1
00:00:07,730 --> 00:00:05,230
what's up for februari Jupiter's moons

2
00:00:11,450 --> 00:00:07,740
Jupiter's largest moons were first seen

3
00:00:13,640 --> 00:00:11,460
400 years ago in early 1610 hello and

4
00:00:15,289 --> 00:00:13,650
welcome I'm Jane Houston Jones at NASA's

5
00:00:19,970 --> 00:00:15,299
Jet Propulsion Laboratory in Pasadena

6
00:00:23,000 --> 00:00:19,980
California on the 7th of January 1610 in

7
00:00:25,460 --> 00:00:23,010
Padua Italy Galileo looked up above the

8
00:00:27,380 --> 00:00:25,470
constellation Orion he aimed his

9
00:00:29,960 --> 00:00:27,390
telescope at the well-known starry

10
00:00:32,240 --> 00:00:29,970
wanderer the planet Jupiter which was

11
00:00:34,310 --> 00:00:32,250
near Orion that night what he saw

12
00:00:36,700 --> 00:00:34,320
through his telescope startled him and

13
00:00:39,590 --> 00:00:36,710

marked the beginning of modern astronomy

14
00:00:42,020 --> 00:00:39,600
Jupiter was not just one object as he

15
00:00:44,119 --> 00:00:42,030
wrote and drew in his journal there are

16
00:00:46,639 --> 00:00:44,129
three stars in the heavens moving about

17
00:00:51,260 --> 00:00:46,649
Jupiter as Venus and Mercury around the

18
00:00:53,810 --> 00:00:51,270
Sun he wrote Galileo's January seventh

19
00:00:55,819 --> 00:00:53,820
observation showed three stars the one

20
00:00:58,490 --> 00:00:55,829
start to the west was Ganymede and to

21
00:01:00,349 --> 00:00:58,500
the east there were two objects one was

22
00:01:03,709 --> 00:01:00,359
the moon Callisto and the other was a

23
00:01:05,719 --> 00:01:03,719
tight pairing of Io and Europa IO and

24
00:01:07,520 --> 00:01:05,729
Europa appeared so close together they

25
00:01:11,060 --> 00:01:07,530
looked like one object in Galileo's

26
00:01:12,820 --> 00:01:11,070
modest telescopic view on January eighth

27
00:01:15,320 --> 00:01:12,830
he saw a different line up altogether

28
00:01:18,620 --> 00:01:15,330
there were three stars on one side of

29
00:01:20,780 --> 00:01:18,630
the planet aya was the moon closest to

30
00:01:23,359 --> 00:01:20,790
the planet followed by Europa and

31
00:01:25,999 --> 00:01:23,369
Ganymede to cloudy nights and two

32
00:01:28,219 --> 00:01:26,009
additional observations later on January

33
00:01:30,800 --> 00:01:28,229
thirteenth Galileo identified a fourth

34
00:01:32,780 --> 00:01:30,810
object orbiting Jupiter the arrangement

35
00:01:35,420 --> 00:01:32,790
this night turned out to be Europa on

36
00:01:38,719 --> 00:01:35,430
the east and Ganymede I oh and Callisto

37
00:01:41,030 --> 00:01:38,729
on the west on january fifteenth all

38
00:01:42,890 --> 00:01:41,040

four stars were seen on one side of the

39
00:01:45,570 --> 00:01:42,900
planet

40
00:01:47,520 --> 00:01:45,580
everyone who aims a modest telescope or

41
00:01:50,400 --> 00:01:47,530
even binoculars that Jupiter will see

42
00:01:52,350 --> 00:01:50,410
the same view that Galileo did the views

43
00:01:54,420 --> 00:01:52,360
of tiny moons orbiting the king of the

44
00:01:57,300 --> 00:01:54,430
planets will surprise and delight all

45
00:01:59,220 --> 00:01:57,310
who look up Jupiter is hard to see in

46
00:02:01,290 --> 00:01:59,230
the evening sky this month but northern

47
00:02:03,300 --> 00:02:01,300
hemisphere observers may see Jupiter and

48
00:02:06,360 --> 00:02:03,310
Venus close together low on the south

49
00:02:07,950 --> 00:02:06,370
western horizon on Valentine's Day then

50
00:02:09,749 --> 00:02:07,960
it would be a few months wait until

51
00:02:12,570 --> 00:02:09,759
Jupiter becomes visible in the morning

52
00:02:14,520 --> 00:02:12,580
sky by August you can once again view

53
00:02:16,890 --> 00:02:14,530
Jupiter and the four Galilean moons

54
00:02:19,890 --> 00:02:16,900
after dinner or as soon as the Sun sets

55
00:02:23,340 --> 00:02:19,900
and the stars come out NASA's Galileo

56
00:02:25,770 --> 00:02:23,350
mission which ended in 2003 changed the

57
00:02:28,170 --> 00:02:25,780
way we look at our solar system it found

58
00:02:31,230 --> 00:02:28,180
evidence of subsurface salt water on

59
00:02:34,980 --> 00:02:31,240
Europa Ganymede and Callisto an intense

60
00:02:37,830 --> 00:02:34,990
volcanic activity on Io NASA's Juno

61
00:02:40,590 --> 00:02:37,840
mission will launch in 2011 on a mission

62
00:02:42,600 --> 00:02:40,600
to study Jupiter and the Europa Jupiter

63
00:02:45,570 --> 00:02:42,610

system mission a joint mission of the

64
00:02:48,630 --> 00:02:45,580
european space agency and nasa is slated

65
00:02:51,150 --> 00:02:48,640
to launch in 2020 it will primarily

66
00:02:54,990 --> 00:02:51,160
study Jupiter's moons Europa and

67
00:02:57,500 --> 00:02:55,000
Ganymede and Jupiter's magnetosphere you

68
00:03:01,620 --> 00:02:57,510
can learn all about NASA's missions at