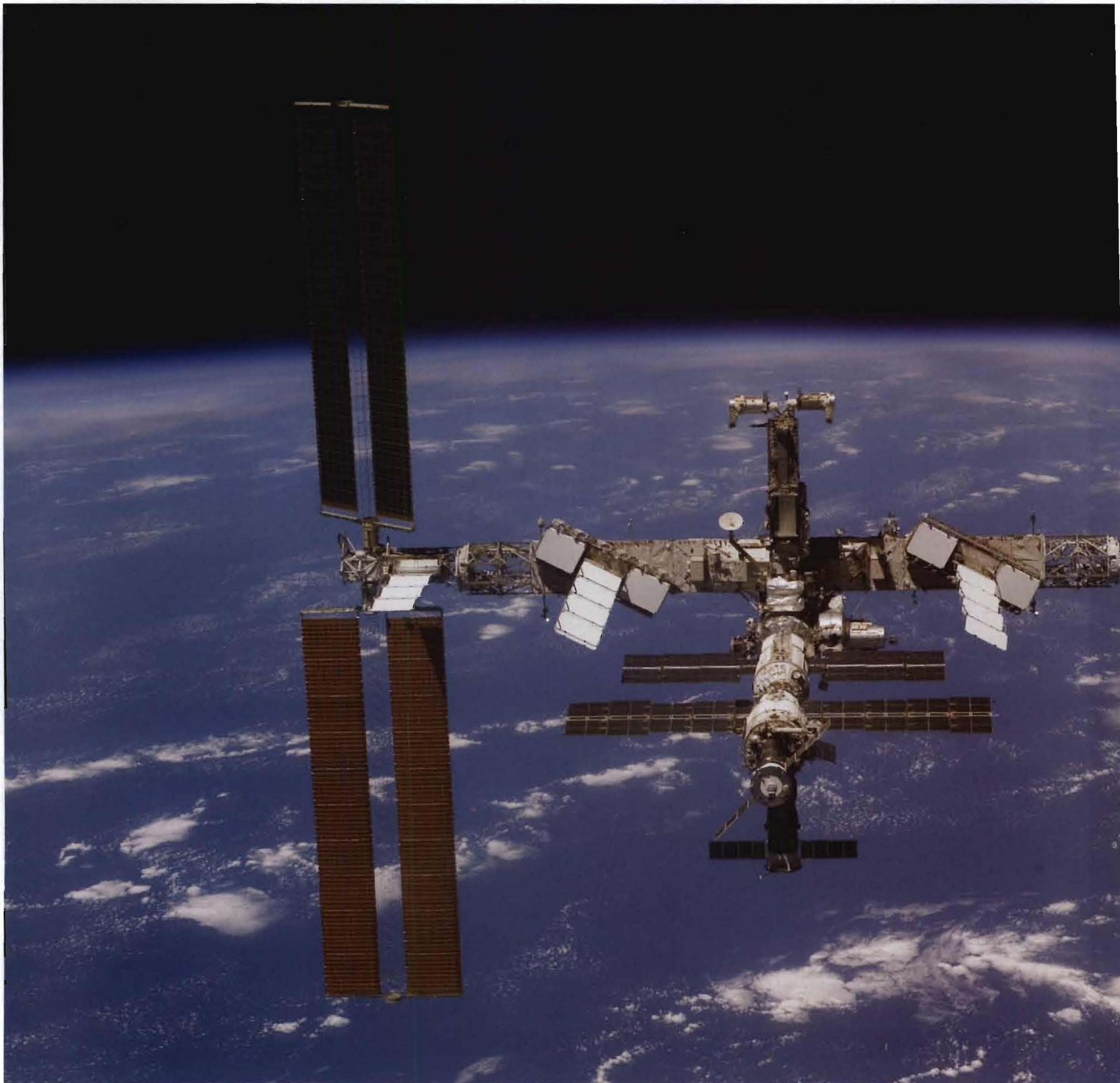
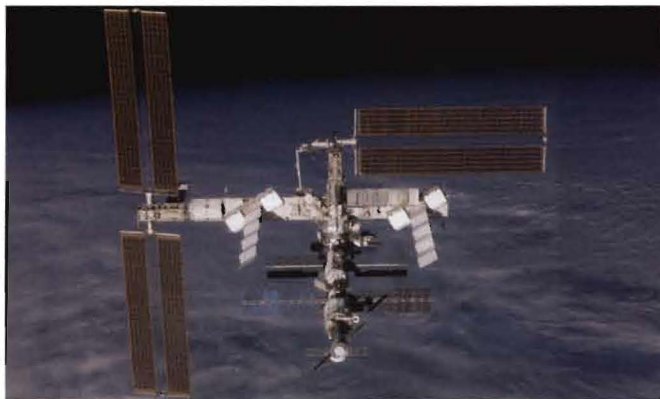


W I D E O P E N S P A C E S

THE JOURNEY OF RICK STURCKOW

BY SCOTT ROARK





(L) The International Space Station moves away from the Space Shuttle Atlantis as Sturckow and fellow astronauts complete their mission. A pair of solar arrays and starboard truss segments were attached during three spacewalks, giving the station a new "symmetrical" look. (Top L) The Space Station before Sturckow's mission. (Top R) Sturckow during his days as a test pilot.

IT'S VERY COLD IN SPACE.

At minus 250 F, an unprotected person would be frozen solid in seconds, and in dead silence, since no oxygen exists to transmit sound waves. Things heat up swiftly as the sun peeks above the earth's horizon, a breathtaking sight from orbit.

In this hostile environment, the Space Shuttle Atlantis approaches the International Space Station approximately 210 miles above the Earth's surface. Both the shuttle and space station are hurtling around the Earth at approximately 17,500 miles per hour, creating the daunting task of connecting the two vehicles while in orbit. The shuttle's familiar profile is dwarfed by the station, a complex array of circular modules, antennas and solar panels.

In the shuttle cockpit, Commander **Rick Sturckow (ME '84)** carefully guides the controls as the station looms into view through the cockpit window. Atlantis slowly glides toward the station during the 90-minute docking procedure, closing the gap at 2,000 feet, then 400, then 100 before finally connecting under a canopy of stars.

NASA mission STS-117, launched on June 8, is well under way.

Before piloting spaceships high above the Earth's atmosphere, Sturckow was guiding a vehicle a little more down to earth – an off-road truck he built and raced with the Cal Poly Society of Automotive Engineers.

"I came to Cal Poly because of off-road racing. My day job was being a truck mechanic for International Harvester, and I worked weekends on a racing pit crew for famous drivers such as Rick Mears, Roger Mears and Walker Evans," said Sturckow. "One day at a race, I saw the old Cal Poly SAE truck go bouncing by and thought 'that's where I want to be.'"

Sturckow grew up on a farm outside Lakeside, Calif., where his family raised turkeys and cattle. Farm life and racing "prepared me well" according to Sturckow, because of the mechanical understanding and ability required at NASA.

Sturckow raced in professional off-road races in Arizona, Nevada, and Baja,

continued...



(L) Sturckow in the Destiny laboratory of the International Space Station.

California, during his time at Cal Poly, gaining experience in leadership and project management, along with the fine art of traveling all night before a race and staying mentally sharp when that throttle kicks in.

"Many engineering careers besides mine were positively influenced by the SAE truck project," said Sturckow. "I was more

Each circular module is a cozy living space for space-bound astronauts, 45 feet in length, 15 feet in diameter, with windows to admire the breathtaking view. Additional modules were later connected, much like a floating erector set, during subsequent missions. Solar panels provide power. A crew has permanently manned the station since 2000.

Hanging your hat (or helmet) at the space station is a comfortable experience. You don't have to dress up as you float around inside – T-shirts are the norm and shorts are common. You can exercise on the treadmill and shower regularly, but no washing machine exists for laundry.

Food has to be nonperishable – the station does not have a refrigerator – and certain items are off-limits. Tortillas are used since bread can crumble, causing a hazard for the ventilation system as the particles float away. Salt and pepper are in liquid form for the same reason.

Sturckow has piloted two shuttle missions to add modules and perform general station maintenance. Last summer's mission, which he commanded, focused on expanding the station's power source. Astronauts installed two solar panels to power a European module and a Japanese module, both scheduled to be added in October.

The facility and research center is gaining critical information about daily living in space and the long-term effects of

EACH CIRCULAR MODULE IS A COZY LIVING SPACE FOR SPACE-BOUND ASTRONAUTS, 45 FEET IN LENGTH, 15 FEET IN DIAMETER, WITH WINDOWS TO ADMIRE THE BREATHTAKING VIEW

successful as a Marine officer, F/A-18 test pilot and astronaut because of Cal Poly's learn-by-doing philosophy, which enabled students to compete and win in professional racing."

Sturckow had Ron Mullisen to thank for that career as a Marine officer. The mechanical engineering professor encouraged Sturckow to join because of the opportunity to become a jet pilot. The sky was the limit after that.

Sturckow's first journey into the heavens was a historic mission in 1998, behind the throttle of Space Shuttle Endeavour. The shuttle was carrying the first two modules of the International Space Station, later joined together in orbit.

weightlessness. The knowledge will be used for a potential manned mission to Mars.

On the technical side, the challenge for Mars is designing a vehicle that is simple and robust enough to operate with no support from Earth for three years, said Sturckow. "I wouldn't be surprised to see Cal Poly engineering graduates involved with the Mars vehicle design and one of them making the first trip." □