
THE 88-SOUTH ANTARCTIC TRAVERSE
YEAR TWO

1
00:00:05,590 --> 00:00:04,150
so they fly you down on a military cargo

2
00:00:07,030 --> 00:00:05,600
plane so it's not like your passenger

3
00:00:09,030 --> 00:00:07,040
jet with windows everywhere that you can

4
00:00:10,870 --> 00:00:09,040
kind of see where you're coming into you

5
00:00:13,030 --> 00:00:10,880
just kind of land and they tell you

6
00:00:14,709 --> 00:00:13,040
you've arrived on antarctica and pop

7
00:00:16,550 --> 00:00:14,719
open a door

8
00:00:17,910 --> 00:00:16,560
thank you

9
00:00:19,670 --> 00:00:17,920
it's really breathtaking the first time

10
00:00:22,390 --> 00:00:19,680
you walk off the plane you get a blast

11
00:00:24,230 --> 00:00:22,400
of cold air in the face and it's sunny

12
00:00:26,470 --> 00:00:24,240
it's everything's white so it's really

13
00:00:28,790 --> 00:00:26,480

bright and sunny so we landed in mcmurdo

14
00:00:30,710 --> 00:00:28,800
which is on the coast so you've got

15
00:00:32,950 --> 00:00:30,720
this huge volcano in the background

16
00:00:34,950 --> 00:00:32,960
mount erebus and the trans-antarctic

17
00:00:36,150 --> 00:00:34,960
mountains and mount discovery off to one

18
00:00:38,150 --> 00:00:36,160
side and

19
00:00:40,069 --> 00:00:38,160
sea ice and a little ice shelf that

20
00:00:41,430 --> 00:00:40,079
you've just landed on i think the thing

21
00:00:43,030 --> 00:00:41,440
that struck out to me the most was you

22
00:00:45,029 --> 00:00:43,040
have these small little stations and you

23
00:00:46,630 --> 00:00:45,039
can easily get in your head that you're

24
00:00:48,150 --> 00:00:46,640
on campus or

25
00:00:49,430 --> 00:00:48,160
wherever but sort of realizing that when

26
00:00:52,709 --> 00:00:49,440
you look out that it's like yeah the

27
00:00:54,709 --> 00:00:52,719
next place is a couple thousand miles of

28
00:01:07,429 --> 00:00:54,719
nothing just white

29
00:01:11,830 --> 00:01:09,990
it took us about 12 days to conduct the

30
00:01:14,230 --> 00:01:11,840
entire traverse from south pole back

31
00:01:15,510 --> 00:01:14,240
around to south pole and that's moving

32
00:01:16,390 --> 00:01:15,520
you know roughly

33
00:01:19,350 --> 00:01:16,400
seven

34
00:01:21,830 --> 00:01:19,360
or so hours a day of travel and then

35
00:01:24,630 --> 00:01:21,840
then the real work begins

36
00:01:26,789 --> 00:01:24,640
what we're doing is collecting gps data

37
00:01:28,149 --> 00:01:26,799
which gives us not only our latitude and

38
00:01:30,789 --> 00:01:28,159

longitude but it also gives us our

39
00:01:32,550 --> 00:01:30,799
elevation we take those gps elevation

40
00:01:34,230 --> 00:01:32,560
measurements which are precise down to

41
00:01:36,149 --> 00:01:34,240
about the centimeter level and we

42
00:01:39,429 --> 00:01:36,159
compare them directly against icesat-2's

43
00:01:44,550 --> 00:01:41,830
we go to this part of the world because

44
00:01:47,749 --> 00:01:44,560
basically the icesat-2 orbits all

45
00:01:49,990 --> 00:01:47,759
converge at 88 degrees north and 88

46
00:01:52,830 --> 00:01:50,000
degrees south so we get the densest data

47
00:01:55,190 --> 00:01:52,840
record that's great from a validation

48
00:01:56,389 --> 00:01:55,200
standpoint antarctica is a great place

49
00:01:57,709 --> 00:01:56,399
for this type of validation it's a

50
00:02:00,310 --> 00:01:57,719
relatively

51
00:02:01,590 --> 00:02:00,320
unchanging surface at that at that

52
00:02:03,910 --> 00:02:01,600
latitude

53
00:02:06,550 --> 00:02:03,920
and at that elevation we're interested

54
00:02:08,309 --> 00:02:06,560
in the centimeter level accuracy of the

55
00:02:09,990 --> 00:02:08,319
satellite centimeter level accuracy of

56
00:02:11,830 --> 00:02:10,000
our gps data the reason why we're

57
00:02:13,830 --> 00:02:11,840
interested in that is imagine a

58
00:02:15,830 --> 00:02:13,840
centimeter of water over the continental

59
00:02:17,589 --> 00:02:15,840
united states and now putting that into

60
00:02:19,990 --> 00:02:17,599
the ocean that's obviously a lot of

61
00:02:22,710 --> 00:02:20,000
water ultimately when we're interested

62
00:02:24,790 --> 00:02:22,720
in that level of change over that great

63
00:02:28,309 --> 00:02:24,800

distance so centimeters become really

64
00:02:32,869 --> 00:02:31,430
it's amazing how much elevation changes

65
00:02:34,390 --> 00:02:32,879
the environment

66
00:02:36,150 --> 00:02:34,400
the air is drier

67
00:02:37,270 --> 00:02:36,160
it's colder the wind bites a little

68
00:02:39,430 --> 00:02:37,280
harder

69
00:02:43,350 --> 00:02:39,440
what you doing kelly

70
00:02:46,470 --> 00:02:44,130
trying to breathe

71
00:02:47,990 --> 00:02:46,480
[Laughter]

72
00:02:50,229 --> 00:02:48,000
trying to breathe what's the problem

73
00:02:53,030 --> 00:02:50,239
with your breathing

74
00:02:58,470 --> 00:02:53,040
we're at 10 000 feet above sea level

75
00:03:01,910 --> 00:02:59,910
one of the additional instruments that

76
00:03:04,630 --> 00:03:01,920
we brought this year was this downward

77
00:03:06,390 --> 00:03:04,640
looking laser to get a grip on surface

78
00:03:07,670 --> 00:03:06,400
roughness as we're driving along sort of

79
00:03:10,070 --> 00:03:07,680
the small scale

80
00:03:12,710 --> 00:03:10,080
sastrugi and rolls in the snow as we're

81
00:03:14,949 --> 00:03:12,720
driving along that gives us a handle of

82
00:03:16,790 --> 00:03:14,959
how much the gps is moving around

83
00:03:18,550 --> 00:03:16,800
if it's floating on top of the snow if

84
00:03:19,509 --> 00:03:18,560
it's moving with the roughness of the

85
00:03:21,430 --> 00:03:19,519
surface

86
00:03:22,790 --> 00:03:21,440
and then ultimately make corrections for

87
00:03:25,110 --> 00:03:22,800
that if we need to

88
00:03:26,949 --> 00:03:25,120

we've had two amazing traverses the

89
00:03:28,710 --> 00:03:26,959
first one was fantastic and a bit

90
00:03:30,390 --> 00:03:28,720
pioneering and figured out what worked

91
00:03:31,750 --> 00:03:30,400
what didn't work second one improved on

92
00:03:33,110 --> 00:03:31,760
that we've already thought about ways

93
00:03:34,869 --> 00:03:33,120
that we're going to improve the next one

94
00:03:37,030 --> 00:03:34,879
for sure maybe streamline things make