

Presentation of the Greco-Arabian sky

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There are two Arab skies. The ancient Arabs present, in the 8th century AD, a sky based on the framework of the *manāzil al-qamar*, or “stations of the Moon”, which can be called the “traditional Arabian sky”, and whose description can be consulted separately¹. In this sky, several hundred stars are already named².

However, the Arabs began to learn about the Greek sky at this time. Already around 660, the scholar Sawerā Sebōkt / Severus Sebokht, gave his Syriac version of Aratus’s *Φαινόμενα* under the title *Mimrā ʿalā demwātē hālēn d-metaʿmrān b-šamyā*, or literally, “Book of Figures that are said to be seen in the sky”³. Half a century later, the hammam of Qusayr ʿAmra, in present-day Jordan, dated between 723 and 743, shows the first images of the Greek constellations, painted in fresco on its dome. Much later still, towards the end of the 8th century, the Muslim scholar, from the Jewish and Zoroastrian communities, Rabbān Ṭabarī, delivers from Persian, according to Abū Maʿšar, a version of the *Μαθηματικὴ σύνταξις*, or the “Mathematical Composition” of Claudius Ptolemy, while ʿUmar b. al-Farruḥān al-Ṭabarī translated in 812 from Persian into Arabic the *Τετράβιβλος* or “Four-partite Book”, the astrological sum of the same Ptolemy, under the title of *Kitāb al-Arbaʿa* or “Book of Four”⁴.

¹ Voir « Presentation of the Traditional Arabian Sky) ([Français](#) / [English](#)) ».

² Voir « Catalogue of the Stars of the Traditional Arabian sky ([Français](#) / [English](#)) ».

³ SEBŌKT, Sawera / Sebokht, Sévère, “Book of Figures that are said to be seen in the sky”, seer NAU, François, *Mimrā ʿalā demwātē hālēn d-metaʿmrān b-šamyā*, in « Un traité sur les constellations de Sévère Sebokht », *Revue de l’Orient chrétien (ROC)*, vol. 27, n° 3 & 4 (1929-30), 327-410, and vol. 28, n° 1&2 (1931-1932), 85-100.

⁴ Voir Laffitte, Roland, « À l’école des prédécesseurs », dans *Le ciel des Arabes*, Paris : Geuthner, 2012, 136-139.

The establishment of a Greco-Arabian sky

The most significant event for our subject, however, is the direct translation from Greek into Arabic in the 820s, under the impetus given by the caliph al-Ma'mūn (813-833), of Claudius Ptolemy's *Μαθηματικὴ σύνταξις*, by al-Ḥaḡḡāḡ b. Maṭar, with the help of Saḡūn b. Hiliyā. A second version of this translation was carried out around 880 by Ishāq b. Hunayn. Based on its common name, *ἡ Μεγίστη*, "the Very great [Composition]", these two scholars gave their work the title *Kitāb al-Maḡistī* which would become, thanks to the Latin version made by Gerard of Cremona, the *Liber Almagesti*, the famous *Almagest*.

From then on, the Arab astronomers took up Ptolemy's catalogue, carefully checking the coordinates and magnitudes star by star, and inserted the traditional Arabic names in force. Thus, when they described the 8th star of the constellation of *Σκορπιός* – *α Sco* in the Bayer designation – they noted that the Greeks named it, according to the Arabic transcription: *Antaris*, but they also recalled that it was called *Qalb al-^cAqrab*, "the Heart of the Scorpion", in the traditional Arabian sky, and it is this latter name that will be retained. An astronomer like °Abd al-Raḥmān al-Šūfī, around 964, describes in his *Šuwar al-kawākib al-tābita* or "Figures of the Fixed Stars", the figures of the traditional Arabian sky corresponding to Ptolemaic space, constellation by constellation, which contributes to bringing popular astronomical culture to life. The latter is elsewhere revived in scholarly circles up to the imperial-colonial period. This explains this curious phenomenon, namely that even in their catalogs following the formatting of the sky by the Ptolemaic constellations, many astronomers continue to give to certain stars, as Ptolemy had done, names expressing their location in the figures of the traditional Arab sky. An example can be given in the 16th century when, in the *Ġadwal al-kawākib al-tābita*, or "Tables of the Fixed

Stars", written in 1533, Muḥammad al-Tīzīnī al-Muwaqīt, the stars ν^1 , μ , φ and ν *Hya* are respectively named: the 1st, 3rd, 4th and 6th of *al-Šarāsif*, "the Felched Camels", while the stars δ , ε , ζ , η and α *Hya* are placed in the *Head al-Šuġāʿ*, "the Big Serpent", a name by which Arab astronomers render $\Upsilon\delta\rho\eta$, the Greek "Hydra".

The formation of star names in the Greco-Arabian sky

Let us return to the Ptolemaic heritage. Very early on, the limited space allowed by astrolabes, and then celestial globes, to designate the stars, required brief names. Now, if these exist for the stars that have a name in the traditional Arabic sky, this is not the case for all the stars that are retained to be marked on these instruments, notably the astrolabe and which nevertheless appear in the *Kitāb al-Maġisī*. Thus, the 12th star of *Baršawš* – β *Per* in Bayer's designation – is retained by the astrolabe makers to appear on the spider of this instrument. But it is given thus in al-Ḥaġġāġ b. Maṭar: *al-kawkab al-muḏīʿ al-laḏī fi raʿs al-Ġul*, "the bright star that is on the head of the Ghoul", the ghoul being an Arab monster that serves to acclimatize the Gorgon *Médoussa*, or the "Medusa". Almost immediately, this star becomes, on the astrolabe of Naṣṭūlus, in 827, *Raʿs al-Ġul*, "the Head of the Ghoul", then, among certain makers of this instrument like Abū Bakr, quite simply *Ġul*, as can be read on the Paris astrolabe of 1218. Mentioned on the astrolabe of Naṣṭūlus in the vicinity of *al-ʿAyyuq* (for α *Aur*), and other names from the traditional Arabian sky, *Raʿs al-Ġul* assumes, like them, the role of proper name. This appellation is moreover immediately taken up in 830 by Yaḥya b. Abī Maṣṣūr in his *Ziġ al-mumtaḥan* or "Verified Tables". The passage from the astrolabe to the catalogue is in this case very rapid, which is moreover quite rarely the case.

The significant step of Abū l-Rayḥān al-Bīrūnī

In his *Zīğ al-Şābi*, or “Sabaeen Tables”, Muḥammad b. Ğābir b. Sinān al-Battānī writes for this same star, namely β Per: *al-munīr min al-latī fī ra’s al-Ġul*, “the bright one of those on the head of the Ghoul,” exactly as he did only a decade earlier in his new translation of Ptolemy’s η *Μεγίστη*, following Ishāq b. Hunayn, who had already simplified the description of the star by deleting *al-kawkab*, “the star par excellence”. ‘Abd al-Raḥmān Şūfī clearly distinguishes the names of the astrolabe and those of the catalogues: while he gives a little more than a century later *Ra’s al-Ġul* on the astrolabe, he always gives, for the 12th star of *Baršawš* (β Per) in his catalogue of the *Kitāb Şuwar al-kawākib al-tābita*, the description: *al-muḍī’ al-laḍī fī ra’s al-Ġul*, “the bright one which is on the head of the Ghoul”. One may still wonder whether this author is not simply an abbreviation, given that one often still finds, for other stars, all or part of the original description in catalogues translated from Greek. But when this simplification is reduced to a single word or a simple expression, as is the case with later astronomers, as is the case for β Per, designated: *Ra’s al-Ġul*, there is no longer any doubt that it is indeed a proper name: it is this that we encounter in the text of Abū ‘Alī l-Hasan al-Marrākuşī, at the end of the 13th century, in that Nağm al-Dīn al-Mişrī in the first half of the 14th century, in those of Muḥammad Tārağay, known under the name of Uluğ Bēğ in the 14th century, of Muḥammad al-Tīzīnī al-Muwaqqit in the 16th century, or again Muḥammad al-Aḥsāsī in the 17th century.

The legitimate doubt about the nature of stellar appellations in al-Bīrūnī means that the simple appellations appearing in the *Kitāb al-Qānūn al-Mas’ūdī* are only indicated in *The Catalogue of Star Names in the Greco-Arabian Sky* when they are confirmed, in the form or in a corresponding form, in the catalogues of the later astronomers just cited, or in the lists of

names appearing on the celestial globes and astrolabes used, except when they are particularly significant. But in many cases, one will still hesitate between a simple summary description of the position of the star and a true proper name.