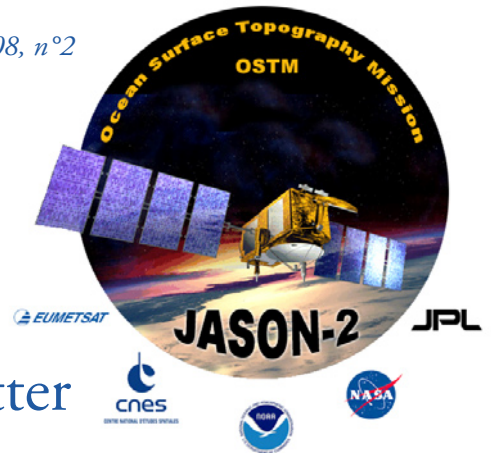




July 2008, n°2



Users Newsletter

News of OSTM/Jason-2

J. Perbos, Jason-2 project manager at CNES

This is a special feature issue of the Aviso users Newsletter, dedicated to the newborn Jason-2 mission. Less than one month after launch, all indicators are very good. The satellite is now beginning its tandem verification phase, 55 seconds behind Jason-1.



OSTM/Jason-2 was successfully launched on 20 June 2008, after a slight delay of four days with respect to the initial date planned about four years ago. The launch sequence went off normally and the Delta II rocket put Jason-2 onto the right injection orbit. All equipment on the satellite platform operated perfectly.

DORIS was the first instrument to be switched on, during the evening of June 20. In spite of the satellite being in 'barbecue' mode (i.e. spinning with its different sides alternately exposed to the Sun), which is not favourable for DORIS as the antenna then only receives ground beacon signals intermittently, the Diode onboard navigator achieved decametric accuracy on the satellite position in less than six hours.

The spacecraft began functioning nominally (in particular with geocentric (nadir) pointing) on the morning of June 22. The other instruments were successively activated on June 22, namely Poseidon (altimeter, CNES), AMR (radiometer, NASA), GPSP (pre-

cise GPS, NASA), Carmen-2 (CARacterization and Modelling of Environment, CNES) and LPT (Light Particles Telescope, JAXA) (both dosimeters, used in particular to assess radiation exposure at the altitude of Jason). Data received and processed on the ground show that all these instruments are operating perfectly and that their calibration parameters are stable and similar to ground calibration values.

The T2L2 (Time Transfer by Laser Link) passenger instrument, designed to synchronise remote clocks with a very high level of precision, was switched on on June 25. An analysis of its parameters shows that it is functioning nominally. The first laser echoes were received on Sunday June 28. The Observatoire de la Côte d'Azur (Grasse, France) received echoes after firing the laser on Jason-2 on July 1st. Instrument telemetry reception should enable acquisition of the first time measurements.

The satellite reached its final orbit on 4 July 2008 at an altitude of 1336 km, following a series of manoeuvres. It will now fly in formation with Jason-1 (55 seconds behind it on the same orbit) for a few months, taking nearly simultaneous measurements so that the OSTM/Jason-2 instruments can be precisely calibrated with respect to those of Jason-1.

The in-flight verification phase is continuing, with, in particular, evaluation of the new altimeter modes (Poseidon-3 – DORIS coupling), and of the potential pointing bias of the altimeter antenna, which will be compensated onboard, so as to ensure permanent nadir-pointing of the altimeter antenna.

The Delta-II rocket with Jason-2 inside its fairing at the moment of launch. (Credits NASA/Carleton Bailie photograph for United Launch Alliance)

Jason-2 Sea Level Anomaly map (top) plotted with data from 2008-06-25 to 2008-06-30; at bottom the same map plotted from Jason-1 equivalent data.

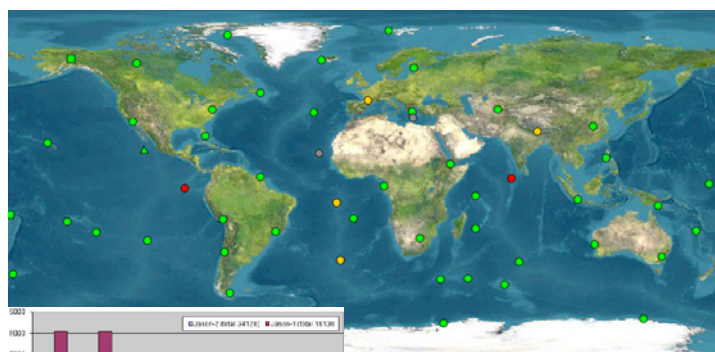
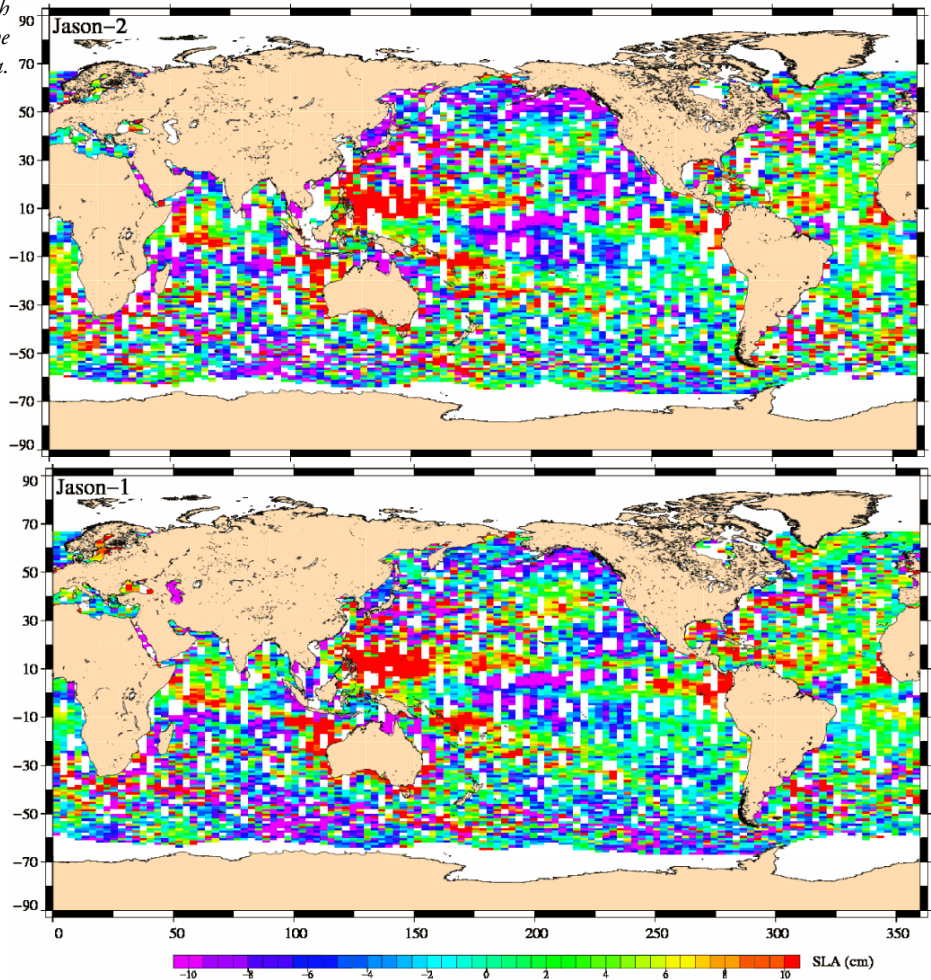
Ground segment & system

The whole ground system is behaving satisfactorily, both for command/control functions and for ground segment processing (with problem-free production meeting expectations for level 2 data products).

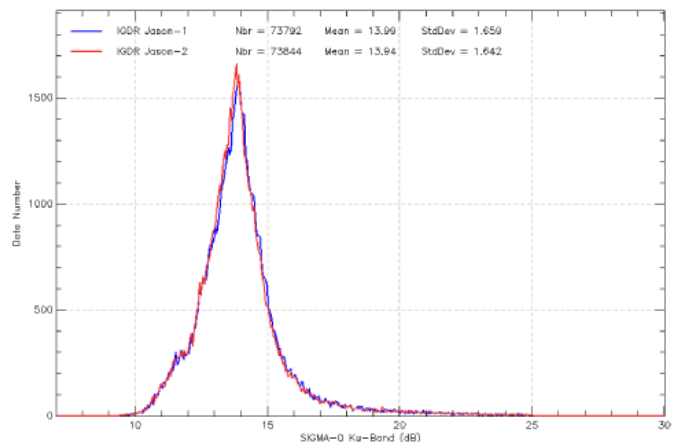
The Usingen ground terminal, provided by CNES, was refitted, and tested for robustness before launch. It has been functioning perfectly since the launch. The first real-time products (Operational Geophysical Data Records, OGDRs) were produced a few hours after the altimeter had been activated. They are now being generated regularly by our partners, EUMETSAT and NOAA.

Scientific products (Interim Geophysical Data Records, IGDRs) are still undergoing validation, and are proving to be of excellent quality with respect to Jason-1 products. The new objective of acquiring data over coastal areas and hydrological basins in particular, should be attained.

The coordination between the four partners, (CNES, EUMETSAT, NASA/JPL and NOAA) is going flawlessly.



Map of the Doris beacons as seen by Jason-2 from June 26, 2008, 12:00 up to June 27 (the two red dots are out-of-order beacons) and number of measurements per Doris processing units for Jason-2 and Jason-1 for that day.



Number of data for Jason-2 (red) and Jason-1 (blue) for Sigma0 in Ku-band. There is a very close fit between the Jason-2 and Jason-1 curves, including mean and standard deviation.

Events

End of July 2008: distribution of first Jason-2 OGDR and IGDR data to PIs

September 8-12, 2008: Eumetsat meeting (Darmstadt, Germany)

September 10, 2008: GOCE launch

October 2008: distribution of first Jason-2 GDR data to PIs

November 2008: end of Jason-2 Calval phase for OGDRs

November 6-7, 2008: Second Coastal Altimetry Workshop (Pisa, Italy)

November 10-12, 2008: OST/ST meeting (Nice, France)

November 12-15, 2008: Final GODAE symposium (Nice, France)

November 12-15, 2008: IDS workshop (Nice, France)

Following Nice OST/ST: first Jason-2 OGDR data distribution to users

March 2009: end of Jason-2 Calval phase for (I)GDRs

March 2009: OST/ST meeting (San Diego, USA)

following San Diego OST/ST: first Jason-2 (I)GDR data distribution to users

Aviso users newsletter

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