TW@N

THIS WEEK @ NASA

1
00:00:01,329 --> 00:00:04,180
An update on the Green Run hot fire test for
Artemis I …

2
00:00:04,180 --> 00:00:06,790
A commercial cargo spacecraft leaves the space
station …

3
00:00:06,790 --> 00:00:11,610
And innovative ideas for exploring unexplored
areas of the Moon … a few of the stories

4
00:00:11,610 --> 00:00:14,300
to tell you about – This Week at NASA!

5
00:00:14,300 --> 00:00:18,840
The Green Run hot fire test with the Space
Launch System or SLS rocket’s core stage

6
00:00:18,840 --> 00:00:24,740
for our Artemis I mission, is now targeted
for as early as Jan. 17. The hot fire is the

7
00:00:24,740 --> 00:00:29,540
eighth and final scheduled test of the Green
Run series and will see all four of the rocket’s

8
00:00:29,540 --> 00:00:34,410
engines fired to simulate a launch. We conducted
the seventh test of the series – the wet

9
00:00:34,410 --> 00:00:39,449
dress rehearsal - on Dec. 20. During that
test the core stage tanks were loaded with

10
00:00:39,449 --> 00:00:45,869
more than 700,000 gallons of supercold propellant
for the first time, and then drained. SLS

11

00:00:45,869 --> 00:00:51,120
will launch an uncrewed Orion spacecraft on
a mission around the Moon on Artemis I.

12
00:00:51,120 --> 00:00:56,360
A Northrop Grumman Cygnus cargo spacecraft
left the International Space Station on Jan.

13
00:00:56,360 --> 00:01:01,910
6 – more than three months after delivering
nearly 8,000 pounds of supplies, scientific

14
00:01:01,910 --> 00:01:07,290
investigations, and other cargo to the orbiting
outpost. The Cygnus is named in memory of

15
00:01:07,290 --> 00:01:12,780
Kalpana Chawla a member of the STS-107 crew
that was lost in the space shuttle Columbia

16
00:01:12,780 --> 00:01:14,430
accident.

17
00:01:14,430 --> 00:01:21,570
During a virtual forum Jan. 6-7, university
teams selected as finalists in NASA’s Breakthrough,

18
00:01:21,570 --> 00:01:26,110
Innovative and Game-changing or (BIG) Idea
Challenge, presented innovative concepts for

19
00:01:26,110 --> 00:01:31,911
lunar payloads that could help NASA explore
previously uncharted areas on the Moon. Some

20
00:01:31,911 --> 00:01:36,440
of these concepts could help our Artemis lunar
exploration program study the Moon ahead of

21
00:01:36,440 --> 00:01:42,159

a human landing and help establish a sustained presence on the lunar surface.

22
00:01:42,159 --> 00:01:47,170
Researchers at our Kennedy Space Center recently tested a new robotic CubeRover inside a massive

23
00:01:47,170 --> 00:01:53,240
bin of regolith rock and dust used to simulate the lunar surface. The shoebox-size rover

24
00:01:53,240 --> 00:01:58,960
built by Astrobotic Technology was funded by a NASA program that encourages commercial

25
00:01:58,960 --> 00:02:04,140
development of innovative technologies to fulfill agency needs. As is the case with

26
00:02:04,140 --> 00:02:09,780
small satellites, the rover's standard size enables researchers and students to build

27
00:02:09,780 --> 00:02:14,910
and launch them on NASA missions designed to expand science, exploration, and commercial

28
00:02:14,910 --> 00:02:17,500
activity on the Moon.

29
00:02:17,500 --> 00:02:21,950
NASA contributions to two recently approved heliophysics missions will help us understand

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00:02:21,950 --> 00:02:27,290
the Sun and Earth as an interconnected system. One is an international mission targeted for

31
00:02:27,290 --> 00:02:33,540
launch in 2026 that will use a next-generation

solar-observing telescope to study how solar

32
00:02:33,540 --> 00:02:38,860
wind and material is released from the sun’s
atmosphere. The other mission will use a trio

33
00:02:38,860 --> 00:02:44,200
of small satellites to study electric currents
in Earth’s atmosphere linking aurora to

34
00:02:44,200 --> 00:02:50,180
the Earth’s magnetosphere. That mission
will launch no earlier than June 2024.

35
00:02:50,180 --> 00:02:55,310
Data from our Solar Dynamics Observatory have
led to new results about the workings of sunquakes

36
00:02:55,310 --> 00:03:01,380
- seismic activity seen as ripples on the
Sun following a solar flare. Scientists have

37
00:03:01,380 --> 00:03:06,849
long suspected that sunquakes are driven by
magnetic forces or heating of the outer atmosphere,

38
00:03:06,849 --> 00:03:13,489
where solar flares occur. But data captured
by SDO in 2011 saw surface ripples of a sunquake

39
00:03:13,489 --> 00:03:18,560
emerging from deep beneath the solar surface,
right after a flare occurred. Scientists now

40
00:03:18,560 --> 00:03:23,400
think that sunquake ripples are driven by
a submerged source which is somehow triggered

41
00:03:23,400 --> 00:03:25,599
by solar flares in the atmosphere above.

42
00:03:25,599 --> 00:03:27,680
That’s what’s up this week @NASA …