The Night Sky for September

A good month for viewing with four bright planets lighting up the evening sky along with some of the brightest stars. Both Jupiter and Saturn are worth a look in any telescope.

From northern New Zealand the star Deneb can be seen near the north skyline in the Milky Way. It is the brightest star in Cygnus the Swan. Close by is Vega.

Arcturus is on the northwest skyline, shining through a lot of air which makes it twinkle colourfully. Orange Arcturus twinkles red and green. On the skyline is Vega, the second-brightest northern star after Arcturus.

Orange Antares, northwest of the zenith (the highest point), marks the body of the Scorpion, or the 'fish-hook of Maui' in Maori star lore. The Scorpion's tail hooks toward the zenith like a back-to-front question mark. Below or right of the Scorpion's tail is 'the teapot' made by the brightest stars of Sagittarius. It is upside down in our southern hemisphere view.

Midway down the southwest sky are The Pointers, Beta and Alpha Centauri, pointing down to Crux the Southern Cross. Alpha Centauri is the third brightest star and the closest of the naked-eye stars, 4.3 light years away. Beta Centauri, along with most of the stars in Crux, is a blue-giant star hundreds of light years away.

This is a good month to view the Milky Way as it spans the sky from north to south, seeming to split the sky in half in the midevening. It is brightest and broadest overhead in Scorpius and Sagittarius and in a dark sky it can be traced down past the Pointers and Crux (the Southern Cross, lying on its side) into the southwest. To the northeast it passes Altair, meeting the skyline right of Vega. We are looking at our own galaxy, the Milky Way, edge-on, with the thick hub of the galaxy, 27,000 light years away, in Sagittarius. Dust clouds near us appear as gaps and slots in the Milky Way. Binoculars show many clusters of stars and some glowing gas clouds in the Milky Way.

Canopus, the brightest star in the sky, skims along the southern skyline, twinkling colourfully like Arcturus. Canopus, being white, shows all colours like a diamond.

The Large and Small Clouds of Magellan, LMC and SMC, look like two misty patches of light in the south sky, easily seen by eye on a dark moonless night. They are galaxies like our Milky Way but much smaller. The LMC is about 160 000 light years away; the SMC about 200 000 light years away.

On moonless evenings in a dark sky the Zodiacal Light is visible in the west, a faint broad column of light extending upward around Mercury and Venus. Sometimes called the false dawn, it is caused by sunlight reflecting off fine meteoric dust in the inner solar system, which may have come from a big comet, many centuries ago.

MERCURY: Visible in the west, just below and to the left of Venus, Mercury is making its best evening sky appearance of the year. Around the 20th Mercury will make a close pair with Spica, the brightest star in Virgo. The two stay close as both set earlier, with Mercury the brighter of the two at first. By the end of the month Mercury, above and left of Spica, will be fainter than Spica as it begins to pass between us and the Sun.

VENUS: This brilliant 'evening star' appears in the west soon after sunset. It will be bright enough to be seen in daylight too, just north of overhead at 3pm (best to look for it from a shady spot). On the 5th Venus will be close to Spica low in the west and In a binocular field it will be 5° above the crescent Moon at 3 pm on the 10th.

**MARS:** Mars is all but lost to the setting Sun’s glare in early September.

JUPITER: Seen high in the sky in the east of northeast at dusk. With a golden glow, Jupiter becomes the brightest 'star' in the night sky after Venus sets. A small telescope shows Jupiter's disk and the four 'Galilean' moons lined up on each side of it. A larger telescope shows stripes across the planet made by its warm and cold clouds. Occasionally the shadow of a moon crosses Jupiter, making a tiny black spot. The Moon will be near Jupiter on the 18th.

SATURN: Also in the east, above Jupiter, looking like a medium bright star. In binoculars Saturn appears to be an oval shape, the planet and rings blended together. Almost any telescope will separate the planet and the ring. The Moon will be near Saturn on the 17th.

NEPTUNE: reaches opposition on 14 Sep (i.e. Earth is between the Sun and Saturn). It’s never a spectacular sight, even in a big telescope, but it’s worth the effort to glimpse this quiet and beautiful ice giant at the edge of the solar system. It’s is visible in binoculars, but you need a telescope to see its tiny disk and blue-green colour.

<https://www.rasnz.org.nz/in-the-sky/the-evening-sky>

<https://cosmicpursuits.com/night-sky-this-month/>

https://www.stardome.org.nz/astronomy/star-charts/