Astronomy for Development

Working towards impact

Workshop

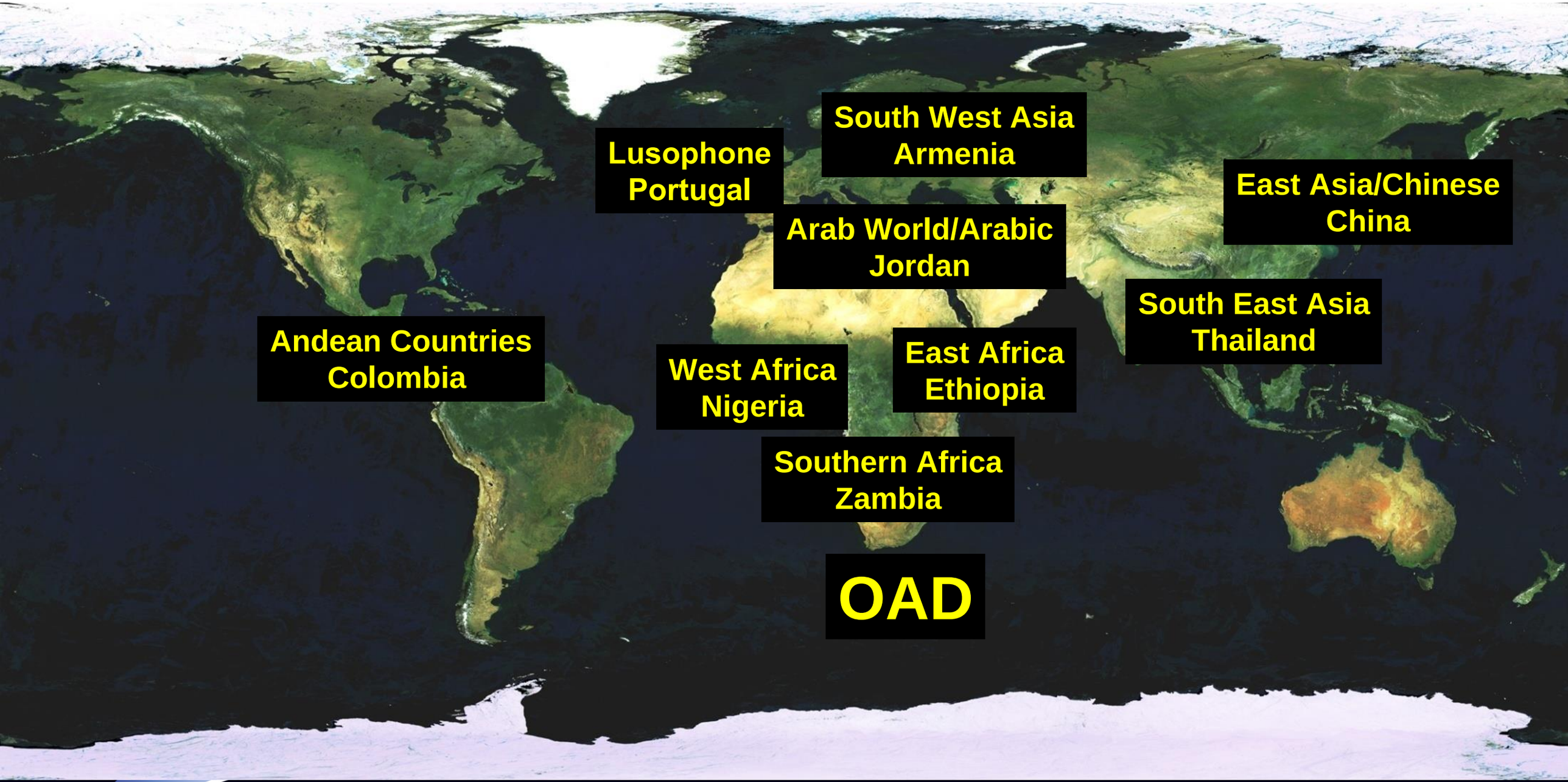
XV LARIM 2016, Colombia

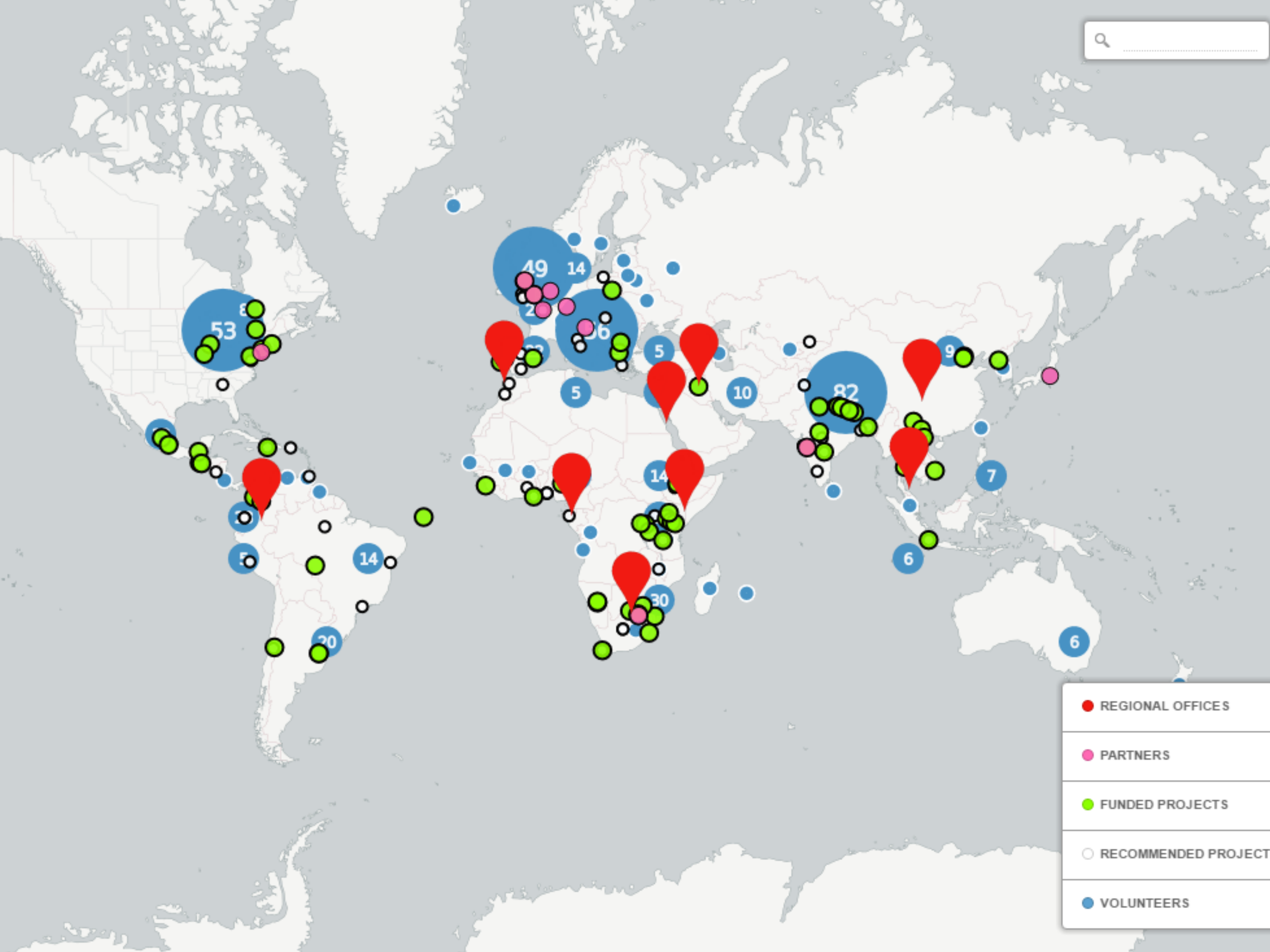
International Astronomical Union | Office of Astronomy for Development

Ramasamy Venugopal, rv@astro4dev.org
Kevin Govender, kg@astro4dev.org
Eli Grant, eg@astro4dev.org
www.astro4dev.org

XV LARIM Latin American XV Regional IAU Meeting
Cartagena de Indias Colombia / 2016

OAD Regional Offices




49
14
53
56
5
5
10
82
9
14
7
6
5
14
30
20
6
REGIONAL OFFICES
PARTNERS
FUNDED PROJECTS
RECOMMENDED PROJECT
VOLUNTEERS

IAU GA 2015 Resolution
(following positive OAD review)

Resolves

1. That the pursuit of the goals of the Strategic Plan 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.

Great Paris Exhibition Telescope
(lens at the same scale)
Paris, France (1900)

Yerkes Observatory
(40" refractor
lens at the same scale)
Williams Bay,
Wisconsin (1893)

Hooker (100")
Mt Wilson,
California
(1917)

Hale (200")
Mt Palomar,
California
(1948)

(1979-1998) (1999-)
Multi Mirror Telescope
Mount Hopkins, Arizona

BTA-6 (Large Altazimuth Telescope)
Zelenchuksky, Russia
(1975)

Large Zenith Telescope
British Columbia, Canada
(2003)

Gaia
Earth-Sun L2 point
(2014)

Kepler
Earth-trailing
solar orbit
(2009)

James Webb Space Telescope
Earth-Sun L2 point
(planned 2018)

Hubble Space Telescope
Low Earth
Orbit
(1990)

Large Sky Area Multi-Object Fiber Spectroscopic Telescope
Hebei, China
(2009)

Gran Telescopio Canarias
La Palma,
Canary Islands,
Spain (2007)

Keck Telescope
Mauna Kea, Hawaii
(1993/1996)

Hobby-Eberly Telescope
Davis
Mountains,
Texas (1996)

Southern African Large Telescope
Sutherland,
South Africa
(2005)

Gemini North
Mauna Kea,
Hawaii (1999)

Subaru Telescope
Mauna Kea,
Hawaii (1999)

Thirty Meter Telescope
Mauna Kea, Hawaii (planned 2022)

Gemini South
Cerro Pachón,
Chile (2000)

Large Binocular Telescope
Mount Graham,
Arizona (2005)

Large Synoptic Survey Telescope
El Peñón, Chile
(planned 2020)

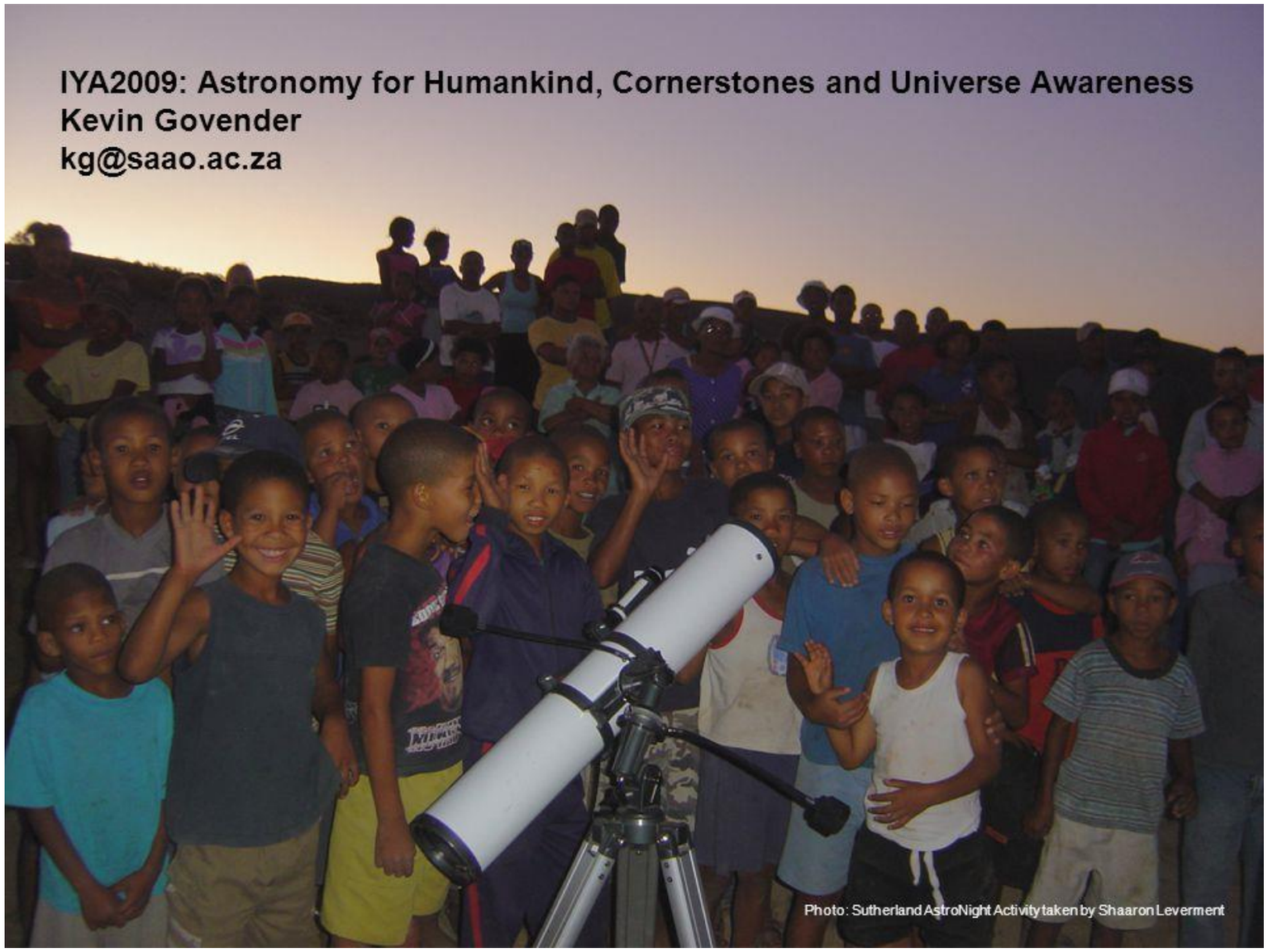
Very Large Telescope
Cerro Paranal, Chile
(1998-2000)

European Extremely Large Telescope
Cerro Armazones,
Chile (planned 2022)

Human
at the
same scale

0 5 10 m
0 10 20 30 ft

Sutherland, South Africa



Tourism
Infrastructure
Jobs
Community Center
Access &
Opportunities

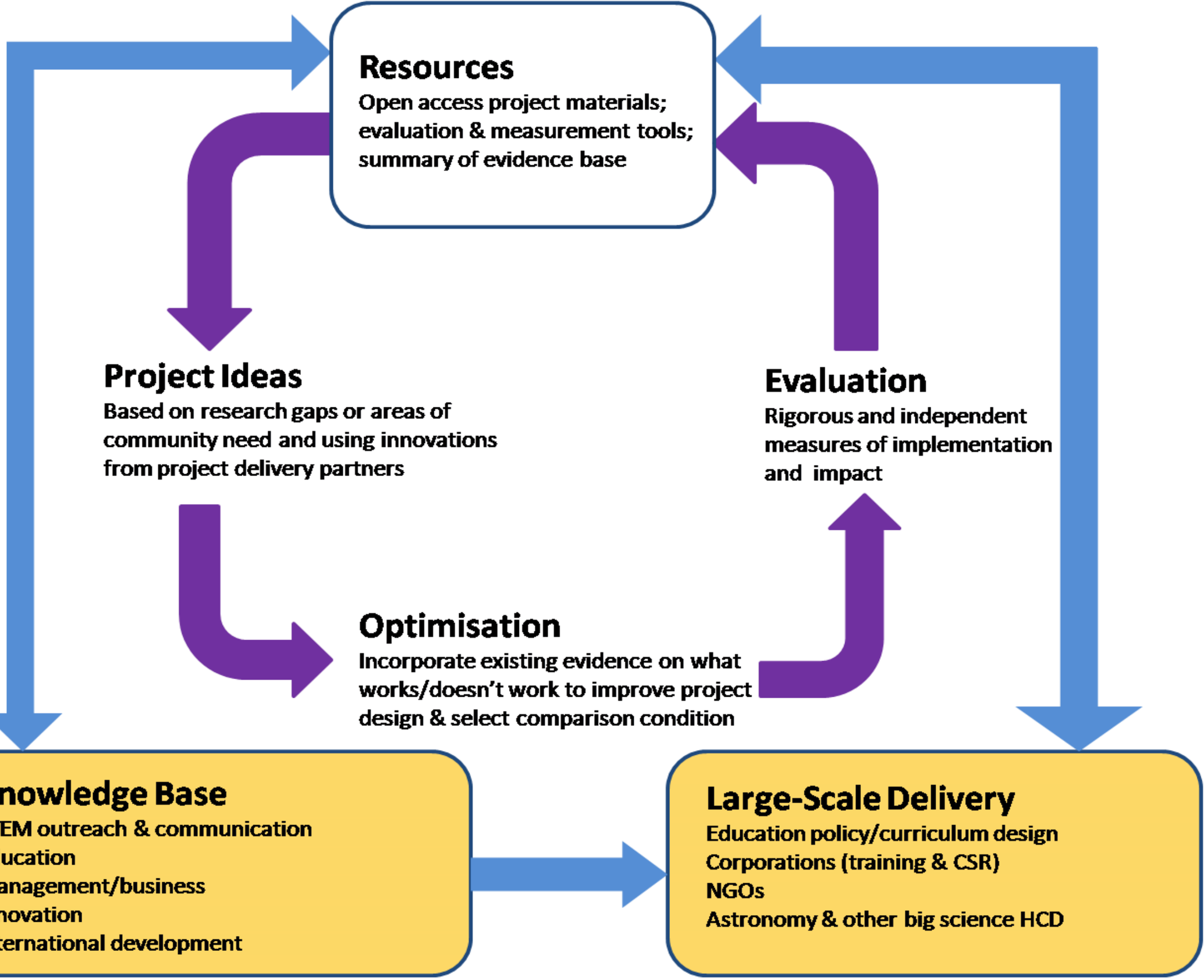
Community Development, Indonesia

Working with local Community, Training, Infrastructure Education

Do projects work?

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

OAD Impact Cycle: Positive Feedback Loop



Gaps

Interdisciplinary collaborative projects, especially between natural and social sciences.
Material/Methods for **teaching related subjects** (e.g. basic mathematics, statistics, engineering, programming, etc.) using Astronomy.
Problem sets and assessments (e.g. short tests administered before and after a training workshop/school)
Career information, using national and/or international data.
Parenting and early childhood development (e.g. guidelines for parents to encourage learning in their children).
Literacy and numeracy using astronomy (e.g. using astronomy to improve the teaching of reading, writing and counting/basic arithmetic).
Resource development (e.g. open-access course materials, culturally relevant astronomy, etc.).
Research reviews (i.e. finding and summarising relevant research that may be available on what works and what doesn't work for project types typically funded by the OAD)

Way Forward?

- Astronomy community engagement
- Interdisciplinary work – social sciences
- Communicating the benefits of astronomy/physics/science for development
- Regional Offices
- Wider funding
- Volunteers – global network
- OAD partnerships

Astronomy for Development

Working towards impact

Workshop

XV LARIM 2016, Colombia

International Astronomical Union | Office of Astronomy for Development

www.astro4dev.org

XV LARIM Latin American XV Regional IAU Meeting

Cartagena de Indias Colombia / 2016

OAO - OAD - IAU (Divisions)

Knowledge

Access

Development

International Astronomical Union | Office of Astronomy for Development

Staffing

Director

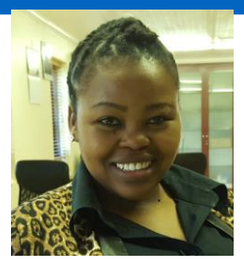
Programme Coordinator

Astronomer

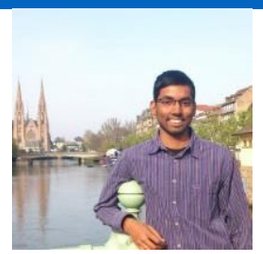
Fundraiser

Office Manager

Interns

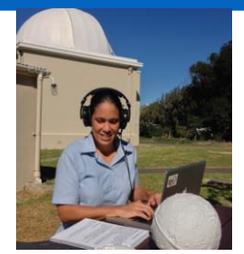


Fellows



Volunteers

Postdocs



OAD Task Force membership

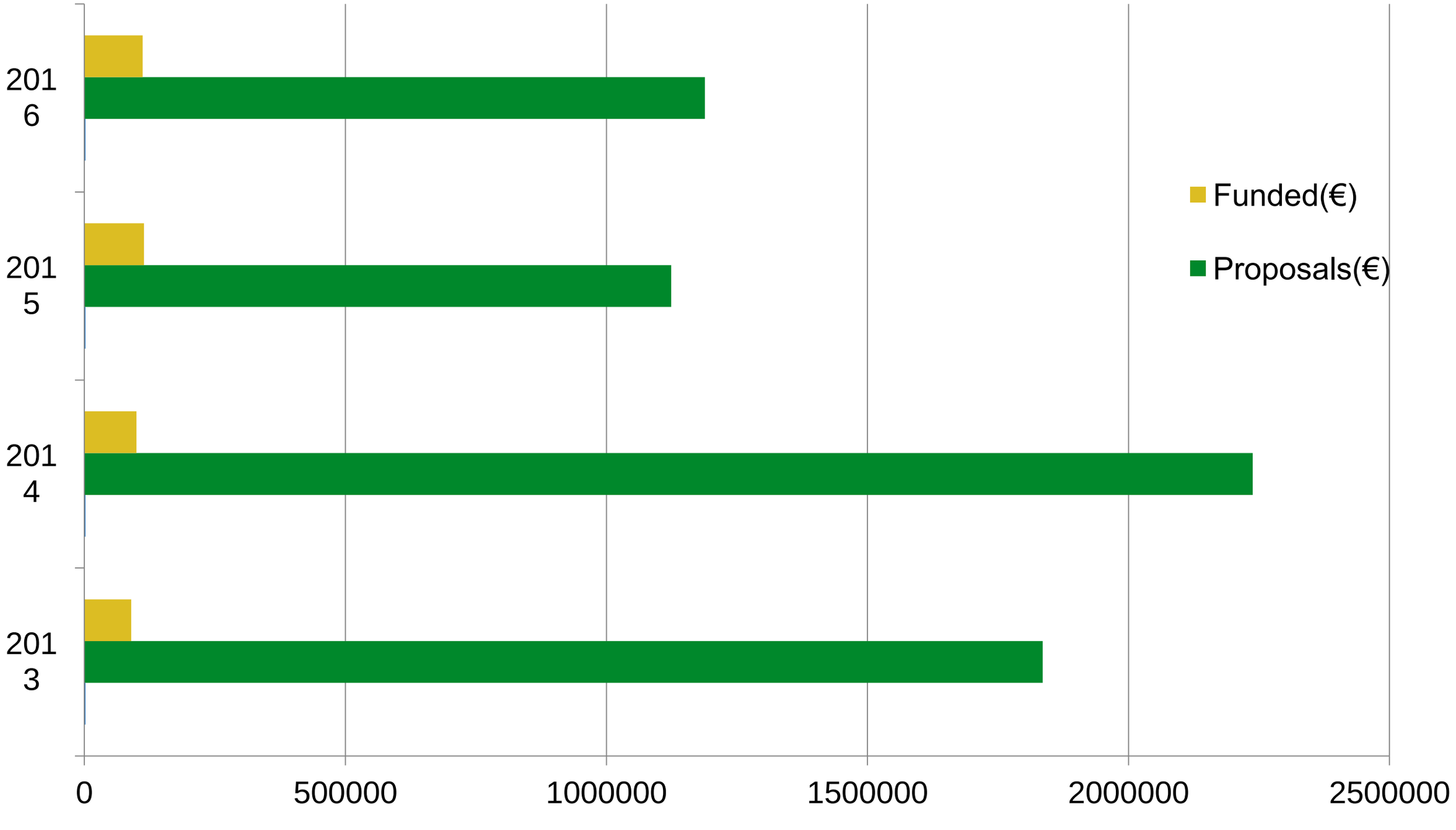
Astronomy for Universities and Research	Astronomy for Children and Schools	Astronomy for the public
Task Force 1 (TF1)	**Task Force 2 (TF2)**	**Task Force 3 (TF3)**
Nicole van der Bliek (Chile/Netherlands)	**Edward Gomez (Co-chair – UK) – Co-Chair**	Megan Argo (Australia/Commission C2 Nomination)
Jean-Pierre de Greve (Belgium)	Jen Gupta (UK)	Kimberly Arcand (US)
Michele Gerbaldi (France) – Co-Chair	Robert Hollow (Australia)	Sze-leung Cheung (OAO/Japan)
Edward Guinan (Chair – USA) – Co-Chair	Ofodum Chukwujekwu Nworah (Nigeria)	Thilina Heenatigala (Sri Lanka)
Roger Hajjar (Lebanon)	Linda Strubbe (Canada/USA)	**Carolina Odman (South Africa) – Co-Chair**
Edward Jurua (Uganda)	Akihiko Tomita (Japan)	German Puerta (Colombia)
Stella Kafka (US)	**Amelia Ortiz-Gil (Spain) – Co-Chair**	**Kumiko S. Usuda (Japan/USA) – Co-Chair**
Hakim Malasan (Indonesia)	Tsolmon Renchin (Mongolia)	Brooke Simmons (UK)
Shengbang Qian (China)	Lina Canas (OAO/Japan)	
Ravi Sheth (ICTP/Italy)		

2016 Recommended Projects

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

Trend 2013-16 : Demand vs Supply



Ad-hoc Projects

- AstroVarsity
  - provide course and tutorial resources for Maths & Physics lecturers at undergraduate level
- AstroSense
  - Accessibility and Inclusion
- Ultrascope and 3D printing
  - NASA Asteroid Grand Challenge
- Randomized Control Trial

Previous – AstroTruck, AstroPack, AstroComputing

OAD Volunteers

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

www.astro4dev.org/volunteers