**Barry Lawrence Ruderman**
**Antique Maps Inc.**

7407 La Jolla Boulevard
La Jolla, CA 92037

www.raremaps.com

(858) 551-8500
blr@raremaps.com

# Harmonia Macrocosmica sev atlas universalis et novus, totius universi creati cosmographiam generalem, et novam exhibens.

**Stock#:** 78475
**Map Maker:** Cellarius

**Date:** 1661
**Place:** Amsterdam
**Color:** Hand Colored
**Condition:** VG
**Size:**

**Price:** Not Available

**Description:**

***The Most Sought-After of All Celestial Atlases and the Only One Produced During the Dutch Cartographic Golden Age.***

The Charles Leeson Prince copy of the first edition, second printing (published one year after the first), of the greatest of all celestial atlases, issued by Andreas Cellarius in Amsterdam in 1661.

This work, Cellarius's *magnum opus*, was produced as a means to illustrate competing theories of celestial mechanics, during an era in which these issues were very much still up for debate. With scholarly precision, but in a manner accessible to the contemporary reader, Cellarius describes, contrasts, and analyzes the hypotheses and observations made by the great thinkers of classical antiquity in addition to those made by his contemporaries.

The modern reader will immediately be drawn to the volume's 29 hand-colored, double-page engraved plates. These depict the Sun, the Earth, and the stars in a way they had not been seen before. These magnificent depictions take all the strengths of Dutch 17th-century engraving and apply it to the sky: information is simply presented and any critical eye will immediately start to understand the points that Cellarius conveys.

The plates can be divided into two sections: plates 1-21 deal with varying hypotheses on how the Solar System functions, citing Claudius Ptolemy, Tycho Brahe, Nicolaus Copernicus, as well as lesser-known figures such as Aratus of Soli. The plates convey, with two-dimensional *in plano* and three-dimensional *scenographia* depictions, how the planetary motions within each model account for contemporary observations. Some plates focus on other themes, these include the influence of the Earth's tilt on climatic effects and how we observe the stars, or the explanation for the phases of the Moon.

7407 La Jolla Boulevard
La Jolla, CA 92037
www.raremaps.com
(858) 551-8500
blr@raremaps.com

**Harmonia Macrocosmica sev atlas universalis et novus, totius universi creati cosmographiam generalem, et novam exhibens.**

Plates 22-29 neglect the workings of the Solar System and instead focus on the constellations. While later scientific texts eschew discussions of these human constructions, in Cellarius's time they were still considered of critical scholarly importance. The most important recent innovations, which are displayed in various plates, are the discoveries and naming of Southern Hemisphere stars as well as the attempted renaming of the pagan constellations to fit Christian ideals. These plates are perhaps the most fantastic in the whole set, as they all, bar Plate 27 (which seeks to map the Southern Hemisphere), show the world as seen from outside the celestial realm, that is, we are looking from beyond the stars into our own existence.

***"We aspire to something greater, and undertake to draw up a Universalem Cosmographiam . . . we will discover the Harmoniam Macrocosmican" (Johannes Janssonius)***

This *Harmoniam Macrocosmican*--a complete description of the cosmos--had been conceived nearly a century earlier by the early cartographer Gerard Mercator. In his *Chronologia*, Mercator advertised his intent to publish a multi-volume atlas on "cosmography" (here meaning not only celestial cartography but also a study of modern and ancient geography), yet neither he nor his son would ever complete this project. In 1603 the first celestial atlas was published in Augsburg, this was Johann Bayer's *Uranometria*. This work limits itself in scope to only depicting the constellations, and as such, the 17th-century still lacked any sort of publicly accessible study of the Universe that took into account scientific debates and the workings of the Solar System.

Johannes Janssonius would take up Mercator's concept of an atlas that covered all known geographies in 1636 with his *Atlas Novus* (eventually, *Novus Atlas absalutissimus*). By 1647, it is likely that he would already have had Cellarius in mind as the potential author for a volume on celestial cartography that was to be incorporated into this atlas. It is possible that Cellarius had already started work on this volume at the time; he states in the forward of the presented text that "he originally drafted the plates and celestial maps . . . solely for his own use, but that after repeated appeals from the publisher [Janssonius], he had decided to make them available for the public" (translation by Van Gent).

The plates themselves would have been engraved by a host of Dutch workers, but only two have signed their names: van de Hove, who made the frontispiece, and van Loon, a noted creator of nautical charts. By 1660, the work was complete. As mentioned by Cellarius in the text, he intended to publish a second volume that would adjust for this first volume's overreliance on the Ptolemaic model. This overreliance is present in several ways. In plates that pick a certain model of the Solar System, approximately ten show a pre-Copernican concept of the universe, while only two deal with a Copernican viewpoint and six with a Tychonic system. Further, the plates show little in the way of telescopic discoveries, such as the moons of Saturn. We note but two plates (23 and 28) in which a telescope is in active use among the many

**Harmonia Macrocosmica sev atlas universalis et novus, totius universi creati cosmographiam generalem, et novam exhibens.**

representations of astronomical tools in the other plates. It is likely that this intended second volume would have focused more heavily on modern astronomical discoveries. However, Cellarius was aware that it was unlikely that he would live long enough to finish a second volume, and thus intended for this work to be complete as it stood.

**A Brief History of Time**

The plates in the text seek to reconcile various ancient and contemporary theories regarding the functioning of the universe. Foremost among these is the Platonic model, which describes the orbits of the planets as confined to a series of spheres, each centered around the Earth and each made of a different crystalline material. To account for variations in the distance and the direction of movement caused by the true orbits of planets, secondary "epicycles" were invoked, these are small orbits around a fixed point which itself orbits the Earth.

However, this is not the only pre-Copernican theory analyzed in the text. Plate 8, and the text accompanying it, describes a model attributed to Aratus of Soli, a 3rd-century B.C. poet, who is purported to argue that Venus and Mercury rotate not around the earth, but around the sun, which itself rotates around the earth. However, the exact genesis of this geo-heliocentric theory is in doubt. Aratus's poem, which was widely distributed and eventually translated into Latin by Germanicus Caesar, is more allegory than scientific treatise. Cellarius cites Germanicus Caesar as the progenitor of this idea, however, it appears that this is due to a common error that can be traced back to an 8th-century manuscript, in which the worldview of the 4th-century Roman Martianus Capella is presented alongside Caesar's translation.

The idea of the cosmos as a series of perfect realms would start to shatter in the 16th-century with the invention of the telescope and the discovery of the moons of Jupiter. Further observations showed that the Ptolemaic worldview was inconsistent in regards to the orbital parameters of the planets, and two major models evolved to describe the features of the cosmos: the Tychonic system, named after Tycho Brahe, and the Copernican system, named after Nicolas Copernicus. The Tychonic system suggests that the sun rotates around the Earth, but that all other planets rotate around the Sun, while the Copernican system suggests a fixed Sun with all the planets revolving around. The disagreement between these two systems is actually a matter of reference point: whether the sun or the earth is fixed is simply a matter of where the observer is standing. Yet, these two models had at their core a fundamental conflict regarding how something as massive as the Earth could be in perpetual motion and perpetually spinning without consequence. It was not until nearly thirty years after the dissemination of the *Harmonia* that the question of inertial reference frames and gravitational pull would be resolved, by Isaac Newton in his 1687 *Philosophiæ Naturalis Principia Mathematica*.

7407 La Jolla Boulevard
La Jolla, CA 92037
www.raremaps.com
(858) 551-8500
blr@raremaps.com

**Harmonia Macrocosmica sev atlas universalis et novus, totius universi creati cosmographiam generalem, et novam exhibens.**

Even one hundred years following the discoveries of Galileo, there was much that remained to be discovered regarding the stars. Johannes Kepler had only introduced his treatises formulating his three laws of planetary motion fifty years earlier, and acceptance of new ideas was slow. Texts, in particular the present, which targeted a wider audience, were crucial for reformulating the general public's ideas on how the Solar System worked.

**Plates**

We here first describe the title page and frontispiece, followed by plates 1 to 21. These plates show various models of the Solar System and depictions of the Earth and are themselves divided according to subject matter. This is followed by plates 22-29, which show the constellations.

***Frontispiece***

The frontispiece is heavily inspired by the engraved titled used by Philippus van Langsbergen in his 1632 *Tabulae motuum coelestium perpetuae* (Tables of Perpetual Celestial Motion), which produced astronomical tables based on circular planetary motion. Langsbergen's engraved title page contained the motifs visible at the top of the Cellarius frontis, motifs that would appear in the decorative elements of many late 17th-century Dutch maps.

The design shows earthly observers gathered around Urania, the muse of astronomy. They gaze upwards at four cherubs, two holding cross staffs and the other two playing with a model of the Sun orbited by the Earth. Above, the signs of the zodiac are seen on a rotation through the sky, with Libra and Virgo pictured. The Sun and Moon stare at each other, with the dark side of the moon facing the sun.

As mentioned before, the observers below are grouped around Urania. Tycho Brahe sits on the left, pointing up at the stars and holding a compass to a celestial globe, while Nicholas Copernicus sits on the right and points at a graphomotor. The two turbaned figures behind Urania are uncertain, it is suggested that one of them may be the Islamic astronomer Abu Abdallah al-Battani, whose astronomical treaty based on Ptolemy's *Almagest* was of an impressive accuracy for the time. To the right of these figures is the Castilian king Alfonso the Wise, who compiled various Islamic astronomical tables and made them available to European astronomers. At the far right is van Langsbergen, whose book is mentioned above.

***Plates 1 to 21***

The Ptolemaic plates are as follows.

**Harmonia Macrocosmica sev atlas universalis et novus, totius universi creati cosmographiam generalem, et novam exhibens.**

1. *Planisphaerium Ptolemaicum, Sive Machina Orbium Mundi Ex Hypothesi Ptolemaica In Planno Disposita*

A two-dimensional representation of the Ptolemaic model, showing a geocentric concept of the universe with concentric circles of the moon, the sun, the planets, and finally the stars radiating outwards. The map is centered on the world, projected from the north pole and showing California as an island. The ecliptic line (showing the zodiac) is projected here. The planets, which revolve around the Earth, are themselves represented as Roman gods and goddesses circling the Earth on a chariot. The signs of the zodiac again appear in the outermost of the charts.

This is not a complete representation of the Ptolemaic model: Ptolemy accounts for the changing distances between the Earth and planets by suggesting that each celestial body (with the exception of extrasolar stars) rotates around a point (termed the epicycle), and it is this point that rotates around the Earth.

2. *Scenographia Systematis Mundani Ptolemaici*

This representation treats the same subject matter as the first plate, however, here it attempts to show it in a three-dimensional system. Again centered on a representation of a spherical globe, the planets travel through bands concentric with the Earth's ecliptic line. However, in order to better represent the effects of the tilt of the Earth (relatively, the tilt of all other celestial bodies), the three-dimensional representation shows how the tilt leads to the delineation of the tropics and the polar circles.

3. *Orbium Planetarum Terram Complectentium Scenographia*

This is the first complete representation of the Ptolemaic model. Instead of concentric two-dimensional bands, the planets are here shown as limited to certain spheres, argued to be crystalline by Aristotle. This allows for the slightly different orbital planes of the known planets. In addition, this representation is the first to show epicycles, that is, the spheres within spheres, around which the celestial objects orbit in order to account for non-circular motion.

At the bottom left and right of the map are more direct contrasts between the Ptolemaic and Brahe models, with simple Latin explanations outlining their differences.

14. *Hypothesis Ptolemaica Sive Communis Planetarum*

7407 La Jolla Boulevard
La Jolla, CA 92037

www.raremaps.com

(858) 551-8500
blr@raremaps.com

**Harmonia Macrocosmica sev atlas universalis et novus, totius universi creati cosmographiam generalem, et novam exhibens.**

This plate builds on the upper plates by explicitly outlining what is only hinted at before: the complex idea of epicycles. The inner planets, of which only one is here depicted, are effectively satellites around a small but empty orbit, and it is the center of this orbit that rotates around the Earth. Because this alone was not able to account for the observations made, it is necessary that the shells of the planet not be centered around the Earth, but rather around a fictional point, the "Eccentric Centrum." This is more simply displayed in the lower right. The lower left shows an alternate hypothesis in which the sun requires no such epicycle, outlined in plate 16.

20. *Theoriatrium Superiorum Planetarum*

This plate continues with the above reconciliation of the concept of epicycles and modern observations, this one showing how the orbit of the center of the epicycle is elliptical, following the same physics as shown in plate 16.

The Copernican plates are:

4. *Planisphaerium Copernicanum Sive Systema Universi Totius Creati Ex Hypothesi Copernicana In Plano Exhibitum*

The first of the Copernican plates shows a plan of the Solar System more akin to what we know today. The Sun is at the center, with the planets orbiting around it. Orbiting the Earth is the moon, and Jupiter is shown with its four known moons. The outermost zodiac sphere is shown as fixed. At the bottom left and images are astronomers using various modern celestial tools.

5. *Scenographia Systematis Copernicani*

A second Copernican representation, again "scenographic," or an attempt at placing the objects in a three-dimensional viewpoint. While this projection is less clear than plate 2 in terms of the exact angle of the zodiac signs, this globe shows the rotations of the Earth, with a display of the solstices and equinoxes shown. The seasonality of the angles of insulation are demonstrated by illustrations of the Earth for Northern Hemisphere winter (top), Northern Hemisphere summer (bottom), and spring and fall (at the sides).

The Tychonic plates, which show a geo-heliocentric theory in which the Sun orbits the Earth, with all of the other planets orbiting the Sun, are:

6. *Planisphaerium Braheum Sive Structura Mundi Totius Ex Hypothesi Tychonis Braehi In Plano*

7407 La Jolla Boulevard
La Jolla, CA 92037

www.raremaps.com

(858) 551-8500
blr@raremaps.com

**Harmonia Macrocosmica sev atlas universalis et novus, totius universi creati cosmographiam generalem, et novam exhibens.**

*Delineata*

This is the first plate that focuses exclusively on the Tychonic model (which, it should be noted, is simply the Copernican model under a coordinate transformation). Again starting with a two-dimensional projection, the Tychonic model seeks to correct for inconsistencies in the Ptolemaic model by having the planets, with the Sun and Moon revolving around the Earth, but all of the other celestial objects revolving around the Sun. This allowed for Brahe to resolve the fact that he believed the Earth to be too heavy to be in continual motion with the observations made by Copernicus and others of the innermost planets. This model allows for moons to rotate around Jupiter. Again, the map is decoratively embellished with imagery around the sides.

7. *Scenographia Compagis Mundanae Brahea.*

This second plate regarding the Tychonic model attempts to do what plates two and five do for the other models. Again, like the second plate, this shows the tropics and polar circles in a simple manner. The planets Mercury and Venus are shown to be orbiting around the Sun, with the rest orbiting around the Earth. As recognized by Cellarius's contemporaries, this is not a truly Tychonic representation, as Mars, Jupiter, and Saturn do not clearly orbit around the Sun. The detail is less clear on this view due to the sheer amount of non-concentric circles needed, complicating the matter.

9. *Tychonis Brahe Calculus Planetarum Cursus et Altitudines Oboculos Ponens.*

This is the third Tychonic representation of the universe. Plate 9 sets out to compare how the rotation of the planets around the Sun can explain the measured perigees and apogees (furthest and closest distances from the Earth) without having to invoke Ptolemy's epicycles. At the center of the map is a tiny Earth with the moon rotating around it, while the Sun is drawn in two positions. Each of the planets is shown with its relative-to-Earth orbit around both of the Sun's positions. Also, the median distance from the Earth to each planet is market.

At its core, this is a simple image, explaining how the motion of the Earth and Sun, relative to each other, lead to the distances with third-party planets changing. However, the change of reference frames greatly complicates the matter.

16. *Theoria Solis per Eccentricum sine Epicyclo*

This plate takes a Tychonian point of view and shows how the Sun orbits the Earth, but without an

7407 La Jolla Boulevard
La Jolla, CA 92037
www.raremaps.com
(858) 551-8500
blr@raremaps.com



epicycle. Instead, Newtonian physics, expanded by Kepler, shows how in an elliptical free-fall orbit, a body will take the path of an ellipse, which has one locus at the center of mass (here taken to be the Earth), and a second locus at a fictional point, here shown as the *centrum eccentrici*. The sum of the distances between the two points and the orbiting body will always remain the same, this is shown here with the orange-shaded triangles.

21. *Theoria Veneris et Mercurii*

This plate falls in a strange median point between the Tychonic and Ptolemaic viewpoints. It invokes the concept of epicycles but has Venus and Mercury on a concentric epicycle that is centered on an elliptical solar orbit. This reconciliatory plate is not far from plate 8, which is based on Greek philosophies. The distances of apogee and perigee of the Sun and inner planets are given at the sides of the image. These correspond to marked points on the plate. Schematics are shown in the lower left and right.

Plates based on Aratus, the 3rd-century B.C. Greek didactic poet:

8. *Planisphaerium Arateum Sive Compages Orbium Mundanorum Ex Hypothesi Aratea In Plano Expressa*

This plate is perhaps the most interesting in the whole set, showing a model in Venus and Mercury orbit the sun, but the rest orbit the earth. Cellarius is blunt in his recognition that the presented non-heliocentric models are not new. In his text, he states that:

> *This type of cosmography sketched in plano, the same that Brahe hypothesizes. . . were not invented by Tycho Brahe, nor worked out by him, but dug out of darkness (?) from ingenious labors . . . from Aratus, that most learned Greek poet. . .*

In short, "*Hypotheses Brahe & Copernicana non sunt nova*" (Brahe's and Copernicus's hypotheses are not new).

The present plate shows most of the planets orbiting the Earth, with the exception of Venus and Mercury, which orbit the Sun. This depiction is credited to Aratus, a 3rd century B. C. philosopher, whose *Phainomena* describes the Solar System. However, this is more of a poem about the gods than a model, and modern scholarly readings of the text show little connection with heliocentrism. Cellarius himself makes little further reference to Aratus, instead of focusing on the studies and translations by Germanicus Caesar, first-century Roman general and astronomer, referred to in

**Harmonia Macrocosmica sev atlas universalis et novus, totius universi creati cosmographiam generalem, et novam exhibens.**

the *Notis ad Germanici Phaenomena*. Here, the text refers to an Egyptian system, which is again referred to by Theodosius in the fourth century, but is instead thought to relate to the Greek Heraclides.

However, modern readings of this model suggest it as originating to the fourth-century Roman astronomer Martianus Capella and is one of many classical non-fully geocentric theories. His formulation of the universe, was depicted in a ninth-century **Carolingian manuscript** alongside Aratus's poetry. This work, termed the *Leiden Aratea*, appears to have convinced Medieval and Renaissance scholars that this model is Aratean, which Cellarius evidently followed. The depiction in the manuscript is nearly identical to Cellarius's. The first known engraved edition of this depiction is credited to Hugo Grotius, published in 1600 in Leyden, albeit on a much smaller scale.

Two plates debate the manners in which the phases of the moon arise, one taking a Ptolemaic standpoint and one taking a Tychonian view:

18. *Theoria Luna Euiusmotum per Eccentricum et Epicyclum Demonstrans*

Representing the Ptolemaic viewpoint, this plate shows the moon as rotating about an epicycle at the same time as it orbits the Earth. Holding the Sun fixed at the top of the map, we can see the phases of the moon arising simply from the angle between the sun, the moon, and the Earth. The epicycles are invoked to explain the difference between the moon's apogee and perigee. This combination of two orbits results in a complex curlicue geometry to the orbit.

19. *Typus Selenographicus Lunae Phases et Aspectus Varios Adumbras*

This plate describes the phases of the moon as we now understand them. Without a need to account for a complex epicycle geometry, this image is much more straightforward, and the Sun's magnificent rays which streak out across the page make it even more straightforward. In the bottom left is a day-by-day accounting of the phases, while the lower right uses tangential lines to show that half of the moon is always in light, but that the angle visible from Earth is what changes.

The remaining plates touch on various other celestial phenomena and properties

10. *Corporum Ceoelestium Magnitudines*

Advertising itself as a plate showing the "magnitude" of celestial bodies, it appears to show the diameters of a great many objects, including the Moon, stars of various magnitudes, the Earth, the

7407 La Jolla Boulevard
La Jolla, CA 92037

www.raremaps.com

(858) 551-8500
blr@raremaps.com

**Harmonia Macrocosmica sev atlas universalis et novus, totius universi creati cosmographiam generalem, et novam exhibens.**

planets, and the Sun. Some of these sizes are very precise, the Earth is shown at around 1700 German miles, which translates to about 7970 imperial miles--not far from the true value of 7917. The Moon, again, is relatively correctly shown at about a sixth of the Earth's size (instead of a seventh). The accuracy falls away with the rest of the image: Jupiter and Saturn are nearly the same size, Mars is larger than Earth, and Venus is the size of the Moon. An attempt at calculating the sizes of the extrasolar stars is even made (except for the brightest stars, they are smaller than Saturn).

This plate is followed by several pages of calculations based on different sources. They cite the various observations and calculations made by Ptolemy, Brahe, and Copernicus, as well as by Kepler and other contemporary sources. Presenting various points of view, the text compares and contrasts the assumptions made and the results presented.

11. *Stitus Terrae Circulis Coelestibus Circun Datae.*

Similar to plate 2 but with less material to make it more readable, this map shows the ecliptic line with the figures of the zodiac overlaid. The Tropics are tangential and nearly perpendicular is the horizon line. The polar circles are projected out at the angle created by the tilt of the Earth, and various synthetic meridians are shown. The projection surrounds a globe centered on the Pacific, with the outline of Australia, California as an island, and America Septentrionalis.

12. *Haemisphaeria Sphaerarum Rectae Et Obliquae Utriusque Motus et Longitudines Tam Coelestes Quam Terrestres Ac Stellarum Affectiones Monstrantia*

A projection of the Earth with lines of latitude and longitude showing how various the changing position of the observer combined with the tilt of the Earth causes for different celestial observations to be made. This treats a complex three-dimensional problem in a two-dimensional projection. It is made apparent how stars of different celestial latitudes will appear differently to observes based at various latitudes and longitudes, to illustrate this point there are five different "cities" projected as observers. Particularly driven in is the point that, for certain latitudes, a northern hemisphere star can appear directly overhead in the southern hemisphere, and vice versa. There are also stars that will never be visible in the northern hemisphere if they are below the polar lines.

13. *Hemisphaerium Orbis Antiqui Cumzonis Circulis et Situ Populorum Diverso.*

A hemispherical projection of the Earth, centered on the Old World, showing the major circles and

7407 La Jolla Boulevard
La Jolla, CA 92037
www.raremaps.com
(858) 551-8500
blr@raremaps.com



the elliptical line. What is particularly interesting about this image is the annotations on the left- and right-hand sides of the globe. At intervals of ten degrees, the right side shows the amount of daylight (sunrise to sunset) of the longest day of the year, while the left side shows the amount of daylight on the shortest day of the year. This goes up to 178 days, 2 hours calculated at the north pole--exactly half the year.

15. *Typus Aspectuum Oppositionum et Conjuctionum Etzin Planetis*

This plate focuses on the times when constellations and planets will be in opposition or in alliance to each other, a founding principle for astrological belief systems. Charts at the lower left and right display the principles of parallax, which can be used to calculate distances during eclipses. The central image centers around a polar projection of the Earth, showing California as an island, a large New Albion, and a singular island of Japan.

17. *Soliscirca Orbem Terrarum Spiralis Revolutio*

This is a simple projection of the Earth-centered on the Old World, which attempts to show a spiraling-upwards trend of the Sun's orbit around the moon. A series of twelve spirals, going up and down, represent how the Sun slowly tracks upwards and downwards as the months progress.

***Plates 22 to 29***

Plates 22 and 23 show the Christian constellations:

22. *Coeli Stellati Christiani Haemisphaerium Prius*

The first in a two-part division of the hemisphere that divides the stars into the parts that can be seen at various times of the year. This follows Julius Schiller's nomenclature and names 51 constellations and names about half of the 54 constellations he created. Schiller's 1627 *Coelum stellatutum christianum* used the twelve apostles as the signs of the zodiac and included a host of other wonderful imagery.

23. *Coeli Stellati Christiani Haemisphaerium Prius*

This is the second hemisphere to show Schiller's nomenclature. Polar projections are again included at the lower left and right.

**Harmonia Macrocosmica sev atlas universalis et novus, totius universi creati cosmographiam generalem, et novam exhibens.**

Plates 24 through 29 show the pagan constellations:

24. *Haemisphaerium Stellatum Boreale Antiquum*

The first of three plates to focus on northern hemisphere stars, this one projects a simple planform projection, centered on the north pole.

25. *Hemispherii Borealis Coeliet Terrae Sphaerica Scenographia*

The second plate to show the Northern Hemisphere constellations, this one takes the completely novel approach of putting the viewer past the constellations, looking inwards at the earth. Cellarius terms this a "scenographic" projection, and the engraving works constellations into the features of Old World cartography.

26. *Hemispherii Borealis Coeliet Terrae cum Subjecto Haemisphaerio Terrestri*

This plate repeats the previous image, but in order to better orient the reader, it focuses on the globe instead of the constellations. By a slight shift in reference point and a different tonality of shading, the view magnificently highlights the map of the world.

27. *Haemisphaerium Stellatum Australe Antiquum*

This plate starts the trilogy of Southern Hemisphere stars, with this one being a planiform projection nearly centered on the South Pole. It bears noting that many of the Southern Hemisphere constellations had become known to European scholars less than 70 years before this book was published, through the observations of Frederick de Houtman in 1595-97.

28. *Haemisphaerium Scenographicum Australe Coelis Stellati et Terra*

This is Cellarius's stunning scenographic projection of the Southern Hemisphere. Centered on the "Terra Australis Incognita," it shows the recently discovered constellations that can be seen only from the Southern Hemisphere. Many of them are given names that correspond to animals that inhabit regions only recently explored by Europeans, such as Pavo (the peacock) and the Pis Indica (apparently the turkey).

29. *Haemisphaerium Scenographicum Australe Coelis Stellati et Terra*

This is the final plate in the atlas. This plate again portrays the globe in the manner following plate

**Harmonia Macrocosmica sev atlas universalis et novus, totius universi creati cosmographiam generalem, et novam exhibens.**

26, highlighting the continents (here, North and South America), with the constellations portrayed in a more subdued manner.

**Provenance -- Charles Leeson Prince**

The atlas contains early, perhaps 17th-century, ink marginalia and the inscription of Charles Leeson Prince, FRAS, 1883. Prince also used the margins to conduct various calculations.

Trained as a doctor and a native of Sussex, Charles Leeson Prince was elected to the Royal Astronomical Society and was a scholar on Aratus of Soli, publishing a translation of his work: *A Literal Translation of the Astronomy and Meteorology of Aratus, with some Bibliographical Remarks* (Lewes, Sussex: 1895). Included as the frontispiece to his text was Plate 8 of the presented volume--a photograph, as he states in his introduction, that would have been taken from this volume.

Shortly after his father's death in 1872, Prince retired from general practice and moved to Crowborough, occupying a property at the summit of Crowborough Hill. This is one of the highest points in the South of England and allowed Prince to create an observatory and pursue his interest in astronomy and meteorology (he was a Fellow of the Royal Meteorological and Astronomical Societies, British Astronomical Association, and Scottish Meteorogoical Society). He published several works on astronomy as well as a volume giving meteorological observations for Uckfield for 1843-1870; and a second edition extended his observations to 1885, using readings taken at Crowborough for the later years.

Prince was noted for both his current observations on the planets as well as being particularly interested in the history of astronomical observation. He showed that the discovery of the division of Saturn's rings could be traced back to Cassini, and not William Ball, as it was commonly believed at the time. He also pursued various other amateur endeavors, such as photography, and collected important early scientific documents. He was also a noted scholar of antiquities. Prince's annotations in pencils in the present text show several detailed calculations as well as highlighting areas where Cellarius discusses classical models of the cosmos.

Priince was a noted bibliophile and collector of rare books, whose collection was donated in part to Royal Astromical Society in 1898.

**Detailed Condition:**

Folio. Exceptional full red morocco gilt extra, following the late-17th-century Dutch style, covers paneled in gilt, with fleuron tools in the center panels, and corners of outer panels with brocade-like elaborate

7407 La Jolla Boulevard
La Jolla, CA 92037
www.raremaps.com
(858) 551-8500
blr@raremaps.com

## Harmonia Macrocosmica sev atlas universalis et novus, totius universi creati cosmographiam generalem, et novam exhibens.

complications of gilt tools; spine in nine compartments separated by raised bands (bands with small alternating floral tools), lettered in the second "ATLAS | COELESTIS" and in the fourth "SEU | HARMONIA | MACROCOSMICA", the other compartments with intricate curlicue tools in quarters. [14], 125, [1 blank], 219 pages; engraved frontispiece by F.H. van Hoven and 29 double-page engraved celestial maps. Signed in ink on title "Chas Leeson Prince. F.R.A.S. 1883." Scattered, unobtrusive ink and pencil marginalia in text. Some small marginal chips and repairs but overall in very good order.