1
00:00:00,200 --> 00:00:05,005
What lady would take mathematics
instead of Latin?

2
00:00:05,005 --> 00:00:11,078
Nancy Grace Roman, “The Mother
of Hubble,” NASA’s First Chief
of Astronomy

3
00:00:14,114 --> 00:00:18,418
The idea of Hubble was something
that was among the astronomical

4
00:00:18,418 --> 00:00:23,056
community for generations. It
was not something that was new.

5
00:00:23,056 --> 00:00:27,427
Astronomers badly wanted a large
telescope above the atmosphere.

6
00:00:27,427 --> 00:00:31,565
Well I decided that if the
aerospace companies were going

7
00:00:31,565 --> 00:00:35,202
to put a lot of money into
designing a telescope, they

8
00:00:35,202 --> 00:00:39,206
might as well design one that
made sense. So what I did was to

9
00:00:39,206 --> 00:00:42,743
bring together a collection of
astronomers from all over the

10
00:00:42,743 --> 00:00:46,546
country trying to represent a
variety of things that we might

11
00:00:46,546 --> 00:00:52,653
do with the telescope and some
NASA engineers and get them to

12
00:00:52,653 --> 00:00:55,756
sit down together and come up
with something that the

13
00:00:55,756 --> 00:00:59,126
engineers thought would work and
that the astronomers thought

14
00:00:59,126 --> 00:01:01,061
would do their job.

15
00:01:01,061 --> 00:01:05,999
Becoming an Astronomer

16
00:01:05,999 --> 00:01:07,401
Well I think I've

17
00:01:07,401 --> 00:01:12,139
always been curious. I just
wanted to satisfy my curiosity,

18
00:01:12,139 --> 00:01:16,243
and astronomy in particular was
a subject I wanted to learn more

19
00:01:16,243 --> 00:01:19,813
about. I blamed my mother,
because she used to take me out

20
00:01:19,813 --> 00:01:22,950
to show me the constellations
and show me the northern lights

21
00:01:22,950 --> 00:01:27,955

and things like that. I just was fascinated. Between 5th and 6th

22
00:01:27,955 --> 00:01:33,293
grade I organized my friends into an astronomy club to study

23
00:01:33,293 --> 00:01:38,165
the constellations, and by 7th grade I decided I wanted to be

24
00:01:38,165 --> 00:01:41,134
an astronomer, and I was going to try for it. I knew it was

25
00:01:41,134 --> 00:01:44,371
going to take me another 12 years of schooling, but I

26
00:01:44,371 --> 00:01:48,909
figured I'd try, and if I didn't make it I could teach physics or

27
00:01:48,909 --> 00:01:52,646
math in high school. I certainly did not receive any

28
00:01:52,646 --> 00:01:57,351
encouragement. I was told from the beginning that women could

29
00:01:57,351 --> 00:02:01,922
not be scientists. In high school one of the experiences I

30
00:02:01,922 --> 00:02:04,591
remember is that I asked my guidance counselor for

31
00:02:04,591 --> 00:02:08,929

permission to take a second year
of algebra instead of a fifth

32
00:02:08,929 --> 00:02:13,867
year of Latin. And she looked
down her nose and sneered, “What

33
00:02:13,867 --> 00:02:18,872
lady would take mathematics
instead of Latin?” The first

34
00:02:18,872 --> 00:02:24,611
encouragement I got was in my
junior year at college when the

35
00:02:24,611 --> 00:02:28,415
head of the physics department
came up to me in lab one day and

36
00:02:28,415 --> 00:02:32,919
said, “You know, I usually try
to talk women out of going into

37
00:02:32,919 --> 00:02:39,493
physics, but I think maybe, you
might make it.” My main

38
00:02:39,493 --> 00:02:44,264
astronomical research area when
I started out was what they call

39
00:02:44,264 --> 00:02:47,534
spectral classification. Looking
at the stars spreading the light

40
00:02:47,534 --> 00:02:52,439
out into a rainbow, so that you
could see the different colors

41
00:02:52,439 --> 00:02:55,375

separately. What I started out
doing was looking at these

42
00:02:55,375 --> 00:03:00,013
spectra, looking at these
rainbows, and deciding the

43
00:03:00,013 --> 00:03:03,383
temperature and the brightness
of the stars, and then I was

44
00:03:03,383 --> 00:03:08,321
trying to find out how far away
they were and how they moved. My

45
00:03:08,321 --> 00:03:13,093
thesis professor was someone I
often didn’t get the support I

46
00:03:13,093 --> 00:03:16,563
expected. There was a period of
six months he went without

47
00:03:16,563 --> 00:03:20,600
speaking to me even when I said
hello to him in the hall. He

48
00:03:20,600 --> 00:03:23,070
didn’t want to have anything to
do with me.

49
00:03:23,070 --> 00:03:27,007
Becoming NASA's First Chief of
Astronomy

50
00:03:27,007 --> 00:03:29,476
I didn’t think I could get
tenure

51
00:03:29,476 --> 00:03:34,381

as a research astronomer. I
didn’t think I could stay in the

52
00:03:34,381 --> 00:03:38,852
academic community, because I
looked around and I think there

53
00:03:38,852 --> 00:03:43,023
was one other woman in astronomy
who had tenure in this country.

54
00:03:43,023 --> 00:03:48,995
But I saw very senior women who
didn’t have it. When NASA came

55
00:03:48,995 --> 00:03:53,300
along and offered me a job I
decided to take it. I started at

56
00:03:53,300 --> 00:03:59,106
NASA in 1959, it was six months
old. When I joined the

57
00:03:59,106 --> 00:04:03,477
government, I was hired as a
fresh PhD in spite of the fact

58
00:04:03,477 --> 00:04:07,180
that I had not only six years of
experience but an international

59
00:04:07,180 --> 00:04:12,919
reputation. And afterwards I
understood the reason. My salary

60
00:04:12,919 --> 00:04:16,923
at the university was so low
that civil service did not

61
00:04:16,923 --> 00:04:21,161

recognize it as a professional
experience. Being the first

62
00:04:21,161 --> 00:04:27,100
executive woman at NASA turned
out to be not terribly eventful.

63
00:04:27,100 --> 00:04:33,874
I was accepted very readily as a
scientist in my job and the men

64
00:04:33,874 --> 00:04:37,444
were very cooperative. I felt
that the men treated me as one

65
00:04:37,444 --> 00:04:42,682
of the team without a problem.
Civil service had rewards for

66
00:04:42,682 --> 00:04:47,687
outstanding work, but they were
limited to men. Someone decided

67
00:04:49,856 --> 00:04:54,127
there should be something for
women. In 1962, I received the

68
00:04:54,127 --> 00:04:58,198
Federal Women’s Award. We all
met with Kennedy in the course

69
00:04:58,198 --> 00:05:00,233
of receiving the award.

70
00:05:00,233 --> 00:05:04,137
Women in Astronomy

71
00:05:04,137 --> 00:05:05,572
I'm happy about the

72
00:05:05,572 --> 00:05:10,777
fact that women can get senior
jobs now, and they’re not being

73
00:05:10,777 --> 00:05:16,049
quite as discouraged as I was.
But I think there are two things

74
00:05:16,049 --> 00:05:20,520
that I would like to see
changed: one is salaries.

75
00:05:20,520 --> 00:05:24,758
Salaries are still not equal.
And the other thing is I would

76
00:05:24,758 --> 00:05:31,531
like to see more uniform women
across the ranks. Women can get

77
00:05:31,531 --> 00:05:35,735
into senior positions in
astronomy now, but percentage

78
00:05:35,735 --> 00:05:39,005
wise there are still few at the
high levels.

79
00:05:39,005 --> 00:05:42,742
Nancy's Legacy

80
00:05:42,742 --> 00:05:47,013
It's hard to decide how history
will view my accomplishments.

81
00:05:47,013 --> 00:05:51,985
People generally aren’t terribly
interested in what gets things

82

00:05:51,985 --> 00:05:55,322
started. And so I’m not sure
they’re going to have much of an

83
00:05:55,322 --> 00:05:57,290
idea of my role. [music ends]
www.nasa.gov/hubble @NASAHubble

84
00:05:57,290 --> 00:06:08,468
[music ends]

85
00:06:08,468 --> 00:06:12,572
www.nasa.gov/hubble
@NASAHubble

86
00:06:12,572 --> 00:06:16,343
[satellite swooshes by, beep
beep, beep beep, beep beep]