

1
00:00:12,468 --> 00:00:16,769
what does the James Webb Space Telescope

2
00:00:14,519 --> 00:00:19,500
have to do with the world's largest

3
00:00:16,769 --> 00:00:21,000
centrifuge we are here at NASA's Goddard

4
00:00:19,500 --> 00:00:24,118
Space Flight Center in Greenbelt

5
00:00:21,000 --> 00:00:26,849
Maryland to find out hi Bill

6
00:00:24,118 --> 00:00:28,948
hi Mary I was told you can tell us more

7
00:00:26,849 --> 00:00:30,960
about this centrifuge that we're

8
00:00:28,949 --> 00:00:32,640
standing on the only centrifuge I know I

9
00:00:30,960 --> 00:00:33,120
was in my chemistry lab it's exactly

10
00:00:32,640 --> 00:00:36,539
like that

11
00:00:33,119 --> 00:00:38,640
except bigger so why does Goddard have

12
00:00:36,539 --> 00:00:40,768
such a big centrifuge well we use the

13
00:00:38,640 --> 00:00:43,829
centrifuge here to generate the same

14
00:00:40,768 --> 00:00:45,780
forces that a payload would see when

15
00:00:43,829 --> 00:00:48,599
it's launched in a rocket how big is

16
00:00:45,780 --> 00:00:51,000
this thing this room is about a hundred

17
00:00:48,600 --> 00:00:52,829
and fifty feet in diameter and the

18
00:00:51,000 --> 00:00:55,890
centrifuge is about a hundred and forty

19
00:00:52,829 --> 00:00:57,570
feet in diameter we can spin this arm to

20
00:00:55,890 --> 00:01:00,689
about a hundred and fifty six miles an

21
00:00:57,570 --> 00:01:02,338
hour but the wind is actually 200 miles

22
00:01:00,689 --> 00:01:04,890
an hour when we're spinning

23
00:01:02,338 --> 00:01:06,450
so is it like being in a hurricane if

24
00:01:04,890 --> 00:01:08,820
you were in the center of the centrifuge

25
00:01:06,450 --> 00:01:11,850
and it was spinning you would see or

26
00:01:08,819 --> 00:01:14,279
feel no load so what kind of payloads if

27
00:01:11,849 --> 00:01:16,890
you will do you test on a a centrifuge

28
00:01:14,280 --> 00:01:19,349
of this size we just large spacecraft

29

00:01:16,890 --> 00:01:23,129
we've tested small parts of the

30
00:01:19,349 --> 00:01:25,169
spacecraft we've tested SUVs here on

31
00:01:23,129 --> 00:01:26,849
this centrifuge well thank you so much

32
00:01:25,170 --> 00:01:29,159
for introducing us to the world's

33
00:01:26,849 --> 00:01:31,319
largest Stan Refuge and we're gonna talk

34
00:01:29,159 --> 00:01:33,900
to somebody else to find out how JWST is

35
00:01:31,319 --> 00:01:37,679
using this so Eric you guys are using

36
00:01:33,900 --> 00:01:39,150
this centrifuge to test pieces of the

37
00:01:37,680 --> 00:01:41,070
James Webb Space Telescope that's right

38
00:01:39,150 --> 00:01:42,330
we have our icing structure up here the

39
00:01:41,069 --> 00:01:43,349
structure that holds all the science

40
00:01:42,329 --> 00:01:45,870
instruments on the James Webb Space

41
00:01:43,349 --> 00:01:48,089
Telescope and we're using the centrifuge

42
00:01:45,870 --> 00:01:50,579
kind of like a big merry-go-round spin

43
00:01:48,090 --> 00:01:53,909

it up really fast and show that the

44

00:01:50,579 --> 00:01:55,709

structure can hang onto the telescope

45

00:01:53,909 --> 00:01:58,979

just like it'll have to do during launch

46

00:01:55,709 --> 00:02:01,048

we're gonna test to seven G's to show

47

00:01:58,978 --> 00:02:03,390

that it can hold on to the rocket seven

48

00:02:01,049 --> 00:02:05,970

G's gives it like we are seven times

49

00:02:03,390 --> 00:02:08,189

heavier than what it is seven times the

50

00:02:05,969 --> 00:02:10,889

Earth's gravity and then when it gets to

51

00:02:08,189 --> 00:02:13,799

zero G way out in space we have to show

52

00:02:10,889 --> 00:02:15,509

that it's the same shape as it was here

53

00:02:13,799 --> 00:02:16,709

on earth well thanks Eric for showing us

54

00:02:15,509 --> 00:02:18,560

how the James Webb Space Telescope

55

00:02:16,709 --> 00:02:22,370

program is using this

56

00:02:18,560 --> 00:02:24,770

fuge my pleasure now you can see how a

57

00:02:22,370 --> 00:02:26,000

virtual spin around the block will help

58

00:02:24,770 --> 00:02:28,520

make sure that James Webb Space

59

00:02:26,000 --> 00:02:30,650

Telescope withstands the forces and

60

00:02:28,520 --> 00:02:32,659

stresses during launch thanks for

61

00:02:30,650 --> 00:02:35,170

joining us for another edition of behind

62

00:02:32,659 --> 00:02:35,169

the Webb

63

00:02:38,110 --> 00:02:40,170

you