space shuttle Atlantis pierced a bright blue Florida sky over NASA's Kennedy Space Center for an on-time launch on November 16th 2009 beginning the fifth and final shuttle mission of the year the liftoff also was the 31st shuttle mission to the international space station and Atlantis's 31st flight overall Atlantis with six crew members aboard played catch up with the orbiting laboratory during the first two flight days as the crew conducted the shuttles exterior inspection on November eighteenth commander Charlie hoba
carefully guided the shuttle toward a successful docking to the space station's harmony module as the two orbited 225 miles above Earth the arrival brought together a combined crew of 12 as the hatches between the two spacecraft were opened the shuttle carried 14 tons of supplies and spare parts for the station's electrical and robotics systems in addition station flight engineer Nicole Stott would catch a ride back to earth after 91 days in space becoming the last station crew
member to ride a board a shuttle the

heart of the missions work was accomplished in three spacewalks during

the seven days of docked operations

first up for space walkers Mike Foreman and Bobby schar with Barry Wilmore and Leland Melvin supporting them with the station's robotic arm during their six hour 37 minute spacewalk the duo completed a number of tasks including antenna installation and lubrication of the japanese robotic arm

the second spacewalk of the mission teamed Foreman with Randy bresnick the
six-hour eight-minute outing included

not only scheduled tasks such as deployment of a spare parts payload attachment system on the upper part of the starboard three trust but some additional get ahead work as well

bresnick and sachar conducted the third and final spacewalk in five hours and 42 minutes the spacewalks most lengthy task was the installation of a 6.2 foot long twelve hundred and forty pound high-pressure oxygen tank that melvin will more maneuvered using the station's robotic arm after a final day of docked operations the two spacecraft
parted ways and the atlantis crew

conducted a final inspection in

preparation for the homecoming trip back

to earth once again the Florida Sun

shined on the atlantis astronauts as

they book ended their mission with an

on-time landing at Kennedy having

traveled more than 4.5 million miles

during 171 orbits of Earth touchdown

came on November 27th ending the

successful 11-day mission