

YES2 satellite given green light for launch

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After 5 years of design and development work and preparation of the flight model, the second Young Engineers Satellite (YES2) experiment has passed its Final Acceptance Review and been given the green light by ESA for launch in September.

Following four and a half months of assembly, integration and testing at ESTEC, the groundbreaking student experiment was shipped to TsSKB-Progress in Samara, Russia, on 7 May. After a month in storage, a series of final adjustments began on 12 June. Two days later, the experiment was installed for the first time on the exterior of the Foton-M3 spacecraft on which it will piggyback a ride into orbit.

In the coming weeks, YES2 will undergo a series of checks to ensure that all of its systems are functioning as intended in conjunction with Foton. These assessments will include communications tests to ensure that commands can be received via the Foton, electrical interface tests and combined functional tests with all the other Foton experiments.

“Although there were tight deadlines to meet, the students worked closely in conjunction with ESA and prime contractor Delta-Utec to bring the tethered re-entry capsule experiment to a state of readiness for launch,” said Roger Walker, Project Manager for YES2, from the ESA Education Office. “The experiment has completed an intensive verification campaign, involving vibration testing, thermal-vacuum and electromagnetic testing. The team has achieved a great deal to get this far, and the students have benefited tremendously from this practical experience with a real space project.”

One of the most challenging aspects of the mission is the deployment of the unique 30 km tether, which will be the longest ever deployed in space. Until recently, the flight tether was still on the premises of Delta-Utec in order to assess its physical properties and ensure that there will be no snags during deployment. The careful unwinding and winding of the tether alone takes a number of days to complete.

Following the completion of the Final Acceptance Review on 20 June and the YES2 - Foton interface and functional tests on 21 June, the experiment is scheduled to be detached from the main spacecraft and then shipped to Baikonur Cosmodrome in early July. YES2 will be reinstalled on the Foton at the end of July and final checks performed in readiness for the launch campaign during September.

Almost 500 students from most ESA Member States, together with the United States, Japan, Canada and Australia have worked on YES2. Although these were mainly involved in the preliminary design phase, some 60 students have participated in the latter stages of developing and building hardware and software.

Source: European Space Agency

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