

1
00:00:07,580 --> 00:00:14,820
your guide to constellations deep-sky

2
00:00:11,029 --> 00:00:19,698
objects planets and events tonight's sky

3
00:00:14,820 --> 00:00:19,698
highlights of the August sky

4
00:00:36,649 --> 00:00:44,509
early in the month Jupiter will hang low

5
00:00:40,259 --> 00:00:44,509
in the West right after sunset

6
00:00:53,299 --> 00:01:01,219
catch it early because the planet will

7
00:00:56,310 --> 00:01:01,219
be too low to spot after darkness falls

8
00:01:10,930 --> 00:01:18,090
in the southwestern sky Saturn and Mars

9
00:01:14,409 --> 00:01:27,090
form a trio with the bright reddish star

10
00:01:18,090 --> 00:01:30,129
Antares throughout the evening the three

11
00:01:27,090 --> 00:01:34,109
celestial objects will appear closest

12
00:01:30,129 --> 00:01:34,109
together near the end of the month

13
00:01:46,700 --> 00:01:57,960
stargazing on a hot August night reveals

14
00:01:49,950 --> 00:02:01,280
a multitude of wonders Lyra the small

15
00:01:57,959 --> 00:02:05,549
harp lies high in the late evening sky

16
00:02:01,280 --> 00:02:08,368
its main star is the great Vega one of

17
00:02:05,549 --> 00:02:11,400
the brightest in the sky look for Lyra

18
00:02:08,368 --> 00:02:15,120
by locating Vega and then the

19
00:02:11,400 --> 00:02:18,140
parallelogram of stars nearby epsilon

20
00:02:15,120 --> 00:02:21,270
Lyra the bright star near Vega is

21
00:02:18,139 --> 00:02:29,488
actually a wonderful quadruple star

22
00:02:21,270 --> 00:02:32,550
system known as the double-double in the

23
00:02:29,489 --> 00:02:36,239
parallelogram of Lyra lies the dramatic

24
00:02:32,550 --> 00:02:39,570
ring nebula it is an expanding shell of

25
00:02:36,239 --> 00:02:42,680
glowing gas expelled by the dying star

26
00:02:39,569 --> 00:02:42,680
at its center

27
00:02:47,139 --> 00:02:49,199
you

28
00:02:51,860 --> 00:02:58,090
the great constellation Cygnus the Swan

29

00:02:55,180 --> 00:03:01,129
flies high through the August night

30
00:02:58,090 --> 00:03:04,509
using bright Vega as your guide star

31
00:03:01,129 --> 00:03:07,789
look for the cross just to the east

32
00:03:04,509 --> 00:03:12,379
Cygnus is also known as the northern

33
00:03:07,789 --> 00:03:16,489
cross Albireo at the head of the Swan is

34
00:03:12,379 --> 00:03:19,250
a showpiece for small telescopes this

35
00:03:16,490 --> 00:03:22,150
spectacular pair of stars features

36
00:03:19,250 --> 00:03:27,469
contrasting colors of sapphire and

37
00:03:22,150 --> 00:03:31,159
golden topaz Deneb the Swans tail is a

38
00:03:27,469 --> 00:03:33,949
supergiant star if Deneb replaced the

39
00:03:31,159 --> 00:03:37,819
Sun in the center of our solar system it

40
00:03:33,949 --> 00:03:41,629
would engulf Mercury and Venus on a

41
00:03:37,819 --> 00:03:44,780
clear night hazy patches of nebulae can

42
00:03:41,629 --> 00:03:49,669
be seen by casually panning across the

43
00:03:44,780 --> 00:03:52,039

Cygnus area with binoculars the most

44

00:03:49,669 --> 00:03:55,969

prominent is the North American nebula

45

00:03:52,039 --> 00:04:00,819

an area of gas and dust illuminated by

46

00:03:55,969 --> 00:04:00,819

the nearby brilliant star Deneb

47

00:04:04,280 --> 00:04:12,598

cygnus also hosts several clusters of

48

00:04:07,620 --> 00:04:17,910

stars the easiest to find are M 29 and M

49

00:04:12,598 --> 00:04:20,279

39 M 29 is found near the center of the

50

00:04:17,910 --> 00:04:24,800

northern cross when viewed in a small

51

00:04:20,279 --> 00:04:27,289

telescope it resembles a small square

52

00:04:24,800 --> 00:04:31,500

best seen in binoculars

53

00:04:27,290 --> 00:04:32,879

m39 is a loosely bound cluster of about

54

00:04:31,500 --> 00:04:40,680

30 stars

55

00:04:32,879 --> 00:04:42,689

just to the north of Deneb just to the

56

00:04:40,680 --> 00:04:46,310

south of Cygnus lies the small

57

00:04:42,689 --> 00:04:49,399

constellation vulpecula the little fox

58
00:04:46,310 --> 00:04:54,560
first charted by polish astronomer

59
00:04:49,399 --> 00:04:54,560
johannes hevelius in the 17th century

60
00:04:56,060 --> 00:05:02,339
vulpecula hosts the dumbbell nebula

61
00:04:59,129 --> 00:05:06,449
which can be seen as a faint smudge in

62
00:05:02,339 --> 00:05:09,859
binoculars a small telescope reveals its

63
00:05:06,449 --> 00:05:09,860
double-lobed shape

64
00:05:30,029 --> 00:05:33,699
Aquila

65
00:05:31,420 --> 00:05:38,830
the Eagle was known to the ancient

66
00:05:33,699 --> 00:05:43,120
Greeks as the great bird of Zeus altair

67
00:05:38,829 --> 00:05:46,439
the brightest star in Aquila is only 16

68
00:05:43,120 --> 00:05:46,439
light-years from Earth

69
00:05:57,639 --> 00:06:05,168
the bright stars of the summer night sky

70
00:06:00,389 --> 00:06:10,180
Vega Altair and Deneb make up the summer

71
00:06:05,168 --> 00:06:12,908
triangle use binoculars to look for the

72
00:06:10,180 --> 00:06:16,949
coat hanger located halfway between

73
00:06:12,908 --> 00:06:16,949
Altair and Albireo

74
00:06:23,589 --> 00:06:29,500
this remarkable little group of stars

75
00:06:26,319 --> 00:06:31,740
forms a familiar pattern from our point

76
00:06:29,500 --> 00:06:31,740
of view

77
00:06:43,769 --> 00:06:50,139
the Perseid meteor shower is an always

78
00:06:47,589 --> 00:06:56,589
anticipated feature of the August night

79
00:06:50,139 --> 00:07:00,899
sky look for meteors during the early

80
00:06:56,589 --> 00:07:00,899
morning hours of August 12th and 13th

81
00:07:01,139 --> 00:07:07,329
these streaks of light are tiny bits of

82
00:07:04,839 --> 00:07:11,049
a comet burning up as they enter Earth's

83
00:07:07,329 --> 00:07:13,629
atmosphere the cometary debris trail

84
00:07:11,050 --> 00:07:16,590
which Earth passes through once a year

85
00:07:13,629 --> 00:07:19,180
was left behind by Comet swift-tuttle

86

00:07:16,589 --> 00:07:28,209
during its many visits to the inner

87
00:07:19,180 --> 00:07:29,939
solar system the night sky is always a

88
00:07:28,209 --> 00:07:32,259
celestial showcase

89
00:07:29,939 --> 00:07:34,439
explore its wonders from your own

90
00:07:32,259 --> 00:07:34,439
backyard

91
00:07:49,910 --> 00:07:51,970
you