1
00:00:00,010 --> 00:00:01,880
[Music]

2
00:00:01,900 --> 00:00:08,680
I'm Jan McGarry, I'm a mathematician and I work in the Laser Remote Sensing branch at the Goddard Space F

3
00:00:08,700 --> 00:00:12,810
Satellite Laser Ranging is a technique of measuring the distance to the satellites.

4
00:00:12,830 --> 00:00:18,340
The light goes up to the spacecraft, bounces off, comes back, and that's the round-trip time of flight.

5
00:00:18,360 --> 00:00:26,480
And it's used both for very precise orbit determination, as well as once you've got the orbit nailed down then yo

6
00:00:26,500 --> 00:00:30,630
the location of where the center of mass of the Earth is and how it's moving.

7
00:00:30,650 --> 00:00:45,400
And then from the standpoint of the station location, the position of the stations in reference to one another give

8
00:00:45,420 --> 00:00:54,780
Goddard is actually the birthplace of Satellite Laser Ranging: it was developed by Henry Plotkin in the early 19

9
00:00:54,800 --> 00:01:02,480
He also developed the Satellite Laser Ranging ground station, which was the Goddard Laser Ranging Station,

10
00:01:02,500 --> 00:01:12,180
And in fact we're coming up on the fiftieth anniversary of Satellite Laser Ranging here because that was done

11
00:01:12,200 --> 00:01:15,940
During a typical day I spend a lot of my time at meetings.

12
00:01:15,960 --> 00:01:26,580
But at night I'm often at the optical site operating the system, doing software development or working on the au

13
00:01:26,600 --> 00:01:35,930

When you do R&D development you run into a lot of dead ends sometimes and you run into a lot of problems t

14
00:01:35,950 --> 00:01:45,920
That's one of the reasons why Goddard is such a great place to work. People don't take no for an answer, whe