



1  
00:00:27,640 --> 00:00:26,290  
we'll go ahead and go to questions here

2  
00:00:29,830 --> 00:00:27,650  
in Houston if you have no opening

3  
00:00:31,320 --> 00:00:29,840  
statement and we'll start with mark

4  
00:00:34,840 --> 00:00:31,330  
Cairo the Houston Chronicle

5  
00:00:37,570 --> 00:00:34,850  
good morning what questions your Sacko

6  
00:00:39,880 --> 00:00:37,580  
you spoke before the mission was some

7  
00:00:43,270 --> 00:00:39,890  
enthusiasm about the opportunity to

8  
00:00:45,070 --> 00:00:43,280  
leave academia to pursue some research

9  
00:00:47,920 --> 00:00:45,080  
in space including your experimental

10  
00:00:50,170 --> 00:00:47,930  
zeolites I just wonder how you assess

11  
00:00:52,900 --> 00:00:50,180  
that experience now was it worth the

12  
00:00:54,430 --> 00:00:52,910  
training the launch delays has the

13  
00:00:56,709 --> 00:00:54,440

mission been long enough for your work

14

00:00:58,630 --> 00:00:56,719

and you might just comment on your

15

00:01:14,170 --> 00:00:58,640

zeolite experiment do you think it's

16

00:01:16,090 --> 00:01:14,180

benefited tremendous time about standing

17

00:01:17,740 --> 00:01:16,100

results it's going to be difficult for

18

00:01:19,390 --> 00:01:17,750

me to comment exactly on what those

19

00:01:21,190 --> 00:01:19,400

results are going to be they look pretty

20

00:01:22,780 --> 00:01:21,200

good so far based on what I can see but

21

00:01:24,490 --> 00:01:22,790

we really have to go back to the lab and

22

00:01:26,469 --> 00:01:24,500

use an electron microscope and some

23

00:01:28,240 --> 00:01:26,479

other pretty sophisticated equipment to

24

00:01:31,899 --> 00:01:28,250

look at just how long these crystals

25

00:01:33,039 --> 00:01:31,909

have grown but on a quick look based on

26  
00:01:35,410 --> 00:01:33,049  
what you can see with the eye everything

27  
00:01:36,940 --> 00:01:35,420  
seems to be going very very well I'm

28  
00:01:38,770 --> 00:01:36,950  
real excited about that learned an awful

29  
00:01:40,390 --> 00:01:38,780  
lot about doing things in space which is

30  
00:01:41,710 --> 00:01:40,400  
a little different that I had imagined

31  
00:01:43,840 --> 00:01:41,720  
or the way that I had researched it

32  
00:01:45,069 --> 00:01:43,850  
pretty well and that's what I'm here for

33  
00:01:46,450 --> 00:01:45,079  
I'm here to learn and pass on to my

34  
00:01:48,280 --> 00:01:46,460  
other colleagues or the future they can

35  
00:01:50,560 --> 00:01:48,290  
do well so if we do want with the

36  
00:01:53,109 --> 00:01:50,570  
zeolite space experiment which I fully

37  
00:01:54,999 --> 00:01:53,119  
expect we will I think that we can have

38  
00:01:57,609 --> 00:01:55,009

some major breakthroughs down the road

39

00:01:59,410 --> 00:01:57,619

it takes some time we don't we can't run

40

00:02:01,359 --> 00:01:59,420

a lot of experiments up here we really

41

00:02:02,770 --> 00:02:01,369

need a station or something like that to

42

00:02:05,679 --> 00:02:02,780

spend a long a period of time and be

43

00:02:08,620 --> 00:02:05,689

able to iterate off the results that I

44

00:02:10,150 --> 00:02:08,630

feel that these preliminary results have

45

00:02:12,220 --> 00:02:10,160

based on what we had done at us about

46

00:02:13,930 --> 00:02:12,230

one of the follow-on to that certainly

47

00:02:15,520 --> 00:02:13,940

giving us our lead the right direction

48

00:02:24,490 --> 00:02:15,530

as we look towards the space station

49

00:02:30,970 --> 00:02:24,500

Terra Colombia stand by for Marshall PA

50

00:02:41,030 --> 00:02:34,580

TV here in Huntsville my question is for

51  
00:02:42,440 --> 00:02:41,040  
dr. Leslie dr. my question is to get you

52  
00:02:44,300 --> 00:02:42,450  
to please comment on the role that

53  
00:02:46,280 --> 00:02:44,310  
Marshall has played in this mission we

54  
00:02:48,229 --> 00:02:46,290  
know that the folks here in Huntsville

55  
00:02:50,509 --> 00:02:48,239  
have overseen a lot of the experiments

56  
00:02:52,940 --> 00:02:50,519  
their comment on the support that you

57  
00:02:57,440 --> 00:02:52,950  
have received from the crews here on the

58  
00:03:00,020 --> 00:02:57,450  
ground at Marshall well the support from

59  
00:03:01,640 --> 00:03:00,030  
Marshall has been quite extensive as you

60  
00:03:03,680 --> 00:03:01,650  
know a number of experiments came from

61  
00:03:05,809 --> 00:03:03,690  
Marshall so that's a contribution from

62  
00:03:07,220 --> 00:03:05,819  
the science side we did a lot of our

63  
00:03:09,949 --> 00:03:07,230

training there at Marshall there's a

64

00:03:13,250 --> 00:03:09,959

simulator of this laboratory module

65

00:03:15,319 --> 00:03:13,260

there so we says spent a year and a half

66

00:03:17,449 --> 00:03:15,329

training there and of course during the

67

00:03:19,369 --> 00:03:17,459

fly itself the payload operations

68

00:03:21,229 --> 00:03:19,379

control centers provided a tremendous

69

00:03:23,210 --> 00:03:21,239

amount of support in replanting our

70

00:03:25,099 --> 00:03:23,220

activities and keeping the science going

71

00:03:35,740 --> 00:03:25,109

so Marshalls made a tremendous

72

00:03:41,300 --> 00:03:38,960

Berkey with the huntsville times dr.

73

00:03:44,149 --> 00:03:41,310

leslie if you could tell me what the

74

00:03:46,690 --> 00:03:44,159

benefit is of having gotten a chance to

75

00:03:50,300 --> 00:03:46,700

go up yourself and do your science

76

00:03:54,190 --> 00:03:50,310

instead of simply sending someone up

77

00:03:58,550 --> 00:03:56,539

well I wish I had the luxury to spend

78

00:04:00,979 --> 00:03:58,560

all my time on on my experiment and

79

00:04:02,720 --> 00:04:00,989

watching the the flows being generated

80

00:04:06,199 --> 00:04:02,730

unfortunately I've got other duties here

81

00:04:07,819 --> 00:04:06,209

so I don't have that luxury but the ones

82

00:04:09,410 --> 00:04:07,829

I've seen look really great as you know

83

00:04:11,539 --> 00:04:09,420

we were trying to look for transitions

84

00:04:14,000 --> 00:04:11,549

and certain types of flows that occur on

85

00:04:15,319 --> 00:04:14,010

a rotating sphere and I've seen those I

86

00:04:17,240 --> 00:04:15,329

know there's a lot of data that's gone

87

00:04:19,520 --> 00:04:17,250

down in fact the instrument is running

88

00:04:21,050 --> 00:04:19,530

now as I look over at it so even as we

89

00:04:22,340 --> 00:04:21,060

speaking there's data coming down and I'm

90

00:04:23,930 --> 00:04:22,350

going to look forward to spending a next

91

00:04:25,820 --> 00:04:23,940

year or so going over that data with the

92

00:04:30,770 --> 00:04:25,830

co-investigators and we'll have a great

93

00:04:32,600 --> 00:04:30,780

look at it Martin Burke again even out

94

00:04:34,339 --> 00:04:32,610

Pennington at one point said that he

95

00:04:36,170 --> 00:04:34,349

thought this mission might be sort of

96

00:04:39,020 --> 00:04:36,180

like watching grass grow and that's okay

97

00:04:40,430 --> 00:04:39,030

but I was wondering what you would tell

98

00:04:43,550 --> 00:04:40,440

your folks and friends and Huntsville

99

00:04:45,560 --> 00:04:43,560

about the importance of doing this basic

100

00:04:54,500 --> 00:04:45,570

science that's hard to illustrate to

101  
00:04:59,300 --> 00:04:57,230  
well sure farmers might be excited about

102  
00:05:00,440 --> 00:04:59,310  
watching grass grow and scientists are

103  
00:05:02,840 --> 00:05:00,450  
excited about watching science

104  
00:05:04,010 --> 00:05:02,850  
experiments take place so maybe I'm an

105  
00:05:05,510 --> 00:05:04,020  
optimist but I think the number of

106  
00:05:06,680 --> 00:05:05,520  
experiments we've been doing here for

107  
00:05:08,420 --> 00:05:06,690  
the past two weeks is going to really

108  
00:05:14,770 --> 00:05:08,430  
make a difference so I'm excited about

109  
00:05:17,990 --> 00:05:14,780  
it and finally dr. Leslie if you could

110  
00:05:19,370 --> 00:05:18,000  
talk a little bit if you would for

111  
00:05:20,960 --> 00:05:19,380  
Huntsville people about more

112  
00:05:23,630 --> 00:05:20,970  
specifically what it was like I mean

113  
00:05:25,460 --> 00:05:23,640

when you first reached orbit that very

114

00:05:37,730 --> 00:05:25,470

first moment that you you know began to

115

00:05:40,010 --> 00:05:37,740

experience space around 3GS and we're

116

00:05:48,380 --> 00:05:40,020

killing that lie on our backs we're

117

00:05:50,420 --> 00:05:48,390

filling that to our chest but it's no

118

00:05:52,850 --> 00:05:50,430

longer where my back was but it was

119

00:05:54,620 --> 00:05:52,860

wherever I put my feet so for the next

120

00:05:57,830 --> 00:05:54,630

day or so it took a little getting used

121

00:05:59,630 --> 00:05:57,840

to the slight disorientation but you

122

00:06:01,790 --> 00:05:59,640

adapt after I guess it's different for

123

00:06:04,250 --> 00:06:01,800

individuals but it took me about a day

124

00:06:07,580 --> 00:06:04,260

or so to to adapt to that and it feels

125

00:06:09,470 --> 00:06:07,590

great now this is Marcia Benner the

126

00:06:11,900 --> 00:06:09,480

Associated Press for anyone who'd like

127

00:06:13,790 --> 00:06:11,910

to answer earlier in the mission some of

128

00:06:15,650 --> 00:06:13,800

you mentioned missing pizza and showers

129

00:06:17,630 --> 00:06:15,660

what else are you looking forward to

130

00:06:20,090 --> 00:06:17,640

getting back to and realistically

131

00:06:29,990 --> 00:06:20,100

speaking how much more time do you wish

132

00:06:32,090 --> 00:06:30,000

you had up there welcome to get back but

133

00:06:33,560 --> 00:06:32,100

in addition to that I guess a lot of us

134

00:06:35,510 --> 00:06:33,570

are missing our families I've got a two

135

00:06:37,160 --> 00:06:35,520

natural daughter and I'm real excited

136

00:06:40,190 --> 00:06:37,170

about getting to see her and hold her

137

00:06:41,750 --> 00:06:40,200

again after two weeks but the admission

138

00:06:44,330 --> 00:06:41,760

has been fantastic and as a matter of

139

00:06:45,740 --> 00:06:44,340

fact the oh I know personally I'm open

140

00:06:47,030 --> 00:06:45,750

for at least one wave out there so we

141

00:06:54,200 --> 00:06:47,040

could have spent a little extra time up

142

00:06:58,880 --> 00:06:54,210

here I think Yvonne with Reuters I have

143

00:07:02,540 --> 00:06:58,890

a question for Katie and for Michael do

144

00:07:05,090 --> 00:07:02,550

you feel as if you had enough free time

145

00:07:07,100 --> 00:07:05,100

I know there were there is free time

146

00:07:07,830 --> 00:07:07,110

built into everyone's schedule but do

147

00:08:08,909 --> 00:07:07,840

you

148

00:08:11,640 --> 00:08:08,919

the window and my situation was a little

149

00:08:13,500 --> 00:08:11,650

bit one of the orbiter crew members I

150

00:08:17,100 --> 00:08:13,510

was not tasked on a minute-by-minute

151  
00:08:19,080 --> 00:08:17,110  
basis as was the payload through so my

152  
00:08:21,240 --> 00:08:19,090  
duties consisted mostly in the flight

153  
00:08:24,540 --> 00:08:21,250  
deck and I got a great chance to look

154  
00:08:26,430 --> 00:08:24,550  
out the window the pace for me was very

155  
00:08:28,290 --> 00:08:26,440  
comfortable and I certainly got enough

156  
00:08:30,029 --> 00:08:28,300  
time off toward the end of the flight

157  
00:08:32,790 --> 00:08:30,039  
after I started to be a little bit more

158  
00:08:35,040 --> 00:08:32,800  
efficient about how I did things I found

159  
00:08:36,060 --> 00:08:35,050  
that I had more time than I had in the

160  
00:08:37,769 --> 00:08:36,070  
beginning of the flight and I was

161  
00:08:40,560 --> 00:08:37,779  
actually looking for other things to do

162  
00:08:42,029 --> 00:08:40,570  
to help my crewmates but you never get

163  
00:08:46,110 --> 00:08:42,039

tired of the view and it's a great way

164

00:08:48,840 --> 00:08:46,120

to spend your free time it's bill

165

00:08:50,280 --> 00:08:48,850

Harwood CBS News for dr. Thornton it

166

00:08:51,750 --> 00:08:50,290

seems like every time there's a Spacelab

167

00:08:54,090 --> 00:08:51,760

mission like this reporters always ask

168

00:08:55,920 --> 00:08:54,100

you guys to talk about how it mirrors

169

00:08:57,510 --> 00:08:55,930

Space Station operations and things like

170

00:08:59,160 --> 00:08:57,520

that I guess I've been struck during

171

00:09:01,590 --> 00:08:59,170

this flight by the role of tellus ient

172

00:09:04,500 --> 00:09:01,600

by the multi-user facilities that are on

173

00:09:06,150 --> 00:09:04,510

board could you talk about that theme in

174

00:09:08,160 --> 00:09:06,160

the sense philosophically this sort of

175

00:09:09,900 --> 00:09:08,170

flight really does I think mirror some

176

00:09:16,110 --> 00:09:09,910

of the operations on Space Station can

177

00:09:18,319 --> 00:09:16,120

you give me your thoughts on that are

178

00:09:20,510 --> 00:09:18,329

precursors to Space Station experiments

179

00:09:22,790 --> 00:09:20,520

the drop physics module

180

00:09:24,380 --> 00:09:22,800

the surface tension experiments that

181

00:09:26,720 --> 00:09:24,390

we're doing are precursors some of the

182

00:09:28,820 --> 00:09:26,730

crystal growth experiments will be done

183

00:09:30,680 --> 00:09:28,830

on Space Station and what we learn on

184

00:09:32,960 --> 00:09:30,690

these short duration flights can help in

185

00:09:34,540 --> 00:09:32,970

the development of those facilities for

186

00:09:36,260 --> 00:09:34,550

longer-term use on the space station

187

00:09:38,450 --> 00:09:36,270

some of the things that we've had

188

00:09:43,280 --> 00:09:38,460

onboard this flight that I do are ground

189

00:09:44,990 --> 00:09:43,290

air television and the electronic data

190

00:09:46,550 --> 00:09:45,000

transfer we've had up and down is not

191

00:09:49,880 --> 00:09:46,560

new on this flight but it's relatively

192

00:09:51,940 --> 00:09:49,890

new in the program and also the digital

193

00:09:55,880 --> 00:09:51,950

television where we sit down six

194

00:09:57,800 --> 00:09:55,890

channels of digital video over one high

195

00:09:59,300 --> 00:09:57,810

data-rate kayuu channel is due on this

196

00:10:01,670 --> 00:09:59,310

flight and I think that's the way state

197

00:10:03,710 --> 00:10:01,680

the space that space station is going to

198

00:10:05,000 --> 00:10:03,720

be we have a lot of data to get to the

199

00:10:06,890 --> 00:10:05,010

ground and we're gonna have to do it

200

00:10:09,380 --> 00:10:06,900

this way so this is kind of a pathfinder

201  
00:10:13,790 --> 00:10:09,390  
for the kind of operations we're going

202  
00:10:15,710 --> 00:10:13,800  
to have on the space station this is

203  
00:10:18,590 --> 00:10:15,720  
Michael cabbage with Florida today and

204  
00:10:21,470 --> 00:10:18,600  
my question is for Kathy Thornton and Al

205  
00:10:23,120 --> 00:10:21,480  
Sacco I know the people at Marshall are

206  
00:10:25,490 --> 00:10:23,130  
still in the early stages of reviewing

207  
00:10:27,260 --> 00:10:25,500  
the data for most of the experiments but

208  
00:10:29,240 --> 00:10:27,270  
have there been any results that jump

209  
00:10:31,160 --> 00:10:29,250  
out is something totally unexpected or

210  
00:10:43,460 --> 00:10:31,170  
anything to characterizes a major

211  
00:10:45,500 --> 00:10:43,470  
discovery at this point we have seen

212  
00:10:48,110 --> 00:10:45,510  
some surprises in terms of the crystal

213  
00:10:49,580 --> 00:10:48,120

growth in particular what I've seen is

214

00:10:51,350 --> 00:10:49,590

some of the crystals have grown faster

215

00:10:53,870 --> 00:10:51,360

than I expected that the grow based on

216

00:10:56,060 --> 00:10:53,880

previous literature I had read in other

217

00:10:59,210 --> 00:10:56,070

cases crystals that I expected to grow

218

00:11:01,100 --> 00:10:59,220

slower did grow slower but try to

219

00:11:02,630 --> 00:11:01,110

analyze exactly what that is whether it

220

00:11:04,400 --> 00:11:02,640

have to do with the fluid dynamics or

221

00:11:06,140 --> 00:11:04,410

whether we're change something sets of

222

00:11:07,340 --> 00:11:06,150

interesting things the Kathy will talk

223

00:11:09,440 --> 00:11:07,350

about the minute on the combustion

224

00:11:11,450 --> 00:11:09,450

experiments we were looking at flames

225

00:11:12,860 --> 00:11:11,460

burn as well so yeah we've learned an

226

00:11:15,590 --> 00:11:12,870

awful lot and that's what science is all

227

00:11:17,870 --> 00:11:15,600

about things change you postulate

228

00:11:19,250 --> 00:11:17,880

something you I know just how good you

229

00:11:22,070 --> 00:11:19,260

really understand things and then you

230

00:11:23,450 --> 00:11:22,080

move this situation forward an iterative

231

00:11:25,460 --> 00:11:23,460

process and that's exactly what's

232

00:11:27,470 --> 00:11:25,470

working out here there's been some

233

00:11:29,450 --> 00:11:27,480

significant surprises in terms of the

234

00:11:33,470 --> 00:11:29,460

rates in my mind anyways the crystal

235

00:11:38,190 --> 00:11:36,600

my fluids experiments cannot be done on

236

00:11:40,350 --> 00:11:38,200

the ground so everything up here was

237

00:11:42,180 --> 00:11:40,360

pretty much a surprise we found that a

238

00:11:44,160 --> 00:11:42,190

lot of times the procedures that we had

239

00:11:45,810 --> 00:11:44,170

from pre-flight are essentially being

240

00:11:47,760 --> 00:11:45,820

rewritten after the first one or two

241

00:11:49,079 --> 00:11:47,770

runs of an experiment because of the

242

00:11:51,120 --> 00:11:49,089

things that were learned in those first

243

00:11:52,560 --> 00:11:51,130

one or she runs and I think it's great

244

00:11:54,449 --> 00:11:52,570

that we can be flexible enough to handle

245

00:11:56,570 --> 00:11:54,459

that that all the folks on the ground

246

00:11:58,920 --> 00:11:56,580

can turn things around that fast

247

00:12:00,780 --> 00:11:58,930

particularly in the drop physics module

248

00:12:03,480 --> 00:12:00,790

and the surface tension driven

249

00:12:07,769 --> 00:12:03,490

convection experiment we saw a lot of

250

00:12:09,269 --> 00:12:07,779

new things that we're not expected he

251  
00:12:12,090 --> 00:12:09,279  
called Terry with the West Kentucky news

252  
00:12:13,350 --> 00:12:12,100  
for the commander by the way thanks for

253  
00:12:16,019 --> 00:12:13,360  
waiting till I got back from vacation

254  
00:12:19,650 --> 00:12:16,029  
for lifting off if everything goes

255  
00:12:22,590 --> 00:12:19,660  
according to schedule you'll be coming

256  
00:12:23,790 --> 00:12:22,600  
home Sunday and apparently the range is

257  
00:12:25,680 --> 00:12:23,800  
not going to be able to fully support

258  
00:12:35,400 --> 00:12:25,690  
you what have you been doing to prepare

259  
00:12:36,960 --> 00:12:35,410  
for the landing protocol exercise trying

260  
00:12:39,740 --> 00:12:36,970  
to take care of ourselves getting plenty

261  
00:12:43,680 --> 00:12:39,750  
of sleep we've also been using the pilot

262  
00:12:45,900 --> 00:12:43,690  
simulator a small it's a workstation in

263  
00:12:48,240 --> 00:12:45,910

a laptop computer that allows us to

264

00:12:50,610 --> 00:12:48,250

practice on landings on-orbit take a

265

00:12:51,090 --> 00:12:50,620

look at our symbology the landing Hudson

266

00:12:52,620 --> 00:12:51,100

Balaji

267

00:12:54,810 --> 00:12:52,630

before we actually get into the landing

268

00:12:58,019 --> 00:12:54,820

pattern and we're looking forward to the

269

00:13:00,780 --> 00:12:58,029

landing this is Marsha Dunn of The

270

00:13:02,730 --> 00:13:00,790

Associated Press again for anyone if you

271

00:13:04,890 --> 00:13:02,740

were going to spend another month or two

272

00:13:06,449 --> 00:13:04,900

or three in orbit like on a space

273

00:13:08,310 --> 00:13:06,459

station I'm wondering what kind of

274

00:13:11,250 --> 00:13:08,320

amenities would you like to make your

275

00:13:13,079 --> 00:13:11,260

life more livable and maybe along those

276

00:13:15,630 --> 00:13:13,089

lines the ground to air TV helped in

277

00:13:24,350 --> 00:13:15,640

terms of your family contacts could you

278

00:13:28,669 --> 00:13:27,410

well I think the we love our food up

279

00:13:30,259 --> 00:13:28,679

here but what I've learned on this

280

00:13:31,910 --> 00:13:30,269

flight is I didn't spend enough time in

281

00:13:34,369 --> 00:13:31,920

my menu and I repeated to me the items

282

00:13:36,019 --> 00:13:34,379

so variety on food I think is very

283

00:13:37,999 --> 00:13:36,029

important even things it's if you're not

284

00:13:39,829 --> 00:13:38,009

gonna like after eating the same thing

285

00:13:42,350 --> 00:13:39,839

several days in a row you're ready for a

286

00:13:43,579 --> 00:13:42,360

change the as far as the other thing

287

00:13:45,979 --> 00:13:43,589

that's very important to have a little

288

00:13:47,600 --> 00:13:45,989

bit of privacy and we've seen that with

289

00:13:48,859 --> 00:13:47,610

our sleep stations on board not all

290

00:13:50,600 --> 00:13:48,869

flights have them but that's very

291

00:13:52,789 --> 00:13:50,610

important and I think for station and

292

00:13:54,889 --> 00:13:52,799

when you start spending two or three or

293

00:13:55,910 --> 00:13:54,899

four months in space you've got to give

294

00:13:57,710 --> 00:13:55,920

people some privacy

295

00:13:59,960 --> 00:13:57,720

just so they can have a little bit of

296

00:14:02,030 --> 00:13:59,970

time alone and that'll make it much more

297

00:14:10,910 --> 00:14:02,040

productive and efficient in the long run

298

00:14:12,590 --> 00:14:10,920

I want to that what they know it'd be

299

00:14:15,470 --> 00:14:12,600

quite a bit different as we've been

300

00:14:17,210 --> 00:14:15,480

working pretty hard for two weeks this

301

00:14:18,859 --> 00:14:17,220

is kind of a sprint compared to a two

302

00:14:21,470 --> 00:14:18,869

month or three months or four months

303

00:14:22,669 --> 00:14:21,480

spin on orbit and so I think things

304

00:14:24,859 --> 00:14:22,679

would be a little bit different rather

305

00:14:27,470 --> 00:14:24,869

than have every minute point out to them

306

00:14:30,530 --> 00:14:27,480

to the detail we would probably have

307

00:14:32,509 --> 00:14:30,540

some more general goals to accomplish in

308

00:14:34,639 --> 00:14:32,519

a day or even a week and we would

309

00:14:36,710 --> 00:14:34,649

probably not be working 12 hours a day

310

00:14:38,389 --> 00:14:36,720

either because that could be that'd be

311

00:14:40,759 --> 00:14:38,399

pretty tough to maintain over that time

312

00:14:43,429 --> 00:14:40,769

so the question because of what you're

313

00:14:45,679 --> 00:14:43,439

going to do in your free time and I

314

00:14:47,659 --> 00:14:45,689

guess you need to come up with some sort

315

00:14:49,879 --> 00:14:47,669

of entertainment and he mentioned

316

00:14:52,009 --> 00:14:49,889

ground-to-air TV that would be one thing

317

00:14:53,539 --> 00:14:52,019

certainly a selection a greater

318

00:14:55,909 --> 00:14:53,549

selection of music and I personally

319

00:14:58,789 --> 00:14:55,919

would wish I would have brought a book

320

00:15:00,499 --> 00:14:58,799

along to read because sometimes it takes

321

00:15:03,619 --> 00:15:00,509

a little while to unwind after the days

322

00:15:06,019 --> 00:15:03,629

over and when you get into into the

323

00:15:07,999 --> 00:15:06,029

sleep station without anything to read

324

00:15:09,439 --> 00:15:08,009

you kind of have to let your mind wander

325

00:15:10,669 --> 00:15:09,449

a little bit and it's a little bit

326

00:15:11,749 --> 00:15:10,679

tougher that way and I think I could

327

00:15:19,470 --> 00:15:11,759

have learned something and enjoyed

328

00:15:25,650 --> 00:15:22,450

this is Vicki Vaughn with Reuters again

329

00:15:27,760 --> 00:15:25,660

I have a follow-up to Marshalls question

330

00:15:30,010 --> 00:15:27,770

Michael I'd like to know what kind of

331

00:15:34,680 --> 00:15:30,020

music you didn't listen to or what was

332

00:15:38,830 --> 00:15:34,690

available up there but my question is if

333

00:15:41,620 --> 00:15:38,840

I'm hoping maybe two of you could answer

334

00:15:46,330 --> 00:15:41,630

this if you were suddenly put in charge

335

00:15:48,850 --> 00:15:46,340

of a new mission USML 3 what changes

336

00:15:51,220 --> 00:15:48,860

would you like to make either in terms

337

00:15:54,640 --> 00:15:51,230

of scheduling or the science aboard

338

00:15:56,710 --> 00:15:54,650

anything maybe any broad issue that you

339

00:16:03,460 --> 00:15:56,720

would like to address or change on an

340

00:16:05,590 --> 00:16:03,470

upcoming mission Vicki though a long

341

00:16:07,120 --> 00:16:05,600

question let me see if I the beginning

342

00:16:08,950 --> 00:16:07,130

of it I think that's what kind of music

343

00:16:11,050 --> 00:16:08,960

or what selection we have actually each

344

00:16:13,030 --> 00:16:11,060

of us got to bring a selection of music

345

00:16:14,830 --> 00:16:13,040

with us and I'm not sure but I don't

346

00:16:18,490 --> 00:16:14,840

think we've done any exchanging yet but

347

00:16:20,890 --> 00:16:18,500

that certainly is an option as far as

348

00:16:23,260 --> 00:16:20,900

what other changes we've what other

349

00:16:25,510 --> 00:16:23,270

changes we might entertain well I took

350

00:16:27,730 --> 00:16:25,520

they mentioned a few of them as I said

351

00:16:28,960 --> 00:16:27,740

I'd like to bring along a Brook I don't

352

00:16:30,700 --> 00:16:28,970

think we have any complaints with the

353

00:16:32,950 --> 00:16:30,710

scheduling whatsoever for the length of

354

00:16:35,500 --> 00:16:32,960

mission that we have it was not too much

355

00:16:36,880 --> 00:16:35,510

work yet it was enough and I think we

356

00:16:40,060 --> 00:16:36,890

really got a lot of bang for our buck

357

00:16:41,860 --> 00:16:40,070

with the science teams so I think that's

358

00:16:43,780 --> 00:16:41,870

that's something that I would not change

359

00:16:45,580 --> 00:16:43,790

now as I said if we were going to step

360

00:16:48,870 --> 00:16:45,590

it up that long ago we might slack off a

361

00:16:51,490 --> 00:16:48,880

little because it this is a pretty

362

00:16:53,290 --> 00:16:51,500

sprint type pace it would be tough to

363

00:17:02,400 --> 00:16:53,300

maintain over a much longer period and

364

00:17:10,329 --> 00:17:09,069

well I was three it would be longer once

365

00:17:11,949 --> 00:17:10,339

we got up here to do some of the

366

00:17:14,620 --> 00:17:11,959

experiments that we've been practicing

367

00:17:16,510 --> 00:17:14,630

and talking about and planning and

368

00:17:18,130 --> 00:17:16,520

trying to figure out exactly what is the

369

00:17:20,410 --> 00:17:18,140

best way to do them up here on orbit

370

00:17:22,240 --> 00:17:20,420

when you actually get to do them it's a

371

00:17:24,549 --> 00:17:22,250

wonderful thing I just feel like I'm up

372

00:17:26,530 --> 00:17:24,559

here doing what I like to do and that's

373

00:17:30,490 --> 00:17:26,540

great for me so it'll be a longer

374

00:17:31,960 --> 00:17:30,500

mission certainly and I guess so I would

375

00:17:45,520 --> 00:17:31,970

probably do a lot more exchanging on

376

00:17:46,690 --> 00:17:45,530

music yes for commander Bowersox I guess

377

00:17:48,490 --> 00:17:46,700

the weather forecast isn't all that

378

00:17:50,289 --> 00:17:48,500

optimistic for Sunday landing here if

379

00:17:51,850 --> 00:17:50,299

you land Monday you'll break the shuttle

380

00:17:54,190 --> 00:17:51,860

record for a long duration flight

381

00:17:57,549 --> 00:17:54,200

can you just two things can you discuss

382

00:17:59,409 --> 00:17:57,559

a your readiness to land after this long

383

00:18:01,539 --> 00:17:59,419

of a flight you know how you stay in

384

00:18:04,120 --> 00:18:01,549

shape I realize you exercise and use

385

00:18:06,789 --> 00:18:04,130

pilot but just your general views on

386

00:18:08,200 --> 00:18:06,799

landing after a long flight and broader

387

00:18:10,780 --> 00:18:08,210

than that what is the state of knowledge

388

00:18:13,060 --> 00:18:10,790

now about how long you think a pilots of

389

00:18:14,919 --> 00:18:13,070

the shuttle can stay weightless and

390

00:18:23,560 --> 00:18:14,929

still perform properly when you pull

391

00:18:31,090 --> 00:18:23,570

jeans coming back down the biggest

392

00:18:33,370 --> 00:18:31,100

concern that we have out there somewhere

393

00:18:35,440 --> 00:18:33,380

where as he's coming back his vestibular

394

00:18:37,539 --> 00:18:35,450

system causes them to get uncoordinated

395

00:18:39,010 --> 00:18:37,549

and he loses that programming that's

396

00:18:41,500 --> 00:18:39,020

been built into them over years and

397

00:18:45,940 --> 00:18:41,510

years and years of training and so he

398

00:18:47,860 --> 00:18:45,950

makes a mistake on the landing what we

399

00:18:50,620 --> 00:18:47,870

do to make sure that programming is good

400

00:18:52,900 --> 00:18:50,630

is we we work on it a lot pre-flight

401  
00:18:57,760 --> 00:18:52,910  
I've got over a thousand approaches in

402  
00:18:59,680 --> 00:18:57,770  
the shuttle training area seeing out the

403  
00:19:03,960 --> 00:18:59,690  
window I've seen that the view looks

404  
00:19:11,169 --> 00:19:07,140  
just like the shuttle training error is

405  
00:19:14,740 --> 00:19:11,179  
that that programming in me is good as

406  
00:19:15,450 --> 00:19:14,750  
far as how long that that to my last I

407  
00:19:17,760 --> 00:19:15,460  
got

408  
00:19:19,769 --> 00:19:17,770  
it's probably out at 3040 days I know

409  
00:19:21,750 --> 00:19:19,779  
I've gone as long as four months without

410  
00:19:24,090 --> 00:19:21,760  
planning the shuttle training and I

411  
00:19:26,130 --> 00:19:24,100  
jumped in and everything works fine

412  
00:19:30,149 --> 00:19:26,140  
I make reasonable landings on my first

413  
00:19:32,370 --> 00:19:30,159

attempt but we're still working on a lot

414

00:19:34,350 --> 00:19:32,380

of unknowns with the microgravity aspect

415

00:19:36,480 --> 00:19:34,360

and that's why we're doing kind of a

416

00:19:39,840 --> 00:19:36,490

gentle build-up that we've gone from 11

417

00:19:41,430 --> 00:19:39,850

days to 13 days to 16 days and maybe one

418

00:19:42,570 --> 00:19:41,440

of these days we'll get out to 17 18 or

419

00:19:44,340 --> 00:19:42,580

even longer

420

00:19:45,960 --> 00:19:44,350

I think that's gonna be possible but

421

00:19:47,970 --> 00:19:45,970

it's we want to use our heads we want to

422

00:19:52,710 --> 00:19:47,980

do it in a common-sense fashion and with

423

00:19:54,330 --> 00:19:52,720

a nice gradual buildup this is Michael

424

00:19:56,820 --> 00:19:54,340

cabbage with Florida today and my

425

00:19:58,769 --> 00:19:56,830

question is also for commander Bowersox

426

00:20:02,070 --> 00:19:58,779

and it's kind of a follow-up of an

427

00:20:04,080 --> 00:20:02,080

earlier question on all prior shuttle

428

00:20:06,360 --> 00:20:04,090

landings nASA has gotten c-band radar

429

00:20:08,820 --> 00:20:06,370

tracking support from the Air Force's

430

00:20:10,289 --> 00:20:08,830

Eastern range but because of a Titan

431

00:20:11,820 --> 00:20:10,299

launch scheduled for Saturday night at

432

00:20:13,549 --> 00:20:11,830

the Air Station this will be the first

433

00:20:16,200 --> 00:20:13,559

landing not to have that data available

434

00:20:30,299 --> 00:20:16,210

does that create any additional concerns

435

00:20:31,590 --> 00:20:30,309

for you we've looked into it and we

436

00:20:34,289 --> 00:20:31,600

think it's a reasonable thing to do

437

00:20:37,049 --> 00:20:34,299

where we always like to do things the

438

00:20:38,399 --> 00:20:37,059

best way we possibly can and that's the

439

00:20:41,130 --> 00:20:38,409

c-band beacons when when they're

440

00:20:42,960 --> 00:20:41,140

available but when we have to go to a

441

00:20:44,580 --> 00:20:42,970

fallback we go to a fallback we try to

442

00:20:45,930 --> 00:20:44,590

be flexible that's what we're doing at

443

00:20:47,970 --> 00:20:45,940

this situation just trying to be

444

00:20:51,690 --> 00:20:47,980

flexible with our operations and I think

445

00:20:53,190 --> 00:20:51,700

what we're doing is very reasonable we

446

00:20:55,889 --> 00:20:53,200

call Terry with the West Kentucky news

447

00:20:57,630 --> 00:20:55,899

for Katie this mission seems to be going

448

00:21:00,060 --> 00:20:57,640

real smooth the stars of science is

449

00:21:02,789 --> 00:21:00,070

concerned in fact I kind of liken it to

450

00:21:06,210 --> 00:21:02,799

it's like the Apollo 17 of shuttle

451  
00:21:08,639 --> 00:21:06,220  
missions can you comment on how

452  
00:21:16,080 --> 00:21:08,649  
sophisticated you think this is this

453  
00:21:20,619 --> 00:21:18,430  
the last part I question I'll pick it he

454  
00:21:23,169 --> 00:21:20,629  
restricted it yeah

455  
00:21:25,749 --> 00:21:23,179  
can you comment on how how sophisticated

456  
00:21:40,619 --> 00:21:25,759  
you think this mission is in the way of

457  
00:21:44,680 --> 00:21:42,459  
experiments we have on board

458  
00:21:46,989 --> 00:21:44,690  
and we built a lot of contingency time

459  
00:21:48,190 --> 00:21:46,999  
into our time to take care of that well

460  
00:21:50,049 --> 00:21:48,200  
we haven't used any of that for

461  
00:21:51,849 --> 00:21:50,059  
contingency so we've been able to

462  
00:22:03,060 --> 00:21:51,859  
collect a lot of data I think that we

463  
00:22:05,200 --> 00:22:03,070

weren't expected to get captain Coleman

464

00:22:07,359 --> 00:22:05,210

training for Spacelab mission of course

465

00:22:08,709 --> 00:22:07,369

is a real sprint for a couple years you

466

00:22:09,999 --> 00:22:08,719

guys work around the clock and then you

467

00:22:12,459 --> 00:22:10,009

finally get up on the mission and you're

468

00:22:14,109 --> 00:22:12,469

working dual shifts to do all this you

469

00:22:18,609 --> 00:22:14,119

have a chance at all or have you had a

470

00:23:05,310 --> 00:22:18,619

chance yet to think about versus reality

471

00:23:09,499 --> 00:23:07,409

this is Michel cabbage with Florida

472

00:23:11,820 --> 00:23:09,509

today and this question is for anyone

473

00:23:14,789 --> 00:23:11,830

Debbie Brown in the aerospace education

474

00:23:16,230 --> 00:23:14,799

opposite JSC said the idea for holding

475

00:23:18,389 --> 00:23:16,240

the interactive sessions with high

476

00:23:20,850 --> 00:23:18,399

school students first was suggested by

477

00:23:22,799 --> 00:23:20,860

crew members and my question is who

478

00:23:24,480 --> 00:23:22,809

initially came up with this idea and do

479

00:23:26,580 --> 00:23:24,490

you think this is a worthwhile teaching

480

00:23:35,360 --> 00:23:26,590

method that should be repeated on future

481

00:23:43,950 --> 00:23:39,330

because I'm the a commission I guess in

482

00:23:46,259 --> 00:23:43,960

a group but it's the one that we're

483

00:23:47,970 --> 00:23:46,269

talking about how we all got here and in

484

00:23:50,340 --> 00:23:47,980

that course of the conversation decided

485

00:23:52,680 --> 00:23:50,350

that science isn't really for greets

486

00:23:54,269 --> 00:23:52,690

which is a general perception up against

487

00:23:57,029 --> 00:23:54,279

people today and we thought we'd bring

488

00:23:58,379 --> 00:23:57,039

that home because young people look up

489

00:23:59,820 --> 00:23:58,389

to the astronaut corps we'd bring it

490

00:24:01,139 --> 00:23:59,830

home by bringing some of the science

491

00:24:03,600 --> 00:24:01,149

we're really doing which is world class

492

00:24:05,610 --> 00:24:03,610

science and have some of the kids do

493

00:24:08,340 --> 00:24:05,620

very similar things and interact with

494

00:24:11,340 --> 00:24:08,350

them so it was really an idea that was

495

00:24:13,980 --> 00:24:11,350

bred from all of us at Kathy - it went

496

00:24:16,049 --> 00:24:13,990

forward with it and pushed it and we

497

00:24:17,700 --> 00:24:16,059

were able to get her on board and I has

498

00:24:18,960 --> 00:24:17,710

an activation and an educator hope we'll

499

00:24:21,539 --> 00:24:18,970

do it the future I hope the kids

500

00:24:23,279 --> 00:24:21,549

benefited from but I certainly did and I

501

00:24:24,779 --> 00:24:23,289

think it's very important this country

502

00:24:27,749 --> 00:24:24,789

we keep these kids excited about math

503

00:24:29,850 --> 00:24:27,759

and science because that is will bring

504

00:24:31,110 --> 00:24:29,860

this country as a leader into the 21st

505

00:24:33,419 --> 00:24:31,120

century and we all have to keep that

506

00:24:35,610 --> 00:24:33,429

mind all the time but it was really

507

00:24:39,480 --> 00:24:35,620

great and we had a lot of fun and I just

508

00:24:41,549 --> 00:24:39,490

hope the kids good as well okay you have

509

00:24:44,039 --> 00:24:41,559

said you had two dreams one to be a

510

00:24:45,720 --> 00:24:44,049

teacher and one to fly in space now

511

00:24:54,180 --> 00:24:45,730

you've done both do you have a third

512

00:24:56,700 --> 00:24:54,190

dream not the least of which is to grow

513

00:24:58,769 --> 00:24:56,710

some of the largest for perfect zeolites

514

00:25:00,810 --> 00:24:58,779

that haven't been grown hope to do that

515

00:25:02,639 --> 00:25:00,820

on this flight there are a lot of things

516

00:25:04,470 --> 00:25:02,649

there had to be as an individual I have

517

00:25:06,899 --> 00:25:04,480

a lot of development to do I need to

518

00:25:09,570 --> 00:25:06,909

talk to a lot of kids which I hope to do

519

00:25:11,669 --> 00:25:09,580

and not to get them excited about math

520

00:25:13,409 --> 00:25:11,679

and science and the future is out here

521

00:25:16,259 --> 00:25:13,419

as I look at the cosmos and see what's

522

00:25:18,180 --> 00:25:16,269

around I realized that the universe is

523

00:25:19,139 --> 00:25:18,190

really our playground and we need to

524

00:25:20,759 --> 00:25:19,149

take advantage of it

525

00:25:22,289 --> 00:25:20,769

to get kids excited about it moving

526  
00:25:23,759 --> 00:25:22,299  
forward so that's one of the things that

527  
00:25:27,509 --> 00:25:23,769  
one of the messages are becoming

528  
00:25:29,269 --> 00:25:27,519  
hopeless okay

529  
00:25:37,859 --> 00:25:29,279  
commander how has now been is a

530  
00:25:41,399 --> 00:25:37,869  
companion in space I can't imagine a

531  
00:25:42,749 --> 00:25:41,409  
better crew member on board it now of

532  
00:25:44,969 --> 00:25:42,759  
course prejudiced people they're both

533  
00:25:46,469 --> 00:25:44,979  
really good guys but I'll brings a

534  
00:25:48,299 --> 00:25:46,479  
certain fire to the crew a certain

535  
00:25:50,430 --> 00:25:48,309  
spirit he's a lot of fun he's always

536  
00:25:54,029 --> 00:25:50,440  
joking around and his wife makes great

537  
00:25:55,739 --> 00:25:54,039  
spaghetti okay well any chance the

538  
00:26:12,779 --> 00:25:55,749

flight will be extended at all for a

539

00:26:15,060 --> 00:26:12,789

couple days maybe we'll get an extra day

540

00:26:17,789 --> 00:26:15,070

so hoping for that because we all feel

541

00:26:19,229 --> 00:26:17,799

great none of us are tired what time we

542

00:26:20,369 --> 00:26:19,239

have a lot of things we accomplished a

543

00:26:21,119 --> 00:26:20,379

lot of things and would like to just

544

00:26:24,269 --> 00:26:21,129

keep it going

545

00:26:26,369 --> 00:26:24,279

I thought the training you received

546

00:26:28,409 --> 00:26:26,379

getting up there is it was the training

547

00:26:29,789 --> 00:26:28,419

exactly what it is like up there in

548

00:26:38,219 --> 00:26:29,799

space or have you been caught by

549

00:26:40,259 --> 00:26:38,229

surprise at all good it really was

550

00:26:42,629 --> 00:26:40,269

excellent they told us exactly what to

551  
00:26:45,119 --> 00:26:42,639  
expect sometimes we come up here and I

552  
00:26:46,589 --> 00:26:45,129  
was not expecting some things that they

553  
00:26:48,119 --> 00:26:46,599  
thought were gonna expect because I just

554  
00:26:51,839 --> 00:26:48,129  
felt that that probably wouldn't happen

555  
00:26:53,639 --> 00:26:51,849  
and sure you know experience always good

556  
00:26:54,899 --> 00:26:53,649  
so a lot of these folks have experience

557  
00:26:57,989 --> 00:26:54,909  
that's what they learn about the crews

558  
00:26:59,849 --> 00:26:57,999  
and so what you have is training that

559  
00:27:01,409 --> 00:26:59,859  
really is specific for what you're doing

560  
00:27:02,999 --> 00:27:01,419  
and it's very very good and I haven't

561  
00:27:06,479 --> 00:27:03,009  
had any surprises at traps of

562  
00:27:08,549 --> 00:27:06,489  
vibrationally I know commander Ken

563  
00:27:11,729 --> 00:27:08,559

Bowersox is with us as well on the line

564

00:27:22,499 --> 00:27:11,739

and Ken is out pulling his load

565

00:27:24,989 --> 00:27:22,509

they're on board the shuttle great

566

00:27:26,609 --> 00:27:24,999

dehydrated spaghetti that she made at

567

00:27:30,029 --> 00:27:26,619

home and he's been doing an outstanding

568

00:27:32,099 --> 00:27:30,039

job in the science and weather despite

569

00:27:32,970 --> 00:27:32,109

his excitement about the science that

570

00:27:34,649 --> 00:27:32,980

we're doing that

571

00:27:36,629 --> 00:27:34,659

I'll just beams up when he's got

572

00:27:39,000 --> 00:27:36,639

something going on in the glove box or

573

00:27:41,820 --> 00:27:39,010

on the DPN module or SUV any of the

574

00:27:43,259 --> 00:27:41,830

unities working on and that spirit rubs

575

00:27:46,289 --> 00:27:43,269

off on the rest of us and makes us

576  
00:27:48,320 --> 00:27:46,299  
excited about the science too and Ken I

577  
00:27:51,029 --> 00:27:48,330  
know you've got over 500 hours in space

578  
00:28:02,669 --> 00:27:51,039  
does it ever get routine or is it

579  
00:28:04,259 --> 00:28:02,679  
exciting every time you go up it wasn't

580  
00:28:07,620 --> 00:28:04,269  
my first fight and I'm looking forward

581  
00:28:09,870 --> 00:28:07,630  
to seeing it some more how do you sleep

582  
00:28:16,169 --> 00:28:09,880  
are you tied in or you just pretty much

583  
00:28:18,240 --> 00:28:16,179  
find an open corner we have they look

584  
00:28:20,820 --> 00:28:18,250  
like kitchen cabinets you could open a

585  
00:28:23,759 --> 00:28:20,830  
door and crawl in and they're very

586  
00:28:25,470 --> 00:28:23,769  
comfortable they have liners it you just

587  
00:28:27,960 --> 00:28:25,480  
sort of the ultimate waterbed you know

588  
00:28:29,669 --> 00:28:27,970

you just float there and I have to

589

00:28:31,379 --> 00:28:29,679

listen to music all night orally at

590

00:28:33,659 --> 00:28:31,389

least about all night for an hour or so

591

00:28:35,100 --> 00:28:33,669

before I go to sleep sometimes do some

592

00:28:37,129 --> 00:28:35,110

reading and that that drift off to sleep

593

00:28:41,279 --> 00:28:37,139

it's very comfortable

594

00:28:43,110 --> 00:28:41,289

what about any motion sickness stomach

595

00:28:49,860 --> 00:28:43,120

problems how have you been faring as far

596

00:28:51,389 --> 00:28:49,870

as your health goes expected to have

597

00:28:53,250 --> 00:28:51,399

maybe a little bit of an upset stomach

598

00:28:55,440 --> 00:28:53,260

and I feel so well the first few days

599

00:28:57,120 --> 00:28:55,450

and I went a couple of periods where I

600

00:28:58,500 --> 00:28:57,130

felt like I was not going to feel good

601

00:29:00,330 --> 00:28:58,510

but I just took the advice of my

602

00:29:02,700 --> 00:29:00,340

commander which was the slowdown and to

603

00:29:04,560 --> 00:29:02,710

concentrate just relax a little bit and

604

00:29:06,480 --> 00:29:04,570

it went right away and I didn't get sick