

1
00:00:07,429 --> 00:00:14,580
your guide to constellations deep-sky

2
00:00:10,820 --> 00:00:19,278
objects planets and events tonight's sky

3
00:00:14,580 --> 00:00:19,278
highlights of the August sky

4
00:00:36,060 --> 00:00:44,520
after sunset Mars and Saturn dipped

5
00:00:39,479 --> 00:00:47,549
toward the western horizon watch Saturn

6
00:00:44,520 --> 00:00:50,270
dance ever closer to Mars as the month

7
00:00:47,549 --> 00:00:50,269
progresses

8
00:01:00,289 --> 00:01:05,909
on the evening of August thirty-first

9
00:01:03,210 --> 00:01:09,510
look for a lovely triple conjunction as

10
00:01:05,909 --> 00:01:13,489
Mars Saturn and the crescent moon share

11
00:01:09,510 --> 00:01:13,490
the same small patch of sky

12
00:01:27,920 --> 00:01:33,030
stargazing on a hot August night reveals

13
00:01:30,930 --> 00:01:41,460
a multitude of wonders in the summer

14
00:01:33,030 --> 00:01:44,790
night sky Lyra the small harp lies high

15
00:01:41,459 --> 00:01:47,280
in the late evening sky its main star is

16
00:01:44,790 --> 00:01:51,000
the great Vega one of the brightest in

17
00:01:47,280 --> 00:01:53,460
the sky look for lehre by locating Vega

18
00:01:51,000 --> 00:01:57,209
and then the parallelogram of stars

19
00:01:53,459 --> 00:02:00,149
nearby epsilon lora the bright star

20
00:01:57,209 --> 00:02:03,000
near Vega is actually a wonderful

21
00:02:00,149 --> 00:02:05,810
quadruple star system known as the

22
00:02:03,000 --> 00:02:05,810
double-double

23
00:02:10,038 --> 00:02:16,738
in the parallelogram of lira lies the

24
00:02:13,500 --> 00:02:19,620
dramatic ring nebula it is an expanding

25
00:02:16,739 --> 00:02:23,569
shell of glowing gas expelled by the

26
00:02:19,620 --> 00:02:23,569
dying star at its center

27
00:02:33,009 --> 00:02:39,598
the great constellation Cygnus the Swan

28
00:02:36,389 --> 00:02:42,548
flies high through the August night

29

00:02:39,598 --> 00:02:45,030
using bright Vega as your guide star

30
00:02:42,549 --> 00:02:48,010
look for the cross just to the east

31
00:02:45,030 --> 00:02:53,530
Cygnus is also known as the northern

32
00:02:48,009 --> 00:02:56,649
cross Albireo at the head of the Swan is

33
00:02:53,530 --> 00:02:59,229
a showpiece for small telescopes this

34
00:02:56,650 --> 00:03:01,780
spectacular pair of stars features

35
00:02:59,229 --> 00:03:08,018
contrasting colors of sapphire and

36
00:03:01,780 --> 00:03:11,530
golden topaz Deneb the Swans tail is a

37
00:03:08,019 --> 00:03:14,439
supergiant star if Deneb replaced the

38
00:03:11,530 --> 00:03:18,150
Sun in the center of our solar system it

39
00:03:14,439 --> 00:03:21,939
would engulf Mercury and Venus on a

40
00:03:18,150 --> 00:03:24,670
clear night hazy patches of nebulae can

41
00:03:21,939 --> 00:03:28,680
be seen by casually panning across the

42
00:03:24,669 --> 00:03:28,679
Cygnus area with binoculars

43
00:03:29,770 --> 00:03:35,310

the most prominent is the North American

44

00:03:32,949 --> 00:03:38,439
nebula an area of gas and dust

45

00:03:35,310 --> 00:03:41,340
illuminated by the nearby brilliant star

46

00:03:38,439 --> 00:03:41,340
Deneb

47

00:03:45,889 --> 00:03:56,229
cygnus also hosts several clusters of

48

00:03:49,159 --> 00:03:59,060
stars the easiest to find RM 29 and m39

49

00:03:56,229 --> 00:04:01,579
m29 is found near the center of the

50

00:03:59,060 --> 00:04:06,280
northern cross when viewed in a small

51

00:04:01,580 --> 00:04:10,730
telescope it resembles a small square

52

00:04:06,280 --> 00:04:13,879
best seen in binoculars m39 is a loosely

53

00:04:10,729 --> 00:04:17,230
bound cluster of about thirty stars just

54

00:04:13,879 --> 00:04:17,230
to the north of Deneb

55

00:04:20,790 --> 00:04:26,700
just south of Cygnus lies the small

56

00:04:23,569 --> 00:04:29,029
constellation vulpecula the little fox

57

00:04:26,699 --> 00:04:33,920
first charted by polish astronomer

58
00:04:29,029 --> 00:04:33,919
johannes hevelius in the 17th century

59
00:04:38,060 --> 00:04:43,560
vulpecula hosts the dumbbell nebula

60
00:04:40,920 --> 00:04:47,100
which can be seen as a faint smudge in

61
00:04:43,560 --> 00:04:50,509
binoculars a small telescope reveals its

62
00:04:47,100 --> 00:04:50,510
double lobed shape

63
00:05:11,519 --> 00:05:18,990
aquila the eagle was known to the

64
00:05:14,500 --> 00:05:22,240
ancient Greeks as the great bird of Zeus

65
00:05:18,990 --> 00:05:26,639
Altair the brightest star in Aquila is

66
00:05:22,240 --> 00:05:26,639
only 16 light-years from Earth

67
00:05:39,009 --> 00:05:45,669
the bright stars of the summer night sky

68
00:05:41,769 --> 00:05:50,978
Vega Altair and Deneb make up the summer

69
00:05:45,668 --> 00:05:53,098
triangle use binoculars to look for the

70
00:05:50,978 --> 00:05:57,088
coat hanger located halfway between

71
00:05:53,098 --> 00:05:57,088
Altair and Albireo

72
00:06:05,009 --> 00:06:10,750
this remarkable little group of stars

73
00:06:07,810 --> 00:06:12,959
forms a familiar pattern from our point

74
00:06:10,750 --> 00:06:12,959
of view

75
00:06:26,579 --> 00:06:31,500
during the middle of the month Venus and

76
00:06:29,279 --> 00:06:33,929
Jupiter hovered together above the

77
00:06:31,500 --> 00:06:37,819
eastern horizon gracing the early

78
00:06:33,930 --> 00:06:37,819
morning sky before sunrise

79
00:06:40,819 --> 00:06:46,719
a telescope will provide a better view

80
00:06:43,970 --> 00:06:46,720
of the planets

81
00:06:56,750 --> 00:07:02,009
Venus and Jupiter experienced an

82
00:06:59,430 --> 00:07:04,470
extremely close conjunction on August

83
00:07:02,009 --> 00:07:08,360
eighteenth look for the tight pair in

84
00:07:04,470 --> 00:07:08,360
the early morning before sunrise

85
00:07:23,160 --> 00:07:28,890
the perseid meteor shower is an always

86

00:07:26,399 --> 00:07:31,310
anticipated feature of the August night

87
00:07:28,889 --> 00:07:31,310
sky

88
00:07:33,350 --> 00:07:40,410
however this year's show may be impeded

89
00:07:37,350 --> 00:07:42,689
by the bright moon look for meteors

90
00:07:40,410 --> 00:07:45,990
during the early morning hours of August

91
00:07:42,689 --> 00:07:48,719
twelfth and thirteenth these streaks of

92
00:07:45,990 --> 00:07:51,600
light are tiny bits of a comet burning

93
00:07:48,720 --> 00:07:53,880
up as they enter Earth's atmosphere the

94
00:07:51,600 --> 00:07:56,550
cometary debris trail through which

95
00:07:53,879 --> 00:07:59,399
Earth passes once a year was left behind

96
00:07:56,550 --> 00:08:06,600
by comet swift-tuttle during its many

97
00:07:59,399 --> 00:08:11,599
visits to the inner solar system the

98
00:08:06,600 --> 00:08:11,600
night sky is always a celestial showcase

99
00:08:12,769 --> 00:08:17,659
explore its wonders from your own

100
00:08:15,300 --> 00:08:17,660

backyard

101

00:08:32,658 --> 00:08:34,718

you