

1
00:00:07,440 --> 00:00:09,620
Your guide to constellations,

2
00:00:09,619 --> 00:00:14,639
deep-sky objects, planets, and events:

3
00:00:14,640 --> 00:00:22,160
Tonight's Sky. Highlights of the July sky:

4
00:00:38,700 --> 00:00:41,240
Venus hangs in the west at dusk

5
00:00:41,240 --> 00:00:45,000
with eye-catching brilliance.

6
00:00:45,000 --> 00:00:46,899
On the 15th, it lies

7
00:00:46,939 --> 00:00:52,459
right above the slender crescent moon.

8
00:00:53,859 --> 00:00:56,500
Venus's own moon-like phase is visible

9
00:00:56,500 --> 00:01:02,119
through a backyard telescope.

10
00:01:13,620 --> 00:01:15,260
Saturn and Jupiter

11
00:01:15,260 --> 00:01:22,540
dominate the southern sky at sunset.

12
00:01:25,939 --> 00:01:29,560
A modest telescope reveals the rings of Saturn

13
00:01:29,560 --> 00:01:31,560
and the prominent cloud bands of Jupiter.

14
00:01:45,500 --> 00:01:51,920
On July 27, Mars reaches its long-awaited opposition.

15
00:01:51,920 --> 00:01:56,359
During opposition, which occurs about every two years,

16
00:01:56,359 --> 00:01:59,420
Mars lies opposite the Sun in our sky,

17
00:01:59,420 --> 00:02:06,070
rises at sunset, and is visible all night.

18
00:02:06,069 --> 00:02:07,639
During opposition,

19
00:02:07,640 --> 00:02:12,300
the disk of Mars appears larger than usual in telescopes,

20
00:02:12,300 --> 00:02:15,280
and offers the best view of its features:

21
00:02:15,280 --> 00:02:17,640
the south polar cap this year

22
00:02:17,639 --> 00:02:22,259
and dark features that shift as the planet rotates.

23
00:02:22,259 --> 00:02:26,000
With Mars nearing its closest approach to the Sun,

24
00:02:26,000 --> 00:02:29,060
this year's opposition will be the most

25
00:02:29,060 --> 00:02:35,240
favorable since 2003.

26
00:02:50,819 --> 00:02:52,680
The summer night sky is

27
00:02:52,680 --> 00:02:58,939
filled with a treasure chest of bright jewels.

28
00:02:59,699 --> 00:03:02,659
Scorpius is a striking constellation,

29

00:03:02,659 --> 00:03:06,000
one of the few that distinctly resembles the object

30
00:03:06,000 --> 00:03:08,340
after which it was named.

31
00:03:08,340 --> 00:03:11,640
The Scorpion is easy to trace in the sky.

32
00:03:11,639 --> 00:03:13,839
Its head, curved tail,

33
00:03:13,840 --> 00:03:17,439
and venomous stinger are prominent.

34
00:03:17,439 --> 00:03:21,938
At the Scorpion's heart lies a reddish star.

35
00:03:21,939 --> 00:03:24,659
Its color closely resembles that of Mars,

36
00:03:24,659 --> 00:03:27,960
known to the Greeks as Ares.

37
00:03:27,960 --> 00:03:31,180
Ancient Greek stargazers, contemplating these

38
00:03:31,180 --> 00:03:35,480
two crimson objects, named the star Antares,

39
00:03:35,479 --> 00:03:40,159
which means "rival of Ares."

40
00:03:40,159 --> 00:03:43,259
A prominent and lovely globular cluster

41
00:03:43,259 --> 00:03:48,819
in small telescopes, M4 lies just to the right of Antares

42
00:03:48,819 --> 00:03:51,139
in Scorpius.

43
00:03:51,139 --> 00:03:54,699

Globular clusters are collections of hundreds of

44

00:03:54,699 --> 00:03:56,679
thousands of closely packed

45

00:03:56,680 --> 00:04:04,080
and gravitationally bound stars.

46

00:04:22,779 --> 00:04:26,359
The center of our galaxy lies in the direction of the

47

00:04:26,360 --> 00:04:31,900
great constellation Sagittarius, the Archer.

48

00:04:31,899 --> 00:04:35,599
This area of the sky overflows with stars,

49

00:04:35,600 --> 00:04:41,660
globular star clusters, and bright and dark nebulae.

50

00:04:41,660 --> 00:04:45,000
Look for Sagittarius by finding the group of stars

51

00:04:45,000 --> 00:04:48,519
commonly known as the Teapot.

52

00:04:48,519 --> 00:04:53,299
The handle, top, and spout are easy to find.

53

00:04:53,300 --> 00:04:56,520
Under dark skies, the Milky Way seems to

54

00:04:56,519 --> 00:04:59,719
rise out of the Teapot's spout.

55

00:04:59,720 --> 00:05:03,160
Many deep-sky targets reside in this area

56

00:05:03,160 --> 00:05:05,540
of the summer night sky.

57

00:05:05,540 --> 00:05:08,200
A quick glance with binoculars reveals

58

00:05:08,199 --> 00:05:11,459

some spectacular objects.

59

00:05:11,459 --> 00:05:14,500

The Lagoon Nebula's gas and dust is

60

00:05:14,500 --> 00:05:17,920

brilliantly illuminated by the energy of the hot,

61

00:05:17,920 --> 00:05:24,300

young stars inside it.

62

00:05:29,139 --> 00:05:32,079

In the three-lobed Trifid Nebula,

63

00:05:32,079 --> 00:05:36,060

dark dustlanes appear etched against the radiance of

64

00:05:36,060 --> 00:05:38,060

glowing gas.

65

00:05:47,100 --> 00:05:51,220

The Omega Nebula glows brightly but we cannot see

66

00:05:51,220 --> 00:05:55,620

its hottest stars, embedded deep inside.

67

00:05:55,620 --> 00:05:59,379

Infrared telescopes, peering through the gas and dust,

68

00:05:59,379 --> 00:06:03,699

can detect them.

69

00:06:05,620 --> 00:06:10,079

M22, one of the brightest globular clusters in the sky,

70

00:06:10,079 --> 00:06:12,439

is visible to the naked eye.

71

00:06:12,439 --> 00:06:15,860

It is a relatively nearby globular cluster,

72
00:06:15,860 --> 00:06:23,259
only about 10,000 light-years distant.

73
00:06:32,759 --> 00:06:37,259
On July 13, portions of Australia and Antarctica

74
00:06:37,259 --> 00:06:40,379
will be treated to a partial solar eclipse

75
00:06:40,379 --> 00:06:46,920
as the Moon passes between Earth and the Sun.

76
00:06:47,920 --> 00:06:52,740
Two weeks later, on the 27th, Europe, Asia, and Africa

77
00:06:52,740 --> 00:06:55,300
will witness a total lunar eclipse

78
00:06:55,300 --> 00:07:01,300
when the Moon slips into Earth's shadow.

79
00:07:05,779 --> 00:07:09,479
If you are in the U.S., you will be able to view the annual

80
00:07:09,480 --> 00:07:11,780
Delta Aquarid meteor shower,

81
00:07:11,779 --> 00:07:16,919
which peaks on the night of July 27 to 28.

82
00:07:16,920 --> 00:07:19,879
Up to about 20 meteors per hour

83
00:07:19,879 --> 00:07:23,579
streak from the constellation of Aquarius.

84
00:07:23,579 --> 00:07:26,979
This year, the full moon sitting close by

85
00:07:26,980 --> 00:07:29,520
will wash out the fainter meteors,

86

00:07:29,519 --> 00:07:33,839
but the brightest should still be visible.

87
00:07:33,839 --> 00:07:40,399
The night sky is always a celestial showcase.

88
00:07:40,399 --> 00:07:46,919
Explore its wonders from your own backyard.