

# Libra

Subjects: [Astronomy & Astrophysics](#)

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The constellation Libra, known as the Scales or the Balance, is one of the 12 zodiac constellations representing an inanimate object. It is located in the southern sky and is associated with justice and balance. Libra is depicted as scales held by the Greek goddess of justice, Astraea, and is the only zodiac constellation named after an object rather than an animal or character from mythology.

constellation

astronomy

IAU

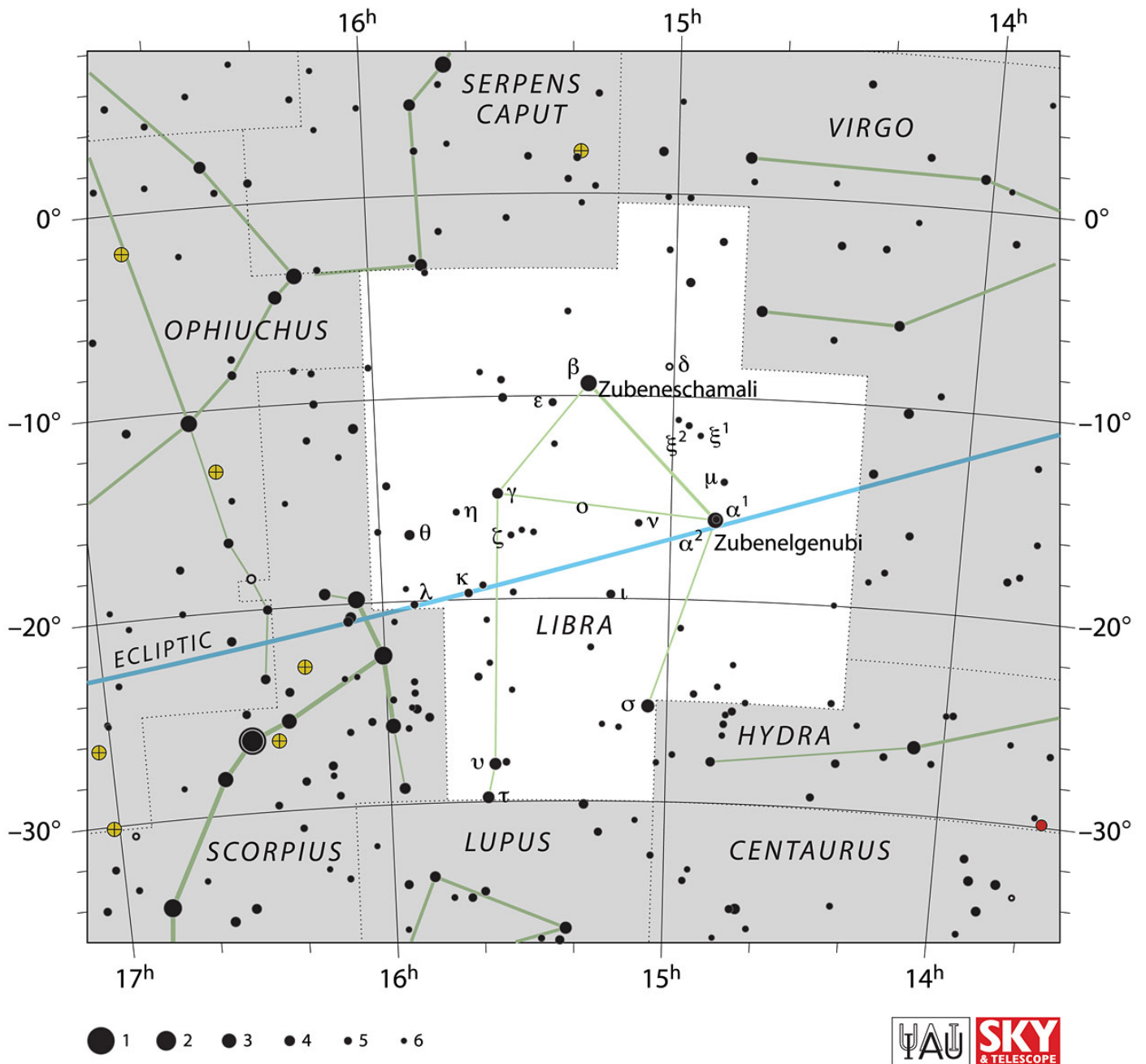
zodiac

## 1. Introduction

Libra, a constellation steeped in both mythological lore and astronomical significance, occupies a notable position within the celestial sphere. Positioned between Virgo and Scorpius along the ecliptic, Libra is one of the twelve zodiacal constellations, tracing its origins back to ancient civilizations that observed the heavens with reverence and awe. With celestial coordinates ranging from approximately 15 to 0 degrees of longitude and 180 to -30 degrees of latitude, Libra spans a significant portion of the southern celestial hemisphere, gracing the night sky with its presence (**Figure 1**).

Characterized by its representation of the scales, Libra's mythological associations vary across cultures, but its overarching theme revolves around balance and justice. In Greek mythology, the constellation is often linked to Astraea, the goddess of justice, who was said to have been placed among the stars as a testament to her righteousness. Likewise, in Roman mythology, Libra is associated with the scales held by Astraea or the goddess *Lustitia*, symbolizing equity and fairness in the dispensation of law.

Astronomically, Libra is not particularly conspicuous, lacking bright stars that stand out prominently against the backdrop of the night sky. Its most notable feature is perhaps its primary star, Zubeneshamali (Beta Librae), which holds the distinction of being one of the few stars to exhibit a greenish hue. Despite its relatively faint stellar ensemble, Libra serves as a reference point for celestial navigation and holds historical significance in the development of astronomical knowledge.



**Figure 1.** IAU chart of Libra. Source: <https://www.iau.org/static/archives/images/screen/lib.jpg>. Credit: IAU and Sky & Telescope. Reproduced under CC BY 4.0 license.

## 2. Historical Background and Mythology

Libra's historical background and mythology intertwine with the cultural narratives of ancient civilizations, spanning across various epochs and geographical regions. Its significance as a celestial marker and symbol of balance and justice has left an indelible imprint on the collective imagination of humanity.

In ancient Mesopotamia, the constellation of Libra was associated with the sun's entry into the autumnal equinox, marking the beginning of the fall season. The Babylonians, renowned for their advanced astronomical observations, considered this celestial event as a pivotal moment in their agricultural calendar, signifying the transition from warmth and abundance to colder months and scarcity. Libra, therefore, held practical importance as a guide for agricultural activities and served as a symbol of balance between the seasons.

In Greek mythology, the scales of Libra are often attributed to the goddess Themis, who personified divine law and order. Themis was considered one of the Titans, primordial deities who ruled the cosmos before the reign of the Olympian gods. As the embodiment of justice, Themis was often depicted holding scales to symbolize the careful weighing of evidence and the fair dispensation of judgment. The association of Libra with Themis reflects the Greek reverence for moral rectitude and the pursuit of harmony in human affairs.

Another prominent figure associated with Libra in Greek mythology is Astraea, the daughter of Zeus and Themis. Astraea, meaning "star-maiden," represented innocence and purity and was revered as the goddess of justice. According to myth, she lived among mortals during the Golden Age, a period of peace and prosperity when humanity lived in harmony with the gods. However, as humanity's moral character deteriorated, Astraea retreated to the heavens, becoming the constellation Virgo. Some interpretations suggest that the scales of Libra were initially held by Astraea as she administered justice among mortals, but were later placed among the stars as a reminder of her divine presence.

The Romans adopted many of the Greek myths and associated their own deities with celestial phenomena. In Roman mythology, Libra is often linked to *Lustitia*, the goddess of justice and fairness. Depicted blindfolded and holding scales and a sword, *Lustitia* personified impartial judgment and the rule of law. The scales of Libra thus became a symbol of equity and the balanced administration of justice in Roman society.

Throughout history, the symbolism of Libra as a representation of balance, fairness, and justice has persisted across diverse cultures. Its presence in the night sky continues to inspire contemplation and reflection on the moral and ethical principles that govern human civilization. From ancient agricultural calendars to modern legal systems, Libra's mythological significance endures as a timeless reminder of humanity's eternal quest for harmony and equity.

## 3. Notable Stars

### 3.1. Zubeneshamali (Beta Librae)

- Spectral Class: A3V
- Apparent Magnitude: 2.61
- Distance from Earth: Approximately 160 light-years

Zubeneshamali, also known as Beta Librae, is the brightest star in the constellation. It is a blue-white main-sequence star, indicating that it is in the prime of its life, fusing hydrogen into helium in its core. Zubeneshamali is

notable for its distinctive greenish hue, a rarity among stars. Its name is derived from the Arabic phrase meaning "the Northern Claw," referring to its position in the constellation's depiction as the northern scale pan of the Libra constellation. This star has a close companion, making it a binary system. The secondary companion is a much fainter star, not visible to the naked eye.

### 3.2. Zubenelgenubi (Alpha Librae)

- Spectral Class: A2V
- Apparent Magnitude: 2.75
- Distance from Earth: Approximately 77 light-years

Zubenelgenubi, also known as Alpha Librae, is another prominent star in the constellation. Its name is derived from the Arabic phrase meaning "the Southern Claw," referring to its position in the southern scale pan of the Libra constellation. It is a blue-white main-sequence star, similar in spectral type to Zubeneschamali. Zubenelgenubi is also part of a binary system, with a fainter companion star orbiting it. This star has historical significance as it was once used as a marker for the autumnal equinox in the Babylonian calendar.

## 4. Deep-Sky Objects

### 4.1. NGC 5897 (Caldwell 45)

- Type: Globular Cluster
- Apparent Magnitude: 9.5
- Distance from Earth: Approximately 40,000 light-years
- NGC 5897 is a globular cluster situated within the confines of Libra. This densely packed group of stars contains hundreds of thousands, if not millions, of stars bound together by gravity. NGC 5897 exhibits a compact core surrounded by a halo of fainter stars, making it a captivating sight through telescopes. Its distance from Earth places it relatively close in astronomical terms, allowing for detailed observations of its stellar population and dynamics.

### 4.2. NGC 5792

- Type: Spiral Galaxy
- Apparent Magnitude: 12.2
- Distance from Earth: Approximately 220 million light-years

NGC 5792 is a spiral galaxy located in the southeastern part of the Libra constellation. This distant galaxy presents a challenge for observation due to its relatively low apparent magnitude. However, its spiral structure and distinct arms can be discerned through larger telescopes. NGC 5792 serves as a reminder of the vast distances and timescales involved in the study of extragalactic astronomy, offering astronomers insights into the formation and evolution of galaxies beyond our own Milky Way.

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