



1

00:00:16,500 --> 00:00:21,670

Mars a rich destination for scientific discovery.

2

00:00:21,670 --> 00:00:27,220

As we expand our presence into the solar system
with robotic and human exploration

3

00:00:27,220 --> 00:00:33,270

The formation and evolution of Mars will help
us learn more about our own planet's history

4

00:00:33,270 --> 00:00:34,270

and future.

5

00:00:34,270 --> 00:00:40,129

In its past the Red Planet had conditions
suitable for life, and future exploration

6

00:00:40,129 --> 00:00:46,230

may uncover evidence of life, answering one
of the fundamental mysteries of humanity:

7

00:00:46,230 --> 00:00:49,100

Does life exist beyond Earth?

8

00:00:49,100 --> 00:00:53,720

At NASA, we're reaching for new heights
so we remain the world's leader in

9

00:00:53,720 --> 00:00:54,720

space...

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00:00:54,720 --> 00:00:56,030

We're pioneers and we always have
been.

11

00:00:56,030 --> 00:00:59,740

And we're building on that
pioneering spirit in science and technology

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00:00:59,740 --> 00:01:03,960

so that we make the world a better place,
so we create jobs right here on earth.

13

00:01:03,960 --> 00:01:10,970

NASA is developing the capabilities needed
to send humans to an asteroid by 2025 and

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00:01:10,970 --> 00:01:13,700

to Mars in the 2030s.

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00:01:13,700 --> 00:01:16,990

We're building something that can go
lunar, something that can go to an

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00:01:16,990 --> 00:01:21,750

asteroid, we can go to Mars with this,
this is the next step we've been looking

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00:01:21,750 --> 00:01:24,220

for since the Apollo era.

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00:01:24,220 --> 00:01:28,430

Robotic explorers have studied Mars for more
than 40 years.

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00:01:28,430 --> 00:01:34,720

NASA's path for the human exploration of Mars
begins in low-Earth orbit aboard the International

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00:01:34,720 --> 00:01:35,750

Space Station.

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00:01:35,750 --> 00:01:40,970

Onboard the orbiting laboratory, astronauts
are helping us prove many of the technologies

22

00:01:40,970 --> 00:01:45,810

and communications systems needed for human missions into deep space.

23

00:01:45,810 --> 00:01:49,170

Well the crews right now on International Space Station are using this wonderful

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00:01:49,170 --> 00:01:53,640

outpost to help us get further and further into space, to asteroids, to Mars

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00:01:53,640 --> 00:01:56,130

eventually, I think the science on station is

26

00:01:56,130 --> 00:01:59,229

making incredible breakthroughs that are going to help us make life better for

27

00:01:59,229 --> 00:02:00,610

people right here on Earth.

28

00:02:00,610 --> 00:02:05,020

We and our other international partner crewmates are working off the planet for

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00:02:05,020 --> 00:02:06,970

the planet.

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00:02:06,970 --> 00:02:11,060

NASA, along with our international partners, conduct scientific research

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00:02:11,060 --> 00:02:12,760

every day here on the station.

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00:02:12,760 --> 00:02:15,540

We use this orbiting laboratory as a stepping-stone for

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00:02:15,540 --> 00:02:17,800

future deep space exploration.

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00:02:17,800 --> 00:02:20,420

In tandem with space station research...

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00:02:20,420 --> 00:02:27,870

NASA will send a robotic mission to capture and redirect an asteroid to orbit the moon.

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00:02:27,870 --> 00:02:33,840

Astronauts aboard NASA's Orion spacecraft will explore the asteroid and return to Earth

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00:02:33,840 --> 00:02:35,910

with samples.

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00:02:35,910 --> 00:02:42,840

This experience will help NASA test new systems and capabilities, such as Solar Electric Propulsion,

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00:02:42,840 --> 00:02:49,230

which will send cargo as part of human missions to Mars.

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00:02:49,230 --> 00:02:56,610

NASA's new Space Launch System rocket will enable these "proving ground" missions to

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00:02:56,610 --> 00:02:59,390

test new capabilities.

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00:02:59,390 --> 00:03:05,440

Human missions to Mars will rely on Orion and an evolved version of the Space Launch

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00:03:05,440 --> 00:03:10,700

System, which will be the most powerful rocket ever flown.

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00:03:10,700 --> 00:03:13,960

With Orion and our heavy-lift Space Launch System... we're going to send

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00:03:13,960 --> 00:03:18,190

humans into space farther than they've ever gone before.

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00:03:18,190 --> 00:03:23,041

This year's Orion test flight will be the most aggressive human spacecraft flight

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00:03:23,041 --> 00:03:24,430

in more than forty years!

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00:03:24,430 --> 00:03:29,200

Apollo happened before I was born so this, for our generation, will be the

49

00:03:29,200 --> 00:03:32,080

exploration missions that we get to see in our lifetime.

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00:03:32,080 --> 00:03:39,640

A fleet of robotic spacecraft and rovers already are on and around Mars, dramatically increasing

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00:03:39,640 --> 00:03:46,710

our knowledge about the Red Planet and paving the way for future human explorers.

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00:03:46,710 --> 00:03:54,480

Future missions seeking signs of past life will demonstrate new technologies that could

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00:03:54,480 --> 00:03:57,819

help astronauts survive on Mars.

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00:03:57,819 --> 00:04:01,569

I think some of the most amazing things that we are learning is actually how to be

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00:04:01,569 --> 00:04:05,879

really good detectives on another planet which is a really difficult job.

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00:04:05,879 --> 00:04:12,580

Engineers and scientists around the country are working hard to develop the technologies

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00:04:12,580 --> 00:04:21,000

astronauts will use to one day live and work on Mars... and then safely return home from

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00:04:21,000 --> 00:04:24,360

the next giant leap for humanity.

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00:04:24,360 --> 00:04:28,400

Through advanced aerospace technologies, used in everything from

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00:04:28,400 --> 00:04:32,970

modern aircraft to suborbital rockets and the commercial vehicles servicing low

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00:04:32,970 --> 00:04:38,009

Earth orbit today, we're building the machines to take us further into the high

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00:04:38,009 --> 00:04:40,270

frontier.

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00:04:40,270 --> 00:04:42,650

NASA is here to raise the bar for human achievement.

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00:04:42,650 --> 00:04:46,970

We are a community dedicated to

research and discovery in service to

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00:04:46,970 --> 00:04:47,970

society.

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00:04:47,970 --> 00:04:51,560

We have a responsibility to the future
generations of engineers, the future