1
00:00:00,010 --> 00:00:08,190
[Sound FX]

2
00:00:08,210 --> 00:00:14,210
Remember these? Laser light made records obsolete.

3
00:00:14,230 --> 00:00:19,280
NASA is on the verge of doing the same thing with space based communications.

4
00:00:19,300 --> 00:00:24,360
Before the end of the decade, the Laser Communication Relay Demonstration mission

5
00:00:24,380 --> 00:00:31,370
will revolutionize the way we move tons of data from orbit to ground and all around the solar system.

6
00:00:31,390 --> 00:00:38,390
The demand for vast transmission capability grows exponentially. Sensors are gathering more data than ever;

7
00:00:38,410 --> 00:00:43,470
sophisticated command and control software talks more and asks more.

8
00:00:43,490 --> 00:00:47,480
Conventional radio frequency transmissions can't meet the need.

9
00:00:47,500 --> 00:00:55,490
That's why engineers at Goddard, and partners like MIT Lincoln Lab, the Jet Propulsion Lab, and Space Syste

10
00:00:55,510 --> 00:01:00,490
are working on the next generation of high data rate, low mass optical systems.

11
00:01:00,510 --> 00:01:05,500
Their goals are nothing short of imagining the future and bringing it to life.

12
00:01:05,520 --> 00:01:10,520
Imagine live, high definition video feeds from far away places in the solar system.

13
00:01:10,540 --> 00:01:14,590

That's the promise of Laser Comm.

14
00:01:14,610 --> 00:01:17,600
The beauty of Laser Comm is its scalability.

15
00:01:17,620 --> 00:01:24,600
Missions will see profound improvements, with speeds increasing from 10 to 100 times over today's RF transm

16
00:01:24,620 --> 00:01:32,650
And huge bandwidth improvements are just the beginning. Reductions of hardware mass and power demands

17
00:01:32,670 --> 00:01:42,660
Smaller communications systems mean more efficient power management, and more efficient power manage

18
00:01:42,680 --> 00:01:47,670
Laser Comm is just one part of NASA's new initiative to commercialize space.

19
00:01:47,690 --> 00:01:54,710
This particular demonstration will hitch a ride on a Loral communications satellite in 2017.

20
00:01:54,730 --> 00:02:00,780
Once on orbit, control of the Optical Module will be turned over to NASA Goddard for testing.

21
00:02:00,800 --> 00:02:10,790
Two-way data transmissions from ground stations at White Sands New Mexico and NASA's Jet Propulsion Lab

22
00:02:10,810 --> 00:02:19,980
But just a few years after a successful demonstration, NASA's own telecommunications relay system could be