SPACE

EUCLID SPACE TELESCOPE NEARS FINAL INTEGRATION

The ESA - European Space Agency's Euclid mission is about to reach another milestone on its journey to launch in 2022. Its two instruments, VIS (VISible Instrument) and NISP (Near Infrared Spectro-Photometer), implemented with a significant Italian contribution from the National Institute for Astrophysics (INAF) and INFN, coordinated by the Italian Space Agency (ASI), were completed and delivered to be integrated with the telescope and, subsequently, with the rest of the satellite. Euclid consists of a 1.2 metre mirror telescope designed to operate at both visible and near-infrared wavelengths. It will have the task of creating an extremely detailed map of the distribution and evolution of dark matter and dark energy in the universe. Integration of the on-board software of the two instruments, which was developed by INAF researchers, and validation and testing of the hot electronics of the NISP instrument and of the application software of the ICU module (Instrument Control Unit) were carried out by researchers from various INFN divisions, the main contribution came from the Bologna and Padua INFN divisions. By the end of its operational life, of approximately 6 years, Euclid will have produced images and photometric data for more than one billion galaxies and millions of galaxy spectra, data that will be of great importance for many other areas of astrophysics. ■