

# Space Shuttles

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# Space shuttles

- The worlds first reusable space craft
- The first space launch was in 1981
- They flew more than a 130 missions
- They carried people and cargo into orbit
- They have helped build space stations and also helped to launch satellites into orbit.
- There have been 5 different orbiter space shuttles they include

Columbia, Atlantis, Challenger, Discovery and Endeavour.



# Enterprise Space shuttle

- The first space shuttle did not go into space it was used air-launch flight test in 1977 and was flown from Dulles airport outside Washington, DC.
- It was going to be called Constitution but there was a petition to call it Enterprise after the Star Trek spaceship.



# The Columbia Shuttle

- Columbia was the first space shuttle launched in December 1981.
- It flew 28 missions into orbit.
- On January 16<sup>th</sup>, 2003 the shuttle took off from Kennedy Space Station in Florida on a mission. During take off a small portion of foam broke away from the orange external fuel tank and struck the orbiter's left wing.
- The resulting damage created a hole in the wing's leading edge, which caused the vehicle to break apart during re-entry to Earth's atmosphere on February 1<sup>st</sup>, 2003 killing all the astronauts.
- This was the last mission that Columbia flew.



# The challenger shuttle

- The Challenger shuttle flew between 1983 and 1986 and flew 10 missions into orbit.
- Challenger was the first shuttle to launch at night
- Most of the missions lasted around one week.
- The first American woman in space was Sally Ride and Guion Bluford was the first African-American in space, both flew their historic flights aboard the Space Shuttle Challenger.
- The Challenger shuttle and the crew were lost on 28th January 1986, 73 seconds after launch when the right solid rocket booster exploded. There were lots of people watching the launch as American teacher Christa McAuliffe was on the mission.



# After the Challenger disaster

- For the next two years, NASA halted all space shuttle flights.
- Many of the parts were redesigned for added safety.
- Also, new procedures were put into place to insure this wouldn't happen again.





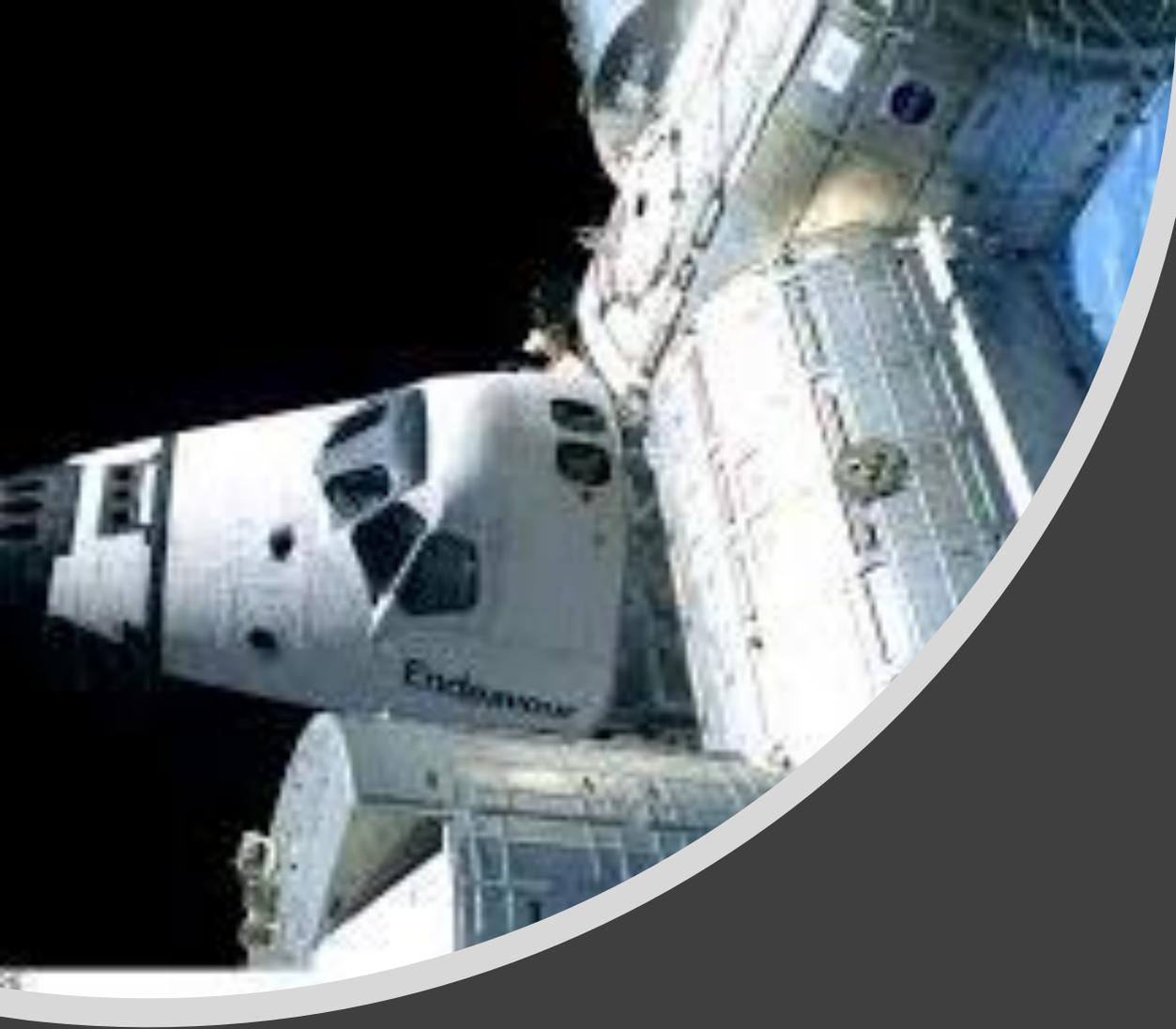
# Discovery shuttle

- The Discovery shuttle flew between 1984 and 2009 and flew 37 missions during this time.
- Discovery was the shuttle that launched the Hubble telescope in to orbit on the 24<sup>th</sup> April 1990.
- It also was important in the launch of the Ulysses spacecraft in October 1990 which went to Jupiter.
- It has also assisted in the servicing of Hubble and has also assisted on many of the ISS assembly flights
- Discovery was the first shuttle to launch after the two disasters of Columbia and Challenger.
- Discovery is the only shuttle ever to fly one of the Mercury Seven — NASA's first astronaut class, which was chosen in 1959. The orbiter carried John Glenn on its STS-95 mission in October 1998, when the astronaut was 77 years old. On the flight, Glenn became the oldest person ever to reach space. Thirty-six years earlier, in 1962, he had become the first American to orbit Earth.

# The Space Shuttle Atlantis

- The shuttle flew missions between 1985 and 2009 flying 31 missions.
- It was the first shuttle to dock with the Russian Mir space station in 1995.
- It helped with the ISS assembly flights
- It was the first shuttle to launch an interplanetary probe to Venus in 1989
- Atlantis was the shuttle that was classed as the work horse of the fleet of 5 shuttle classes.
- It was the last shuttle to service the Hubble space telescope.





# The space shuttle Endeavour

- Endeavour flew 26 missions between 1992 and 2010.
- Endeavour was the first shuttle to be named by children and was the baby of the fleet commission in 1987
- Endeavour was the first shuttle to go to the ISS and helped with the upgrade in 2008.
- It's last flight was to help with the ISS assembly in 2010.
- It was the first shuttle to service the Hubble telescope in 1993.

# Mir and the International space station (ISS)

- Mir orbited Earth for 15 years and was a Russia space station was decommissioned in 2001. it was the largest satellite in space before the launch of the ISS.
- The International space station has been 240 individuals from 19 countries have visited the International Space Station
- Astronauts and cosmonauts have conducted 230 spacewalks and counting! for space station construction, maintenance and upgrades since December 1998.



