
NASA

1
00:00:00,000 --> 00:00:01,635
[background music]

2
00:00:01,635 --> 00:00:05,105
You are now in the Mission
Operations Room. This is the

3
00:00:05,105 --> 00:00:07,541
command center where flight
engineers communicate with

4
00:00:07,541 --> 00:00:11,378
Hubble. Every day they send
commands to Hubble’s computers

5
00:00:11,378 --> 00:00:14,681
to perform daily tasks, such as
coordinating the science

6
00:00:14,681 --> 00:00:18,518
instruments. They also retrieve
all of Hubble’s science and

7
00:00:18,518 --> 00:00:21,421
engineering data and make sure
that none of it is missing or

8
00:00:21,421 --> 00:00:25,225
corrupted. The flight engineers
are also responsible for

9
00:00:25,225 --> 00:00:29,363
monitoring the 10,000 plus items
in that engineering data to make

10
00:00:29,363 --> 00:00:32,699
sure that Hubble is operating
safely and properly. If

11

00:00:32,699 --> 00:00:35,402
something isn’t working
correctly, they follow prepared

12
00:00:35,402 --> 00:00:39,940
contingency plans. Right now the
team is doing routine activities

13
00:00:39,940 --> 00:00:43,510
that include uplinking orbit
information and clearing memory

14
00:00:43,510 --> 00:00:48,248
on the spacecraft for new
messages. Prior to 2011, this

15
00:00:48,248 --> 00:00:52,653
room was staffed 24 hours a day,
7 days a week. But now most of

16
00:00:52,653 --> 00:00:55,522
the daily functions are
automated and it is only staffed

17
00:00:55,522 --> 00:00:59,559
8 hours a day, 5 days a week. If
a problem comes up while the

18
00:00:59,559 --> 00:01:02,396
team is not present, they
receive notifications on their

19
00:01:02,396 --> 00:01:05,632
cell phones, which they can use
to access some of the spacecraft

20
00:01:05,632 --> 00:01:09,870
information and determine how
serious the issue is. Depending

21

00:01:09,870 --> 00:01:12,606
on the severity, they may have
to come into this room to

22
00:01:12,606 --> 00:01:16,977
address the issue. As you look
around the room you will see a

23
00:01:16,977 --> 00:01:19,279
large screen with a graphical
display of Hubble that is driven

24
00:01:19,279 --> 00:01:23,317
with real-time data. It includes
accurate star charts, the

25
00:01:23,317 --> 00:01:26,253
Earth’s position, the Sun’s
location, and other

26
00:01:26,253 --> 00:01:28,922
environmental data to allow the
team to see how Hubble is

27
00:01:28,922 --> 00:01:33,126
oriented. An operations clock in
the corner of the room can be

28
00:01:33,126 --> 00:01:35,996
set to track the length of an
event, or simply display the

29
00:01:35,996 --> 00:01:39,633
current time, in Universal Time
- a standard time used in

30
00:01:39,633 --> 00:01:44,838
astronomy and spacecraft
operations. A model of the main

31

00:01:44,838 --> 00:01:48,508
spacecraft computer sits in the
back of the room. The actual

32
00:01:48,508 --> 00:01:51,778
computer on Hubble manages the
spacecraft's daily functions

33
00:01:51,778 --> 00:01:55,248
such as its power,
communications, and pointing,

34
00:01:55,248 --> 00:01:58,352
and it monitors the health of
the spacecraft. It's also

35
00:01:58,352 --> 00:02:01,488
programmed to put Hubble in a
safe state and be ready to talk

36
00:02:01,488 --> 00:02:05,525
to the ground if a major problem
occurs. An engineering model of

37
00:02:05,525 --> 00:02:08,762
the spacecraft is also in the
back of the room, which flight