



*Hidden
No More*

The Legacy of Mary W. Jackson

1
00:00:10,960 --> 00:00:14,000
Hello
and welcome to today's conversation

2
00:00:14,000 --> 00:00:15,040
called Hidden No More

3
00:00:16,000 --> 00:00:17,279
The life and legacy of

4
00:00:17,279 --> 00:00:20,720
Mary W. Jackson we'll be learning about this

5
00:00:20,720 --> 00:00:24,360
incredible trailblazer
from a great group of guests

6
00:00:24,360 --> 00:00:27,660
with us today is the author of Hidden Figures

7
00:00:27,780 --> 00:00:29,500
Margot Lee Shetterly

8
00:00:29,720 --> 00:00:32,160
NASA's Chief Historian Bill Barry

9
00:00:32,600 --> 00:00:35,840
and NASA Administrator Jim Bridenstine

10
00:00:36,060 --> 00:00:39,360
I'm Bettina Inclán with NASA's office of
communications

11
00:00:39,360 --> 00:00:42,399
on June 24th NASA Administrator
Bridenstine

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00:00:42,399 --> 00:00:46,480

announced that the agency's headquarters
building in Washington DC

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00:00:46,480 --> 00:00:51,600
would be named after Mary W Jackson
NASA's first black female engineer

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00:00:51,600 --> 00:00:55,600
today we'll learn more about this
incredible woman her career

15

00:00:55,600 --> 00:01:01,039
her NASA legacy and what you really means to the agency as we move forward

16

00:01:01,040 --> 00:01:05,440
throughout the conversation we'll also
be taking questions submitted by NASA employees

17

00:01:06,020 --> 00:01:07,100
let's begin

18

00:01:07,380 --> 00:01:08,860
we'll start with NASA

19

00:01:08,860 --> 00:01:10,940
Administrator Jim Bridenstine

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00:01:11,120 --> 00:01:12,900
well thank you so much Bettina and what

21

00:01:13,600 --> 00:01:18,960
an honor to be here
to celebrate really the life of Mary W

22

00:01:18,960 --> 00:01:24,159
Jackson and all of her achievements
yes we are we are going to name the

23

00:01:24,159 --> 00:01:28,479

headquarters building
which until now has not had a name but

24
00:01:28,479 --> 00:01:32,640
we're gonna name it
after Mary W Jackson and there there are

25
00:01:32,640 --> 00:01:37,280
so many reasons
um why this is the case uh she was a

26
00:01:37,280 --> 00:01:40,560
leader
at the agency in fact even before NASA

27
00:01:40,560 --> 00:01:44,880
was an agency
it was the NACA

28
00:01:44,880 --> 00:01:48,320
the national advisory committee on
aeronautics

29
00:01:48,320 --> 00:01:52,560
and of course Mary W Jackson was a
mathematician

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00:01:52,560 --> 00:01:55,920
and a computer back then we didn't have
big machines

31
00:01:55,920 --> 00:02:00,159
what we had were people and
mathematicians that did the computing

32
00:02:00,159 --> 00:02:05,119
that today we would have
machines do and and Mary W Jackson had

33
00:02:05,119 --> 00:02:09,679

to overcome
adversity in order to achieve all of her

34

00:02:09,679 --> 00:02:13,120
monumental achievements but to start
with

35

00:02:13,120 --> 00:02:17,040
she had to work in a segregated
environment with so many other

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00:02:17,040 --> 00:02:21,200
human computers at the time and yet
there were people at NASA who

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00:02:21,200 --> 00:02:24,959
recognized her intellect and her
capabilities

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00:02:24,959 --> 00:02:28,000
and there were people at nasa who said
wait a second

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00:02:28,000 --> 00:02:32,080
maybe you need to be more than a human
computer you should be an engineer

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00:02:32,080 --> 00:02:36,080
and she accepted that challenge and not
only did she accept the challenge

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00:02:36,080 --> 00:02:39,519
she then had to overcome more adversity
because at the time

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00:02:39,519 --> 00:02:45,440
education was segregated in virginia
and so she had to go to a school that

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00:02:45,440 --> 00:02:49,440

was segregated and
and and it was whites only and she had

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00:02:49,440 --> 00:02:52,800
to encourage everybody to allow her into
the classroom

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00:02:52,800 --> 00:02:56,640
and she got accepted into the classroom
overcame adversity

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00:02:56,640 --> 00:03:01,200
and became an engineer and as you said
Bettina she was

47

00:03:01,200 --> 00:03:05,519
the first african-american female
engineer at the agency

48

00:03:05,520 --> 00:03:09,140
but of course when we decided that we
were going to name the headquarters building

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00:03:09,240 --> 00:03:12,240
after Mary W Jackson we also wanted to

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00:03:12,240 --> 00:03:15,360
talk to her daughter and her
granddaughter and

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00:03:15,360 --> 00:03:18,480
and her relatives and hear what they had
to say

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00:03:18,480 --> 00:03:22,000
and and what they said matched perfectly
what i've read

53

00:03:22,000 --> 00:03:25,280
um what Margot Shetterly has written of

um

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00:03:25,280 --> 00:03:28,480

the things that you see in the movie
Hidden Figures

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00:03:28,480 --> 00:03:34,239

what they said is that they taught her
her daughter and her granddaughter

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00:03:34,239 --> 00:03:37,440

Mary W Jackson taught them that whenever you

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00:03:37,440 --> 00:03:41,680

overcome adversity whenever you achieve
whenever you move up

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00:03:41,680 --> 00:03:45,680

always always always bring people with
you

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00:03:45,680 --> 00:03:49,200

and that's who Mary W Jackson was she
was somebody

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00:03:49,200 --> 00:03:53,519

who brought people with her it wasn't
just about her climbing the ranks

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00:03:53,519 --> 00:03:57,360

in fact
she gave up opportunity for promotion

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00:03:57,360 --> 00:04:02,000

because she was more interested in equal
opportunity she was more interested in

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00:04:02,000 --> 00:04:05,360

diversity
and of course she became the head of our

64

00:04:05,360 --> 00:04:09,439

equal opportunity
and diversity office at the time there

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00:04:09,440 --> 00:04:15,200

at the langley research center
but her contributions are you know

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00:04:15,200 --> 00:04:19,600

civil rights
her contributions are um inclusion

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00:04:19,600 --> 00:04:23,840

and diversity but beyond that her
contributions were enabling

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00:04:23,840 --> 00:04:27,759

America to achieve more than it ever
could have achieved

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00:04:27,759 --> 00:04:31,120

in space flight and for all those
reasons

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00:04:31,120 --> 00:04:35,520

it made great sense to name the
headquarters building

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00:04:35,520 --> 00:04:39,360

after Mary W Jackson and of course if
you just

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00:04:39,360 --> 00:04:43,919

look her up online you can see all of
her achievements all of her awards

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00:04:43,919 --> 00:04:47,840

all of her prizes but i think the prize
that

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00:04:47,840 --> 00:04:54,080

is above all others is in 2019
congress the house and the senate voted

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00:04:54,080 --> 00:04:57,759

unanimously
to give her a congressional gold medal

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00:04:57,759 --> 00:05:01,759

and that was signed into law by the
president of the united states

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00:05:01,759 --> 00:05:08,400

and i think it's a perfect example of
how the United States of America really

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00:05:08,400 --> 00:05:14,080

needs to overcome a lot of the history
and get us to a new spot where everybody

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00:05:14,080 --> 00:05:19,440

is recognized and everybody is in fact
included Bettina thank you for putting

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00:05:19,440 --> 00:05:23,360

this together and i'm very excited about
listening to a dialogue

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00:05:23,360 --> 00:05:27,520

uh between Margot Shetterly of course who wrote the book

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00:05:27,520 --> 00:05:30,720

Hidden Figures and you know now the movie that
we've all seen

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00:05:30,720 --> 00:05:35,039

and Bill Barry the NASA historian who of
course

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00:05:35,039 --> 00:05:39,199

has been at the agency for years and
knows more about NASA than i'll

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00:05:39,199 --> 00:05:43,120

i'll ever know but i'm really looking
forward to this dialogue

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00:05:43,120 --> 00:05:46,960

about why it is we decided to name the
NASA headquarters building

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00:05:46,960 --> 00:05:52,260

after Mary W Jackson so Bettina thanks
for having me and i'll turn it back over to you

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00:05:52,460 --> 00:05:54,960

so thank you so much administrator we're

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00:05:54,960 --> 00:05:58,800

now going to
invite Bill Barry and Margot to turn on

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00:05:58,800 --> 00:06:02,560

their cameras so we can start this
conversation

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00:06:02,560 --> 00:06:04,181

hi Bettina hi Margot

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00:06:04,181 --> 00:06:08,639

Hey Bill hi Bettina
hi thank you so much for joining us

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00:06:08,639 --> 00:06:12,639

today for this conversation
Hidden No More about the life and legacy

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00:06:12,639 --> 00:06:15,919

of Mary W Jackson we just heard from the administrator he talked

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00:06:15,919 --> 00:06:19,600

a lot about about her life and we wanted to dive into it

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00:06:19,600 --> 00:06:22,800

there's a lot of people who haven't read the book and

97

00:06:22,800 --> 00:06:26,880

we had some questions Margot you're the author of this incredible book

98

00:06:26,880 --> 00:06:31,199

um but that as the administrator mentioned became a popular movie

99

00:06:31,200 --> 00:06:34,940

but what drew you to write these stories about NASA women

100

00:06:35,040 --> 00:06:37,280

how did you get started on this research?

101

00:06:37,500 --> 00:06:40,260

uh well it's very interesting i mean i am

102

00:06:40,400 --> 00:06:43,600

i consider myself to be a product of

103

00:06:43,600 --> 00:06:48,319

NASA and its history because my father who's now retired um

104

00:06:48,319 --> 00:06:53,440

was an atmospheric research scientist at NASA Langley in Hampton Virginia where i

105
00:06:53,440 --> 00:06:58,080
grew up so
i you know i knew Mary Jackson i knew

106
00:06:58,080 --> 00:07:02,160
Catherine Johnson i knew
many of the engineers and the scientists

107
00:07:02,160 --> 00:07:06,720
that worked with them
all the NASA people because they were

108
00:07:06,720 --> 00:07:10,800
part of my community and they were part
of my father's work

109
00:07:10,800 --> 00:07:15,199
so NASA has been a part of my life as
long as i can remember

110
00:07:15,199 --> 00:07:19,840
um and when i started working on this
book in 2010

111
00:07:19,840 --> 00:07:24,160
it was the it was an opportunity for me
to look at the history behind those

112
00:07:24,160 --> 00:07:30,160
people and to really understand in a way
i never had prior to that point uh

113
00:07:30,160 --> 00:07:37,360
the contributions that they had made to
science and engineering and to NASA and

114
00:07:37,360 --> 00:07:40,560
its predecessor
um the national advisory committee for

115

00:07:40,560 --> 00:07:44,400

aeronautics so

um i guess you could say that i was you

116

00:07:44,400 --> 00:07:47,199

know

eventually this this might have been my

117

00:07:47,199 --> 00:07:50,960

destiny to write this book given my

background

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00:07:50,960 --> 00:07:55,280

and with the book we have this new term

Hidden Figures where did

119

00:07:55,280 --> 00:08:00,639

where did that come from uh so the

the title Hidden Figures you know when

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00:08:00,639 --> 00:08:06,479

you're i think when you're writing

a book or uh trying to come up with

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00:08:06,479 --> 00:08:10,960

even a research reporter in any kind of

uh creative endeavor

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00:08:10,960 --> 00:08:15,360

coming up with a title that sums it up

is often the hardest part

123

00:08:15,360 --> 00:08:19,120

and there were many titles that i had

working titles

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00:08:19,120 --> 00:08:23,680

as i was going through the process of

working and researching this book

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00:08:23,680 --> 00:08:28,000

um Hidden Figures you know honestly it was one of these things that just

126

00:08:28,000 --> 00:08:31,199

popped into mind i mean really like wholly formed

127

00:08:31,199 --> 00:08:34,640

at one point um but the thing about the title

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00:08:34,640 --> 00:08:39,680

is that it really uh it has it has layers of meaning you know it really

129

00:08:39,680 --> 00:08:44,399

represented the fact that the women were

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00:08:44,399 --> 00:08:51,279

hidden away in their own separate office uh the fact that the figures the numbers

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00:08:51,279 --> 00:08:55,600

you know we see the result that we we don't often see the numbers that go

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00:08:55,600 --> 00:08:58,959

into it um and so not just those women but the

133

00:08:58,959 --> 00:09:01,519

entire work of the engineers and that whole

134

00:09:01,519 --> 00:09:06,880

team behind these spectacular technological advancement all that work

135

00:09:06,880 --> 00:09:10,320

was also hidden you know so there were
all these layers of meaning

136

00:09:10,320 --> 00:09:16,880

that once that title came to
the four you know i thought wow that's

137

00:09:16,880 --> 00:09:20,400

everything that i wanted to say about
this in two words

138

00:09:20,680 --> 00:09:24,720

Bill maybe you
and that is fantastic maybe Bill you can

139

00:09:24,720 --> 00:09:28,320

give us some more context on
um these hidden figures we're talking

140

00:09:28,320 --> 00:09:32,560

about the women of west computing
why were they called human computers you

141

00:09:32,560 --> 00:09:36,080

know who were these women and how did
this come to be

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00:09:36,080 --> 00:09:40,720

uh well this all traces back to the
early part of the 20th century

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00:09:40,720 --> 00:09:46,800

NACA engineers got tired of doing all
the math all the time

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00:09:46,800 --> 00:09:50,000

and they said we need some help here to
reduce all the data

145

00:09:50,000 --> 00:09:53,120

from these wind tunnel tests and and
those sorts of things

146

00:09:53,120 --> 00:09:56,720

so um the NACA tried an experiment in
mid-30s

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00:09:56,720 --> 00:10:01,600

you know they bring women in to do the
sort of the grunt computing work

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00:10:01,600 --> 00:10:05,040

and as it turns out the experiment was a
huge success they were

149

00:10:05,040 --> 00:10:08,079

um you know we have actually have a
letter from

150

00:10:08,079 --> 00:10:12,000

the NACA where they responded to a
request from industry about how did

151

00:10:12,000 --> 00:10:14,240

women computers
you know how does this experiment years

152

00:10:14,240 --> 00:10:18,079

work out and they went back and said
you know not only are the women you know

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00:10:18,079 --> 00:10:20,560

they're faster they're more accurate
they get more

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00:10:20,560 --> 00:10:23,600

done in the morning than the engineers
could get done in the whole day

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00:10:23,600 --> 00:10:27,279

and and we don't have to pay them as much right because

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00:10:27,279 --> 00:10:30,560

they're women and everything's woman's work uh so computing became

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00:10:30,560 --> 00:10:35,200

a woman's work sort of um sub-engineering specialty that uh that

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00:10:35,200 --> 00:10:38,800

was able to be done and the NACA relied on women in in the

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00:10:38,800 --> 00:10:43,600

30s and into the 40s during the war world war ii

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00:10:43,600 --> 00:10:46,959

uh in the NACA like everybody else was short-staffed because

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00:10:46,959 --> 00:10:50,160

so many of the you know people were off at war itself um

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00:10:50,160 --> 00:10:55,839

and uh in desperation to find more uh mathematicians to do the work then the

163

00:10:55,839 --> 00:10:58,959

calculating work for them um they actually started tapping the

164

00:10:58,959 --> 00:11:03,040

african-american community and they had a great pool of folks out there

165

00:11:03,040 --> 00:11:07,200

you know people who were
didn't have an opportunity to to

166

00:11:07,200 --> 00:11:11,680

exercise the skills that they had in
in a larger context other than largely

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00:11:11,680 --> 00:11:14,880

in the african-american segregated
school system

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00:11:14,880 --> 00:11:19,120

but once the NACA touched into that that
tap review they found a

169

00:11:19,120 --> 00:11:22,160

an incredibly talented pool and brought
in a bunch of them so

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00:11:22,160 --> 00:11:27,920

um but of course it's Hampton Virginia
1940s everything's still segregated in

171

00:11:27,920 --> 00:11:30,399

fact it's not just
segregated because that's the way it is

172

00:11:30,399 --> 00:11:35,440

it's segregated because that's the law
in virginia so you wind up with this

173

00:11:35,440 --> 00:11:38,320

separate
computing unit there and you have the

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00:11:38,320 --> 00:11:43,519

you know the white woman computers
and then because of where the facility

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00:11:43,519 --> 00:11:46,720

was built where they were
they were expanding the langley facility

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00:11:46,720 --> 00:11:48,800

and they built a unit out to the west of
the

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00:11:48,800 --> 00:11:52,639

the main campus uh which is now what's
now langley research center

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00:11:52,639 --> 00:11:55,600

uh but the west computing unit was named
that because that just happened to be

179

00:11:55,600 --> 00:12:00,720

the location where they were
i think i get all that right margot

180

00:12:01,040 --> 00:12:05,839

absolutely check check check check so
Bill yeah it's really great that you say

181

00:12:05,839 --> 00:12:09,440

that and as you were
talking about the the buildings i

182

00:12:09,440 --> 00:12:13,360

actually
can visualize in my mind the floor plans

183

00:12:13,360 --> 00:12:17,200

you know one of the things that was so
great for me doing the research for this

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00:12:17,200 --> 00:12:19,839

book
was all of the incredible research and

185

00:12:19,839 --> 00:12:23,920

all of the artifacts that that you guys
had saved and had scanned and that i

186

00:12:23,920 --> 00:12:27,839

found in the NASA
history office and headquarters and that

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00:12:27,839 --> 00:12:31,279

Mary Gainer
had had in the the langley research

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00:12:31,279 --> 00:12:34,880

center
um so it's so funny as you're you're

189

00:12:34,880 --> 00:12:38,480

recounting the history
i'm actually going through my mind and

190

00:12:38,480 --> 00:12:43,680

seeing all of the
the raw documents that that made up this story

191

00:12:45,040 --> 00:12:48,000

i became chief of story about the time
you started working on the book and and

192

00:12:48,000 --> 00:12:50,800

i remember wandering into the archive
from time to time and seeing seeing you

193

00:12:50,800 --> 00:12:55,360

at work there and thinking
i wonder what she's doing

194

00:12:55,940 --> 00:13:00,399

little than i know that how important your work
would be in the years to come

195

00:13:00,399 --> 00:13:06,560

yeah incredibly important we now have multiple facilities named after are

196

00:13:06,560 --> 00:13:09,040

these hidden figures that you wrote about in your book

197

00:13:09,040 --> 00:13:12,880

and as the administrator mentioned we said in the opening um statements

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00:13:12,880 --> 00:13:16,000

NASA headquarters is now called Mary W Jackson

199

00:13:16,000 --> 00:13:17,580

but can you tell us more

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00:13:17,580 --> 00:13:20,560

who was Mary W Jackson?

201

00:13:20,560 --> 00:13:23,920

so Mary Jackson you know i think it's it is so

202

00:13:23,920 --> 00:13:27,839

fitting that this building is named after Mary Jackson um

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00:13:27,839 --> 00:13:31,279

Mary uh her family the Winston family of the

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00:13:31,279 --> 00:13:35,120

W of her name um they were from Hampton Virginia

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00:13:35,120 --> 00:13:39,360

uh her father and her mother actually

met when they were college students

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00:13:39,360 --> 00:13:44,079

in the late 1890s in Hampton in
Hampton what was then called Hampton

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00:13:44,079 --> 00:13:48,240

Institute um Mary
and her siblings all went to Hampton

208

00:13:48,240 --> 00:13:53,040

university so she really was a part of
this community like a very fundamental

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00:13:53,040 --> 00:13:58,079

part of this um this community that that
grew up in the shadow of the civil war

210

00:13:58,079 --> 00:14:02,880

and then reconstruction
um so Mary worked at the

211

00:14:02,880 --> 00:14:05,920

uh the USO the united service
organization

212

00:14:05,920 --> 00:14:09,279

you know uh during world war ii she was
a teacher

213

00:14:09,279 --> 00:14:14,320

and then she came to uh to NASA after a
very short stint at Fort Monroe

214

00:14:14,320 --> 00:14:18,240

as a secretary another military
institution in Hampton

215

00:14:18,240 --> 00:14:21,680

um but Mary had been very good at math

and science

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00:14:21,680 --> 00:14:25,440

um you know this was um that was her her
field of study

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00:14:25,440 --> 00:14:30,160

when she was in college and she came in
as a computer she was working for

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00:14:30,160 --> 00:14:34,079

Dorothy Vaughan in the then segregated
west area computing unit

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00:14:34,079 --> 00:14:39,199

um and then she rotated into um
a work group called the four foot by four

220

00:14:39,199 --> 00:14:42,560

foot supersonic pressure tunnel this was
one of the wind tunnels

221

00:14:42,560 --> 00:14:45,920

um which was sort of the bread and
butter of the work at the at

222

00:14:45,920 --> 00:14:51,600

a part of the work anyway at the uh the
langley laboratory it was then called

223

00:14:51,600 --> 00:14:56,480

and um moving into that group really
kicked off her career

224

00:14:56,480 --> 00:15:03,600

and she worked for a senior engineer
a guy named Kazimierz Czarnecki um who

225

00:15:03,600 --> 00:15:07,120

you know we've seen the dramatization in

the movie

226

00:15:07,120 --> 00:15:11,120

uh and you know the movie always changes
a little bit but the core of that story

227

00:15:11,120 --> 00:15:15,760

is absolutely true

um Czarneki in in real life uh

228

00:15:15,760 --> 00:15:19,199

saw her engineering talent and said
listen

229

00:15:19,199 --> 00:15:22,800

staying in the computing pool is fine
but i think you'd make a great engineer

230

00:15:22,800 --> 00:15:28,320

and um that proved to be absolutely true
the two of them uh he was sort of first

231

00:15:28,320 --> 00:15:31,360

her mentor

and then they became research partners

232

00:15:31,360 --> 00:15:35,759

and they did quite a few

uh authored quite a few research

233

00:15:35,759 --> 00:15:40,320

reports over the years

principally on um aircraft supersonic

234

00:15:40,320 --> 00:15:43,920

aircraft

um that they would you know look at the

235

00:15:43,920 --> 00:15:46,560

protrusion

of rivets and how did that change the

236

00:15:46,560 --> 00:15:51,600

efficiency of the aircraft as it
was flying things like that um so Mary

237

00:15:51,600 --> 00:15:54,880

was an engineer
as we know NASA is an engineering

238

00:15:54,880 --> 00:15:57,839

organization so she was a real fit for
that

239

00:15:57,839 --> 00:16:01,600

um and then as as you mentioned Mary at
the end of her career

240

00:16:01,600 --> 00:16:08,079

as the administrator mentioned um took
a a demotion in order to go into um

241

00:16:08,079 --> 00:16:12,959

into human resources and really remove
barriers for other women of all

242

00:16:12,959 --> 00:16:16,560

backgrounds she was really really
committed to making sure that all

243

00:16:16,560 --> 00:16:20,079

people had a chance an equal chance at
moving up so

244

00:16:20,079 --> 00:16:24,240

um you know and that that's that is i
think a real testament to the person

245

00:16:24,240 --> 00:16:27,920

that she was

that uh she was a humanitarian she was

246

00:16:27,920 --> 00:16:32,000

always somebody who was
trying to gather different kinds of

247

00:16:32,000 --> 00:16:36,399

people around her
and get the talents of all of those

248

00:16:36,399 --> 00:16:40,079

people
together in order to advance what she

249

00:16:40,079 --> 00:16:43,680

thought was
was her mission part of which was NASA's

250

00:16:43,680 --> 00:16:45,839

mission
science and engineering and part of

251

00:16:45,839 --> 00:16:50,320

which was a larger humanitarian mission
and i think that she was a true

252

00:16:50,320 --> 00:16:53,759

humanitarian spirit

253

00:16:54,000 --> 00:16:59,040

that is fantastic so a lot of us
know this story because of the movie

254

00:16:59,040 --> 00:17:02,480

movie in the movie Hidden Figures
Janelle Monae plays Mary W Jackson

255

00:17:02,480 --> 00:17:08,000

and how the movie was written
was that an accurate portrayal of Mary

256

00:17:08,000 --> 00:17:11,360

you've already pointed one
little change you know we know these

257

00:17:11,360 --> 00:17:14,400

movies are entertaining they're not
exactly documentaries

258

00:17:14,400 --> 00:17:18,000

but i'd love to hear you know Margot
from you like where

259

00:17:18,000 --> 00:17:21,280

you thought it was accurate and Bill if
you can tell us like

260

00:17:21,280 --> 00:17:26,560

what is NASA's role in making sure that
these are historically supported movies

261

00:17:27,100 --> 00:17:27,960

all right

262

00:17:27,960 --> 00:17:31,080

why don't you go ahead and start Margot

263

00:17:31,340 --> 00:17:34,480

uh well you know Bill and i

264

00:17:34,480 --> 00:17:38,000

we we met because you know through this
process of

265

00:17:38,000 --> 00:17:42,799

this movie coming together and um so i
will have you know we've lots of short

266

00:17:42,799 --> 00:17:47,200

stories and great memories about that
but you know it was very interesting to

267

00:17:47,200 --> 00:17:51,760

see this process
of having the uh the book become

268

00:17:51,760 --> 00:17:55,919

a film and i would say that although
there were

269

00:17:55,919 --> 00:18:00,320

things facts that were changed you know
the timelines were different

270

00:18:00,320 --> 00:18:04,400

the um you know some of the things about
the characters and the names were

271

00:18:04,400 --> 00:18:07,520

changed
but the thing that i i really felt and i

272

00:18:07,520 --> 00:18:11,440

believe this was true for the
for you know for NASA and for the

273

00:18:11,440 --> 00:18:15,520

families
is that the movie was true you know and

274

00:18:15,520 --> 00:18:18,080

i think there's
there's a slight difference between

275

00:18:18,080 --> 00:18:22,240

truth and fact and story
but there was there was so much truth

276

00:18:22,240 --> 00:18:25,679

and um
understanding of the conditions that the

277
00:18:25,679 --> 00:18:29,840
women were working
in the situation the geopolitical

278
00:18:29,840 --> 00:18:34,000
situation at the time
um the character of each of the

279
00:18:34,000 --> 00:18:38,400
individual women
um and and that i was really impressed

280
00:18:38,400 --> 00:18:42,240
at how the filmmakers
were very committed to making sure that

281
00:18:42,240 --> 00:18:45,760
the truth
of that came through so that even as you

282
00:18:45,760 --> 00:18:47,600
you know you kind of look at the apple
and

283
00:18:47,600 --> 00:18:52,160
of the book and the orange of the film
you say well that's an apple and that's

284
00:18:52,160 --> 00:18:56,320
an orange um
that when you when you take both of them

285
00:18:56,320 --> 00:18:59,600
together
you still did get the truth of those

286
00:18:59,600 --> 00:19:03,440

women and that story
um and you know and Bill i mean bill

287

00:19:03,440 --> 00:19:07,679

just you know
you did so much like detailed detailed

288

00:19:07,679 --> 00:19:12,880

research for that movie
well i i think we shared the duty with a

289

00:19:12,880 --> 00:19:16,400

lot of folks at NASA because the
the production team particularly the

290

00:19:16,400 --> 00:19:20,559

director Ted Melfi was
he was completely fanatical about trying

291

00:19:20,559 --> 00:19:26,720

to get you know tell the true story
uh and also tell an entertaining

292

00:19:26,720 --> 00:19:29,919

story that would you know make a
powerful movie which which it

293

00:19:29,919 --> 00:19:34,400

did a great job with um but also to get
as many of the details

294

00:19:34,400 --> 00:19:38,559

exactly correct as it could and you know
some of the things

295

00:19:38,559 --> 00:19:41,760

uh you know or get altered like uh you
know kaz

296

00:19:41,760 --> 00:19:45,360

you know Czarnecki's name uh in his hometown he wasn't from Europe he

297

00:19:45,360 --> 00:19:47,360

actually grew up in new Bedford Massachusetts for

298

00:19:47,360 --> 00:19:50,240

example but you know little things like that but but you know

299

00:19:50,240 --> 00:19:54,080

the fundamental things i think that's Margot pointed out are the key you know

300

00:19:54,080 --> 00:19:56,880

it's it it may be that it's an apple and an

301

00:19:56,880 --> 00:19:59,919

orange sort of thing but the orange of the movie tastes a lot

302

00:19:59,919 --> 00:20:03,360

like that an apple i think i mean it really tells you something true about

303

00:20:03,360 --> 00:20:07,600

about what happened at the time um but yeah there are there are a lot of

304

00:20:07,600 --> 00:20:09,840

things a lot and a lot of people at NASA who

305

00:20:09,840 --> 00:20:14,320

helped out the photo lab the video archive uh the folks in

306

00:20:14,320 --> 00:20:18,640

procurement who helped actually
one of the things in the back drop of

307

00:20:18,640 --> 00:20:23,280

the scene uh there's a
painting of airplanes that was actually

308

00:20:23,280 --> 00:20:27,280

at langley research center
and was being accessed and in the

309

00:20:27,280 --> 00:20:29,600

procurement office there actually
actually managed to inter

310

00:20:29,600 --> 00:20:33,200

intercept that on its way out the door
and had to loan it to the movie studio

311

00:20:33,200 --> 00:20:36,159

so they could put it in the background
it appears there's a sort of toss away

312

00:20:36,159 --> 00:20:38,000

thing in the background of a couple of
scenes

313

00:20:38,000 --> 00:20:40,480

but uh but it was something that
actually would have been in the

314

00:20:40,480 --> 00:20:43,679

background
uh during um things that happened at

315

00:20:43,679 --> 00:20:46,960

langley research center at the time so
so they're really fanatical about about

316

00:20:46,960 --> 00:20:50,080

doing that stuff but yeah they want to
tell a good story too

317

00:20:50,080 --> 00:20:54,000

um so for example this is the scene
where Mary Jackson

318

00:20:54,000 --> 00:20:57,120

uh gets her she's walking through the
wind tunnel and she gets her her

319

00:20:57,120 --> 00:21:00,320

high heel cut into the great of the
floor and i

320

00:21:00,320 --> 00:21:03,520

argued like crazy with Ted Melfi about
that as a ted

321

00:21:03,520 --> 00:21:06,799

you know first of all nobody walks to
their office

322

00:21:06,799 --> 00:21:10,960

through a wind tunnel right that's not a
corridor right and even if you were

323

00:21:10,960 --> 00:21:14,240

nobody in their right mind be wearing
high heels because it's

324

00:21:14,240 --> 00:21:17,280

just don't do that sort of stuff you
know anybody knows anything about wind

325

00:21:17,280 --> 00:21:19,600

tunnels is going to know that's not
really going to happen

326

00:21:19,600 --> 00:21:23,200

and Ted paused for a second and he goes
yeah he goes but how many people know

327

00:21:23,200 --> 00:21:25,919

anything about wind tunnels beside you
people who work at NASA

328

00:21:25,919 --> 00:21:28,960

i said well he goes i'm telling you this
is going to make a great scene people

329

00:21:28,960 --> 00:21:32,320

will remember that scene
and guess what we all remember that

330

00:21:32,320 --> 00:21:35,919

scene right so he was right they did a
great job telling a good story

331

00:21:35,919 --> 00:21:39,200

but also getting at the fundamental
truth of what things were

332

00:21:39,200 --> 00:21:43,679

and i think they did a particularly nice
job with with Mary W Jackson in terms of

333

00:21:43,679 --> 00:21:45,679

um
getting to her you know her real

334

00:21:45,679 --> 00:21:50,000

character and showing you know
both the grit of her personality and her

335

00:21:50,000 --> 00:21:54,480

stick-to-itiveness
but also um the humanitarian side

336

00:21:54,480 --> 00:21:57,919

and and you know how she you know cared
for her family and

337

00:21:57,919 --> 00:22:03,280

and juggled all those things and managed
to make things better for all of us

338

00:22:03,280 --> 00:22:07,039

um one of the questions we got from
employees is when researching

339

00:22:07,039 --> 00:22:10,960

for your book did you come across any
other african-american hidden figures

340

00:22:10,960 --> 00:22:13,480

women or men worth noting?

341

00:22:14,000 --> 00:22:16,960

yeah you know one of the real challenges

342

00:22:16,960 --> 00:22:20,320

particularly in the beginning of the
book is that there were so many

343

00:22:20,320 --> 00:22:25,600

interesting people uh that it was
it was a real challenge not to want to

344

00:22:25,600 --> 00:22:29,600

tell every single
everyone's story um and you know they

345

00:22:29,600 --> 00:22:32,000

were
figuring out how all of these people had

346

00:22:32,000 --> 00:22:37,280

come to NASA and the work that they did
particularly during that golden age

347

00:22:37,280 --> 00:22:41,760

of um of the Mercury missions and Gemini
and Apollo

348

00:22:41,760 --> 00:22:45,840

uh it was really hard to to sort of hear
it down but there were so many people um

349

00:22:45,840 --> 00:22:48,960

there was Jim Williams who was an
african-american

350

00:22:48,960 --> 00:22:54,000

engineer um one of the the early uh
black men who had been hired at the

351

00:22:54,000 --> 00:22:58,480

langley research center
um there was Dorothy Hoover very very

352

00:22:58,480 --> 00:23:03,200

interesting black woman
um who had also come in 1943 during this

353

00:23:03,200 --> 00:23:07,679

this push during world war
ii um had become was promoted to

354

00:23:07,679 --> 00:23:11,760

a research scientist so her title was
actually research scientist she really

355

00:23:11,760 --> 00:23:15,520

did move
up um out of the computing pool and was

356

00:23:15,520 --> 00:23:19,600

in this
very interesting um theoretical

357

00:23:19,600 --> 00:23:25,440

kind of um you know very mathematical
theoretically mathematically oriented

358

00:23:25,440 --> 00:23:28,799

group um and then
left went back started doing some

359

00:23:28,800 --> 00:23:32,440

graduate study
um and eventually ended up at

360

00:23:32,440 --> 00:23:36,960

Goddard Research Center
so she was a really fascinating person

361

00:23:36,960 --> 00:23:41,200

um and then you know i would just say
scoping back from that

362

00:23:41,200 --> 00:23:44,799

beyond simply you know the
african-american

363

00:23:44,799 --> 00:23:47,840

people in the story there were so many
women

364

00:23:47,840 --> 00:23:51,679

and men from all backgrounds and you
know what i didn't know was

365

00:23:51,679 --> 00:23:55,600

how many people had come from abroad
international people who were working

366

00:23:55,600 --> 00:23:58,559

there at the the langley research center
people who had come

367

00:23:58,559 --> 00:24:04,320

from Germany and Poland and
Asia um you know there were people who

368

00:24:04,320 --> 00:24:07,919

had come from all over the united states
who were converging

369

00:24:07,919 --> 00:24:14,159

on what was a war boom town at the time
world war ii um you know and and i think

370

00:24:14,159 --> 00:24:16,480

that
you know again this this sort of the

371

00:24:16,480 --> 00:24:19,840

metaphor of or
you know the the concept of hidden

372

00:24:19,840 --> 00:24:23,679

figures and really
understanding and looking and seeing how

373

00:24:23,679 --> 00:24:27,919

each of these people
whose names i i you know some of their

374

00:24:27,919 --> 00:24:32,080

names i had known
others i didn't um certainly the details

375

00:24:32,080 --> 00:24:35,600

of their work i really didn't know until
i started doing this

376

00:24:35,600 --> 00:24:39,279

and to see how all of these different
people came together

377

00:24:39,279 --> 00:24:43,600

you know very different circumstances
bringing them together to this one place

378

00:24:43,600 --> 00:24:48,000

and um coming together to achieve this
mission

379

00:24:48,000 --> 00:24:51,200

over time you know that that culminated
in something

380

00:24:51,200 --> 00:24:55,120

like the moon landing in 1969 and seeing
all of the people

381

00:24:55,120 --> 00:24:59,200

and the talent required to get there and
to

382

00:24:59,200 --> 00:25:03,679

having the privilege of seeing all of
that from the sort of behind the scenes

383

00:25:03,679 --> 00:25:08,320

and knowing um their names at this point
and knowing what they contributed to

384

00:25:08,320 --> 00:25:11,840

to science into our history

385

00:25:12,960 --> 00:25:16,000

there are so many great stories about uh
people that

386

00:25:16,000 --> 00:25:19,840

worked at NASA in the past that's uh you
know i wish we had

387

00:25:19,840 --> 00:25:23,120

a thousand historians to tell all these stories but uh you know unfortunately

388

00:25:23,120 --> 00:25:27,120

we've got you know some great ones like Margot here who been able to unearth

389

00:25:27,120 --> 00:25:29,840

these things and tell these stories for us it's been

390

00:25:29,840 --> 00:25:33,760

it's a real privilege to have uh have you apply that kind of talent to

391

00:25:33,760 --> 00:25:38,159

the this story for us i'm just so appreciative

392

00:25:38,159 --> 00:25:42,240

yeah well it's a quirky group of people you know i knew that growing up

393

00:25:42,240 --> 00:25:46,240

and um you know when you when you start looking back into the history and you

394

00:25:46,240 --> 00:25:51,200

hear the stories about um you know the one chief uh engineer in

395

00:25:51,200 --> 00:25:56,320

charge who was there briefly who uh tried to kind of

396

00:25:56,320 --> 00:26:01,120

create a system where he could drive his car and read a book at the same time

397

00:26:01,120 --> 00:26:05,360

no that that you see that and you're
like you understand a little bit about

398

00:26:05,360 --> 00:26:08,960

the dna of the organization

399

00:26:09,120 --> 00:26:12,159

well i really enjoyed reading your book
um

400

00:26:12,159 --> 00:26:16,880

and and especially as a NASA employee i
became even more proud

401

00:26:16,880 --> 00:26:22,159

of our history um of and how much we
have accomplished as a team as an agency

402

00:26:22,159 --> 00:26:25,440

and
um one of the questions that we got was

403

00:26:25,440 --> 00:26:27,919

was there
anything that you found in your research

404

00:26:27,919 --> 00:26:30,459

that you did not portray
in the movie or the book?

405

00:26:30,459 --> 00:26:34,720

and what came to mind i'm sure you have a lot was when we were i was reading your book in the

406

00:26:34,720 --> 00:26:38,880

epilogue
you talk about the second part of Mary W

407

00:26:38,880 --> 00:26:42,000

Jackson's
life and that you wish you could have

408
00:26:42,000 --> 00:26:45,279
talked more
about that can you tell us more because

409
00:26:45,279 --> 00:26:48,640
i think it's in especially as we've
named this building in her honor

410
00:26:48,640 --> 00:26:53,840
that plays a big part in her the bigger
part of her legacy

411
00:26:55,600 --> 00:26:58,880
absolutely true um and and i think you
know

412
00:26:58,880 --> 00:27:02,240
it is it makes so much sense given
mary's long

413
00:27:02,240 --> 00:27:06,240
career at NASA and the fact that she
spent

414
00:27:06,240 --> 00:27:10,720
um the the time at the laboratory when
it was part of the NACA

415
00:27:10,720 --> 00:27:14,559
she was there for NASA in the golden
years though the entire push through Apollo

416
00:27:14,559 --> 00:27:17,760
and then she had this very kind of

417
00:27:17,760 --> 00:27:21,120
institutional

administrative affiliation with the

418

00:27:21,120 --> 00:27:24,640

agency at the the administrative level
the federal level

419

00:27:24,640 --> 00:27:29,520

and really trying to
uh get the most out of the assets you

420

00:27:29,520 --> 00:27:33,919

know the assets
in a knowledge based company

421

00:27:33,919 --> 00:27:37,120

that we we know today right this is what
drives our economy

422

00:27:37,120 --> 00:27:41,200

are the people you need talented people
you need to liberate them to do the best

423

00:27:41,200 --> 00:27:44,559

work
um you need to uh figure out ways for

424

00:27:44,559 --> 00:27:48,559

them to work together
and that was something that Mary Jackson

425

00:27:48,559 --> 00:27:52,320

in addition to being a gifted engineer
really had that understanding of

426

00:27:52,320 --> 00:27:57,039

organizational dynamics
and and people and so that section the

427

00:27:57,039 --> 00:28:01,200

epilogue in the book

uh discussing this decision that she

428

00:28:01,200 --> 00:28:05,600

made at the end of her career
after uh Kazimierz Czarnecki retired and he

429

00:28:05,600 --> 00:28:08,880

really was this
fundamental research partner for many

430

00:28:08,880 --> 00:28:13,440

years she then made the decision to go
into human resources to take

431

00:28:13,440 --> 00:28:19,120

a step back to go from a gs12 to a gs11
in order to take this job even as she

432

00:28:19,120 --> 00:28:23,760

had worked very hard to get promoted
as an engineer over the course of those

433

00:28:23,760 --> 00:28:28,480

years she made that decision
and then she really uh became a part of

434

00:28:28,480 --> 00:28:31,279

the
institutional structure in the

435

00:28:31,279 --> 00:28:35,279

institutional memory not just the
engineering part but the institutional

436

00:28:35,279 --> 00:28:41,919

part of of NASA um and she was
in during that time the federal women's

437

00:28:41,919 --> 00:28:46,320

program manager her job really was to

take a look at the the career prospects

438

00:28:46,320 --> 00:28:50,799

for women in the
the organization at the time and

439

00:28:50,799 --> 00:28:55,600

do what she could with her team to
remove barriers so that people

440

00:28:55,600 --> 00:29:02,640

like for example Dr Christine Darden um
who became um very very well known

441

00:29:02,640 --> 00:29:10,000

uh supersonic aeronautical engineer
so that she could do her best work so um

442

00:29:10,000 --> 00:29:13,679

at one point when i was writing the book
i really did have this idea that i would

443

00:29:13,679 --> 00:29:16,960

continue it
all the way through to like you know

444

00:29:16,960 --> 00:29:22,640

1980 and 1983 so we could actually
see the result which was Christine Darden

445

00:29:22,820 --> 00:29:26,320

you know
kind of uh as a complete expression of

446

00:29:26,320 --> 00:29:30,480

these early women
um but but you know you you kind of have

447

00:29:30,480 --> 00:29:34,720

to consider people's attention spans

when you write a book as well

448

00:29:34,720 --> 00:29:40,960

and i made it an epilogue but
that part of Mary W Jackson's life

449

00:29:40,960 --> 00:29:45,360

um i think is is an important one and so
just because it's not

450

00:29:45,360 --> 00:29:49,120

shown in detail in the book the way the
earlier part is

451

00:29:49,120 --> 00:29:53,120

doesn't mean that i think it is any less
important and it really does

452

00:29:53,120 --> 00:29:56,960

speak to her character and to her
commitment to this this

453

00:29:56,960 --> 00:30:02,080

this uh this institution that she truly
loved

454

00:30:02,399 --> 00:30:05,679

and Bill do you have anything to add i
know that she even spent some time at

455

00:30:05,679 --> 00:30:10,080

headquarters
doing some training um for this?

456

00:30:10,080 --> 00:30:13,120

yeah she she of course came to
headquarters for training it because you

457

00:30:13,120 --> 00:30:15,679

know she's shifting from being an

engineer to being a

458

00:30:15,679 --> 00:30:20,399

you know hr person and while some engineers might think well that's easy

459

00:30:20,399 --> 00:30:24,720

you know you know everybody has their specialty and you can't just you know

460

00:30:24,720 --> 00:30:28,240

take off one hat one day and put on the other one the next day when you can and

461

00:30:28,240 --> 00:30:30,240

some people do it better than others maybe but

462

00:30:30,240 --> 00:30:33,520

but you can't headquarters and get some training in the hr thing and then do

463

00:30:33,520 --> 00:30:35,919

this um one of the the things you know

464

00:30:35,919 --> 00:30:40,240

context-wise to think about it it's kind of hard to imagine maybe now

465

00:30:40,240 --> 00:30:43,760

uh in in you know 2020 but uh you know back in

466

00:30:43,760 --> 00:30:46,880

this in the 70s uh the women's movement had

467

00:30:46,880 --> 00:30:49,760

been

at work there and and that was a really

468

00:30:49,760 --> 00:30:53,360

important issue

and and you know people like Mary

469

00:30:53,360 --> 00:30:56,720

jackson were breaking glass ceilings but
they kept running into more ceilings

470

00:30:56,720 --> 00:31:00,559

above

um and so um that was a critical time

471

00:31:00,559 --> 00:31:03,919

for

NASA to face the music on this the issue

472

00:31:03,919 --> 00:31:06,720

of

you know women's rights uh and and we

473

00:31:06,720 --> 00:31:09,679

didn't do a very good job of it in the
60s

474

00:31:09,679 --> 00:31:13,039

uh you know it got better over time but
one of the

475

00:31:13,039 --> 00:31:17,440

things to me about uh about Mary's
decision to do that is that

476

00:31:17,440 --> 00:31:21,200

it was a is a critical thing that helped
the agency

477

00:31:21,200 --> 00:31:25,519

you know embody the culture that we all

aspire to

478

00:31:25,519 --> 00:31:28,960

and what in new ways that you know to face the new environment uh

479

00:31:28,960 --> 00:31:32,000

and that was an environment where you know we really need to be inclusive

480

00:31:32,000 --> 00:31:36,000

of women uh who's you know 50 percent of the human population that we're

481

00:31:36,000 --> 00:31:39,919

basically ignoring uh their talents except in exceptional cases

482

00:31:39,919 --> 00:31:43,039

maybe but we needed to make it possible for that to happen

483

00:31:43,039 --> 00:31:46,880

and so you know her her commitment to that uh i think is supposedly

484

00:31:46,880 --> 00:31:50,559

a sign of her commitment to you know humanity in general but also

485

00:31:50,559 --> 00:31:55,519

specifically to the you know to nasa and and in our future and so that's that's

486

00:31:55,519 --> 00:31:59,120

one of the reasons i really love the fact that we named the building after

487

00:31:59,120 --> 00:32:02,159

one of the things that we got is like

what advice do you think

488

00:32:02,160 --> 00:32:07,980

Mary W Jackson would give to current and future NASA leaders if she was still living today?

489

00:32:08,100 --> 00:32:09,840

that's a good question

490

00:32:09,840 --> 00:32:12,220

Margot you want to take a shot at that

491

00:32:12,220 --> 00:32:14,080

uh that is a good question

492

00:32:14,080 --> 00:32:18,159

because i think she was somebody who had a lot of good advice

493

00:32:18,159 --> 00:32:24,880

um you know the the thing that i would say is uh

494

00:32:24,880 --> 00:32:28,240

Mary Jackson so you know i will just say that i grew up

495

00:32:28,240 --> 00:32:32,159

in this community of NASA people where there were a lot of engineers and

496

00:32:32,159 --> 00:32:35,279

scientists and people really did have that spirit

497

00:32:35,279 --> 00:32:38,320

from you know the 60s and 70s and i guess

498

00:32:38,320 --> 00:32:42,000

kind of on into the 80s um i don't know
if you want to call

499

00:32:42,000 --> 00:32:45,120

it like the kind of the Star Trek spirit
you know this like

500

00:32:45,120 --> 00:32:48,880

sense of adventure of science being so
important

501

00:32:48,880 --> 00:32:53,919

um of science and humanity being
you know two parts of the same thing you

502

00:32:53,919 --> 00:32:58,320

know this exploring spirit
to boldly go where no man has gone

503

00:32:58,320 --> 00:33:01,519

before and and for the benefit of
humanity you know so i

504

00:33:01,519 --> 00:33:04,559

really grew up in that kind of an
environment

505

00:33:04,559 --> 00:33:09,600

and Mary Jackson had that you know my
father has that all of these you know

506

00:33:09,600 --> 00:33:12,080

Christine Darden
they really had that it was a part of

507

00:33:12,080 --> 00:33:16,240

who they were and so from the time we
were little kids

508

00:33:16,240 --> 00:33:20,720
these NASA people were always trying to
convince us that the very best thing

509
00:33:20,720 --> 00:33:24,080
that we could do with our talents
was to become a scientist or to become

510
00:33:24,080 --> 00:33:28,320
an engineer and
um you know i you know my dad didn't get

511
00:33:28,320 --> 00:33:31,440
engineer out of me but i do have you
know one of my sisters a

512
00:33:31,440 --> 00:33:34,720
a cancer researcher so he did get one
scientist

513
00:33:34,720 --> 00:33:38,960
out of the lot but um you know i think
that

514
00:33:38,960 --> 00:33:46,159
that having the the current generation
of NASA people reach down

515
00:33:46,159 --> 00:33:52,399
to these kids today and say this is
amazing work it's exciting work it is

516
00:33:52,399 --> 00:33:56,799
cool work um you know and because we're
always talking about the

517
00:33:56,799 --> 00:34:00,640
the the stem workforce of the the
president and of the future and where is

518

00:34:00,640 --> 00:34:03,440

the talent going to come from
well if you're looking at kids in

519

00:34:03,440 --> 00:34:07,360

college it's it's kind of too late
i think you know like you really have to

520

00:34:07,360 --> 00:34:11,599

start cultivating that talent
uh when they're very young and and one

521

00:34:11,599 --> 00:34:17,280

of the real gifts of my childhood
is that you know we got exposure to that

522

00:34:17,280 --> 00:34:22,879

to science to um the wonder of it
not just the technical part of it but

523

00:34:22,879 --> 00:34:27,200

the wonder of it
very very young and so i think Mary Jackson

524

00:34:27,200 --> 00:34:30,480

who is always you know creating after

525

00:34:30,480 --> 00:34:34,480

school programs for kids
and having them build wind tunnels you

526

00:34:34,480 --> 00:34:39,280

know things like that
it's amazing it really has an impact and

527

00:34:39,280 --> 00:34:43,440

i think you know we got a lot of
engineers and scientists out of that

528

00:34:43,440 --> 00:34:47,200

generation
because of people like Mary Jackson so i

529
00:34:47,200 --> 00:34:52,079
would say that
uh one of her bits of advice would be to

530
00:34:52,079 --> 00:34:57,599
follow in her footsteps and evangelize
for science and technology and

531
00:34:57,600 --> 00:35:02,420
engineering
because that is also part of being a humanitarian

532
00:35:02,740 --> 00:35:05,680
that is fantastic as we talk more about

533
00:35:05,680 --> 00:35:09,119
Mary W Jackson's legacy i'd like to
invite the administrators to join us

534
00:35:09,119 --> 00:35:13,839
back into the conversation
Jim hi

535
00:35:13,839 --> 00:35:17,599
yeah um so you Margot in that last
question

536
00:35:17,599 --> 00:35:21,040
you answered our one of the questions
it's very similar

537
00:35:21,040 --> 00:35:24,880
we actually got a question from a fifth
grader at Charles Barrett Elementary

538
00:35:24,880 --> 00:35:29,200
school

who um i know that you know children

539

00:35:29,200 --> 00:35:33,680

were very important to Mary W Jackson
spent three decades as a girl scouts

540

00:35:33,680 --> 00:35:37,680

um troop leader so the question and i
think you answered is like what advice

541

00:35:37,680 --> 00:35:39,839

would you give today to young black
girls who

542

00:35:39,839 --> 00:35:44,400

are interested in working at NASA um and
what do you think about their their work

543

00:35:44,400 --> 00:35:47,520

and Hidden Figures i know um you kind of
answered i don't know if there's

544

00:35:47,520 --> 00:35:50,240

anything else
Margot i know Jim you care a lot about

545

00:35:50,240 --> 00:35:53,040

stem you talk a lot about things for
students

546

00:35:53,040 --> 00:35:56,960

um you know i love answers from from all
of you

547

00:35:56,960 --> 00:36:00,480

on how do we engage this young
generation how do we

548

00:36:00,480 --> 00:36:04,320

especially include more um young black

girls

549

00:36:04,320 --> 00:36:08,400

boys minority children to make so
they're the future of NASA and they

550

00:36:08,400 --> 00:36:13,839

really represent what Mary W Jackson
stood for

551

00:36:14,720 --> 00:36:18,800

well i think that's one of the reasons
why you know NASA made the bet on

552

00:36:18,800 --> 00:36:22,880

on the movie you know because we
expended a fair amount of resources on

553

00:36:22,880 --> 00:36:26,560

on you know helping out with research in
the movie and then you know

554

00:36:26,560 --> 00:36:30,320

doing other so you know events
associated with the movie

555

00:36:30,320 --> 00:36:33,599

um because we wanted to build that
workforce we need to get us to the moon

556

00:36:33,599 --> 00:36:36,320

and mars
you know they're not going to appear out

557

00:36:36,320 --> 00:36:41,280

of nowhere and in this
in this story uh really speaks to

558

00:36:41,280 --> 00:36:44,400

i think uh people with all kinds of

circumstances that

559

00:36:44,400 --> 00:36:48,400

you can overcome you know difficult
barriers yet it's not going to be easy

560

00:36:48,400 --> 00:36:51,520

necessarily
but there are you know you can if you

561

00:36:51,520 --> 00:36:54,720

focus on the energy
your energy into into doing it you do

562

00:36:54,720 --> 00:36:56,720

the things you need to do to prepare
yourself

563

00:36:56,720 --> 00:37:00,800

you can you can be a part of this team
and and make a difference and make the

564

00:37:00,800 --> 00:37:04,240

world a better place
uh and also get us to the Moon and Mars

565

00:37:04,240 --> 00:37:06,480

and so
i think there's a there's a pretty good

566

00:37:06,480 --> 00:37:10,480

bet on our part to try and build our
future workforce by doing this

567

00:37:10,480 --> 00:37:13,920

as well as the you know familiarize our
way with the past so that

568

00:37:13,920 --> 00:37:17,359

you know it not only inspires kids but

it also inspires us adults

569

00:37:17,359 --> 00:37:22,160

that we would see that message um out
there and that you know um you know we

570

00:37:22,160 --> 00:37:25,200

can all make the world a better place
but we've got to stay focused on

571

00:37:25,200 --> 00:37:29,359

on the important values of our our lives
and build the culture we need to

572

00:37:29,359 --> 00:37:33,359

to to build a workforce that that'll
work together well

573

00:37:33,359 --> 00:37:37,119

and does that sort of Star Trek
mentality thing of getting us ahead

574

00:37:37,119 --> 00:37:42,800

in the world and bring us to a future
that we all are looking forward to

575

00:37:42,960 --> 00:37:46,160

i i think that's i think that's right
Bill and um

576

00:37:46,160 --> 00:37:50,800

i would just say one of the things we
need to do at NASA every day

577

00:37:50,800 --> 00:37:57,680

is build a workforce that
is open that is welcoming

578

00:37:57,680 --> 00:38:03,119

that is inclusive and diverse

and let people know that NASA is a very

579

00:38:03,119 --> 00:38:06,320

safe place to

come and work and do extraordinary

580

00:38:06,320 --> 00:38:10,079

things

as Bill said it's not easy uh what we do

581

00:38:10,079 --> 00:38:14,400

at nasa is very difficult and

and we see that over and over in in

582

00:38:14,400 --> 00:38:18,800

history

but at the same time there are barriers

583

00:38:18,800 --> 00:38:23,520

but those barriers cannot be

based on any kind of discrimination

584

00:38:23,520 --> 00:38:26,560

based on any kind

and when i say discrimination i'm

585

00:38:26,560 --> 00:38:31,440

talking about any kind of discrimination

racial discrimination we have to

586

00:38:31,440 --> 00:38:34,320

eliminate those kind of obstacles so

that somebody

587

00:38:34,320 --> 00:38:37,920

if there is a young african-american

child that says

588

00:38:37,920 --> 00:38:42,240

man one day i want to be one of those

astronauts that they don't feel like

589

00:38:42,240 --> 00:38:45,920

maybe they shouldn't they feel like in
fact they should

590

00:38:45,920 --> 00:38:50,720

and i think we as an agency and we we do
a good job make no mistake but we can do

591

00:38:50,720 --> 00:38:53,440

more
to make sure that everybody feels

592

00:38:53,440 --> 00:38:56,880

included and everybody feels like
when they join NASA they're going to

593

00:38:56,880 --> 00:39:01,200

have opportunities to excel
and be promoted and all of those kind of things

594

00:39:05,119 --> 00:39:08,480

and you know i i would just uh i would
just

595

00:39:08,480 --> 00:39:12,880

piggyback on what the administrator said
and you know the thing about

596

00:39:12,880 --> 00:39:17,760

the thing about NASA and the thing about
NASA's missions and the thing about

597

00:39:17,760 --> 00:39:22,160

you know uh you know when when President
Kennedy decided that NASA

598

00:39:22,160 --> 00:39:26,640

and the america was gonna go to the Moon

he said you know we choose to do these

599

00:39:26,640 --> 00:39:29,040

things

not because they're easy but because

600

00:39:29,040 --> 00:39:32,000

they are hard

you know and and that is something that

601

00:39:32,000 --> 00:39:36,160

i think we really have to

remember and say to these kids you know

602

00:39:36,160 --> 00:39:39,599

the reason why you're doing this and the

reason why it means so much

603

00:39:39,599 --> 00:39:43,599

and why it is so meaningful and

enjoyable isn't because it's easy it's

604

00:39:43,599 --> 00:39:47,040

because it's hard

you know that is a part of it and if

605

00:39:47,040 --> 00:39:50,480

it's hard

that's okay that is that is a part of it

606

00:39:50,480 --> 00:39:54,560

you know you

look at what Mary Jackson did Mary W

607

00:39:54,560 --> 00:39:56,960

Jackson look at what Katherine Johnson

did

608

00:39:56,960 --> 00:40:00,800

look at what all those engineers and

scientists and mathematicians did over

609

00:40:00,800 --> 00:40:03,200

the years

and you can do it too it was hard for

610

00:40:03,200 --> 00:40:07,760

them too you know this this is not easy

work this is challenging work

611

00:40:07,760 --> 00:40:11,680

um but you are up to the task it will be

hard

612

00:40:11,680 --> 00:40:15,839

but that's a part of it and it is so

rewarding it's beautiful work it's

613

00:40:15,839 --> 00:40:22,240

interesting work um and so i think that

you know that to me um that was always a

614

00:40:22,240 --> 00:40:26,480

part of the ethos of NASA

that i love so much and my father kind

615

00:40:26,480 --> 00:40:30,160

of gave that

to to me and my siblings and you know

616

00:40:30,160 --> 00:40:33,599

Christine Darden all these people it was

a very disciplined

617

00:40:33,599 --> 00:40:36,800

approach to that work you didn't you

didn't get up from the table

618

00:40:36,800 --> 00:40:39,920

until after the last calculus problem

was done

619

00:40:39,920 --> 00:40:43,680

but there were rewards for that and um i think that

620

00:40:43,680 --> 00:40:47,680

teaching the kids that from a very early age probably means that

621

00:40:47,680 --> 00:40:51,280

you know 20 years from now there's there's an entirely new

622

00:40:51,280 --> 00:40:57,760

pipeline of engineers ready to carry out NASA's next mission

623

00:40:58,400 --> 00:41:02,079

there's so many questions i want to ask but i know that we're

624

00:41:02,079 --> 00:41:07,359

we're trying to wrap up um but you know i think there's a lot of people who are

625

00:41:07,359 --> 00:41:10,000

really proud of everything that is going on

626

00:41:10,000 --> 00:41:15,920

but also want to continue to represent and recognize the work of Hidden Figures

627

00:41:15,920 --> 00:41:20,240

what are we doing as an agency um or what can we do with society to

628

00:41:20,240 --> 00:41:24,400

make sure that we know

more um about Hidden Figures recognize

629

00:41:24,400 --> 00:41:26,800

them and also recognize other hidden figures

630

00:41:26,800 --> 00:41:30,480

that maybe weren't included in this book?
so um

631

00:41:30,480 --> 00:41:37,440

any thoughts from from any of you
sure i'll i'll go ahead and start um so

632

00:41:37,440 --> 00:41:41,040

the
the agency as as you mentioned um

633

00:41:41,040 --> 00:41:44,720

we want we want to be inclusive we want
people from

634

00:41:44,720 --> 00:41:48,240

all over the nation different
backgrounds different ethnicities

635

00:41:48,240 --> 00:41:53,760

to join us in this bold vision of going
to the Moon and on to Mars and if

636

00:41:53,760 --> 00:41:58,000

if we do it right we will inspire the
next generation to go into the stem

637

00:41:58,000 --> 00:42:01,280

fields and
our country and in fact humanity will

638

00:42:01,280 --> 00:42:05,200

will in fact

uh be be made better off so those are

639

00:42:05,200 --> 00:42:08,640

the things that we work on
just you know you asked um what what are

640

00:42:08,640 --> 00:42:13,200

we doing today
um you know when when we look at um

641

00:42:13,200 --> 00:42:18,000

some of the recent events that we've
seen um we we've been taking action

642

00:42:18,000 --> 00:42:21,599

and Bettina you know this day in and day
out we're looking at things that we can

643

00:42:21,599 --> 00:42:24,720

do
uh to make sure people do feel included

644

00:42:24,720 --> 00:42:29,119

to to start though i want to be clear
the the amazing NASA workforce has has

645

00:42:29,119 --> 00:42:32,800

really
it does a really amazing job and and

646

00:42:32,800 --> 00:42:36,800

because of that
um you know we're hopeful that the the

647

00:42:36,800 --> 00:42:40,800

glass ceilings that were broken
uh by the hidden figures whether it was

648

00:42:40,800 --> 00:42:44,640

Dorothy Vaughn or

Mary W Jackson Catherine Johnson

649

00:42:44,640 --> 00:42:49,040

Christine Darden

that that those ceilings are no longer

650

00:42:49,040 --> 00:42:52,800

the barriers

um but the barriers are only what it is

651

00:42:52,800 --> 00:42:57,119

you can achieve

using using your talents and your mind

652

00:42:57,119 --> 00:43:01,119

and and and all of us being able to work

in an inclusive environment

653

00:43:01,119 --> 00:43:04,560

so one of the first things we did um

when you know

654

00:43:04,560 --> 00:43:09,119

we started seeing these challenges from

you know the the George Floyd incident

655

00:43:09,119 --> 00:43:13,839

the police brutality um you know the the

protests

656

00:43:13,839 --> 00:43:20,079

the civil unrest uh i asked our

our office of chief of um

657

00:43:20,079 --> 00:43:24,800

human capital the the office of the

chief human capital officer if you will

658

00:43:24,800 --> 00:43:30,720

um i asked her and

our equal opportunity office to come

659

00:43:30,720 --> 00:43:33,520

together

and look at all of the things that we do

660

00:43:33,520 --> 00:43:37,839

as an agency

to bring people in how do we recruit how

661

00:43:37,839 --> 00:43:41,359

do we

train um how do we promote

662

00:43:41,359 --> 00:43:44,960

and look at the things that we do and

and it's

663

00:43:44,960 --> 00:43:48,400

just so everybody is aware the the NASA

workforce does a great job

664

00:43:48,400 --> 00:43:53,680

um you know we have been you know told

over and over again

665

00:43:53,680 --> 00:43:58,079

by the office of personnel management

they do a big workforce

666

00:43:58,079 --> 00:44:03,200

survey and NASA is is the number one

agency in the federal government as far

667

00:44:03,200 --> 00:44:06,160

as

the best place to work NASA has the

668

00:44:06,160 --> 00:44:10,720

highest ratings on inclusiveness

so look i want to be clear NASA does an

669

00:44:10,720 --> 00:44:13,520

amazing job

but what we want to do is we want to

670

00:44:13,520 --> 00:44:17,520

always be striving for more so what are
the things that we're missing and how do

671

00:44:17,520 --> 00:44:20,000

we

how do we do even better than we're

672

00:44:20,000 --> 00:44:24,160

doing so i asked i asked
our organizations that are involved in

673

00:44:24,160 --> 00:44:26,800

these activities to to report back to me
on

674

00:44:26,800 --> 00:44:32,720

on what we can do second thing we did is
i asked we need to put together a

675

00:44:32,720 --> 00:44:36,160

strategic plan
and that strategic plan for the agency

676

00:44:36,160 --> 00:44:40,960

of course is longer term
but what that strategic plan includes is

677

00:44:40,960 --> 00:44:43,359

a lot of
feedback from the workforce so we're

678

00:44:43,359 --> 00:44:47,359

doing dialogues at the centers all

across the agency

679

00:44:47,359 --> 00:44:51,520

to get what what are the things that the workforce feels like we could do better

680

00:44:51,520 --> 00:44:55,280

from a diversity and inclusion perspective so that we can actually put

681

00:44:55,280 --> 00:44:59,119

together actionable items um for for this

682

00:44:59,119 --> 00:45:04,960

um for this uh for this time the other thing um you know that we did

683

00:45:04,960 --> 00:45:08,000

the the Deputy NASA Administrator Jim Morhard

684

00:45:08,000 --> 00:45:13,200

and i uh we put together um we put together a

685

00:45:13,200 --> 00:45:18,160

contract if you will basically uh we signed a document that

686

00:45:18,160 --> 00:45:22,880

says that we are 100 committed to making nasa

687

00:45:22,880 --> 00:45:27,440

the absolute best place for diversity and inclusion

688

00:45:27,440 --> 00:45:31,200

and that we will be free of

discrimination and retaliation

689

00:45:31,200 --> 00:45:35,839

and any kind of harassment and we've asked that all of our leaders whether

690

00:45:35,839 --> 00:45:39,599

you're an associate administrator or a center director

691

00:45:39,599 --> 00:45:44,400

or another leader we're asking all of our leaders to sign on to this

692

00:45:44,400 --> 00:45:48,160

so that we can absolutely see the commitment so we're going to be getting

693

00:45:48,160 --> 00:45:52,000

a lot of feedback in the coming months um and then we're

694

00:45:52,000 --> 00:45:55,040

going to take actionable steps um to improve the

695

00:45:55,040 --> 00:45:57,119

agency again i want to be clear because i know

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00:45:57,119 --> 00:46:00,319

how hard people work our agency is a great place to work

697

00:46:00,319 --> 00:46:04,160

but we always want to be striving to do more and that's what we're doing

698

00:46:04,160 --> 00:46:08,079

um so those are those are just some of

the things we're going to get the

699

00:46:08,079 --> 00:46:10,960

feedback we're going to take the appropriate steps

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00:46:10,960 --> 00:46:15,680

um but it's also true and i'll just make this announcement right here Bettina

701

00:46:15,680 --> 00:46:20,480

um you know we have we have our core values

702

00:46:20,480 --> 00:46:24,960

you know a lot of agencies and and and corporates have core values

703

00:46:24,960 --> 00:46:28,000

uh i come from the navy when i was in the navy it was honor

704

00:46:28,000 --> 00:46:32,640

courage and commitment well with NASA we've got safety teamwork integrity

705

00:46:32,640 --> 00:46:37,599

excellence and within teamwork which is an important core value we had

706

00:46:37,599 --> 00:46:41,359

diversity and inclusion inside of teamwork

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00:46:41,359 --> 00:46:44,880

but based on some of the conversations and dialogues that have been happening

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00:46:44,880 --> 00:46:48,400

across the agency

we wanted to separate that out and make

709

00:46:48,400 --> 00:46:53,599

it you know an an
independent um core value

710

00:46:53,599 --> 00:46:56,960

which is inclusion we're going to make
inclusion

711

00:46:56,960 --> 00:47:02,000

an independent core value so now there's
five core values

712

00:47:02,000 --> 00:47:06,400

um and and and yes teamwork and
inclusion i mean they go hand in hand

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00:47:06,400 --> 00:47:09,599

but i think it's important that what we
do

714

00:47:09,599 --> 00:47:14,160

actually signals you know the the things
that need to be done to make NASA a

715

00:47:14,160 --> 00:47:17,440

better place and so
you asked what we're doing i know i just

716

00:47:17,440 --> 00:47:21,119

talked a lot but um obviously this is
important to the agency

717

00:47:21,119 --> 00:47:24,720

a lot of people doing great work and we
want to strive

718

00:47:24,720 --> 00:47:28,160

every day to to be better Bettina and so

those are the things that we're working

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00:47:28,160 --> 00:47:32,559

on
that's fantastic um Jim i think you know

720

00:47:32,559 --> 00:47:35,520

i think a lot of people would agree that
and

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00:47:35,520 --> 00:47:40,480

that one of the key tenants of Mary W
Jackson is inclusiveness is she is

722

00:47:40,480 --> 00:47:44,400

someone who dedicated a career to be
incredibly inclusive

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00:47:44,400 --> 00:47:47,440

um and not to put you on the spot Margot
but

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00:47:47,440 --> 00:47:50,720

you know how do we the administrator
just

725

00:47:50,720 --> 00:47:54,240

outline a bunch of stuff uh how we can
continue to live

726

00:47:54,240 --> 00:47:57,520

in Mary W Jackson's legacy and make it
real

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00:47:57,520 --> 00:48:00,960

on a day-to-day basis what are your
thoughts on this and how do we continue

728

00:48:00,960 --> 00:48:05,359

to live up to the standards

set by Mary W Jackson and and these

729

00:48:05,360 --> 00:48:09,500

other um

and these other incredible figures in NASA's history

730

00:48:10,060 --> 00:48:12,700

i i think that's a really good question

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00:48:12,700 --> 00:48:15,359

you know one of the things that really struck me

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00:48:15,359 --> 00:48:22,000

about Mary W Jackson and and her life and her career is that she never

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00:48:22,000 --> 00:48:25,599

she never felt that there was a difference that was so

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00:48:25,599 --> 00:48:29,200

great that she could not bridge it with someone else

735

00:48:29,200 --> 00:48:33,839

she always assumed that she had more in common with someone even despite

736

00:48:33,839 --> 00:48:36,079

whatever

the difference is in background or

737

00:48:36,079 --> 00:48:39,520

gender or race or whatever

she always assumed that she was able to

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00:48:39,520 --> 00:48:44,240

find some commonality

and then once she did that to

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00:48:44,240 --> 00:48:48,720

work together with that person whether
it was um finding

740

00:48:48,720 --> 00:48:53,200

um some kids that in the neighborhood
and converting them to this

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00:48:53,200 --> 00:48:58,240

you know uh passion for engineering and
science and and you know finding that

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00:48:58,240 --> 00:49:03,760

inside of them and connecting there
or um working with the people around her

743

00:49:03,760 --> 00:49:07,520

and getting them
to say hey i'm gonna reach back and and

744

00:49:07,520 --> 00:49:11,680

bring these kids into the office and
commit to mentoring them or tutoring

745

00:49:11,680 --> 00:49:16,559

them you know she was always trying to
to build the bridges so that everybody

746

00:49:16,559 --> 00:49:19,760

could then move
in in the same direction on whatever the

747

00:49:19,760 --> 00:49:22,880

mission was
and i think that's something that um i

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00:49:22,880 --> 00:49:27,520

think that is a
a wonderful core value and uh

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00:49:27,520 --> 00:49:32,880

something that um you know when i think
okay what what would Mary Jackson do

750

00:49:32,880 --> 00:49:36,480

here what would she
say about this situation you know she

751

00:49:36,480 --> 00:49:39,119

really was always trying to extend
herself

752

00:49:39,119 --> 00:49:43,440

and to build those bridges and to find
that common ground and so i think that

753

00:49:43,440 --> 00:49:46,640

is something
um it's a core part of teamwork it's a

754

00:49:46,640 --> 00:49:51,839

core part of inclusion
and um it is one of Mary W Jackson's

755

00:49:51,839 --> 00:49:55,520

fundamental values that's so i i would
say remembering that

756

00:49:55,520 --> 00:49:59,359

is is a good way to pave the way to the
future

757

00:49:59,359 --> 00:50:03,359

so thank you so much everyone for this
wonderful conversation

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00:50:03,359 --> 00:50:06,400

we're going to wrap it up and i'm going
to turn it over to the administrator

759

00:50:06,400 --> 00:50:12,400

for some closing remarks well thank you
Bettina for setting this up

760

00:50:12,400 --> 00:50:15,599

and Margot Shetterly thank you for your
leadership

761

00:50:15,599 --> 00:50:19,440

and taking what used to be hidden
figures and

762

00:50:19,440 --> 00:50:25,040

and making them now no longer hidden
and for Bill Barry and all of the the

763

00:50:25,040 --> 00:50:30,000

great work you've done at NASA as far as
being a historian and and helping tell

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00:50:30,000 --> 00:50:34,480

these incredible stories of our
of our history um i just want to thank

765

00:50:34,480 --> 00:50:38,319

everybody for this
really amazing dialogue and as an agency

766

00:50:38,319 --> 00:50:40,720

um
as as i said earlier we're going to

767

00:50:40,720 --> 00:50:44,880

continue working
to make this agency the most inclusive

768

00:50:44,880 --> 00:50:48,640

um
and diverse and value everybody's input

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00:50:48,640 --> 00:50:53,440

and make it an agency that is free of
any kind of discrimination including

770

00:50:53,440 --> 00:50:58,720

racial discrimination
and an agency that that is safer and

771

00:50:58,720 --> 00:51:02,240

better
because of the input of all of our great

772

00:51:02,240 --> 00:51:04,800

employees and again we're going to
continue to work

773

00:51:04,800 --> 00:51:08,480

on how we bring in people in a more
inclusive way how we

774

00:51:08,480 --> 00:51:12,240

how we grow them within the agency and
promote them

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00:51:12,240 --> 00:51:15,200

so there's there's really a bright
future here and i want to be really

776

00:51:15,200 --> 00:51:19,440

clear
that future is embedded in the person of

777

00:51:19,440 --> 00:51:22,480

Mary W Jackson and this is why we named the

778

00:51:22,480 --> 00:51:27,680

headquarters after her
an amazing not so longer hidden figure

779

00:51:27,680 --> 00:51:32,240

she now um has the name of the NASA