NASA SCIENTISTS OPEN ONE OF THE LAST SEALED APOLLO 17 MOON SAMPLES

1
00:00:19,990 --> 00:00:18,390
[Music]

2
00:00:22,070 --> 00:00:20,000
the first thing we do is we put it in

3
00:00:23,990 --> 00:00:22,080
this catapult looking device that you

4
00:00:25,670 --> 00:00:24,000
see here we call it the rocket launcher

5
00:00:27,349 --> 00:00:25,680
the end caps are taken off of the drive

6
00:00:29,109 --> 00:00:27,359
tube and then

7
00:00:31,109 --> 00:00:29,119
threaded metal rods with plates on the

8
00:00:32,790 --> 00:00:31,119
end were actually inserted into either

9
00:00:34,549 --> 00:00:32,800
end then the sample is picked up from

10
00:00:37,030 --> 00:00:34,559
the rocket launcher and it's put into

11
00:00:39,830 --> 00:00:37,040
this device over here with the wheel on

12
00:00:42,389 --> 00:00:39,840
it as that wheel gets turned very slowly

13
00:00:46,389 --> 00:00:42,399

the threads engage and the rod starts to

14
00:00:50,869 --> 00:00:48,069
that core

15
00:00:53,990 --> 00:00:50,879
was collected by gene cernan

16
00:00:55,990 --> 00:00:54,000
as i was working on the edge of a of a

17
00:00:57,670 --> 00:00:56,000
crater nearby

18
00:00:59,270 --> 00:00:57,680
one of the most important tools that we

19
00:01:02,630 --> 00:00:59,280
had was this

20
00:01:04,869 --> 00:01:02,640
core tube a double drive tube and you

21
00:01:06,870 --> 00:01:04,879
could drive these into the surface now

22
00:01:08,390 --> 00:01:06,880
still very difficult

23
00:01:12,149 --> 00:01:08,400
it was the best we had and we got a

24
00:01:14,870 --> 00:01:12,159
quite a number of very good cores that

25
00:01:17,190 --> 00:01:14,880
are giving us new information not only

26
00:01:19,670 --> 00:01:17,200
about the nature of this debris layer

27
00:01:23,030 --> 00:01:19,680
but also within those cores is a history

28
00:01:26,390 --> 00:01:24,950
it was anticipated early on in the

29
00:01:27,429 --> 00:01:26,400
apollo program

30
00:01:30,550 --> 00:01:27,439
that

31
00:01:33,030 --> 00:01:30,560
analytical technology would mature would

32
00:01:35,030 --> 00:01:33,040
become much more sophisticated with time

33
00:01:37,350 --> 00:01:35,040
that we could gain new information from

34
00:01:39,590 --> 00:01:37,360
the same old samples it makes it

35
00:01:41,749 --> 00:01:39,600
very very exciting for everybody in fact

36
00:01:43,510 --> 00:01:41,759
apollo never ended for lunar scientists

37
00:01:45,190 --> 00:01:43,520
our analytical techniques have gotten to

38
00:01:47,350 --> 00:01:45,200

the point where we can actually detect

39
00:01:49,270 --> 00:01:47,360
the water that is in some of these

40
00:01:51,030 --> 00:01:49,280
ancient ludar rocks we've actually been

41
00:01:52,710 --> 00:01:51,040
able to constrain

42
00:01:54,469 --> 00:01:52,720
that there is a common history and a

43
00:01:56,149 --> 00:01:54,479
common source between the earthman

44
00:01:58,230 --> 00:01:56,159
system which is what we have learned

45
00:02:00,550 --> 00:01:58,240
previously by other studies of the

46
00:02:03,350 --> 00:02:00,560
apollo lunar samples that we have

47
00:02:06,069 --> 00:02:03,360
x-ray computed tomography or xct now

48
00:02:07,910 --> 00:02:06,079
this is a way for us to actually look at

49
00:02:13,510 --> 00:02:07,920
the three-dimensional structure of a

50
00:02:17,510 --> 00:02:15,430
there's a whole industry of engineers

51
00:02:19,670 --> 00:02:17,520
who are studying how to extract

52
00:02:21,030 --> 00:02:19,680
resources from the moon and so one of

53
00:02:22,630 --> 00:02:21,040
the things that we want to do during

54
00:02:24,790 --> 00:02:22,640
artemis is actually test out some of

55
00:02:26,470 --> 00:02:24,800
these new technologies and see how

56
00:02:28,470 --> 00:02:26,480
effective they are at extracting the

57
00:02:30,470 --> 00:02:28,480
water and these other materials thinking

58
00:02:33,110 --> 00:02:30,480
forward to mars we've only ever sent

59
00:02:35,030 --> 00:02:33,120
robotic missions to mars and so when we

60
00:02:36,790 --> 00:02:35,040
send people to mars these are things

61
00:02:39,670 --> 00:02:36,800
we're going to have to consider so this

62
00:02:41,750 --> 00:02:39,680
core has a multitude of the information

63
00:02:43,750 --> 00:02:41,760

to give us and we're as you can tell i

64
00:02:45,589 --> 00:02:43,760
think all of us are very excited about

65
00:02:47,750 --> 00:02:45,599
getting a chance to work on it there's a

66
00:02:49,910 --> 00:02:47,760
lot we don't know about the rest of the

67
00:02:51,750 --> 00:02:49,920
moon and there's a lot we don't know

68
00:02:54,390 --> 00:02:51,760
about in between these various sites

69
00:02:56,550 --> 00:02:54,400
that apollo landed at and so gathering

70
00:02:58,070 --> 00:02:56,560
new information uh particularly from the

71
00:03:00,390 --> 00:02:58,080
south pole but there are many other

72
00:03:03,509 --> 00:03:00,400
areas on the far side that will start to

73
00:03:06,070 --> 00:03:03,519
define much more uh give us much more

74
00:03:07,589 --> 00:03:06,080
information about lunar science you have

75
00:03:09,350 --> 00:03:07,599
to remember that everything we're

76
00:03:11,589 --> 00:03:09,360
learning about the moon

77
00:03:13,670 --> 00:03:11,599
relates to the very early history of the

78
00:03:17,190 --> 00:03:13,680
solar system and particularly to the

79
00:03:31,430 --> 00:03:17,200
very early history of the earth

80
00:03:34,050 --> 00:03:32,390
subscribe