
NASA
ON THE EDGE OF FOREVER
SPACE STATIONS

1
00:00:07,639 --> 00:00:04,910
space the final frontier when Star Trek

2
00:00:09,759 --> 00:00:07,649
originally aired in 1966 NASA space

3
00:00:11,959 --> 00:00:09,769
program was still in its infancy but

4
00:00:14,209 --> 00:00:11,969
Star Trek allowed us to imagine what

5
00:00:17,210 --> 00:00:14,219
could be if we dare to boldly go where

6
00:00:18,620 --> 00:00:17,220
no one had gone before for most of us

7
00:00:20,390 --> 00:00:18,630
the thought of traveling to another

8
00:00:23,030 --> 00:00:20,400
galaxy probably seems like science

9
00:00:24,560 --> 00:00:23,040
fiction but the truth is the foundation

10
00:00:26,930 --> 00:00:24,570
for humankind's journey beyond our solar

11
00:00:39,459 --> 00:00:26,940
system is being laid right now aboard

12
00:00:43,970 --> 00:00:42,170
on the original Star Trek TV series

13
00:00:45,770 --> 00:00:43,980

space station served as deep space

14
00:00:47,270 --> 00:00:45,780
research laboratories as well as

15
00:00:54,079 --> 00:00:47,280
rendezvous points where starships could

16
00:00:55,250 --> 00:00:54,089
dock before exploring the unknown when

17
00:00:57,369 --> 00:00:55,260
we were envisioning our own space

18
00:01:00,009 --> 00:00:57,379
station the applications were similar

19
00:01:03,920 --> 00:01:00,019
the international space station is

20
00:01:04,369 --> 00:01:03,930
probably the most fantastic vehicle ever

21
00:01:06,760 --> 00:01:04,379
built

22
00:01:09,920 --> 00:01:06,770
it's the one-of-a-kind laboratory

23
00:01:12,139 --> 00:01:09,930
orbiting about 250 miles above the earth

24
00:01:13,940 --> 00:01:12,149
and we perform experiments on the

25
00:01:15,889 --> 00:01:13,950
International Space Station we can do

26
00:01:17,749 --> 00:01:15,899
science we can do experiments we can

27
00:01:20,480 --> 00:01:17,759
learn how to do things out of this world

28
00:01:22,249 --> 00:01:20,490
and the result will help benefit the

29
00:01:23,809 --> 00:01:22,259
people in the ground and all of this

30
00:01:26,480 --> 00:01:23,819
data curves to further our knowledge of

31
00:01:29,719 --> 00:01:26,490
the universe but it's not just that we

32
00:01:32,749 --> 00:01:29,729
are using the space station as a testbed

33
00:01:34,609 --> 00:01:32,759
for future space exploration it's to

34
00:01:38,270 --> 00:01:34,619
further our capabilities to travel in

35
00:01:44,770 --> 00:01:38,280
space and ultimately being able to leave

36
00:01:50,210 --> 00:01:47,120
it's not only part of our present and

37
00:01:51,260 --> 00:01:50,220
certainly be part of our future we knew

38
00:01:52,999 --> 00:01:51,270

if we were gonna continue with this

39
00:01:54,469 --> 00:01:53,009
mission of exploration we need to learn

40
00:01:56,810 --> 00:01:54,479
more about the human bodies and how to

41
00:01:59,060 --> 00:01:56,820
keep humans safe so we have to

42
00:02:01,370 --> 00:01:59,070
understand what physiological changes

43
00:02:03,289 --> 00:02:01,380
occur to the human body when we're in

44
00:02:05,929 --> 00:02:03,299
space the crew of the enterprise

45
00:02:09,229 --> 00:02:05,939
mastered artificial gravity for the most

46
00:02:10,850 --> 00:02:09,239
part we however aren't quite there yet

47
00:02:11,540 --> 00:02:10,860
and that comes with its own set of

48
00:02:13,759 --> 00:02:11,550
challenges

49
00:02:15,680 --> 00:02:13,769
when you remove the force of gravity

50
00:02:19,100 --> 00:02:15,690
from your body you lose things like

51
00:02:21,740 --> 00:02:19,110
muscle mass bone density your heart

52
00:02:23,150 --> 00:02:21,750
doesn't have to work as hard overcoming

53
00:02:24,860 --> 00:02:23,160
these challenges will become even more

54
00:02:26,120 --> 00:02:24,870
important when humans step foot on Mars

55
00:02:29,030 --> 00:02:26,130
where the crew will have to be

56
00:02:30,860 --> 00:02:29,040
self-sufficient but thanks to the

57
00:02:32,150 --> 00:02:30,870
International Space Station we're able

58
00:02:34,400 --> 00:02:32,160
to study the effects of weightlessness

59
00:02:39,770 --> 00:02:34,410
and develop countermeasures in orbit

60
00:02:41,449 --> 00:02:39,780
close to Earth the International Space

61
00:02:43,130 --> 00:02:41,459
Station isn't just providing insight

62
00:02:45,170 --> 00:02:43,140
into how our bodies adapt to spaceflight

63
00:02:47,120 --> 00:02:45,180

but we also knew we need to learn a lot

64
00:02:49,009 --> 00:02:47,130
more about living in space and how to be

65
00:02:50,750 --> 00:02:49,019
self-sufficient to take care of our

66
00:02:54,349 --> 00:02:50,760
crews as they went on a deep-space

67
00:02:58,550 --> 00:02:54,359
journey for deep-space missions we still

68
00:03:02,690 --> 00:02:58,560
have a lot to learn we need to find out

69
00:03:04,789 --> 00:03:02,700
how to mitigate these limitations that

70
00:03:07,039 --> 00:03:04,799
we have and that's exactly what we're

71
00:03:09,140 --> 00:03:07,049
doing in space fashion the ISS is the

72
00:03:11,150 --> 00:03:09,150
only laboratory available to test life

73
00:03:13,819 --> 00:03:11,160
support systems crew health systems

74
00:03:16,160 --> 00:03:13,829
habitat modules and other technologies

75
00:03:18,730 --> 00:03:16,170
that would help astronauts be safe and

76
00:03:22,300 --> 00:03:18,740
productive on a deep-space journey

77
00:03:24,160 --> 00:03:22,310
do you wish the first Apollo mission

78
00:03:25,330 --> 00:03:24,170
hadn't reached the moon whether we

79
00:03:27,670 --> 00:03:25,340
hadn't gone on to Mars men to the

80
00:03:29,920 --> 00:03:27,680
nearest star those are the imaginative

81
00:03:33,520 --> 00:03:29,930
things that NASA are looking at that's

82
00:03:35,680 --> 00:03:33,530
every bit as passionately imaginative as

83
00:03:38,260 --> 00:03:35,690
science fiction I personally think that

84
00:03:40,660 --> 00:03:38,270
we are at a moment in the history of the

85
00:03:43,330 --> 00:03:40,670
human race where we are ready to leap

86
00:03:45,960 --> 00:03:43,340
forward leap out of this planet and I

87
00:03:49,390 --> 00:03:45,970
think it's in our evolutionary Creed

88
00:03:53,320 --> 00:03:49,400

that we have a manifest destiny to go

89
00:03:55,810 --> 00:03:53,330
into space and do to find new worlds to

90
00:03:57,130 --> 00:03:55,820
live it so every step we take we're just

91
00:03:59,050 --> 00:03:57,140
getting further and further into space

92
00:04:01,900 --> 00:03:59,060
and becoming more and more like Star

93
00:04:05,140 --> 00:04:01,910
Trek and just like Star Trek our journey

94
00:04:07,210 --> 00:04:05,150
will never happen even though we've been

95
00:04:09,190 --> 00:04:07,220
sending humans into space for over 50

96
00:04:12,040 --> 00:04:09,200
years it is still just the beginning

97
00:04:13,780 --> 00:04:12,050
someday far into the future we'll look

98
00:04:15,280 --> 00:04:13,790
back and recognize the pivotal role the

99
00:04:17,070 --> 00:04:15,290
International Space Station played in

100
00:04:20,140 --> 00:04:17,080
humankind's deep-space exploration

101
00:04:21,700 --> 00:04:20,150
given enough time and ingenuity who