



1

00:00:12,090 --> 00:00:16,130

Sea surface salinity has a massive influence on Earth's climate.

2

00:00:16,150 --> 00:00:20,150

With Aquarius, scientists

3

00:00:20,170 --> 00:00:24,190

will have a new way to measure that influence in a consistent way.

4

00:00:24,210 --> 00:00:28,220

Today's computer models reliably

5

00:00:28,240 --> 00:00:32,240

predict global temperatures. But when it comes to ocean salinity,

6

00:00:32,260 --> 00:00:36,290

the picture gets fuzzier. Researchers use a wide

7

00:00:36,310 --> 00:00:40,340

range of methods to gather data, making it difficult to

8

00:00:40,360 --> 00:00:44,380

obtain a true global picture of how sea surface salinity is influencing

9

00:00:44,400 --> 00:00:48,410

the ocean. Aquarius is poised

10

00:00:48,430 --> 00:00:52,450

to provide a missing link in satellite-Earth observations.

11

00:00:52,470 --> 00:00:56,490

Satellites already measure sea surface temperature, rainfall,

12

00:00:56,510 --> 00:01:00,530

sea level, surface wind, and ocean color.

13

00:01:00,550 --> 00:01:04,550

Aquarius will provide a key to help unlock links

14

00:01:04,570 --> 00:01:08,550

between ocean circulation, the global water cycle, and

15

00:01:08,570 --> 00:01:12,600

climate. Its data will improve the accuracy of computer

16

00:01:12,620 --> 00:01:16,640

models that forecast climate changes and patterns by mapping the

17

00:01:16,660 --> 00:01:20,680

entire ice-free ocean every seven days.

18

00:01:20,700 --> 00:01:24,710

Aquarius will accomplish this daunting task by using a

19

00:01:24,730 --> 00:01:28,740

state of the art radiometer that will detect natural thermal emissions

20

00:01:28,760 --> 00:01:32,770

from the ocean surface that are affected in small part by salinity.

21

00:01:32,790 --> 00:01:36,790

Aquarius will also employ a scatterometer

22

00:01:36,810 --> 00:01:40,810

which will emit energy pulses, then study the

23

00:01:40,830 --> 00:01:44,840

return pulses to measure and correct for the effects caused by ocean

24

00:01:44,860 --> 00:01:48,890

waves. With its unprecedented accurate and

25

00:01:48,910 --> 00:01:52,930

consistent salinity measurements, Aquarius will help

