
esa

1
00:00:14,600 --> 00:00:02,929
station this is Houston are you ready

2
00:00:17,380 --> 00:00:14,610
for the event so special I'm okay

3
00:00:24,820 --> 00:00:17,390
euronews this is Mission Control Houston

4
00:00:34,580 --> 00:00:28,099
station this is Isabel kumar from urine

5
00:00:37,100 --> 00:00:34,590
user can you hear me good morning Isabel

6
00:00:42,920 --> 00:00:37,110
I hear you loud and clear how do you

7
00:00:44,770 --> 00:00:42,930
hear me I hear you very well this is

8
00:00:47,330 --> 00:00:44,780
great so I think we'll start in a few

9
00:00:49,880 --> 00:00:47,340
seconds from now just to tell you about

10
00:00:51,680 --> 00:00:49,890
the format the interview itself will be

11
00:00:54,650 --> 00:00:51,690
10 minutes long then we have some extra

12
00:00:57,139 --> 00:00:54,660
questions after in the I talk interview

13
00:00:58,819 --> 00:00:57,149

we have video questions that we received

14
00:01:00,319 --> 00:00:58,829
from our viewers which will come in

15
00:01:06,469 --> 00:01:00,329
three different languages but I will

16
00:01:09,289 --> 00:01:06,479
paraphrase those straight after that

17
00:01:11,390 --> 00:01:09,299
okay it is great sounds like it might be

18
00:01:17,359 --> 00:01:11,400
fun can you hear me or can you see me

19
00:01:24,920 --> 00:01:17,369
okay I can see you and i'm very jealous

20
00:01:27,289 --> 00:01:24,930
it looks amazing so I think any now what

21
00:01:33,289 --> 00:01:27,299
I'll be around me and behind me are

22
00:01:35,060 --> 00:01:33,299
doing the interview fantastic yeah if

23
00:01:36,890 --> 00:01:35,070
you've got anything here you can show us

24
00:01:38,539 --> 00:01:36,900
and we're going to talk about gravity at

25
00:01:40,969 --> 00:01:38,549
one point so if you can show something

26
00:01:42,679 --> 00:01:40,979
that will make it very visually kind of

27
00:01:46,460 --> 00:01:42,689
clear to our viewers what you're

28
00:01:59,950 --> 00:01:46,470
explaining that's great but ok we're

29
00:01:59,960 --> 00:02:20,600
the next space then set ballot orthotics

30
00:02:25,550 --> 00:02:23,510
the next space sensation making history

31
00:02:27,800 --> 00:02:25,560
hundreds of kilometers above our heads

32
00:02:30,080 --> 00:02:27,810
luca parmitano is the youngest

33
00:02:33,110 --> 00:02:30,090
astronauts on a long-term mission to the

34
00:02:36,140 --> 00:02:33,120
international space station the 36 year

35
00:02:38,810 --> 00:02:36,150
old italian blasted up to the ISSS just

36
00:02:41,000 --> 00:02:38,820
a few weeks ago and joins us live from

37
00:02:42,980 --> 00:02:41,010
the orbiting outpost answering your

38
00:02:46,340 --> 00:02:42,990

questions and sharing a rare glimpse of

39
00:02:48,920 --> 00:02:46,350
what life is like in space look at many

40
00:02:50,780 --> 00:02:48,930
thanks for joining us on I talk I'd like

41
00:02:57,620 --> 00:02:50,790
to know what's impressed you the most up

42
00:03:00,530 --> 00:02:57,630
there but it'd be easier to answer what

43
00:03:02,960 --> 00:03:00,540
has impressed me the least because

44
00:03:04,940 --> 00:03:02,970
everything has impressed me leaving a

45
00:03:07,610 --> 00:03:04,950
gorgeous tension is a very sensorial

46
00:03:11,150 --> 00:03:07,620
experience everything here is that

47
00:03:14,479 --> 00:03:11,160
perceived differently the things that we

48
00:03:17,540 --> 00:03:14,489
used to take for granted don't apply

49
00:03:21,199 --> 00:03:17,550
here anymore and so every time I look

50
00:03:25,930 --> 00:03:21,209
around is a surprise printer a different

51
00:03:29,860 --> 00:03:25,940
sensation but i think i'm surprised i

52
00:03:32,509 --> 00:03:29,870
think it was impressed me is how

53
00:03:38,300 --> 00:03:32,519
technology in the space station is

54
00:03:40,789 --> 00:03:38,310
really part of our daily life and but we

55
00:03:42,380 --> 00:03:40,799
are that so fast but now it just feels

56
00:03:45,440 --> 00:03:42,390
like home even though we are surrounded

57
00:03:53,449 --> 00:03:45,450
by by technology and i'm very thin very

58
00:03:55,370 --> 00:03:53,459
thin wall between us and space okay well

59
00:04:00,949 --> 00:03:55,380
we'll go straight to our first question

60
00:04:03,289 --> 00:04:00,959
and that comes from belgium hello my

61
00:04:05,000 --> 00:04:03,299
name is jerry from belgium and i want to

62
00:04:08,199 --> 00:04:05,010
know what has been the most difficult

63
00:04:11,539 --> 00:04:08,209

thing for you to give you soon in space

64
00:04:14,600 --> 00:04:11,549
so there's been months of preparation

65
00:04:19,960 --> 00:04:14,610
but what did you by surprise when you're

66
00:04:25,540 --> 00:04:23,200
well I say that the training that we get

67
00:04:30,190 --> 00:04:25,550
on the ground really does an amazing job

68
00:04:32,230 --> 00:04:30,200
of getting us ready for for living up in

69
00:04:35,440 --> 00:04:32,240
space on the space station environment

70
00:04:37,300 --> 00:04:35,450
looks oddly familiar appending all years

71
00:04:39,220 --> 00:04:37,310
literally two and a half years in

72
00:04:42,460 --> 00:04:39,230
different buildings around the world

73
00:04:46,210 --> 00:04:42,470
that that where we have mock-ups of

74
00:04:49,240 --> 00:04:46,220
tension of this module where I'm linear

75
00:04:53,380 --> 00:04:49,250
and where I'm going right now so we are

76
00:04:55,090 --> 00:04:53,390
we actually very they look so familiar

77
00:04:59,800 --> 00:04:55,100
once you get here because you've seen so

78
00:05:01,390 --> 00:04:59,810
many times I actually was surprised the

79
00:05:03,430 --> 00:05:01,400
thing that was really hard for me

80
00:05:05,760 --> 00:05:03,440
however was getting used to how things

81
00:05:09,160 --> 00:05:05,770
were different different in a zero-g

82
00:05:12,880 --> 00:05:09,170
what what is easy on the ground like

83
00:05:15,760 --> 00:05:12,890
staying still if he almost impossible on

84
00:05:18,010 --> 00:05:15,770
GOG you will things float all the time

85
00:05:20,020 --> 00:05:18,020
it's impossible panting somewhere you

86
00:05:24,130 --> 00:05:20,030
always have to tell you attracted to

87
00:05:27,100 --> 00:05:24,140
velcro or other means so it's the this

88
00:05:29,050 --> 00:05:27,110

reverse way of thinking where think the

89
00:05:31,240 --> 00:05:29,060
easy on the ground and hard of space and

90
00:05:37,330 --> 00:05:31,250
vice versa that was the most heart the

91
00:05:38,860 --> 00:05:37,340
hardest thing so far to adjust to very

92
00:05:44,950 --> 00:05:38,870
briefly now but how long did it take you

93
00:05:48,340 --> 00:05:44,960
to adjust to that all right I think I'm

94
00:05:50,560 --> 00:05:48,350
Austin adjusting to it it's an evolving

95
00:05:52,510 --> 00:05:50,570
process I've been on the special almost

96
00:05:57,219 --> 00:05:52,520
three weeks now and I feel comfortable

97
00:05:59,020 --> 00:05:57,229
enough I think that a two-week span is

98
00:06:02,140 --> 00:05:59,030
what he really takes to start feeling

99
00:06:04,180 --> 00:06:02,150
completely confident about moving in

100
00:06:08,920 --> 00:06:04,190
treating in a three-dimensional world

101
00:06:15,580 --> 00:06:08,930
and getting used to the 22 to

102
00:06:16,930 --> 00:06:15,590
microgravity environment okay well look

103
00:06:23,020 --> 00:06:16,940
at we're going to go to our next

104
00:06:25,300 --> 00:06:23,030
question now guru Sri Ganesha to bench

105
00:06:26,519 --> 00:06:25,310
is in may be able to weather the kolkata

106
00:06:30,179 --> 00:06:26,529
journalist but

107
00:06:31,769 --> 00:06:30,189
so you have got a very busy schedule up

108
00:06:34,319 --> 00:06:31,779
there you're carrying out a lot of

109
00:06:40,049 --> 00:06:34,329
experiments can you briefly give us an

110
00:06:41,909 --> 00:06:40,059
outline of what you're doing so on the

111
00:06:44,069 --> 00:06:41,919
space station at any given moment we

112
00:06:48,899 --> 00:06:44,079
have hundreds literally our experiments

113
00:06:52,339 --> 00:06:48,909

but we were only involved in in a few of

114
00:06:56,249 --> 00:06:52,349
them at the same time for example today

115
00:07:00,539 --> 00:06:56,259
my schedule is a partly busy with the

116
00:07:02,399 --> 00:07:00,549
ATV the European Space Agency's space of

117
00:07:06,089 --> 00:07:02,409
the just arrived a couple of days ago

118
00:07:07,769 --> 00:07:06,099
after yesterday we're beating with some

119
00:07:10,729 --> 00:07:07,779
preparation opening the hatch which I

120
00:07:14,309 --> 00:07:10,739
just finished a started experiment I am

121
00:07:16,289 --> 00:07:14,319
currently doing a diet experiment where

122
00:07:18,299 --> 00:07:16,299
we are trying to figure out that

123
00:07:21,089 --> 00:07:18,309
scientists are trying to figure out how

124
00:07:22,709 --> 00:07:21,099
to reduce the loss of calcium and my

125
00:07:24,869 --> 00:07:22,719
colleagues I'm glad you have this

126
00:07:26,879 --> 00:07:24,879
question because I have right here an

127
00:07:29,339 --> 00:07:26,889
example of what of what science we were

128
00:07:33,449 --> 00:07:29,349
doing today this is an awful sound

129
00:07:35,639 --> 00:07:33,459
machine right behind me and today my my

130
00:07:38,239 --> 00:07:35,649
to my two colleagues Chris Chris Cassidy

131
00:07:40,919 --> 00:07:38,249
and tenon library we're actually

132
00:07:43,369 --> 00:07:40,929
analyzing each other spine to an

133
00:07:46,019 --> 00:07:43,379
ultrasound machine and this will be a

134
00:07:48,479 --> 00:07:46,029
revolutionary way for people on the

135
00:07:51,869 --> 00:07:48,489
ground be able to analyze damages to

136
00:07:54,959 --> 00:07:51,879
their spine in remote areas where MRIs

137
00:07:56,969 --> 00:07:54,969
or x-ray machines are not available this

138
00:08:03,179 --> 00:07:56,979

is going to be a very big impact on the

139
00:08:05,129 --> 00:08:03,189
ground as we speak and there's some

140
00:08:07,499 --> 00:08:05,139
health issues up in space for you

141
00:08:14,380 --> 00:08:07,509
personally again with very short of time

142
00:08:24,250 --> 00:08:17,770
so you can ask the question again is the

143
00:08:27,760 --> 00:08:24,260
first part there are some health issues

144
00:08:29,050 --> 00:08:27,770
for you personally up in space as again

145
00:08:35,080 --> 00:08:29,060
we're very short of time but can you

146
00:08:37,780 --> 00:08:35,090
quickly tell us what those are sure so

147
00:08:42,220 --> 00:08:37,790
one of the issues is the loss of perfume

148
00:08:45,220 --> 00:08:42,230
our bones need private to do to grow and

149
00:08:47,680 --> 00:08:45,230
get strong in a very simple way if

150
00:08:50,560 --> 00:08:47,690
they're not in an experience that the

151
00:08:52,570 --> 00:08:50,570
gravity they do not they tend to lose

152
00:08:55,180 --> 00:08:52,580
their their calcium and to become

153
00:08:58,600 --> 00:08:55,190
brittle and fragile it's all sorted i

154
00:09:01,960 --> 00:08:58,610
will also girls another issue is at a

155
00:09:03,790 --> 00:09:01,970
cardiovascular level you your muscles

156
00:09:06,010 --> 00:09:03,800
tend to advertise because you don't use

157
00:09:07,840 --> 00:09:06,020
them as much I don't use my legs almost

158
00:09:10,920 --> 00:09:07,850
almost at all while moving in early

159
00:09:15,160 --> 00:09:10,930
States and the third one is related to

160
00:09:18,580 --> 00:09:15,170
vision because of the because of the

161
00:09:21,370 --> 00:09:18,590
Jersey environment I spent change to

162
00:09:29,020 --> 00:09:21,380
change shape that will affect long-term

163
00:09:30,280 --> 00:09:29,030

vision even permanent okay look at we're

164
00:09:32,470 --> 00:09:30,290
now gonna have a question from one of

165
00:09:38,790 --> 00:09:32,480
your biggest fans and that's five year

166
00:09:44,820 --> 00:09:38,800
old Alessandro Jordan jelly jam on son

167
00:09:49,420 --> 00:09:44,830
not me I demander a and C get additional

168
00:09:56,380 --> 00:09:49,430
acid reality Abby that metal bottle

169
00:09:58,120 --> 00:09:56,390
crashes ciao so with the Kepler

170
00:10:02,910 --> 00:09:58,130
telescope he's spot on isn't he

171
00:10:12,910 --> 00:10:05,199
sounds amazing yeah it sounds like a

172
00:10:16,090 --> 00:10:12,920
great kid so here's my question is are

173
00:10:19,480 --> 00:10:16,100
there there are other forms of life on

174
00:10:22,170 --> 00:10:19,490
another planet supporting me so if

175
00:10:24,280 --> 00:10:22,180
you're ready for my answer that would be

176
00:10:27,460 --> 00:10:24,290
my answer would be this and this is

177
00:10:30,190 --> 00:10:27,470
Lucas weekly not not the astronaut just

178
00:10:33,790 --> 00:10:30,200
a simple person I believe that there are

179
00:10:36,190 --> 00:10:33,800
so many planet millions and millions of

180
00:10:38,199 --> 00:10:36,200
planets in the universe that what we

181
00:10:40,509 --> 00:10:38,209
lack right now is imagination if we

182
00:10:42,819 --> 00:10:40,519
could only imagine something different

183
00:10:45,940 --> 00:10:42,829
than what we call life maybe not based

184
00:10:47,769 --> 00:10:45,950
on on water not based on on the on

185
00:10:50,530 --> 00:10:47,779
oxygen bottle something completely

186
00:10:52,630 --> 00:10:50,540
different may be maintained maybe that

187
00:10:54,579 --> 00:10:52,640
you know different at different form of

188
00:10:57,519 --> 00:10:54,589

something comparable what we call life

189
00:10:59,949 --> 00:10:57,529
then I think that we are talking more

190
00:11:06,250 --> 00:10:59,959
about probabilities numbers and that's

191
00:11:09,639 --> 00:11:06,260
simplest way I can put it luca parmitano

192
00:11:11,829 --> 00:11:09,649
many thanks for joining us on I took we

193
00:11:15,040 --> 00:11:11,839
now got a few more questions from other

194
00:11:17,050 --> 00:11:15,050
programs and one of those is for

195
00:11:18,160 --> 00:11:17,060
learning world program is on education

196
00:11:20,439 --> 00:11:18,170
and we want to know what was the most

197
00:11:25,060 --> 00:11:20,449
important milestone in terms of learning

198
00:11:32,850 --> 00:11:29,410
ah that is that there is a great

199
00:11:36,070 --> 00:11:32,860
question if I had to pick one moment and

200
00:11:38,680 --> 00:11:36,080
really changed my life was when I was

201
00:11:41,910 --> 00:11:38,690
about 16 years old and I became an

202
00:11:46,030 --> 00:11:41,920
exchange student I I want a scholarship

203
00:11:48,600 --> 00:11:46,040
golly for a year by myself in the US as

204
00:11:53,080 --> 00:11:48,610
an exchange student and I think that

205
00:11:55,090 --> 00:11:53,090
coming from from ccd which is sort of

206
00:11:57,970 --> 00:11:55,100
you know it's in the south of Italy a

207
00:12:01,030 --> 00:11:57,980
little bit far away from from the heart

208
00:12:04,270 --> 00:12:01,040
of Europe that experience really opened

209
00:12:07,030 --> 00:12:04,280
my eyes and introduced me to the beauty

210
00:12:09,280 --> 00:12:07,040
of difference the beauty of something

211
00:12:11,770 --> 00:12:09,290
that is culturally completely are

212
00:12:14,170 --> 00:12:11,780
related to what you're used to and not

213
00:12:20,200 --> 00:12:14,180

to be afraid of social and cultural

214
00:12:22,510 --> 00:12:20,210
differences okay then I've got some

215
00:12:24,040 --> 00:12:22,520
questions from your colleagues with the

216
00:12:26,680 --> 00:12:24,050
arrival of the automated Transfer

217
00:12:28,870 --> 00:12:26,690
Vehicle you'll soon work on an

218
00:12:35,410 --> 00:12:28,880
experiment called phases what can you

219
00:12:40,980 --> 00:12:35,420
tell us about this experiment so faces

220
00:12:44,410 --> 00:12:40,990
is a statement it is related to emotions

221
00:12:46,300 --> 00:12:44,420
emotions are important because they they

222
00:12:50,100 --> 00:12:46,310
have applications in many different

223
00:12:54,250 --> 00:12:50,110
fields from from pure chemistry to

224
00:12:56,020 --> 00:12:54,260
chemical industry to even even the food

225
00:12:59,530 --> 00:12:56,030
industry and as an Italian that's the

226
00:13:01,930 --> 00:12:59,540
specifics important emotions have a

227
00:13:03,520 --> 00:13:01,940
tendency to be stable or unstable and

228
00:13:05,650 --> 00:13:03,530
sometimes we want them stable so

229
00:13:07,000 --> 00:13:05,660
sometimes we wander not stable on the

230
00:13:09,600 --> 00:13:07,010
space station we have the unique

231
00:13:12,670 --> 00:13:09,610
opportunity damning an environment where

232
00:13:15,190 --> 00:13:12,680
the disk decorator istics are not

233
00:13:21,090 --> 00:13:15,200
affected by gravity and so it's an ideal

234
00:13:29,050 --> 00:13:23,230
so how can we benefit from this

235
00:13:39,170 --> 00:13:33,350
let's imagine a few a fuser is basically

236
00:13:41,600 --> 00:13:39,180
a mix of different different chemicals

237
00:13:44,840 --> 00:13:41,610
now obviously we will want this chemical

238
00:13:47,210 --> 00:13:44,850

to be stable for the longest possible so

239
00:13:49,850 --> 00:13:47,220
that it can start it can be used later

240
00:13:53,000 --> 00:13:49,860
in the in any condition on the ground

241
00:13:57,170 --> 00:13:53,010
storage on on on space because of the

242
00:13:58,970 --> 00:13:57,180
lack of acceleration of gravity so we

243
00:14:00,950 --> 00:13:58,980
need this suit to be stable we need to

244
00:14:04,460 --> 00:14:00,960
understand what are the characteristics

245
00:14:06,080 --> 00:14:04,470
they make up your stable or stable solid

246
00:14:08,480 --> 00:14:06,090
so that we can exploit those

247
00:14:10,520 --> 00:14:08,490
characteristics and accentuate the one

248
00:14:13,970 --> 00:14:10,530
that we like emanate the ones that we

249
00:14:17,030 --> 00:14:13,980
don't like the same goes for for storage

250
00:14:21,350 --> 00:14:17,040
of food for example a simple plain like

251
00:14:24,410 --> 00:14:21,360
like a vinaigrette now you need

252
00:14:28,070 --> 00:14:24,420
everybody's seen these these bottles of

253
00:14:32,300 --> 00:14:28,080
mixes that separate after a while but we

254
00:14:38,330 --> 00:14:32,310
need to be great if we could have find a

255
00:14:40,340 --> 00:14:38,340
simple way to study these liquid solid a

256
00:14:43,220 --> 00:14:40,350
stain a certain form in a stable form

257
00:14:44,960 --> 00:14:43,230
for the longest time the same is true

258
00:14:47,270 --> 00:14:44,970
for the opposite sometimes we would like

259
00:14:49,820 --> 00:14:47,280
things to separate easily so that we can

260
00:14:53,200 --> 00:14:49,830
distinguish them and again the

261
00:14:57,380 --> 00:14:53,210
applications on the ground can vary from

262
00:15:00,770 --> 00:14:57,390
focus from storage to a simpler way of

263
00:15:02,360 --> 00:15:00,780

separating or cleaning there's just

264
00:15:04,070 --> 00:15:02,370
certainly certainly many more

265
00:15:07,490 --> 00:15:04,080
applications that i cannot think of

266
00:15:13,250 --> 00:15:07,500
right now those are just a few examples

267
00:15:14,900 --> 00:15:13,260
i could give okay so you're

268
00:15:17,300 --> 00:15:14,910
participating in an experiment in

269
00:15:19,970 --> 00:15:17,310
September with Michelle Hopkins called

270
00:15:24,100 --> 00:15:19,980
energy can you tell us briefly about

271
00:15:29,440 --> 00:15:26,259
it's sort of relate the one that I was

272
00:15:31,750 --> 00:15:29,450
talking about the diet in the future we

273
00:15:35,590 --> 00:15:31,760
will we will try to understand how we

274
00:15:39,940 --> 00:15:35,600
can go further in space leave low-earth

275
00:15:42,670 --> 00:15:39,950
orbit and and be independent well Jordan

276
00:15:45,670 --> 00:15:42,680
that we need to understand how much how

277
00:15:48,280 --> 00:15:45,680
much energy we spend as individuals when

278
00:15:51,670 --> 00:15:48,290
we are in orbit so this experiment that

279
00:15:54,430 --> 00:15:51,680
we are we will do in September and it's

280
00:15:56,170 --> 00:15:54,440
going to determine exact when except but

281
00:15:58,449 --> 00:15:56,180
a degree of precision that since never

282
00:16:02,410 --> 00:15:58,459
been obtained before exactly how much

283
00:16:05,769 --> 00:16:02,420
energy does navarrete astronaut Ozma not

284
00:16:09,130 --> 00:16:05,779
use while in space and that way we can

285
00:16:11,050 --> 00:16:09,140
we can predict the future how much you

286
00:16:13,960 --> 00:16:11,060
owe for the body how much food how much

287
00:16:17,769 --> 00:16:13,970
water we're going to need to store in

288
00:16:24,960 --> 00:16:17,779

the spaceship in order to go for a for a

289
00:16:29,439 --> 00:16:27,790
okay yeah I think we have no more time

290
00:16:31,780 --> 00:16:29,449
or maybe we could just quickly try and

291
00:16:35,759 --> 00:16:31,790
slip something in now can you explain

292
00:16:39,100 --> 00:16:35,769
what you drink no okay so we're done

293
00:16:41,019 --> 00:16:39,110
station we're out of time this is

294
00:16:44,620 --> 00:16:41,029
Houston ACR thank you that concludes the

295
00:16:47,439 --> 00:16:44,630
event thank you very much your news

296
00:16:54,370 --> 00:16:47,449
station we are now resuming operational