



1
00:00:11,110 --> 00:00:09,030
good afternoon i'm dave bowles director

2
00:00:13,030 --> 00:00:11,120
of nasa's langley research center in

3
00:00:14,870 --> 00:00:13,040
hampton virginia and it's my pleasure to

4
00:00:17,430 --> 00:00:14,880
welcome you to our laboratory on this

5
00:00:19,670 --> 00:00:17,440
really truly historic day at this time

6
00:00:21,429 --> 00:00:19,680
please silence your cell phones and

7
00:00:23,830 --> 00:00:21,439
stand for the posting of our country's

8
00:00:25,750 --> 00:00:23,840
colors by the u.s joint base langley

9
00:00:27,750 --> 00:00:25,760
eustis color guard and then please

10
00:00:30,790 --> 00:00:27,760
remain standing for the singing of our

11
00:00:33,030 --> 00:00:30,800
national anthem by the woodside high

12
00:00:34,870 --> 00:00:33,040
school's de meester singers from newport

13
00:00:44,069 --> 00:00:34,880

news virginia under the direction of

14

00:01:05,590 --> 00:00:45,510

four

15

00:01:05,600 --> 00:01:24,710

um

16

00:01:24,720 --> 00:01:36,710

huh

17

00:01:38,390 --> 00:01:37,510

oh

18

00:01:41,749 --> 00:01:38,400

say

19

00:01:46,469 --> 00:01:41,759

can you see

20

00:01:47,710 --> 00:01:46,479

by the dawn's early light

21

00:01:49,590 --> 00:01:47,720

what so

22

00:01:54,300 --> 00:01:49,600

proudly we

23

00:02:18,710 --> 00:02:00,170

[Music]

24

00:02:32,949 --> 00:02:20,390

rockets

25

00:02:36,050 --> 00:02:35,200

still there

26

00:02:38,750 --> 00:02:36,060

[Music]

27

00:02:41,509 --> 00:02:38,760

[Applause]

28

00:02:43,140 --> 00:02:41,519

[Music]

29

00:02:44,370 --> 00:02:43,150

yet

30

00:02:46,040 --> 00:02:44,380

[Music]

31

00:02:50,790 --> 00:02:46,050

[Applause]

32

00:03:08,309 --> 00:02:50,800

[Music]

33

00:03:08,319 --> 00:03:11,340

up

34

00:03:11,350 --> 00:03:41,990

[Applause]

35

00:03:44,630 --> 00:03:43,750

all right please go ahead and take a

36

00:03:47,509 --> 00:03:44,640

seat

37

00:03:49,750 --> 00:03:47,519

and to the color guard and our singers

38

00:03:52,630 --> 00:03:49,760

thank you for helping us open today's

39

00:03:55,589 --> 00:03:52,640

ceremony uh as i mentioned today is a

40

00:03:57,750 --> 00:03:55,599

very special day for us here at langley

41

00:03:59,509 --> 00:03:57,760

in this our centennial year we have

42

00:04:01,990 --> 00:03:59,519

gathered to celebrate the opening of a

43

00:04:04,390 --> 00:04:02,000

powerful new computational facility that

44

00:04:05,990 --> 00:04:04,400

promises to accelerate our research for

45

00:04:07,589 --> 00:04:06,000

decades to come

46

00:04:09,830 --> 00:04:07,599

but really more importantly we're here

47

00:04:12,470 --> 00:04:09,840

to honor the legacy of one of the most

48

00:04:15,030 --> 00:04:12,480

admired and inspirational people

49

00:04:17,110 --> 00:04:15,040

ever associated with nasa

50

00:04:19,189 --> 00:04:17,120

and the person for whom this building is

51
00:04:21,590 --> 00:04:19,199
going to be named after catherine g

52
00:04:23,110 --> 00:04:21,600
johnson the mathematician and human

53
00:04:24,950 --> 00:04:23,120
computer

54
00:04:27,270 --> 00:04:24,960
before we go any further i also want to

55
00:04:29,990 --> 00:04:27,280
recognize the distinguished guest that

56
00:04:32,150 --> 00:04:30,000
we have participating in today's events

57
00:04:33,990 --> 00:04:32,160
please hold your applause till i get to

58
00:04:35,749 --> 00:04:34,000
the end of the list of names and

59
00:04:36,469 --> 00:04:35,759
recognizing them all

60
00:04:39,110 --> 00:04:36,479
so

61
00:04:40,550 --> 00:04:39,120
starting join us today the honorable

62
00:04:42,550 --> 00:04:40,560
terry mcauliffe governor of the

63
00:04:44,790 --> 00:04:42,560

commonwealth of virginia

64

00:04:47,110 --> 00:04:44,800

the honorable mark warner united states

65

00:04:49,670 --> 00:04:47,120

senator from virginia the honorable

66

00:04:51,590 --> 00:04:49,680

donnie tuck mayor of hampton

67

00:04:53,749 --> 00:04:51,600

by way of video we're here from the

68

00:04:56,950 --> 00:04:53,759

honorable scott taylor congressman from

69

00:04:59,590 --> 00:04:56,960

virginia's second district also joining

70

00:05:01,990 --> 00:04:59,600

us here today are colonel jason kelly of

71

00:05:04,230 --> 00:05:02,000

the u.s army corps of engineers

72

00:05:06,790 --> 00:05:04,240

from nasa headquarters dan tinney the

73

00:05:09,350 --> 00:05:06,800

agency's acting associate administrator

74

00:05:11,990 --> 00:05:09,360

for mission support and today's keynote

75

00:05:13,990 --> 00:05:12,000

speaker margot lee shetterly author of

76

00:05:16,550 --> 00:05:14,000

the best-selling book hidden figures

77

00:05:17,909 --> 00:05:16,560

which serves as the basis basis of the

78

00:05:20,710 --> 00:05:17,919

motion picture

79

00:05:22,230 --> 00:05:20,720

uh hidden of hidden figures of the same

80

00:05:24,230 --> 00:05:22,240

name sorry

81

00:05:25,280 --> 00:05:24,240

so let's give them all a very warm

82

00:05:33,990 --> 00:05:25,290

welcome

83

00:05:35,909 --> 00:05:34,000

[Applause]

84

00:05:37,670 --> 00:05:35,919

we also have an amazingly diverse and

85

00:05:39,909 --> 00:05:37,680

distinguished group of other guests here

86

00:05:41,270 --> 00:05:39,919

today from so many different sectors we

87

00:05:43,510 --> 00:05:41,280

have elected officials government

88

00:05:45,270 --> 00:05:43,520

officials community leaders

89

00:05:46,790 --> 00:05:45,280

congressional staff members

90

00:05:49,189 --> 00:05:46,800

representatives from industry and

91

00:05:51,749 --> 00:05:49,199

academia as well as the families of

92

00:05:53,670 --> 00:05:51,759

other human computers like mary jackson

93

00:06:03,189 --> 00:05:53,680

and the dorothy vaughn families thank

94

00:06:07,510 --> 00:06:05,430

now i've saved the best for last

95

00:06:09,990 --> 00:06:07,520

she's a presidential medal of freedom

96

00:06:12,629 --> 00:06:10,000

recipient a member of nasa langley's

97

00:06:15,749 --> 00:06:12,639

hall of honor and just last month she

98

00:06:17,749 --> 00:06:15,759

celebrated her 99th birthday ladies and

99

00:06:19,990 --> 00:06:17,759

gentlemen please join me in letting her

100

00:06:22,230 --> 00:06:20,000

know how much we appreciate her in being

101
00:07:03,350 --> 00:06:22,240
here in her service to the nation miss

102
00:07:07,189 --> 00:07:05,189
so in a few minutes we'll officially

103
00:07:10,070 --> 00:07:07,199
open the catherine g johnson

104
00:07:12,309 --> 00:07:10,080
computational research facility or crf

105
00:07:14,070 --> 00:07:12,319
as we call it a building that sets the

106
00:07:16,950 --> 00:07:14,080
stage for our continuing digital

107
00:07:19,909 --> 00:07:16,960
transformation an exciting new era of

108
00:07:21,430 --> 00:07:19,919
sophisticated modeling and simulation

109
00:07:22,870 --> 00:07:21,440
we know that these are the tools that

110
00:07:25,510 --> 00:07:22,880
will help us shape the world of the

111
00:07:27,990 --> 00:07:25,520
future just as langley's wind tunnels

112
00:07:30,469 --> 00:07:28,000
have helped shape nearly every aircraft

113
00:07:32,629 --> 00:07:30,479

that's in the skies flying today thanks

114

00:07:34,870 --> 00:07:32,639

to this new building's robust carefully

115

00:07:36,870 --> 00:07:34,880

designed infrastructure we'll do more

116

00:07:39,189 --> 00:07:36,880

calculations than ever and we'll do them

117

00:07:40,950 --> 00:07:39,199

faster more efficiently and with greater

118

00:07:43,670 --> 00:07:40,960

reliability

119

00:07:46,309 --> 00:07:43,680

in a world-facing increasingly complex

120

00:07:48,869 --> 00:07:46,319

challenges langley researchers will need

121

00:07:50,950 --> 00:07:48,879

access to more computational power we

122

00:07:52,230 --> 00:07:50,960

will also need a solid foundation on

123

00:07:54,550 --> 00:07:52,240

which to create the computing

124

00:07:56,790 --> 00:07:54,560

capabilities of tomorrow

125

00:07:59,430 --> 00:07:56,800

that's the promise of this new building

126
00:08:01,990 --> 00:07:59,440
holds it allows us to better address the

127
00:08:03,589 --> 00:08:02,000
challenges of the future

128
00:08:05,589 --> 00:08:03,599
so now let's take a quick look inside

129
00:08:11,300 --> 00:08:05,599
the facility that will drive so much of

130
00:08:21,189 --> 00:08:19,430
[Music]

131
00:08:22,869 --> 00:08:21,199
hi i'm vince whitfield and we're here at

132
00:08:24,869 --> 00:08:22,879
the katherine johnson computational

133
00:08:26,869 --> 00:08:24,879
research facility at nasa's langley

134
00:08:28,710 --> 00:08:26,879
research center we're about to cut the

135
00:08:30,869 --> 00:08:28,720
ribbon on this state-of-the-art facility

136
00:08:32,469 --> 00:08:30,879
but before we do let's take a sneak peek

137
00:08:34,230 --> 00:08:32,479
inside the building that will enable

138
00:08:36,630 --> 00:08:34,240

innovative research and development

139

00:08:39,589 --> 00:08:36,640

across all of nasa's mission areas let's

140

00:08:43,269 --> 00:08:41,430

this building the third new structure

141

00:08:45,430 --> 00:08:43,279

built in the last six years as part of

142

00:08:47,670 --> 00:08:45,440

the centre's revitalization plan is

143

00:08:49,750 --> 00:08:47,680

named for catherine g johnson for those

144

00:08:51,829 --> 00:08:49,760

watching who may not know ms johnson is

145

00:08:53,269 --> 00:08:51,839

a human computer an amazing

146

00:08:55,030 --> 00:08:53,279

mathematician who calculated

147

00:08:57,190 --> 00:08:55,040

trajectories and played a key role in

148

00:08:59,829 --> 00:08:57,200

america's human space flight program

149

00:09:01,350 --> 00:08:59,839

including the apollo 11 moon landing

150

00:09:03,030 --> 00:09:01,360

featured in the lobby is a beautiful

151
00:09:05,430 --> 00:09:03,040
portrait of miss johnson that was taken

152
00:09:07,590 --> 00:09:05,440
last year at nearby fort monroe by

153
00:09:10,230 --> 00:09:07,600
famous photographer annie leibowitz for

154
00:09:12,150 --> 00:09:10,240
a vanity fair magazine article we also

155
00:09:14,150 --> 00:09:12,160
have items here that recognize catherine

156
00:09:15,509 --> 00:09:14,160
and the other human computers like an

157
00:09:17,350 --> 00:09:15,519
official proclamation from the

158
00:09:18,710 --> 00:09:17,360
commonwealth of virginia and a group

159
00:09:20,470 --> 00:09:18,720
achievement award from the nasa

160
00:09:22,389 --> 00:09:20,480
administrator

161
00:09:25,190 --> 00:09:22,399
a little less than half of the space in

162
00:09:27,110 --> 00:09:25,200
its 37 000 square foot facility is

163
00:09:28,630 --> 00:09:27,120

dedicated to supporting the employees of

164

00:09:30,070 --> 00:09:28,640

the office of the chief information

165

00:09:32,550 --> 00:09:30,080

officer and those who will be

166

00:09:34,790 --> 00:09:32,560

contributing to and benefiting from the

167

00:09:36,470 --> 00:09:34,800

technologies that are housed here

168

00:09:38,470 --> 00:09:36,480

researchers from across the centre will

169

00:09:41,110 --> 00:09:38,480

conduct a variety of computing projects

170

00:09:43,350 --> 00:09:41,120

here including aerodynamic modeling

171

00:09:45,910 --> 00:09:43,360

entry descent and landing calculations

172

00:09:47,509 --> 00:09:45,920

and computational fluid dynamics

173

00:09:49,990 --> 00:09:47,519

the facility advances langley's

174

00:09:52,310 --> 00:09:50,000

capabilities in modeling and simulation

175

00:09:54,070 --> 00:09:52,320

big data and analysis

176

00:09:55,910 --> 00:09:54,080

much of the work now performed in wind

177

00:09:57,990 --> 00:09:55,920

tunnels will one day be handled by

178

00:09:59,269 --> 00:09:58,000

powerful computers such as those in the

179

00:10:00,870 --> 00:09:59,279

crf

180

00:10:02,710 --> 00:10:00,880

now let's go take a look at the guts of

181

00:10:05,030 --> 00:10:02,720

this high-tech facility

182

00:10:07,030 --> 00:10:05,040

the data hall has a maximum capacity of

183

00:10:09,030 --> 00:10:07,040

nearly 200 racks

184

00:10:11,190 --> 00:10:09,040

that's enough to store almost 4 000

185

00:10:13,269 --> 00:10:11,200

systems here you may have noticed the

186

00:10:15,110 --> 00:10:13,279

racks are mostly empty right now

187

00:10:17,110 --> 00:10:15,120

about 1200 servers will be moved from

188

00:10:19,509 --> 00:10:17,120

the current locations on center later

189

00:10:21,750 --> 00:10:19,519

this fall allowing us to consolidate

190

00:10:24,150 --> 00:10:21,760

numerous server rooms and data centers

191

00:10:26,470 --> 00:10:24,160

from across langley into this one data

192

00:10:28,069 --> 00:10:26,480

center here in the crm

193

00:10:30,389 --> 00:10:28,079

when all of the systems are moved there

194

00:10:33,350 --> 00:10:30,399

will be about 13 miles of copper network

195

00:10:35,190 --> 00:10:33,360

cabling and 97 miles of fiber optic

196

00:10:36,949 --> 00:10:35,200

cable in the building

197

00:10:39,269 --> 00:10:36,959

now i know it's loud in these rooms and

198

00:10:41,110 --> 00:10:39,279

here's why the electrical power plant

199

00:10:44,470 --> 00:10:41,120

that powers the ic functions of this

200

00:10:47,350 --> 00:10:44,480

building can supply 2.1 megawatts that's

201
00:10:48,550 --> 00:10:47,360
enough to power a small town

202
00:10:50,630 --> 00:10:48,560
because of the importance of the

203
00:10:52,630 --> 00:10:50,640
information on the servers the building

204
00:10:54,310 --> 00:10:52,640
is designed to withstand category 3

205
00:10:55,670 --> 00:10:54,320
hurricane conditions

206
00:10:57,430 --> 00:10:55,680
there are generators that can run

207
00:10:58,710 --> 00:10:57,440
continuously even in the event of a

208
00:11:00,710 --> 00:10:58,720
power outage

209
00:11:03,430 --> 00:11:00,720
and it's on track to receive lead silver

210
00:11:04,470 --> 00:11:03,440
certification from the us green building

211
00:11:07,670 --> 00:11:04,480
council

212
00:11:09,670 --> 00:11:07,680
the building is an energy saver 33 more

213
00:11:11,509 --> 00:11:09,680

efficient than energy standards just a

214

00:11:13,350 --> 00:11:11,519

few years ago

215

00:11:14,790 --> 00:11:13,360

so that concludes our quick look at this

216

00:11:16,630 --> 00:11:14,800

new building a building whose

217

00:11:18,870 --> 00:11:16,640

capabilities and people will help to

218

00:11:20,550 --> 00:11:18,880

address nasa's future challenges

219

00:11:22,389 --> 00:11:20,560

speaking of the future we have a special

220

00:11:24,310 --> 00:11:22,399

treat from the next generation of nasa

221

00:11:31,110 --> 00:11:24,320

employees from our child development

222

00:11:31,120 --> 00:11:42,940

[Music]

223

00:11:42,950 --> 00:11:48,630

[Applause]

224

00:11:54,150 --> 00:11:51,350

well that's a great ending to that video

225

00:11:55,910 --> 00:11:54,160

you can't you can't see too much of that

226

00:11:58,310 --> 00:11:55,920

but as you can see this facility will

227

00:12:00,230 --> 00:11:58,320

improve the efficiency and reliability

228

00:12:01,829 --> 00:12:00,240

of our number crunching it will also

229

00:12:03,990 --> 00:12:01,839

give us room to grow and collaborate

230

00:12:06,230 --> 00:12:04,000

with our partners across the agency and

231

00:12:08,150 --> 00:12:06,240

with industry as you know at langley we

232

00:12:10,470 --> 00:12:08,160

have world-class researchers

233

00:12:12,230 --> 00:12:10,480

that's been true for a century now

234

00:12:14,790 --> 00:12:12,240

and researchers from across our center

235

00:12:17,110 --> 00:12:14,800

will benefit from this new facility

236

00:12:19,670 --> 00:12:17,120

one of our areas of expertise is entry

237

00:12:21,110 --> 00:12:19,680

descent and landing or edl as we call it

238

00:12:23,190 --> 00:12:21,120

and it's really the science of how a

239

00:12:25,430 --> 00:12:23,200

spacecraft enters and flies through a

240

00:12:26,710 --> 00:12:25,440

planet's atmosphere and lands safely on

241

00:12:28,230 --> 00:12:26,720

its surface

242

00:12:30,150 --> 00:12:28,240

langley's skill in this area has been

243

00:12:33,030 --> 00:12:30,160

used for every successful robotic

244

00:12:34,710 --> 00:12:33,040

mission that's landed on mars and as we

245

00:12:36,790 --> 00:12:34,720

are called upon to support nasa's

246

00:12:38,629 --> 00:12:36,800

journey to mars the calculations we need

247

00:12:40,470 --> 00:12:38,639

to get us there will take place in this

248

00:12:42,150 --> 00:12:40,480

new building

249

00:12:44,150 --> 00:12:42,160

improving our aerodynamic testing

250

00:12:46,389 --> 00:12:44,160

capabilities using commute computer

251
00:12:48,389 --> 00:12:46,399
models also known as computational fluid

252
00:12:50,470 --> 00:12:48,399
dynamics is another area where these

253
00:12:52,389 --> 00:12:50,480
powerful computer servers will help us

254
00:12:54,790 --> 00:12:52,399
lead the way for nasa

255
00:12:57,190 --> 00:12:54,800
and in materials research an area i used

256
00:12:59,110 --> 00:12:57,200
to work many many years ago

257
00:13:01,030 --> 00:12:59,120
there's potential to model the property

258
00:13:03,590 --> 00:13:01,040
of new polymers and learn which ones

259
00:13:06,389 --> 00:13:03,600
will help us create stronger lighter

260
00:13:08,629 --> 00:13:06,399
more capable aircraft and spacecraft all

261
00:13:10,069 --> 00:13:08,639
very exciting stuff

262
00:13:14,389 --> 00:13:10,079
but no matter

263
00:13:17,190 --> 00:13:14,399

are at the end of the day it takes the

264

00:13:19,670 --> 00:13:17,200

people to use those computers and the

265

00:13:21,670 --> 00:13:19,680

the innovation and brilliant ideas they

266

00:13:23,430 --> 00:13:21,680

come up with and what we're really doing

267

00:13:25,590 --> 00:13:23,440

is taking lessons learned when katherine

268

00:13:28,069 --> 00:13:25,600

johnson and her fellow human computers

269

00:13:31,030 --> 00:13:28,079

calculated spacecraft trajectories with

270

00:13:33,509 --> 00:13:31,040

paper pencil and adding machines and

271

00:13:35,350 --> 00:13:33,519

applying them to today's missions with

272

00:13:37,350 --> 00:13:35,360

this new facility we will continue to

273

00:13:40,069 --> 00:13:37,360

advance the same techniques that she

274

00:13:42,629 --> 00:13:40,079

used to such spectacular effect and i

275

00:13:45,189 --> 00:13:42,639

can't imagine a better tribute to mrs

276

00:13:47,269 --> 00:13:45,199

johnson's character and accomplishments

277

00:13:49,829 --> 00:13:47,279

than this building that will bear her

278

00:13:51,750 --> 00:13:49,839

name

279

00:13:57,829 --> 00:13:51,760

so this yes that deserves a round of

280

00:14:00,949 --> 00:13:59,189

and so this really is a day of

281

00:14:03,350 --> 00:14:00,959

celebration for our center and really

282

00:14:05,750 --> 00:14:03,360

all of nasa and i want to send i wanted

283

00:14:07,750 --> 00:14:05,760

to say again thank you catherine and all

284

00:14:09,910 --> 00:14:07,760

of your family for being here today

285

00:14:11,750 --> 00:14:09,920

we're glad uh you could be here to share

286

00:14:14,389 --> 00:14:11,760

in this moment and we're happy all of

287

00:14:16,230 --> 00:14:14,399

you could join us for such a great day

288

00:14:17,829 --> 00:14:16,240

you know this is an incredible project

289

00:14:20,710 --> 00:14:17,839

wouldn't have been possible without the

290

00:14:22,870 --> 00:14:20,720

hard work collaboration and support from

291

00:14:24,629 --> 00:14:22,880

our partners and friends outside of nasa

292

00:14:27,350 --> 00:14:24,639

as well and we're going to hear from a

293

00:14:29,829 --> 00:14:27,360

few of them uh today so first i'd like

294

00:14:32,069 --> 00:14:29,839

to invite colonel jason kelly of the u.s

295

00:14:34,830 --> 00:14:32,079

army corps of engineers to the podium

296

00:14:40,870 --> 00:14:34,840

colonel kelly can you come up

297

00:14:43,430 --> 00:14:40,880

[Applause]

298

00:14:45,350 --> 00:14:43,440

to governor mcauliffe

299

00:14:47,189 --> 00:14:45,360

senator warner

300

00:14:48,470 --> 00:14:47,199

representative taylor

301
00:14:50,710 --> 00:14:48,480
mayor tuck

302
00:14:53,189 --> 00:14:50,720
miss shetley

303
00:14:55,670 --> 00:14:53,199
friends of this story installation

304
00:14:59,110 --> 00:14:55,680
and organization

305
00:15:00,790 --> 00:14:59,120
and of course ms johnson and family

306
00:15:03,509 --> 00:15:00,800
thank you for joining us today on this

307
00:15:05,269 --> 00:15:03,519
very special afternoon

308
00:15:06,870 --> 00:15:05,279
on this very special

309
00:15:09,110 --> 00:15:06,880
day

310
00:15:10,790 --> 00:15:09,120
as i look out

311
00:15:13,189 --> 00:15:10,800
i see friends

312
00:15:14,710 --> 00:15:13,199
i see partners

313
00:15:18,389 --> 00:15:14,720

i see folks that understand the

314

00:15:20,790 --> 00:15:18,399

importance of collaboration

315

00:15:22,949 --> 00:15:20,800

working together

316

00:15:24,470 --> 00:15:22,959

especially when you're solving big

317

00:15:27,350 --> 00:15:24,480

problems

318

00:15:28,710 --> 00:15:27,360

when taking on addressing

319

00:15:31,269 --> 00:15:28,720

and conquering

320

00:15:34,870 --> 00:15:31,279

substantive challenges

321

00:15:37,350 --> 00:15:34,880

such things are not done alone

322

00:15:39,910 --> 00:15:37,360

the preciseness required

323

00:15:41,829 --> 00:15:39,920

to construct a computational research

324

00:15:44,790 --> 00:15:41,839

facility

325

00:15:46,389 --> 00:15:44,800

under the watchful eye

326

00:15:49,269 --> 00:15:46,399

of scientists

327

00:15:52,629 --> 00:15:49,279

and fellow engineers

328

00:15:55,749 --> 00:15:52,639

from which the occupants will explore

329

00:15:57,670 --> 00:15:55,759

and expand the frontiers of knowledge

330

00:16:00,629 --> 00:15:57,680

regarding space

331

00:16:03,350 --> 00:16:00,639

is not easily done

332

00:16:05,509 --> 00:16:03,360

but i've been confident throughout

333

00:16:07,030 --> 00:16:05,519

i knew this very moment

334

00:16:08,870 --> 00:16:07,040

this ceremony

335

00:16:10,949 --> 00:16:08,880

this very day

336

00:16:12,790 --> 00:16:10,959

would soon come

337

00:16:15,030 --> 00:16:12,800

miss kellerman

338

00:16:18,069 --> 00:16:15,040

the center operations director and i

339

00:16:19,749 --> 00:16:18,079

have long talked about it

340

00:16:22,710 --> 00:16:19,759

exact

341

00:16:25,110 --> 00:16:22,720

is the demand she impressed upon me

342

00:16:26,710 --> 00:16:25,120

and all involved in the oversight of

343

00:16:28,790 --> 00:16:26,720

construction

344

00:16:30,949 --> 00:16:28,800

of this building

345

00:16:32,389 --> 00:16:30,959

having earned an undergraduate degree in

346

00:16:34,470 --> 00:16:32,399

mathematics from the united states

347

00:16:37,749 --> 00:16:34,480

military academy

348

00:16:40,230 --> 00:16:37,759

followed by studies and statistics at

349

00:16:42,389 --> 00:16:40,240

the georgia institute of technology

350

00:16:46,629 --> 00:16:42,399

i feel uniquely qualified to speak on

351
00:16:51,350 --> 00:16:49,030
it's a hallmark of the army corps of

352
00:16:53,829 --> 00:16:51,360
engineers and it underpins

353
00:16:55,990 --> 00:16:53,839
all that nasa has done and continues to

354
00:16:58,150 --> 00:16:56,000
do for our great nation

355
00:17:00,310 --> 00:16:58,160
i'm honored to represent

356
00:17:01,590 --> 00:17:00,320
the many men and women

357
00:17:02,710 --> 00:17:01,600
laborers

358
00:17:04,390 --> 00:17:02,720
helpers

359
00:17:06,470 --> 00:17:04,400
project managers

360
00:17:07,829 --> 00:17:06,480
construction representatives

361
00:17:09,110 --> 00:17:07,839
architects

362
00:17:11,429 --> 00:17:09,120
engineers

363
00:17:14,870 --> 00:17:11,439

and a host of support staff members who

364

00:17:17,990 --> 00:17:14,880

work so hard to deliver this facility

365

00:17:19,510 --> 00:17:18,000

as the conclusion of my command tenure

366

00:17:22,470 --> 00:17:19,520

draws near

367

00:17:24,789 --> 00:17:22,480

i look forward to watching from afar the

368

00:17:26,949 --> 00:17:24,799

great advancements and wonders

369

00:17:28,870 --> 00:17:26,959

that will soon be realized

370

00:17:30,310 --> 00:17:28,880

from this very site

371

00:17:33,510 --> 00:17:30,320

i'm honored to have been a part of it

372

00:17:35,029 --> 00:17:33,520

and i can't wait to see the great work

373

00:17:37,110 --> 00:17:35,039

that i know will be produced from this

374

00:17:38,190 --> 00:17:37,120

computational research facility thank

375

00:17:42,230 --> 00:17:38,200

you

376

00:17:44,630 --> 00:17:42,240

[Applause]

377

00:17:46,950 --> 00:17:44,640

thank you colonel kelly for those

378

00:17:49,430 --> 00:17:46,960

great remarks now it's my pleasure to

379

00:17:51,190 --> 00:17:49,440

introduce a good friend of nasa langley

380

00:17:53,590 --> 00:17:51,200

the mayor of the great city of hampton

381

00:17:59,990 --> 00:17:53,600

the honorable donny tuck mr mayor come

382

00:18:02,549 --> 00:18:01,830

afternoon

383

00:18:07,270 --> 00:18:02,559

to

384

00:18:08,630 --> 00:18:07,280

congressman taylor

385

00:18:10,710 --> 00:18:08,640

to

386

00:18:12,070 --> 00:18:10,720

other elected officials and government

387

00:18:15,029 --> 00:18:12,080

officials

388

00:18:16,549 --> 00:18:15,039

to director bowles and to the

389

00:18:19,270 --> 00:18:16,559

administrators

390

00:18:21,029 --> 00:18:19,280

staff researchers here at nasa langley

391

00:18:23,029 --> 00:18:21,039

research center and to the

392

00:18:25,029 --> 00:18:23,039

representatives from nasa headquarters

393

00:18:26,470 --> 00:18:25,039

and the other research centers

394

00:18:33,750 --> 00:18:26,480

to

395

00:18:36,150 --> 00:18:33,760

distinguished guests

396

00:18:37,669 --> 00:18:36,160

good afternoon it's my pleasure to

397

00:18:41,110 --> 00:18:37,679

welcome you here

398

00:18:44,150 --> 00:18:41,120

in our city's 407 year history

399

00:18:46,070 --> 00:18:44,160

as well as 100 year of relationship with

400

00:18:49,029 --> 00:18:46,080

nasa langley research center

401
00:18:51,029 --> 00:18:49,039
we've had many many historic events and

402
00:18:52,870 --> 00:18:51,039
many proud moments

403
00:18:56,870 --> 00:18:52,880
and certainly today's prestigious

404
00:18:58,950 --> 00:18:56,880
recognition of mrs johnson

405
00:19:01,830 --> 00:18:58,960
whose contributions to nasa langley

406
00:19:03,830 --> 00:19:01,840
research center and quiet strength

407
00:19:06,870 --> 00:19:03,840
have inspired so many young men and

408
00:19:08,710 --> 00:19:06,880
women to break through barriers rates

409
00:19:12,950 --> 00:19:08,720
as the proudest moment that i've been a

410
00:19:15,190 --> 00:19:12,960
part of so today congratulations to you

411
00:19:17,430 --> 00:19:15,200
and thank you

412
00:19:18,630 --> 00:19:17,440
as well as to the incredible

413
00:19:20,390 --> 00:19:18,640

men and women

414

00:19:30,310 --> 00:19:20,400

here at nasa langley research center who

415

00:19:33,270 --> 00:19:32,390

thank you mayor tuck for those great

416

00:19:35,190 --> 00:19:33,280

words

417

00:19:37,669 --> 00:19:35,200

now i'd like to invite to the podium of

418

00:19:39,350 --> 00:19:37,679

mr dan tinney he's nasa's acting

419

00:19:47,190 --> 00:19:39,360

associate administrator for mission

420

00:19:51,270 --> 00:19:48,950

thank you dave and thank you to all of

421

00:19:53,590 --> 00:19:51,280

you for being here today this is truly a

422

00:19:56,070 --> 00:19:53,600

historic moment and it's wonderful to

423

00:19:58,150 --> 00:19:56,080

see such high level support for nasa's

424

00:19:59,750 --> 00:19:58,160

langley research center and this new

425

00:20:02,149 --> 00:19:59,760

facility that we're dedicating on behalf

426

00:20:03,830 --> 00:20:02,159

of miss catherine g johnson

427

00:20:05,990 --> 00:20:03,840

it's my honor to do this today to

428

00:20:07,990 --> 00:20:06,000

dedicate this facility a facility that

429

00:20:10,310 --> 00:20:08,000

will enable the future that's not an

430

00:20:12,470 --> 00:20:10,320

easy task and a rapidly and changing

431

00:20:15,990 --> 00:20:12,480

environment such as aerospace but this

432

00:20:17,750 --> 00:20:16,000

facility truly will endeavor our future

433

00:20:20,870 --> 00:20:17,760

this facility will help us move forward

434

00:20:22,230 --> 00:20:20,880

in advancements in aeronautics science

435

00:20:24,230 --> 00:20:22,240

earth sciences

436

00:20:25,909 --> 00:20:24,240

as well as space technology

437

00:20:28,230 --> 00:20:25,919

it will also help us move forward as we

438

00:20:30,230 --> 00:20:28,240

advance towards our mission in mars

439

00:20:32,630 --> 00:20:30,240

from aeronautical support to human space

440

00:20:33,990 --> 00:20:32,640

flight to sciences and space technology

441

00:20:37,110 --> 00:20:34,000

nasa langley has continued to be

442

00:20:39,430 --> 00:20:37,120

involved in all facets of nasa's mission

443

00:20:40,470 --> 00:20:39,440

and it's a tribute to our pioneering

444

00:20:45,909 --> 00:20:40,480

spirit

445

00:20:48,149 --> 00:20:45,919

and the story of catherine g johnson

446

00:20:50,630 --> 00:20:48,159

which has inspired so many her story

447

00:20:52,710 --> 00:20:50,640

will inspire generations of young people

448

00:20:55,430 --> 00:20:52,720

who will be inspired to pursue their

449

00:20:57,190 --> 00:20:55,440

dreams their ambitions to work for us

450

00:21:00,230 --> 00:20:57,200

hopefully one day

451
00:21:01,909 --> 00:21:00,240
as author ms shutterly can attest the

452
00:21:04,549 --> 00:21:01,919
many hidden figures that contributed to

453
00:21:06,630 --> 00:21:04,559
the great accomplishments of nasa are so

454
00:21:08,310 --> 00:21:06,640
important to our future

455
00:21:10,070 --> 00:21:08,320
miss johnson

456
00:21:12,149 --> 00:21:10,080
thank you for being here thank you for

457
00:21:14,230 --> 00:21:12,159
your hard work over the years you truly

458
00:21:15,590 --> 00:21:14,240
did make nasa a wonderful place in

459
00:21:17,430 --> 00:21:15,600
helping this nation advance our

460
00:21:19,510 --> 00:21:17,440
aerospace program

461
00:21:22,470 --> 00:21:19,520
i'd also just like to say that

462
00:21:24,789 --> 00:21:22,480
miss johnson's testimony is a tribute to

463
00:21:26,549 --> 00:21:24,799

her sharp mind her pioneering spirit and

464

00:21:27,669 --> 00:21:26,559

the many doors she helped open for so

465

00:21:29,510 --> 00:21:27,679

many others

466

00:21:31,669 --> 00:21:29,520

it's my honor to be here today i want to

467

00:21:33,350 --> 00:21:31,679

say congratulations to nasa langley

468

00:21:35,669 --> 00:21:33,360

congratulations to ms catherine g

469

00:21:37,909 --> 00:21:35,679

johnson and congratulations to nasa as

470

00:21:40,149 --> 00:21:37,919

we continue to pave away for the united

471

00:21:46,950 --> 00:21:40,159

states thank you let us celebrate

472

00:21:51,110 --> 00:21:48,710

thank you dan

473

00:21:53,590 --> 00:21:51,120

all right uh next we uh have a recorded

474

00:21:56,070 --> 00:21:53,600

message from congressman scott taylor so

475

00:21:58,149 --> 00:21:56,080

if we can uh cue that up

476

00:22:00,789 --> 00:21:58,159

hi everyone it's congressman scott

477

00:22:03,590 --> 00:22:00,799

taylor and i am extremely excited about

478

00:22:05,510 --> 00:22:03,600

nasa langley's new computational center

479

00:22:08,710 --> 00:22:05,520

it will strengthen virginia's already

480

00:22:11,110 --> 00:22:08,720

strong reputation as a high-tech hub of

481

00:22:13,830 --> 00:22:11,120

innovation it shows that langley's

482

00:22:15,430 --> 00:22:13,840

strong past is a springboard to a

483

00:22:17,430 --> 00:22:15,440

dynamic future

484

00:22:19,750 --> 00:22:17,440

the world has changed and opened up with

485

00:22:22,230 --> 00:22:19,760

complex challenges and profound

486

00:22:24,149 --> 00:22:22,240

possibilities and just as katherine

487

00:22:25,750 --> 00:22:24,159

johnson expanded and accelerated our

488

00:22:27,270 --> 00:22:25,760

nation's computing power to meet the

489

00:22:29,669 --> 00:22:27,280

needs of today

490

00:22:32,630 --> 00:22:29,679

this center will set the conditions of

491

00:22:35,510 --> 00:22:32,640

tomorrow in machine intelligence big

492

00:22:37,750 --> 00:22:35,520

data analytics aerospace technology

493

00:22:38,830 --> 00:22:37,760

simulations of aircraft and spacecraft

494

00:22:41,830 --> 00:22:38,840

structures

495

00:22:44,630 --> 00:22:41,840

electromagnetics acoustics trajectories

496

00:22:47,190 --> 00:22:44,640

sensors and computer models for hardware

497

00:22:48,390 --> 00:22:47,200

to explore our solar system and much

498

00:22:49,990 --> 00:22:48,400

more

499

00:22:51,669 --> 00:22:50,000

ronald reagan once said that each

500

00:22:53,510 --> 00:22:51,679

generation goes further than the

501
00:22:55,510 --> 00:22:53,520
generation preceding it because it

502
00:22:57,510 --> 00:22:55,520
stands upon the shoulders of that

503
00:23:00,070 --> 00:22:57,520
generation and that you will have more

504
00:23:01,430 --> 00:23:00,080
opportunities beyond anything we've ever

505
00:23:03,590 --> 00:23:01,440
known

506
00:23:06,070 --> 00:23:03,600
pioneering patriots like catherine

507
00:23:08,630 --> 00:23:06,080
johnson broke racial and gender barriers

508
00:23:11,669 --> 00:23:08,640
in laying the foundation of mathematics

509
00:23:12,470 --> 00:23:11,679
critical to nasa's early space flights

510
00:23:15,110 --> 00:23:12,480
well

511
00:23:17,029 --> 00:23:15,120
today it is fitting that the foundation

512
00:23:18,149 --> 00:23:17,039
of this center is being laid in her

513
00:23:20,710 --> 00:23:18,159

honor

514

00:23:23,029 --> 00:23:20,720

our nation's economic future national

515

00:23:25,669 --> 00:23:23,039

security and our travels beyond this

516

00:23:28,390 --> 00:23:25,679

world depend on a new generation of

517

00:23:30,630 --> 00:23:28,400

innovators who stand on the shoulders of

518

00:23:33,590 --> 00:23:30,640

catherine johnson we are counting on

519

00:23:35,029 --> 00:23:33,600

this center and we are counting on them

520

00:23:36,870 --> 00:23:35,039

no pressure

521

00:23:39,669 --> 00:23:36,880

they must take on this task for our

522

00:23:42,549 --> 00:23:39,679

nation with persistence character and

523

00:23:45,909 --> 00:23:42,559

the confidence to make the impossible a

524

00:23:54,470 --> 00:23:45,919

reality thank you god bless you and god

525

00:23:57,350 --> 00:23:55,830

all right very good and we certainly

526
00:23:59,750 --> 00:23:57,360
appreciate those words and that message

527
00:24:01,669 --> 00:23:59,760
from the congressman now it's uh my

528
00:24:03,990 --> 00:24:01,679
distinct pleasure to invite to the

529
00:24:05,190 --> 00:24:04,000
podium a strong nasa supporter and a

530
00:24:07,350 --> 00:24:05,200
united states senator from the

531
00:24:09,430 --> 00:24:07,360
commonwealth of virginia he serves on

532
00:24:11,430 --> 00:24:09,440
the finance banking budget and rules

533
00:24:13,669 --> 00:24:11,440
committees and is vice chairman of the

534
00:24:15,669 --> 00:24:13,679
select committee on intelligence the

535
00:24:17,990 --> 00:24:15,679
senator is a co-chair of the senate

536
00:24:19,750 --> 00:24:18,000
aerospace caucus and of the senate's

537
00:24:21,990 --> 00:24:19,760
unmanned aerial

538
00:24:24,470 --> 00:24:22,000

aerial systems caucus

539

00:24:32,070 --> 00:24:24,480

so please welcome senator warner to the

540

00:24:34,789 --> 00:24:33,669

you dave thank you for that introduction

541

00:24:38,149 --> 00:24:34,799

and it is

542

00:24:40,630 --> 00:24:38,159

a great honor for me to also be here to

543

00:24:42,549 --> 00:24:40,640

celebrate this um opening this wonderful

544

00:24:46,070 --> 00:24:42,559

new facility and to finally have a

545

00:24:48,390 --> 00:24:46,080

chance to meet uh mrs johnson it is a

546

00:24:49,510 --> 00:24:48,400

a really great honor i colonel you you

547

00:24:52,789 --> 00:24:49,520

said

548

00:24:55,190 --> 00:24:52,799

you are here as an expert on precision

549

00:24:58,549 --> 00:24:55,200

as a former governor and senator i'm not

550

00:25:01,990 --> 00:25:01,110

but i'm still extraordinarily glad to be

551
00:25:02,950 --> 00:25:02,000
here

552
00:25:05,269 --> 00:25:02,960
and i

553
00:25:07,430 --> 00:25:05,279
want to commend i think back um

554
00:25:08,549 --> 00:25:07,440
when i first got this job back in 2008

555
00:25:10,149 --> 00:25:08,559
and nine and

556
00:25:12,390 --> 00:25:10,159
talking with folks here we we thought

557
00:25:13,190 --> 00:25:12,400
about what could be

558
00:25:16,710 --> 00:25:13,200
that

559
00:25:18,149 --> 00:25:16,720
langley could be

560
00:25:19,590 --> 00:25:18,159
bring about and

561
00:25:20,950 --> 00:25:19,600
your team

562
00:25:22,710 --> 00:25:20,960
said

563
00:25:23,909 --> 00:25:22,720

advanced composites modeling and

564

00:25:25,669 --> 00:25:23,919

simulation

565

00:25:26,789 --> 00:25:25,679

all of the activities around big data

566

00:25:29,510 --> 00:25:26,799

and others that are going to come out of

567

00:25:32,470 --> 00:25:29,520

this facility and to see that

568

00:25:34,549 --> 00:25:32,480

vision become more and more a reality is

569

00:25:36,549 --> 00:25:34,559

really remarkable i also want to commend

570

00:25:37,830 --> 00:25:36,559

the fact that as we think about

571

00:25:40,230 --> 00:25:37,840

america's

572

00:25:42,390 --> 00:25:40,240

journey into space and we're celebrating

573

00:25:44,470 --> 00:25:42,400

ms johnson's role in that you know the

574

00:25:46,950 --> 00:25:44,480

fact is every in every american

575

00:25:48,630 --> 00:25:46,960

astronaut who ever walked on the moon

576

00:25:51,990 --> 00:25:48,640

did part of their training right here at

577

00:25:54,149 --> 00:25:52,000

nasa langley so in many ways that

578

00:25:56,390 --> 00:25:54,159

the whole notion of america looking to

579

00:25:58,549 --> 00:25:56,400

the stars looking to

580

00:26:00,470 --> 00:25:58,559

the notion of conquering space

581

00:26:02,710 --> 00:26:00,480

started right here at nasa langley and

582

00:26:05,269 --> 00:26:02,720

the notion

583

00:26:07,190 --> 00:26:05,279

that ms johnson

584

00:26:09,909 --> 00:26:07,200

i've also never been called a human

585

00:26:11,830 --> 00:26:09,919

computer either but the idea that what

586

00:26:14,870 --> 00:26:11,840

sheik was able to do

587

00:26:16,549 --> 00:26:14,880

she and her colleagues with

588

00:26:19,750 --> 00:26:16,559

paper pencil adding machines and most

589

00:26:22,470 --> 00:26:19,760

importantly just that plain intellect

590

00:26:25,990 --> 00:26:22,480

just that plain intellect is a

591

00:26:27,269 --> 00:26:26,000

remarkable remarkable accomplishment

592

00:26:29,669 --> 00:26:27,279

i know we're going to hear a little bit

593

00:26:31,909 --> 00:26:29,679

later from margo shatterly who

594

00:26:33,750 --> 00:26:31,919

wrote that the remarkable hidden figures

595

00:26:35,990 --> 00:26:33,760

which turns into a film

596

00:26:38,390 --> 00:26:36,000

and earlier this year

597

00:26:41,430 --> 00:26:38,400

we had miss shetterly come up to capitol

598

00:26:43,430 --> 00:26:41,440

hill and tim kaine and bobby scott and i

599

00:26:46,070 --> 00:26:43,440

sponsored a viewing of the film miss

600

00:26:49,990 --> 00:26:46,080

johnson wasn't able to come but

601
00:26:51,590 --> 00:26:50,000
we filled an auditorium 400 strong

602
00:26:53,110 --> 00:26:51,600
particularly of virginia young people

603
00:26:55,669 --> 00:26:53,120
and they hung

604
00:26:56,789 --> 00:26:55,679
not on on not only on the film but on

605
00:26:58,549 --> 00:26:56,799
the words

606
00:27:00,549 --> 00:26:58,559
of our keynote speaker and the

607
00:27:01,830 --> 00:27:00,559
inspiration that provided to

608
00:27:04,230 --> 00:27:01,840
particularly

609
00:27:07,990 --> 00:27:04,240
you know women and children of color to

610
00:27:09,830 --> 00:27:08,000
recognize that uh the you can

611
00:27:12,549 --> 00:27:09,840
your imagination and as far as you can

612
00:27:13,990 --> 00:27:12,559
reach is only limited by

613
00:27:15,750 --> 00:27:14,000

your your

614

00:27:18,230 --> 00:27:15,760

willingness to take on great challenges

615

00:27:19,750 --> 00:27:18,240

and the truth is ms johnson represents

616

00:27:21,750 --> 00:27:19,760

that so much so it's a real honor for me

617

00:27:24,310 --> 00:27:21,760

to be here it's an honor for me to

618

00:27:26,870 --> 00:27:24,320

finally get a chance to meet you and

619

00:27:29,029 --> 00:27:26,880

to go along with all these other we saw

620

00:27:31,350 --> 00:27:29,039

in that dave that video presentation you

621

00:27:33,190 --> 00:27:31,360

had like a little memorial from the

622

00:27:34,870 --> 00:27:33,200

state we also i want to go over and

623

00:27:36,149 --> 00:27:34,880

present to miss johnson right now

624

00:27:38,470 --> 00:27:36,159

something that tim and i put into the

625

00:27:41,110 --> 00:27:38,480

congressional record uh recognizing your

626

00:27:42,389 --> 00:27:41,120

great contribution and uh

627

00:27:44,950 --> 00:27:42,399

the fact that

628

00:27:46,630 --> 00:27:44,960

your story needs to be taught in every

629

00:28:14,710 --> 00:27:46,640

school not only across virginia but

630

00:28:14,720 --> 00:28:23,350

stop

631

00:28:28,549 --> 00:28:26,470

thank you so much for that uh

632

00:28:31,430 --> 00:28:28,559

doing that that means a lot so thank you

633

00:28:33,750 --> 00:28:31,440

very much all right now i'm happy to

634

00:28:35,990 --> 00:28:33,760

introduce a leader who works tirelessly

635

00:28:38,549 --> 00:28:36,000

to build a new virginia economy based on

636

00:28:40,710 --> 00:28:38,559

21st century industries such as cyber

637

00:28:42,789 --> 00:28:40,720

security biosciences and advanced

638

00:28:44,870 --> 00:28:42,799

manufacturing and i think it's safe to

639

00:28:46,789 --> 00:28:44,880

say that langley's new computational

640

00:28:48,470 --> 00:28:46,799

center is a good example of the kind of

641

00:28:50,870 --> 00:28:48,480

high-tech future he sees for the

642

00:28:52,789 --> 00:28:50,880

commonwealth of virginia as chairman of

643

00:28:55,190 --> 00:28:52,799

the national governors association he

644

00:28:57,510 --> 00:28:55,200

made cyber security his signature

645

00:28:59,350 --> 00:28:57,520

signature initiative and as a result

646

00:29:00,230 --> 00:28:59,360

been called the cyber governor of the

647

00:29:03,190 --> 00:29:00,240

year

648

00:29:05,350 --> 00:29:03,200

he was named 2016 bio governor of the

649

00:29:07,510 --> 00:29:05,360

year by the biotechnology innovation

650

00:29:10,070 --> 00:29:07,520

organization and was twice elected

651
00:29:11,669 --> 00:29:10,080
chairman of the chesapeake bay executive

652
00:29:14,070 --> 00:29:11,679
council i also know he's one of the

653
00:29:17,430 --> 00:29:14,080
first governors who flew in a drone over

654
00:29:19,590 --> 00:29:17,440
at wallops about what two months ago so

655
00:29:21,510 --> 00:29:19,600
another first

656
00:29:23,350 --> 00:29:21,520
he has worked to make virginia an open

657
00:29:25,750 --> 00:29:23,360
and welcoming place to do business and

658
00:29:27,990 --> 00:29:25,760
has led 30 trade missions to more than

659
00:29:29,430 --> 00:29:28,000
two dozen countries

660
00:29:32,070 --> 00:29:29,440
so we're very glad to have you back

661
00:29:34,470 --> 00:29:32,080
again uh governor so please welcome the

662
00:29:36,549 --> 00:29:34,480
72nd governor of the great commonwealth

663
00:29:44,230 --> 00:29:36,559

of virginia the honorable terry

664

00:29:47,909 --> 00:29:45,990

thank you everybody good afternoon thank

665

00:29:49,909 --> 00:29:47,919

you thank you thank you

666

00:29:51,430 --> 00:29:49,919

i mean first of all i want to

667

00:29:54,070 --> 00:29:51,440

thank david for his tremendous

668

00:29:55,590 --> 00:29:54,080

leadership he started here 38 years ago

669

00:29:57,110 --> 00:29:55,600

and is the director of this langley

670

00:29:58,710 --> 00:29:57,120

research center i'm telling you david

671

00:30:00,389 --> 00:29:58,720

you have done a magnificent job let's

672

00:30:04,070 --> 00:30:00,399

give david a great round of applause if

673

00:30:07,430 --> 00:30:05,669

mayor tuck it's great to be back in the

674

00:30:09,029 --> 00:30:07,440

greatest city in the united states of

675

00:30:10,630 --> 00:30:09,039

america back in hampton the greatest

676

00:30:12,950 --> 00:30:10,640

city and the greatest state the greatest

677

00:30:16,870 --> 00:30:12,960

nation on earth it all comes back to

678

00:30:18,470 --> 00:30:16,880

virginia does it not folks

679

00:30:20,149 --> 00:30:18,480

and to catherine what an honor to be

680

00:30:22,070 --> 00:30:20,159

with you today

681

00:30:24,870 --> 00:30:22,080

we are so honored to have you here today

682

00:30:27,190 --> 00:30:24,880

at this magnificent facility

683

00:30:28,950 --> 00:30:27,200

we love langley research center here in

684

00:30:30,950 --> 00:30:28,960

the commonwealth of virginia first of

685

00:30:33,590 --> 00:30:30,960

all for what it does for us economically

686

00:30:36,549 --> 00:30:33,600

about 1.2 billion a year

687

00:30:38,230 --> 00:30:36,559

of economic activity uh it seems like

688

00:30:39,990 --> 00:30:38,240

just yesterday but it was two and a half

689

00:30:41,990 --> 00:30:40,000

years ago i cut the ribbon on this very

690

00:30:43,590 --> 00:30:42,000

building that we're in today and

691

00:30:45,510 --> 00:30:43,600

the senator and i were back recently for

692

00:30:46,950 --> 00:30:45,520

the measurement systems we put the

693

00:30:48,549 --> 00:30:46,960

shovel in the ground and to be here

694

00:30:50,789 --> 00:30:48,559

today again for this beautiful ribbon

695

00:30:53,350 --> 00:30:50,799

cutting really is something very special

696

00:30:55,029 --> 00:30:53,360

we love langley research facility first

697

00:30:56,549 --> 00:30:55,039

of all we would not be able to be in the

698

00:30:58,630 --> 00:30:56,559

air we would never been able to go to

699

00:31:00,630 --> 00:30:58,640

space we're not for langley research and

700

00:31:02,230 --> 00:31:00,640

we thank you all for that especially

701
00:31:04,789 --> 00:31:02,240
those politicians who spent a lot of

702
00:31:06,549 --> 00:31:04,799
time in the air i thank you for safe and

703
00:31:08,070 --> 00:31:06,559
shorter flights today

704
00:31:09,750 --> 00:31:08,080
but what you've been able to build for

705
00:31:11,350 --> 00:31:09,760
us for the future

706
00:31:13,029 --> 00:31:11,360
this morning senator and i are up at a

707
00:31:14,789 --> 00:31:13,039
great event where with the new fiber

708
00:31:16,310 --> 00:31:14,799
optic cables coming into the united

709
00:31:18,870 --> 00:31:16,320
states of america where is that coming

710
00:31:20,470 --> 00:31:18,880
to virginia beach of course

711
00:31:22,470 --> 00:31:20,480
the only place it should come to

712
00:31:25,110 --> 00:31:22,480
virginia but that new cable will bring

713
00:31:26,870 --> 00:31:25,120

this fastest most reliable data which

714

00:31:28,549 --> 00:31:26,880

we'll be able to use for this facility

715

00:31:30,710 --> 00:31:28,559

now which will be collection all the

716

00:31:33,269 --> 00:31:30,720

langley research data we will have in

717

00:31:35,430 --> 00:31:33,279

one place as soon as i leave here i'm

718

00:31:37,430 --> 00:31:35,440

going off to wallops island

719

00:31:39,110 --> 00:31:37,440

and we are going to launch our first

720

00:31:40,870 --> 00:31:39,120

maritime drone

721

00:31:42,549 --> 00:31:40,880

virginia controls the air we have more

722

00:31:44,789 --> 00:31:42,559

drone companies here than any other

723

00:31:47,190 --> 00:31:44,799

state in america we control the land

724

00:31:49,269 --> 00:31:47,200

we're building 55 sensors for automated

725

00:31:52,389 --> 00:31:49,279

vehicles and by the end of the today we

726

00:31:53,909 --> 00:31:52,399

will own the sea the land the sea and

727

00:31:59,269 --> 00:31:53,919

the air all controlled by the

728

00:32:02,389 --> 00:32:00,630

and katherine none of that would have

729

00:32:03,830 --> 00:32:02,399

happened but for you

730

00:32:05,350 --> 00:32:03,840

so i want to thank you and as the

731

00:32:06,950 --> 00:32:05,360

director said i did recently i'm the

732

00:32:09,430 --> 00:32:06,960

first governor to actually go up in an

733

00:32:11,110 --> 00:32:09,440

unmanned system i went up a drone off of

734

00:32:12,950 --> 00:32:11,120

our new wallops island if you did now

735

00:32:15,190 --> 00:32:12,960

virginia's the only state in america

736

00:32:17,269 --> 00:32:15,200

that has a drone runway three thousand

737

00:32:19,110 --> 00:32:17,279

foot runway down at wallops island i had

738

00:32:21,269 --> 00:32:19,120

a robot in the pilot chair i hit a

739

00:32:22,950 --> 00:32:21,279

button it took off we went eight miles

740

00:32:24,710 --> 00:32:22,960

over the atlantic i hit a button said

741

00:32:25,909 --> 00:32:24,720

land and the thing turned around came

742

00:32:27,909 --> 00:32:25,919

back

743

00:32:29,669 --> 00:32:27,919

that's a distinction uh as you probably

744

00:32:31,909 --> 00:32:29,679

read in the paper uh i just jumped out

745

00:32:34,310 --> 00:32:31,919

of an airplane at ten thousand feet

746

00:32:36,470 --> 00:32:34,320

i had a parachute uh landed at a wounded

747

00:32:38,310 --> 00:32:36,480

warrior event in virginia beach as i

748

00:32:41,830 --> 00:32:38,320

like to say my security he's only got

749

00:32:44,950 --> 00:32:41,840

four months left who cares let him jump

750

00:32:46,470 --> 00:32:44,960

cares anymore but uh all of these great

751
00:32:48,630 --> 00:32:46,480
things that we're doing here leading on

752
00:32:50,230 --> 00:32:48,640
cyber leading on data centers leading on

753
00:32:52,149 --> 00:32:50,240
autonomous vehicles now a leader on

754
00:32:53,990 --> 00:32:52,159
biotech a lot of that can come back here

755
00:32:55,509 --> 00:32:54,000
to the langley research center and i do

756
00:32:57,990 --> 00:32:55,519
want to thank all of you and to

757
00:32:59,750 --> 00:32:58,000
catherine you have been a trailblazer

758
00:33:01,190 --> 00:32:59,760
you think back into the 50s what you

759
00:33:02,950 --> 00:33:01,200
were able to do when a lot of

760
00:33:04,870 --> 00:33:02,960
discrimination and people tried to

761
00:33:06,789 --> 00:33:04,880
constantly hold you down

762
00:33:08,549 --> 00:33:06,799
it reminds me of another groundbreaking

763
00:33:10,230 --> 00:33:08,559

i just did i just named the new building

764

00:33:12,230 --> 00:33:10,240

the new state office building in

765

00:33:14,950 --> 00:33:12,240

richmond the new attorney general office

766

00:33:17,350 --> 00:33:14,960

i named that after another trailblazer a

767

00:33:19,669 --> 00:33:17,360

16 year old young african-american girl

768

00:33:25,590 --> 00:33:19,679

by the name of barbara johns our state

769

00:33:29,509 --> 00:33:27,350

our state office building today is now

770

00:33:31,350 --> 00:33:29,519

the barbara john state office building

771

00:33:33,430 --> 00:33:31,360

because like you catherine

772

00:33:35,029 --> 00:33:33,440

this 16 year old girl in prince edward

773

00:33:36,950 --> 00:33:35,039

county virginia had a very difficult

774

00:33:39,029 --> 00:33:36,960

time in the 50s

775

00:33:40,310 --> 00:33:39,039

two sets of schools white students black

776

00:33:42,470 --> 00:33:40,320

students

777

00:33:45,110 --> 00:33:42,480

and she led a revolt in the 50s at the

778

00:33:46,789 --> 00:33:45,120

age of 16 years old and said this isn't

779

00:33:50,070 --> 00:33:46,799

fair and it's not right

780

00:33:52,549 --> 00:33:50,080

and she led 400 of her fellow students

781

00:33:55,350 --> 00:33:52,559

got them all into the gym 16 years old

782

00:33:57,190 --> 00:33:55,360

in the 50s in prince edward county

783

00:33:58,710 --> 00:33:57,200

think of that

784

00:34:00,149 --> 00:33:58,720

and then had someone go down the street

785

00:34:01,750 --> 00:34:00,159

and call the principal and say there's a

786

00:34:03,430 --> 00:34:01,760

student down here in farmville come get

787

00:34:05,190 --> 00:34:03,440

him as soon as the principal left she

788

00:34:07,350 --> 00:34:05,200

got them all in close the doors and she

789

00:34:09,349 --> 00:34:07,360

marched all 400 out and she is we are

790

00:34:12,629 --> 00:34:09,359

not coming back until we have an equal

791

00:34:15,589 --> 00:34:12,639

school and she got that done

792

00:34:19,190 --> 00:34:17,829

you are that same trailblazer

793

00:34:20,550 --> 00:34:19,200

so when i think of virginia in the

794

00:34:22,310 --> 00:34:20,560

history of what we've gone through we

795

00:34:24,389 --> 00:34:22,320

have had so maggie walker we've had so

796

00:34:25,589 --> 00:34:24,399

many great leaders you are at that top

797

00:34:27,270 --> 00:34:25,599

of that list

798

00:34:29,270 --> 00:34:27,280

so on behalf of everybody who's had to

799

00:34:30,869 --> 00:34:29,280

knock down walls and knock down barriers

800

00:34:32,550 --> 00:34:30,879

we want to thank you because you were at

801
00:34:34,149 --> 00:34:32,560
the forefront

802
00:34:35,750 --> 00:34:34,159
it's easier now to come behind but we

803
00:34:37,909 --> 00:34:35,760
needed always somebody who was that ram

804
00:34:39,270 --> 00:34:37,919
and rod that was you catherine so on

805
00:34:40,950 --> 00:34:39,280
behalf of all of us here in the

806
00:34:43,909 --> 00:34:40,960
commonwealth and the united states of

807
00:34:45,750 --> 00:34:43,919
america i thank you for your leadership

808
00:34:46,790 --> 00:34:45,760
and today is not about putting a name on

809
00:34:50,230 --> 00:34:46,800
a wall

810
00:34:55,109 --> 00:34:53,109
today is about every young student

811
00:34:57,349 --> 00:34:55,119
or every young african-american girl

812
00:34:59,510 --> 00:34:57,359
today who's going to school

813
00:35:01,430 --> 00:34:59,520

says i too can do this

814

00:35:03,349 --> 00:35:01,440

i too can be a success

815

00:35:05,829 --> 00:35:03,359

we just met a young woman a junior at

816

00:35:08,630 --> 00:35:05,839

odu when we were two in the facility all

817

00:35:11,510 --> 00:35:08,640

excited katherine johnson was her hero

818

00:35:13,829 --> 00:35:11,520

she is here now

819

00:35:16,710 --> 00:35:13,839

and she's here because of cancer johnson

820

00:35:18,550 --> 00:35:16,720

and that is her future so today's not

821

00:35:20,710 --> 00:35:18,560

about names today's catherine would you

822

00:35:22,790 --> 00:35:20,720

have been a trailblazer and your name

823

00:35:24,790 --> 00:35:22,800

will go on and on to all of those young

824

00:35:26,550 --> 00:35:24,800

women who follow behind you who have the

825

00:35:28,150 --> 00:35:26,560

courage to do it because of you

826

00:35:38,230 --> 00:35:28,160

katherine so thank you on behalf of all

827

00:35:38,240 --> 00:35:47,270

yes

828

00:35:50,870 --> 00:35:49,270

thank you very much governor

829

00:35:53,270 --> 00:35:50,880

all right so next we're going to hear

830

00:35:55,750 --> 00:35:53,280

from today's keynote speaker someone who

831

00:35:57,910 --> 00:35:55,760

knows catherine johnson well someone who

832

00:36:00,069 --> 00:35:57,920

has spent years researching the stories

833

00:36:02,310 --> 00:36:00,079

of catherine and the many other female

834

00:36:04,710 --> 00:36:02,320

mathematicians at langley who made such

835

00:36:05,670 --> 00:36:04,720

important contributions to nasa and our

836

00:36:07,270 --> 00:36:05,680

nation

837

00:36:09,349 --> 00:36:07,280

let's welcome back to the center a

838

00:36:12,270 --> 00:36:09,359

distinguished member of nasa langley's

839

00:36:22,150 --> 00:36:12,280

extended family margot lee shetterly

840

00:36:24,069 --> 00:36:22,160

[Applause]

841

00:36:25,670 --> 00:36:24,079

thank you dave and to all of our

842

00:36:28,470 --> 00:36:25,680

distinguished guests

843

00:36:31,190 --> 00:36:28,480

to everyone in the nasa langley family

844

00:36:34,390 --> 00:36:31,200

and most of all to mrs catherine johnson

845

00:36:37,270 --> 00:36:34,400

it is an honor to be here today

846

00:36:39,190 --> 00:36:37,280

in 1962 following the success of john

847

00:36:41,349 --> 00:36:39,200

glenn's orbital space flight the city of

848

00:36:43,030 --> 00:36:41,359

hampton hosted a parade for the mercury

849

00:36:45,589 --> 00:36:43,040

seven astronauts

850

00:36:48,550 --> 00:36:45,599

the astronauts and their families local

851
00:36:50,470 --> 00:36:48,560
politicians nasa executives everybody

852
00:36:53,589 --> 00:36:50,480
toured through the city and a motorcade

853
00:36:55,510 --> 00:36:53,599
of 33 convertibles and throngs of people

854
00:36:57,510 --> 00:36:55,520
came out to celebrate them

855
00:36:59,750 --> 00:36:57,520
now as the public faces of the space

856
00:37:01,270 --> 00:36:59,760
program those men became heroes and

857
00:37:03,670 --> 00:37:01,280
their names were synonymous with

858
00:37:05,349 --> 00:37:03,680
american ingenuity perseverance and

859
00:37:07,750 --> 00:37:05,359
courage

860
00:37:09,990 --> 00:37:07,760
who among the thirty

861
00:37:12,870 --> 00:37:10,000
people who crowded the streets of

862
00:37:15,109 --> 00:37:12,880
hampton my hometown i may add

863
00:37:17,510 --> 00:37:15,119

that day to catch a glimpse of those

864

00:37:20,069 --> 00:37:17,520

mercury 7 astronauts could have guessed

865

00:37:22,550 --> 00:37:20,079

that 55 years later we would be

866

00:37:24,950 --> 00:37:22,560

convening to dedicate this

867

00:37:27,270 --> 00:37:24,960

state-of-the-art data facility to the

868

00:37:29,829 --> 00:37:27,280

woman whose mathematical acuity and

869

00:37:32,230 --> 00:37:29,839

behind-the-scenes calculations

870

00:37:34,630 --> 00:37:32,240

contributed to the success of so many of

871

00:37:36,710 --> 00:37:34,640

those groundbreaking missions

872

00:37:39,349 --> 00:37:36,720

but let's not forget the motto of the

873

00:37:42,550 --> 00:37:39,359

city of hampton is e praetoritis

874

00:37:43,750 --> 00:37:42,560

futurist futura out of the past the

875

00:37:46,470 --> 00:37:43,760

future

876

00:37:49,270 --> 00:37:46,480

the question as always has been which

877

00:37:51,829 --> 00:37:49,280

past and to what future

878

00:37:54,470 --> 00:37:51,839

but today as we dedicate the katherine g

879

00:37:57,589 --> 00:37:54,480

johnson computational facility we take

880

00:38:00,390 --> 00:37:57,599

the time to celebrate mrs johnson's past

881

00:38:02,630 --> 00:38:00,400

her contributions to the success of nasa

882

00:38:04,710 --> 00:38:02,640

to computer science and to our nation's

883

00:38:06,470 --> 00:38:04,720

space program

884

00:38:08,550 --> 00:38:06,480

since the national advisory committee

885

00:38:11,829 --> 00:38:08,560

for aeronautics set up shop here in

886

00:38:13,270 --> 00:38:11,839

hampton in 1917 100 years ago the

887

00:38:15,190 --> 00:38:13,280

langley research center which was

888

00:38:17,270 --> 00:38:15,200

originally called the langley memorial

889

00:38:19,190 --> 00:38:17,280

aeronautical laboratory has been

890

00:38:21,190 --> 00:38:19,200

reaching for the heavens

891

00:38:23,109 --> 00:38:21,200

catherine's work and that of the other

892

00:38:25,510 --> 00:38:23,119

women mathematicians who worked here

893

00:38:28,310 --> 00:38:25,520

with her is the foundation of this

894

00:38:30,710 --> 00:38:28,320

building we are living in a present that

895

00:38:32,950 --> 00:38:30,720

they willed into existence with their

896

00:38:35,030 --> 00:38:32,960

pencils their slide rules their

897

00:38:37,349 --> 00:38:35,040

mechanical calculating machines and of

898

00:38:39,270 --> 00:38:37,359

course their brilliant minds

899

00:38:41,510 --> 00:38:39,280

with katherine johnson's achievements to

900

00:38:44,630 --> 00:38:41,520

inspire us we are called first to

901
00:38:47,030 --> 00:38:44,640
imagine and then to engineer the future

902
00:38:48,790 --> 00:38:47,040
of nasa of our community and of our

903
00:38:50,230 --> 00:38:48,800
country

904
00:38:52,150 --> 00:38:50,240
from the vantage point of the present

905
00:38:54,470 --> 00:38:52,160
it's really easy for us to look at the

906
00:38:56,950 --> 00:38:54,480
past and to assume that what actually

907
00:38:59,349 --> 00:38:56,960
happened was always inevitable seems

908
00:39:01,109 --> 00:38:59,359
like a foregone conclusion for example

909
00:39:03,349 --> 00:39:01,119
that america would triumph over the

910
00:39:05,750 --> 00:39:03,359
russians in the space race

911
00:39:07,910 --> 00:39:05,760
only when we step into our time machine

912
00:39:09,990 --> 00:39:07,920
and examine the past up close do we

913
00:39:11,990 --> 00:39:10,000

understand that the path to the future

914

00:39:14,390 --> 00:39:12,000

is rarely smooth or direct or

915

00:39:17,589 --> 00:39:14,400

predictable and catherine's story is no

916

00:39:20,470 --> 00:39:17,599

exception but at every fork her talent

917

00:39:22,470 --> 00:39:20,480

her hard work and her character pulled

918

00:39:24,550 --> 00:39:22,480

her toward her destiny

919

00:39:27,270 --> 00:39:24,560

at every turn she made a choice becoming

920

00:39:29,750 --> 00:39:27,280

the protagonist of her own story and

921

00:39:31,670 --> 00:39:29,760

then of ours

922

00:39:34,790 --> 00:39:31,680

her work calculating the trajectory for

923

00:39:37,349 --> 00:39:34,800

john glenn's 1962 orbital flight is only

924

00:39:39,510 --> 00:39:37,359

the most well-known episode in a life

925

00:39:42,470 --> 00:39:39,520

that intersected many of the memorable

926

00:39:44,390 --> 00:39:42,480

events of the 20th century but it's an

927

00:39:46,790 --> 00:39:44,400

anecdote from her youth one that took

928

00:39:49,030 --> 00:39:46,800

place decades before those decisive

929

00:39:51,510 --> 00:39:49,040

weeks in 1962 that i think is

930

00:39:53,510 --> 00:39:51,520

particularly relevant to this occasion

931

00:39:55,589 --> 00:39:53,520

because it paved the way for us to be

932

00:39:57,510 --> 00:39:55,599

here today

933

00:39:59,349 --> 00:39:57,520

katherine johnson graduated from high

934

00:40:00,950 --> 00:39:59,359

school and enrolled in the historically

935

00:40:03,190 --> 00:40:00,960

black college west virginia state

936

00:40:05,430 --> 00:40:03,200

institute at age 14

937

00:40:07,190 --> 00:40:05,440

and in no time she had whipped through

938

00:40:08,710 --> 00:40:07,200

all of the courses in the math

939

00:40:11,750 --> 00:40:08,720

department

940

00:40:13,750 --> 00:40:11,760

now a professor named w.w sheflin clader

941

00:40:15,670 --> 00:40:13,760

he was the third african american in the

942

00:40:17,510 --> 00:40:15,680

country to get a phd in mathematics and

943

00:40:19,510 --> 00:40:17,520

he was born in norfolk

944

00:40:21,589 --> 00:40:19,520

dr clader took note of catherine's

945

00:40:24,630 --> 00:40:21,599

talent and he developed advanced math

946

00:40:26,710 --> 00:40:24,640

classes just for her and in fact he did

947

00:40:29,030 --> 00:40:26,720

more than that what he did was he began

948

00:40:31,510 --> 00:40:29,040

to prepare her for a career as a

949

00:40:34,230 --> 00:40:31,520

research mathematician which for any

950

00:40:38,069 --> 00:40:34,240

woman in the 1930s much less a black

951
00:40:41,349 --> 00:40:38,079
woman was essentially non-existent

952
00:40:46,470 --> 00:40:41,359
where will i find a job she asked him

953
00:40:53,190 --> 00:40:49,670
now i've come to think of sheflin clader

954
00:40:55,670 --> 00:40:53,200
as the ghost of nasa future

955
00:40:57,670 --> 00:40:55,680
somehow he believed that his star

956
00:41:00,069 --> 00:40:57,680
student would eventually find a career

957
00:41:02,790 --> 00:41:00,079
that was worthy of her talents and he

958
00:41:04,390 --> 00:41:02,800
did all he could to set the cornerstone

959
00:41:05,670 --> 00:41:04,400
of that career

960
00:41:07,990 --> 00:41:05,680
and the fact that a professional

961
00:41:09,910 --> 00:41:08,000
mathematician's job was nowhere on the

962
00:41:11,829 --> 00:41:09,920
horizon when katherine johnson was in

963
00:41:14,069 --> 00:41:11,839

college did nothing to dull her

964

00:41:17,030 --> 00:41:14,079

enthusiasm for that work when she

965

00:41:19,990 --> 00:41:17,040

finally made it to nasa in 1953 this was

966

00:41:22,069 --> 00:41:20,000

16 years after graduation many of those

967

00:41:24,150 --> 00:41:22,079

years spent working as a math teacher in

968

00:41:26,390 --> 00:41:24,160

segregated virginia schools

969

00:41:28,550 --> 00:41:26,400

she was well prepared for the job and

970

00:41:30,230 --> 00:41:28,560

she was so well prepared in fact that

971

00:41:32,710 --> 00:41:30,240

dorothy vaughan who is the head of

972

00:41:35,349 --> 00:41:32,720

langley's all-black west area computing

973

00:41:37,670 --> 00:41:35,359

unit selected her for the assignment in

974

00:41:39,270 --> 00:41:37,680

the flight research division

975

00:41:41,990 --> 00:41:39,280

and i just want to mention that dorothy

976

00:41:44,150 --> 00:41:42,000

vaughn actually taught at moton high

977

00:41:46,309 --> 00:41:44,160

school this was the or this is the black

978

00:41:48,150 --> 00:41:46,319

school in farmville virginia

979

00:41:50,550 --> 00:41:48,160

where barbara johns went to school so

980

00:41:52,230 --> 00:41:50,560

there are a lot of connections here

981

00:41:54,390 --> 00:41:52,240

now dorothy vaughn herself was a

982

00:41:57,589 --> 00:41:54,400

brilliant mathematician and she was also

983

00:41:59,670 --> 00:41:57,599

an excellent manager so dorothy knew

984

00:42:02,069 --> 00:41:59,680

that when she sent katherine johnson to

985

00:42:04,550 --> 00:42:02,079

this hard charging group of brainy

986

00:42:07,349 --> 00:42:04,560

fellas that she was sending the smart

987

00:42:09,349 --> 00:42:07,359

one this is as the john glenn character

988

00:42:11,750 --> 00:42:09,359

mentions in the hidden figures movie

989

00:42:14,630 --> 00:42:11,760

katherine johnson was the right person

990

00:42:16,950 --> 00:42:14,640

at the right time for the job at hand

991

00:42:19,430 --> 00:42:16,960

and it was the rigorous preparation from

992

00:42:21,990 --> 00:42:19,440

her days as a student that would set the

993

00:42:23,990 --> 00:42:22,000

trajectory that would bring her here to

994

00:42:26,230 --> 00:42:24,000

nasa where she could play a role in

995

00:42:28,150 --> 00:42:26,240

determining the future

996

00:42:29,910 --> 00:42:28,160

so any of you students out there who

997

00:42:31,349 --> 00:42:29,920

have ever been in math class and have

998

00:42:34,630 --> 00:42:31,359

asked your teacher

999

00:42:36,710 --> 00:42:34,640

when am i ever going to use this

1000

00:42:38,309 --> 00:42:36,720

i think this might be a really good time

1001
00:42:41,270 --> 00:42:38,319
for you to have a sit down with mrs

1002
00:42:45,589 --> 00:42:43,750
so by now most of us know the details of

1003
00:42:48,230 --> 00:42:45,599
the work that katherine johnson did here

1004
00:42:50,309 --> 00:42:48,240
at nasa we know about the calculations

1005
00:42:52,710 --> 00:42:50,319
she provided for alan shepard's flight

1006
00:42:55,750 --> 00:42:52,720
the calculations that she provided for

1007
00:42:57,270 --> 00:42:55,760
john glenn's pioneering orbital flight

1008
00:42:59,430 --> 00:42:57,280
we know about the math that she

1009
00:43:01,829 --> 00:42:59,440
contributed to the parking orbit

1010
00:43:03,190 --> 00:43:01,839
calculations for the apollo 11 mission

1011
00:43:05,589 --> 00:43:03,200
to the moon

1012
00:43:08,630 --> 00:43:05,599
today all of those things seem

1013
00:43:11,270 --> 00:43:08,640

inevitable but without her past full of

1014

00:43:13,190 --> 00:43:11,280

diverging roads and choices that made

1015

00:43:17,430 --> 00:43:13,200

all the difference we would not be

1016

00:43:18,790 --> 00:43:17,440

standing on the brink of this future

1017

00:43:21,750 --> 00:43:18,800

my first interview with katherine

1018

00:43:23,829 --> 00:43:21,760

johnson took place in 2010 and no matter

1019

00:43:26,950 --> 00:43:23,839

how many times i've heard her story

1020

00:43:29,510 --> 00:43:26,960

since then i am always blown away and

1021

00:43:31,829 --> 00:43:29,520

very touched but what she did in that

1022

00:43:33,990 --> 00:43:31,839

interview and over the course of many

1023

00:43:36,950 --> 00:43:34,000

more interviews was to tell me the

1024

00:43:39,190 --> 00:43:36,960

stories of other women she told me about

1025

00:43:41,190 --> 00:43:39,200

her admiration for mary jackson who

1026
00:43:42,390 --> 00:43:41,200
became nasa's first black female

1027
00:43:44,309 --> 00:43:42,400
engineer

1028
00:43:46,150 --> 00:43:44,319
she told me that she considered dorothy

1029
00:43:48,069 --> 00:43:46,160
vaughn to be one of the smartest people

1030
00:43:49,670 --> 00:43:48,079
that she has ever met

1031
00:43:51,349 --> 00:43:49,680
and she told me that when she speaks to

1032
00:43:53,750 --> 00:43:51,359
students in classrooms and she has

1033
00:43:56,309 --> 00:43:53,760
always been working to inspire kids to

1034
00:43:58,630 --> 00:43:56,319
choose stem careers that she never fails

1035
00:44:00,390 --> 00:43:58,640
to mention dr christine darden who

1036
00:44:03,430 --> 00:44:00,400
started in the computing pool at langley

1037
00:44:05,750 --> 00:44:03,440
in 1967 and went to on to become a top

1038
00:44:08,630 --> 00:44:05,760

expert on the phenomenon of sonic booms

1039

00:44:10,710 --> 00:44:08,640

and she is here today

1040

00:44:12,630 --> 00:44:10,720

she told me about marge hannah the white

1041

00:44:14,950 --> 00:44:12,640

woman who was the first supervisor of

1042

00:44:16,790 --> 00:44:14,960

the segregated west area group and marge

1043

00:44:18,710 --> 00:44:16,800

eventually joined catherine's group and

1044

00:44:21,030 --> 00:44:18,720

did forward-thinking research into

1045

00:44:22,950 --> 00:44:21,040

missions to mars jupiter and saturn and

1046

00:44:24,150 --> 00:44:22,960

this was back in the late 60s and early

1047

00:44:26,309 --> 00:44:24,160

70s

1048

00:44:28,550 --> 00:44:26,319

so by telling her own story catherine

1049

00:44:30,550 --> 00:44:28,560

johnson put me onto the story of the

1050

00:44:31,430 --> 00:44:30,560

black women in the west area computing

1051
00:44:33,430 --> 00:44:31,440
group

1052
00:44:35,670 --> 00:44:33,440
she led me to the white women of the

1053
00:44:38,470 --> 00:44:35,680
east area computing group as well and in

1054
00:44:40,790 --> 00:44:38,480
fact when we celebrate her we celebrate

1055
00:44:43,109 --> 00:44:40,800
the women who worked as computers

1056
00:44:45,270 --> 00:44:43,119
mathematicians technicians

1057
00:44:47,750 --> 00:44:45,280
scientists and engineers at all of the

1058
00:44:48,710 --> 00:44:47,760
naca and nasa installations over the

1059
00:44:51,750 --> 00:44:48,720
years

1060
00:44:53,910 --> 00:44:51,760
her story is a story of curiosity and

1061
00:44:57,349 --> 00:44:53,920
the thirst for knowledge that as is at

1062
00:44:59,589 --> 00:44:57,359
the core of this agency

1063
00:45:01,430 --> 00:44:59,599

my curiosity about catherine's story

1064

00:45:03,670 --> 00:45:01,440

planted the seed for hidden figures and

1065

00:45:04,790 --> 00:45:03,680

what i've come to believe after years of

1066

00:45:07,030 --> 00:45:04,800

research

1067

00:45:09,030 --> 00:45:07,040

is that the world that took shape over

1068

00:45:10,150 --> 00:45:09,040

the course of the 20th century which

1069

00:45:13,030 --> 00:45:10,160

many of

1070

00:45:16,069 --> 00:45:13,040

us call the american century

1071

00:45:18,550 --> 00:45:16,079

this world of airplanes of spaceships

1072

00:45:19,750 --> 00:45:18,560

missiles computers communications

1073

00:45:22,230 --> 00:45:19,760

technology

1074

00:45:24,630 --> 00:45:22,240

that world is in many ways the history

1075

00:45:27,430 --> 00:45:24,640

of women sitting in rooms like the ones

1076

00:45:29,270 --> 00:45:27,440

here at langley doing math

1077

00:45:31,510 --> 00:45:29,280

and with all of those shoulders to stand

1078

00:45:34,069 --> 00:45:31,520

on there is no telling what we will be

1079

00:45:36,710 --> 00:45:34,079

able to achieve in the future

1080

00:45:40,470 --> 00:45:36,720

so catherine telling your story has been

1081

00:45:43,990 --> 00:45:40,480

an honor your work changed our history

1082

00:45:46,790 --> 00:45:44,000

and your history has changed our future

1083

00:45:48,280 --> 00:45:46,800

so thank you happy belated birthday and

1084

00:45:58,630 --> 00:45:48,290

congratulations

1085

00:46:03,030 --> 00:45:59,589

thank you

1086

00:46:05,670 --> 00:46:03,040

words and i i'll just share margaret and

1087

00:46:07,430 --> 00:46:05,680

i were talking in the facility uh before

1088

00:46:09,910 --> 00:46:07,440

the uh celebration

1089

00:46:12,390 --> 00:46:09,920

and it's just amazing that uh we're here

1090

00:46:13,349 --> 00:46:12,400

during our centennial year

1091

00:46:18,230 --> 00:46:13,359

uh

1092

00:46:20,630 --> 00:46:18,240

of this building

1093

00:46:23,190 --> 00:46:20,640

uh with somebody who had such an impact

1094

00:46:24,710 --> 00:46:23,200

on our first 100 years and this new

1095

00:46:26,309 --> 00:46:24,720

facility is really going to lay the

1096

00:46:27,349 --> 00:46:26,319

groundwork for our second hundred years

1097

00:46:28,870 --> 00:46:27,359

so it's just

1098

00:46:31,030 --> 00:46:28,880

as i tell people all the time you can't

1099

00:46:33,030 --> 00:46:31,040

make his stuff up it all came together

1100

00:46:36,390 --> 00:46:33,040

in the same year but it's just an

1101
00:46:39,430 --> 00:46:36,400
amazing story and uh that's a good lead

1102
00:46:42,390 --> 00:46:39,440
in to share a special video message from

1103
00:46:43,460 --> 00:46:42,400
our guest of honor today so let's show

1104
00:46:54,710 --> 00:46:43,470
that video

1105
00:46:57,270 --> 00:46:54,720
[Music]

1106
00:47:00,390 --> 00:46:57,280
you want my honest dance i think they're

1107
00:47:05,430 --> 00:47:02,390
i was excited

1108
00:47:07,990 --> 00:47:05,440
for something new

1109
00:47:10,630 --> 00:47:08,000
always like something new

1110
00:47:12,710 --> 00:47:10,640
but give us credits to everybody who

1111
00:47:16,870 --> 00:47:12,720
helped

1112
00:47:20,870 --> 00:47:16,880
i didn't do anything alone but

1113
00:47:22,950 --> 00:47:20,880

try to go to the root of the question

1114

00:47:25,850 --> 00:47:22,960

and

1115

00:47:32,630 --> 00:47:25,860

succeeded there

1116

00:47:36,309 --> 00:47:34,150

do your best

1117

00:47:39,109 --> 00:47:36,319

but like it

1118

00:47:40,549 --> 00:47:39,119

like what you do and you then you will

1119

00:47:43,930 --> 00:47:40,559

do your best

1120

00:47:51,510 --> 00:47:43,940

if you don't like it same morning

1121

00:47:54,150 --> 00:47:51,520

[Music]

1122

00:47:58,069 --> 00:47:54,160

well now if they just did the hard work

1123

00:48:02,150 --> 00:47:58,079

that i did which was my job

1124

00:48:05,349 --> 00:48:02,160

i did it every day i never missed a day

1125

00:48:06,549 --> 00:48:05,359

never stayed home playing stick and

1126
00:48:07,349 --> 00:48:06,559
stuff

1127
00:48:08,150 --> 00:48:07,359
but

1128
00:48:10,950 --> 00:48:08,160
my

1129
00:48:12,790 --> 00:48:10,960
problem was to answer

1130
00:48:15,589 --> 00:48:12,800
questions

1131
00:48:17,829 --> 00:48:15,599
and i did that to the best of my ability

1132
00:48:20,870 --> 00:48:17,839
at all times

1133
00:48:23,349 --> 00:48:20,880
correct or incorrect

1134
00:48:26,850 --> 00:48:23,359
but that's my theory

1135
00:48:34,230 --> 00:48:26,860
do your best all the time

1136
00:48:37,109 --> 00:48:34,240
[Music]

1137
00:48:38,950 --> 00:48:37,119
i'll be exceedingly honored and

1138
00:48:42,390 --> 00:48:38,960

greatly honored

1139

00:48:45,190 --> 00:48:42,400

but you know math is the same

1140

00:48:47,750 --> 00:48:45,200

but i gave you that answer last year

1141

00:48:48,790 --> 00:48:47,760

it's the same name today

1142

00:48:51,750 --> 00:48:48,800

a lot

1143

00:48:54,150 --> 00:48:51,760

man things i liked what i was doing i

1144

00:48:58,390 --> 00:48:54,160

liked working

1145

00:49:01,109 --> 00:48:58,400

i liked the stars and stories

1146

00:49:03,349 --> 00:49:01,119

we were telling

1147

00:49:06,230 --> 00:49:03,359

and it was a joy

1148

00:49:08,790 --> 00:49:06,240

to contribute to the literature

1149

00:49:11,829 --> 00:49:08,800

that was going to be coming out

1150

00:49:23,670 --> 00:49:11,839

but little did i think

1151
00:49:25,670 --> 00:49:24,549
yes

1152
00:49:29,650 --> 00:49:25,680
that was

1153
00:49:29,660 --> 00:49:44,950
[Applause]

1154
00:49:48,150 --> 00:49:46,870
so thank you catherine for everything

1155
00:49:50,069 --> 00:49:48,160
you've done

1156
00:49:51,829 --> 00:49:50,079
uh to like i said shape that first

1157
00:49:53,670 --> 00:49:51,839
hundred years and lay the foundation for

1158
00:49:55,510 --> 00:49:53,680
the second hundred years just amazing

1159
00:49:57,750 --> 00:49:55,520
they actually asked me if i wanted to

1160
00:50:00,470 --> 00:49:57,760
see that video yesterday and i told them

1161
00:50:02,630 --> 00:50:00,480
no i didn't i wanted to see it real time

1162
00:50:05,910 --> 00:50:02,640
today and it certainly didn't disappoint

1163
00:50:07,190 --> 00:50:05,920

it was it was amazing just just fanta

1164

00:50:08,470 --> 00:50:07,200

blew me away

1165

00:50:11,190 --> 00:50:08,480

all right so i also want to thank

1166

00:50:13,750 --> 00:50:11,200

everyone who's helped to make this day a

1167

00:50:16,069 --> 00:50:13,760

really a reality our partners at the u.s

1168

00:50:18,069 --> 00:50:16,079

army corps of engineers norfolk district

1169

00:50:19,510 --> 00:50:18,079

everyone at turner construction and our

1170

00:50:21,510 --> 00:50:19,520

team here including our center

1171

00:50:23,910 --> 00:50:21,520

operations directorate in the office of

1172

00:50:25,589 --> 00:50:23,920

chief information officer

1173

00:50:26,950 --> 00:50:25,599

so it's a beautiful building and i know

1174

00:50:28,549 --> 00:50:26,960

it and

1175

00:50:30,870 --> 00:50:28,559

that and the people who are working it

1176
00:50:33,430 --> 00:50:30,880
will help us reach new heights reveal

1177
00:50:35,109 --> 00:50:33,440
the unknown for the benefit of humankind

1178
00:50:36,630 --> 00:50:35,119
that's what nasa does

1179
00:50:38,390 --> 00:50:36,640
pretty cool job

1180
00:50:39,750 --> 00:50:38,400
as i say i've got the coolest job on the

1181
00:50:41,430 --> 00:50:39,760
planet

1182
00:50:43,589 --> 00:50:41,440
so with that it's really time to get

1183
00:50:45,589 --> 00:50:43,599
down to business and officially open our

1184
00:50:47,750 --> 00:50:45,599
new building so i'd like to ask today's

1185
00:50:50,630 --> 00:50:47,760
speakers to join me for the ceremonial

1186
00:50:52,710 --> 00:50:50,640
ribbon cutting over here to the right so

1187
00:50:54,630 --> 00:50:52,720
miss johnson if you can move over there

1188
00:50:56,230 --> 00:50:54,640

also i'd like to ask loretta kelleman

1189

00:50:58,470 --> 00:50:56,240

director of our center operations

1190

00:51:00,549 --> 00:50:58,480

director to join us over there as

1191

00:51:02,230 --> 00:51:00,559

well her team

1192

00:51:03,829 --> 00:51:02,240

and the great work uh we wouldn't be

1193

00:51:05,589 --> 00:51:03,839

here having this ribbon cutting today

1194

00:51:45,510 --> 00:51:05,599

without her team so let's all go over

1195

00:52:16,150 --> 00:51:56,150

all right

1196

00:52:19,270 --> 00:52:17,190

four

1197

00:52:31,430 --> 00:52:19,280

three two

1198

00:52:33,990 --> 00:52:32,950

ladies and gentlemen i'm rob wyman the

1199

00:52:35,750 --> 00:52:34,000

lead for langley's office of

1200

00:52:37,190 --> 00:52:35,760

communications and on behalf of director

1201

00:52:39,030 --> 00:52:37,200

bowles and the remainder of the staff

1202

00:52:40,150 --> 00:52:39,040

here thank you for coming for those of

1203

00:52:41,430 --> 00:52:40,160

you in the room please sit tight for

1204

00:52:42,630 --> 00:52:41,440

just a minute we have some announcements

1205

00:52:44,630 --> 00:52:42,640

for you but for those of you who

1206

00:52:46,470 --> 00:52:44,640

virtually joined us online from nasa tv

1207

00:52:48,230 --> 00:52:46,480

and facebook live and we counted that

1208

00:52:50,549 --> 00:52:48,240

include upward of 20 different countries

1209

00:52:52,870 --> 00:52:50,559

from around the world joined us today

1210

00:52:55,430 --> 00:52:52,880

thank you so much this concludes the

1211

00:52:56,630 --> 00:52:55,440

televised portion of today's ceremony

1212

00:52:58,790 --> 00:52:56,640

thank you for helping us celebrate