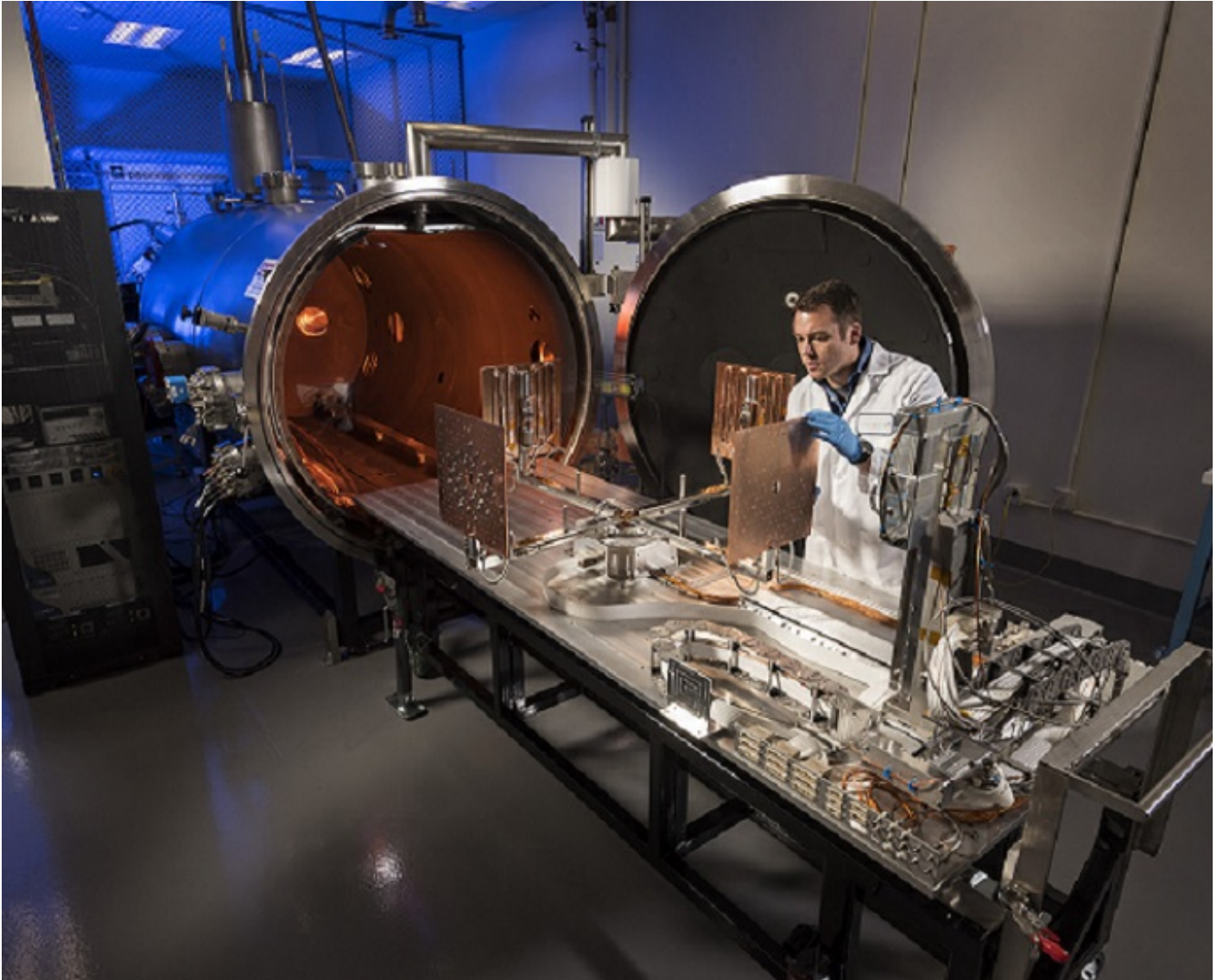


# New Lockheed Martin Lab in Silicon Valley "SPARC"s Interest in Space Science

*Atomic particle accelerator--one of only a few in the world--brings new capability to Silicon Valley's space industry*



*Lockheed Martin's new Space Plasma and Radiation Center (SPARC) features one of the world's few atomic particle accelerators that the facility will use to mimic the sun's effects on space instruments.*

PALO ALTO, Calif., Feb. 21, 2017 /[PRNewswire](#)/ -- What sounds like science fiction is now reality for a new Lockheed Martin (NYSE: LMT) laboratory in Silicon Valley. Technicians from Denmark installed a new linear particle accelerator at the company's Advanced Technology Center to cap a significant expansion in space instrument testing. The accelerator, one of a few in the world, is part of a collection of new testing hardware designed to take spacecraft to new levels of capability and performance.

"Before we send new materials and instruments into orbit, we must first ensure they will survive the brutal environment of space," said David Knapp, lead scientist for the Space Plasma and Radiation Center (SPARC). "So we replicate the space environments in vacuum chambers here on Earth and analyze the results."

The SPARC encompasses 1,800 square feet and includes new hardware to test sensitive instruments that range from space-based imaging and communications satellites to deep space navigation.


The testing machines are extremely precise. For example, the particle accelerator speeds protons to over 12 million miles per hour, or 2 percent the speed of light. The electron accelerator shoots electrons to 66 percent the speed of light, and the solar simulator delivers 2.5 suns worth of light exposure. All the instruments are precisely positioned to less than 100 microns, many times smaller than the width of a human hair.

Equipment in the center includes the particle accelerator, electron accelerator, solar simulators, UV arc lamps, electrostatic discharge equipment, reflectance measurement probes, residual gas analyzer, precision motion stages, liquid and nitrogen cooling. The facility also incorporates large 5ftx10ft vacuum chambers for flexible testing.

### **About Lockheed Martin**

Headquartered in Bethesda, Maryland, Lockheed Martin is a global security and aerospace company that employs approximately 97,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services.

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