1
00:00:00,570 --> 00:00:06,080
Here at Vandenberg Air Force Base in California,
NASA is preparing to launch a spacecraft to

2
00:00:06,080 --> 00:00:11,490
study the Earth's atmosphere and better understand
how climate change affects everyone on the

3
00:00:11,490 --> 00:00:12,589
planet.

4
00:00:12,589 --> 00:00:18,990
The Orbiting Carbon Observatory, or OCO-2,
will be NASA's first dedicated Earth remote-sensing

5
00:00:18,990 --> 00:00:25,439
satellite to collect space-based global measurements
of atmospheric carbon dioxide. It will have

6
00:00:25,439 --> 00:00:30,669
the precision, resolution and coverage needed
to better understand the environment on a

7
00:00:30,669 --> 00:00:32,610
global basis.

8
00:00:32,610 --> 00:00:37,239
The mission to study the atmosphere began
to take shape in an Orbital Sciences Corporation

9
00:00:37,239 --> 00:00:44,020
facility in Gilbert, Arizona. The company
built, integrated and tested the OCO-2 spacecraft

10
00:00:44,020 --> 00:00:49,469
under a contract from NASA's Jet Propulsion
Laboratory in Pasadena, California.

11
00:00:49,469 --> 00:00:55,559

After a 560-mile trip from Orbital's facility
in Arizona, the satellite arrived at Vandenberg

12
00:00:55,559 --> 00:01:02,489
on April 30. It then was transported to the
Astrotech payload processing facility. Inside

13
00:01:02,489 --> 00:01:08,500
the clean room, technicians and engineers
began uncrating the OCO-2 spacecraft.

14
00:01:08,500 --> 00:01:14,430
The 985-pound satellite then was placed on
a test fixture to begin weeks of intense prelaunch

15
00:01:14,430 --> 00:01:19,500
checkouts to ensure all its complex systems
are working properly.

16
00:01:19,500 --> 00:01:24,290
During December of last year, a convoy of
trucks began delivering the solid rocket motors

17
00:01:24,290 --> 00:01:29,310
to Vandenberg for the United Launch Alliance
Delta II rocket that will boost the satellite

18
00:01:29,310 --> 00:01:31,530
to orbit.

19
00:01:31,530 --> 00:01:37,799
In late March, the Delta's first-stage booster
arrived at NASA hangar 836.

20
00:01:37,799 --> 00:01:44,540
On March 28, the Delta II first stage booster
was transported to SLC-2 and raised to the

21
00:01:44,540 --> 00:01:49,350
vertical position and hoisted into the mobile

service tower.

22
00:01:49,350 --> 00:01:55,049
Two weeks later, the three solid rocket motors
were attached to the first stage of the booster.

23
00:01:55,049 --> 00:01:59,619
The Delta II second stage then was towed to
the base of the mobile service tower at Space

24
00:01:59,619 --> 00:02:02,520
Launch Complex-2 on April 15.

25
00:02:02,520 --> 00:02:07,579
The instruments and systems on OCO-2 were
thoroughly tested at Astrotech's Vandenberg

26
00:02:07,579 --> 00:02:13,440
facility, including the all-important solar
arrays. While orbiting the Earth, the arrays

27
00:02:13,440 --> 00:02:20,440
will capture the sun's energy and generate
813 watts of power for the spacecraft's systems.

28
00:02:20,660 --> 00:02:26,200
With a primary structure consisting of a seven-foot-long
hexagonal column that is three feet wide,

29
00:02:26,200 --> 00:02:30,170
OCO-2 is about the size of an office desk.

30
00:02:30,170 --> 00:02:35,130
Once final checks were complete at the Vandenberg
Astrotech facility, the satellite was enclosed

31
00:02:35,130 --> 00:02:39,850
in its transportation canister and prepared
for the trip to the launch pad to meet up

32
00:02:39,850 --> 00:02:42,460
with the Delta II vehicle.

33
00:02:42,460 --> 00:02:48,520
By mid-June, OCO-2 was ready to be placed
atop the Delta rocket to begin final preparations

34
00:02:48,520 --> 00:02:51,740
for liftoff and its 24-month mission.

35
00:02:51,740 --> 00:02:57,350
Once in orbit, OCO-2 will study carbon dioxide
levels of the Earth's atmosphere from an orbit