



1  
00:01:33,460 --> 00:02:36,710

you

2  
00:02:42,420 --> 00:02:39,180

good morning Atlanta is planning ship is

3  
00:02:44,220 --> 00:02:42,430

here with you how you doing today good

4  
00:02:47,699 --> 00:02:44,230

boy Houston nice to hear your voice

5  
00:02:49,710 --> 00:02:47,709

we're all with you okay Ken and we have

6  
00:02:52,410 --> 00:02:49,720

some work for you today I hate to get

7  
00:02:55,590 --> 00:02:52,420

you started so early but if you could go

8  
00:02:58,050 --> 00:02:55,600

on up to spec 20 the forward Jets are

9  
00:03:06,690 --> 00:02:58,060

getting a little cold we'd like to get

10  
00:03:09,390 --> 00:03:06,700

some firings on them but we need to

11  
00:03:11,340 --> 00:03:09,400

select a three on the dev so that would

12  
00:03:12,570 --> 00:03:11,350

be an item 1 plus 3 that'll tighten the

13  
00:03:23,619 --> 00:03:12,580

dead bands and get us a couple of

14

00:03:29,240 --> 00:03:26,690

Houston Atlantis with answers for the

15

00:03:34,210 --> 00:03:29,250

head of that questions okay we're ready

16

00:03:41,539 --> 00:03:37,339

Tyler bulky htn for Grand Rapids

17

00:03:43,490 --> 00:03:41,549

Michigan as a pretty confident and what

18

00:03:47,570 --> 00:03:43,500

ways is the MIR space station better

19

00:03:49,130 --> 00:03:47,580

than the space shuttle and we started to

20

00:03:51,229 --> 00:03:49,140

try to come up with the list of ways and

21

00:03:53,240 --> 00:03:51,239

then realize what you would really be

22

00:03:55,180 --> 00:03:53,250

comparing our apples and oranges are

23

00:03:58,339 --> 00:03:55,190

really two completely different vehicles

24

00:04:01,240 --> 00:03:58,349

here of course was designed to stay on

25

00:04:04,009 --> 00:04:01,250

orbit for a long time and it's

26  
00:04:06,610 --> 00:04:04,019  
approaching nearly 10 years old orbit

27  
00:04:11,240 --> 00:04:06,620  
the Space Shuttle was designed for

28  
00:04:15,050 --> 00:04:11,250  
frequent trips to at that space caring

29  
00:04:19,039 --> 00:04:15,060  
and fairly large amount of cargo so to

30  
00:04:22,250 --> 00:04:19,049  
say beer is better than the shuttle in

31  
00:04:24,890 --> 00:04:22,260  
some ways is only true because it does a

32  
00:04:27,640 --> 00:04:24,900  
different job so for sale in orbit for

33  
00:04:31,400 --> 00:04:27,650  
very long time near does have advantages

34  
00:04:34,550 --> 00:04:31,410  
if that is expandable they can change

35  
00:04:37,900 --> 00:04:34,560  
the configuration much more living

36  
00:04:43,010 --> 00:04:37,910  
volume in fear that we do it the shuttle

37  
00:04:45,409 --> 00:04:43,020  
also totally restored would say they say

38  
00:04:48,980 --> 00:04:45,419

we taste not have to carry liquid oxygen

39

00:04:51,920 --> 00:04:48,990

and hydrogen to generate electricity on

40

00:04:54,110 --> 00:04:51,930

the other hand the shuttle has

41

00:04:56,839 --> 00:04:54,120

advantages at being able to carry large

42

00:04:59,600 --> 00:04:56,849

payloads and a large number of people to

43

00:05:04,040 --> 00:04:59,610

a problem a low-earth orbit it's also a

44

00:05:06,440 --> 00:05:04,050

reusable space vehicle so they're just

45

00:05:09,950 --> 00:05:06,450

decide for two very different purposes

46

00:05:15,339 --> 00:05:09,960

so comparing them is perhaps are not up

47

00:05:17,779 --> 00:05:15,349

not something that's very easy to do

48

00:05:22,730 --> 00:05:17,789

okay bill we copy dad won't pass that

49

00:05:25,700 --> 00:05:22,740

along thanks very much ok the next word

50

00:05:30,260 --> 00:05:25,710

is for bill bill derbyshire age 40

51  
00:05:32,630 --> 00:05:30,270  
Aberdeen New Jersey bill and asks why we

52  
00:05:34,880 --> 00:05:32,640  
throw away the external tank he writes

53  
00:05:36,930 --> 00:05:34,890  
it seems a waste to throw away the ET

54  
00:05:38,700 --> 00:05:36,940  
just as you attain orbit would

55  
00:05:40,080 --> 00:05:38,710  
make sense to at least parts of the use

56  
00:05:43,200 --> 00:05:40,090  
tanks and save this valuable resource

57  
00:05:45,660 --> 00:05:43,210  
for future visions and while certainly

58  
00:05:48,540 --> 00:05:45,670  
we hate not to conserve all the

59  
00:05:50,490 --> 00:05:48,550  
resources that we can in order to park

60  
00:05:52,590 --> 00:05:50,500  
an external tank on orbit we would have

61  
00:05:55,200 --> 00:05:52,600  
to be able to circularize its orbit

62  
00:05:56,940 --> 00:05:55,210  
which would mean either carrying it all

63  
00:06:02,070 --> 00:05:56,950

the way to low-earth orbit with the

64

00:06:04,170 --> 00:06:02,080

shuttle in which case it would remain it

65

00:06:07,200 --> 00:06:04,180

or in orbit with Charlotte would

66

00:06:11,100 --> 00:06:07,210

ultimately be a hazard to other vehicles

67

00:06:13,530 --> 00:06:11,110

also without self-contained propulsive

68

00:06:16,770 --> 00:06:13,540

devices its orbit would serve decay and

69

00:06:19,290 --> 00:06:16,780

it would reenter anyway and then also

70

00:06:21,900 --> 00:06:19,300

even to another alternative would be to

71

00:06:23,910 --> 00:06:21,910

have a self-contained propulsion device

72

00:06:26,670 --> 00:06:23,920

on the external tank in which case it

73

00:06:29,100 --> 00:06:26,680

could circularize its own orbit but in

74

00:06:32,730 --> 00:06:29,110

idiot k any case the cost to do that

75

00:06:35,700 --> 00:06:32,740

would probably be significantly higher

76

00:06:39,330 --> 00:06:35,710

that the conservation of resources we

77

00:06:44,430 --> 00:06:39,340

would realize by keeping the excel tanks

78

00:06:54,970 --> 00:06:44,440

a little bit okay bill would copy that

79

00:07:02,080 --> 00:06:58,720

and all our staff with a third one here

80

00:07:05,560 --> 00:07:02,090

from Jill Davis Carl h12 Scott Air Force

81

00:07:07,990 --> 00:07:05,570

Base Illinois yes how many hours of

82

00:07:10,510 --> 00:07:08,000

sleep two astronauts get call it space

83

00:07:12,220 --> 00:07:10,520

is the sleep wrestle how long did your

84

00:07:15,220 --> 00:07:12,230

body's take to adjust to be a Christmas

85

00:07:17,500 --> 00:07:15,230

before being able to sleep well the

86

00:07:19,810 --> 00:07:17,510

number of hours we sleep berries just as

87

00:07:22,600 --> 00:07:19,820

it does on the ground during this side

88

00:07:26,860 --> 00:07:22,610

we've been scheduled for between six and

89

00:07:29,230 --> 00:07:26,870

eight hours of sleep and we've had to be

90

00:07:32,700 --> 00:07:29,240

so busy up here that we get that we do

91

00:07:35,710 --> 00:07:32,710

get fatigued so the sleep Israel and

92

00:08:50,530 --> 00:07:35,720

we've been able to sleep since the first

93

00:08:56,319 --> 00:08:53,319

vanished minus Houston were two minutes

94

00:08:58,540 --> 00:08:56,329

to LOL and we'll pick you up ten minutes

95

00:09:12,759 --> 00:08:58,550

later on the other side should be an

96

00:11:58,509 --> 00:09:12,769

Emmy team about 33 35 Roger that and

97

00:12:11,460 --> 00:12:00,710

Atlantis you have a go to swap to the be

98

00:12:11,470 --> 00:13:49,180

okay that's complete

99

00:13:58,250 --> 00:13:56,449

it'll an go in put the arm at the

100

00:13:59,660 --> 00:13:58,260

position for the plume attachment

101  
00:14:01,280 --> 00:13:59,670  
contamination experiment it kind of

102  
00:14:07,430 --> 00:14:01,290  
gives some interesting video if you want

103  
00:14:22,780 --> 00:14:07,440  
to look at that link yes we're looking

104  
00:14:22,790 --> 00:14:42,809  
great smiles

105  
00:14:42,819 --> 00:14:48,319  
lots of big smiles up here story

106  
00:14:54,929 --> 00:14:52,799  
sunglasses to kin story we thought you

107  
00:15:03,749 --> 00:14:54,939  
only had KO video through the East

108  
00:15:21,290 --> 00:15:03,759  
address we've got it the entire West

109  
00:15:21,300 --> 00:15:46,820  
that's a Louisiana smile yes it is

110  
00:15:46,830 --> 00:27:15,650  
Nigeria Ross

111  
00:27:15,660 --> 00:27:22,360  
Lane is Houston

112  
00:27:29,980 --> 00:27:26,770  
but you don't have the resolution y'all

113  
00:27:32,770 --> 00:27:29,990

do but I see there's a coming up on a

114

00:27:39,160 --> 00:27:32,780

clear area over Canada right now I don't

115

00:27:42,370 --> 00:27:39,170

have your exact location also great like

116

00:28:24,570 --> 00:27:42,380

that is clear but I didn't want you to

117

00:28:31,770 --> 00:28:27,100

that's great-looking country we're about

118

00:28:35,530 --> 00:28:33,940

okay story and what time are you going