



1  
00:00:00,010 --> 00:00:09,010  
[ SFX ]

2  
00:00:09,030 --> 00:00:18,040  
For centuries, sailors have traversed the seas with the help of a sextant and the stars.

3  
00:00:18,060 --> 00:00:26,070  
Now a team led by scientists and engineers at NASA Goddard is taking navigation by the stars to a whole new level.

4  
00:00:26,090 --> 00:00:30,090  
Future spacecraft will have the capability to explore the vastness of space

5  
00:00:30,110 --> 00:00:34,160  
with unprecedented awareness of their own place in the Galaxy.

6  
00:00:34,180 --> 00:00:41,240  
NASA's SEXTANT mission will demonstrate the use of pulsars, nature's stellar lighthouses, as navigational beacons.

7  
00:00:41,260 --> 00:00:47,270  
Pulsars are small, dense stellar remnants that regularly sweep beams of energy our way.

8  
00:00:47,290 --> 00:00:52,310  
Successive sweeps produce pulses timed so precisely that they rival atomic clocks on Earth

9  
00:00:52,330 --> 00:00:55,360  
and that's exactly how NASA plans to use them.

10  
00:00:55,380 --> 00:01:02,390  
With its sensitive telescopes, SEXTANT will lock onto multiple pulsars, allowing it to determine its precise location in the Galaxy.

11  
00:01:04,430 --> 00:01:09,470  
Future spacecraft will navigate to distant planets using this new capability

12  
00:01:09,490 --> 00:01:14,530  
in much the same way that we use GPS to travel to unfamiliar locations on Earth.

13

00:01:14,550 --> 00:01:18,580

Pulsar-based spacecraft navigation is still in its development stage,