#### SELEFA

Société d'Études Lexicographiques & Étymologiques Françaises & Arabes

## The Sky, our Common Heritage

Comparative representations of the sky in Mesopotamian, Greek, Arab, and contemporary astronomy:

a scientific and educational project presented by Roland LAFFITTE



Arab figure of *Al-Thurayâ* (representation based on the names of stars in classical Arabic)

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#### **'The Sky, Our Common Heritage':** the project in a nutshell

The project will present, for scientific and educational purposes, the night sky as seen by the different civilisations:

→ Mesopotamian, → Greek,

 $\rightarrow$  Arabic,

and

 $\rightarrow$  European,

that have contributed to the present-day map of the stars, as adopted internationally.

It will utilise all possible media: planetariums, globes, planispheres and celestial maps, DVDs, internet sites, films, books, etc.

\* Achieving these aims will involve:

 $\rightarrow$  assembling the star lore of different peoples, with special emphasis on the star lore of the Arab world;

 $\rightarrow$  developing an original iconography, with reference especially to the Mesopotamian and Arab skies.

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See detailed summary, page 4

#### The project 'The Sky our Common Heritage' is sponsored by:

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- **Christian Julien ROBIN**, Member of the Institut de France, Director of the LESA (Études Sémitiques), CNRS-Collège de France, President of the Société des Archéologues, Philologues et Historiens de l'Arabie;
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Živa VESEL, CNRS researcher, Mondes iranien et indien, 'Patrimoine manuscrit iranien' programme, co-author of *Images du Ciel d'Orient au Moyen-Âge*, Paris: Sorbonne, 2003;

Gabriel YARED, Artist, pianist and composer.

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## I. Background considerations

We observe today, in our field of study, i.e. that of celestial representations, that there is considerable interest in the history of astronomy, both in its mathematical and physical aspect and in its cultural dimension, which is to say representations of the sky and of the celestial imaginary.

#### Interest everywhere in the celestial imaginary and its representations

Responding to this interest is an effort on the part of many people around the world to make these treasures of the human spirit more generally available.

In the case of the Chinese their own representations of the sky, so far barely known in the rest of the world, are popularised through Chinese, Japanese and Korean universities, museums and astronomical centres keen to present, as well as the common international figures in current use, their own traditional figures and rich celestial imaginary.

Illustration from the *Tiangguan shu* by Sima Qiang, end  $2^{nd}$  century BC, explaining that *Beidou*, the 'Northern Bushel' – whose 7 stars correspond to the Greek *Chariot* or the Arab figure of *Na<sup>c</sup>sh wabanâtuhu* – serves as a chariot for the emperor and commands the four cardinal points



(Bas-relief of the Han era, 2<sup>nd</sup> century AD, published by *Zhongguo gudai tianwen wenwu tuji*, Beijing: Wenwu Press, 1980)



Map of the *Forbidden Purple Enclosure* showing the Northern Circumpolar Constellations on a scroll of the Tang era, 7<sup>th</sup> century, found at Danhuang, Gansu province. The constellation of *Beidou* (i.e. the *Big Dipper*) can be seen at the bottom of the map. (British Museum, London, Oriental ms. 8210/S.3326/R.2)

There is enormous interest in ethnoastronomy, both among university researchers and more generally, among amateur astronomers in particular. But whereas the greater part of the Arab contribution to the international heritage is explained by popular Arab traditions, the representations that receive most attention are those of the Amerindians and Africans.





Illustration of an Amerindian legend that sees the stars of *Orion/Al-Jawzâ*' as a race between two canoes



#### A paradox: the Mesopotamian and Arab contribution to the world heritage is huge but largely unknown

Of the representations of the celestial sphere recognised by the International Astronomical Union only the Greek imaginary, with its astral mythology relating to the 48 classical constellations, is available to the public. But in fact half the Greek constellations are of Babylonian origin, in spite of which the immense cultural heritage of Mesopotamian civilisation, to which Arab and Islamic as well as European civilisation is so indebted, remains unknown to most people. These celestial figures are associated with an extraordinarily rich star lore that remains completely unexploited: in the starry heaven is written, for example, the story of the tumultuous love affair between Inanna/Ishtar and Dumuzi/Tammuz or, in the Greek heaven, the rescue of Andomeda by Perseus.

On the other hand, two thirds of the common names for stars in catalogues the world over are Arabic in origin, though typically their users, including those in the Arab world, know nothing at all about the imaginary world that lies behind them.

This glaring imbalance needs to be corrected as a matter of urgency. The task is made somewhat easier today by the globalisation of the means of communication and by the internet, since all peoples now have the technical means to disseminate knowledge of their culture and share it with others.



The God Enki/Ea, from whom the figure Aquarius is derived, on a cylinder seal, 18<sup>th</sup> century BC

The celestial figures evoked and the complexity of the myths in which they are embedded, with their often unknown supernatural charge, speak directly to the hearts of men and women across the barriers of space and time. They allow us to highlight a common heritage to which all Mediterranean civilisations have contributed; and they constitute an effective means whereby people from different cultures can improve their mutual understanding.

We hear more and more these days about a 'clash of civilisations', which makes it all the more interesting and important to be able to demonstrate how civilisations on either side of the Mediterranean have influenced each other. Supplying practical, comparative materials would allow useful educational work to be done. The contribution of each great civilisation to our modern cultural heritage would be acknowledged – a heritage that belongs henceforth not only to the peoples who live around the Mediterranean but to all peoples on the planet.



## **II. Presentation**

#### A. A project in two parts:

#### **<u>Part 1:</u>** Assembling the star lore

Greek myths relating to the stars have already been assembled and require no further work. The imaginary underpinnings of the 40 new European constellations are different in kind and require very little research.

**In the case of Mesopotamia** much work has been done on mythology in general. It will simply be necessary to establish a corpus relating to the stars in particular.

#### The Sumerian myth of Inanna and Dumuzi

In the Mesopotamian heaven is written the story of the most ancient pair of lovers, Inanna/Ishtar and Dumuzi/ Tammuz, who, in Syria became Astarte and Adonis, and then in Greece, Aphrodite and Adonis. The Western Fish is the symbol of Anunîtu(m), one of the manifestations of Inanna. Goddess of Love, and the Ram is the emblem of Dumuzi, the heavenly shepherd. When Inanna was taken prisoner by her sister Ereshkigal, goddess of the World Below, the door to which was guarded by the gods Maslamtaea and Lugalirra, her messenger, Papsukkal, represented by Orion, ran to warn the gods that in the absence of the goddess of fecundity on earth, nature had brought the succession



Inanna/Ishtar & Dumuzi/Tammuz, 2<sup>nd</sup> millennium BC, *in* D. Wolkstein, *Inanna, Queen of Heaven and Earth* 

of her vital cycles to an end. The gods in their alarm followed the wise advice of Enlil/Ea, represented by *Capricorn*, among other figures: the prisoner had to hand over someone else in exchange for her freedom, and she designated her lover who, it seemed to her, was enjoying himself a little too much in her absence. After which, of course, she shed tears aplenty for him, giving Mesopotamian scribes the opportunity to engrave their most beautiful tablets.

**Arab star lore**, on the other hand, remains to be assembled, and will require a considerable amount of work, on classical literature and popular traditions.

**1. Work on classical literature** will be based on the following sources: classical dictionaries, literary texts (poetry, fiction, etc.) and classical astronomical literature.

The research will span the different periods, namely: the pre-Islamic period, the Umayyad and Abbasid periods, and so on; and extend to different areas in the Arab world: the Maghreb, Egypt, the Mashreq, the Arabian Peninsula, etc.

The work will involve assembling legends, literary images (metaphors, allusions, etc.) and proverbs for the different celestial figures classified according to their position in the sky.

**2. Work on popular traditions** will be based on popular literature in dialectical Arabic and on oral memory.

This work, which is partly ethnographical and partly anthropological, will involve:

\* assembling material provided by orientalists or European travellers to the Maghreb as well as the Mashreq;

\* local almanachs (kutûb al-anwâ');

\* collecting data from the populations concerned: sailors and fishermen, Bedouins and farmers, but also town dwellers, for the stars must also be referred to in urban traditions, in songs.

حبورة الجرزاء التحالي فراند المنعة فراند المنعة فراند المنعة المناب الممناب المممامممامالممام الممام الممام الممام الممام المماممام ا

The Arab figure of *Al-Jawzâ*' (representation based on the names of stars in classical Arabic). There are many Arab legends in which *Al-Jawzâ*' is paired with *Suhayl* (i.e. the star *Canopus*)

Popular literature and oral memory are not only precious tools for explaining a certain number of celestial figures. They can also be used as a reference point for presenting these figures to an Arab public, while also helping to safeguard the cultural heritage of the Arab peoples and of humanity.

For more details on Part 1 see 'Star Lore in the Arab World', p. 22 and the SELEFA website, SELEFA, www.selefa.asso.fr

#### Part 2: Developing an original iconography

While we possess an extremely rich and well-developed iconography for the Greek figures and contemporary figures, the same cannot be said for the Mesopotamian and Arab figures.

In our present-day culture of the image, iconography does not only have an artistic and cultural interest of its own. It can also act as a powerful lever in the popularisation of knowledge; and it is particularly important to the present project as a means of increasing its educational effectiveness.

## the Mouth of the String aros the Tongue *tHer* \*

#### 1. An iconography of Mesopotamian figures

Reconstruction of the figure of *Gula* and the *Sitting Dog* based on Mesopotamian documents in which  $\beta$  Herculis is Kalbu, 'the Dog', whereas for the Arabs,  $\alpha$  Herculis may be Al-Kalb, 'the Dog'

As for Babylon, we have a complete iconography only for the zodiacal constellations that have come down to us in the symbols for the signs of the zodiac. We do however have many figures of divinities to which the stars are linked and many lists dating from 700-400 BC describing the position of the stars in relation to these figures, so that we are able to reconstruct a good part of the celestial sphere, as for example in the above diagram.

#### 2. Requirements for an iconography of the Arab sky

As for the Arab figures, of major interest since they underpin two thirds of our star names, we have no images at all. Precise descriptions of the figures as imagined by Arab peoples can however be found in classical texts, so that, taking into account certain characteristics of Arab and Islamic astronomy, they can be represented graphically.

# 

<sup>c</sup>Abd al-Rahmân al-Sûfî, *Kitâb* suwar al-kawâkib al-thâbita, ms. of Ulugh Beg, 15<sup>th</sup> c. (BnF, Paris, Arab ms. 5036)



The Arabs have hitherto adopted Greek representations of the sky

Abû Ma<sup>c</sup>shar al-Balkhî, *Kitâb al-mawâlid*, Egyptian ms., end 15<sup>th</sup> century (BnF, Paris, Arab ms. 2583)

A characteristic feature of Arab and Islamic astronomy is that the figures represented on the heavenly vault are those of the Greeks, and half of these Greek figures are inherited from Babylon. And, as can be seen in the figure of the *Great Bear* below, within the constellations inherited from the Greeks, the Arabs indicated the popular Arabic names for the stars, namely, for this figure: *Na<sup>c</sup>sh and* 

Banât Na<sup>c</sup>sh, Al-Qâ'id, Al-Inâq, Al-Jawn, Suhâ, Al-Thibâ', or the Qafzât series, which are unrelated to the mythology of the Bear.



Globe by Muhammad Ibn Hilâl, Mossul, 13<sup>th</sup> century (British Museum), and detail of the northern hemisphere, published by Bernhardt Dorn, 1829



#### \* There is an urgent need to depict the specifically Arab figures

And so there is a special interest in presenting the figures that are the product of the Arab imagination, as others are doing elsewhere in the world for other cultures. These figures are described in detail in astronomical documents: see for example the sketch of  $Na^c sh wa-Ban \hat{a} tuhu$  (below) based on classical texts.



The Arab figures of  $Na^c sh$  and Al-Thib $\hat{a}$ ' located, according to classical texts, in the position of the *Great Bear*.

#### 3. Creating an original iconography

Our first task, therefore, on the basis of texts and other documents in our possession, is to produce a systematic iconography of the Babylonian and Arab figures, which may then be compared with the Greek figures.

**a. 60 Mesopotamian constellations**. For these, we have to find a graphic style that evokes the art of the ancient civilisations of Babylon or Nineveh.

**b. 80 Arab constellations**, for which we have to find graphic styles compatible with the imaginative and visual traditions of the Arab and Iranian worlds; and which must also correspond to the positions of stars in the heavens as described in astronomical texts and in classical and popular poetry.

**c. 48 Greek constellations** whose position and shape are long since established and which exist in numerous representations, but for which a new and distinctive graphic style has to be found to distinguish them from the preceding representations.

**d. 88 contemporary constellations**, of which many representations already exist: these consist of the 48 Greek constellations, completed during the Renaissance by figures that fill the spaces in between considered to be too empty, to which were added, mainly in the eighteenth century, the constellations of the austral sky.

#### The result: a set of pictures

When the work of drawing and painting is finished, we will have a set of 280 pictures in two different formats:

**1. 280 original pictures** of celestial figures individually designed in relation to points of reference already established by cartographers specialising in astronomy. These pictures will be produced in full colour with a maximum of artistry and will constitute a matrix of figures that can be presented in different languages and adapted to different media. They can be used as they are, as a series of pictures, but will be used, above all, in the making of globes, planispheres and celestial atlases, or for illustrating books.

Picture of the Arab figure of *Al-Thurayâ*, adapted to the Arabic language.





**2. 280 simplified diagrams:** the figures will appear in the same celestial positions as before, but in a simplified form that will allow them to be used as teaching materials, and to be adapted to various media.

Simplified diagram of the Arab figure of *Al-Thurayâ*.

#### **B.** Making the results available to the public

There are many ways - all of them useful, each with its own possibilities - of making these various treasures of the human imagination available to the public.

#### 1. Traditional visual and audiovisual media

**a. Traditional media:** celestial globes, planispheres, maps and atlases have existed since Antiquity; and planetariums provide a particularly striking image of the night sky.

Celestial globes, which Arab civilisation excelled at creating, are of considerable interest as educational tools. But planetariums, of which the oldest known is the cupola of the hammam of Qusayr 'Amra, in Jordan, dating from 720, combine the advantages of globes and planispheres while avoiding some of their disadvantages.



Two representations of the space of the Ram and the Bull based on popular Arab descriptions

**b.** Audiovisual media: documentary films can present the history of celestial formations in different ways; they can address the imaginary dimension.

#### 2. Books

The use and application of images can proceed alongside the publication of books that will serve, in their different ways, to highlight the scientific and literary heritage. Four collections might be envisaged:

**a.** A collection for scholars and academics which might include, in particular, Arabic texts not yet translated into European languages, such as the ninth-century *Kitab' al-anwa'* or *Star Rise Book* of Ibn Qutayba, or similar works by other Arab or Iranian authors which are not generally available, even in the original languages.

**b.** A collection for the general public presenting the classical texts of astronomy in different languages, for example: Mesopotamian texts such as the Mul.Apin *series* 

(7<sup>th</sup> century BC), Greek texts such as the *Phenomena of Aratos* (3<sup>rd</sup> century BC), or texts like the *Kitâb Suwar al-kawâkib al-thâbita* or *Book of the Fixed Stars* by <sup>c</sup>Abd al-Rahmân al-Sûfî.

**c.** A literary collection: this would disseminate, in different languages, Arabic and Persian texts from the popular literature devoted to the stars; and a collection of the main poetic texts which allude to the Arab representation of the heavens (there are for instance 300 synonyms for *Al-Thuraya* in Andalusian poetry).

**d.** A collection for children, aiming to present the celestial legends in the different civilisations to children living in countries all around the Mediterranean.

#### 3. Digital media

**a. Software for planetariums.** Planetariums are nowadays making use of computer animation, giving them a stunning advantage in the simulation of the celestial vault.

b. **CDs** and **DVDs.** available to individuals as well as schools, public libraries and cultural institutions, also provide effective animation. They can be supplemented by good historic and scientific documentation, with attractive illustrations that will increase their educational effectiveness. Moreover, they



effectiveness. Moreover, they The *Scorpion* and *Sagittarius* on Yemenite relief, 5<sup>th</sup> c. AD can be offered in different languages.

#### **C.** Possible extensions of the project

The human and material resources that this project must draw upon, as well as the



skills that it will enable people to acquire, should in due course open the way to a more global project, that would offer to one an international public the treasures of celestial imaginary the of all civilisations, notably the Chinese and the Indian, but also other civilisations and cultures which, on every continent, possess fabulous riches.

*The Vermillion Bird of the South*, one of the classical figures of Chinese astronomy, inherited by the Japanese, painting in the Kitora Tomb, a tumulus dating from the 7<sup>th</sup> to 8<sup>th</sup> centuries (photo: National Research Institute for Cultural Properties, Nara)

Such an extension would be justified by the fact that more and more star names

from quite different places are entering star lists everywhere, thus opening a window for everyone on the planet onto new cultural worlds.

By offering a new route into the imaginary world of people on every continent, such a project would hope to encourage better mutual comprehension.



Shiva-Rudra, who appears in the sky as Mrigavyadha, the 'Deer-slayer', the Indian name for Sirius



## **Preparation and setting up**

#### **1. The preliminary Phase**

The tasks in this initial phase are as follows:

\* making contact with different cultural and educational institutions in countries on both sides of the Mediterranean (planetariums, universities, public and private foundations, etc.), and bringing interested parties together around the common project and within specific legal structures;

\* creating a website that will make the project accessible and allow people to follow its progress;

\* exploring possible sources of funding;



The Mesopotamian Twins

Setting up proper begins with the formation of two teams:

\* An iconography team: The work will be done by a team of people comprising artists responsible for the original pictures and simplified diagrams, and celestial cartographers. The team will be supported by historians of science to vouch for the scientific accuracy of materials assembled from the different periods;

\* A star lore team: this will be made up on the one hand of linguists and literary critics to gather together poetic, literary and mythological texts from the different periods, especially from the Mesopotamian and Arabo-Islamic civilisations, and to earmark some of these texts for translation into various languages; on the other hand linguists, ethnologists and literary critics to record popular tradition, whose exact meaning will also need to be determined by astronomers.

The fact that the different parts of the project will advance at different speeds and be financed in a number of different ways means that the various phases are bound to overlap.

Thus the setting up of a research network for 'Star Lore in the Arab World' (see page 22) takes us through the preliminary phase (Phase 0) and into the setting up phase (Phase 1).

Moreover the fact that we are able, here and now, to create specific products that exploit results already obtained, such as the 5-minute film entitled 'Figures arabes dans le ciel étoilé' (see page 23), means that, in certain areas, we are already bringing the work to the attention of the public (Phase 2).

## 2. SELEFA, the association in charge of the preliminary phase

SELEFA (the Société d'Études Lexicographiques et Étymologiques Françaises et Arabes) is a law-of-1901 association created in March 2002 and based in Pantin (near Paris).

#### It has the following aims:

1. To promote research into lexicographical exchanges between languages, written and spoken, ancient and modern, on both sides of the Mediterranean.

2. To study a shared cultural heritage that includes linguistic borrowings, demonstrating how the great civilisations of the Mediterranean are not external to one another and how the different cultural heritages are part of a larger whole.

#### The educational challenge:

Words, and especially names, are a tool for raising awareness of what we have in common. The pleasure, the thrill even, that names can provide is a good springboard for learning. They are the result of a complex history, they are often linked to the supernatural, and they arouse curiosity. Playing with words is a simple way of breaking down the barriers that prejudice erects between different periods of history and different cultures. Juggling with words allows us to highlight in a playful way the contribution of different civilisations and every social group to our common culture, to quietly enrich each member of each society with the contributions of the others, to straightforwardly convey in a practical way the idea of what is pooled and what is shared in the life of the City-world.

#### **Activities:**

\* Working with a network of the best scholars in the field, SELEFA holds regular meetings and publishes the results of its research in linguistics in a twice-yearly Bulletin.

\* Having considerable experience in the cultural and educational fields, SELEFA works to promote the sharing of a common heritage among adults (in further and continuing education, in cultural centres and in the context of various university or cultural events), as well as among children and young people (in lycées, collèges, community centres, etc.). It offers lectures as well as practical sessions of various kinds.



The Farnese Atlas, a Roman copy of a Greek globe, 1<sup>st</sup> century AD

For more details go to: <u>www.selefa.asso.fr</u>

#### **3. Progress report**

#### 1. A conference on the theme of 'Nos héritages babyloniens et arabes dans le ciel étoilé'

The conference, organised by UNESCO's 'Plan Arabia' under the presidency of His Excellency Abdulrazzak al-Nafisi, Permanent Delegate of the State of Kuwait to UNESCO, was held in Paris on 8 March 2007 under the he presidency of His Excellency Ali Zainal, Permanent Delegate of the State of Qatar to UNESCO and new president of « Plan Arabia ». Mr. Roland Laffitte, project leader, presented 'The Sky our Common Heritage' with the aid of a videoprojection; the aim of the project being to bring together the different representations of the celestial sphere, Mesopotamian, Greek and Hellenistic, Arab and Islamic, and contemporary. He explained that the work would involve (i) creating a comparative iconography, (ii) assembling myths and legends from oral and written sources and (iii) using all available media – visual, audiovisual, digital, and print – in order to bring this inheritance to the attention to the general public.

There followed presentations by Mr. Jean-Jacques Glassner, Directeur de Recherches at the CNRS and Lecturer at the École des Hautes Etudes en Sciences Sociales, which stressed the links between Mesopotamian and Greek astronomy, and Mr. Mohamed Tahar Bensaada, Professor at the Haute Ecole Ilya Prigogine, Brussels, which focussed on the cultural continuum across the vast Middle Eastern and Eastern Mediterranean regions at different stages of history. The debate which followed, chaired by Mr. Pierre Bordreuil, former Directeur de Recherche at the CNRS and Collège de France, Laboratoire des Etudes Sémitiques, brought the educational side of the project into clearer focus.

#### 2. Creation of a network for research on 'Star Lore in the Arab World'

The programme involves assembling representations of the stars from the different sources which have contributed to the formation of the modern celestial sphere. On the Arab side of the programme it will be essential to assemble examples on two levels: 1. literary texts (stories and images: metaphors, allusions, etc.), and 2. oral memory, the latter work being partly ethnographical and partly anthropological.

The institutions which have responded favourably to this initiative so far are the following: 1. In Egypt the PSC (Planetarium Scientific Center) of the Bibliotheca Alexandrina, by letter from its director Ms Hoda El Mikati; and a group of scholars under the direction of Professor Salah Fadl; 2. In Tunisia, The University of Sfax, initially by letter from its president Mr. Hamed Ben Dhia. On 10 May 2007 Roland Laffitte lectured on 'The Sky, our Common Heritage' at the University. This was followed by a meeting with a group of teachers and doctoral research students belonging to ERCILIS (Équipe de Recherche en Civilisation et Littérature de Sfax) led by Ms Hedia Abdelkefi.

Discussions are moreover taking place with the Moroccan Ministry of National Education, following a positive response from Mr Habib al-Malki, Minister of Higher Education and Scientific Research. In Algeria Prime Minister Mr Abdelaziz Belkhadem has indicated his support for the project 'The Sky, Our Common Heritage'. Discussions are also taking place with a languages institute at the University of Algiers and an institute of anthropology at the University of Oran.



Sagittarius after a medieval manuscript of the Book of Fixed Stars by Al-Sûfî



An Assyrian planisphere dating from the 7<sup>th</sup> century BC

### **3.** A 5-minute film entitled 'Figures arabes dans le ciel étoilé' is currently in production

This film, due to appear in late 2007, has been produced by agreement with the APLF (Association des Planétariums de Langue Française) and the PSC (Planetarium Science Center) of the Bibliotheca Alexandrina. By virtue of a tripartite agreement it will be distributed to planetariums exclusively. It will be distributed in French by the APLF and in Arabic by the PSC.

(A detailed description of this film appeared in the journal Planétariums in May 2007 and may be found on the SELEFA website, under 'Online documentation')

#### 4. Publication of a set of reference cards showing the constellations

SELEFA and the Observatorium de Nice-Côte d'Azur have signed an agreement to jointly produce a set of astronomical reference cards for educational purposes. The cards will give both astronomical and cultural information; the former will be supplied by the Observatorium de Nice, the latter by the Observatorium and SELEFA jointly. They are due to be published in Spring 2008. A preliminary sketch of the card for the Cygnus constellation may be viewed on the SELEFA website, under 'Institutional actions'.

#### 4. Roland Laffitte, project leader

Roland Laffitte is the author of works on linguistics, secretary of SELEFA and editor of its Bulletin. He has specialised in (i) Arabic and oriental words in European languages and (ii) ancient astronomy and the names of celestial bodies in Babylonian, Greek, Aramaic and Arabic.

He is in charge of the project 'The Sky, Our Common Heritage'.

#### Works on Ancient Astronomy

#### **Publications**

Books:

\* Des noms arabes pour les étoiles, Paris: Geuthner, 2001, revised edition, 2005.

\* Contribution to: Les Instruments mathématiques, XVI<sup>e</sup> -XVII<sup>e</sup> siècle: cadrans solaires, astrolabes, globes, nécessaires de mathématiques, microscopes, etc., Camille Frémontier-Murphy, Paris: Musée du Louvre, Département des objets d'art, 2002: decipherment of the names of stars on the retes of astrolabes in the Louvre as well as tables of latitude and longitude on their tympanums. See 'Les astrolabes du Louvre' at www.selefa.asso.fr.



#### Books due for publication and in preparation:

\* Les Noms d'étoiles. Origine et signification de 500 noms, 2008.

\* Étoiles & constellations de Babylone à nos jours. Origine de nos figures célestes & Étymologie des noms d'étoiles, 2008.

\* Naissance et diffusion des constellations et du zodiaque mésopotamien, Paris: Geuthner, 2009.

#### Articles:

\* 'De l'akkadien Zibânîtu à l'arabe Al-Zubânâ, en passant par le mandéen zibânîtâ?', *Semitica* (Cahiers de l'Institut d'Études Sémitiques du Collège de France, Paris), n° 50, 2002.

\* 'Les Noms sémitiques des signes du zodiaque, de Babylone à Baghdad', *Comptes Rendus du GLECS* (Groupe Linguistique d'Études Chamito-Sémitiques, Paris), vol. XXXIV, 2003.

\* 'Sur le zodiaque sudarabique', *Arabia* (a review of sabeology published by IREMAM, Aixen-Provence & ISIAO, Rome), n° 1, 2004. \* 'Sur l'origine du nom de la constellation de la Vierge', *Journal asiatique*, Paris, vol. CCIXII, n° 1 & 2, 2004.

\* 'D'où viennent nos constellations et nos noms d'étoiles', *Planétariums*, review of the Association des Planétariums de langue française, May 2006.

\* 'Ce que notre ciel doit aux Arabes', *Les Cahiers Clairaut*, Bulletin du comité de liaison enseignants et astronomes, n° 109, Summer 2006.

\* « Précisions sur le noms des signes du zodiaque », Bulletin de la SELEFA, n° 7, June 2006.

#### **Scientific presentations**

\* 'Les noms sémitiques des signes du zodiaque, de Babylone à Baghdad', presentation given at the Groupe Linguistique d'Études Chamito-Sémitiques, Paris, 30 Nov 2000.

\* 'Les zodiaques moyen perse et sanscrit et leur origine babylonienne', presentation given at the Science and Literature workshop organised by Monde iranien (inter-disciplinary research unit 7528, CNRS), Paris, 22 Jun 2001.

\* 'Sur l'origine du nom de la constellation de la Vierge', presentation given at a session of the Société asiatique, Paris, 9 Nov 2001.

\* 'Données sur l'uranographie babylonienne aux III<sup>e</sup>/II<sup>e</sup> millénaires av. J.-C.', presentation given at the *Science and Literature workshop* organised by Monde iranien (inter-disciplinary research unit 7528, CNRS), Paris, 26 Jan 2002.

\* 'De Babylone aux Latins et aux Arabes: les noms de la constellation de la Balance', presentation given at the 3<sup>rd</sup> *Journées de L'Orient*, a conference organised by the Société asiatique and the Université Michel Montaigne-Bordeaux 3, Bordeaux, Pessac campus, 3-4 Oct 2002 (to be published in the conference proceedings).

\* 'Les noms du zodiaque dans l'espace turco-arabo-persan', presentation given at the 3<sup>rd</sup> International Conference, *Emprunt linguistique dans l'espace turco-arabo-persan et méditerranéen*, organised by ERISM and INALCO with the support of IFPO, the University of Damascus and AUF, 18–19 December 2005, Rida Saïd Centre, Damascus.

\* 'Aux origines du zodiaque babylonien: une nomenclature', presentation to GLECS, Paris, 26 April 2006.

\* 'Le point sur l'origine mésopotamienne du signe zodiacal du *Bélier*', presentation to the 5<sup>th</sup> *Journées de L'Orient* organised on the theme of 'The Centre and the Periphery' by the Collège de France, the Société Asiatique and the CNRS, Paris, 31 May–1 June, 2006.

\* « Les héritages mésopotamiens et arabes dans le ciel étoilé », presentation given to the Université of Sfax, Tunisia, 10 May 2007.

\* « Naissance et diffusion du zodiaque mésopotamien », presentation to the Société d'Études Euro-Asiatiques, Paris, 20 décembre 2007.

For further information on the work and publications of Roland Laffitte, see SELEFA's website: <u>www.selefa.asasso.fr</u>.

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