



1
00:00:00,000 --> 00:00:07,000
(Music)

2
00:00:07,000 --> 00:00:10,000
The OPALS payload will transmit a high-definition video

3
00:00:10,000 --> 00:00:13,000
from the space station down to the ground on a laser beam.

4
00:00:13,000 --> 00:00:16,000
We do this by using a telescope high above Los Angeles,

5
00:00:16,000 --> 00:00:17,000
in the San Gabriel mountain range.

6
00:00:17,000 --> 00:00:20,000
It's going to come down on a 2.5-Watt laser, from a payload

7
00:00:20,000 --> 00:00:22,000
called the OPALS payload up on the space station.

8
00:00:22,000 --> 00:00:25,000
The file will transmit over a fiber-optics cable,

9
00:00:25,000 --> 00:00:27,000
on the beam back to the ground station on Table Mountain.

10
00:00:27,000 --> 00:00:30,000
From this location, we will illuminate

11
00:00:30,000 --> 00:00:32,000
the International Space Station with a laser beam.

12
00:00:32,000 --> 00:00:35,000
Once the beacon is received, the OPALS payload points back

13
00:00:35,000 --> 00:00:37,000

at the ground station and will modulate a signal

14

00:00:37,000 --> 00:00:40,000

over a laser beam back to the ground.

15

00:00:40,000 --> 00:00:43,000

We collect an enormous amount of data out in space,

16

00:00:43,000 --> 00:00:44,000

and we need to get it all down to the ground.

17

00:00:44,000 --> 00:00:47,000

This is an alternative that's much faster than our traditional

18

00:00:47,000 --> 00:00:49,000

radio waves that we use to communicate back down to the ground.

19

00:00:49,000 --> 00:00:50,000

And so with this demonstration, we're

20

00:00:50,000 --> 00:00:54,000

paving the way for the future of communications to and from space.

21

00:00:54,000 --> 00:00:57,000

So we have a special message now from the International Space Station.

22

00:00:57,000 --> 00:01:00,000

It's our first video, called 'Hello, World';

23

00:01:00,000 --> 00:01:03,000

an homage to the first output of any standard computer program.

24

00:01:03,000 --> 00:01:05,000

Let's take a look at it now.

25

00:01:05,000 --> 00:01:11,000

It's the story of an endless search to serve the communication needs of America.

26
00:01:11,000 --> 00:01:13,000
[Male Voice] Beep beep beep. 'Why the hurry?'

27
00:01:13,000 --> 00:01:16,000
Here is modern telegraphy at work.

28
00:01:16,000 --> 00:01:18,000
Sending and receiving in facsimile.