RoxyAPI Accuracy Report

Every value the API returns, compared with a named reference source and a stated pass band.

> **For the Sun, Moon, planets and Chiron, RoxyAPI returned 231 of 231 positions within 0.32 arcsec (0.000089°) of NASA JPL Horizons. In the open accuracy benchmark run of 2026-11-01, RoxyAPI returned 2,701 of 2,701 values within tolerance across 17 domains, with a median angular deviation of 0.048 arcsec (0.000013°).**

Run date	2026-11-01
API under test	roxyapi.com
Latest report	roxyapi.github.io/astrology-api-benchmark/
Publisher	RoxyAPI, roxyapi.com

SECTION 1

Executive summary

For the Sun, Moon, planets and Chiron, RoxyAPI returned 231 of 231 positions within 0.32 arcsec (0.000089°) of NASA JPL Horizons. In the open accuracy benchmark run of 2026-11-01, RoxyAPI returned 2,701 of 2,701 values within tolerance across 17 domains, with a median angular deviation of 0.048 arcsec (0.000013°).

Every figure here is computed from the run itself, and anyone can reproduce it from the open repository. The cases are built to break formulas, not to resemble everyday birth data: births on a leap day and inside a daylight saving change, high latitudes such as Reykjavik and Tromso, instants seconds from a sign, nakshatra, tithi or gate boundary, a planet at its station, and calendar year edges such as Li Chun, so an ordinary chart is an easier test than any of them. Picked from everyday modern charts alone, the 8 births from 1950 to 2010 at ordinary latitudes, the planet maximum would read 0.087 arcsec (0.000024°); the published 0.32 arcsec (0.000089°) comes from the edge cases, with the 1879 chart the hardest.

17
Domains checked

2,701
Values compared with a reference

2,701
Within tolerance, every one

DOMAIN	AUTHORITY	VALUES	WITHIN BAND	MEASURED DEVIATION
Western planets	NASA JPL Horizons	231	**231 of 231**	median 0.048, max 0.32 arcsec
Western angles and houses	NASA JPL Horizons sidereal time and obliquity, standard spherical astronomy	200	**200 of 200**	median 0.12, max 1.5 arcsec
Vedic sidereal chart	NASA JPL Horizons with the Lahiri ayanamsa by its published definition	894	**894 of 894**	positions median 0.039, max 1.5 arcsec; days max 0.49; 638 exact
Panchang	NASA JPL Horizons Sun and Moon longitudes by the classical definitions, sunrise from the US Naval Observatory	73	**73 of 73**	13 exact instants; 60 exact
Forecast events	NASA JPL Horizons	29	**29 of 29**	median 2.3, max 44.9 seconds
Moon phases	U.S. Naval Observatory primary moon phase tables, Universal Time dates	11	**11 of 11**	11 exact days
Human Design bodygraph	NASA JPL Horizons with the 88 degree solar arc and the Rave Mandala	100	**100 of 100**	instants median 0.014, max 0.28 seconds; 90 exact
Chinese calendar	Hong Kong Observatory Gregorian-Lunar conversion tables, sexagenary cycle from a published anchor day	135	**135 of 135**	103 exact days; 32 exact
Feng shui	Printed Qing almanac and Xuan Kong rules recomputed, Hong Kong Observatory Li Chun dates	256	**256 of 256**	13 exact days; 243 exact
Mesoamerican calendar	GMT correlation 584283, cross-checked against the FAMSI converter	56	**56 of 56**	16 exact days; 40 exact
Vastu	Brihat Samhita chapter 53 in the Iyer and Kern translations	118	**118 of 118**	all exact
Numerology	Pythagorean rules recomputed, cross-checked against published worked examples	21	**21 of 21**	all exact
Kabbalah	Published gematria letter table and the arithmetic Hebrew calendar	72	**72 of 72**	all exact

DOMAIN	AUTHORITY	VALUES	WITHIN BAND	MEASURED DEVIATION
Biorhythm	Sine cycles of 23, 28 and 33 days, recomputed from the published definition	70	**70 of 70**	10 exact days; 60 exact
Ayurveda	NASA JPL Horizons Sun ingress by the classical season rule, sunrise from the US Naval Observatory	105	**105 of 105**	instants median 1.7, max 29.6 seconds; 24 exact
I Ching	King Wen sequence, cross-checked against Legge and the Unicode Standard	306	**306 of 306**	all exact
Location	IANA Time Zone Database	24	**24 of 24**	all exact

Measured deviation is the median and the largest distance from the reference, rounded up, in the unit named; exact values either match or do not. The Method section defines each unit.

What was checked

Western planets	against NASA JPL Horizons, through `POST /api/v2/astrology/natal-chart`
Western angles and houses	against NASA JPL Horizons sidereal time and obliquity, standard spherical astronomy, through `POST /api/v2/astrology/natal-chart`
Vedic sidereal chart	against NASA JPL Horizons with the Lahiri ayanamsa by its published definition, through `POST /api/v2/vedic-astrology/birth-chart` `POST /api/v2/vedic-astrology/navamsa` `POST /api/v2/vedic-astrology/dasha/major`
Panchang	against NASA JPL Horizons Sun and Moon longitudes by the classical definitions, sunrise from the US Naval Observatory, through `POST /api/v2/vedic-astrology/panchang/basic` `POST /api/v2/vedic-astrology/panchang/detailed`
Forecast events	against NASA JPL Horizons, through `POST /api/v2/forecast/transits` `POST /api/v2/astrology/transits/monthly`
Moon phases	against U.S. Naval Observatory primary moon phase tables, Universal Time dates, through `GET /api/v2/astrology/moon-phase/upcoming`
Human Design bodygraph	against NASA JPL Horizons with the 88 degree solar arc and the Rave Mandala, through `POST /api/v2/human-design/bodygraph`
Chinese calendar	against Hong Kong Observatory Gregorian-Lunar conversion tables, sexagenary cycle from a published anchor day, through `GET /api/v2/chinese-astrology/calendar/solar-terms/{year}` `POST /api/v2/chinese-astrology/calendar/lunar-date` `POST /api/v2/chinese-astrology/bazi/chart`
Feng shui	against Printed Qing almanac and Xuan Kong rules recomputed, Hong Kong Observatory Li Chun dates, through `POST /api/v2/feng-shui/kua` `GET /api/v2/feng-shui/flying-stars/annual/{year}` `POST /api/v2/feng-shui/flying-stars/natal`
Mesoamerican calendar	against GMT correlation 584283, cross-checked against the FAMSI converter, through `POST /api/v2/mesoamerican-astrology/mayan/chart`
Vastu	against Brihat Samhita chapter 53 in the Iyer and Kern translations, through `POST /api/v2/vastu/entrance`
Numerology	against Pythagorean rules recomputed, cross-checked against published worked examples, through `POST /api/v2/numerology/chart`
Kabbalah	against Published gematria letter table and the arithmetic Hebrew calendar, through `POST /api/v2/kabbalah/gematria` `POST /api/v2/kabbalah/birth-profile`
Biorhythm	against Sine cycles of 23, 28 and 33 days, recomputed from the published definition, through `POST /api/v2/biorhythm/reading`
Ayurveda	against NASA JPL Horizons Sun ingress by the classical season rule, sunrise from the US Naval Observatory, through `POST /api/v2/ayurveda/ritucharya` `POST /api/v2/ayurveda/dinacharya`
I Ching	against King Wen sequence, cross-checked against Legge and the Unicode Standard, through `GET /api/v2/iching/hexagrams/lookup` `GET /api/v2/iching/hexagrams/{number}` `GET /api/v2/iching/trigrams/{id}`
Location	against IANA Time Zone Database, through `GET /api/v2/location/search`

SECTION 2

Coverage map

Each reference authority, the domain it checks and the quantities compared, drawn from the references of every domain in this run.

DOMAIN	REFERENCE AUTHORITIES	COVERS
Western planets	NASA JPL Horizons; NASA JPL Horizons small-body integration	Sun, Moon, planets and Chiron
Western angles and houses	NASA JPL Horizons; Spherical astronomy formulas	Ascendant, Midheaven and Placidus cusps
Vedic sidereal chart	NASA JPL Horizons; Lahiri ayanamsa, Calendar Reform Committee definition; IERS Conventions 2010, Table 5.3a; Positional Astronomy Centre, Kolkata; Brihat Parasara Hora Sastra	Lahiri ayanamsa and sidereal longitudes; Nakshatra and pada; Navamsa and Vimshottari
Panchang	NASA JPL Horizons; Surya Siddhanta, Burgess translation; Lahiri ayanamsa, Calendar Reform Committee definition; Positional Astronomy Centre, Kolkata; US Naval Observatory Astronomical Applications API	Tithi, yoga, karana and vara; Sunrise
Forecast events	NASA JPL Horizons; US Naval Observatory seasons	Sign ingress instants; Station instants; Exact transit instant
Moon phases	U.S. Naval Observatory Astronomical Applications moon phase service	Phase dates
Human Design bodygraph	NASA JPL Horizons; Introduction to the Human Design System; Jovian Archive; Human Design Gates by Zodiac Degrees	Design instant; Personality and design Sun and Earth gates and lines; Profile
Chinese calendar	Hong Kong Observatory Gregorian-Lunar calendar conversion table; Sexagenary cycle; Ganzhi	Solar terms and Lunar New Year; Four pillars
Feng shui	Xieji Bianfang Shu; Gujin Tushu Jicheng, Yangzhai Shishu; Shen Shi Xuan Kong Xue; Hong Kong Observatory Gregorian-Lunar calendar conversion table	Kua number and the Li Chun year boundary; Annual flying star plate; Natal period, mountain and water stars
Mesoamerican calendar	GMT correlation definition; FAMSI date converter	Long Count and day count; Tzolkin sign and number; Haab month and day
Vastu	Varahamihira, Brihat Samhita, translated by N. Chidambaram Iyer; Kern, Verspreide Geschriften vol. 2	Entrance side and pada from facing bearing and door position; Square of the nine by nine plan; Classical effect of the entrance pada
Numerology	Pythagorean numerology rules; Hans Decoz worked examples	Life Path, Expression and Soul Urge
Kabbalah	Mispar Hechrachi letter table; Dershowitz and Reingold, Calendrical Calculations; Hebcal date converter	Mispar Hechrachi and Mispar Gadol word values; Hebrew year, month and day, with the leap year flag
Biorhythm	Cleve Moler, Biorhythms, MathWorks blog; US Patent 4,240,153, Biorhythm display device, USPTO	Physical, emotional and intellectual cycles
Ayurveda	NASA JPL Horizons; Sushruta Samhita, Bhishagratna translation; Charaka Samhita, Sutrasthana 6; Surya Siddhanta, Burgess translation; Lahiri ayanamsa, Calendar Reform Committee definition; Positional Astronomy Centre, Kolkata; US Naval Observatory seasons; Ashtanga Hridaya, Sutrasthana 1.8; US Naval Observatory Astronomical Applications API	Season at a date, both zodiacs and both hemispheres; Season opening and closing instants; Sunrise and sunset; Brahma muhurta window; Dosha periods of the day and night

DOMAIN	REFERENCE AUTHORITIES	COVERS
I Ching	List of hexagrams of the I Ching; The Unicode Standard, trigram and hexagram blocks; Legge, The Yi King, Sacred Books of the East vol. 16	King Wen hexagrams and trigrams
Location	IANA Time Zone Database	Time zone and UTC offset

SECTION 3

Method

Each domain holds reference values from a named source, pulled from that source or recomputed from its published definition by a script in the open repository. The runner sends every case to the API under test, reads the returned value and compares it with the reference.

A value passes when its deviation is within the pass band set for that quantity. Every pass band is vendor neutral: it states why it has its size, and none is sized to any one API. A value the API did not return is counted as missing, and a missing value fails the run.

Read the largest deviation per quantity, not only the pass count. A pass band is a floor, so a drift that stays inside the band still passes; it shows first in the per quantity maxima.

arcsec. Angles are decimal degrees; the deviation is the shortest angular distance in arcseconds.

days. Calendar counts are whole days from a fixed epoch; the deviation is in days.

exact. Discrete values such as a day sign or a calendar label: the deviation is 0 on a match and 1 otherwise, and the pass band is 0.

seconds. Instants carry a UTC offset; the deviation is the difference in seconds.

Anyone can rerun the benchmark: clone the repository, set an API key and run `python -m benchmark run`. Point `--target` at another API and adapt a domain check to compare it against the same references.

Western planets

NASA JPL Horizons. Apparent geocentric ecliptic longitude of date at the chart instant converted to UT, read from the Observer Ecliptic Longitude column, seven decimal degrees as printed.

NASA JPL Horizons small-body integration. Apparent geocentric ecliptic longitude of the small body 2060 Chiron at the chart instant converted to UT, which Horizons integrates on demand from the initial conditions of its orbit solution, read from the same column as the planets.

APPLIES TO	PASS BAND	WHY THIS SIZE
Moon	72 arcsec	The Moon moves about 13 degrees a day, so this absorbs a couple of minutes of birth time interpretation. A vendor-neutral pass bar, not sized to any one API.
Every other quantity	36 arcsec	A vendor-neutral pass bar, not sized to any one API. Wide enough for the legitimate arcsecond level disagreement between two good ephemeris implementations, tight enough to fail a geometric rather than an apparent ephemeris, a wrong timezone resolution or a wrong epoch element set. Read the per body maxima for regressions: a body drifting from 0.1 to 20 arcseconds still passes.

Western angles and houses

NASA JPL Horizons. Local apparent sidereal time at the birthplace at the chart instant converted to UT, and the true obliquity of date solved from the apparent equatorial and ecliptic coordinates of one direction. Horizons converts UTC to UT1 with its Earth orientation table before computing sidereal time; before 1962 it reads the time as UT1.

Spherical astronomy formulas. Midheaven: the ecliptic longitude whose right ascension is the sidereal angle. Ascendant: the rising ecliptic point on the horizon. Placidus cusps 11 and 12: the ecliptic points one and two thirds of their own diurnal semi arc east of the meridian; cusps 2 and 3: two and one thirds of their own nocturnal semi arc west of the lower meridian, each by fixed point iteration to 1e-10 degrees; cusps 5, 6, 8 and 9 are their opposites. Seven decimal degrees.

APPLIES TO	PASS BAND	WHY THIS SIZE
Every quantity	36 arcsec	A vendor-neutral pass bar, not sized to any one API, the same as the planets. The sky turns 15 arcseconds per second of time, so the bar admits two good implementations that differ by milliarcseconds in their precession and nutation model, or by the under one second between UTC and UT1, and fails a wrong timezone resolution, mean in place of true obliquity at high latitude, a sign or quadrant slip, or a different house system. Angles and cusps magnify a time error at high latitude, so read the per quantity maxima for regressions.

Vedic sidereal chart

NASA JPL Horizons. Apparent geocentric ecliptic longitude of date at the case instant, minus the Lahiri ayanamsa recomputed from its definition at the same instant. Sun to Mars by their own centres, Jupiter and Saturn by the system barycentres. The Lagna is the rising ecliptic point from the local apparent sidereal time at the birthplace and the true obliquity of date solved from the same graha rows (Jean Meeus, Astronomical Algorithms, first edition, 1991, eq. 12.1, 12.2 and 12.9), omitted beyond the polar circles and at instants off the minute.

Lahiri ayanamsa, Calendar Reform Committee definition. 23 deg 15 min on 21 March 1956, growing with the general precession in longitude. Held at 23 deg 15 min 00.658 sec at 0h TT as a true ayanamsa, the reading that reproduces the Positional Astronomy Centre tables, carried by IERS Conventions 2010 equation 5.44 and the IAU 2000A nutation in longitude.

IERS Conventions 2010, Table 5.3a. IAU 2000A nutation in longitude, all lunisolar and planetary terms, with the fundamental arguments of equations 5.43 and 5.44.

Positional Astronomy Centre, Kolkata. Published nirayana longitudes of the Sun, Moon and planets at 0h TT, transcribed for three dates as cross checks the recomputation reproduces.

Brihat Parasara Hora Sastra. Nakshatra and pada from the sidereal longitude in spans of 13 deg 20 min and 3 deg 20 min, navamsa from the movable, fixed and dual sign rule, dasha lord counted from Krittika, balance as the unexpired fraction of the Moon nakshatra times the lord years in Julian years of 365.25 days.

APPLIES TO	PASS BAND	WHY THIS SIZE
Moon	72 arcsec	The Moon moves about 13 degrees a day, so this absorbs a couple of minutes of birth time interpretation. A vendor-neutral pass bar, as for the tropical Moon.
Sun, Mars, Mercury, Jupiter, Venus, Saturn	36 arcsec	The tropical planet bar: wide enough for the arcsecond level disagreement between two good ephemeris implementations, tight enough to fail a geometric position or a wrong timezone. The frame is held separately by the ayanamsa bar.
Lagna	36 arcsec	The Ascendant turns a degree in about four minutes, so this is a couple of seconds of sidereal time: room for the UT1 handling of two good implementations, tight enough to fail sidereal time from UTC alone, a mean sidereal time or a wrong timezone.
ayanamsa	3 arcsec	Two faithful implementations of this definition differ by the precession model (under an arcsecond between the 1955 rate and the IAU rate over 1879 to 2026) and the epoch rounding (0.658 arcseconds). A frame without the nutation term, up to 18 arcseconds off, or a different Lahiri revision fails.
dasha balance	1 days	A balance is commonly printed in whole days, and a year of 365.2422 days instead of 365.25 moves a 20 year balance by under a quarter of a day. One day is also about 7 arcseconds of the Moon on a Venus balance, so the bar keeps the frame honest.
Every other quantity	0 exact	Nakshatra, pada, navamsa sign and dasha lord are discrete: a value is the definition applied to the sidereal longitude or it is not.

Panchang

NASA JPL Horizons. Apparent geocentric ecliptic longitude of date of the Sun and Moon at the case instant. Elongation for tithi and karana, sidereal sum for yoga.

Surya Siddhanta, Burgess translation. Tithi is the elongation in units of 12 degrees, karana in units of 6 degrees, yoga the sidereal sum in units of 13 degrees 20 minutes, vara the weekday of the civil date whose sunrise opens the day.

Lahiri ayanamsa, Calendar Reform Committee definition. 23 deg 15 min on 21 March 1956, growing with the general precession in longitude. Held at 23 deg 15 min 00.658 sec at 0h TT as a true ayanamsa, carried by IERS Conventions 2010 equation 5.44 and the IAU 2000A nutation in longitude (Table 5.3a, downloaded on each pull). Enters yoga only.

Positional Astronomy Centre, Kolkata. Published nirayana longitudes of the Sun and Moon at 0h TT, transcribed for three dates as cross checks: the limbs they give must equal the recomputed ones.

US Naval Observatory Astronomical Applications API. The Rise entry of the Sun data, in the local zone given. Sunrise is the upper limb of the Sun on a level sea horizon under 34 arcminutes of refraction. The service prints whole minutes.

APPLIES TO	PASS BAND	WHY THIS SIZE
sunrise	90 seconds	The reference prints whole minutes and so does a typical response, so two exact values can differ by up to a minute through rounding alone; the half minute beyond covers the difference between two good ephemeris implementations of the same upper limb and 34 arcminute definition. A different limb (about 4 minutes at mid latitudes) or no refraction (about 2 to 3) fails.
Every other quantity	0 exact	Tithi, yoga, karana and vara are discrete: a value is the definition applied to the Sun and Moon longitudes, or the weekday of the sunrise date, or it is not.

Forecast events

NASA JPL Horizons. Apparent geocentric ecliptic longitude of date, tabulated daily over the month of the event to bracket it and hourly around the bracket to locate it. An ingress or an exact transit is the instant the longitude reaches the sign boundary or the natal point plus the aspect angle, by bisection on the cubic through the four hourly rows around the crossing. A station is the instant the longitude rate is zero, by bisection on the derivative of a degree six least squares polynomial fitted to four days of rows ten minutes apart. Interpolation follows Meeus, Astronomical Algorithms, 2nd edition, chapter 3.

US Naval Observatory seasons. Equinox and solstice instants in UT to the minute as published. The Sun entering Aries and Cancer is the same event, so the two values are kept as cross checks of the Horizons recomputation, not as references.

APPLIES TO	PASS BAND	WHY THIS SIZE
Sun ingress, Mercury ingress, Venus ingress, Mars ingress, Sun ingress, monthly table, Mercury ingress, monthly table, Venus ingress, monthly table, Mars ingress, monthly table, Sun transit	60 seconds	A vendor-neutral pass bar, not sized to any one API. At these events the Sun, Mercury, Venus and Mars move at least half a degree a day, so a minute is at least an arcsecond of motion: wide enough for the arcsecond level disagreement between two good ephemerides, tight enough to fail a crossing read off a sampled table or a longitude in the wrong frame. The monthly table prints whole minutes, which takes up to half of this band. An exact transit also carries the natal longitude, so a natal error shows here as time.
Moon ingress, monthly table	60 seconds	The Moon moves about 13 degrees a day, so a minute is about 33 arcseconds, inside the band its position is held to. The table prints whole minutes, which takes up to half of this band.
Jupiter ingress, Saturn ingress, Uranus ingress, Neptune ingress, Pluto ingress, Jupiter ingress, monthly table, Saturn ingress, monthly table, Uranus ingress, monthly table, Neptune ingress, monthly table, Pluto ingress, monthly table	600 seconds	Jupiter to Pluto move between a few hundredths and a quarter of a degree a day, so the same arcsecond of legitimate disagreement is tens of seconds to over ten minutes of time. Ten minutes is under one arcsecond of Neptune motion and still fails a crossing read off an hourly or daily table.
Sun station, Mercury station, Venus station, Mars station	60 seconds	A station is the instant the longitude rate is zero, the vertex of a near parabola, so its time is set by the rate, not the position: within a minute of a Mars station the longitude changes by a hundred thousandth of an arcsecond. Mercury, Venus and Mars turn fast enough that a minute is a rate disagreement of 0.03 arcseconds a day for Mars to 0.35 for Mercury, which two good ephemerides stay inside.
Jupiter station, Saturn station, Uranus station, Neptune station, Pluto station	600 seconds	Saturn to Pluto turn so slowly, their rate changing by 0.0005 to 0.002 degrees a day each day, that a rate disagreement of a thousandth of an arcsecond a day moves the station by up to a minute, so the band is wider than for the fast bodies. Ten minutes still fails a station taken from a sampled table, and a longitude without the precession of date, which moves a Pluto station by about two hours.

Moon phases

U.S. Naval Observatory Astronomical Applications moon phase service. The primary phases of each listed year are read from the year endpoint: the phase name and the instant in Universal Time. The expected value is the calendar date of that instant in Universal Time.

APPLIES TO	PASS BAND	WHY THIS SIZE
Every quantity	0 days	A phase date is a calendar day. Away from midnight a one day miss is a wrong phase; within an hour of midnight it is a wrong time zone.

Human Design bodygraph

NASA JPL Horizons. Apparent geocentric ecliptic longitude of date of the Sun at birth; the Design moment root found by Newton steps on the Sun rate until the Sun stands 88 degrees behind the natal Sun, then interpolated inside the bracketing minute. Gates and lines follow from these longitudes by the Rave Mandala.

Introduction to the Human Design System. The Design side is computed at the instant the Sun stood 88 degrees of solar arc before its natal longitude, never 88 calendar days.

Jovian Archive. The Sun enters gate 41, the first gate of the Rave Mandala, on 22 January 2024 at 13:18 UTC, fixing the wheel start at 2 degrees Aquarius. The profile is the Personality Sun line over the Design Sun line (https://jovianarchive.com/blogs/chart-interpretations-components/understanding-your-human-design-profile).

Human Design Gates by Zodiac Degrees. The opening degree and minute of all 64 gates in zodiac order, which a test pins against the wheel order and the 5 deg 37 min 30 sec gate.

APPLIES TO	PASS BAND	WHY THIS SIZE
design instant	60 seconds	The Sun moves about one arcsecond in 24 seconds, so this is about 2.5 arcseconds of solar arc: room for two good ephemerides and their nutation and aberration models, while 88 calendar days, a mean Sun or a wrong timezone misses by hours.
Every other quantity	0 exact	Gates, lines and the profile are discrete: the Rave Mandala applied to the longitude gives the value or it does not. Every reference Sun sits at least 10 arcseconds inside its line.

Chinese calendar

Hong Kong Observatory Gregorian-Lunar calendar conversion table. The text file of each year lists every date with its lunar date and, on term days, the solar term. Term dates are the calendar dates in Hong Kong Time, UTC+8; the first day of the first lunar month is the lunar new year. Month pillars are placed by the dates of the twelve jie terms.

Sexagenary cycle. Day pillar by days since the jiazi day 1 October 1949, the worked example of the page. Year pillar by the rule that 4 CE is a jiazi year, applied to the solar year that opens at Li Chun. Month stem by the five tigers rule and hour stem by the five rats rule, both checked against the page tables of month and hour names. Dates are proleptic Gregorian.

Ganzhi. The worked example of the page for 18 February 1912, a jiazi day, transcribed and reproduced by the day count above.

APPLIES TO	PASS BAND	WHY THIS SIZE
year_pillar, month_pillar, day_pillar, hour_pillar	0 exact	A pillar is a discrete stem and branch pair: any miss is a wrong pillar.
Every other quantity	0 days	The tables publish calendar dates, not instants, so a date either matches or is a whole day away.

Feng shui

Xieji Bianfang Shu. A man counts backwards one palace a year from Kan 1, Xun 4 and Dui 7 at the jiazi years of the upper, middle and lower eras, a woman forwards from the centre 5, Kun 2 and Gen 8. The year star enters the centre at 1, 4 and 7 at the same three years and steps back one a year, the same count as a man, and the plate flies from the centre to Qian, Dui, Gen, Li, Kan, Kun, Zhen and Xun. The year 1684 opened an upper era, so 1864, 180 years on, opened the next. The solar year turns at Li Chun.

Gujin Tushu Jicheng, Yangzhai Shishu. States the same rule for both sexes and that a man on the centre 5 lodges at Kun and a woman at Gen, with the upper era opening in 1504. Its table of the gua for a man and for a woman in each of the 180 years is transcribed and reproduced year by year by the rule.

Shen Shi Xuan Kong Xue. The period star enters the centre and flies forward. The stars on the sitting and facing palaces enter the centre as the mountain and water star and fly forward when the mountain in the same dragon position of the home palace of that star is yang, in reverse when yin; a 5 takes the polarity of the sitting or facing mountain itself. Yang mountains are qian, xun, gen and kun, the four human dragons yin, shen, si and hai, and the four earth dragons jia, geng, ren and bing; the rest are yin. The table of the star on the sitting and facing palace and the two flight directions for each sitting mountain and period is transcribed and reproduced.

Hong Kong Observatory Gregorian-Lunar calendar conversion table. The Spring Commences (Li Chun) date of each year in Hong Kong Time, UTC+8, decides the solar year of a birth date and the changeover of an annual plate. A date-only birth is read at the start of its day, as the API documents, and the Li Chun instant falls later that day, so a birth on the Li Chun date belongs to the outgoing year.

APPLIES TO	PASS BAND	WHY THIS SIZE
boundary_date, changeover_date	0 days	The tables publish calendar dates, not instants, so a date either matches or is a whole day away.
Every other quantity	0 exact	A star, a Kua number, a solar year and a flight direction are discrete: any miss is a different chart.

Mesoamerican calendar

GMT correlation definition. Recomputed from the definition: the epoch 13.0.0.0.0 = 4 Ajaw 8 Kumku sits at Julian Day Number 584283, the day count is the Julian Day Number minus 584283, the Long Count is that count in base 20 with 18 winal to a tun, the Tzolkin runs 13 numbers against 20 day signs and the Haab runs 18 months of 20 days plus the 5 days of Wayeb, both from the epoch. The Julian Day Number of a proleptic Gregorian date follows Fliegel and Van Flandern.

FAMSI date converter. Gregorian date and correlation constant 584283 entered in the converter form; the Long Count and Calendar Round it printed were transcribed. The recomputation above is asserted to reproduce every value.

APPLIES TO	PASS BAND	WHY THIS SIZE
days_since_epoch, julian_day_number	0 days	A day count is an integer from a fixed epoch, any miss is a wrong day.
Every other quantity	0 exact	Long Count, Tzolkin and Haab values are discrete: a one day shift fails.

Vastu

Varahamihira, Brihat Samhita, translated by N. Chidambaram Iyer. The nine by nine plate and the squares of its rim were transcribed from verses 42 to 45, the effect of a door on each rim square from verses 72 to 75. Each list opens at the corner its verse names, and a corner square belongs to the side whose list opens with it. A side is cut into eight equal parts counted from that corner, and a facing bearing names the cardinal side it looks out toward within 22.5 degrees.

Kern, Verspreide Geschriften vol. 2. The effect words of verses 72 to 75 were read in a second, independent translation and classified by the same rule as the first. Where it renders an effect with different words that name the same kind of outcome, the classification agrees. Where it differs, the pada is left unclassified.

APPLIES TO	PASS BAND	WHY THIS SIZE
Every quantity	0 exact	A pada, a side, a square and an effect word are discrete: one square off names a different deity and a different verdict.

Numerology

Pythagorean numerology rules. Recomputed from the rules: letters A to I, J to R and S to Z take 1 to 9, a number reduces by digit sum and stops at a single digit or at 11, 22 or 33, the Life Path reduces the month, day and year each and then their sum, and a name number reduces each name part and then the sum of the parts. A, E, I, O and U are the vowels; Y and W are consonants.

Hans Decoz worked examples. Life Path examples from the Life Path page, the Expression example for Thomas Cruise Mapother from the Expression page and the Soul Urge example for Thomas John Hancock from the Soul Urge page, transcribed by hand. The recomputation above is asserted to reproduce every value.

APPLIES TO	PASS BAND	WHY THIS SIZE
Every quantity	0 exact	A numerology number is a discrete value from fixed rules: any other number is a different reading.

Kabbalah

Mispar Hechrachi letter table. Recomputed from the published letter table: the 22 letters carry 1 to 9, 10 to 90 and 100 to 400, and the five final forms count as the regular letter they are a form of, which is Mispar Hechrachi. Mispar Gadol continues the sequence with the final forms at 500 to 900. Vowel points and cantillation marks carry no value and are removed first.

Dershowitz and Reingold, Calendrical Calculations. The arithmetic Hebrew calendar: leap years by (7y + 1) mod 19 < 7, the molad of Tishri from the mean lunation 29 days 12 hours 793 parts, the four postponement rules, and month lengths set by the year length. The Hebrew day begins at sunset, so a civil date from midnight is dated directly and a moment after nightfall takes the next civil date.

Hebcal date converter. The Gregorian date, with the after sunset option where noted, entered in the converter; the Hebrew year, month and day it printed were transcribed. The recomputation above is asserted to reproduce every value.

APPLIES TO	PASS BAND	WHY THIS SIZE
Every quantity	0 exact	A word value is a sum of integers and a calendar date is a discrete day count, so one letter or one day off is a wrong answer.

Biorhythm

Cleve Moler, Biorhythms, MathWorks blog. Recomputed from the definition: physical sin(2 pi t / 23), emotional sin(2 pi t / 28), intellectual sin(2 pi t / 33), where t is the number of days since birth. The percentage is 100 times the sine rounded to the nearest whole number and the raw value is the sine rounded to four decimals.

US Patent 4,240,153, Biorhythm display device, USPTO. Read for the same three periods of 23, 28 and 33 days and for the rule that the cycles are set from the number of days elapsed since the birth date, which the day count of each case follows.

APPLIES TO	PASS BAND	WHY THIS SIZE
days_since_birth	0 days	A calendar day count is an integer: a miss is a wrong day
Every other quantity	0 exact	The percentage is published as a whole number and the raw sine to four decimals, so the recomputed value rounded the same way must match exactly.

Ayurveda

NASA JPL Horizons. Apparent geocentric ecliptic longitude of the Sun of date, hourly around each season edge. The edge is the instant the longitude reaches a multiple of 60 degrees from 270 (sayana), or the same longitude less the Lahiri ayanamsa (nirayana), by bisection on the cubic through the four rows around the crossing, Meeus, Astronomical Algorithms, 2nd edition, chapter 3. The season of a date is the one the Sun is in at midday UT.

Sushruta Samhita, Bhishagratna translation. Sisira is Magha and Phalguna, vasanta Chaitra and Vaishakha, and so on to hemanta. A solar month carries the month named for it (Makara for Magha), which puts every edge on a multiple of 30 degrees of solar longitude and the two courses on the two solstices. A muhurta is a thirtieth of a day, 48 minutes.

Charaka Samhita, Sutrasthana 6. The second witness to the six season names and to their order against the Sun course: sisira opens the northward half, which a tropical Sun does at the December solstice.

Surya Siddhanta, Burgess translation. A season of two solar months opens at a Sun ingress into a sign.

Lahiri ayanamsa, Calendar Reform Committee definition. 23 deg 15 min 00.658 sec at 0h TT on 21 March 1956 as a true ayanamsa, made mean, carried by the IERS Conventions 2010 general precession in longitude and made true again with the IAU 2000A nutation in longitude of the instant. The frame of every sidereal season edge.

Positional Astronomy Centre, Kolkata. Published nirayana longitude of the Sun at 0h TT, transcribed for the four days around the two sidereal season edges as cross checks: the instant the published longitude reaches the edge must equal the recomputed one.

US Naval Observatory seasons. The December and June solstice instants in UT to the minute as published. A tropical season edge at 270 and 90 degrees is the same event, so the two values are cross checks of the Horizons recomputation, not references.

Ashtanga Hridaya, Sutrasthana 1.8. Kapha holds the first third, pitta the middle third and vata the last third of the day, and the same order the night. The brahma muhurta is read as the window 96 to 48 minutes before sunrise, the fixed reading the commentary settles on; that offset is a stated convention, checked here as arithmetic from sunrise.

US Naval Observatory Astronomical Applications API. The Rise and Set entries of the Sun data, in the local zone given, and the Rise of the next local day. Sunrise is the upper limb of the Sun on a level sea horizon under 34 arcminutes of refraction. The service prints whole minutes. The thirds of the day and night and the brahma muhurta are computed from them.

APPLIES TO	PASS BAND	WHY THIS SIZE
ritu start, ritu end	60 seconds	A vendor-neutral pass bar, not sized to any one API. The Sun moves about 2.5 arcseconds a minute at a season edge, so a minute is the arcsecond level disagreement between two good ephemerides: wide enough for that, tight enough to fail an edge read off a daily table, a mean Sun, a longitude in the wrong frame or a coarse sampling of the ingress, each of which is minutes to hours.
sidereal ritu start, sidereal ritu end	120 seconds	The tropical bar plus the ayanamsa. Two published recomputations of the Lahiri definition differ by an arcsecond or two once nutation is treated as the definition allows, which is up to a minute of Sun motion, so the band is twice the tropical one. A different ayanamsa revision is 20 arcseconds or more, over eight minutes, and fails.
sunrise, sunset, next sunrise, brahma muhurta start, brahma muhurta end, day pitta start, day vata start, night pitta start, night vata start	90 seconds	The reference prints whole minutes, so two exact values differ by up to a minute through rounding alone; the half minute beyond covers the difference between two good implementations of the same upper limb and 34 arcminute refraction definition. A different limb (about 4 minutes at mid latitudes) or no refraction (about 2 to 3) fails. A third of the day or night and a fixed offset from sunrise inherit the same bar, since each is a weighted mean of the sunrise and sunset errors.

APPLIES TO	PASS BAND	WHY THIS SIZE
ritu, sidereal ritu, southern ritu, dosha order	0 exact	Discrete names: the season is a machine identifier of the six, and the order of the six dosha periods is a fixed sequence, so either is right or wrong.

I Ching

List of hexagrams of the I Ching. The lower and upper trigram of each of the 64 hexagrams in King Wen order were transcribed from the list. The line pattern of a hexagram is its lower trigram followed by its upper trigram, bottom line first, and its number is its place in the list. The relating hexagram is the primary with each changing line (6 or 9) turned into its opposite.

The Unicode Standard, trigram and hexagram blocks. The eight trigram code points U+2630 to U+2637 are named for Heaven, Lake, Fire, Thunder, Wind, Water, Mountain and Earth in the traditional order, which counts down from three solid lines to three broken lines. The line pattern of each trigram is recomputed from that order. The 64 hexagram code points from U+4DC0 follow the King Wen sequence, so the symbol of hexagram n is the code point U+4DC0 plus n minus 1.

Legge, The Yi King, Sacred Books of the East vol. 16. The line values 9 old yang, 8 young yin, 7 young yang and 6 old yin follow Appendix V chapter 2 note, p. 423. The trigrams of each hexagram are the ones named in the Great Symbolism, Appendix II, and the recomputed table is asserted to agree with every one the scanned copy states.

APPLIES TO	PASS BAND	WHY THIS SIZE
Every quantity	0 exact	A hexagram number, a trigram and a line pattern are discrete: a transposed pair of trigrams or a reversed line order names a different hexagram.

Location

IANA Time Zone Database. Release 2026e (tzdata package 2026.5). The zone of each place is the one the database zone table lists for its country and region; the offset schedule is the database rule evaluated from 2020 to 2040 and read at the run instant, because the search endpoint returns the offset in force today, not at a chosen date.

APPLIES TO	PASS BAND	WHY THIS SIZE
Every quantity	0 exact	A zone name and an offset in seconds are discrete: any other value fails.

DOMAIN 1 OF 17

Western planets

231 of 231

Authority: NASA JPL Horizons

Covers: Sun, Moon, planets and Chiron

`POST /api/v2/astrology/natal-chart`

Moon: 72 arcsec | Every other quantity: 36 arcsec

PER QUANTITY

RoxyAPI Sun: every one of 21 charts within 0.31 arcsec (0.000086°) of NASA JPL Horizons (median 0.048).

RoxyAPI Moon: every one of 21 charts within 0.27 arcsec (0.000075°) of NASA JPL Horizons (median 0.048).

RoxyAPI Mercury: every one of 21 charts within 0.3 arcsec (0.000083°) of NASA JPL Horizons (median 0.048).

RoxyAPI Venus: every one of 21 charts within 0.31 arcsec (0.000086°) of NASA JPL Horizons (median 0.048).

RoxyAPI Mars: every one of 21 charts within 0.31 arcsec (0.000086°) of NASA JPL Horizons (median 0.048).

RoxyAPI Jupiter: every one of 21 charts within 0.31 arcsec (0.000086°) of NASA JPL Horizons (median 0.048).

RoxyAPI Saturn: every one of 21 charts within 0.31 arcsec (0.000086°) of NASA JPL Horizons (median 0.049).

RoxyAPI Uranus: every one of 21 charts within 0.31 arcsec (0.000086°) of NASA JPL Horizons (median 0.048).

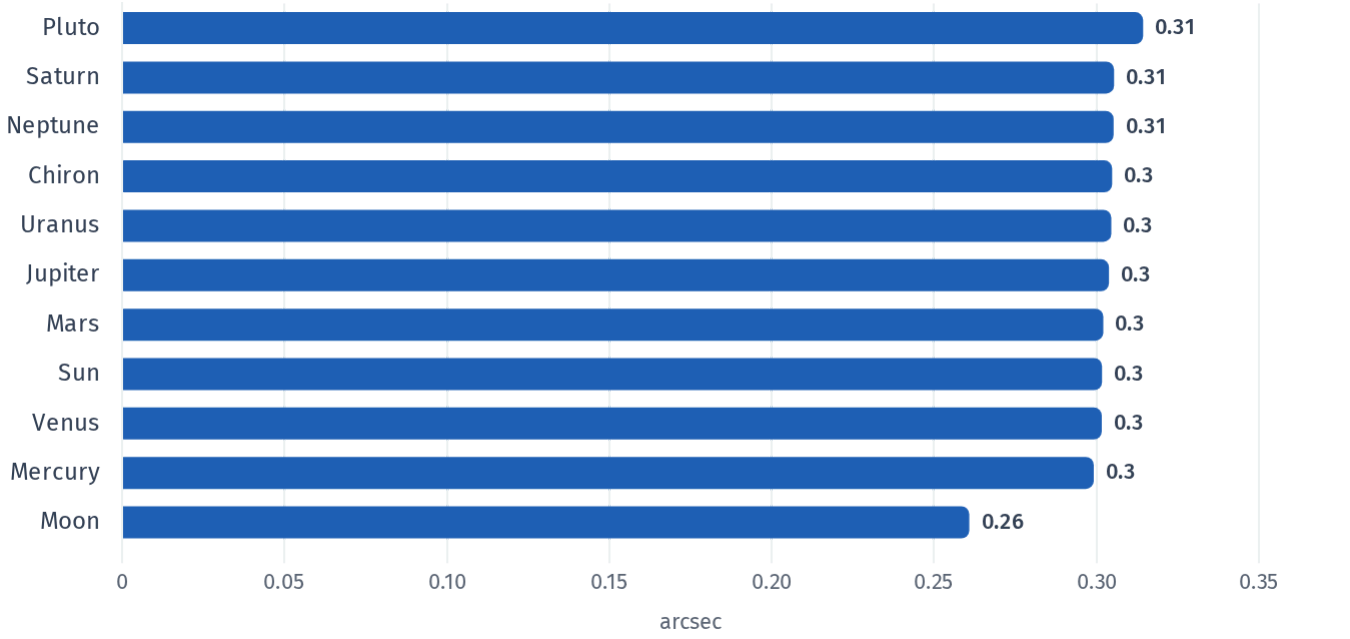
RoxyAPI Neptune: every one of 21 charts within 0.31 arcsec (0.000086°) of NASA JPL Horizons (median 0.048).

RoxyAPI Pluto: every one of 21 charts within 0.32 arcsec (0.000089°) of NASA JPL Horizons (median 0.056).

RoxyAPI Chiron: every one of 21 charts within 0.31 arcsec (0.000086°) of NASA JPL Horizons small-body integration (median 0.049).

LARGEST DEVIATION PER QUANTITY, ARCSEC

Worst case across every subject. Median 0.048, p95 0.24, max 0.32 arcsec.



All 231 measurements of this domain, case by case, are in roxyapi.github.io/astrology-api-benchmark/latest.csv and roxyapi.github.io/astrology-api-benchmark/latest.json.

DOMAIN 2 OF 17

Western angles and houses

200 of 200

Authority: NASA JPL Horizons sidereal time and obliquity, standard spherical astronomy

Covers: Ascendant, Midheaven and Placidus cusps

`POST /api/v2/astrology/natal-chart`

Every quantity: 36 arcsec

PER QUANTITY

RoxyAPI Ascendant: every one of 20 charts within 1.5 arcsec (0.00042°) of NASA JPL Horizons sidereal time and obliquity, standard spherical astronomy (median 0.1).

RoxyAPI Midheaven: every one of 20 charts within 0.86 arcsec (0.00024°) of NASA JPL Horizons sidereal time and obliquity, standard spherical astronomy (median 0.12).

RoxyAPI Cusp 2: every one of 20 charts within 1.1 arcsec (0.00031°) of NASA JPL Horizons sidereal time and obliquity, standard spherical astronomy (median 0.11).

RoxyAPI Cusp 3: every one of 20 charts within 0.73 arcsec (0.00020°) of NASA JPL Horizons sidereal time and obliquity, standard spherical astronomy (median 0.11).

RoxyAPI Cusp 5: every one of 20 charts within 0.74 arcsec (0.00021°) of NASA JPL Horizons sidereal time and obliquity, standard spherical astronomy (median 0.12).

RoxyAPI Cusp 6: every one of 20 charts within 0.69 arcsec (0.00019°) of NASA JPL Horizons sidereal time and obliquity, standard spherical astronomy (median 0.12).

RoxyAPI Cusp 8: every one of 20 charts within 1.1 arcsec (0.00031°) of NASA JPL Horizons sidereal time and obliquity, standard spherical astronomy (median 0.11).

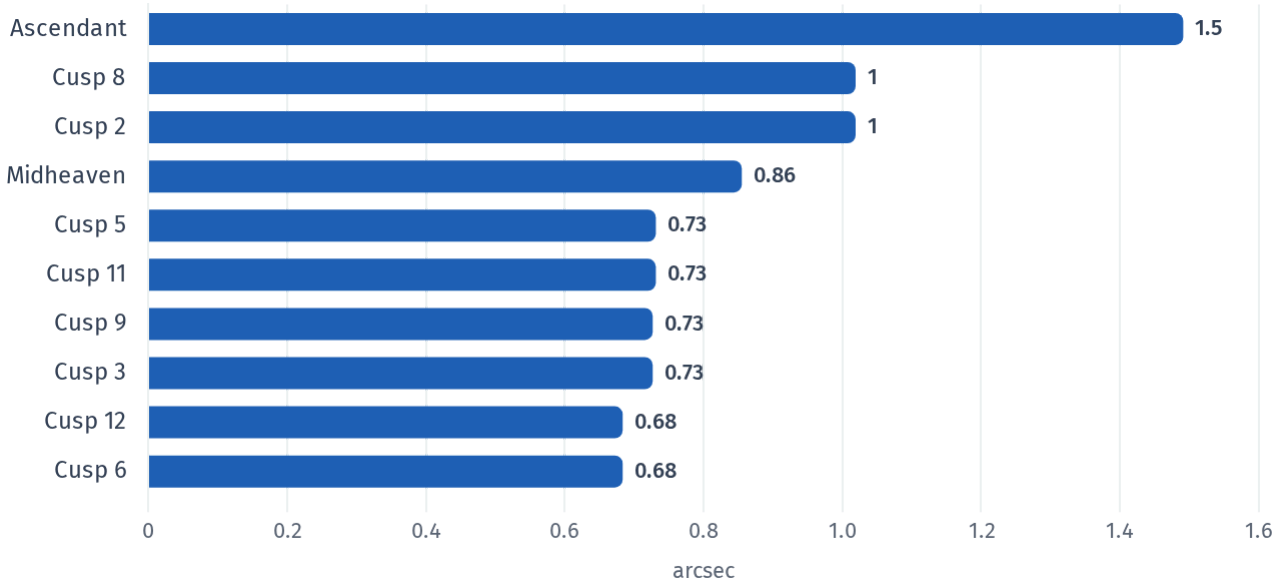
RoxyAPI Cusp 9: every one of 20 charts within 0.73 arcsec (0.00020°) of NASA JPL Horizons sidereal time and obliquity, standard spherical astronomy (median 0.11).

RoxyAPI Cusp 11: every one of 20 charts within 0.74 arcsec (0.00021°) of NASA JPL Horizons sidereal time and obliquity, standard spherical astronomy (median 0.12).

RoxyAPI Cusp 12: every one of 20 charts within 0.69 arcsec (0.00019°) of NASA JPL Horizons sidereal time and obliquity, standard spherical astronomy (median 0.12).

LARGEST DEVIATION PER QUANTITY, ARCSEC

Worst case across every subject. Median 0.12, p95 0.62, max 1.5 arcsec.



All 200 measurements of this domain, case by case, are in roxyapi.github.io/astrology-api-benchmark/latest.csv and roxyapi.github.io/astrology-api-benchmark/latest.json.

DOMAIN 3 OF 17

Vedic sidereal chart

Authority: NASA JPL Horizons with the Lahiri ayanamsa by its published definition

Covers: Lahiri ayanamsa and sidereal longitudes; Nakshatra and pada; Navamsa and Vimshottari

`POST /api/v2/vedic-astrology/birth-chart` `POST /api/v2/vedic-astrology/navamsa` `POST /api/v2/vedic-astrology/dasha/major`

230 of 230

26 of 26

638 of 638

Moon: 72 arcsec | Sun, Mars, Mercury, Jupiter, Venus, Saturn: 36 arcsec | Lagna: 36 arcsec | ayanamsa: 3 arcsec | dasha balance: 1 days | Every other quantity: 0 exact

PER QUANTITY

RoxyAPI ayanamsa: every one of 26 cases within 0.0096 arcsec (0.0000027°) of NASA JPL Horizons with the Lahiri ayanamsa by its published definition (median 0.0087).

RoxyAPI Sun: every one of 26 cases within 0.3 arcsec (0.000083°) of NASA JPL Horizons with the Lahiri ayanamsa by its published definition (median 0.039).

RoxyAPI Moon: every one of 26 cases within 0.26 arcsec (0.000072°) of NASA JPL Horizons with the Lahiri ayanamsa by its published definition (median 0.04).

RoxyAPI Mars: every one of 26 cases within 0.3 arcsec (0.000083°) of NASA JPL Horizons with the Lahiri ayanamsa by its published definition (median 0.039).

RoxyAPI Mercury: every one of 26 cases within 0.29 arcsec (0.000081°) of NASA JPL Horizons with the Lahiri ayanamsa by its published definition (median 0.039).

RoxyAPI Jupiter: every one of 26 cases within 0.3 arcsec (0.000083°) of NASA JPL Horizons with the Lahiri ayanamsa by its published definition (median 0.039).

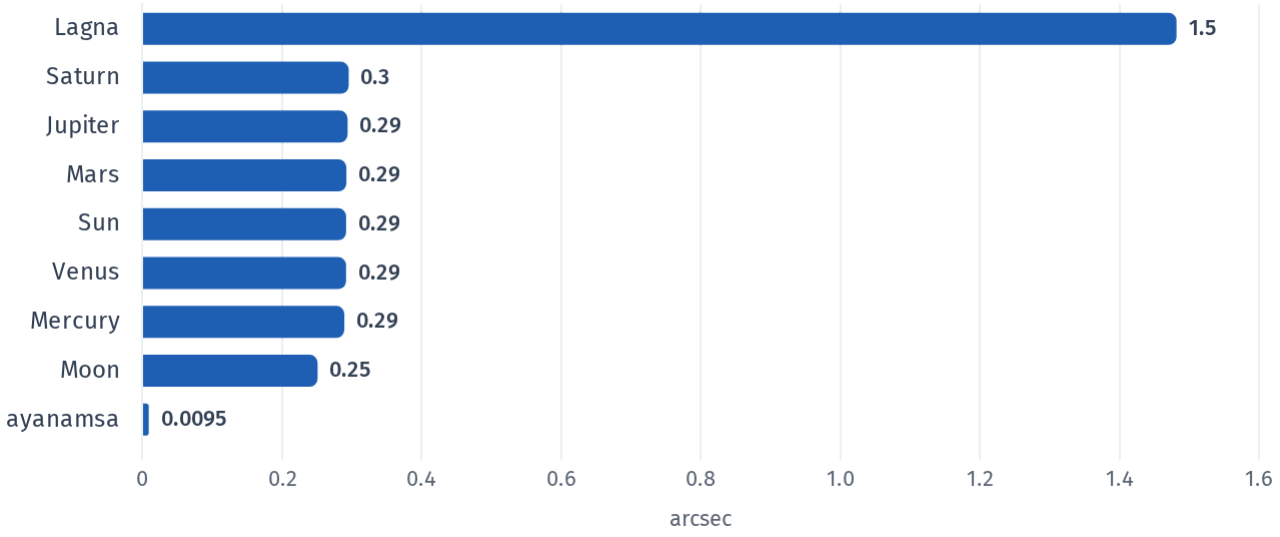
RoxyAPI Venus: every one of 26 cases within 0.3 arcsec (0.000083°) of NASA JPL Horizons with the Lahiri ayanamsa by its published definition (median 0.04).

RoxyAPI Saturn: every one of 26 cases within 0.3 arcsec (0.000083°) of NASA JPL Horizons with the Lahiri ayanamsa by its published definition (median 0.04).

RoxyAPI Lagna: every one of 22 cases within 1.5 arcsec (0.00042°) of NASA JPL Horizons with the Lahiri ayanamsa by its published definition (median 0.084).

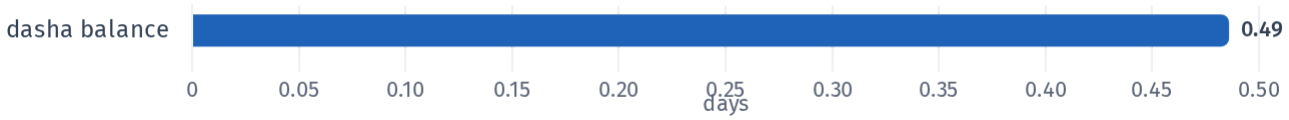
LARGEST DEVIATION PER QUANTITY, ARCSEC

Worst case across every subject. Median 0.039, p95 0.23, max 1.5 arcsec.



LARGEST DEVIATION PER QUANTITY, DAYS

Worst case across every subject. Median 0.2, p95 0.48, max 0.49 days.



EXACT

All 638 values match the reference exactly, a deviation of 0 on every case.

All 894 measurements of this domain, case by case, are in roxyapi.github.io/astrology-api-benchmark/latest.csv and roxyapi.github.io/astrology-api-benchmark/latest.json.

DOMAIN 4 OF 17

Panchang

Authority: NASA JPL Horizons Sun and Moon longitudes by the classical definitions, sunrise from the US Naval Observatory

Covers: Tithi, yoga, karana and vara; Sunrise

`POST /api/v2/vedic-astrology/panchang/basic` `POST /api/v2/vedic-astrology/panchang/detailed`

13 of 13

60 of 60

sunrise: 90 seconds | Every other quantity: 0 exact

PER QUANTITY

RoxyAPI sunrise: every one of 13 cases within 0 seconds of US Naval Observatory Astronomical Applications API (median 0).

SECONDS

All 13 values match the reference exactly, a deviation of 0 on every case.

EXACT

All 60 values match the reference exactly, a deviation of 0 on every case.

All 73 measurements of this domain, case by case, are in roxyapi.github.io/astrology-api-benchmark/latest.csv and roxyapi.github.io/astrology-api-benchmark/latest.json.

DOMAIN 5 OF 17

Forecast events

29 of 29

Authority: NASA JPL Horizons

Covers: Sign ingress instants; Station instants; Exact transit instant

`POST /api/v2/forecast/transits` `POST /api/v2/astrology/transits/monthly`

Sun ingress, Mercury ingress, Venus ingress, Mars ingress, Sun ingress, monthly table, Mercury ingress, monthly table, Venus ingress, monthly table, Mars ingress, monthly table, Sun transit: 60 seconds

Moon ingress, monthly table: 60 seconds

Jupiter ingress, Saturn ingress, Uranus ingress, Neptune ingress, Pluto ingress, Jupiter ingress, monthly table, Saturn ingress, monthly table, Uranus ingress, monthly table, Neptune ingress, monthly table, Pluto ingress, monthly table: 600 seconds

Sun station, Mercury station, Venus station, Mars station: 60 seconds

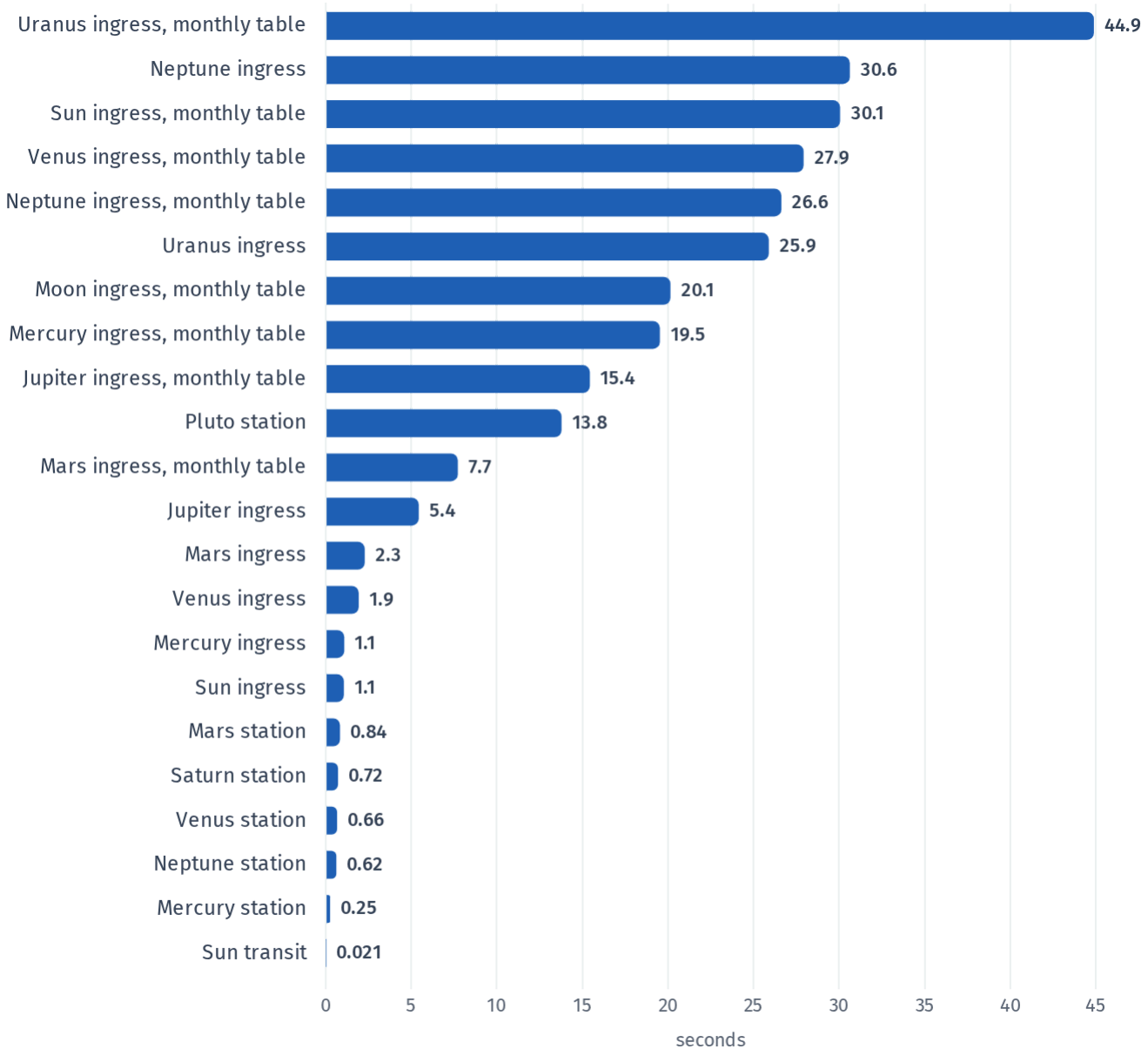
Jupiter station, Saturn station, Uranus station, Neptune station, Pluto station: 600 seconds

PER QUANTITY

RoxyAPI Sun ingress: every one of 2 cases within 1.1 seconds of NASA JPL Horizons (median 0.95).
RoxyAPI Sun ingress, monthly table: every one of 2 cases within 30.1 seconds of NASA JPL Horizons (median 23.5).
RoxyAPI Mercury ingress: every one of 2 cases within 1.1 seconds of NASA JPL Horizons (median 0.78).
RoxyAPI Mercury ingress, monthly table: every one of 2 cases within 19.6 seconds of NASA JPL Horizons (median 10.8).
RoxyAPI Venus ingress: every one of 1 cases within 2 seconds of NASA JPL Horizons (median 1.9).
RoxyAPI Venus ingress, monthly table: every one of 1 cases within 28 seconds of NASA JPL Horizons (median 27.9).
RoxyAPI Mars ingress: every one of 1 cases within 2.3 seconds of NASA JPL Horizons (median 2.3).
RoxyAPI Mars ingress, monthly table: every one of 1 cases within 7.8 seconds of NASA JPL Horizons (median 7.7).
RoxyAPI Jupiter ingress: every one of 1 cases within 5.5 seconds of NASA JPL Horizons (median 5.4).
RoxyAPI Jupiter ingress, monthly table: every one of 1 cases within 15.5 seconds of NASA JPL Horizons (median 15.4).
RoxyAPI Uranus ingress: every one of 1 cases within 25.9 seconds of NASA JPL Horizons (median 25.9).
RoxyAPI Uranus ingress, monthly table: every one of 1 cases within 44.9 seconds of NASA JPL Horizons (median 44.9).
RoxyAPI Neptune ingress: every one of 1 cases within 30.7 seconds of NASA JPL Horizons (median 30.6).
RoxyAPI Neptune ingress, monthly table: every one of 1 cases within 26.7 seconds of NASA JPL Horizons (median 26.6).
RoxyAPI Moon ingress, monthly table: every one of 2 cases within 20.2 seconds of NASA JPL Horizons (median 20).
RoxyAPI Mars station: every one of 1 cases within 0.84 seconds of NASA JPL Horizons (median 0.83).
RoxyAPI Venus station: every one of 2 cases within 0.67 seconds of NASA JPL Horizons (median 0.35).
RoxyAPI Mercury station: every one of 2 cases within 0.26 seconds of NASA JPL Horizons (median 0.19).
RoxyAPI Pluto station: every one of 1 cases within 13.8 seconds of NASA JPL Horizons (median 13.8).
RoxyAPI Neptune station: every one of 1 cases within 0.62 seconds of NASA JPL Horizons (median 0.62).
RoxyAPI Saturn station: every one of 1 cases within 0.72 seconds of NASA JPL Horizons (median 0.72).
RoxyAPI Sun transit: every one of 1 cases within 0.021 seconds of NASA JPL Horizons (median 0.021).

LARGEST DEVIATION PER QUANTITY, SECONDS

Worst case across every subject. Median 2.3, p95 30.6, max 44.9 seconds.



All 29 measurements of this domain, case by case, are in roxyapi.github.io/astrology-api-benchmark/latest.csv and roxyapi.github.io/astrology-api-benchmark/latest.json.

DOMAIN 6 OF 17

Moon phases

11 of 11

Authority: U.S. Naval Observatory primary moon phase tables, Universal Time dates

Covers: Phase dates

`GET /api/v2/astrology/moon-phase/upcoming`

Every quantity: 0 days

DAYS

All 11 values match the reference exactly, a deviation of 0 on every case.

All 11 measurements of this domain, case by case, are in roxyapi.github.io/astrology-api-benchmark/latest.csv and roxyapi.github.io/astrology-api-benchmark/latest.json.

DOMAIN 7 OF 17

Human Design bodygraph

10 of 10

90 of 90

Authority: NASA JPL Horizons with the 88 degree solar arc and the Rave Mandala

Covers: Design instant; Personality and design Sun and Earth gates and lines; Profile

`POST /api/v2/human-design/bodygraph`

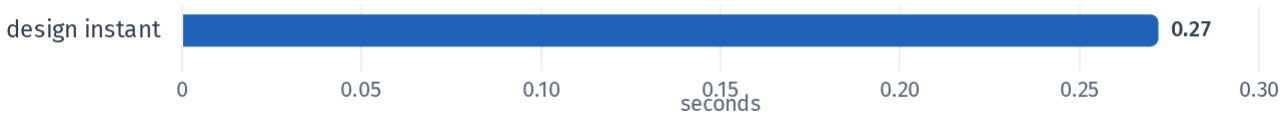
design instant: 60 seconds | Every other quantity: 0 exact

PER QUANTITY

RoxyAPI design instant: every one of 10 cases within 0.28 seconds of NASA JPL Horizons with the 88 degree solar arc and the Rave Mandala (median 0.014).

LARGEST DEVIATION PER QUANTITY, SECONDS

Worst case across every subject. Median 0.014, p95 0.27, max 0.28 seconds.



EXACT

All 90 values match the reference exactly, a deviation of 0 on every case.

All 100 measurements of this domain, case by case, are in roxyapi.github.io/astrology-api-benchmark/latest.csv and roxyapi.github.io/astrology-api-benchmark/latest.json.

DOMAIN 8 OF 17

Chinese calendar

Authority: Hong Kong Observatory Gregorian-Lunar conversion tables, sexagenary cycle from a published anchor day

Covers: Solar terms and Lunar New Year; Four pillars

`GET /api/v2/chinese-astrology/calendar/solar-terms/{year}` `POST /api/v2/chinese-astrology/calendar/lunar-date` `POST /api/v2/chinese-astrology/bazi/chart`

103 of 103

32 of 32

year_pillar, month_pillar, day_pillar, hour_pillar: 0 exact

Every other quantity: 0 days

DAYS

All 103 values match the reference exactly, a deviation of 0 on every case.

EXACT

All 32 values match the reference exactly, a deviation of 0 on every case.

All 135 measurements of this domain, case by case, are in roxyapi.github.io/astrology-api-benchmark/latest.csv and roxyapi.github.io/astrology-api-benchmark/latest.json.

DOMAIN 9 OF 17

Feng shui

Authority: Printed Qing almanac and Xuan Kong rules recomputed, Hong Kong Observatory Li Chun dates

Covers: Kua number and the Li Chun year boundary; Annual flying star plate; Natal period, mountain and water stars

`POST /api/v2/feng-shui/kua` `GET /api/v2/feng-shui/flying-stars/annual/{year}` `POST /api/v2/feng-shui/flying-stars/natal`

13 of 13

243 of 243

boundary_date, changeover_date: 0 days

Every other quantity: 0 exact

DAYS

All 13 values match the reference exactly, a deviation of 0 on every case.

EXACT

All 243 values match the reference exactly, a deviation of 0 on every case.

All 256 measurements of this domain, case by case, are in roxyapi.github.io/astrology-api-benchmark/latest.csv and roxyapi.github.io/astrology-api-benchmark/latest.json.

DOMAIN 10 OF 17

Mesoamerican calendar

16 of 16

40 of 40

Authority: GMT correlation 584283, cross-checked against the FAMSI converter

Covers: Long Count and day count; Tzolkin sign and number; Haab month and day

`POST /api/v2/mesoamerican-astrology/mayan/chart`

days_since_epoch, julian_day_number: 0 days

Every other quantity: 0 exact

DAYS

All 16 values match the reference exactly, a deviation of 0 on every case.

EXACT

All 40 values match the reference exactly, a deviation of 0 on every case.

All 56 measurements of this domain, case by case, are in roxyapi.github.io/astrology-api-benchmark/latest.csv and roxyapi.github.io/astrology-api-benchmark/latest.json.

DOMAIN 11 OF 17

Vastu

Authority: Brihat Samhita chapter 53 in the Iyer and Kern translations

Covers: Entrance side and pada from facing bearing and door position; Square of the nine by nine plan; Classical effect of the entrance pada

`POST /api/v2/vastu/entrance`

118 of 118

Every quantity: 0 exact

EXACT

All 118 values match the reference exactly, a deviation of 0 on every case.

All 118 measurements of this domain, case by case, are in roxyapi.github.io/astrology-api-benchmark/latest.csv and roxyapi.github.io/astrology-api-benchmark/latest.json.

DOMAIN 12 OF 17

Numerology

21 of 21

Authority: Pythagorean rules recomputed, cross-checked against published worked examples

Covers: Life Path, Expression and Soul Urge

`POST /api/v2/numerology/chart`

Every quantity: 0 exact

EXACT

All 21 values match the reference exactly, a deviation of 0 on every case.

All 21 measurements of this domain, case by case, are in roxyapi.github.io/astrology-api-benchmark/latest.csv and roxyapi.github.io/astrology-api-benchmark/latest.json.

DOMAIN 13 OF 17

Kabbalah

Authority: Published gematria letter table and the arithmetic Hebrew calendar

Covers: Mispar Hechrachi and Mispar Gadol word values; Hebrew year, month and day, with the leap year flag

`POST /api/v2/kabbalah/gematria` `POST /api/v2/kabbalah/birth-profile`

72 of 72

Every quantity: 0 exact

EXACT

All 72 values match the reference exactly, a deviation of 0 on every case.

All 72 measurements of this domain, case by case, are in roxyapi.github.io/astrology-api-benchmark/latest.csv and roxyapi.github.io/astrology-api-benchmark/latest.json.

DOMAIN 14 OF 17

Biorhythm

10 of 10

60 of 60

Authority: Sine cycles of 23, 28 and 33 days, recomputed from the published definition

Covers: Physical, emotional and intellectual cycles

`POST /api/v2/biorhythm/reading`

days_since_birth: 0 days | Every other quantity: 0 exact

DAYS

All 10 values match the reference exactly, a deviation of 0 on every case.

EXACT

All 60 values match the reference exactly, a deviation of 0 on every case.

All 70 measurements of this domain, case by case, are in roxyapi.github.io/astrology-api-benchmark/latest.csv and roxyapi.github.io/astrology-api-benchmark/latest.json.

DOMAIN 15 OF 17

Ayurveda

Authority: NASA JPL Horizons Sun ingress by the classical season rule, sunrise from the US Naval Observatory

Covers: Season at a date, both zodiacs and both hemispheres; Season opening and closing instants; Sunrise and sunset; Brahma muhurta window; Dosha periods of the day and night

`POST /api/v2/ayurveda/ritucharya` `POST /api/v2/ayurveda/dinacharya`

81 of 81

24 of 24

ritu start, ritu end: 60 seconds

sidereal ritu start, sidereal ritu end: 120 seconds

sunrise, sunset, next sunrise, brahma muhurta start, brahma muhurta end, day pitta start, day vata start, night pitta start, night vata start: 90 seconds

ritu, sidereal ritu, southern ritu, dosha order: 0 exact

PER QUANTITY

RoxyAPI ritu start: every one of 13 cases within 1.7 seconds of NASA JPL Horizons Sun ingress by the classical season rule, sunrise from the US Naval Observatory (median 1.5).

RoxyAPI ritu end: every one of 13 cases within 1.7 seconds of NASA JPL Horizons Sun ingress by the classical season rule, sunrise from the US Naval Observatory (median 1.6).

RoxyAPI sidereal ritu start: every one of 5 cases within 0.97 seconds of NASA JPL Horizons Sun ingress by the classical season rule, sunrise from the US Naval Observatory (median 0.71).

RoxyAPI sidereal ritu end: every one of 5 cases within 0.85 seconds of NASA JPL Horizons Sun ingress by the classical season rule, sunrise from the US Naval Observatory (median 0.42).

RoxyAPI sunrise: every one of 5 cases within 25.1 seconds of NASA JPL Horizons Sun ingress by the classical season rule, sunrise from the US Naval Observatory (median 9.3).

RoxyAPI sunset: every one of 5 cases within 29.6 seconds of NASA JPL Horizons Sun ingress by the classical season rule, sunrise from the US Naval Observatory (median 27.2).

RoxyAPI next sunrise: every one of 5 cases within 22.2 seconds of NASA JPL Horizons Sun ingress by the classical season rule, sunrise from the US Naval Observatory (median 13.3).

RoxyAPI brahma muhurta start: every one of 5 cases within 25.1 seconds of NASA JPL Horizons Sun ingress by the classical season rule, sunrise from the US Naval Observatory (median 9.3).

RoxyAPI brahma muhurta end: every one of 5 cases within 25.1 seconds of NASA JPL Horizons Sun ingress by the classical season rule, sunrise from the US Naval Observatory (median 9.3).

RoxyAPI day pitta start: every one of 5 cases within 19.8 seconds of NASA JPL Horizons Sun ingress by the classical season rule, sunrise from the US Naval Observatory (median 7.6).

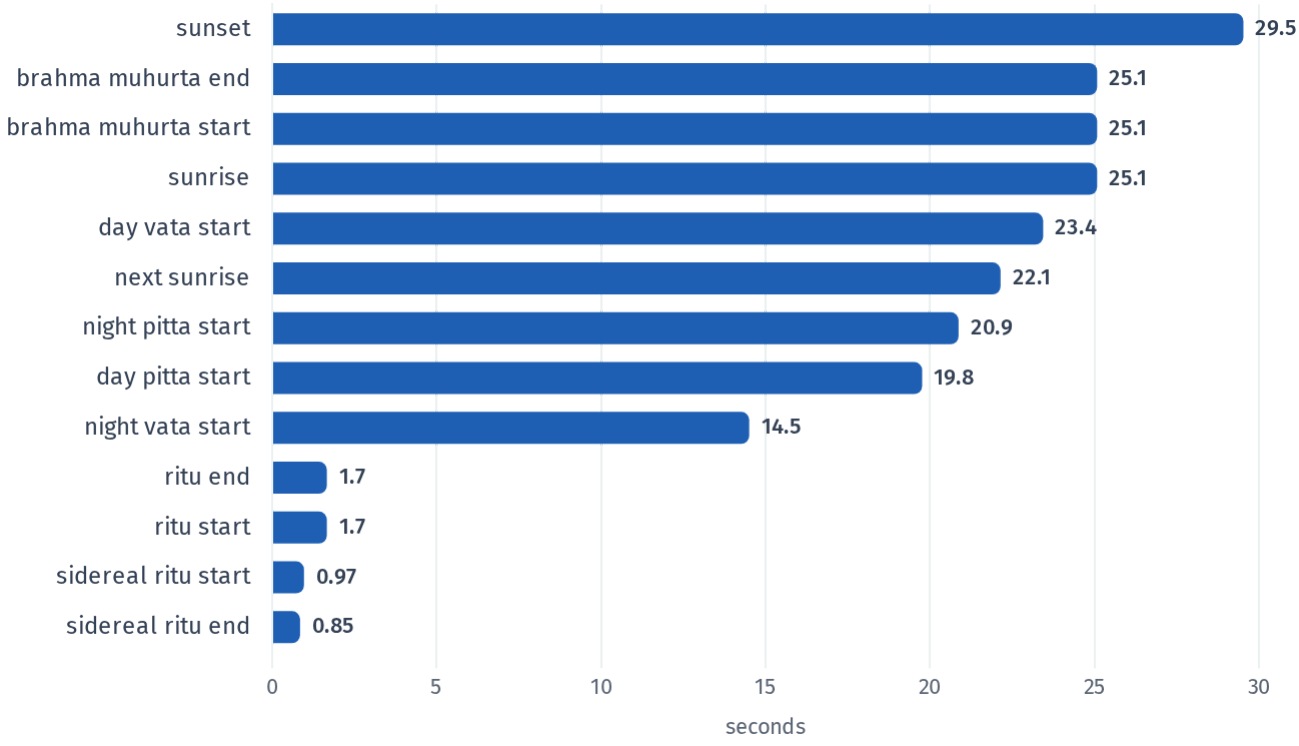
RoxyAPI day vata start: every one of 5 cases within 23.5 seconds of NASA JPL Horizons Sun ingress by the classical season rule, sunrise from the US Naval Observatory (median 16.6).

RoxyAPI night pitta start: every one of 5 cases within 20.9 seconds of NASA JPL Horizons Sun ingress by the classical season rule, sunrise from the US Naval Observatory (median 13.7).

RoxyAPI night vata start: every one of 5 cases within 14.6 seconds of NASA JPL Horizons Sun ingress by the classical season rule, sunrise from the US Naval Observatory (median 5.1).

LARGEST DEVIATION PER QUANTITY, SECONDS

Worst case across every subject. Median 1.7, p95 25.1, max 29.6 seconds.



EXACT

All 24 values match the reference exactly, a deviation of 0 on every case.

All 105 measurements of this domain, case by case, are in roxyapi.github.io/astrology-api-benchmark/latest.csv and roxyapi.github.io/astrology-api-benchmark/latest.json.

DOMAIN 16 OF 17

I Ching

Authority: King Wen sequence, cross-checked against Legge and the Unicode Standard

Covers: King Wen hexagrams and trigrams

`GET /api/v2/iching/hexagrams/lookup` `GET /api/v2/iching/hexagrams/{number}` `GET /api/v2/iching/trigrams/{id}`

306 of 306

Every quantity: 0 exact

EXACT

All 306 values match the reference exactly, a deviation of 0 on every case.

All 306 measurements of this domain, case by case, are in roxyapi.github.io/astrology-api-benchmark/latest.csv and roxyapi.github.io/astrology-api-benchmark/latest.json.

DOMAIN 17 OF 17

Location

24 of 24

Authority: IANA Time Zone Database

Covers: Time zone and UTC offset

`GET /api/v2/location/search`

Every quantity: 0 exact

EXACT

All 24 values match the reference exactly, a deviation of 0 on every case.

All 24 measurements of this domain, case by case, are in roxyapi.github.io/astrology-api-benchmark/latest.csv and roxyapi.github.io/astrology-api-benchmark/latest.json.

APPENDIX

Sources and credits

Reference data crosses into this benchmark with attribution; no third party code or text does.

Western planets

NASA JPL Horizons

`https://ssd.jpl.nasa.gov/api/horizons.api`

Licence	NASA JPL data, public domain US government work; cite Horizons
Retrieved	2026-10-09
Regenerate	`python -m benchmark pull western-planets (OBSERVER table, CENTER 500@399, QUANTITIES 31, one minute step)`
Notes	Sun to Mars use their own Horizons centres. Jupiter to Pluto use the Horizons system barycentres 5 to 9: the planetary ephemeris integrates the system barycentres, while the planet centres come from separate satellite solutions that sit off it by thousands of kilometres.
Covers	Sun, Moon, Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto

NASA JPL Horizons small-body integration

`https://ssd.jpl.nasa.gov/api/horizons.api`

Licence	NASA JPL data, public domain US government work; cite Horizons
Retrieved	2026-10-09
Regenerate	`python -m benchmark pull western-planets (OBSERVER table, CENTER 500@399, QUANTITIES 31, one minute step)`
Covers	Chiron

Western angles and houses

NASA JPL Horizons

`https://ssd.jpl.nasa.gov/api/horizons.api`

Licence	NASA JPL data, public domain US government work; cite Horizons
Retrieved	2026-10-09
Regenerate	`python -m benchmark pull western-angles (OBSERVER tables: QUANTITIES 7 at the birthplace; QUANTITIES 2 and 31 of geocentric bodies)`
Notes	Frame IAU 1976/1980 as Horizons prints it. Charts at or beyond the polar circles are skipped because Placidus is undefined there: tromso_midnight_sun.

Spherical astronomy formulas

Licence	Formulas and definitions only; no text reproduced
Retrieved	2026-10-09
Citation	Jean Meeus, Astronomical Algorithms, first edition, Willmann-Bell, 1991: chapter 12 eq. 12.1 to 12.4 and 12.9, chapter 14 eq. 14.1. Placidus de Titis, Tabulae Primi Mobilis, 1657, for the house definition.
Regenerate	`python -m benchmark pull western-angles`

Vedic sidereal chart

NASA JPL Horizons

`https://ssd.jpl.nasa.gov/api/horizons.api`

Licence	NASA JPL data, public domain US government work; cite Horizons
Retrieved	2026-10-09
Regenerate	`python -m benchmark pull vedic (OBSERVER tables: QUANTITIES 2, 30 and 31 of geocentric bodies; QUANTITIES 7 at the birthplace)`
Covers	Sun, Moon, Mars, Mercury, Jupiter, Venus, Saturn, Lagna, ayanamsa

Lahiri ayanamsa, Calendar Reform Committee definition

`https://archive.org/details/calendar_reform_comittee_report`

Licence	Government of India publication; the definition is cited, no text is reproduced
Retrieved	2026-10-09
Citation	Report of the Calendar Reform Committee, Government of India, Council of Scientific and Industrial Research, 1955: Recommendations for the religious calendar, item 7, pages 7 and 8; general precession, page 209
Covers	Sun, Moon, Mars, Mercury, Jupiter, Venus, Saturn, Lagna, ayanamsa

IERS Conventions 2010, Table 5.3a

`https://iers-conventions.obspm.fr/content/chapter5/additional_info/tab5.3a.txt`

Licence	IERS Conventions (2010), IERS Technical Note 36; data cited
Retrieved	2026-10-09
Regenerate	`python -m benchmark pull vedic (downloads the table on each pull)`
Covers	Sun, Moon, Mars, Mercury, Jupiter, Venus, Saturn, Lagna, ayanamsa

Positional Astronomy Centre, Kolkata

`https://packolkata.imd.gov.in/download/nirlon/nlongitude.htm`

Licence	Government of India data, India Meteorological Department; values cited with attribution
Retrieved	2026-10-09
Covers	Sun, Moon, Mars, Mercury, Jupiter, Venus, Saturn

Brihat Parasara Hora Sastra

`https://archive.org/details/BPHSEnglish`

Licence	Classical text; the rules are cited, no translation text is reproduced
Retrieved	2026-10-09
Citation	Brihat Parasara Hora Sastra, translated by R. Santhanam, Ranjan Publications: chapter 6 sloka 12 (volume 1 page 72) for navamsa, chapter 46 slokas 12 to 16 and notes (volume 2 pages 507 to 509) for nakshatra, pada and the Vimshottari dasha at birth
Covers	Sun nakshatra, Sun pada, Sun navamsa, Moon nakshatra, Moon pada, Moon navamsa, Mars nakshatra, Mars pada, Mars navamsa, Mercury nakshatra, Mercury pada, Mercury navamsa, Jupiter nakshatra, Jupiter pada, Jupiter navamsa, Venus nakshatra, Venus pada, Venus navamsa, Saturn nakshatra, Saturn pada, Saturn navamsa, Lagna nakshatra, Lagna pada, Lagna navamsa, dasha lord, dasha balance

Panchang

NASA JPL Horizons

`https://ssd.jpl.nasa.gov/api/horizons.api`

Licence	NASA JPL data, public domain US government work; cite Horizons
Retrieved	2026-10-09
Regenerate	`python -m benchmark pull panchang (OBSERVER tables: QUANTITIES 30 and 31 of the geocentric Sun and Moon)`
Covers	tithi, yoga, karana

Surya Siddhanta, Burgess translation

`https://archive.org/details/jstor-592174`

Licence	Classical text in an openly digitised 1860 translation; the rules are cited, no text is reproduced
Retrieved	2026-10-09
Citation	Translation of the Surya-Siddhanta, a Text-Book of Hindu Astronomy, by Ebenezer Burgess, Journal of the American Oriental Society, volume 6, 1860: chapter 2 verses 65 to 69 (pages 235 to 238) for yoga, tithi and karana; chapter 1 verse 13 note (page 151) and verses 51 and 52 (pages 175 and 176) for the day counted from sunrise and named for its lord
Covers	tithi, yoga, karana, vara

Lahiri ayanamsa, Calendar Reform Committee definition

`https://archive.org/details/calendar_reform_comittee_report`

Licence	Government of India publication; the definition is cited, no text is reproduced
Retrieved	2026-10-09
Citation	Report of the Calendar Reform Committee, Government of India, Council of Scientific and Industrial Research, 1955: Recommendations for the religious calendar, item 7, pages 7 and 8; general precession, page 209
Covers	yoga

Positional Astronomy Centre, Kolkata

`https://packolkata.imd.gov.in/download/nirlon/nlongitude.htm`

Licence	Government of India data, India Meteorological Department; values cited with attribution
Retrieved	2026-10-09
Covers	tithi, yoga, karana

US Naval Observatory Astronomical Applications API

`https://aa.usno.navy.mil/data/api`

Licence	US Government data, public domain; cite USNO
Retrieved	2026-10-09
Citation	Complete Sun and Moon Data for One Day; rise and set defined at https://aa.usno.navy.mil/faq/RST_defs
Regenerate	`python -m benchmark pull panchang (GET rstt/oneday with date, coords and tz in hours)`
Covers	sunrise

Forecast events

NASA JPL Horizons

`https://ssd.jpl.nasa.gov/api/horizons.api`

Licence	NASA JPL data, public domain US government work; cite Horizons
Retrieved	2026-10-09
Regenerate	`python -m benchmark pull forecast (OBSERVER table, CENTER 500@399, QUANTITIES 31, daily then hourly or ten minute step, root by bisection)`
Notes	Times are UT, kept to the millisecond the search resolves; the seven printed decimals bound them well under a second. Every event is in the past, where Horizons applies measured delta T. The natal point of the exact transit is the Horizons longitude at the birth instant of the chart. Sun to Mars use their own Horizons centres, Jupiter to Pluto the system barycentres, as for the planets.

US Naval Observatory seasons

`https://aa.usno.navy.mil/data/api`

Licence	US Naval Observatory data, public domain US government work
Retrieved	2026-10-09
Regenerate	`python -m benchmark pull forecast (GET /api/seasons?year=YYYY)`
Covers	Sun ingress, Sun ingress, monthly table

Moon phases

U.S. Naval Observatory Astronomical Applications moon phase service

`https://aa.usno.navy.mil/data/api`

Licence	U.S. government work, public domain; cite the Astronomical Applications Department
Retrieved	2026-10-09
Regenerate	`python -m benchmark pull moon-phases (one JSON document per year)`
Notes	The API under test names no time zone for this list and carries no parameter for one, so its dates are compared as Universal Time dates, the zone its sibling phase endpoint documents as its default. Two cases sit within an hour of midnight Universal Time, one on each side, to prove that convention; the others sit at least three hours from it.

Human Design bodygraph

NASA JPL Horizons

`https://ssd.jpl.nasa.gov/api/horizons.api`

Licence	NASA JPL data, public domain US government work; cite Horizons
Retrieved	2026-10-09
Regenerate	`python -m benchmark pull human-design (OBSERVER tables of the geocentric Sun, QUANTITIES 31, one minute windows at whole UT seconds)`
Notes	Horizons puts the Sun at 302 degrees, the start of gate 41, at 2024-01-22 13:17:56 UT, inside the minute Jovian Archive publishes for the Rave New Year.

Introduction to the Human Design System

`https://www.ihdschool.com/resources/free-library`

Licence	Published by the International Human Design School; the rule is cited, no text is reproduced
Retrieved	2026-10-09
Citation	Ra Uru Hu, Introduction to the Human Design System, International Human Design School, free edition: pages 3 and 4, the Design calculation 88 degrees of the movement of the Sun before birth
Covers	design instant, design Sun gate, design Sun line, design Earth gate, design Earth line

Jovian Archive

`https://jovianarchive.com/blogs/transits-global-cycles/the-rave-new-year-stage-1-and-2`

Licence	Jovian Archive publication; facts cited, no text reproduced
Retrieved	2026-10-09
Covers	personality Sun gate, personality Sun line, personality Earth gate, personality Earth line, design Sun gate, design Sun line, design Earth gate, design Earth line, profile

Human Design Gates by Zodiac Degrees

`https://bonniesorsby.com/human-design-gates-by-degree/`

Licence	Published table; the degree of each gate is cited as a fact
Retrieved	2026-10-09
Covers	personality Sun gate, personality Sun line, personality Earth gate, personality Earth line, design Sun gate, design Sun line, design Earth gate, design Earth line

Chinese calendar

Hong Kong Observatory Gregorian-Lunar calendar conversion table

https://www.hko.gov.hk/en/gts/time/conversion.htm

Licence	Hong Kong Government open data: free to reproduce for commercial and non-commercial use with attribution to the Government and DATA.GOV.HK
Retrieved	2026-10-09
Regenerate	`python -m benchmark pull chinese-calendar (one text file per year)`
Notes	The tables publish dates, so the unit is days. The Observatory states that an event close to midnight can differ by one day for decades ahead; the listed years avoid its named cases. Each file header also names the year pillar of the lunar year.
Covers	bai-lu, chu-shu, chun-fen, da-han, da-shu, da-xue, dong-zhi, gu-yu, han-lu, jing-zhe, li-chun, li-dong, li-qiu, li-xia, mang-zhong, qing-ming, qiu-fen, shuang-jiang, xia-zhi, xiao-han, xiao-man, xiao-shu, xiao-xue, yu-shui, lunar_new_year, year_pillar, month_pillar

Sexagenary cycle

https://en.wikipedia.org/wiki/Sexagenary_cycle

Licence	Calendar definition, facts only; the page is CC BY-SA
Retrieved	2026-10-09
Covers	day_pillar, hour_pillar, year_pillar, month_pillar

Ganzhi

https://zh.wikipedia.org/wiki/干支

Licence	Calendar definition, facts only; the page is CC BY-SA
Retrieved	2026-10-09
Covers	day_pillar

Feng shui

Xieji Bianfang Shu

https://zh.wikisource.org/wiki/欽定協紀辨方書_(四庫全書本)

Licence	Public domain text, compiled 1739 to 1741; rules only
Retrieved	2026-10-09
Citation	Qinding Xieji Bianfang Shu, compiled by Yunlu, Mei Gucheng, He Guozong and others by imperial order, 1739 to 1741, Siku Quanshu edition. Juan 35 (appendix), the section on the nine palaces of men and women: the Kua rule for both sexes. Juan 8, the table of the year star entering the centre and its worked plate for the jiazi year 1684: the annual centre star, the era anchor and the Lo Shu flight path. Juan 34, the note on building works between Da Han and Li Chun: the year spirits change at Li Chun
Regenerate	`python -m benchmark pull feng-shui (rules recomputed)`
Notes	The text records that an older almanac shifted the eras by one and was corrected by imperial order in 1717; this domain follows the corrected reading, which the other two printed sources share. Its year star table is transcribed as a cross check.
Covers	kua, raw_kua, annual_center, annual_northwest, annual_west, annual_northeast, annual_south, annual_north, annual_southwest, annual_east, annual_southeast

Gujin Tushu Jicheng, Yangzhai Shishu

https://zh.wikisource.org/wiki/欽定古今圖書集成/博物彙編/藝術典/第675卷

Licence	Public domain text, printed 1726; values only
Retrieved	2026-10-09
Citation	Qinding Gujin Tushu Jicheng, 1726, Bowu section, Yishu canon, juan 675, Kanyu part 25: Yangzhai Shishu, chapter 2 on the Fu Yuan, the rule for starting men and women in the three eras, and the table of the Fu De palace for every year of the three jiazi eras
Notes	Convention chosen where schools differ: the printed era count, not the modern shortcut that sums the last two digits of the year. The two agree from 1900 to 2099 only, because 100 is not a multiple of 9; the 2100 case is where they part. A raw 5 lodges at 2 for a man and at 8 for a woman, as printed here.
Covers	kua, raw_kua

Shen Shi Xuan Kong Xue

https://www.diancangwang.cn/xuanxuewushu/f6f37803664b/90b563d9cb41.html

Licence	Public domain text, author died 1906, first printed 1925; rules only
Retrieved	2026-10-09
Citation	Shen Zhureng, Shen Shi Xuan Kong Xue, edited by Shen Zumian, first edition 1925, revised edition 1933, juan 4: the palm rule for placing stars on the nine palaces and the nine period star table of the 24 mountains; the same juan names 1864 as the year the upper era opened
Notes	Facing is named as one of the 24 mountains, so every chart is the down gua chart; the substitute charts for a bearing near a mountain edge are out of scope. Three rows of the readable transcript print a flight that the verdict on the same row contradicts (mao sitting period 4, you sitting period 1, xun sitting period 6) and are left out of the cross checks.
Covers	period_center, period_northwest, period_west, period_northeast, period_south, period_north, period_southwest, period_east, period_southeast, mountain_center, mountain_northwest, mountain_west, mountain_northeast, mountain_south, mountain_north, mountain_southwest, mountain_east, mountain_southeast, water_center, water_northwest, water_west, water_northeast, water_south, water_north, water_southwest, water_east, water_southeast, mountain_flight, water_flight

Hong Kong Observatory Gregorian-Lunar calendar conversion table

https://www.hko.gov.hk/en/gts/time/conversion.htm

Licence	Hong Kong Government open data: free to reproduce for commercial and non-commercial use with attribution to the Government and DATA.GOV.HK
Retrieved	2026-10-09
Regenerate	`python -m benchmark pull feng-shui (one text file per year)`
Notes	Day granular printed charts that count the whole Li Chun day as the new year differ from this convention on that one day; the lichun-day case pins it. The 2025 case catches a boundary assumed fixed on 4 February.
Covers	solar_year, boundary_date, changeover_date

Mesoamerican calendar

GMT correlation definition

https://en.wikipedia.org/wiki/Mesoamerican_Long_Count_calendar

Licence	Calendar definition, facts only; the page is CC BY-SA
Retrieved	2026-10-09
Citation	Fliegel and Van Flandern, A machine algorithm for processing calendar dates, Communications of the ACM 11 (10), 1968, p. 657
Regenerate	`python -m benchmark pull mesoamerican-calendar`
Notes	Dates are proleptic Gregorian for every year. A converter that reads dates before 15 October 1582 as Julian differs by ten or eleven days.

FAMSI date converter

https://research.famsi.org/date_mayaLC.php

Licence	Published tool output, values only
Retrieved	2026-10-09
Covers	long_count, tzolkin_sign, tzolkin_number, haab_month, haab_day

Vastu

Varahamihira, Brihat Samhita, translated by N. Chidambaram Iyer

https://archive.org/details/b29353130

Licence	Public domain translation, Madura, 1884; values only
Retrieved	2026-10-09
Citation	Varahamihira, The Brihat Samhita, translated into English by N. Chidambaram Iyer, Madura, South Indian Press, 1884, chapter 53 (the sixth chapter of the volume part on architecture), verses 42 to 45 for the squares and 71 to 75 for the effects
Regenerate	`python -m benchmark pull vastu`
Notes	The effect word is a reading of the verse: gain, harm, or mixed where the verse names both or neither. It is asserted only where the Iyer and Kern translations agree on it.
Covers	side, ordinal_on_side, pada, square, effect_category

Kern, Verspreide Geschriften vol. 2

https://archive.org/details/in.gov.ignca.10715

Licence	Public domain translation, The Hague, 1913; values only
Retrieved	2026-10-09
Citation	Hendrik Kern, translation of the Brhat Sanhita of Varahamihira, in Verspreide Geschriften vol. 2, The Hague, 1913, chapter 53, verses 71 to 75
Covers	effect_category

Numerology

Pythagorean numerology rules

https://www.worldnumerology.com/numerology-life-path/

Licence	Published rules, facts only; no text is copied
Retrieved	2026-10-09
Regenerate	`python -m benchmark pull numerology`
Notes	Practitioners split on whether Y is a vowel by its sound and on whether a name is summed whole or part by part. This reference follows the part by part method and reads Y as a consonant.

Hans Decoz worked examples

https://www.worldnumerology.com/numerology-expression/

Licence	Published worked examples, results only
Retrieved	2026-10-09
Covers	life_path, expression, soul_urge

Kabbalah

Mispar Hechrachi letter table

https://en.wikipedia.org/wiki/Gematria

Licence	Letter values, facts only; the page is CC BY-SA
Retrieved	2026-10-09
Regenerate	`python -m benchmark pull kabbalah`
Notes	Final letters in Mispar Hechrachi take the regular value: the page states that the final forms are given their own values from 500 to 900 only in Mispar Gadol.
Covers	mispar_hechrachi, mispar_gadol

Dershowitz and Reingold, Calendrical Calculations

https://www.cambridge.org/core/books/calendrical-calculations/B897CA3260110348F1F7D906B8D9480D

Licence	Published algorithm, recomputed; no text or code copied
Retrieved	2026-10-09
Citation	Dershowitz and Reingold, Calendrical Calculations, Cambridge University Press, chapter 8 The Hebrew Calendar
Notes	Dates are proleptic Gregorian for every year.
Covers	hebrew_year, month_number, day, leap_year

Hebcal date converter

https://www.hebcal.com/converter

Licence	Published tool output, values only
Retrieved	2026-10-09
Covers	hebrew_year, month_number, day, leap_year

Biorhythm

Cleve Moler, Biorhythms, MathWorks blog

https://blogs.mathworks.com/cleve/2012/06/11/biorhythms-2/

Licence	Published definition, facts only, cited
Retrieved	2026-10-09
Regenerate	`python -m benchmark pull biorhythm`
Notes	The day count is the difference of two calendar dates, with no time of day and no time zone. Only the three primary cycles carry a published period, so no other cycle is checked.

US Patent 4,240,153, Biorhythm display device, USPTO

https://patents.google.com/patent/US4240153A/en

Licence	US government patent record, facts only, cited
Retrieved	2026-10-09
Covers	days_since_birth

Ayurveda

NASA JPL Horizons

https://ssd.jpl.nasa.gov/api/horizons.api

Licence	NASA JPL data, public domain US government work; cite Horizons
Retrieved	2026-10-09
Regenerate	`python -m benchmark pull ayurveda (OBSERVER table of the Sun, CENTER 500@399, QUANTITIES 31, hourly step around each season edge, root by bisection)`
Notes	Times are UT to the millisecond the search resolves. Every instant is in the past, where Horizons applies measured delta T.
Covers	ritu, sidereal ritu, southern ritu, ritu start, ritu end, sidereal ritu start, sidereal ritu end

Sushruta Samhita, Bhishagratna translation

https://archive.org/details/india.history.resource.92776

Licence	Classical text in an openly digitised 1907 translation; the rules are cited, no text is reproduced
Retrieved	2026-10-09
Citation	An English Translation of the Sushruta Samhita, Kaviraj Kunja Lal Bhishagratna, Calcutta 1907, volume 1, Sutrasthana chapter VI (pages 43 and 44): the twelve months from Magha in six seasons of two, and thirty muhurtas to the day and night
Covers	ritu, sidereal ritu, southern ritu, ritu start, ritu end, sidereal ritu start, sidereal ritu end, brahma muhurta start, brahma muhurta end

Charaka Samhita, Sutrasthana 6

https://archive.org/details/GabrielVanLoonCharakaSamhitaVol1Eng

Licence	Cited for the rule only; no text is reproduced
Retrieved	2026-10-09
Citation	Charaka Samhita, Handbook on Ayurveda Volume I, edited by Gabriel Van Loon, 2002 to 2003, after P. V. Sharma: Sutrasthana 6.3 and 6.4, the six seasons and the northward course from sisira to grisma against the southward course from varsa to hemanta
Covers	ritu, sidereal ritu, southern ritu, ritu start, ritu end, sidereal ritu start, sidereal ritu end

Surya Siddhanta, Burgess translation

https://archive.org/details/TranslationOfTheSuryaSiddhanta

Licence	Classical text in an openly digitised 1860 translation; the rule is cited, no text is reproduced
Retrieved	2026-10-09
Citation	Translation of the Surya-Siddhanta, a Text-Book of Hindu Astronomy, by Ebenezer Burgess, Journal of the American Oriental Society, volume 6, 1860: chapter 1 verse 13, a solar month is determined by the entrance of the Sun into a sign of the zodiac
Covers	ritu start, ritu end, sidereal ritu start, sidereal ritu end

Lahiri ayanamsa, Calendar Reform Committee definition

https://archive.org/details/calendar_reform_comittee_report

Licence	Government of India publication; the definition is cited, no text is reproduced
Retrieved	2026-10-09
Citation	Report of the Calendar Reform Committee, Government of India, 1955, recommendations for the religious calendar, item 7, pages 7 and 8
Covers	sidereal ritu, sidereal ritu start, sidereal ritu end

Positional Astronomy Centre, Kolkata

https://packolkata.imd.gov.in/download/nirlon/nlongitude.htm

Licence	Government of India data, India Meteorological Department; values cited with attribution
Retrieved	2026-10-09
Covers	sidereal ritu start, sidereal ritu end

US Naval Observatory seasons

https://aa.usno.navy.mil/data/api

Licence	US Naval Observatory data, public domain US government work
Retrieved	2026-10-09
Covers	ritu start, ritu end

Ashtanga Hridaya, Sutrasthana 1.8

https://archive.org/details/Ashtanga.Hridaya.of.Vagbhata

Licence	Classical text in an openly digitised edition; the rule is cited, no text is reproduced
Retrieved	2026-10-09
Citation	Ashtanga Hridaya of Vagbhata, Sanskrit with two commentaries, as digitised: Sutrasthana 1.8, the humours hold the end, the middle and the beginning of the day, the night and digestion; Sutrasthana 2.1, rising in the brahma muhurta
Covers	brahma muhurta start, brahma muhurta end, day pitta start, day vata start, night pitta start, night vata start, dosha order

US Naval Observatory Astronomical Applications API

https://aa.usno.navy.mil/data/api

Licence	US Government data, public domain; cite USNO
Retrieved	2026-10-09
Citation	Complete Sun and Moon Data for One Day; rise and set defined at https://aa.usno.navy.mil/faq/RST_defs
Regenerate	`python -m benchmark pull ayurveda (GET rstt/oneday with date, coords and tz in hours)`
Covers	sunrise, sunset, next sunrise, brahma muhurta start, brahma muhurta end, day pitta start, day vata start, night pitta start, night vata start

I Ching

List of hexagrams of the I Ching

https://en.wikipedia.org/wiki/List_of_hexagrams_of_the_I_Ching

Licence	King Wen sequence, facts only; the page is CC BY-SA
Retrieved	2026-10-09
Regenerate	`python -m benchmark pull i-ching`
Notes	The sequence is a published table with no formula. Only casts that give the line values directly are measured: the casting endpoints draw their lines from a seed, so their output has no independent reference.
Covers	hexagram_lines, hexagram_lower_trigram, hexagram_upper_trigram, primary_hexagram, primary_lower_trigram, primary_upper_trigram, relating_hexagram

The Unicode Standard, trigram and hexagram blocks

https://www.unicode.org/charts/PDF/U4DC0.pdf

Licence	Unicode character names and order, public specification
Retrieved	2026-10-09
Covers	trigram_lines, hexagram_symbol

Legge, The Yi King, Sacred Books of the East vol. 16

https://archive.org/details/mlbd.sacredbooksofeas0000fmax.vol.16

Licence	Public domain translation, Oxford, 1899; values only
Retrieved	2026-10-09
Citation	James Legge, The Yi King, Sacred Books of the East vol. 16, Oxford, 1899, Appendix II and Appendix V
Covers	primary_hexagram, relating_hexagram

Location

IANA Time Zone Database

https://www.iana.org/time-zones

Licence	Public domain
Retrieved	2026-10-09
Regenerate	`uv run python -m benchmark pull location`
Notes	Places are pinned by name, country code and province, never by name alone. The stored utc_offset is the offset on the pull date and is replaced by the scheduled offset at the run instant.