

# UNIVERSE AWARENESS – UNAWE

## INTRODUCTION FOR NEW COLLEAGUES AND FRIENDS

- Rationale
  - Why astronomy for young children?
- History and accomplishments 2003 - 2014
- Lessons and thoughts on future

# UNIVERSE AWARENESS (UNAWAWE)

Astronomy-based program with social goals



Exposes DISADVANTAGED young children (4 – 10) to  
INSPIRATIONAL aspects of astronomy

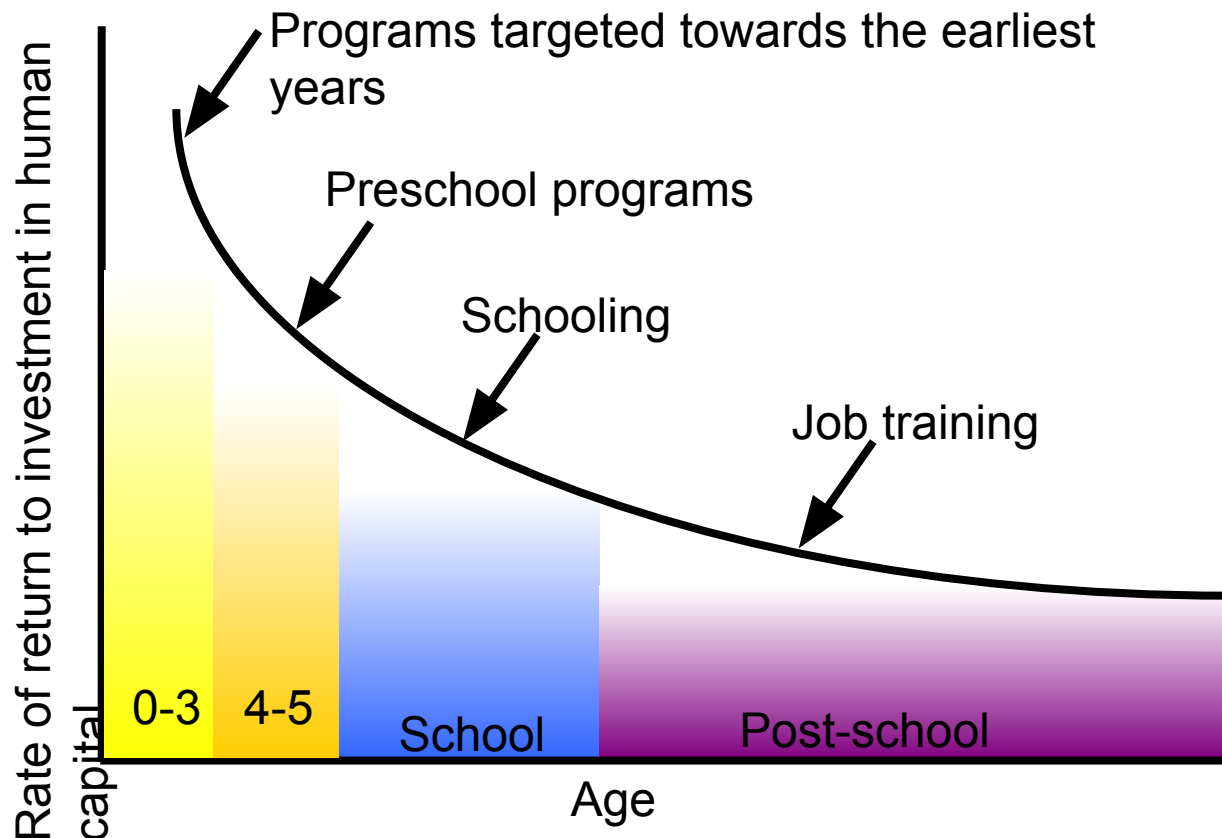
- Use **PERSPECTIVE** of astronomy to
  - **Broaden children's minds**
    - Stimulate sense of internationalism, tolerance, respect at age when value-systems are formed
- Use **INSPIRATION** and **FUN** of astronomy to
  - **Introduce excitement of science**
    - Demonstrate power of rational thought
    - Motivate development of language and numeric skills

# WHY YOUNG DISADVANTAGED CHILDREN?

## **ECONOMIC** RATIONALE

Rates of Return for Human Capital Investment at Different Ages

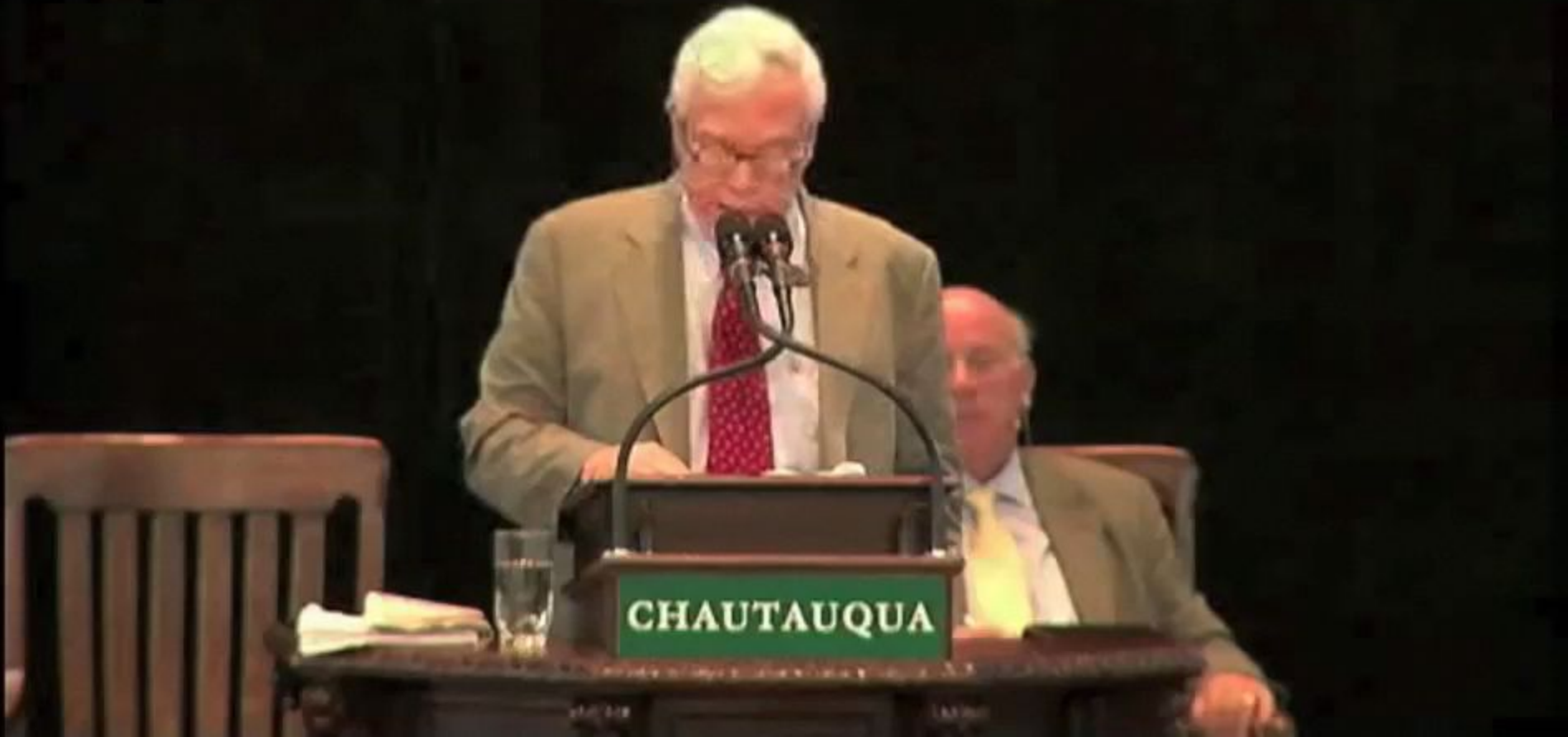
**Nobel Prize-winning economist James Heckman (2007)**



**MOTIVATION  
BEGETS  
MOTIVATION  
BEGETS  
MOTIVATION**

# WHY MOTIVATE YOUNG CHILDREN?

FORA.tv



**PROF. JAMES HECKMAN, ECONOMICS NOBEL PRIZE 2000**

# PRE-HISTORY OF UNIVERSE AWARENESS - 1

- **August 2003** Research Plan NL Academy Professorship
  - Small part to initiating a scheme for exposing young children in the underdeveloped world to inspirational aspects of modern astronomy.
- **October 2003 Meeting at ESO** with Richard West and Claus Madsen - Strong support
- **25 February 2004**
  - Letter seeking funds to Cornelis van Bochove, DG Science Policy, NL Ministry Education Culture & Research
- **27 October 2004 Meeting at European Schoolnet Brussels**
  - ESO: Claus Madsen, U Leiden: George Miley, EUN: Alexa Joyce, Thomas Maier, Santi Scimeca, EAAE: Fernand Wagner

# PRE-HISTORY OF UNIVERSE AWARENESS - 2

- 27 – 28 May 2005: First UNAWE Workshop, ESO Garching
  - Participants: Alec Boksenberg, Chandra Fernando, Marina Joubert, Birthe Kirknæs, Jesper Kirknæs, Naoufel Ben Maaouia, Bernat Martinez, George Miley, Premana Premadi, Rosa Ros, Karl Sarnow, Cecilia Scorza, Claus Madsen, Henri Boffin, Richard West
  - Pilot projects in Chile, Indonesia, Tunisia, South Africa
  - Reach 200,000 children in 8 countries starting in 2009
    - UA Education Committee chaired by Cecilia Scorza
    - UA Funding Committee chaired by Professor Alec Boksenberg
- Advert for PM -June 2005
  - 1 September 2005 – Carolina Ödman appointed part-time PM
- October 2005 – UNESCO GA Paris - Lobbying
  - Alec Boksenberg, Claus Madsen, George Miley, Carolina Odman, Cecilia Scorza

# PRE-HISTORY OF UNIVERSE AWARENESS – 2

## OFFICIAL LAUNCH IAU GA PRAGUE 23 AUGUST 2006

### Press Conference on Universe Awareness project



Press Conference at the XXVI IAU General Assembly in Prague on 23 August 2006 regarding the Universe Awareness (UNAW) project. The project received strong support from ESO during the initial phase. Seen from left to right: George Miley (Leiden/Chairman of UNAW), Carolina Ödman (UNAW Coordinator at the time), Cecilia Scorza (astronomy education expert) and Claus Madsen (ESO/UNAW Co-Chairman).

**Credit:** ESO/C. Madsen

# PRE-HISTORY OF UNIVERSE AWARENESS -3

- September 2006 Ministry of Education Culture and Science – 3 year startup
  - Received personally from Dutch Minister of Education Culture and Science, Maria van der Hoeven
- Global **cornerstone** of UN-ratified International Year of Astronomy **IYA2009**
- Official programme of International Astronomical Union, embedded in decadal **IAU Strategic Plan** “Astronomy for Development”
- **BOTTOM-UP network** of > 500 dedicated multidisciplinary experts in > 60 countries



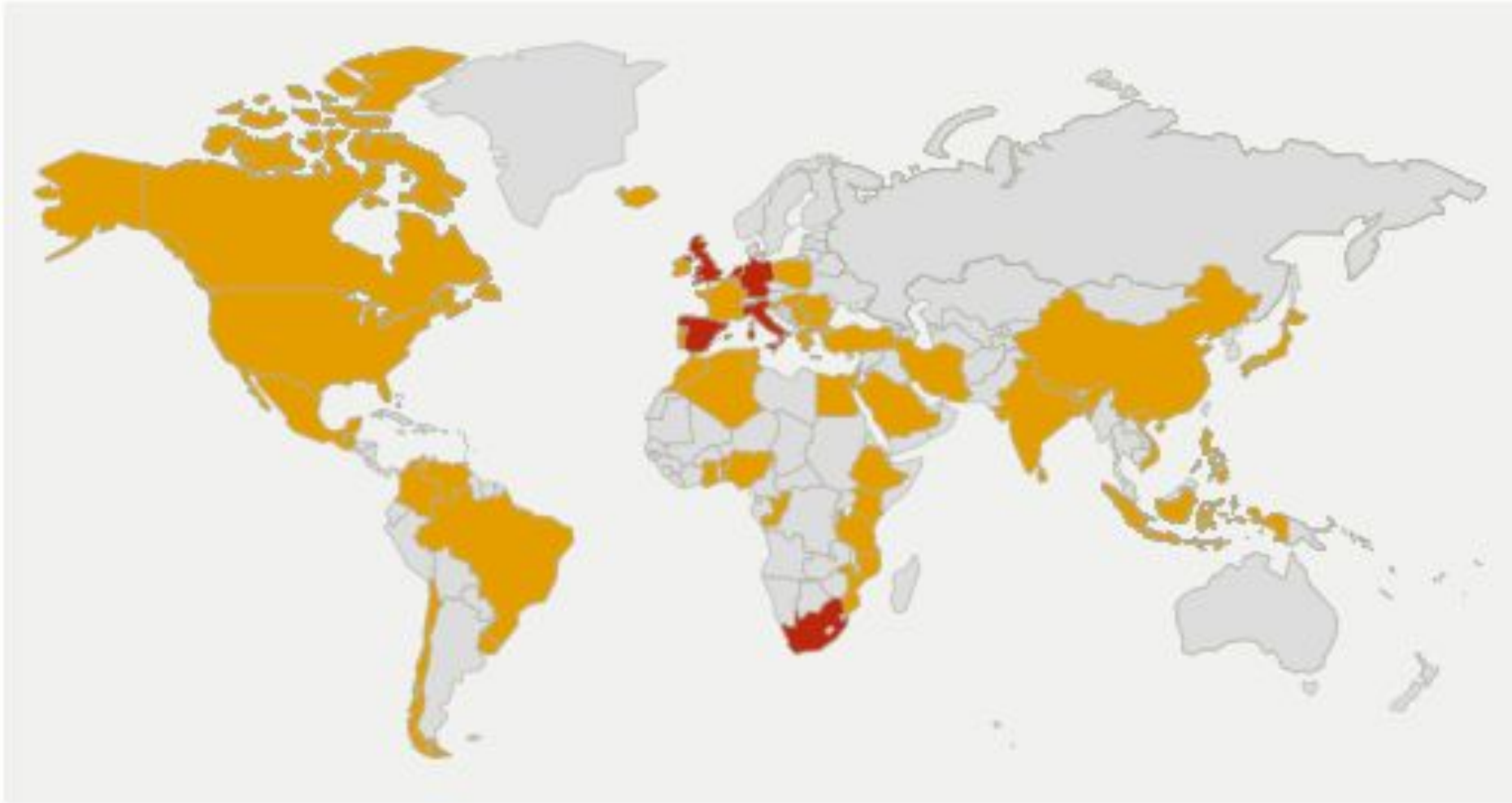
# EU- UNIVERSE AWARENESS (EUNAWE)

Astronomy-based program with educational and social goals



- **2011 -2013:** Implementation in 5 EU member states and South Africa
  - **Allocated 2.5M Euro**
  - **Germany, Italy, Netherlands, Spain, UK (N. Ireland)**
  - **South Africa**
- **National coordinators+materials+teacher training+exchanges**

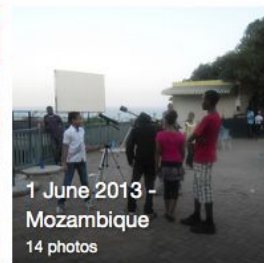
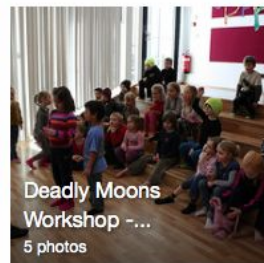
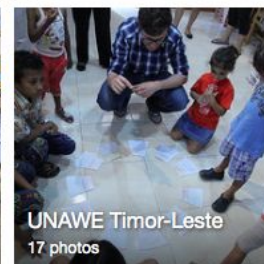
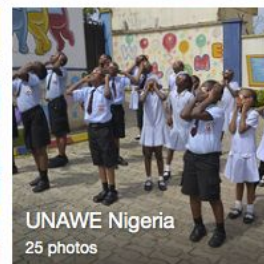
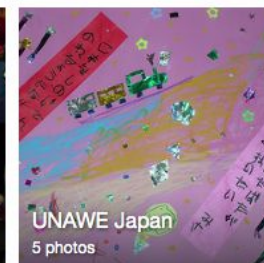
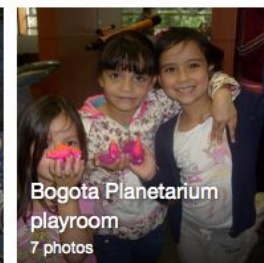
# UNAWE (2014) IN ~ 60 COUNTRIES



**~60 UNAWE Countries**  
**(6 of them EU-UNAWE)**

**500+ Educators/Teachers/Astronomers**

# UNAWE IN MORE THAN 60 COUNTRIES



# EU UNIVERSE AWARENESS ACCOMPLISHMENTS

- **Teachers Trained** - Target 945; Achieved **1842**
- **Children reached** - Target 33,150: Achieved **64,727**
- Educational resources produced - **170**
- Creation of IAU endorsed platform for peer-reviewed astronomy education
- **SCIENCE MAGAZINE SCIENCE PRIZE FOR ONLINE RESOURCES IN EDUCATION (SPORE) –2011**
- EU-UNAWE's Space Scoops press releases for kids
  - **204: Translated into 27 languages (=2322)**
- Creation of EU-UNAWE Student Ambassador Programme
  - **124 student volunteers from 40 countries**
- **Websites Visitors 220,000**

# EU-UNAWWE RESOURCES e.g. EARTH BALL



- 10 000 Distributed to schools and teachers
- 57 Different countries

# EU-UNAWWE RESOURCES - e.g. UNIVERSE IN A BOX

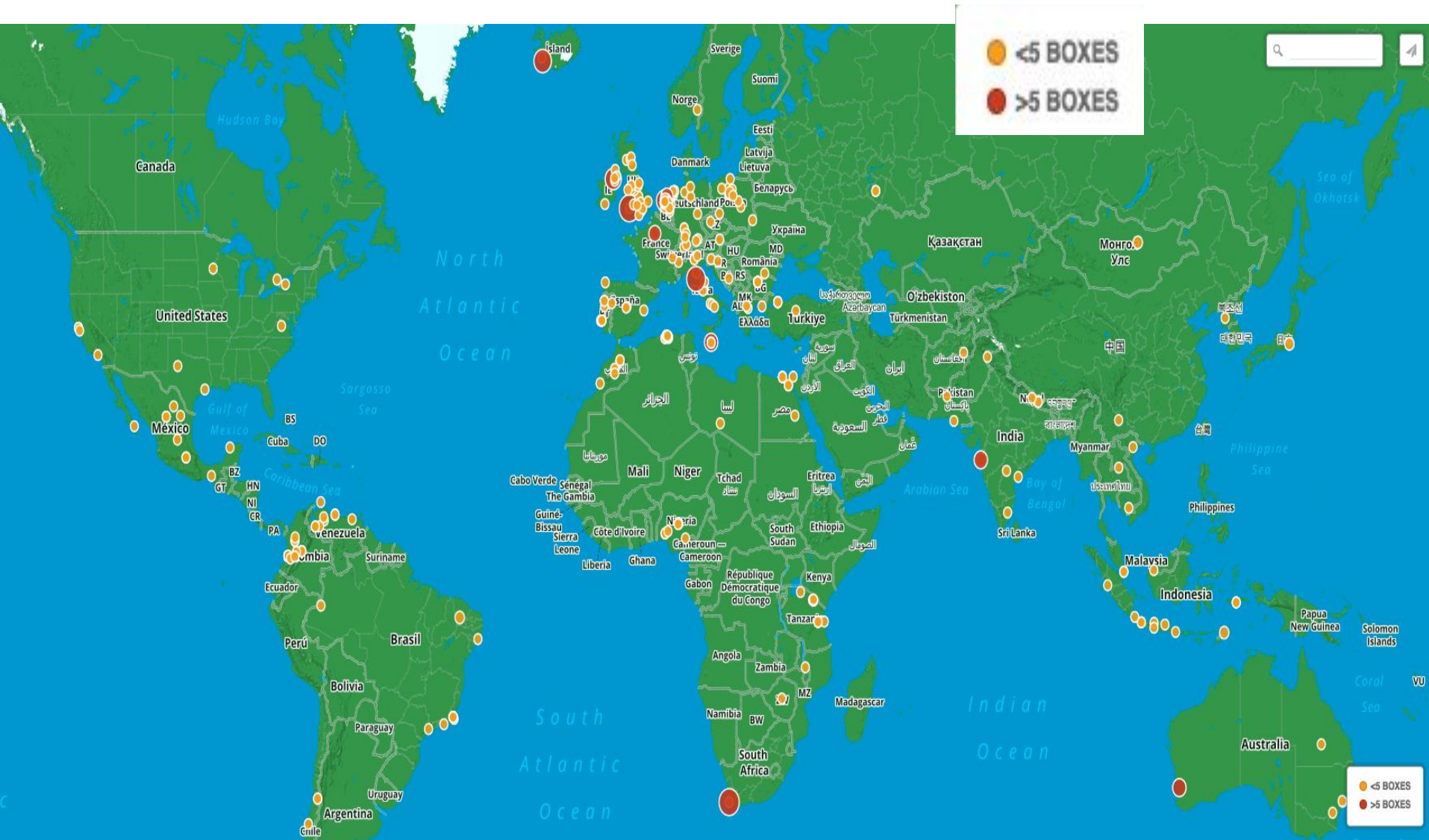


- Developed by **Cecilia Scorza** HdA Heidelberg
- 1,000 distributed to schools and teachers
- 57 Different countries

# UNIVERSE IN A BOX GLOBAL DISTRIBUTION

## VIA CROWD FUNDING

Ashton, Russo and Heenatigala, 2014



# SUPPORT IN EU PARLIAMENT

- **PARLIAMENTARY AMENDMENT 898 TO 2009 BUDGET(Teresa Riera -Madurell MEP)**
  - **Actions will include activities in the framework of the International Year of Astronomy (IYA2009) +2MEuro in 2010 budget**
    - **IYA2009 emphasizes outreach to young people.**
- **Written Declaration 45/2011 of European Parliament 15 March 2012 (signed by 394 MEPs)**
  - **RECOGNISING THAT *further European involvement in African radio astronomy can become a powerful driver of socioeconomic growth in Africa***
  - **SUPPORTS the development of science capacity in Africa through *greater investment in research infrastructures, with particular focus on radio astronomy***
- **Parliamentary Questions about continuation of UNAWE – March 2012 (Alyn Smith MEP)**
- **2013 - Support from 11 MEPs, 7 countries, 5 parliamentary groups**
  - **Liam Aylward, Thijs Berman, Bill Newton Dunn, Jill Evans, Filip Kaczmarek, Malcolm Harbour, Gay Mitchell, Vittorio Prodi, Teresa Riera Madurell, Alyn Smith and Rui Tavares**

# NALEDI PANDOR

## SOUTH AFRICAN MINISTER OF SCIENCE AND TECHNOLOGY



# THE UNIVERSE IS SCIENCE



UNAWA Venezuela – Centro de Investigaciones de  
Astronomía

# THE UNIVERSE IS TECHNOLOGY



UNAWA Venezuela – Centro de Investigaciones de  
Astronomía

# THE UNIVERSE IS CULTURE



UNAWA Tunisia– Club d'enfants de  
Sfax



# THE UNIVERSE INSPIRES



UNAWWE India – Tamil Nadu Science  
Forum



# UNAWE APPEALS TO LARGE PUBLIC



UNAWE-UNESCO Venezuela – Centro de Investigaciones de Astronomía



# UNAWE IS ALSO FOR HANDICAPPED CHILDREN



UNAWE –UNESCO Venezuela – Centro de Investigaciones de  
Astronomía  
Uitvoering door kinderen met autisme

# UNAWE 2025 – PERSONAL THOUGHTS ON FUTURE - 1

- UNAWE/ Pale Blue Dot –type programme **more than ever needed**, given geopolitical trends
  - Nationalism, populism, ethnicism, nuclear war, climate change threaten **survival of species and planet**
- **To be effective** > implementation on **GLOBAL SCALE** adapted to local cultures
  - **Large funding sources needed** – unsuitable for normal proposal call
  - Partnership between **research** astronomers and **teachers** essential
  - Think about possible partnership with **other relevant sciences, arts + culture??**
  - New generation of proponents need to be recruited
    - Dedicated driven idealist + diplomats + pragmatists

# UNAWE 2025 – PERSONAL THOUGHTS ON FUTURE -2

## • POSSIBLE ROADMAP

- Mobilise influential senior researcher astronomers
  - Uniqueness of UNAWE/PBT approach
- Approach distinguished potential patrons via senior international research astronomers
  - e.g. Calibre of ex- Minister Pandor and Prof. Mokhele from SA
- Recruit idealist volunteers from young researchers and teachers throughout world
- Draw up multi-year plan with appropriate partners (e.g. OAD, OAE ++) and discuss with national Academies
- Exploit network to approach sympathetic politicians, administrators, foundations and international organisations
- Min. initial funding (~2 FTE) for highly-motivated charismatic PM to lay ground