
44

1
00:00:00,167 --> 00:00:04,004
[Music]

2
00:00:04,004 --> 00:00:07,107
Hi, I'm Jim Green, the
director of Planetary Science

3
00:00:07,107 --> 00:00:08,108
here at NASA.

4
00:00:14,615 --> 00:00:20,354
OSIRIS-REx is an opportunity
to go back in time and visit an

5
00:00:20,354 --> 00:00:21,555
asteroid called Bennu.

6
00:00:21,555 --> 00:00:26,026
Bennu is a very primitive
object, created at the birth of

7
00:00:26,026 --> 00:00:27,494
our solar system.

8
00:00:27,494 --> 00:00:31,231
OSIRIS-REx is going to go there,
orbit Bennu for more than a

9
00:00:31,231 --> 00:00:33,200
year, and bring back a sample.

10
00:00:37,537 --> 00:00:41,408
Since September, when we
launched OSIRIS-REx, it has made

11
00:00:41,408 --> 00:00:44,778
wonderful progress in the solar
system, but is getting close to

12
00:00:44,778 --> 00:00:46,546
a very important place.

13
00:00:46,546 --> 00:00:50,884
This is the Earth's
Lagrangian point L4.

14
00:00:50,884 --> 00:00:54,955
Now a Lagrangian point are
special regions in and around

15
00:00:54,955 --> 00:00:57,991
our orbit, for which the
gravitational interaction

16
00:00:57,991 --> 00:01:02,663
between the Earth and the
sun nearly cancels out.

17
00:01:02,663 --> 00:01:05,499
This allows an object to be
trapped

18
00:01:05,499 --> 00:01:07,601
and remain in that location.

19
00:01:11,505 --> 00:01:13,974
So what's trapped at L4?

20
00:01:13,974 --> 00:01:15,509
Well we don't really know.

21
00:01:15,509 --> 00:01:18,745
We only know what's trapped
at L4 around other planets.

22
00:01:18,745 --> 00:01:22,816
At Jupiter these are hundreds
and hundreds of objects

23
00:01:22,816 --> 00:01:24,685
that we call Trojans.

24
00:01:24,685 --> 00:01:28,255
And so, at Earth's L4, if we
find anything

25
00:01:28,255 --> 00:01:30,624
we'll be calling them Earth
Trojans.

26
00:01:33,160 --> 00:01:34,294
Now what are Trojans?

27
00:01:34,294 --> 00:01:38,432
Well, these are small
bodies caught in this orbit for

28
00:01:38,432 --> 00:01:39,733
billions of years.

29
00:01:39,733 --> 00:01:43,770
The Earth has swept up all kinds
of material to be created as we

30
00:01:43,770 --> 00:01:46,907
know it today, and what's
left are those things

31
00:01:46,907 --> 00:01:49,376
that are sitting at L4.

32
00:01:49,376 --> 00:01:52,779
That's what makes it really
exciting to be able to go there,

33
00:01:52,779 --> 00:01:55,482
and OSIRIS-REx is nearly there.

34
00:01:55,482 --> 00:01:59,152
Beginning February 9th,
OSIRIS-REx is going to turn on

35
00:01:59,152 --> 00:02:01,688
its scanning camera. It's going
to scan the areas,

36
00:02:01,688 --> 00:02:04,157
it's going to look for these
objects.

37
00:02:08,362 --> 00:02:11,298
To follow along with
OSIRIS-REx, please go to