

1
00:00:08,269 --> 00:00:15,298
Coble is turning 25 hard to believe it's

2
00:00:13,080 --> 00:00:17,849
been a few decades since Nancy Roman

3
00:00:15,298 --> 00:00:20,070
worked at NASA but she still has vivid

4
00:00:17,849 --> 00:00:23,179
memories of a time when the Hubble

5
00:00:20,070 --> 00:00:25,800
telescope was little more than an idea I

6
00:00:23,179 --> 00:00:28,649
remember when we were thinking about

7
00:00:25,800 --> 00:00:30,750
hoping it would last 15 years and I'm

8
00:00:28,649 --> 00:00:35,429
certainly glad that it's last of another

9
00:00:30,750 --> 00:00:39,049
10 and still going strong not bad for a

10
00:00:35,429 --> 00:00:42,238
telescope that almost didn't get built

11
00:00:39,049 --> 00:00:46,109
some of the most influential astronomers

12
00:00:42,238 --> 00:00:49,078
thought it was better to spend 300

13
00:00:46,109 --> 00:00:52,200
million dollars by building 20

14
00:00:49,079 --> 00:00:55,558
duplicates of the Palomar 200-inch

15
00:00:52,200 --> 00:00:58,219
telescope rather than spending the same

16
00:00:55,558 --> 00:01:02,099
amount of money on one very expensive

17
00:00:58,219 --> 00:01:04,379
telescope in space while some scientists

18
00:01:02,100 --> 00:01:07,019
didn't want a space telescope others

19
00:01:04,379 --> 00:01:11,270
couldn't wait to use a large orbiting

20
00:01:07,019 --> 00:01:13,769
observatory astronomers have wanted for

21
00:01:11,269 --> 00:01:17,310
generations actually to get us a

22
00:01:13,769 --> 00:01:19,438
telescope above the atmosphere I like to

23
00:01:17,310 --> 00:01:21,180
describe the atmosphere as being

24
00:01:19,438 --> 00:01:24,779
something like working through an old

25
00:01:21,180 --> 00:01:25,970
stained glass window the window has dust

26
00:01:24,780 --> 00:01:28,370
on it

27
00:01:25,969 --> 00:01:33,019
so the background is kind of scattered

28
00:01:28,370 --> 00:01:35,359
and bright just the glass is colored so

29

00:01:33,019 --> 00:01:38,060
that you only see certain colors through

30
00:01:35,359 --> 00:01:40,549
it you only see certain colors - yeah

31
00:01:38,060 --> 00:01:43,040
mr. Varon we were anxious to see some of

32
00:01:40,549 --> 00:01:46,250
the other colors from the universe the

33
00:01:43,040 --> 00:01:49,280
very sharp images it would produce would

34
00:01:46,250 --> 00:01:52,280
allow you to see things that were much

35
00:01:49,280 --> 00:01:56,599
bigger than it possibly ever be possible

36
00:01:52,280 --> 00:01:58,849
from the ground eventually the project

37
00:01:56,599 --> 00:02:02,359
known as the large Space Telescope began

38
00:01:58,849 --> 00:02:04,759
in earnest during the 1970s but how

39
00:02:02,359 --> 00:02:09,860
would an observatory out in space be

40
00:02:04,760 --> 00:02:12,230
operated and went right along with the

41
00:02:09,860 --> 00:02:13,850
telescope and look sir what we wanted to

42
00:02:12,229 --> 00:02:16,699
get rid of the atmosphere and the man

43
00:02:13,849 --> 00:02:19,609

needed the atmosphere secondly a man

44

00:02:16,699 --> 00:02:22,909

would and I don't care how much he tried

45

00:02:19,610 --> 00:02:26,870

to say still no man or woman is going to

46

00:02:22,909 --> 00:02:29,930

sit for an hour without moving Engineers

47

00:02:26,870 --> 00:02:33,500

would have to look at other options the

48

00:02:29,930 --> 00:02:36,200

detector for photographic film or

49

00:02:33,500 --> 00:02:38,389

photographic plates I know we're

50

00:02:36,199 --> 00:02:42,769

sensitive of what we have today

51

00:02:38,389 --> 00:02:45,259

the DoD did use photographic film for

52

00:02:42,770 --> 00:02:47,659

reconnaissance and drop the film into

53

00:02:45,259 --> 00:02:50,120

the ocean where it can be picked up that

54

00:02:47,659 --> 00:02:52,419

was much too expensive in a process for

55

00:02:50,120 --> 00:02:55,489

NASA

56

00:02:52,419 --> 00:02:58,879

instead NASA looked at making images

57

00:02:55,489 --> 00:03:03,379

digitally on charge-coupled devices or

58
00:02:58,879 --> 00:03:06,949
CCDs problem was CCD technology was in

59
00:03:03,379 --> 00:03:10,099
its infancy see CDs were becoming of

60
00:03:06,949 --> 00:03:14,299
interest in the television industry the

61
00:03:10,099 --> 00:03:16,500
problem was that the early sea CDs had

62
00:03:14,300 --> 00:03:18,420
no sensitivity and the ultra

63
00:03:16,500 --> 00:03:19,979
and one of the things we wanted to do

64
00:03:18,419 --> 00:03:22,949
with the Hubble was to work in the

65
00:03:19,979 --> 00:03:26,158
ultraviolet coating the detectors with

66
00:03:22,949 --> 00:03:28,548
quarantine an organic compound would

67
00:03:26,158 --> 00:03:31,679
make them sensitive to the ultraviolet

68
00:03:28,549 --> 00:03:33,840
so the first use of the C CDs in

69
00:03:31,680 --> 00:03:37,200
astronomy was actually the proof of

70
00:03:33,840 --> 00:03:39,439
concept for the Hubble what was arguably

71
00:03:37,199 --> 00:03:41,839
the biggest obstacle standing in the way

72
00:03:39,439 --> 00:03:45,109
getting the money to pay for it

73
00:03:41,840 --> 00:03:48,090
couple supporters won out in the end I

74
00:03:45,110 --> 00:03:51,030
did a back-of-the-envelope calculation

75
00:03:48,090 --> 00:03:53,819
and my answer was that for the cost of a

76
00:03:51,030 --> 00:03:56,789
night of new movies every American

77
00:03:53,818 --> 00:04:00,958
taxpayer would have 15 years of exciting

78
00:03:56,789 --> 00:04:03,289
discoveries at another 10 years for good

79
00:04:00,959 --> 00:04:06,239
measure and Hubble has not only eclipsed

80
00:04:03,289 --> 00:04:08,939
expectations but even more discoveries

81
00:04:06,239 --> 00:04:10,829
are on the horizon from the Space

82
00:04:08,939 --> 00:04:15,169
Telescope Science Institute in Baltimore

83
00:04:10,829 --> 00:04:15,170
Maryland I'm Mary Estacion