



GLOBAL FLIGHT
PANEL DWG.#
000708 REV. B
CELL SIDE

1
00:00:20,710 --> 00:00:19,109
the environment of space is very harsh

2
00:00:22,230 --> 00:00:20,720
on any hardware we put up whether it be

3
00:00:23,670 --> 00:00:22,240
satellites or rockets or the space

4
00:00:24,710 --> 00:00:23,680
shuttle and i think it's one of the

5
00:00:26,150 --> 00:00:24,720
things that

6
00:00:28,550 --> 00:00:26,160
the average person doesn't really

7
00:00:30,710 --> 00:00:28,560
appreciate

8
00:00:32,950 --> 00:00:30,720
the glory mission is going to fly in a

9
00:00:35,110 --> 00:00:32,960
what's known as a low earth polar orbit

10
00:00:37,510 --> 00:00:35,120
it will fly around the poles of the

11
00:00:39,350 --> 00:00:37,520
earth we're in a particular orbit called

12
00:00:41,350 --> 00:00:39,360
a sun synchronous orbit such that when

13
00:00:44,950 --> 00:00:41,360

we come over the equator every pass the

14

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

sun is in the same relative position

15

00:00:48,069 --> 00:00:46,480

when you think about that on every orbit

16

00:00:50,229 --> 00:00:48,079

we're going from sun into darkness and

17

00:00:51,670 --> 00:00:50,239

sun into darkness and so the spacecraft

18

00:00:53,590 --> 00:00:51,680

can cycle through temperature extremes

19

00:00:55,590 --> 00:00:53,600

of 100 degrees centigrade from high to

20

00:00:57,270 --> 00:00:55,600

low and so you just think about going

21

00:00:59,349 --> 00:00:57,280

from the hottest plates in the summer to

22

00:01:01,430 --> 00:00:59,359

the coldest place in the winter every 45

23

00:01:03,430 --> 00:01:01,440

minutes that extreme thermal cycling is

24

00:01:04,950 --> 00:01:03,440

very tough on the spacecraft

25

00:01:06,630 --> 00:01:04,960

so what we do on the ground is we try

26

00:01:08,070 --> 00:01:06,640

and expose the spacecraft to the

27

00:01:10,230 --> 00:01:08,080

environment that it will see in space as

28

00:01:12,789 --> 00:01:10,240

much as we can before launch to try and

29

00:01:14,390 --> 00:01:12,799

work out all those kinks starting at the

30

00:01:16,070 --> 00:01:14,400

component level we do vibration and

31

00:01:17,830 --> 00:01:16,080

thermal testing and then up to the

32

00:01:19,429 --> 00:01:17,840

instrument level so with the aps and tim

33

00:01:21,350 --> 00:01:19,439

instruments they'll go through a full

34

00:01:22,630 --> 00:01:21,360

environmental test program and then once

35

00:01:24,070 --> 00:01:22,640

we put the whole thing together we

36

00:01:26,149 --> 00:01:24,080

expose the spacecraft with the

37

00:01:28,230 --> 00:01:26,159

instruments to a series of vibration

38

00:01:29,749 --> 00:01:28,240

tests and then we put in a vacuum

39

00:01:31,590 --> 00:01:29,759

chamber and pump out all the air to

40

00:01:32,710 --> 00:01:31,600

simulate the vacuum of space and we'll

41

00:01:34,789 --> 00:01:32,720

cycle it through those temperature

42

00:01:36,310 --> 00:01:34,799

extremes and again try and replicate all

43

00:01:37,830 --> 00:01:36,320

those environments that we'll see on

44

00:01:41,990 --> 00:01:37,840

space before we launch it to make sure

45

00:01:45,350 --> 00:01:43,830

the thermal cycling and the vibration of

46

00:01:47,350 --> 00:01:45,360

being launched on a rocket and all those

47

00:01:48,710 --> 00:01:47,360

things are very harsh on the spacecraft

48

00:01:50,069 --> 00:01:48,720

and if you don't check them out in

49

00:01:52,550 --> 00:01:50,079

advance there's a good possibility you

50

00:01:54,230 --> 00:01:52,560

could induce failures and if you induce

51

00:01:55,990 --> 00:01:54,240

faders on the way up there's no way to

52

00:01:57,830 --> 00:01:56,000

go grab the spacecraft and bring it back