
NASA
Goddard
Space
Flight
Center

1
00:00:13,330 --> 00:00:14,330
Transcript for Behind The Webb
Episode 19: Spinning a Webb.

2
00:00:14,330 --> 00:00:16,430
Mary Estacion/Reporter: What does the James
Webb Space Telescope have to do with the world's

3
00:00:16,430 --> 00:00:18,270
largest centrifuge?

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00:00:18,270 --> 00:00:22,960
We're here at NASA's Goddard Space Flight
Center in Beltsville, MD to find out.

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00:00:22,960 --> 00:00:23,960
Mary: Hi Bill.

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00:00:23,960 --> 00:00:24,960
Bill Chambers/Project Engineer: Hi Mary.

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00:00:24,960 --> 00:00:30,020
Mary: I was told you can tell us more about
this centrifuge that we're standing on.

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00:00:30,020 --> 00:00:32,540
The only centrifuge I know was in my chemistry
lab.

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00:00:32,540 --> 00:00:35,030
Bill: It's exactly that, except bigger.

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00:00:35,030 --> 00:00:37,820
Mary: So why does Goddard have such a big
centrifuge?

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00:00:37,820 --> 00:00:43,870
Bill: We use the centrifuge here to generate
the same forces that a payload would see when

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00:00:43,870 --> 00:00:45,040
it's launched on a rocket.

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00:00:45,040 --> 00:00:46,620
Mary: How big is this thing?

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00:00:46,620 --> 00:00:54,930
Bill: This room is about 150 feet in diameter
and the centrifuge is about 140 feet in diameter.

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00:00:54,930 --> 00:01:00,830
We can spin this arm to about 156 miles an
hour, but the wind is actually 200 miles an

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00:01:00,830 --> 00:01:02,340
hour when we're spinning.

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00:01:02,340 --> 00:01:04,549
Mary: So is it like being in a hurricane or
something?

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00:01:04,549 --> 00:01:09,050
Bill: If you were at the center of the centrifuge
and it wasspinning, you would see or feel

19
00:01:09,050 --> 00:01:10,050
no load.

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00:01:10,050 --> 00:01:15,090
Mary: So what kind of payloads, if you will,
do you test on a centrifuge of this size?

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00:01:15,090 --> 00:01:17,180
Bill: We test large spacecraft.

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00:01:17,180 --> 00:01:20,350
We've tested small parts of the spacecraft.

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00:01:20,350 --> 00:01:23,830
We've tested SUVs here on this centrifuge.

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00:01:23,830 --> 00:01:28,740
Mary: Well, thank you so much for introducing
us to the world's largest centrifuge and we're

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00:01:28,740 --> 00:01:32,070
going to talk to someone else to find out
how JWST is using this.

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00:01:32,070 --> 00:01:38,320
Mary: So Eric, you guys are using this centrifuge
to test pieces of the James Webb Space Telescope?

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00:01:38,320 --> 00:01:39,320
Eric Johnson/ISIM Structure Manager: That's
right.

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00:01:39,320 --> 00:01:41,060
We have our ISIM structure up here.

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00:01:41,060 --> 00:01:44,450
It's the structure that holds all the science
instruments on the James Webb Space Telescope

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00:01:44,450 --> 00:01:49,300
and we're using the centrifuge, kind of like
a big merry go round, spin it up really fast

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00:01:49,300 --> 00:01:55,780
and show that thestructure can hang onto the
telescope, just like it will have to do during

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00:01:55,780 --> 00:01:56,780
the launch.

33
00:01:56,780 --> 00:02:00,760
We're going to test to 7Gs to show that it

can hold onto the rocket.

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00:02:00,760 --> 00:02:04,070
Mary: 7Gs... is it like we're 7 times heavier
than we are?

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00:02:04,070 --> 00:02:05,280
Eric: That's exactly what it is.

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00:02:05,280 --> 00:02:10,539
7 times the earth's gravity and then when
it gets to zero G way out in space, we have

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00:02:10,539 --> 00:02:14,099
to show that it's the same shape as it was
here on earth.

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00:02:14,099 --> 00:02:17,780
Mary: Well thanks Eric for showing us how
the James Webb Space Telescope program is

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00:02:17,780 --> 00:02:18,909
using the centrifuge.

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00:02:18,909 --> 00:02:20,380
Eric: My pleasure.

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00:02:20,380 --> 00:02:25,970
Mary: Now you can see how a virtual spin around
the block will help make sure the James Webb

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00:02:25,970 --> 00:02:30,470
Space Telescope withstands the forces and
stresses during launch.

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00:02:30,470 --> 00:02:33,110
Thanks for joining us for another edition
of Behind the Webb.