
SCIENTIST TO
MEASURE
MOVING AN
ASTEROID

1
00:00:01,568 --> 00:00:02,769
I've always liked asteroids.

2
00:00:02,936 --> 00:00:06,573
There's so much we don't know about them that it's really exciting to me

3
00:00:06,573 --> 00:00:11,978
that we're finding out about the ways they've developed, the way they move, the way their orbits change.

4
00:00:12,212 --> 00:00:16,983
I'm Andy Rivkin and I study how the orbits of asteroids change after we hit them with spacecraft.

5
00:00:17,117 --> 00:00:19,786
NASA is crashing a spacecraft into an asteroid.

6
00:00:20,286 --> 00:00:26,726
The DART mission is NASA's first test of a planetary defense technique called kinetic impactor.

7
00:00:26,726 --> 00:00:31,564
And it's going to smash itself into the moonlet Dimorphos, which orbits the asteroid Didymos,

8
00:00:31,564 --> 00:00:36,903
in order to change Dimorphos' orbit and show that we can deflect incoming asteroids if we need to.

9
00:00:37,203 --> 00:00:40,540
I lead a group of astronomers that are going to measure

10
00:00:40,540 --> 00:00:45,211
how much DART changed Dimorphos' orbit using ground-based telescopes all over the world.

11
00:00:45,211 --> 00:00:46,880
This is an animation.

12
00:00:47,080 --> 00:00:49,482
You can see Didymos and Dimorphos as one point of light.

13
00:00:49,716 --> 00:00:55,355

These curves show the brightness change due to Dimorphos moving in front of and behind Didymos.

14
00:00:55,355 --> 00:00:59,059
We can tell how quickly Dimorphos is moving around Didymos.

15
00:00:59,059 --> 00:01:01,661
We make these measurements before DART arrives

16
00:01:01,661 --> 00:01:06,533
and then this is the same technique that we'll use after the impact to determine how much we've changed the o

17
00:01:08,635 --> 00:01:09,469
I make music.

18
00:01:09,869 --> 00:01:13,840
A lot of it as you might imagine has nothing to do with science, but a lot of it does.

19
00:01:13,840 --> 00:01:19,846
You know I'm not immune to the charms of writing a gimmicky science song every once in a while.

20
00:01:20,280 --> 00:01:23,049
So um, I did write a song about DART.

21
00:01:23,483 --> 00:01:29,322
The mission goes by the name of DART, the Double Asteroid Redirection Test.

22
00:01:29,322 --> 00:01:32,292
And just one flick should do the trick.

23
00:01:32,559 --> 00:01:35,295
A lot of scientists definitely have a creative side.

24
00:01:35,628 --> 00:01:39,432
A lot of us write. A lot of us are in bands. There's a lot who paint.

25
00:01:39,432 --> 00:01:44,471
And I think having that creative part of your brain definitely helps in science just as much as it does in art.