

SPACE MISSION TO GLIESE 581c (EXTRA - GALACTIC ASTRONOMY)

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Gliese 581c is an extrasolar planet which is orbiting the red giant Gliese 581. It is supposed to be the first terrestrial planet in the hypothetical habitable zone around the star and has temperatures which permit the existence of water in its liquid form.

Since the distance between Earth and Gliese 581c (20.4 light years) is enormous, the SPACE PROBE will be equipped with an array of sophisticated instruments and cameras able to collect images in many varying conditions and light spectra; from visible light to the infrared. Instruments include—Optical Remote sensing (Example: Infrared Spectrometer); Fields, particles and waves (Example: Magnetometer); Microwave remote sensing (Radar). Radioisotope Thermoelectric Generators will provide power for the spacecraft, including the instruments, computers, and radio transmitters on board. The PROBE will use the gravity assist of planets on the way to boost its speed.

Pointing its various instruments at carefully calculated scientific targets, SPACE PROBE will collect detailed data on Gliese 581c. The information will aid scientists in understanding whether or not Gliese 581c is indeed suitable for life. Main scientific goals will include, checking if the planet is tidally locked (one hemisphere always day and the other always night), determining the atmospheric composition, temperature field and cloud properties, its global wind field, the heat flux and radiation environment at the surface, the nature of its greenhouse effect (proximity to edge of habitable zone and high gravity could lead to greenhouse effect like that on Venus), existence of a magnetosphere by determining core composition.