PERSPECTIVE OF THE PAST AND FUTURE OF UNAWE

20 years of the Universe awareness programme

Dr. Cecilia Scorza
Coordinator Public Outreach and Education
LMU Physics Faculty, Munich
c.scorza@lmu.de

Perspective on the past and future of UNAWE

Prof. George Miley- Leiden Observatory

Initiator of the UNAWE programme

It aims to exploit the beauty, the charm and the immensity of the universe to inspire children aged 4 to 10, particularly those from developing countries and disadvantaged backgrounds.

THANK YOU GEORGE!

Defining and setting up the UNAWE programme

Meeting at ESO, May 2005

Science

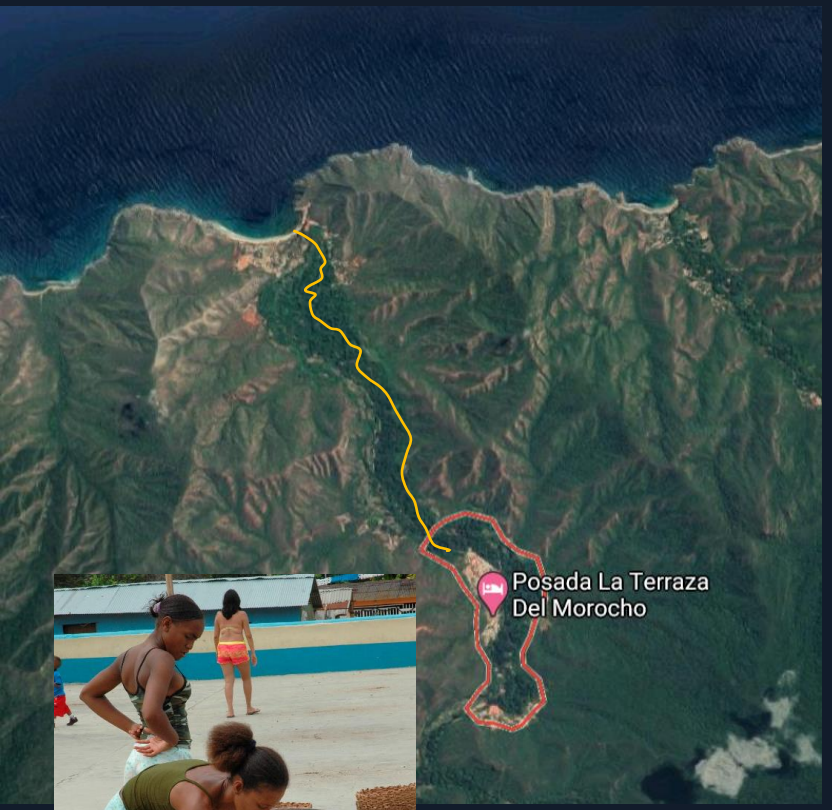
Technology

Cultural roots

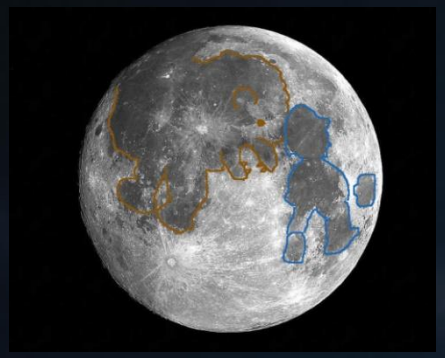
Bringing astronomy to children at the Landessternwarte, Heidelberg

Heidelberg Observatory 2002

First UNAWE pilot project – Meeting children in a remote place (Venezuela)



The big idea behind UNAWE



Think big!

The educational power of astronomy: Expanding children's world view and connecting the human family!

Developmental psychology and astronomy education

Teaching Creativity to Children from a Galaxy Away

Thursday, May 17, 2012, Tel Aviv University

http://www.aftau.org/site/News2?page=NewsArticle&id=16567

Encouraging "expansive thinking" opens children to creative possibilities, says a TAU researcher

Playing make-believe is more than a childhood pasttime. According to psychologists, it's also crucial to building creativity, giving a child the ability to consider alternative realities and perspectives. And this type of thinking is essential to future development, aiding interpersonal and problem-solving skills and the ability to invent new theories and concepts. That has been shown to be a component of future professional success in fields from the arts to the sciences and business.

But can creativity be taught? ***Prof. Nira Liberman*** of***Tel Aviv University***'s ***School of Psychological Sciences***, with her students ***Maayan Blumenfeld***, ***Boaz Hameiri*** and ***Orli Polack***, has demonstrated that children can be "primed" for creativity by how they are persuaded to think about and see the world around them. According to their study, one catalyst of creativity is "expansive" thought — encouraging children to think about distant objects and perspectives like the galaxies in the skies above, as opposed to local objects and perspectives in their immediate surroundings.

Thinking "outwards" rather than "inwards" allows children to consider different points of view and think beyond their "here and now" reality, says Prof. Liberman, whose research has been published in the *Journal of Experimental Child Psychology*. She says that relatively simple exercises can get children in the right frame of mind.

Thinking from the inside out

Prof. Nira Liberman

For their study, the researchers worked with 55 children ages six to nine. Half were shown a series of photographs that started with nearby objects and gradually progressed to more distant ones — from a close-up of the pencil sitting on their desk progressing to a picture of the Milky Way galaxy. The other half was shown exactly the same photographs but in reverse order, to induce a "contractive" frame of mind.

After viewing the series of photographs, the children completed creativity tests, including the Tel Aviv Creativity Test (TACT), in which the participant is given an object and asked to name the different uses they can think of for it. Points are given for the number of uses mentioned and the creativity of the use. The children in the expansive mind-set group scored significantly better on all of the creativity measures, coming up with a greater number of uses and more creative uses for the objects.

Think big!!

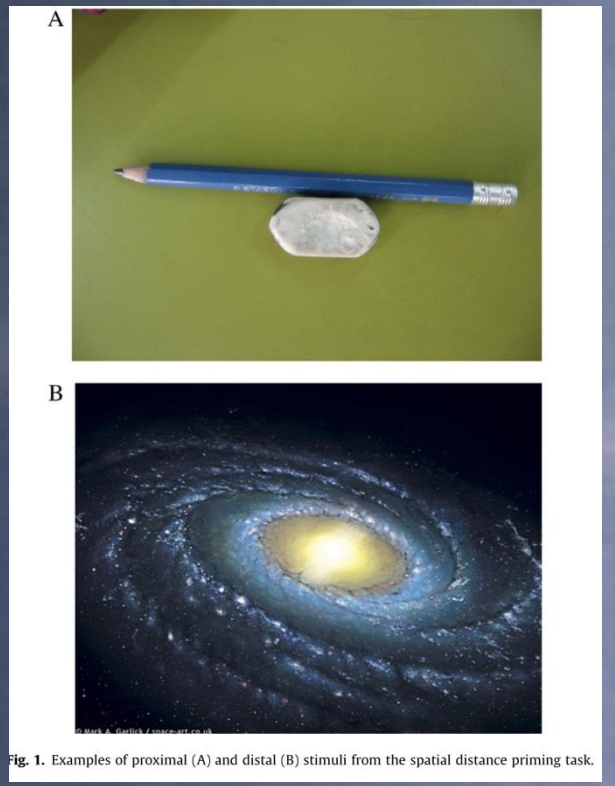
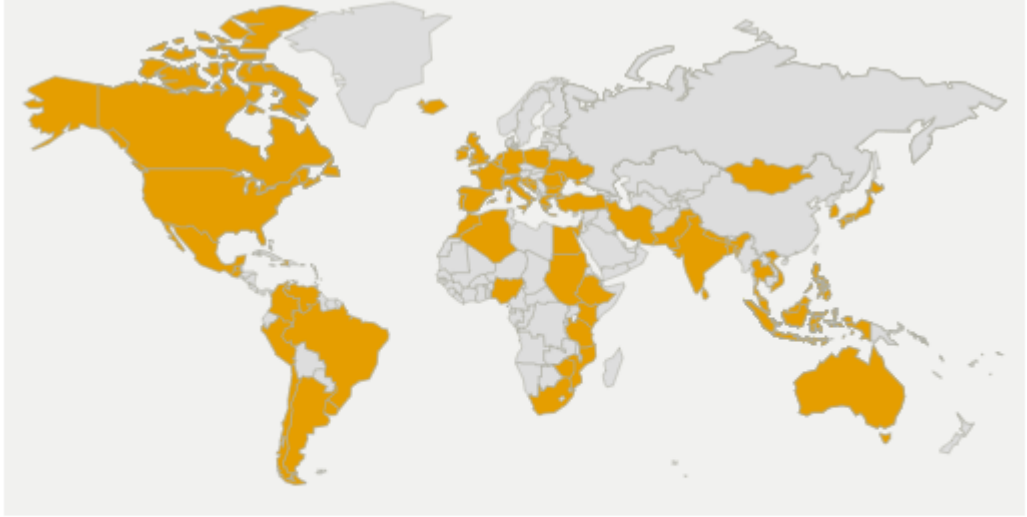


Fig. 1. Examples of proximal (A) and distal (B) stimuli from the spatial distance priming task.

UNAWE 20 YEARS LATER



UNAWE currently has 63 member countries and comprises a global network of about 1,000 astronomers, teachers and other educators. Each member country has a national programme, which coordinates its UNAWE activities and acts as a point of contact for people to find out what is happening in their local area.

- Countries with UNAWE programmes: 61
- Number of astronomers, educators and communicators involved: 1,000+
- Number of teachers trained by UNAWE (Since 2011): 9 001
- Number of children reached by UNAWE (Since 2011): 419 777

- Algeria
- Argentina
- Aruba
- Australia
- Bangladesh
- Belgium
- Bosnia And Herzegovina
- Brazil
- Bulgaria
- Canada
- Cape Verde
- Chile
- Colombia
- Croatia
- Egypt
- Ethiopia
- France
- Germany
- Greece
- Guatemala
- Haiti
- Iceland
- India
- Indonesia
- Iran
- Ireland
- Israel
- Italy
- Japan
- Kenya
- Korea (South)
- Malaysia
- Malta
- Mexico
- Moldova
- Mongolia
- Morocco
- Mozambique
- Nepal
- Netherlands
- Nigeria
- Pakistan
- Palestine
- Peru
- Philippines
- Poland
- Portugal
- Romania
- Singapore
- Slovenia
- South Africa
- Spain
- Sri Lanka
- Sudan
- Tanzania
- Thailand
- Turkey
- Ukraine
- United Kingdom
- United States
- Uruguay
- Venezuela
- Vietnam
- Zimbabwe

Universe Awareness Programme worldwide

FIRST UNAWE INTERNATIONAL COORDINATOR

Carolina Ödman-Govender, first UNAWE coordinator

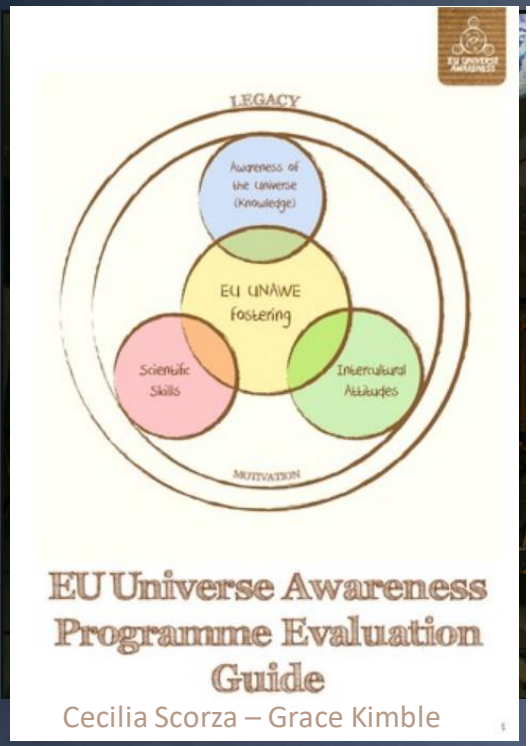
First contacts with the UNESCO

Cecilia

Carolina

SECOND UNAWE INTERNATIONAL COORDINATOR

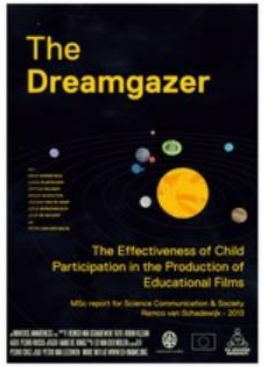
Pedro Russo (Leiden University)



Reports

Astronomical Perspectives for Young Children

Writing a Space Scoop in Seven Steps



Effectiveness of child participation in educational films

Importance of science education to development and capacity building

International projects

International year of astronomy 2009
Galileo Mobile and Proyecto miradas
brought astronomy to children
in remote villages across South America.

Painting by Countries:
A Global UNAWE Art Project

Astro News for Children

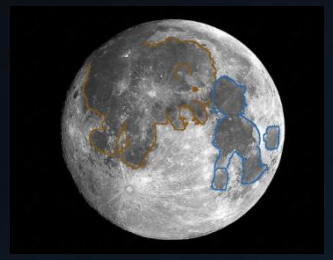
International workshops (2012)

Eratostenes – UNAWE- GTTP

Educational tool: The Universe in the box

The Universe in the Box

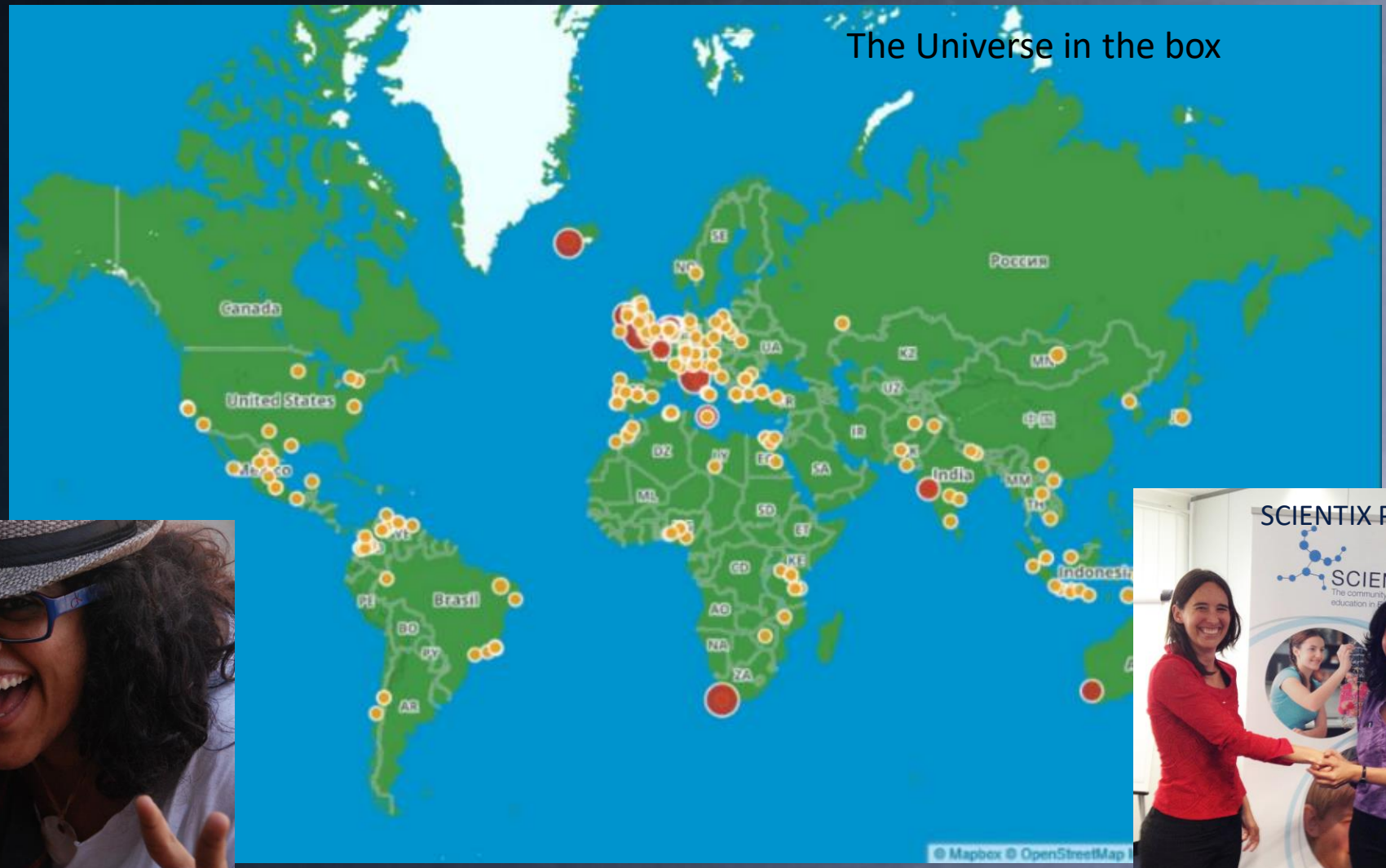
Fostering scientific thinking



„Down"

Recompilation, description, completion
Cecilia Scorza and Natalie Fischer HdA

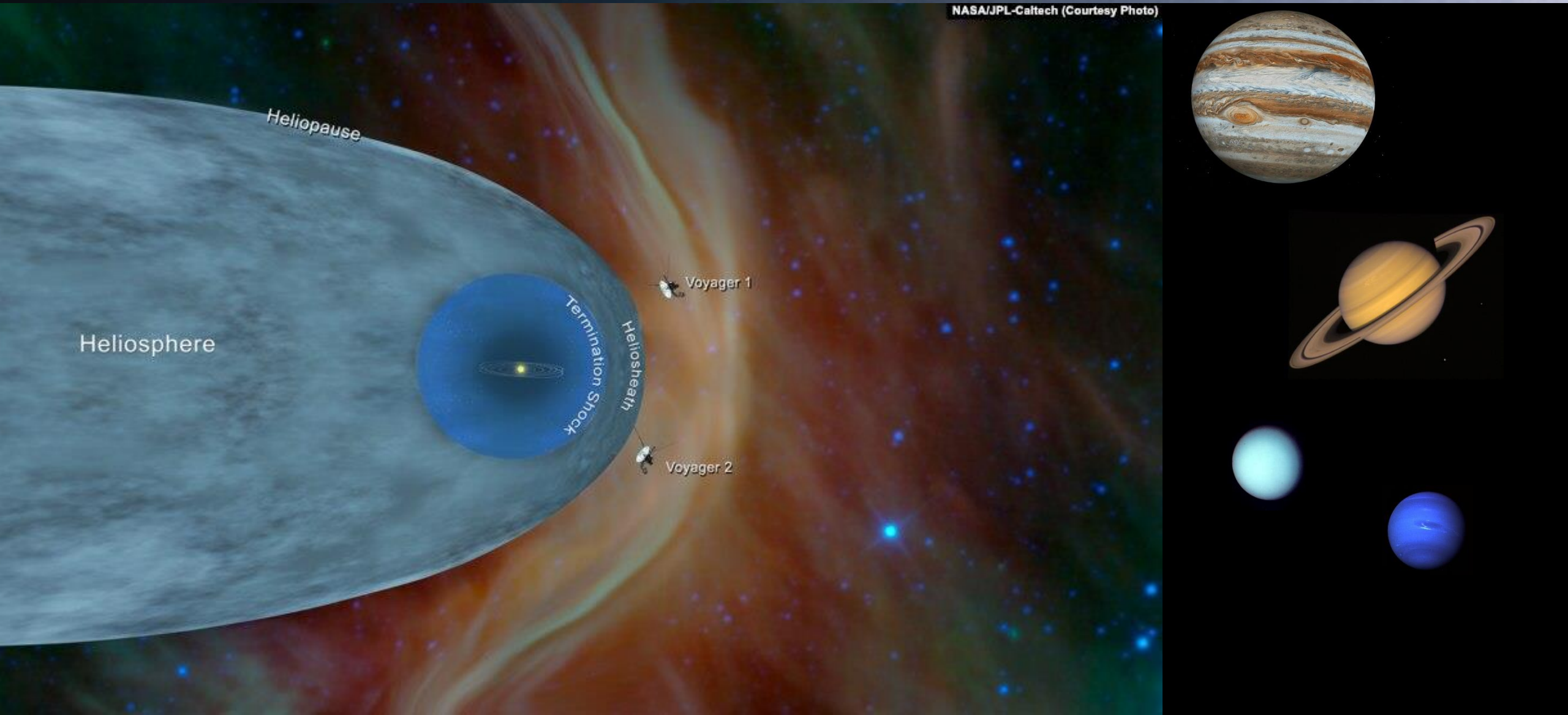
Crowdfunding campaign – Kickstarter Mai 2014



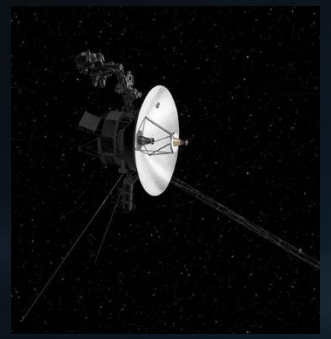
Pedro Russo and Jaya Ramchandani

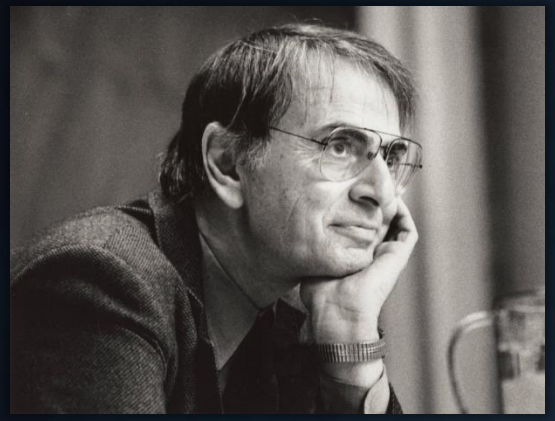
THE FUTURE OF UNAWE

Looking back home with Voyager 1



PALE BLUE DOT

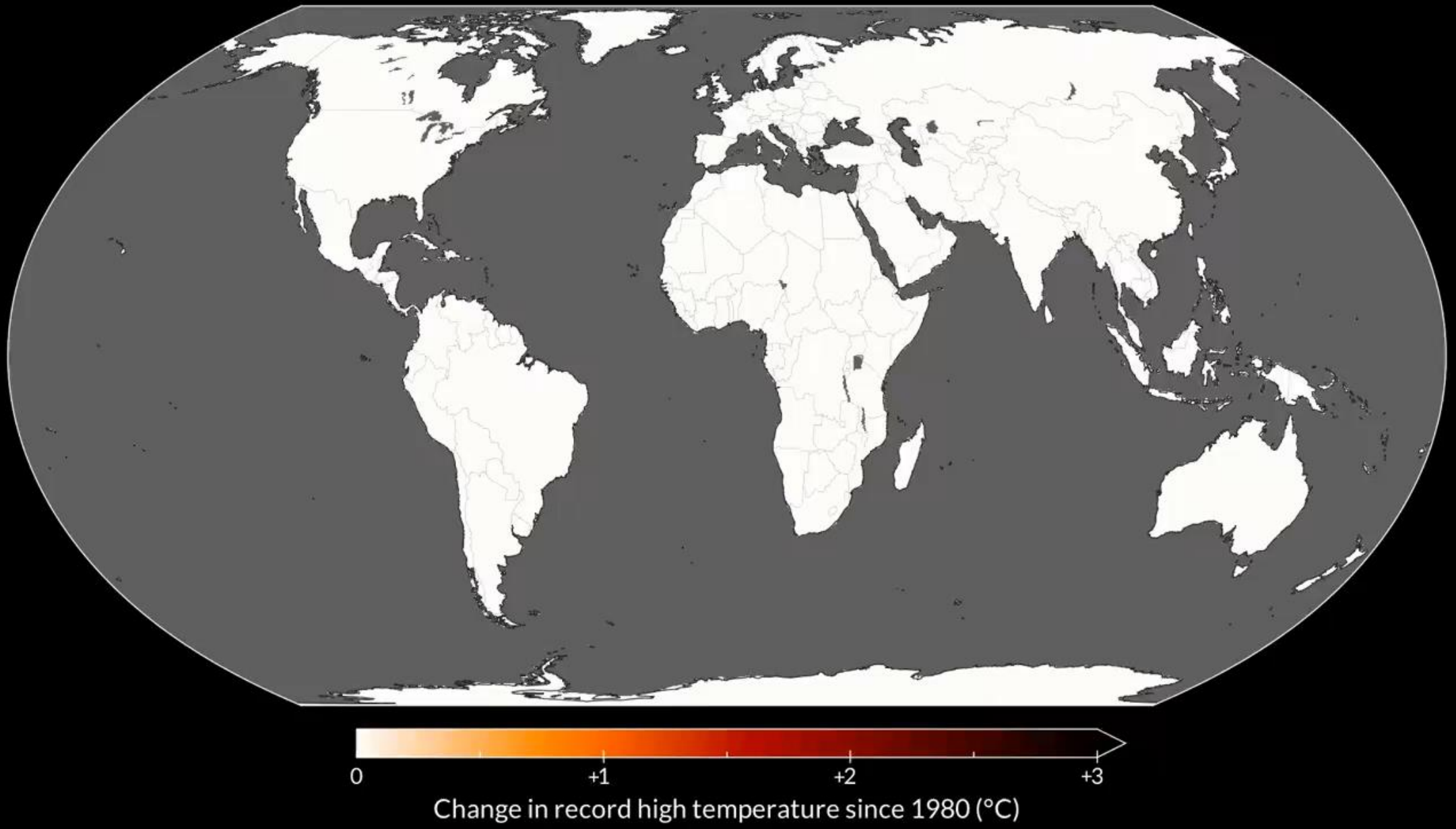




Carl Sagan
(Credits: Cornell University Library)

“Look at this dot. That's here. That's home... It underscores our responsibility to preserve and care for the pale blue dot, the only home we have ever known."

Climate change is the greatest challenge for humanity in the 21st century



Data source: Berkeley Earth daily TMAX

Video: Antti Lipponen (@anttilip)

Extreme weather events

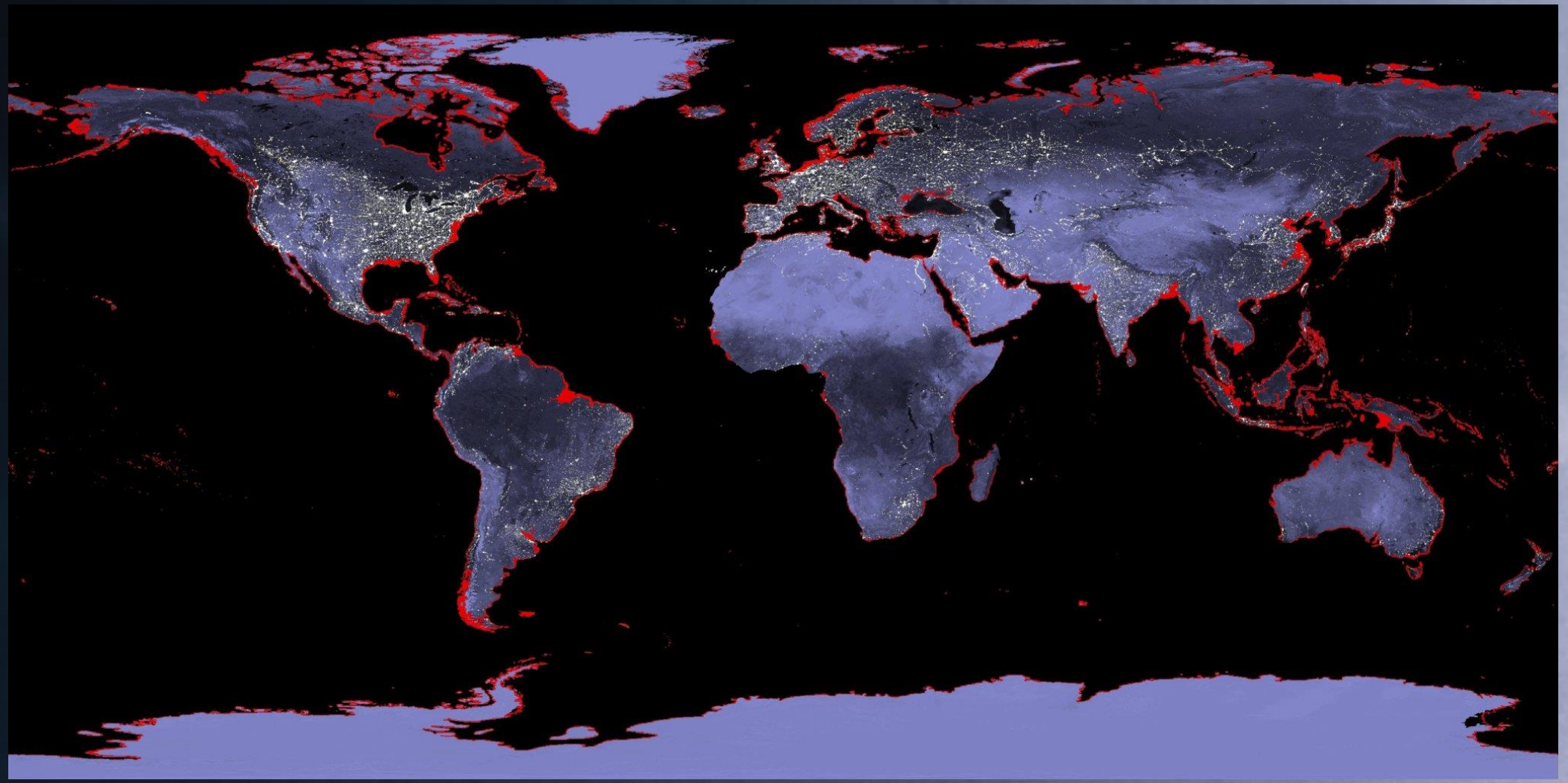
Extreme weather events

Over 27 million children at risk as devastating floods set records across the world

Number of children affected by flooding in Chad, Gambia, Pakistan and north-east Bangladesh highest in over 30 years

UNICEF

Six meter sea level rise



Global warming reduces the habitable regions of the earth

Natural hazards are part of everyday life in Bangladesh. This woman tries to save her belongings from the floods.

Disaster-resilient Floating Homes for Bangladesh

The Planet

The globe

We forget the planetary boundaries!

WE NEED MORE "EARTH AWARENESS"

https://blogs.oregonstate.edu/technosphere

UNAWE PALE BLUE DOT

From knowledge about our planet to sustainable action

Pale Blue Dot

Dr. Cecilia Scorza and Christine Freitag, Faculty of Physics at LMU

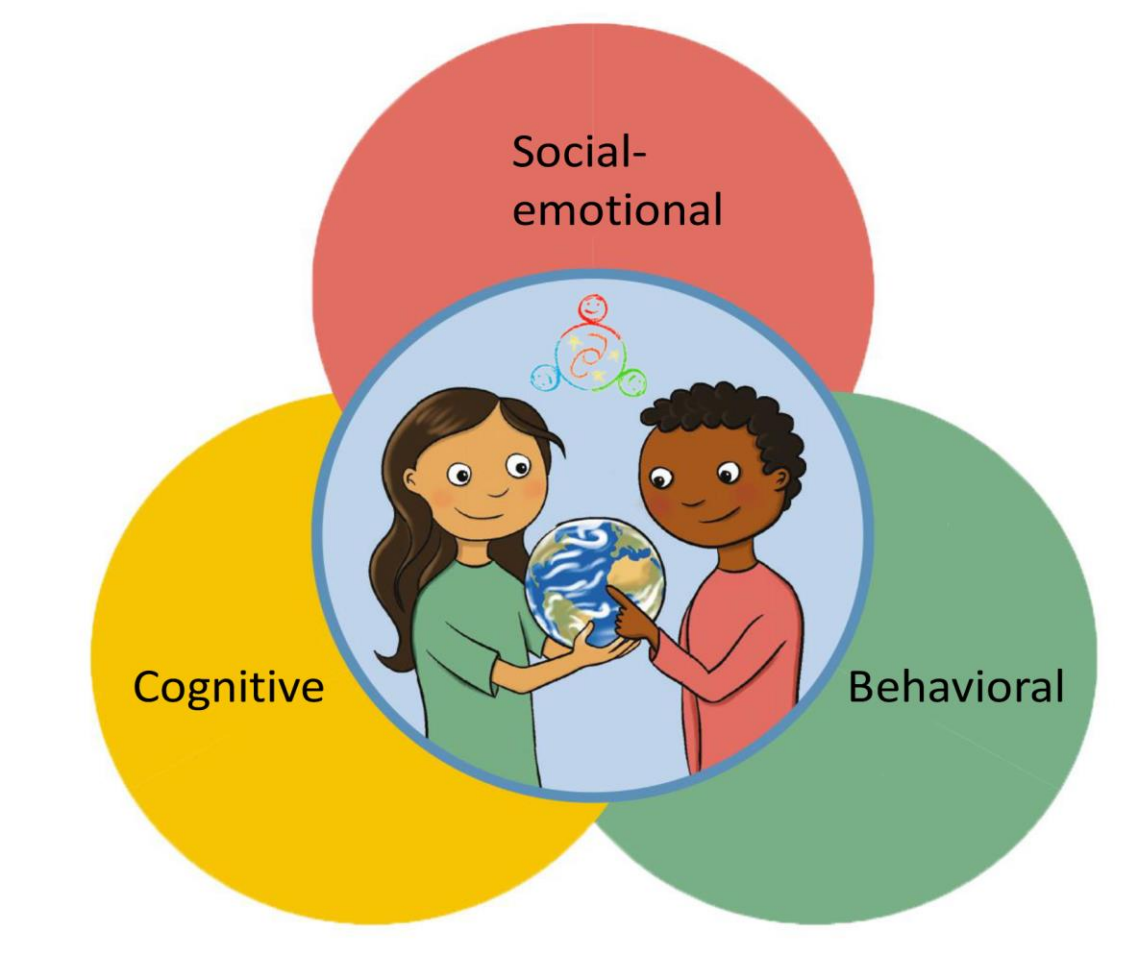
UNAWE PALE BLUE DOT: GOALS

- Promotes scientific thinking
- Raises awareness of environmental protection
- Promotes cooperation

→ Only **together** will we be able to overcome the challenges

→ Resilience develops **in groups**

UNAWE PALE BLUE DOT



COGNITIVE

Acquisition of knowledge, scientific and critical thinking about global, regional, national and local issues. **Discovering connections**.

SOCIAL-EMOTIONAL

Have a sense of belonging to a common humanity, sharing values and responsibilities. **Solidarity**

BEHAVIORAL

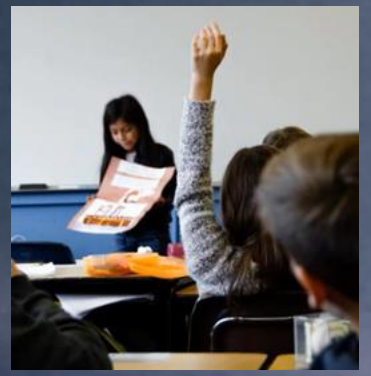
Acting effectively and responsibly at local, national and global levels for a more peaceful and sustainable world.

Participatory activities and approaches to global learning

Working groups

Space for questions

Student-led learning



Discussions

Regional examples

Visual resources I

Visual resources II

Experiments!

THROUGHOUT:

Storytelling

Observing - perfoming experiments

Comparing

CLIMATE CHANGE AND THE UN DEVELOPMENT GOALS

Where to start?
Where can I have the greatest impact?

UNAWE PALE BLUE DOT - MODULES

MODULE 2
The formation of the Earth and life on it

MODULE 1
Our wonderful planet Earth

MODULE 3
Climate change and climate protection

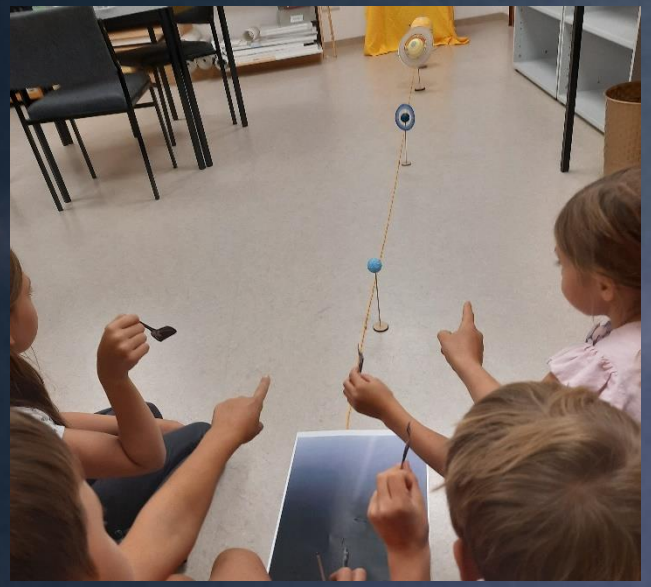
INTRODUCING THE PBD PROGRAMME

The teachers and children immediately transform into a research team!

What makes the Earth habitable?

Message 1: Earth is a very special place

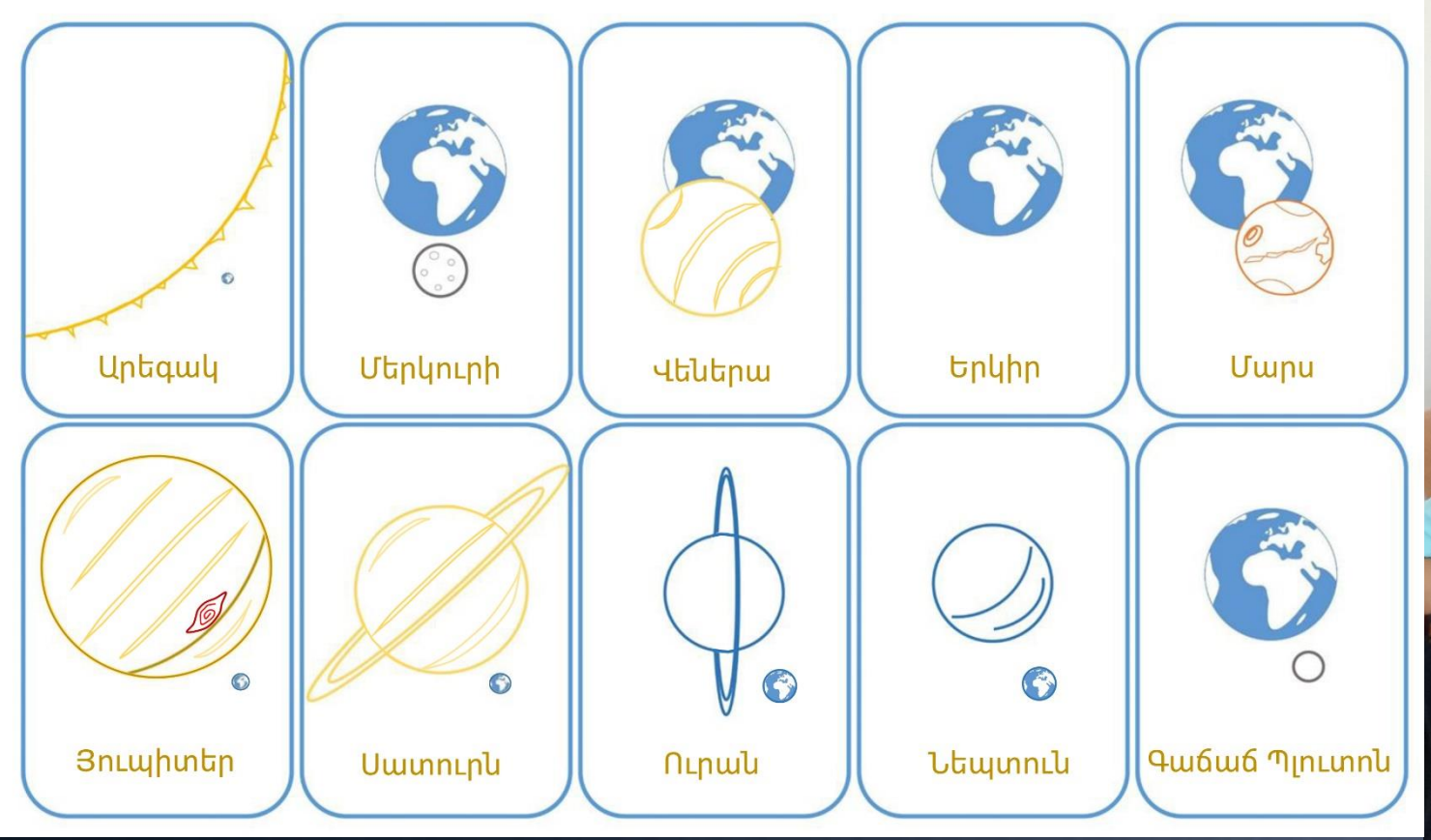
Discovering the habitable zone



Reliving Vogager's journey

Understanding the Pale Blue Dot picture

Solar System Card game

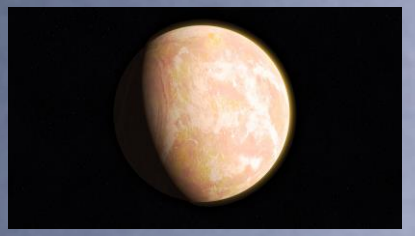


MODULE 2: THE ORIGIN OF THE EARTH AND OF LIFE ON IT

Looking under the bed..

Earth´s grow from dust

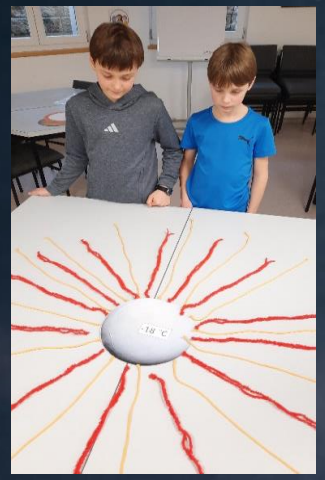
A hot and dry Earth



MESSAGE 2: MANY EVENTS HAVE MADE THE EARTH HABITABLE. THE EARTH'S RESOURCES ARE LIMITED. WE MUST SHARE THEM!

Water cycle

MODULE 3: THE CAUSES OF GLOBAL WARMING

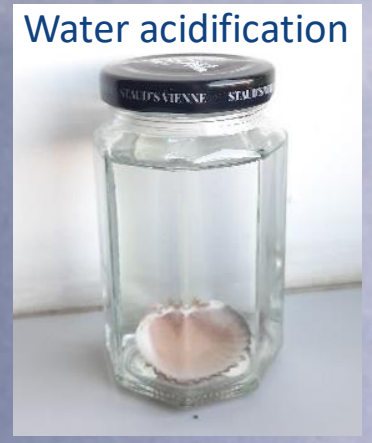


The role of ice on T

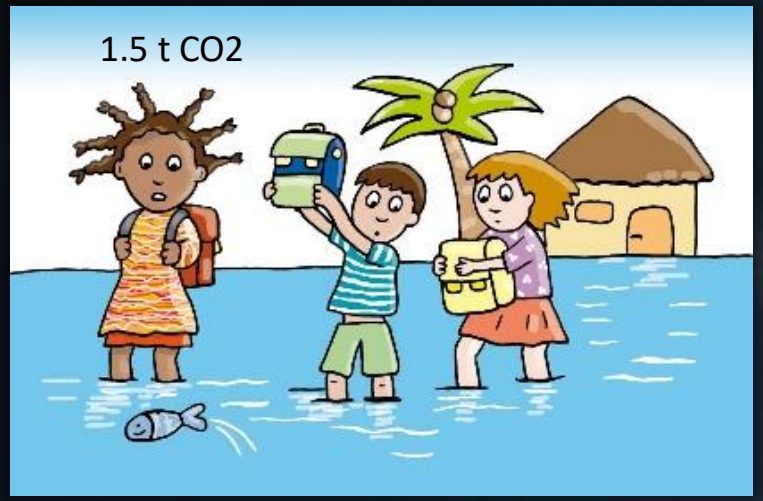
The rise of sea level

The rise of water volume

Water acidification



MODULE 3: THE IMPACT OF GLOBAL WARMING



MESSAGE 3: GLOBAL WARMING IS CAUSED BY HUMANS.
WE MUST STOP the CO_2 EMISSIONS!

MODULE 3: CLIMATE PROTECTION AND ADAPTATION

MESSAGE 4: WE SUPPORT THE ENERGY TRANSITION AND THE DEVELOPMENT OF CLEAN TECHNOLOGIES – MITIGATION

www.blaueperle-schule.com/en

Pale Blue Dot

EN

Project | Modules | Teacher training | News | Contact

Pale Blue Dot - Educational material

©NASA

From knowledge about our planet to sustainable practices!

An educational programme that simultaneously awakens children's interest in science, a sense of global citizenship and responsibility for the world around them!

PALE BLUE DOT TEACHER TRAINING COURSES AT IRL GARS AM INN

To memory of
Carolina Ödman-Govender

Caritas fabric Fulda