



1  
00:00:11,589 --> 00:00:09,350  
nasa's newest mars rover curiosity began

2  
00:00:14,150 --> 00:00:11,599  
its launch site preparation in florida

3  
00:00:15,910 --> 00:00:14,160  
on may 12 2011.

4  
00:00:17,990 --> 00:00:15,920  
that's when the first three elements of

5  
00:00:20,150 --> 00:00:18,000  
the spacecraft officially known as the

6  
00:00:22,070 --> 00:00:20,160  
mars science laboratory were delivered

7  
00:00:25,189 --> 00:00:22,080  
to kennedy space center shuttle landing

8  
00:00:26,470 --> 00:00:25,199  
facility aboard an air force c-17 cargo

9  
00:00:28,630 --> 00:00:26,480  
plane

10  
00:00:30,310 --> 00:00:28,640  
after the cruise stage back shell and

11  
00:00:32,069 --> 00:00:30,320  
heat shield were unloaded and

12  
00:00:34,470 --> 00:00:32,079  
transported to the payload hazardous

13  
00:00:36,389 --> 00:00:34,480

surfacing facility processing got

14

00:00:38,549 --> 00:00:36,399

underway

15

00:00:40,950 --> 00:00:38,559

technicians installed a solar array

16

00:00:43,030 --> 00:00:40,960

panel to the cruise stage and processed

17

00:00:45,350 --> 00:00:43,040

the spacecraft's back shell

18

00:00:47,270 --> 00:00:45,360

the back shell carries the parachute and

19

00:00:49,830 --> 00:00:47,280

several components used during later

20

00:00:51,110 --> 00:00:49,840

stages of entry descent and landing of

21

00:00:53,510 --> 00:00:51,120

the rover

22

00:00:55,990 --> 00:00:53,520

the aeroshell comprising the back shell

23

00:00:57,910 --> 00:00:56,000

and the heat shield was tested on a spin

24

00:00:59,910 --> 00:00:57,920

table before technicians used an

25

00:01:01,590 --> 00:00:59,920

overhead crane to separate the two

26

00:01:04,630 --> 00:01:01,600

components

27

00:01:06,469 --> 00:01:04,640

on june 22nd a cargo plane arrived at

28

00:01:08,390 --> 00:01:06,479

kennedy carrying the rover and the

29

00:01:09,510 --> 00:01:08,400

spacecraft's rocket-powered descent

30

00:01:13,030 --> 00:01:09,520

stage

31

00:01:15,510 --> 00:01:13,040

during the final moments before its

32

00:01:17,429 --> 00:01:15,520

landing on the martian surface

33

00:01:19,510 --> 00:01:17,439

after transportation to the servicing

34

00:01:21,190 --> 00:01:19,520

facility technicians removed the

35

00:01:23,670 --> 00:01:21,200

protective wrapping from the descent

36

00:01:24,950 --> 00:01:23,680

stage thrusters for documenting and

37

00:01:26,870 --> 00:01:24,960

inspection

38

00:01:29,510 --> 00:01:26,880

the rover itself was removed from its

39

00:01:31,109 --> 00:01:29,520

protective carrier and moved by crane to

40

00:01:33,590 --> 00:01:31,119

a work stand

41

00:01:36,469 --> 00:01:33,600

the rover's processing and testing began

42

00:01:38,310 --> 00:01:36,479

including a series of rotation tests

43

00:01:40,550 --> 00:01:38,320

the wheels as well as the instrument

44

00:01:43,030 --> 00:01:40,560

mast and science boom were put through a

45

00:01:45,030 --> 00:01:43,040

series of deployment tests

46

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

enclosed in a shipping cask the

47

00:01:48,789 --> 00:01:46,720

spacecraft's power generating

48

00:01:50,870 --> 00:01:48,799

multi-mission radio isotope thermal

49

00:01:53,030 --> 00:01:50,880

electric generator arrived at Kennedy

50

00:01:56,630 --> 00:01:53,040

June 30th and was moved to a storage

51  
00:01:58,230 --> 00:01:56,640  
facility where workers removed the cask

52  
00:02:00,469 --> 00:01:58,240  
a fit check of the generator was

53  
00:02:02,789 --> 00:02:00,479  
conducted in july

54  
00:02:04,389 --> 00:02:02,799  
also in july the rover's launch vehicle

55  
00:02:06,950 --> 00:02:04,399  
began to take shape

56  
00:02:09,430 --> 00:02:06,960  
a united launch alliance atlas v with

57  
00:02:11,510 --> 00:02:09,440  
four solid rocket boosters attached will

58  
00:02:12,550 --> 00:02:11,520  
loft the mars science laboratory into

59  
00:02:15,030 --> 00:02:12,560  
space

60  
00:02:17,030 --> 00:02:15,040  
the atlas v first stage and centaur

61  
00:02:19,110 --> 00:02:17,040  
second stage were offloaded from the

62  
00:02:20,790 --> 00:02:19,120  
delta mariner transport ship at port

63  
00:02:23,430 --> 00:02:20,800

canaveral just a few miles from the

64

00:02:25,510 --> 00:02:23,440

launch site they were transported to

65

00:02:27,110 --> 00:02:25,520

cape canaveral air force station and

66

00:02:29,350 --> 00:02:27,120

delivered to the atlas space flight

67

00:02:32,390 --> 00:02:29,360

operations center

68

00:02:34,229 --> 00:02:32,400

a crane was used to position the 106 and

69

00:02:36,630 --> 00:02:34,239

a half foot long stage inside the

70

00:02:38,390 --> 00:02:36,640

integration facility and lower it onto

71

00:02:40,790 --> 00:02:38,400

its launch platform

72

00:02:42,869 --> 00:02:40,800

several days later technicians began the

73

00:02:45,589 --> 00:02:42,879

installation of the four solid rocket

74

00:02:48,070 --> 00:02:45,599

motors using a lifting device to elevate

75

00:02:50,229 --> 00:02:48,080

them to an upright position

76  
00:02:51,830 --> 00:02:50,239  
an overhead crane lifted the centaur

77  
00:02:53,750 --> 00:02:51,840  
upper stage of the rocket and

78  
00:02:55,110 --> 00:02:53,760  
technicians attached it to the lower

79  
00:02:57,350 --> 00:02:55,120  
stage

80  
00:02:59,589 --> 00:02:57,360  
in the payload processing facility the

81  
00:03:01,589 --> 00:02:59,599  
dual sections of the atlas v payload

82  
00:03:04,070 --> 00:03:01,599  
fairing that will protect the spacecraft

83  
00:03:05,430 --> 00:03:04,080  
during launch and ascent were prepared

84  
00:03:07,190 --> 00:03:05,440  
technicians helped guide the

85  
00:03:09,830 --> 00:03:07,200  
rocket-powered descent stage over

86  
00:03:11,509 --> 00:03:09,840  
curiosity for integration

87  
00:03:13,190 --> 00:03:11,519  
then they positioned the back shell as

88  
00:03:15,030 --> 00:03:13,200

it was lowered over the rover for

89

00:03:16,949 --> 00:03:15,040

encapsulation

90

00:03:19,030 --> 00:03:16,959

technicians cleaned the fairing acoustic

91

00:03:22,070 --> 00:03:19,040

protection system to meet nasa's

92

00:03:24,149 --> 00:03:22,080

planetary protection requirements

93

00:03:27,350 --> 00:03:24,159

the spacecraft's cruise stage was joined

94

00:03:29,509 --> 00:03:27,360

to the aeroshell containing curiosity

95

00:03:31,589 --> 00:03:29,519

the cruise stage provides solar power

96

00:03:33,350 --> 00:03:31,599

thrusters for navigation and heat

97

00:03:35,430 --> 00:03:33,360

exchangers to the rover during its

98

00:03:37,670 --> 00:03:35,440

flight from earth to mars

99

00:03:39,750 --> 00:03:37,680

the spacecraft was then enclosed between

100

00:03:41,750 --> 00:03:39,760

the two halves of the payload fairing

101  
00:03:44,869 --> 00:03:41,760  
and placed on a transporter for the move

102  
00:03:47,190 --> 00:03:44,879  
to space launch complex 41.

103  
00:03:49,350 --> 00:03:47,200  
as dawn broke on november 3rd the

104  
00:03:51,830 --> 00:03:49,360  
payload was ready to be lifted at space

105  
00:03:53,429 --> 00:03:51,840  
launch complex 41's vertical integration

106  
00:03:55,589 --> 00:03:53,439  
facility

107  
00:03:57,990 --> 00:03:55,599  
once atop the rocket the payload was

108  
00:04:00,630 --> 00:03:58,000  
attached and the radioisotope thermal

109  
00:04:02,309 --> 00:04:00,640  
electric generator was installed

110  
00:04:05,030 --> 00:04:02,319  
with its final earthbound journey

111  
00:04:07,270 --> 00:04:05,040  
completed the rover curiosity and its

112  
00:04:08,149 --> 00:04:07,280  
atlas v launch vehicle were ready for

113  
00:04:09,509 --> 00:04:08,159

launch