September Constellations

September
Tonight’s Sky
Constellations

As September brings transition from summer to fall, the sky transitions to the stars of autumn.

Increasingly prominent in the southeastern sky is Pegasus, the winged horse.

The Great Square of stars that outlines the body is a useful guide to the fall patterns around it.

Near the Great Square lies the sprawling pattern of Aquarius, the water-bearer.

Located within the western part of the constellation is M2, one of the oldest and largest globular star clusters associated with the Milky Way galaxy.

It appears as a circular, grainy glow in backyard telescopes.

NASA’s Hubble Space Telescope has imaged the cluster, a compact globe of some 150,000 stars that are more than 37,000 light-years away.

At approximately 13 billion years old, this cluster formed early in the history of the universe, and offers scientists an opportunity to see how stars of different masses live and die.

Results from ESA’s Gaia satellite suggest that this cluster, along with several others, may have once belonged to a dwarf galaxy that merged with the Milky Way.

West of Aquarius is the constellation of Capricornus, the sea goat, a figure dating back to the Sumerians and Babylonians.

The star at the western end of Capricornus is Alpha Capricorni.

Alpha Capricorni is an optical double but not a binary pair. The brighter star, Algedi, is about 100 light-years away. The fainter lies along the same line of sight but is roughly eight times farther away.

The pattern hosts another globular star cluster: M30.

It appears as a hazy glow in small telescopes.

Stars are packed so closely in globular clusters that they can interact with each other. Binary stars can exchange partners in their tight gravitational square dance.

More massive objects like black holes and neutron stars move toward the center.

M30 likely started life with another galaxy that merged with our own: The globular cluster is orbiting the Milky Way in the opposite direction of most stars.

Look west to find the constellation Sagittarius, the centaur archer in the sky.
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Past the centaur’s arm, you will find another globular star cluster, Terzan 5.

Terzan 5 sits near the dark dust lanes of the Milky Way.

Bright blue young stars are visible in the foreground of the ancient cluster.

The core of Terzan 5 shines brightly with the X-ray light from white dwarfs and neutron stars.

Take advantage of mild, late summer nights to enjoy the constellations and ancient globular star clusters of the September sky.

Celestial wonders await you in tonight’s sky.