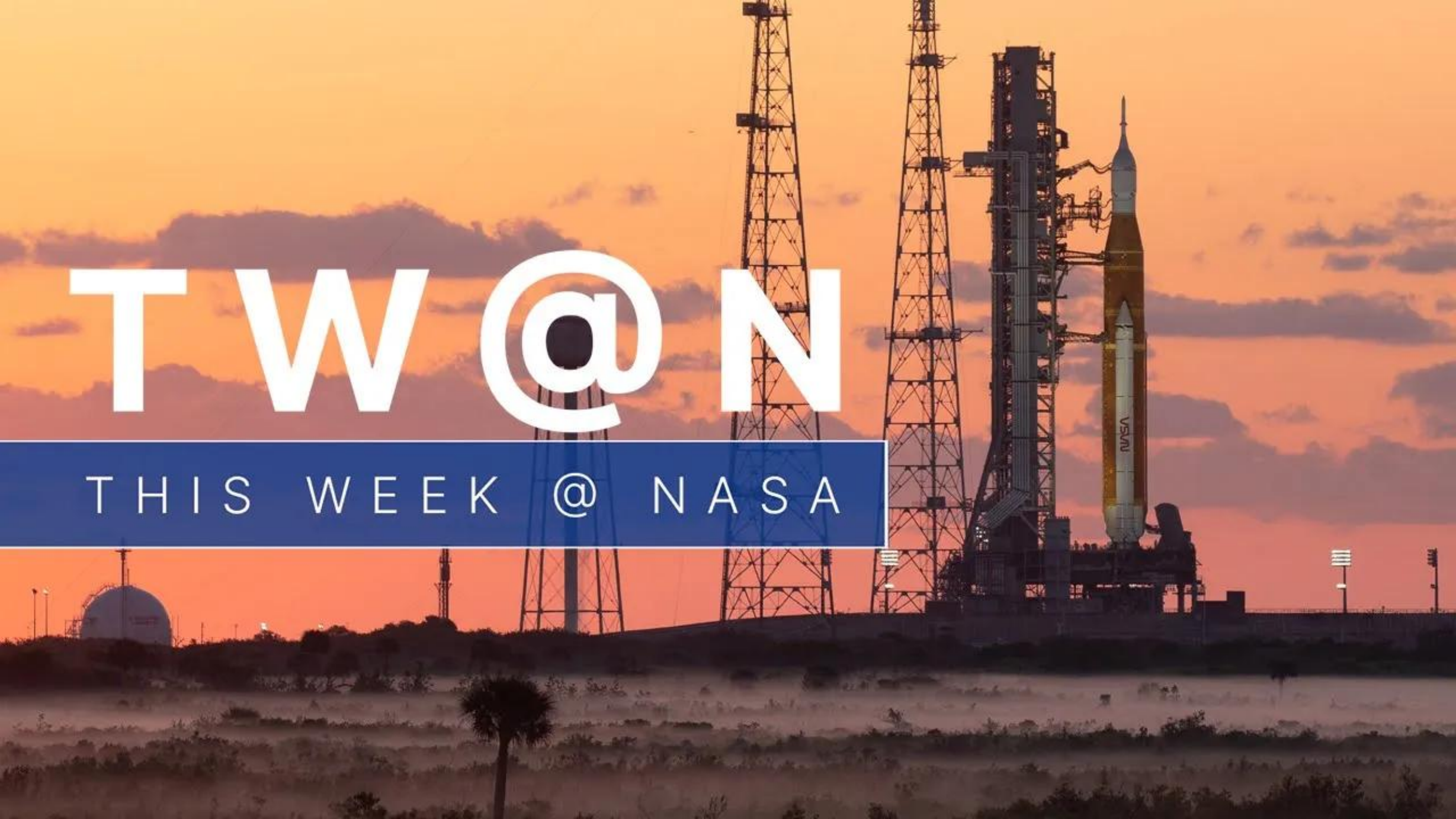
TW@N
THIS WEEK @ NASA

1
00:00:00,166 --> 00:00:03,803
Testing our mega Moon rocket and ground
systems ...

2
00:00:03,803 --> 00:00:06,573
Preparing the James
Webb Space Telescope for science ...

3
00:00:06,873 --> 00:00:10,410
And testing an instrument for future X-59
research …

4
00:00:10,710 --> 00:00:14,180
a few of the stories
to tell you about – This Week at NASA!

5
00:00:15,849 --> 00:00:19,986
From April 12-14,
NASA conducted a modified wet

6
00:00:19,986 --> 00:00:24,891
dress rehearsal for the agency’s Space
Launch System rocket and Orion spacecraft

7
00:00:25,258 --> 00:00:28,895
on Launch Pad 39B
at our Kennedy Space Center in Florida

8
00:00:29,162 --> 00:00:31,931
ahead of the uncrewed Artemis
I Moon mission.

9
00:00:32,332 --> 00:00:36,603
The multi-day wet dress rehearsal
focused on loading fuel into the rocket’s

10
00:00:36,603 --> 00:00:39,572
core stage tanks,
refining countdown procedures,

11
00:00:39,873 --> 00:00:43,209
and validating critical models
and software interfaces.

12
00:00:43,643 --> 00:00:47,247
In addition to the two recent test runs
for wet dress rehearsal,

13
00:00:47,514 --> 00:00:51,551
this modified test allowed teams
to practice operations critical

14
00:00:51,551 --> 00:00:55,188
to launch success ahead of the Artemis
I mission.

15
00:00:56,489 --> 00:01:02,328
On April 7, the Mid-Infrared Instrument (MIRI)
aboard the James Webb Space Telescope

16
00:01:02,529 --> 00:01:06,599
reached a cooling milestone
as it prepares for science this summer.

17
00:01:07,000 --> 00:01:11,438
With the assistance of a cryocooler,
the instrument reached its final operating

18
00:01:11,438 --> 00:01:14,541
temperature of less than 7 kelvins

19
00:01:14,541 --> 00:01:17,310
(minus 447 degrees Fahrenheit),

20
00:01:17,677 --> 00:01:21,448
that’s just a few degrees above the lowest
temperature matter can reach.

21
00:01:22,015 --> 00:01:26,252

Webb’s four science instruments,
including MIRI, initially cooled off

22
00:01:26,252 --> 00:01:26,853
in the shade

23
00:01:26,853 --> 00:01:31,091
of the tennis-court-size sunshield,
but making the final temperature drop

24
00:01:31,091 --> 00:01:34,861
is essential for the observatory’s
only mid-infrared instrument

25
00:01:35,128 --> 00:01:39,933
that will play a key role in understanding
the origins of stars and planets.

26
00:01:39,933 --> 00:01:45,105
NASA conducted a series of flight tests
at our Armstrong Flight

27
00:01:45,105 --> 00:01:48,408
Research Center
in California, to evaluate improvements

28
00:01:48,408 --> 00:01:52,879
made to a shock-sensing probe
designed to measure the unique shock waves

29
00:01:52,979 --> 00:01:57,584
that our quiet supersonic X-59
aircraft will generate during flight.

30
00:01:58,017 --> 00:02:01,521
The probe was mounted
on the nose of a NASA F-15 research

31
00:02:01,521 --> 00:02:04,891
aircraft to measure shock waves from a NASA F-18,

32
00:02:05,191 --> 00:02:09,062
using flight techniques
that will test the X-59's shockwaves

33
00:02:09,295 --> 00:02:13,833
during the future acoustic validation
phase of quiet supersonic flight.

34
00:02:15,568 --> 00:02:17,637
NASA’s Hubble Space Telescope

35
00:02:17,637 --> 00:02:23,343
has determined the size of the largest icy
comet nucleus ever seen by astronomers.

36
00:02:23,810 --> 00:02:27,180
The estimated diameter of behemoth comet

37
00:02:27,180 --> 00:02:32,886
C/2014
UN271 is approximately 80 miles across,

38
00:02:33,153 --> 00:02:35,755
making it larger than the state of Rhode
Island!

39
00:02:36,222 --> 00:02:41,261
Using a series of five Hubble images
taken of the comet in January 2022

40
00:02:41,461 --> 00:02:44,931
combined with a computer model
of the surrounding dusty coma,

41
00:02:45,265 --> 00:02:50,103
scientists revealed a massive,
but measurable, starlike nucleus

42

00:02:50,103 --> 00:02:53,907
that is about 50 times larger than what's
found at the heart of most

43
00:02:53,907 --> 00:02:56,176
known comets.

44
00:02:56,943 --> 00:03:01,381
On Feb. 14, NASA's
Lucy spacecraft obtained a series

45
00:03:01,381 --> 00:03:04,884
of calibration images
with its four visible-light cameras.

46
00:03:04,884 --> 00:03:08,254
While the first test images
were taken shortly after launch,

47
00:03:08,555 --> 00:03:11,090
the February tests
were much more extensive.

48
00:03:11,491 --> 00:03:16,296
Using its Instrument Pointing Platform,
Lucy pointed at 11 different star fields

49
00:03:16,296 --> 00:03:18,798
to test camera
performance and sensitivity,

50
00:03:19,032 --> 00:03:23,436
as well as the spacecraft's ability to
point accurately in different directions.

51
00:03:23,903 --> 00:03:29,375
Lucy, which launched in October 2021,
is the first space mission set to explore

52
00:03:29,375 --> 00:03:34,080

a diverse population of small bodies
known as the Trojan asteroids.

53
00:03:34,647 --> 00:03:36,683
That’s what’s up this week @NASA …