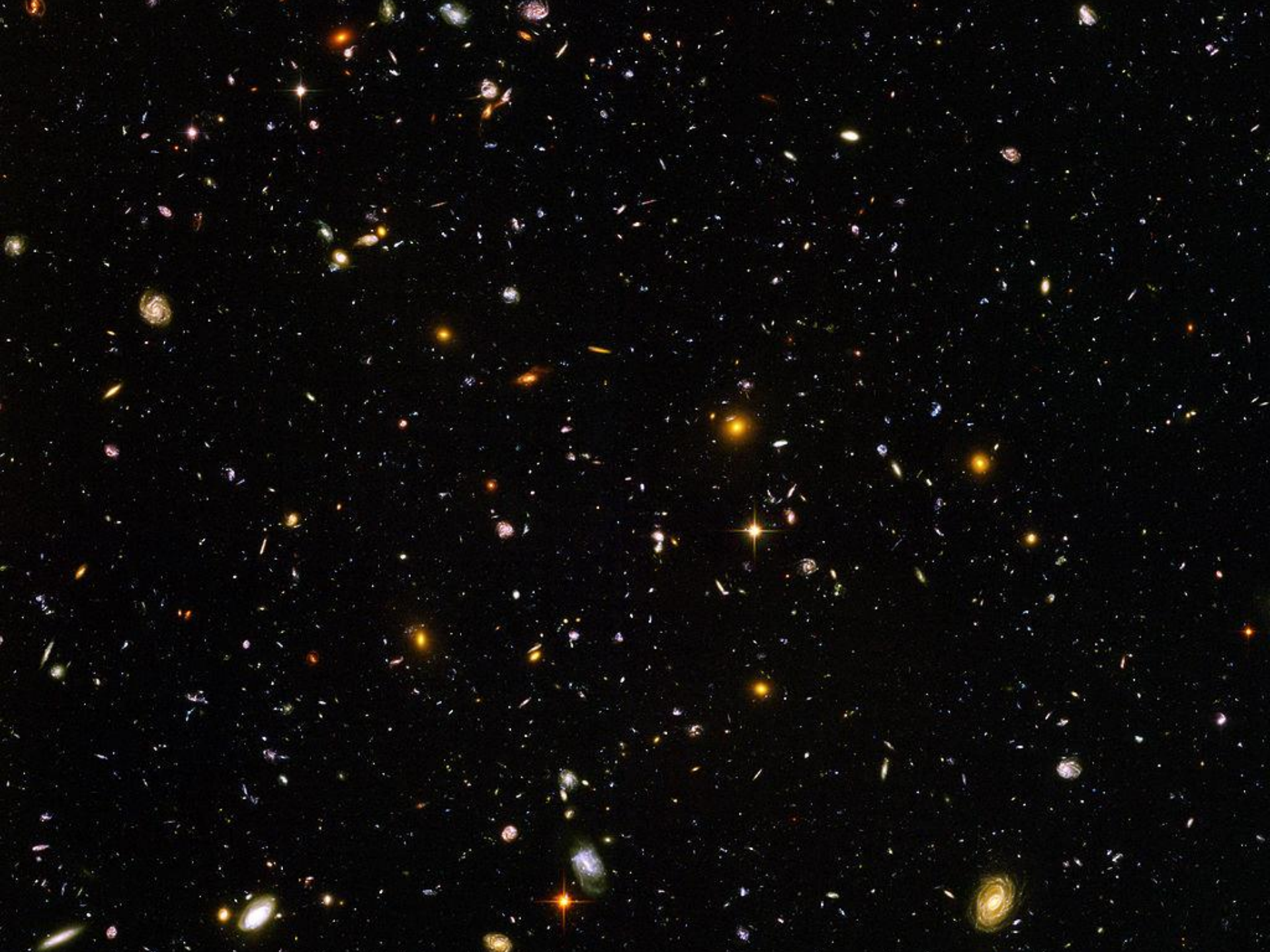
**Access**

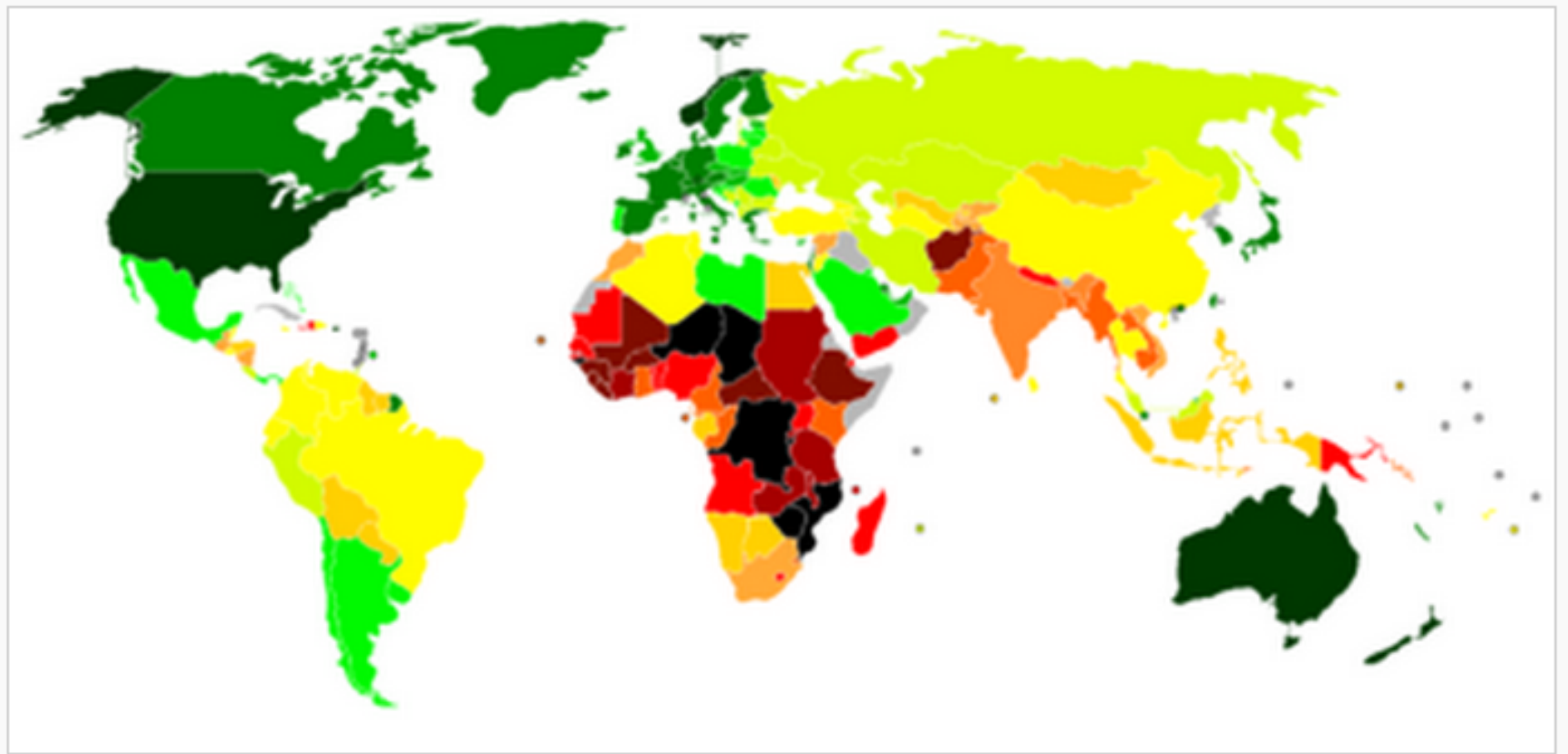


**Development**

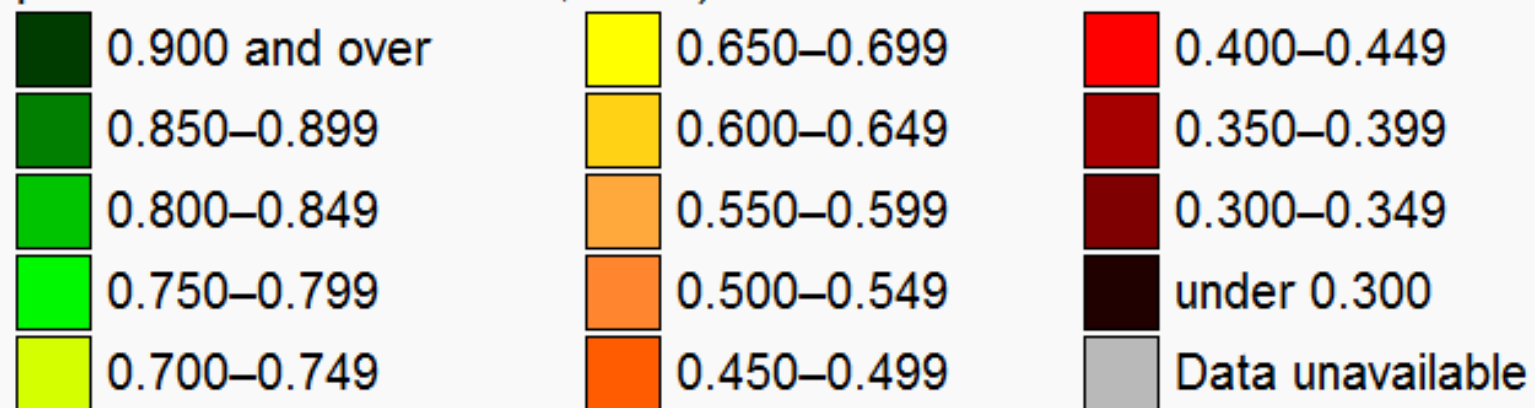


International | Office of  
Astronomical | Astronomy  
Union | for Development





World map indicating the Human Development Index (based on 2010 data, published on November 4, 2010)<sup>[1]</sup>





# Obama warns Putin

Russia shouldn't intervene in Syrian civil war, Obama says

Moscow: Turkey protecting ISIS ties

War on ISIS: Who's doing what?

Turkey: Don't 'play with fire'

**ALJAZEERA** NEWS PROGRAMMES OPINION INVESTIGATIONS ABOUT video

Topics: Lebanon Nusra Front ISIL Turkey Kenya

**Drowning Megacities**  
On the front lines of the African climate change battle

**WATCH NOW**  
Fault Lines

**TV SCHEDULE**  
Newshour (IN 18 MIN.)

**Who's killing clerics?**

NEWS AS WE GET IT 01 DEC 2015

BLOG 14 minutes ago

US 'terror' arrests at highest level since 9/11

@AJNEWS 25 minutes ago

Images from Skala, Greece, earlier today by Al Jazeera's @P\_Strickland\_ who's reporting on the plight of refugees

@AJNEWS 31 minutes ago

12 rights groups call on Egypt to free investigative reporter Ismail Alexandrani by @anealla

@AJNEWS 33 minutes ago

Egypt extends detention of journalist by 15 days, charges include "spreading false news"

Updated

## Iraq: We don't need foreign troops to fight ISIL

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Unity

Top Stories

Iraqi PM's comment come after U defence secretary said extra troop will assist forces in fight against IS

01 Dec 2015 22:28 GMT | War & Conflict, Middle East, ISIL, Iraq, Syria

# US tells Turkey and Russia to end row

US President Barack Obama urges Turkey and Russia to calm tensions over the downing of a Russian warplane and to focus on fighting IS militants.

**Does Turkey really get its oil from Islamic State?**

| EUROPE

**Donald Trump's bungled black-vote pitch**

| US & CANADA



Faulty part 'factor' in AirAsia crash



US to deploy special force to Iraq



Blast at Istanbul metro station

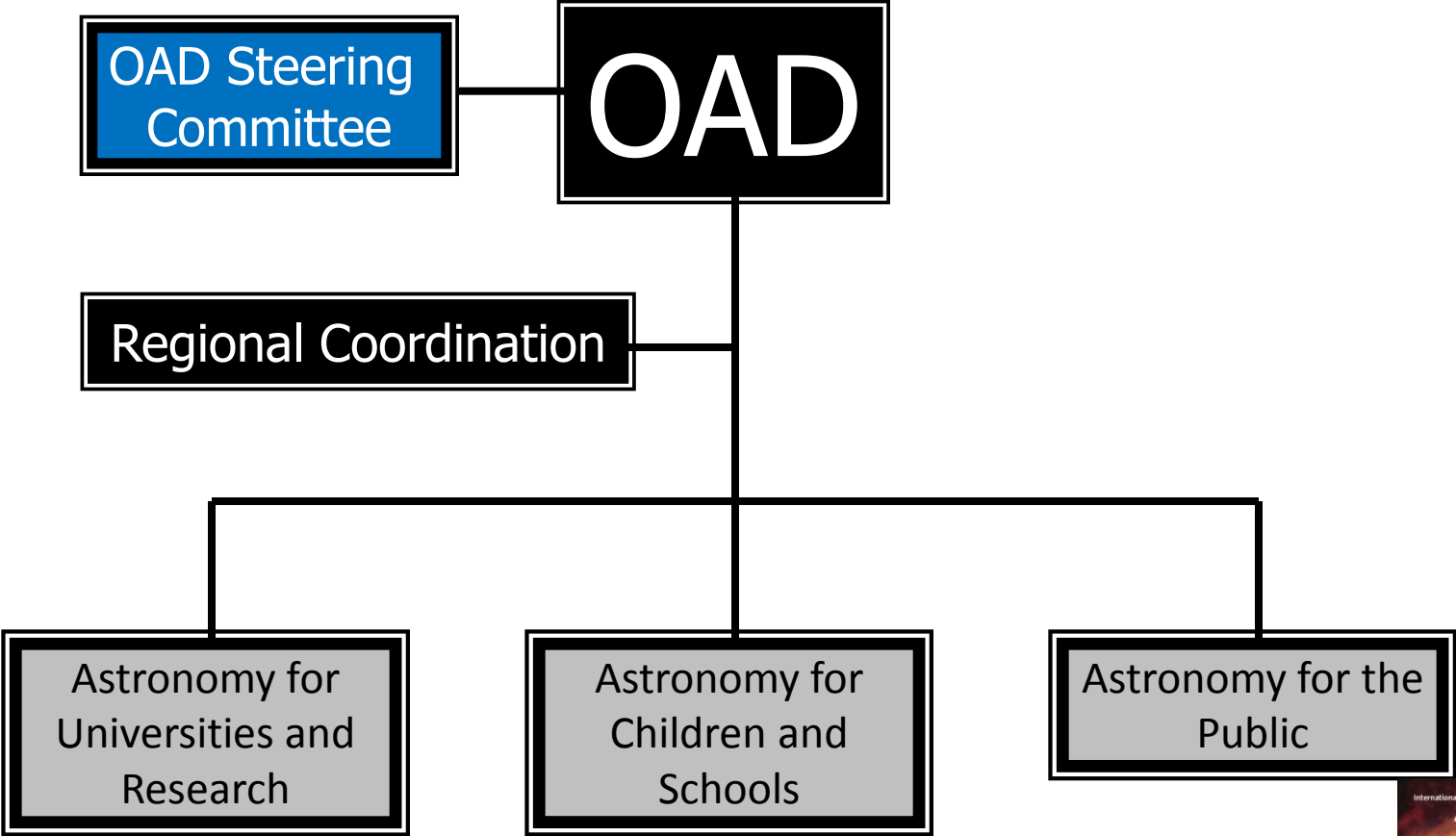
# Cameron Attacks 'Terrorist Sympathiser' MPs



# Astronomy for Sustainable Development!

- **Social benefits** (common humanity, scientific engagement & discourse)
- **Human capital development** (education, skills, career choices)
- **Economic growth** (knowledge economy, innovation)
- **Human welfare** (all of the above, technology transfer)

# OAD Structure



***“Astronomy for a better world!”***





# OAD Structure



- Ajit Kembhavi (Chair - nominated by IAU)
- Teresa Lago (nominated by IAU)
- Katrien Kolenberg (nominated by IAU)
- Khotso Mokhele (nominated by NRF)
- Renee Kraan-Korteweg (nominated by NRF)
- Saalih Allie (nominated by NRF)

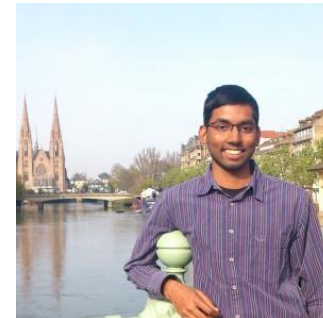


# OAD Structure



## Staff:

Kevin  
Eli Grant  
Nuhaah



## Fellows:

Silvia  
Wanda  
Ram

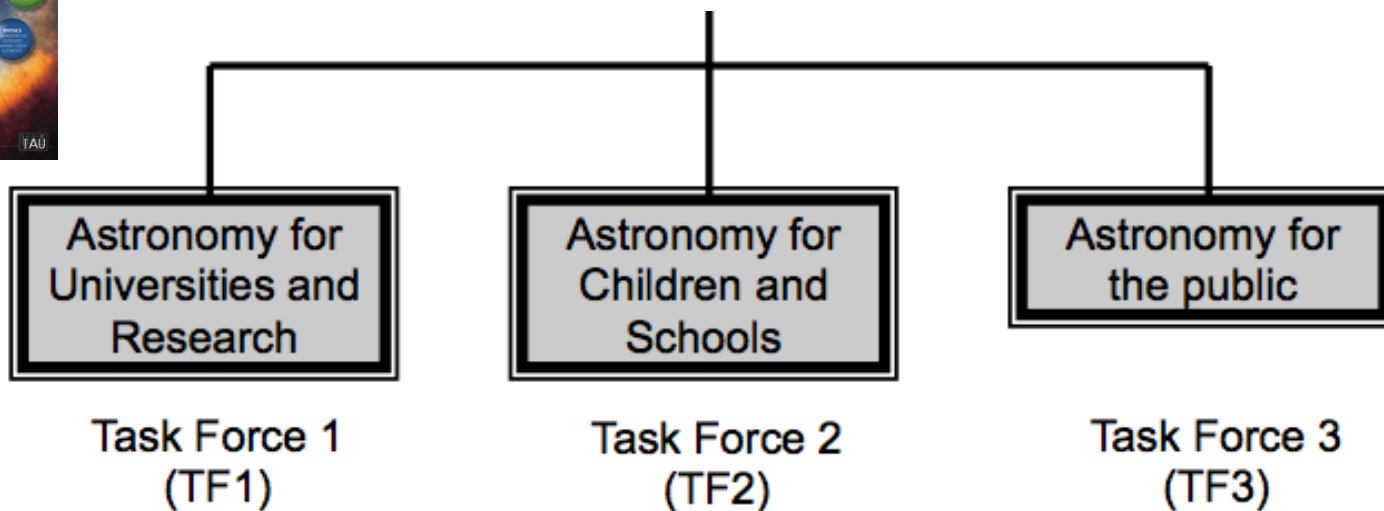
## Interns:

Laure  
Rajin  
Eli Kasai





# OAD Task Force membership



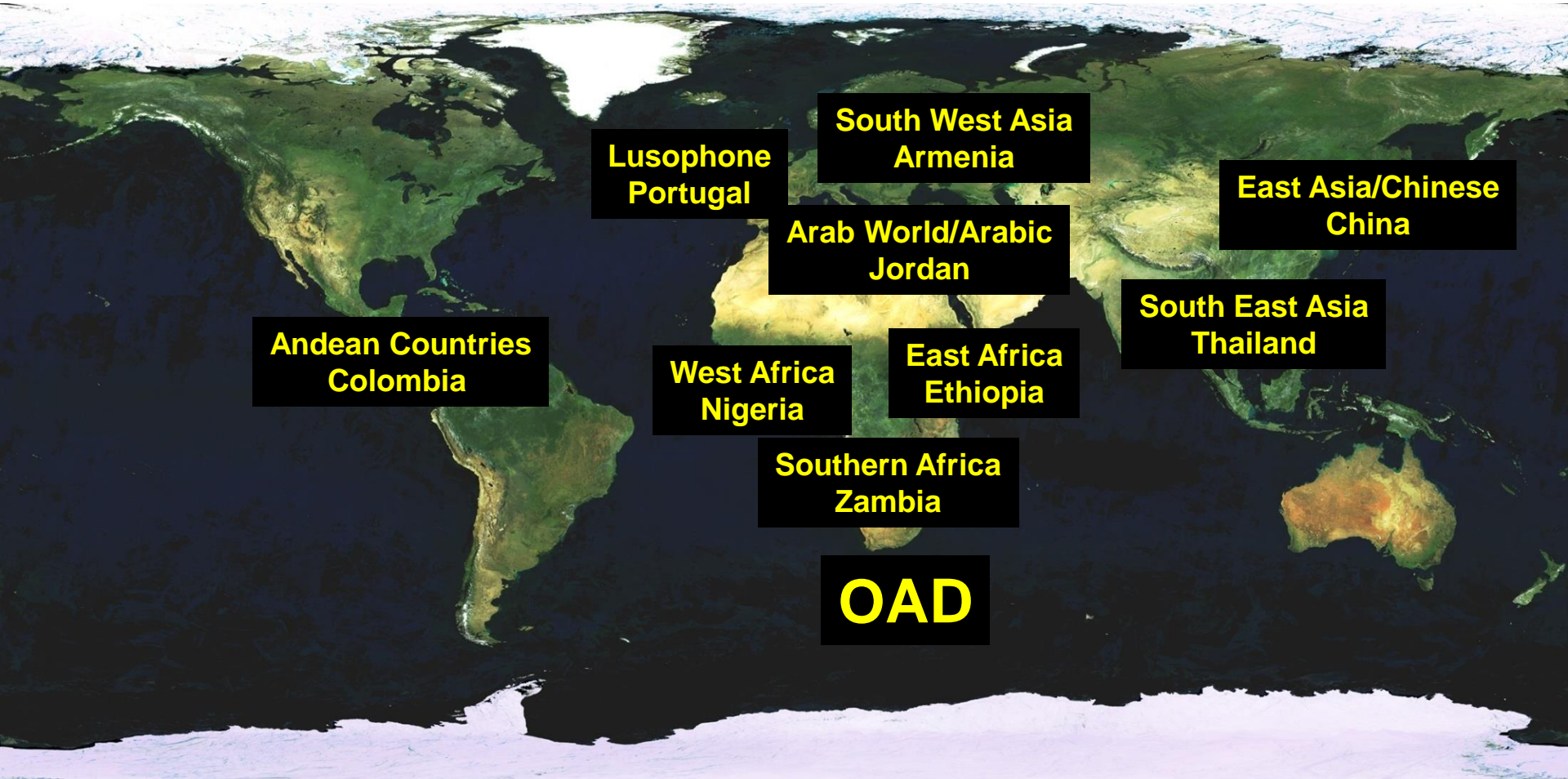
Jean-Pierre de Grève (Belgium, C46)  
 Richard de Grijs (China)  
 Michèle Gerbaldi (France)  
**Edward Guinan (USA – Chair)**  
 Roger Hajjar (Lebanon)  
 Edward Jurua (Uganda)  
**Katrien Kolenberg (USA - VC)**  
 Hakim Malasan (Indonesia, Div C)  
 Shengbang Qian (China)  
 Nicole van der Bliet (Chile)

Rosa Doran (Portugal)  
**Edward Gomez (LCOGT,Cardiff - VC)**  
 Mary Kay Hemmenway (USA, **observer**)  
 Robert Hollow (Australia)  
 Ofodum Chukwujekwu Nworah (Nigeria)  
 Rosa Maria Ros (Spain)  
**Pedro Russo (Leiden/UNAWWE/C55, Chair)**  
 Cecilia Scorza (Venezuela/Germany)  
 Linda Strubbe (Canada)  
 Akihiko Tomita (Japan)  
 Jinhua He (China, Observer)

Thilina Heenatigala (Sri Lanka)  
 Sarah Kendrew (UK - New Media)  
 Kimberley Kowal (US)  
**Carolina Ödman (South Africa – VC)**  
 German Puerta (Colombia)  
*Sze-leung Cheung (Japan, OAO)*  
**Ian Robson (UK - Chair)**  
 Komiko Usida (Japan)  
 Ziping Zhang (China)



# OAD Regional Offices



**Andean Countries  
Colombia**

**Lusophone  
Portugal**

**South West Asia  
Armenia**

**Arab World/Arabic  
Jordan**

**East Asia/Chinese  
China**

**West Africa  
Nigeria**

**East Africa  
Ethiopia**

**South East Asia  
Thailand**

**Southern Africa  
Zambia**

**OAD**

# OAD Volunteers



- IAU members, amateurs, professionals, teachers, students, public
- Over 550 worldwide (on this map they are grouped by location)

[www.astro4dev.org/volunteers](http://www.astro4dev.org/volunteers)

# OAD Partners



- Royal Astronomical Society
- Netherlands Organisation for Scientific Research
- International Centre for Theoretical Physics
- Inter-University Centre for Astronomy and Astrophysics
- University of Central Lancashire
- Haus der Astronomie
- Fiat Physica
- Associated Universities Inc. / Leiden University

# Funded Projects (68+18=86)



[www.astro4dev.org/proposals](http://www.astro4dev.org/proposals)

#### TASK FORCES

- ASTRONOMY FOR CHILDREN & SCHOOLS (TF2)
- ASTRONOMY FOR UNIVERSITIES & RESEARCH (TF1)
- ASTRONOMY FOR THE PUBLIC (TF3)



# OAD Annual Call for Proposals

## 2012 Call (191)

## 2013 Call (230)

## 2014 Call (131)

## 2015 Call (124)

**Astronomy for  
Universities  
and Research**

42 applications  
€ 752,959 requested

54 applications  
€ 919,308 requested

31 applications  
€ 514,103 requested

28 applications  
€ 232,257 requested

**Astronomy for  
Children and  
Schools**

96 applications  
€ 772,079 requested

113 applications  
€ 864,731 requested

67 applications  
€ 431,695 requested

66 applications  
€ 654,802 requested

**Astronomy for  
the public**

53 applications  
€ 310,782 requested

63 applications  
€ 453,805 requested

33 applications  
€ 178,254 requested

30 applications  
€ 301,431 requested

**Total requested  
(recommended)**

€ 1,835,820  
(€ 869,426)

€ 2,237,844  
(€1,534,513)

€ 1,124,052  
(€535,373)

€ 1,188,490





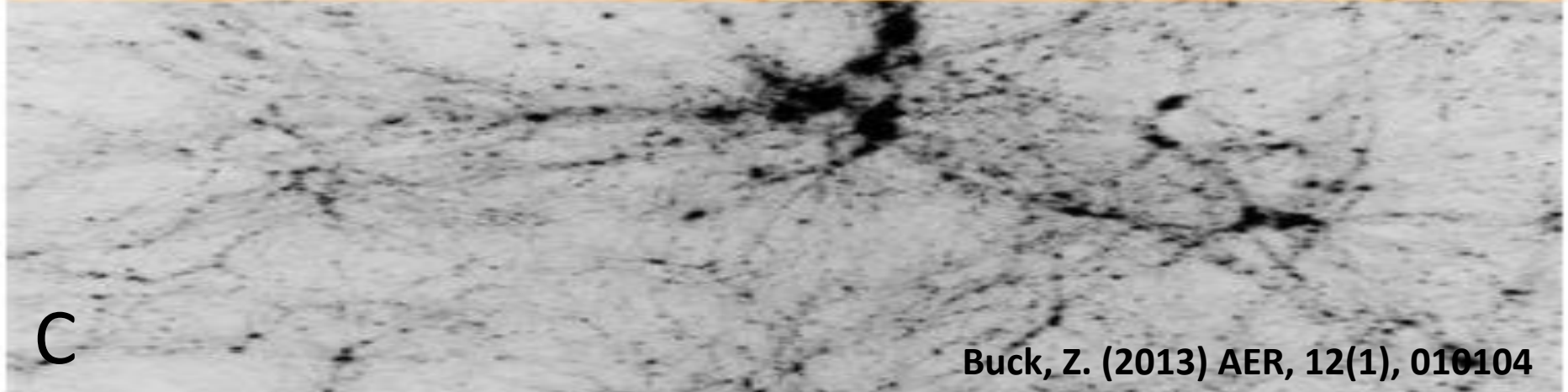
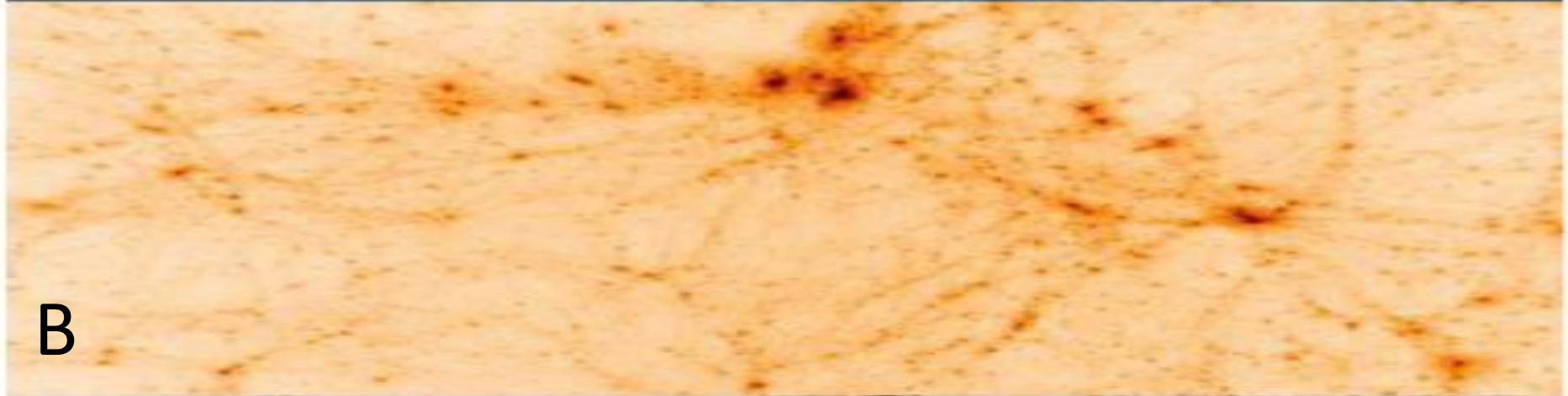
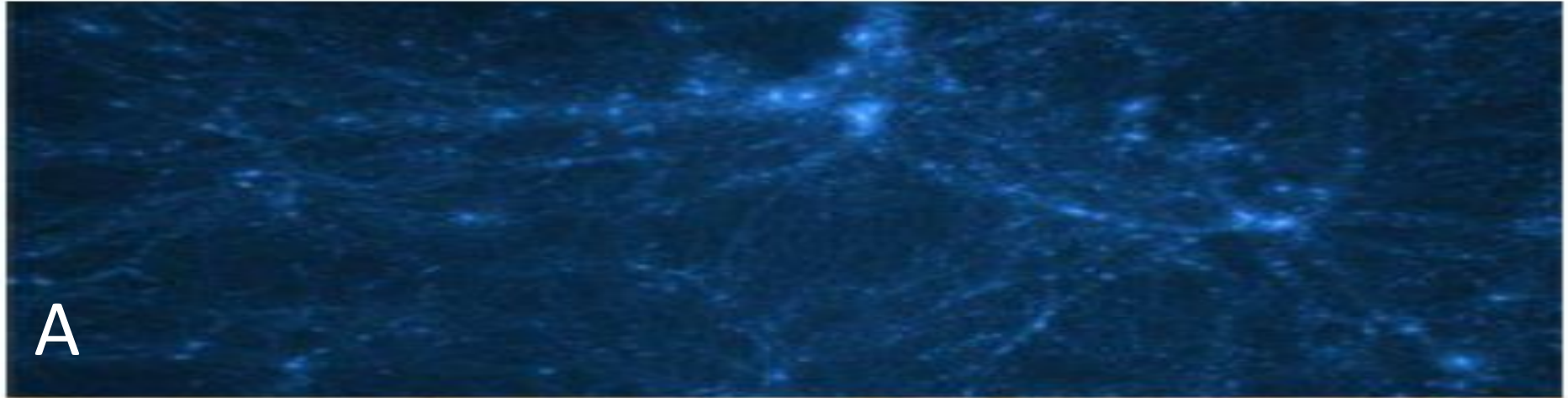
Experimentos espaciales (espacio)



# Do projects work?

- Access  $\neq$  Development
- Humans are complex and embedded in complex social systems
- OAD needs to
  - Identify best practices, allocate resources efficiently
  - Manage risks of unintended consequences







A

**Option A: 4 x less likely to correctly identify dark matter than students exposed to B or C**



B



C



# Best Evidence Encyclopedia

Empowering Educators with Evidence on Proven Programs

Home | About the BEE | Review Methods | Sign Up for News | Resources

Search



## Program Reviews

### Mathematics

Elementary  
Middle/High School  
Effectiveness of Technology

### Reading

Beginning  
Upper Elementary  
Elementary  
Middle/High School  
English Language Learners  
Struggling Readers  
Effectiveness of Technology

### Science

Elementary  
Secondary (New!)

### Comprehensive School Reform

Elementary (CSRQ)  
Middle/High School (CSRQ)  
K-12 Meta-Analysis (Borman)  
Education Service Providers (CSRQ)

### Early Childhood

Early Childhood Education (New!)

### Methods

Methodological Features and Effect Sizes (New!)

## New Reviews Added to the BEE!

The BEE has recently added two major new reviews:

[Secondary Science](#). A comprehensive review of research on science programs for grades 6-12.

[Early Childhood Education](#). A comprehensive review focusing on studies comparing programs for four-year-olds using either "balanced" approaches, which include phonemic awareness and early phonics along with traditional preschool activities, to "developmental" approaches, which include little focus on pre-reading skills.

Other reviews being substantially updated and revised include:

- Elementary math
- Secondary reading
- Methodology effects in systematic reviews

Watch this space!

## Spotlight

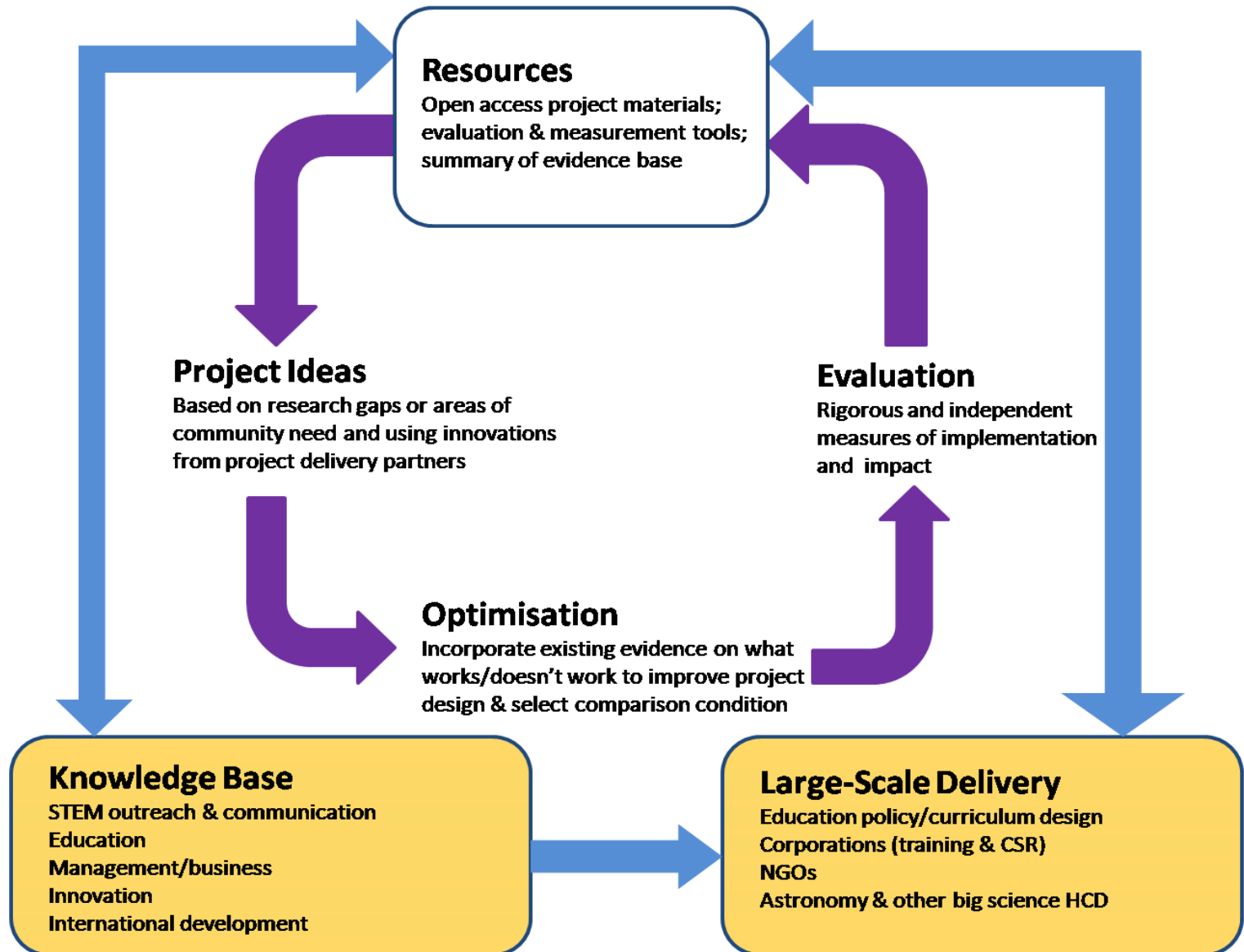
Effective Programs for Secondary Science



[Our new review](#) summarizes the evidence on four types of programs designed to improve the science achievement of students in grades 6-12.

# www.bestevidence.org

# OAD Impact Cycle: Positive Feedback Loop



# IAU GA 2015 Resolution

## (following positive OAD review)



...

## Resolves

1. That the pursuit of the goals of the Strategic Plan: Astronomy for the Developing World should continue until the XXXI General Assembly to be held August 2021,
2. That the Executive Committee should present for approval at the XXX General Assembly to be held in Vienna, Austria in August 2018 an extended Strategic Plan which addresses the future of the OAD and its activities beyond 2021,
3. That the Executive Committee should consult existing and potential stakeholders in the preparation of this Strategic Plan.

# A possible vision for 2021



- User-friendly “impact cycle” (positive feedback)
  - Strategic partnerships with development organisations
- Synergised regional leadership
- Host large externally funded programmes
- Adoption by other sciences
- Volunteer system
- Renewed Strategic Plan



# Shared resources/services

- Websites
- Mailing lists
- Evaluation
- Surveys
- Language
- Lobbying
- Virtual meetings
- Shared information on big astronomical events
- Certification
- Involvement with OAO in Japan



# Common Plan across Regions

- Guiding Principles
- 2021 Strategic Goals
- Operational Objectives and Indicators
- Major Challenges
- Risk analysis
- Human Resources and Infrastructure
- Annual Budgets

**Face to Face Meeting: 2-4 March 2016**



# Astronomy for a Better World!



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**[www.astro4dev.org](http://www.astro4dev.org)**

# References

- Haynes et al. (2009). A surgical safety checklist to reduce morbidity and mortality in a global population. *The New England Journal of Medicine*, 360, 491–499.
- Yeager and Walton (2011) Social-Psychological Interventions in Education: They're Not Magic. *Review of Educational Research*, 267-301.