



10 Feb 2014 13:00

1
00:00:00,200 --> 00:00:03,103
NASA funded researchers have
linked unexplained pockets of

2
00:00:03,103 --> 00:00:06,807
ozone over the Western Pacific
Ocean to fires thousands of

3
00:00:06,807 --> 00:00:11,378
miles away. The findings are
from a 2014 field campaign over

4
00:00:11,378 --> 00:00:15,449
the remote island of Guam.
Scientists took to the air

5
00:00:15,449 --> 00:00:18,552
aboard flying laboratories
filled with instruments to study

6
00:00:18,552 --> 00:00:22,089
the chemistry of the atmosphere.
Measurements taken along flight

7
00:00:22,089 --> 00:00:26,593
paths up to 30,000 feet revealed
areas with levels of ozone that

8
00:00:26,593 --> 00:00:29,796
were three times higher than
normal. So while

9
00:00:29,796 --> 00:00:33,500
ozone is an important shield
against ultraviolet radiation in

10
00:00:33,500 --> 00:00:36,103
the upper atmosphere, in the
lower atmosphere it is a very

11
00:00:36,103 --> 00:00:39,606
strong greenhouse gas. So what
we were trying to explore, is

12
00:00:39,606 --> 00:00:43,277
what was causing these very high
levels of ozone in the Pacific.

13
00:00:43,277 --> 00:00:46,146
The answer came from two
chemicals found with the ozone

14
00:00:46,146 --> 00:00:49,349
linked to forest fires and the
burning of vegetation. As these

15
00:00:49,349 --> 00:00:53,153
fires burn, a mix of organic
compounds and gases that react

16
00:00:53,153 --> 00:00:56,924
to form ozone are released into
the atmosphere. They're then

17
00:00:56,924 --> 00:01:00,127
transported by winds, sometimes
thousands of miles from their

18
00:01:00,127 --> 00:01:03,096
source. Using a
computer model, we traced the

19
00:01:03,096 --> 00:01:05,899
winds back in time to their
origins so we could figure out

20
00:01:05,899 --> 00:01:09,303
the source of these chemicals.
What the model and satellite

21
00:01:09,303 --> 00:01:12,472
data showed, is that these
chemicals were coming from fires

22
00:01:12,472 --> 00:01:16,076
in Africa and Southeast Asia.
The red and orange lines in this

23
00:01:16,076 --> 00:01:19,479
visualization trace the path of
high concentrations of

24
00:01:19,479 --> 00:01:22,816
ozone-filled air detected in the
Western Pacific to their source.

25
00:01:22,816 --> 00:01:26,853
The air could be traced back ten
to fifteen days to fires in

26
00:01:26,853 --> 00:01:30,657
Southeast Asia and tropical
Africa. In one of the remotest

27
00:01:30,657 --> 00:01:34,227
parts of the Northern
Hemisphere, we're seeing impacts

28
00:01:34,227 --> 00:01:37,698
from fires that are happening
half a world away. So what I

29
00:01:37,698 --> 00:01:40,200
think is important about this
study, is that it helps us

30
00:01:40,200 --> 00:01:44,738
connect these fires in Africa
and Southeast Asia to processes

