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00:00:00,280 --> 00:00:07,130

I'm Dava Newman, the Deputy Administrator of NASA.

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00:00:07,130 --> 00:00:17,430

Music

NASA's really excited about exploration

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00:00:17,430 --> 00:00:22,610

because we're on our journey to Mars taking people to where we've never been before.

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00:00:22,610 --> 00:00:26,910

Facilitating imagination, and hope, inspiration – we're going to the unknown. One of my

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00:00:26,910 --> 00:00:33,620

favorites is the great work in in space propulsion. This is solar electric propulsion very high

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00:00:33,620 --> 00:00:39,399

power, high energy. It's because of the constant acceleration, the forces build up,

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00:00:39,399 --> 00:00:44,620

and you end up with very high energy propulsion. The great benefit would be that you'd use

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00:00:44,620 --> 00:00:49,390

10 times less propellant than conventional chemical propulsion technology of today.

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00:00:49,390 --> 00:00:55,850

We're investing in technology, Deep Space, Atomic Clock, this is really vital, precise

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00:00:55,850 --> 00:01:01,920

radio navigation is critical to many deep space exploration missions. Once we get to

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00:01:01,920 --> 00:01:06,840
Mars, we're in a partial gravity environment.
Now it's 3/8ths gravity environment, so

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00:01:06,840 --> 00:01:11,210
that's great. 3/8ths gravity so now I become
a biped again. So I'm going to probably

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00:01:11,210 --> 00:01:14,600
going to do some bounding motion the reason
being we're going to design and develop

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00:01:14,600 --> 00:01:19,390
a great spacesuit that gives you maxim mobility
so if you have maximum mobility through a

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00:01:19,390 --> 00:01:22,909
space suit then on the 3/8ths gravity environment
of Mars, you're going to kind of do this

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00:01:22,909 --> 00:01:27,750
loping motion. It's really great.
The Martian atmosphere is only 1% of what

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00:01:27,750 --> 00:01:31,619
earth's atmosphere is, so you need to have
your own life support system. That's what

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00:01:31,619 --> 00:01:36,700
the space suit provides. It provides your
air to breath, it provides the pressure, going

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00:01:36,700 --> 00:01:41,539
to scrub the carbon dioxide. Going to provide
your thermal control. The spacesuit is really

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00:01:41,539 --> 00:01:47,149
the world's smallest spacecraft all in one
Another technology NASA is investing in is

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00:01:47,149 --> 00:01:52,869
a Laser Communications Relay Demonstration
or Laser Comm for short. Mars is incredibly

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00:01:52,869 --> 00:01:56,579
far away. You think the moon is far away,
no, no, no, the moon is really close, you

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00:01:56,579 --> 00:02:02,299
know, say a 3 day journey. Mars is going to
take us probably six to eight months to get

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00:02:02,299 --> 00:02:08,759
there so we have to invest in breakthrough
technology in this case, Laser Comm technology

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00:02:08,759 --> 00:02:15,010
so we can transmit high bandwidth data back
to earth. Laser Communication Relay Demonstration

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00:02:15,010 --> 00:02:20,400
is revolutionizing the way we'll transmit
data, video and other information