1
00:00:22,000 --> 00:00:34,790
whoops

2
00:00:40,470 --> 00:00:37,670
southeast new mexico beautiful rugged

3
00:00:43,430 --> 00:00:40,480
terrain and open spaces dotted here and

4
00:00:45,670 --> 00:00:43,440
there with towns like fort sumner

5
00:00:47,990 --> 00:00:45,680
the kid was shot and buried here over a

6
00:00:50,069 --> 00:00:48,000
century ago and folks joked that

7
00:00:52,950 --> 00:00:50,079
nothing's happened since

8
00:00:55,430 --> 00:00:52,960
but actually every spring and fall fort

9
00:00:58,670 --> 00:00:55,440
sumner's small airport becomes a base

10
00:01:01,029 --> 00:00:58,680
for scientific research

11
00:01:02,950 --> 00:01:01,039
investigators from around the world

12
00:01:05,030 --> 00:01:02,960
converge here bringing with them

13
00:01:06,230 --> 00:01:05,040

instrument packages weighing thousands

14
00:01:08,550 --> 00:01:06,240
of pounds

15
00:01:12,070 --> 00:01:08,560
their goal is to fly these large

16
00:01:14,789 --> 00:01:12,080
payloads 25 miles up near the edges of

17
00:01:16,950 --> 00:01:14,799
space gathering data about things like

18
00:01:19,190 --> 00:01:16,960
cosmic rays without the distorting

19
00:01:21,429 --> 00:01:19,200
effects of the atmosphere

20
00:01:24,230 --> 00:01:21,439
nasa launches the instruments but not

21
00:01:26,789 --> 00:01:24,240
with rockets or planes even aircraft

22
00:01:29,350 --> 00:01:26,799
like the er2 can't fly high or long

23
00:01:32,789 --> 00:01:29,360
enough and it's not cost effective to

24
00:01:35,429 --> 00:01:32,799
put such large payloads aboard a shuttle

25
00:01:37,990 --> 00:01:35,439
the alternative large helium-filled

26
00:01:39,910 --> 00:01:38,000
balloons made of a special polyethylene

27
00:01:41,830 --> 00:01:39,920
that can withstand cold temperatures in

28
00:01:45,030 --> 00:01:41,840
the upper atmosphere

29
00:01:47,190 --> 00:01:45,040
fully inflated they can stand 900 feet

30
00:01:59,190 --> 00:01:47,200
tall about the height of the eiffel

31
00:02:04,630 --> 00:02:01,670
once a balloon rises above an instrument

32
00:02:09,589 --> 00:02:04,640
package it is released and the two begin

33
00:02:11,910 --> 00:02:09,599
their journey to 130 000 feet

34
00:02:14,869 --> 00:02:11,920
throughout a flight scientists and the

35
00:02:17,190 --> 00:02:14,879
nasa operations team tracked the payload

36
00:02:20,390 --> 00:02:17,200
continuously recording data it sends

37
00:02:24,630 --> 00:02:22,150
because the instruments eventually

38
00:02:27,190 --> 00:02:24,640

return to the ground recovery trucks are

39
00:02:29,350 --> 00:02:27,200
deployed these crews often cover

40
00:02:35,350 --> 00:02:29,360
hundreds of miles a day following a

41
00:02:39,430 --> 00:02:37,350
towards the end of the flight a small

42
00:02:41,589 --> 00:02:39,440
plane heads out and surveys potential

43
00:02:43,990 --> 00:02:41,599
landing sites for the payload

44
00:02:46,390 --> 00:02:44,000
new mexico offers plenty of unpopulated

45
00:02:48,869 --> 00:02:46,400
areas for safe touchdowns

46
00:02:51,270 --> 00:02:48,879
satisfied that no lives or property are

47
00:02:53,750 --> 00:02:51,280
in danger the air crew transmits a

48
00:02:55,830 --> 00:02:53,760
signal that destroys the balloon and the

49
00:03:00,229 --> 00:02:55,840
instrument package parachutes to the

50
00:03:04,470 --> 00:03:02,630
successful landings don't always mean

51
00:03:06,309 --> 00:03:04,480
easy recoveries

52
00:03:09,670 --> 00:03:06,319
getting transport trucks into the

53
00:03:12,229 --> 00:03:09,680
touchdown area is the first hurdle

54
00:03:14,869 --> 00:03:12,239
hauling out a three-ton load without

55
00:03:17,509 --> 00:03:14,879
damaging it is another

56
00:03:19,110 --> 00:03:17,519
and three entangled parachutes can be a

57
00:03:21,030 --> 00:03:19,120
real challenge

58
00:03:23,270 --> 00:03:21,040
but the people in the program pride

59
00:03:25,910 --> 00:03:23,280
themselves on good science at a

60
00:03:31,190 --> 00:03:25,920
reasonable cost and getting payloads

61
00:03:35,830 --> 00:03:33,430
nasa has been doing missions like this

62
00:03:37,750 --> 00:03:35,840
since the early 1960s

63
00:03:39,110 --> 00:03:37,760

although the balloons are larger and the

64
00:03:42,390 --> 00:03:39,120
equipment to launch them more

65
00:03:44,229 --> 00:03:42,400
sophisticated it remains a very reliable

66
00:03:45,589 --> 00:03:44,239
way to do studies in the upper

67
00:03:48,149 --> 00:03:45,599
atmosphere

68
00:03:50,390 --> 00:03:48,159
it's also often the only way especially

69
00:03:57,670 --> 00:03:50,400
for universities and graduate students

70
00:04:03,589 --> 00:04:01,910
nasa's balloon program over 25 years