Ayanamshas in Sidereal Astrology

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Western astrology mostly uses the *tropical* zodiac, in which 0° Aries is fixed at the vernal point. The vernal point is the point where the Sun is located at the spring equinox.

By contrast, *sidereal* astrology uses a sidereal zodiac whose initial point is defined relative to the fixed stars. Sidereal astrology has a western as well as an eastern tradition. The former claims to go back to the Babylonian and Hellenistic traditions, whereas the latter originates from the Indian tradition, which has become known as "Vedic" astrology in recent years. (Since Vedic spirituality does not have anything to do with astrology, this is actually a misnomer, and I shall henceforward call it "Indian astrology" or "sidereal astrology".)

Since the vernal point makes a slow motion relative to the fixed stars, namely the so-called precession of 1° in 71.6 years, the tropical and the sidereal zodiacs slowly drift apart. About 1500 - 2000 years ago, both zodiacs almost perfectly agreed with each other. However, in our time, the difference between them amounts to 20° and continues increasing.

Nowadays, sidereal ephemerides are derived from tropical ephemerides by subtracting a certain difference value from the tropical positions of the planets. This difference value is called *ayanamsha*. The Sanskrit term *ayanāṃśaḥ* is composed of the words *ayanam*, "course (of the Sun), half-year" and *aṃśaḥ*, "part", thus literally means "part of the course". It refers to the distance of a solstice from the initial point of the cardinal zodiac sign that is associated with it. This distance equals the distance of the vernal point from the sidereal Aries point.

Sidereal astrologers unfortunately disagree about where exactly in the sky the initial point of the sidereal zodiac should be located. There are numerous divergent ideas about it and, consequently, a considerable number of different ayanamshas. New ayanamshas are invented almost every year. Beginners in sidereal astrology are confronted with the difficult problem of deciding which ayanamsha to use, unless they choose to follow the recommendation of their teacher. Hindu astrologers and their western disciples mostly use the so-called Lahiri ayanamsha, whereas the western sidereal tradition mostly uses the Fagan/Bradley Ayanamsha.

On astro.com's web page "Extended Chart Selection", sidereal charts can be generated using the following ayanamshas:

* Fagan/Bradley Ayanamsha

Originally called the *"Hypsomatic ayanamsha"* by the Irish American astrologer *Cyril Fagan* (1896-1970), it was introduced in a book titled *Zodiacs Old and New* in 1950. Fagan placed the fixed star Spica at 29° Virgo based on his research into the origins of the exaltation degrees (*hypsomata*). The American astrologer *Donald A. Bradley* (1925-1974, aka *Garth Allen*) corrected the position of this star to about 29°06 Virgo in 1957 after he investigated hundreds of Sidereal lunar and solar ingresses into the cardinal signs that preceded major mundane events such as volcanic eruptions and mining disasters. With this ayanamsha, which he dubbed the *"Synetic" vernal point* or *SVP*, the important stars Aldebaran and Antares are located at almost exactly 15° Taurus and Scorpio respectively.

The Fagan/Bradley zodiac is very close to the zodiac that was used by Babylonian astrologers in the Hellenistic period. Statistical examinations of astronomical cuneiform tablets by Peter Huber in 1958 have provided an ayanamsha that differs by less than an arc minute from the Fagan/Bradley ayanamsha. However, according to a more recent investigation by John P. Britton (2010), the difference could still amount to several arc minutes (see further below).

The Fagan/Bradley zodiac is the oldest sidereal zodiac.

C. Fagan & R.C. Firebrace, *A Primer of the Sidereal Zodiac*, London, 1961.

Cyril Fagan & Roy C. Firebrace, *Primer of Sidereal Astrology*, AFA, Tempe, AZ, 2008.

Cyril Fagan, *Zodiacs Old and New, A Probe Into Antiquity and What Was Found*, (Foreword by Donald A. Bradley), 2011 reprint.

Kenneth Bowser, *An Introduction to Western Sidereal Astrology*, AFA, Tempe, AZ, 2012

* Lahiri Ayanamsha

This is the ayanamsha mostly used in India, and it is the official ayanamsha used to determine the dates of Hindu religious festivals. It was introduced in 1955 by the Indian Calendar Reform Committee and named after its inventor, the astronomer Nirmala Chandra Lahiri. Since Indian religious calendars are defined by the ingresses of the Sun into sidereal zodiac signs, Hindu religious celebrations depend on the ayanamsha used in calendar-making. By introducing an official ayanamsha, the Indian government wanted to enforce that religious holidays fell on the same days in the whole country. However, the historical basis of this ayanamsha is problematic and many experts consider it wrong by several degrees.

Lahiri actually intended that the star Spica (in Sanskrit *Citrā*) should be fixed at 0° Libra. However the official definition of the Lahiri ayanamsha does not realise this idea accurately. This is explained by the fact that the traditional method of calculating ayanamshas does not take into account the proper motion of fixed stars and a small change in orientation of the ecliptic plane. For this reason, some astrologers have proposed an improved version of this ayanamsha, the so-called "True Chitra Paksha Ayanamsha". (see below)

Other Ayanamshas Tied to the Star Citrā/Spica

* True Chitra Paksha Ayanamsha

This ayanamsha is considered to be a correction of the Lahiri ayanamsha. The fixed star Spica (in Sanskrit *Citrā*) is always located exactly at 0° Libra.

* Suryasiddhanta Chitra Ayanamsha

The earliest clue that supports the view that Spica/Citra was used as a marker of 0° Libra is found in the ancient Indian astronomy text book Suryasiddhanta. It must be noted, however, that this work does not talk about ayanamsha, but only mentions the positions of some fixed stars in a sidereal zodiac. In its present form, the Suryasiddhanta was composed near the year 500 CE. Older versions of it are not extant, but are referred to in other texts.

The *Suryasiddhanta Chitra Ayanamsha* is defined in such a way that the star Spica was at 0° Libra in the year 499 CE if projected on the ecliptic in so-called polar projection. In polar projection, the projection line is not perpendicular to the ecliptic but is drawn through the celestial north pole and the star. Since the above-mentioned Spica-based ayanamshas (Lahiri und True Chitra) are projected on the ecliptic in a right angle, strictly speaking they cannot be justified on the basis of the Suryasiddhanta.

In addition, it must be noted that other star positions given in the Suryasiddhanta are not compatible with Spica at 0° Libra. For this reason, this ayanamsha should not be considered very reliable either.

* Krishnamurti Ayanamsha

The ayanamsha used by the astrologer K.S. Krishnamurti (1908-1972) is close to the Lahiri ayanamsha and the True Chitra Ayanamsha.

Ayanamshas Fixed at *Revatī* (*zeta Piscium*) or the Galactic Centre

Ayanamshas oriented towards Revati (ζ Piscium) or the galactic centre are subsumed in one group because the resulting zodiac happens to be almost identical. Since ancient Indian astronomers were not aware of the galactic centre, this coincidence seems to be rather accidental. From a philosophical point

of view, it probably makes a lot more sense to fix the sidereal zodiac at the galactic centre than at some random fixed star. Since all visible stars circle around the galactic centre, it could be called the "central star" of our galaxy. The galactic centre is also millions of times heavier than any star.

* True Revati Ayanamsha and

* Suryasiddhanta Revati Ayanamsha

According to the Suryasiddhanta, the star *Revati* (*ζ Piscium*) was located at 29°50' Pisces. Two different ayanamshas can be derived from this information. With the *True Revati Ayanamsha*, the star is assumed at this ecliptic position in rectangular projection. With the *Suryasiddhanta Revati Ayanamsha*, on the other hand, the zodiac is defined in such a way that Revati had the same position in *polar ecliptic projection* in the year 499 CE. The latter seems to be more appropriate because the Suryasiddhanta uses polar projection. However, it must be noted that the position of Revati as given in the Suryasiddhanta is incompatible with the positions of Spica and other stars as given in the same work. Unfortunately, the star positions of the Suryasiddhanta do not allow us to determine the underlying ayanamsha.

* Usha & Shashi Ayanamsha

This ayanamsha is named after two authors called Usha and Shashi. It has the star *Revati* (*ζ Piscium*) close to 0° Aries (29°50' Pisces)and the galactic centre in the middle of the lunar mansion Mula ("root, origin"), which might have been at the beginning of the nakshatra circle in very ancient times.

The galactic centre is a massive black hole in the centre of the Milky Way. Our Sun and all visible stars circle around it.

Usha and Shashi, *Hindu Astrological Calculations*, 1978 (Sagar Publications, New Delhi).

* Dhruva Galactic Center Middle Mula Ayanamsha (Ernst Wilhelm)

This ayanamsha was introduced in 2006 by the American astrologer Ernst Wilhelm. The galactic centre is projected on the ecliptic in polar projection, i.e. along a great circle that passes through the celestial north pole (in Sanskrit *dhruva*) and the galactic centre. The point at which this great circle cuts the ecliptic is defined as the middle of the nakshatra Mula.

This ayanamsha is very close to the *Usha-Shashi ayanamsha* and the *Revati ayanamshas*. With all of them, the star Revati (ζ Piscium) is near the sidereal position 29°50 Pisces.

This ayanamsha is a little less stable than the other ayanamshas. Since polar projection is used, it is a little bit influenced by general precession. However, polar projection was actually the method used by the Suryasiddhanta.

It must be noted that Wilhelm uses this ayanamsha only for the definition of the nakshatra circle not for the zodiac, because he uses the tropical zodiac combined with sidereal nakshatras.

https://groups.yahoo.com/neo/groups/StudyingKala/conversations/topics/14656

* Sassanian Ayanamsha

This is an Indo-Persian ayanamsha that has the star Revati near 29°50 Pisces.

More information on this ayanamsha is found in the General Documentation of the Swiss Ephemeris.

* Hipparchus Ayanamsha

This ayanamsha is based on a fact noted by the historian Raymond Mercier, namely that if the star positions of the Greek astronomer Hipparchus are used, "not only does Spica set simulaneously with the rising of the origin of the sidereal ecliptic, but we also have then the rising of α, β Arie and ζ Pisc" (i.e. the stars of Aries and Revati).

Raymond Mercier, *Studies on the Transmission of Medieval Mathematical Astronomy*, IIb, p. 35f.

More information on this ayanamsha is found in the General Documentation of the Swiss Ephemeris.

* Galactic Centre = 0° Sagittarius

This ayanamsha has the galactic centre at 0° Sagittarius and at the beginning of the nakshatra Mula.

* Cochrane Ayanamsha: Galaktic Centre = 0° Capricorn

This ayanamsha was proposed by Davind Cochrane in 2017. In his opinion, the Galactic Centre should be assumed at 0° Capricorn.

David Cochrane, "The Cochrane Ayanamsha" (2018),
https://www.academia.edu/36162624/The_Cochrane_Ayanamsha

* Galactic Centre in the Golden Section Scorpio/Aquarius (Rafael Gil Brand)

This ayanamsha, which is close to the Raman ayanamsha, was proposed by the German-Spanish astrologer Rafael Gil Brand (1959-). Gil Brand places the galactic centre at the golden section between 0° Scorpion and 0° Aquarius. The axis between 0° Leo and 0° Aquarius is the axis of the astrological ruler system.

Rafael Gil Brand, *Himmlische Matrix. Die Bedeutung der Würden in der Astrologie*, Mössingen (Chiron), 2014;

idem, "Umrechnung von tropischen in siderische Positionen".

Raman Ayanamsha and Other Indian Ayanamshas

* B.V. Raman Ayanamsha

This ayanamsha was used by the great Indian astrologer Bangalore Venkata Raman (1912-1998). It is based on a statement by the medieval astronomer Bhaskara II (1184-1185), who assumed an ayanamsha of 11° in the year 1183 (according to Information given by Chandra Hari).

Although this ayanamsha is very close to the galactic ayanamsha of Gil Brand, Raman apparently did not think of the possibility to define the zodiac using the galactic centre.

According to: Chandra Hari, "Ayanāṃśa", unfortunately without indication of source.

See also: B.V. Raman, *Hindu Predictive Astrology*, pp. 378-379. Here, the year 389 CE is given as the year of zero ayanamsha.

* Shri Yukteshwar Ayanamsha

This ayanamsha is named after Swami Shri Yukteshwar Giri (1855-1936). We have taken over its definition from Graham Dawson. However, the definition given by Yukteshwar himself in the introduction of his work *The Holy Science* cannot be reconsiled with it. According to his "astronomical reference", the ayanamsha on the spring equinox 1893 was 20°54'36" (1894 according to the revised edition of 1977). At the same time he believed that this was the distance of the spring equinox from the star Revati, which he put at the initial point of Aries. Unfortunately, this is wrong, because on that date Revati was actually 18°23' away from the vernal point. The error is explained from the fact that Yukteshwar used the zero ayanamsha year 499 CE and an inaccurate Suryasiddhantic precession rate of 360°/24'000 years = 54 arcsec/year.

Since Yukteshwar's precession rate is wrong by 4" per year or 6'40" per century, astro.com cannot offer a correct ayanamsha according to Shri Yukteshwar.

Unfortunately, the Yukteshwar ayanamsha, as implemented in the Swiss Ephemeris, does not agree with any information given by Yukteshwar himself. And unfortunately, its ultimate origin is unknown to us.

Although this ayanamsha differs by only a few arc seconds from the galactic ayanamsha of Gil Brand, Yukteshwar obviously did not intend to define the zodiac using the galactic centre. He actually intended a Revati-oriented ayanamsha, but committed the above-mentioned errors in his calculation.

Swami Sri Yukteswar, *The Holy Science*, 1920 (1949, 1957 and 1977, partly revised), Yogoda Satsanga Society of India.
Also see the paragraphs further above on ayanamshas that are oriented towards the star Revati.

* True Pushya Ayanamsha

This ayanamsha was proposed by the Indian astrologer P.V.R. Narasimha Rao, the author of the astrological software Jagannatha Hora. He argues that the human existence has its root in the heart, which corresponds to the sign of Cancer. For this reason he chooses the star *Pushya* (*δ Cancri, Asellus Australis*) as the anchor star of the zodiac. According to ancient texts this star is located at 16° Cancer.

P.V.R. Narasimha Rao, "Introducing Pushya-paksha Ayanamsa" (2013).

* Bhasin Ayanamsha

This ayanamsha was used by the Indian astrologer J.N. Bhasin (1908-1983).

* "Vedic Ayanamsha" according to Sunil Sheoran

This ayanamsha ist derived from ancient Indian time cycles and astronomical information given in the Mahabharata. Its author, Mr. Sunil Sheoran, therefore calls this ayanamsha "Vedic".

Essential in Sheoran's argumentation is the assumption that the two Mahabharatan solar eclipses that were observed from Kurukshetra and Dvaraka were 18 years apart, not 36 years as is taught by tradition and the Mahabharata itself. Also essential to Sheoran's theory is his assumption that the traditional lengths of the yugas are too high and that in reality a period of four yugas (caturyuga/mahāyuga) should be 120 years rather than 12.000 divine years or 4.320.000 human years. From the mentioned eclipse pair and historical considerations, he derives that the Mahabharata war must have taken place in the year 827 BCE. Then he dates the beginning of the last Manvantara on the winter solstice 4174 BCE. This is Sheoran's ayanamsha zero date, to which he assigns the ayanamsha value -60°.

Moreover it must be mentioned that in Sheoran’s opinion the nakshatra circle does not begin at the initial point of the zodiac, but that 0° Aries corresponds to 3°20’ in Ashvini.

Unfortunately, there are serious problems at least in Sheoran linguistic argumentation. As to the time distance between the two eclipses, the Mahabharata itself states: *ṣaṭtriṃśe varṣe*, MBh 16.1.1 and 16.2.2. The correct translation of this expression is "in the 36th year", whereas Sheoran mistakenly attempts to read it as "3 x 6 = 18 years". In addition, in texts to do with the durations of the yugas Sheoran reads *sahasrāṇi* as "10" instead of "1000" and *śatāni* as "1" instead of "100". Unfortunately, Sanskrit dictionaries and grammar do not allow such translations.

Sunil Sheoran, "The Science of Time and Timeline of World History", 2017.

Babylonian Ayanamshas and Ayanamshas Fixed at the Star *Mula* (*lambda Scorpionis*)

* Fagan-Bradley-Ayanamsha

See further above.

* Babylonian Ayanamsha (P. Huber)

This ayanamsha was calculated in 1958 by Peter Huber, a Swiss expert in Babylonian mathematics and astronomy, based on a statistical investigation of cuneiform astronomical tablets. It differs from the Fagan/Bradley ayanamsha by less than an arc minute. Its uncertainty is given as +-20 arcmin.

P. Huber, "Über den Nullpunkt der babylonischen Ekliptik", in: *Centaurus* 1958, 5, p. 192-208.

* Babylonian Ayanamsha (J. P. Britton)

This ayanamsha was calculated in 2010 by the American astronomy historian John P. Britton based on a statistical investigation of cuneiform astronomical tablets. It is an attempt to improve P. Huber's work. It differs from the Fagan/Bradley ayanamsha by 7 arc minutes. Britton gives an uncertainty of +-0.09° (=5'24").

John P. Britton, "Studies in Babylonian lunar theory: part III. The introduction of the uniform zodiac", in *Arch. Hist. Exact. Sci.* (2010)64:617-663, p. 630.

* Vettius Valens Ayanamsha

The ayanamsha used by Greek astrologers in late antiquity does not have a clear-cut definition. However, from extant charts it is known that the ayanamsha was about -3° in the year 150 CE. The Vettius Valens ayanamsha was derived from the Hellenistic astrologer Vettius Valens' (2nd century CE) lunar positions, according to the following publication:

James H. Holden, "The Classical Zodiac", in: *AFA Journal of Research*, vol. 7, no. 2 1995, p. 12.

* True Mula Ayanamsha (K. Chandra Hari)

With this ayanamsha, the star *Mula* (*λ Scorpionis*) is assumed at 0° Sagittarius.

The Indian astrologer Chandra Hari is of the opinion that the lunar mansion Mula corresponds to the Muladhara Chakra. He refers to the doctrine of the *Kalapurusha* which assigns the 12 zodiac signs to parts of the human body. The initial point of Aries is considered to correspond to the crown and Pisces to the feet of the cosmic human being. In addition, Chandra Hari notes that Mula has the advantage to be located near the galactic centre and to have "no proper motion". This ayanamsha is very close to the Fagan/Bradley ayanamsha. Chandra Hari believes it defines the original Babylonian zodiac.

(In reality, however, the star Mula (λ Scorpionis) has a small proper motion, too. As has been stated, the position of the galactic centre was not known to the ancient peoples. However, they were aware of the fact that the Milky Way crossed the ecliptic in this region of the sky.)

K. Chandra Hari, "On the Origin of Siderial Zodiac and Astronomy", in: Indian Journal of History of Science, 33(4) 1998.

Chandra Hari, "Ayanāṃśa"

http://www.indiadivine.org/content/topic/1229109-true-ayanamsa-views-of-chandra-hari/

P.V.R. Narasimha Rao, "Brief Account of Chandra Hari Ayanamsa - Rationale of Zodiac".

Ayanamshas Oriented towards the Galactic-Ecliptic Node

A few astrologers have started to fix a sidereal-like zodiac at the "galactic nodes", i.e. at the intersection points between the ecliptic and the galactic equator, which roughly corresponds to the centre line of the visible Milky Way. This kind of solution as well as ayanamshas oriented towards the galactic centre are obviously more convincing from a philosophical point of view, because the galaxy is the greater whole, within which our Sun and all visible stars move and exist. In R. Mardyks' view, this kind of ayanamsha or zodiac is not sidereal, but galactic. Nevertheless, it is as "fixed" as a sidereal zodiac.

* Skydram Ayanamsha (R. Mardyks)

(also known as Galactic Alignment Ayanamsha)

This ayanamsha was proposed in 1991 by the American astrologer Raymond Mardyks. It had the value 30° on the autumn equinox 1998. Consequently, the node (intersection point) of the galactic equator with the ecliptic was very close to sidereal 0° Sagittarius on the same date, and there was an interesting "galactic alignment": The autumnal equinoctial point was conjunct the north galactic pole and the solstices were conjunct the galactic nodes. A similar alignment occurs four times in a full precessional cycle. In Mardyks' view, this galactically aligned zodiac and ayanamsha opens astrology to higher "galactic" dimensions which are also considered in Maya astrology.

This ayanamsha or zodiac therefore has a "tropical" component. Mardyks calls it a "hybrid fixed-tropical, galactic zodiac". In astrological practice, Mardyks uses this galactic zodiac combined with the tropical zodiac along with the stars that compose the constellations.

Mardyks' calculation is partially based on the galactic coordinate system that was defined by the International Astronomical Union in 1958.

Raymond Mardyks, "When Stars Touch the Earth", in: *The Mountain Astrologer* Aug./Sept. 1991, pp. 1-4 and 47-48.

* Galactic Equator IAU 1958

This is a variation of Mardyks' *Skydram* or *"Galactic Alignment" ayanamsha*, where the galactic equator cuts the ecliptic at exactly 0° Sagittarius. This ayanamsha differs from the Skydram ayanamsha by only 19 arc seconds.

* Galactic Equator at 0° Sagittarius

The last two ayanamshas are based on a slightly outdated position of the galactic pole that was determined in 1958. According to more recent observations and calculations from the year 2010, the galactic node with the ecliptic shifts by 3'11", and the "Galactic Alignment" is preponed to 1994. The galactic node is fixed exactly at sidereal 0° Sagittarius.

Mardyks still gives preference to the older galactic pole and plane, which are still used in astronomy as the standard galactic coordinate system.

Liu/Zhu/Zhang, "Reconsidering the galactic coordinate system", *Astronomy & Astrophysics* No. AA2010, Oct. 2010, p. 8.

* Galactic Equator (Fiorenza)

This ayanamsha, which is also based on the galactic equator, was introduced in 2001 by Nick Anthony Fiorenza. According to him, 1 Jan. 2000 should be taken as the date of the alignment of the solstitial points with the galactic nodes. He assumes an ayanamsha value of exactly 25° on this date. Thus, the vernal point fell on exactly 5° Pisces.

Nick Anthony Fiorenza, “The Star Chart. Sidereal Astrology and the Fixed Stars" (2001)
https://www.lunarplanner.com/siderealastrology.html

* Ardra Galactic Plane Ayanamsha

(= Galactic equator cuts ecliptic in the middle of Mula and the beginning of Ardra) With this ayanamsha, the galactic equator cuts the ecliptic exactly in the middle of the nakshatra Mula. This means that the Milky Way passes through the middle of this lunar mansion. Here again, it is interesting that the Sanskrit word *mūlam* means "root, origin", and it seems that the circle of the lunar mansions originally began with this nakshatra. On the opposite side, the galactic equator cuts the ecliptic exactly at the beginning of the nakshatra *Ārdrā* ("the moist, green, succulent one", feminine).

This ayanamsha was introduced by the American astrologer Ernst Wilhelm in 2004. He used a calculation of the galactic node by D. Koch from the year 2001, which had a small error of 2 arc seconds. The current implementation of this ayanamsha is based on a new position of the Galactic pole found by Chinese astronomers in 2010.

Liu/Zhu/Zhang, "Reconsidering the galactic coordinate system", *Astronomy & Astrophysics* No. AA2010, Oct. 2010, p. 8.

Esoteric Ayanamshas

* R. DeLuce Ayanamsha

This ayanamsha was proposed by the American astrologer Robert DeLuce (1877-1964). It is fixed at the birth of Jesus, theoretically on 1 January 1 AD. However, DeLuce de facto used an ayanamsha of 26°24'47 in the year 1900, which corresponds to 4 June 1 BC as zero ayanamsha date. This error is explained by the fact that the ayanamsha was defined using the older precession theory of Newcomb.

DeLuce believes that this ayanamsha was also used in ancient India. He draws this conclusion from the fact that the important ancient Indian astrologer Varahamihira, who assumed the solstices on the ingresses of the Sun into sidereal Cancer and Capricorn, allegedly lived in the 1st century BC. This dating of Varahamihira has recently become popular under the influence of Hindu nationalist ideology (Hindutva). However, historically, it cannot be maintained. Varahamihira lived and wrote in the 6th century AD.

Robert DeLuce, *Constellational Astrology According to the Hindu System*, Los Angeles, 1963, p. 5.

* Djwhal Khul Ayanamsha

This ayanamsha is based on the assumption that the Age of Aquarius will begin in the year 2117. This assumption is maintained by a theosophical society called *Ageless Wisdom*, and bases itself on a channelled message given in 1940 by a certain spiritual master called *Djwhal Khul*.

On 7 July 2020, Clifford Ribaudo sent us additional information in a mail to Alois Treindl:
“Also, I know the “real" source of the 2117 date for the DK (= Djwhal Khul) Ayanamsa and the original provenance of it. It was not Lindsay or Robbins or the journal of Esoteric Psychology. My friend Keith Bailey, inherited a whole bunch of papers from Marion Walter’s who was one of the members of the “DINA” group discussed in Alice Bailey’s books. DK answered a question from Roberto Assagioli and in the answer he mentioned that “he would suggest the start of the Aquarian Age was 177 years from the date of writing.”. A copy of that letter was given to Robbins and then at some point he mentioned it in Journal of Esoteric Psychology.”

Philipp Lindsay, "The Beginning of the Age of Aquarius: 2,117 A.D.".

Ayanamshas derived from the Suryasiddhanta and Aryabhata

* Aryabhata Equinox 499 and

* Aryabhata Mean Sun 499

The ancient Indian astronomer Aryabhata (476-550) states that from the beginning of the Kaliyuga (Kali Age) in 3102 BCE until the spring equinox 499 CE (Aryabhata's own 23rd year of life) exactly 3600 years have passed. In addition, he assumes the spring equinox at the initial point of Aries. From this information, two possible ayanamshas can be derived. Either the zero point of the zodiac is assumed at the position of the equinoctial point on the spring equinox 499 CE, or otherwise at the position of the mean Sun exactly 3600 sidereal years after the beginning of the Kaliyuga.

More information on these ayanamshas is found in the General Documentation of the Swiss Ephemeris.

* Suryasiddhanta Equinox 499 und

* Suryasiddhanta Mean Sun 499

These ayanamshas are calculated using the same methods as the two Aryabhata ayanamshas above, however using the year length of the Suryasiddhanta.

* Aryabhata 522

According to Govindasvamin (850 n. Chr.), Aryabhata and his disciples taught that the vernal point was at the beginning of sidereal Aries in the year 522 AD (= Shaka 444). This tradition probably goes back to an erroneous interpretation of Aryabhata's above-mentioned statement that he was 23 years old when 3600 had elapsed after the beginning of the Kaliyuga.

D. Pingree, "Precession and Trepidation in Indian Astronomy", in *JHA* iii (1972), pp. 28f.

Astronomical Ayanamshas

* J2000,

* J1900, and

* B1950

These ayanamshas are not used in astrology. In fact, they are not ayanamshas at all, but astronomical sidereal coordinate systems, where the tropical ecliptic of the beginning of the year 2000, 1900, or 1950 is defined as a sidereal reference frame.

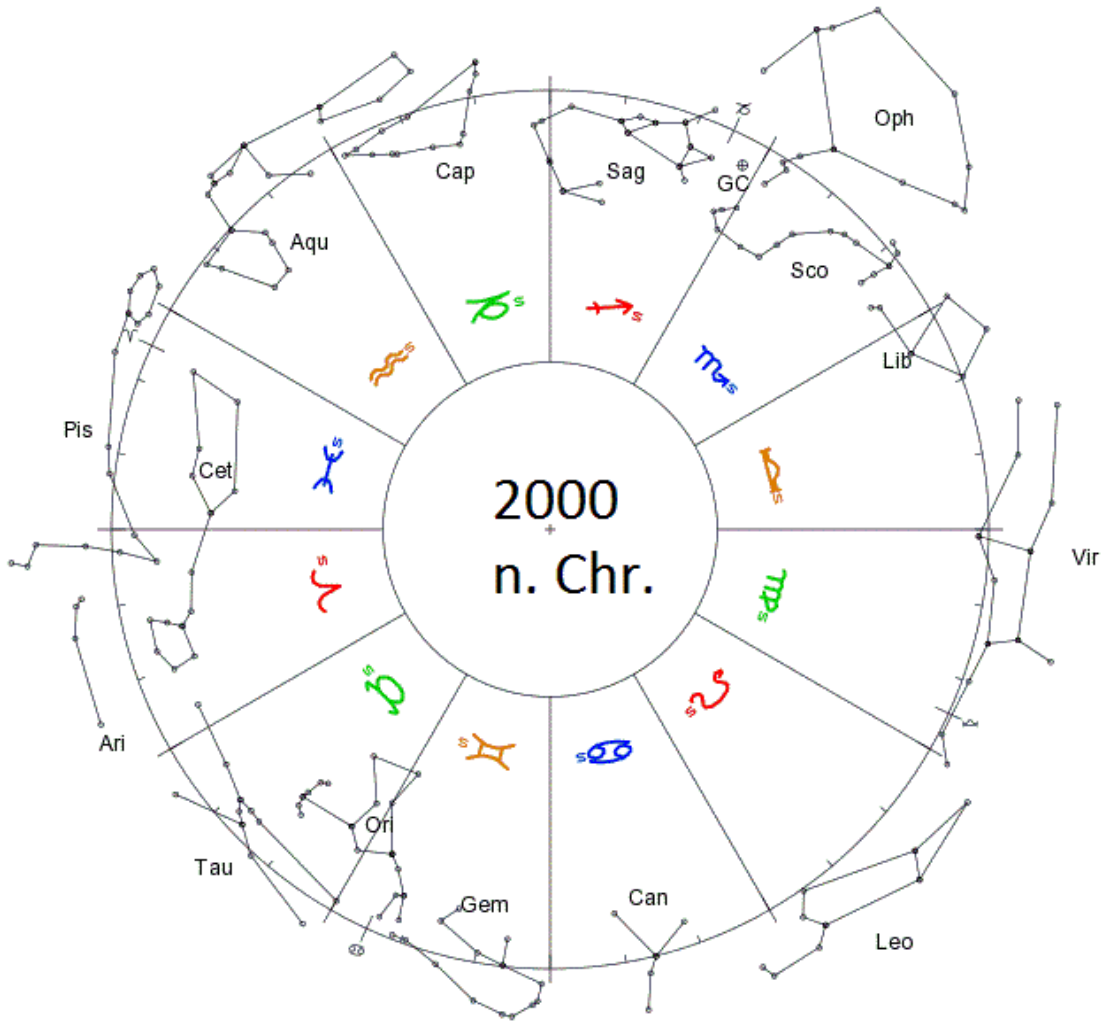
Theoretical Considerations

The Proper Motion of the Stars

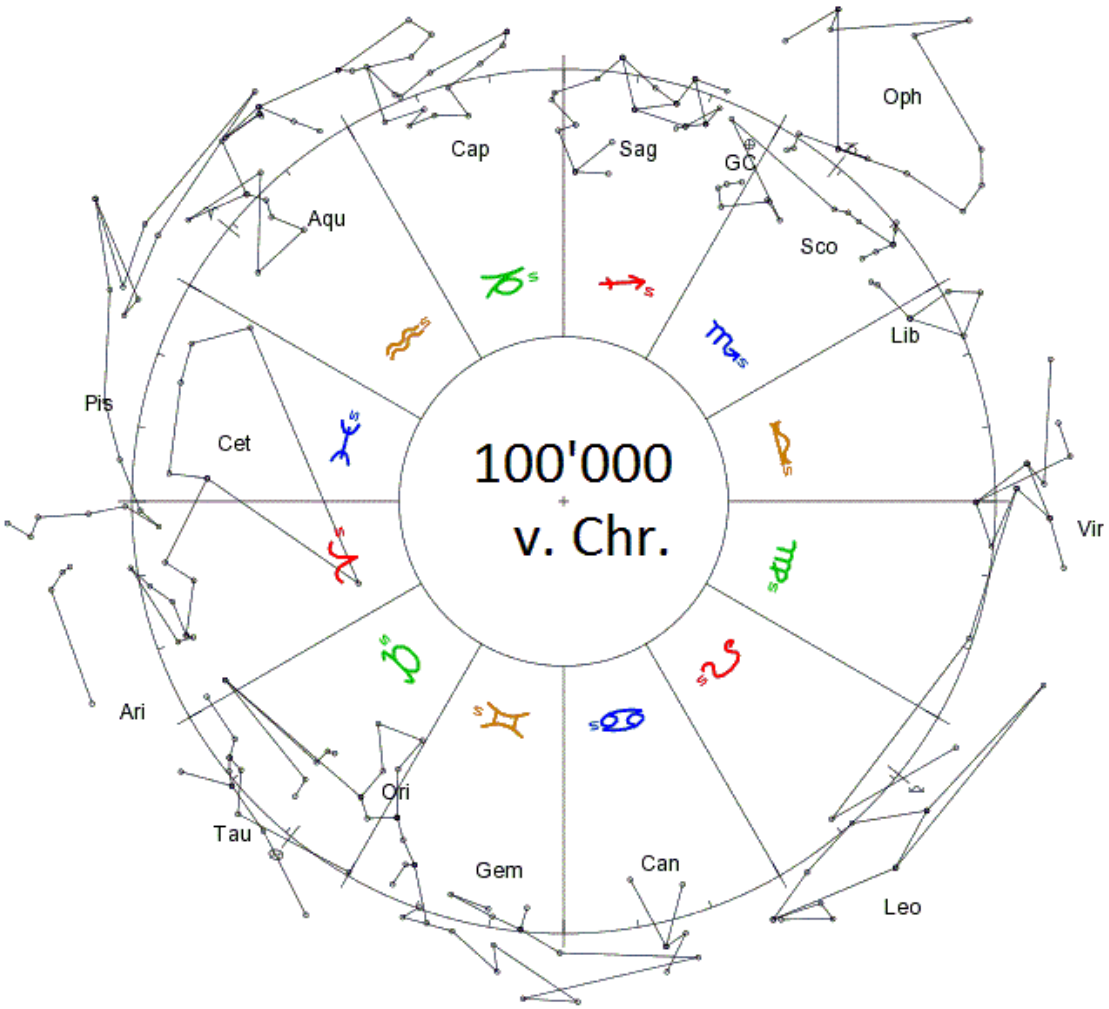
Ayanamshas are usually defined using the positions of certain fixed stars. The following fixed stars played an important role in the history of the zodiac:

- Aldebaran and Antares at 15° Taurus and 15° Scorpio (Babylonian, Fagan/Bradley);
- Citrā/Spica at 0° Libra (Lahiri);
- Revatī/zeta Piscium at 29°50 Pisces (Sūryasiddhānta).

Unfortunately, nobody can tell why any of these stars should be so important that it could be used as an anchor point for the zodiac. In addition, all these solutions are unattractive in that the fixed stars actually are not fixed forever, but have a small proper motion which over a long period of time such as several millennia, can result in a considerable change in position. While it is possible to tie the zodiac to the star Spica in a way that it remains at 0° Libra for all times, all other stars would change their positions relative to Spica and relative to this zodiac and would not be fixed at all. The appearance of the sky changes over long periods of time. In 100'000 years, the constellation will look very different from now, and the nakshatras (lunar mansions) will get confused. For this reason, a zodiac defined by positions of stars is unfortunately not able to provide an everlasting reference frame.



Constellations of the zodiac in the year 2000



Constellations of the zodiac around the year 100'000 BC. If one were to travel back to that time, one could not easily recognise any of the constellations except Orion.

Incidentally, this phenomenon not only challenges current definitions of ayanamsha, which anchor the zodiac at some fixed star, but also obviously proves that the zodiacal constellations either have no reality and are mere imagination or otherwise that they are a transient and perishable thing. In addition, it is obvious that the astrological zodiac of 12 equal signs with all its wonderful internal logic and symmetry, if it is real at all and an everlasting archetype of the cycles of life, cannot derive its effectiveness from a random distribution of unrelated fixed stars, but must be based on something more stable and more fundamental.

Could the Galactic Centre Serve as a Point of Reference?

For such or also other reasons, some astrologers (Raymond Mardyks, Ernst Wilhelm, Rafael Gil Brand, Nick Anthony Fiorenza) have tried to redefine the sidereal zodiac using either the galactic centre or the node of the galactic equator with the ecliptic. It is obvious that this kind of solution, which would not depend on the position of a single star anymore, could provide a philosophically meaningful and very stable definition of the zodiac. Fixed stars would be allowed to change their positions over very long periods of time, but the zodiac could still be considered fixed and "sidereal".

Disregarding historical considerations for a moment, it would be philosophically convincing to define the sidereal zodiac relative to the galactic centre, around which our Sun and all visible stars circle. E.g., the beginning of a zodiac sign could be assumed near the galactic centre. If the resulting zodiac should be as close as possible to traditional sidereal zodiacs, then the galactic centre could be assumed at 0° Sagittarius. Consequently, the galactic centre would fall at the beginning of the lunar mansion Mūla. Interestingly, the Sanskrit word *mūlam* means "root, origin". The preceding lunar mansion is called Jyeṣṭhā, "the oldest one" (feminine). It seems that the beginning and end of the Indian nakshatra circle

was originally between Jyeṣṭhā, "the oldest one", and Mūla, "the origin". Assuming the galactic centre here seems to make sense. However, the resulting zodiac would deviate from traditional zodiacs such as the Lahiri or the Fagan/Bradley zodiac by several degrees.(1)

Also to be mentioned in this context is the fact that ayanamshas that are fixed at the star Revatī have the galactic centre almost exactly in the middle of the "root" nakshatra Mūla, e.g. the *Usha & Shashi ayanamsha*. Consequently, Ernst Wilhelm's *Dhruva Galactic Center Middle Mula Ayanamsha*, which has the galactic centre at the middle of Mula, also has the star Revatī (ζ Piscium) almost exactly at the position it has in the Sūryasiddhānta, namely 10 arc minutes before the beginning of Aries. Thus this ayanamsha is very close to the ayanamshas that are fixed at the star Revati. Although these solutions differ from Lahiri and Fagan/Bradley by several degrees(3), they can claim to be in agreement with an ancient Indian astronomical tradition.

Another ayanamsha that is fixed at the galactic centre was proposed by the German-Spanish astrologer Rafael Gil Brand. Gil Brand assumes the galactic centre at the golden section between 0° Scorpio and 0° Aquarius. He finds this convincing because 0° Aquarius and the opposition point 0° Leo form the axis of symmetry of the sign rulers.(2) Although the resulting zodiac differs from the Lahiri zodiac by more than a degree, it comes very close to the ayanamsha of the important Indian astrologer Raman and also very close to the ayanamsha named after Shri Yukteshwar.(4)

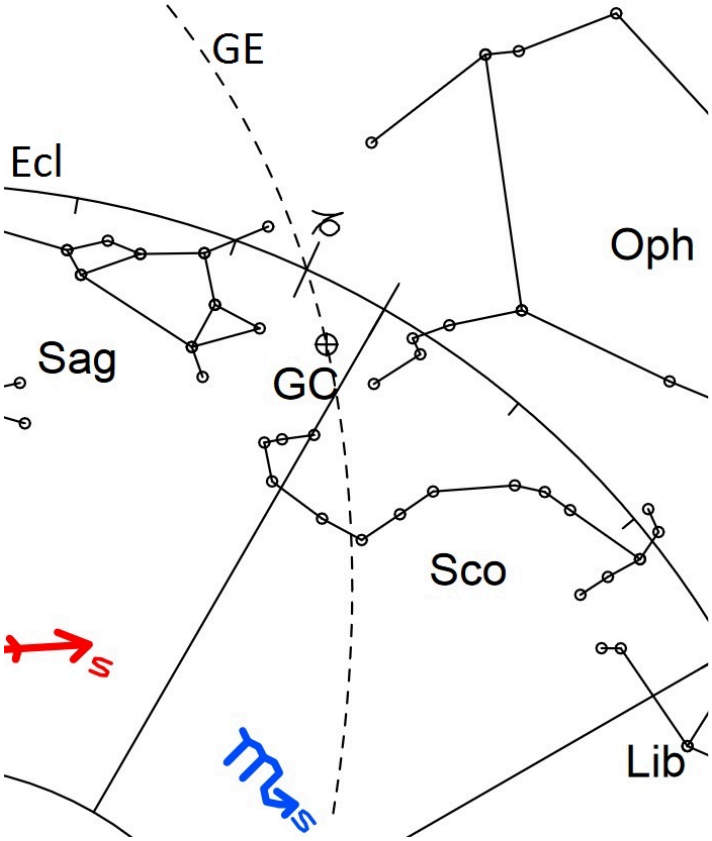
To sum up, it seems that even if one agrees that the galactic centre should play an important role in the definition of the sidereal zodiac, nevertheless several different solutions remain possible.

Since the Sun moves about the galactic centre, the galactic centre makes a small apparent motion, too, comparable to the fixed stars. If one wanted a really fixed reference point, then one would have to fix the zodiac at the so-called *International Celestial Reference System* (ICRS) or the extragalactic radiation sources at which it is anchored. Nevertheless, the centre of our galaxy is certainly a lot more convincing as a reference point than some random fixed star such as Spica/Citra or Revati.

Could the Galactic Node Serve as a Point of Reference?

From a historical point of view, however, it must be noted that the galactic centre was discovered only in modern times and therefore certainly did not play any role, when the sidereal zodiac was first defined. However, it is quite possible that the *galactic node, i.e. the intersection point between the galactic equator (or the Milky Way) and the ecliptic* was the point of reference. This intersection point, which is located only a few degrees from the galactic centre, could again be assumed at the beginning of Sagittarius or the nakshatra Mula. This solution (or actually a variation on it) was apparently first proposed in 1991 by the American astrologer Raymond Mardyks.(5) While this definition again deviates from traditional ayanamshas by several degrees,(6) it obviously has the advantage that it shares the aesthetics of the tropical zodiac, which is defined by the intersection of great circles, too. A bit unaesthetic remains the fact that its beginning is not defined as sidereal Aries, but sidereal Sagittarius.

Incidentally, this solution could solve the problem of the Age of Aquarius, whose beginning is mostly assumed in our time, whereas with all other approaches, it would only occur in several centuries. If the galactic node is assumed exactly at 0° Sagittarius, then the New Age began in 1994.(7)



Galactic alignment of the Earth, the Sun, and the Milky Way on 1 August 1994: The galactic equator (GE) cuts the ecliptic (Ecl) exactly in the winter solstice point (0° Capricorn). The galactic centre (GC) is located a few degrees from this point south of the ecliptic.

If one prefers a solution closer to traditional ayanamshas, one could assume the galactic node in the *middle* of the nakshatra Mula. Then the Milky way passes the middle of the "root" nakshatra Mula, which is quite aesthetic. With this solution the zero point of the zodiac would be near the zero point of the Lahiri zodiac.(8) However, the Age of Aquarius would then occur only in a few centuries.

Also relevant may be the question of whether this reference system is really fixed. In reality, it is subject to small fluctuations, too. Since it is based on the node of the galactic equator with the *ecliptic* (i.e. with the orbital plane of the Earth around the Sun), therefore the position of this node is influenced by small fluctuations in the orientation of the ecliptic. These fluctuations are caused by the gravitational influence of the planets (so-called planetary precession). Consequently, the galactic node changes its position in the course of millennia by several arc minutes, however oscillates around some a mean position. Nevertheless, it is certainly a lot more convincing as a point of reference for the sidereal zodiac than some random fixed star.

Unfortunately, there are some problems with the definition of the galactic equator, too. It is defined in such a way that both the Sun and the galactic centre are in its plane and that it also approximates the mean plane of the Milky Way. The galactic coordinate system, which was defined by the *International Astronomical Union* in the year 1958, only very roughly fulfils this definition. Today, the position of the galactic centre is known with much higher accuracy than it was in 1958. It has been found that it does not lie exactly in the plane of the galactic coordinate system, as it should, but about 4 arc minutes south of it. For this reason, we use a slightly corrected galactic equator for two of the ayanamshas listed above "Galactic equator at 0° Sagittarius" and "Ardra Galactic Plane Ayanamsha"). This correction is based on a paper by Chinese scientists from the year 2010. However, another small correction may be required in the future.(9)

Another point we should be aware of is the fact that alternative definitions of the galactic plane could be thought of. The plane of the galactic equator described above passes through the Sun and the galactic centre and approximates the plane of the Milky Way as closely as possible. However, it is not identical to the true plane of the Milky way. Since the current position of the Sun is not exactly in the plane of our galaxy, but a bit above it, therefore we actually look a bit down on the plane of the Milky Way. Consequently, the galactic centre has an apparent position of 8.2 arc minutes below the great circle that

is drawn by the plane of the galaxy. The node of this plane with the ecliptic is about 9.5 arc minutes away from the node of the galactic equator.(10) The question arises which of the two planes should be astrologically relevant. The galactic equator or the true plane of the galaxy?

The true plane of the galaxy is certainly more fundamental and more stable than the galactic equator. The galactic equator is only an approximation of it. Since the Sun is located exactly in its plane by definition, however in its orbit around the galactic centre moves above and below the fundamental galactic plane, it follows that the galactic equator will change its inclination against the galactic plane over time, i.e. it will execute an oscillating tilting movement. The nodal axis of this tilting movement is exactly 90° from the galactic centre. In addition, since the Sun also moves around the galactic centre and the galactic centre makes a corresponding apparent motion, too, the nodal axis of the tilting movement will also wander around the galactic centre in the course of more than 200 million years. These motions are extremely small and will become significant only over millions of years, however it is a fact that the galactic equator is not a fixed frame of reference. By contrast, the true galactic plane is extremely stable. As has been stated, the difference between the two planes is small, and their nodes with the ecliptic are only about 9.5 arc min from each other. The galactic equator passed the ecliptic at the winter solstitial point in 1994, however the true galactic plane did so only in the year 2005 or 2006.

It is likely that some astrologers would prefer an ayanamsha based on the true galactic plane. At the moment, however, we have not implemented such ayanamshas yet. While a rough calculation could be done already, astronomical data available today are still not accurate enough in order to calculate such ayanamshas with high precision.

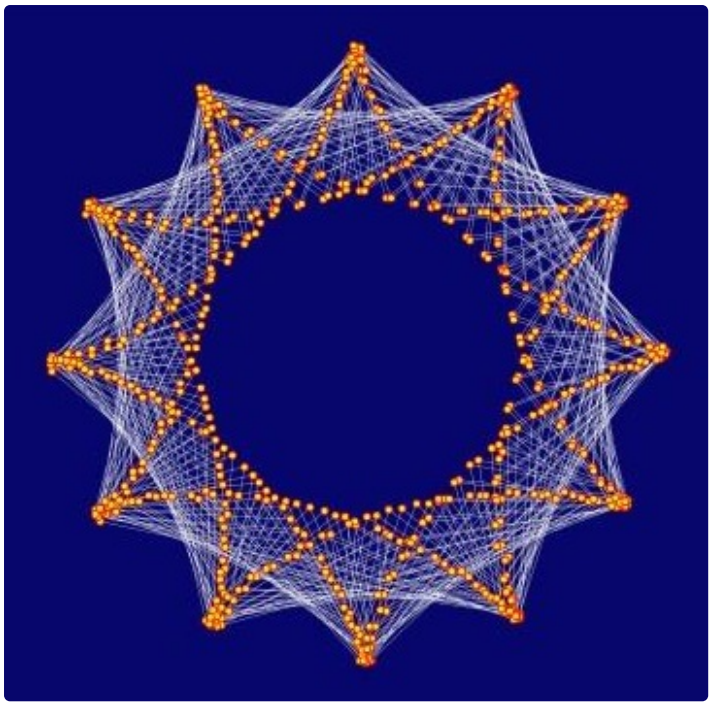
Another possible galactic plane of reference is given by the motion of the Sun around the galactic centre, i.e. by the current apparent proper motion of the galactic centre. This plane has a completely different orientation and is subject to enormous fluctuations over a period of millions of years. These fluctuations are caused by the fact that the Sun during its revolution around the galactic centre several time crosses the galactic plane and moves up and down, thereby changing its direction of motion. Currently this plane "orbital plane" of the Sun cuts the ecliptic in tropical Leo and Aquarius or in sidereal Cancer and Capricorn.(11) This plane is considerably less stable than the galactic equator and the true plane of the galaxy.

The Andromeda Galaxy as a reference point?

In October 2017, *Jonathan Dunn* pointed out to me the possibility to define the initial point of the zodiac by the Andromeda Galaxy. The Andromeda Galaxy is the largest galaxy close to our Milky Way. It moves at more than 100 km per second towards our galaxy and will unite with it in about 4.5 billion years. In this sense, it is a kind of partner galaxy of the Milky Way and will play a major role in its destiny. Should it therefore be chosen as a reference point for the sidereal zodiac? With an ecliptical latitude of 33°N, the Andromeda galaxy is far away from the zodiac. However, if one takes its ecliptical longitude as the initial point of the zodiac, then surprisingly an ayanamsha results that lies within the scope of common ayanamshas, deviating from the DeLuce and Djwhal Khul ayanamshas only by a few arc minutes. It seems, however, that neither DeLuce nor Djwhal Khul were aware of this fact, because they do not mention the Andromeda galaxy at all.

Definition of the zodiac by planetary resonances?

The German civil engineer *Hartmut Warm*, who as a free researcher has conducted very extensive studies on the subject of "Sphere Harmony", in his book "Signature of the Celestial Spheres" (12) mentions a resonance relationship between Saturn, Jupiter and Neptune, which can be represented graphically as a star with twelve teeth (see illustration).



Saturn-centric position of Neptune with heliocentric conjunctions of Jupiter and Neptune over a period of 8948 years, according to Hartmut Warm, "Signature of the Celestial Spheres" (2004, German version, p. 265 and Tafel 8).

The star graphic, which evokes associations with the twelve-part zodiac, can be generated as follows: First calculate the points in time at which Jupiter and Neptune heliocentrically form a conjunction, then for each of these points in time draw the saturn-centric position of Neptune in ecliptical longitude into a circle. The distance of the Neptune dot from the center of the graphic must be chosen proportional to the distance of Neptune from Saturn. The graphic was generated by Warm based to conjunctions over a period of 8950 years.

The question arises as to whether this star figure generated by resonances of planetary orbits could define a sidereal zodiac. Based on the Nasa Ephemeris DE431 and with the support of the Zurich mathematician Hans Walter Buff, I calculated the ayanamshas of this resonance figure as follows:

ayanāṃśa = 31.24° - 0,012047° x T, where T = centuries since 2000

I assumed that the ayanamsha should be as close as possible to traditional ayanamshas. But since it is a twelve-pointed star, one could just as well choose any other point of the star as the beginning of the zodiac.

As the formula shows, the figure is not absolutely fixed, but performs an extremely slow rotation of about 43 arcseconds per century. This rotation is over 100 times slower than the precession.

Two Ayanamshas for the Zodiac and the Nakshatra Circle?

Finally yet importantly, investigations in the "true original" ayanamsha should take into account the fact that the nakshatra circle and the circle of the zodiac were originally created independently of each other. The nakshatra circle was invented by the ancient Indians, whereas the 12-sign zodiac was invented by the Babylonians. Contrary to assertions often made by Hindu astrologers, Pre-Hellenistic Vedic texts do not know or mention any zodiac signs. E.g., the Mahabharata often mentions the position of the Moon or the planets in nakshatras, but never in the zodiac signs or the 12 ecliptic constellations.(13) In Babylon, on the other hand, there is no mention of a circle of 27 or 28 lunar mansions, whereas the zodiacal constellations and signs are very well-attested. The two systems were brought together and conflated in India in the Hellenistic or post-Hellenistic period. The details of this conflation process are unknown. However, it is rather unlikely that the initial point of the original Babylonian Aries coincided exactly with the initial point of the original nakshatra Ashvini. Instead, the zodiac or the nakshatra circle or both of them could have been adjusted in order to bring them into line with each other and create the conflated circle that is used today. It is therefore possible that the original Babylonian zodiac and the original Indian nakshatra circle had separate ayanamshas. In addition, as has been shown, the nakshatra circle

might originally have been defined by the galactic node, which was located at the beginning or in the middle of Mula. On the other hand, the beginning of the Babylonian zodiac was assumed in Aries, not in Mula/Sagittarius, most probably because the vernal point was located in Aries and the year began in spring. For this reason, the galactic node cannot have played any role in the definition of the Babylonian zodiac. Thus, from a historical point of view, the ayanamshas of the nakshatra circle and the zodiac should actually be investigated separately.

Interestingly, *all* ancient Indian texts that mention the positions of the solstices and equinoxes relative to zodiac signs place these points at the beginnings of the cardinal signs. The vernal point is always assumed at the beginning of Aries, no text ever places it in Taurus or another zodiac sign, the summer solstice is always at the beginning of Cancer, the winter solstice at the beginning of Capricorn, and the autumn equinox at the beginning of Libra.(14) Since it is unlikely that all those texts were written at the same time, it seems that the zodiac introduced into India was originally tropical, i.e. fixed at the solstices and equinoxes. Only later, it was transformed into a sidereal zodiac, most probably because Indian astronomers were focused on sidereal observation, but did not know how to handle precession. While some old Vedic texts place the solstices in the nakshatras Dhanishtha and Ashlesha, it is important to note that these texts do not know any zodiac signs yet. Perhaps, the American astrologer Ernst Wilhelm, also an expert in Hindu astrology, comes closest to these facts, since he uses sidereal nakshatras combined with a tropical zodiac.