



1  
00:00:00,000 --> 00:00:00,750  
It is time.

2  
00:00:01,290 --> 00:00:05,430  
On December 7 2021, NASA  
launched the laser

3  
00:00:05,430 --> 00:00:09,180  
communications Relay  
Demonstration payload or LC rd

4  
00:00:09,180 --> 00:00:09,660  
one.

5  
00:00:10,020 --> 00:00:15,270  
And we have lift off of United  
Launch Alliance Atlas five

6  
00:00:15,270 --> 00:00:18,660  
rocket with the SDP three  
mission for the United States

7  
00:00:18,660 --> 00:00:19,530  
Space Force.

8  
00:00:20,190 --> 00:00:23,730  
LCD is testing revolutionary  
laser communications

9  
00:00:23,730 --> 00:00:27,660  
technologies which can offer  
science and exploration missions

10  
00:00:27,690 --> 00:00:32,520  
more data than ever before. Over  
the holidays, we asked for

11  
00:00:32,520 --> 00:00:35,850  
social media users and NASA

missions to share their New

12

00:00:35,850 --> 00:00:40,320

Year's resolutions with us using  
the hashtag LCR D resolutions.

13

00:00:41,040 --> 00:00:44,430

Today, we are happy to announce  
that we've transmitted those

14

00:00:44,430 --> 00:00:48,900

resolutions to space over laser  
links through the LCR D mission.

15

00:00:50,070 --> 00:00:53,640

But how did we send your  
resolutions to space? What is

16

00:00:53,640 --> 00:00:54,600

LCR? D.

17

00:00:54,930 --> 00:00:58,200

LCR D is this part of the  
spacecraft that's about the size

18

00:00:58,200 --> 00:01:02,010

of a king size bed and has two  
optical modules. They're

19

00:01:02,010 --> 00:01:05,100

basically telescopes that look  
down to the earth and look at

20

00:01:05,100 --> 00:01:08,910

our to ground stations in Hawaii  
in California. So this is 10

21

00:01:08,910 --> 00:01:13,800

scale. But this is a full scale  
optical module. This is the

22

00:01:13,800 --> 00:01:16,500  
telescope that will do bi  
directional communication. So

23

00:01:16,500 --> 00:01:19,350  
the lasers coming into this  
telescope will be going to the

24

00:01:19,350 --> 00:01:20,670  
earth and coming back.

25

00:01:20,970 --> 00:01:24,540  
Now that we are on orbit and  
transmitting data through LCD,

26

00:01:24,660 --> 00:01:29,310  
we're sticking to our New Year's  
resolutions. We're using LCD as

27

00:01:29,310 --> 00:01:32,400  
a platform for optical  
communications experimentation,

28

00:01:32,610 --> 00:01:36,120  
and showcasing the benefits that  
laser communications high data

29

00:01:36,120 --> 00:01:40,680  
rates can offer science and  
exploration missions. We've also

30

00:01:40,680 --> 00:01:43,770  
launched teebird, a small  
satellite demonstrating NASA's

31

00:01:43,770 --> 00:01:49,290  
highest ever space data rates  
using laser links. Soon, we'll

32

00:01:49,290 --> 00:01:52,440

install a laser communications  
terminal on the International

33

00:01:52,440 --> 00:01:55,470

Space Station, empowering  
astronauts on the orbiting

34

00:01:55,470 --> 00:01:59,700

laboratory with new  
communications capabilities. We

35

00:01:59,700 --> 00:02:02,760

are also furnishing the Artemis  
two mission with a laser

36

00:02:02,760 --> 00:02:06,990

communication system so NASA can  
transmit high definition video

37

00:02:07,080 --> 00:02:11,490

of the next generation of lunar  
explorers. To learn more about