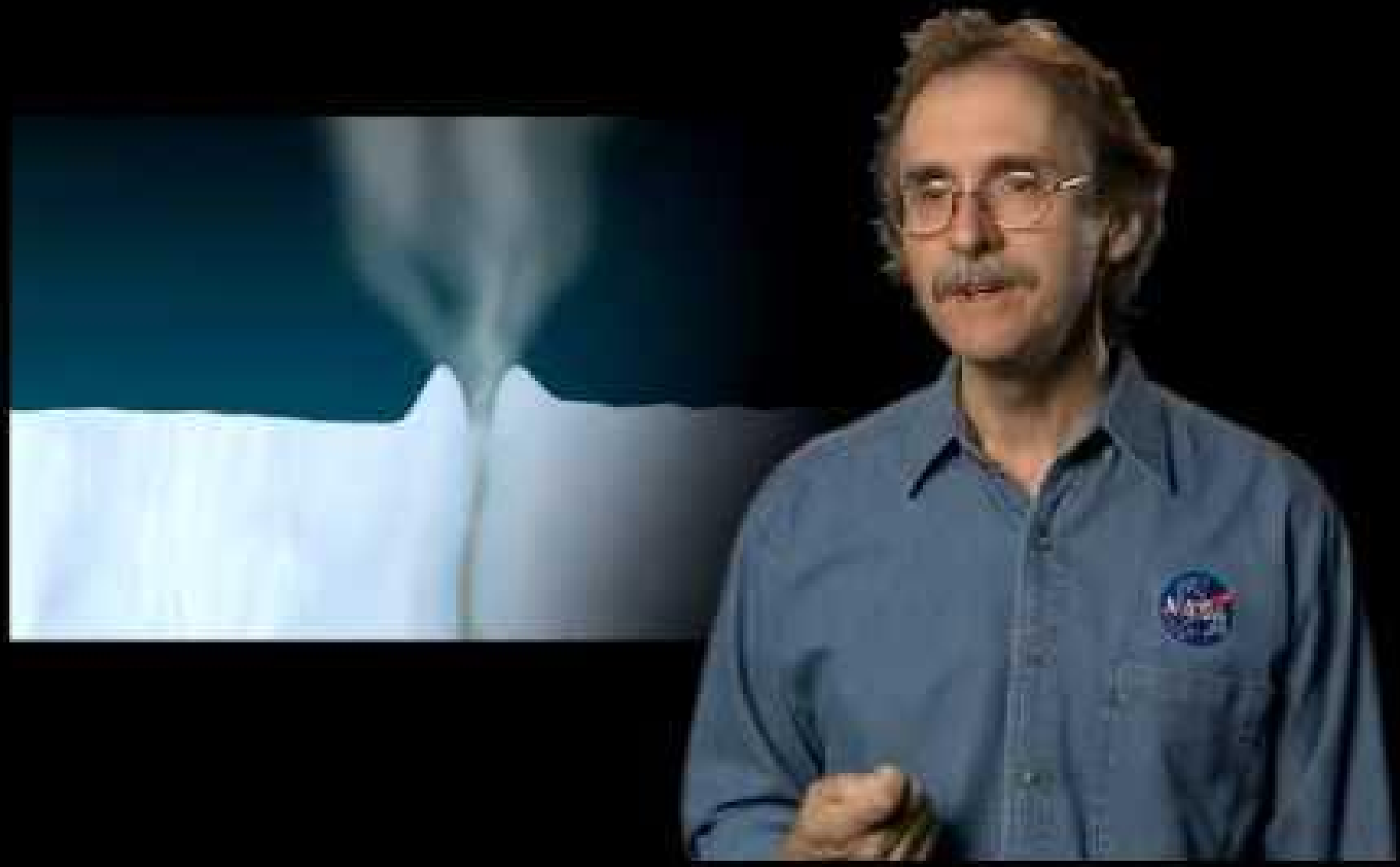

1
00:00:09,860 --> 00:00:08,059
and solidus is an amazing place it's one

2
00:00:13,539 --> 00:00:09,870
of the most remarkable places we found

3
00:00:17,810 --> 00:00:13,549
in the Saturn system it's got these

4
00:00:20,779 --> 00:00:17,820
fractures that are spouting water vapor

5
00:00:23,840 --> 00:00:20,789
and ice these enormous plumes coming out

6
00:00:25,970 --> 00:00:23,850
of the South Pole the geysers on

7
00:00:28,099 --> 00:00:25,980
Enceladus are actually quite a lot like

8
00:00:29,689 --> 00:00:28,109
Old Faithful geyser or other geysers in

9
00:00:31,310 --> 00:00:29,699
Yellowstone National Park that we are

10
00:00:33,709 --> 00:00:31,320
familiar with in fact the total amount

11
00:00:35,630 --> 00:00:33,719
of material coming out of Old Faithful

12
00:00:37,190 --> 00:00:35,640
in one of its eruptions is similar to

13
00:00:40,330 --> 00:00:37,200

the amount of material that comes out of

14
00:00:45,470 --> 00:00:42,619
obviously there's a source of water down

15
00:00:47,660 --> 00:00:45,480
there it's coming out everywhere so how

16
00:00:49,220 --> 00:00:47,670
big it is how extensive people don't

17
00:00:51,619 --> 00:00:49,230
know for sure because it's so much

18
00:00:53,900 --> 00:00:51,629
colder we don't get liquid water coming

19
00:00:56,139 --> 00:00:53,910
out of those guys as we get a lot of

20
00:00:58,549 --> 00:00:56,149
very fine ice particles a lot of vapor

21
00:01:00,680 --> 00:00:58,559
for this flyby we're coming down from

22
00:01:04,579 --> 00:01:00,690
the North going past the equator and

23
00:01:06,679 --> 00:01:04,589
down under the South Pole the shuttle in

24
00:01:09,230 --> 00:01:06,689
orbit around the Earth is there about

25
00:01:12,380 --> 00:01:09,240
300 kilometers up we're going to be

26
00:01:14,450 --> 00:01:12,390
about six times closer than that the

27
00:01:16,910 --> 00:01:14,460
closest approach point is just a little

28
00:01:18,590 --> 00:01:16,920
below the equator but by the time we get

29
00:01:20,539 --> 00:01:18,600
down near the South Pole where the

30
00:01:22,910 --> 00:01:20,549
plumes are we're gonna be up more like

31
00:01:24,590 --> 00:01:22,920
200 kilometers to altitude we just sort

32
00:01:27,620 --> 00:01:24,600
of grazed the edge of the plume last

33
00:01:30,679 --> 00:01:27,630
time in 2005 this time we're really

34
00:01:33,770 --> 00:01:30,689
plunging into the plume the measurements

35
00:01:36,920 --> 00:01:33,780
made by the instruments will certainly

36
00:01:39,319 --> 00:01:36,930
lead to understanding the interior how

37
00:01:41,450 --> 00:01:39,329
extensive the water source is what

38
00:01:44,300 --> 00:01:41,460

processes are forming the skies earth

39
00:01:45,710 --> 00:01:44,310
will really be tasting the plume taking

40
00:01:47,210 --> 00:01:45,720
the material from the flew into the

41
00:01:53,090 --> 00:01:47,220
instruments on board the spacecraft and

42
00:01:55,069 --> 00:01:53,100
analyzing them how risky is it to be

43
00:01:58,090 --> 00:01:55,079
flying through this part of the probes

44
00:02:00,770 --> 00:01:58,100
the particles are very small

45
00:02:02,929 --> 00:02:00,780
micron-sized particles none of the big

46
00:02:05,389 --> 00:02:02,939
particles can get lofted by the plumes

47
00:02:07,700 --> 00:02:05,399
to be as high as we're going to be so