PROMOTING OCEAN AND CLIMATE LITERACY:

2008-2009 JPL OCEAN SURFACE TOPOGRAPHY EDUCATION AND PUBLIC OUTREACH ACTIVITIES

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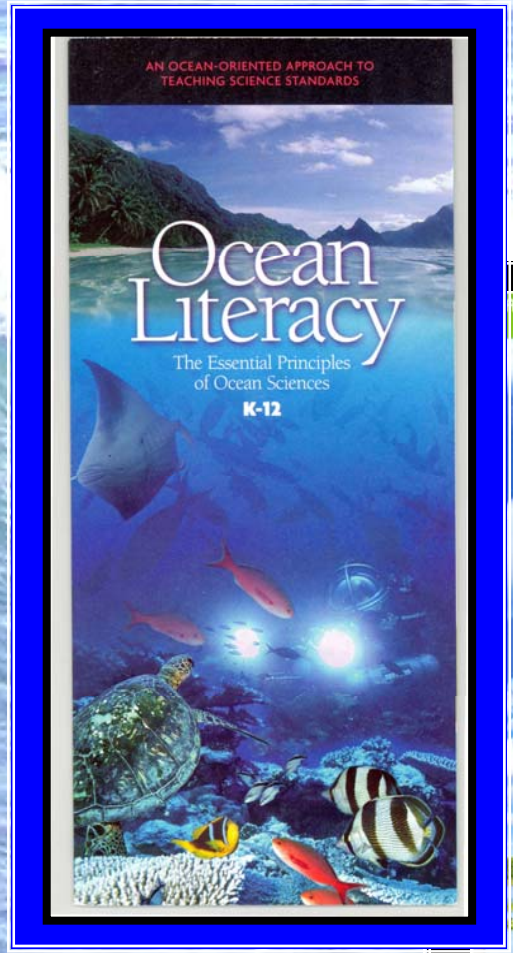
OSTST, Nice, France

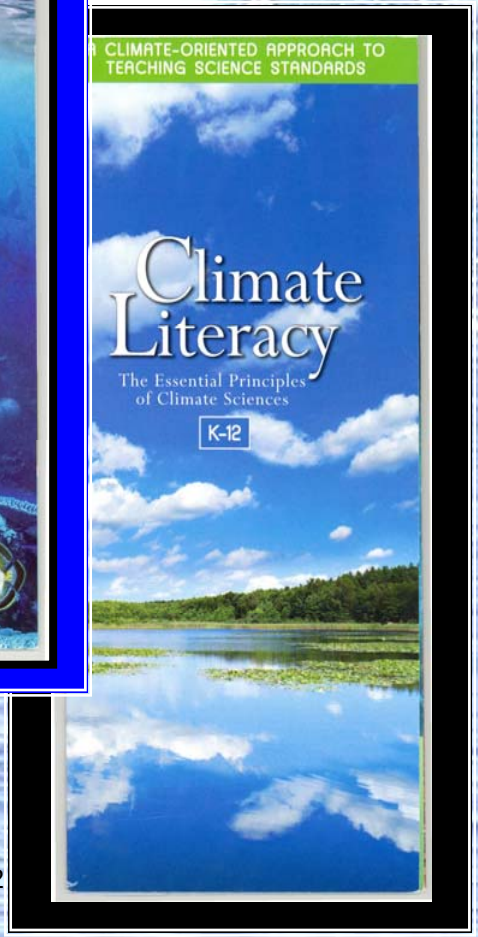
Ocean and Climate Literacy

- Last year, introduced the Ocean Literacy Network, a consortium of scientists and educators interested in using the ocean to teach science

- Similar consortium formed for climate literacy; determined seven essential principles and fundamental concepts to know about climate

- JPL team is using ocean and climate literacy as our EPO focus areas





Ocean Literacy Essential Principles

1. Earth has one big ocean with many features.
2. The ocean and life in the ocean shape the features of Earth.
3. The ocean is a major influence on weather and climate.
4. The ocean makes Earth habitable.
5. The ocean supports a great diversity of life and ecosystems.
6. The ocean and humans are inextricably linked.
7. The ocean is largely unexplored.

Climate Literacy Essential Principles

1. Life on Earth has been shaped by, depends on, and affects climate.

2. We increase our understanding of the climate system through observation and modeling.

3. The sun is the primary source of energy for the climate system.

4. Earth's weather and climate systems are the result of complex interactions.

5. Earth's weather and climate vary over time and space.

6. Evidence indicates human activities are impacting the climate system.

7. Earth's climate system is influenced by human decisions involving economic costs and social values.

Ocean and Climate Education Activities Support

- Scope and sequence development for ocean literacy essential principles

- Multinational Youth Studying Practical Applications of Climatic Events (M.Y.S.P.A.C.E)

- Jefferson Middle School GATE Program on Global Climate Issues

Climate Day 2008

- Educational event to promote awareness of global climate issues

- Hosted in conjunction with the Centers for Ocean Science Education Excellence-West and the East San Gabriel Valley Regional Occupational Program/Technical Center

- Held on the ROP campus in West Covina, California, on March 18th

- Informed participants of the role of satellite oceanography in our understanding of the global ocean and its role in weather and climate

- Included lectures, career discussions, hands-on activities, and exhibits

- Approximately 950 high-school students and 25 teachers participated.

Climate Day 2008 Video

Climate Day 2009

- Multi-Agency (NASA, NOAA), Multi-Partner (JPL, COSEE-West, Aquarium of the Pacific, City of Pasadena (proposed)
- Pasadena Convention Center (proposed)
- Two days: 1 for schools, 1 for the community
- Expanded school participation (PUSD, LAUSD, LCUSD)
- Inclusion of ocean and climate literacy essential principles
- Inclusion of city departments and community organizations

Banners, Decals, Pins, Shirts

Displays/Exhibits

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Current sea level rise

From Wikipedia, the free encyclopedia
(Redirected from Sea level rise)

This article is about the current and future rise in sea level asso

Sea level has been rising at a rate of around 1.8mm per year for th
increasing; measurements from the period 1993-2000 indicated a me
least the coming century.[5] The contribution from thermal expansion
largely dependent on how rapidly ice caps disintegrate with increasin
is currently the dominant contributor to sea level rise, and to the pre
mm). Only if glacial melt substantially increases will it become the la
age resulted in a 120 meters rise in sea level.

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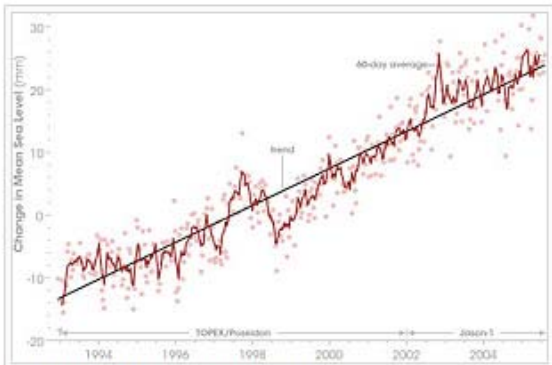
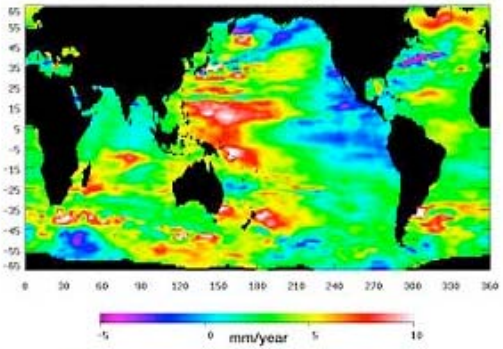


Satellite Measurement of Sea Level

Trend of Sea Level Change (1993-2008)



Red and white show where sea level has risen the most rapidly. Purple and blue where it has dropped.

today.

Our Goal: $6 m

see Sea level#change

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TOPEX/Poseidon

From Wikipedia, the free encyclopedia
(Redirected from TOPEX)

Launched in 1992, **TOPEX/Poseid**
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observations. The distinguished oc

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Description

Before TOPEX/Poseidon, scientists had onl
provided the first continuous global coverage
ice-free ocean to an accuracy of 3.3 centime

The mission's most important achievement
the Sun, ocean circulation is a driving force
improve climate predictions.[2]

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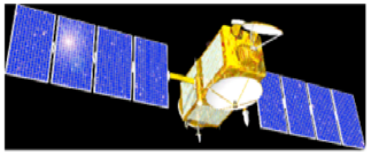
Jason 1

From Wikipedia, the free encyclopedia



Jason-1[1] is a satellite oceanography mission to monitor global ocean circulation, study the ties between the ocean and the atmosphere, improve global climate forecasts and predictions, and monitor events such as El Niño and ocean eddies.[2]

It is a follow-on to the TOPEX/Poseidon [3] mission, which measured ocean surface topography from 1992 through 2005. Like its predecessor, Jason-1 is a joint project between the NASA (United States) and CNES (France) space agencies. Jason-1's successor, the Ocean Surface Topography Mission [4] on the Jason-2 satellite, was launched in June 2008. These satellites provide a unique global view of the oceans that is impossible to acquire using traditional ship-based sampling.

Jason-1 was designed to measure climate change through very precise millimeter-per-year measurements of global sea level changes. As did

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Ocean Surface Topography Mission

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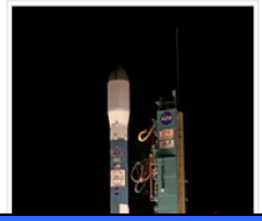
This article or section documents a current or recent spaceflight.
Details may change as the mission progresses.

Artist's interpretation of the Jason-2 satellite



The **Ocean Surface Topography Mission** (**OSTM**) on the **Jason-2** satellite[1] is an international Earth observation satellite mission that continues the sea surface height measurements begun in 1992 by the joint NASA/CNES TOPEX/Poseidon mission[2] now being made by the NASA/CNES Jason-1 mission launched in 2001.[3]

Like its two predecessors, OSTM/Jason-2 uses high-precision ocean altimetry to measure the distance between the satellite and the ocean surface to within a few centimeters. These very accurate observations of variations in sea surface height—also known as ocean topography—provide information about global sea level, the speed and direction of ocean currents, and heat stored in the ocean.

Scientists consider the 15-plus-year climate data record that this mission will extend critical understanding how ocean circulation is linked to global climate change.

OSTM/Jason-2 was launched at 07:46 UTC on June 20, 2008, from Space Launch Complex 2W at the Vandenberg Air Force Base in California, USA, by a Delta II 7320 rocket.[4] The spacecraft separated from the rocket 55 minutes later.[5]

It is now in a 1,336 km (830 mi) circular, non-sun-synchronous orbit at an inclination of 66 degrees to Earth's equator, allowing it to monitor 95 percent of Earth's ice-free ocean every 10 days. OSTM/Jason-2 is flying in line with Jason-1 (approximately 55 seconds or 300 miles behind) while scientists compare the operation and accuracy of both satellites' instruments and data products. Once this cross-calibration and validation is complete, Jason-1 will be moved to a parallel position, so the two spacecraft can operate in a

Acknowledgements

My thanks go to the following individuals and organizations:

- Rosemary Sullivant
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- You!