



2022: THE STELLAR ODYSSEY

JAEGER-LECOULTRE CELEBRATES THE LINKS BETWEEN COSMIC PHENOMENA, THE ORIGINS OF TIMEKEEPING AND HOROLOGICAL INNOVATION

In 2022, Jaeger-LeCoultre embarks on a Stellar Odyssey, paying homage to the astronomical phenomena that lie at the origins of time measurement. For La Grande Maison, such phenomena have deep significance, not only because the movement of the planets and stars is fundamental to the measuring of time, but also because its home is in the Vallée de Joux, where the exceptionally clear night sky is ideal for observing the celestial events that inspire the Manufacture's watchmakers.

In the beginning, the movements of the planets and stars were used to measure the passing of time; later, these measurements governed the way that clock and watch mechanisms were structured; and now, talented watchmakers of the current generation are reinterpreting astronomical phenomena, capturing them in the form of intricate complications to be worn on the wrist.

Since the earliest days of the Manufacture, astronomical functions have played a major role in Jaeger-LeCoultre's portfolio of complicated timepieces. Mastering all three measures of time – solar, lunar and sidereal – the watchmakers of La Grande Maison have perpetually innovated to create the most advanced and precise mechanisms that represent or even predict celestial phenomena. In 2022 an array of new celestial watches takes the spotlight, honouring this noble legacy and expressing almost 190 years of accumulated expertise in new ways. As well as celebrating the beauty of these timepieces, this stellar odyssey is a direct reminder of the origins of time measurement and the very foundation of horology.

A Stellar Odyssey

Starting in 2022, the Stellar Odyssey of Jaeger-LeCoultre becomes a literal journey as La Grande Maison hosts themed events around the globe – an invitation for clients and the general public alike to discover how the mysteries of the cosmos are translated into micro-mechanical wonders for the wrist. The Stellar Odyssey exhibition will make its debut at Watches & Wonders in March, before embarking on a world tour. As well as tracing the story of time and unveiling Jaeger-LeCoultre's newest celestially-inspired timepieces, the exhibition features immersive multi-media installations that will take visitors on a virtual journey to the cosmos. At the Atelier d'Antoine, the 2022 programme of hands-on Discovery Workshops will focus on the wonder of astronomical complications and the celestial origins of time-



keeping. Completing these experiences, for the latest in its series of collaborations with artisan-creators from other disciplines, Jaeger-LeCoultre has commissioned the renowned mixologist Matthias Giroud to create a menu of superlative cocktails inspired by the cosmos and featuring flavours from the Vallée de Joux.

“This year, the Stellar Odyssey will continue the Manufacture’s journey around the world, sharing not only our creations that are inspired by the celestial theme, but also translating the wonders of the celestial world into art installations and immersive experiences. The Atelier d’Antoine will bring a new aspect to the transmission of watchmaking know-how with the introduction of a new educational workshop based on the Stellar Odyssey theme.” Catherine Rénier, Jaeger-LeCoultre CEO

The Origins of Time

Very early, mankind observed that certain natural phenomena appeared at regular intervals, and our first awareness of the passing of time was the transition from darkness to light as the Sun moved across the sky. The desire to measure this passage of time emerged as a consequence of daily routines – hunting, harvesting, eating, sleeping and socialising – naturally following this solar cycle.

The ancient Egyptians and Babylonians developed sundials, dividing daylight into 12 equal parts as the shadow cast by an upright object (gnomon) moved across a marked scale. Then they divided darkness into 12 equal parts, creating the 24-hour day. However, the length of each hour varied throughout the year: a daylight hour lasted longer in summer than in winter, and a night time hour was longer in winter than summer. Although the Greek astronomer Hipparchus proposed making the hours equal in length all year round by basing the 24 divisions on the equinox days, fixed-length hours did not become the norm until the advent of mechanical clocks during the 14th century.

Over the millennia, instruments have been invented to reproduce the celestial cycles and to enhance scientists’ understanding of astronomical phenomena. Astrolabes – introduced during the Hellenistic period and more widely used from the 8th century onwards – were hand-held models of the universe rendered on a flat surface. By enabling early astronomers to work out the relationship of various cosmic bodies, astrolabes had applications in astronomy, astrology, navigation and religion.

The Renaissance brought a new understanding of the universe. Although a heliocentric model (with the Sun at its centre) had been hypothesised in Ancient Greece by Aristarchus of Samos, the geocentric model (with the Sun and planets revolving around a fixed Earth) prevailed until 1543, when Copernicus published his model of the solar system. Three-dimensional mechanical mobiles known as tellurions (also written “tellurium”) were developed to illustrate the relative positions and movements of the Earth and Moon in relation to the Sun.

Astronomers often had a keen interest in clock-making and it was Galileo who first noticed the timekeeping property of the pendulum – the first “oscillator”. In Europe, mechanical clocks appeared in the 14th century, although accurate timekeeping remained elusive. The breakthrough came in 1656



when the Dutch astronomer and physicist Christiaan Huygens invented the pendulum clock. Thereafter, astronomy and horology developed in tandem, one relying on the other.

Driven by a strong spirit of invention, Antoine LeCoultre established his watchmaking workshop in 1833, setting the standard for what has become an exceptionally well-rounded Manufacture. As horologist-inventors, La Grande Maison's watchmakers have mastered all forms of astronomical complication, from simple moon phase displays to highly complex perpetual calendars and sky charts, translating cosmic phenomena into the tiny confines of a wristwatch case and even combining them with other functions to create Grandes Complications. These remarkable calibres were bought by many other great Maisons for their own watches, hence Jaeger-LeCoultre's nickname: "the watchmaker of watchmakers".

The Anomalies of Time

Although watchmaking measures time by using the values of different cycles of the heavenly bodies, the units of standard civil timekeeping are only approximate, based on the average value of Earth cycle. This difference made it significantly more complex to build an accurate calendar.

Around 100 BC, Egyptian astronomers measured a year's length by observing the time it takes for the Sun to return to the same position in the sky, completing a full cycle of seasons. However, the solar (or "tropical") year is 365.242189 days (normally averaged to 365.2425 days) exceeding our 365-day calendar year by almost six hours.

Introduced by Julius Caesar in 46 B.C., the Julian calendar was divided into 12 months of either 30 or 31 days each. This fell almost six hours short of a solar year and to compensate, an extra day was added to February every fourth year. However, that was an over-compensation and in 1582, Pope Gregory XIII eliminated some leap years, bringing the length of the solar and calendar years within 27 seconds of each other. According to the Gregorian Calendar, which we use to this day, if the year is divisible by 4, it is a leap year but if it can also be divided by 100, it is not a leap year (for example 1900, 2100); however, if it can be divided by 400, it is a leap year (2000, 2400).

The irregularities of the calendar, with leap years as well as months of differing lengths, represent a real challenge for watchmakers, since only a highly complex system of gears can take such irregular events into account. Thomas Mudge developed the first pocket watch perpetual calendar mechanism in 1762 (these mechanisms had previously appeared only in clocks), but for 150 years, the feat was rarely repeated – perhaps because of its complexity. Since the end of the 19th century, Jaeger-LeCoultre has mastered the intricacies of the perpetual calendar, also combining it with other complications to create Grande Complication movements.

The World Time

The passage of time is based on the cycle of the sun, and humans, including early navigators, noticed that sunrise and sunset occur at different times in different places. With the development of maritime



trade in the 18th century and railway travel in the 19th century, the need became clear for standardised timing. Until then, cities had their own local times, which were set every day at noon when the sun reached its zenith.

At the International Meridian Conference in 1884, it was decided that Greenwich Observatory in London would be the prime meridian (longitude 0°) as the standard of time reckoning around the world. The world's universal day would be the Mean Solar Day, starting and ending at midnight at Greenwich. These resolutions were later formalised to create the 24 evenly spaced time zones that we use today.

The growth of travel in the 20th century created a demand for watches that could show different time zones at a glance, prompting the development of World Time and, later, GMT and Dual Time watches – all owing their origins to the standardisation of solar time. Jaeger-LeCoultre has developed great expertise in these complications, with innovations including the first Memovox World Timer with an alarm, the dual-time Reverso Duoface and the highly complex Duomètre Unique Travel Time, and Calibre 948, which realistically represents Earth's rotation on its axis with a dial that turns in 24 hours.

The Secrets of Constellations

Once referred to as “daisy chains of the gods”, the stars have always fascinated mankind. And because it is innately human to recognise patterns, early civilisations identified and named groups of stars – the constellations. Their shapes reminded observers of animals or mythological characters and their changing positions were, to ancient societies, their gods' way of sending messages and telling stories. The constellations had practical value, too: their position aided navigation and told people when to sow and harvest their crops.

In about 130 BC, the Greek astronomer Hipparchus developed the first accurate star map. Although preceded by Babylonian astronomers 1,000 years earlier and by the Chinese astronomer, Gan De around 400 BC, Hipparchus's work was the foundation of Western astronomy. Of the 88 constellations recognised today, the ones that we know best are the 12 constellations of the zodiac. These constellations sit in a band that straddles the ecliptic (the Sun's apparent path across the sky), and change their apparent position as Earth orbits the Sun.

Highlighting this celestial aspect of time measurement, the watchmakers of La Grande Maison have invented a mechanism able to display the position of the constellations in real time, as seen from the home of the Manufacture in the Vallée de Joux. The sky chart complication, introduced in Calibre 945, indicates the passing of sidereal time, based on the stars, rather than civil time. Sidereal calendars and star charts display mankind's link to the cosmos directly on the dial in a literal and aesthetically captivating way, unlike a classical calendar, in which we infer that link from the numerical readings.

The Fascination of the Moon

The earliest known moon phase mechanism – known as the Byzantine Sundial-Calendar – predates mechanical watches by more than 1,000 years and, even though we can easily observe the constantly



changing phases of the Moon with the naked eye, watchmakers continue to be fascinated by the challenge of indicating lunar cycles more accurately.

Although the structure of this classical complication has remained essentially unchanged for two centuries, Jaeger-LeCoultre has improved its precision and mechanical efficiency, taken on the challenge of combining it with other complications, and developing entirely new lunar complications. La Grande Maison has taken this mastery to another level by indicating not only the moon's synodic cycle – the 29.53-day sequence of moon phases that we are most familiar with – but also its anomalistic cycle (which bases the month on the time when the moon's elliptical orbit brings it closest to Earth) and its draconic cycle – when the moon's orbit intersects with the ecliptic.

In 2021, for the first time in the history of horology, Jaeger-LeCoultre united these three lunar displays in a single wristwatch, the Reverso Hybris Mechanica Calibre 185. This micromechanical marvel allows the determination of solar and lunar eclipse events and rare phenomena, such as super moons.

The Unpredictable Stars

Although the movements of the planets and stars conform to regular and measurable patterns, there is one notable exception: shooting stars. They are not in fact stars but meteors – pieces of debris mostly left over from comet tail, which burn brightly as they enter Earth's atmosphere. Ephemeral and unpredictable, their occurrence is the antithesis of the measured and regular rhythms that govern watchmaking. Nevertheless, Jaeger-LeCoultre has succeeded, for the first time ever, in creating a mechanism that reproduces the totally random appearance of shooting stars.

This romantic and dreamy complication has been created especially for the feminine Rendez-Vous collection, where it is framed by a bezel of sparkling claw-set diamonds that seem to float like the stars, or appears amid a dream-like hand-painted sky.

The Perpetual Motion

For La Grande Maison, the perpetual movement of the Atmos clock, which works in perfect autonomy by harnessing minuscule variations in atmospheric temperature, is a metaphor for the infinity of the universe. Invented more than 90 years ago, it remains an object of fascination, the aesthetic beauty of its mechanism more than equalled by its apparently magical way of working. Since the first Atmos with moon-phase display was created at the end of the 1990s, Jaeger-LeCoultre has continued to develop astronomical complications for the clock, and this year introduces an extraordinary new complication that reproduces the monthly and annual cycles of both Earth and the Moon simultaneously.

Marrying Technology, Tradition and Artistry

Since 1833, Jaeger-LeCoultre has forged an unparalleled reputation for inventiveness, with more than 430 patents and 1,300 different calibres to its name – from the simplest to the most complex. For 2022 it has harnessed this tremendous breadth and depth of expertise to embark on a journey of discovery through the cosmos and its various cycles.



Earth's rotation on itself is depicted in a sumptuous new interpretation of La Grande Maison's Universal Time calibre: the Master Grande Tradition Calibre 948. The magnificence of the constellations that we see from Earth has been reproduced on the wrist with two new artistic interpretations of the extraordinary Calibre 945. With its fascinating technical intricacy and everyday practicality, a new perpetual calendar enriches the Polaris collection. Eternally fascinated by the night sky, the Manufacture's watchmakers have captured the rarity and enchantment of shooting stars in a new complication for the feminine Rendez-Vous collection. And they translate the infinity of the universe through the Atmos clock, by reproducing the Earth and Moon's cycles around the Sun in the breathtaking Atmos Hybris Mechanica Calibre 590.

Exuding both romance and technical ingenuity, the celestial timepieces created for 2022 – each one of them a small masterpiece of mechanical engineering and artistic savoir-faire – perfectly embody the unique spirit of the Manufacture.

ABOUT THE STELLAR ODYSSEY

In 2022 Jaeger-LeCoultre pays homage to the astronomical phenomena that lie at the very origin of how mankind measures time. Since the earliest days of the Manufacture, astronomical functions have played a major role in Jaeger-LeCoultre's portfolio of complicated timepieces – ranging from simple forms of moon phase display to highly complex perpetual calendars, equation of time, sky charts, and the draconic and anomalistic lunar cycles. Mastering all three measures of time – solar, lunar and sidereal – the watchmakers of La Grande Maison have perpetually innovated to create the most advanced and precise mechanisms that represent or even predict celestial phenomena. This year, Jaeger-LeCoultre embarks on a Stellar Odyssey with an immersive exhibition and a series of themed events that will embrace inspirational collaborations with a visual artist and a mixologist, and a fascinating programme of celestially-themed Discovery Workshops at Atelier d'Antoine. The Stellar Odyssey is an invitation to discover how the mysteries of the cosmos are translated into micro-mechanical wonders for the wrist.

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