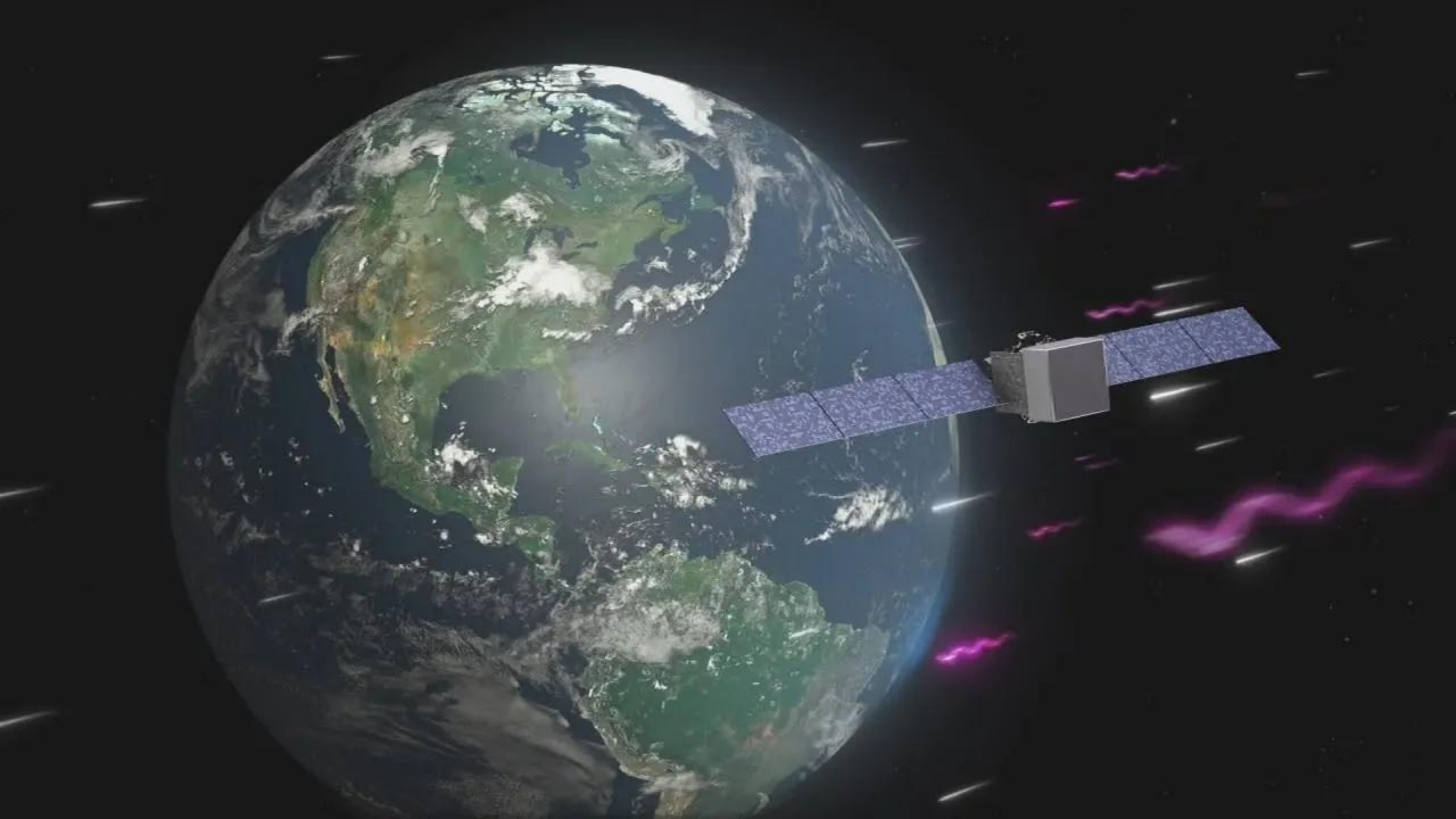

1
00:00:01,020 --> 00:00:05,210
Tracing the source of a cosmic phenomenon
…

2
00:00:05,210 --> 00:00:07,870
The sound of plasma waves in space …

3
00:00:07,870 --> 00:00:12,839
And X-ray exploration of the Eagle Nebula
… a few of the stories to tell you about

4
00:00:12,839 --> 00:00:17,020
– This Week at NASA!

5
00:00:17,020 --> 00:00:21,670
For the first time ever, our Fermi Gamma-ray
Space Telescope has found the source of a

6
00:00:21,670 --> 00:00:25,730
high-energy neutrino from outside our galaxy.

7
00:00:25,730 --> 00:00:30,550
High-energy neutrinos are hard-to-catch particles
that are believed to be created by the most

8
00:00:30,550 --> 00:00:36,800
powerful events in the cosmos, like galaxy
mergers and material falling onto supermassive

9
00:00:36,800 --> 00:00:38,290
black holes.

10
00:00:38,290 --> 00:00:43,710
Fermi traced this neutrino back to a blast
of gamma-ray light from a distant supermassive

11
00:00:43,710 --> 00:00:46,720
black hole in the constellation Orion.

12
00:00:46,720 --> 00:00:52,780
It travelled 3.7 billion years at nearly light
speed before being detected by an international

13
00:00:52,780 --> 00:01:01,620
team of scientists using the National Science
Foundation’s IceCube Neutrino Observatory.

14
00:01:01,620 --> 00:01:10,439
That’s the sound of plasma waves moving
between Saturn and its moon Enceladus.

15
00:01:10,439 --> 00:01:15,789
During its final orbits around the planet,
our Cassini spacecraft observed for the first

16
00:01:15,789 --> 00:01:21,750
time that the plasma waves travel on magnetic
field lines that are like an electrical circuit

17
00:01:21,750 --> 00:01:24,710
connecting Saturn and Enceladus.

18
00:01:24,710 --> 00:01:29,259
Researchers converted the recording of the
plasma into this audio file that we can hear

19
00:01:36,029 --> 00:01:30,259
…

20
00:01:36,029 --> 00:01:43,429
The recording was time-compressed from 16
minutes to 28.5 seconds.

21
00:01:43,429 --> 00:01:48,119
This new composite image of the Pillars of
Creation – the spectacular star-forming

22
00:01:48,119 --> 00:01:53,869

region of The Eagle Nebula about 5,700 light
years from Earth – combines X-ray data from

23
00:01:53,869 --> 00:01:58,989
our Chandra X-ray Observatory and optical
data from the Hubble Space Telescope.

24
00:01:58,989 --> 00:02:05,020
Chandra's unique ability to resolve and
locate X-ray sources made it possible to identify

25
00:02:05,020 --> 00:02:11,510
hundreds of very young stars, and those still
in the process of forming – known as "protostars".

26
00:02:11,510 --> 00:02:18,250
On July 10, we announced the six women and
men selected as the agency's newest flight

27
00:02:18,250 --> 00:02:19,590
directors.

28
00:02:19,590 --> 00:02:25,150
After extensive training, the new flight directors
will oversee a variety of human missions involving

29
00:02:25,150 --> 00:02:30,730
the International Space Station – including
flights on American-made commercial crew spacecraft,

30
00:02:30,730 --> 00:02:36,150
as well as missions to the Moon and beyond
with our Orion spacecraft.

31
00:02:36,150 --> 00:02:41,460
An unpiloted Russian Progress cargo spacecraft,
loaded with almost three tons of supplies,

32
00:02:41,460 --> 00:02:47,970
arrived at the International Space Station

on July 9 at 9:31 p.m. EDT, less than four

33
00:02:47,970 --> 00:02:51,400
hours after being launched from Kazakhstan.

34
00:02:51,400 --> 00:02:56,760
The spacecraft’s fast-track trip to the
station demonstrated an expedited capability

35
00:02:56,760 --> 00:03:00,930
that may be used on future Russian cargo and
crew launches.

36
00:03:00,930 --> 00:03:05,480
The Progress will remain docked to the station
until late January 2019.

37
00:03:05,480 --> 00:03:08,950
That’s what’s up this week @NASA …