

ILRS MISSION SUPPORT REQUEST FORM

GENERAL INFORMATION

Satellite Name: Jason-2

Satellite Host Organization: CNES / EUMETSAT / NASA / NOAA

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MISSION SPECIFICS:

Scientific or Engineering Objectives of Mission: The Ocean Surface Topography Mission (OSTM) is a joint oceanography mission to monitor global ocean circulation, climate change and sea-level rise. The Jason-2 satellite is the follow-on to the TOPEX/POSEIDON and Jason-1 satellites. The satellite will also support the Time Transfer by Laser Link (T2L2) experiment, designed to allow the synchronization of remote ultra-stable clocks and the determination of their performances over intercontinental distances. Two other instruments, LPT (Light Particle Telescope) and Carmen-2, will study the radiation environment at the Jason-2 altitude.

Satellite Laser Ranging (SLR) Role of Mission: Precision orbit determination is a fundamental requirement for achieving the goals of the OSTM. The SLR data play an important role in two ways (1) providing strong tracking information to complement GPS and DORIS, and (2) providing a unique and unambiguous verification of the absolute radial orbit accuracy. The T2L2 experiment also depends entirely on the SLR tracking.

Anticipated Launch Date: June 15, 2008

Expected Mission Duration: 3-5 years

Websites for Jason-2:

<http://sealevel.jpl.nasa.gov/mission/ostm.html> (NASA)

http://www.aviso.oceanobs.com/html/missions/jason2/welcome_uk.html (AVISO)

<http://smc.cnes.fr/JASON2/Fr/> (CNES)

<http://www.osd.noaa.gov/ostm/index.htm> (NOAA)

Jason-2 T2L2 Experiment Technical Contact:

Etienne Samain, OCA UMR Gemini, Avenue Nicolas Copernic
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Jason-2 T2L2 website

<http://www.obs-azur.fr/gemini/projets/t2l2/>

ANTICIPATED ORBITAL PARAMETERS:

Altitude: 1336 km

Inclination: 66 degrees

Eccentricity: ~0.001

TRACKING REQUIREMENTS:

Tracking Schedule: 24 hours, 7 days a week

Spatial Coverage: global

Temporal Coverage: as dense as possible

Data Accuracy: cm or better

OPERATIONS REQUIREMENTS:

Mission Coordinator (ILRS, Subnetwork, etc.):

Priority of SLR for POD: high priority (essential for best POD; critical for orbit accuracy verification)

Other Sources of POD (GPS, PRARE, Doppler, etc.): GPS and DORIS

Primary Analysis Center: CNES

Normal Point Time Span (sec): 15-20 seconds

Data Delivery Time Requirements: 24 hours where possible; a few days otherwise

Subnetworks/Stations Requested to Track: During the initial phase of the Jason-2 mission, Jason-1 and Jason-2 will fly in tandem mode for several months (on the same ground track separated by approximately one minute). Interleaving tracking between both satellites is the preferred mode as long as the data loss due to switching is small; this applies primarily for higher maximum elevation (i.e. longer) passes. For stations where interleaving would lead to sparse tracking or for lower elevation (i.e. shorter) passes, tracking alternate passes is preferred.

RETROREFLECTOR ARRAY INFORMATION:

Description of Array and Location: 16 cm hemispherical array consisting of 9 corner cubes on nadir side of satellite (see Fig. 1)

Technical Contact for Array Correction/Center of Mass: Parag Vaze

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Other Comments: Reflector array and physical location identical to Jason-1; location of center of mass to be specified after launch

SPACECRAFT CONFIGURATION:



Figure 1: Exploded view of OSTM/Jason-2 spacecraft (from <http://www.jason.oceanobs.com/html/missions/jason2/instruments>)