CAUTION
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1
00:00:13,850 --> 00:00:16,620
\h Damon Talley/NASA Digital Learning Network Hi, and welcome to another exciting year of space shuttle

2
00:00:16,620 --> 00:00:19,610
\h as we continue construction of the International Space Station.

3
00:00:19,610 --> 00:00:23,150
\h I'm your host, Damon Talley with NASA's Digital Learning Network.

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00:00:23,150 --> 00:00:27,960
\h Have you ever wondered how the massive space station segments are prepared and packed for their tri

5
00:00:27,960 --> 00:00:31,690
\h Well, we're going to show you the huge
facility at Kennedy Space Center

6
00:00:31,690 --> 00:00:34,860
\h where all the final checkouts and preparations take place.

7
00:00:34,860 --> 00:00:39,780
\h We'll also learn about the segment set to fly aboard Discovery on the STS-119 mission.

8
00:00:39,780 --> 00:00:43,060
\h Then we'll introduce you to the crew set to carry out the mission.

9
00:00:43,060 --> 00:00:46,890
\h Before I join the payload manager inside
Kennedy's Space Station Processing
Facility,

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00:00:46,890 --> 00:00:50,980
\h let's learn a little more about this unique building.

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00:00:50,980 --> 00:00:52,070
\h Damon Talley/NASA Digital Learning
Network The Space Station Processing

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00:00:52,070 --> 00:00:55,300

\h Facility is in the Kennedy Space Center Industrial Area.

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00:00:55,300 --> 00:01:00,770
\h Built to handle the final processing of space station components, it was completed in 1994.

14
00:01:00,770 --> 00:01:09,200
\h The three-story facility has 457,000 square feet of space. The building includes two processing bays, ar

15
00:01:09,200 --> 00:01:16,030
\h operational control rooms, laboratories, logistics areas, office space and a cafeteria.

16
00:01:16,030 --> 00:01:19,520
\h As the last stop on Earth for each space station segment and module,

17
00:01:19,520 --> 00:01:24,970
\h this is where teams of technicians carry out the final preparation, inspection and testing.

18
00:01:24,970 --> 00:01:30,330
\h International partners, like European Space Agency and Japan Aerospace Exploration Agency

19
00:01:30,330 --> 00:01:34,280
\h send teams of technicians to prepare their modules in the facility.

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00:01:34,280 --> 00:01:38,310
\h The processing facility also is where astronauts get final hands-on experience

21
00:01:38,310 --> 00:01:43,240
\h with hardware they will later install on the station during their missions.

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00:01:43,240 --> 00:01:46,260
\h Damon Talley/NASA Digital Learning Network And here we are in the high bay of the Space Station Pro

23
00:01:46,260 --> 00:01:51,900
\h This place is huge! It has eight "footprints" -- or separate locations for the various segments to be proces

24
00:01:51,900 --> 00:01:56,360
\h Right now, technicians are working on the external component of the Japanese Kibo module,

25
00:01:56,360 --> 00:02:01,010
\h the Cupola module, and Node 3 set to arrive soon. Here we also have all three of the

26
00:02:01,010 --> 00:02:05,390
\h Multi-Purpose Logistics Modules used to carry supplies to the station.

27
00:02:05,390 --> 00:02:11,410
\h And down at that end is where they bring in the large canister to transfer the segments to the launch pa

28
00:02:11,410 --> 00:02:12,680
\h Damon Talley/NASA Digital Learning Network
Joining me is Robby Ashley,

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00:02:12,680 --> 00:02:20,660
\h manager for this mission's payload. Robby, tell us how the STS-119 S6, or Starboard 6, payload was pr

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00:02:20,660 --> 00:02:22,720
\h Robby Ashley/STS-119 Payload Mission Manager OK. It's my pleasure to be here, Damon.

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00:02:22,720 --> 00:02:31,630
\h S6 arrived in two pieces actually, back in December 2002. There was the integrated equipment assemb

32
00:02:31,630 --> 00:02:40,790
\h After completing installation of all the
electronics boxes, we did a quick functional
checkout just to make sure

33
00:02:40,790 --> 00:02:46,010
\h everything was functioning properly and then we integrated the two elements -- the long spacer to the IE

34
00:02:46,010 --> 00:02:52,260
\h or integrated equipment assembly, back in September of 2003.

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00:02:52,260 --> 00:02:56,650
\h Damon Talley/NASA Digital Learning Network When the processing is finished, how is the segment loa

36
00:02:56,650 --> 00:02:59,650
\h Robby Ashley/STS-119 Payload Mission Manager Well, we have a payload canister, which is basically,

37
00:02:59,650 --> 00:03:04,020
\h it's built to the dimensions of the orbiter's payload bay and it rides on a crawler-transporter.

38
00:03:04,020 --> 00:03:10,760
\h And we lift it out of its work stand, translate it down the length of the high bay and install it in the payload

39
00:03:10,760 --> 00:03:16,100
\h We install the payload vertically at the launch pad. And once we get out to the launch pad,

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00:03:16,100 --> 00:03:22,220
\h the payload canister is hoisted up to the 195-foot-level where we have a payload clean room,

41
00:03:22,220 --> 00:03:26,700
\h or it's referred to the payload changeout
room. We install the payload into the

42
00:03:26,700 --> 00:03:30,590
\h payload changeout room where it awaits the arrival of the shuttle.

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00:03:30,590 --> 00:03:32,490
\h Damon Talley/NASA Digital Learning Network And that's where the S6 is now -- tucked inside

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00:03:32,490 --> 00:03:38,970
\h the payload bay of the space shuttle Discovery as it stands ready just a few miles from here on Launch

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00:03:38,970 --> 00:03:46,110
\h Now we'd like you to meet Discovery's crew members who will install the S6 truss.

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00:03:46,110 --> 00:03:49,370
\h Damon Talley/NASA Digital Learning Network When Discovery's astronauts are finished with the STS-1

47
00:03:49,370 --> 00:03:54,310
\h they will leave the space station with the ability to generate enough power to support a crew of six.

48
00:03:54,310 --> 00:03:58,970
\h That's because they will deliver and install the S6 -- the final truss segment with its set of

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00:03:58,970 --> 00:04:03,330
\h solar arrays attached -- performing four spacewalks during the mission.

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00:04:03,330 --> 00:04:10,650
\h Led by Commander Lee Archambault, the crew members are Pilot Tony Antonelli, Mission Specialists J

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00:04:10,650 --> 00:04:18,810
\h John Phillips, Steve Swanson, Richard Arnold, and Koichi Wakata from the Japan Aerospace Exploratio

52
00:04:18,810 --> 00:04:24,110
\h Wakata will stay aboard the station at the
end of the mission, and current station
resident Sandy Magnus

53
00:04:24,110 --> 00:04:29,590
\h will return to Earth aboard Discovery. The spacewalkers will have their work cut out for them,

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00:04:29,590 --> 00:04:36,370
\h since the S6 must be installed at the farthest end to the right, or starboard, side of the station.

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00:04:36,370 --> 00:04:43,850
\h That means the station's robotic arm must extend its reach about as far as it will go, leaving little room t

56
00:04:43,850 --> 00:04:49,550
\h Once the segment is attached, the two 115-foot solar wings will be carefully unfolded.

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00:04:49,550 --> 00:04:56,290
\h Mission Specialist John Phillips is charged with that critical task. Phillips previously lived and worked ab

58
00:04:56,290 --> 00:05:01,330
\h space station as science officer and flight engineer for the Expedition 11 crew.

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00:05:01,330 --> 00:05:06,010
\h He describes the teamwork involved in the deployment of the solar wings.

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00:05:06,010 --> 00:05:08,570
\h John Phillips/STS-119 Mission Specialist "We've got the entire shuttle crew work on this.

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00:05:08,570 --> 00:05:12,380
\h We've got 12 TV monitors up looking at different views. We've got a guy on the shuttle,

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00:05:12,380 --> 00:05:19,860
\h six guys on the station and I -- and it's a big
team effort. When we unfold these arrays,
they're coming out of the boxes and they're,

63
00:05:19,860 --> 00:05:24,570
\h and they're pleated together, and the pleats are flattening as they come out of the boxes.

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00:05:24,570 --> 00:05:27,040
\h Damon Talley/NASA Digital Learning Network With plenty of troubleshooting time built into the mission,

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00:05:27,040 --> 00:05:33,320
\h the teams on Earth and in space will breathe a collective sigh of relief when the arrays are fully extende

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00:05:33,320 --> 00:05:39,430
\h As Discovery and crew depart the station at the end of their 14-day mission, they will be able to give us

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00:05:39,430 --> 00:05:45,840
\h the space station with the full expanse of its superstructure and solar wings in place.

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00:05:45,840 --> 00:05:46,890
\h Damon Talley/NASA Digital Learning Network Well the payload is ready,

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00:05:46,890 --> 00:05:50,620
\h the crew is ready and the space shuttle Discovery is poised for liftoff.

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00:05:50,620 --> 00:05:54,460
\h Live coverage begins about five hours
before liftoff on NASA TV

71
00:05:54,460 --> 00:06:00,880
\h and on NASA's Launch Blog -- that's at www.nasa.gov/shuttle.

72
00:06:00,880 --> 00:06:05,080
\h You can also join me for a live interactive

webcast beginning one hour before