1
00:00:00,010 --> 00:00:04,080
Narrator: Keep an eye on the sky this summer because right above your head

2
00:00:04,100 --> 00:00:08,020
scientific discoveries will be unfolding. Courtesy of NASA and its Discover-AQ campaign.

3
00:00:08,040 --> 00:00:11,960
Rich Rogers: They are going to be looking up over

4
00:00:11,980 --> 00:00:16,020
295, 95 and 695 around Baltimore and see a big P-3,

5
00:00:16,040 --> 00:00:20,050
our ORION doing science above them at about 1000

6
00:00:20,070 --> 00:00:24,090
feet. Throughout July this P-3 aircraft will spiral down low

7
00:00:24,110 --> 00:00:28,120
over the i-95 corridor, while it's partner, a high flying

8
00:00:28,140 --> 00:00:32,150
UC-12 will cruise above. Their mission is to measure and map air

9
00:00:32,170 --> 00:00:36,230
pollutants. Dr. Kennith Pickering: We need to better understand how pollutions are

10
00:00:36,250 --> 00:00:40,300
how pollution is transported, how

11
00:00:40,320 --> 00:00:44,370
it evolves during the day and the air quality of

12
00:00:44,390 --> 00:00:48,420
course in this area does violate the ambient air quality standards

13
00:00:48,440 --> 00:00:52,470

for health effects a very frequently. Narrator: NASA

14
00:00:52,490 --> 00:00:56,500
is in a unique position to help. Using satellites to track pollutants is the

15
00:00:56,520 --> 00:01:02,680
best way to continuously monitor air quality over a broad region. That, however, has its challenges.

16
00:01:02,700 --> 00:01:06,710
Jim Crawford: What we want to understand is the pollution level at the surface,

17
00:01:06,730 --> 00:01:10,720
at nose level where its impacting people, but the satellite return is for the

18
00:01:10,740 --> 00:01:14,750
entire atmosphere. And so trying to understand how much pollution is aloft

19
00:01:14,770 --> 00:01:18,830
versus how much pollution is at the surface is a particular challenge for

20
00:01:18,850 --> 00:01:22,910
satellites. Narrator: And that's where Discover AQ comes in it's a

21
00:01:22,930 --> 00:01:26,970
three-pronged approach: Collecting data at ground stations, with a low flying

22
00:01:26,990 --> 00:01:31,040
P-3 and a high flying U-C 12. Combined the data can

23
00:01:31,060 --> 00:01:35,090
help create a three-dimensional view of how pollutants are distributed and travel through

24
00:01:35,110 --> 00:01:39,120
the atmosphere. Collecting the air samples will be a challenge by itself.

25
00:01:39,140 --> 00:01:43,160
The P-3 pilot will fly in spiral patterns to obtain data at different

26
00:01:43,180 --> 00:01:47,200
altitudes...it's the first time NASA has conducted such flights in a

27
00:01:47,220 --> 00:01:51,230
major urban area. Rich Rogers: We're going to have air traffic but the weather.

28
00:01:51,250 --> 00:01:55,320
So for us to get in there and work with the FAA, the high density traffic and some

29
00:01:55,340 --> 00:01:59,420
summer weather, we're going to be working real hard.

30
00:01:59,440 --> 00:02:03,490
Narrator: But the challenges are worth the potential reward. Jim Crawford: The ability to

31
00:02:03,510 --> 00:02:07,550
make smart decisions about how to either alter missions or patterns

32
00:02:07,570 --> 00:02:11,610
of behavior has to do with a complete understanding of how the pollutants

33
00:02:11,630 --> 00:02:15,660
enter the atmosphere, are chemically altered or transported, so that's