



1
00:00:00,000 --> 00:00:04,004
The Hubble Space Telescope is
one of the most scientifically

2
00:00:04,004 --> 00:00:07,507
productive spacecraft in NASA's
history and changed our

3
00:00:07,507 --> 00:00:11,011
fundamental understanding of the
universe.

4
00:00:11,011 --> 00:00:14,014
Behind Hubble are some
remarkable women who overcame

5
00:00:14,014 --> 00:00:16,016
challenges to help make Hubble
one of the greatest scientific

6
00:00:16,016 --> 00:00:19,853
instruments of all time.

7
00:00:19,853 --> 00:00:27,694
[music]

8
00:00:27,694 --> 00:00:31,031
Mission Possible: Women of the
Hubble Space Telescope

9
00:00:31,031 --> 00:00:34,368
[music swells]

10
00:00:34,368 --> 00:00:37,537
One Christmas, I
remember my mom giving me a

11
00:00:37,537 --> 00:00:42,242
Barbie doll house—a dream house.

They put it together the night

12

00:00:42,242 --> 00:00:46,480
before, I guess, and I was
pretty upset that it was already

13

00:00:46,480 --> 00:00:48,482
put together because I wanted to
do it. That was one of

14

00:00:48,482 --> 00:00:50,851
the things—that was one of the
things very early on that they

15

00:00:50,851 --> 00:00:54,955
had a clue that maybe she wanted
to do something with her hands

16

00:00:54,955 --> 00:01:00,093
and that later evolved to
engineering. My father used to

17

00:01:00,093 --> 00:01:05,265
play games with me, mental
arithmetic, I recognize now

18

00:01:05,265 --> 00:01:08,135
that it was algebra on his part,
but of course, I didn't know

19

00:01:08,135 --> 00:01:10,270
they were algebra as an
eight-year old.

20

00:01:10,270 --> 00:01:11,838
I never really thought

21

00:01:11,838 --> 00:01:15,776
about being a scientist when I
was growing up because I didn't

22

00:01:15,776 --> 00:01:18,745

know any scientists, I didn't
really know that that was a

23

00:01:18,745 --> 00:01:23,083

pathway I could pursue. I was
not someone who had a distinct

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00:01:23,083 --> 00:01:26,153

thought in mind of what I want
to be or what I want to do when

25

00:01:26,153 --> 00:01:28,855

I grow up. I knew two things
really were strong interests for

26

00:01:28,855 --> 00:01:32,826

me, I was inspired and curious
and fascinated by the grand

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00:01:32,826 --> 00:01:35,562

adventure I was seeing the
early astronauts have on

28

00:01:35,562 --> 00:01:39,099

television. I watched everything
from Alan Shepherd's 15 minute

29

00:01:39,099 --> 00:01:42,202

flight on forward. [Recording:
It's progressing beautifully. I

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00:01:42,202 --> 00:01:44,905

believe they are setting up the
flag now.] And it was just a

31

00:01:44,905 --> 00:01:50,477

scale of drama and boldness and
adventure that even the world

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00:01:50,477 --> 00:01:55,148

had never seen and watching that
at a young age was a great

33

00:01:55,148 --> 00:01:57,384

inspiration to me. But it mainly
made me curious. About how do

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00:01:57,384 --> 00:02:03,457

people get that kind of
adventure in their life? I was

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00:02:03,457 --> 00:02:07,127

born in Korea in the poor
environment. My mother she

36

00:02:07,127 --> 00:02:11,031

raised two daughters as a single
mom. She decided that we should

37

00:02:11,031 --> 00:02:14,368

immigrate to the United States.
And then things were really

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00:02:14,368 --> 00:02:19,406

tough because the language and
the kids were mean back then;

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00:02:19,406 --> 00:02:23,076

they were always making fun of
us, my sister and I. And most of

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00:02:23,076 --> 00:02:27,814

my friends were dropping out of
high school and most kids just

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00:02:27,814 --> 00:02:30,951

get a job after high school.
That was my goal also. I worked

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00:02:30,951 --> 00:02:35,122
in the sewing factory with my
mom. I was making a penny for

43

00:02:35,122 --> 00:02:38,825
sewing one piece of clothes. I
thought: wait a minute. This is

44

00:02:38,825 --> 00:02:42,996
not, this is not something I
want to do. I can't do this. I

45

00:02:42,996 --> 00:02:47,234
need to better myself. Make a
better living. I needed to

46

00:02:47,234 --> 00:02:54,041
expand my knowledge I guess in
math. Study something on it. My

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00:02:54,041 --> 00:03:01,915
counselor of course said:
engineering is for you. I am

48

00:03:01,915 --> 00:03:06,920
from Baltimore, Maryland. Born
and raised. I attended Baltimore

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00:03:06,920 --> 00:03:11,491
public city schools and I also
attended high school which was

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00:03:11,491 --> 00:03:17,497
an engineering-based. It was
not too open to women being at

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00:03:17,497 --> 00:03:22,235
the school. The other challenges
might have been financial.

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00:03:22,235 --> 00:03:26,239

Having to work through college
and having to work a semester to

53

00:03:26,239 --> 00:03:31,244

pay for the upcoming semester
which of course delayed me

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00:03:31,244 --> 00:03:34,381

graduating. And I don't know if
I would have ended up at Goddard

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00:03:34,381 --> 00:03:40,887

had I finished when I thought I
should finish. Well, between

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00:03:40,887 --> 00:03:44,825

fifth and sixth grade, I
organized my friends into an

57

00:03:44,825 --> 00:03:49,396

astronomy club to study the
constellations. And by seventh

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00:03:49,396 --> 00:03:53,333

grade, I decided I wanted to be
an astronomer and I was going to

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00:03:53,333 --> 00:03:55,802

try for it. And I knew it was
going to take me an additional

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00:03:55,802 --> 00:04:00,006

twelves years of schooling but I
figured I'd try. And if I didn't

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00:04:00,006 --> 00:04:04,811

make it, I could probably teach
physics or math in high school.

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00:04:04,811 --> 00:04:09,983

I was told from the beginning
that women cannot be scientists.

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00:04:09,983 --> 00:04:13,820

In high school, one of the
experiences I remember is that I

64

00:04:13,820 --> 00:04:19,159

asked my guidance counsellor for
permission to take a second year

65

00:04:19,159 --> 00:04:23,296

of Algebra instead of a fifth
year of Latin. And she looked

66

00:04:23,296 --> 00:04:27,100

down her nose at me and sneered:
“What lady would take

67

00:04:27,100 --> 00:04:32,506

mathematics instead of Latin?” I
was not encouraged as a woman.

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00:04:32,506 --> 00:04:37,077

My thesis professor was one I'd
often didn't get the support

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00:04:37,077 --> 00:04:40,480

that I expected. There was a
period in which he went for six

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00:04:40,480 --> 00:04:43,650

months without speaking to me
even when I said hello to him in

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00:04:43,650 --> 00:04:47,654

the hall. He was angry because
I'd left the University to go to

72

00:04:47,654 --> 00:04:54,161

the government. My role in Hubble was as Program Scientist.

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00:04:54,161 --> 00:04:57,998

Being the first executive woman at NASA turned out not to be

74

00:04:57,998 --> 00:05:03,170

terribly eventful. I was accepted very readily as a

75

00:05:03,170 --> 00:05:08,742

scientist and in my job. The men were very cooperative. I never

76

00:05:08,742 --> 00:05:14,514

found that anybody looked at me from a gender standpoint. I was

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00:05:14,514 --> 00:05:17,918

part of the group. Hey, Facebook! We're here live at the

78

00:05:17,918 --> 00:05:21,288

Goddard Space Flight Center. I'm Erin Kisliuk and we're talking

79

00:05:21,288 --> 00:05:23,890

about Hubble's brand new frontier. It was the summer

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00:05:23,890 --> 00:05:27,727

before my senior year. My internship was, um, with Human

81

00:05:27,727 --> 00:05:30,964

Exploration and Operations in their Education and Outreach

82

00:05:30,964 --> 00:05:36,002

Group and it was the opportunity of a life time. The course of my

83

00:05:36,002 --> 00:05:39,906

career took me to Houston to work for NASA, it took me back

84

00:05:39,906 --> 00:05:44,277

to the DC area to work for NASA again and I found myself at age

85

00:05:44,277 --> 00:05:49,683

25 for reasons completely beyond my control having lost three

86

00:05:49,683 --> 00:05:54,387

different jobs and I thought that was it for me to be honest.

87

00:05:54,387 --> 00:05:58,858

Um, but, I gave it one last shot and I'm here. In the place I

88

00:05:58,858 --> 00:06:03,396

exactly wanted to be. And I was nearing the end of graduate

89

00:06:03,396 --> 00:06:06,933

school when NASA opened the competition for space shuttle

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00:06:06,933 --> 00:06:10,270

astronauts. I never thought of my life that way: I want to be

91

00:06:10,270 --> 00:06:14,074

an astronaut. So when the Hubble deployment crew was being chosen

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00:06:14,074 --> 00:06:17,711

one of the key factors in the
NASA leadership mind was someone

93

00:06:17,711 --> 00:06:20,880

with experience in every one of
the crew positions. These guys

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00:06:20,880 --> 00:06:24,584

are looking for expedition
managers. They want someone that

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00:06:24,584 --> 00:06:29,089

is a hybrid of the ship's
company as we would call it and

96

00:06:29,089 --> 00:06:31,758

are attached to the shuttle and
we were going to host and

97

00:06:31,758 --> 00:06:34,761

operate scientific experiments.
So it's a different model than

98

00:06:34,761 --> 00:06:40,500

an oceanographic research ship,
but familiar. I think there were

99

00:06:40,500 --> 00:06:46,039

times when I felt really
intimidated. I had come from a

100

00:06:46,039 --> 00:06:50,143

small town in rural Arkansas
when I entered the University

101

00:06:50,143 --> 00:06:54,514

environment, I felt intimidated
a lot of times in my classes.

102

00:06:54,514 --> 00:06:59,252

But I learned how to seek out help. I learned how to find

103

00:06:59,252 --> 00:07:04,524

mentors, find tutors, ask questions and not be embarrassed

104

00:07:04,524 --> 00:07:05,892

to do that.

105

00:07:05,892 --> 00:07:09,095

The advice I have for young people, especially

106

00:07:09,095 --> 00:07:14,100

those underprivileged is don't let anything stop you. If I

107

00:07:16,469 --> 00:07:21,041

hadn't had some of the stumbling blocks I had to get to where I

108

00:07:21,041 --> 00:07:26,112

am now, a, I wouldn't appreciate it as much as I do right now,

109

00:07:26,112 --> 00:07:29,149

and b, I don't know if I would have been in the right place at

110

00:07:29,149 --> 00:07:32,786

the right time to end up where I am now. So, if there's

111

00:07:32,786 --> 00:07:35,789

something, this light at the end of the tunnel that's keeping you

112

00:07:35,789 --> 00:07:38,892

going, keep your eye on the prize. You don't want to spend

113

00:07:38,892 --> 00:07:44,064

your life doing something you don't like. Stay curious. Learn

114

00:07:44,064 --> 00:07:47,567

how to learn. Understand you're going to have to match your

115

00:07:47,567 --> 00:07:51,471

passions and your dreams with really hard work. A lot of

116

00:07:51,471 --> 00:07:55,008

people have already paved the way. There's still a lot of

117

00:07:55,008 --> 00:07:59,946

things that have to change, but I think a lot of doors are open.

118

00:07:59,946 --> 00:08:06,019

And, opportunities are vast. I'm here and there are a lot of

119

00:08:06,019 --> 00:08:12,959

others like me here. If I can do it, they can do it also.

120

00:08:12,959 --> 00:08:19,799

www.nasa.gov/hubble
@NASAHubble

121

00:08:19,799 --> 00:08:22,902

[satellite swooshes by, beep
beep, beep beep]

