# Spectrolab Solar Cells Help Set Record for Fastest Ever U.S. Solar Car Race

Powered by Spectolab solar cells, the University of Missouri Rolla's solar-powered car, Solar Miner IV, recently took first-place in the American Solar Challenge 2003 and set a new record for the fastest ever U.S. solar car race. Spectrolab Inc. is a leading supplier of solar cells, panels and arrays for space applications, and a business of The Boeing Company [NYSE: BA].

The Solar Miner IV made the trip from Chicago to Claremont, Calif. (about 2,233 miles) in a cumulative time of 51 hours, 47 minutes and 39 seconds. It finished 289 minutes and 8 seconds ahead of second-place University of Minnesota's Borealis II, which was also equipped with Spectrolab solar cells. The University of Missouri Rolla's solar car team has been one of the most successful teams in solar racing history.

"It has been a pleasure working with Spectrolab to complete Solar Miner IV," said Kerry Poppa, Solar Car Team president at University of Missouri-Rolla. "We look forward to continuing that relationship during future projects."

Sponsored by the U.S. Department of Energy, the American Solar Challenge is one of the world's longest races for solar-powered vehicles. This year's race began July 13 with solar car drivers and teams of 20 colleges and universities from around the world competing daily from 8 a.m. to 6 p.m. through its finish on July 23.

This year, the University of Missouri-Rolla team's car was powered entirely by Spectrolab solar cells, with some 3,000 dual-junction gallium arsenide terrestrial solar cells aboard. The team had previously used Spectrolab e-store solar cells during their 2001 race, when they placed second to University of Michigan who also used solar cells similar to those on the Solar Miner IV.

The Solar Miner IV's solar cells are called dual-junction because they are composed of two different solar cells that are epitaxially "grown" in series onto a single germanium base. This structure is more efficient than single-junction structures in capturing and converting solar spectrum energy into electricity. Each junction captures and converts energy from a different portion of the solar spectrum.

Spectrolab manufactures Improved Triple-Junction (ITJ) and Ultra Triple-Junction (UTJ) solar cells with efficiencies of 26.8 percent and 28 percent under space conditions (or Air Mass Zero, AM0). The dual-junction solar cells average 21.5 percent efficiency for space programs (AM0) and 23.7 percent efficiency for terrestrial applications (AM1.5). Triple-junction concentrator cells have also been developed with efficiencies up to 36.9 percent at 310 suns efficiency.

Spectrolab, founded in 1956, has been supplying solar cells and panels to the space industry for 40 years. Spectrolab is headquartered in Sylmar, Calif., a suburb of Los Angeles. It also is a leading supplier of Nightsun® searchlights and solar simulators.

A unit of The Boeing Company, Boeing Integrated Defense Systems is one of the world's largest space and defense businesses. Headquartered in St. Louis, Boeing IDS is a $25 billion business that provides systems solutions to its global military, government and commercial customers. It is a leading provider of intelligence, surveillance and reconnaissance; the world's largest military aircraft manufacturer; the world's largest satellite manufacturer and a leading provider of space-based communications; the primary systems integrator for U.S. missile defense; NASA's largest contractor; and a global leader in launch services.

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