



1  
00:00:01,168 --> 00:00:04,371  
If your night sky is clear this weekend, try taking a look at

2  
00:00:04,371 --> 00:00:08,075  
Jupiter, our solar system's largest planet. Jupiter is in

3  
00:00:08,075 --> 00:00:12,112  
opposition on April 7th, meaning the planet is directly opposite

4  
00:00:12,112 --> 00:00:15,816  
in the sky from the Sun and it's relatively close and bright.

5  
00:00:15,816 --> 00:00:18,952  
Jupiter is rising as the Sun sets and setting as the Sun

6  
00:00:18,952 --> 00:00:22,823  
rises, so it's up all night long in the constellation Virgo, and

7  
00:00:22,823 --> 00:00:25,525  
depending on the time of night, you can view three or four of

8  
00:00:25,525 --> 00:00:29,563  
Jupiter's largest moons through binoculars or a small telescope.

9  
00:00:29,563 --> 00:00:32,032  
And if you want to know what Jupiter looks like through a big

10  
00:00:32,032 --> 00:00:35,669  
telescope, here's an image of Jupiter that NASA's Hubble Space

11

00:00:35,669 --> 00:00:40,040

Telescope took just a few days ago, on April 3rd, 2017.

12

00:00:40,040 --> 00:00:43,440

Hubble regularly takes observations of Jupiter as part of its Outer

13

00:00:43,443 --> 00:00:47,714

Planets Atmospheres Legacy program, or OPAL. That program

14

00:00:47,714 --> 00:00:50,584

has been able to observe movements in Jupiter's clouds to

15

00:00:50,584 --> 00:00:54,354

measure the speeds of Jupiter's winds, study color changes, and

16

00:00:54,360 --> 00:00:57,820

watch changes on the Great Red Spot, a huge storm on the planet.

17

00:00:57,820 --> 00:01:00,794

The Great Red Spot is larger than the size of Earth,

18

00:01:00,794 --> 00:01:03,797

and has been shrinking over the past 100 years, becoming more

19

00:01:03,797 --> 00:01:07,901

and more round. The OPAL program makes global maps of Jupiter

20

00:01:07,901 --> 00:01:11,405

that can be rendered onto a spherical model, and the team

21

00:01:11,405 --> 00:01:13,807

will be working in the coming weeks on a new set of global

22

00:01:13,807 --> 00:01:17,244

maps of Jupiter from these latest observations. So this

23

00:01:17,244 --> 00:01:20,280

image we've shown you is really just a preview of what's to come.

24

00:01:20,280 --> 00:01:23,617

But that's not the only way Hubble observes Jupiter.

25

00:01:23,617 --> 00:01:26,520

Hubble has been able to observe auroras on Jupiter in

26

00:01:26,520 --> 00:01:29,790

ultraviolet wavelengths with its Space Telescope Imaging

27

00:01:29,790 --> 00:01:33,393

Spectrograph. And Hubble has been able to observe the greater

28

00:01:33,393 --> 00:01:37,464

Jovian system of Jupiter and its moons - it's taken images like

29

00:01:37,464 --> 00:01:40,801

this one of Callisto, Europa, and Io transiting across the

30

00:01:40,801 --> 00:01:44,738

disk of Jupiter; Hubble has observed Ganymede's auroras move

31  
00:01:44,738 --> 00:01:48,108  
in a way that suggests the moon  
has an underground saltwater

32  
00:01:48,108 --> 00:01:51,945  
ocean; and Hubble has seen  
evidence of water vapor plumes

33  
00:01:51,945 --> 00:01:55,582  
erupting from the surface of  
Europa. NASA uses Hubble

34  
00:01:55,582 --> 00:01:59,119  
observations of Jupiter to help  
guide its robotic planetary

35  
00:01:59,119 --> 00:02:02,856  
explorers - the global maps of  
Jupiter from the OPAL program

36  
00:02:02,856 --> 00:02:05,525  
provide context for the Juno  
spacecraft's up-close

37  
00:02:05,525 --> 00:02:09,129  
observations, and Hubble's  
evidence of water vapor plumes

38  
00:02:09,129 --> 00:02:12,733  
on Europa provides targets for  
the upcoming Europa Clipper

39  
00:02:12,733 --> 00:02:15,936  
mission. So while you're looking  
at Jupiter in your own night

40  
00:02:15,936 --> 00:02:19,406  
sky, take a minute to celebrate  
the robots and spacecraft, like

41

00:02:19,406 --> 00:02:22,776

the Hubble Space Telescope, that  
are ever expanding what we know

42

00:02:22,776 --> 00:02:23,944

about our solar system.