

Its spectrum is purely gaseous, and spectroscopic investigations by Sir William and Lady Huggins seem to show "a unity of composition of the [trapezium] stars and nebulae which surround them and link them together." Keeler finds from spectroscopic observations that it and our system are separating at the rate of ten miles a second. Holden thinks it of fluctuating brightness.

The nebula proper covers a space equal to the apparent size of the moon, but nebulosity extends over a very much larger area, for recent observations by Swift, by William H. Pickering in 1889 from Wilson's Peak, and by Barnard with the camera on Mount Hamilton in October, 1894, reveal nebulous matter, 14° to 15° in diameter, that includes the Belt and much of the body of Orion. Barnard says of it: "Compared with this enormous nebula, the old θ , or so-called Great Nebula, is but a pigmy." A million of globes, each equal in diameter to that of the earth's orbit, would not equal this in extent. One of the Harvard photographs of 1889 showed a certain amount of spiral structure in the Great Nebula.

The adjacent nebula, N. G. C. 1982, catalogued separately by Messier as 43, is shown on a photograph of the 30th of November, 1886, by Roberts, to be connected with it by threads of nebulosity.

At least six stars are found in the Trapezium, the four largest being of the 5th, 6th, 7th, and 8th magnitudes, easily visible in a $2\frac{1}{4}$ -inch glass with a power of 140. They may form a system. Huygens noted the triplicity of θ^1 when he discovered the nebula; the 4th component was first seen in 1684; the 5th was "discovered by Robert Hooke in 1664, but forgotten and rediscovered by Struve in 1826"; and the 6th was first seen by Sir John Herschel, on the 13th of February, 1830. More are claimed by some recent observers, but Burnham disputes their existence.

In 3.36 square degrees of the θ^1 nebula Bond catalogued nearly 1000 stars.

ι , Triple and nebulous, 3.5, 8.5, and 11, white, pale blue, and grape red.

Al Tizini designated this as **Nā'ir al Saif**, the Bright One in the Sword, but it is practically unnamed with us, although far more deserving of the title Saiph than is the succeeding star κ .

In China it was **Fa**, a Middle-man, ν and intermediate stars being included under this name; but Edkins translates the word "Punishment," and gives another title for it,—**Tui**, or **Jui**, the Sharp Edge, analogous to the Arabian Saif and perhaps taken from it.

It lies just south of θ , inclosed in faint nebulosity. The two larger stars are $11''.5$ apart, with a position angle of 142° ; the 11th-magnitude companion is $49''$ away, at a position angle of 103° .

η , 2.4,

located near the right knee, was appropriately described by the Arabic astronomers as **Rijl Jauzah al Yamnā'**, the Right Leg of the Jauzah, but we now know it as **Saiph**, from Al Saif, the Sword, although it is at some distance from that weapon, and the name really belongs to η , ι , and stars near by.

In his vast Head immerst in boundless spheres
Three Stars less bright, but yet as great, he bears.
But further off remov'd, their Splendor's lost.

Creech's *Manilius*.

λ , Double, 3.8 and 6, pale white and violet.

Al Maisān, the title of γ Geminorum, by some error of Firuzabadi was applied to this star as **Meissa**, and is now common for it. Al Sufi called it **Al Tahāyī**; but Al Ferghani and Al Tizini knew it as **Rās al Jauzah**, the Head of the Jauzah, which it marks.

The original Arabic name, **Al Hak'ah**, a White Spot, was from the added faint light of the smaller ϕ^1 and ϕ^2 in the background, and has descended to us as **Heka** and **Hika**. These three stars were another of the Athāfiyy of the Arabs; and everywhere in early astrology were thought, like all similar groups, to be of unfortunate influence in human affairs.

They constituted the Euphratean lunar station **Mas-tab-ba-tur-tur**, the Little Twins, a title also found for γ and η Geminorum; and individually were important stars among the Babylonians, rising to them with the sun at the summer solstice, and, with α and γ , were known as **Kakkab Sar**, the Constellation of the King. In other lunar zodiacs they were the Sogdian **Marezānā**, and the Khorasmian **Ikhma**, the Twins; the Persian **Aveqr**, the Coronet; and the Coptic **Klusos**, Watery. They also were the 3d *mansil*, **Al Hak'ah**; the *sieu Tsee*, or **Tsuy He**, the Beak, or Pouting Lips, anciently **Tsok**, which Reeves gave as **Keo**; and the *nakshatra* **Mrigaqiras**, or **Mriga-qirshā**, the Head of the Stag,—Soma, the Moon, being its presiding divinity, and λ the junction star towards Ārdrā, and its determinant. As to this lunar station Professor Whitney very reasonably wrote:

It is not a little strange that the framers of the system should have chosen for marking the 3d station this faint group, to the neglect of the brilliant and conspicuous pair β and