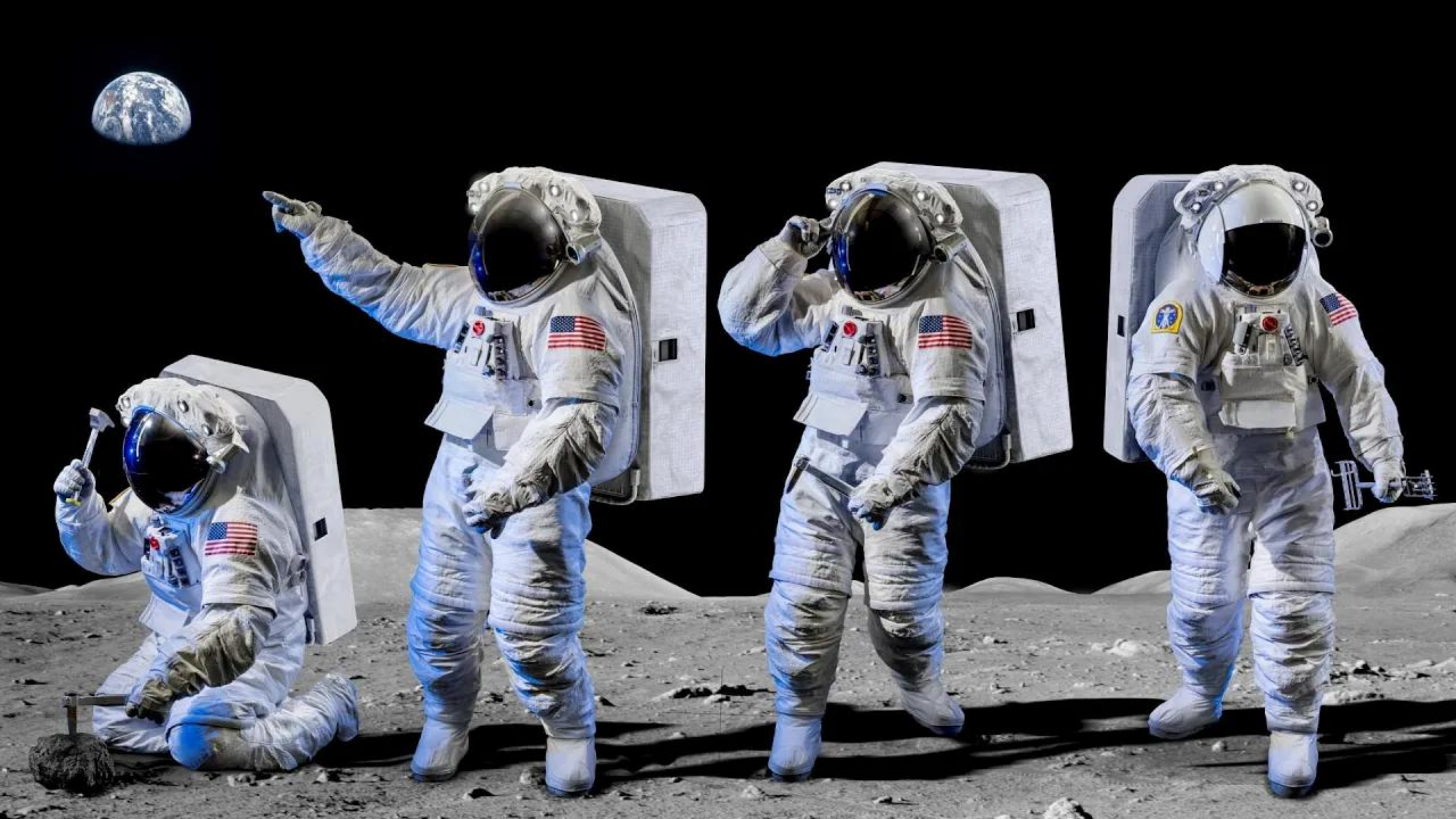

1
00:00:09,750 --> 00:00:06,630
there's been a lot of excitement about

2
00:00:13,749 --> 00:00:11,430
but what about that iconic puffy

3
00:00:16,150 --> 00:00:13,759
marshmallow suit that we used to walk on

4
00:00:19,189 --> 00:00:16,160
the moon this is what we call an extra

5
00:00:22,470 --> 00:00:19,199
vehicular mobility unit or emu and these

6
00:00:24,230 --> 00:00:22,480
suits truly are in a class of their own

7
00:00:26,310 --> 00:00:24,240
since apollo we've retooled and

8
00:00:28,790 --> 00:00:26,320
reimagined what can be accomplished on a

9
00:00:30,870 --> 00:00:28,800
spacewalk and the current spacesuit that

10
00:00:33,510 --> 00:00:30,880
nasa uses is based on a design that

11
00:00:35,190 --> 00:00:33,520
first flew in 1981

12
00:00:37,190 --> 00:00:35,200
through rigorous maintenance safety

13
00:00:38,950 --> 00:00:37,200

testing and upgrades this suit has

14
00:00:41,430 --> 00:00:38,960
allowed us to perform some incredibly

15
00:00:43,510 --> 00:00:41,440
monumental achievements and spacewalk

16
00:00:46,310 --> 00:00:43,520
our way into the record books

17
00:00:48,549 --> 00:00:46,320
you may have all come on different ships

18
00:00:50,310 --> 00:00:48,559
but we're in the same boat now a

19
00:00:52,869 --> 00:00:50,320
spacesuit is not something you simply

20
00:00:55,270 --> 00:00:52,879
wear it's more like an astronaut's very

21
00:00:57,350 --> 00:00:55,280
own personal vehicle a spacesuit is

22
00:00:59,910 --> 00:00:57,360
basically a self-contained environment

23
00:01:01,990 --> 00:00:59,920
it is a mini spacecraft that is tightly

24
00:01:04,789 --> 00:01:02,000
wound around a human body containing

25
00:01:07,590 --> 00:01:04,799
everything they need to survive because

26
00:01:08,550 --> 00:01:07,600
we are going back to the moon and onto

27
00:01:10,710 --> 00:01:08,560
mars

28
00:01:12,950 --> 00:01:10,720
exploration spacesuits have to solve the

29
00:01:15,429 --> 00:01:12,960
challenges from the past and anticipate

30
00:01:17,510 --> 00:01:15,439
those in the future some of the biggest

31
00:01:19,990 --> 00:01:17,520
environmental challenges that we're

32
00:01:23,590 --> 00:01:20,000
seeing is finding a balance between

33
00:01:26,550 --> 00:01:23,600
mobility and lunar dust in other words

34
00:01:27,990 --> 00:01:26,560
exploration is dirty work

35
00:01:29,429 --> 00:01:28,000
looks like you guys have been playing in

36
00:01:32,310 --> 00:01:29,439
a cold bend i don't know how we're gonna

37
00:01:33,749 --> 00:01:32,320
get it off let's do the best we can

38
00:01:35,109 --> 00:01:33,759

like how are we gonna clean these guys

39
00:01:36,630 --> 00:01:35,119
off before they're allowed to go back

40
00:01:38,950 --> 00:01:36,640
inside there's

41
00:01:40,710 --> 00:01:38,960
many ways and do we know if they work we

42
00:01:42,710 --> 00:01:40,720
have to find out and when your life

43
00:01:45,510 --> 00:01:42,720
depends on a good seal and perfectly

44
00:01:47,190 --> 00:01:45,520
performing fabrics dust is kind of a big

45
00:01:49,510 --> 00:01:47,200
deal

46
00:01:52,230 --> 00:01:49,520
lunar regolith it looks like it's it's

47
00:01:53,429 --> 00:01:52,240
just a fine-grained material when you

48
00:01:55,670 --> 00:01:53,439
when you see the pictures of the apollo

49
00:01:58,550 --> 00:01:55,680
boots in it and stuff but uh you're

50
00:01:59,749 --> 00:01:58,560
gonna see anywhere from broken rock

51
00:02:03,190 --> 00:01:59,759
shapes

52
00:02:05,830 --> 00:02:03,200
that's what it looks like under the

53
00:02:08,070 --> 00:02:05,840
microscope of such a small particle size

54
00:02:10,150 --> 00:02:08,080
range that it gets in everything the

55
00:02:12,710 --> 00:02:10,160
apollo missions only needed their suits

56
00:02:14,790 --> 00:02:12,720
to last for a few moonwalks but these

57
00:02:17,110 --> 00:02:14,800
missions to the moon and mars could be

58
00:02:19,190 --> 00:02:17,120
weeks months and even years long

59
00:02:21,830 --> 00:02:19,200
demanding the most innovative solutions

60
00:02:24,229 --> 00:02:21,840
from nasa and our industry partners

61
00:02:27,190 --> 00:02:24,239
whether we put a protective layer

62
00:02:29,589 --> 00:02:27,200
whether we are able to charge the suit

63
00:02:31,589 --> 00:02:29,599

to repel dust

64
00:02:33,509 --> 00:02:31,599
there are multiple things that we're

65
00:02:36,150 --> 00:02:33,519
looking at so we still have a lot of

66
00:02:38,070 --> 00:02:36,160
challenges and work the original emu's

67
00:02:38,949 --> 00:02:38,080
were designed for the astronauts of that

68
00:02:40,949 --> 00:02:38,959
era

69
00:02:42,949 --> 00:02:40,959
since then our astronaut classes have

70
00:02:45,589 --> 00:02:42,959
become far more diverse and the next

71
00:02:47,030 --> 00:02:45,599
generation of spacesuits can follow well

72
00:02:48,949 --> 00:02:47,040
suit

73
00:02:51,110 --> 00:02:48,959
as nasa works together with industry

74
00:02:53,750 --> 00:02:51,120
partners on exploration spacesuits

75
00:02:55,030 --> 00:02:53,760
follow along and be part of our journey