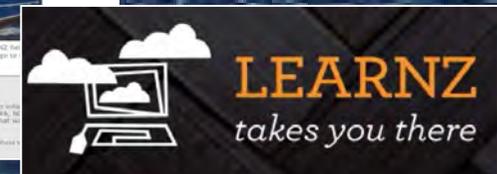


Argo Profiling Floats Field Trip

LEARNZ program -- National Strategic Goals from New Zealand – Technology
Steve Piotrowicz, NOAA

“Argo Floats tracking the pulse of world oceans”

- Supported by the New Zealand Ministry of Education, NIWA, CSIRO, and NOAA,
- 16-25 June 2014
- Led by professional educators
- Target age group: 7th grade
- Curriculum development
- 14 educational movies
- Focus on;
 - Argo Program
 - Ocean literacy education
 - Geography
 - Science methods



www.learnz.org.nz

<http://www.learnz.org.nz/argofloats142/argo-floats-tracking-pulse-world-oceans>

LEARNZ Program -- Argo Profiling Floats Field Trip

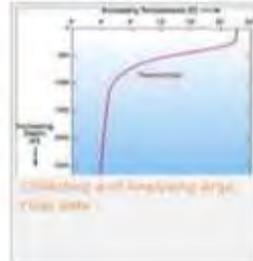
Areas covered by the Background Pages



- What is an Argo Float?
- The Argo Float Programme
- The World's Oceans



- Properties of the Sea: currents, layers and pressure
- Properties of the sea: salinity and temperature
- Properties of the Sea: food chains and food webs



- Where in the World are we?
- NIWA, NOAA and the *RV Tangaroa*
- Collecting and analysing Argo Float data

Enroll your class in the *Argo Floats* field trip

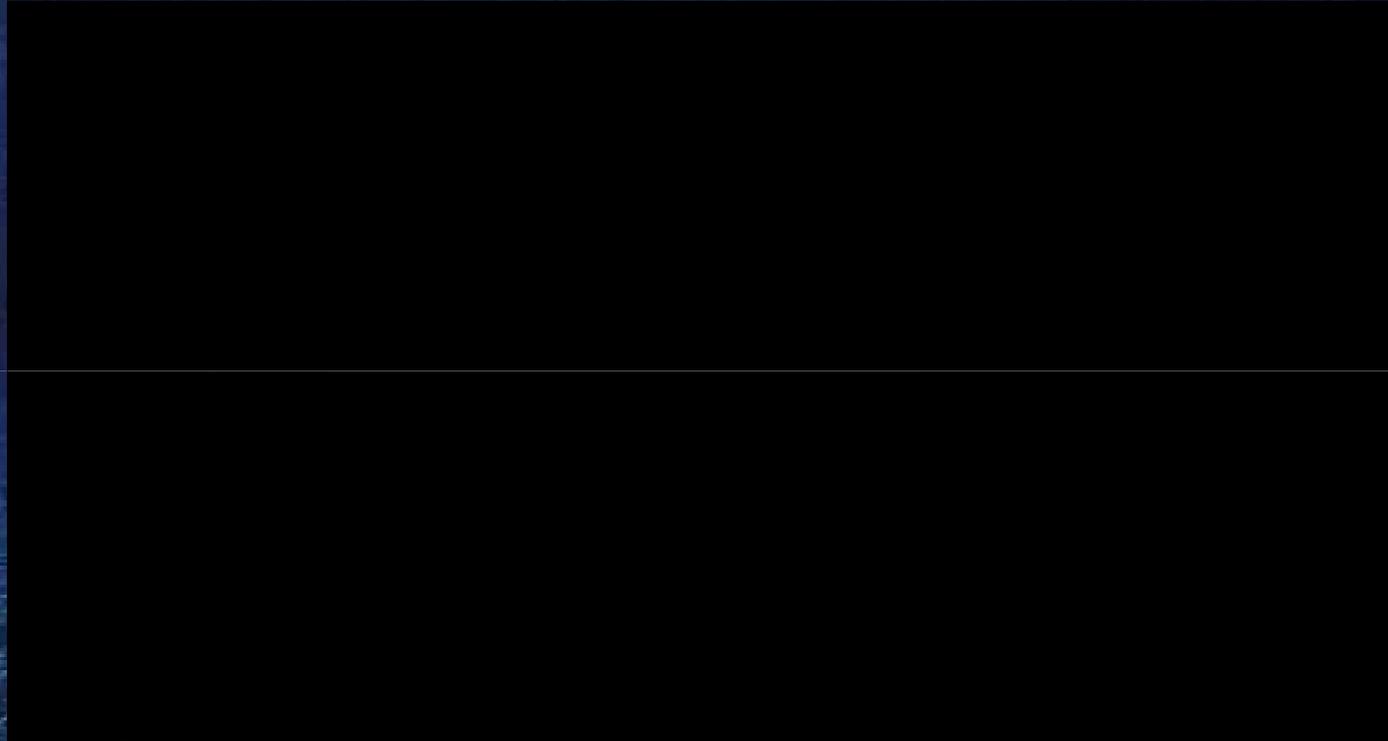


Visit the [website](#) to find out more

Or call the teacher free phone 0800 22 55 53

- **Videos**
5-6 videos shot/day → 1 video/day
- **Diaries**
Each day describing the action
- **Audioconferences**
Twice a day students can ask questions of experts in the field
- **Images**
Hundreds of images can be viewed and downloaded
- **Ambassadors**
Send a class member (soft toy) to experience the live trip

LEARNZ Program -- Argo Profiling Floats Field Trip



Steve Piotrowicz, NOAA

LEARNZ Program -- Argo Profiling Floats Field Trip

Argo EDUCATIONAL LINKS

<http://www.learnz.org.nz/argofloats142/argo-floats-tracking-pulse-world-oceans>

<http://www.argo.ucsd.edu/SEREAD.html>

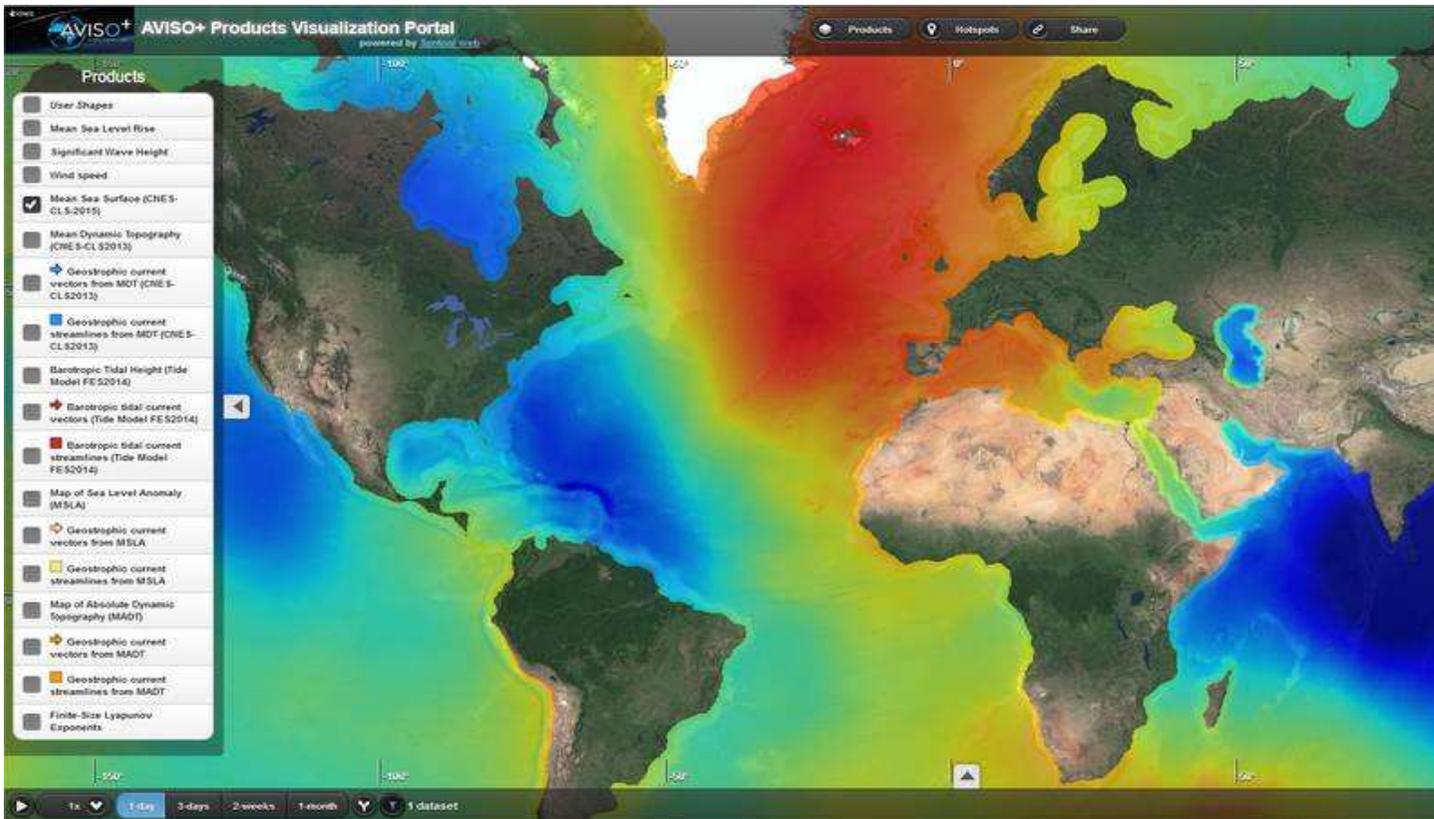
<http://argofloats.wikispaces.com/>

<http://www.monoceanetmoi.com/web/index.php/en/adopt-a-float-home>

<http://www.euro-argo.eu/Outreach/Educational-Web-Site>

<http://imos.org.au/argoteacherresources.html>

Aviso Viz



Visualize samples of products referenced in the AVISO+ catalogue. These products are not updated in real time, they are representative of a short period in the past (December 2014).

In this first version of the tool, only gridded products are available (Level 4 products and auxiliary products). Samples of *along-track* products will be available in March 2017, in the next version of the visualization tool.

- Author name: OceanDataLab for CNES
- Year: 2016
- web-based interface

Aviso+ web mobile version



Mobile / light interface to visit the whole Aviso+ website

Manual switch possible from a classical PC (low bandwidth)

Text-only menus

- Aviso+ team
- Year: 2015
- Public aimed: data users, web visitors with limited bandwidth or on mobile phones / pads
- Medium**: web
- Language(s): English/French

Vendée Globe Skippers partners of **ARGONAUTICA**



- Author name: D de Staerke, CNES
- Year: 2016
- Public aimed*: primary, secondary
- web sites
- Language(s): French

The skippers carry Argonautica buoys that they will release during the race.

Through Argonautica and while tracking the race, students can work on many of the subjects in the school curriculum:

- once launched in the ocean, buoys* drift under the influence of the currents and winds. Thanks to the Argos system, we can track their journeys and thus discover how the **major marine currents** operate.
- **Biodiversity:** during part of the race in the sub-Antarctic region, skippers cross the paths of marine animals* which are also carrying Argos transmitters and which routes are affected by climate variations

* The trajectories as well as ocean maps are all displayed on CNES site

JASON-3 CONTEST



- Author name: D de Staerke, CNES
- Year: 2016
- Public aimed*: primary, secondary
- web sites
- Language(s): French and English

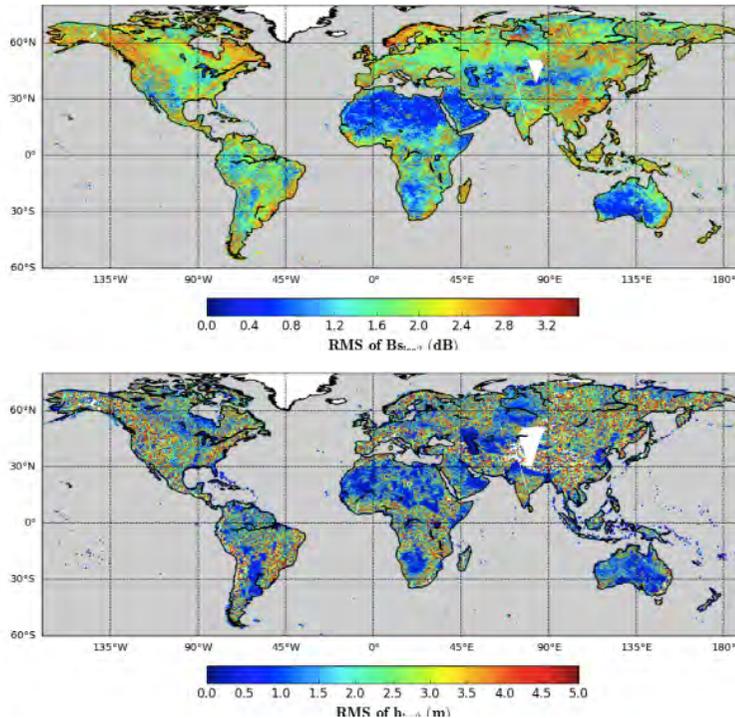
Discover the role of Jason-3, the European-American oceanography satellite launched at the beginning of 2016 to study the climate and the environment, by taking part in the *Jason-3* mini-site *competition*.

Use the resources made available by the various partners in this space project, to design a mini-site which reflects your understanding of satellite-based Earth observation of climate and biodiversity changes.

CNES will be awarding a prize for the best production for each of the school levels. The winning sites will be highlighted on CNES web sites and social networks and those of its partners.



ERS-2 Mission Reprocessing at CTOH for Continental Surfaces



Description of the Product:

- DEOS's **precise orbit** (Rudenko et al., 2014)
- **ICE-1 and ICE-2 retracking parameters**
- New **dry troposphere** correction with ERA-INTERIM fields valid over all surfaces (Blarel and Legresy, 2013)
- New **Doppler correction** accounting for the range rate (Blarel and Legresy, 2012)
- Empirical corrections to make **ERS-2 comparable to ENVISAT-v2.1**
- **Global coverage** (continental but also oceans)

The product is available on the AVISO+ web site:
www.aviso.altimetry.fr



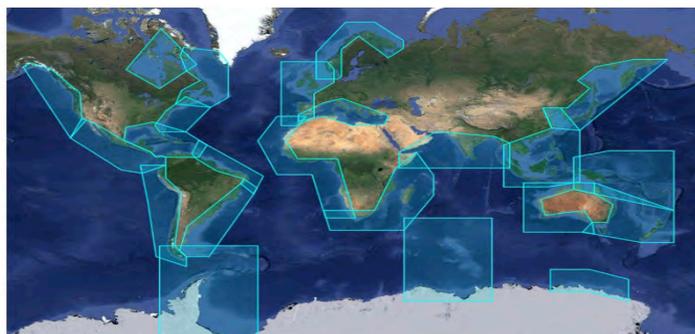
See also **Poster** in Sessions “Outreach, Education and Altimetric Data Services”:
CTOH Altimetry Product (L1 to L4) for Ocean, Ice and Continental Surface Applications

References:

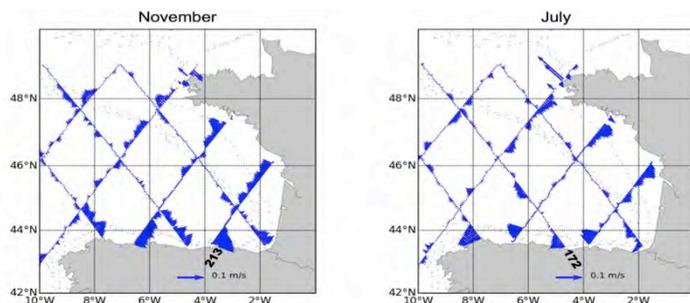
- CTOH. 2015. “Dataset: Altimetric data of the ERS-2 mission”. OMP-INSU-UPS-IRD. doi:10.6096/CTOH_ERS-2_2015_01.
- CTOH ERS-2 Product Handbook, 2015. <http://ctoh.legos.obs-mip.fr/products/alongtrack-data/ctoh-ers-2-handbook>
- F. Frappart, B. Legrésy, F. Niño, F. Blarel, N. Fuller, S. Fleury, F. Birol, S. Calmant. “An ERS-2 altimetry reprocessing compatible with ENVISAT for long term land and ice sheets studies.” *Remote Sensing of Environment* 2016.



X-TRACK Regional Product from CTOH Release 2016



Definition of the regional polygons in release 2016, covering now all the coastal areas.



Monthly climatology of the surface geostrophic current anomaly

Description of the Product:

- 1hz along track SLA available in **23 regions**
- based on a **23 years Mean Sea Surface Height**
- **6 altimetric missions** available: Topex, Jason-1&2, Geosat, Ers2, Envisat
- **Along-track tidal constants** (amplitude, phase lags and associated estimation errors for 73 constituents) derived from the X-TRACK T/P and Jason SLA time series, are available every 6-7 km alongtrack for all regions.
- Version 2016 entirely revisited with significant differences both in terms of data availability and SLA standard deviation.

Product soon available on the AVISO+ web site:

www.aviso.altimetry.fr



See also **Poster** in Sessions "Outreach, Education and Altimetric Data Services":

CTOH Altimetry Product (L1 to L4) for Ocean, Ice and Continental Surface Applications

Reference:

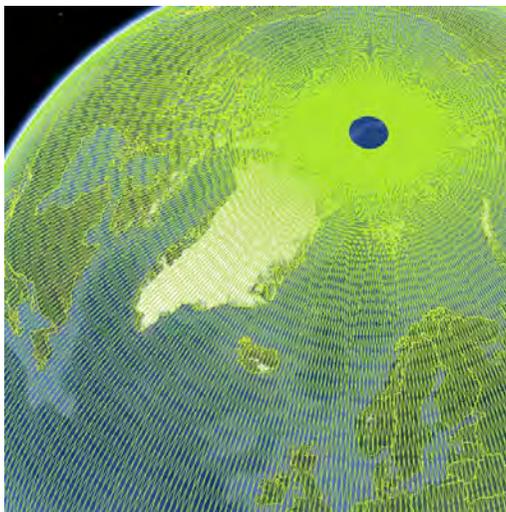
Birol et al., Coastal applications from nadir altimetry: example of the X-TRACK regional products, Advances in Space Research, 2016, under rev.



CryoSat-2 ESA Baseline C : NetCDF Edition from CTOH



Description of the Product relatively to official ESA data



*CryoSat-2 ground tracks
for one sub-cycle (29 days)*

- **One file per track** including all the altimeter modes: **LRM, SAR and SARIN**
- File **format similar to the Jason-2 GDR-D** products and CF-1.6 compliant
- Filename **includes cycle, sub-cycle, track and sub-track numbers**
- Every **variable documented** with units and comments
- **Units consistent**, with lengths in **meters** and time in **UTC**
- Lon, lat and time directly available both at 1hz and 20hz
- Duplicate data or data with time inconsistency have been removed
- **New parameters and geophysical corrections added** (geoid, DEM, distance to coast, mean sea surface, ..)
- The data can be selected by track number, by region and/or by dates, and are provided on request through <http://ctoh.legos.obs-mip.fr/products/cryosat-2>

Product soon available on the AVISO+ web site:
www.aviso.altimetry.fr



See also **Poster** in Sessions "Outreach, Education and Altimetric Data Services":

CTOH Altimetry Product (L1 to L4) for Ocean, Ice and Continental Surface Applications



FREE ONLINE COURSE

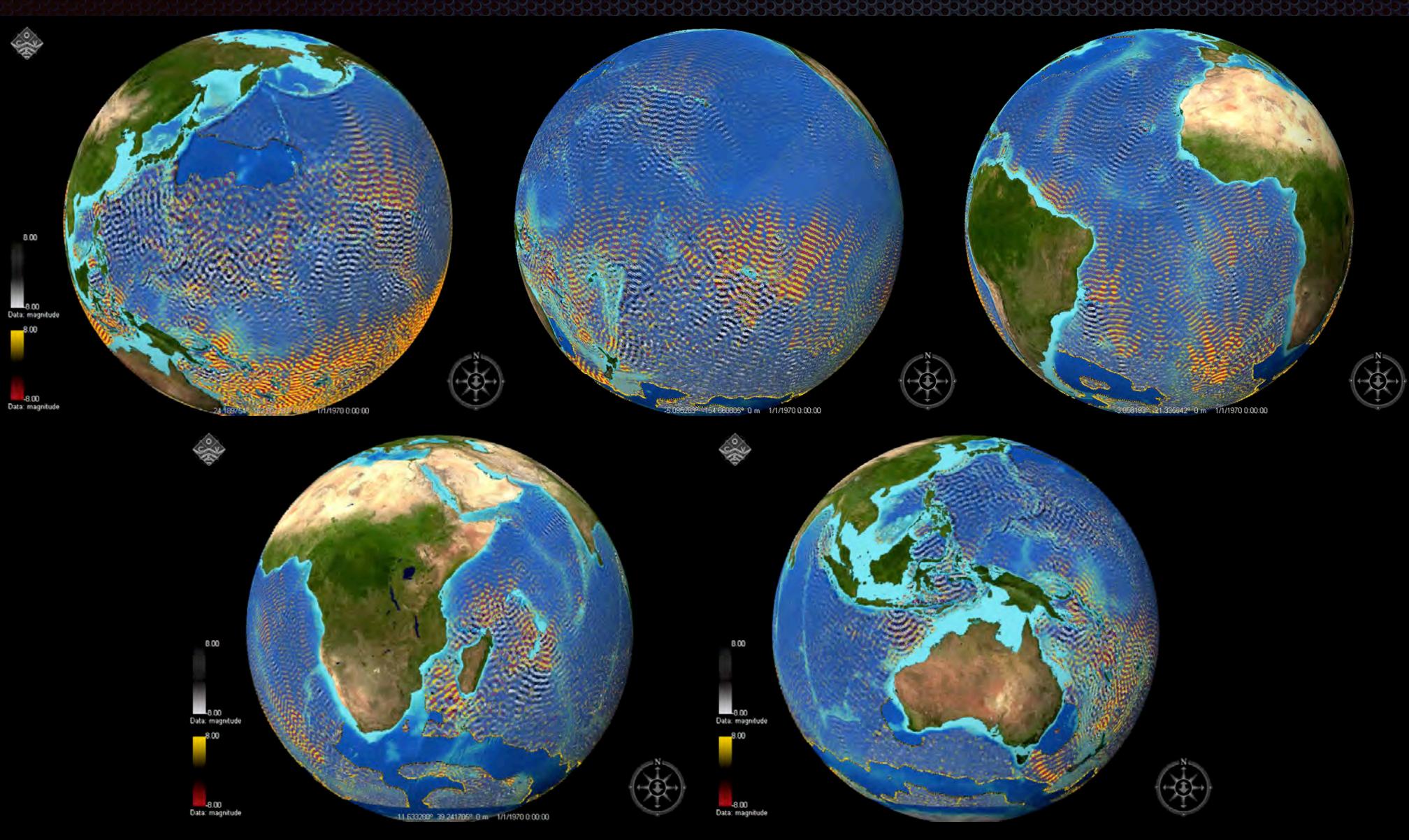
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Explore our oceans from space. Discover how Earth observation allows us to monitor ocean health, and inform policy and planning.

[Join now – just started](#)

FREE online course Duration: 5 weeks 3 hours pw Certificates available

- Massively Open On-line Course (MOOC)
- Created by EUMETSAT
- Started 24 October, 5 weeks, 3 hours/week
- Altimetry in weeks 1 and 2
- <http://bit.ly/EUMMooc>



Internal Tide Animations

(M2 semidiurnal frequency, first baroclinic mode)

James B. Girton (girton@apl.uw.edu) and Zhongxiang Zhao (zzhao@apl.uw.edu),

Applied Physics Laboratory, University of Washington

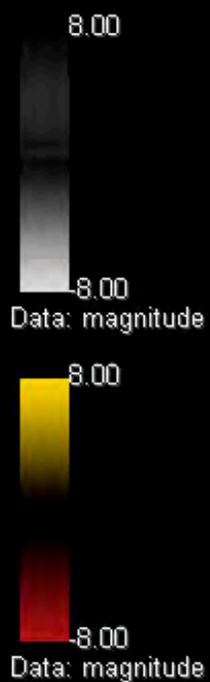
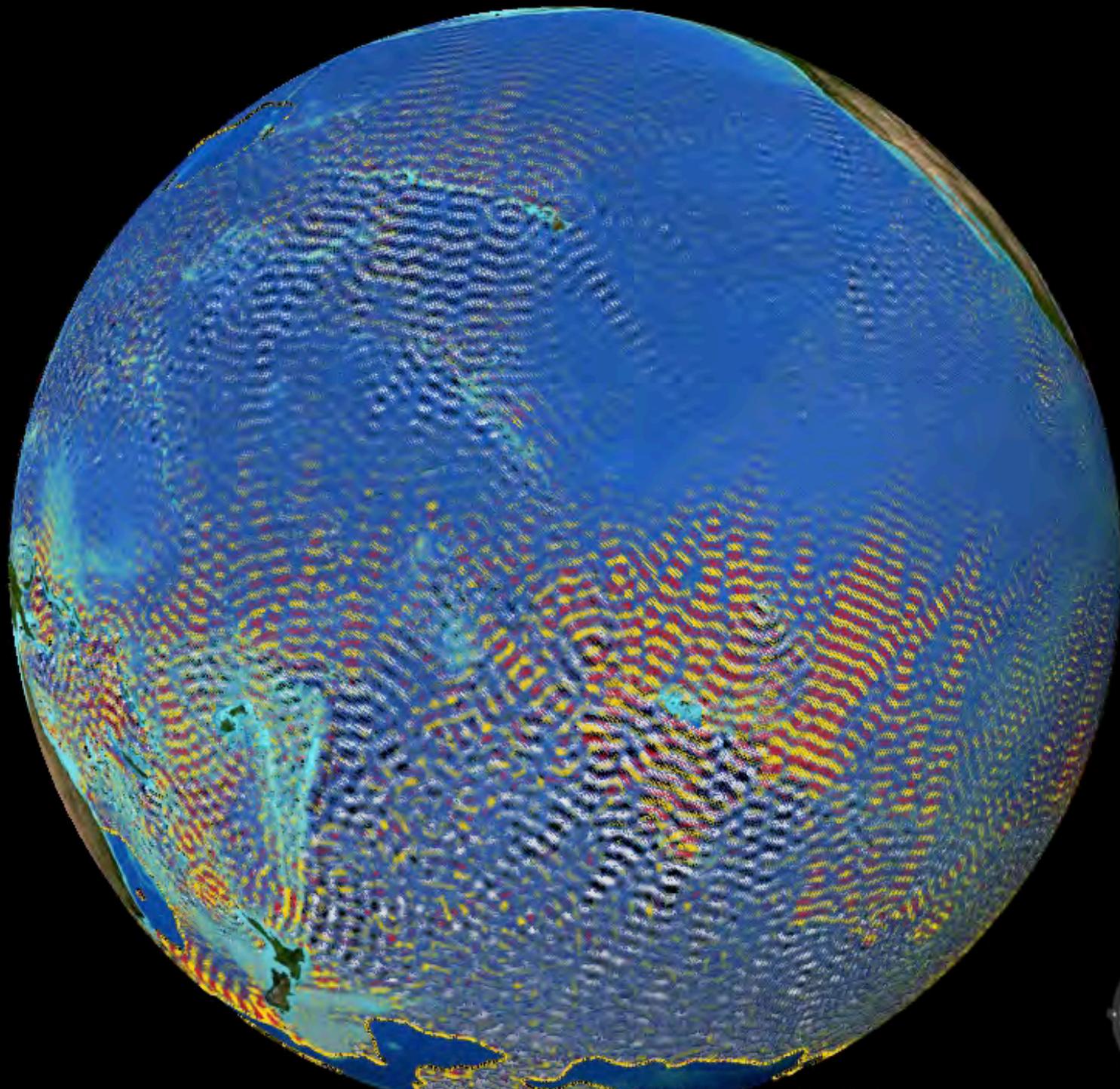
Matthew H. Alford (malford@ucsd.edu),

Scripps Institution of Oceanography, University of California, San Diego

https://www.dropbox.com/sh/zzjwzca1tthi7zb/AACJBiTkc29Ahjw_csYC2LGoa?dl=0

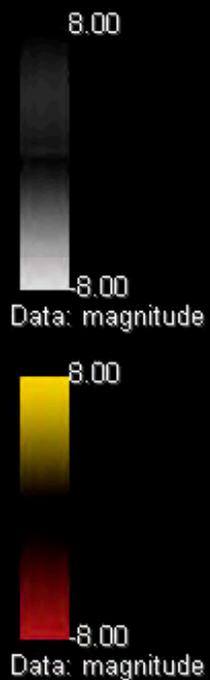
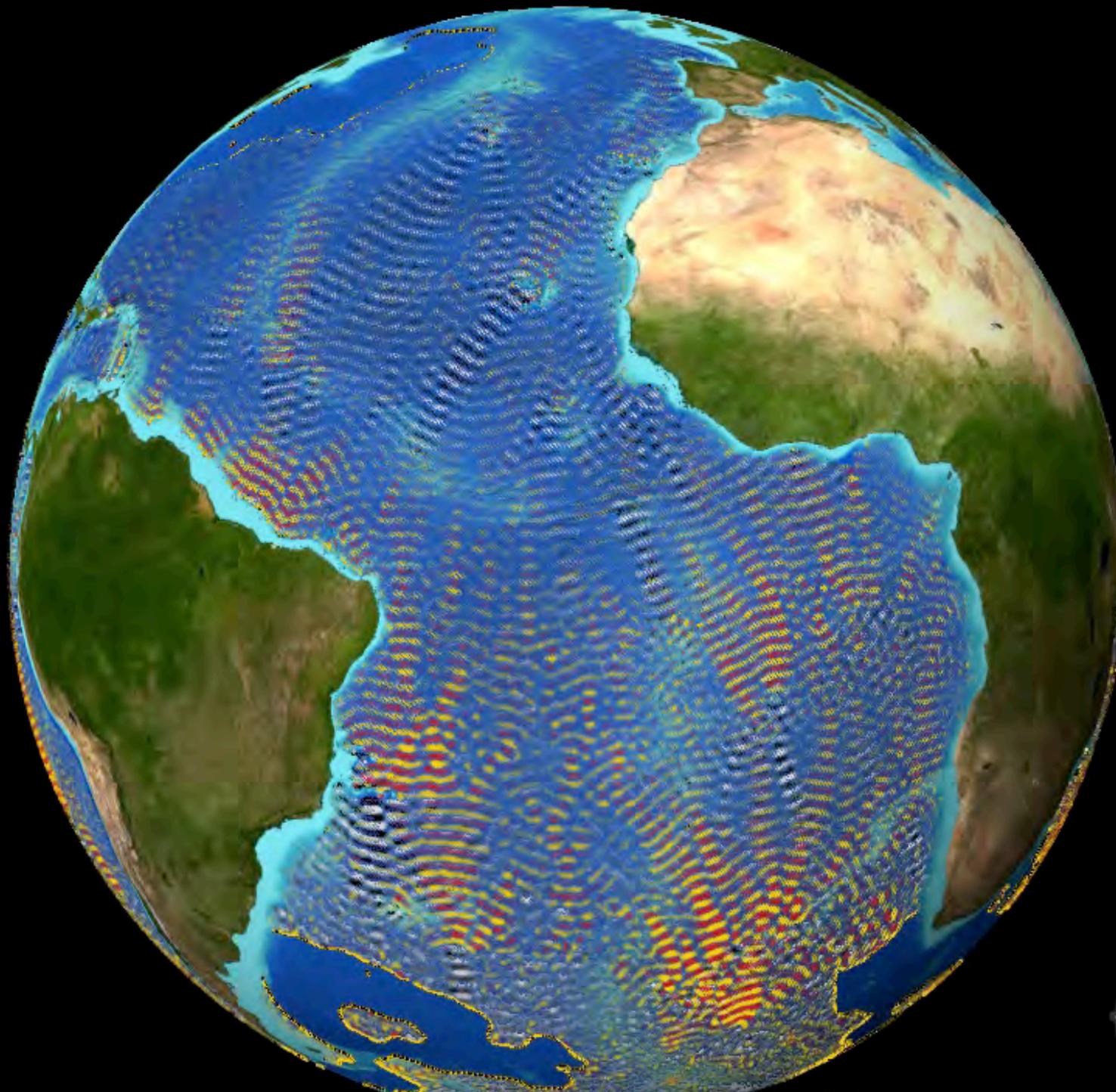
Zhao, Z., M. H. Alford, J. B. Girton, L. Rainville, and H. L. Simmons, 2016: Global Observations of Open-Ocean Mode-1 M_2 Internal Tides, *J. Phys. Oceanogr.*, 46, 1657-1684.

Center for
Environmental
Visualization
Bruce Campbell
Hunter Hadaway
Mark Stoermer



-5.095289° -154.660805° 0 m 1/1/1970 0:00:00





3.058193°, 21.335842° 0 m 1/1/1970 0:00:00

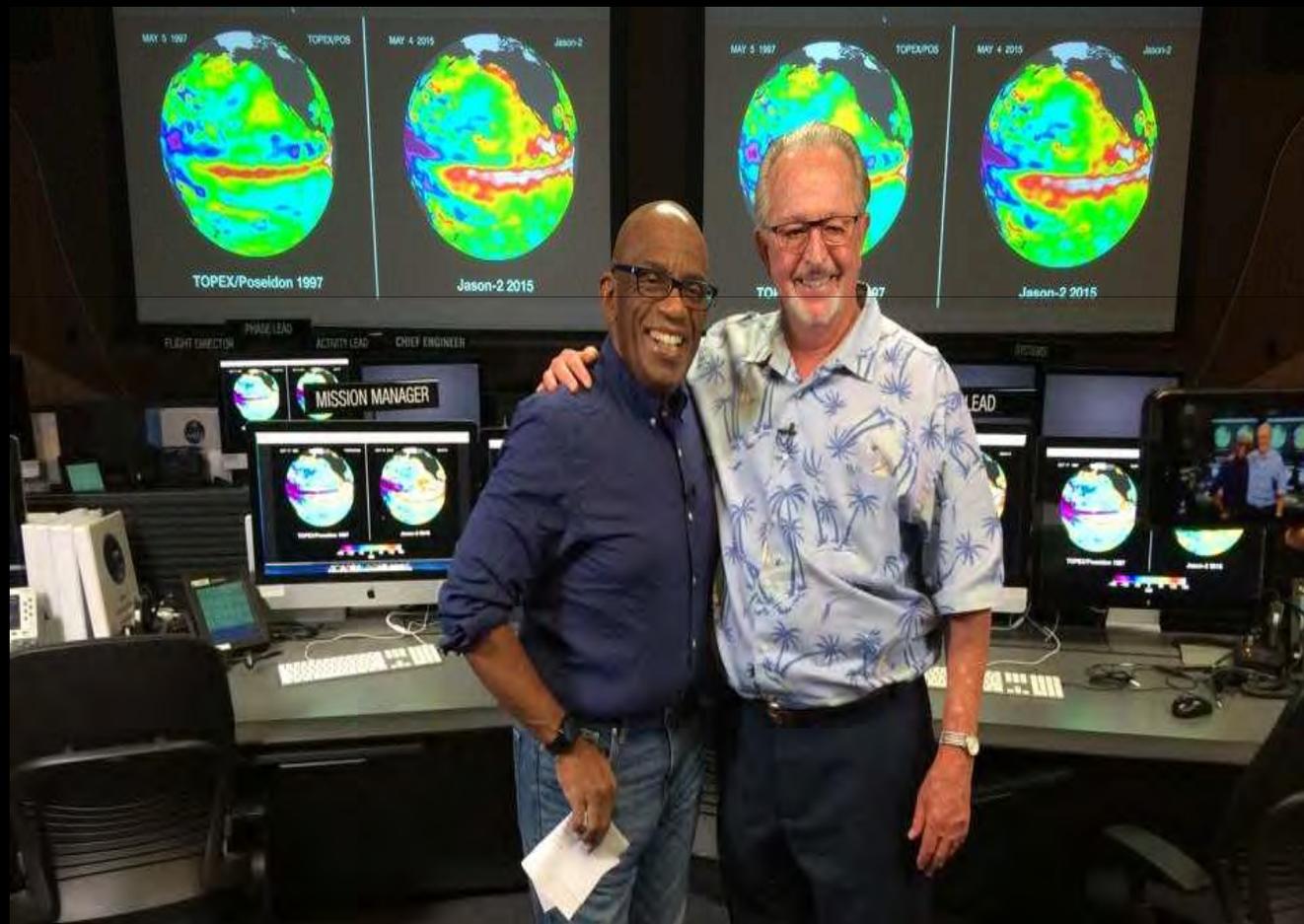
Bill Patzert

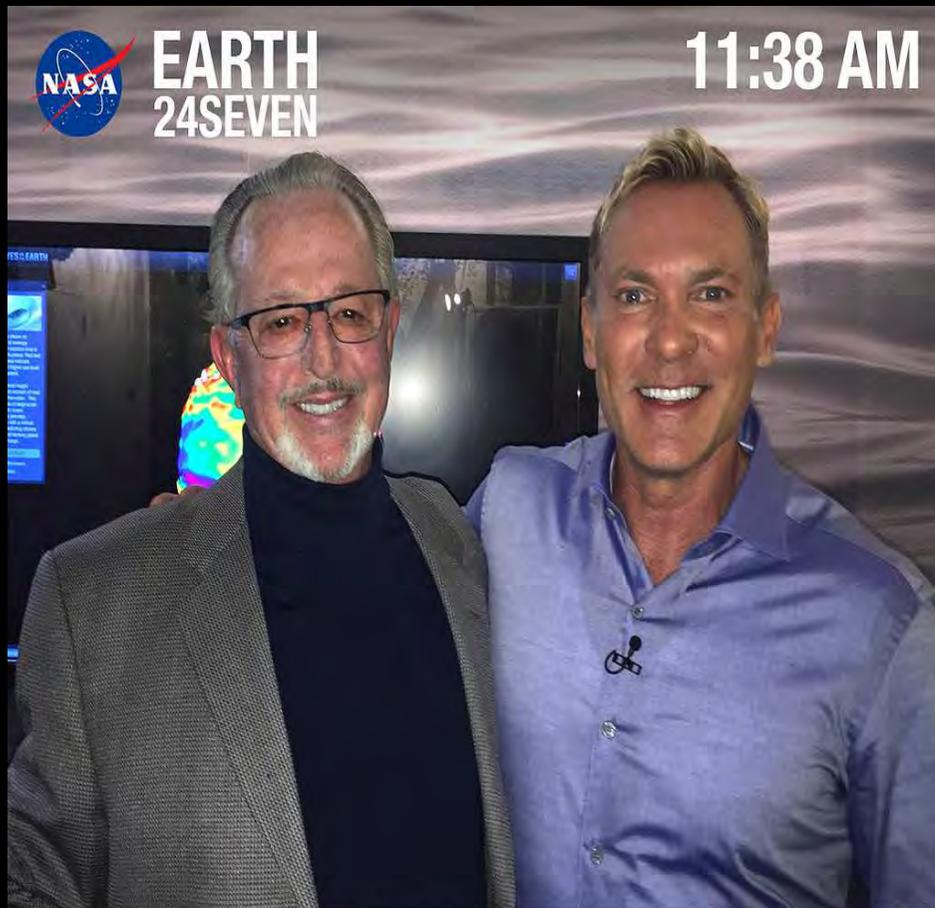
NASA's Jet Propulsion Laboratory

Science Communication (1 Jan '16 - now)

- 4 - Drafted/supported NASA/JPL/GSFC Press/Image & Feature Releases:**
- 3 - Documentaries/Courses:**
- 51 - TV interviews**
- 11 - YouTube/Videos**
- 30 - Radio interviews**
- 213 - Newspaper interviews**
- 3 - Magazine interviews**
- 199 - .com articles/interviews/blogs**
- 7 - Lectures at local schools and businesses (colleges to middle schools)**
- 12 - Public Lectures**
- 1 - GLOBE Webinar**

 **NBC**
NIGHTLY NEWS
WITH LESTER HOLT





Bill Patzert, NASA Jet Propulsion Laboratory climatologist and oceanographer, was interviewed by Sam Champion, chief meteorologist and managing editor of The Weather Channel and host of the primetime program *23.5° with Sam Champion*. Bill and Sam chatted about the status of the present El Niño, the possibility of an imminent La Niña, the implications for the continuing California drought, and how global warming could impact future Los Niños and Las Niñas. climate.nasa.gov

Image credit: NASA/JPL-Caltech

Bill Patzert

Oceanography Research Scientist of JPL

“ The Prophet
of California Climate ”

23.5°
with
SAM CHAMPION

The
Weather
Channel
Tuesdays 11p ET



The
Weather
Channel



**Ocean Extras:
El Niño overview -
with Dr Bill Patzert**

