1
00:00:14,299 --> 00:00:09,200
Mark's a rich destination for scientific

2
00:00:16,190 --> 00:00:14,309
discovery as we expand our presence into

3
00:00:18,410 --> 00:00:16,200
the solar system with human and robotic

4
00:00:20,390 --> 00:00:18,420
exploration we're learning more about

5
00:00:22,640 --> 00:00:20,400
the formation and evolution of Mars

6
00:00:26,390 --> 00:00:22,650
which can help us learn more about our

7
00:00:28,429 --> 00:00:26,400
own planets history and future in the

8
00:00:31,669 --> 00:00:28,439
past the red planet had conditions

9
00:00:33,979 --> 00:00:31,679
suitable for life and future exploration

10
00:00:37,219 --> 00:00:33,989
may uncover evidence of life answering

11
00:00:40,009 --> 00:00:37,229
one of the oldest questions does life

12
00:00:42,110 --> 00:00:40,019
exist beyond Earth NASA is on a journey

13
00:00:45,759 --> 00:00:42,120

to Mars and the first humans will set

14
00:00:52,340 --> 00:00:49,189
Rovers and spacecraft are on and around

15
00:00:54,350 --> 00:00:52,350
Mars studying its conditions revealing

16
00:00:58,130 --> 00:00:54,360
its history and showing us the red

17
00:01:00,530 --> 00:00:58,140
planet like never before on earth and in

18
00:01:02,210 --> 00:01:00,540
space we're doing the hard work to

19
00:01:05,299 --> 00:01:02,220
prepare for missions father than ever

20
00:01:08,780 --> 00:01:05,309
before first to an asteroid and then

21
00:01:11,390 --> 00:01:08,790
onward to pioneer Mars during the past

22
00:01:13,870 --> 00:01:11,400
40 years NASA explored Mars through

23
00:01:15,710 --> 00:01:13,880
robotic spacecraft Landers and Rovers

24
00:01:18,080 --> 00:01:15,720
dramatically increasing our knowledge

25
00:01:20,840 --> 00:01:18,090
about the red planet and paving the way

26
00:01:23,330 --> 00:01:20,850
for future human explorers future

27
00:01:25,520 --> 00:01:23,340
missions seeking signs of past life will

28
00:01:28,010 --> 00:01:25,530
demonstrate new technology that could

29
00:01:29,660 --> 00:01:28,020
help astronauts survive on Mars I think

30
00:01:30,609 --> 00:01:29,670
some of the most amazing things that

31
00:01:32,859 --> 00:01:30,619
we're learning are

32
00:01:34,330 --> 00:01:32,869
how to be really good detectives on

33
00:01:36,850 --> 00:01:34,340
another planet which is a really

34
00:01:39,670 --> 00:01:36,860
difficult job NASA's human mission to

35
00:01:42,010 --> 00:01:39,680
Mars begins in low-earth orbit aboard

36
00:01:43,899 --> 00:01:42,020
the International Space Station where

37
00:01:46,690 --> 00:01:43,909
astronauts are approving technologies

38
00:01:49,630 --> 00:01:46,700

and communications systems needed for

39
00:01:51,639 --> 00:01:49,640
human missions into deep space the space

40
00:01:54,490 --> 00:01:51,649
station also teaches us how the human

41
00:01:56,560 --> 00:01:54,500
body changes in space so we can protect

42
00:01:58,889 --> 00:01:56,570
astronaut health on long-duration

43
00:02:00,969 --> 00:01:58,899
missions deeper into the solar system

44
00:02:04,180 --> 00:02:00,979
NASA will test other new technologies

45
00:02:06,219 --> 00:02:04,190
needed to send humans to Mars and the

46
00:02:09,070 --> 00:02:06,229
first-ever mission to capture and

47
00:02:11,949 --> 00:02:09,080
redirect an asteroid mass to a stable

48
00:02:14,590 --> 00:02:11,959
orbit around the moon astronauts aboard

49
00:02:16,960 --> 00:02:14,600
NASA's Orion spacecraft will explore the

50
00:02:19,690 --> 00:02:16,970
asteroid in the 2020s and return to

51
00:02:21,670 --> 00:02:19,700
Earth with samples this experience will

52
00:02:24,280 --> 00:02:21,680
help NASA test new systems and

53
00:02:26,620 --> 00:02:24,290
capabilities such as solar electric

54
00:02:28,990 --> 00:02:26,630
propulsion which is a highly efficient

55
00:02:32,020 --> 00:02:29,000
way to send heavy cargo ahead of human

56
00:02:34,539 --> 00:02:32,030
missions to Mars astronauts will travel

57
00:02:36,849 --> 00:02:34,549
in an Orion launched atop a Space Launch

58
00:02:38,800 --> 00:02:36,859
System heavy lift rocket which will be

59
00:02:41,140 --> 00:02:38,810
the most powerful rocket ever flown

60
00:02:44,199 --> 00:02:41,150
apollo happened before I was born so

61
00:02:45,910 --> 00:02:44,209
this for our generation will be the

62
00:02:51,600 --> 00:02:45,920
exploration missions that we get to see

63
00:02:57,220 --> 00:02:54,400

the journey to Mars will improve lives

64
00:02:59,350 --> 00:02:57,230
on earth in an important ways will

65
00:03:02,140 --> 00:02:59,360
increase scientific knowledge that could

66
00:03:04,060 --> 00:03:02,150
help us better understand earth will

67
00:03:06,550 --> 00:03:04,070
also develop new technologies and

68
00:03:09,670 --> 00:03:06,560
economic opportunities right here in the

69
00:03:11,740 --> 00:03:09,680
United States and will advance us

70
00:03:14,890 --> 00:03:11,750
leadership in the peaceful international

71
00:03:17,050 --> 00:03:14,900
exploration of space but make no mistake

72
00:03:19,840 --> 00:03:17,060
the journey to Mars will be the

73
00:03:21,460 --> 00:03:19,850
challenge of a generation to send humans

74
00:03:24,960 --> 00:03:21,470
to the red planet and return them safely

75
00:03:27,580 --> 00:03:24,970
so we can go back keep exploring and

76
00:03:31,300 --> 00:03:27,590
push the frontiers of discovery

77
00:03:34,840 --> 00:03:31,310
it's a journey well worth the risks

78
00:03:37,440 --> 00:03:34,850
today our engineers and scientists are

79
00:03:40,570 --> 00:03:37,450
working hard to develop the technologies

80
00:03:44,800 --> 00:03:40,580
astronauts will use to travel to and