BOB SIECK: I would imagine, you could say bittersweet. It'll be an emotional event to say the least.

BOB CABANA: Discovery gets the job done. It's flown all kinds of missions and it's done them extremely well.

It's a great flying machine and I think that's what it's remembered for.

NARRATOR: With 38 missions completed successfully, space shuttle Discovery achieved a robust history of accomplishment for NASA's oldest active shuttle, including two Return to Flight missions, the launch of NASA's Hubble Space Telescope, and the deployment of 17 satellites.

Along the way, Discovery also contributed to scientific knowledge on Earth by hosting microgravity laboratories in space and carrying specialized instruments that analyzed Earth's atmosphere.

JANICE VOSS: Discovery has a role to play. You can look back on the flights that it's done and on the contributions it made to forwarding the future of mankind.

STEPHANIE STILSON: Whenever I see Discovery launch I definitely feel like a proud constructor of the International Space Station, the largest spacecraft ever assembled.
parent, as do everyone that works with Discovery.

BOB SIECK: It's the oldest orbiter in the fleet, it's flown more often than any of the other orbiters and it will take that record with it, until it's, when it's put away in a museum.

NARRATOR: Now headed into space for the last time, Discovery continues pointing a way toward accomplishment.

Its payload includes a module that astronauts and station residents will use for years to come on the space station as they continue its cutting-edge research.

Crews will even be joined on the station by a robotic astronaut heading into space on Discovery: Robonaut 2, the first humanoid robot to venture into space.

STEVE LINDSEY: It's a privilege I think, for us to be able to fly it on its last flight and it's a real tribute to the folks here and at the other manned spacecraft centers for all they've done to keep these vehicles flying and allowing them to do all the things they do.

NARRATOR: Space shuttle Discovery blasted into orbit for the first time on Aug. 30, 1984. It made its mark on the future right away when the astronauts tested a solar array system that would later be used on the International Space Station.
On its second flight, STS-51A, Discovery hosted a team of astronauts that used a futuristic jetpack to snare a stranded satellite and return it to Earth.

BILL HARWOOD: It was an amazing sight to watch Joe Allen with the manned maneuvering unit flying free of the shuttle, no tethers, over to a satellite, which was very close by, and attach his grapple fixture and fly it back to the shuttle.

That was an amazing thing to see.

Discovery went into space six times during its first year, but would make perhaps its greatest impact on NASA after the Challenger accident grounded the shuttle fleet for more than two years.

When NASA was ready to send its astronauts back into space again,

it was Discovery that rolled to the launch pad to carry out the mission, STS-26.

BOB SEICK: STS-26 was a great event for the team. Describe how it felt, it felt like STS-1 all over again.

NARRATOR: Discovery rarely was overshadowed during its career.

That changed in April 1990, when the shuttle launched NASA's Hubble Space Telescope, deploying it on a mission that would alter the way we see our universe and our understanding of our place in
BOB SIECK: But when Hubble came along, it was, wow, this is a different payload.

NARRATOR: Discovery would see the Hubble telescope two more times, in February 1997,

and December 1999, on servicing missions that saw astronauts upgrade the telescope's instruments and systems.

Discovery also allowed unique views of some of Earth's closest neighbors.

Astronaut Bob Cabana flew into space for the first time aboard Discovery in October 1990,

on a mission to launch the Ulysses probe on the first mission to look at the sun's north and south poles.

BOB CABANA: My first flight, you know, it's pretty amazing to be standing at the 195-foot level looking at
this machine that's alive,

it's venting, it's creaking, it's ready to go into space. It says "Discovery" on the side, you know and you just
cannot believe

that three hours from now you're going to be inside there blasting off. You know, it's just, it's amazing, it
really is.

JANICE VOSS: Discovery was my only night launch. And standing on there with all the flood lights on
Discovery, it was, it's just surreal.

You can hear all the cryogenics. It's very quiet at night. You hear everything creaking and groaning. It's just
the most amazing sight.

That's what I really remember about Discovery from a visual perspective is seeing it
just bathed in all those really bright lights at night on the pad.

Along with its important payload, Discovery played its part in international relations, as well.

Cosmonaut Sergei Krikalev became the first Russian to fly on a shuttle during Discovery's STS-60 flight in February 1994.

Astronaut and former senator John Glenn returned to orbit aboard Discovery in October 1998, after he made history as the first American to orbit Earth on Feb. 20, 1962.

Just as Discovery changed the people who flew aboard it, the spacecraft itself underwent numerous advances during its career.

For example, technicians installed a "glass cockpit" in 2001 that replaced analog dials and instruments with modern, digital displays.

The spacecraft was also lightened as test instruments for its first flights were removed and modifications to other systems shaved off more weight.

Discovery and all the NASA shuttles would undergo one more metamorphosis after the Columbia accident in February 2003.

STEVAN STILESON: My proudest moment with Discovery would have to be Return to Flight after the Columbia accident.

We basically found the problem, fixed the problem and proved to the world that we could continue flying.
NARRATOR: Just as it had done 17 years before, Discovery took to space to prove NASA's shuttle fleet was not finished marking its place in exploration history.

MIKE LEINBACH: The overwhelming sense of the launch team was that, 'This is what we do. We have to. We have to fly again.'

NARRATOR: Along with sister shuttles Atlantis and Endeavour, Discovery finished assembling the International Space Station and then helped take new parts, supplies and experiments to the orbiting laboratory.

STEVE LINDSEY: I was telling some employees here yesterday, when you walk inside Discovery and see it, it still looks like a new car after almost 30 years of service.

NARRATOR: Discovery is expected to be put on public display after the space shuttle retires.

BOB SIECK: Everyone here that has ever done anything associated with an orbiter will be, will say, 'I worked on Discovery.'

BOB CABANA: I think Discovery's, just because it has flown so much, it has been such a work horse, it flew return to flight, I think if you go back and look at all the missions its flown, it really has achieved some phenomenal successes.

LAUNCH COMMENTATOR: Zero, booster ignition, and liftoff of Discovery, blazing a trail of scientific discoveries aboard space station.