

# Ocean Surface Topography Constellation

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## CNES, ESA, EUMETSAT, ISRO, NASA, NOAA, SOA & US Navy

- **Goal**

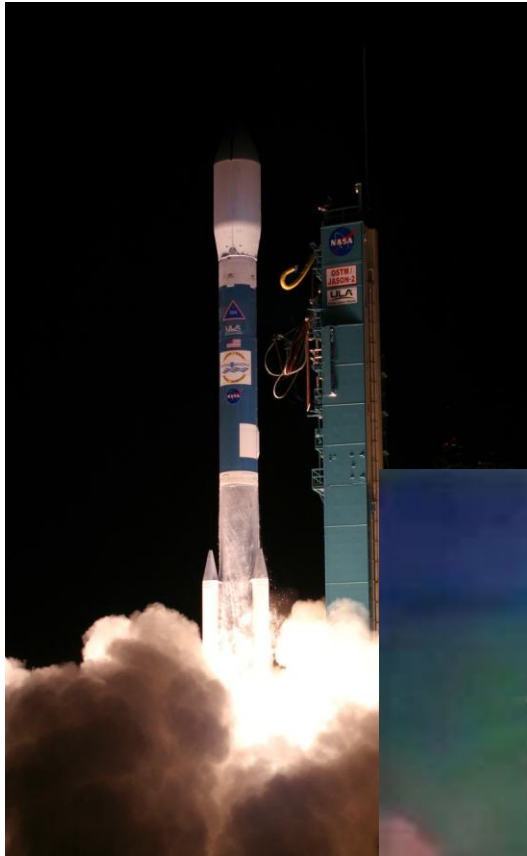
- Implement a sustained, systematic capability to observe the surface topography of the global oceans
- These observations – together with Argo – are needed to understand the dynamics of the oceans, assess their role in climate, and sustain a robust operational forecast capability

- **Approach**

- Maintain continuity in the low inclination Jason altimetry time series
- Maintain continuity with altimeters on at least two complementary, high-inclination satellites
- Extend the capability of altimetry to denser sampling through the development of swath altimetry and/or fleet of microsattellites

## OSTM/Jason-2 SUCCESSFUL LAUNCH !

20 June 2008



- 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.
- The Jason-2 satellite separation occurred approximately 55 minutes after lift-off. Within minutes, the tracking station at Hartebeesthoek, South Africa, picked up Jason-2's confirmation signal.

# First CAL/VAL results are very promising!

Jason 2

Jason 1

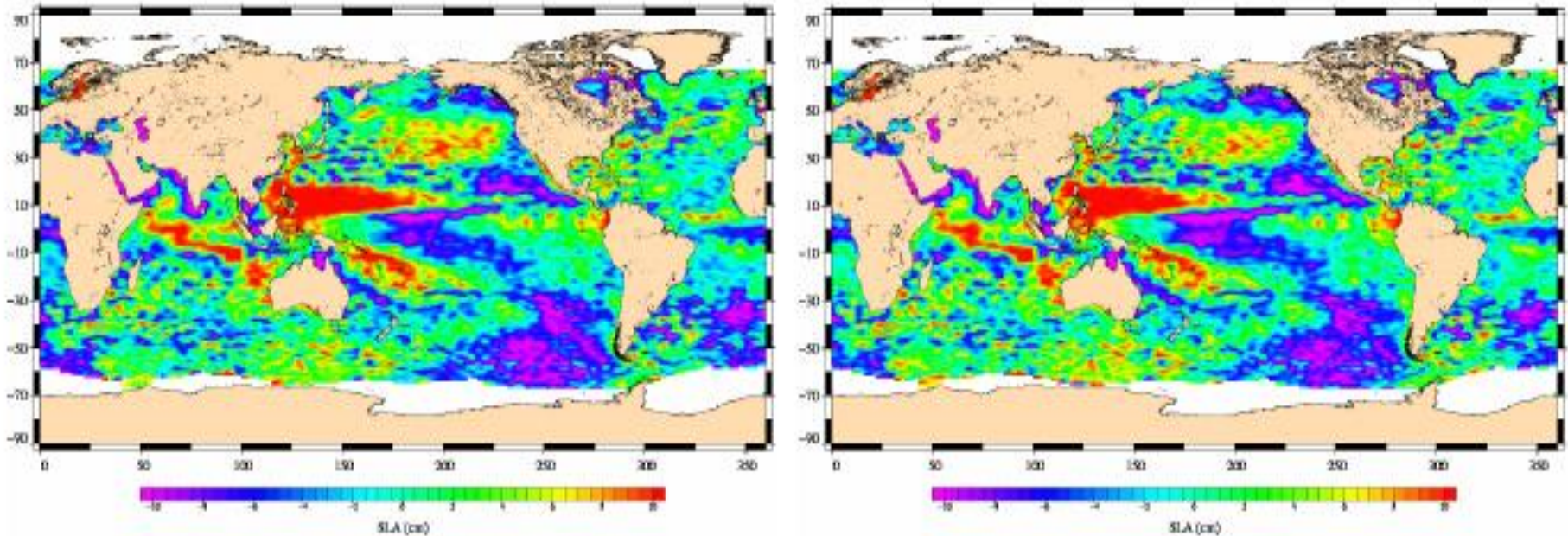
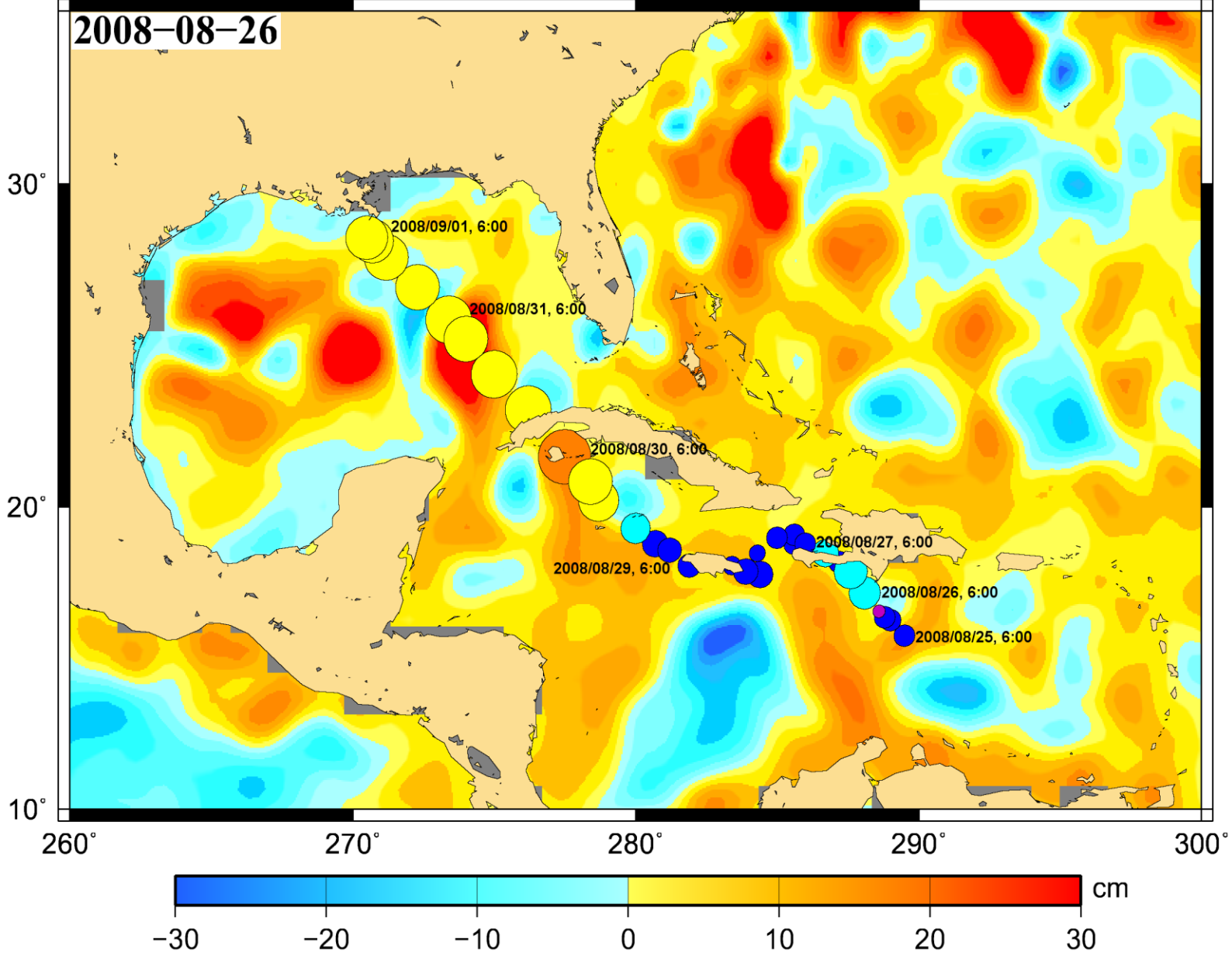


Figure 24: *SLA map (Averaged per box) for IGDR J2 on left and IGDR J1 on right*

IGDR Averaged over cycle 0: 04/07/2008 - 14/07/2008

2008-08-26



**Hurricane Gustav intensity overlaid on a Sea level anomaly map. The fact it went over a cold eddy before reaching Louisiana might have played a role in its lower intensity (Credits [CLS/Cnes](#), [Ssalto/Duacs](#) merged data including *Jason-2*).**

# Progress since SIT 21

- **Altimeter missions in orbit**
  - **Jason & ENVISAT** – performance OK
  - **GFO** – power too low in eclipse; reaction wheel too hot in full sun
  - **OSTM/Jason-2** – Successful launch on June 20th
- **Missions in development**
  - **CryoSat-2** – Good progress for launch in late 2009
  - **SARAL** – Launch first semester 2010
  - **HY-2A** – CNES/SOA negotiations re: DORIS; launch in June 2010
  - **Sentinel-3A** – good progress for launch in 2012
- **Missions in planning**
  - **Jason-3** – EUMETSAT, NOAA, CNES and EC to resolve approach and seek funding for an OSTM/Jason-2 follow-on
  - **Jason-CS** – ESA, EC, EUM to consolidate programmatic and funding approach
  - **OST Constellation** Workshop (29-31 Jan 2007) developed 15-year strategy; Invitation to Tender issued a *Missions Requirements Document for the Constellation* (see next slide)
  - **SWOT** – *Workshop on Mesoscale Oceanic Processes: Explorations with Wide-Swath Interferometry Radar Altimetry*, 28-30 April 2008, at Scripps; NASA/CNES Feasibility Study to start shortly

# Mission requirement document

- The historical "purple book" published in 1992, served as the reference strategic document for satellite altimetry since that time. The objective is today to "update" this document.
- This document would not replace the individual mission requirements but will address points such as multi-mission products requirements, orbit complementarity, overlap between missions, overall constellation reliability objectives etc... that needs to be addressed first at the level of the constellation.
- The study is led by the French company CLS (Dr Philippe Escudier) and will involve the contribution of Dr Jean-Louis Fellous; In the course of the preparation of the document, they will extensively consult with other experts in the various application fields of altimetry to make sure that the vision is shared by a wide user community
- Document is expected late 2008/ early 2009

# Requested SIT and CEOS Support

- *Help resolve the approach and secure funding for an OSTM/Jason-2 follow-on in time to provide continuity of the Jason-quality data stream, in addition to recurrent units for high-inclination Sentinel-3 mission*
- *Be prepared to respond to the Mission Requirements Document for the Constellation when it becomes available 1 Dec 2008*
- *Engage key officials of the State Oceanic Administration to collaborate in altimetry - to extend data availability beyond that available from existing constellation*



# Ocean Surface Topography Constellation Roadmap

