



1
00:00:00,208 --> 00:00:07,382
(SFX)

2
00:00:07,382 --> 00:00:10,510
My main interest in planetary
science is because it's

3
00:00:10,510 --> 00:00:13,972
the closest part of the cosmos
that we can actually go,

4
00:00:13,972 --> 00:00:15,557
see, visit and probe.

5
00:00:15,557 --> 00:00:24,774

6
00:00:24,774 --> 00:00:28,069
Psyche is a large asteroid
in the main belt that is

7
00:00:28,069 --> 00:00:30,780
in between Mars and Jupiter.

8
00:00:30,780 --> 00:00:34,409
Our experience, so far, in terms
of exploring the solar system

9
00:00:34,409 --> 00:00:38,538
has been with either
rocky, or icy bodies.

10
00:00:38,538 --> 00:00:40,915
What's particularly
interesting about Psyche is

11
00:00:40,915 --> 00:00:42,917
we think it's a metallic object.

12

00:00:42,917 --> 00:00:46,755

We have a common understanding,
perhaps, of, you know, how

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00:00:46,755 --> 00:00:49,382

regular common rocks behave.

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00:00:49,382 --> 00:00:52,844

But, metal behave in a
very different way.

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00:00:52,844 --> 00:00:55,722

What I contribute to the mission
is trying to understand how

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00:00:55,722 --> 00:01:00,101

cratering and the process of
collision and interaction work

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00:01:00,101 --> 00:01:01,686

for a metallic object.

18

00:01:01,686 --> 00:01:05,356

And, we will use this
information, then, to understand

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00:01:05,356 --> 00:01:08,401

what we see at the surface
once we get there.

20

00:01:08,401 --> 00:01:11,988

What we did is take
an iron meteorite,

21

00:01:11,988 --> 00:01:14,949

put it in the, in the chamber
and use it as a target

22

00:01:14,949 --> 00:01:16,743

for our impetus experiment.

23

00:01:16,743 --> 00:01:19,245

And, we were shooting quartz bit

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00:01:19,245 --> 00:01:21,956

at high speed in order

to produce a crater.

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00:01:21,956 --> 00:01:25,001

Everything has been filmed

with high-speed cameras.

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00:01:25,001 --> 00:01:27,796

So, we have a tremendous

amount of data that shows

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00:01:27,796 --> 00:01:31,633

in high resolution what

happened during the contact,

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00:01:31,633 --> 00:01:32,884

during the explosion,

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00:01:32,884 --> 00:01:35,595

and how the crater

forms on the surface.

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00:01:35,595 --> 00:01:39,182

So, everything has been

documented in great details.

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00:01:39,182 --> 00:01:42,268

Here we have a piece of

the Gibeon meteorite.

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00:01:42,268 --> 00:01:46,981

And, what we see here is a

crater that was produced in

33

00:01:46,981 --> 00:01:49,651

as a result of one of
our experiments. And,

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00:01:49,651 --> 00:01:53,947

traditionally with rocks, the
rim would be blasted away

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00:01:53,947 --> 00:01:57,283

and would be a sort of a
flattish feature. But here,

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00:01:57,283 --> 00:01:59,786

we see there's flaps that
basically, are frozen

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00:01:59,786 --> 00:02:03,206

into place and this is because
the metal is much harder

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00:02:03,206 --> 00:02:06,209

than rocks. And so,
you can then retain

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00:02:06,209 --> 00:02:08,837

this interesting morphology.

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00:02:08,837 --> 00:02:12,340

There's going to be a very
exciting phase of the mission

41

00:02:12,340 --> 00:02:15,301

when we actually start
gathering data.

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00:02:15,301 --> 00:02:17,387

And, there's going to
be lots of surprises.

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00:02:17,387 --> 00:02:20,723

I just can't wait to be there
and see whether or not

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00:02:20,723 --> 00:02:21,891

there is, you know,