

# Space Flight Program

## Questions & Answers

By

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NASA Astronaut

# The Right Stuff

# ASTRONAUT POSITIONS

- Commander/Pilot
- Mission Specialist (Payload Commander)
- Mission Specialist (Space Station Commander)
- Mission Specialist Astronaut
- Mission Specialist Educator
- Payload Specialist Astronaut

# Commander/Pilot Astronaut Selection Requirements

- 1000 hours pilot-in command time in jet aircraft (flight test experience desired)
- Pass NASA Class 1 Space Flight Physical
- Bachelors' degree in engineering, science, or mathematics (graduate degree desired)
- Height between 64 and 76 inches
- U.S. Citizen

# Mission Specialist Astronaut Selection Requirements

- Advanced Degree (M.S. or Ph.D) in engineering, biological science, physical science, or mathematics
- Three years of professional experience
- Pass a NASA Class II Flight Physical
- Height between 64 and 76 inches

# Payload Specialist Astronaut Selection Requirements

- Nominated and selected by host country
- Professional in physical or life sciences and skilled in operating a unique space flight equipment or experiment
- Pass NASA health and physical fitness standards

# Astronaut Statistics

■ Active Astronauts	112
■ Former Astronauts	209
■ Astronaut Candidates	14
■ International Astronauts	32
■ Cosmonauts	41
■ Payload Specialist	35
■ Total	443

# Astronaut Statistics

■ Women Astronauts	71
U.S. Astronauts	57
Russian Cosmonauts	8
International Astronauts	6
■ African American Astronauts	17
■ Hispanic Astronauts	11



# Astronaut Training

# Types of Astronaut Training

- Astronaut Candidate Training
- Astronaut Formal Training
- Mission Specific Training

# Astronaut Candidate Training

- Classroom and field training on Shuttle systems, basic science and technology, geology, oceanography, orbital dynamics, astronomy, etc.
- Land and water survival training including SCUBA qualification training
- Space suit familiarization training
- Flight crew training in NASA aircraft

# Astronaut Formal Training

- Computer-based training on Space Shuttle and Space Station systems
- Training in Single System Trainer (SST) and Space Station Mockup and Training Facility (SSMTF)
- Training in Shuttle Mission Simulators, Shuttle Training Aircraft (STA)
- Training in Neutral Buoyancy Laboratory
- Training in Russian space systems and language

# Mission Specific Training

- Training in Shuttle Training Aircraft (STA) and Shuttle Mission Simulator for specific flight
- Mission Specific Experiment Training
- Crew Emergency Training
- Training with Mission Control Ground Control Team
- Mission Specific EVA Training

# Land Survival Training



# Water Survival Training



# Fire Fighting Training

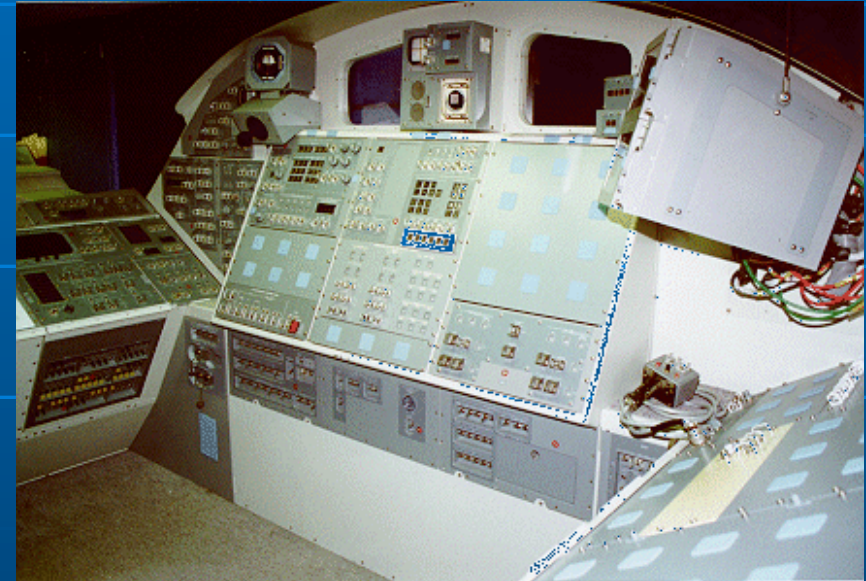
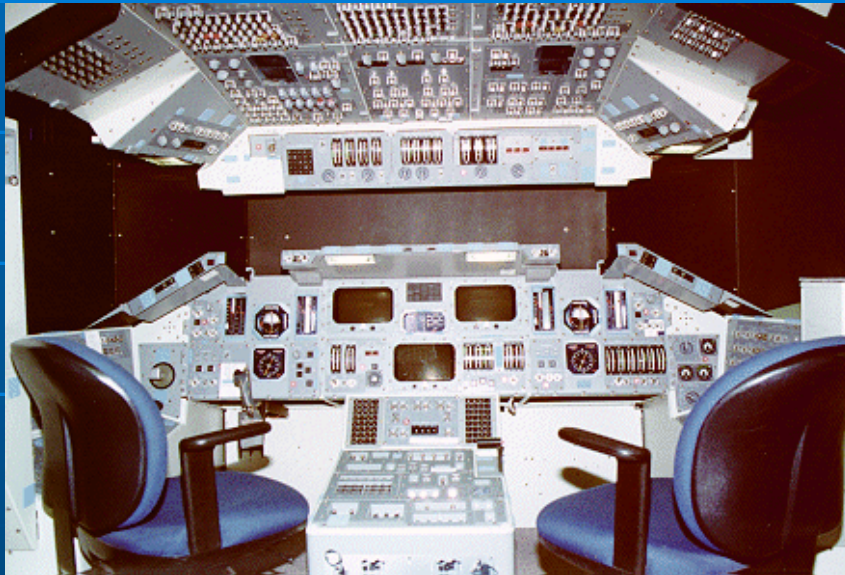




# Flight Proficiency Training



# Space Shuttle Single System Trainer



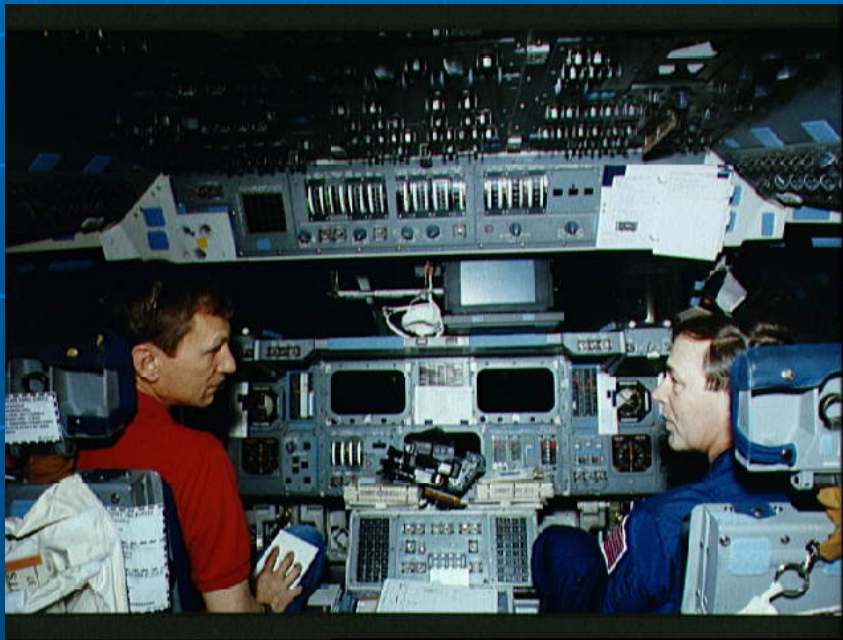
# Shuttle Mission Simulator



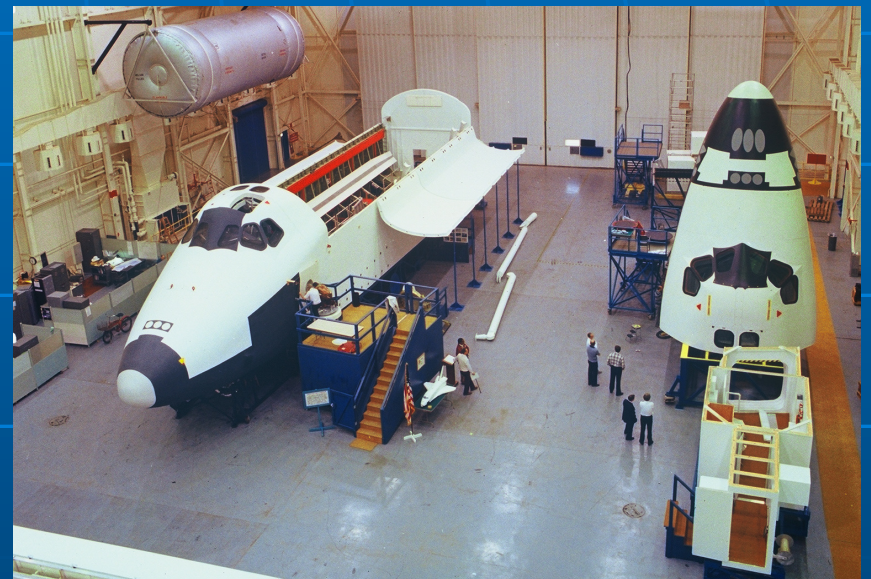
# Shuttle Mission Simulator



# Shuttle Mission Simulator



# Space Vehicle Mockup Facility



# Space Vehicle Mockup Facility

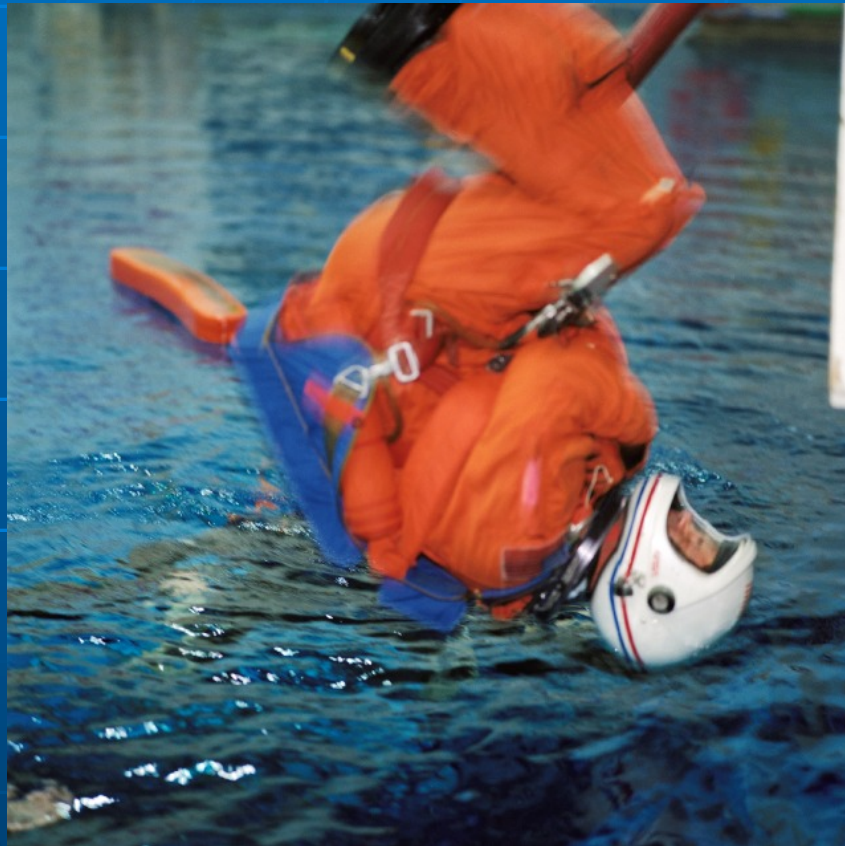


# Space Vehicle Mockup Facility





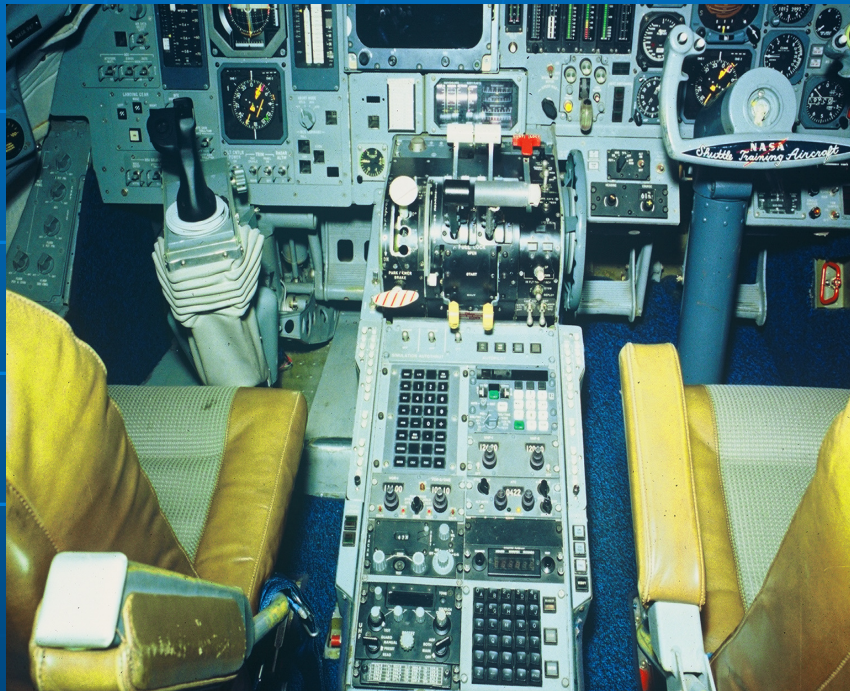
# Water Emergency Egress Training



# Water Emergency Egress Training



# Shuttle Training Aircraft



# Shuttle Training Aircraft



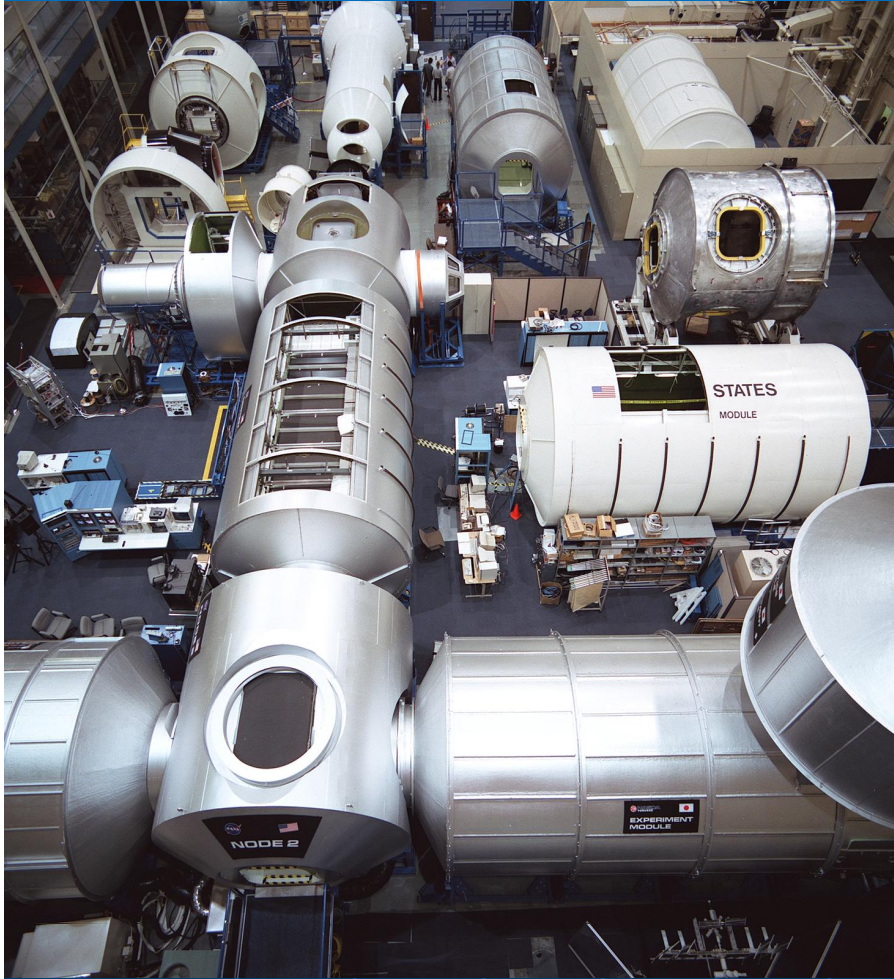
# NASA Extreme Environment Mission Operations Training



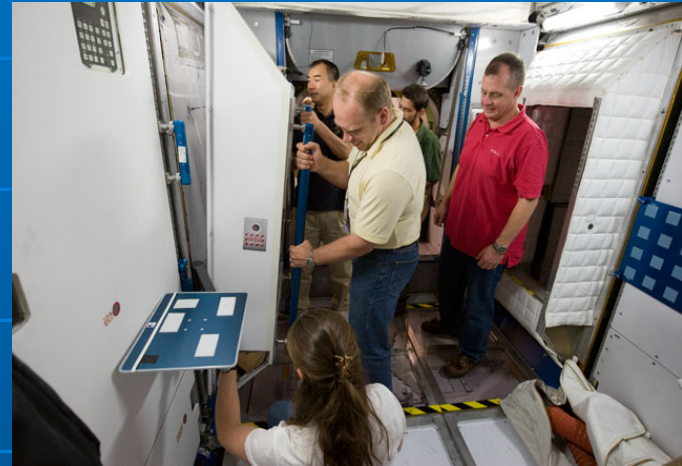
# NASA Extreme Environment Mission Operations Training



# Space Station Training Facility



# Space Station Training





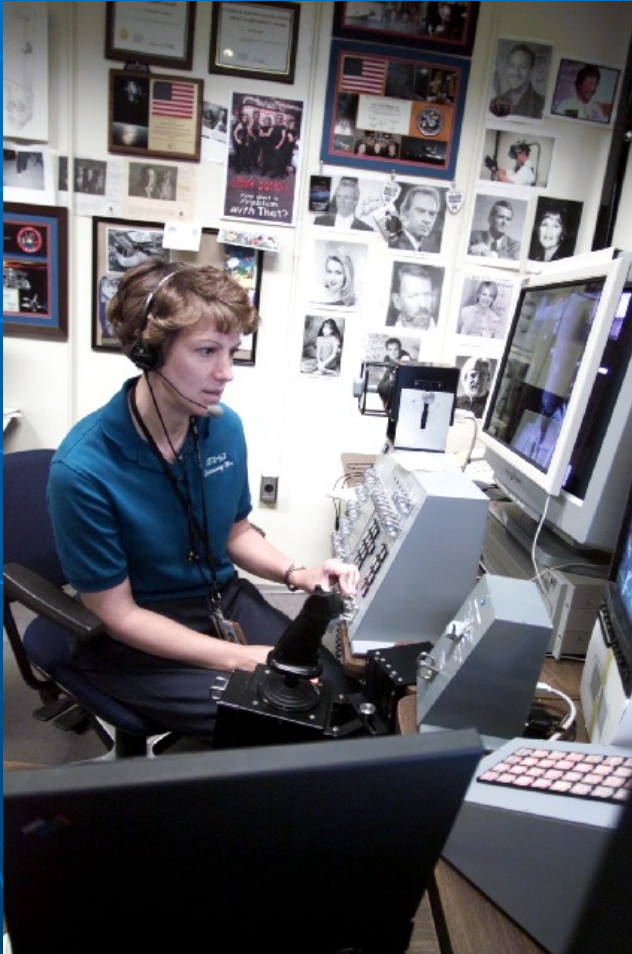
# Space Station Suit Training



# Space Station Airlock Training



# Virtual Reality Training



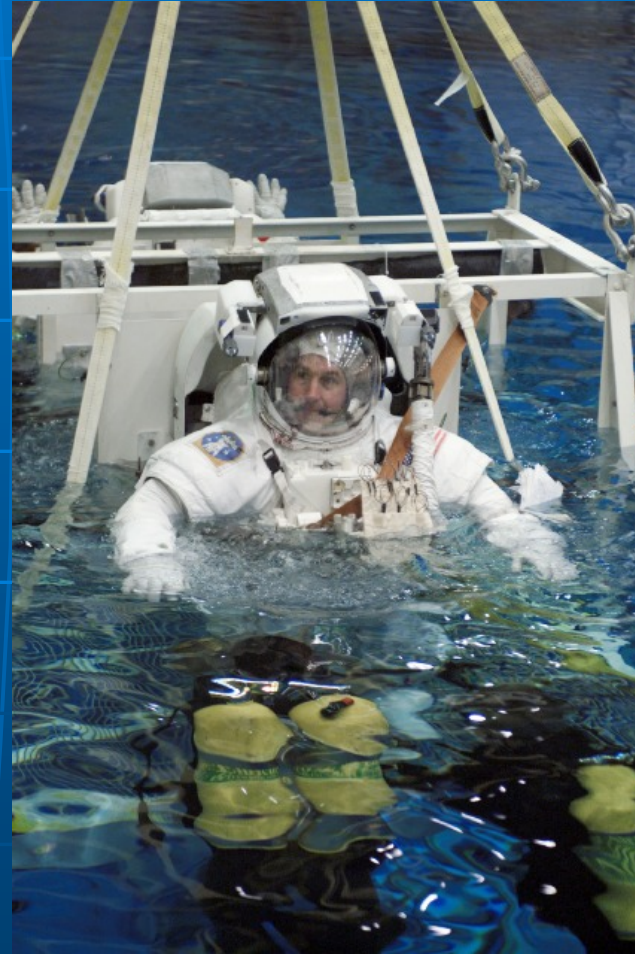
# Virtual Reality Training



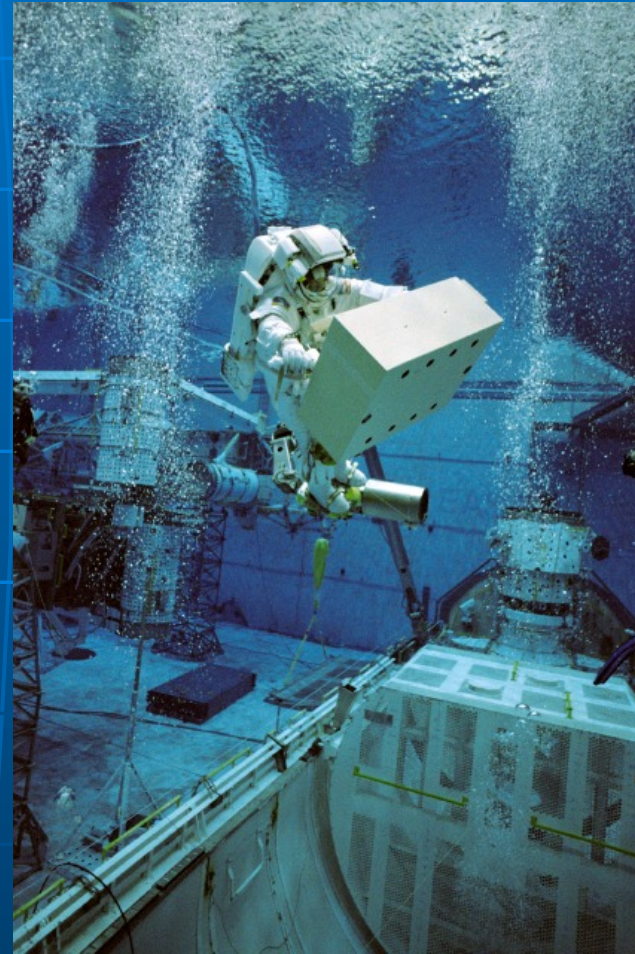
# Neutral Buoyancy Facility



# Neutral Buoyancy Facility



# Neutral Buoyancy Facility



# Gagarin Cosmonaut Training Center Star City, Russia





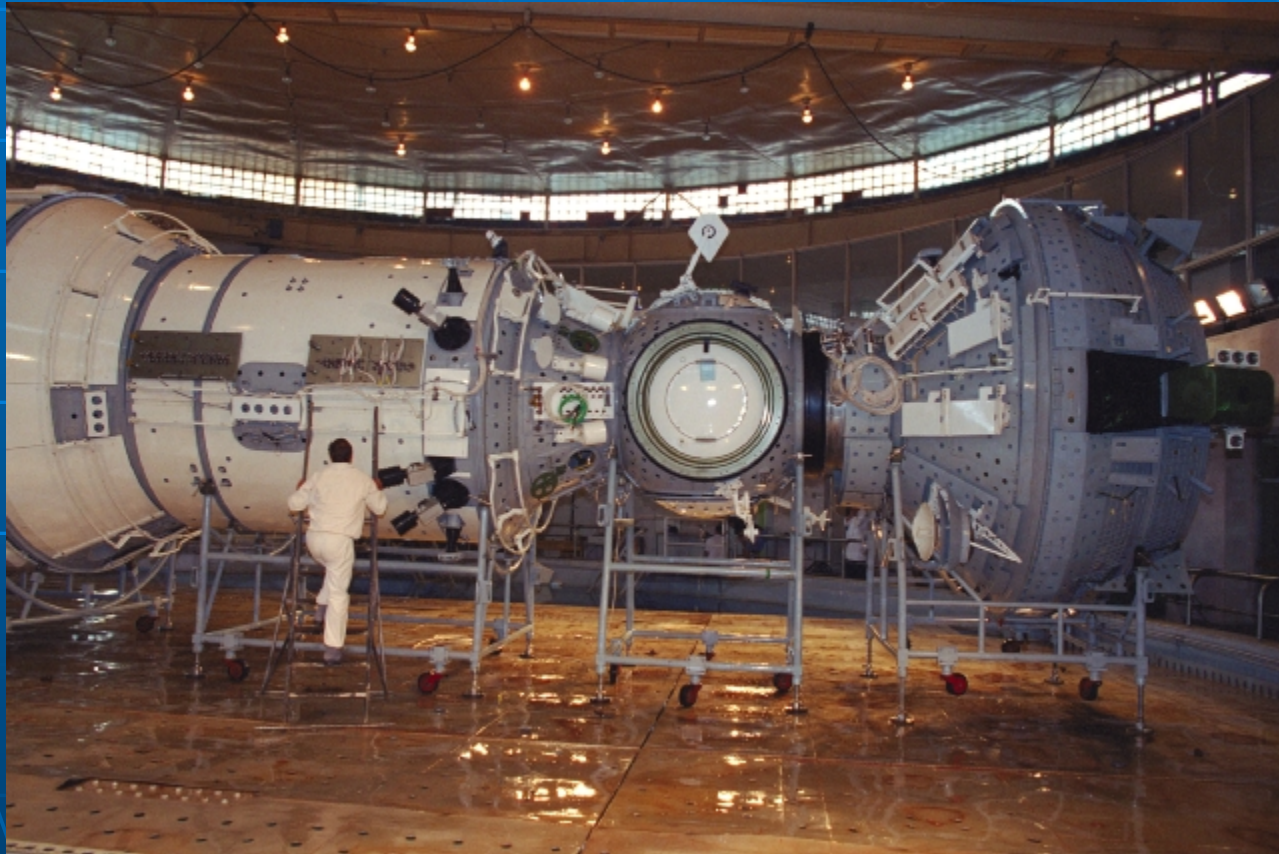
# Zvezda Service Module Training



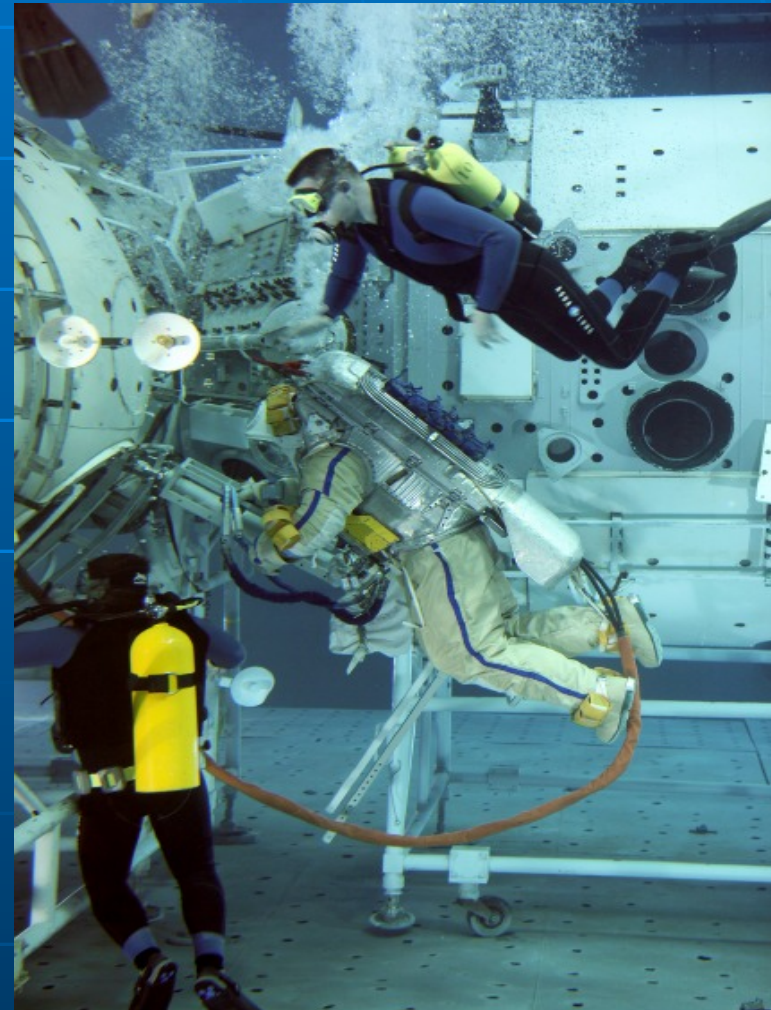
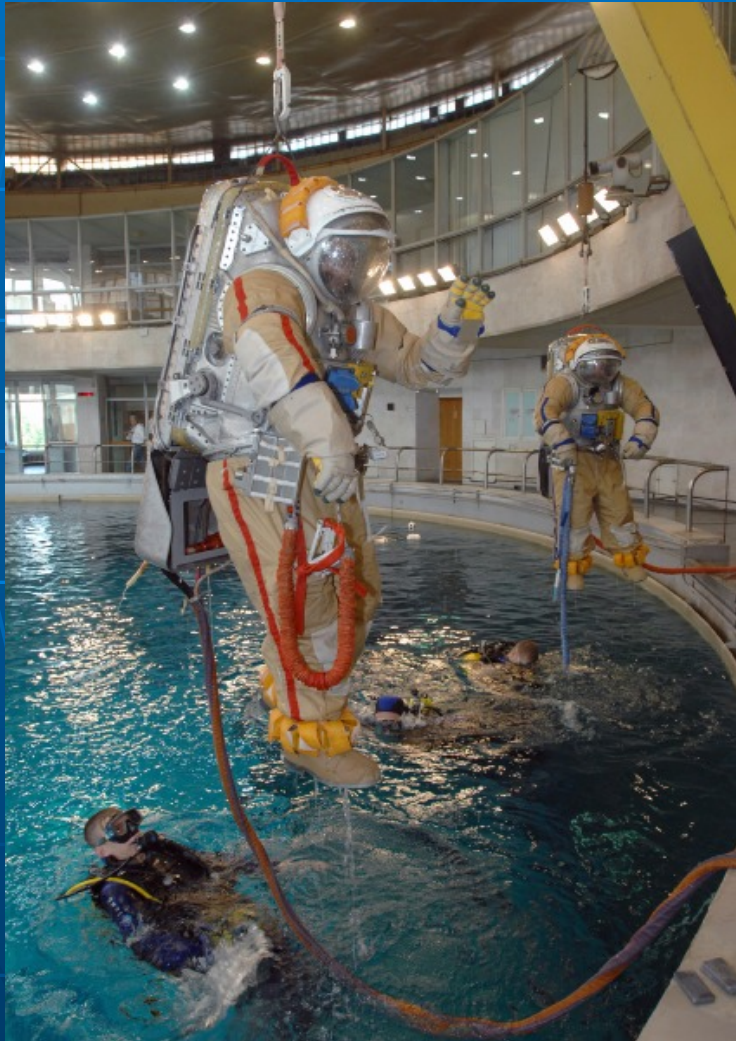
# Russian Hydrolab Facility



# Hydrolab Service Module Mockup



# Russian Hydrolab Facility



# European Astronaut Training Centre Cologne Germany





# Canadian Astronaut Training Facility Saint-Hubert, Quebec

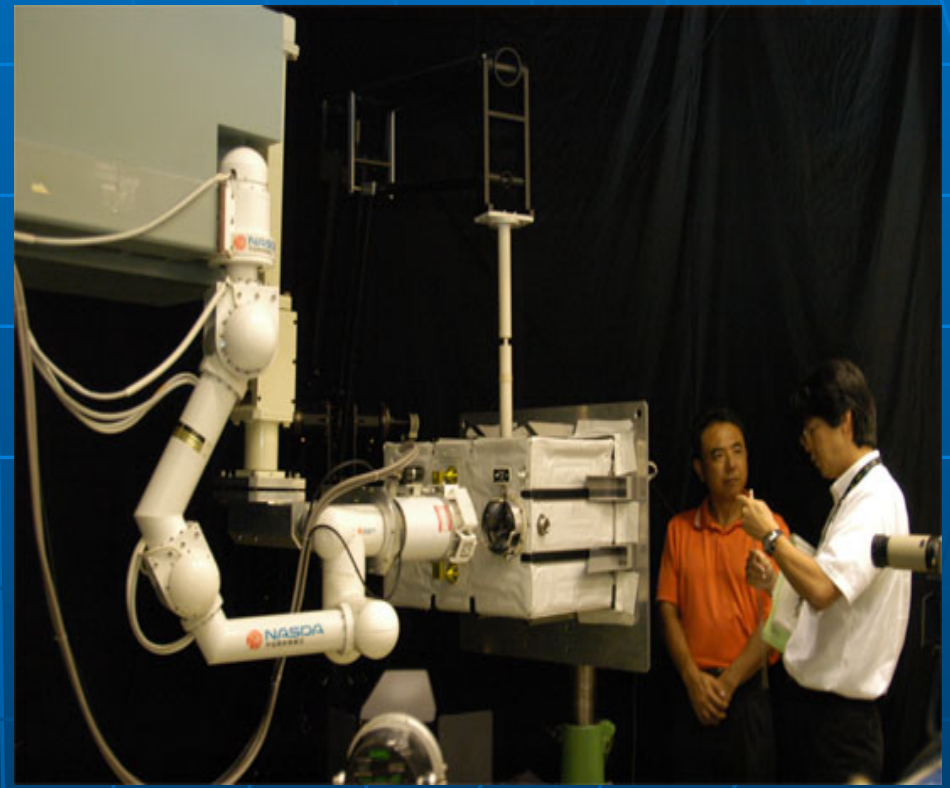


# Japanese Astronaut Training Facility Tsukuba Space Center





# JEM Remote Manipulator System Training



# Launch Egress Training



# Launch Egress Training



# Terminal Countdown Demonstration Test (TCDDT)



# Crew Arrives for Space Flight



# Crew Suits Up for Space Flight



# Crew Suits Up for Space Flight



# Launch Day





# Space Shuttle Processing



**External Tank Arrives by Barge from MS**





Vertical Assembly Building

External Tank

Removing  
External Tank  
From Carrier







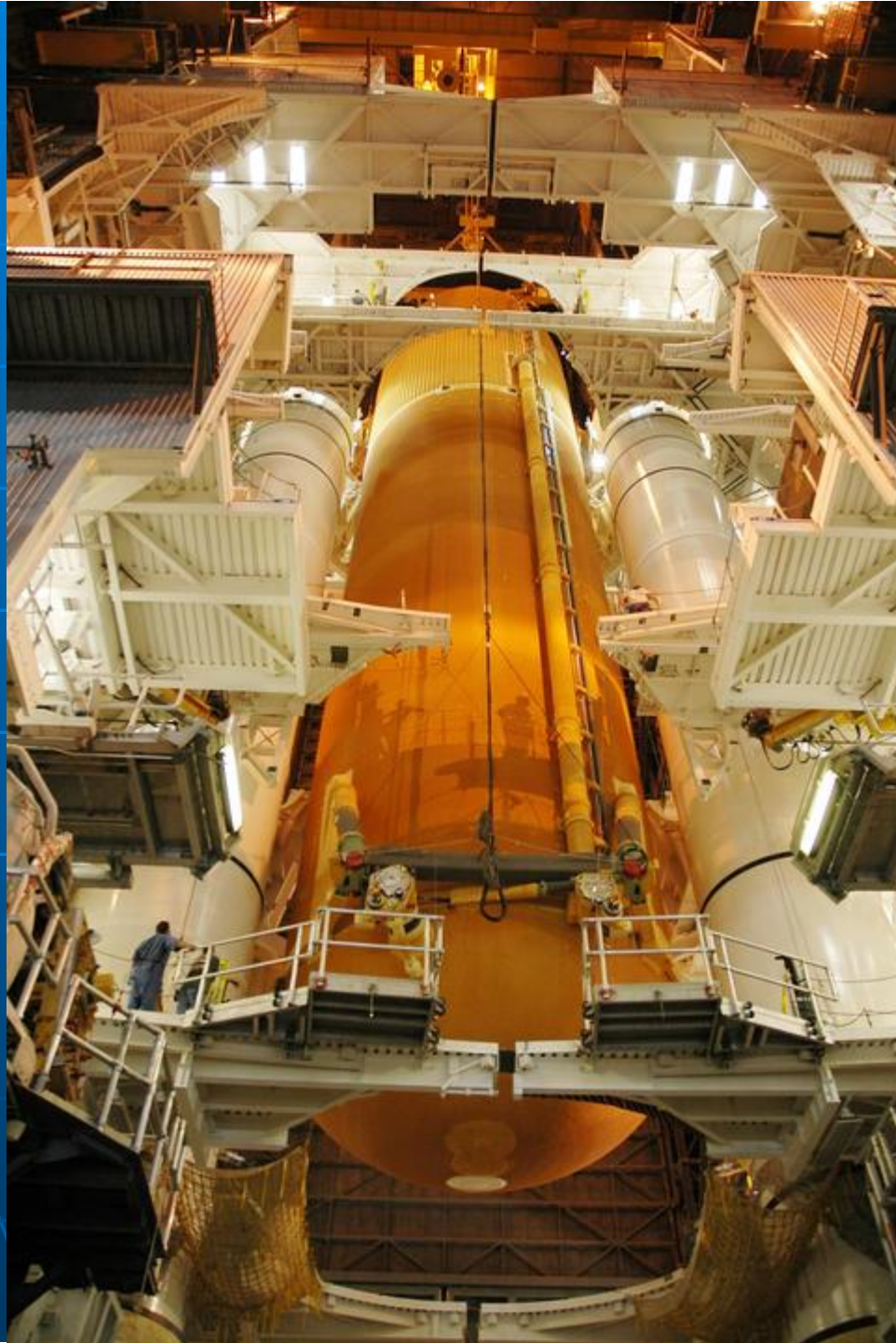


External Tank in VAB







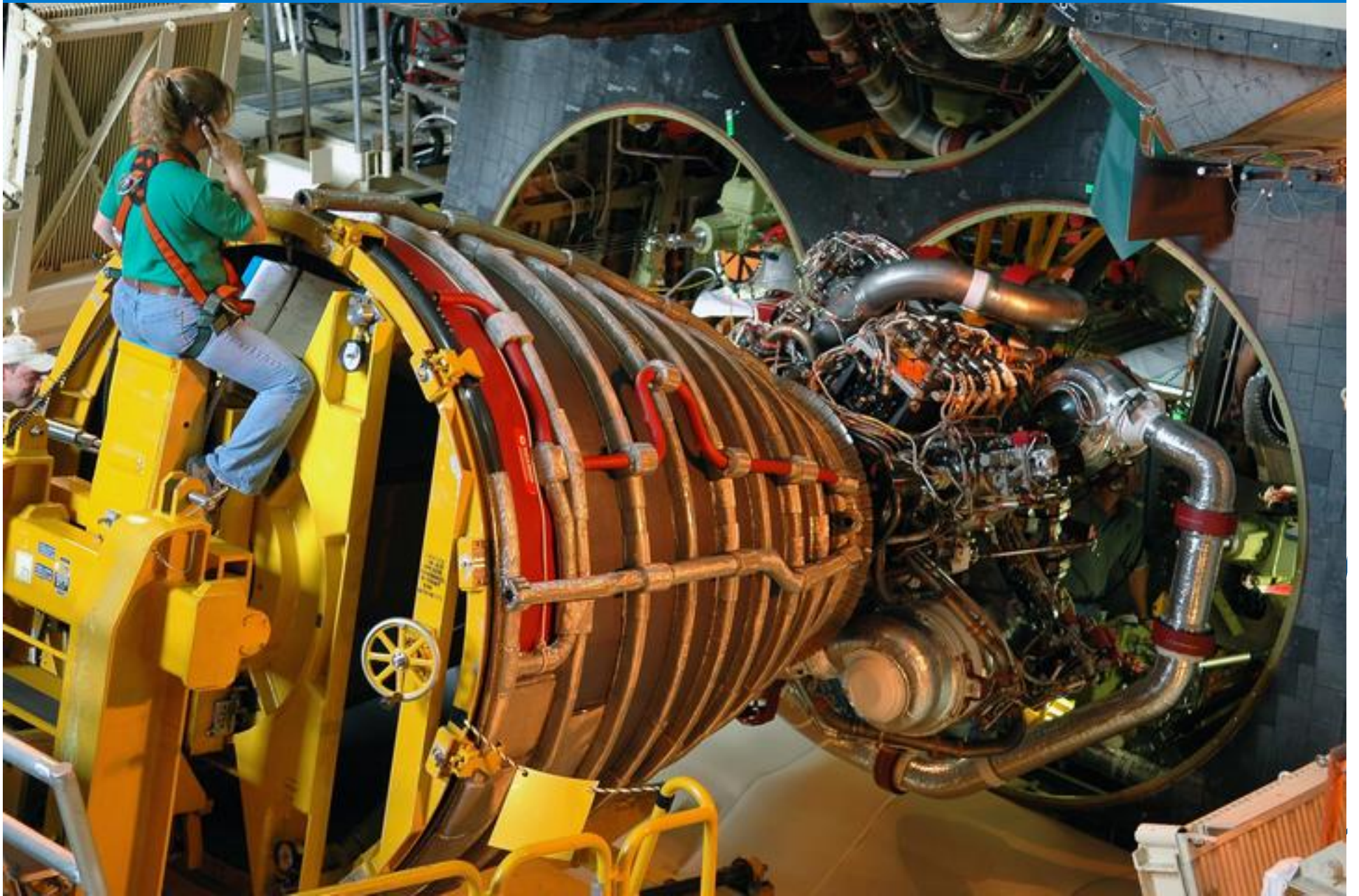




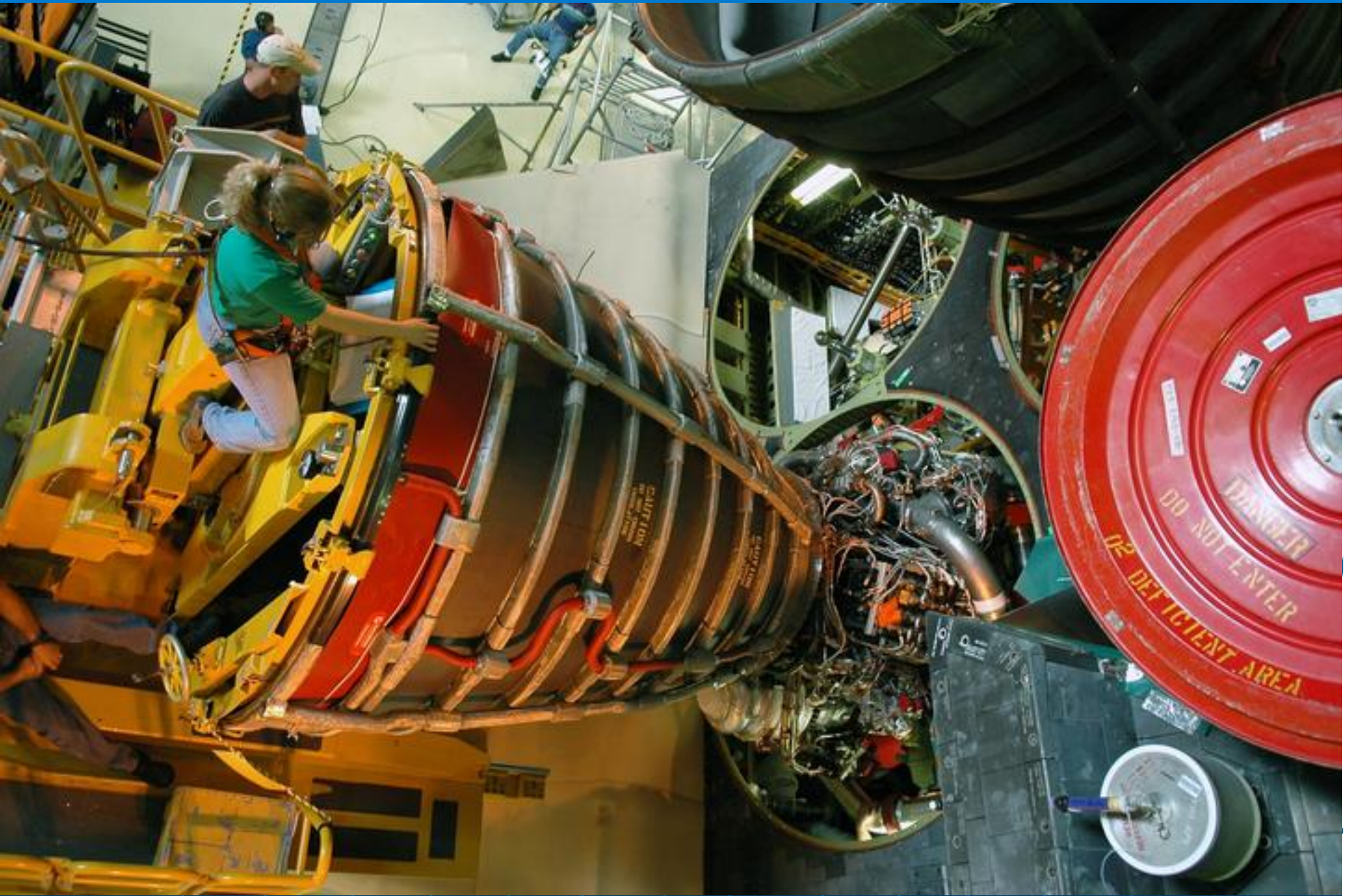




























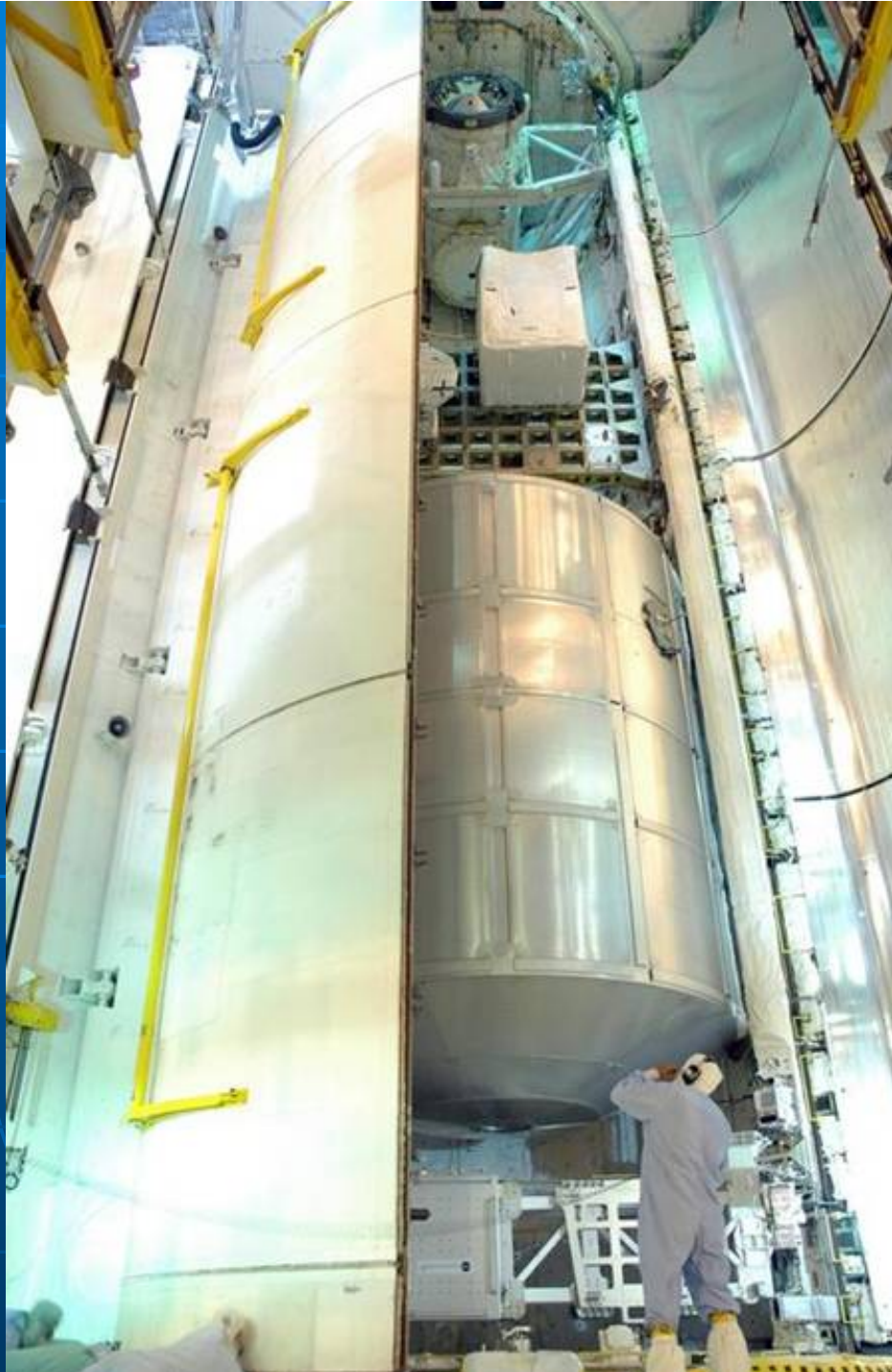




















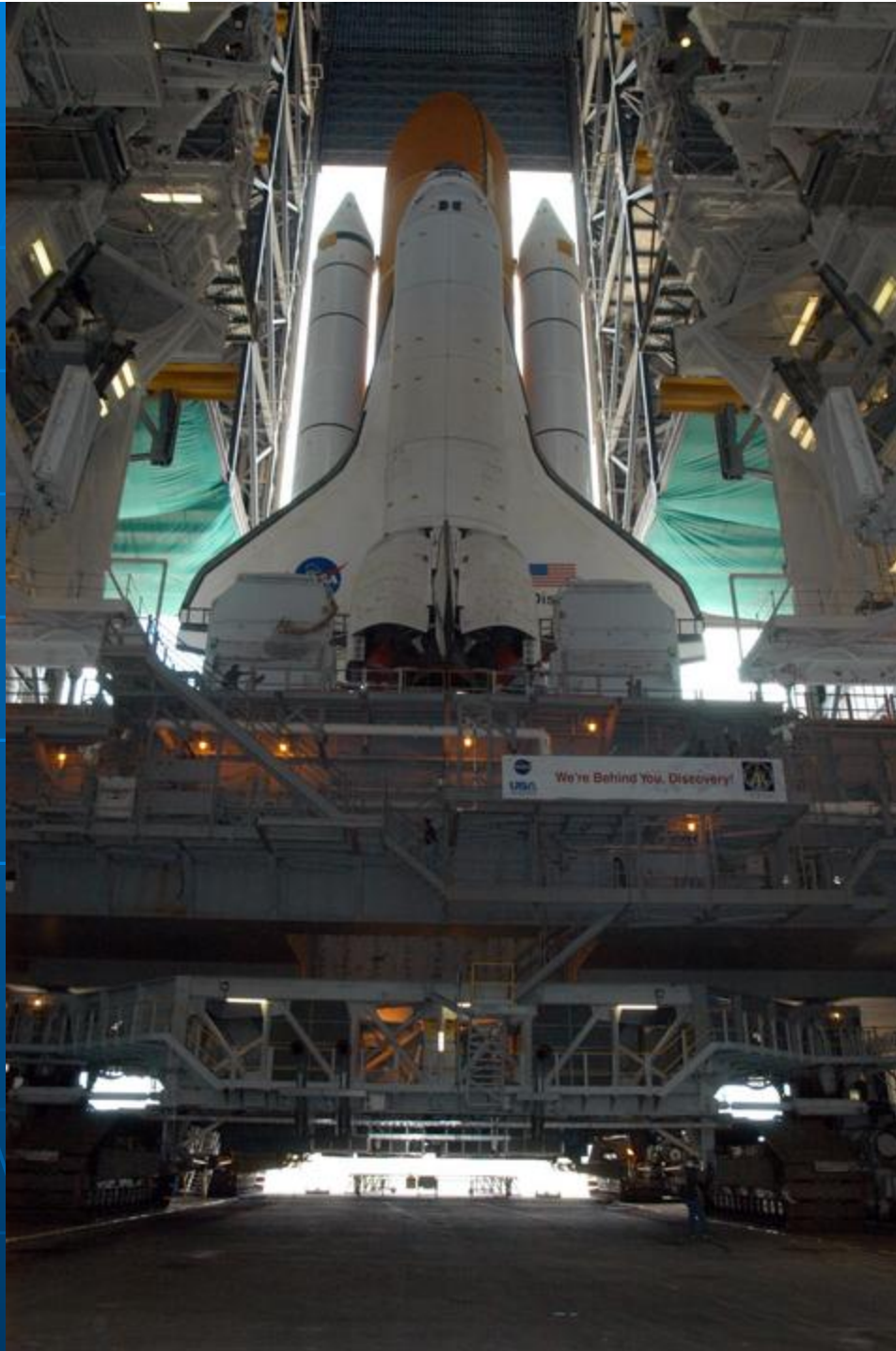


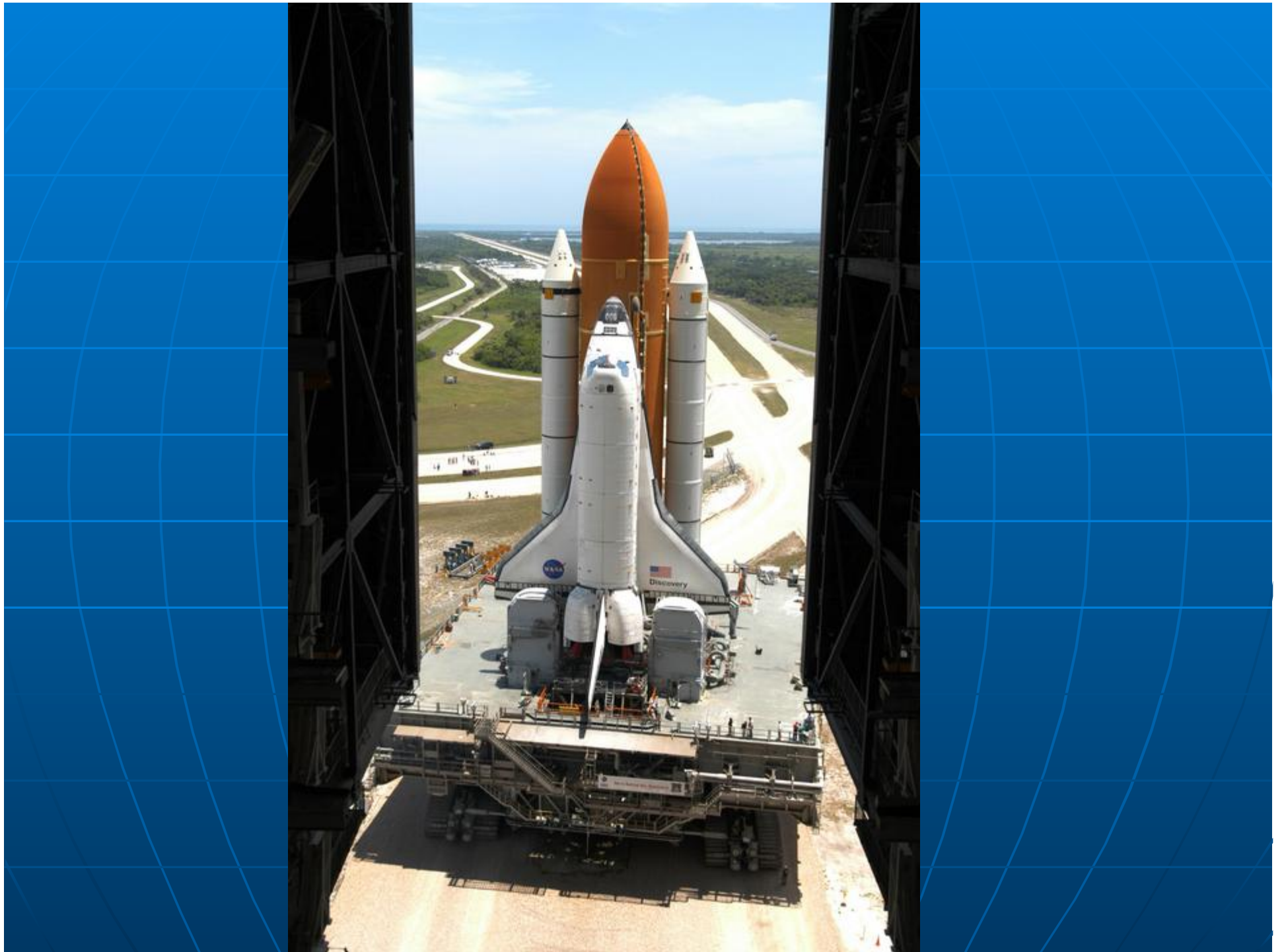














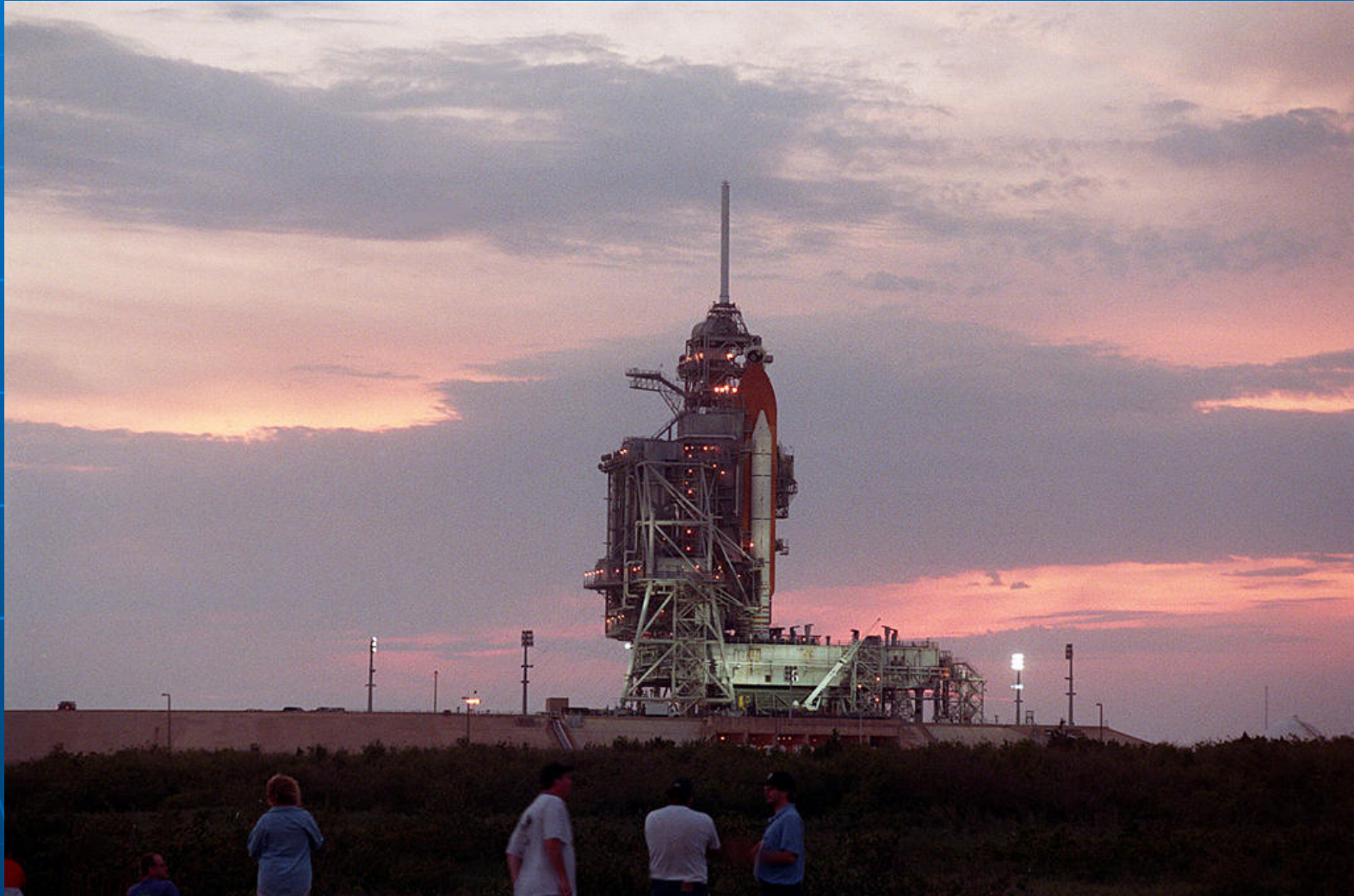
































































# Mission Control Centers

# Launch Control Center



# Space Shuttle Mission Control Center





# Space Station Flight Control Center



# Payload Operations and Integration Center



# Russian Mission Control Center Korolev, Russia



# Columbus Lab Control Room Oberpfafenhoffen, Germany



# Kibo Mission Control Room Tsukuba, Japan

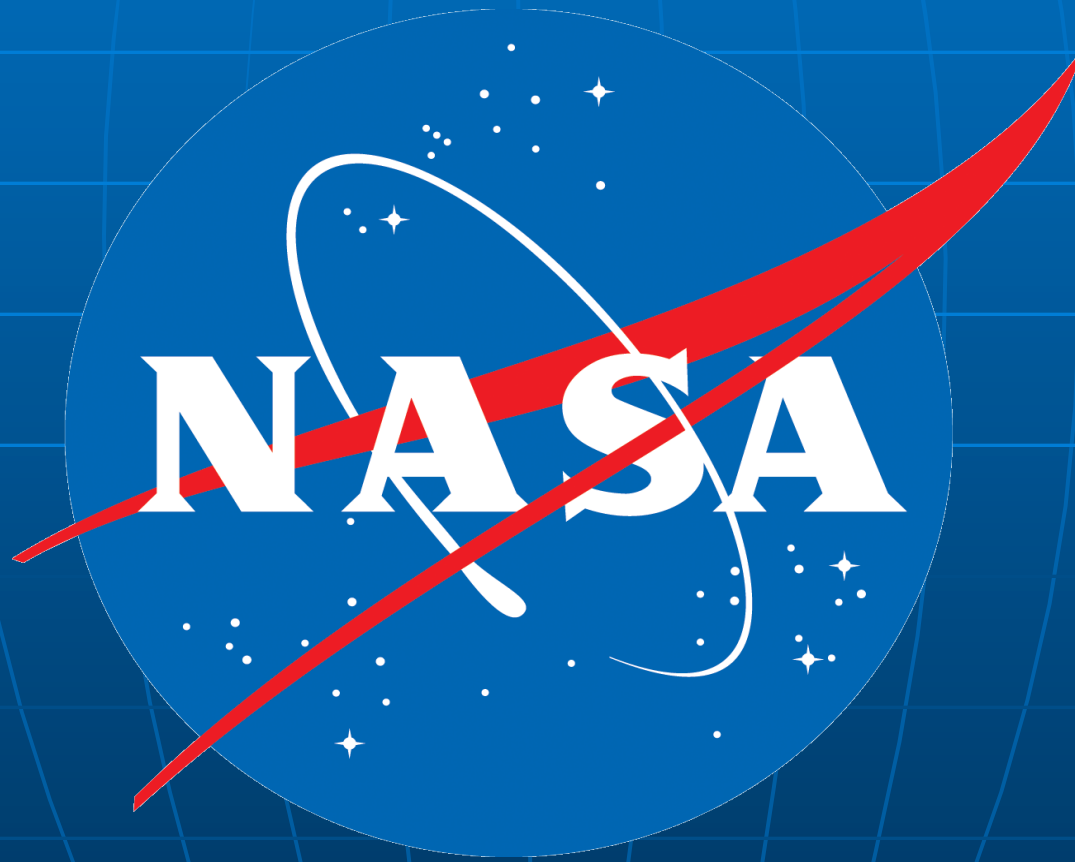


# Canadian Mission Control Centre St. Hubert, Canada



# National Space Agencies

# National Aeronautics and Space Administration





# Russian Federal Space Agency



# Canadian Space Agency



# European Space Agency



# Japan Aerospace Exploration Agency



# China National Space Administration

