



1
00:00:17,660 --> 00:00:14,570
from space we realize that water covers

2
00:00:19,970 --> 00:00:17,670
most of planet Earth it is ocean waves

3
00:00:22,910 --> 00:00:19,980
that transfer and maintain energy in our

4
00:00:24,980 --> 00:00:22,920
atmosphere recently an international

5
00:00:27,380 --> 00:00:24,990
effort between NASA and the Office of

6
00:00:29,300 --> 00:00:27,390
Naval Research studied ocean waves off

7
00:00:32,600 --> 00:00:29,310
the coast of Virginia with aircraft

8
00:00:34,490 --> 00:00:32,610
ships and buoys it was designed to

9
00:00:36,620 --> 00:00:34,500
better understand how ocean waves

10
00:00:39,459 --> 00:00:36,630
develop and dissipate and how they

11
00:00:42,319 --> 00:00:39,469
transfer energy between the sea and air

12
00:00:44,810 --> 00:00:42,329
this information is useful in shipping

13
00:00:48,770 --> 00:00:44,820

ocean monitoring systems and weather

14

00:00:53,910 --> 00:00:51,450

much of what we presently know comes

15

00:00:57,829 --> 00:00:53,920

from research in wave tanks like the one

16

00:01:00,810 --> 00:00:57,839

at Nashua using lasers dr. northern Wan

17

00:01:06,730 --> 00:01:00,820

investigates the speed of currents below

18

00:01:10,870 --> 00:01:08,800

laboratory research along with few

19

00:01:13,569 --> 00:01:10,880

studies like this

20

00:01:17,020 --> 00:01:13,579

research vessel Creed helped determine

21

00:01:19,090 --> 00:01:17,030

how waves and currents interact the

22

00:01:22,030 --> 00:01:19,100

Creed is specially designed with

23

00:01:24,520 --> 00:01:22,040

underwater stabilizers and

24

00:01:27,190 --> 00:01:24,530

and it will see well making it a near

25

00:01:33,590 --> 00:01:27,200

perfect wave

26

00:01:37,590 --> 00:01:35,820

scattered throughout the ship are a

27

00:01:40,320 --> 00:01:37,600

variety of instruments that collect

28

00:01:42,450 --> 00:01:40,330

local weather and ocean data would

29

00:01:45,390 --> 00:01:42,460

create gathers information the total

30

00:01:49,700 --> 00:01:45,400

visits to a meteorological Dewar's in a

31

00:01:49,710 --> 00:01:56,920

because it made such an tunisians

32

00:02:05,330 --> 00:02:00,080

that's right we're eating a total item

33

00:02:08,389 --> 00:02:05,340

perhaps or six five or six feet remote

34

00:02:10,520 --> 00:02:08,399

sensing planes like NASA's c-130 can

35

00:02:13,440 --> 00:02:10,530

cover a larger area than the Creed in

36

00:02:18,839 --> 00:02:16,890

a year and have to be perfect even so

37

00:02:21,000 --> 00:02:18,849

there are exciting possibilities

38

00:02:23,339 --> 00:02:21,010

according to chief scientist dr. mark

39

00:02:25,740 --> 00:02:23,349

Donnelly the most striking of which is

40

00:02:26,880 --> 00:02:25,750

the ability to measure the surface and

41

00:02:30,570 --> 00:02:26,890

directional properties away from

42

00:02:31,920 --> 00:02:30,580

aircraft with what's called microwave

43

00:02:33,509 --> 00:02:31,930

radar systems that look down on the

44

00:02:35,030 --> 00:02:33,519

surface and either make in effect a

45

00:02:38,460 --> 00:02:35,040

stereographic map of the surface by

46

00:02:40,500 --> 00:02:38,470

sensing the elevation of aircraft all by

47

00:02:42,839 --> 00:02:40,510

scanning it's low properties in using

48

00:02:44,970 --> 00:02:42,849

that one instrument built by the

49

00:02:47,640 --> 00:02:44,980

University of Massachusetts produces

50

00:02:50,130 --> 00:02:47,650

circular radar scans that plot complete

51
00:02:54,180 --> 00:02:50,140
profiles of in researchers a color-coded

52
00:02:56,970 --> 00:02:54,190
roadmap of wave heights data from

53
00:02:59,220 --> 00:02:56,980
aircraft buoys and the ship give a high

54
00:03:01,949 --> 00:02:59,230
angle view of the study site during

55
00:03:04,229 --> 00:03:01,959
intense weather animation shows a

56
00:03:07,890 --> 00:03:04,239
storm's track with hot colors

57
00:03:10,470 --> 00:03:07,900
representing the highest waves being

58
00:03:12,160 --> 00:03:10,480
able to combine research tools like this

59
00:03:13,950 --> 00:03:12,170
will eventually

60
00:03:16,080 --> 00:03:13,960
to study

61
00:03:19,200 --> 00:03:16,090
the world from space with satellites