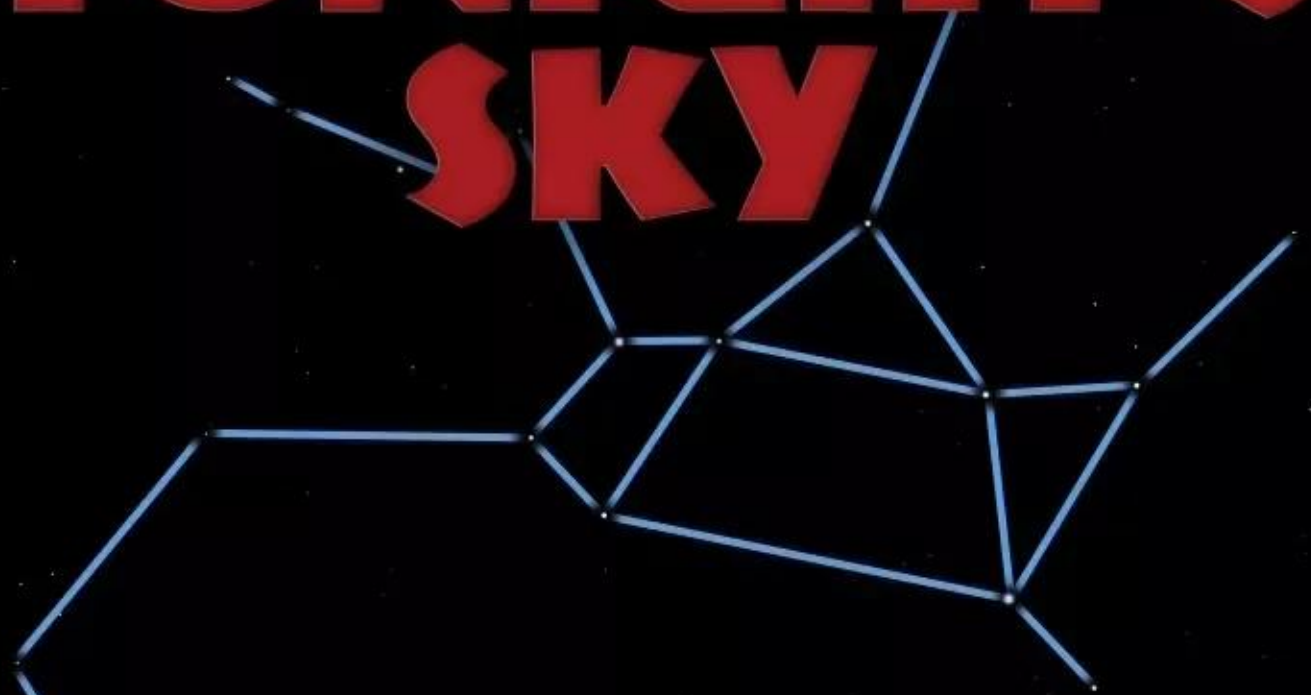
TONIGHT'S SKY



July 2018

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

2
00:00:09,620 --> 00:00:14,640
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 --> 00:00:46,900
On the 15th, it lies

7
00:00:46,940 --> 00:00:52,460
right above the slender crescent moon.

8
00:00:53,860 --> 00:00:56,500
Venus’s own moon-like phase is visible

9
00:00:56,500 --> 00:01:02,120
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
00:01:25,940 --> 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 --> 00:01:56,360
During opposition, which occurs about every two years,

16
00:01:56,360 --> 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
00:02:06,070 --> 00:02:07,640
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
00:02:17,640 --> 00:02:22,260
and dark features that shift as the planet rotates.

23
00:02:22,260 --> 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
00:02:50,820 --> 00:02:52,680
The summer night sky is

27
00:02:52,680 --> 00:02:58,940
filled with a treasure chest of bright jewels.

28
00:02:59,700 --> 00:03:02,660
Scorpius is a striking constellation,

29
00:03:02,660 --> 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
00:03:11,640 --> 00:03:13,840
Its head, curved tail,

33
00:03:13,840 --> 00:03:17,440
and venomous stinger are prominent.

34
00:03:17,440 --> 00:03:21,939
At the Scorpion’s heart lies a reddish star.

35
00:03:21,940 --> 00:03:24,660
Its color closely resembles that of Mars,

36
00:03:24,660 --> 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
00:03:35,480 --> 00:03:40,160
which means “rival of Ares.”

40
00:03:40,160 --> 00:03:43,260
A prominent and lovely globular cluster

41
00:03:43,260 --> 00:03:48,820
in small telescopes, M4 lies just to the right of Antares

42
00:03:48,820 --> 00:03:51,140
in Scorpius.

43
00:03:51,140 --> 00:03:54,700
Globular clusters are collections of hundreds of

44
00:03:54,700 --> 00:03:56,680
thousands of closely packed

45
00:03:56,680 --> 00:04:04,080
and gravitationally bound stars.

46
00:04:22,780 --> 00:04:26,360
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
00:04:31,900 --> 00:04:35,600
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 --> 00:04:48,520
commonly known as the Teapot.

52
00:04:48,520 --> 00:04:53,300
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
00:04:56,520 --> 00:04:59,720
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
00:05:08,200 --> 00:05:11,460
some spectacular objects.

59
00:05:11,460 --> 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
00:05:29,140 --> 00:05:32,080
In the three-lobed Trifid Nebula,

63
00:05:32,080 --> 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 --> 00:05:59,380
Infrared telescopes, peering through the gas and dust,

68
00:05:59,380 --> 00:06:03,700
can detect them.

69
00:06:05,620 --> 00:06:10,080
M22, one of the brightest globular clusters in the sky,

70
00:06:10,080 --> 00:06:12,440
is visible to the naked eye.

71
00:06:12,440 --> 00:06:15,860
It is a relatively nearby globular cluster,

72
00:06:15,860 --> 00:06:23,260
only about 10,000 light-years distant.

73
00:06:32,760 --> 00:06:37,260
On July 13, portions of Australia and Antarctica

74
00:06:37,260 --> 00:06:40,380
will be treated to a partial solar eclipse

75
00:06:40,380 --> 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
00:07:05,780 --> 00:07:09,480
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
00:07:11,780 --> 00:07:16,920
which peaks on the night of July 27 to 28.

82
00:07:16,920 --> 00:07:19,880
Up to about 20 meteors per hour

83
00:07:19,880 --> 00:07:23,580
streak from the constellation of Aquarius.

84
00:07:23,580 --> 00:07:26,980
This year, the full moon sitting close by

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

86
00:07:29,520 --> 00:07:33,840
but the brightest should still be visible.