

COUNTDOWN TO MARS



DR. JUSTIN FILIBERTO



1
00:00:13,020 --> 00:00:17,920
The answer probably everyone will give
is the evidence for ancient life.

2
00:00:17,930 --> 00:00:23,699
Specifically for my research, is where
we find these hydrothermal systems so

3
00:00:23,699 --> 00:00:27,029
where igneous rocks interact with
sedimentary rocks, especially water

4
00:00:27,029 --> 00:00:32,730
bearing ones, they produce hydrothermal
fluids. Those fluids have a distinct

5
00:00:32,730 --> 00:00:36,360
signature when they evaporate, leaving
behind the minerals, and they were

6
00:00:36,360 --> 00:00:41,320
habitable environments. The cool thing
with Perseverance is the PIXL instrument.

7
00:00:41,420 --> 00:00:46,860
We can actually pull apart
the rocks in place, in situ, on Mars and

8
00:00:46,860 --> 00:00:50,969
look at these textures and see which
minerals were dissolving and which new

9
00:00:50,969 --> 00:00:54,930
minerals were forming and we can
constrain the fluids really precisely

10
00:00:54,930 --> 00:00:58,739
based on what we saw. It'll be the first
time we can do this and we can use my

11
00:00:58,740 --> 00:01:02,940
analogue sight sort of as a comparison
to see what's going on.

12
00:01:06,200 --> 00:01:10,780
So, Mars 2020 Perseverance is going to
Jezero crater. One of the nice things

13
00:01:10,789 --> 00:01:14,810
about Jezero crater is we're gonna land
on or near a volcanic floor unit in

14
00:01:14,810 --> 00:01:18,740
contact with sediments, and one of the
things me and my team have been working

15
00:01:18,740 --> 00:01:23,929
on is a Mars analogue site where we see
just this: igneous dike cross-cutting

16
00:01:23,929 --> 00:01:29,060
sediments and producing hydrothermal
activity and so we can actually test all