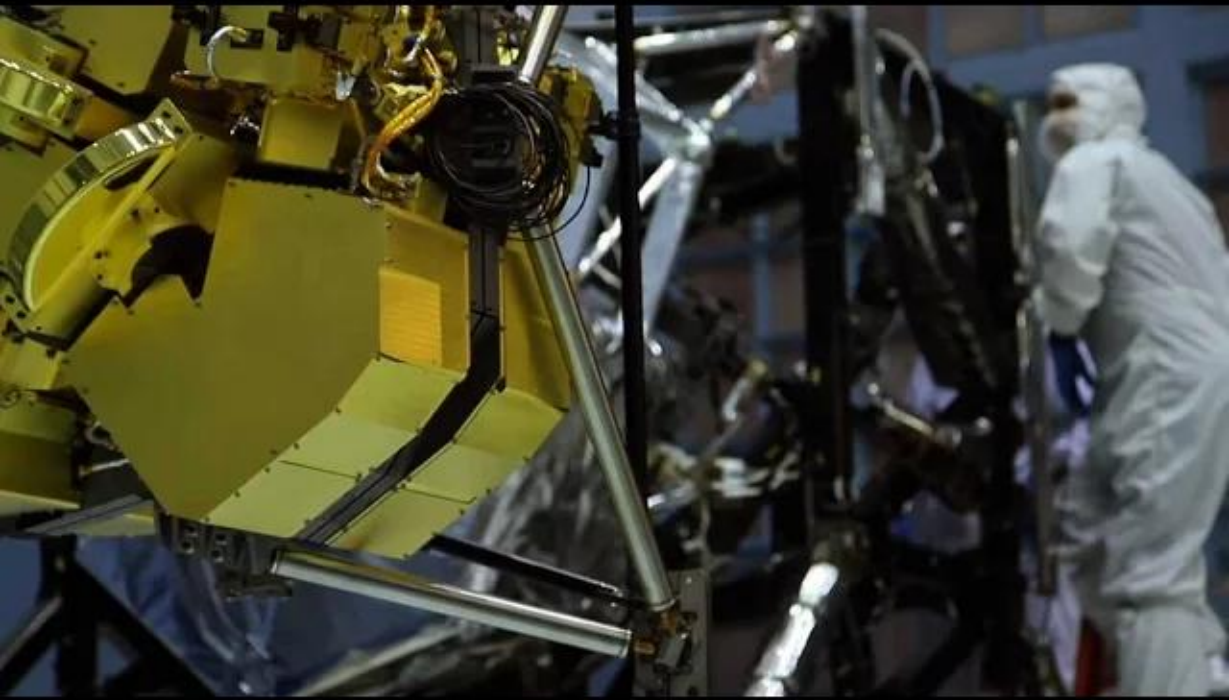

1
00:00:00,000 --> 00:00:12,690
you

2
00:00:17,260 --> 00:00:15,280
the James Webb Space Telescope is made

3
00:00:19,390 --> 00:00:17,270
up of four instruments but only one of

4
00:00:21,970 --> 00:00:19,400
them is being built in the United States

5
00:00:24,640 --> 00:00:21,980
it's called near cam or near-infrared

6
00:00:26,710 --> 00:00:24,650
camera to find out more about near cam

7
00:00:28,659 --> 00:00:26,720
we have with us the principal

8
00:00:30,909 --> 00:00:28,669
investigator for near cam Marshall Ricci

9
00:00:34,150 --> 00:00:30,919
Marshall what exactly does NIR cam do

10
00:00:36,400 --> 00:00:34,160
NIR cam is both the science camera for

11
00:00:37,810 --> 00:00:36,410
short wavelengths for JWST meaning it

12
00:00:39,729 --> 00:00:37,820
should take beautiful pictures like

13
00:00:42,130 --> 00:00:39,739

we've come to expect from Hubble but

14
00:00:45,250 --> 00:00:42,140
it's also the facility wavefront sensor

15
00:00:48,009 --> 00:00:45,260
and is used to tell how to line up the

16
00:00:50,410 --> 00:00:48,019
telescope near cam is actually part of

17
00:00:52,660 --> 00:00:50,420
the telescope in making the telescope

18
00:00:55,060 --> 00:00:52,670
work right what kind of science do you

19
00:00:57,220 --> 00:00:55,070
expect from your cam oh that's a that's

20
00:00:59,829 --> 00:00:57,230
a question we could spend the next five

21
00:01:01,750 --> 00:00:59,839
hours on but what we're expecting is to

22
00:01:04,689 --> 00:01:01,760
find the first galaxies that formed

23
00:01:06,510 --> 00:01:04,699
after the Big Bang we hope to find and

24
00:01:09,760 --> 00:01:06,520
characterize planets around other stars

25
00:01:12,280 --> 00:01:09,770
more about how solar systems form all

26
00:01:14,320 --> 00:01:12,290
kinds of things we're standing above

27
00:01:16,000 --> 00:01:14,330
some sort of cleanroom Marcia can we get

28
00:01:17,859 --> 00:01:16,010
down there to get a closer look at

29
00:01:19,780 --> 00:01:17,869
what's going on I think that can be

30
00:01:21,700 --> 00:01:19,790
arranged in my team that's been building

31
00:01:23,980 --> 00:01:21,710
this and aligning it and calibrating it

32
00:01:26,289 --> 00:01:23,990
can lead you through what it does what

33
00:01:29,440 --> 00:01:26,299
we have here is the optical metrology

34
00:01:31,359 --> 00:01:29,450
assembly for the NIR cam instrument we

35
00:01:34,209 --> 00:01:31,369
place an air cam inside of the chamber

36
00:01:37,389 --> 00:01:34,219
the system of mirrors takes a small beam

37
00:01:39,490 --> 00:01:37,399
from a star and it expands it up and

38
00:01:42,730 --> 00:01:39,500

then it makes the beam coming into the

39
00:01:45,959 --> 00:01:42,740
near cam instrument the same size and

40
00:01:48,789 --> 00:01:45,969
shape as if it would be coming from JWST

41
00:01:51,069 --> 00:01:48,799
why do you have a chamber for NIR cam

42
00:01:54,160 --> 00:01:51,079
why not just have it connected out here

43
00:01:56,080 --> 00:01:54,170
we want to simulate the operational

44
00:01:58,149 --> 00:01:56,090
environment that the near cam instrument

45
00:02:01,270 --> 00:01:58,159
will be in it can see hot it can see

46
00:02:02,590 --> 00:02:01,280
cold it can see vacuum all those

47
00:02:04,660 --> 00:02:02,600
different conditions that it would go

48
00:02:06,279 --> 00:02:04,670
through in its normal life thanks a lot

49
00:02:06,760 --> 00:02:06,289
for showing us your assembly you're most

50
00:02:09,010 --> 00:02:06,770
welcome

51
00:02:11,380 --> 00:02:09,020
the testing at the optical metrology

52
00:02:13,840 --> 00:02:11,390
assembly made sure near Kim could not

53
00:02:16,120 --> 00:02:13,850
just see a star clearly but use its

54
00:02:18,400 --> 00:02:16,130
vision to do science and help align the

55
00:02:20,680 --> 00:02:18,410
telescope after that phase was completed

56
00:02:23,530 --> 00:02:20,690
near cam went through some vibration

57
00:02:25,470 --> 00:02:23,540
testing before ending up here at NASA's

58
00:02:27,479 --> 00:02:25,480
Goddard Space Flight Center

59
00:02:30,089 --> 00:02:27,489
this time it'll go through a number of

60
00:02:31,949 --> 00:02:30,099
checks but it won't go with a loan near

61
00:02:34,680 --> 00:02:31,959
cams joined by the other science

62
00:02:36,300 --> 00:02:34,690
instruments on the Webb telescope thanks