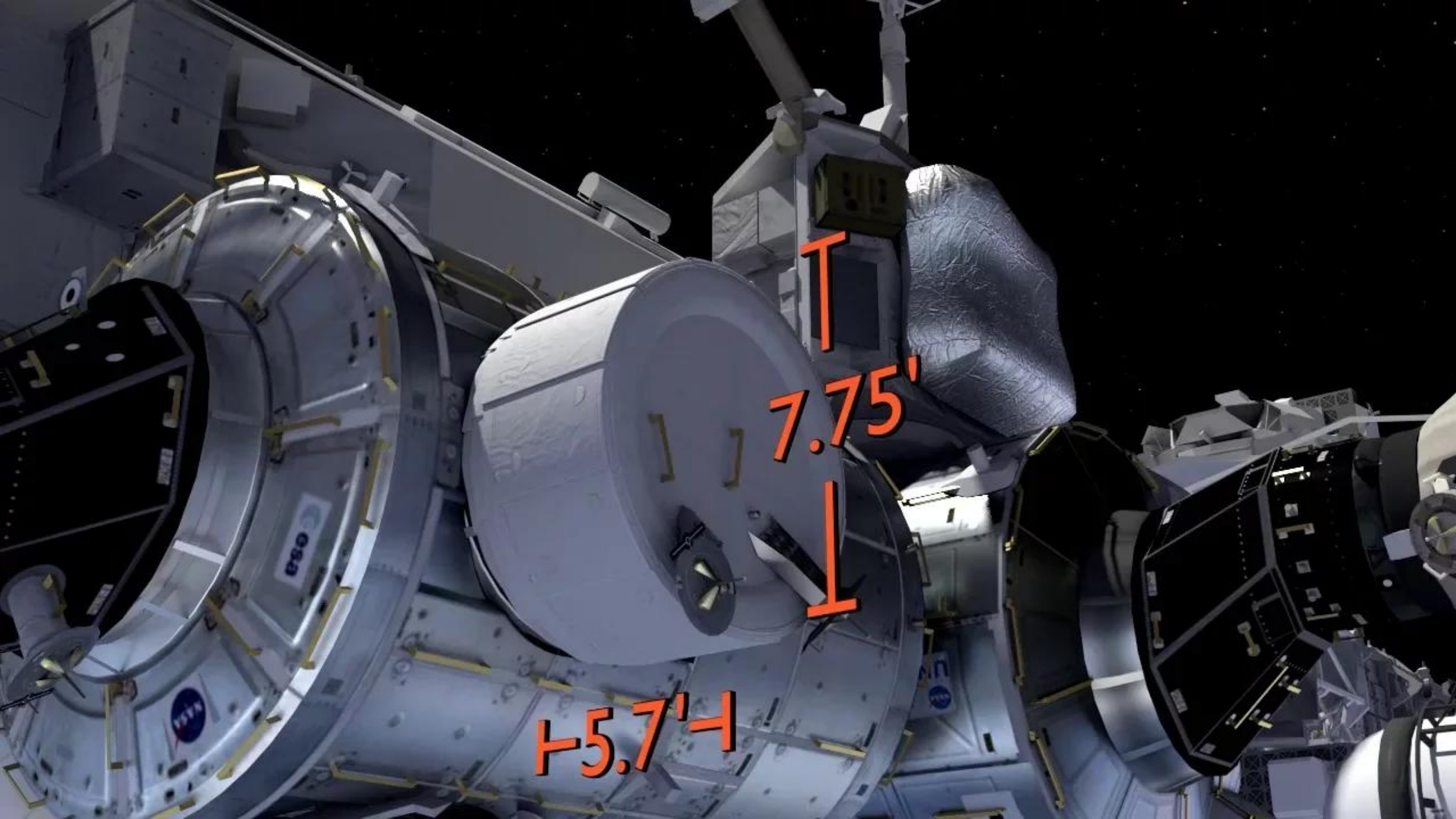
7.75'
5.7'

1
00:00:05,269 --> 00:00:03,110
nasa is developing the capabilities to

2
00:00:07,190 --> 00:00:05,279
send people into deep space to

3
00:00:09,350 --> 00:00:07,200
accomplish this we need to extend our

4
00:00:11,509 --> 00:00:09,360
knowledge of how to operate in space

5
00:00:13,350 --> 00:00:11,519
nasa is developing habitation systems

6
00:00:15,749 --> 00:00:13,360
that provide safe and sustainable

7
00:00:17,430 --> 00:00:15,759
space-based living quarters workspaces

8
00:00:19,830 --> 00:00:17,440
and laboratories

9
00:00:22,070 --> 00:00:19,840
expandable habitats are one option these

10
00:00:24,070 --> 00:00:22,080
potentially weigh less and occupy less

11
00:00:26,310 --> 00:00:24,080
volume on a rocket while allowing for

12
00:00:28,230 --> 00:00:26,320
additional space for living and working

13
00:00:29,990 --> 00:00:28,240

however testing needs to be done on the

14
00:00:31,269 --> 00:00:30,000
design performance of expandable

15
00:00:33,910 --> 00:00:31,279
habitats

16
00:00:36,310 --> 00:00:33,920
the bigelow expandable activity module

17
00:00:38,709 --> 00:00:36,320
or beam developed under contract with

18
00:00:40,790 --> 00:00:38,719
bigelow aerospace provides a test

19
00:00:42,790 --> 00:00:40,800
platform for demonstrating the thermal

20
00:00:45,190 --> 00:00:42,800
structural radiation performance

21
00:00:49,270 --> 00:00:45,200
mechanical durability and long-term leak

22
00:00:52,950 --> 00:00:51,029
the beam will be transported to the

23
00:00:55,590 --> 00:00:52,960
international space station inside the

24
00:00:57,430 --> 00:00:55,600
spacex dragon supply vehicle's trunk

25
00:00:59,189 --> 00:00:57,440
once dragon is birthed to the space

26
00:01:01,349 --> 00:00:59,199
station flight controllers at mission

27
00:01:03,750 --> 00:01:01,359
control in houston texas will maneuver

28
00:01:05,750 --> 00:01:03,760
the station's robotic arm to extract

29
00:01:07,910 --> 00:01:05,760
beam and attach it to the rear port on

30
00:01:10,070 --> 00:01:07,920
the tranquility node after all

31
00:01:12,390 --> 00:01:10,080
preparations are complete crew members

32
00:01:14,230 --> 00:01:12,400
will begin inflating the structure this

33
00:01:16,550 --> 00:01:14,240
will be the first time an expandable

34
00:01:18,710 --> 00:01:16,560
habitat has been deployed on station so

35
00:01:20,950 --> 00:01:18,720
the procedure will take place slowly to

36
00:01:22,950 --> 00:01:20,960
closely absorb the expansion process and

37
00:01:23,990 --> 00:01:22,960
maintain the safety of the crew and the

38
00:01:26,310 --> 00:01:24,000

station

39
00:01:29,429 --> 00:01:26,320
during this time beam will expand from

40
00:01:32,310 --> 00:01:29,439
its packed dimensions of 5.7 feet long

41
00:01:34,390 --> 00:01:32,320
and just under 7.75 feet in diameter to

42
00:01:37,190 --> 00:01:34,400
its pressurized dimensions of 12 feet

43
00:01:39,590 --> 00:01:37,200
long and 10.5 feet in diameter

44
00:01:42,230 --> 00:01:39,600
once beam is fully expanded the crew

45
00:01:44,310 --> 00:01:42,240
will pressurize it and test it for leaks

46
00:01:46,310 --> 00:01:44,320
after this beam's pressure will be

47
00:01:48,149 --> 00:01:46,320
equalized with the station pressure and

48
00:01:49,670 --> 00:01:48,159
the crew will enter the beam and install

49
00:01:53,910 --> 00:01:49,680
sensors

50
00:01:56,069 --> 00:01:53,920
autonomously collect thermal impact and

51
00:01:59,670 --> 00:01:56,079
radiation data throughout the two-year

52
00:02:03,350 --> 00:02:01,510
these experiments will help determine

53
00:02:05,910 --> 00:02:03,360
whether expandable structures will