

05 – Exploración del Sistema Solar

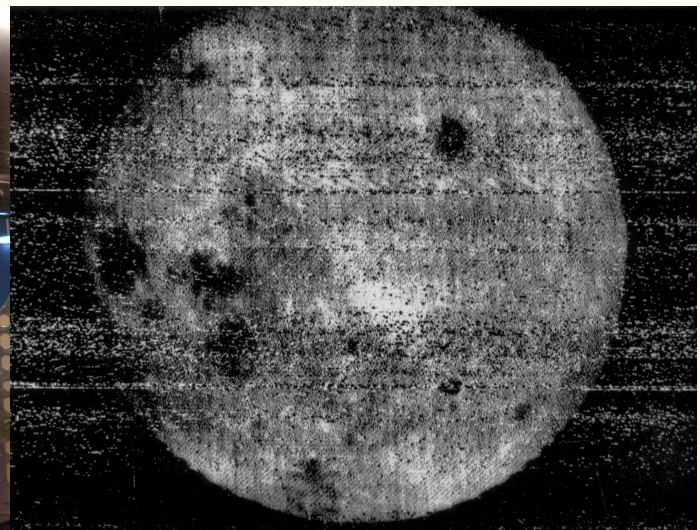
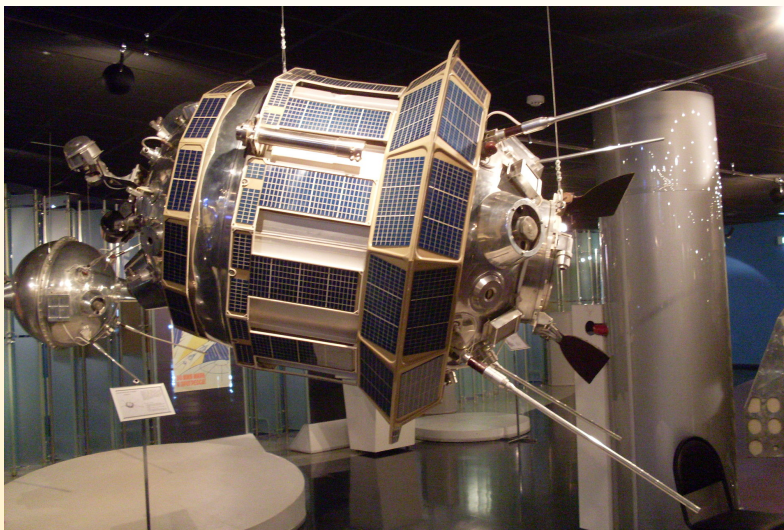
1950 - 1960

02.01.1959 – Luna 1 (SSSR) – first Lunar flyby

03.03.1959 – Pioneer 4 (USA) – Lunar flyby —

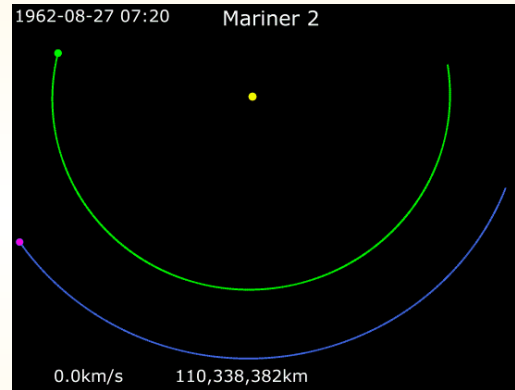
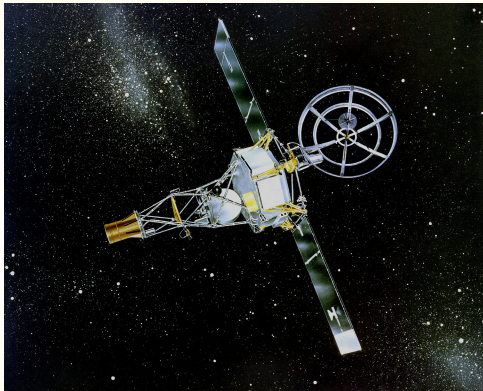
12.09.1959 – Luna 2 (SSSR) – first Lunar impact

04.10.1959 – Luna 3 (SSSR) – Lunar flyby & first image of the moon from a space-craft

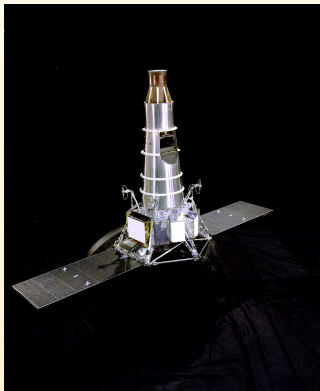


1960-1970

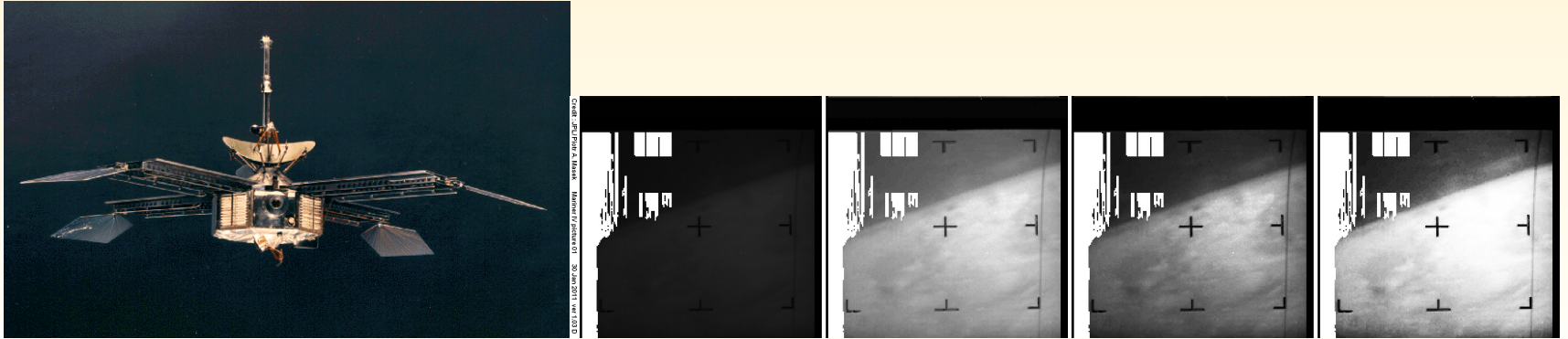
27.08.1962 – Mariner 2 (USA) – first Venus flyby



28.07.1964 – Ranger 7 (USA) – Lunar impact



28.11.1964 – Mariner 4 (USA) – first Mars flyby



16.11.1965 – Venera 3 (SSSR) – first Venus impact

31.01.1966 – Luna 9 (SSSR) – first soft Lunar landing

31.03.1966 – Luna 10 (SSSR) – first Lunar orbiter

30.05.1966 – Surveyor 1 (USA) – Lunar lander

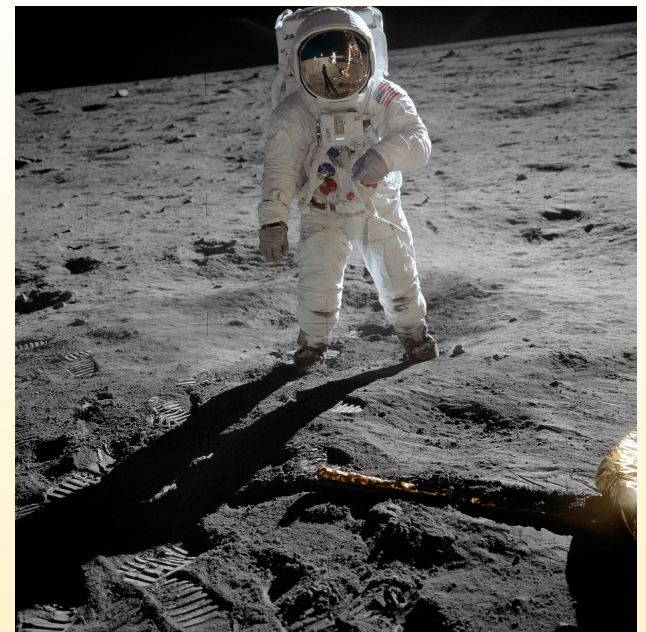
10.08.1966 – Lunar Orbiter 1 (USA) – Lunar orbiter

12.06.1967 – Venera 4 (SSSR) – first Venus atmospheric probe

14.09.1968 – Zond 5 (SSSR) - first Lunar flyby & return to Earth

21.12.1968 – Apollo 8 (USA) – first manned Lunar orbiter

16.07.1969 – Apollo 11 (USA) – first manned Lunar landing



1970-1980



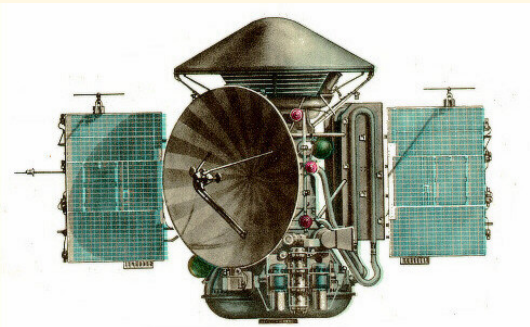
17.08.1970 – Venera 7 (USSR) – first Venus lander

12.09.1970 – Luna 16 (USSR) – first robotic Lunar sample return

10.11.1970 – Luna 17 / Lunokhod 1 (USSR) – first Lunar rover



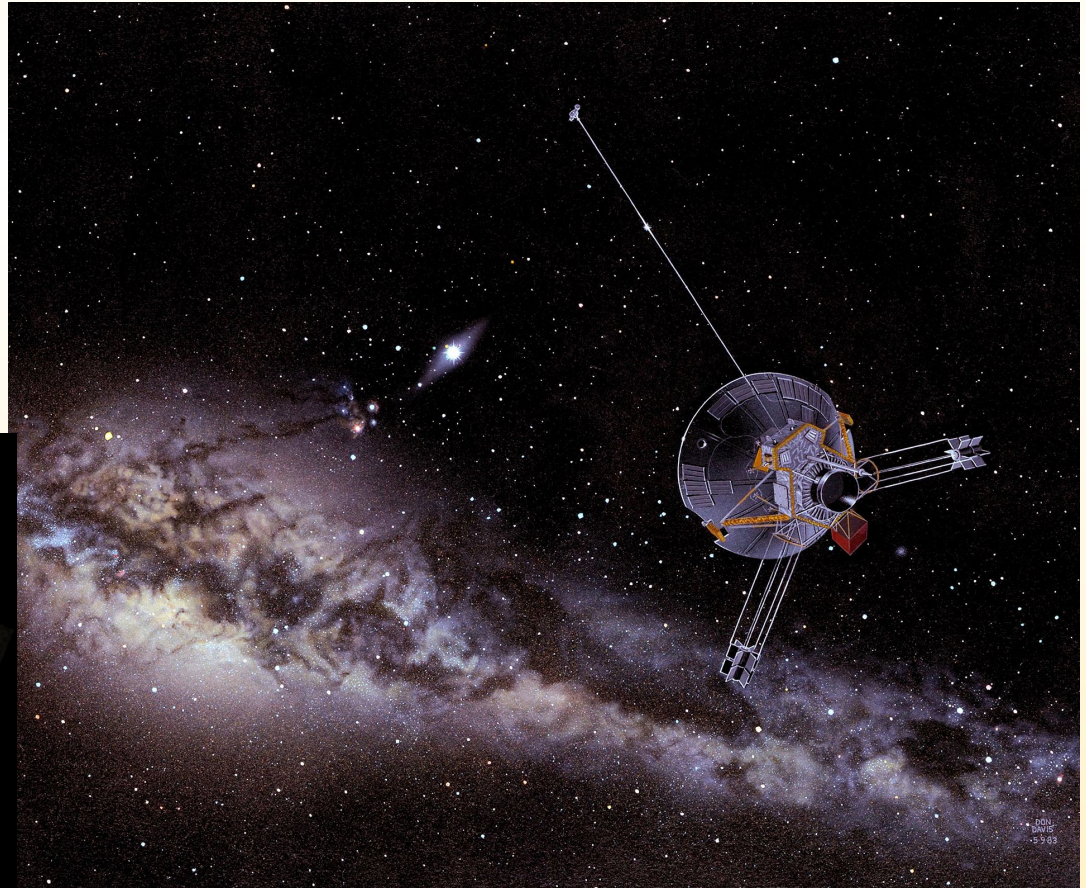
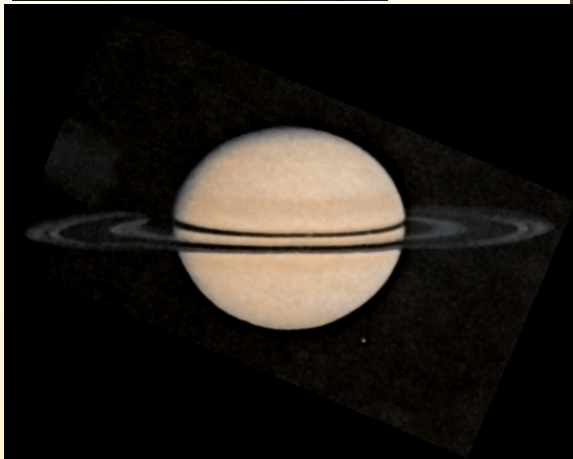
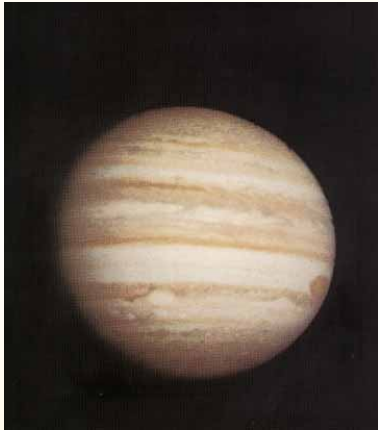
19.05.1971 – Mars 2 (USSR) – first Mars impact



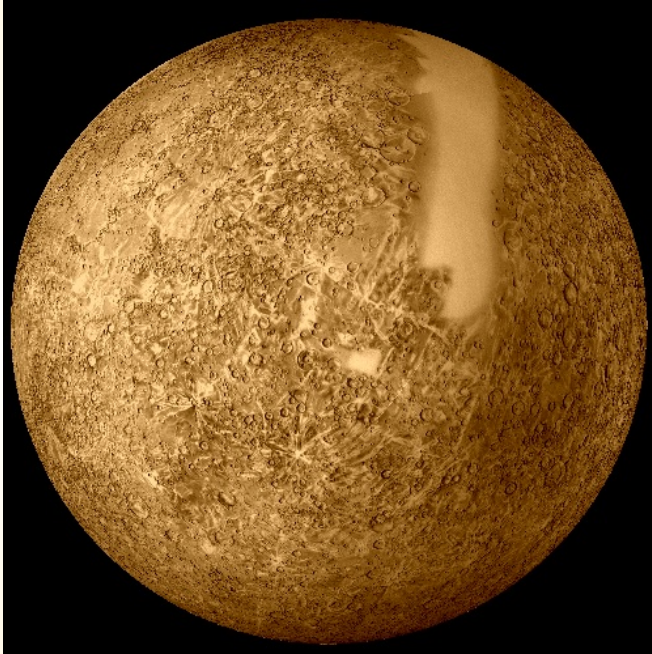
30.05.1971 – Mariner 9 (USA) – first Mars orbiter

03.03.1972 – Pioneer 10 (USA) – first Jupiter flyby

05.04.1973 – Pioneer 11 (USA) – Jupiter flyby & first Saturn flyby



03.11.1973 – Mariner 10 (USA) – Lunar & Venus flyby
& first Mercury flyby



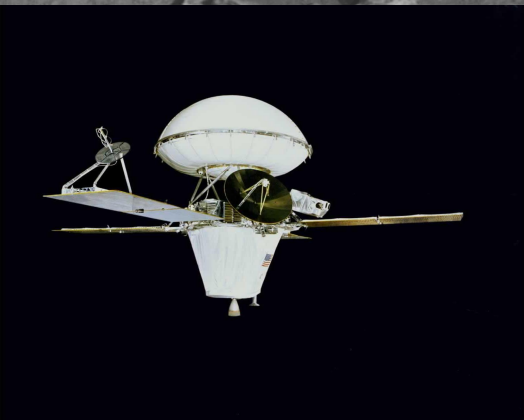
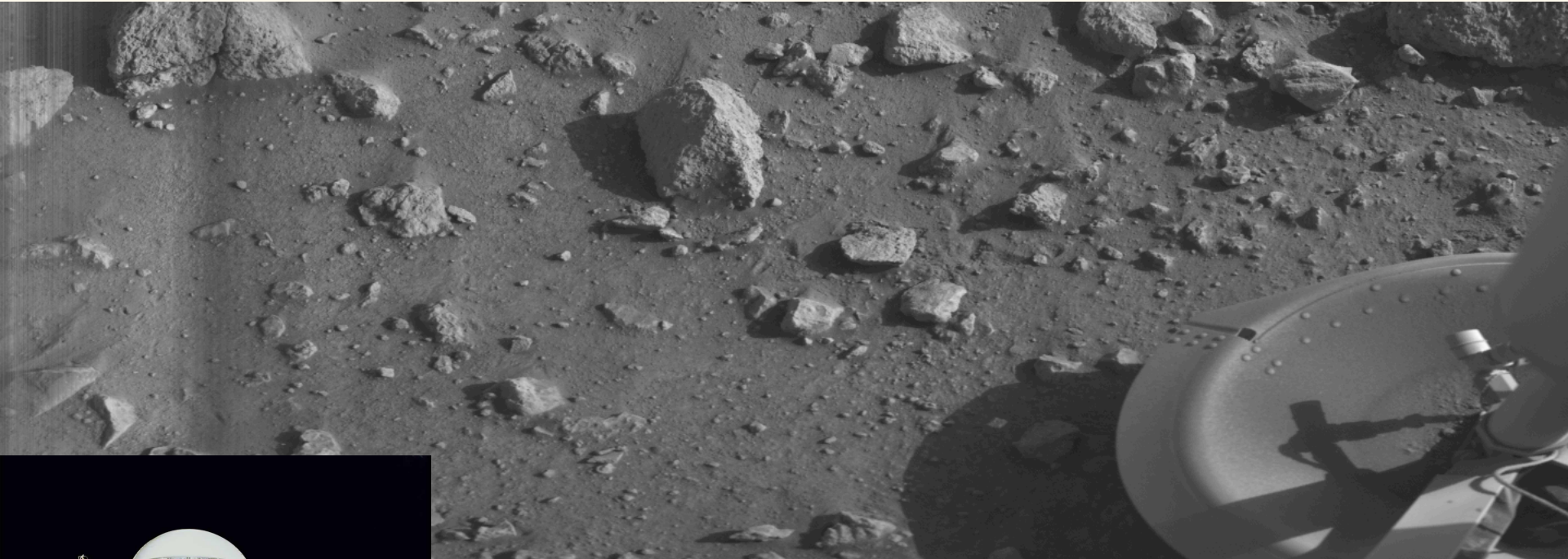
10.12.1974 – Helios A (USA & Germany) – Solar observations

08.06.1975 – Venera 9 (SSSR) – first Venus orbiter & lander, first images from Venus surface



20.08.1975 – Viking 1 (USA) – Mars orbiter & lander,
first images from Mars surface

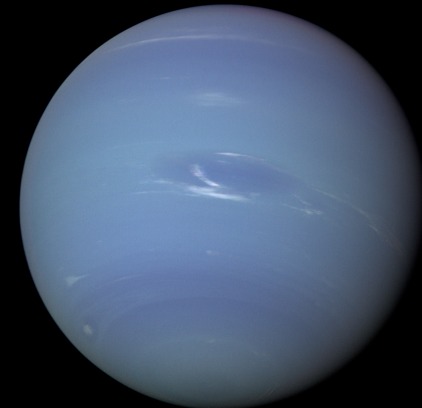
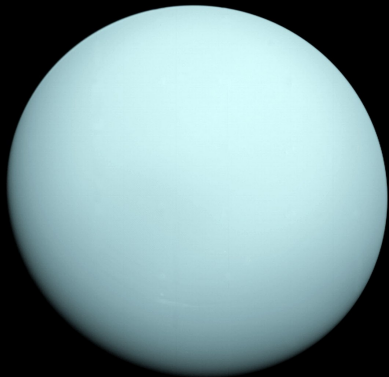
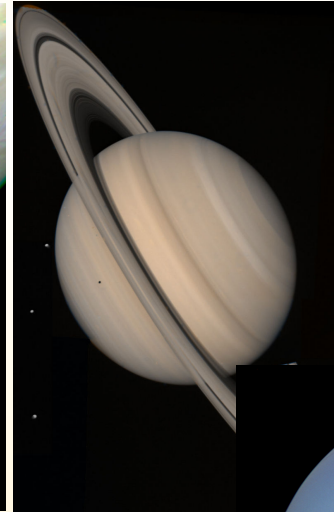
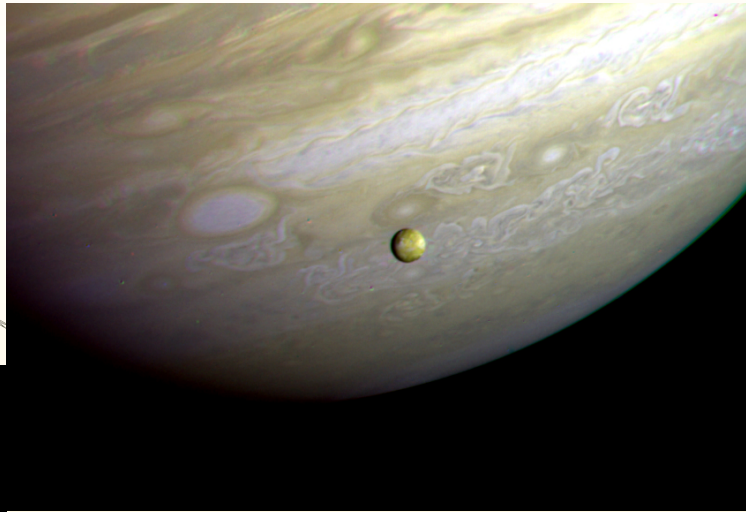
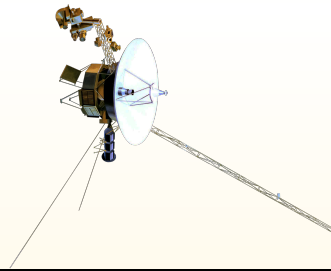
09.09.1975 - Viking 2 (USA) – Mars orbiter & lander



20.08.1977 – Voyager 2 (USA) – Jupiter & Saturn flyby, first Uranus flyby, first Neptune flyby

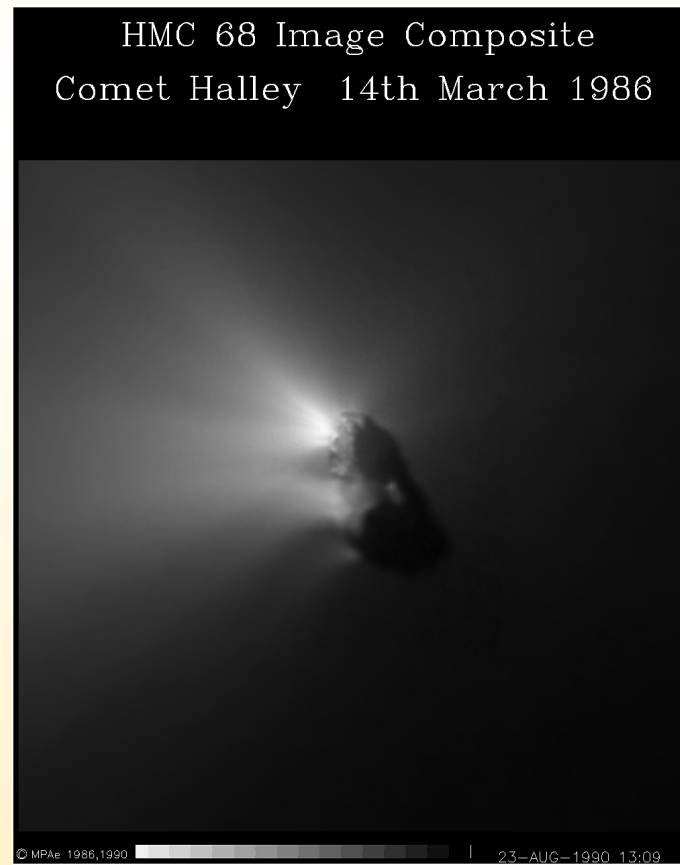
05.09.1977 – Voyager 1 (USA) – Jupiter & Saturn flyby, first exit of Heliosphere

12.08.1978 – ISEE-3 (USA & Europe) – first comet flyby

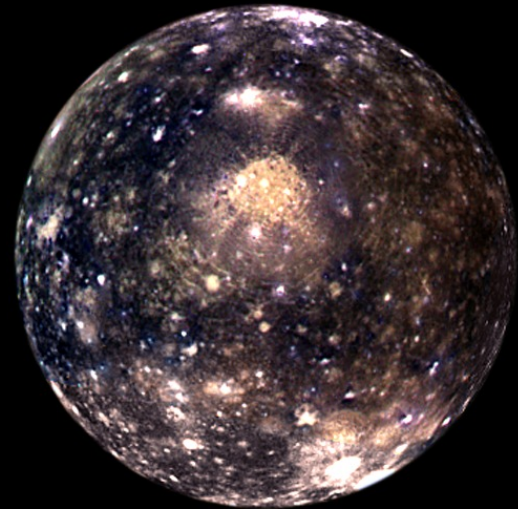
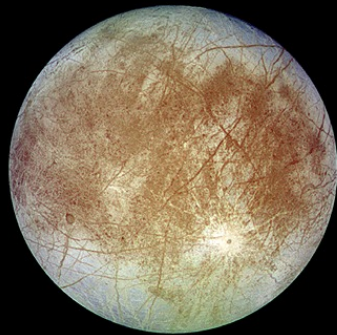
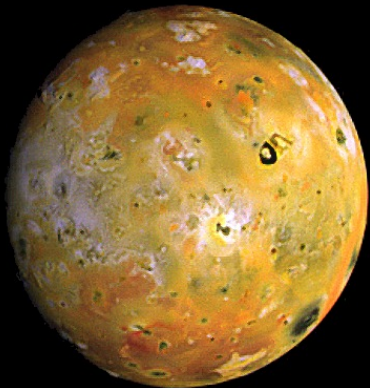


1980-1990

1984/85 – Vega 1 (SSSR) & Saigake (Japan) & Giotto (Europe) & Suisei (Japan) – first comet Halley flyby



18.10.1989 – Galileo (USA) – first asteroid (Gaspra, Ida) flyby & first Jupiter orbiter



1990-2000

24.01.1990 – Hiten (Japan) – Lunar flyby & orbiter

06.10.1990 – Ulysses (USA & Europe) – Solar polar orbiter

02.12.1995 – SOHO (USA & Europe) Solar observatory

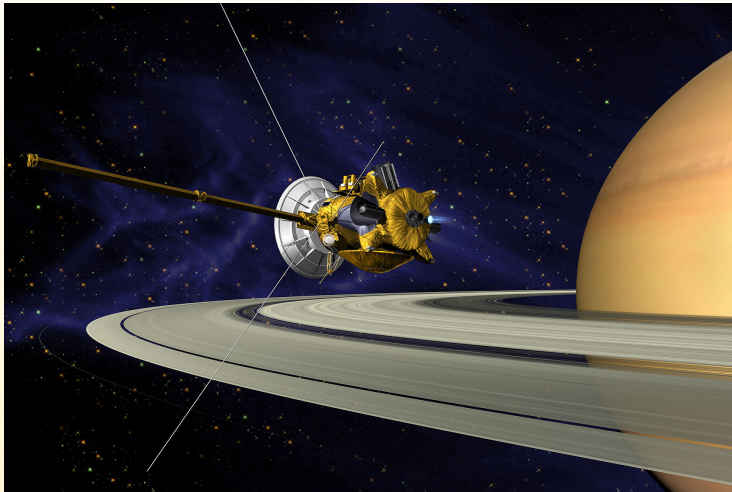
17.02.1996 – NEAR Shoemaker (USA) – first near-Earth asteroid flyby, first asteroid landing

07.11.1996 – Mars Global Surveyor (USA) – Mars orbiter

04.12.1996 – Mars Pathfinder (USA) – Mars lander & first Mars rover (Sojourner)



15.10.1997 – Cassini-Huygens (USA & Europe) – first Saturn orbiter and Titan lander



24.10.1998 – Deep Space 1 (USA) – asteroid & comet flyby

07.02.1999 – Stardust (USA) – first comet sample return

2000-2010

07.04.2001 – Mars Odyssey (USA) – Mars orbiter

08.08.2001 – Genesis (USA) – first Solar wind sample return

09.05.2003 – Hayabusa (Japan) – asteroid lander & first sample return from asteroid

02.06.2003 – Mars Express (Europe) – Mars orbiter

10.06.2003 – Mars Rover Spirit (USA) – Mars rover

08.07.2003 – Mars Rover Opportunity (USA) – Mars rover

02.03.2004 – Rosetta-Philae (Europe) – Asteroid flyby (Steins, Lutetia), first comet orbiter and lander

03.08.2004 – Messenger (USA) – first Mercury orbiter

12.01.2005 – Deep Impact (USA) - comet flyby and impact

12.08.2005 – Mars Reconnaissance Orbiter (USA) – Mars orbiter

09.11.2005 – Venus Express (Europe) – Venus polar orbiter

19.01.2006 – New Horizons (USA) – First Pluto flyby (2015), first Arrokoth flyby (2019)

04.08.2007 – Phoenix (USA) – Mars polar lander

27.09.2007 – Dawn (USA) – Ceres & Vesta orbiter

22.10.2008 – Chandrayaan 1 (India) – Lunar orbiter & impact (water discovered on Moon)

18.06.2009 – Lunar Reconnaissance Orbiter (USA) – Lunar polar orbiter & impact

2010-2020

20.05.2010 – Akatsuki (Japan) – Venus orbiter

05.08.2011 – Juno (USA) – Jupiter orbiter

26.11.2011 – Curiosity (USA) – Mars rover

05.11.2013 – Mangalyaan (India) – Mars orbiter

18.11.2013 – Maven (USA) – Mars orbiter

01.12.2013 – Chang'e 3 (China) – Lunar rover

03.12.2014 – Hayabusa 2 Mascot (Japan, Germany, France) – asteroid lander & rover & sample return (2020)

08.09.2016 – Osiris-Rex (USA) – asteroid sample return (2023)

05.05.2018 – InSight (USA) – Mars lander

20.05.2018 – Queqiao (China) – Relay satellite

12.08.2018 – Parker Solar Probe (USA) – Solar corona probe (2020)

19.10.2018 – BepiColombo (Europe) – 2 Mercury orbiters (2025)

07.12.2018 – Chang'e 4 (China) – Lunar lander on far side

19.07.2020 – Mars Hope (UAE) – Mars orbiter (2021)



Kennedy
Space
Center

VISITOR COMPLEX



NASA

Endeavour



MAX
ALWAYS COME WITH US

JOURNEY TO MARS
SEE HOW WE DO IT

SEE HOW WE DO IT

Two people, a woman in a pink dress and a man in a red shirt, are looking at a display on the wall.

UE

19

33

UNITED STATES

Blue directional sign with an arrow pointing up.

JAE ULTRA BOOM









ORE
ld's

Endeavour

United States

SNC
SPACE
NATIONAL
CENTRE
Space Systems

Dream Chaser



Similar to the Space Shuttle, the Dream Chaser[®] experiences a low impact reentry (~1.5g) and a runway landing.

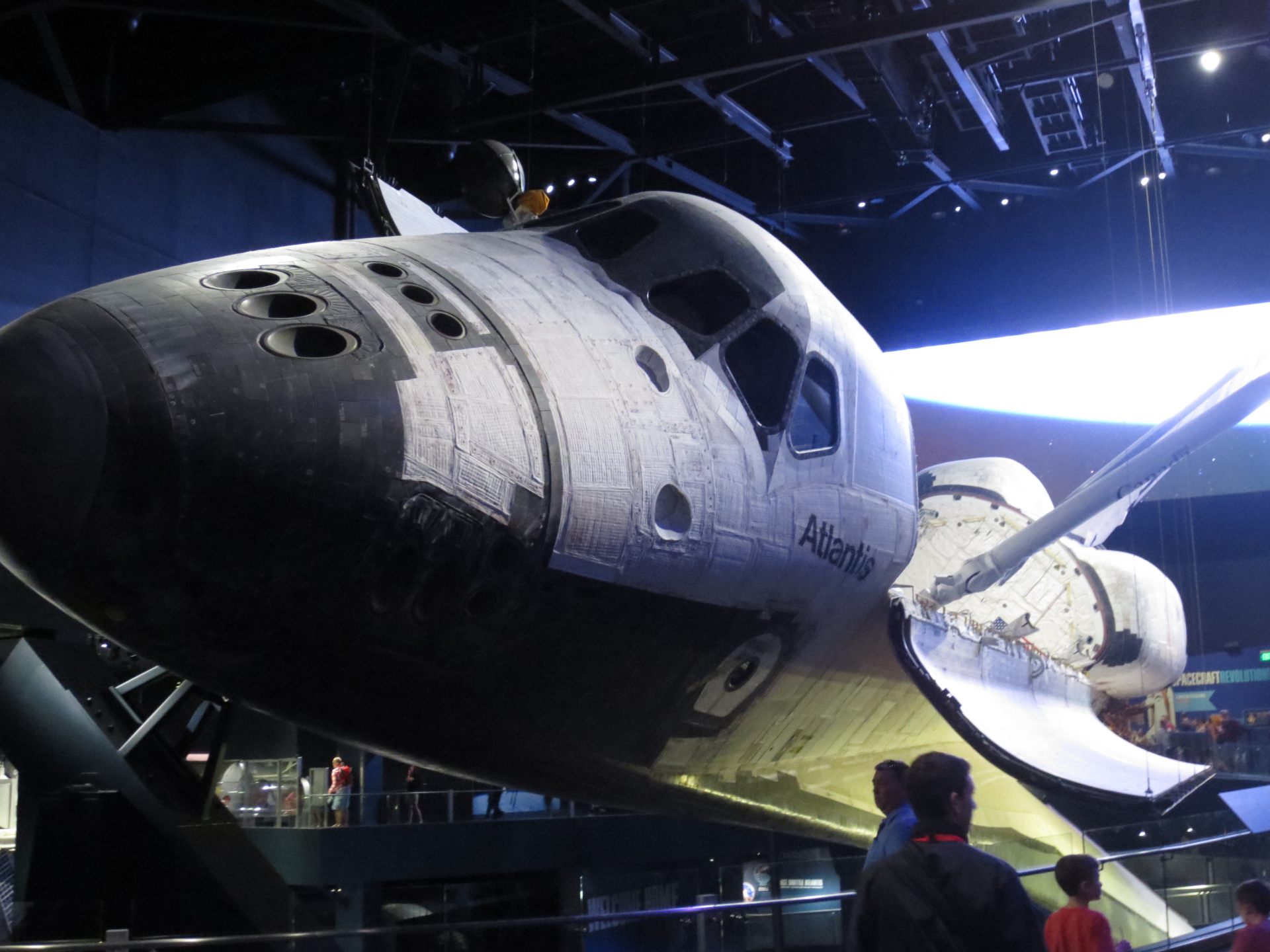
Unlike the Space Shuttle, the Dream Chaser[®] can land on any commercial runway.



The Dream Chaser[®] is a reusable lifting body spacecraft that can be operated by a pilot or flown autonomously.

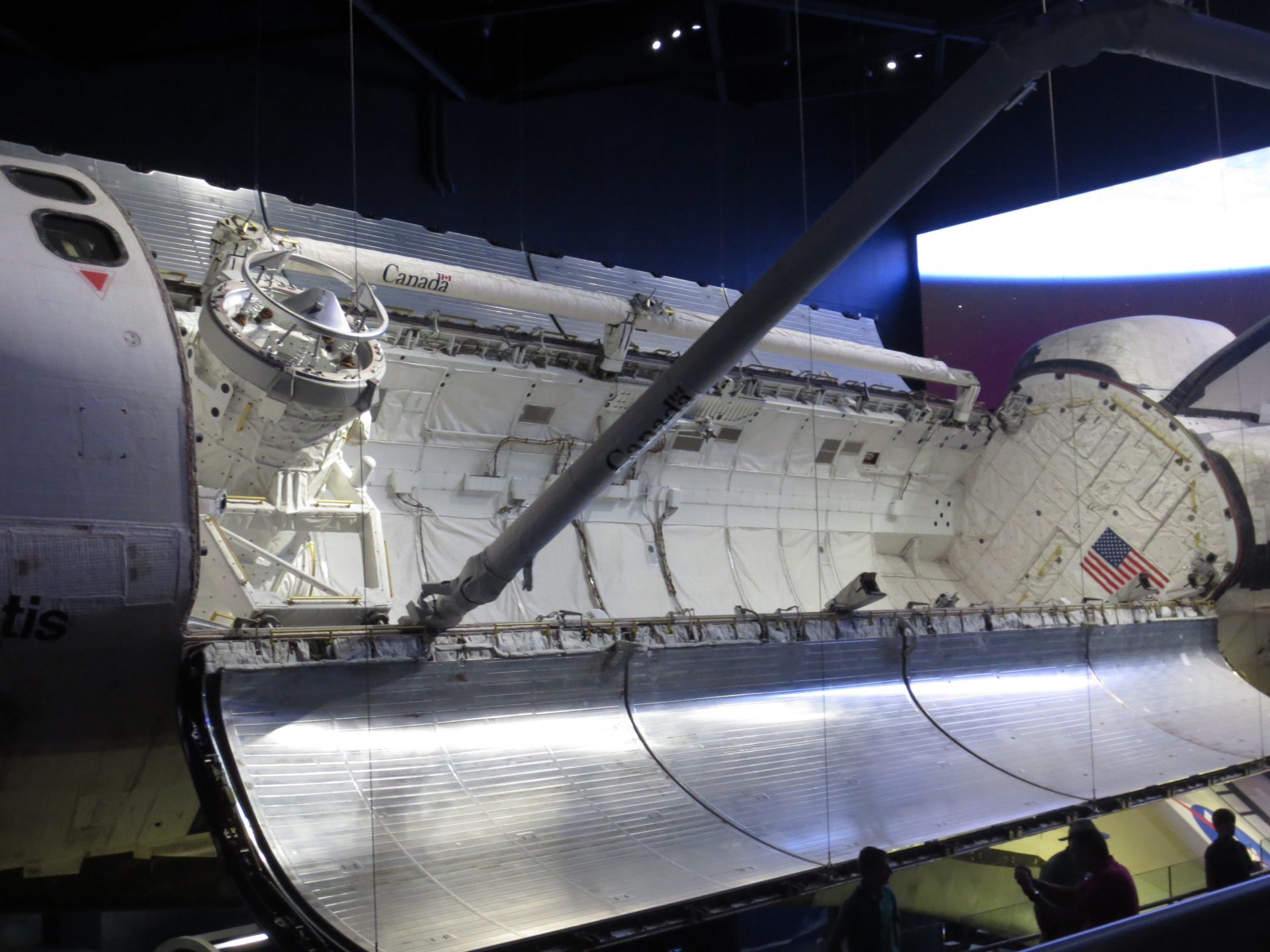
The vehicle is powered in orbit by SNC's flight proven non-toxic propulsion system.





Atlantis

SPACECRAFT EVOLUTION



Canada

Canada



Challenger



Endeavour

NASA United States

MISSION 20 THE BIG BEAV





BORMAN LOVELL AND...

MCDONNELL-DUGLASS
APOLLO IX

YOUNG

1
STAGE

2
BUS LOADING



COMMAND
MODULE

SERVICE
MODULE

UNITED
STATES

LOADING

CAF



Astronauts Charlie Duke, John Young and Ken Mattingly test the lunar roving vehicle trainer.

Apollo 16

Astronauts Gene Cernan and Harrison Schmitt practice lunar surface activities at Kennedy Space Center.

THE WORLD

THE CAPE



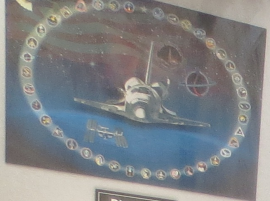






NASA TEST DIRECTOR





Discovery



Endeavour

UNIVERSAL TIME 095:16:20:14
SHERIFFE COUNTDOWN 888:88:88:8
LOCAL TIME 12:20:14
WINDOW REMAINING 88:88:88
POST LOX GRANULES LOADED TIME 88:88:88

09:16:20:14

12:20:14

12:20:14



ASST. LANDING REC...

PAYLOAD TEST DIRECTOR

LANDING RECOVERY DIRECTOR

CHIEF MNT TEST DIRECTOR

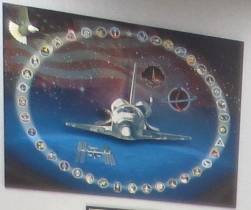
MNT MNT DIRECTOR

MNT DIRECTOR

MNT DIRECTOR



Challenger



Discovery



Atlantis



Endeavour

UNIVERSITY TIME: 095:16:36:25
 LOCAL TIME: 12:36:25
 SHUTTLE CONNECTION: 000:00:00:00
 WINDOW REMAINING: 00:00:00
 PORT LOX DRAINBACK ELAPSED TIME: 00:00:00
 HOLD TIME REMAINING: 00:00:00

095:16:36:25
 12:36:25



ASST. LANDING RECOVERY DIRECTOR

LANDING RECOVERY DIRECTOR

CHIEF NASA TEST DIRECTOR

ASST. NASA TEST DIRECTOR

NASA TEST DIRECTOR

ASST. TEST DIRECTOR

TEST DIRECTOR





SPACEX









