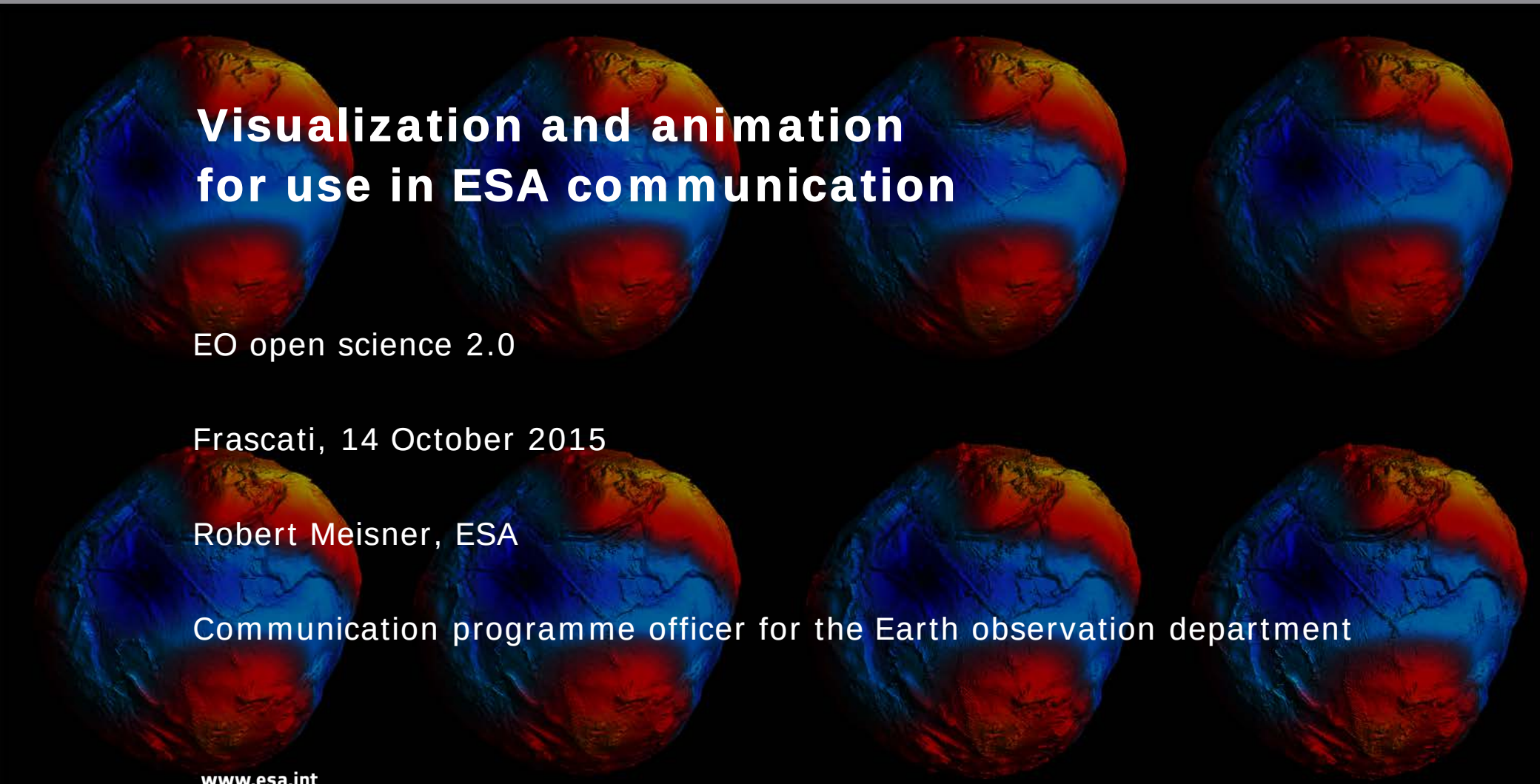


Visualization and animation for use in ESA communication

EO open science 2.0

Frascati, 14 October 2015

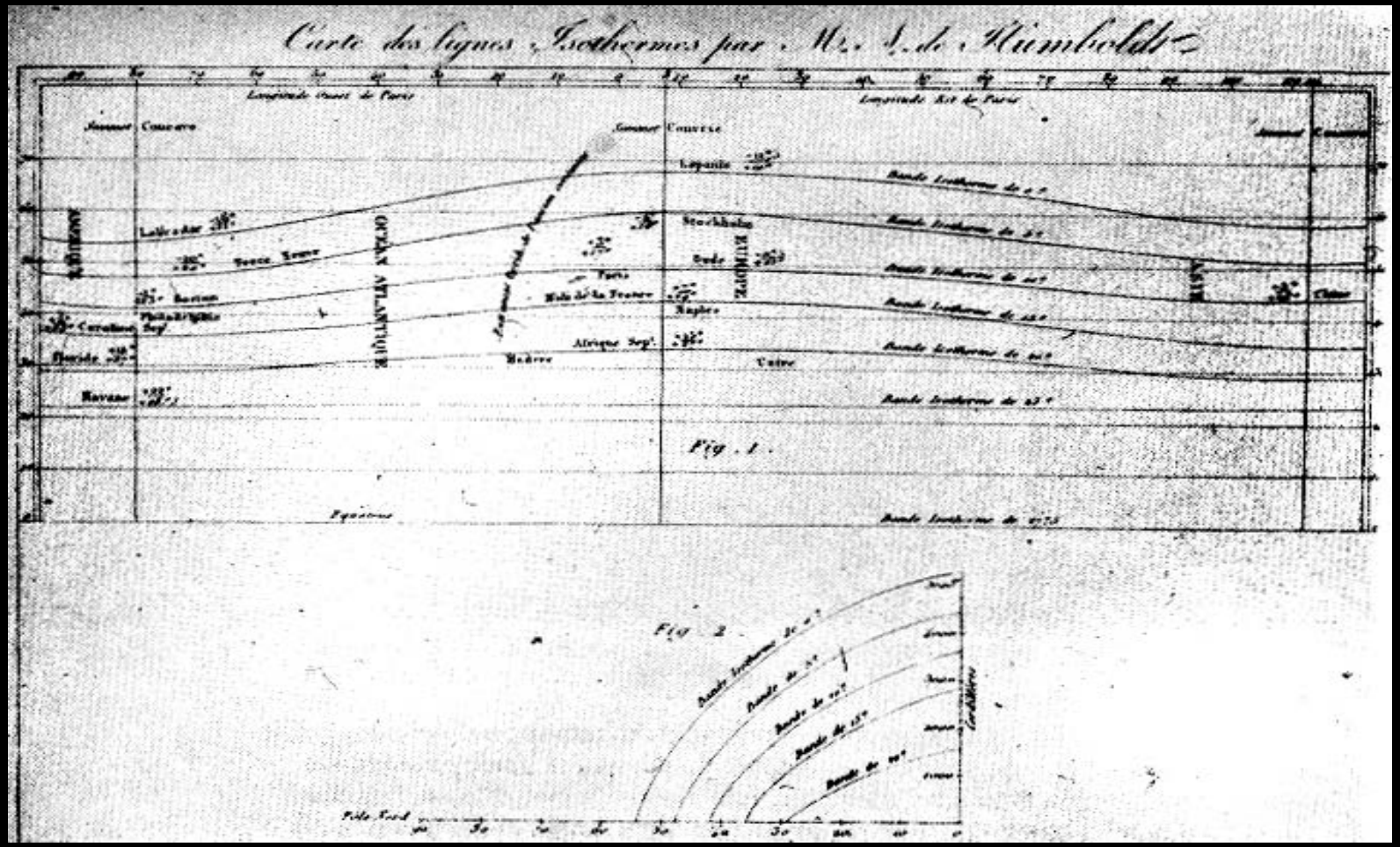
Robert Meisner, ESA

Communication programme officer for the Earth observation department

Visualization is not new

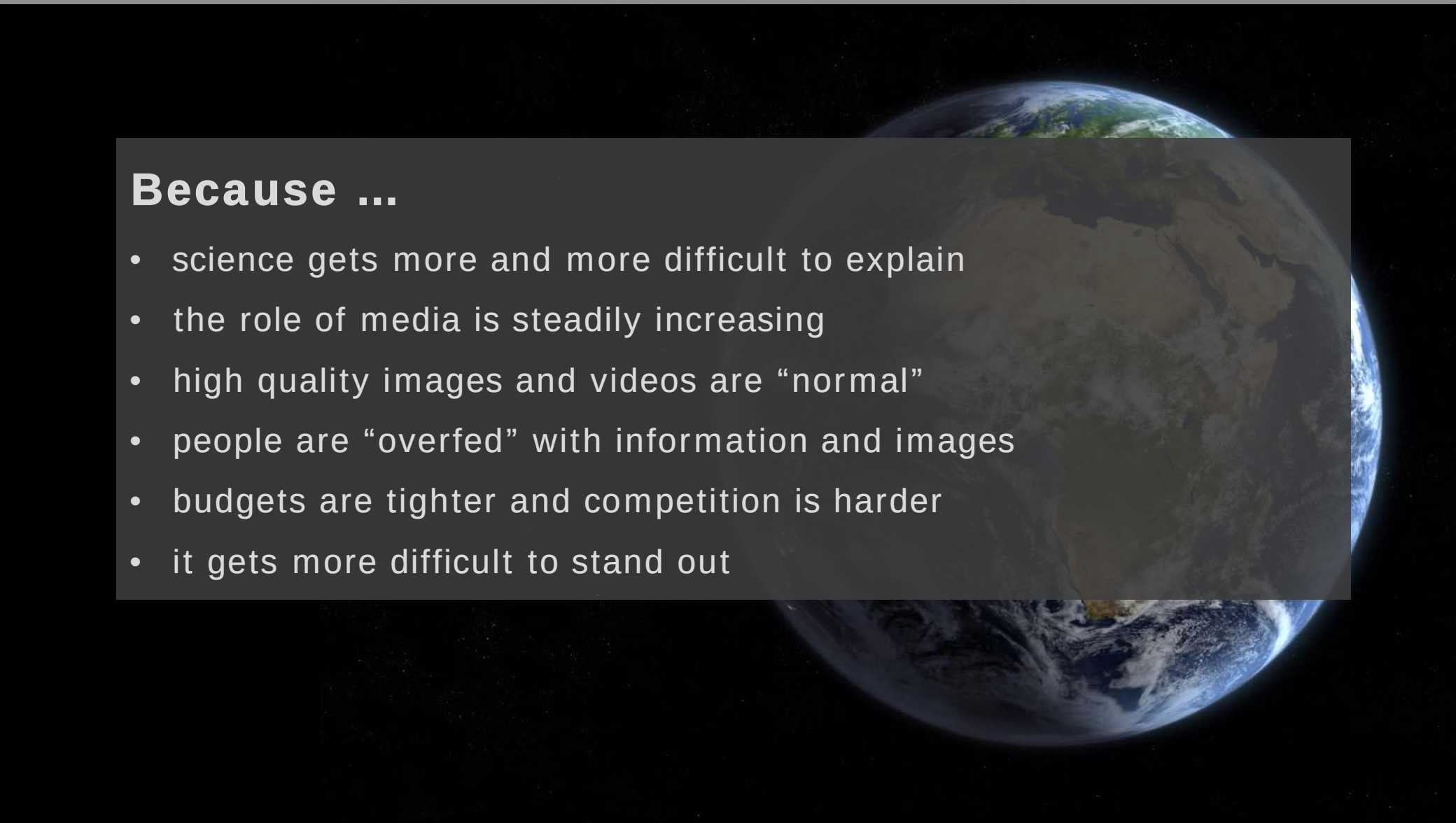
Babylonian World Map approx. 500 B.C.
(British Museum, London)

Visualization is not simple



Isothermes, time and latitude dependency, Alexander v. Humboldt, 1817

Why worry ?



Because ...

- science gets more and more difficult to explain
- the role of media is steadily increasing
- high quality images and videos are “normal”
- people are “overfed” with information and images
- budgets are tighter and competition is harder
- it gets more difficult to stand out

Earth observation communication

Tasks:

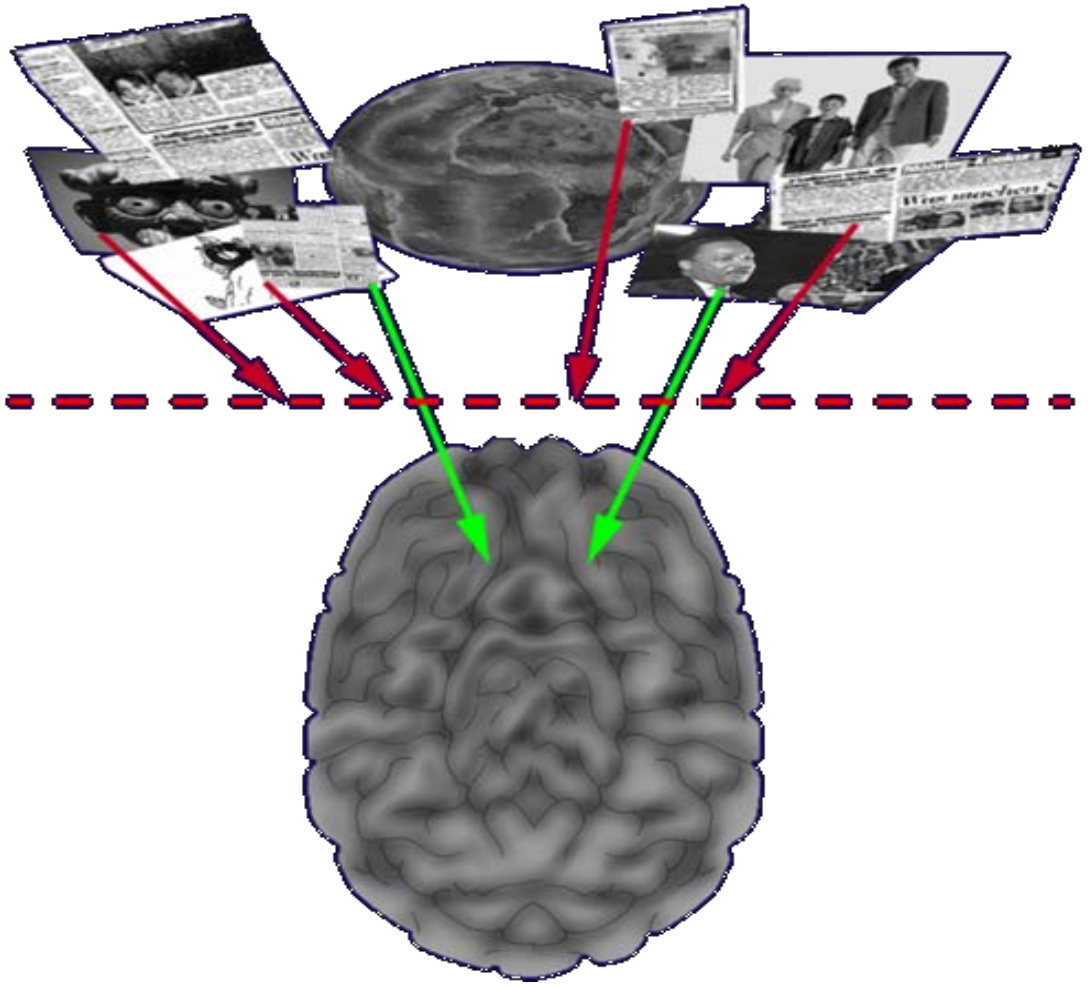
- Raise awareness of the benefits of Earth observation
- Convince share holders, member states and funding bodies
- Increase visibility of satellite missions & scientific results
- Relate Earth observation to socioeconomic benefits
- Illustrate the benefits of space activities for the environment

Communication tools

Material produced:

- Graphics illustrating data
- Good images/maps based on satellite data and results
- Animations based on results and satellite data
- Interactive media collections (iBooks, Apps, etc.)
- Videos and Web-TV productions
- Combination products of all of the above

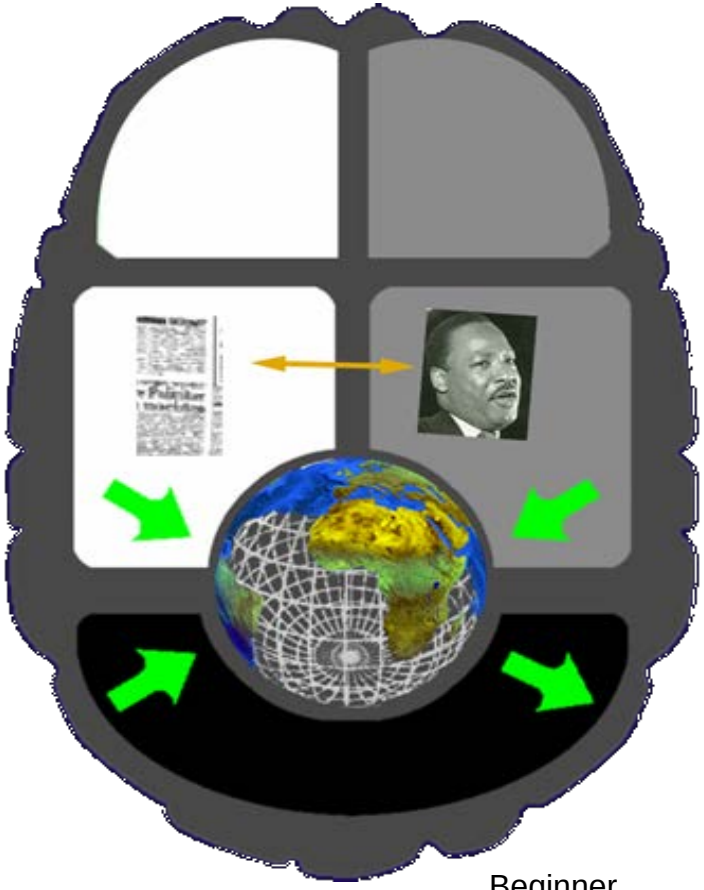
Passing the perception filter…



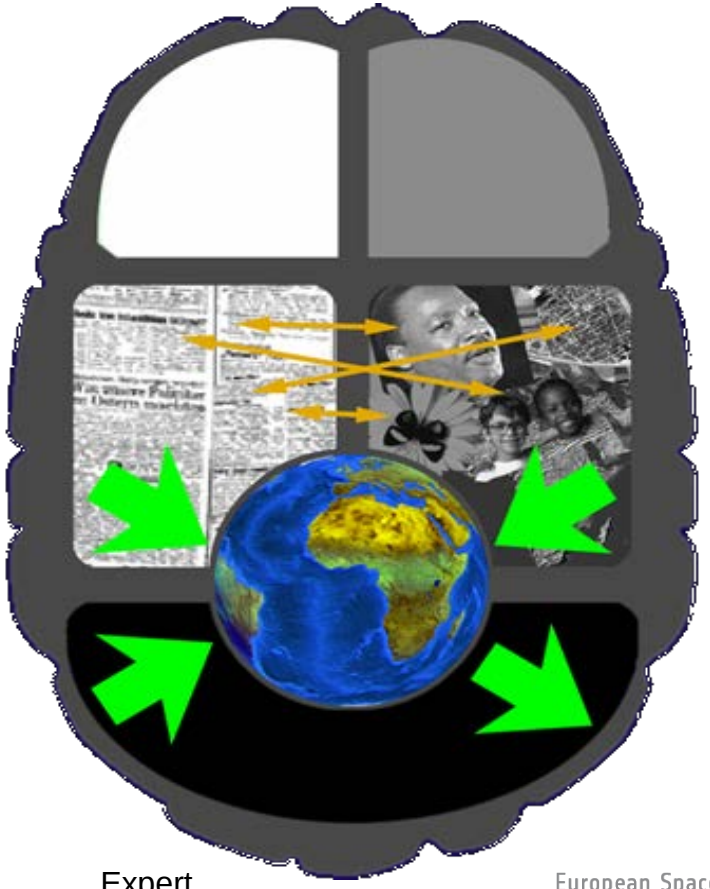
Perception filter

… and getting integrated.

Individual „mental maps“ require adapted visualizaton content

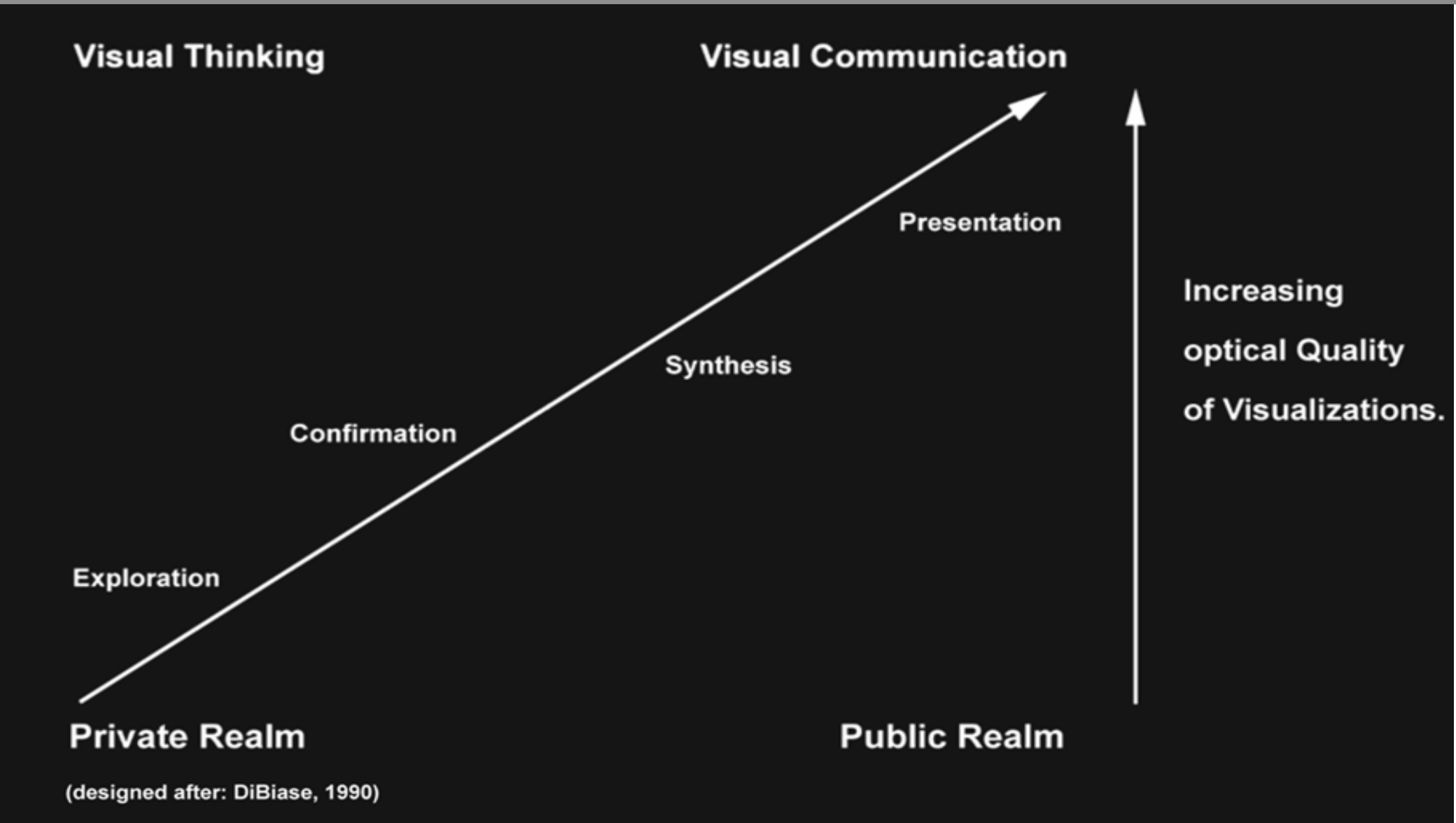


Beginner

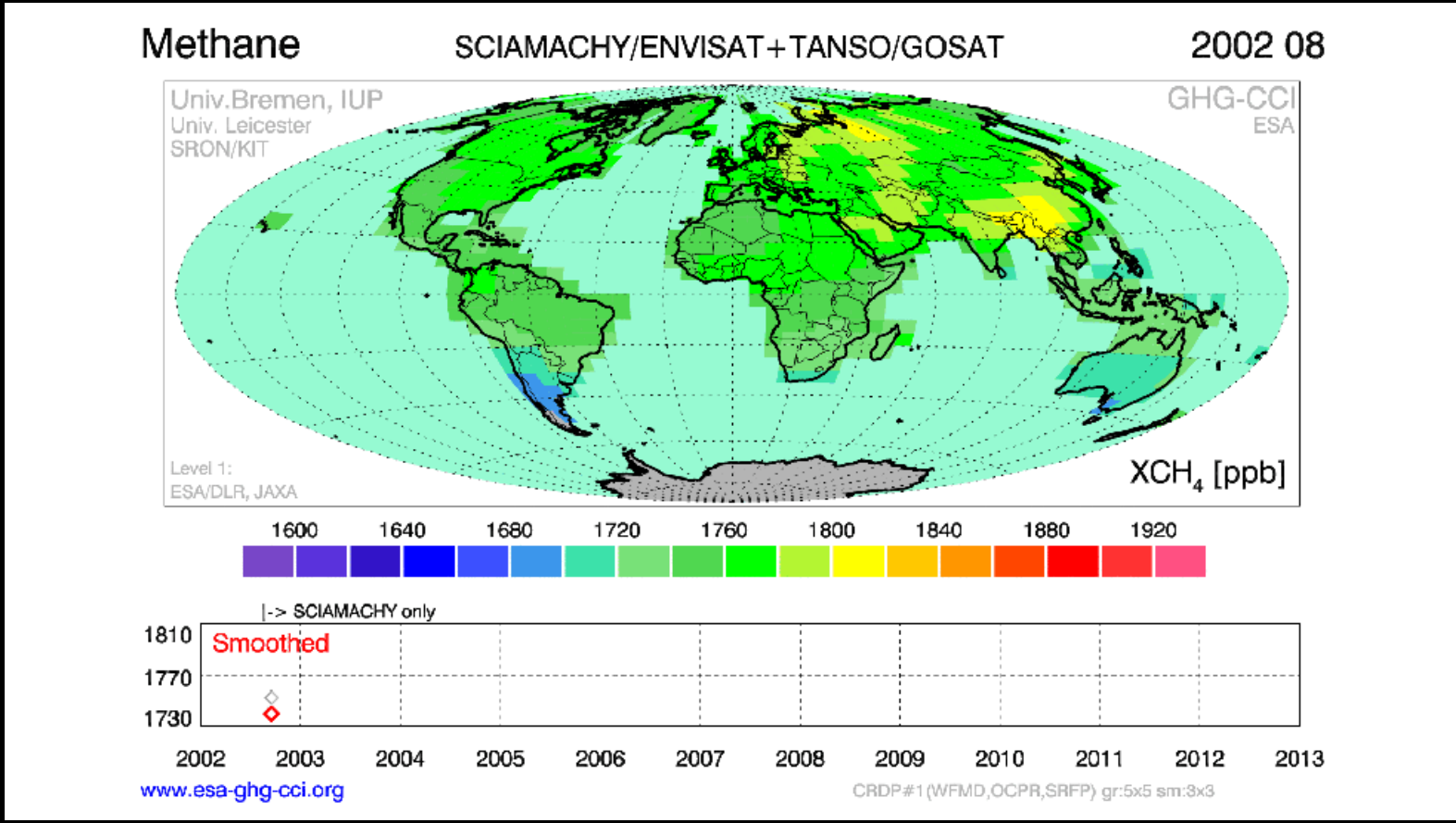


Expert

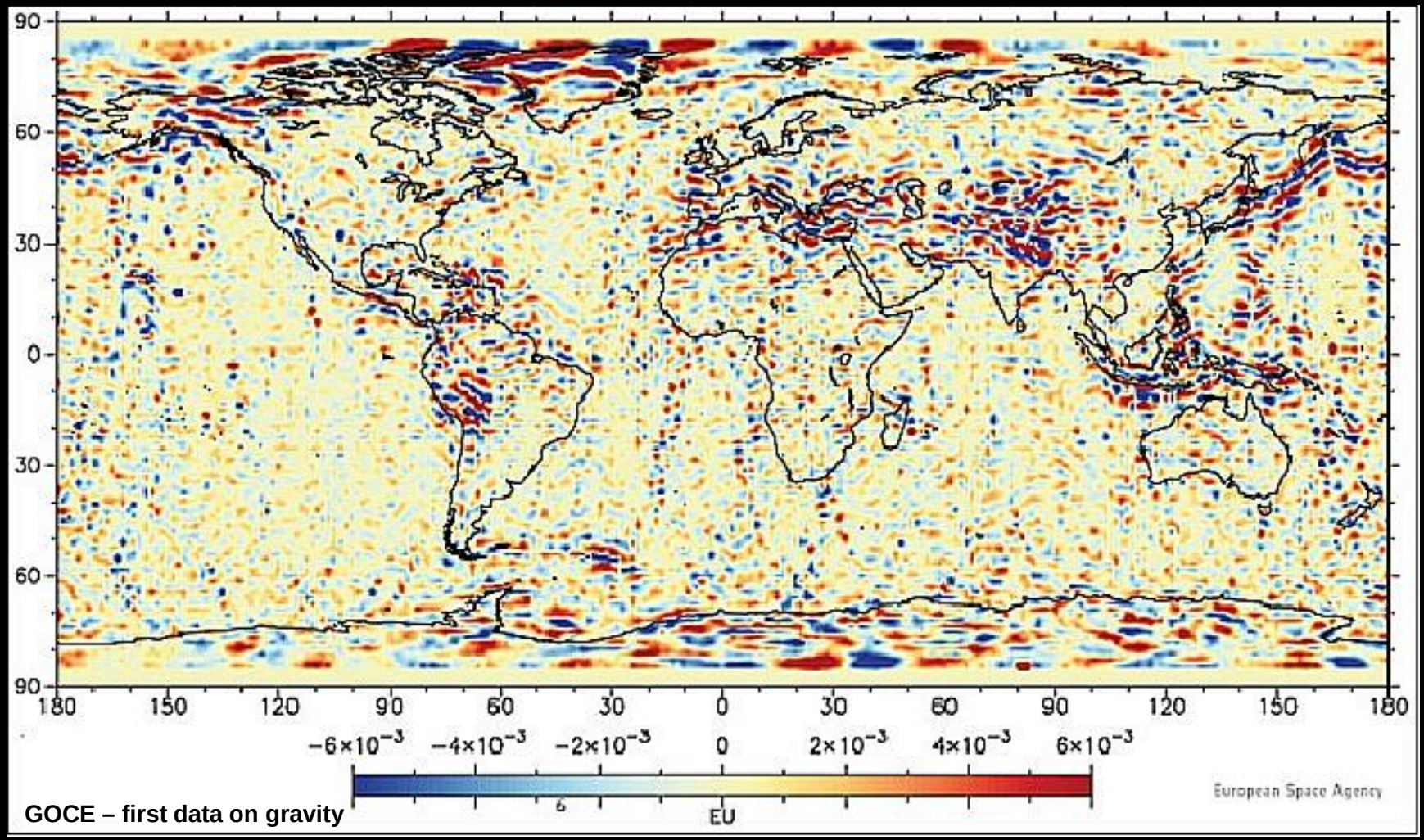
Visualization quality versus objective



Scientific discussions (Exploration)
What scientists produce (and use)

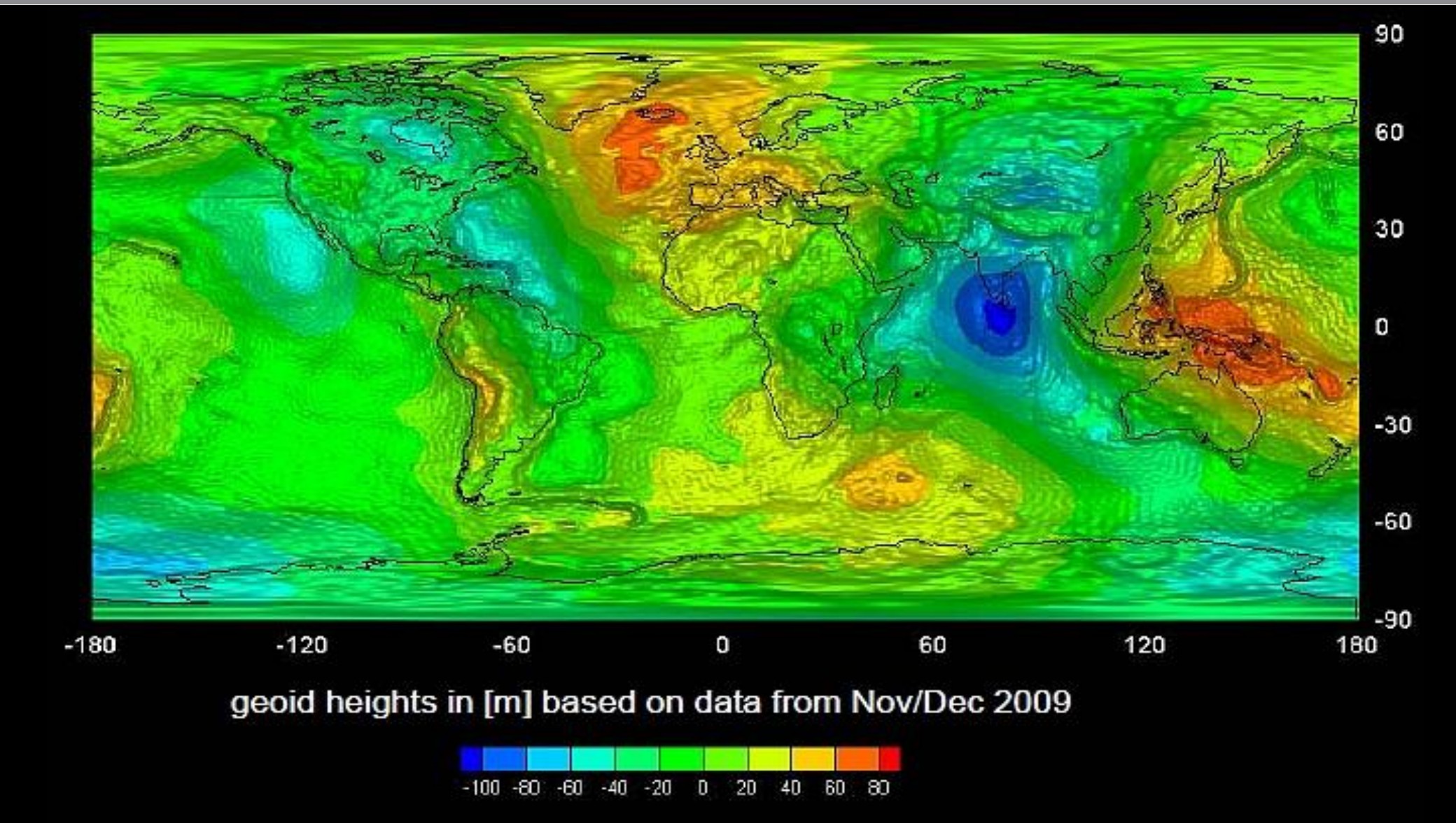


GOCE gravity data
What we get from the satellite

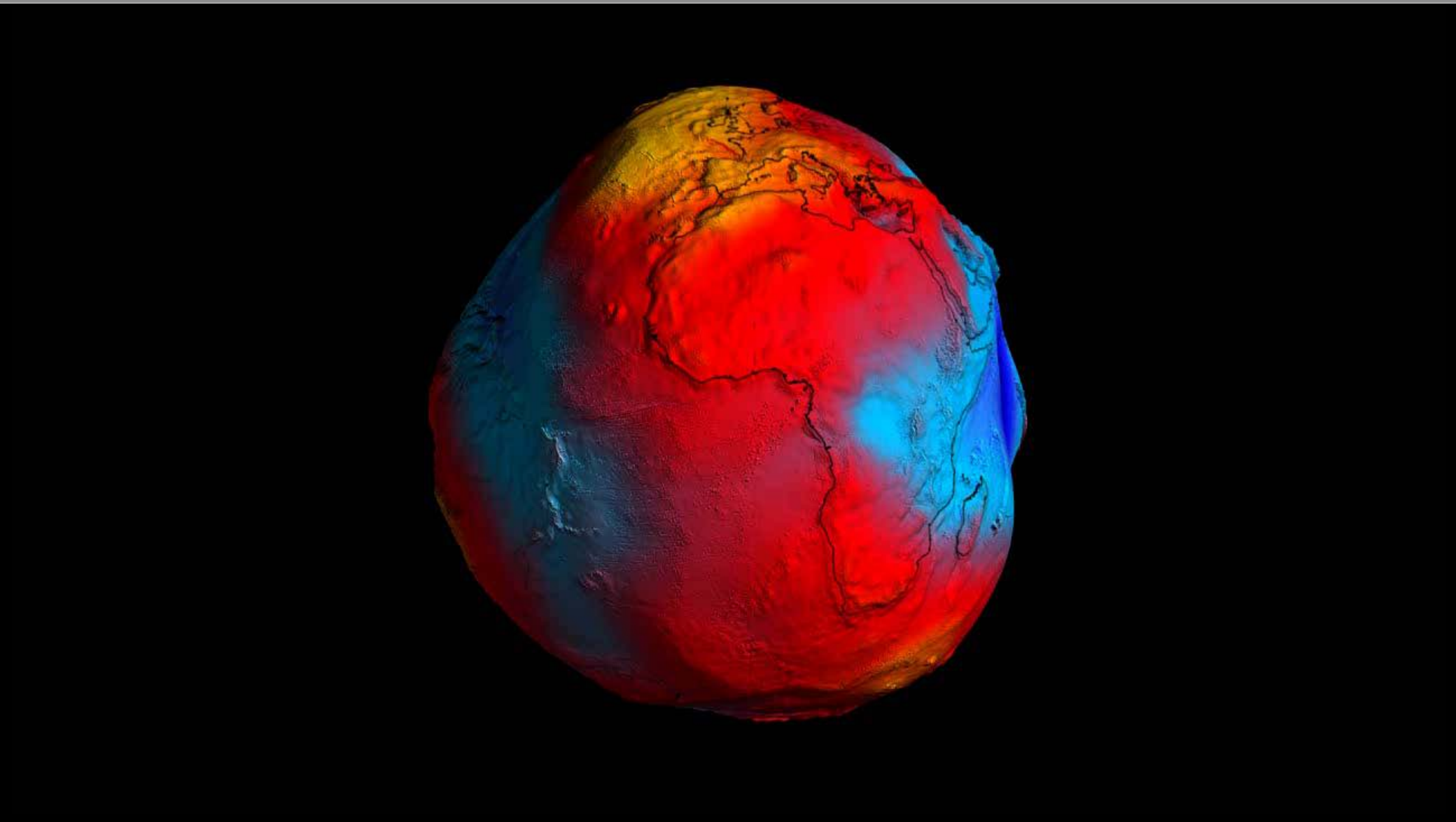


GOCE – first data on gravity

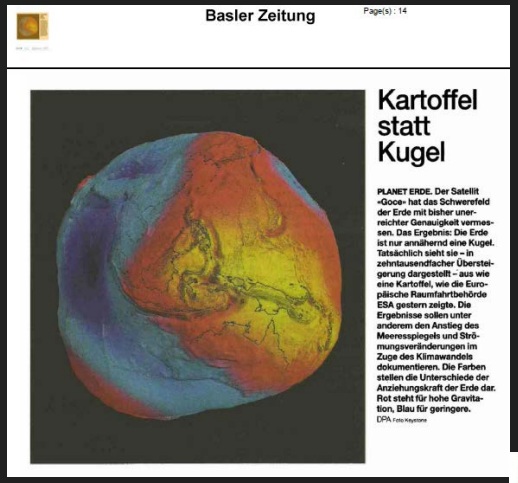
GOCE visualization
Used at a conference



GOCE data visualization
What communication wants to show



GOCE data visualization
And the echo we can get



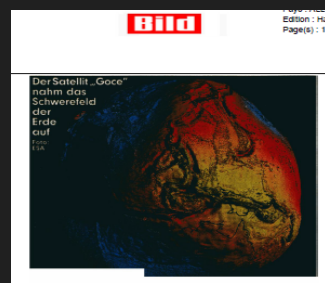
Basler Zeitung

Page(s) : 14

Kartoffel statt Kugel

PLANET ERDE. Der Satellit «Goce» hat das Schwerefeld der Erde mit bisher unerreichter Genauigkeit vermessen. Das Ergebnis: Die Erde ist nur annähernd eine Kugel. Tatsächlich sieht sie – in zehntausendfacher Übersteigerung dargestellt – aus wie eine Kartoffel, wie die Europäische Raumfahrtbehörde ESA gestern zeigte. Die Ergebnisse sollen unter anderem den Anstieg des Meeresspiegels und Strömungsveränderungen im Zuge des Klimawandels dokumentieren. Die Farben stellen die Unterschiede der Anziehungskraft der Erde dar. Rot steht für hohe Gravitation, Blau für geringere.

DPA



Bild

Edition : Hamburg

Page(s) : 1

Der Satellit „Goce" nahm das Schwerefeld der Erde auf

Foto: ESA

Erde ist gar nicht rund!

München – So krumm haben wir unsere Erde noch nie gesehen! Der ESA-Satellit „Goce" hat

Jornal de Notícias

Frankfurter Allgemeine

ZEITUNG FÜR DEUTSCHLAND

Eine Welt aus Beulen und Dellen

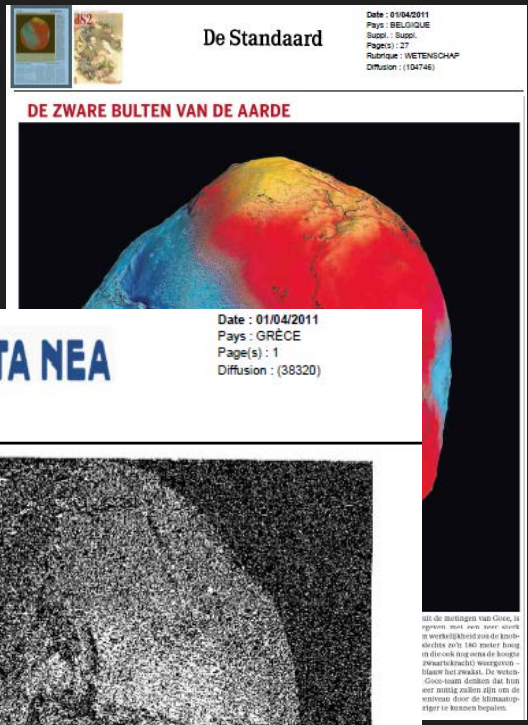
Streithar und erfahren

Pays : PORTUGAL

Page(s) : 51

Rubrique : Informação Geral

Diffusion : (90013)



De Standaard

Date : 01/04/2011

Pays : BELGIQUE

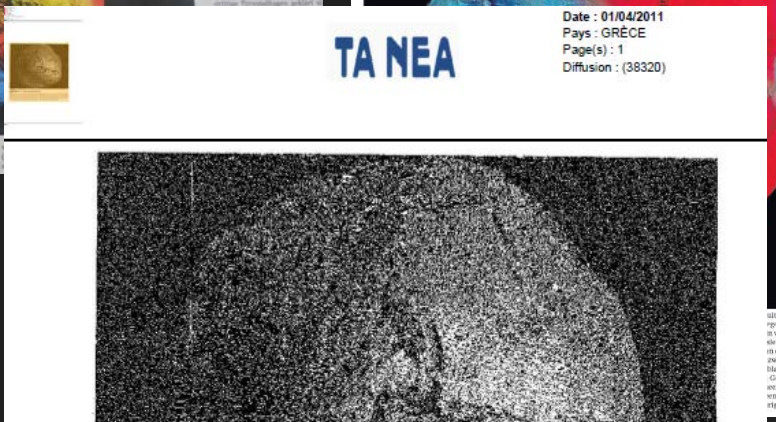
Suppl. : Suppl.

Page(s) : 27

Rubrique : WETENSCHAP

Diffusion : (104746)

DE ZWARE BULTEN VAN DE AARDE



TA NEA

Date : 01/04/2011

Pays : GRÈCE

Page(s) : 1

Diffusion : (38320)

Ο Άτλας της βαρύτητας

Μοιάζει με τεράστια πολύχρωμη πατάτα στο Διάστημα. Μη βιαστείτε να υποθέσετε ότι ανακαλύφθηκε και ερευνάται εξωγήινη ζωή. Διότι κάτω το γεωμηλο είναι ο δικός μας πλανήτης από μια άλλη σπανιά γωνία. Τις την αμφίβολα, είναι ο χάρτης του βαρυτικού πεδίου της Γης, όπως απεικονίστηκε από τον ευρωπαϊκό δορυφόρο Goce και παρουσιάστηκε από τον Ευρωπαϊκό Οργανισμό Διαστήματος (ESA). Σε πολύ απλά ελληνικά, αυτός ο χάρτης δείχνει πως η έλξη προς τα κάτω δεν είναι ίδια σε όλα τα μέρη της Γης – στις κίτρινες περιοχές η βαρύτητα είναι μεγαλύτερη και στα μπλε μικρότερη. Οι επιστήμονες λένε ότι αυτές οι μετρήσεις θα βοηθήσουν πολλούς σημαντικούς τομείς της επιστήμης, όπως η παρακολούθηση διαφόρων φαινομένων, όπως η περιστροφή και σεισμική δραστηριότητα αλλά και η κλιματική αλλαγή.

Periodico de Catalunya [El]

Pays : ESPAGNE

Page(s) : 30

Rubrique : Sociedad

Diffusion : (174649)

Un satélite europeo crea el mejor mapa de la gravedad terrestre

- Las diferencias detectadas forman un planeta imaginario con aspecto de patata
- El campo gravitatorio varía por los materiales internos de la Tierra y su forma casi esférica

ANTONIO MADRIDEJOS

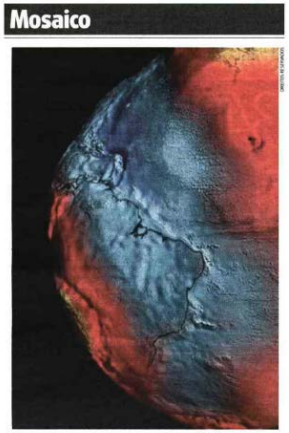
BARCELONA

Representación de la Tierra con los cambios de gravedad marcados desde el eje (rojo) hasta el ecuc (menos).

Desde el 2009

A UNA ALTITUD DE 260 KILÓMETROS

El GOCE, con un presupuesto de 350 millones de euros, fue lanzado por la ESA en marzo de 2009 y ya ha completado su misión original de analizar la gravedad durante 12 meses. Los datos son tomados desde una órbita muy precisa situada a 260 kilómetros de altura.

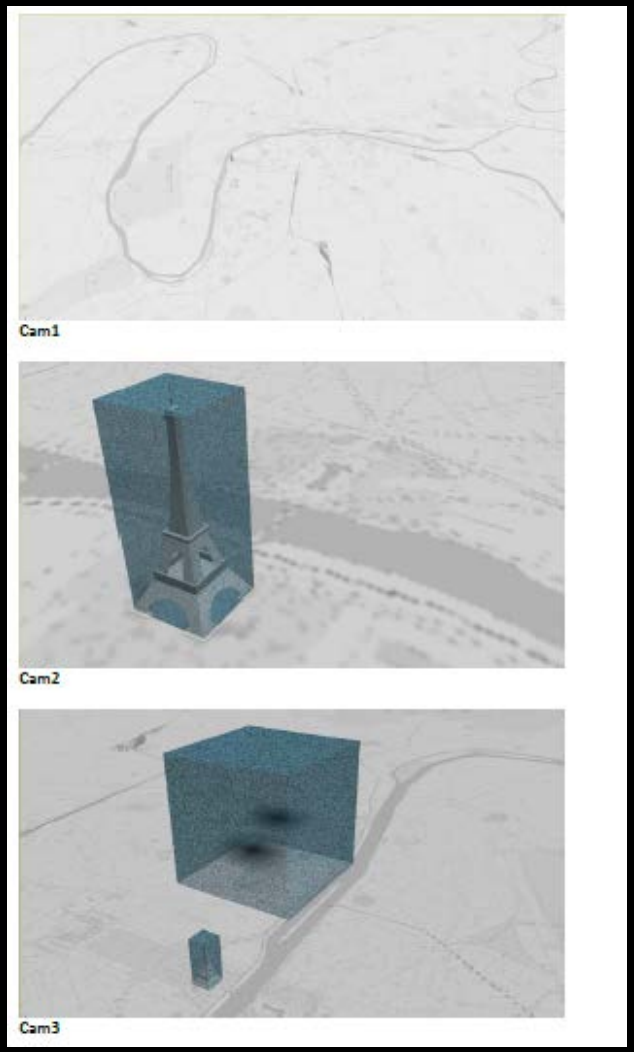


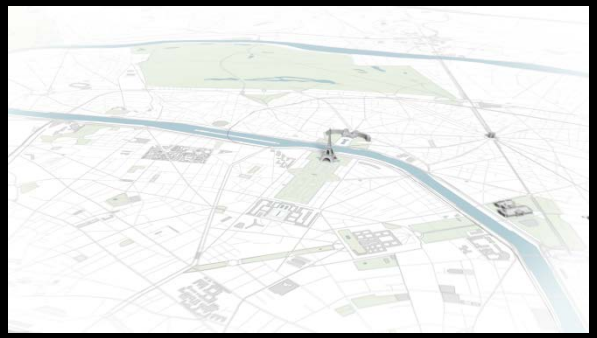
Mosaico

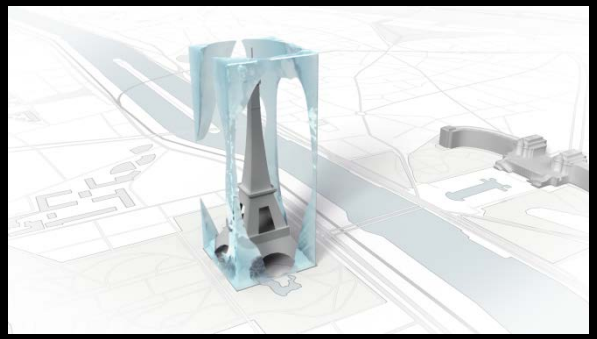
Gravidade da Terra muito variável

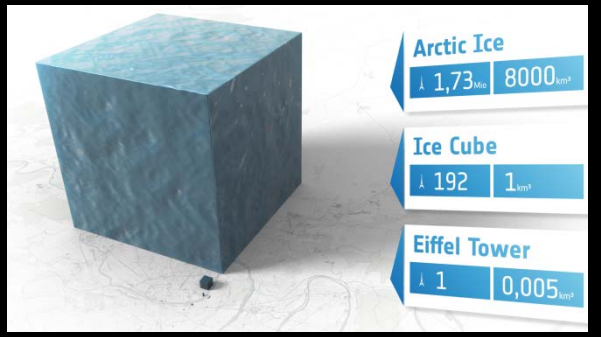
... Foram ontem divulgadas as medições da gravidade do planeta pelo satélite GOCE, da Agência Espacial Europeia. Delas resulta esta imagem da Terra, onde em vastas regiões (a amarelo) a força da gravidade é maior. Os dados levam também ao desenho da circulação dos oceanos.

Preparation – from storyboard to image









Preparation - storyboarding

Length
0'40"
+ 0'15"
+ 0'10"

Animation 01/12
Copernicus opener with logo, title, and information
Copernicus closer with logo and credits

Timecode 0'00" – 0'05"

Subtitle
Screen
- stius, occuptur, sae volenim velitatem es eari nem con reium fuga. Namus,
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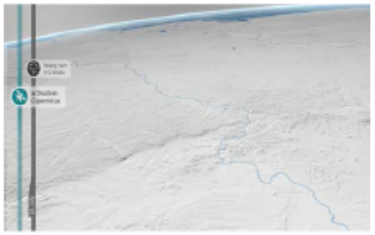

Timecode 0'05" – 0'25"

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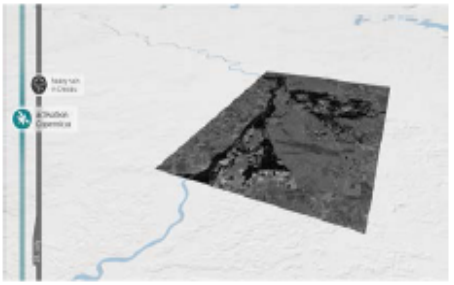
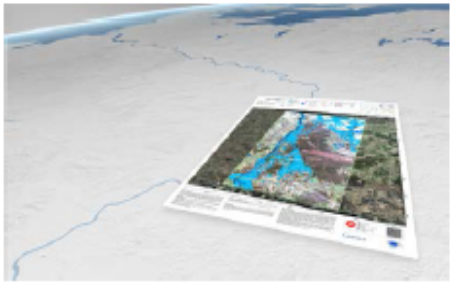


Timecode 0'25" – 0'35"



Timecode 0'35" – 0'40"

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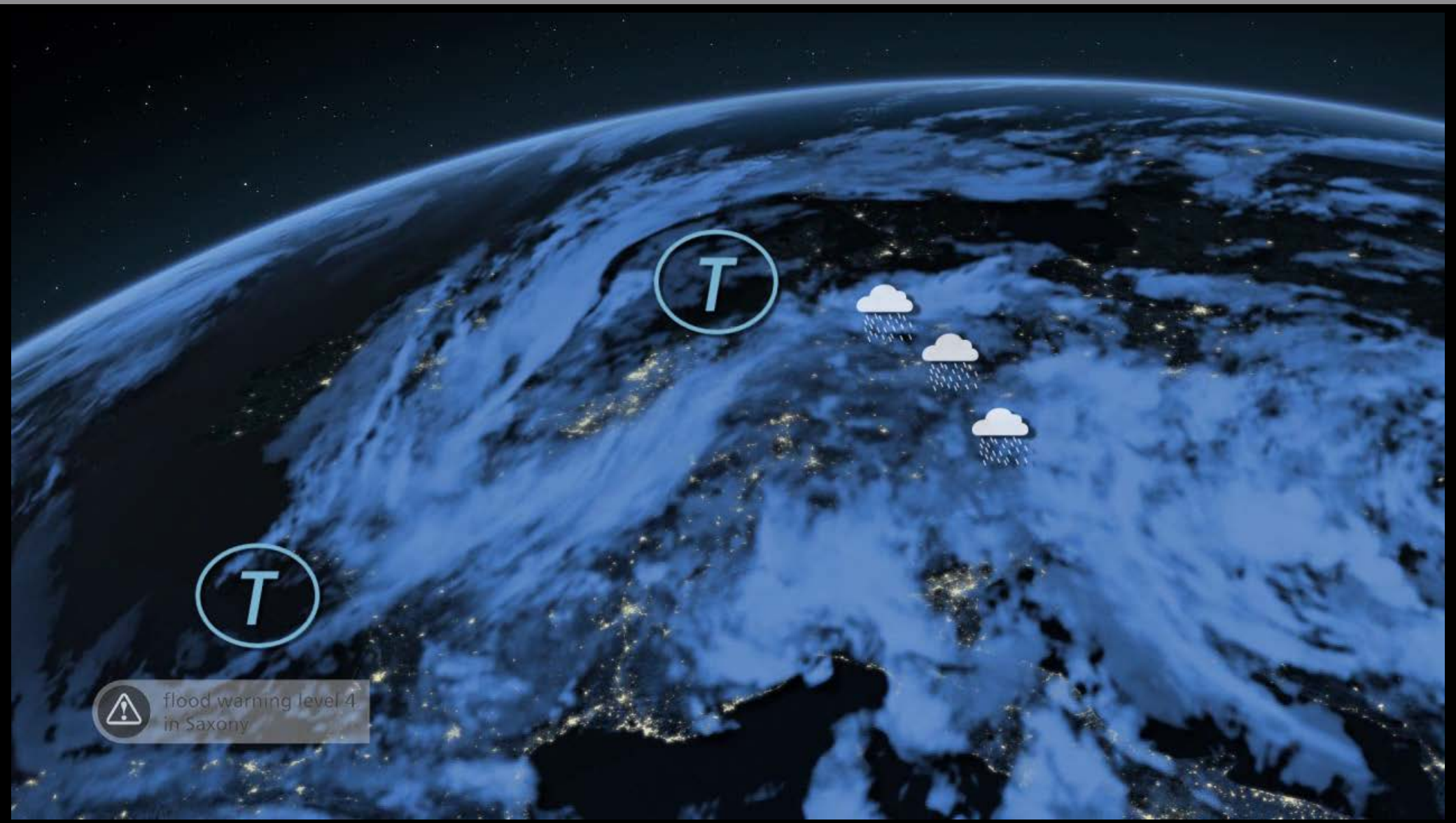
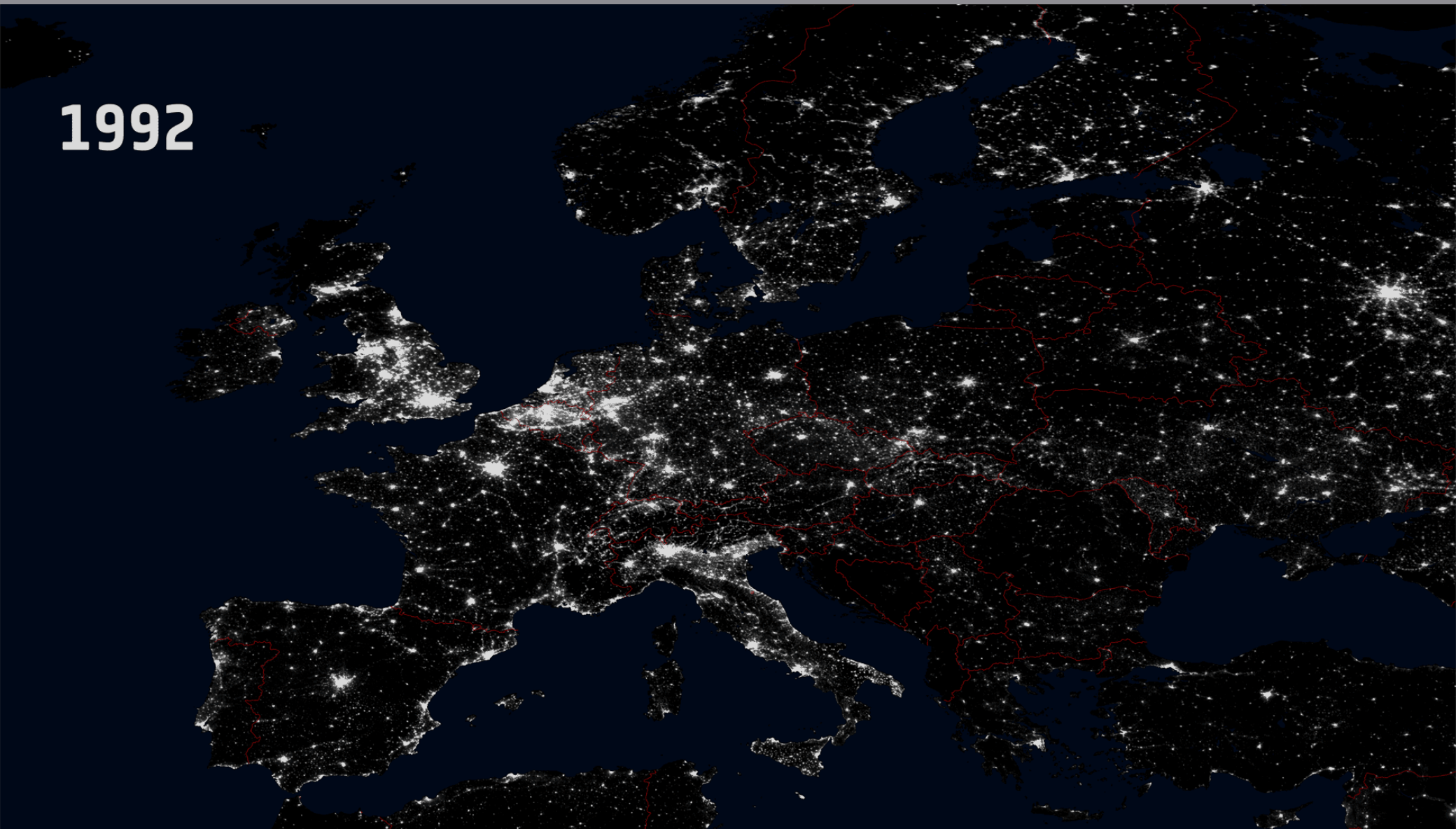
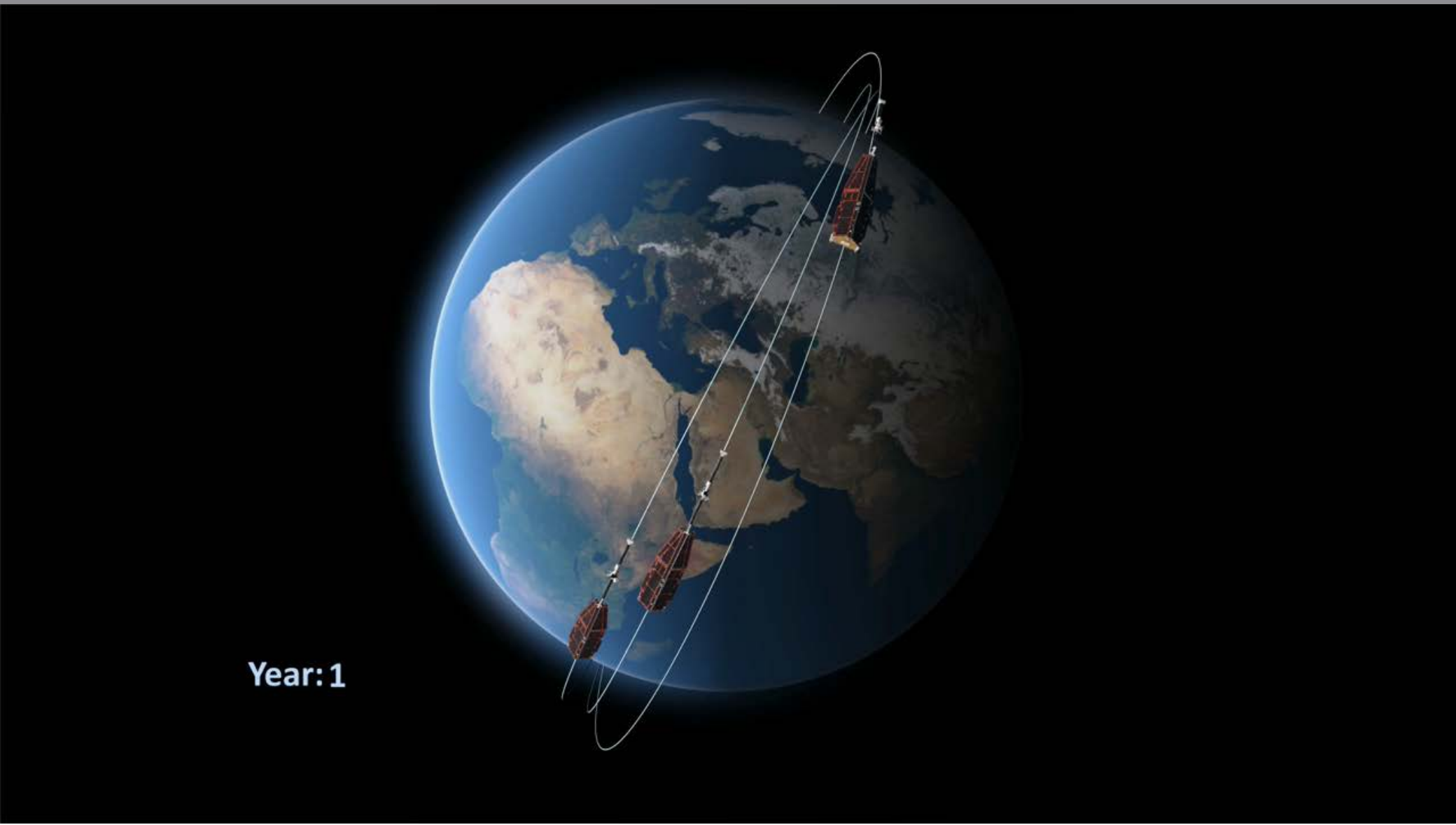
Implementation - Animation



Simple Visualization (WWF – Earth day)



Visualization example
Mission promotion (Swarm)



Visualization example
Socioeconomic impact (Oil spills in Europe)

Visualization example – visually good story