

WELCOME TO LEIDEN

10TH ANNIVERSARY OF

FORMAL UNAWWE KICKOFF

OFFICIAL LAUNCH OF UNIVERSE AWARENESS IAU GENERAL ASSEMBLY - 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 (ES/UNAW Co-Chairman).

Credit: ESO/C. Madsen

UNIVERSE AWARENESS – UNAWE

INTRODUCTION FOR NEW COLLEAGUES AND FRIENDS



- Rationale
- Pre-history
- Scope and accomplishments
- UNAWE – part of global capacity building strategy
- Ambitions

UNIVERSE AWARENESS (UNAWE)

Astronomy-based program with social goals



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

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

WHY FOCUS ON YOUNG DISADVANTAGED CHILDREN?

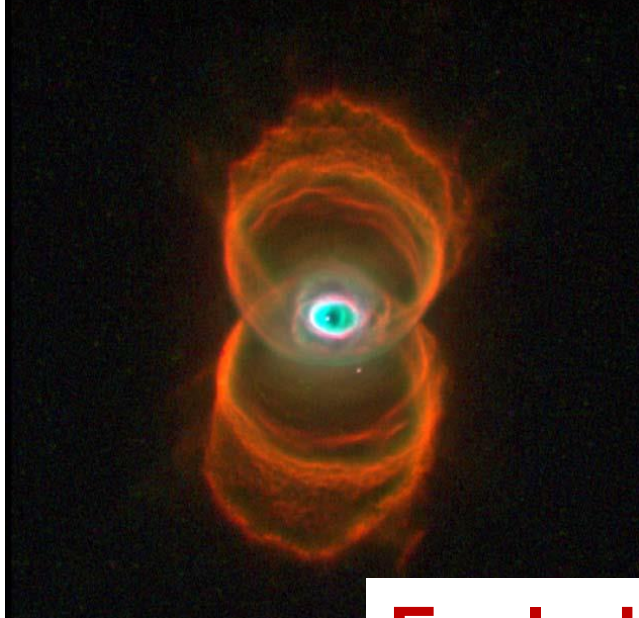
ASTRONOMY IS AN OUTSTANDING MOTIVATOR



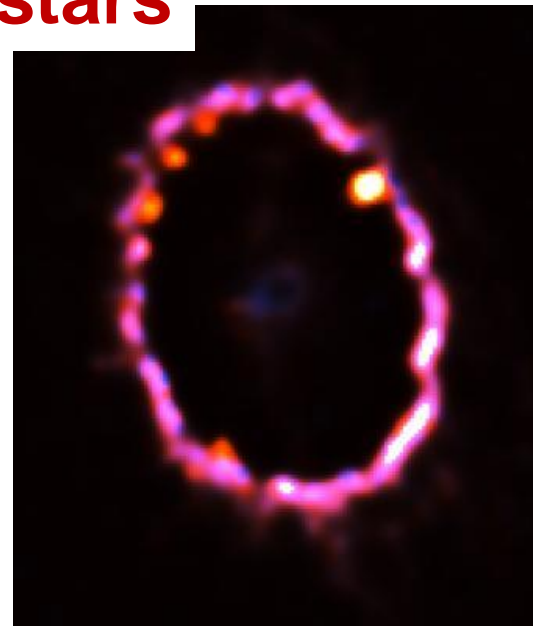
INSPIRATION
OUR Universe is beautiful

e.g. Birthplace of stars

INSPIRATION - OUR Universe is exciting



Exploding stars



INSPIRATION – DEEPEST PICTURE OF UNIVERSE BACK TO OUR ROOTS



- **Deepest photo of Universe ever taken**
 - **Billion times fainter than naked eye can see**
- **Faintest galaxies**
 - **13.2 billion light years away**
 - **When Universe 500 million years old**
 - **4% of its present age**

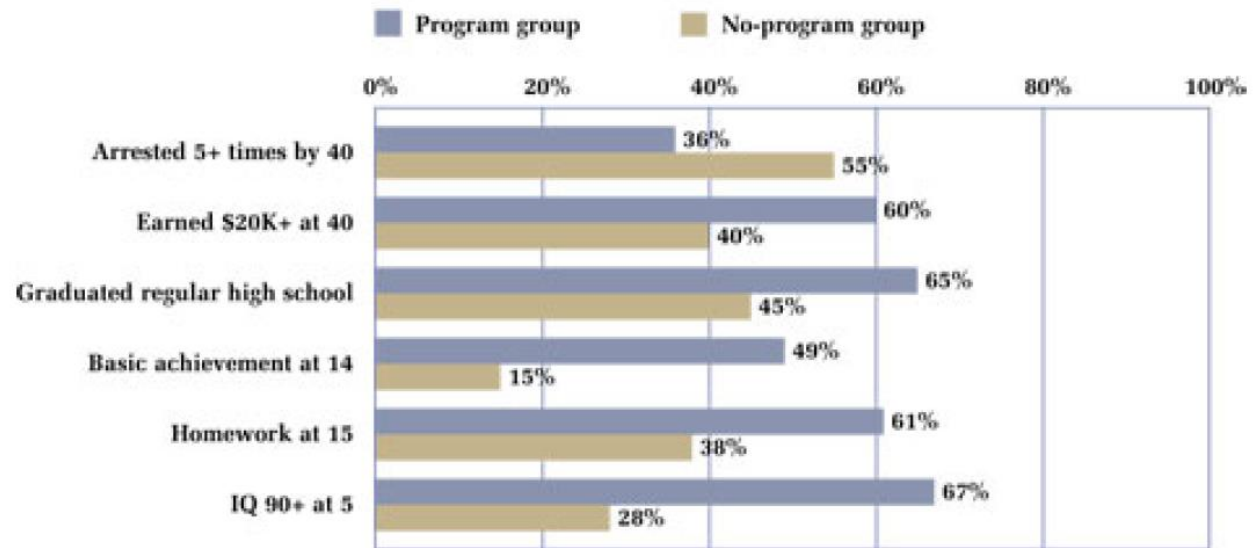
WHY FOCUS ON YOUNG CHILDREN IN DISADVANTAGED COMMUNITIES?

CAN EARLY INTERVENTION HAVE A LIFELONG EFFECT?

YES! e.g. HIGH/SCOPE PERRY PRESCHOOL STUDY

- 1962 – 1967: 123 poor Afro-Americans, 3 – 4 years old
 - Half high-quality “pre-schooling”. Half in control group without preschooling
- Followed over 40 years

Major Findings: High/Scope Perry Preschool Study at 40

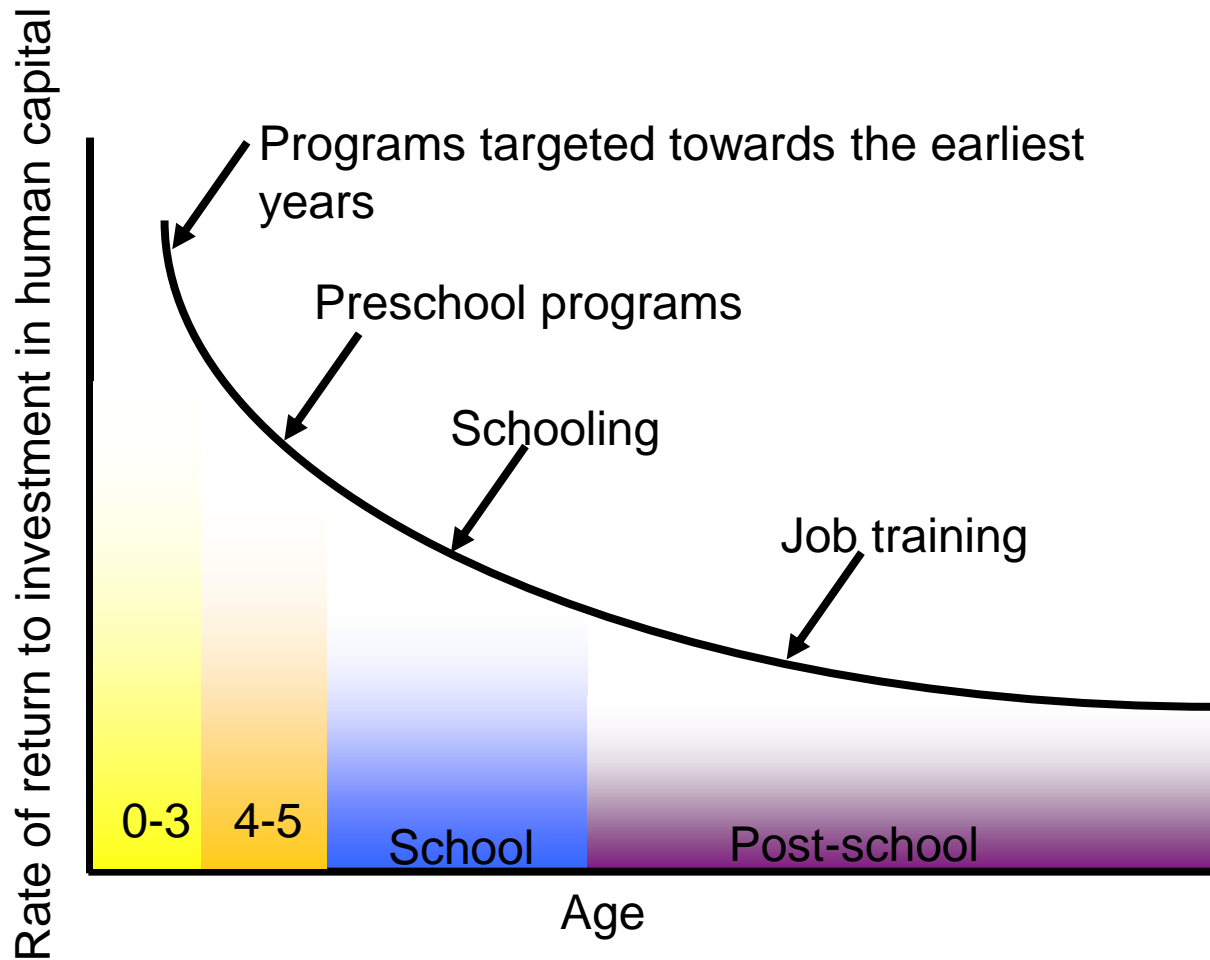


- For children from poor socio-economic background \$7 return per invested dollar!!

WHY YOUNG DISADVANTAGED CHILDREN? ECONOMIC RATIONALE

Rates of Return for Human Capital Investment at Different Ages

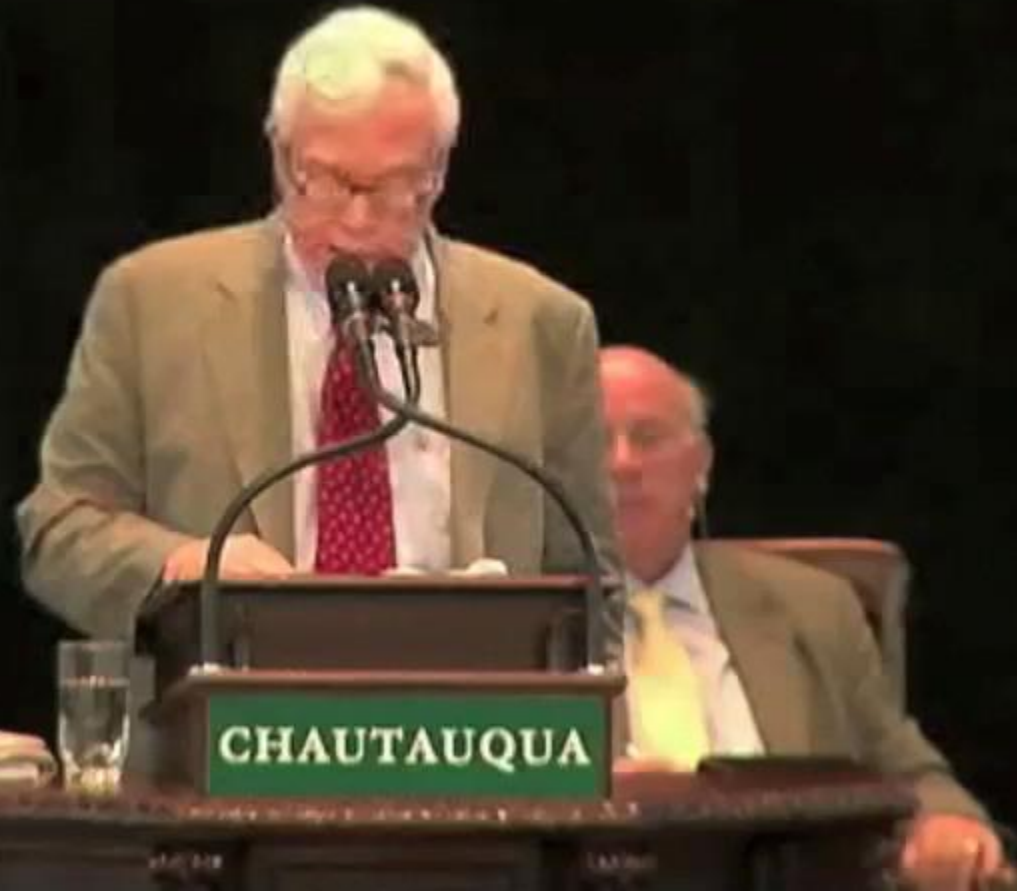
Nobel Prize-winning economist James Heckman (2007)



**MOTIVATION
BEGETS
MOTIVATION
BEGETS
MOTIVATION**

WHY MOTIVATE YOUNG CHILDREN?

FORA.tv



PROF. JAMES HECKMAN, ECONOMICS NOBEL PRIZE 2000

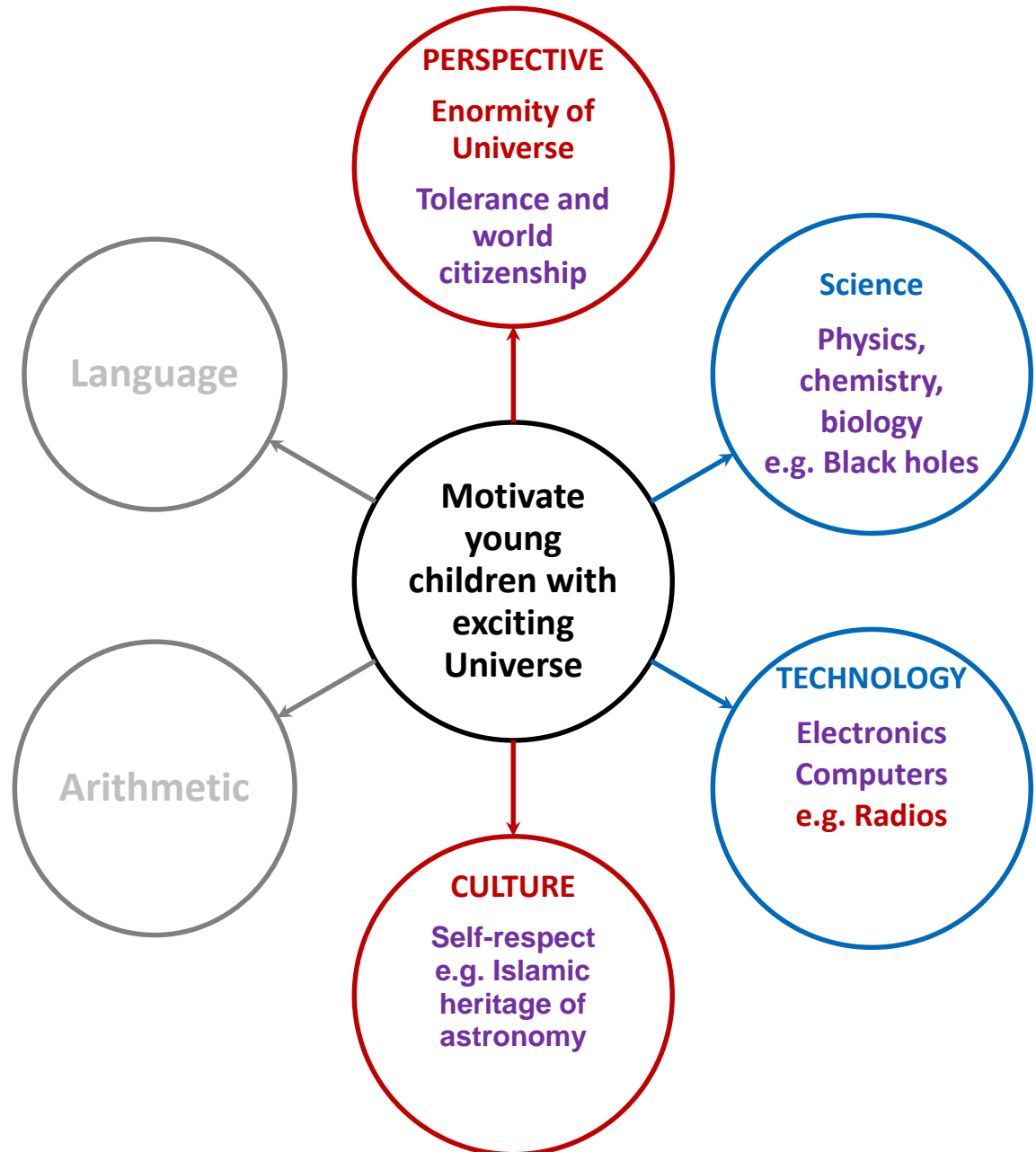
MUCH MORE THAN JUST ECONOMIC EFFECTIVENESS AWARENESS OF UNIVERSE GIVES PERSPECTIVE CAN HELP COMBAT FANATICISM

"Fanatic ethnic, religious or national identifications are difficult to support when we see our planet as a fragile, blue crescent fading to become an inconspicuous point of light against the bastion and citadel of the stars. "
CARL SAGAN



EARTH FROM SATURN (CASSINI)

MOTIVATE, EXCITE INSPIRE – HOLISTIC APPROACH



PRE-HISTORY - 1

- **August 2003 Research Plan - Academy Professorship**
 - “I wish to devote small part of my time to exploring an aspect of astronomical outreach that has so far received little attention, namely the viability of a initiating a scheme for exposing young children in the underdeveloped world to inspirational aspects of modern astronomy. “
 - “Within the perspective of the scale and grandeur of the Universe as a whole, national and ethnic considerations become trivial, so in its gamma role astronomy helps combat the dark forces of nationalism and narrow isolationism that continually threaten our civilization. During the last years, the need to develop scientific outreach programmes to help counteract irrational influences in the world has grown substantially.”
- **October 2003 Meeting at ESO with Richard West and Claus Madsen - Strong support**
- **25 February 2004**
 - Letter seeking funds to Dr. Cornelis van Bochove, DG Science Policy, NL Ministry OC&W

PRE-HISTORY - 2

- **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**
 - “It was agreed that the programme should not be restricted to developing countries, as originally proposed. A pilot program should also include several EU countries. This would make it easier to obtain EU funding and for EU Schoolnet and ESO to play important roles.”
- **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

PRE-HISTORY– 3

FIRST UNAWE WORKSHOP – ESO GARCHING 27 – 28 MAY 2005

- **Approach**
 - “Programme would involve (national) TV as a main carrier, but with a range of accompanying activities that would allow for face-to-face interaction with children and grow in complexity commensurate with the age /cognitive capabilities of the different age groups.”
- **Curriculum:**
 - **Begin with ‘Earth Awareness’**
 - Child is member of a diverse human family of children with different backgrounds in different countries.
 - **Develop through awareness of the solar system to ‘Star and Galaxy Awareness’.**
- **Delivery**
 - **Diverse environments (Poor, intermediate, rich)**
- **Pilot projects in Chile, Indonesia, Tunisia, South Africa**
 - **Reach 200,000 children in 8 countries starting in 2009**

PRE-HISTORY - 4

- **June 2005 - Advert for PM**
 - “A position is available for 16 to 20 hours per week for a twelve-month period starting in September 2005 for a Project Manager who will work towards setting up this program.”
- **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**
- **2005 – 2006**
 - **Endorsements from Nobel prizewinners and well-known people**
- **AUGUST 2006**
 - **OFFICIAL LAUNCH AT IAU GENERAL ASSEMBLY**
- **9 – 13 October 2006 Second UNAWE International Workshop at Lorentz Center, U. Leiden**
 - **3 year startup funds 325k€**
 - **Delivered personally by Dutch Minister of Education Culture and Science, Maria van der Hoeven**

HISTORY - 1

- Global cornerstone of UN-ratified International Year of Astronomy IYA2009
- 2008 - Official programme of International Astronomical Union, embedded in decadal strategic plan “Astronomy for Development”
- 2011 – 2013 EU Universe Awareness
 - **2M€ from European Commission**
 - Implementation in 6 countries
 - Germany, Italy, Netherlands, Spain, UK (N. Ireland), South Africa
- 2014 – 2018 Part of EU Space Awareness
 - **2M€ from European Commission**
 - 9 partners, 15 dissemination nodes



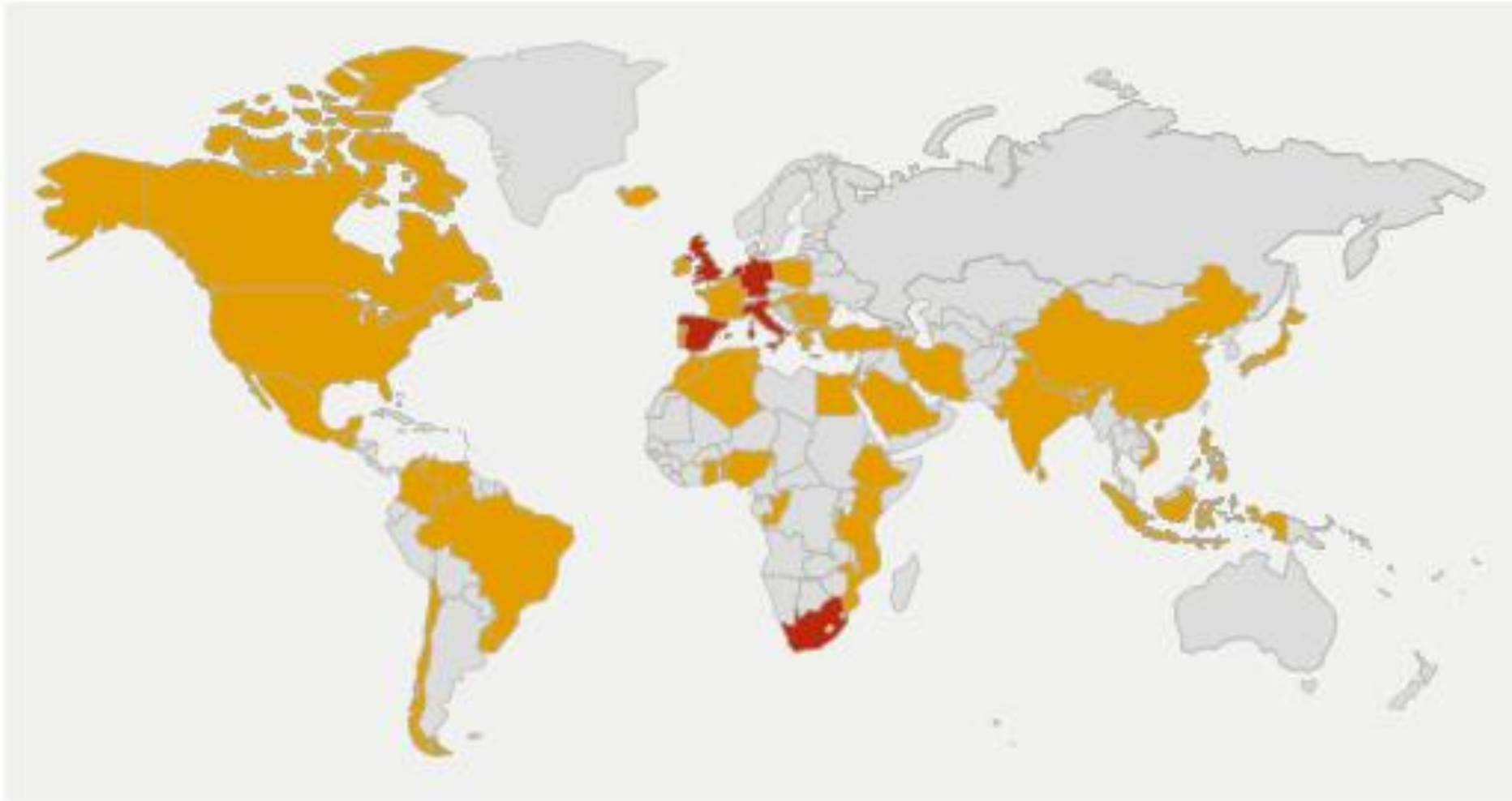
EU UNIVERSE AWARENESS ACCOMPLISHMENTS

- **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**

UNAWE NOW IN > 60 COUNTRIES

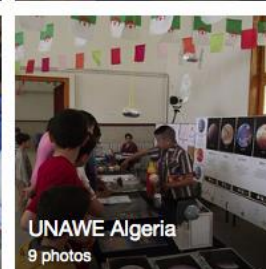
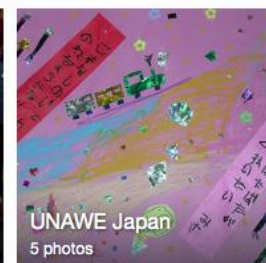
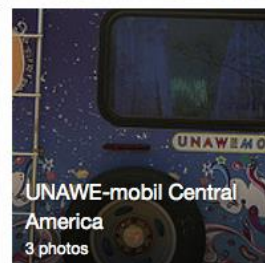
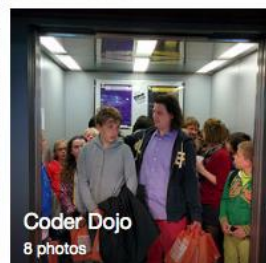
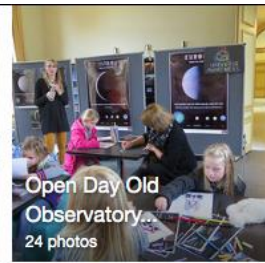


~65 UNAWE Countries
(6 of them EU-UNAWE)

500+
Educators/Teachers/Astronomers

UNAWE IN MORE THAN 60 COUNTRIES

BOTTOM-UP network of > 500 dedicated multidisciplinary experts



UNAWE ZIMBABWE – JOINED MARCH 2015



“Universe in a box” activity

Charles Wraith Primary School - March 2015

EU-UNAWE RESOURCES e.g. EARTH BALL



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

EU-UNAWE RESOURCES - e.g. UNIVERSE IN A BOX



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

UNAWE

**PART OF GLOBAL CAPACITY BUILDING
STRATEGY**

IAU STRATEGIC PLAN

“ASTRONOMY FOR DEVELOPMENT”

http://iau.org/static/education/strategicplan_091001.pdf

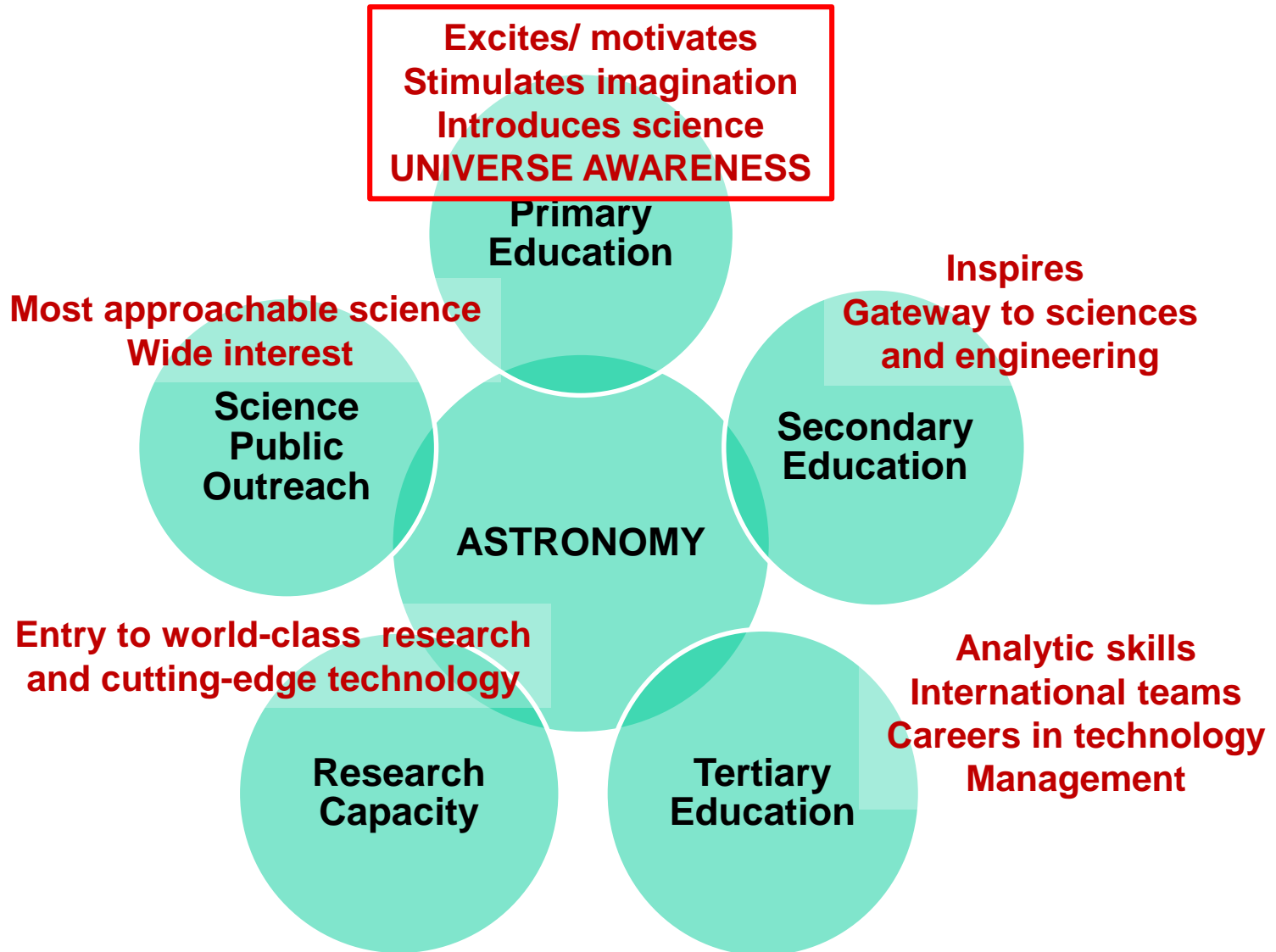
IAU = INTERNATIONAL ASTRONOMICAL UNION
Global organisation of professional astronomers
73 member states, 11,000 members

Some Elements

- Long-term Vision
- Goals for 2010 – 2020
- Strategy includes
 - Integrated strategic phased approach
 - Driven by regional demand
 - Emphasis Sub-Saharan Africa
 - Build on International Year of Astronomy
 - Mobilize volunteers
 - Exploit new possibilities
- Implementation Roadmap

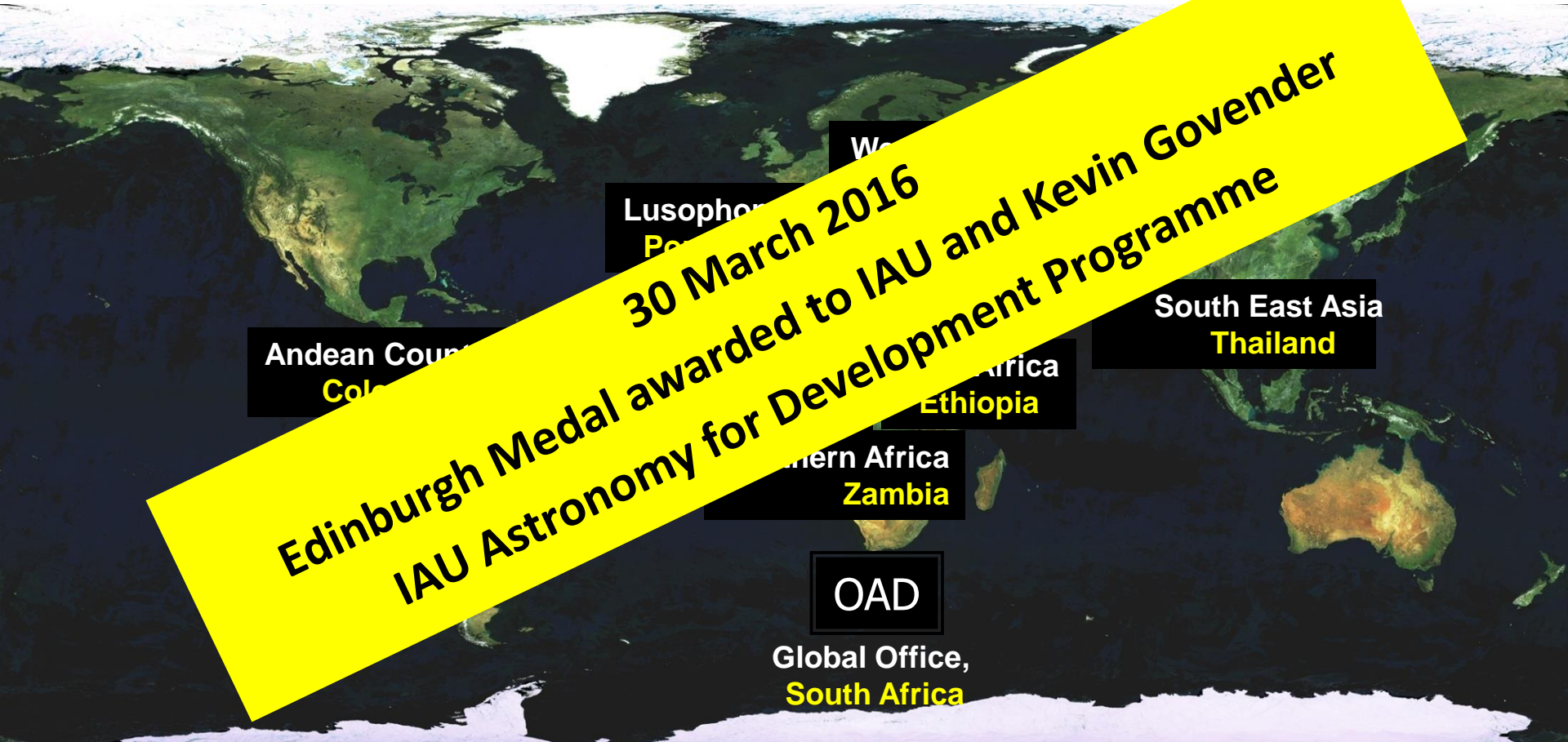


TOOLS OF ASTRONOMY FOR DEVELOPMENT





IMPLEMENTATION OF STRATEGIC PLAN 9 SELF-SUPPORTING REGIONAL OFFICES ESTABLISHED



**Edinburgh Medal awarded to IAU and Kevin Govender
IAU Astronomy for Development Programme**
30 March 2016

VERY HIGH VISIBILITY/ IMPACT AMONG POLICY MAKERS

For further about OAD info ask Ramasamy Venugopal

NALEDI PANDOR

SOUTH AFRICAN MINISTER OF SCIENCE AND TECHNOLOGY



UNAWE – SOME AMBITIONS FOR FUTURE CONSOLIDATION AND EXPANSION

- **Application to migrant communities**
 - **Refugees**

UNAWE – FOR REFUGEE CHILDREN (UNAWE-VK)

INITIATIVE FROM THE NL ASTRONOMY



**UNIVERSE AWARENESS CAN MAKE
UNIQUE CONTRIBUTION TO FURTHERING
INTEGRATION AND EDUCATIONAL FORMING OF REFUGEE CHILDREN**

UNAWE – SOME AMBITIONS FOR FUTURE CONSOLIDATION AND EXPANSION

- Application to migrant communities
 - Refugees
- Scalable model for further expansion
 - e.g. UNAWE miniMOOCs for teachers in many languages (and cultures)
- Investigate non-traditional methods of delivering UNAWE
 - e.g. UNAWE Astro-busses to reach remote regions
- Interact with national educational authorities to incorporate UNAWE philosophy in parts of curricula
- Persuade foundations multi-national companies and other potential fund givers to support sustainability of UNAWE in developing countries.
- Multidisciplinary research into long-term impact of UNAWE programme

BUT YOU ARE UNAWE!!!

PLEASE GIVE US YOUR FEEDBACK DURING THIS WORKSHOP

WHY DID UNAWE SUCCEED DURING SO FAR?

- Need and rationale
- Bottom-up nature – ownership locally
 - Added value of international imprimatur
- Multidisciplinary nature of network, with involvement of research scientists
- Lobbying, persistence and support from political and host institutions
- Professional coordination
- Special people
 - Project lead: Carolina Ödman, Pedro Russo
 - Cecilia Costa HdA
 - Claus Madsen - Initial ESO Support. Led fund raising in Brussels
 - Premana Premadi (Indonesia), Kevin Govender (South Africa)
 - Cornelis van Bochove (Ministry OC&W)
 - Robbert Dijkgraaf, President Royal Netherlands Academy
 - Maria van der Hoeven, NL Minister of Education, Culture and Science
 - Teresa Riera MEP

THANK YOU ALL FOR COMING

THE UNIVERSE IS SCIENCE



UNAVE Venezuela – Centro de Investigaciones de Astronomía

THE UNIVERSE IS TECHNOLOGY



UNAVE Venezuela – Centro de Investigaciones de Astronomía

THE UNIVERSE IS CULTURE



UNAWE Tunisia– Club d'enfants de Sfax



THE UNIVERSE INSPIRES



UNAWE 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
UNAWE entertainment by autistic children

