

# Strengthening capacity building in Astronomy, Astrophysics and Space Sciences in Africa

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Development

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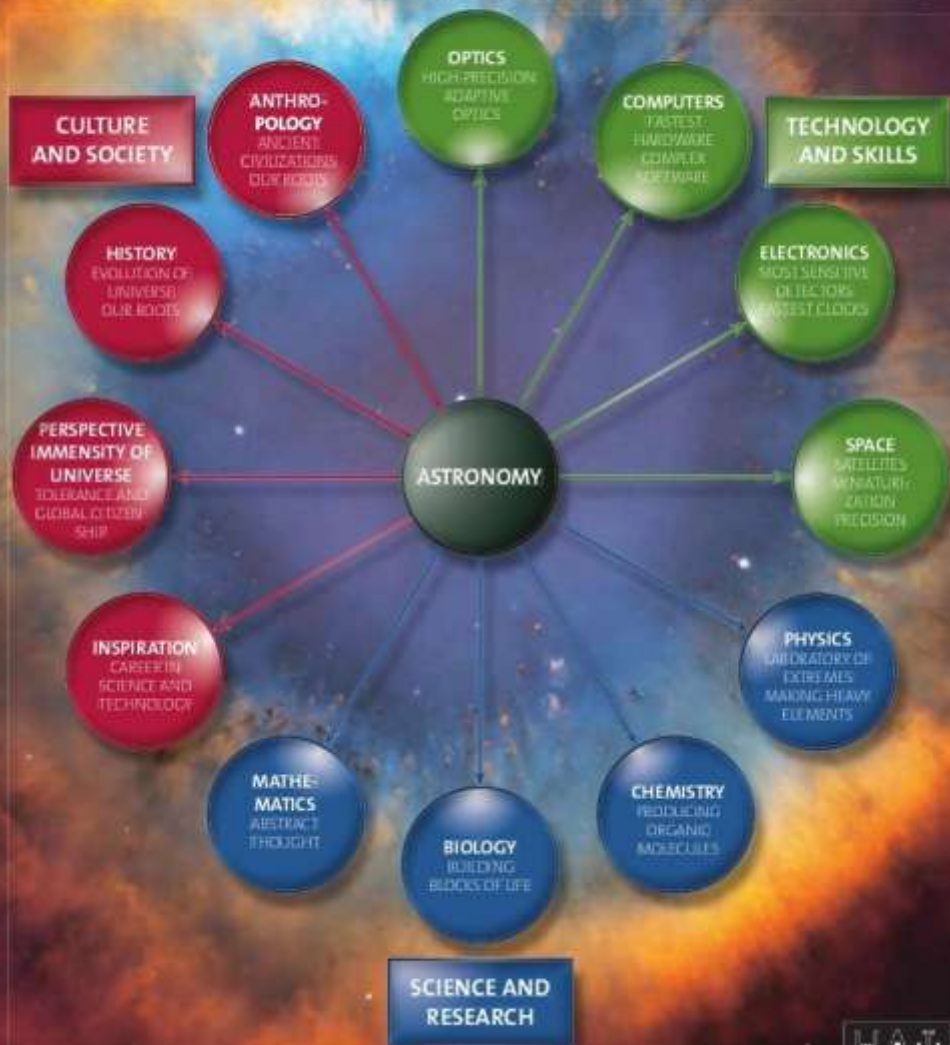
International Astronomical Union

# Astronomy for Development

Building from the IYA2009

## Strategic Plan 2010–2020

with 2012 update on implementation

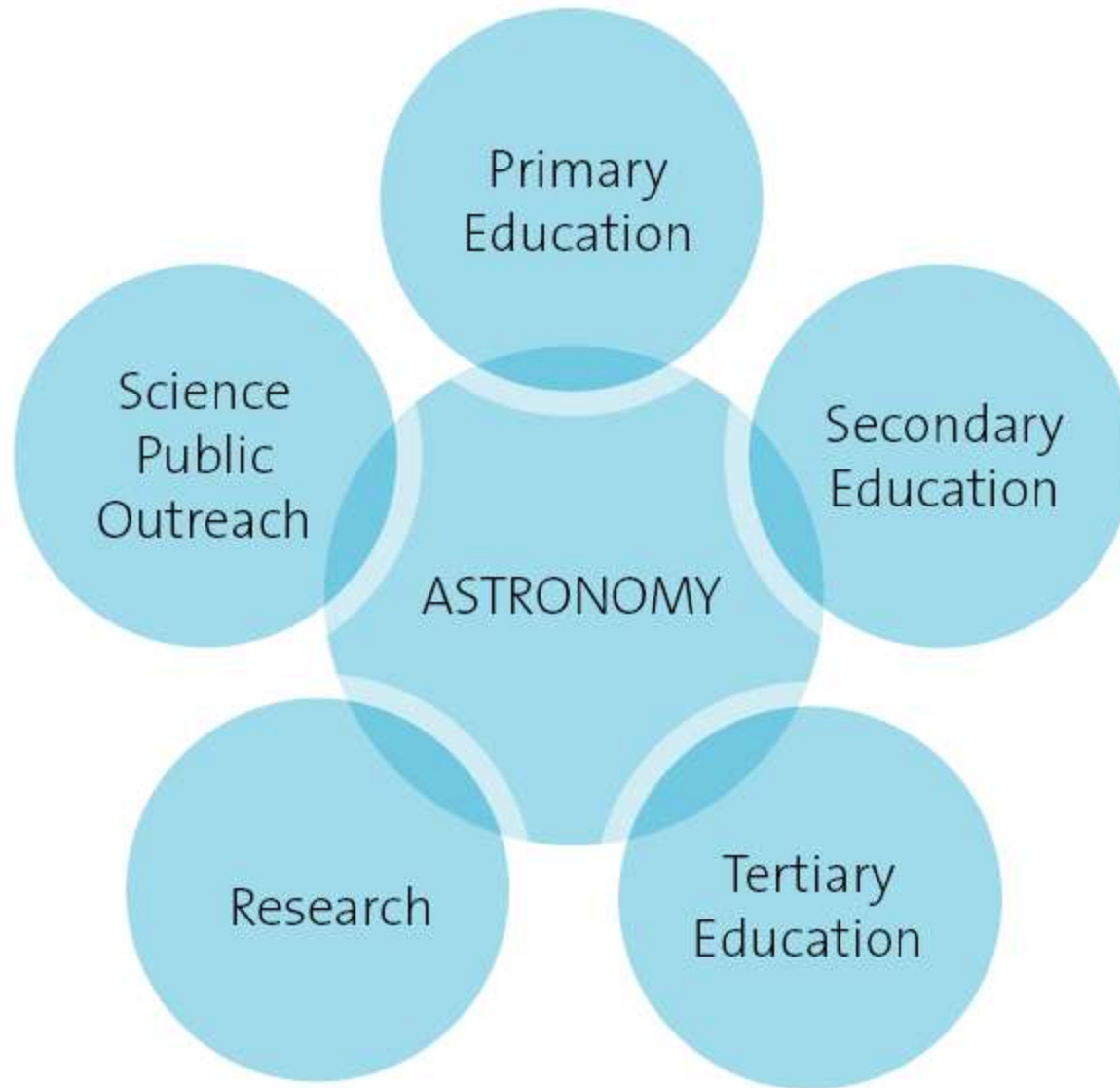


IAU

“Exploring the Universe for the benefit of humankind”



# Elements of Astronomy for Development...





DECISION ON THE AFRICAN SQUARE KILOMETRE  
ARRAY (SKA) PROJECT  
Doc. Assembly/AU/14(XVIII) Add. 7

The Assembly,

1. **RECALLS** its Kampala Decision Assembly/AU/Dec. 303(XV) endorsing the African bid to host the Square Kilometer Array (SKA) on the African continent;
2. **WELCOMES** the progress made by Republic of South Africa in submitting the final African SKA bid documents to the Founding Board of the SKA;
3. **ALSO EXPRESSES ITS GRATITUDE** to Botswana, Ghana, Namibia, Madagascar, Mauritius, Mozambique, Kenya and Zambia under the coordination of the Republic of South Africa, for providing diplomatic, regulatory, technical and logistical support for this bid;
4. **ENCOURAGES** the parties concerned to intensify efforts and continue to support the on-going processes and mobilize the support of the international community;
5. **STRESSES** the significant potential of investment in African Radio Astronomy initiatives, such as the planned African Very Long Baseline Interferometry (VLBI) Network, to rapidly enhance Africa's science and technology capacities, and therefore;
6. **PROPOSES** the inclusion of Radio Astronomy as a priority focus area for Africa's international science and technology partnerships, such as the Eighth Africa-European Union (EU) Partnership on Science, Information Society and Space;
7. **CALLS UPON** other Member States, the Commission, and the Regional Economic Communities (RECs) to support the African SKA bid both directly and in all relevant forums where such support would promote the success of the bid, leading towards the final decision expected to be made in 2012.



2009 - 2014

14.11.2011

0045/2011

## WRITTEN DECLARATION

pursuant to Rule 123 of the Rules of Procedure

on Science Capacity Building in Africa: promoting European-African radio astronomy partnerships

**Miguel Angel Martinez Martinez, Fiona Hall, Filip Kaczmarek, Teresa Riera Madurell, Judith Sargentini**



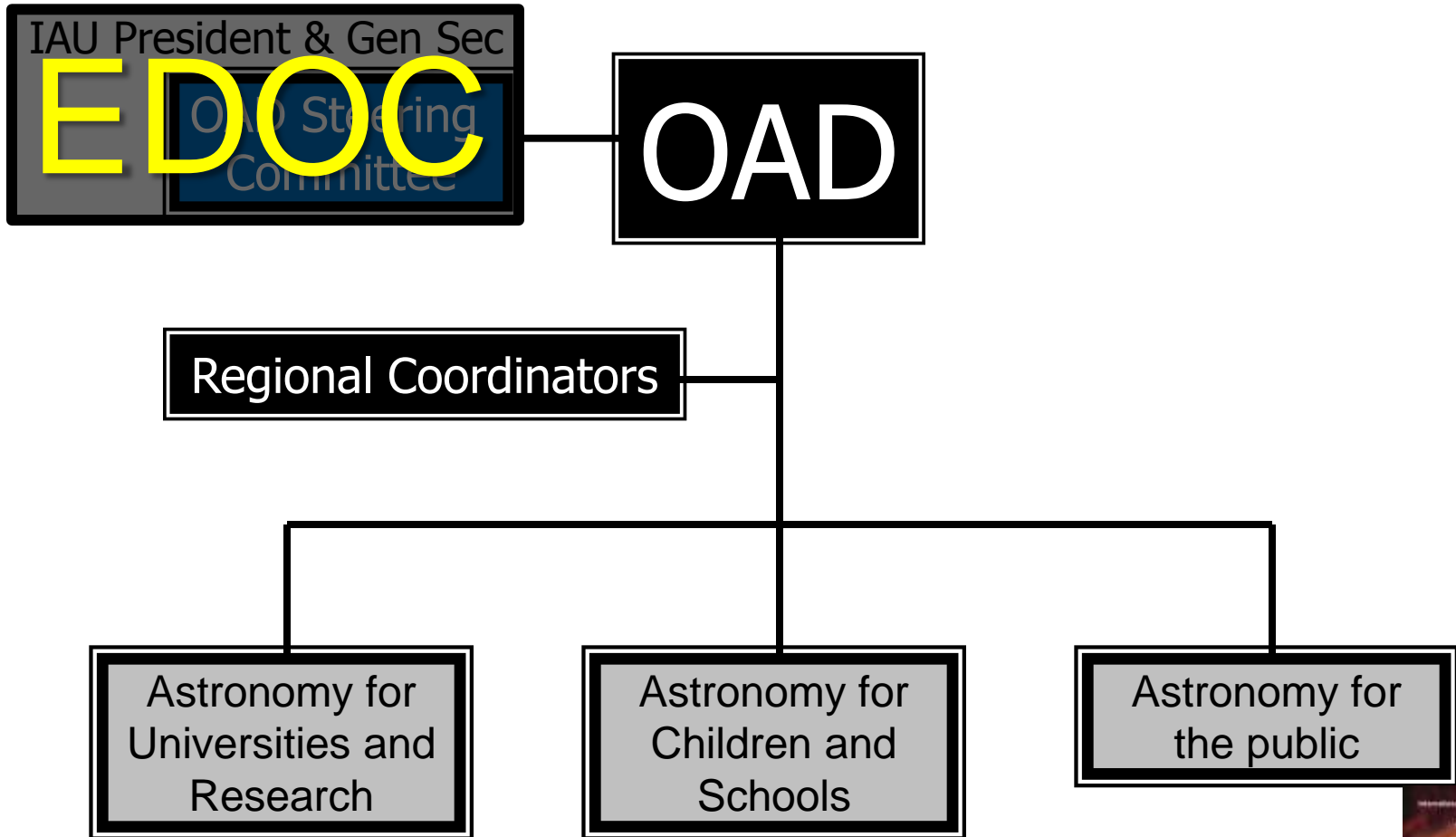


# RESEARCH & INNOVATION

## Horizon 2020



# The IAU Office of Astronomy for Development



***“Astronomy for a better world!”***

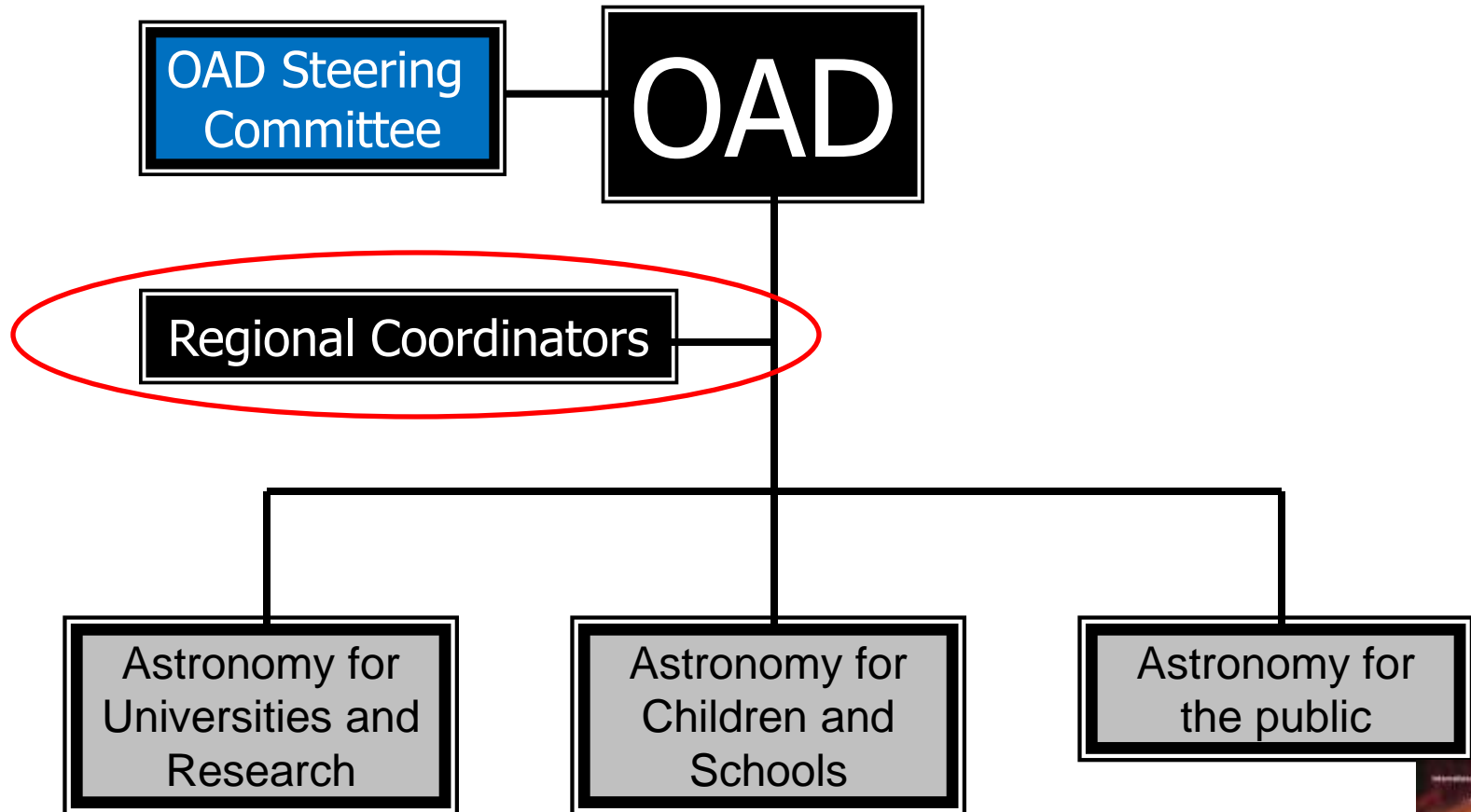


# The Roles of the OAD

- **Implementation of the Strategic Plan**
- **Strategic advice**
- **Coordination and Facilitation**
- **Funding and Infrastructure**
- **Implementation of special projects**



# The IAU Office of Astronomy for Development



***“Astronomy for a better world!”***





# OAD Regional Nodes

- **Announcement of Opportunity (January 2012)**
- **Language Expertise Centres included**
- **31 Expressions of Interest**
- **15 Full proposals**



# OAD Regional Nodes

***First 2 nodes established:***

**East Asia**

**Tuesday 21/08/2012**

**South East Asia**

**Monday 27/08/2012**



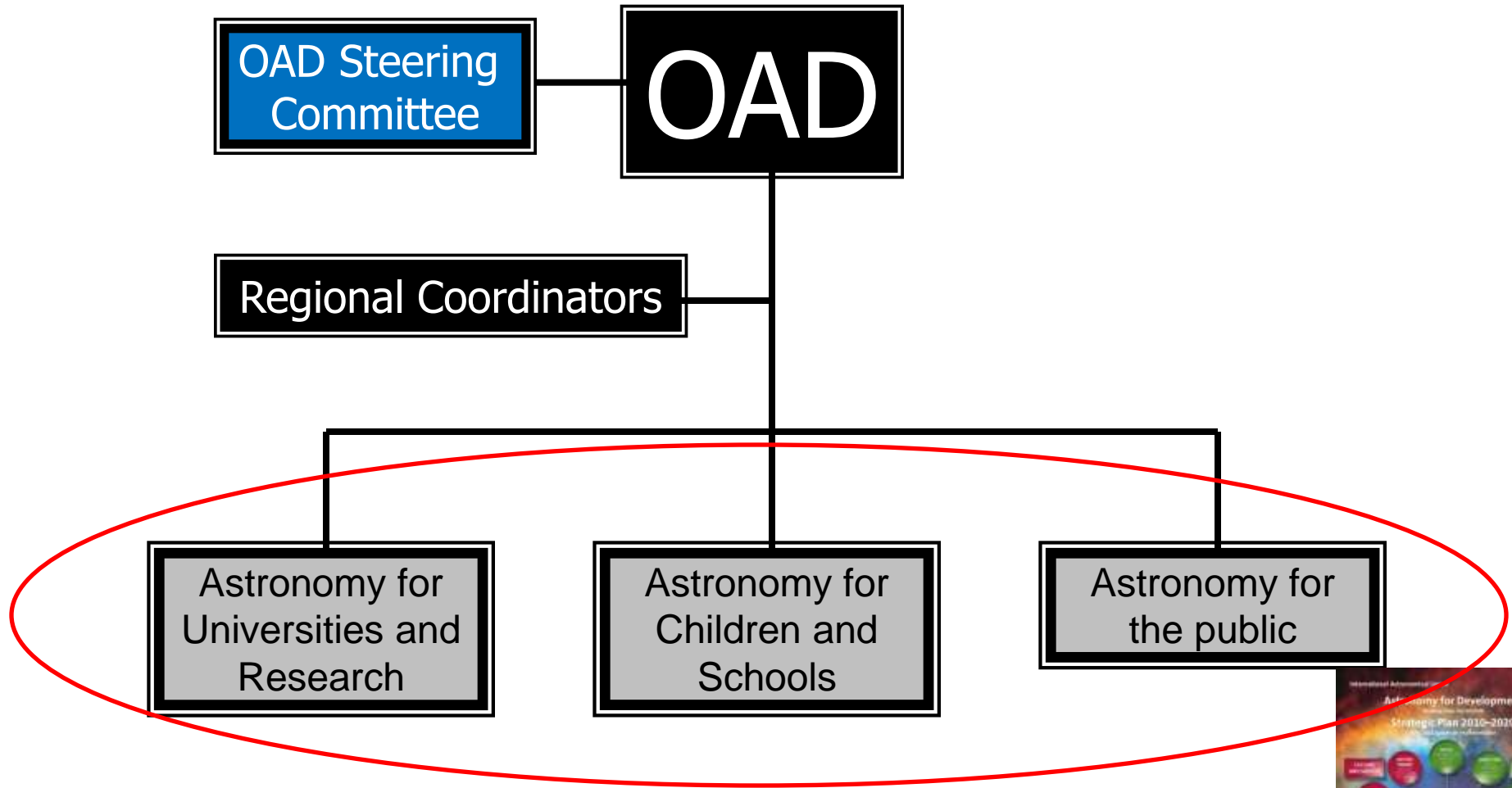
**What about Africa?**



AERAP funded  
African node?



# The IAU Office of Astronomy for Development



***“Astronomy for a better world!”***



# OAD Task Forces

## TF1: Universities and Research

- Jean-Pierre de Greve (Belgium)
- Richard de Grijs (China)
- Michele Gerbaldi (France)
- **Edward Guinan (USA – Chair)**
- Roger Hajjar (Lebanon)
- Edward Jurua (Uganda)
- **Katrien Kolenberg (USA/Belgium – Vice-Chair)**
- Hakim Malasan (Indonesia)
- Shengbang Qian (China)
- Nicole van der Blik (Chile)



# OAD Task Forces

## TF2: Children and Schools

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



# OAD Task Forces

## TF3: Public

- Thilina Heenatigala (Sri Lanka)
- Sarah Kendrew (EU - New Media)
- Lars Lindberg Christensen (Germany, C55)
- **Carolina Odman (South Africa – Vice-Chair)**
- German Puerta (Colombia)
- *Sarah Reed (Japan/UK)*
- **Ian Robson (UK - Chair)**
- Komiko Usida (Japan)



# Volunteers (~450) – country of origin...





# IAU Office for Public Outreach



- **Coordinator appointed September 2012**
- **Works closely with OAD Task Force 3 and IAU Commission 55**



# Task Force Calls for Proposals

- **Call went live on 10<sup>th</sup> August 2012**
- **Translation support offered**
- **€80000 available for Task Force recommendations**
- **Projects recommended but not funded go onto “wish list”**
- **EDOC allocates IAU funds by December 2012**
- **Projects implemented in 2013**
- **Each Task Force has similar (but separate) call...**



# Task Force Calls - Examples

## TF1: Universities and Research

- Visiting astronomer programmes or exchange programmes
- National or regional astronomy schools and workshops
- Astronomy education research equipment and laboratory small grant
- Sabbatical leave visit programme
- Undergraduate astronomy courses
- Technology internships e.g. instrument specialists
- University twinning programmes
- Innovative university astronomy programs not listed above



# Task Force Calls - Examples

## TF2: Children and Schools

- Teacher training and development
- Resource development and vetting
- Produce guidelines for using robotic telescopes for school projects
- Distance learning options applicable to school level education
- Astronomy education research
- Reference group for curriculum evaluation
- Support existing networks for education
- Mobile education projects
- Study on the value of astronomy training
- Any other relevant projects



# Task Force Calls - Examples

## TF3: Public

- Journalist/blogger/communicator and amateur training
- Citizen science projects
- Develop/Identify models for good outreach activities
- Traditional/Cultural astronomy for outreach and false beliefs
- Establish evolving list of existing celebrations
- Creation of images and multimedia resources
- Stargazing events and telescope making workshops
- Any other relevant project which may not be mentioned here
- Astro-tourism activities
- Outreach awards
- Establish evaluation guidelines



# Collaborations and Grants

- **Royal Astronomical Society**
  - Visiting experts
  - Approximately 5 visits per year



# Collaborations and Grants

- **Netherlands Organisation for Scientific Research**
  - Visiting experts
  - Approximately 3 per year



Netherlands Organisation for Scientific Research  
Physical Sciences



# Collaborations and Grants

- **International Science Programme (Uppsala)**
  - Workshop for Physics lecturers
  - Use Virtual Observatory and small telescope
  - First workshop targets “historically black” universities in SA





# Collaborations and Grants

- **International Centre for Theoretical Physics**
  - Associate Scientists (5 per year)
  - Networks (3 per year)
  - Individual travel grants (5 per year)
  - Meetings and Workshops (2 per year)
  - Schools for young scientists (2 per year)



# Collaborations and Grants

- **Inter-University Centre for Astronomy and Astrophysics**
  - Human Capital Development
  - Visiting Experts
  - Testing educational Resources



# Collaborations and Grants

- **University of Central Lancashire**
  - Distance learning scholarships (12 per year)
  - Visiting experts



# Projects

- **Science Hack Day (“Hacking for Development”)**
- **Microsoft Worldwide Telescope Workshop**
- **Transit of Venus Consolidation**
- **Sutherland Youth Day Programming Workshop**
- **Astronomy Teaching and Research Orientation Workshop (instrumentation and data)**
- **Undergraduate astronomy courseware**
- **French speaking Africa – Eclipse meeting 2013**
- **East African Astronomy Workshop - Kampala**



# 2015 Strategic Goals

- Active regional nodes on all continents
- Active Task Forces with yearly funding cycle
- Secured funding for the OAD in the 2016 to 2020 period.
- Sustainable volunteer programme
- Total accumulated fundraising exceeding those made through the IAU-NRF agreement.

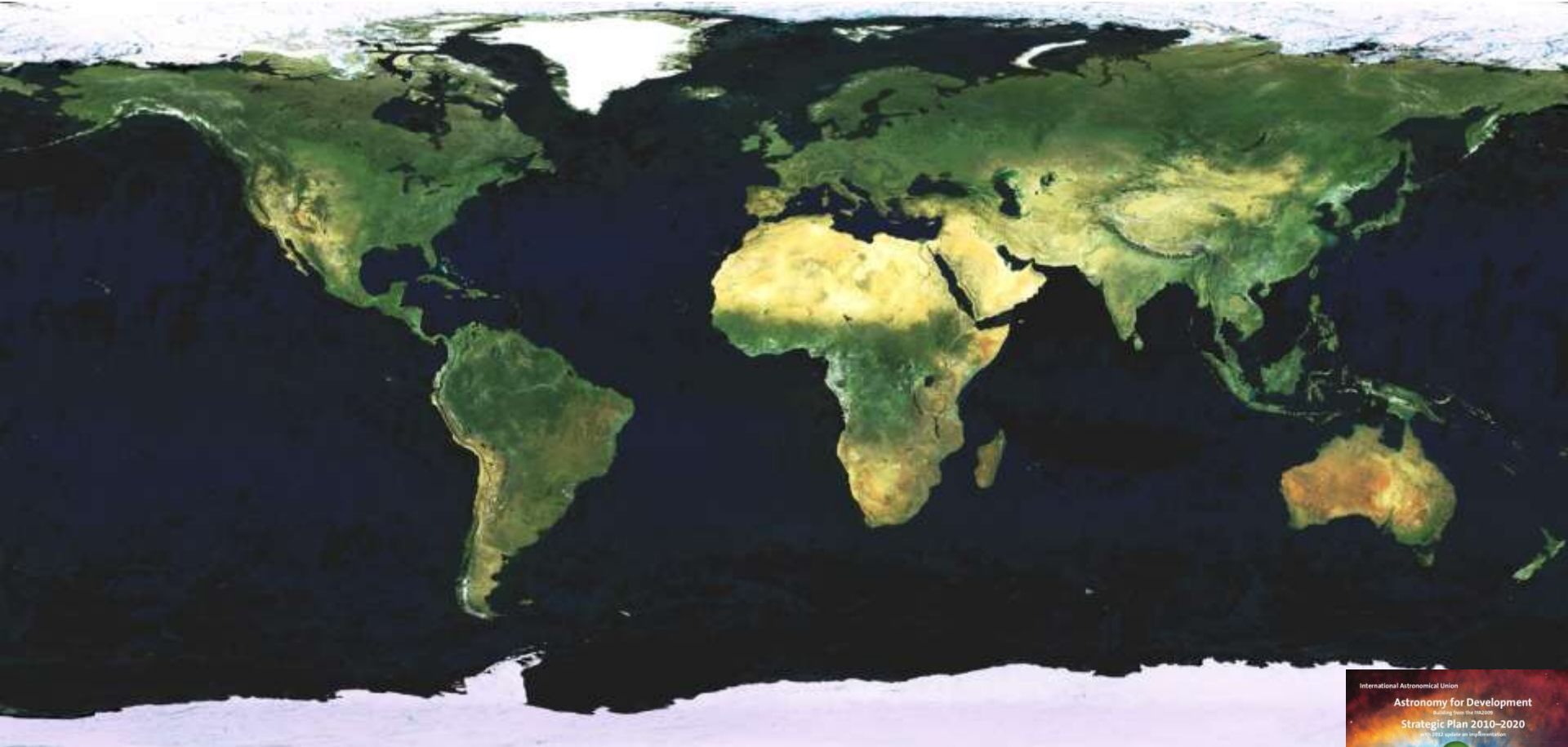


# Possibilities for Capacity Building in Africa

- Call for proposals
- Use OAD volunteers – global network
- Use OAD partners and opportunities they bring
- Use IAU endorsement for fundraising/support
- Expand the reach of OAD special projects
- We remain open to innovative ideas...



# Astronomy for a better world!



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