

Kepler's planet-hunting days over; alternatives sought

CAPE CANAVERAL (FLORIDA): The Kepler space telescope's planet-hunting days are over because its broken positioning system cannot be fixed, NASA officials said on Thursday.

The observatory was launched in 2009 to hunt for Earth-sized worlds suitably positioned around their parent stars for liquid water, a condition believed to be necessary for life.

The telescope was sidelined in May when it lost use of equipment needed to keep its gaze steady on about 100,000 target stars. Kepler worked by finding slight dips in the amount of light coming from a star, a telltale sign of a planet passing by, relative to the telescope's line of sight.

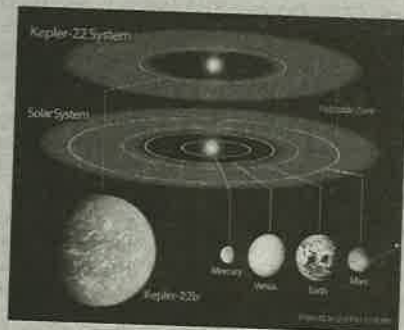
The technique requires precise pointing, which was accomplished by three spinning wheels to control the

telescope's motion up and down, left and right and side to side. Kepler also had a fourth spare wheel, but that was put into service after a previous wheel failure in July 2012.

Engineers began tests last month to see if either jammed wheel could be recovered, but the efforts ultimately proved fruitless, the U.S. space agency said.

"The wheels are sufficiently damaged that they cannot sustain spacecraft pointing control for any extended period of time," Charles Sobeck, Kepler deputy project manager at NASA's Ames Research Center in Moffett Field, California, told reporters during a conference call on Thursday.

Scientists may be able to use the telescope for projects that do not require such precise positioning, such



A diagram comparing our own solar system to Kepler-22, a star system containing the first "habitable zone" planet discovered by NASA's Kepler mission. — PHOTO: REUTERS

as looking for asteroids, comets and other celestial objects.

NASA is soliciting proposals for alternative Kepler missions and expects to make a decision early next year on whether to continue funding the telescope's operation. The Kepler project's budget currently is about \$18 million a year. So far, the telescope has found 135 planets beyond the solar system and another 3,500 possible planets that are awaiting confirmation, according to scientists. While some planets are even smaller than Earth and others have been found in potentially life-friendly orbits, so far a perfect Earth analog has yet to be identified.

An Earth-sized planet orbiting a star about the same distance that Earth is from the sun would take a year to pass under Kepler's gaze. Scientists have about two years of archived Kepler data yet to be analysed. — Reuters