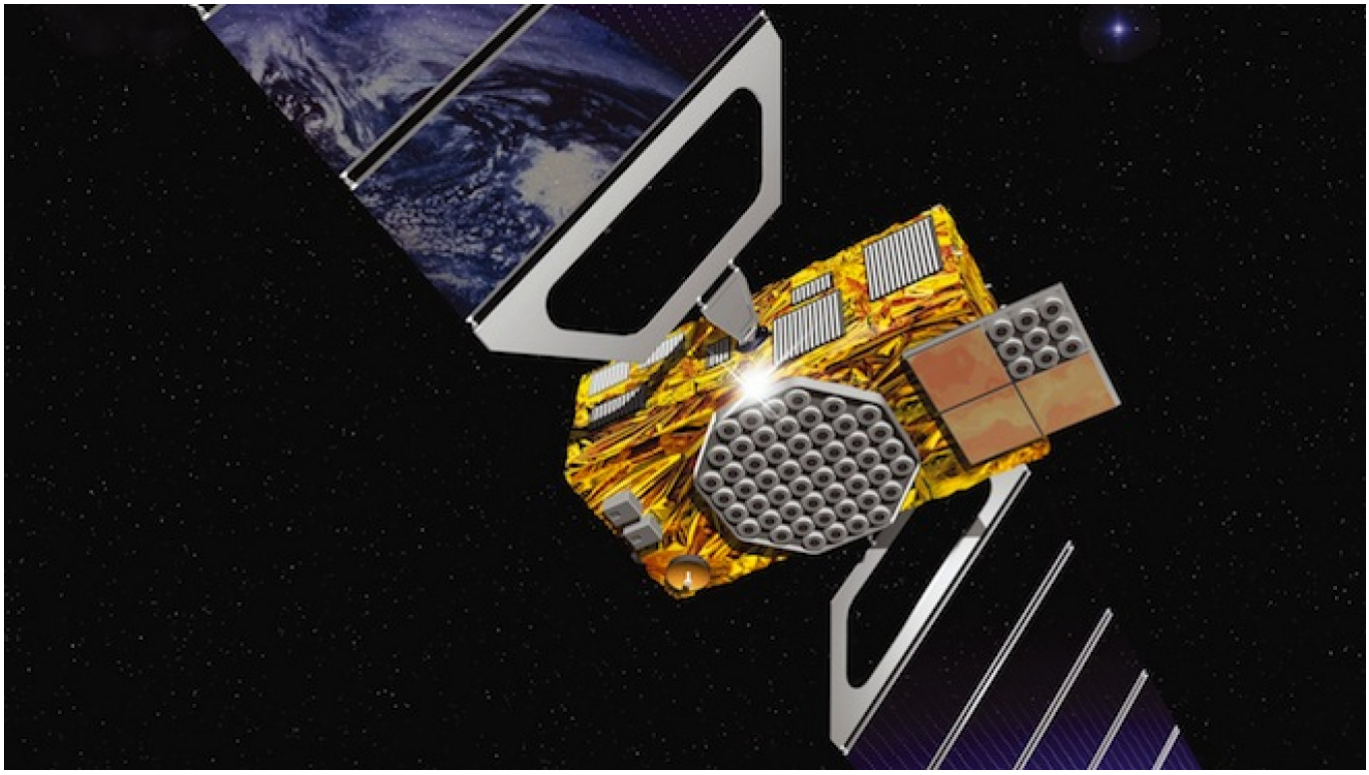
The Moscow Times
30 YEARS
INDEPENDENT NEWS FROM RUSSIA

New Use for Satellites Launched Into Wrong Orbit by Russia's Roscosmos

By The Moscow Times

November 13, 2015



The two satellites were intended to be used as part of Galileo, Europe's answer to the U.S. Global Positioning System (GPS), which required the Russian Soyuz rocket to deliver them into circular orbits, but a guidance error sent them into elliptical orbits.

When a Russian rocket launched two European Galileo navigation satellites into an incorrect orbit last year, many thought the two spacecraft were destined to become little more than very expensive space junk.

But now, the European Space Agency has found a new use for the wayward navigation satellites: conducting the most rigorous test thus far of one of the key predictions of Albert Einstein's general theory of relativity — that time slows down the closer you are to a heavy object.

One physicist at Canada's University of Manitoba, Gerald Gwinner, called the idea a "brilliant" use of two otherwise useless satellites. "Even a mishap can be turned into

something useful and fascinating," said Gwinner in comments carried by Nature.com,

"This is a classic case of 'When life gives you lemons, make lemonade,'" he said.

The two satellites were intended to be used as part of Galileo, Europe's answer to the U.S. Global Positioning System (GPS), which required the Russian Soyuz rocket to deliver them into circular orbits, but a guidance error sent them into elliptical orbits.

While this orbit prevents the satellites from being used for navigation, their varying distance from the Earth, combined with the clocks aboard the spacecraft, allow scientists at the European Space Agency to measure the passage of time throughout the satellites' orbits, Nature.com reported Friday.