



1
00:00:00,360 --> 00:00:10,709

[Music]

2
00:00:14,310 --> 00:00:12,310

when you fill a glass of water you

3
00:00:17,029 --> 00:00:14,320

probably don't ponder where the clear

4
00:00:20,150 --> 00:00:17,039

liquid came from yes it flows from a

5
00:00:23,349 --> 00:00:20,160

faucet but originally it came from a

6
00:00:28,150 --> 00:00:25,509

clouds are the mechanism to transport

7
00:00:30,390 --> 00:00:28,160

water from the oceans and through

8
00:00:31,910 --> 00:00:30,400

evaporation back into the land and form

9
00:00:36,389 --> 00:00:31,920

our lakes and rivers and our water

10
00:00:42,069 --> 00:00:39,030

water evaporates from oceans lakes and

11
00:00:43,590 --> 00:00:42,079

land the moisture rises then cools to

12
00:00:45,990 --> 00:00:43,600

form clouds

13
00:00:49,190 --> 00:00:46,000

when the clouds become heavy with water

14

00:00:51,990 --> 00:00:49,200

they drop it back to earth as snow or

15

00:00:55,510 --> 00:00:53,990

most of the satellites that are with the

16

00:00:57,590 --> 00:00:55,520

earth look at the top of the clouds and

17

00:00:59,110 --> 00:00:57,600

tell us where the top of the clouds are

18

00:01:00,389 --> 00:00:59,120

and of course in the bottom of the earth

19

00:01:02,950 --> 00:01:00,399

we can see the bottom of the class but

20

00:01:05,189 --> 00:01:02,960

we don't know what's in between

21

00:01:06,950 --> 00:01:05,199

we're missing the detailed information

22

00:01:08,230 --> 00:01:06,960

that determines what effect the cloud is

23

00:01:10,710 --> 00:01:08,240

going to have

24

00:01:11,990 --> 00:01:10,720

in whether it's going to precipitate

25

00:01:13,670 --> 00:01:12,000

whether it's going to give us rain

26

00:01:16,070 --> 00:01:13,680

whether it's going to give us snow

27

00:01:17,910 --> 00:01:16,080

whether it's going to have a net heating

28

00:01:20,070 --> 00:01:17,920

effect on the planet or a net cooling

29

00:01:22,070 --> 00:01:20,080

effect on the planet

30

00:01:24,550 --> 00:01:22,080

nasa's cloud set will attempt to answer

31

00:01:26,390 --> 00:01:24,560

these questions from space for the first

32

00:01:29,109 --> 00:01:26,400

time scientists will be able to see

33

00:01:30,710 --> 00:01:29,119

clouds in 3d

34

00:01:34,870 --> 00:01:30,720

this is the first

35

00:01:37,670 --> 00:01:34,880

time we will see snowfall from space

36

00:01:39,910 --> 00:01:37,680

we will know for the very first time

37

00:01:41,350 --> 00:01:39,920

globally what percentage of clouds

38

00:01:43,910 --> 00:01:41,360

produce rain

39

00:01:46,149 --> 00:01:43,920

we will know for the very first time

40

00:01:48,550 --> 00:01:46,159

how much water how much ice is locked up

41

00:01:50,069 --> 00:01:48,560

in clouds

42

00:01:52,710 --> 00:01:50,079

clouds that will share its right into

43

00:01:55,109 --> 00:01:52,720

orbit with another nasa satellite the

44

00:01:57,429 --> 00:01:55,119

cloud aerosol lidar and infrared

45

00:02:00,469 --> 00:01:57,439

pathfinder satellite observations known

46

00:02:03,429 --> 00:02:00,479

as calypso once in space the two will

47

00:02:05,990 --> 00:02:03,439

hop aboard the a-train

48

00:02:08,229 --> 00:02:06,000

well the a-train is a set of satellites

49

00:02:09,430 --> 00:02:08,239

that will follow each other in orbit and

50

00:02:11,190 --> 00:02:09,440

take data

51
00:02:13,430 --> 00:02:11,200
the a train will provide the most

52
00:02:16,390 --> 00:02:13,440
comprehensive observations of earth's

53
00:02:18,390 --> 00:02:16,400
atmosphere ever obtained and cloudsat

54
00:02:21,030 --> 00:02:18,400
will do its part to watch over one of

55
00:02:22,630 --> 00:02:21,040
our most precious resources

56
00:02:24,630 --> 00:02:22,640
everyone in the world is worried about

57
00:02:26,150 --> 00:02:24,640
oil right now right we don't have enough

58
00:02:29,190 --> 00:02:26,160
oil the oil supply is going to run out

59
00:02:30,790 --> 00:02:29,200
what about our water supply

60
00:02:33,910 --> 00:02:30,800
so the next time you pour yourself a

61
00:02:35,509 --> 00:02:33,920
glass of water remember

62
00:02:37,509 --> 00:02:35,519
the water that you have in a glass of

63
00:02:39,430 --> 00:02:37,519

water in front of you