COUNTDOWN TO MARS

DR. SARAH JOHNSON

1
00:00:12,259 --> 00:00:17,940
This mission is going to kick off a breathtakingly ambitious campaign to

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00:00:17,940 --> 00:00:24,119
return samples from Mars to earth and as an astrobiologist who spends my life

3
00:00:24,119 --> 00:00:29,640
working on biosignatures, there could be nothing better. So, just to understand,

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00:00:29,640 --> 00:00:33,840
you know, most of what we do now is we try to work with data that's coming back from

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00:00:33,840 --> 00:00:39,450
orbiters, coming back from rovers, and the idea of having actual samples from Mars

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00:00:39,450 --> 00:00:43,140
that have been carefully selected and returned to our planet in our

7
00:00:43,140 --> 00:00:46,950
laboratories where we can scour them and hit them with everything we've got

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00:00:46,950 --> 00:00:51,560
I mean, it's just gonna be a huge paradigm shift for the kind of work we do.

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00:00:54,660 --> 00:00:58,500
Well, there's plenty of amazing things that this mission could discover but

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00:00:58,500 --> 00:01:03,539
like every astrobiologist you ask I'm going to say, of course, evidence for life

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00:01:03,539 --> 00:01:08,790
and I guess I should qualify that like
there are different types of life we

12
00:01:08,790 --> 00:01:13,380
could find evidence for ancestrally
related life the the same kind of life

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00:01:13,380 --> 00:01:17,189
we have here on earth that perhaps are
just caught from the next planet over

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00:01:17,189 --> 00:01:21,810
and of course that would be tremendously
exciting in its own right it would give

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00:01:21,810 --> 00:01:25,259
us a chance to replay the tape of
evolution on another planet and

16
00:01:25,259 --> 00:01:31,110
rerun that experiment and see what turns
out but what gets me most excited is

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00:01:31,110 --> 00:01:35,850
this idea of an independent Genesis;
a kind of life that's unlike any life

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00:01:35,850 --> 00:01:39,900
that we've ever seen before
and specifically when I think about the

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00:01:39,900 --> 00:01:45,840
work that my group does we're really
interested in this idea of agnostic biosignatures

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00:01:46,020 --> 00:01:50,780
or a type of like evidence
for life that doesn't presuppose the

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00:01:50,790 --> 00:01:54,770
same molecular framework as life here on
earth or the same underlying

22
00:01:54,770 --> 00:02:00,050
biochemistry and sometimes it feels
like trying to imagine a color that

23
00:02:00,050 --> 00:02:04,130
you've never seen before. You know,
figuring out ways that we could look for

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00:02:04,130 --> 00:02:08,930
chemical complexity or unexpected
accumulations or elements or isotopes

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00:02:08,930 --> 00:02:14,600
that would be suggestive of life
that could be just completely different

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00:02:14,600 --> 00:02:18,820
from anything we'd seen before and I
just think that would be better than