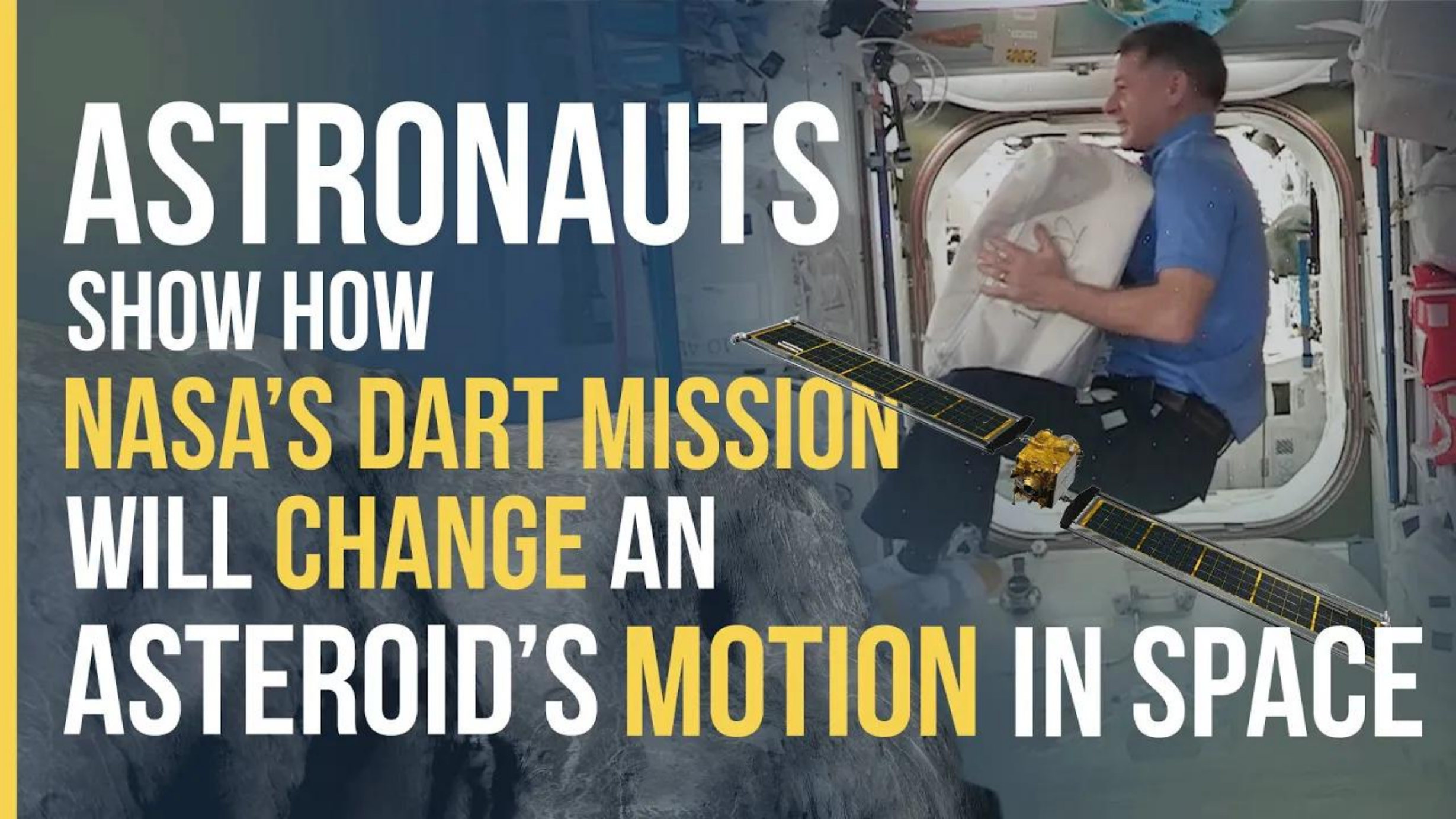
ASTRONAUTS SHOW HOW NASA'S DART MISSION WILL CHANGE AN ASTEROID'S MOTION IN SPACE



1
00:00:00,033 --> 00:00:01,568
Hi, everyone, I'm Thomas Pesquet, and I'm

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00:00:01,568 --> 00:00:06,106
with my favorite astronaut, Shane
Kimbrough, up here on the space station.

3
00:00:06,106 --> 00:00:10,577
Today, we're going to talk about
a very cool new NASA mission called DART.

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00:00:10,910 --> 00:00:15,281
Can you tell us, and tell me a little bit
more about what is NASA's DART mission

5
00:00:15,482 --> 00:00:18,418
and what does NASA's
DART mission stand for?

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00:00:20,120 --> 00:00:24,758
OK. Yeah, so DART is NASA's
first planetary defense test.

7
00:00:25,692 --> 00:00:27,994
So we're going to
we're going to try to do something

8
00:00:27,994 --> 00:00:30,497
we've never done before with a spacecraft.

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00:00:31,164 --> 00:00:34,901
DART stands for Double Asteroid
Redirection Test,

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00:00:34,901 --> 00:00:38,038
so a nice acronym,
NASA does like acronyms.

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00:00:38,738 --> 00:00:40,640

DART is another one.

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00:00:40,740 --> 00:00:44,244
And now the purpose of this spacecraft
in this mission, it has one purpose,

13
00:00:44,244 --> 00:00:46,579
and that's the crash itself
into an asteroid

14
00:00:46,813 --> 00:00:49,749
and try to redirect it
or try to move it into a different orbit.

15
00:00:50,216 --> 00:00:51,251
So today, Shane,

16
00:00:52,585 --> 00:00:54,654
we're going to demonstrate

17
00:00:54,654 --> 00:00:57,891
some of those principles
that you laid out before.

18
00:00:58,825 --> 00:01:01,728
But can you tell us
exactly how we're going to do that?

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00:01:03,496 --> 00:01:04,197
Well, I can try.

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00:01:04,197 --> 00:01:06,599
We're going to. It's a first time for us,
but we're going to try

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00:01:06,599 --> 00:01:09,969
to demonstrate this,
this asteroid kinetic deflection method,

22

00:01:10,637 --> 00:01:15,275
which is really the moment that that
that spacecraft crashes into the asteroid.

23
00:01:15,308 --> 00:01:18,912
So we're going to use microgravity up here
because we have that all the time

24
00:01:19,312 --> 00:01:22,982
and we're going to try to show
you kind of how this is going to work

25
00:01:23,383 --> 00:01:26,319
when the asteroid is hit
by this spacecraft

26
00:01:26,719 --> 00:01:29,055
called DART. So here we go.

27
00:01:34,761 --> 00:01:35,762
So what I'll do,

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00:01:35,762 --> 00:01:40,533
Shane's going to be the asteroid
and I'm going to be the NASA dark mission.

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00:01:40,533 --> 00:01:43,636
And this CTB more exactly,
is going to be a spacecraft.

30
00:01:44,571 --> 00:01:45,538
I'm going to try to throw

31
00:01:45,538 --> 00:01:49,542
it and we look at the effect of that
mass coming at him

32
00:01:49,542 --> 00:01:53,947
and the kinetic energy transfer
from the CTB to Shane.

33
00:01:53,947 --> 00:01:56,382
Shane will be perfectly stable.

34
00:01:58,852 --> 00:02:01,387
It's not an easy task. You're ready?

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00:02:01,387 --> 00:02:03,556
All right. Here it comes.

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00:02:12,699 --> 00:02:14,901
I've redirected Shane successfully.

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00:02:16,102 --> 00:02:19,572
Yeah, pretty good.

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00:02:20,073 --> 00:02:23,643
A while ago, we got out the door
and we got some new solar arrays

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00:02:23,643 --> 00:02:25,712
here on space station,
and so the same technology

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00:02:25,712 --> 00:02:28,748
we have here now in the space
station is going to be used to power

41
00:02:28,982 --> 00:02:31,684
the DART mission
on its way to this asteroid.

42
00:02:31,718 --> 00:02:36,489
IROSA, in case you didn't know,
but you knew it stands for ISIS,

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00:02:36,489 --> 00:02:37,857
rolled out solar arrays,

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00:02:37,857 --> 00:02:42,262
so we got a chance to go outside
and install the very first two of these

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00:02:42,262 --> 00:02:46,332
new IROSAs or roll out
solar arrays on the very end of the space

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00:02:46,332 --> 00:02:47,534
station out on the port side.

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00:02:48,668 --> 00:02:51,905
These are different because for one,
they're much lighter and smaller.

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00:02:52,238 --> 00:02:54,040
To me, they look very fragile.

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00:02:54,040 --> 00:02:56,943
We're picking them up and moving them,
but they're rolled up.

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00:02:56,943 --> 00:03:00,180
So they when they launch,
they're kind of rolled up into a compact

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00:03:00,180 --> 00:03:02,949
cylinder, which is great
for launch conditions.

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00:03:03,583 --> 00:03:07,353
And then once they get up
on the space station or in space

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00:03:07,353 --> 00:03:11,191
for a satellite or something, they can
then roll these things out to be useful.

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00:03:11,357 --> 00:03:14,594

And so the same technology we have here now in the space station, it's