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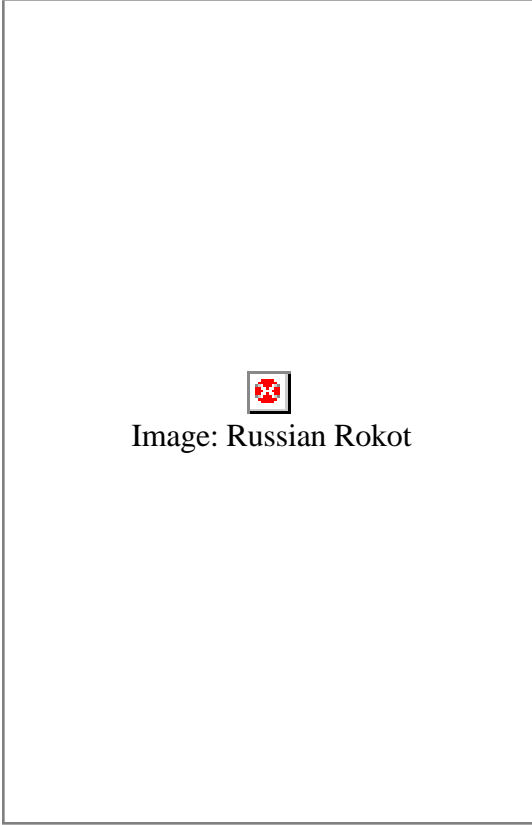



Image: Russian Rokot

Russia's Rokot booster lifts off from the Plesetsk Cosmodrome on Sunday, carrying two U.S.-German Grace satellites into orbit.

Russians tout next-generation launch vehicles

Rokot booster could give Russia's space industry a needed boost as well

ASSOCIATED PRESS

MOSCOW, March 19 — Russia's premier aerospace company has developed a range of new booster rockets for foreign satellites in a bid to hold onto its share of market for commercial launches, its director said Tuesday.

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A ROKOT booster developed by the Khrunichev State Research and Production Center put twin U.S.-German satellites into orbit on Sunday for the Gravity Recovery and Climate Experiment, also known as Grace. The rocket was converted from a Soviet-designed SS-19 ballistic missile.

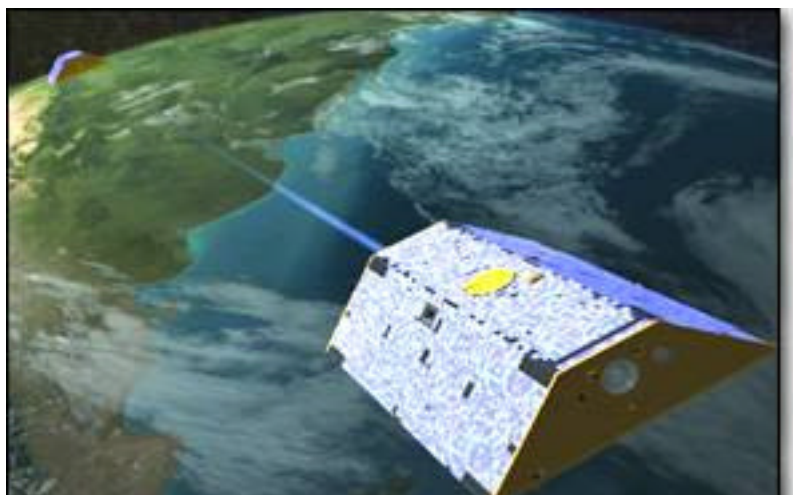
The unmanned German-built spacecraft, nicknamed Tom and Jerry, will fly in tandem to create what scientists hope will be the most accurate map ever of the Earth's gravitational field.

The \$127 million mission is a collaboration between NASA and the German Center for Air and Space Travel. It is being managed by NASA's Jet Propulsion Laboratory in Pasadena, Calif.

The two satellites, each weighing 1,100 pounds (500 kilograms), will map the Earth's gravitational field, which is lumpy because of the variations in the density and types of materials that make up Earth. Grace should reveal just how uneven it is, providing a view 100 times more accurate than that contained in current maps.

During their five-year mission, the spacecraft will also chart large-scale movements of water around Earth. Those shifts in mass result in measurable differences in the planet's gravitational field. Scientists expect Grace to track the depletion of large aquifers, the melting of glaciers and flow currents within the oceans.

Readings from Tom and Jerry, the two probes shown in this artist's conception, will be analyzed to generate a map of Earth's gravitational field during the Gravity Recovery and Climate Experiment, or Grace.





\$10 MILLION LAUNCH

Khrunichev's director, Alexander Medvedev, said his company earned about \$10 million for the launch, which was barely above production cost.

"We have to charge bottom price" to remain competitive he said at a news conference.

Medvedev said that the launch price could be increased later as Rokot wins a market niche. He said another three Rokot launches are set for this year.

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Thanks to its heavy lift Proton, Khrunichev has become the top cash cow for the beleaguered Russian space industry, putting commercial satellites — mostly foreign — into high, geostationary orbits throughout the 1990s.

Russia receives tens of millions of dollars for each launch, a coveted

revenue source for an industry struggling to survive on a fraction of generous Soviet-era state funding.

Medvedev blamed a sluggish global market for commercial space launches for last year's drop in the number of Proton launches. Khrunichev launched only two Western satellites into orbit atop Protons last year. Another two commercial launches set for 2001 were postponed until this year because of problems with satellites, Medvedev said.

He said his company had invested part of the earnings from commercial launches into research and development works for Rokot, Proton-M and the next-generation Angara rocket.

Khrunichev has also paid for upgrading the crumbling Soviet-era infrastructure of the Baikonur Cosmodrome, which Russia leases from the former Soviet republic of Kazakhstan and Russia's own Plesetsk cosmodrome used for Sunday's launch.

Medvedev said Khrunichev paid for a backup power system at Baikonur after the Kazakh authorities once cut power to the launch pad minutes before a scheduled commercial liftoff.

"Such incidents can land you in the madhouse," he said

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