VENI VIDI VICI

presents the first and only watch that unveils the subtle dance of the Sun and the Earth.

THORVAH
PV

Inventing what no one has created

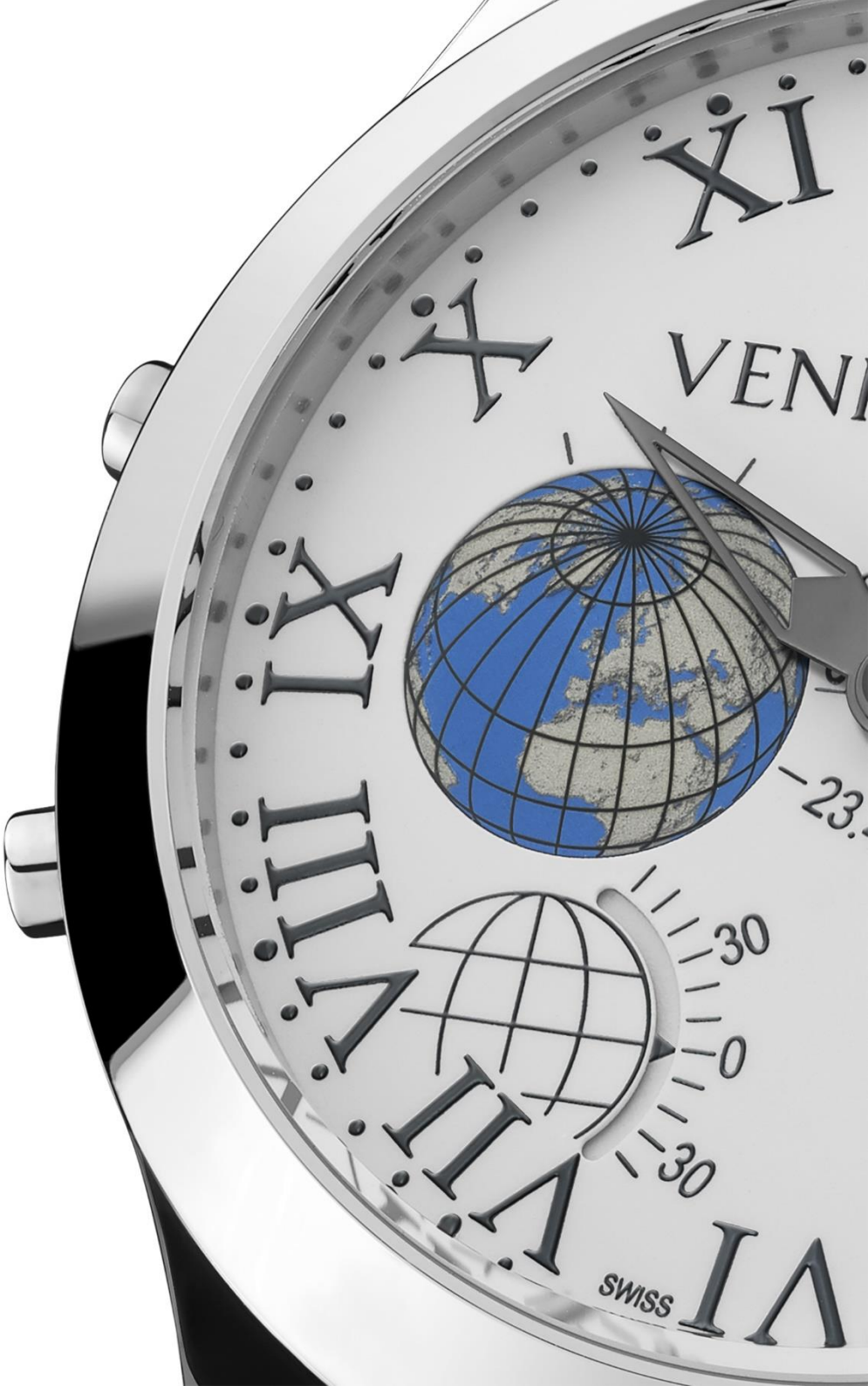
Designing a mechanism to describe the astronomical phenomena of the Earth's race around the Sun is an exercise that has never been done.

The challenge is to imagine a complication that shows which hemisphere of the Earth is illuminated by the Sun and also the height of the Sun at noon for each day of the year and that this watch is universal.

The idea of designing a mechanism to visualize the evolution of the solar declination and the height of the Sun at noon took 11 years for

Jean-Pierre Horvath, the inventor of the complication, with the objective of facilitating the understanding of the effects of the movement that the Earth makes around its star, the Sun.

THORVAH is the name of the collection and the model reference is PV.



The aesthetics

It is rare to be able to start from a blank sheet of paper and surprise lovers and collectors of fine watchmaking.

Jean-Pierre Horvath designed the complication and designed the watch with simplicity in mind so that the information can be read and understood with ease in a natural logic and harmony; each counter and indicator finds its place with balance and symmetry.

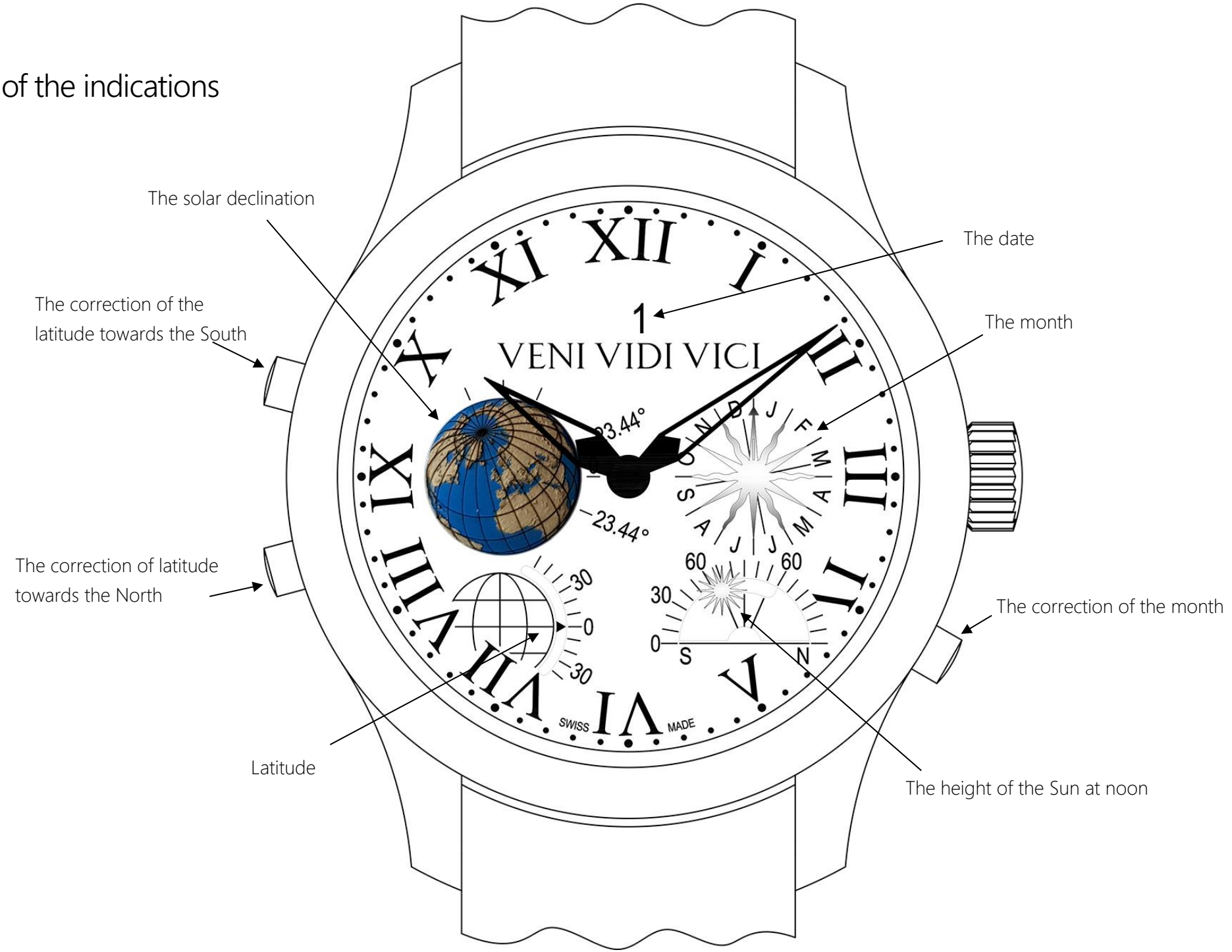
Attention to detail

Particular care has been taken to ensure that the person returning the watch is surprised.

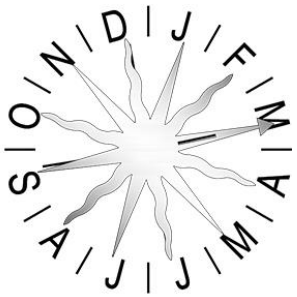
On the background, translucent hybrid ceramic covers the laser-textured laurel leaves in colour.

The golden colour at the bottom of the VENI VIDI VICI engraving is not a galvanic deposit or a lacquer, it is a laser colouring and structuring that reproduces the diffraction phenomenon as on the wings of certain butterflies.

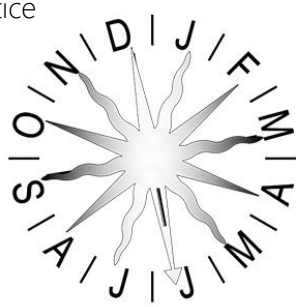
Description of the indications



Spring equinox

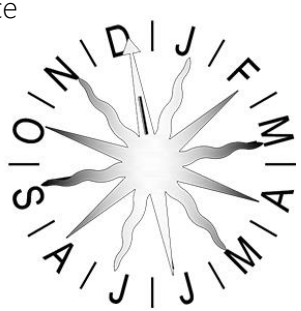


Summer solstice



Autumnal equinox

Winter solstice



The functioning of solar declination

The hand of the month is represented by a Sun that will illuminate the Earth.

A radius has an arrowhead that indicates the period of the month and an opening that shows the alignment with the equinox and solstice indication marks on the dial.

The shape of this hand is inspired by the Sun drawn on the dial of the clock of the Geneva City Hall.

The mechanism faithfully reproduces the evolution of the solar declination, the Earth will oscillate on its axis by 23.44°.

The Earth

The mechanism faithfully reproduces the evolution of the solar declination, the Earth will oscillate on its axis by 23.44°.

The Earth is a curved surface on which the relief of the continents is visible while it is only 9.5 mm in diameter, a technical feat.

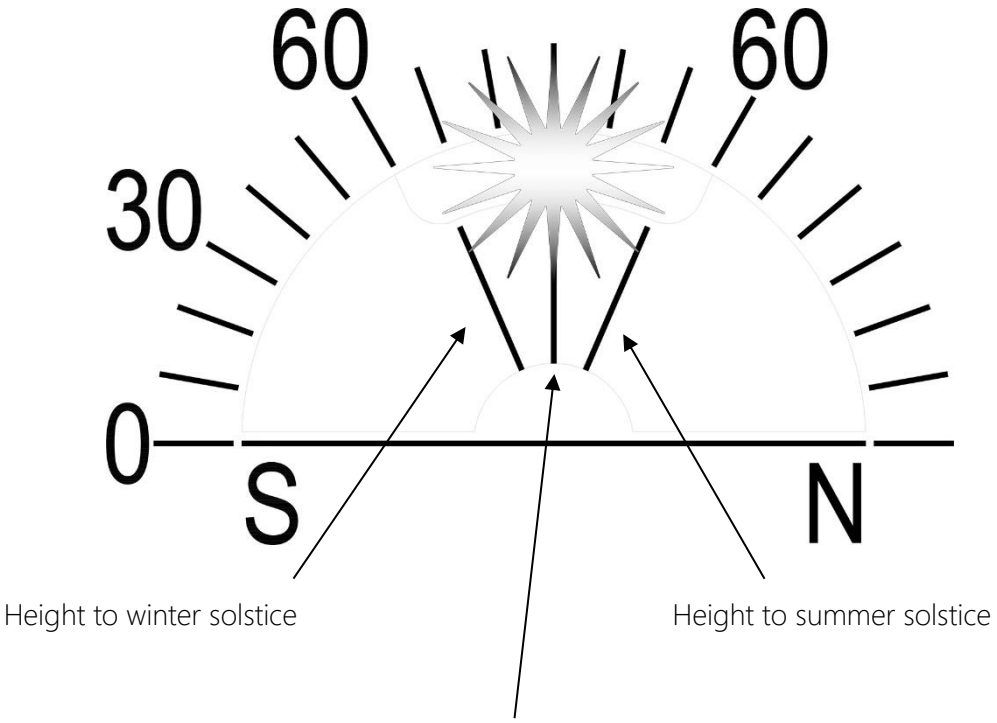
The realization of the planisphere consists of a 2.5D texturization entirely engraved with laser, gold for the Earths and galvanic treatment PVD blue for the oceans, a bi-color realized by laser ablation.

Different versions of the planisphere are available: the one presented is intended for European customers. The versions for the Near East, Far East and North America are available. Other orientations can be carried out at the customer's request.

There was nonsense in hiding the part of the Earth that is in the shadows; it is the only concession where aesthetic criteria have prevailed over physical reality.

This side is in the shadows

This face is illuminated by the Sun



The functioning of the height of the Sun

Every day the Sun appears above the horizon to the east, at about noon it will reach the top of its course in the sky and then disappears below the horizon to the west.

This height depends on the day of the year and the place of observation.

For a given latitude, the height of the Sun evolves between two positions represented by the solstices.

Depending on the latitude, the maximum or minimum height takes place on different dates.

The Sun is at its zenith twice a year at the meridian crossing for latitudes between 23.44° N and 23.44° S.

For latitudes above 23.44°, the height of the Sun is always less than 90°.

The change in latitude

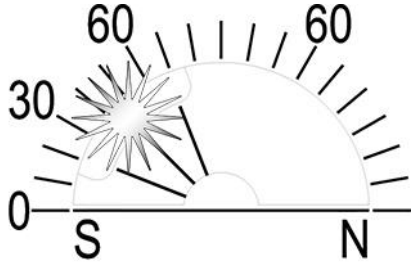
Two push-buttons on the left side of the watch change the latitude; pressing the lower push-button changes the latitude to the north and the upper push-button changes the latitude to the south in 5° steps, which changes the indication of the height of the Sun.

When the latitude changes, the Sun and the disc with the solstices and equinoxes are moving together.

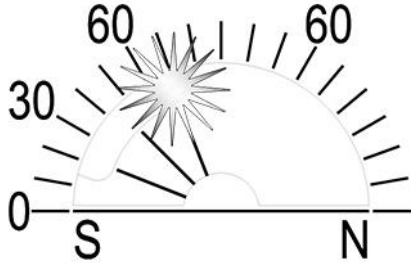
The mechanism is designed for latitudes between 40° South and 60° North.

At 45° north latitude, the Sun reaches a maximum height of 68.44° at the summer solstice and a minimum height of 21.56° at the winter solstice as shown opposite.

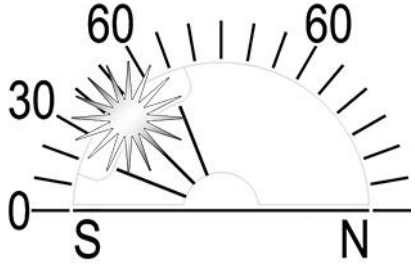
Spring equinox



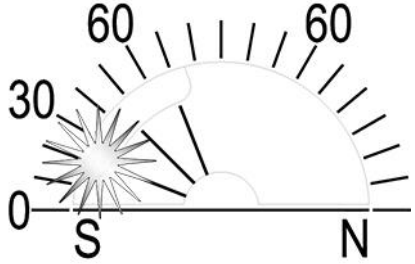
Summer solstice



Autumnal equinox



Winter solstice



Limited edition

The THORVAH PV model is available in a limited edition of 100 pieces in 316 L stainless steel.

The experienced amateur and the collector know the rarity of these models and the guarantee of the investment they represent.

Exclusive watch, exclusive service

To acquire a VENI VIDI VICI watch is to opt for an exceptional timepiece, worthy of the heir to exceptional ancestral watchmaking know-how and a passion for fine, high quality watchmaking.

VENI VIDI VICI, only for this model, favours direct sales.

The inventor, Jean-Pierre Horvath, is your privileged interlocutor to try the complication, explain you its functioning and specificities and answer your questions.

Glossary of terms

Complication: Display on the dial of a function other than the hour and minutes

Solar declination: Angle between the Earth's axis and the Sun's axis.

Meridian: An imaginary circle passing through the two terrestrial poles.

Zenith: Point of the sky located vertically above the observer.

To get an idea of the proportions of the solar system, consult

http://joshworth.com/dev/pixelspace/pixelspace_solarsystem.html.

Description of the physical phenomenon

Man has always observed the sky in order to orient himself, to measure time and to predict the future.

In the night sky, all the stars cross the sky except for a few luminous points that move at their own pace, these are the five planets that can be perceived with the naked eye: Mercury, Venus, Mars, Jupiter and Saturn.

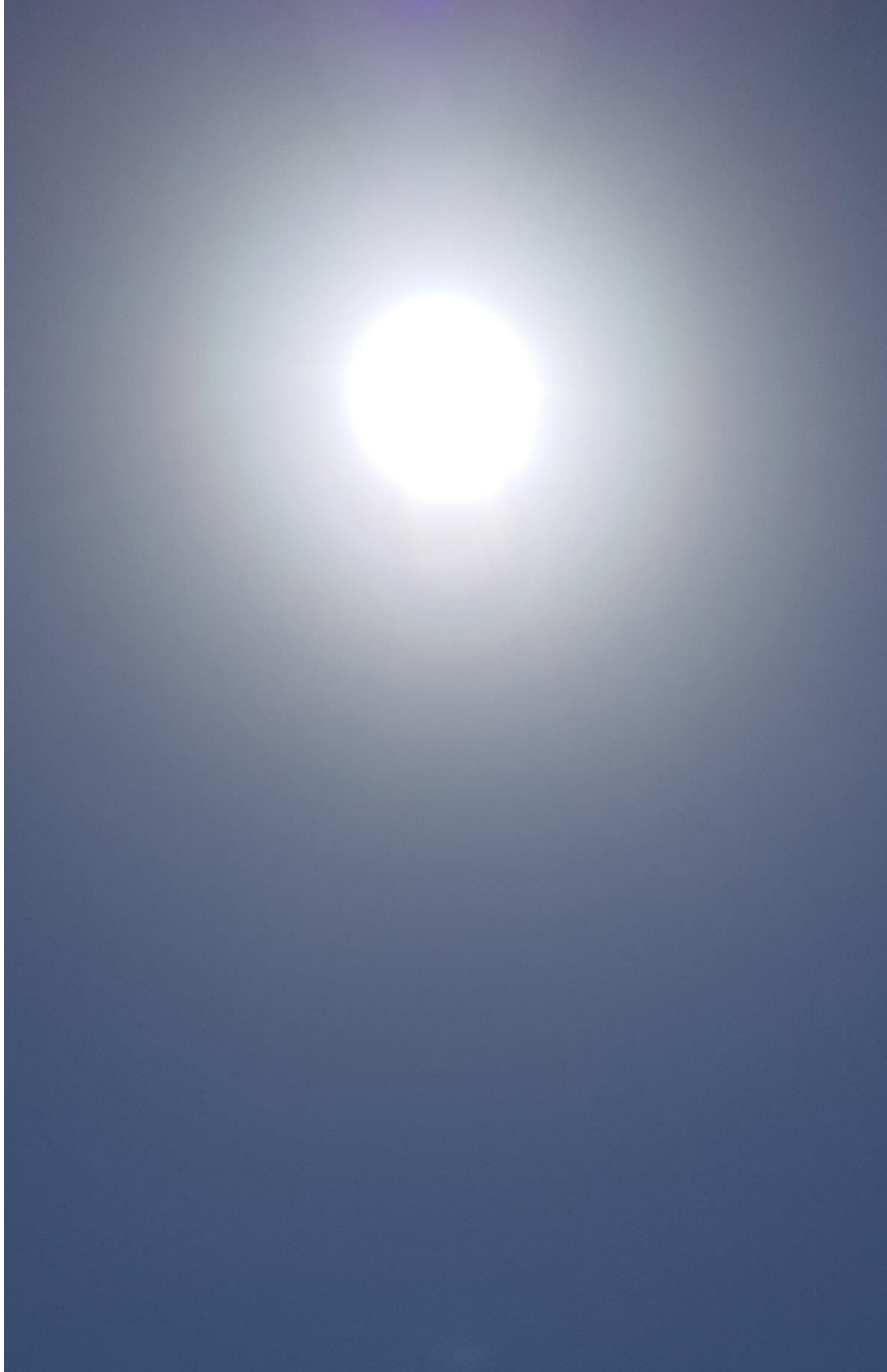
To explain the world, Man has invented mechanisms to better understand it and above all to be able to explain how astronomical phenomena are realized.

The oldest known mechanism is the Anticythera machine.

While mechanical clocks were invented less than 100 years ago, between 1348 and 1364; Giovanni Dondi manufactured the first astronomical and planetarium clock: the Astrarium which models the solar system.

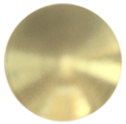
Many astronomical phenomena have also been realized using clock mechanisms such as the phases of the Moon, the equation of time, the sunrise and sunset times, etc.

While the Sun was present on the clocks of the oldest bell towers, the watchmakers forgot it and it disappeared; VENI VIDI VICI puts the star of the day back on the dial and restores it to its rightful place.



Spring equinox

Summer solstice



Winter solstice

Autumnal equinox

A complex relationship

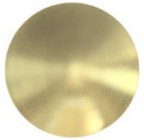
The Earth revolves around the Sun and on itself; however, the Earth's axis is not parallel to the Sun's axis, it always points towards the North Star. It is the existence and maintenance of this natural inclination that causes the planet to move in its orbit, the succession of seasons.

This phenomenon is experienced by every inhabitant of the Earth on a daily basis. Yet few people can easily explain how the Earth and the Sun interact.

The Earth orbits the Sun at an average distance of about 150 million kilometres over a period of 365.2564 days.

To estimate the dimensions of the Earth-Sun system, it is necessary to imagine that the Earth is a 1 centimeter (0.01 meter) marble, it rotates at a distance of 11 719 centimeters (117.19 meters) around the Sun which measures 109 centimeters (1.09 meter).

The light (300 000 km/s) takes about 8 minutes and 20 seconds to travel the distance between the Sun and the Earth.



The physical phenomenon

During the Earth's journey around the Sun, the angle between the Earth's axis and the Sun's axis changes, it is the solar declination.

At the equinoxes, the axes are parallel, the declination value is 0°.

At the summer solstice, the Earth axis and the Sun axis form an angle of 23.44° while at the winter solstice, the positions of the axes are inverted and the angle is -23.44°.

The constancy of the orientation of the Earth's axis produces singular astronomical events: the equinoxes and solstices which also determine the seasons in the European tradition.

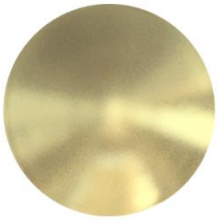
At the equinoxes, the duration of day and night are equal throughout the Earth, the Sun rises almost exactly to the east and sets almost exactly to the west. At the equator, the height of the Sun at noon will be at its zenith.

At the summer solstice, the Sun is the highest above the horizon in the Northern Hemisphere, it is the longest day and the Sun does not set at the North Pole. In the Southern Hemisphere, it is the southern winter.

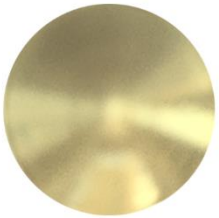
At the winter solstice, the Sun is the lowest above the horizon in the Northern Hemisphere, it is the shortest day. At the North Pole, the Sun does not rise.

The modification of the angular height of the Sun in the sky at noon during the passage of the meridian is another effect that every Man experiences on a daily basis. A height that varies throughout the year and depends on the location of observation.

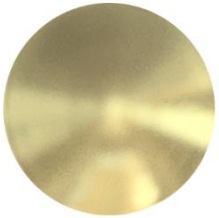
Spring equinox



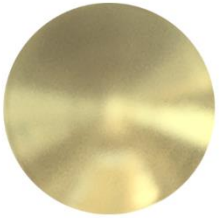
Summer solstice



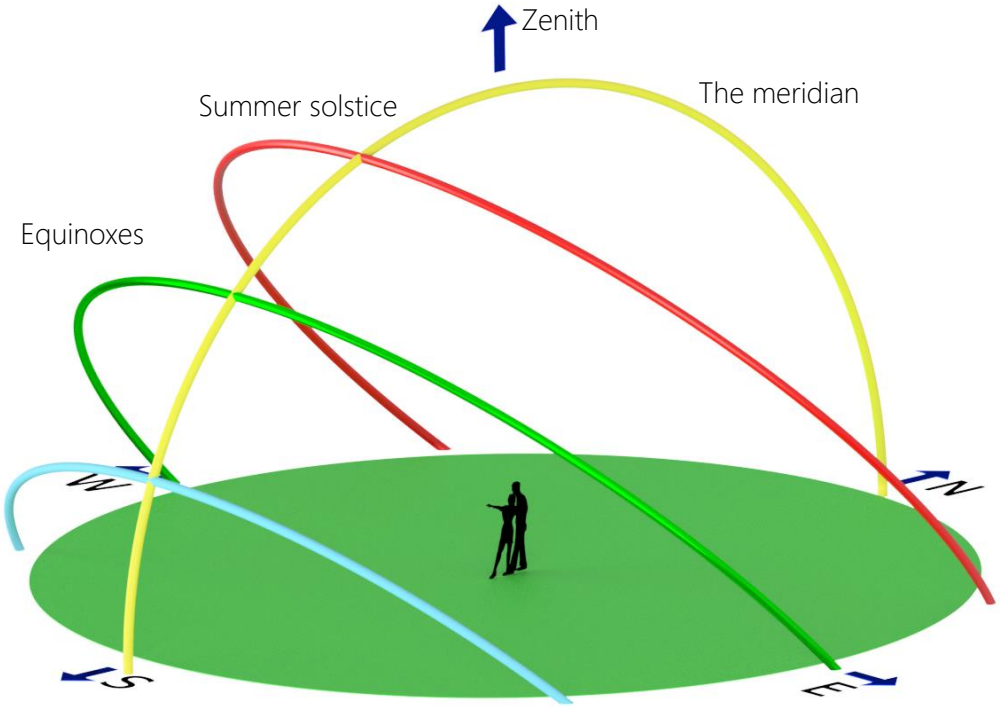
Autumnal equinox



Winter solstice



The sun's path at 45° N



Winter solstice

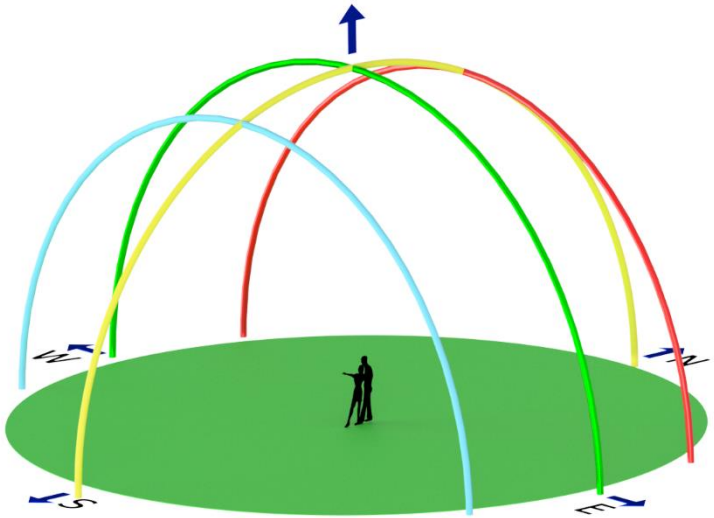
The course of the sun

The equinoxes determine the beginning of spring and autumn. This is the time when the day is equal to the night, 12 hours each. It is also the only time when the Sun passes at its zenith for a person on the equator.

At the summer solstice, the Sun reaches the maximum height for all people living above the Tropic of Cancer, it is the minimum height for a person living at the equator and in the southern hemisphere.

On the other hand, at the winter solstice, the Sun reaches the minimum height for all people living above the Tropic of Cancer, this will once again be the minimum height for a person living at the equator and the maximum height beyond the Tropic of Capricorn in the Southern Hemisphere.

The course of the sun at the equator



The seasons

The Earth does not rotate at a constant speed around the Sun, which means that the time to go from a solstice to an equinox and so on is not constant, so the seasons do not have the same duration. The duration of the seasons is currently as follows:

Seasons (northern hemisphere)	Current duration
Spring	92 days 19 hours
Summer	93 days 23 hours
Autumn	89 days 13 hours
Winter	89 days 0 hour

The calendar

The Gregorian calendar has a duration of 365.2425 days, its purpose is among other things to be as close as possible to the tropical year (365.2422 days) and to keep the dates of the seasons fixed in the calendar year.

Since the duration of the seasons is variable and in order for the solstices and equinoxes to be in relation to fixed dates, the duration of the months is chosen so that the dates of the equinoxes and solstices return almost to the same dates.

For the 21st century, the equinoxes and solstices are distributed as follows:

Number of spring equinoxes

March 19th	March 20th	March 21th
20	78	2

Number of summer solstices

June 20th	June 21th
47	53

Number of autumn equinoxes

September 21th	September 22th	September 23th
2	76	22

Number of winter solstices

December 20th	December 21th	December 22th
5	82	13

Contact VENI VIDI VICI :

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