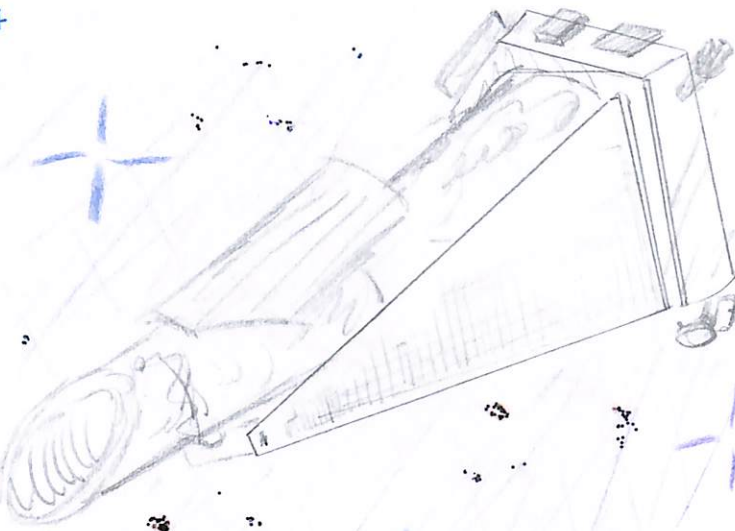




spitzer space telescope

Infrared space telescope launched in 2003. Operations ended on 30 January 2020. Spitzer carries 3 instruments on board: Infrared array camera, Infrared spectrograph, Multiband Imaging Photometer for Spitzer. All 3 instruments used liquid He for cooling the sensors. Once the He was exhausted, only the 2 shorter wavelengths in IR/He were used in the "warm mission".



Kepler space telescope

Retired space telescope launched by NASA in 2009. The principal investigator was William J. Borucki. After 9 and a half years of operations, the telescope's reaction control system fuel was depleted.

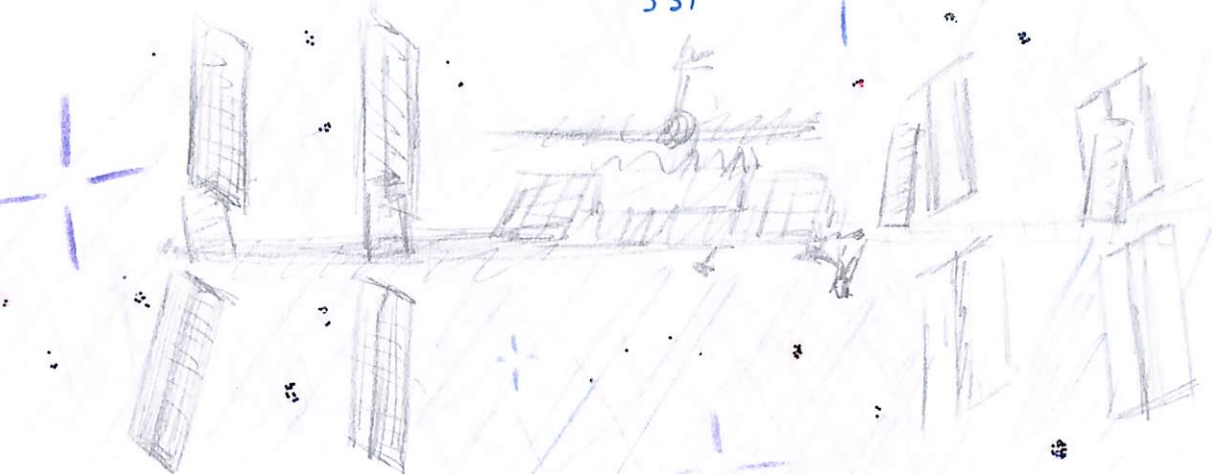
and NASA announced its retirement on October 30, 2018. Kepler observed 830,506 stars and detected 2,615 planets.

On February 2, 2011, the Kepler team announced the results, and showed that 68 planets were approximately Earth-size, 228 super-Earth size, 662 Neptune-size, 165 Jupiter-size, and 19 up to twice the size of Jupiter.

the 388th anniversary of Johannes Kepler's death in 1630. candidates included 5 that may be in the "habitable zone", including 5 less than twice the size of Earth. Kepler's retirement coincides with the 388th anniversary of Johannes Kepler's death in 1630.

SPACE TECHNOLOGY

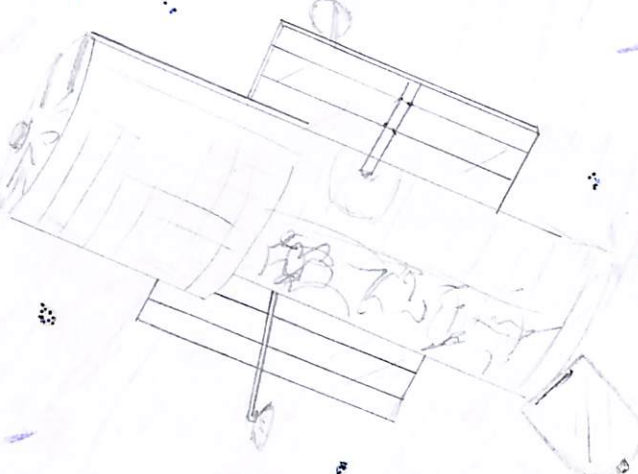
ISS



It is a multinational collaborative project involving 5 participating space agencies: NASA, Roscosmos, JAXA, ESA, CSA. It is the largest artificial object in space and the largest satellite in low Earth orbit, regularly visible to the naked eye from Earth's surface. In April 2022, 251 astronauts, cosmonauts, and space tourists from 20 different nations have visited the space station, many of them multiple times.

A typical day for the crew begins with a wake-up at 06:00. The ISS has been described as the most expensive single item ever constructed. As of 2020, the total cost was US\$150 billion. This includes NASA's budget of \$5.87 billion, for the station from 1985 to 2015, Russia's \$12 billion, Europe's \$5 billion, Japan's \$5 billion, Canada's \$2 billion.

hubble space telescope



Ever since its launch in 1990, this telescope has been of the most successful advances in space exploration. Hubble features a 2.4m mirror, and its 5 main instruments observe in the UV, visible, and NI regions of the electromagnetic spectrum. It was funded and built in the 1970s by US space agency NASA with contributions from European Space Agency. Its intended launch was 1983, but was finally launched in 1990. Unusual was the work of Nancy Grace Roman, the mother of Hubble. It consists of: advanced camera for surveys, cosine origins spectrograph, Faint Object Camera, High Speed Photometer, Wide Field and Planetary Camera, etc.