1
00:00:11,519 --> 00:00:14,200
Extreme weather is a fact of life.

2
00:00:14,200 --> 00:00:18,960
But the key to saving lives and protecting
property is early warnings.

3
00:00:18,970 --> 00:00:24,699
Soon meteorologists will gain a new tool that
will revolutionize weather forecasting.

4
00:00:24,699 --> 00:00:30,620
NASA is preparing to launch GOES-R, the first
in a series of next-generation Geostationary

5
00:00:30,620 --> 00:00:36,030
Operational Environmental Satellites for NOAA
the National Oceanic and Atmospheric

6
00:00:36,030 --> 00:00:37,030
Administration

7
00:00:37,030 --> 00:00:40,860
Todd McNamara speaking: The benefits we are
seeing with the GOES-R satellite system, the

8
00:00:40,860 --> 00:00:45,270
higher resolution, the more frequent updates,
the increasing number of products and the

9
00:00:45,270 --> 00:00:50,500
lightning information is kind of like going
from a black and white television system to

10
00:00:50,500 --> 00:00:52,860
a high-definition television system.

11
00:00:52,870 --> 00:00:57,900
State-of-the-art technology and instrumentation

on the spacecraft are designed to provide

12
00:00:57,900 --> 00:01:02,980
more timely and accurate weather forecasts, and
most importantly, faster warnings.

13
00:01:02,989 --> 00:01:06,640
Todd McNamara: Forecasters all across
the nation will have this benefit.

14
00:01:06,640 --> 00:01:11,240
They're going to get that more frequent updates, higher
resolution data, and they are going to be

15
00:01:11,240 --> 00:01:17,040
able to monitor forest fires, dense fog situations,
tornadoes or even tropical

16
00:01:17,049 --> 00:01:20,840
cyclones, and they are going to be able to
provide more accurate forecasts.

17
00:01:20,840 --> 00:01:22,880
This new satellite is going to save lives.

18
00:01:22,880 --> 00:01:28,279
The GOES-R satellite was manufactured by Lockheed
Martin Space Systems in Littleton,

19
00:01:28,279 --> 00:01:37,209
Colorado, and was delivered to the
Shuttle Landing Facility at NASA's Kennedy Space center in Florida on Aug. 22, 2016.

20
00:01:37,209 --> 00:01:42,299
The agency's Launch Services Program has spent
years working not just with Lockheed Martin,

21
00:01:42,300 --> 00:01:47,620
but also the spacecraft team at the Goddard Space
Flight Center, and United Launch Alliance,

22
00:01:47,630 --> 00:01:52,139
or ULA, who provides the Atlas V rocket to
boost it into space.

23
00:01:52,139 --> 00:01:55,649
Diana Calero: We've been working with the
ULA team, the spacecraft team, the Lockheed

24
00:01:55,649 --> 00:02:01,869
Martin team, the LSP team for over six years
since this has been in the works.

25
00:02:01,869 --> 00:02:02,869
And we have

26
00:02:02,869 --> 00:02:04,310
formed an incredible team."

27
00:02:04,310 --> 00:02:08,539
But before GOES-R begins work in orbit, it
must be prepared for launch.

28
00:02:08,539 --> 00:02:13,520
Diana Calero: Since its arrival here at the
Kennedy Space Center in August, the

29
00:02:13,520 --> 00:02:18,319
GOES-R satellite was transported from the
SLF, Shuttle Landing Facility, over to the

30
00:02:18,320 --> 00:02:23,140
Astrotech building over in Titusville where it is being
processed in a large high bay."

31
00:02:23,140 --> 00:02:29,220
Ironically, one of the challenges for the
GOES-R team was a case of extreme weather.

32

00:02:29,220 --> 00:02:35,580
On Oct. 6 and 7, 2016, the east coast of Florida,
including the Kennedy Space Center, was slammed

33
00:02:35,580 --> 00:02:37,600
by Hurricane Matthew.

34
00:02:37,610 --> 00:02:40,970
This required quick work to protect the satellite
from possible damage

35
00:02:40,970 --> 00:02:48,860
Omar Baez: It's interesting how a satellite
that's supposed to be out hunting hurricanes gets

36
00:02:49,860 --> 00:02:56,650
effected by a hurricane and has caused a delay
to its launch."

37
00:02:56,650 --> 00:03:01,580
Once checkouts and processing are completed
at the Astrotech facility, GOES-R is

38
00:03:01,580 --> 00:03:07,510
encapsulated in the payload fairing for the
trip to space launch complex 41 at Cape Canaveral

39
00:03:07,510 --> 00:03:08,510
Air Force Station.

40
00:03:08,510 --> 00:03:15,450
Diana Calero: Then very slowly, it is transported
over ground to the Vertical Integration Facility.

41
00:03:15,450 --> 00:03:17,690
That's where the rocket is waiting.

42
00:03:17,690 --> 00:03:21,590
And the spacecraft is hoisted and carried
up on top of the

43
00:03:21,590 --> 00:03:24,730
rocket gets settled on there and bolted down."

44
00:03:24,730 --> 00:03:32,900
Next, the team begins a series of integrated
tests between the spacecraft and the vehicle.

45
00:03:32,900 --> 00:03:37,660
Finally, on the day before launch, the rocket
is ready to be rolled out to the pad.

46
00:03:37,660 --> 00:03:42,490
As always, launch day is filled with tension
and anticipation.

47
00:03:42,490 --> 00:03:49,040
Calero: The most exciting part of a launch
campaign are the final few minutes prior to launch.

48
00:03:50,760 --> 00:03:55,540
Everybody's quiet, everybody's intent on listening
on their headsets to the final launch sequence

49
00:03:55,540 --> 00:03:58,790
occurring on an Atlas V rocket.

50
00:03:58,790 --> 00:04:03,210
This has been the culmination of many years
of hard

51
00:04:03,210 --> 00:04:07,002
work, of setbacks, of successes and finally
we're here.

52
00:04:07,002 --> 00:04:09,420
And when you finally hear the 3, 2, 1, liftoff!

53
00:04:09,420 --> 00:04:12,180

-- It's the most thrilling, exciting, nervous
experience

54
00:04:12,180 --> 00:04:16,010
you can have throughout the whole launch campaign."

55
00:04:16,010 --> 00:04:23,130
GOES-R will be placed in a geosynchronous
orbit circling at about 22,000 miles above the Earth.

56
00:04:23,130 --> 00:04:28,140
In this orbit, the spacecraft remains over
the same point on the western hemisphere,

57
00:04:28,150 --> 00:04:31,710
giving meteorologists a continuous view of
the weather.

58
00:04:31,710 --> 00:04:35,659
Baez: At the end of the day, we get rewarded
with a beautiful launch

59
00:04:35,659 --> 00:04:36,939
and I think that's just