

COUNTDOWN TO MARS



DR. ALEXIS TEMPLETON



1
00:00:13,280 --> 00:00:18,080

In a lot of the research i do,
I study how microbial life lives in the

2
00:00:18,080 --> 00:00:23,039

shallow subsurface of the earth,
and, in particular, I look at places where

3
00:00:23,039 --> 00:00:26,400

there's rock-hosted life that can be
sustained there

4
00:00:26,400 --> 00:00:29,519

as fluids circulate within those systems
and within the rocks.

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00:00:29,519 --> 00:00:33,280

For me, it's really exciting that this
mission is going to Jezero Crater.

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00:00:33,280 --> 00:00:36,960

And, in Jezero Crater we're going to
have so many different types of habitats

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00:00:36,960 --> 00:00:41,040

that we think
could have been possible places that

8
00:00:41,040 --> 00:00:44,879

microbial life existed,
but, for me, the fact that this mission

9
00:00:44,879 --> 00:00:48,719

is going to go
to the crater rim, that's really

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00:00:48,719 --> 00:00:51,280

analogous to some of the environments
that we're studying.

11
00:00:51,280 --> 00:00:54,719
So, to be able to look at the bedrock
there, and to look for evidence that

12
00:00:54,719 --> 00:00:57,920
fluids circulated within those rocks and were

13
00:00:57,920 --> 00:01:01,359
stored there, and potentially created a really large

14
00:01:01,360 --> 00:01:05,060
microbial habitat, and see
whether they preserve traces of life?

15
00:01:05,100 --> 00:01:09,119
That really connects well to
where we envision there might be

16
00:01:09,119 --> 00:01:12,400
actually an extensive biosphere on Earth
through all of its history, as well.

17
00:01:12,400 --> 00:01:14,920
So, the connections are really spectacular.

18
00:01:18,160 --> 00:01:22,159
One of the really exciting things when
you look at the Perseverance rover is

19
00:01:22,159 --> 00:01:26,159
to look at the instrument suite that's
been assembled together:

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00:01:26,159 --> 00:01:31,040
between SuperCam, PIXL, and then Sherlock,
is just three of the examples.

21
00:01:31,040 --> 00:01:34,159
Their imaging capabilities are

spectacular, so

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00:01:34,160 --> 00:01:38,520
I'm really excited to see how the
combination of putting all of those together,

23
00:01:38,620 --> 00:01:41,280
and looking again at some of the really

24
00:01:41,280 --> 00:01:43,700
exciting exposures of rock.

25
00:01:43,700 --> 00:01:45,439
We might actually have our first

26
00:01:45,440 --> 00:01:50,320
opportunity to find the best evidence for
preserved traces of life,

27
00:01:50,460 --> 00:01:52,560
and the thing that's also exciting about

28
00:01:52,560 --> 00:01:56,079
the way the mission's designed is that if
we find those samples where we think

29
00:01:56,080 --> 00:01:59,200
through a combination of all of these
ways that we're imaging the rock that

30
00:01:59,200 --> 00:02:02,480
we're finding overlapping lines
of evidence that keeps saying:

31
00:02:02,580 --> 00:02:05,119
this looks like it was alive
there's evidence that this was

32
00:02:05,120 --> 00:02:09,380

biologically inhabited. The fact that we have the opportunity to cache those samples,

33

00:02:09,440 --> 00:02:11,680

and return them to earth in a future mission

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00:02:11,760 --> 00:02:14,959

is a really unique aspect to something we've never done before.