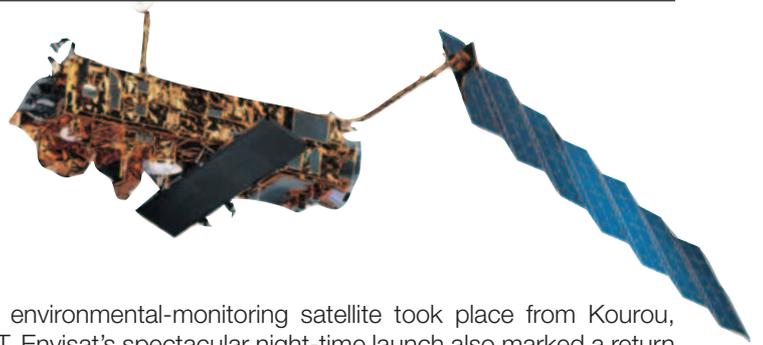


## Envisat on Watch



The eagerly awaited launch of ESA's Envisat environmental-monitoring satellite took place from Kourou, French Guiana, on 1 March at 02:07:59 hrs CET. Envisat's spectacular night-time launch also marked a return to business for Europe's Ariane-5 launcher. Rising into a clear sky and accompanied by the cheers of the engineers, scientists and project team members at the launch site, the Ariane-5 vehicle propelled Envisat towards its lofty vantage orbit some 800 km above the Earth's surface.

After a flawless lift-off, the Ariane-5 launcher put Envisat into a Sun-synchronous orbit, allowing ESA ground controllers at the European Space Operations Centre (ESOC) in Darmstadt, Germany, to take full control for the first time of the most complex satellite ever built in Europe.

*"Now Envisat is in orbit, the culmination of many years' work really begins and we are looking forward to the environmental benefits the satellite is going to bring to Europe,"* said José Achache, ESA's Director of Earth Observation Programmes. *"The ten instruments onboard Envisat - more than on any other such satellite - cover a wide spectrum of phenomena, delivering evidence of the interactions between the atmosphere, the ocean, the polar ice caps, the vegetation as well as human activity on the surface of the Earth. We will be able to trace the smallest changes to the Earth's surface anywhere on the globe. The importance of this mission has triggered great interest in the Earth-science community, both at a European level and worldwide."*

Given its sheer size, Envisat has involved almost all of Europe's space industries in the development of its numerous advanced technologies, particularly for the payload.

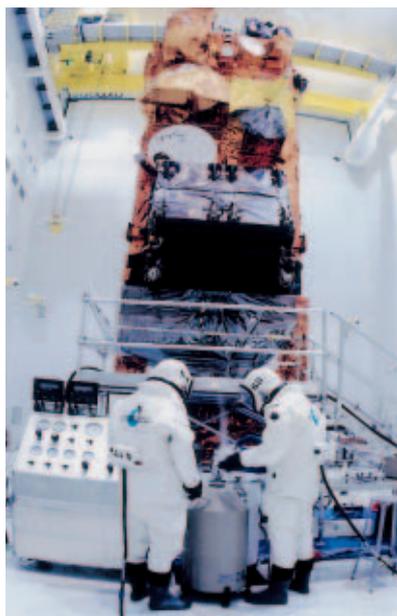
Its 65 m<sup>2</sup> of solar array were fully deployed within 75 minutes after lift-off. This deployment and the subsequent attitude stabilisation of the satellite, performed under coverage of the Perth ground station and monitored from the ESOC Control Room, were eagerly followed by the guests on the large screens of the Jupiter Control Room in Kourou and by the guests at ESOC, both benefiting from a 3D animation display driven from the telemetry being received from the satellite.



Shortly after these events, the Envisat Programme Manager, Jacques Louet, was extremely happy: *"The events of this night went like a dream: a flawless execution of the automatic sequences programmed onboard the launcher and the satellite. It is now party time for both the launcher and satellite teams. Tomorrow, we will be working hard again to finalise the various deployments, to put the full payload into operation and to start the instrument calibration. The objective is to validate the user products within six months - this means a tough job ahead of us, but we and our supporting scientists are well prepared for it. This is a superb day for all of us, and we could not have dreamt of a better start for this mission"*.

Within three days, the ASAR antenna was deployed successfully, shortly followed by the Artemis antenna communications mast. Within a week after the launch, the Launch and Early Orbit Phase (LEOP) was completed and the satellite, stabilised in fine pointing mode, was already providing stable X-band payload communication links and onboard data recording. The switch-on of the instruments is currently in progress, and ESA is looking forward to the first observations of the Earth from this high-tech observatory, which puts Europe at the forefront of environmental monitoring from space and provides a major tool to support the European Global Monitoring for Environment and Security (GMES) initiative.

The ten instruments that make up Envisat's payload - ASAR, MERIS, AATSR, RA-2/MWR/DORIS/LRR, MIPAS, GOMOS and SCIAMACHY - were described in detail in ESA Bulletin No. 106 (June 2001). An overview of the Envisat Data Dissemination System, which provides for rapid transmission of the satellite's data products to users across Europe, is to be found in the article on page 12 of this issue.



1



2



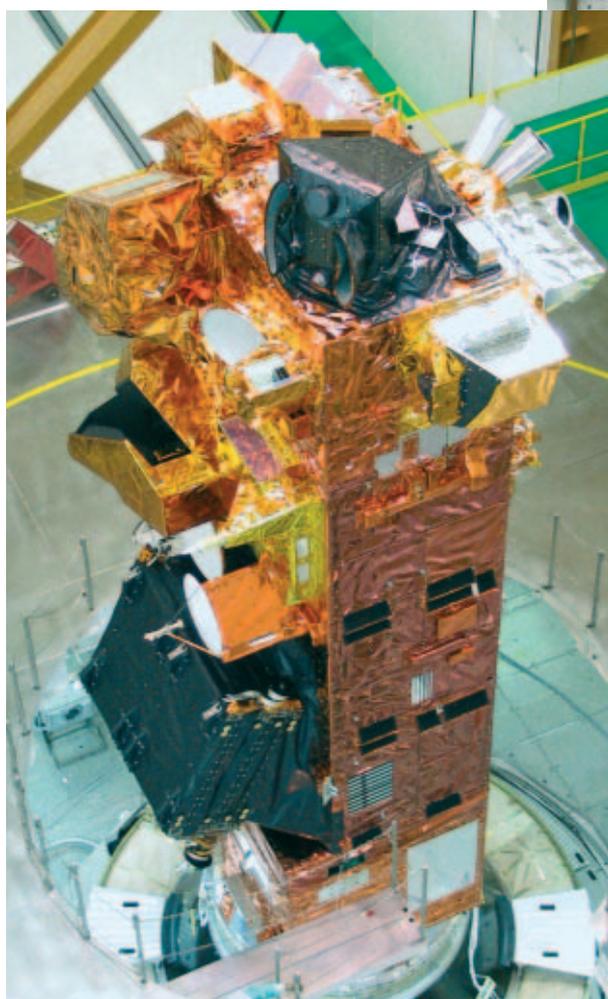
5



3



4



6



7



8

Figures 1-12. Envisat launch preparations, from spacecraft fuelling through to Ariane-5's readiness on the launch pad



9



10



11



12



ESOC Control Room



ESOC



ESTEC



ESA's Director General (right) being congratulated by German State Secretary Uwe Thomas

