

A photograph showing three individuals in a cleanroom environment. They are wearing white lab coats and hairnets. The person on the left is wearing blue gloves and holding a dark, porous, irregularly shaped sample. The person in the middle is looking at the sample. The person on the right is also looking at the sample. The background shows a cleanroom with stainless steel walls and ceiling lights. The text "NASA Johnson's Astromaterials Laboratory" is overlaid in large, blue, outlined letters across the center of the image.

**NASA Johnson's
Astromaterials
Laboratory**

1
00:00:00,170 --> 00:00:02,950

[Music]

2
00:00:08,150 --> 00:00:05,990

for over 50 years nasa astronauts and

3
00:00:10,310 --> 00:00:08,160

scientists have explored the universe

4
00:00:12,549 --> 00:00:10,320

searching for ways to study the elements

5
00:00:14,390 --> 00:00:12,559

and materials that make up the solar

6
00:00:16,550 --> 00:00:14,400

system

7
00:00:18,550 --> 00:00:16,560

in nasa's early days the apollo

8
00:00:20,710 --> 00:00:18,560

astronauts walked the lunar surface to

9
00:00:22,550 --> 00:00:20,720

collect moon rocks and soil for study

10
00:00:25,390 --> 00:00:22,560

back on earth

11
00:00:29,349 --> 00:00:25,400

in all apollo explorers sampled

12
00:00:32,069 --> 00:00:29,359

842 pounds of lunar material

13
00:00:34,549 --> 00:00:32,079

today those precious samples are curated

14

00:00:37,190 --> 00:00:34,559

within nasa's astro materials research

15

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

and exploration science division or

16

00:00:41,030 --> 00:00:38,960

aries

17

00:00:42,790 --> 00:00:41,040

many of those lunar samples are stored

18

00:00:45,430 --> 00:00:42,800

in their lunar sample laboratory

19

00:00:47,430 --> 00:00:45,440

facility at nasa's johnson space center

20

00:00:49,350 --> 00:00:47,440

in houston texas

21

00:00:51,189 --> 00:00:49,360

nasa curators work to preserve the

22

00:00:53,029 --> 00:00:51,199

samples for ongoing and future

23

00:00:55,350 --> 00:00:53,039

scientific research

24

00:00:58,389 --> 00:00:55,360

the samples are protected in secure and

25

00:01:00,790 --> 00:00:58,399

environmentally controlled vaults each

26
00:01:03,029 --> 00:01:00,800
sample is sorted by mission and stored

27
00:01:05,830 --> 00:01:03,039
in teflon based bags that are kept in

28
00:01:08,230 --> 00:01:05,840
cabinets filled with nitrogen gas

29
00:01:10,630 --> 00:01:08,240
to this day scientists from around the

30
00:01:12,469 --> 00:01:10,640
world study and analyze the samples to

31
00:01:15,190 --> 00:01:12,479
answer important questions about the

32
00:01:17,270 --> 00:01:15,200
moon's formation and history

33
00:01:19,270 --> 00:01:17,280
to preserve their integrity nasa

34
00:01:21,190 --> 00:01:19,280
curators follow strict safety and

35
00:01:22,550 --> 00:01:21,200
handling processes when working with

36
00:01:24,950 --> 00:01:22,560
samples

37
00:01:28,310 --> 00:01:24,960
it begins with a laminar airflow change

38
00:01:30,310 --> 00:01:28,320

room this minute long air shower keeps

39

00:01:31,429 --> 00:01:30,320

the labs where they work pristinely

40

00:01:33,830 --> 00:01:31,439

clean

41

00:01:36,950 --> 00:01:33,840

aries scientists must also wear special

42

00:01:39,510 --> 00:01:36,960

gear including a whole body non-particle

43

00:01:41,270 --> 00:01:39,520

shedding polyester bunny suit and triple

44

00:01:43,510 --> 00:01:41,280

layered gloves

45

00:01:45,030 --> 00:01:43,520

they also use custom tools to protect

46

00:01:46,710 --> 00:01:45,040

the samples

47

00:01:49,990 --> 00:01:46,720

moon rocks may only be touched with

48

00:01:52,230 --> 00:01:50,000

teflon aluminum or stainless steel tools

49

00:01:53,350 --> 00:01:52,240

and the dry nitrogen atmosphere around

50

00:01:55,190 --> 00:01:53,360

them

51

00:01:57,109 --> 00:01:55,200

this allows curators to carefully

52

00:01:59,030 --> 00:01:57,119

examine samples while maintaining their

53

00:02:01,510 --> 00:01:59,040

original condition

54

00:02:04,069 --> 00:02:01,520

this process ensures the samples are not

55

00:02:06,469 --> 00:02:04,079

contaminated or destroyed and can be

56

00:02:08,070 --> 00:02:06,479

used to produce scientifically accurate

57

00:02:10,309 --> 00:02:08,080

results

58

00:02:12,309 --> 00:02:10,319

technological advancements including

59

00:02:14,949 --> 00:02:12,319

next generation microscopes and other

60

00:02:17,350 --> 00:02:14,959

devices allow researchers to examine the

61

00:02:19,350 --> 00:02:17,360

samples through new methods resulting in

62

00:02:22,150 --> 00:02:19,360

important discoveries that answer some

63

00:02:24,869 --> 00:02:22,160

of our oldest questions

64

00:02:26,949 --> 00:02:24,879

soon nasa's artemis missions will land

65

00:02:29,910 --> 00:02:26,959

the first woman and the first person of

66

00:02:31,509 --> 00:02:29,920

color on the moon and aries plays an

67

00:02:34,150 --> 00:02:31,519

important role

68

00:02:35,910 --> 00:02:34,160

our researchers scientists and sample

69

00:02:38,309 --> 00:02:35,920

curators look forward to the upcoming

70

00:02:41,270 --> 00:02:38,319

missions and the opportunity to study

71

00:02:43,830 --> 00:02:41,280

new samples of lunar material

72

00:02:45,830 --> 00:02:43,840

as nasa returns to the moon it brings us

73

00:02:46,949 --> 00:02:45,840

closer to landing the first humans on

74

00:02:48,949 --> 00:02:46,959

mars

75

00:02:51,350 --> 00:02:48,959

following in the footsteps of apollo and

76

00:02:53,750 --> 00:02:51,360

artemis missions the next generation

77

00:02:54,790 --> 00:02:53,760

mars explorers will have the opportunity

78

00:02:57,589 --> 00:02:54,800

to see

79

00:02:59,990 --> 00:02:57,599

touch and collect off-world soil and

80

00:03:02,309 --> 00:03:00,000

return it to the earth for study

81

00:03:05,110 --> 00:03:02,319

this work will usher in a new era of

82

00:03:07,990 --> 00:03:05,120

exploration and discovery

83

00:03:09,509 --> 00:03:08,000

we are scientists researchers and

84

00:03:10,710 --> 00:03:09,519

explorers

85

00:03:11,780 --> 00:03:10,720

we are

86

00:03:21,670 --> 00:03:11,790

ares